

NEC

MODEL VT440
VT440G
VT440J

(Japanese model)

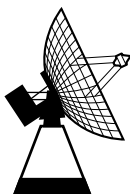
VT540
VT540G
VT540J

(Japanese model)

LCD Projector

SERVICE MANUAL

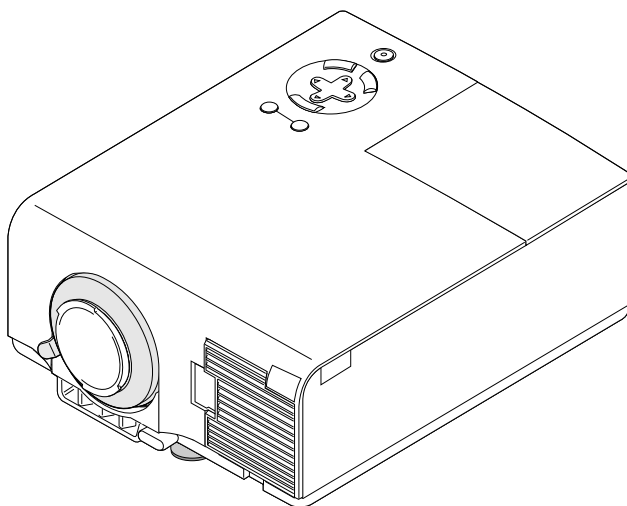
PART No.399911031



Better Service

Better Reputation

Better Profit



SAFETY CAUTION:

Before servicing this chassis, it is important that the service technician read and follow the "Safety Precautions" and "Product Safety Notice" in this Service Manual.

WARNING:

SHOCK HAZARD - Use an isolation transformer when servicing.

NEC

NEC Viewtechnology, Ltd.

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SAFETY PRECAUTIONS

CAUTION		
	RISK OF ELECTRIC SHOCK DO NOT OPEN	


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


 This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside of this unit.

 This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

ATTENTION		
	RISQUE D'ELECTROCUTION NE PAS OUVRIR	

MISE EN GARDE: AFIN DE REDUIRE LES RISQUES D' ELECTROCUTION, NE PAS DEPOSER LE COUVERCLE, IL N'Y A AUCUNE PIECE UTILISABLE A L'INTERIEUR DE CET APPAREIL. NE CONFIER LES TRAVAUX D'ENTRETIEN QU'A UN PERSONNEL QUALIFIE.

 Ce symbole a pour but de prévenir l' utilisateur de la présence d' une tension dangereuse, non isolée se trouvant à l' intérieur de l' appareil. Elle est d' une intensité suffisante pour constituer un risque d' électrocution. Eviter le contact avec les pièces à l' intérieur de cet appareil.

 Ce symbole a pour but de prévenir l' utilisateur de la présence d' importantes instructions concernant l' entretien et le fonctionnement de cet appareil. Par conséquent, elles doivent être lues attentivement afin d' éviter des problèmes.

SAFTY PRECAUTIONS

During servicing carefully observe the following.


1. OBSERVE ALL PRECAUTIONS

Items and locations that require special care during servicing, such as the cabinet, chassis, and parts are labelled with individual safety instructions. Carefully comply with these instructions and all precautions in the instruction manual.

2. BE CAREFUL OF ELECTRIC SHOCK

The chassis carries an AC voltage. If you touch the chassis while it is still alive, you will get a severe shock. If you think the chassis is alive, use an isolating transformer or gloves, or pull out the plug before replacing any parts.

3. USE SPECIFIED PARTS

The components have been chosen for minimum flammability and for specific levels of resistance value and withstand voltage. Replacement parts must match these original specifications. Parts whose specifications are particularly vital to safe use and maintenance of the set are marked  on the circuit diagrams and parts list. Substitution of these parts can be dangerous for you and the customer, so use only specified parts.

4. REMOUNT ALL PARTS AND RECONNECT ALL WIRES AS ORIGINALLY INSTALLED

For safety, insulating tape and tubes are used throughout, but some lift-off parts on the printed wiring board require special attention.

All wires are positioned away from high-temperature and high-voltage parts, and, if removed for servicing, they must be retuned precisely to their original positions.

5. LAMP

Be very careful of the lamp because it generates high heat while it is used at high voltage. When replacing the bulb, make sure it is cool enough.

6. LENS

Do not look into the lens during projection. This important to avoid damage to the eyes.

7. SERVICING

At the time of repair or inspection services, use an earth band (wrist band), without fail.

8. RUN A COMPLETE SAFETY CHECK AT THE COMPLETION OF SERVICING

After completion of servicing, confirm that all screws, parts, and wiring, removed or disconnected for servicing, have been returned to their original positions. Also examine if the serviced sections and peripheral areas have suffered from any deterioration as a result of servicing. In addition, check insulation between external metallic parts and blades of wall-outlet plugs. This examination is indispensable in confirming complete establishment of safety.

(Insulation check)

Pull out a plug from a wall outlet to disconnect the connection cable. Then turn on the POWER switch. Use a 500V megger (Note 2) and confirm that the insulation resistance is 1M Ω or more between each terminal of the plug and exposed external metal (Note 1). If the measured value is below the specified level, then it is necessary to inspect and fix the set.

(Note 1)

Exposed external metal....RGB input terminals, control terminals, etc.

(Note 2)

If a 500V megger is not available for an unavoidable reason, then use a circuit tester or the like for inspection.

LCD Projector

MultiSync VT440/VT540

User's Manual

NEC



IMPORTANT INFORMATION

Precautions

Please read this manual carefully before using your NEC MultiSync VT440/VT540 Projector and keep the manual handy for future reference.

Your serial number is located under the name plate label on the right side of your MultiSync VT440/VT540. Record it here:

CAUTION



To turn off main power, be sure to remove the plug from power outlet.
The power outlet socket should be installed as near to the equipment as possible, and should be easily accessible.

CAUTION



TO PREVENT SHOCK, DO NOT OPEN THE CABINET.
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED NEC SERVICE PERSONNEL.



This symbol warns the user that uninsulated voltage within the unit may be sufficient to cause electrical shock. Therefore, it is dangerous to make any kind of contact with any part inside of the unit.



This symbol alerts the user that important information concerning the operation and maintenance of this unit has been provided. The information should be read carefully to avoid problems.

WARNING

TO PREVENT FIRE OR SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.
DO NOT USE THIS UNIT'S GROUNDED PLUG WITH AN EXTENSION CORD OR IN AN OUTLET UNLESS ALL THREE PRONGS CAN BE FULLY INSERTED.
DO NOT OPEN THE CABINET. THERE ARE HIGH-VOLTAGE COMPONENTS INSIDE. ALL SERVICING MUST BE DONE BY QUALIFIED NEC SERVICE PERSONNEL.

DOC Compliance Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

3. GSGV Acoustic Noise Information Ordinance:

The sound pressure level is less than 70 dB (A) according to ISO 3744 or ISO 7779.

RF Interference

WARNING

The Federal Communications Commission does not allow any modifications or changes to the unit EXCEPT those specified by NEC Technologies in this manual. Failure to comply with this government regulation could void your right to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

In UK, a BS approved power cable with moulded plug has a Black (five Amps) fuse installed for use with this equipment. If a power cable is not supplied with this equipment please contact your supplier.

- IBM is a registered trademark of International Business Machines Corporation.
- Macintosh and PowerBook are registered trademarks of Apple Computer, Inc.
- Other product and company names mentioned in this user's manual may be the trademarks of their respective holders.

Important Safeguards

These safety instructions are to ensure the long life of your projector and to prevent fire and shock. Please read them carefully and heed all warnings.

Installation

1. For best results, use your projector in a darkened room.
2. Place the projector on a flat, level surface in a dry area away from dust and moisture.
3. Do not place your projector in direct sunlight, near heaters or heat radiating appliances.
4. Exposure to direct sunlight, smoke or steam can harm internal components.
5. Handle your projector carefully. Dropping or jarring can damage internal components.
6. Do not place heavy objects on top of the projector.
7. If you wish to have the projector installed on the ceiling:
 - a. **Do not attempt to install the projector yourself.**
 - b. The projector must be installed by qualified technicians in order to ensure proper operation and reduce the risk of bodily injury.
 - c. In addition, the ceiling must be strong enough to support the projector and the installation must be in accordance with any local building codes.
 - d. Please consult your dealer for more information.

Power Supply

1. The projector is designed to operate on a power supply of 100-120 or 200-240 V 50/60 Hz AC. Ensure that your power supply fits this requirement before attempting to use your projector.
2. Handle the power cable carefully and avoid excessive bending. A damaged cord can cause electric shock or fire.
3. If the projector is not to be used for an extended period of time, disconnect the plug from the power outlet.

Cleaning

1. Unplug the projector before cleaning.
2. Clean the cabinet periodically with a damp cloth. If heavily soiled, use a mild detergent. Never use strong detergents or solvents such as alcohol or thinner.
3. Use a blower or lens paper to clean the lens, and be careful not to scratch or mar the lens.

CAUTION

Do not unplug the power cable from the wall outlet under any one of the following circumstances. Doing so can cause damage to the projector:

- * While the Hour Glass icon appears.
- * While the message "Please wait a little." appears. This message will be displayed after the projector is turned off.
- * Immediately after the power cable is plugged into the wall outlet (the POWER indicator has not changed to a steady amber glow).
- * Immediately after the cooling fan stops working (The cooling fan continues to work for 30 seconds after the projector is turned off with the POWER button).
- * While the POWER and the STATUS indicators are alternately flashing.

Lamp Replacement

- To replace the lamp, follow all instructions provided on page E-33.
- Be sure to replace the lamp when the message "The lamp has reached the end of its usable life. Please replace the lamp." appears. If you continue to use the lamp after the lamp has reached the end of its usable life, the lamp bulb may shatter, and pieces of glass may be scattered in the lamp case. Do not touch them as the pieces of glass may cause injury. If this happens, contact your NEC dealer for lamp replacement.
- Allow a minimum of 30 seconds to elapse after turning off the projector. Then disconnect the power cable and allow 60 minutes to cool the projector before replacing the lamp.

Fire and Shock Precautions

1. Ensure that there is sufficient ventilation and that vents are unobstructed to prevent the build-up of heat inside your projector. Allow at least 3 inches (10 cm) of space between your projector and a wall.
 2. Prevent foreign objects such as paper clips and bits of paper from falling into your projector. Do not attempt to retrieve any objects that might fall into your projector. Do not insert any metal objects such as a wire or screwdriver into your projector. If something should fall into your projector, disconnect it immediately and have the object removed by a qualified NEC service personnel.
 3. Do not place any liquids on top of your projector.
- Do not look into the lens while the projector is on. Serious damage to your eyes could result.
 - Keep any items such as magnifying glass out of the light path of the projector. The light being projected from the lens is extensive, therefore any kind of abnormal objects that can redirect light coming out of the lens, can cause unpredictable outcome such as fire or injury to the eyes.
 - Do not cover the lens with the supplied lens cap or equivalent while the projector is on. Doing so can lead to melting of the cap and possibly burning your hands due to the heat emitted from the light output.

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1. INTRODUCTION

Introduction to the MultiSync VT440/VT540 Projector

This section introduces you to your new MultiSync VT440 (SVGA)/VT540 (XGA) Projector and describes the features and controls.

Congratulations on Your Purchase of The MultiSync VT440/VT540 Projector

The MultiSync VT440/VT540 is one of the very best projectors available today. The MultiSync VT440/VT540 enables you to project precise images up to 300 inches across (measured diagonally) from your PC or Macintosh computer (desktop or notebook), VCR, DVD player, document camera, or even a laser disc player.

You can use the projector on a tabletop or cart, you can use the projector to project images from behind the screen, and the projector can be permanently mounted on a ceiling*¹. The remote control can be used wirelessly.

Features you'll enjoy:

- Simple set up and operation.
- Front ventilation directs hot air away from your audience.
- A high-performance 160 watt NSH (130 watt in Eco mode) lamp. The lamp life can be extended up to 3000 hours by using the Eco mode.
- The supplied wireless remote control that operates the projector from any angle.
- Manual zoom control enables you to adjust the image between 25 (0.63 m) and 300 inches (7.6 m) (measured diagonally).
- Keystone correction allows you to correct trapezoidal distortion so that the image is square.
- You can choose between video modes depending on your source: "normal" for a typical picture, "natural" for true color reproduction.
- An image can be projected from in front or behind a screen, and the projector can even be installed on the ceiling.
- NEC Technologies' exclusive Advanced AccuBlend intelligent pixel blending technology - an extremely accurate image compression technology - offers a crisp image with SXGA (1280 x 1024) resolution*³.
- Supports most IBM VGA, SVGA, XGA*², SXGA(with Advanced AccuBlend)*³, Macintosh, component signal (YCbCr / YPbPr) or any other RGB signals within a horizontal frequency range of 15 to 100 kHz and a vertical frequency range of 50 to 117 Hz. This includes NTSC, PAL, PAL60, SECAM and NTSC4.43 standard video signals.

NOTE: Composite video standards are as follows:

NTSC: U.S. TV standard for video in U.S. and Canada.

PAL: TV standard used in Western Europe.

PAL60: TV standard used for NTSC playback on PAL TVs.

SECAM: TV standard used in France and Eastern Europe.

NTSC4.43: TV standard used in Middle East countries.

- The supplied remote control can be used without a cable.
- You can control the projector with a PC using the PC Control port.
- The contemporary cabinet design is light, compact, easy to carry, and complements any office, boardroom or auditorium.
- Eight pointers are available for your presentation.

***1 Do not attempt to mount the projector on a ceiling yourself.**

The projector must be installed by qualified technicians in order to ensure proper operation and reduce the risk of bodily injury. In addition, the ceiling must be strong enough to support the projector and the installation must be in accordance with any local building codes. Please consult your dealer for more information.

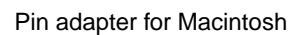
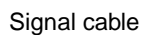
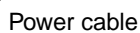
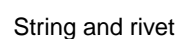
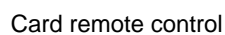
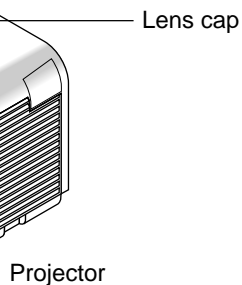
***2 An XGA image (1024 × 768) is converted into an 800 × 600 crisp image with NEC technology's Advanced AccuBlend on VT440.**

***3 An SXGA image (1280 × 1024) is converted into a 1024 × 768 crisp image with NEC technology's Advanced AccuBlend on VT540.**

Getting Started

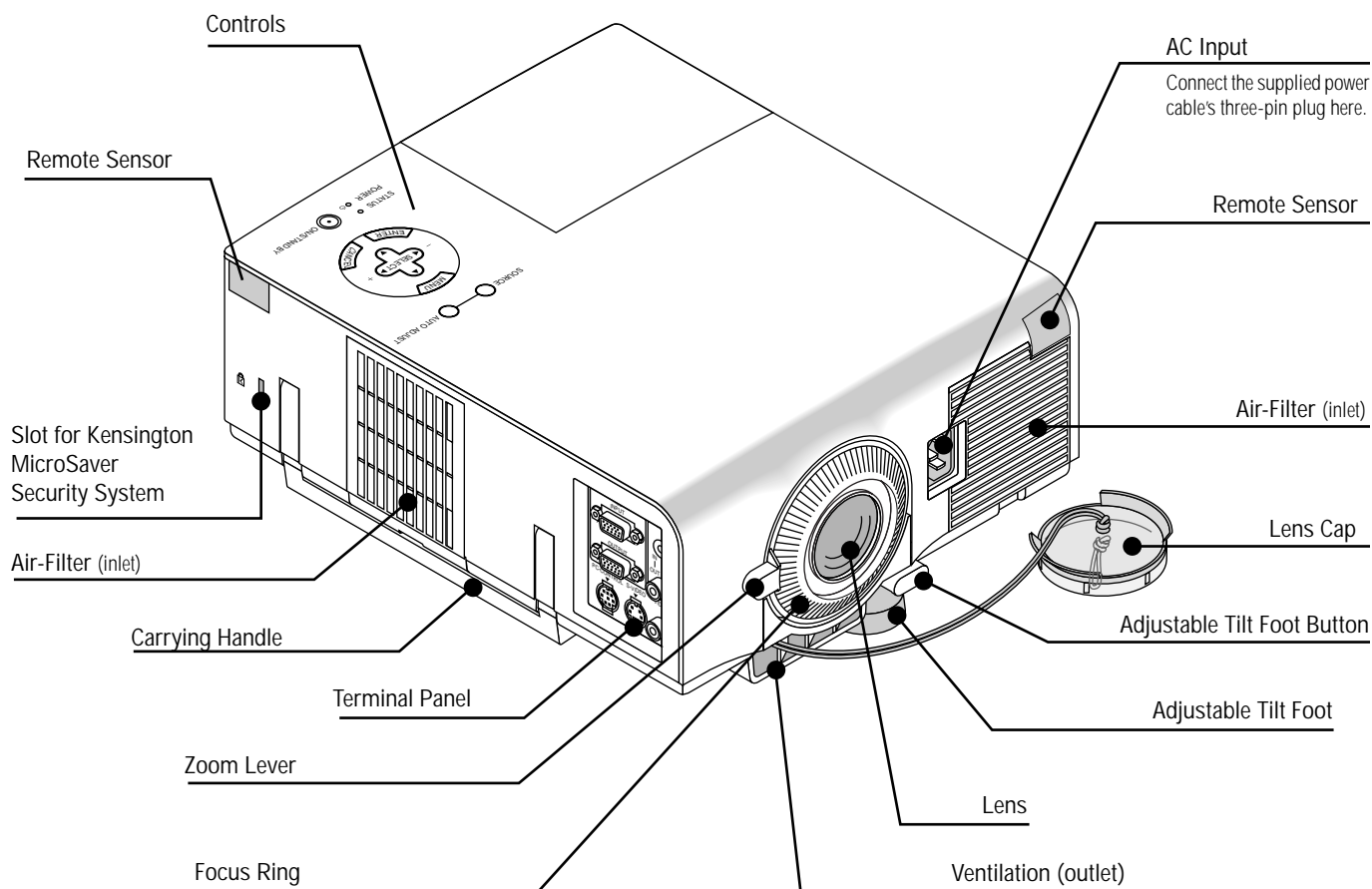
The fastest way to get started is to take your time and do everything right the first time. Take a few minutes now to review the user's manual. This may save you time later on. At the beginning of each section of the manual you'll find an overview. If the section doesn't apply, you can skip it.

Make sure your box contains everything listed. If any pieces are missing, contact your dealer.
Please save the original box and packing materials if you ever need to ship your MultiSync VT440/VT540 Projector.



Getting to Know Your MultiSync VT440/VT540 Projector

Front/ Side Features



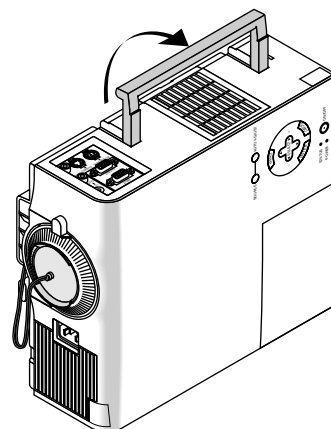
NOTE: Built-in Security Slot ()

This security slot supports the MicroSaver® Security System. MicroSaver® is a registered trademark of Kensington Microware Inc. The logo is trademarked and owned by Kensington Microware Inc.

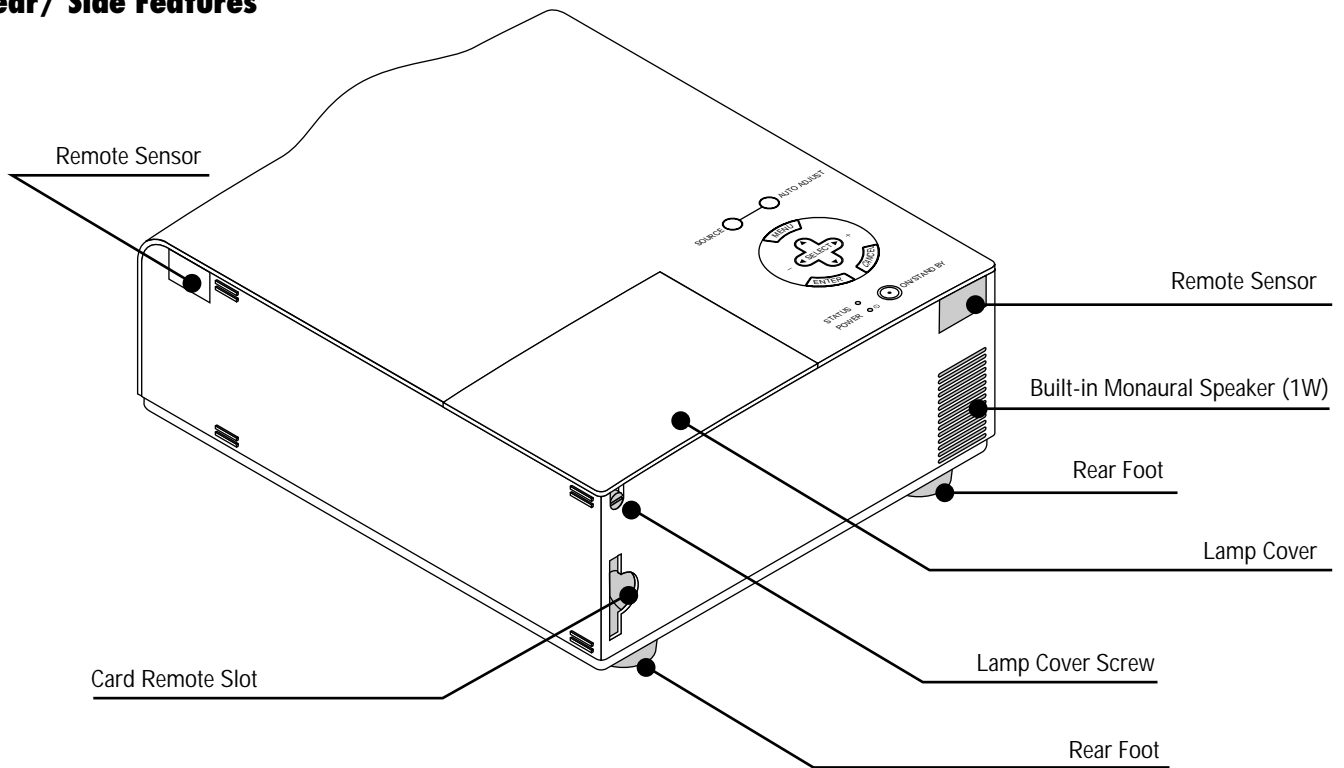
Carrying the Projector:

Raise the carrying handle up. Always carry your projector by the carrying handle.

NOTE: When moving the projector or when it is not in use, cover the lens with the lens cap.



Rear/ Side Features

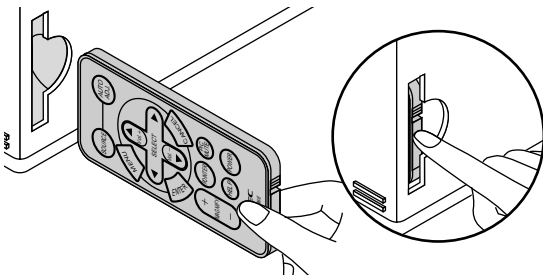


Slot for Card Remote Control

The supplied card remote control can be stored in the cabinet.

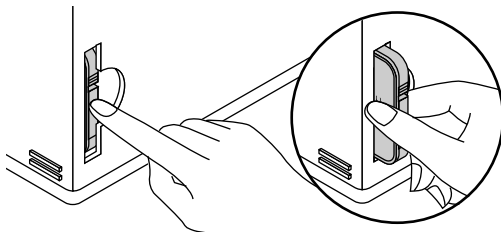
To store the card remote control:

1. Insert the card remote control **STRAIGHT** into the slot.
2. Push the card remote control until it is into place.



To pull out the card remote control:

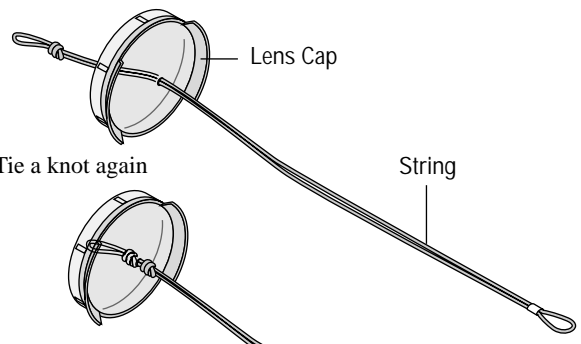
1. Push the bottom of the card remote control straight to eject the card remote control.
2. Pull out the card remote control.



NOTE: Do not push or pull the card remote control in a slanting direction. Unless you push the card remote control straight, you may not eject the card remote control. Should this happen, try pushing the card remote control straight again.

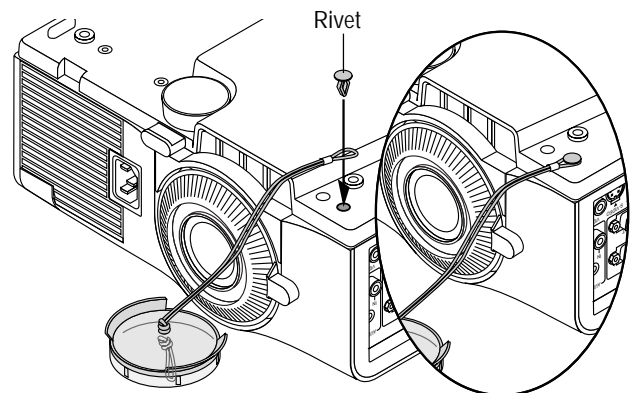
Attaching the lens cap to the lens hood with the supplied string and rivet

1. Thread the string through the hole on the lens cap and then tie a knot in the string.

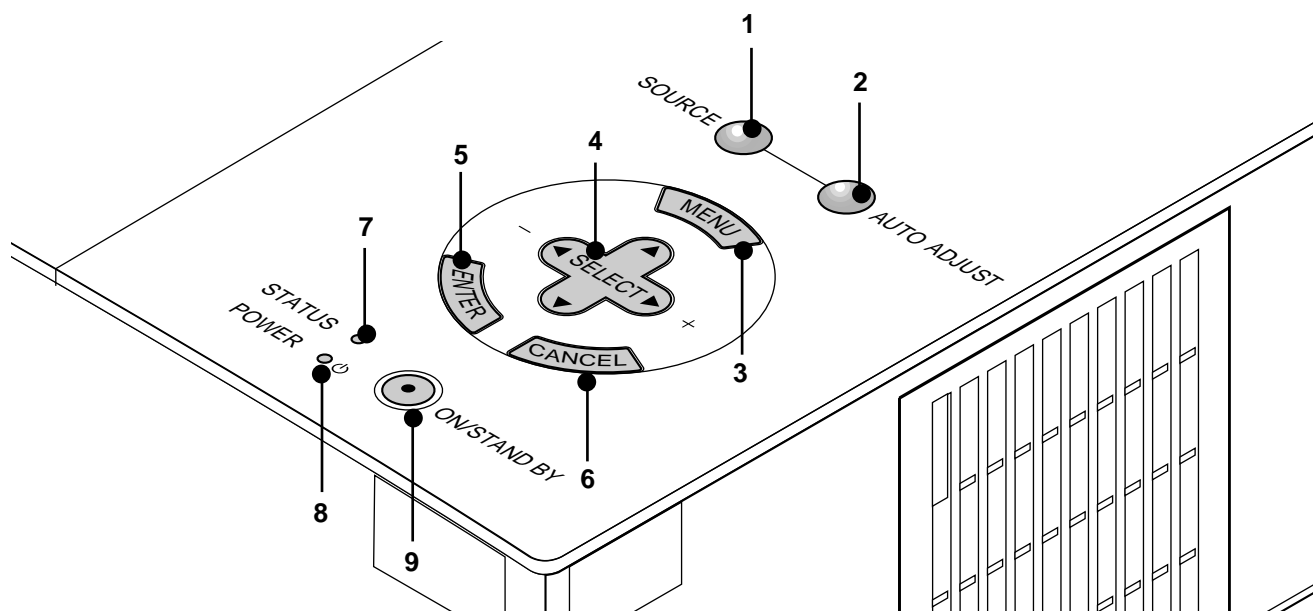


2. Tie a knot again

3. Use the rivet to attach the string to the bottom of the lens hood.



Top Features



1 Source Button

Use this button to select a video source such as a PC, VCR or DVD player.

2 Auto Adjust Button

Use this button to adjust Position-H/V and Pixel Clock/Phase for an optimal picture. Some signals may not be displayed correctly or take time to switch between sources.

3 Menu Button

Displays the menu.

4 Select (▲▼◀▶) / Volume (+) (-) Buttons

▲▼: Use these buttons to select the menu of the item you wish to adjust.

◀▶: Use these buttons to change the level of a selected menu item.

A press of the ▶ button executes the selection. When no menus appear, these ▲▼ buttons work as a volume control.

When the pointer is displayed, these ◀▶ ▲▼ buttons move the pointer.

5 Enter Button

Executes your menu selection and activates items selected from the menu.

6 Cancel Button

Press this button to exit the menu. Press this button to return the adjustments to the last condition while you are in the adjustment or setting menu.

7 Status Indicator

When this is lit red (orange in Eco mode) continually, it's warning you that the projection lamp has exceeded 2000 hours (up to 3000 hours in Eco mode) of service. After this light appears, it is advisable to replace the projection lamp as soon as possible. (See page E-33). In addition the message **"The lamp has reached the end of its usable life. Please replace the lamp."** appears continually until the lamp is replaced.

If this light blinks red rapidly, it indicates that the lamp cover or filter cover is not attached properly or the projector is overheated. See the Power / Status Light Messages on page E-35 for more details.

8 Power Indicator (⦿)

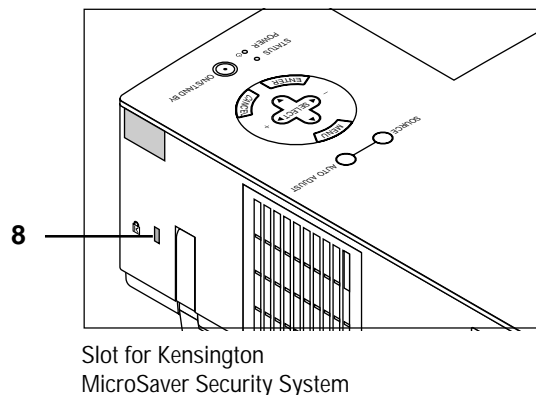
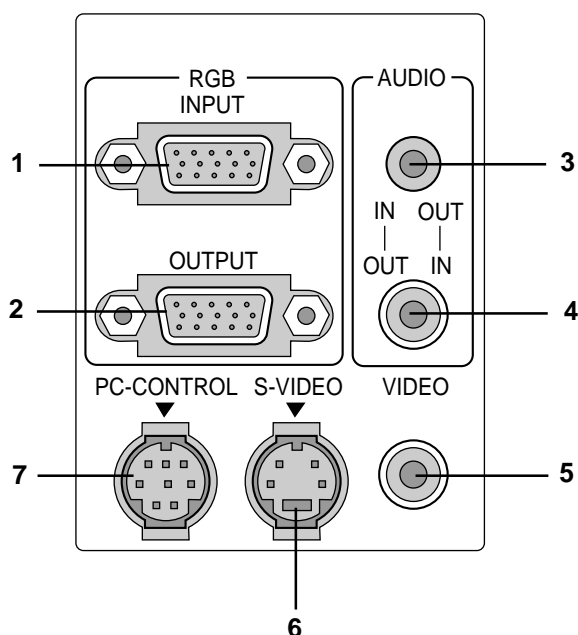
When this indicator is green, the projector is on; when the indicator is orange, it is in standby mode.

9 Power Button (ON / STAND BY)

Use this button to turn the power on and off when the power is supplied and the projector is in standby mode.

NOTE: To turn off the projector, press and hold this button for minimum of two seconds.

Terminal Panel Features



1. RGB Input Connector(Mini D-Sub 15 pin)

Connect your PC or other RGB equipment. Use the supplied signal cable to connect to a PC.

2. RGB Monitor Output Connector (Mini D-Sub 15 pin)

You can use this connector to loop your computer image to an external monitor from the RGB input source.

3. Audio Input / Output Mini Jack

This is where you connect audio output from your computer. Or connect additional external speakers here to listen to audio coming from your Video or S- Video input.

4. Audio Input / Output Connector (RCA)

This is where you connect audio output from a VCR, DVD player, or laser disc player. Or connect additional external speakers to listen to audio coming from your RGB source.

NOTE: Either connector 3 or 4 can be used for input or output, however they cannot both be used for input simultaneously. It can damage your equipment.

5. Video Input (RCA)

Connect a VCR, DVD player, laser disc player, or document camera here to project video.

6. S-Video Input Port (Mini DIN 4 Pin)

Connect the S-Video input from an external source like a VCR.

7. PC Control Port (Mini DIN 8 Pin)

Use this port to connect your PC to control your projector. This enables you to use your PC and serial communication protocol to control the projector. If you are writing your own program, typical PC control codes are on page E-40.

A cap is put on the port at the factory. Remove the cap when using the port.

8. Built-in Security Slot (K)

This security slot supports the MicroSaver ® Security System. MicroSaver ® is a registered trademark of Kensington Microware Inc. The logo is trademarked and owned by Kensington Microware Inc.

Remote Control Features

1 Source Button

Press to select a video source.

2 Auto Adjust Button

Use this button to adjust Position-H/V and Pixel Clock/Phase for an optimal picture. Some signals may not be displayed correctly, or in some cases it may take some time for a source to switch between sources.

3 Menu Button

Displays the menu.

4 Select (▲▼◀▶) / Volume (+) (-) Buttons

▲▼: Use these buttons to select the menu of the item you wish to adjust.

◀▶: Use these buttons to change the level of a selected menu item.

A press of the ▶ button executes the selection. When no menus appear, these ▲▼ buttons work as a volume control.

When the pointer is displayed, these ◀▶ ▲▼ buttons move the pointer.

5 Enter Button

Use this button to enter your menu selection.

6 Cancel Button

Press this button to exit “Menus”. Press this button to return the adjustments to the last condition while you are in the adjustment or setting menu.

7 Magnify Button

Use the (+) or (-) button to adjust the image size up to 400%. When the Pointer is displayed, the magnified image is displayed at the center of the Pointer. When the Pointer is not displayed, the magnified image is displayed at the center of the screen. When the image is magnified, the pointer is changed to the magnifying icon.

8 Pointer Button

Press this button to display one of the eight pointers; press again to hide the pointer. You can move your pointer icon to the area you want on the screen using the Select button.

9 Picture Mute Button

This button turns off the image and sound for a short period of time. Press again to restore the image and sound.

10 Help Button

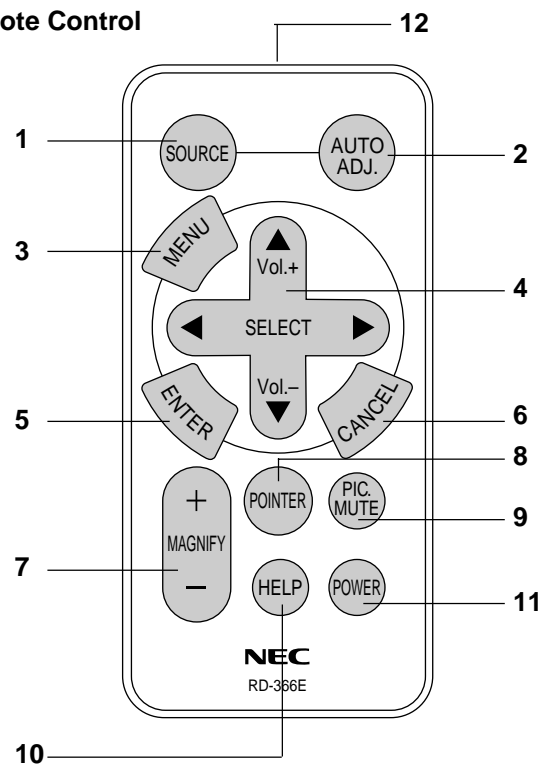
Provides information about operation and adjustment procedures or the set information for the current menu or adjustment during menu operation. This also displays information how to use the Help.

11 Power Button

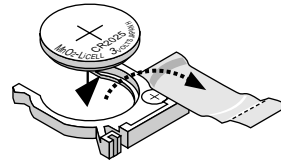
If power is applied, you can use this button to turn your projector on and off.

NOTE: To turn off the projector, press and hold the POWER button for a minimum of two seconds.

Remote Control



NOTE: Remove the transparent insulation tape before use. See page E-34 for battery installation.



12 Infrared Transmitter

Direct the remote control toward the remote sensor on the projector cabinet.

Remote Control Precautions

- Handle the remote control carefully.
- If the remote control gets wet, wipe it dry immediately.
- Avoid excessive heat and humidity.
- Do not place the battery upside down.

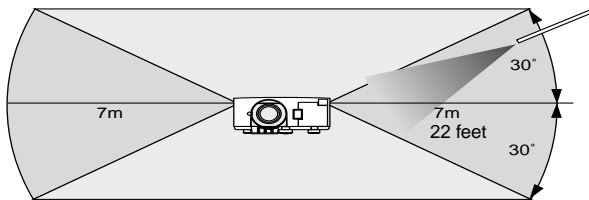
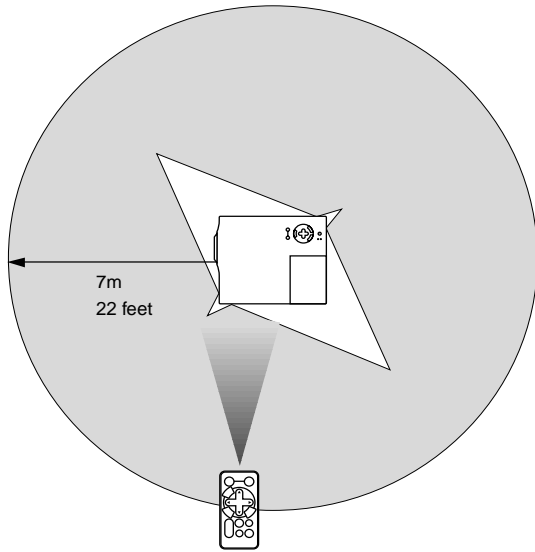
NOTE: Before you use the card remote control for the first time, be sure to remove the insulation tape from the card remote control.

* Keep the coin cell battery out of reach of children so as not to allow them to swallow the cell battery.

CAUTION:

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to your local regulations.

Operating Range



2. INSTALLATION

This section describes how to set up your MultiSync VT440/VT540 projector and how to connect video and audio sources.

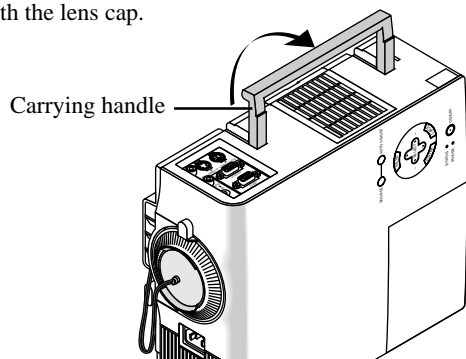
Setting up Your Projector

Your MultiSync VT440/VT540 Projector is simple to set up and use. But before you get started, you must first:

1. Determine the image size.
2. Set up a screen or select a non-glossy white wall onto which you can project your image.

Carrying the Projector: Always carry your projector by the handle. Ensure that the power cable and any other cables connecting to video sources are disconnected before moving the projector.

When moving the projector or when it is not in use, cover the lens with the lens cap.



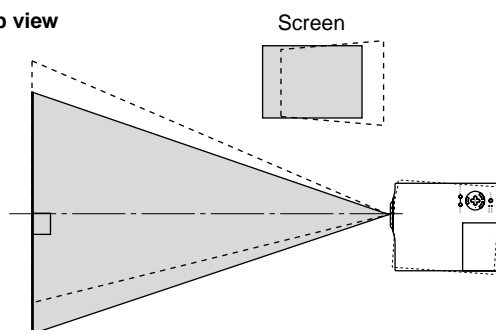
Selecting a Location

The further your projector is from the screen or wall, the larger the image. The minimum size the image can be is approximately 25" (0.64 m) measured diagonally when the projector is roughly 4 feet (1.2 m) from the wall or screen. The largest the image can be is 300" (7.6 m) when the projector is about 39.3 feet (12.0 m) from the wall or screen.

Using a Tabletop or Cart

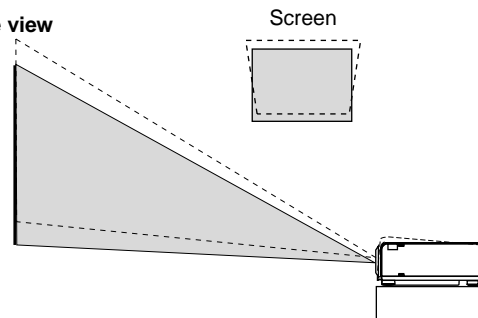
1. Place your projector on a flat level surface at the optimal distance from the screen or wall so you realize the size image you want. (Avoid having bright room lighting or sun light directly on the screen or wall where you'll be projecting the image.)
2. Connect the power cable, remove the lens cap and turn the projector on. (If no input signal is available, the projector will display a background image.)
3. Ensure that the projector is square to the screen.

Top view



4. Move the projector left or right to center the image horizontally on the screen.
5. To center the image vertically, lift the front edge of the projector and press the One-Touch Tilt button on the front side of the projector to release the Front Adjustable foot.

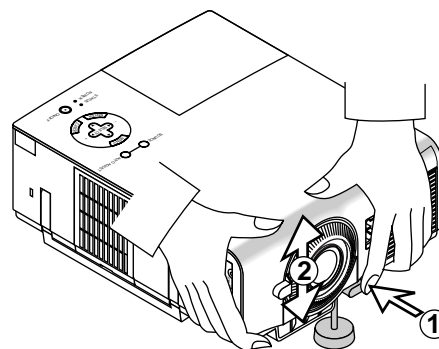
Side view



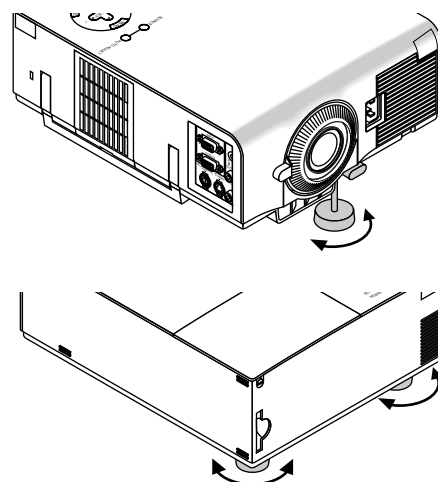
(There is approximately 10 degrees of up and down adjustment for the front of the projector.)

Adjusting the Tilt Foot

- 1) Press and hold the Tilt button on the front of the projector.
- 2) Lift the front edge of the projector to the height you want, and release the button to lock the Adjustable Tilt Foot.

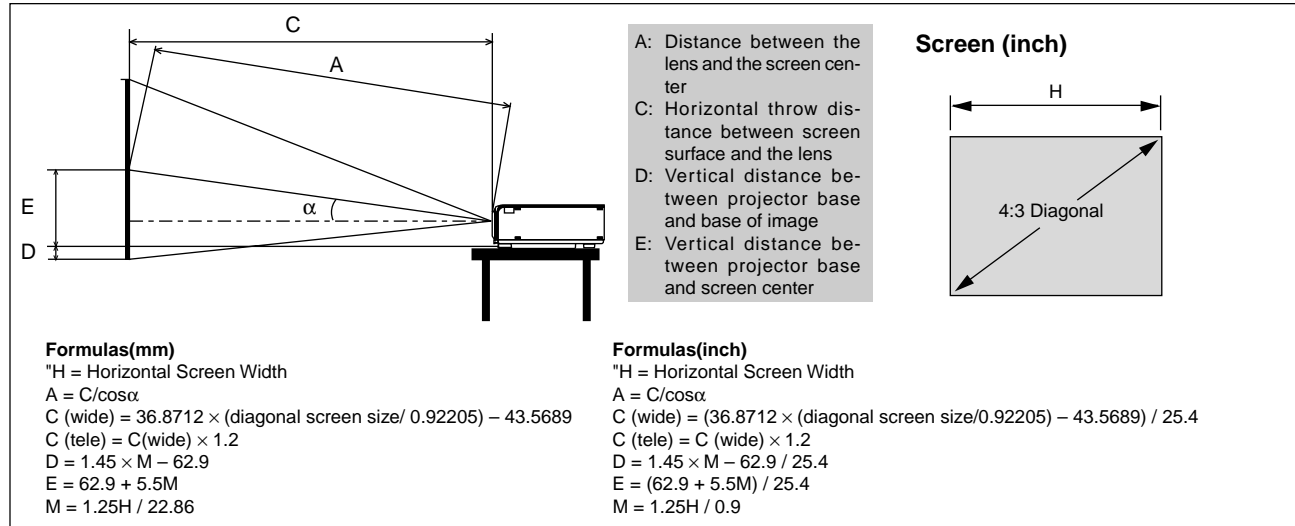


To fine-tune the image's position vertically on the screen, rotate the foot. Each of the rear feet height can be changed up to 0.6" (4mm).



6. If the projected image does not appear square to the screen then use keystone correction for proper adjustment.
7. Adjust the size of the image using the Zoom ring on the lens.

Distance Chart



Zoom Lens (Wide)

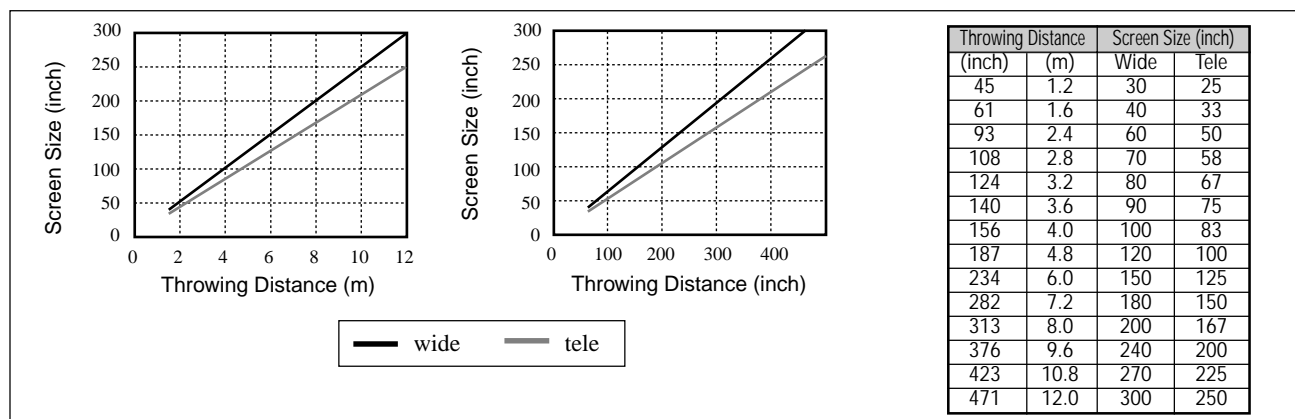
α	degree	9.01	8.93	8.85	8.82	8.81	8.79	8.78	8.77	8.75	8.74	8.74	8.73	8.72	8.72
$\beta (= \sin \alpha)$		0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
$\gamma (= \cos \alpha)$		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Screen Size H-Width	inch	24	32	48	56	64	72	80	96	120	144	160	192	216	240
4:3 Diagonal	inch	30	40	60	70	80	90	100	120	150	180	200	240	270	300
A	mm	1171	1575	2384	2789	3193	3598	4002	4811	6025	7238	8047	9666	10879	12093
	inch	46	62	94	110	126	142	158	189	237	285	317	381	428	476
C	mm	1156	1556	2356	2756	3155	3555	3955	4755	5955	7154	7954	9554	10753	11953
	inch	46	61	93	108	124	140	156	187	234	282	313	376	423	471
D	mm	-15	2	34	50	66	82	98	130	179	227	259	324	372	420
	inch	-1	0	1	2	3	3	4	5	7	9	10	13	15	17
E	mm	246	307	430	491	552	613	674	796	980	1163	1285	1530	1713	1896
	inch	10	12	17	19	22	24	27	31	39	46	51	60	67	75

Zoom Lens (Tele)

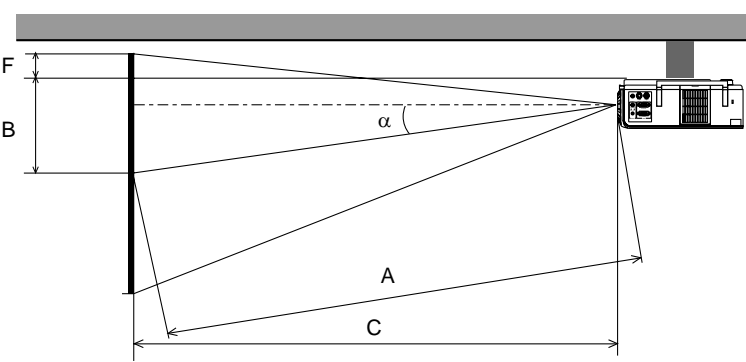
α	degree	6.28	7.46	7.39	7.37	7.36	7.35	7.34	7.32	7.31	7.30	7.30	7.29	7.29	7.28
$\beta (= \sin \alpha)$		0.11	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
$\gamma (= \cos \alpha)$		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Screen Size H-Width	inch	20	32	48	56	64	72	80	96	120	144	160	192	216	240
4:3 Diagonal	inch	25	40	60	70	80	90	100	120	150	180	200	240	270	300
A	mm	1396	1883	2851	3334	3818	4302	4785	5753	7204	8655	9623	11558	13009	14460
	inch	55	74	112	131	150	169	188	226	284	341	379	455	512	569
C	mm	1387	1867	2827	3307	3787	4266	4746	5706	7146	8585	9545	11464	12904	14344
	inch	55	74	111	130	149	168	187	225	281	338	376	451	508	565
D	mm	-23	2	34	50	66	82	98	130	179	227	259	324	372	420
	inch	-1	0	1	2	3	3	4	5	7	9	10	13	15	17
E	mm	216	307	430	491	552	613	674	796	980	1163	1285	1530	1713	1896
	inch	8	12	17	19	22	24	27	31	39	46	51	60	67	75

Distance Chart

NOTE: Distances may vary +/-5%.



Ceiling Installation



Formulas(mm)

H" = Horizontal Screen Width (inch)

A = C/cosα

B = 94 + 5.5 × M

C (wide) = 36.8712 × (diagonal screen size/ 0.92205) – 43.5689

C (tele) = C(wide) × 1.2

F = 1.4516 × M – 94

M = 1.25H" / 22.86

Formulas(inch)

H" = Horizontal Screen Width

A = C/cosα

B = (94+5.5 × M) / 25.4

C (wide) = (36.8712 × (diagonal screen size/0.92205) – 43.5689) / 25.4

C (tele) = C (wide) × 1.2

F = 1.4516 × M – 94/25.4

M = 1.25H / 0.9

A: Distance between the lens and the screen center

B: Vertical distance between the top of the supplied ceiling mount and the screen center

C: Horizontal throw distance between screen surface and the lens

F: Vertical distance between projector base and top of image

Zoom Lens (Wide)

α	degree	9.01	8.93	8.85	8.82	8.81	8.79	8.78	8.77	8.75	8.74	8.74	8.73	8.72	8.72
β (=sinα)		0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
γ (=cosα)		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Screen Size H-Width	inch	24	32	48	56	64	72	80	96	120	144	160	192	216	240
4:3 Diagonal	inch	30	40	60	70	80	90	100	120	150	180	200	240	270	300
A	mm	1171	1471	2242	2628	3013	3399	3785	4556	5713	6870	7641	9184	10341	11498
	inch	46	58	88	103	119	134	149	179	225	270	301	362	407	453
C	mm	1156	1452	2214	2595	2976	3357	3738	4500	5644	6787	7549	9074	10217	11360
	inch	46	57	87	102	117	132	147	177	222	267	297	357	402	447
B	mm	277	338	461	522	583	644	705	827	1011	1194	1316	1561	1744	1927
	inch	11	13	18	21	23	25	28	33	40	47	52	61	69	76
F	mm	-46	-29	3	19	35	51	67	100	148	196	229	293	341	390
	inch	-2	-1	0	1	1	2	3	4	6	8	9	12	13	15

Zoom Lens (Tele)

α	degree	6.28	7.1	7.0	7.0	7.0	7.0	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
β (=sinα)		0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
γ (=cosα)		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Screen Size H-Width	inch	20	32	48	56	64	72	80	96	120	144	160	192	216	240
4:3 Diagonal	inch	25	40	60	70	80	90	100	120	150	180	200	240	270	300
A	mm	1396	1902	2900	3399	3898	4397	4896	5893	7390	8887	9885	11881	13378	14875
	inch	55	75	114	134	153	173	193	232	291	350	389	468	527	586
C	mm	1387	1887	2878	3373	3869	4364	4860	5851	7337	8823	9814	11796	13282	14768
	inch	55	74	113	133	152	172	191	230	289	347	386	464	523	581
B	mm	247	338	461	522	583	644	705	827	1011	1194	1316	1561	1744	1927
	inch	10	13	18	21	23	25	28	33	40	47	52	61	69	76
F	mm	-54	-29	3	19	35	51	67	100	148	196	229	293	341	390
	inch	-2	-1	0	1	1	2	3	4	6	8	9	12	13	15

WARNING

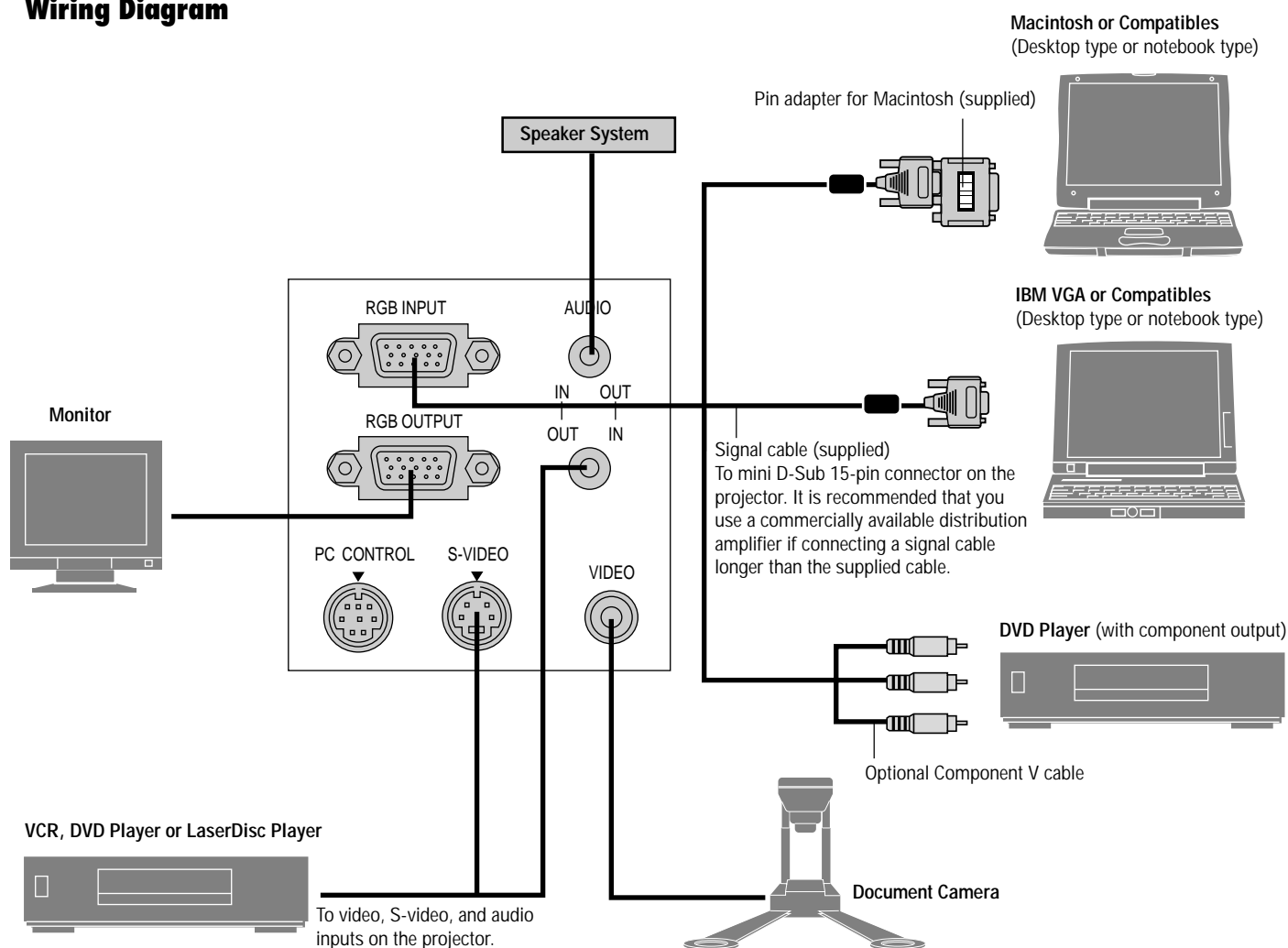
- Installing your projector on the ceiling must be done by a qualified technician. Contact your NEC dealer for more information.
- * Do not attempt to install the projector yourself.
- Only use your projector on a solid, level surface. If the projector falls to the ground, you can be injured and the projector severely damaged.
- Do not use the projector where temperatures vary greatly. The projector must be used at temperatures between 32°F (0°C) and 95°F (35°C).
- Do not expose the projector to moisture, dust, or smoke. This will harm the screen image.
- Ensure that you have adequate ventilation around your projector so heat can dissipate. Do not cover the vents on the side or the front of the projector.

If your projector is mounted on the ceiling and your image is upside down, use the "Menu" and "Select" buttons on your projector cabinet or ▲▼ button on your remote control to correct the orientation. (See page E-31.)

Reflecting the Image

Using a mirror to reflect your projector's image enables you to enjoy a much larger image. Contact your NEC dealer if you need a mirror. If you're using a mirror and your image is inverted, use the "Menu" and "Select" buttons on your projector cabinet or ▲▼ buttons on your remote control to correct the orientation. (See page E-31.)

Wiring Diagram



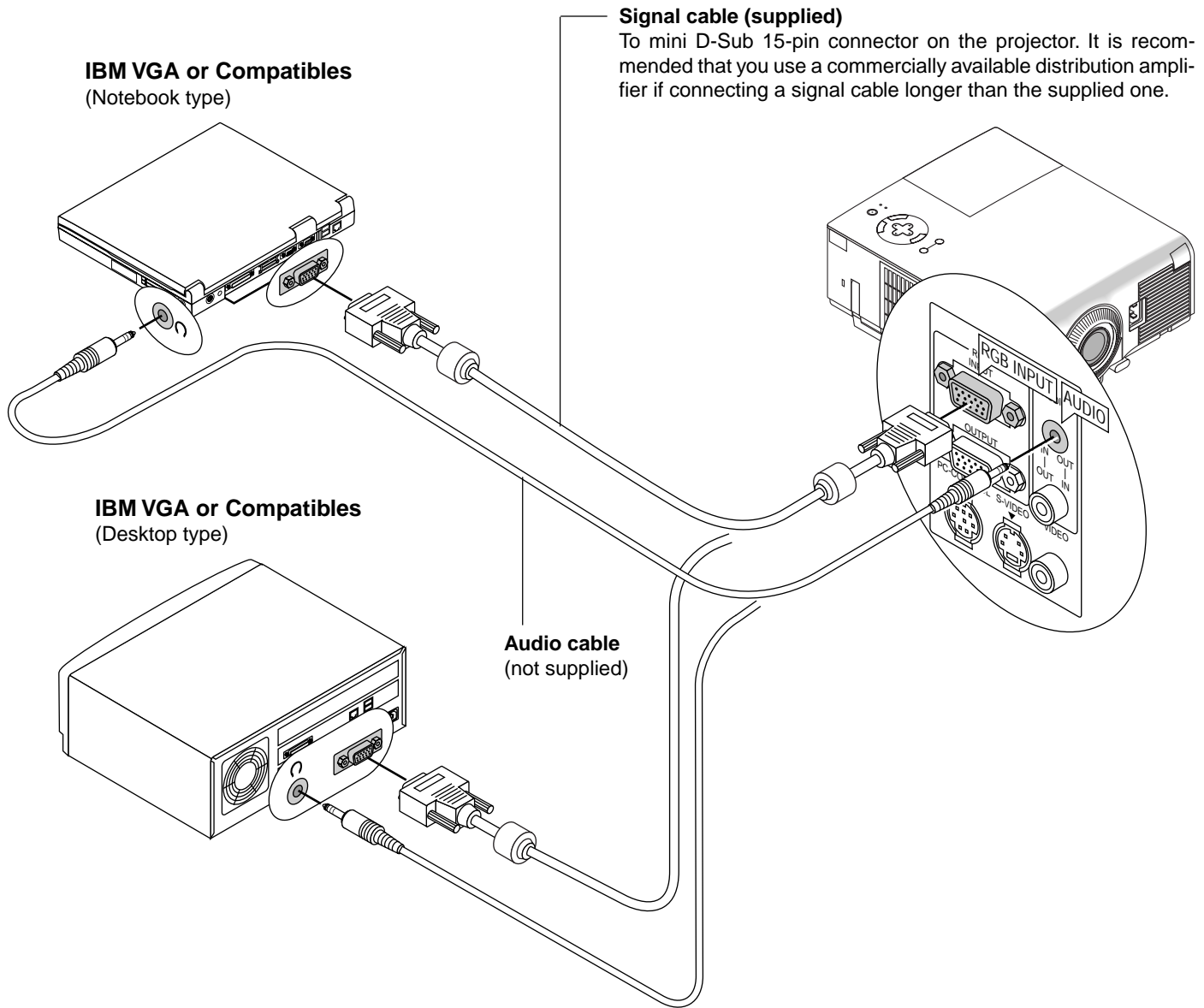
NOTE: When using with a notebook PC, be sure to connect between the projector and the notebook PC before turning on the power to the notebook PC. In most cases signal cannot be output from RGB output unless the notebook PC is turned on after connecting with the projector.

NOTE:

- * If the screen goes blank while using your remote control, it may be the result of the computer's screen-saver or power management software.
- * If you accidentally hit the POWER button on the remote control, wait 30 seconds and then press the POWER button again to resume.

NOTE: If using video, S-video, or audio cables, the cables should be 3 m (9.8 feet) or shorter.

Connecting Your PC



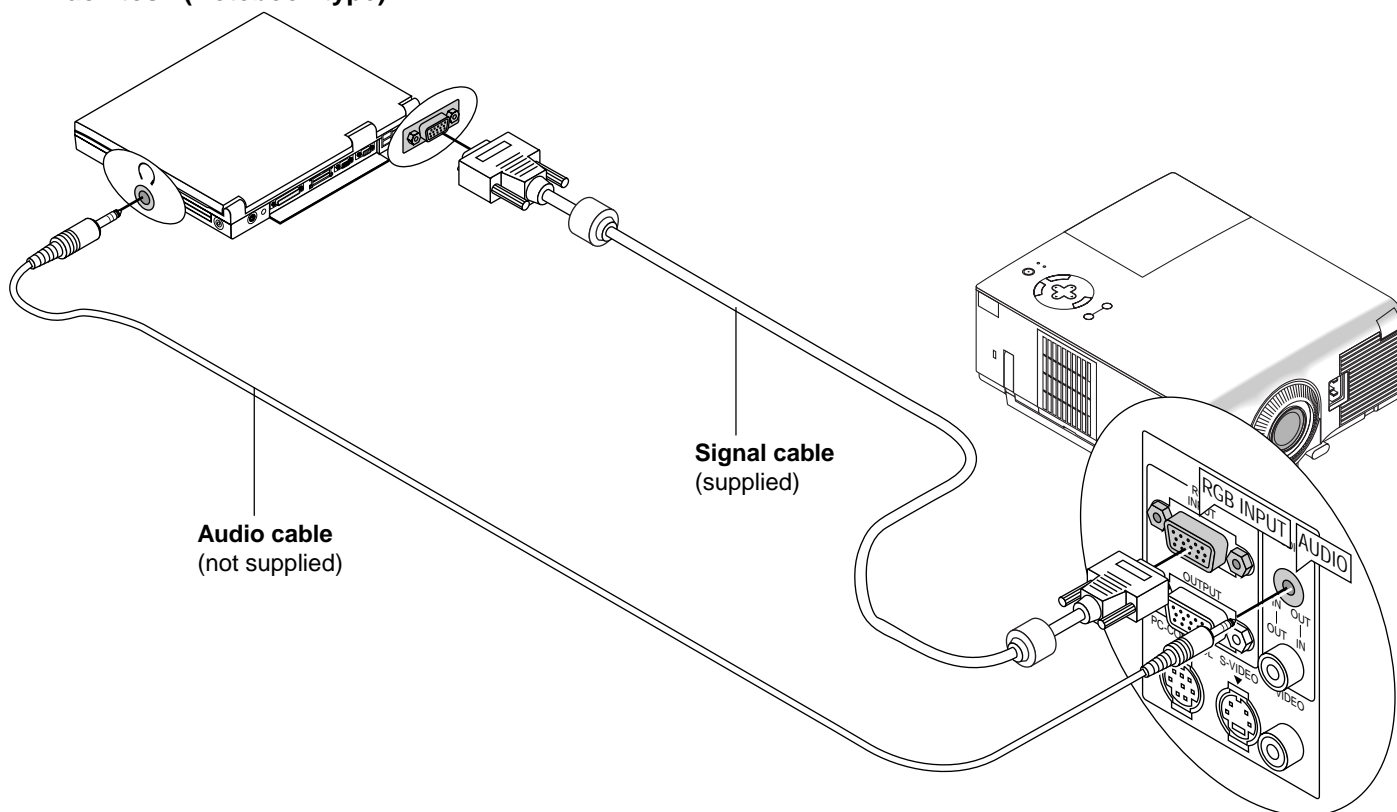
Connecting your PC to your MultiSync VT440 (SVGA)/ VT540 (XGA) projector will enable you to project your computer's screen image for an impressive presentation.

To connect to a PC, simply:

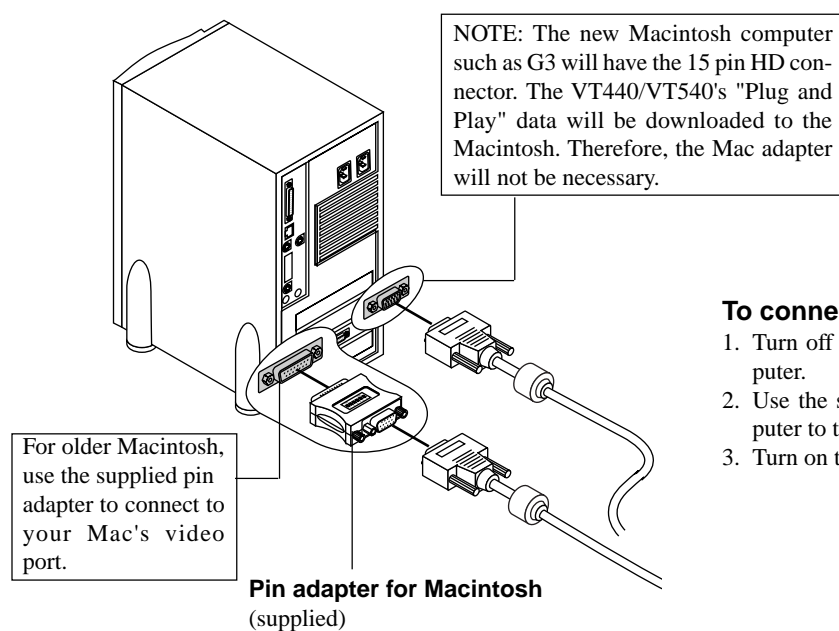
1. Turn off the power to your projector and computer.
2. Use the supplied signal cable to connect your PC to the projector.
3. Turn on the projector and the computer.
4. If the projector goes blank after a period of inactivity, it may be caused by a screen saver installed on the computer you've connected to the projector.

Connecting Your Macintosh Computer

Macintosh (Notebook type)



Macintosh (Desktop type)



To connect to a Macintosh, simply:

1. Turn off the power to your projector and your Macintosh computer.
2. Use the supplied signal cable to connect your Macintosh computer to the projector.
3. Turn on the projector and the Macintosh computer.

When using a Macintosh computer with the projector, set the DIP switches of the supplied pin adapter according to your resolution. After setting, restart your Macintosh computer.

See the following pages for setting of the DIP switches.

- When using with a Macintosh, SVGA(800×600 :VT440)/XGA(1024×768 : VT540) is recommended if your Macintosh supports this mode.
- When using with a Macintosh PowerBook, output may not be set to 800×600 unless “mirroring” is off on your PowerBook. Refer to owner’s manual supplied with your Macintosh computer for mirroring.

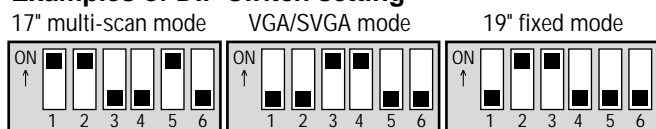
NOTE: A Video Adapter cable manufactured by Apple Computer is needed for a PowerBook which does not have a mini D-Sub 15-pin connector.

Settings for Monitor Mode

Resolution \ Number of DIP switch	1	2	3	4	5	6
13" multi-scan mode /16"-13"	ON	ON			ON	ON
17" multi-scan mode /19"-13"	ON	ON			ON	
21" multi-scan mode /21"-13"	ON	ON				ON
13" fixed mode /640x480	ON	ON				
VGA/SVGA mode			ON	ON		
16" fixed mode /832x624		ON		ON		
19" fixed mode /1024x768		ON	ON			
21" fixed mode /1152x870	ON	ON	ON	ON		

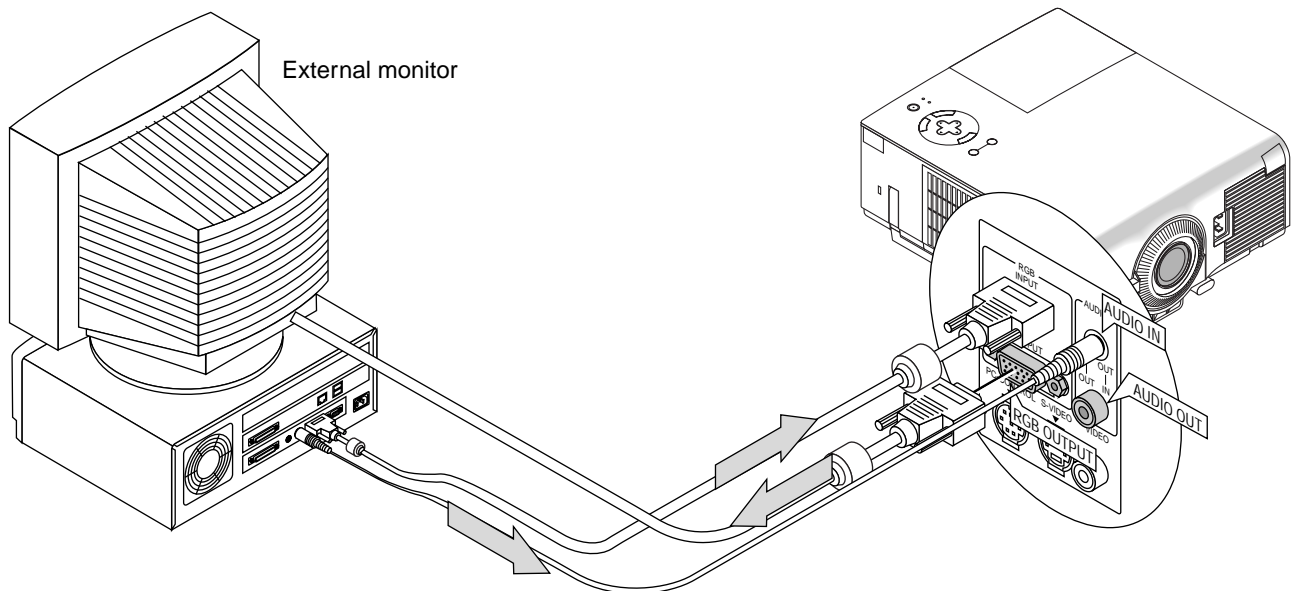
NOTE: For settings other than display modes supported by your Macintosh and the projector, use of the DIP switch may bounce an image slightly or may display nothing. If this happens, set the DIP switch to the 13" fixed mode and then restart your Macintosh. After that, restore to a displayable mode and then restart the Macintosh again. Make sure that the projector and your Macintosh are connected with the pin adapter and the supplied signal cable (mini D-Sub 15-pin connector) and then restart your Macintosh.

Examples of DIP switch setting



NOTE: Refer to your computer’s owner’s manual for more information about your computer’s video output requirements and any special identification or configuring your projector’s image and monitor may require.

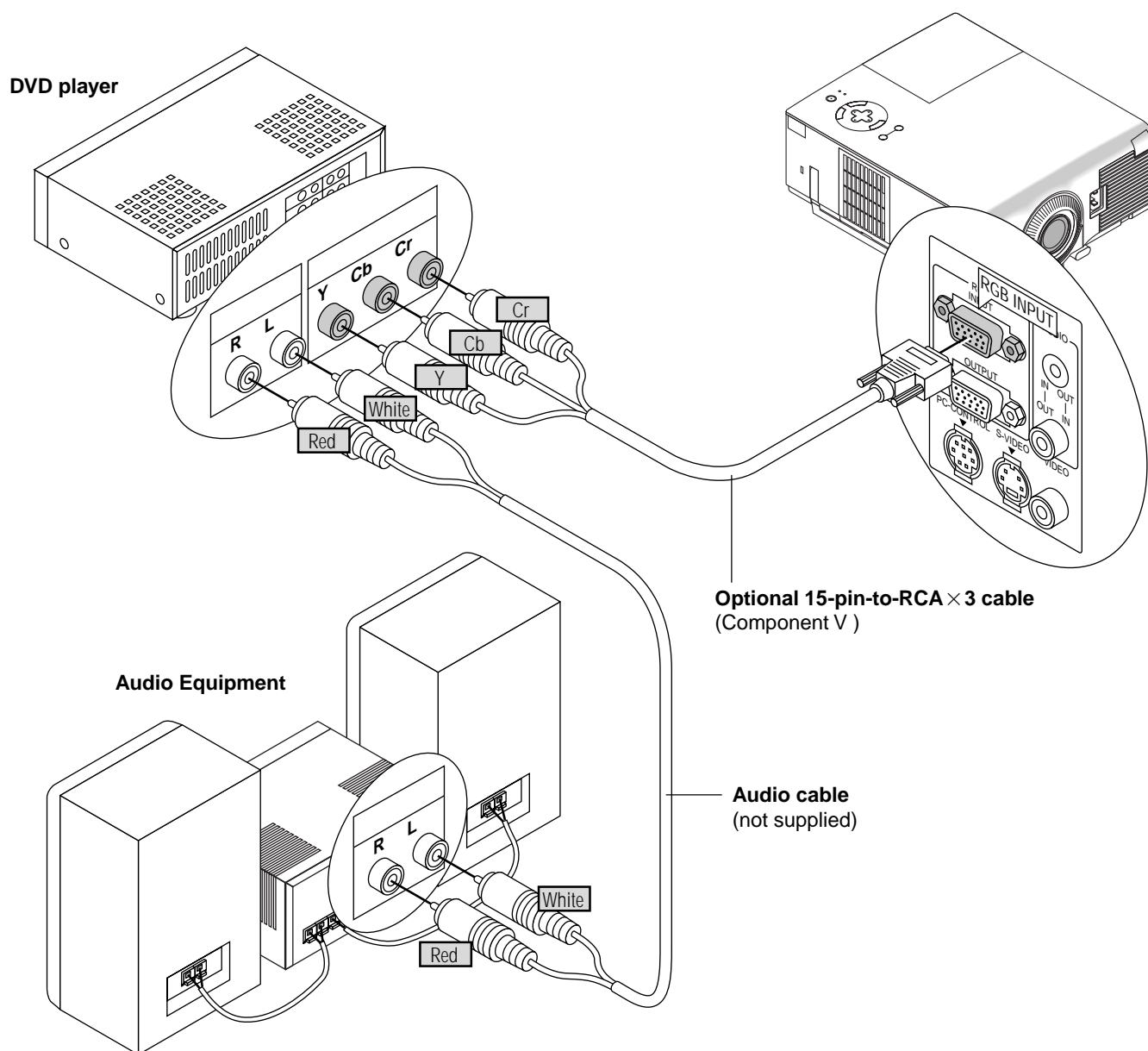
Connecting an External Monitor



You can connect a separate, external monitor to your VT440/VT540 to simultaneously view on a monitor the image you're projecting. To do so:

1. Turn off the power to your projector, monitor and computer.
2. Use a 15-pin cable to connect your monitor to the RGB Monitor Output (Mini D-Sub 15 pin) connector on your projector.
3. Turn on the projector, monitor and the computer.

Connecting Your DVD Player



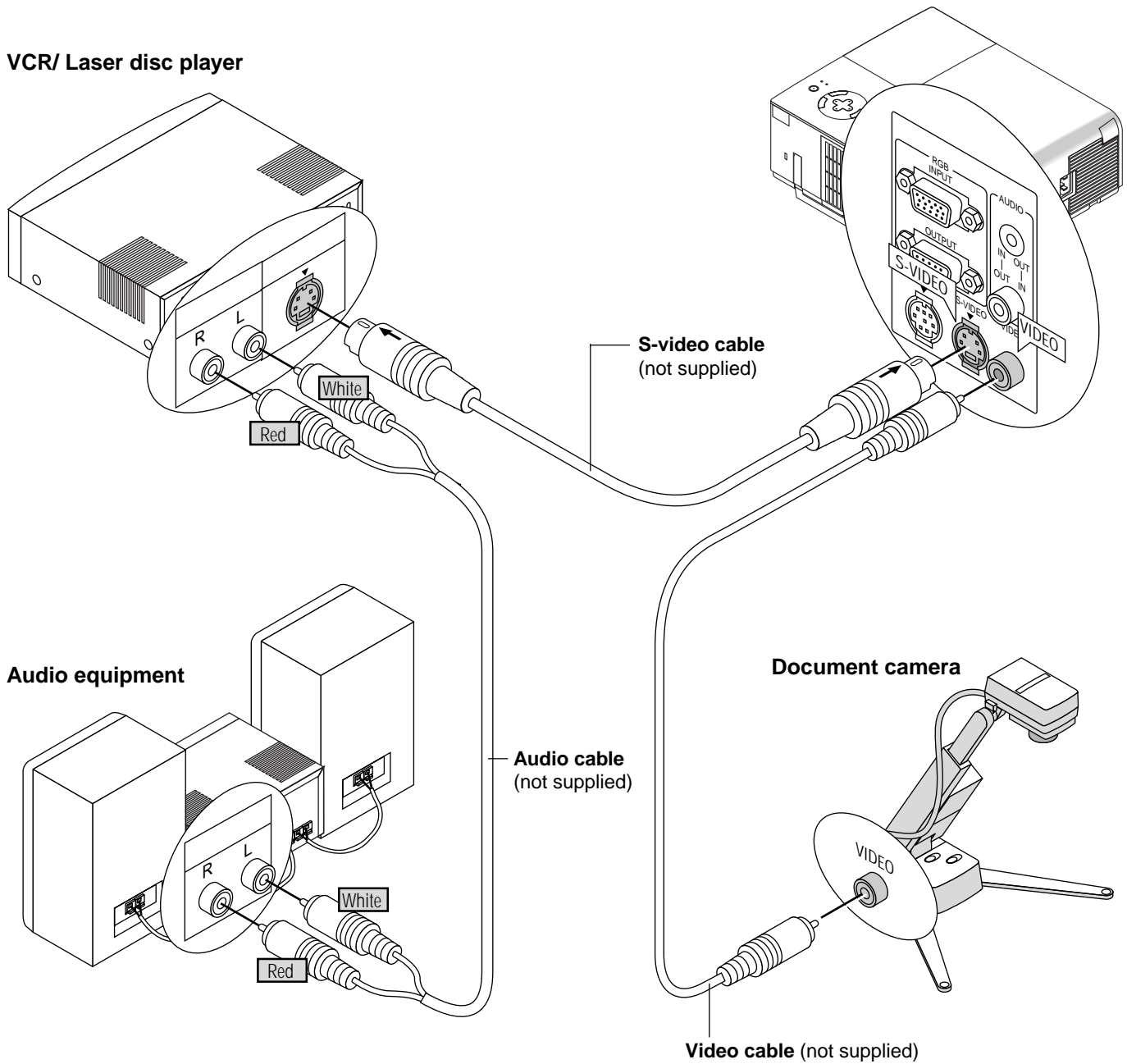
You can connect your projector to a DVD player with component outputs or Video output. To do so, simply:

1. Turn off the power to your projector and DVD player.
2. If your DVD player has the component video (Y,Cb,Cr) output, use the optional 15-pin-to-RCA × 3 cable to connect your DVD player to the RGB INPUT connector on the projector.
For a DVD player without component video (Y,Cb,Cr) outputs, use common RCA cables (not provided) to connect a composite VIDEO output of the DVD player to the Video Input of the projector.
3. Turn on the projector and DVD player.

NOTE: Refer to your DVD player's owner's manual for more information about your DVD player's video output requirements.

Connecting Your VCR or Laser Disc Player

VCR/ Laser disc player



Use common RCA cables (not provided) to connect your VCR, laser disc player or document camera to your projector.

To make these connections, simply:

1. Turn off the power to the projector and VCR, laser disc player or document camera.
2. Connect one end of your RCA cable to the video output connector on the back of your VCR or laser disc player, connect the other end to the Video input on your projector. Use an audio cable (not supplied) to connect the audio from your VCR or laser disc player to your audio equipment (if your VCR or laser disc player has this capability). Be careful to keep your right and left channel connections correct for stereo sound.
3. Turn on the projector and the VCR or laser disc player.

NOTE: Refer to your VCR or laser disc player owner's manual for more information about your equipment's video output requirements.

3. OPERATION

This section describes how to select a computer or video source, how to adjust the picture, and how to customize the menu or projector settings.

General Controls

Before you turn on your projector, ensure that the computer or video source is turned on and that your lens cap is removed.

1. Turn on the Projector

Plug the supplied power cable in the wall outlet. The projector will go into its standby mode and the power indicator will glow orange.

Only after you press the “POWER” button on the projector cabinet or the remote control will the power indicator turn to green and the projector become ready to use.

NOTE: To turn the projector on by plugging in the power cable, use the menu and enable the “Auto Start” feature. (See page E-32.)

NOTE: Regardless of the lamp mode setting, the lamp always stays in High-Bright mode for 3 minutes after the projector is turned on. If you have selected the Eco mode, the STATUS indicator blinks green and the lamp will change to Eco mode in 3 minutes.

2. Select the Computer or Video Source

Press the Source button on the remote control or the projector cabinet to select “Video” (VCR, document camera, or laser disc player), “S-Video” or “RGB” (computer or DVD with component output) to display the image.

Or press the “Menu” button on the remote control or the cabinet and use the menu to select your video source: “Video”, “S-Video” or “RGB”.

3. Adjust the Image Size and the Focus

Use the Zoom lever to adjust the image size, then use the Focus ring to obtain the best focus.

Use the “Magnify” button (+) or (-) on the remote control to make the image larger up to 400%.

4. Turning off the Projector

First press the “POWER” button on the projector cabinet or the remote control for a minimum of two seconds. The power indicator will glow orange. After the projector turns off, the cooling fans keep operating for 30 seconds.

Do not disconnect the power cable during this time. Then, unplug the power cable. The power indicator will go out.

IMPORTANT:

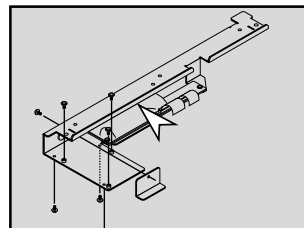
- The projector should be unplugged if it will not to be used for an extended period.
- To turn off the image and sound briefly (five minutes or less), use the “Picture Mute” button instead of turning the projector off and on.
- The projector will display a black, blue image or logo if no input signal is present.
- Do not turn the projector off and then immediately back on. The projector needs to cool for 30 seconds before it can be restarted.

Enlarging and Moving a Picture

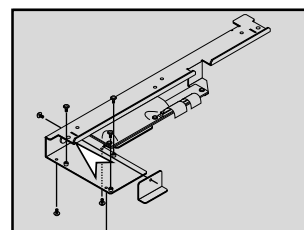
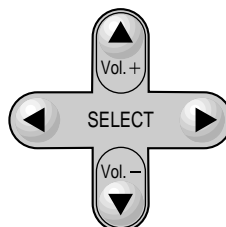
You can enlarge the area you want up to 400 percent.

To do so:

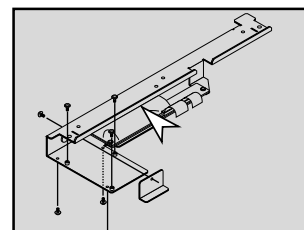
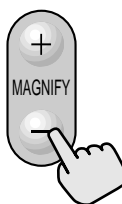
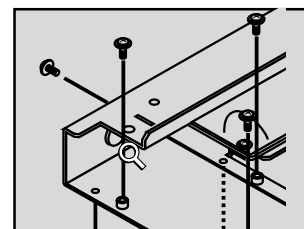
- 1) Press the POINTER button on the card remote control to display the pointer.



- 2) Move the pointer to the area you want to enlarge.



- 3) Adjust the image size up to 400 percent.



Using the Menus

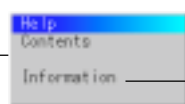
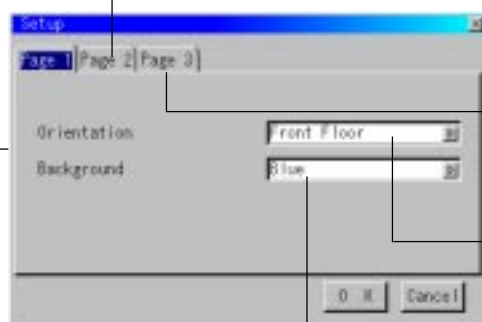
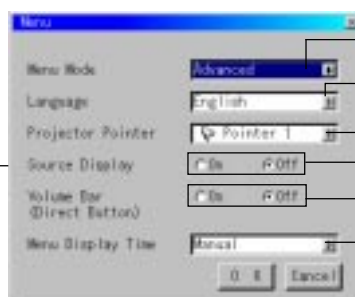
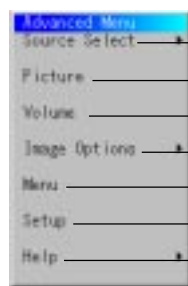
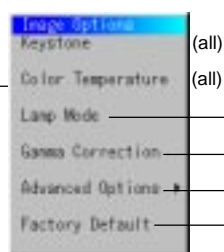
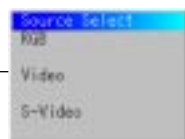
***NOTE:** An interlaced motion video image may be blurred while the menu is displayed.*

1. Press the “Menu” button on the remote control or the projector cabinet to display the Main Menu.
2. Press the ▲▼ buttons on the remote control or the projector cabinet to highlight the menu for the item you want to adjust or set.
3. Press the ► button or the “Enter” button on the remote control or the projector cabinet to select a submenu or item.
4. Adjust the level or turn the selected item on or off by using “Select” ◀ or ▶ buttons on the remote control or the projector cabinet. The on-screen slide bar will show you the amount of increase or decrease.
5. The change is stored until you adjust it again.
ENTER: Stores the setting or adjustments.
CANCEL: Return to the previous screen without storing settings or adjustments.
6. Repeat steps 2-5 to adjust an additional item, or press “Cancel” on the remote control or the projector cabinet to quit the menu display.

MENU Tree

Basic/ Advanced Menu

Sub Menu



Items

Hi-Bright/ Eco (all)

Normal/ Natural1/ Natural2 (all)

Aspect Ratio	Normal/ Zoom/ Wide Zoom/ Cinema	(VCH)
Noise Reduction	Off/ Low/ Medium/ High	(VCH)
Color Matrix	HDTV/ SDTV/ B-Y/R-Y, Cb/Cr, Pb/Pr	(CH)
White Balance	Brightness R/G/B, Contrast R/G/B	(all)
Auto Adjust	On/ Off	(R)
Position/ Clock	Horizontal/ Vertical/ Clock/ Phase	(RH)/(R)
Resolution	Auto/ Native	(R)

All Data/ Current Signal

Menu Mode Basic/ Advanced

English/ German/ French/ Italian/ Spanish/ Swedish/ Japanese

Pointer 1-8

Source Display On/ Off

Volume Bar (Direct Button) On/ Off

Menu Display Time Manual/ Auto 3sec/ Auto 10sec/ Auto 30sec

Signal Select	
RGB	Auto/ RGB/ Component
VIDEO/ S-VIDEO	Auto/ NTSC3.58/ NTSC4.43/ PAL/ PAL60/ SECAM

Auto Start On/ Off

Power Management On/ Off

Power Off Confirmation On/ Off

Keystone Save On/ Off

Clear Lamp Hour Meter

Orientation Front/ Floor, Rear/Ceiling, Rear/Floor, Front/Ceiling

Background Blue/ Black/ Logo

Source Name	Resolution
Input Terminal	Aspect Ratio
Horizontal Frequency	Gamma Correction
Vertical Frequency	Noise Reduction
Sync Polarity	Color Matrix
Signal Type	Matrix Type
Video Type	Lamp Hour Meter
Sync Type	Projector Usage
Interface	

NOTE:

Adjustable sources

R=RGB

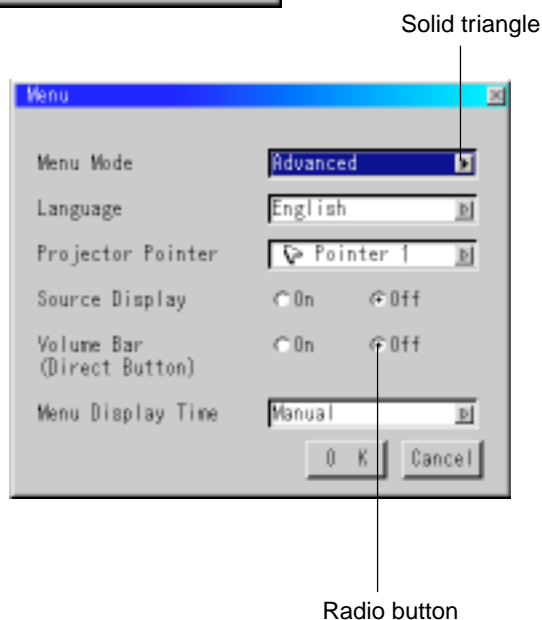
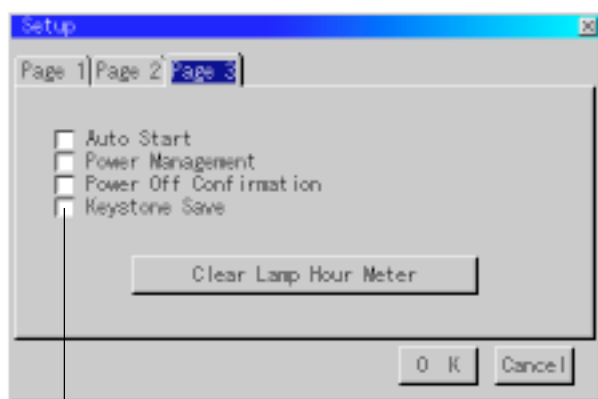
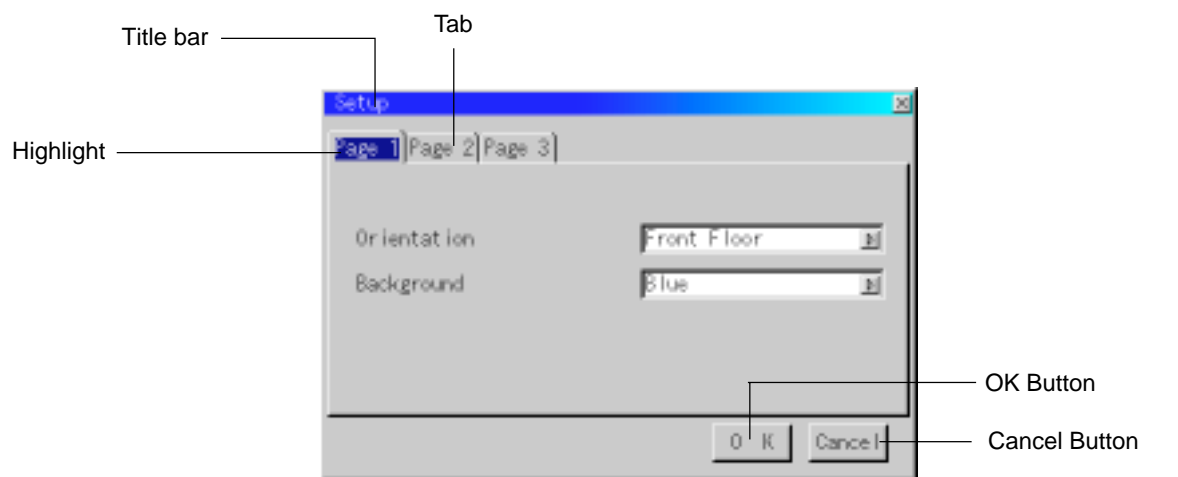
C=Component

All=All sources

V=Video/S-Video

H=HDTV

Menu Elements



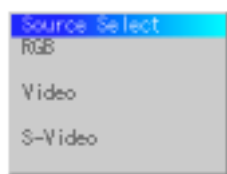
.....

Menu windows or dialog boxes typically have the following elements:

- Title bar:** Indicates the menu title.
 - Highlight:** Indicates the selected menu or item.
 - Solid triangle:** Indicates further choices are available. A highlighted triangle indicates the item is active.
 - Tab:** Indicates a group of features in a dialog box. Selecting on any tab brings its page to the front.
 - Radio button:** Use this round button to select an option in a dialog box.
 - Check box:** Place a checkmark in the square box to turn the option On.
 - Slide bar:** Indicates settings or the direction of adjustment.
 - OK button:** Press to confirm your setting. You will return to the previous menu.
 - Cancel button:** Press to cancel your setting. You will return to the previous menu.
-

Menu Descriptions & Functions

Source Select



Enables you to select a video source such as a VCR, DVD player, laser disc player, computer or document camera depending on what is connected to your inputs. Press the “Select” button on the projector cabinet or ▲▼ buttons on your remote control to highlight the menu for the item you want to adjust.

RGB

Selects the computer connected to your RGB or component signal.

NOTE: An optional component cable (Component V cable) is needed for a component signal.

Video

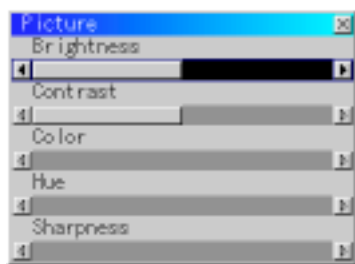
Selects what is connected to your Video input-VCR, laser disc player, DVD player or document camera.

S-Video

Selects what is connected to your S-Video input-VCR, DVD player, or laser disc player.

NOTE: A frame may freeze for a brief period of time when a video is played back in fast-forward or fast-rewind with a Video or S-Video source.

Picture



Provides access to controls for your image. Use the “Select” button on the projector cabinet or the remote control to highlight the menu for the item you want to adjust.

Brightness

Adjusts the brightness level or the back raster intensity.

Contrast

Adjusts the intensity of the image according to the incoming signal.

Color

Increases or decreases the color saturation level (not valid for RGB).

Hue

Varies the color level from +/- green to +/-blue. The red level is used as reference. This adjustment is only valid for Video and Component inputs (Not RGB).

Sharpness

Controls the detail of the image for Video (Not for RGB and Component).

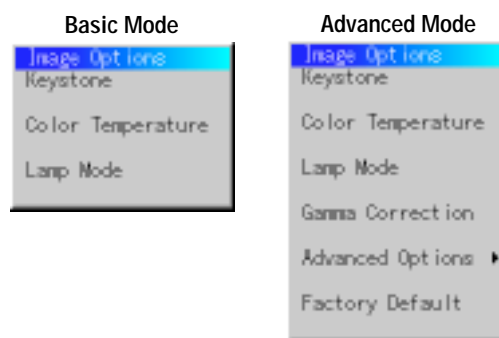
Volume

Adjusts the sound level of the projector.



NOTE: You can display the volume bar without opening the menu. See “Volume Bar (Direct Button)” on page E-31 for more details.

Image Options

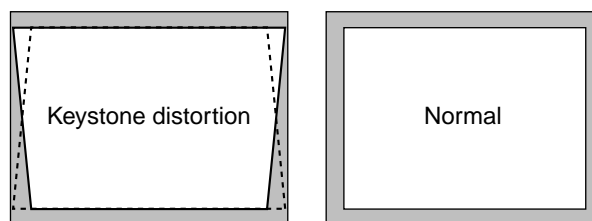


Provides optional controls such as Keystone Correction, Color Temperature and Lamp Mode. When you select Advanced Mode, the following options are available: Gamma Correction, Aspect Ratio, Noise Reduction, Color Matrix, White Balance, Auto Adjust, Position/Clock, Resolution, and Factory Default.

Keystone



This feature corrects the keystone (trapezoidal) distortion to make the top of the screen longer or shorter to be the same as the bottom. Use the ◀ or ▶ buttons on the slide bar to correct the keystone (trapezoidal) distortion.



NOTE: The maximum keystone angle that can be corrected is 15 degrees upward and downward with the projector placed horizontally. However, a picture will be blurred if you correct the keystone angle beyond +12 degrees or more for SXGA signal on VT440.

Color Temperature



This feature adjusts the color temperature using the slide bar. Move the slide bar to the right to increase the color temperature for a bluish image; to the left to decrease it for a reddish image.

Lamp Mode



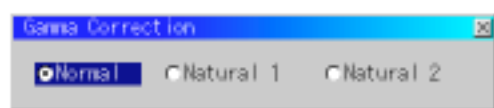
This feature enables you to select two brightness mode of the lamp: High-Bright and Eco modes. The lamp life can be extended up to 3000 hours by using the Eco mode.

High-Bright Mode: This is the default setting.

Eco Mode: Select this mode to increase the lamp life.

NOTE: If you have selected the Eco mode, the lamp lights in High-Bright mode for 3 minutes after the projector is turned on. After 3 minutes the lamp will change to Eco mode.

Gamma Correction (Advanced mode)



Use the ◀ or ▶ buttons to choose “Normal” when in a lighted room and “Natural 1&2” when in a darkened room. “Natural 1” for better flesh tone; “Natural 2” for true reproduction of middle tones.

Each mode is recommended for :

Normal: the regular picture

Natural 1: true color reproduction of natural tones

Natural 2: dark portions of a picture

Advanced Options (Advanced mode)

Allows for adjustments of image position and stability.



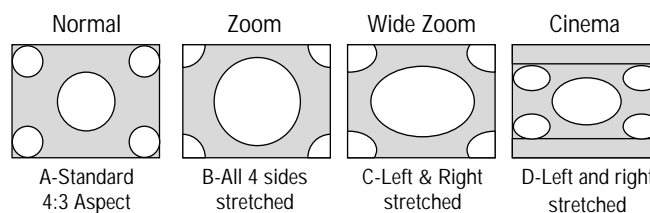
When you select Advanced Options in Advanced mode, the following options are available: Aspect Ratio, Noise Reduction, Color Matrix, White Balance, Auto Adjust, Position/Clock, Resolution, and Factory Default.

Aspect Ratio

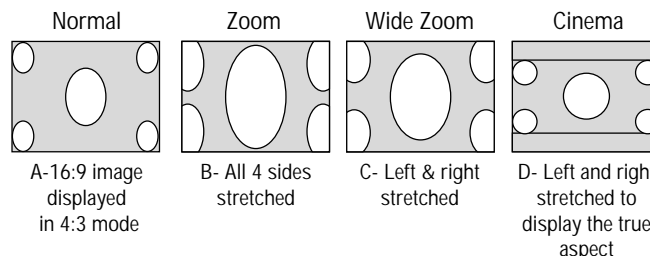


Aspect Ratio allows you to select the best Aspect mode to display your source image.

When 4:3 is selected from the source (i.e. DVD player), the following selections will display:



When Anamorphic or 16:9 is selected from the source (i.e. DVD player), the following selections will display:



NOTE: Aspect Ratio is not available for “RGB”.

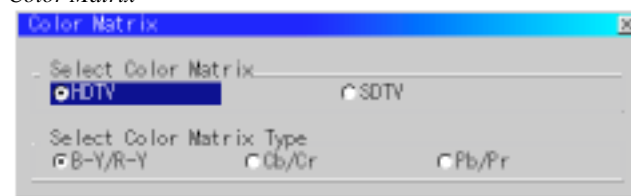
Noise Reduction:



You can select three levels video noise reduction.

NOTE: The lower the Noise Reduction level, the better the image quality by way of higher video bandwidth.

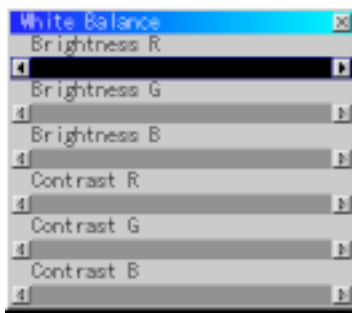
Color Matrix



First select an appropriate color matrix to fit your component signal for HDTV or SDTV. Then select an appropriate matrix type from B-Y/R-Y, Cb/Cr or Pb/Pr.

NOTE: The Color Matrix feature is available for component video signal only.

White Balance:



This allows you to adjust the white balance. Brightness for each color (RGB) is used to adjust the black level of the screen; Contrast for each color (RGB) to adjust the white level of the screen.

First use the up or down buttons to select R, G, or B for the brightness and the contrast. Next use the ◀ or ▶ buttons to adjust the level.

Auto Adjust:



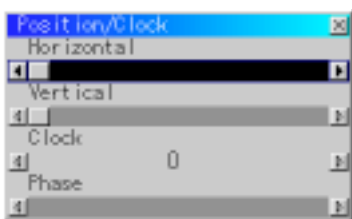
When “Auto Adjust” is set to “On”, the projector automatically determines the best resolution for the current RGB input signal to project an image using NEC’s Advanced AccuBlend Intelligent Pixel Blending Technology.

The image can be automatically adjusted for geometry and stability; “Horizontal Position”, “Vertical Position”, “Clock” and “Phase”.

On: Automatically adjusts image “Horizontal Position”, “Vertical Position”, “Clock” and “Phase”.

Off: User can adjust the image display functions (“Horizontal Position”, “Vertical Position”, “Clock” and “Phase”) manually.

Position/ Clock (when Auto Adjust is off)



This allows you to manually adjust the image horizontally and vertically, and adjust Clock and Phase.

Horizontal/Vertical Position:

Adjusts the image location horizontally and vertically using the ◀ and ▶ buttons.

This adjustment is made automatically when the Auto Adjust is turned on.

Clock: Use this item with the “Auto Adjust off” to fine tune the computer image or to remove any vertical banding that might appear. This function adjusts the clock frequencies that eliminate the horizontal banding in the image. Press the ◀ and ▶ buttons until the banding disappears. This adjustment may be necessary when you connect your computer for the first time. This adjustment is made automatically when the Auto Adjust is turned on.

Phase: Use this item to adjust the clock phase or to reduce video noise, dot interference or cross talk. (This is evident when part of your image appears to be shimmering.) Use the ◀ and ▶ buttons to adjust the image.

Use “Phase” only after the “Clock” is complete.

This adjustment is made automatically when the Auto Adjust is turned on.

Resolution (when Auto Adjust is off):



This allows you to activate or deactivate the Advanced AccuBlend feature.

Auto: Turns on the Advanced AccuBlend feature. The projector automatically reduces or enlarges the current image to fit the full screen.

Native: Turns off the Advanced AccuBlend feature. The projector displays the current image in its true resolution.

NOTE: While you are displaying an image with higher resolution than the projector's native resolution, even when you are in the Native mode, the image is displayed full screen using the Advanced AccuBlend feature.

Factory Default (Advanced mode)



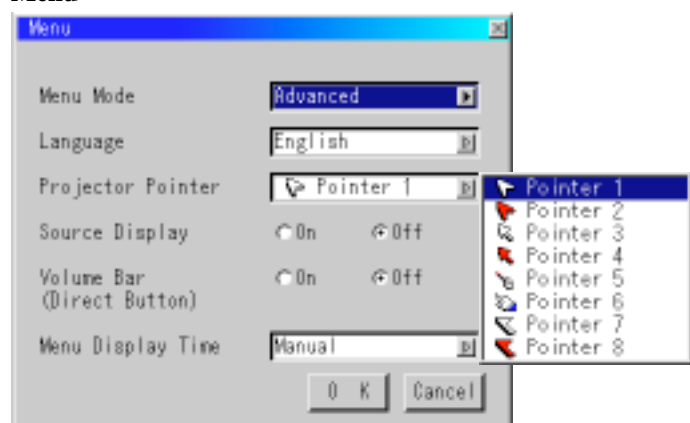
Changes all adjustments and setting to the factory preset for each source individually except Lamp Usage Hours. (To reset the lamp usage time, see “Clear Lamp Hour Meter” on page E-32.)

All Data: Reset all the adjustments and settings for all the signals to the factory preset.

Current Signal: Resets the adjustments for the current signal to the factory preset levels.

The items that can be reset are: Picture, Color Temperature, Gamma Correction, Aspect Ratio, Noise Reduction, Color Matrix, White Balance, Position/Clock and Resolution.

Menu



Allows you to set preferences for the on-screen menu.

Menu Mode:

This feature allows you to select two menu modes: one has basic functionality and the other more advanced functionality.

Basic Mode This is the normal mode.

Advanced Mode ... This mode is used for advanced users. In this mode you can change the following settings: Gamma Correction, Aspect Ratio, Noise Reduction, Color Matrix, White Balance, Auto Adjust, Position/Clock, Resolution, Factory Default, Menu Display Time, Signal Select, Auto Start, Power Management, Power Off Confirmation and Keystone Save and Clear Lamp Hour Meter.

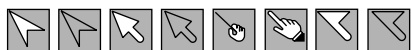
Language:

You can choose one of seven languages for on-screen instructions. The options are: English, German, French, Italian, Spanish, Swedish and Japanese.

Projector Pointer:

This enables you to select from eight different Pointer icons for the "Pointer" button on your remote control.

After moving your Pointer icon to the area you want on the screen, press the Magnify button on the remote control to enlarge the selected area on the screen. See page E-24 for more details.



NOTE: There may be cases where the Pointer function is not available (ex. a non-interlace signal at 15kHz such as video game.)

Source Display:

You can turn on and off the information for input name such as VIDEO and RGB.

When this option is on, the current input will be displayed each time you switch sources or turn on the projector.

Volume Bar (Direct Button):

This option turns on or off the volume bar when you adjust the sound volume using VOL+/- (up and down) button.

On You can increase or decrease the sound volume with the volume bar on screen.

Off You can increase or decrease the sound volume without having to use the volume bar.

Menu Display Time (Advanced mode):

This option allows you to select how long the projector waits after the last touch of a button to turn off the menu.

The preset choices are "Manual", "Auto 3 sec", "Auto 10 sec", and "Auto 30 sec". The "Auto 30 sec" is the factory preset.

Manual The menu can be turned off manually.

Auto 3 sec The menu will automatically be turned off in 3 seconds if no buttons are pressed within 3 seconds.

Auto 10 sec The menu will automatically be turned off in 10 seconds if no buttons are pressed within 10 seconds.

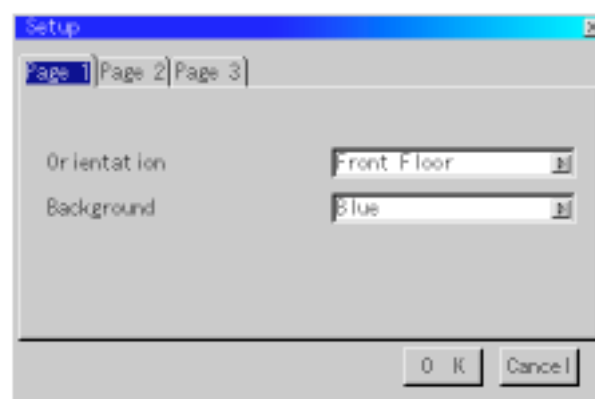
Auto 30 sec The menu will automatically be turned off in 30 seconds if no buttons are pressed within 30 seconds.

Setup

Enables you to set operating options.

Press "OK" to save your changes for all the features of Page1, Page2, and Page3.

[Page1]



Orientation:

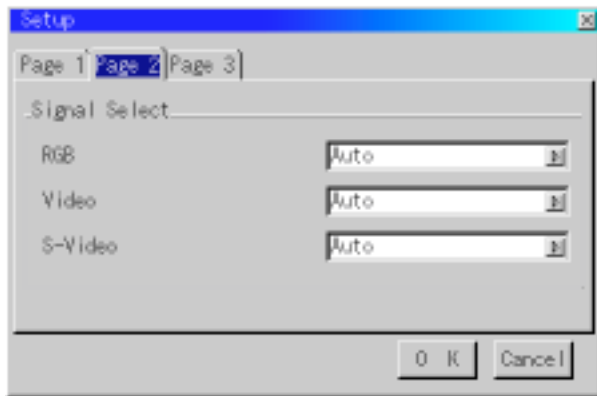
This reorients your image for your type of projection.

The options are: front floor projection, rear ceiling projection, rear floor projection, and front ceiling projection.

Background:

Use this feature to display a black/ blue screen or logo when no signal is available.

[Page2] (Advanced mode)



Signal Select:

<RGB>

Allows you to choose "RGB" for an RGB source such as a computer, or "Component" for a component video source such as a DVD player. Normally select "Auto" and the projector automatically detects a component signal. However there may be some component signals that the projector is unable to detect. If this is the case, select "Component".

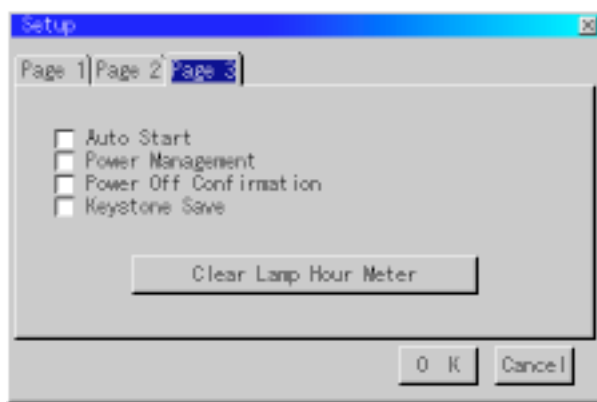
<Video & S-Video System Select>

This feature enables you to select composite video standards manually. Normally select "Auto".

When you select the video standard for Video and S-Video separately, first select the radio button and then select the video standard from the pull-down menu.

This must be done for Video and S-Video respectively.

[Page 3] (Advanced mode)



Auto Start:

Turns the projector on automatically when the power cable is inserted into an active power outlet. This eliminates the need to always use the "Power" button on the remote control or projector cabinet.

Power Management:

When this option is on and there is no RGB input for five minutes or more, the projector will automatically turn itself off.

NOTE: This feature does not work with Video or S-Video sources.

Power Off Confirmation:

This option determines whether a confirmation dialog for turning off the projector will appear or not.

Keystone Save:

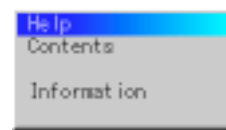
This option enables you to save your current keystone settings. Saving your change once affects all sources. The changes are saved when you turn off the projector.

Clear Lamp Hour Meter:

Resets the lamp clock back to zero. Pressing this button displays the "Are you sure?" confirmation dialog box. To reset the lamp usage hour meter, press "OK".

NOTE: The projector will turn off and go into standby mode after 2100 hours (up to 3150 hours in Eco mode) of service. If this happens, press the "Help" button on the remote control for ten seconds to reset the lamp clock back to zero. Do this only after replacing the lamp.

Help



Contents

Provides an online help about how to use the menus. An underlined link means that you can move to an adjustment item directly. Selecting the underlined link and pressing ENTER moves to the corresponding adjustment item.

Information

Displays the status of the current signal and lamp usage. This dialog box has four pages. The information included are as follows:

[Page 1]	[Page 3]
Source Name	Aspect Ratio
Input Terminal	Gamma Correction
Horizontal Frequency	Noise Reduction
Vertical Frequency	Color Matrix
Sync Polarity	Matrix Type
[Page 2]	[Page 4]
Signal Type	Lamp Hour Meter
Video Type	Projector Usage
Sync Type	
Interlace	
Resolution	

NOTE: The progress indicator shows the percentage of remaining bulb life. The value informs you of the amount of lamp and projector usage respectively.

4. MAINTENANCE

This section describes the simple maintenance procedures you should follow to replace the lamp, clean the filter, and replace the batteries in the remote control.

Replacing the Lamp

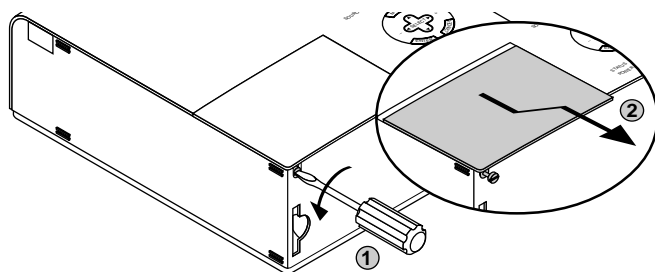
After your lamp has been operating for 2000 hours (up to 3000 hours in Eco mode) or longer, the “Status” light in the cabinet will go on and the message will appear. Even though the lamp may still be working, replace it at 2000 (up to 3000 hours in Eco mode) hours to maintain optimal projector performance.

CAUTION

- DO NOT TOUCH THE LAMP immediately after it has been used. It will be extremely hot. Turn the projector off, wait a full minute, and then disconnect the power cable. Allow at least one hour for the lamp to cool before handling.
- DO NOT REMOVE ANY SCREWS except the lamp cover screw and three lamp case screws. You could receive an electric shock.
- The projector will turn off and go into stand by mode after 2100 (up to 3150 hours in Eco mode) hours of service. If this happens, be sure to replace the lamp. If you continue to use the lamp after 2000 hours (up to 3150 hours in Eco mode) of use, the lamp bulb may shatter, and pieces of glass may be scattered in the lamp case. Do not touch them as the pieces of glass may cause injury. If this happens, contact your NEC dealer for lamp replacement.

To replace the lamp:

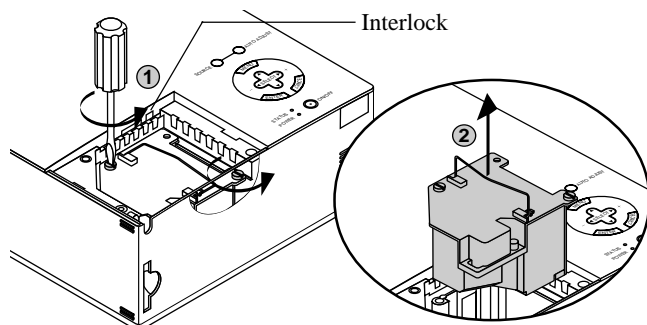
1. Loosen the lamp cover screw until the screwdriver goes into a freewheeling condition and remove the lamp cover. The lamp cover screw is not removable.



2. Loosen the two screws securing the lamp housing until the screwdriver goes into a freewheeling condition. The two screws are not removable.

Remove the lamp housing by pulling out the handle.

NOTE: There is an interlock on this case to prevent the risk of electrical shock. Do not attempt to circumvent this interlock.

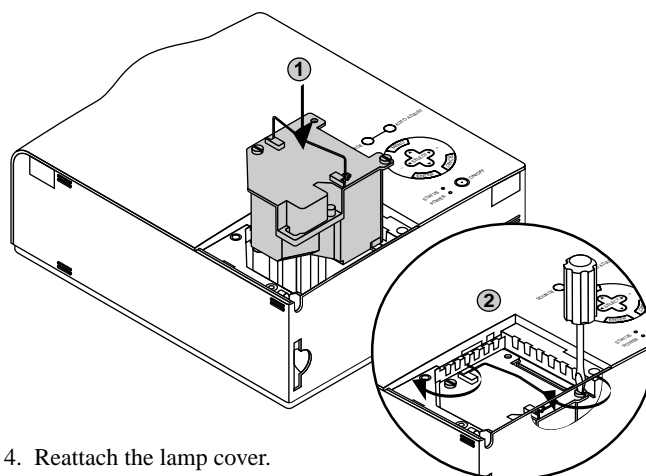


3. Insert a new lamp housing until the lamp housing is plugged into the socket.

CAUTION: Do not use a lamp other than the NEC replacement lamp (VT40LP).
Order this from your NEC dealer.

Secure it in place with the two screws.

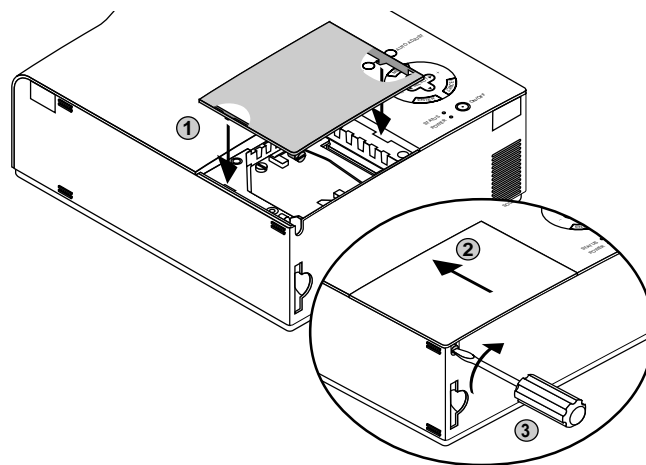
Be sure to tighten the screws.



4. Reattach the lamp cover.

Tighten the lamp cover screw.

Be sure to tighten the screw.



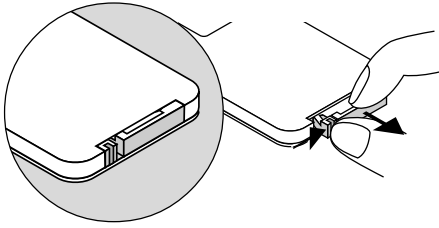
5. After you install a new lamp, select [Advanced Menu] → [Setup] → [Page 3] → [Clear Lamp Hour Meter] to reset the lamp usage hours.

NOTE: When the lamp exceeds 2100 hours (up to 3150 hours in Eco mode) of service, the projector cannot turn on and the menu is not displayed. If this happens, press the Help button on the remote control for a minimum of 10 seconds while in standby mode. When the lamp time clock is reset to zero, the STATUS indicator goes out.

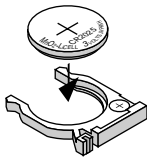
Remote Control Battery Installation

[Wireless Card Remote Control]

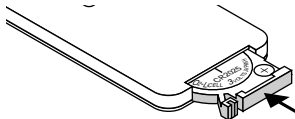
1. Press firmly and slide the battery cover off.



2. Remove the old Lithium coin cell and install new one (CR2025). Ensure that the side with a “+” is facing up.



3. Put the cover back.



Cleaning or Replacing the Filters

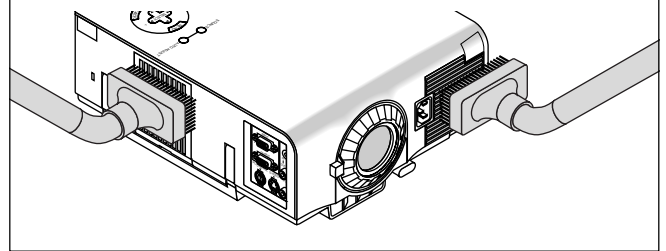
The air-filter sponge keeps the inside of the MultiSync VT440/VT540 Projector free from dust or dirt and should be cleaned after every 100 hours of operation (more often in dusty conditions). If the filter is dirty or clogged, your projector may overheat.

CAUTION

- Turn off the power and unplug the projector before replacing the filter.
- Only clean the outside of the filter cover with a vacuum cleaner.
- Do not attempt to operate the projector without a filter cover.
- Your projector will not operate unless the filter cover is installed correctly.

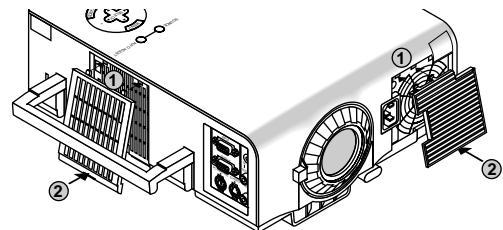
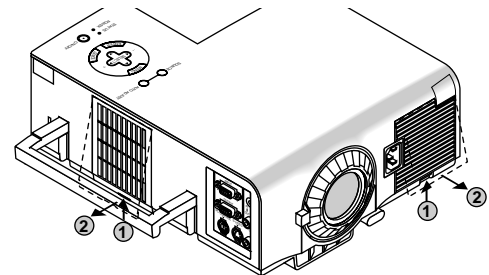
To clean the air-filter:

Vacuum the filter-through the filter cover.



To replace the air-filter:

1. Remove the filter cover by pushing up on the catch of the cover until you feel it detach.



2. Reinstall the new filter cover.

NOTE: Do not detach the sponge from the filter cover. Do not wash the filter cover with soap and water. Soap and water will damage the filter membrane. Before replacing the filter cover, remove dust and dirt from the projector cabinet. Keep out dust and during filter replacement.

5. TROUBLESHOOTING

This section helps you resolve problems you may encounter while setting up or using the projector.

Power/ Status Light Messages

Condition	Power Indicator	Status Indicator	Note
Standby	Steady orange	–	–
Cooling down	Blinking green	–	Blinks green for 30 seconds
Lamp in High-Bright mode	Steady green	–	–
Lamp in Eco mode	Steady green	Steady green	–
One minute after lamp is turned on	Blinking green	No light in High-Bright mode Blinking green in Eco mode	The message "Please wait a little" appears
Retrying to turn on lamp	Blinking green	Blinking orange	The projector retries 3 times at an interval of 15 sec for max. 45 sec)
3 minutes after lamp is turned on in Eco mode	Steady green	Blinking green	Fixed at High-Bright mode. Lamp mode can be changed on the menu
Lamp has reached its end of life (2000 hours or over)	Steady green	Steady red (High-Bright mode)/ Steady orange (Eco mode)	Message appears on screen during 2000-2100 hours of lamp usage. The projector reaches its end of life. Please replace the lamp as soon as possible
Lamp life has reached its end of life (2100 hours or over)	Steady orange	Steady red	The projector is in standby mode and cannot be turned on.
Lamp or filter cover error (3 locations)	Steady orange	Blinking red (1 sec interval)	The projector is in standby mode and cannot be turned on.
Fan error	Steady orange	Blinking red (8 sec interval)	The projector is in standby mode and cannot be turned on.
Lamp error	Steady orange	Blinking red (12 sec interval)	The projector is in standby mode and cannot be turned on.
Temperature error	Steady orange	Blinking red (4 sec interval)	The projector is in standby mode and cannot be turned on.

Common Problems & Solutions

Problem	Check These Items
Does not turn on	<ul style="list-style-type: none"> Check that the power cable is plugged in and that the power button on the projector cabinet or the remote control is on. Ensure that the lamp cover is installed correctly. See page E-33. Check to see if the projector has overheated or the lamp usage exceeds 2100 hours (3150 hours in Eco mode). If there is insufficient ventilation around the projector or if the room where you're presenting is particularly warm, move the projector to a cooler location.
No picture	<ul style="list-style-type: none"> Use the menu to select your source (Video, S-Video or RGB). See page E-28. Ensure your cables are connected properly. Use menus to adjust the brightness and contrast. See page E-28. Remove the lens cap. Reset the settings or adjustments to factory preset levels using the Factory Default on the Image Options Menu in Advanced mode. See page E-30.
Image isn't square to the screen	<ul style="list-style-type: none"> Reposition the projector to improve its angle to the screen. See page E-14. Use the Keystone on the Image Options Menu to correct the trapezoid distortion. See page E-28
Picture is blurred	<ul style="list-style-type: none"> Adjust the focus. See page E-24. Reposition the projector to improve its angle to the screen. See page E-14. Ensure that the distance between the projector and screen is within the adjustment range of the lens. See page E-15.
Image is scrolling vertically, horizontally or both	<ul style="list-style-type: none"> Use menus or Source button on the remote control or the cabinet to select the source you want to input.
Remote control does not work	<ul style="list-style-type: none"> Install a new battery. See page E-34. Make sure there are no obstacles between you and the projector. Stand within 22 feet (7 m) of the projector. See page E-13.
Status indicator is lit or blinking	<ul style="list-style-type: none"> See the Power/ Status Light messages above.
Cross color in RGB mode	<ul style="list-style-type: none"> If Auto Adjust is off, turn it on. If Auto Adjust is on, turn it off and balance the image with the Position and Clock Adjust on the Advanced Options Menu. See page E-30.

6. SPECIFICATIONS

This section provides technical information about the MultiSync VT440/VT540 Projector's performance.

Model Number VT440 / VT440G / VT540 / VT540G

Optical

LCD Panel	0.9" p-Si TFT active-matrix, 800 × 600 dots (VT440) / 1024 × 768 dots (VT540)
Lens	Manual zoom, manual focus F2.0 – 2.3 f=35.8 – 43.0 mm
Lamp	160W NSH lamp (130W in Eco mode)
Image Size	25 – 300 inches (0.64 – 7.62 m) diagonal
Projection Distance	3.94 – 39.04 ft (1.2 - 12.0 m)

Electrical

Inputs	Video (NTSC / PAL / PAL60 / SECAM / NTSC4.43) Horizontal Frequency : 15 – 100 kHz (RGB : 24 kHz or over) Vertical Frequency : 50 – 117 Hz
Video Bandwidth	RGB: 80 MHz
Color	Reproduction Full color, 16.7 million colors simultaneously.
Horizontal Resolution	550 TV lines : NTSC / PAL / NTSC4.43 / YCbCr 350 TV lines : SECAM RGB VT440 : 800 dots horizontal, 600 dots vertical VT540 : 1024 dots horizontal, 768 dots vertical
Power Requirement	100 – 120 / 200 – 240 VAC, 50 / 60 Hz
Input Current	2.7 A (100 – 120 VAC) / 1.3A (200 – 240 VAC)
Power Consumption	240 W (205 W in Eco mode)

Mechanical

Dimensions	9.57" (W) × 4.0" (H) × 11.2" (D) / 243 mm (W) × 103 mm (H) × 284 mm (D) (not including lens)
Net Weight	8.8 lbs / 3.9 kg
Environmental Considerations	Operational Temperatures: 32° – 95°F (0° to 35°C), 20 – 80% humidity Storage Temperatures: 14° – 122°F (-10° to 50°C), 30 – 85% humidity
Regulations	UL Approved (UL 1950, CSA 950) Meets DOC Canada Class B requirements Meets FCC Class B requirements Meets AS/NZS3548 Class B Meets EMC Directive (EN55022, EN55082-1, EN61000-3-2, EN61000-3-3) Meets Low Voltage Directive (EN60950, TUV GS Approved)



We provides more information about our projectors through the World Wide Web at <http://www.nec-pj.com/>

The specifications are subject to change without notice.

TROUBLESHOOTING

Operational checks

By making checks on operation under normal working conditions, a certain degree of fault diagnosis can be carried out. Prior to removing the top cover, make the following checks:

- Is the POWER indicator lit in orange color in the standby state?

NO →

- The POWER cord is disconnected.
- Problem in the power supply.
- The cable (POPM) is disconnected.
- Fuses (F3100 to F3104) of the MAIN PWB have blown out.
- Failure in the CPU peripheral circuits of the MAIN PWB.
- Clogging around the air filter.
- Deviation from the working range and the temperature-condition range.
- The cable (bimetal) is disconnected.

↓ YES

- Is the STATUS indicator flashing?

YES →

- The lamp fails to light.
[Flashing at the intervals of once every 12 seconds (6-second ON/6-second OFF)]
- The filter cover or the lamp cover is dislodged.
[Flashing at the intervals of 1 second (0.5-second ON/0.5-second OFF)]
- The fan is stopped due to the fan being out of order or intrusion of foreign substance.
[Flashing at the intervals of once every 8 seconds (4-second ON/4-second OFF)]
- The cable (POLM) is disconnected.
[Flashing at the intervals of once every 12 seconds (6-second ON/6-second OFF)]
- The cables (POF1, POF2) are disconnected.
[Flashing at the intervals of once every 8 seconds (4-second ON/4-second OFF)]
- The cable (POMK) is disconnected.
[Flashing at the intervals of 1 second (0.5-second ON/0.5-second OFF)]
- Lamp is out of order.
[Flashing at the intervals of once every 12 seconds (6-second ON/6-second OFF)]

↓ NO

- Is the STATUS indicator lit?

YES →

- The total lamp lighting time has exceeded 2000 hours, or the data are destroyed.

↓ NO

- Is the POWER indicator lit in green with POWER ON?

YES →

- The lamp's life has expired. (The STATUS indicator is lit in red.)
- Failure in I/O PWB and MAIN PWB.
- The cables (POMI, POXV, POXT, PORX, POGX, POBX) are disconnected.
- The LC panel is out of order.

↓ NO

- Peripheral circuits are out of order around the cabinet switch, remote control, remote control light receiver, and CPU.

POWER block

Problems in the POWER and related circuits often cause typical malfunctions, such as no picture presentation, no power supply to each PWB, no lamp lighting, no fan rotation, and so on.

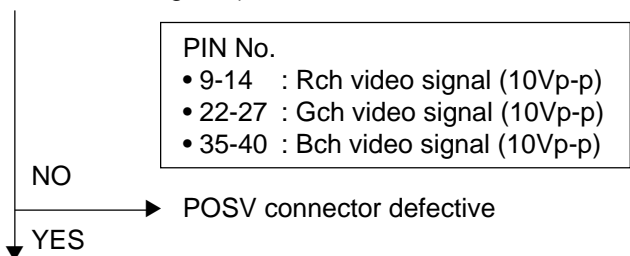
Confirm whether the voltage outputs specified below are available at the POPM connector of the MAIN PWB.

PIN No.	Signal name	Standby	Power ON	Related circuits
1	PS_PW	0V	+3.3V	POWER ON/OFF control signal (output from MAIN)
2	GND	GND	GND	GND
3	A+17.5V	+17.5V	+17.5V	LC driver system
4	GND	GND	GND	GND
5	A+12V	0V	+12V	Input signal processor system, VIDEO signal processor system
6	A+12V	0V	+12V	Fan control
7	GND	GND	GND	GND
8	GND	GND	GND	GND
9	S+5V	+5V	+5V	A/D, ENDEAVOR
10	S+5V	+5V	+5V	Same as above
11	GND	GND	GND	GND
12	GND	GND	GND	GND
13	S+3.3V	+3.3V	+3.3V	A/D, YAMAG, UNI2, CPU, and CPU peripheral
14	S+3.3V	+3.3V	+3.3V	Same as above
15	GND	GND	GND	GND

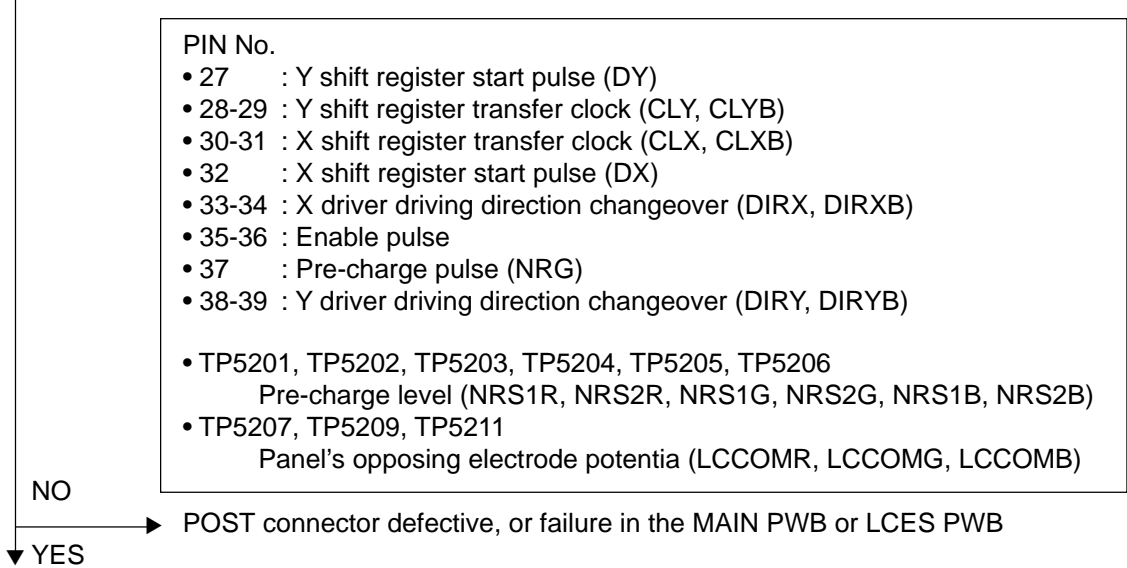
TROUBLESHOOTING

LCES PWB

Are the following signal inputs available at POSV (connected with POSV of the MAIN PWB)?
(See the waveform diagram.)



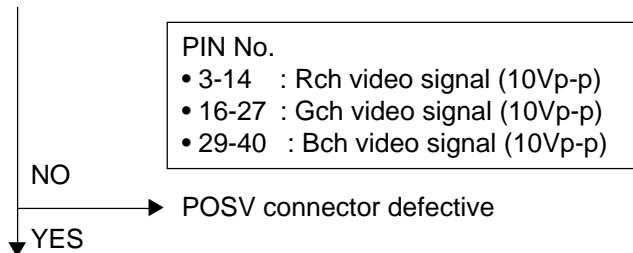
Are the following signal outputs available at the respective output pins and test pins of IC5201
(or IC5202, IC5203)? (See the waveform diagram.)



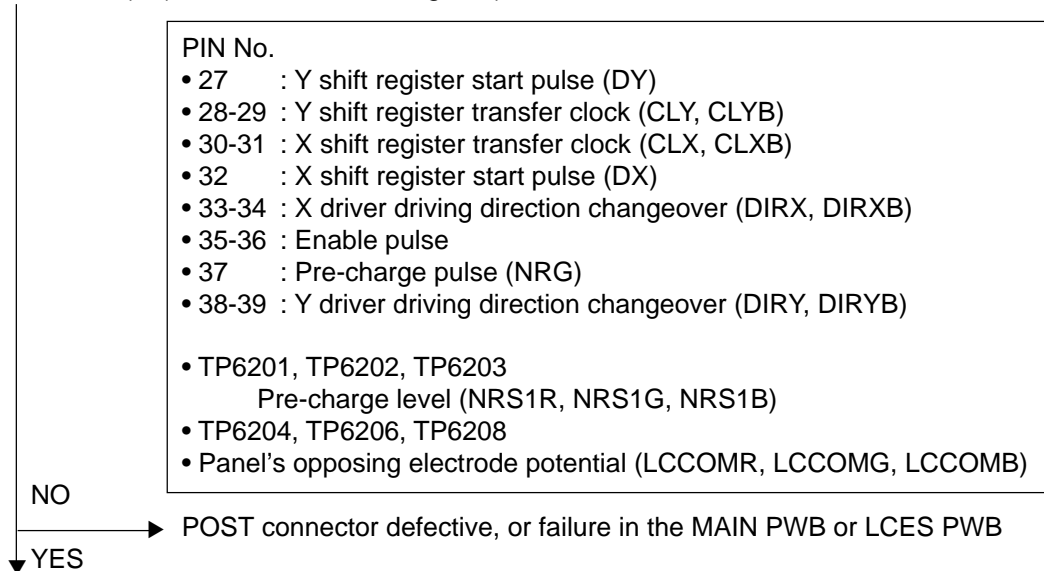
Failure in the LC panel, or other LCES PWB malfunction (defective soldering, cracks in PWB)

LCEX PWB

Are the following signal inputs available at POSV (connected with POSV of the MAIN PWB)?
(See the waveform diagram.)



Are the following signal outputs available at the respective output pins and test pins of IC6201 (or IC6202, IC6203)? (See the waveform diagram.)

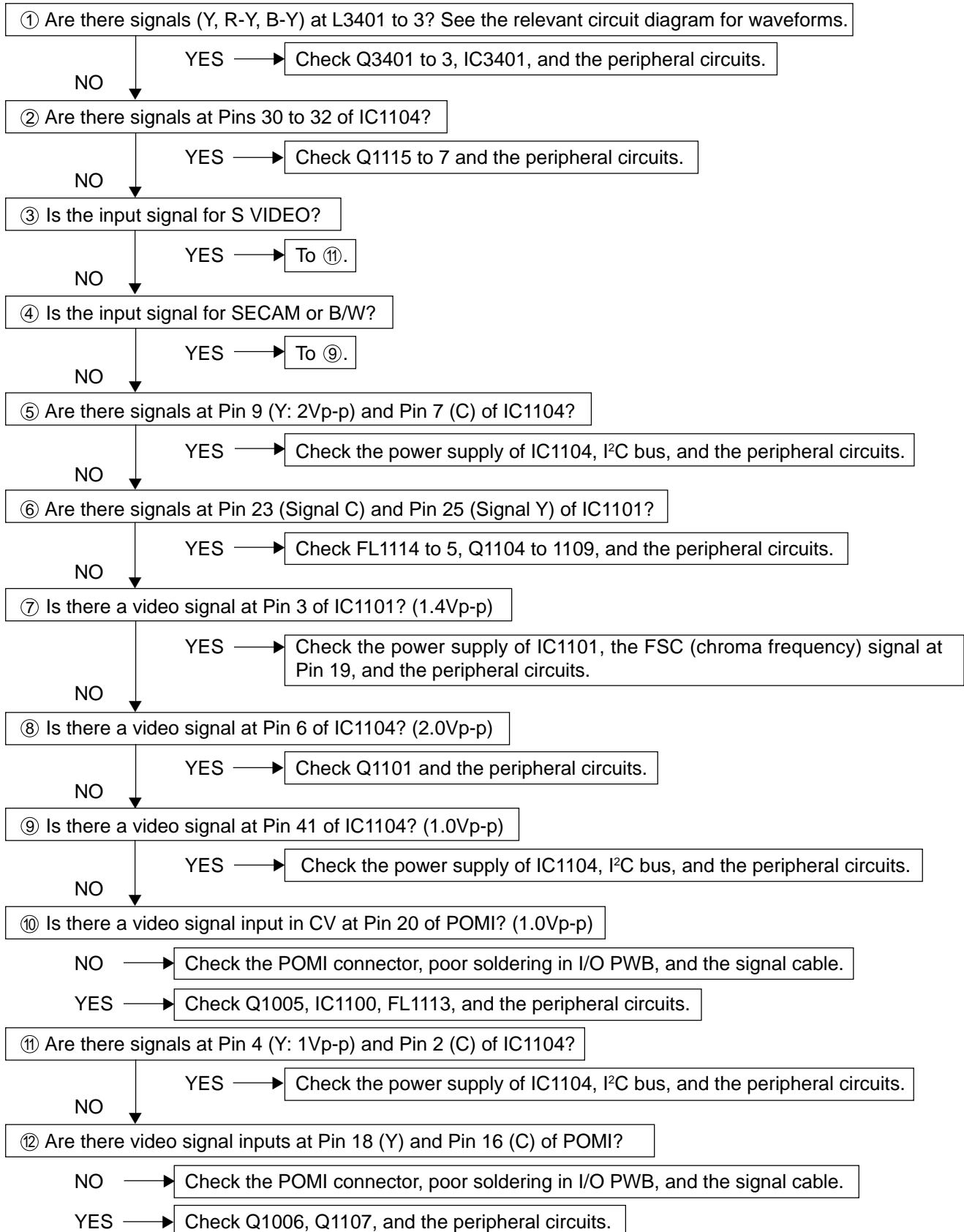


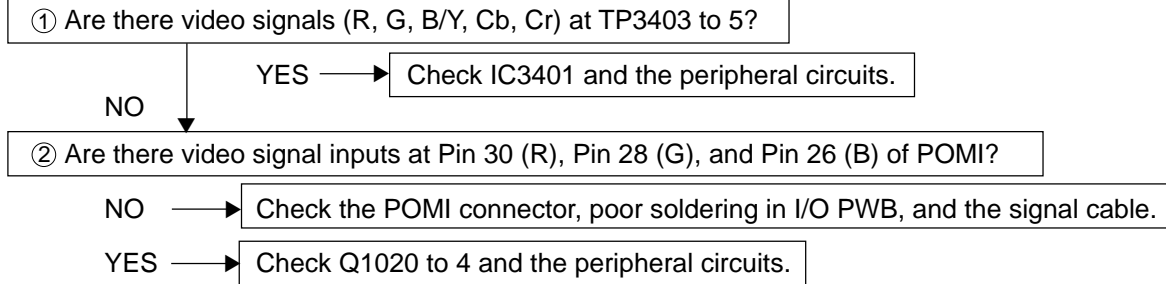
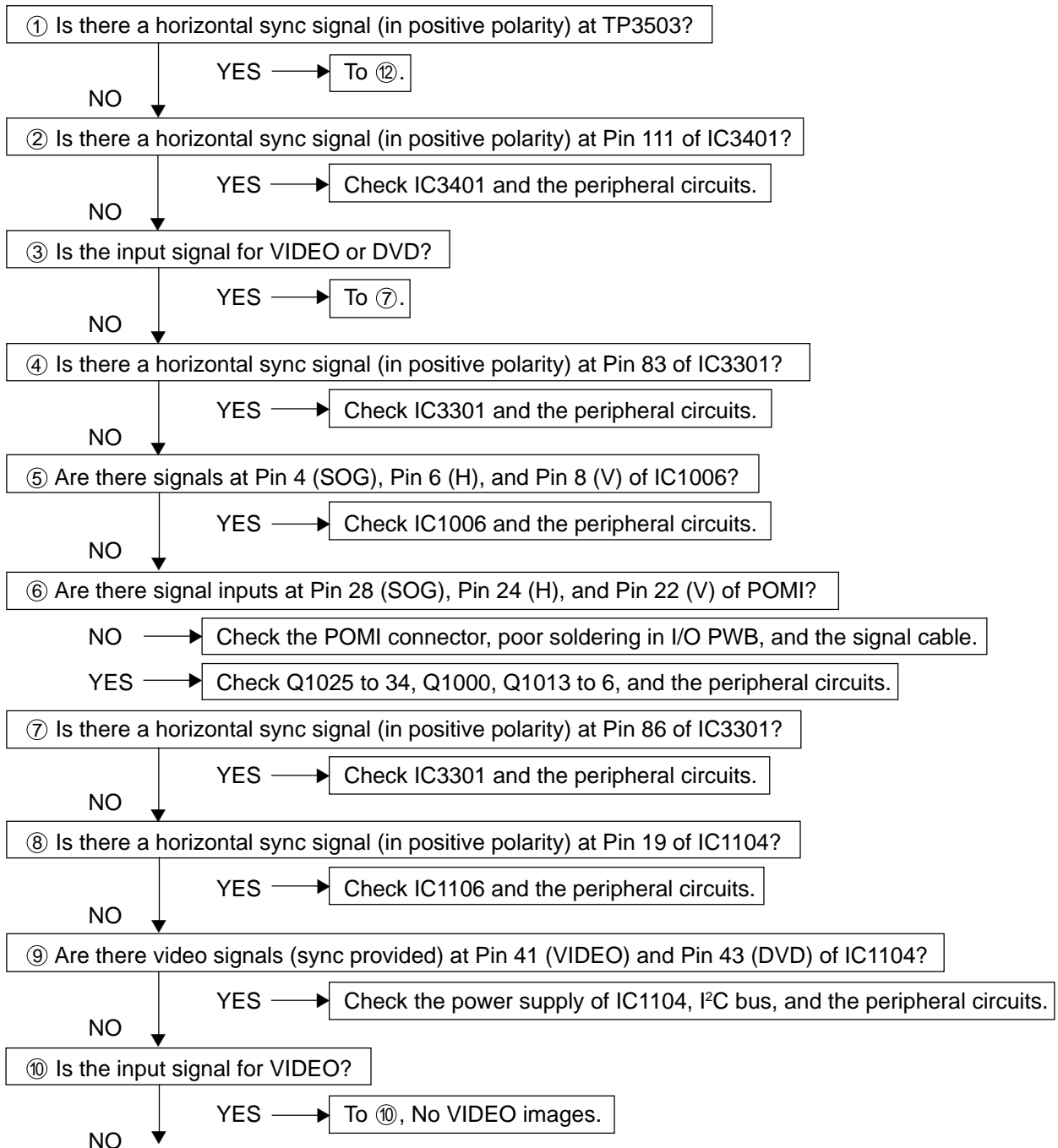
Failure in the LC panel, or other LCES PWB malfunction (defective soldering, cracks in PWB)

TROUBLESHOOTING

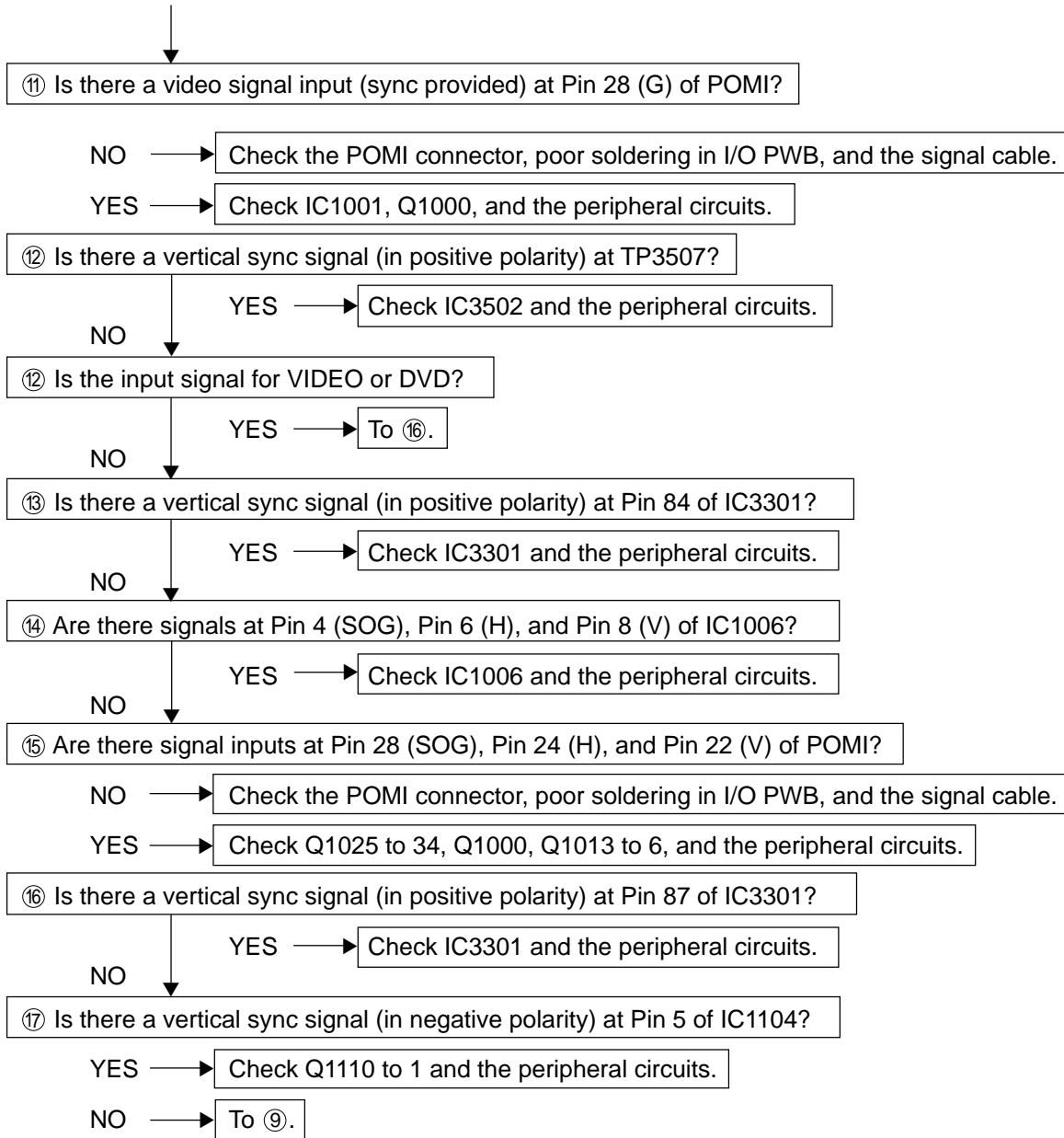
• Troubleshooting for the I/O block, Sync block, and Video block

1. No video images are generated. (VIDEO system)

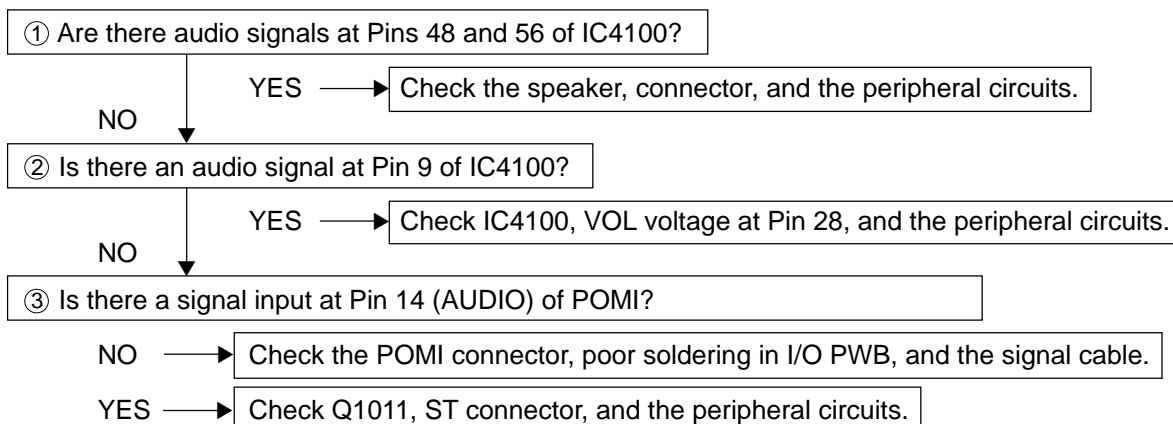


2. No RGB images are generated. (VIDEO system)**3. No images are generated. (Sync system)**

TROUBLESHOOTING



4. No sound generation



--- **METHOD OF ADJUSTMENTS**

PC Control Software

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- 2. Equipment to be used and operating environments**
- 3. Troubleshooting and adjustment procedures**
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 - 3-2. Replacement of the LCEP PWB**
 - 3-3. Replacement of the VIDEO-DEC PWB**
 - 3-4. Replacement of the LCD panel**
- 4. Various functional descriptions**
 - 4-1. Data**
 - 4-2. Sub-B/C**
 - 4-3. Flicker**
 - 4-4. Ghost**
 - 4-5. Lamp**
 - 4-6. Option**
- 5. Error messages**

METHOD OF ADJUSTMENTS

1. Outline software descriptions

This is the PC control software for servicing adjustments to be conducted during the replacement of the MAIN PWB, LCEP PWB, VIDEO-DEC PWB, or the LCD panel for the LCD projector, the VT440/VT540 Series.

This software is used for the adjustment of Sub-Brightness/Sub-Contrast, Flicker, and Ghost, and also the modification of Lamp Usage Time, Filter Usage Time, Panel Usage Time, Projector Usage Time, and Language Selection.

In addition, it enables reading and writing of various data, such as the V-T data for the PJ, the adjusting data for factory shipment, various data for setting (user), and the logo and uniformity data.

2. Equipment to be used and operating environments

<Equipment to be used>

- Software for servicing adjustments (Ser_99vt.exe Ver1.0)
Attached files: V-T Data, etc.
- Personal computer [Enabled to actuate Windows95 or Windows3.1, and the serial port (COM1 or COM2 or COM3) is of the D-SUB9pin.]
- Video signal generator [Auto-adjustment type: Enabled to generate an output of NTSC split color bars (7 colors)]
- Component signal generator [Auto-adjustment type: Enabled to generate an output of 15kHz Component Video 60Hz split color bars (7 colors)]
- Serial cable (Accessory for the PJ main unit)

<Connections>

- Connect the PC CONTROL terminal (Mini DIN-8pin) of the PJ with either serial port COM1 or COM3 (D-SUB 9pin) of the personal computer through a serial cable (accessory for the PJ main unit).
- During the adjustment of RGB Sub-Brightness/Sub-Contrast, connect the RGB terminal of the PJ with an ANALOG RGB output of the personal computer or an RGB signal generator to be used for adjusting signal generation.
- During the adjustment of Component Sub-Brightness/Sub-Contrast, connect the RGB terminal of the PJ with a Component signal generator to be used for adjusting signal generation.
- During the adjustment of Video Sub-Brightness/Sub-Contrast, connect the VIDEO terminal with a Video signal generator to be used for adjusting signal generation.

<Setting of personal computer that generates adjusting pattern screen outputs>

- Personal computer's definition, frequency, and the No. of colors
Make settings at VESA XGA (1024x768) 70Hz, high color (16 bits) or above.
- Method of adjusting pattern screen display
Using the [ON] button located in the test pattern box, the adjusting pattern screen can be displayed on the PC screen. In this case, however, only the test patterns in the [Sub-B/C] tab can be displayed. All other adjusting patterns are the internally available test patterns.

3. Troubleshooting and adjustment procedures

3-1. Replacement of the MAIN PWB

<Copying of the V-T data, ADJ data, Logo data, and Uniformity data>

Let the PJ power supply stay in the STAND BY state and select the [Data] tab for servicing software. Make data read/write according to the descriptions (1) and (2) below.

(1) Data Read

Prior to the replacement, and as required, read the presently used data of the MAIN PWB and save them in the relevant file.

(According to the type of fault, it may be impossible to save these data.)

Designate the file name and save the data by clicking the relevant [Read (PJ->File)] button of the V-T data, ADJ data, Logo data, and Uniformity data.

(2) Data Write

After the replacement of the MAIN PWB, click the relevant [Write (File->PJ)] button of the V-T data, ADJ data, Logo data, and Uniformity data to select the saved file, and write the data.

If it is impossible to save the data of the MAIN PWB used before the replacement, write the V-T data of the model from the file as required, using the [Write (File->PJ)] button of the V-T data.

After all the data have been written, pull out the AC cord of the PJ and confirm that the Power LED is unlit. Since then, connect the AC cord again.

<Adjustment of Sub-Brightness/Sub-Contrast>

Select the [Sub-B/C] tab for servicing software.

Make the respective adjustments of RGB/Component/Video according to the descriptions (1), (2) and (3) below.

(1) Adjustment of RGB Sub-Brightness/Sub-Contrast

Select [RGB] in the Auto ADJ box.

Make adjustments by either method of (a) or (b) below.

(a) Auto adjustment

As an adjusting signal, enter an input of Window (Center: White) with the use of an RGB signal generator. Otherwise, enter an RGB output of the personal computer. (When the PC output is used in the auto-adjustment mode, the screen is automatically changed over to the Window screen.)

When the [Auto] button is clicked in the Auto ADJ box, automatic adjustment is started.

After the completion of automatic adjustment, confirm that there is no coloring of the gray scale.

If any coloring is perceived, make fine adjustments of (b) by manual adjustment.

Note: It is impossible to carry out normal adjustments if the definition (VESA XGA 70Hz) or the pattern is improper for the adjusting signal.

(b) Manual adjustment

If the automatic adjustment is impossible, manual adjustments should be carried out.

As an adjusting signal, enter an input of gray scale with the use of an RGB signal generator. Otherwise, enter an RGB output of the personal computer and display a gray scale with the use of the [Scale] button in the Test Pattern box.

Use a scroll bar to adjust Sub-Brightness/Sub-Contrast, making sure not to cause black and white chroma and also coloring in the gray scale.

After the completion of manual adjustment, click the [Set] button in the Data box.

METHOD OF ADJUSTMENTS

(2) Adjustment of Component Sub-Brightness/Sub-Contrast

Select [Component] in the Auto ADJ box.

Make adjustments by any method of (a), (b) or (c) below.

(a) Auto adjustment

As an adjusting signal, enter a split color bar (7 colors) with the use of a Component signal generator.

When the [Auto] button is clicked in the Auto ADJ box, automatic adjustment is started.

After the completion of automatic adjustment, confirm that there is no coloring of the gray scale.

If any coloring is perceived, make fine adjustments of (b) by manual adjustment.

Note: It is impossible to carry out normal adjustments if the pattern is improper for the adjusting signal.

(b) Manual adjustment

If the automatic adjustment is impossible, manual adjustments should be carried out.

As an adjusting signal, enter an input of gray scale with the use of a Component signal generator.

Use a scroll bar to adjust Sub-Brightness/Sub-Contrast, making sure not to cause black and white chroma and also coloring in the gray scale.

After the completion of manual adjustment, click the [Set] button in the Data box.

(c) Copying of the Video adjusting value

If no Component signal generator is available, try to check [Video-> Comp] in the Auto ADJ box. Then, the same adjusting value as that for Video is written during the adjustment of Video.

(3) Adjustment of Video Sub-Brightness/Sub-Contrast

Select [Video] in the Auto ADJ box.

Make adjustments by either method of (a) or (b) below.

(a) Auto adjustment

As an adjusting signal, enter an input of split color bar (7 colors) with the use of a Video signal generator.

When the [Auto] button is clicked in the Auto ADJ box, automatic adjustment is started.

After the completion of automatic adjustment, confirm that there is no coloring of the gray scale.

If any coloring is perceived, make fine adjustments of (b) by manual adjustment.

Note: It is impossible to carry out normal adjustments if the pattern is improper for the adjusting signal.

(b) Manual adjustment

If the automatic adjustment is impossible, manual adjustments should be carried out.

As an adjusting signal, enter an input of gray scale with the use of a Video signal generator.

Use a scroll bar to adjust Sub-Brightness/Sub-Contrast, making sure not to cause black and white chroma and also coloring in the gray scale.

After the completion of manual adjustment, click the [Set] button in the Data box.

When the respective adjustments have been finished for RGB/Component/Video, a check mark is given to the left-end check box in the Auto ADJ box.

<Adjustment of Flicker>

Select the [Flicker] tab for servicing software.

Make the respective adjustments of Floor/Ceiling according to the descriptions (1) and (2) below.

(1) Adjustment of Floor

Check [Floor].

Click the [ON] button in the Test Pattern box in order to display the internal horizontal line signal.

If this [ON] button is clicked continuously, a changeover action takes place in the toggle mode in the course of R-> G-> B-> R. Make adjustments with the scroll bar so that the flicker in the center part becomes minimum for each color.

(2) Adjustment of Ceiling

Check [Ceiling].

Click the [ON] button in the Test Pattern box in order to display the internal horizontal line signal.

If this [ON] button is clicked continuously, a changeover action takes place in the toggle mode in the course of R-> G-> B-> R. Make adjustments with the scroll bar so that the flicker in the center part becomes minimum for each color.

When adjustments have been finished for both (1) and (2) above, click the [Set] button in the Data box.

Click the [CLS] button in the Test Pattern box in order to clear the internal test signal.

<Adjustment of Ghost>

Select the [Ghost] tab for servicing software.

Click the [ON] button in the Test Pattern box in order to display the internal ghost adjusting signal.

Make adjustments with the scroll bar so that the ghost becomes minimum for each color.

When adjustments have been finished, click the [Set] button in the Data box.

Click the [CLS] button in the Test Pattern box in order to clear the internal test signal.

<Modification of Lamp, Filter, Panel, and Projector Usage Time>

In the case of failure in the <Copying of the V-T data, ADJ data, Logo data, and Uniformity data> to be carried out in the first place, each usage time must be fixed at "0 hours." Therefore, make the setting of each usage time, as required.

Let the PJ power supply stay in the STAND BY state and select the [Lamp] tab for servicing software.

Make the modification of the usage time according to the descriptions (1), (2), and (3) below.

(1) Modification of the lamp usage time

Check [Change time (Lamp Usage Time)] and make the setting of lamp usage time by the use of the scroll bar.

After the completion of this setting, click the [Set] button.

(2) Modification of the filter usage time

Check [Change time (Filter Usage Time)] and set the lamp usage time using the scroll bar/editor input.

After the completion of this setting, click the [Set] button.

(3) Modification of the panel usage time

Check [Change time (Panel Usage Time)] and set the lamp usage time using the scroll bar/editor input.

After the completion of this setting, click the [Set] button.

(4) Check [Change time (Projector Usage Time)] and set the lamp usage time using the scroll bar/editor input.

After the completion of this setting, click the [Set] button.

Upon the completion of (1), (2), (3), and (4) above, pull out the AC cord of the PJ and confirm that the Power indicator is unlit. Since then, connect the AC cord again.

<Language Setting>

Select the [Lamp] tab for servicing software.

In the case of the domestic (Japan) mode, check [VTxxxJ Model] in the Language box.

In the case of an overseas mode, check [Vtxxx, G, GS Model].

In this unit, the factory data only are rewritten to hold the user setting values for the <Copying of the V-T data, ADJ data, Logo data, and Uniformity data> to be carried out in the first place. For this reason, there can be no coincidence between the set language and the displayed language (user setting).

METHOD OF ADJUSTMENTS

3-2. Replacement of the LCEX (LCES) PWB

<Adjustment of Flicker>

Make the similar adjustments as those for the replacement of the MAIN PWB.

3-3. Replacement of the VIDEO-DEC PWB

<Adjustment of Sub-Brightness/Sub-Contrast>

Make the similar adjustments as those for the replacement of the MAIN PWB.

3-4. Replacement of the LCD panel

<Adjustment of Sub-Brightness/Sub-Contrast>

If there is coloring in the gray scale, carry out fine adjustments manually.

In regard to the method of adjustments, refer to the descriptions about the replacement of the MAIN PWB.

<Adjustment of Flicker>

Make the similar adjustments as those for the replacement of the MAIN PWB.

<Adjustment of Ghost>

Make the similar adjustments as those for the replacement of the MAIN PWB.

<Adjustment of Uniformity>

Make the similar adjustments as those for the replacement of the MAIN PWB.

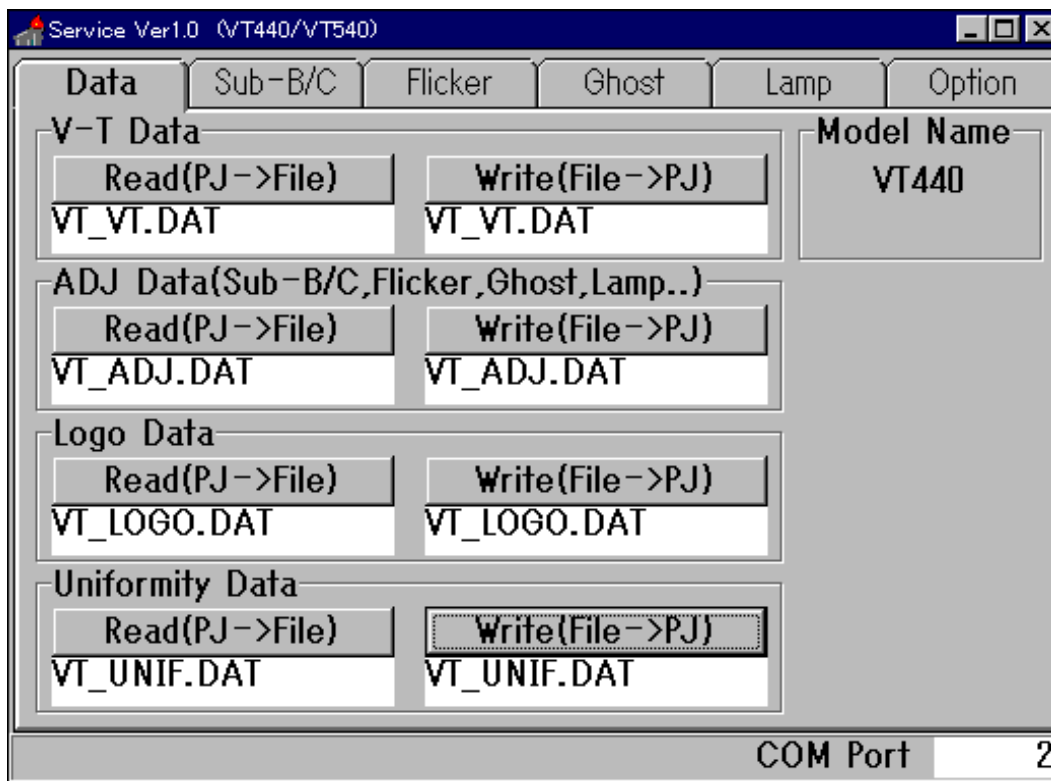
<Modification of Lamp, Filter, Panel, and Projector Usage Time>

Change the panel usage time to "0 Hours."

In regard to the method of modification, refer to the descriptions about the replacement of the MAIN PWB.

4. Various functional descriptions

4-1. Data



<Model Name>

The present PJ data are acquired and discrimination of the model is carried out.

In the case of the VT440 System, [VT440] is displayed. For the VT540 System, [VT540] is displayed.

<Read and Write of the V-T Data>

At the time of the replacement of the MAIN PWB, this function is used to write the V-T data, which have been used before the replacement, in the new MAIN PWB.

The action for reading and writing of the V-T data should be carried out while the PJ power supply is made to stay in the Standby mode.

When the [Read (PJ-> File)] button in the V-T Data box is clicked under the condition that the MAIN PWB before replacement is left attached, the Save Dialog is opened. In this state, designate the file name.

The V-T data are read out of the PJ and saved with the specified file name.

The saved file name is displayed below the [Read (PJ-> File)] button.

When the [Write (File-> PJ)] button in the V-T Data box is clicked after the replacement of the MAIN PWB, the Open Dialog is opened. In this state, select the saved file name.

Write the V-T data in the PJ from the designated file.

The written file name is displayed below the [Write (PJ-> File)] button.

METHOD OF ADJUSTMENTS

<Read and Write of the ADJ Data>

At the time of the replacement of the MAIN PWB, this function is used to write the V-T data (adjusting data used for shipment and various user setting values), which have been used before the replacement, in the new MAIN PWB.

The data rewritten in this case are the factory shipment adjusting data for Sub-Brightness/Sub-Contrast, Flicker, Ghost, and Uniformity, and also the various data of usage time for the lamp, filter, and panel.

The action for the saving and writing of the ADJ data should be carried out while the PJ power supply is made to stay in the Standby mode.

When the [Read (PJ-> File)] button in the ADJ Data box is clicked under the condition that the MAIN PWB before replacement is left attached, the Save Dialog is opened. In this state, designate the file name.

The ADJ data are read out of the PJ and saved with the specified file name.

The saved file name is displayed below the [Read (PJ-> File)] button.

When the [Write (File-> PJ)] button in the ADJ Data box is clicked after the replacement of the MAIN PWB, the Open Dialog is opened. In this state, select the saved file name.

Write the ADJ data in the PJ from the designated file.

The written file name is displayed below the [Write (PJ-> File)] button.

After the ADJ data have been written, pull out the AC cord of the PJ without fail and confirm that the Power LED is unlit.

<Read and Write of the Logo Data>

At the time of the replacement of the MAIN PWB, this function is used to write the Logo data (user registration), which have been used before the replacement, in the new MAIN PWB.

The action for the saving and writing of the Logo data should be carried out while the PJ power supply is made to stay in the Standby mode.

When the [Read (PJ-> File)] button in the Logo Data box is clicked under the condition that the MAIN PWB before replacement is left attached, the Save Dialog is opened. In this state, designate the file name.

The Logo data are read out of the PJ and saved with the specified file name.

The saved file name is displayed below the [Read (PJ-> File)] button.

When the [Write (File-> PJ)] button in the Logo Data box is clicked after the replacement of the MAIN PWB, the Open Dialog is opened. In this state, select the saved file name.

Write the Logo data in the PJ from the designated file.

The written file name is displayed below the [Write (PJ-> File)] button.

<Read and Write of the Uniformity Data>

At the time of the replacement of the MAIN PWB, this function is used to write the Uniformity data, which have been used before the replacement, in the new MAIN PWB.

The action for the reading and writing of the Uniformity data should be carried out while the PJ power supply is made to stay in the Standby mode.

When the [Read (PJ-> File)] button in the Uniformity Data box is clicked under the condition that the MAIN PWB before replacement is left attached, the Save Dialog is opened. In this state, designate the file name.

The Uniformity data are read out of the PJ and saved with the specified file name.

The saved file name is displayed below the [Read (PJ-> File)] button.

When the [Write (File-> PJ)] button in the Uniformity Data box is clicked after the replacement of the MAIN PWB, the Open Dialog is opened. In this state, select the saved file name.

Write the Uniformity data in the PJ from the designated file.

The written file name is displayed below the [Write (PJ-> File)] button.

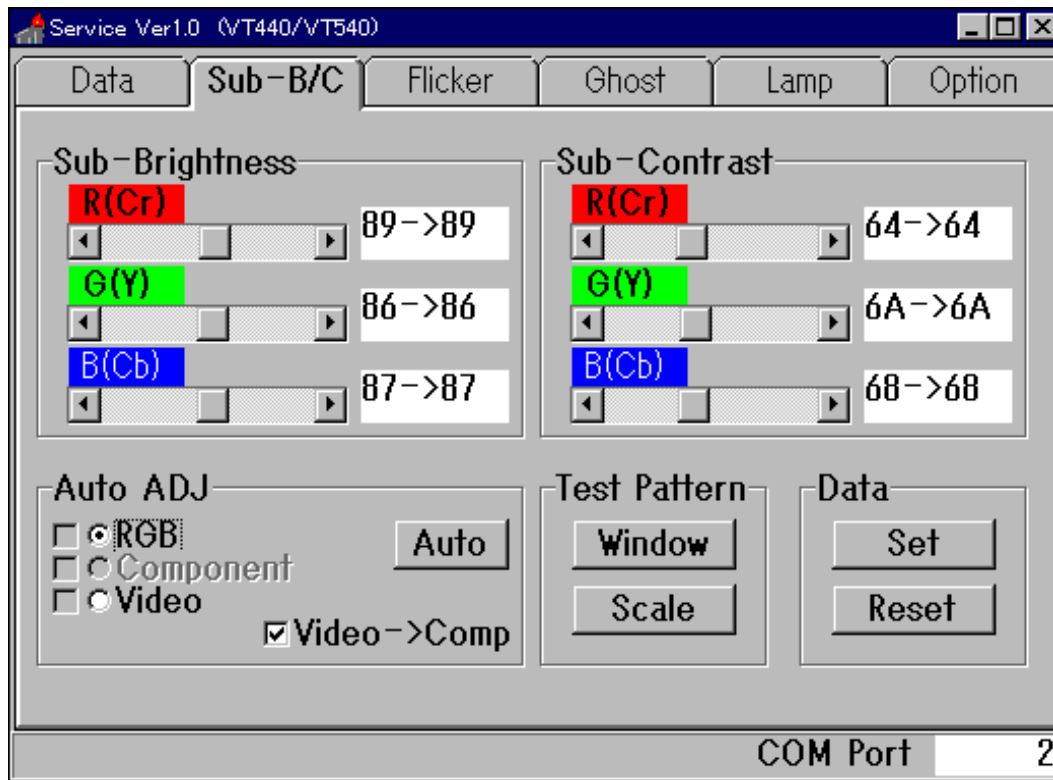
Note 1: According to the type of fault, it may be impossible to save the data.

The default data are written in the MAIN PWB in advance.

Note 2: The ADJ data should be written under the condition that the PJ power supply is made to stay in the standby state. In addition, unless the AC cord of the PJ is drawn out after data writing, the written data cannot be written in the Flash ROM.

Note 3: When all-data resetting is effected, various user setting values written by ADJ data writing cannot be held and the factory shipment values are recovered.

4-2. Sub-B/C



<Sub-Brightness/Sub-Contrast>

This function is used for the manual adjustment of Sub-Brightness/Sub-Contrast.

The data are independently possessed by the three types of signals for RGB, Component, and Video. The signal data selected in the Auto ADJ box are acquired and they are respectively displayed for R(Cr)/G(Y)/B(Cb) beside the scroll bar on the screen.

The data acquired firstly (at the time of starting of the adjusting software) are stored as the initial value and displayed on the left of the arrow mark. The present value is displayed on the right of the arrow.

When writing of the ADJ data is conducted with [Data], however, the written data are regarded as the initial value.

Display the gray scale and make adjustments with the use of the scroll bar, making sure not to cause white and black chroma and also coloring.

Adjusting range: 00H - FFH

METHOD OF ADJUSTMENTS

<Auto ADJ>

This function is used for the selection and automatic adjustment of signals to be used for the adjustment of Sub-Brightness/Sub-Contrast.

Select the required adjusting signal from RGB/Component/Video.

According to the selected signal, signal changeover (RGB/Component-> RGB1, Video-> Video), data read, and data reset (signal being displayed) are carried out.

When the [Auto] button is clicked, automatic adjustment is carried out for the selected signal.

If a signal generator is used during the automatic adjustment of RGB, setting should be made at Window (Center: White) at VESA XGA 70Hz. When a PC signal is used, the Window mode is chosen automatically.

For the automatic adjustment of Component, the signal should be set at the split color bar (7 colors).

In case of failure in the adjustment of Component, check [Video-> Comp].

During the adjustment of Video, the same data are copied in Component.

In the case of automatic adjustment, or when the data are written with the use of the [Set] button in the Data box, a check mark is given to the check box located on the left of the RGB/Component/Video selection as a mark of the completion of adjustment.

This check mark is cleared when the data are reset with the [Reset] button in the Data box.

<Test Pattern>

This function is used when a personal computer intended for adjustments is used as a signal source.

When the [Window] button is clicked, a window display is presented on the PC screen.

This window is used for the adjustment of RGB, but the preliminary display of this window is not required in the case of the automatic adjustment since it is automatically displayed.

When the [Scale] button is clicked, a 16-gradation gray scale is displayed on the PC screen.

When a double click is conducted on the test pattern, this double click is cleared.

<Data>

When the [Set] button is clicked, the adjusted values of Sub-Brightness/Sub-Contrast, adjusted with the scroll bar, are written in the Flash ROM.

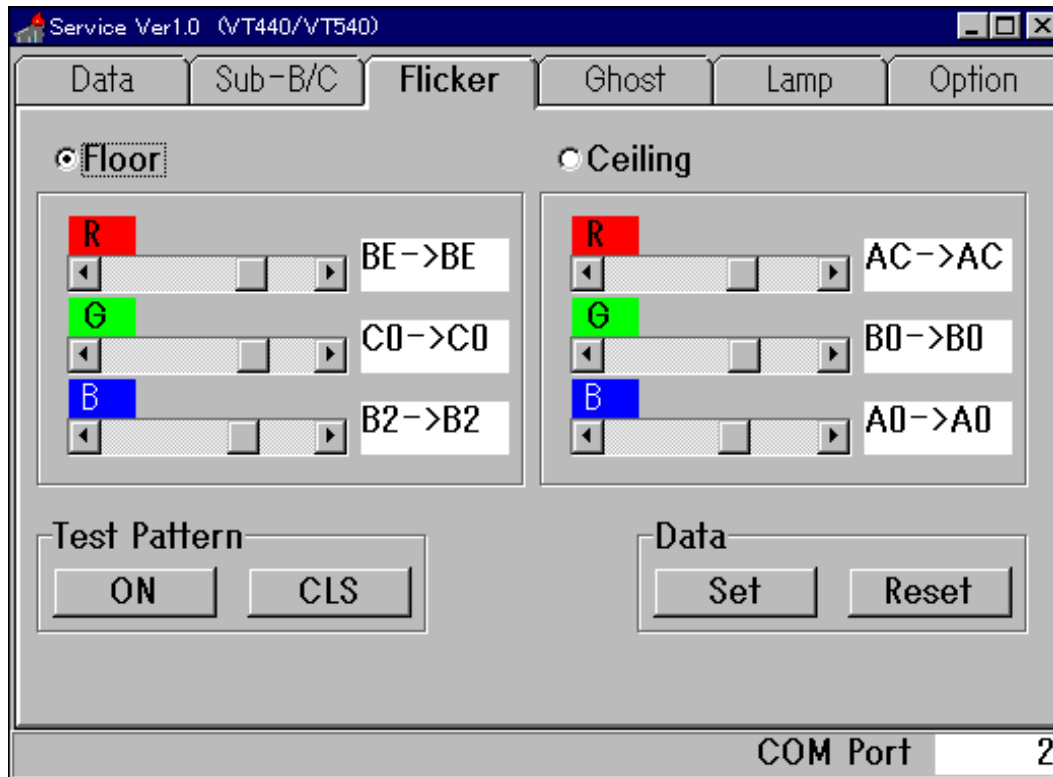
In the case of automatic adjustment, it is unnecessary to click the [Set] button since the adjusted values are automatically written in the Flash ROM.

When the [Reset] button is clicked, the adjusted values of Sub-Brightness/Sub-Contrast are restored to the initial values (at the time of starting of the adjusting software) and written in the Flash ROM.

Note 1: The data adjusted with the scroll bar are the temporary ones. They are not sustained in the PJ without taking any measures. Execute [Set] and write the data in the Flash ROM.

Note 2: Since automatic adjustment is conducted by examining the predetermined position in the screen, this adjustment is impossible to carry out unless the patterns, definition, etc., are found inadequate.

4-3. Flicker



<Floor/Ceiling>

This function is used for the adjustment of flicker.

The data are sustained for Floor and Ceiling, respectively.

The present data of the PJ are acquired and displayed on the screen.

The data acquired firstly (at the time of starting of the adjusting software) are stored as the initial value and displayed on the left of the arrow mark. The present value is displayed on the right of the arrow.

When writing of the ADJ data is conducted with [Data], however, the written data are regarded as the initial value.

Select the method of projection for Floor/Ceiling adjustment.

The scroll bar on the selected side becomes adjustable.

Display the Test Pattern, and make adjustments with the scroll bar so that the flicker in the center part becomes minimum for R/G/B, respectively.

Adjusting range: 00H - FFH

<Test Pattern>

This function is used when an internal Test Pattern is displayed for flicker adjustment.

When the [ON] button is clicked, a horizontal line signal of R is displayed on the projected screen.

If this [ON] button is continuously clicked since then, a changeover action takes place in the toggle mode in the order of horizontal line signal of G-> horizontal line signal of B-> and horizontal line signal of R.

When the [CLS] button is clicked, the Test Pattern is cleared (input changeover to RGB1).

<Data>

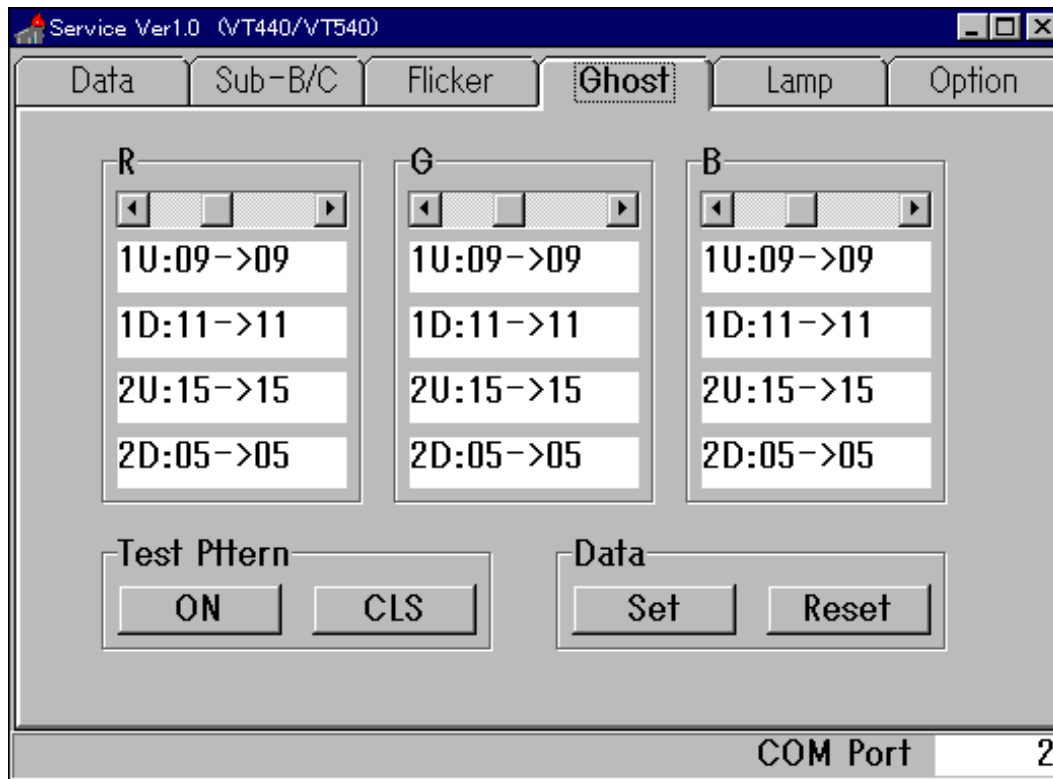
When the [Set] button is clicked, the flicker value adjusted with the scroll bar is written in the Flash ROM.

When the [Reset] button is clicked, the adjusted flicker value is restored to the initial value (at the time of starting of the adjusting software) and written in the Flash ROM.

Note 1: The data adjusted with the scroll bar are the temporary ones. They are not sustained in the PJ without taking any measures. Execute [Set] and write the data in the Flash ROM.

METHOD OF ADJUSTMENTS

4-4. Ghost



<Ghost R/G/B>

This function is used for the adjustment of Ghost.

The present PJ data are acquired and displayed on the screen.

The data acquired firstly (at the time of starting of the adjusting software) are stored as the initial value and displayed on the left of the arrow mark. The present value is displayed on the right of the arrow.

When writing of the ADJ data is conducted with [Data], however, the written data are regarded as the initial value.

The data come in 4 types for each color. During the adjustment, the increment and decrement actions are carried out simultaneously for these 4 types.

Display the Test Pattern, and make adjustments with the use of the scroll bar so that Ghost becomes minimum in the half-tone area on the right of the pattern, for R/G/B, respectively.

Adjusting range: "VT540" 00H - 2FH

"VT440" 00H - 17H

<Test Pattern>

This function is used when an internal Test Pattern is displayed for ghost adjustment.

When the [ON] button is clicked, an adjusting signal of Ghost is displayed on the projected screen.

When the [CLS] button is clicked, the Test Pattern is cleared (input changeover to RGB1).

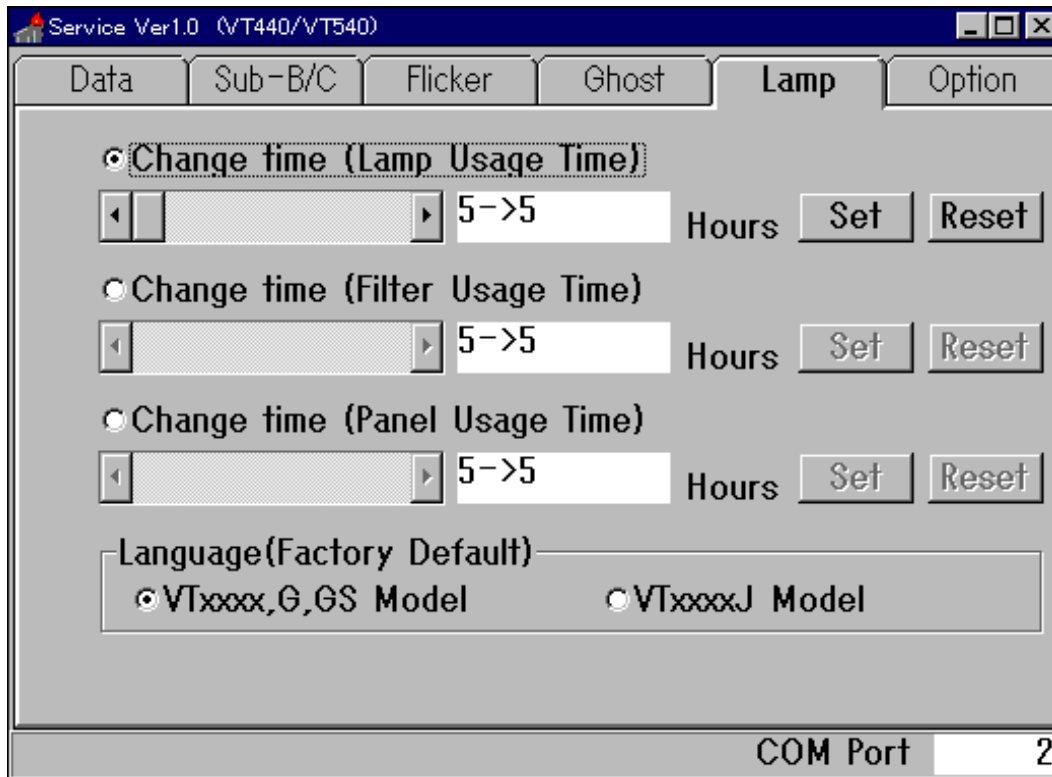
<Data>

When the [Set] button is clicked, the adjusting signal of Ghost adjusted with the scroll bar is written in the Flash ROM.

When the [Reset] button is clicked, the adjusted ghost value is restored to the initial value (at the time of starting of the adjusting software) and written in the Flash ROM.

Note 1: The data adjusted with the scroll bar are the temporary ones. They are not sustained in the PJ without taking any measures. Execute [Set] and write the data in the Flash ROM.

4-5. Lamp



<Change time (Lamp Usage Time)>

This function is used when changing the lamp usage time.

The action for the modification of the lamp usage time should be carried out while the PJ power supply is made to stay in the Standby mode.

At the beginning (at the time of adjusting software start), the projector data are acquired and stored as the initial values.

However, if ADJ Data Write is performed with [Data], the written data are stored as the initial values.

If it is necessary to change the Lamp Usage Time, check the Change Time. Then the usage time is displayed as "0 Hours" and the percentage indication as "100%." When the display is like that, operation becomes possible with the scroll bar, the [Set] button, and the [Reset] button.

Set up the proper time and percentage with the scroll bar.

When the [Set] button is clicked, the lamp usage time and percentage preset with the scroll bar are written in the Flash ROM and displayed on the [Set] button.

When the [Reset] button is clicked, the lamp usage time and percentage are restored to the initial values (the values at the time of adjusting software start) and written in the Flash ROM. Since then, the display on the [Set] button is cleared.

After the Lamp Usage Time has been changed ([Set] and [Reset]), pull out the AC cord of the PJ without fail and confirm that the Power LED is unlit.

When changing the Lamp Usage Time to "0 Hours" and "100%," use the ON-screen menu. Then, clearing becomes possible.

Setting range: 0 Hours - 3000 Hours

0% - 100%

METHOD OF ADJUSTMENTS

<Change time (Filter Usage Time)>

This function is used when changing the filter usage time.

The action for the modification of the filter usage time should be carried out while the PJ power supply is made to stay in the Standby mode.

At the beginning (at the time of adjusting software start), the projector data are acquired and stored as the initial values.

However, if ADJ Data Write is performed with [Data], the written data are stored as the initial values.

If it is necessary to change the Filter Usage Time, check the Change Time. Then the usage time is displayed as "0 Hours." At that time, operation becomes possible with the scroll bar, the [Set] button, and the [Reset] button.

Set up the proper time with the use of the scroll bar or by directly entering the time data into the time display editor.

When the [Set] button is clicked, the filter usage time preset with the scroll bar/editor input is written in the Flash ROM and displayed on the [Set] button.

When the [Reset] button is clicked, the filter usage time is restored to the initial values (those at the time of adjusting software start) and written in the Flash ROM. Since then, the display on the [Set] button is cleared. Upon the completion of changing the filter usage time ([Set] and [Reset]), pull out the AC cord of the PJ without fail and confirm that the Power LED is unlit.

When changing the Filter Usage Time to "0 Hours," use the ON-screen menu in the serviceman mode. Then, clearing becomes possible.

Setting range: Scroll bar 0 Hours - 32000 Hours

Editor input 0 Hours - 596523 Hours

<Change time (Panel Usage Time)>

This function is used when changing the panel usage time.

The action for the modification of the panel usage time should be carried out in the Standby mode at all times.

At the beginning (at the time of adjusting software start), the projector data are acquired and stored as the initial values.

However, if ADJ Data Write is performed with [Data], the written data are stored as the initial values.

If it is necessary to change the Panel Usage Time, check the Change Time. Then the usage time is displayed as "0 Hours." At that time, operation becomes possible with the scroll bar, the [Set] button, and the [Reset] button.

Set up the proper time with the use of the scroll bar or by directly entering the time data into the time display editor.

When the [Set] button is clicked, the panel usage time preset with the scroll bar/editor input is written in the Flash ROM and displayed on the [Set] button.

When the [Reset] button is clicked, the panel usage time is restored to the initial values (those at the time of adjusting software start) and written in the Flash ROM. Since then, the display on the [Set] button is cleared. After the Panel Usage Time has been changed ([Set] and [Reset]), pull out the AC cord of the PJ without fail and confirm that the Power LED is unlit.

Upon the completion of changing the panel usage time ([Set] and [Reset]), pull out the AC cord without fail, and confirm that the Power LED is unlit.

When changing the panel usage time to "0 Hours," use the ON-screen menu to enable the clearing action in the serviceman mode.

Setting range: Scroll bar 0 Hours - 32000 Hours

Editor input 0 Hours - 596523 Hours

<Change time (Projector Usage Time)>

This function is used when changing the Projector Usage Time.

The action for the modification of the projector usage time should be carried out in the standby mode at all times.

The present projector data are acquired and displayed on the screen.

The data acquired at the beginning (at the time of adjusting software start) are stored as the initial values and displayed on the left of the arrow mark. The present values are displayed on the right of the arrow mark.

However, if ADJ Data Write is performed with [Data], the written data are stored as the initial values.

If it is necessary to change the Projector Usage Time, check the Change Time. Then, operation becomes possible with the scroll bar, the [Set] button, and the [Reset] button.

Set up the proper time with the use of the scroll bar or by directly entering the time data into the time display editor.

When the [Set] button is clicked, the projector usage time preset with the scroll bar/editor input is written in the Flash ROM and displayed on the [Set] button.

When the [Reset] button is clicked, the projector usage time is restored to the initial values (those at the time of adjusting software start) and written in the Flash ROM. Since then, the display on the [Set] button is cleared.

After the Projector Usage Time has been changed ([Set] and [Reset]), pull out the AC cord of the PJ, without fail, and confirm that the Power LED is unlit.

Setting range: Scroll bar 0 Hours - 32000 Hours

Editor input 0 Hours - 596523 Hours

<Language>

The default data setting of OSD display is carried out for the domestic (Japan) models (in Japanese) and the overseas models (in English).

For the domestic (Japan) models, select [VTxxxJ Model].

For the overseas models, select [VTxxx, G, GS Model].

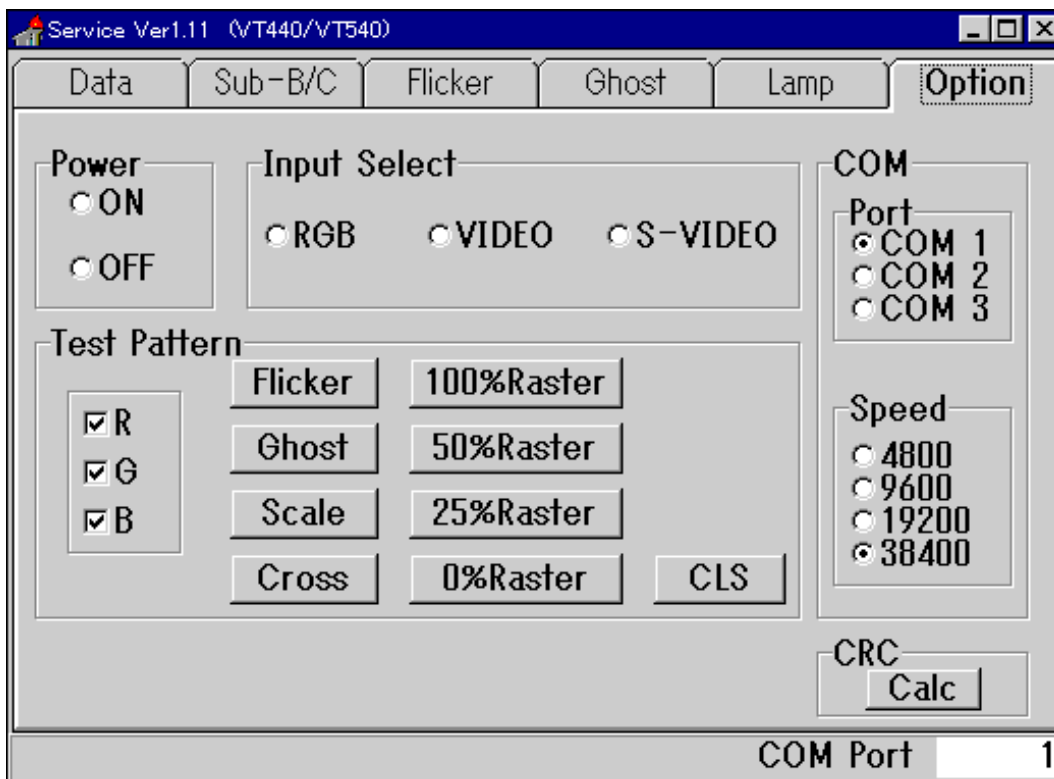
This setting is intended for the factory data only. Modification of user setting is not performed. (This is because of holding the user setting when ADJ data writing is effected with [Data].)

Note 1: In case of ADJ data Read/Write with [Data] during the replacement of the MAIN PWB, it is unnecessary to change the lamp, filter, panel, and projector usage time as well as the language since these data have already been changed to the previous usage time.

Note 2: For the [Set]/[Reset] action of the lamp, filter, panel, and projector usage time, such operation should be carried out in the standby state. In addition, these writing data cannot be written in the Flash ROM unless the AC cord of the PJ is pulled out after the completion of [Set]/[Reset].

METHOD OF ADJUSTMENTS

4-6. Option



<Power>

Used for Power ON/OFF.

When ON/OFF is selected, the power supply is turned ON and OFF.

<Input Select>

Used for input changeover.

The input line is changed over to the selected input.

<Test Pattern>

Used to display the various internal test patterns.

[Flicker]: Horizontal line signal for flicker adjustment

[Ghost]: Signal for ghost adjustment

[Scale]: 16-gradation horizontal gray scale

[Cross]: Cross hatch

[100% Raster]: All-white raster

[50% Raster]: 50% brightness raster

[25% Raster]: 25% brightness raster

[0% Raster]: All-black raster

[CLS]: Test Pattern clear (Changed over to RGB1 input)

[R]/[G]/[B]: Test Patterns appearing in checked color except for [Ghost]

<COM>

Used for the selection of PC Com Port and Baud Rate.
Communication cannot be maintained unless the Baud Rate does not coincide with the PJ setting.
The default setting for the PJ is 38400 bps.

<CRC>

The VT440/540 is provided with a protective function not to perform unwanted POWER ON when the internal data (except for the adjusting data) have been changed. The CRC function is used in the case of failure in POWER ON due to the modification of the internal data.
When this button is pressed, the data error detection table is updated so that it is available for the present data.

METHOD OF ADJUSTMENTS

5. Error messages

“RS xxxxxx”

A communication error in conjunction with the PJ.

Examine the connections and confirm whether the main power supply of the PJ is turned ON or not.

“ACK Data length error,” “R-Checksum error,” “Write error”

A communication error in conjunction with the PJ.

Confirm whether the PJ is really free from errors. Please repeat the action once more again.

“Can not open comport”

Failure in opening the serial port.

Confirm if there is any other application that uses the serial port.

“Do not open comport”

Communication is maintained under the condition that the opening of the above-mentioned serial port has failed.

Confirm if there is any other application that uses the serial port.

“File format error,” “Address error”

During data writing from a file, the data format of the designated file is wrong.

Designate the correct file.

“Data write error!! Please retry.”

Data writing has failed. Please repeat the action once more again.

“Level error,” “Adjust error”

Failure in the automatic adjustment of Sub-Brightness/Sub-Contrast.

Please repeat the action once more again.

1. Adjustment of the optical axis (Shadow adjustment)

1-1. Tools required

1-2. Preliminary arrangements before adjustments

1-3. Method of shadow adjustment in each color

Fig. 1 Flow Chart of Shadow Adjustment

Fig. 2 Objective Blocks to be Adjusted

2. Adjustment of the Polarizing Plate

2-1. Tools required

2-2. Preliminary arrangements before replacement

2-3. Replacement procedures

Fig. 3 Disassembly Diagram

METHOD OF ADJUSTMENTS

1. Adjustment of the optical axis (Shadow adjustment)

This adjustment is intended to remove color stain (defined as shadow hereafter) that may appear at the edge part of the projected screen possibly caused by a problem around the optical engine block.

Adjustments can be carried out based on the flow chart in Fig. 1 and the objective blocks to be adjusted, shown in Fig. 2.

1-1. Tools required

The following tools are required for adjustments:

<Tools to be used>

- Ball driver for FL adjustment and FL2 adjustment : Opposite side 2.0mm
(Ball driver DB-20 (2.0mm), Part No. : 92339583)
- Minus screwdriver for Mirror 1 adjustment: Blade width 5.0mm

<Jig for lamp lighting>

- Dummy load PWB (VT) (Part No.: 98999241)

1-2. Preliminary arrangements before adjustments

- 1) Remove the top cover Assy.
- 2) Remove the Main PWB Assy, the LCES or LCEX PWB Assy, and the Key PWB Assy.
- 3) Remove the Cover (suction air duct) Assy (Part No.: 24FT7461), the Suction air duct (SK) Assy (Part No.: 24FT7451), and the Optical cover (SK) (Part No.: 24F32021).
Taking out the filter Assy B in advance facilitates the removal of the optical cover (SK).
- 4) Mount the dummy load and turn on the power source circuit.
- 5) Zoom the lens to maximum image size.
- 6) Adjust the focus of the screen overall by means of the lens focus adjuster. This adjustment should be carried out in the all-white mode.

1-3. Method of shadow adjustment in each color

1-3-1. Vertical shadow adjustment for G and R (when the shadow color is magenta, cyan, or blue)

- ① Replace the FL vertical adjusting screw. (Part name: Nylock screw (HLSS4*6), Part No.: 24N04751)
Then, follow the working procedures below by the use of a ball driver (opposite side 2.0mm).
- ② Sufficiently loosen the FL vertical fixing screws (Part name: special screw (PL-HM2.5*6), Part No.: 12851741) (in 2 positions).
- ③ Loosen the FL horizontal fixing screws by one turn (Part name: special screw (PL-HM2.5*6), Part No.: 12851741) (in 2 positions).
- ④ Turn the FL vertical adjusting screw to eliminate the vertical shadow (magenta, cyan, and blue) from the projected screen.
- ⑤ Fix the FL horizontal fixing screws (in 2 positions).
The fixing torque is $3.5 \pm 0.5\text{kgf}\cdot\text{cm}$.
- ⑥ Fix the FL vertical fixing screws (in 2 positions).
The fixing torque is $3.5 \pm 0.5\text{kgf}\cdot\text{cm}$.

1-3-2. Vertical shadow adjustment for B (when the shadow color is yellow)

- ① Replace the RL2 vertical adjusting screw. (Part name: Nylock screw (HLSS4*6), Part No.: 24N04751)
Then, follow the working procedures below by the use of a ball driver (opposite side 2.0mm).
- ② Sufficiently loosen the RL2 vertical fixing screw (Part name: special screw (PL-HM2.5*6), Part No.: 12851741) (in 1 position).
- ③ Loosen the RL2 horizontal fixing screw by one turn (Part name: special screw (PL-HM2.5*6), Part No.: 12851741) (in 1 position).
- ④ Turn the RL2 vertical adjusting screw to eliminate the vertical shadow (yellow) from the projected screen.
- ⑤ Fix the RL2 horizontal fixing screw (in 1 position).
The fixing torque is $3.5 \pm 0.5\text{kgf}\cdot\text{cm}$.
- ⑥ Fix the RL2 vertical fixing screw (in 1 position).
The fixing torque is $3.5 \pm 0.5\text{kgf}\cdot\text{cm}$.

1-3-3. Horizontal shadow adjustment for G (when the shadow color is magenta or blue)

- ① Loosen the FL horizontal fixing screws by one turn (in 1 position).
- ② Move the FL to the right and left by hand, in order to eliminate the horizontal shadow (magenta and blue) from the projected screen.
- ③ Fix the FL horizontal fixing screws (in 2 positions).
The fixing torque is $3.5 \pm 0.5\text{kgf}\cdot\text{cm}$.

1-3-4. Horizontal shadow adjustment for R (when the shadow color is cyan)

- ① Loosen the Mirror 1 fixing screw (Part name: PL-CPIMS2.5*6*15BF, Part No.: 910E2511) by 0.5 turns (in 1 position).
- ② Using a minus screwdriver, turn and move the Mirror 1 to eliminate the horizontal shadow (cyan) from the projected screen.
- ③ Fix the Mirror 1 fixing screw (in 1 position).
The fixing torque is $3.5 \pm 0.5\text{kgf}\cdot\text{cm}$.

1-3-5. Horizontal shadow adjustment for B (when the shadow color is yellow)

- ① Loosen the RL2 horizontal fixing screw by one turn (in 1 position).
- ② Move the RL2 to the right and left by hand, in order to eliminate the horizontal shadow (yellow) from the projected screen.
- ③ Fix the RL2 horizontal fixing screw (in 1 position).
The fixing torque is $3.5 \pm 0.5\text{kgf}\cdot\text{cm}$.

METHOD OF ADJUSTMENTS

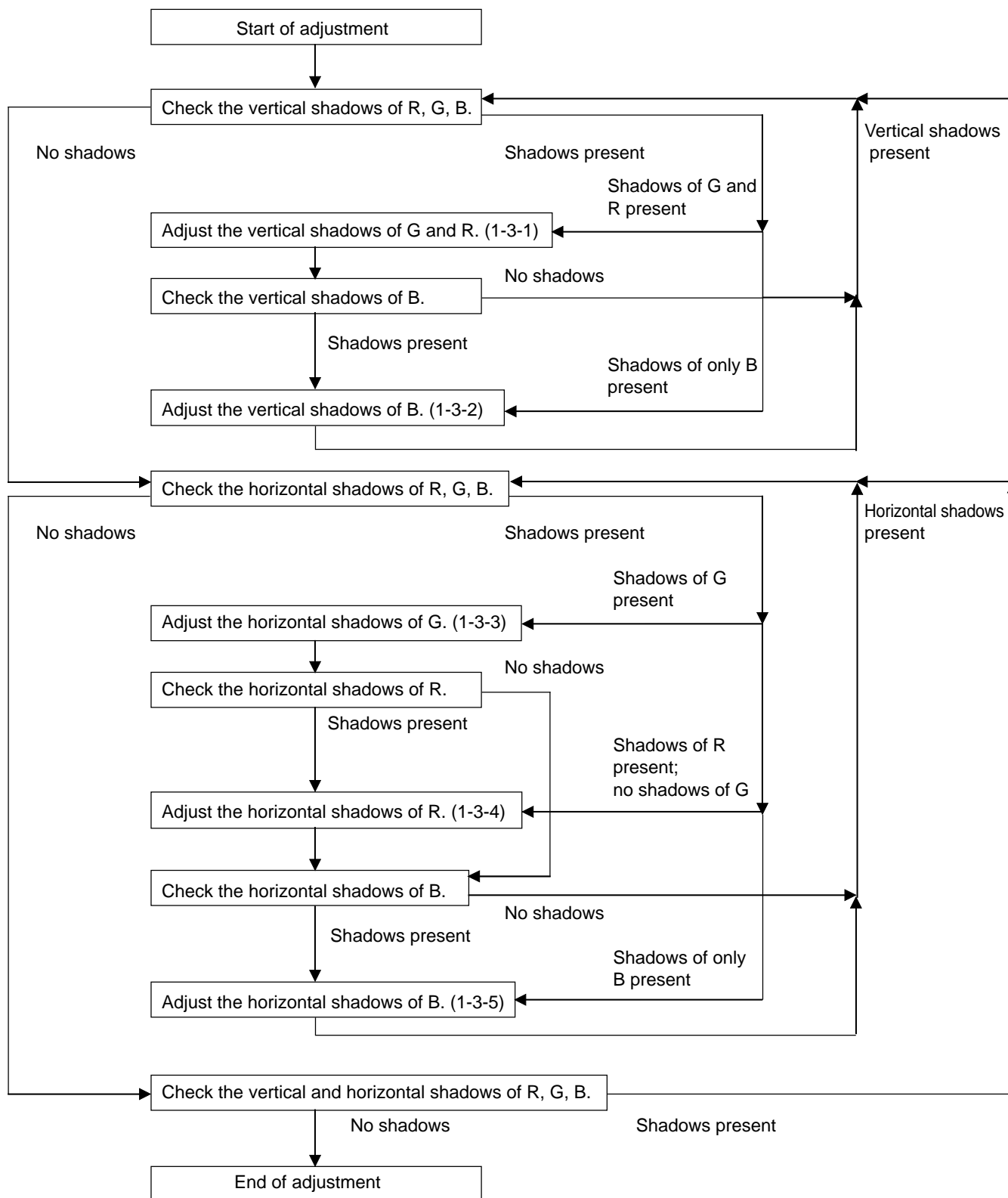


Fig. 1

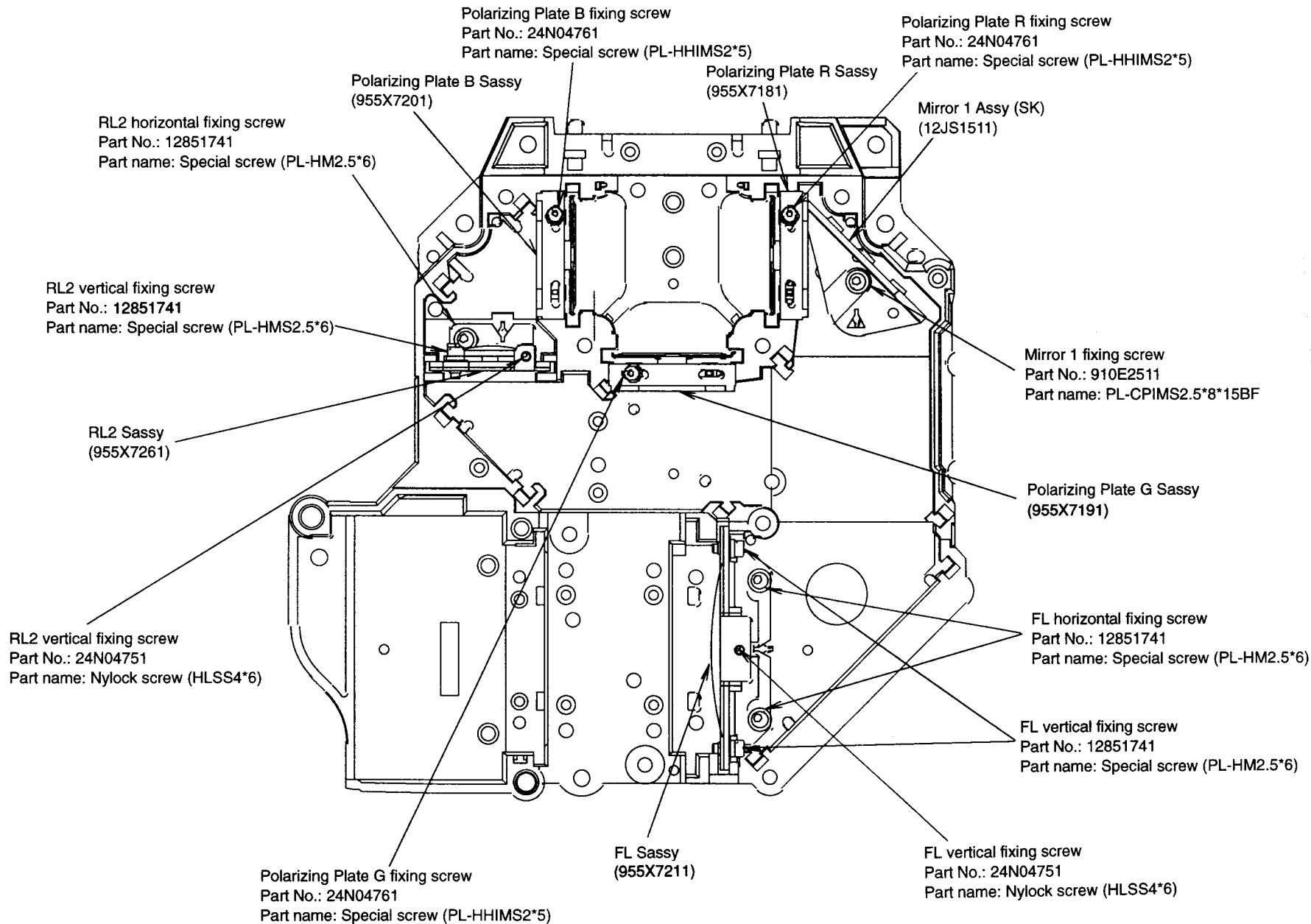


Fig. 2

METHOD OF ADJUSTMENTS

2. Adjustment of the Polarizing Plate

It is unnecessary to adjust the polarizing plate.

If the polarizing plate is damaged, however, it is necessary to replace the polarizer and the mounting metal fitting (POL).

<Replacement procedures>

2-1. Tools required

The following tools are required for this replacement:

<Tools to be used>

- Ball driver for polarizing plate fixing screw mounting and dislodgment : Opposite side 1.5mm (Ball driver DB-15 (1.5mm) Part No. : 9N000001).

2-2. Preliminary arrangements before replacement

- 1) Remove the top cover Assy.
- 2) Remove the Main PWB Assy, the LCES or LCEX PWB Assy, and the Key PWB Assy.
- 3) Remove the Cover (suction air duct) Assy (Part No.: 24FT7461), the Suction air duct (SK) Assy (Part No.: 24FT7451), and the Optical cover (SK) (Part No.: 24F32021).
Taking out the filter Assy B in advance facilitates the removal of the optical cover (SK).

2-3. Replacement procedures

- 1) Remove the polarizing plate Sassy.
Then start the work below for the polarizing plate sassy.
- 2) Take out the mounting metal fitting (POL) from the condenser lens Assy.
- 3) Mount a new polarizer on the new mounting metal fitting (POL).
If the mounting metal fitting (POL) is attached with double coated adhesive tapes (in 2 positions), the mounting of the polarizer should be done after the removal of the peel-off paper.
- 4) For the item assembled as per 3) above, mount this item on the condenser lens Assy.
In this case, the mounting metal fitting (POL) shall be fixed at the right angles with the condenser lens Assy. The fixing torque for the polarizing plate fixing screw shall be 1.5 to 2.0kgf-cm.
Note) In regard to the polarizing plate R sassy, the polarizing plate G sassy, and the polarizing plate B sassy, the mounting angles for the respective polarizing plate fixing screws differ from each other. Make sure not to confuse these angles. (See Fig. 2.)
- 5) Mount the polarizing plate sassy, each assembled as per 4) above.

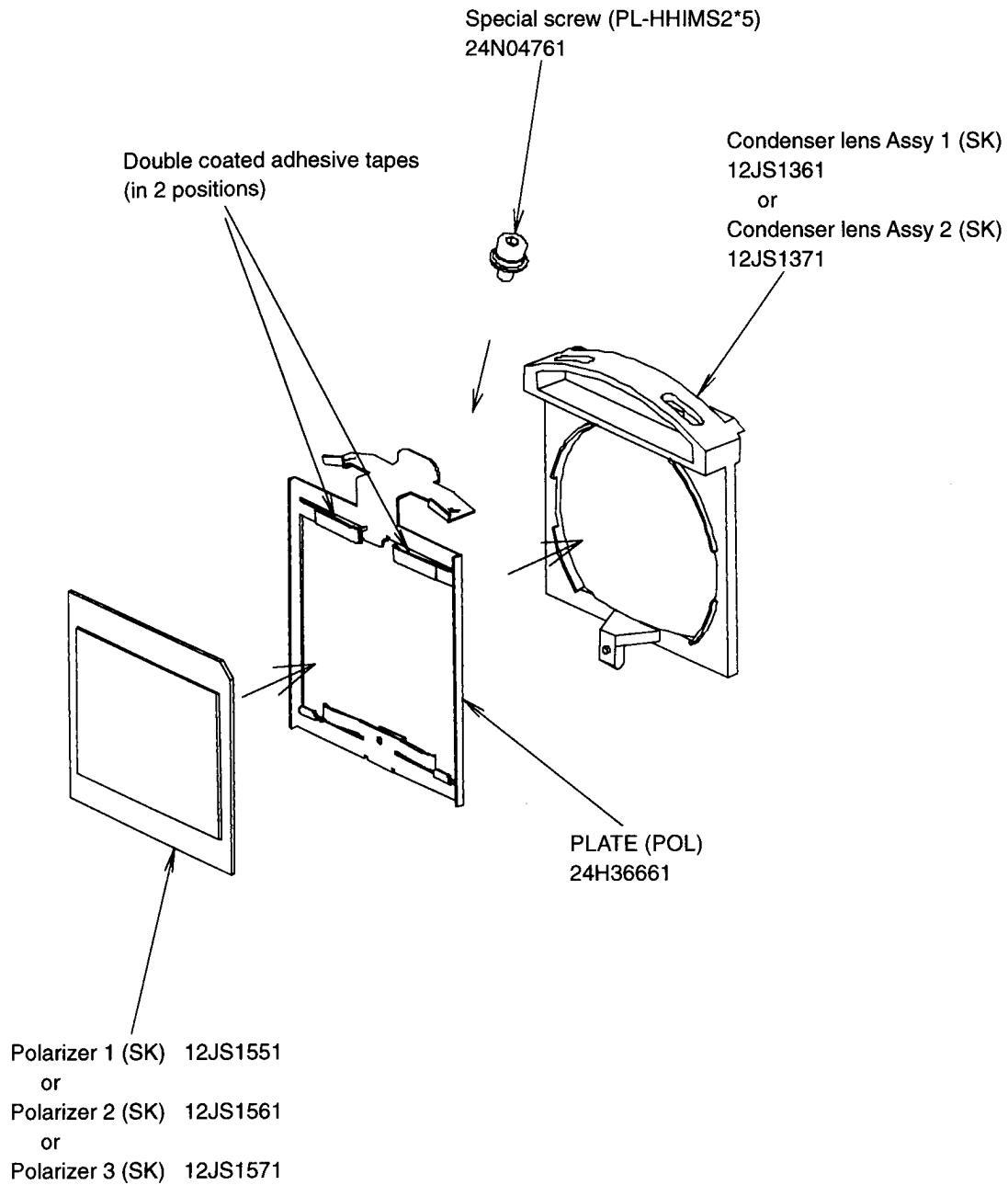


Fig. 3

METHOD OF ADJUSTMENTS

Picture Quality Decision Criteria

Judge units that satisfy the following criteria as acceptable.

(1) Pixel Mis-Convergence

The pixel Mis-Convergence of the red and blue shall be as specified below in reference to the green.

- 1 pixel or less in the center area
- 1 pixel or less in the peripheral (Edge) areas

Mis-Convergence of one quarter ($1/4$) or more from the above specifications ($1\ 1/4$ pixels in the peripheral area) may be acceptable, provided that the signal color of green registers with the pixels of the other colors and does not appear seriously poor as viewed 2 meters away.

(2) A bright pixel defect is always visible on a totally black screen in units of pixels.

Up to 6 pixel defects are permissible for a single color, or up to 18 pixel defects for all the three colors combined.

Bright spots of less than 1 pixel are acceptable unless they are frequently visible 2 meters away.

(This does not apply to bright spots concentrated or markedly visible.)

(3) Dust, smear

Any dust or smear visible in excess of 2 pixels is not permissible at the best focus point.

(2) Replace the LCD panel if bright spot defects exceed the specified level.

(3) Remove dirt and smear in excess of the permissible level.

Lens and Mirror Cleaning

(1) Lens Cleaner

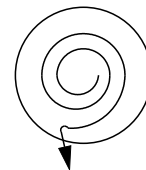
* Cleaning fluid

Use absolute alcohol.

If moisture remains on the surface without drying soon after it is cleaned, use fresh absolute alcohol.

* Cleaning method

Soak a clean cotton cloth or a sheet of commercial cleaning paper with the cleaning fluid. Hold it between your thumb and index finger, and start cleaning the lens at the center and circle the cloth or paper toward the edge, wiping off foreign matter out to the edge. Do not apply pressure on the lens surfaces while cleaning.



(2) Mirror Cleaner

Never grip the mirror hard because it is vapor-deposited. Minor stains may be removed by dissolving them with alcohol and wiping off dry.

(3) Point

Stains on both sides of the LCD unit and on the LCD side of the field lens degrade the picture. Keep them clean.

CIRCUIT DESCRIPTION

LC driver block

1. Circuit configuration

1-1 PWB configuration

- MAIN PWB
Used for the phase decode processing of the RGB video signals, the level adjustment, and the generation of various timing signals.
- Used for the level shift processing of the panel drive timing signals for the LCES PWB (SVGA) and the LCEX PWB (XGA), and also for the generation of panel auxiliary signals.
- The above-mentioned two types of PWBs are connected through the FFC (Flexible Flat Cable) cables of 40 pins (POSV) and 30 pins (POST).

2. Output signal

2-1 Signal level

- RGB video signal : 10.0Vp-p (2.0V/12.0V)
- Panel driving signal : 15.5Vp-p (0.0V/15.5V)
- Panel aux. signal : 5.0Vp-p (2.5V/7.5V)

2-2 Driver panel

- SVGA : Model 0.9 LC panel (P09SG210) by EPSON
- XGA : Model 0.9 LC panel (P09XG210) by EPSON

3. Outline hardware description

3-1 RGB video signal

This signal output is generated from the signal processing circuit G/A, UNI2 (IC3601), on the main board (MAIN PWB). Each 10-bit R,G,B digital video signal (3.3Vp-p) is processed for 6/12 (SVGA/XGA) phase decode processing by the phase decoding ICs (IC3701, 3702, 3703, 3704, 3705, 3706), and also for the level adjustment (10.0Vp-p (2.0V/12.0V)) by the serial D/A (IC3711). Since then, each signal is fed to the LC panel through the LC driver boards (LCES PWB/ LCEX PWB).

3-2 Panel driving signal

This signal output is generated from the signal processing circuit G/A, YAMAG (IC3701), on the same main board (MAIN PWB). The panel drive timing signal (3.3Vp-p) is processed for level shifting to the level (15.5Vp-p) required to drive the shift register in the LC panel by the aid of the level shift ICs (IC5201, 5202, 5203/ IC6201, 6202, 6203) located on the LC driver boards (LCES PWB/ LCEX PWB). Since then, the processed signal is fed to the LC panel.

3-3 Panel auxiliary signal

This signal output is generated from the LC panel signal processing circuit G/A, YAMAG (IC3701), on the same main board (MAIN PWB). The panel auxiliary signal (3.3Vp-p) is processed for level shifting to the level (5.0Vp-p, (2.5V/7.5V)) required to pre-charge the video line in the LC panel by the aid of the level shift ICs (IC5201, 5202, 5203/ IC6201, 6202, 6203) located on the LC driver boards (LCES PWB/ LCEX PWB). Since then, the processed signal is fed to the LC panel via the diamond buffer of the complex transistor group.

CIRCUIT DESCRIPTION

3-4 Interface between MAIN and LCES, LCEX

P0SV		P0ST	
Pin No.	Signal name	Pin No.	Signal name
1	A+17.5V	1	DGND
2	A+17.5V	2	DY
3	VIDR/2	3	CLY
4	VIDR/4	4	NRG
5	VIDR/6	5	NRC
6	VIDR/8	6	D+5V
7	VIDR/10	7	DGND
8	VIDR/12	8	DX
9	VIDR/1	9	CLX
10	VIDR/3	10	ENB1R
11	VIDR/5	11	ENB2R
12	VIDR/7	12	DGND
13	VIDR/9	13	ENB1G
14	VIDR/11	14	ENB2G
15	AGND	15	ENB1B
16	VIDG/2	16	ENB2B
17	VIDG/4	17	D+5V
18	VIDG/6	18	DGND
19	VIDG/8	19	SHENB
20	VIDG/10	20	SHCLP
21	VIDG/12	21	ENBY1
22	VIDG/1	22	ENBY2
23	VIDG/3	23	DGND
24	VIDG/5	24	(NC)
25	VIDG/7	25	DIRY
26	VIDG/9	26	DIRX
27	VIDG/11	27	SCLK
28	AGND	28	D+5V
29	VIDB/2	29	ADATA
30	VIDB/4	30	DGND
31	VIDB/6		
32	VIDB/8		
33	VIDB/10		
34	VIDB/12		
35	VIDB/1		
36	VIDB/3		
37	VIDB/5		
38	VIDB/7		
39	VIDB/9		
40	VIDB/11		

3-5 List of I²C control ICs (Output block)

Item name	Circuit symbol	Function	Slave address	Remarks
M62398FP	IC5103/IC6103	Serial D/A	92H	Output video level adjustment, flicker adjustment

3-6 Interface with the LC panel

SVGA panel		XGA panel	
PORES/GES/BES		POREX/GEX/BEX	
Pin No.	Signal name	Pin No.	Signal name
1	DY	1	DY
2	CLY	2	CLY
3	CLY	3	CLY
4	VDDY	4	NRG
5	NRG	5	VDDY
6	DIRY	6	VDDX
7	LCCOM	7	CLX
8	ENB1	8	CLX
9	ENB2	9	DX
10	DIRX	10	ENB2
11	CLX	11	ENB1
12	CLX	12	DIRX
13	DX	13	VSSX
14	VDDX	14	VID1
15	NC	15	VID2
16	NC	16	VID3
17	VSSX	17	VID4
18	VID1	18	VID5
19	VID2	19	VID6
20	VID3	20	VID7
21	VID4	21	VID8
22	VID5	22	VID9
23	VID6	23	VID10
24	VSSX	24	VID11
25	LCCOM	25	VID12
26	NRS1	26	NRS
27	NRS2	27	LCCOM
28	VSSY	28	DY
29	VSSY	29	DIRY
30	DY	30	VSSY

CIRCUIT DESCRIPTION

I/O Block, VIDEO Processor Block, SYNC Block

1. I/O terminals

1-1 Video input

- RCA PHONO terminal for composite video signal input (1 system)
- S VIDEO input terminal (1 system)

1-2 RGB input (Application to the component input through the conversion cable)

- Mini D-SUB 15-pin (1 system) (plug & play applicable)

1-3 RGB output

- Mini D-SUB 15-pin (1 system)

1-4 Audio I/O

- Mini jack for audio I/O (For both input and output; used in common for respective video signals)
- RCA PHONO terminal for audio I/O (For both input and output; used in common for respective video signals)

1-5 PC CONTROL terminal

- Mini DIN-8P (1 system)
- External control applicable

2. Input signals

2-1 Signal level

- Composite video : 1.0Vp-p/75 Ω
- S VIDEO input : 1.0Vp-p/75 Ω (Signal Y), 0.28Vp-p/75 Ω (Signal C burst level)
- RGB signal : 0.7Vp-p/75 Ω
- Sync signal : TTL level (positive/negative)/ 1k Ω
- Component signal : 1.0Vp-p/75 Ω (Signal Y), 0.7Vp-p/75 Ω (Signal Cb/Cr, Pb/Pr)
- Audio signal : 0.5Vrms/47k Ω

2-2 Color system applicable to video input

- NTSC3.58
- NTSC4.43
- PAL
- PAL-60
- SECAM
- B/W60, B/W50 (B/W: Black-and-white signal without burst)

2-3 Scanning frequency applicable to RGB signals

- Horizontal: 15 to 100kHz
- Vertical: 50 to 117 Hz

2-4 Component signals

- Component video Y/Cb/Cr (DVD output signal)
- HDTV 720p signal, 1080i signal, 480p signal

3. I/O PWB block**3-1 RGB OUT circuit**

The RGB video signal input entered in Pin 15 of the Mini D-SUB is amplified at the 6dB amplifier (IC4000; AD8013AR) so that it attains 1Vp-p at the time of 75Ω termination.

The H Sync output is generated through the buffer circuit (Q4000 to Q4002).

The V Sync output is in the THROUGH OUT.

3-2 Plug & Play

The V Sync terminal of Pin 15 of the Mini D-SUB and the serial terminal of Pins 12 and 15 are connected to the Plug & Play IC (IC4001: 12LC21T) so that the projector can be detected at the PC.

4. MAIN PWB block**4-1 Video signal processor block**

The composite video signal passes through the 6dB amplifier (IC1100; MM1031XM) and the low-pass filter (FL1113), and enters Pin 41 of the video decode IC (IC1104: CXA2139S) at 1Vp-p. The NTSC and PAL signals are led to the IC's internal SW and 6dB amplifier, and the resultant output is fed to Pin 6. The signals are further sent to the 3-line Y/C separator circuit (IC1101: TC9090AF). The signals from Y/C separation are returned again to the video decode IC.

The composite SECAM signal and the B/W signal do not pass through the 3-line Y/C separator circuit. The composite SECAM signal is processed for Y/C separation by the BPF & TRAP that is incorporated in the video decode IC.

The SF video input signal is directly entered in the video decode IC.

The result of discrimination for the color system, vertical frequency, etc., to be conducted at the video decode IC is supervised by the CPU through the I2C bus. According to this result, the CPU controls the 3-line Y/C separator IC and the video decoder at the appropriate setting values through the I2C bus.

In the video decode IC, the sharpness control and the compensation for the phase in conjunction with the chroma output signal are carried out for Signal Y. The signal decoded (decoding angle = 90°) to the Y/chroma in the video decode IC is entered in the A/D converter IC (IC3401: CXA3506R).

The sync signal contained in the Y signal selected by the switch of the video decode IC is sent as the H-V timing pulses to the sync signal changeover block (IC3301: YAMAG) at the next stage, through the horizontal and vertical sync separator circuit in the IC, the copy guard signal mask circuit, the AFC circuit, IC's external mono-multi circuit, etc.

4-2 Sync signal processor block (Mini D-SUB 15-pin input)

The sync signal input entered in Pin 15 of the Mini D-SUB is sent to the amplitude limiter circuit. In this amplitude limiter circuit, the H/V sync signal limited to 0.6Vp-p is applied to the sync signal processor IC (IC1006: M52347FP).

In order to cope with the sync attenuation signals, the Sync on Green signal input is entered in the sync signal processor IC via the Sync chip clamp circuit and the AMP circuit. The DVD signal only is entered in Pin 43 of the video decode IC via IC1001, so that sync processing is conducted in the same manner as for the video signals.

In the sync signal processor IC, the following processing is carried out:

- Discrimination of the presence of H/V Sync
- Discrimination of the polarity of H/V Sync
- Sync separation for the composite Sync
- Sync separation for the G-Sync
- Generation of clamp pulses
- H/V Sync output

The result of discrimination is read out at the serial D/A (IC1003: CXA1315) and sent to the CPU. The H/V Sync output is sent to the Sync signal changeover block (IC3301: YAMAG). After the completion of output synchronization and selection for the video decode IC, the H sync signal is sent to the A/D converter IC (IC3401: CXA3506R) and the V sync signal is sent to the signal processor IC (IC3502: Endeavor).

CIRCUIT DESCRIPTION

4-3 RGB/Component signal processor and A/D converter block

The video signal input entered in Pin 15 of the Mini D-SUB is fed to the A/D converter IC (IC3401: CXA3506R) through the buffer circuit. In the case of a component signal, only the chroma signals (Pb, Pr, Cb, Cr) are entered after their levels have been lowered at the attenuator of -6B.

In the A/D converter IC, the video signal from the video decode IC or the video signal at Pin 15 of the Mini D-SUB is selected. After the contrast has been adjusted at the built-in analog amplifier, this signal is processed for A/D conversion into the 8-bit digital signal.

The 8-bit digital signal is entered in the signal processor IC (IC3502: Endeavor) for signal processing.

The signal to be used to clamp the video signal (clamp pulses) is the clamp pulse signal from the sync signal processor IC (IC1006: M5234FP) or the one from the signal processor IC (IC3502: Endeavor) chosen by the changeover action at the signal changeover block (IC3301: YAMAG). This signal is then entered in the A/D converter IC (IC3401: CXA3506R) for signal clamping. Generally for the VIDEO and HD signals, the clamp pulses of the signal processor IC are used. For the RGB signals, the clamp pulses of the sync signal processor IC are generally used.

4-4 Audio signal processing

The audio signal passes through the buffer circuit of the MAIN PWB, and is then fed to the output AMP IC (IC4100: AN7512SH) that is incorporated in the VOLUME control of the KEY PWB.

The VOLUME control is effected at the serial D/A (IC1003: CXA1315). The amplified audio signal is output (MAX: 1W) to the speaker system (8W x 1).

4-5 Interface with I/O PWB and MAIN PWB

Pin No.	Signal name		Pin No.	Signal name
1	DGND		16	S-C
2	EXT3		17	AGND
3	EXT2		18	S-Y
4	EXT1		19	AGND
5	DGND		20	CV
6	RXD		21	AGND
7	DGND		22	V
8	TXD		23	AGND
9	DGND		24	H
10	VCCS+5V		25	AGND
11	VCCA+9R1		26	B
12	VCCA+9R1		27	AGND
13	AGND		28	G
14	AUDIO		29	AGND
15	AGND		30	R

4-6 List of I²C control ICs

Item name	Circuit symbol	Function	Slave address	Remarks
CXA2139S	IC1104	Video decode	8AH/8BH	
TC9090AF	IC1101	Y/C separation	B2H	
CXA1315M	IC1003	Serial D/A	40H/41H	
CXA3506R	IC3401	A/D converter	9AH	

Signal Processor Block

1. PLL block

The PLL block is incorporated in the A/D converter (IC3401). In the PLL block, the dot clock signal is generated in synchronization with the horizontal sync signal input. This clock signal is fed to the ENDEAVOR (IC3502).

2. ENDEAVOR (IC3502)

The ENDEAVOR (IC3502) is an LSI used as the center of video signal processing. The video signal (8 bits x 3) digitized at the A/D converter is entered in the ENDEAVOR, where frequency conversion, definition conversion, ON-screen signal mixing, V-T compensation, etc., are carried out. The resultant signal is output to the G/A, UNI2 (IC3601), for the color irregularity compensation.

These ENDEAVOR functions are used with the aid of the frame memory composed of the built-in SDRAM.

3. CPU block

The CPU block is composed of the CPU (IC3205), SRAM x 4 (IC3201-3204), 4M FLASH ROM (IC3207), 8M FLASH ROM x 2 (IC3208-3209), and the YAMAG (IC3301). This block is used for various projector controls.

The booting programs and various data are accommodated in the 4M FLASH ROM, while the main programs are accommodated in the 8M FLASH ROM.

4. YAMAG (IC3301)

The YAMAG (IC3301) incorporates the various functions as specified below.

Generation of the address decode and chip select signals

Frequency measurement and interlace discrimination circuit

I/O port (3 x 8 bits)

Beat cancel circuit (Frequency divider circuit, phase comparison, random generation)

2 → 1 sync signal and clamp pulse changeover and sync width variable circuit

Fan rpm control circuit (2 systems of PWM)

Remote control decode, key, external control mixing, and interrupt generator circuit

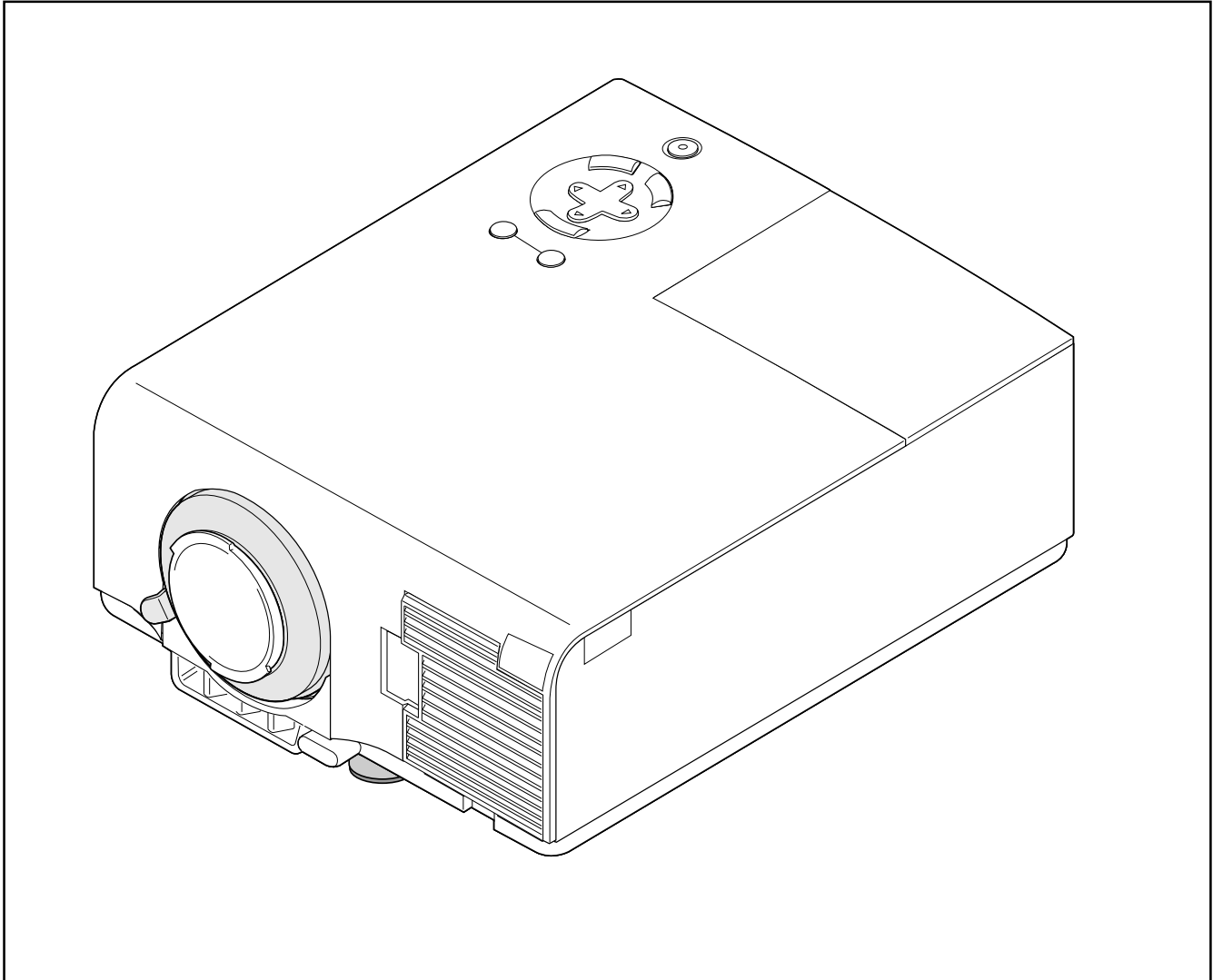
Timing signal generator circuit for the LC panel

5. UNI2 (IC3601)

The UNI2 is the color irregularity compensation IC for the 10-bit input - 10-bit output. The color irregularity compensation data of $25 \times 20 = 500$ points are accommodated in the screen. By these compensation data and linear interpolation, compensation for the color irregularity is carried out in the screen.

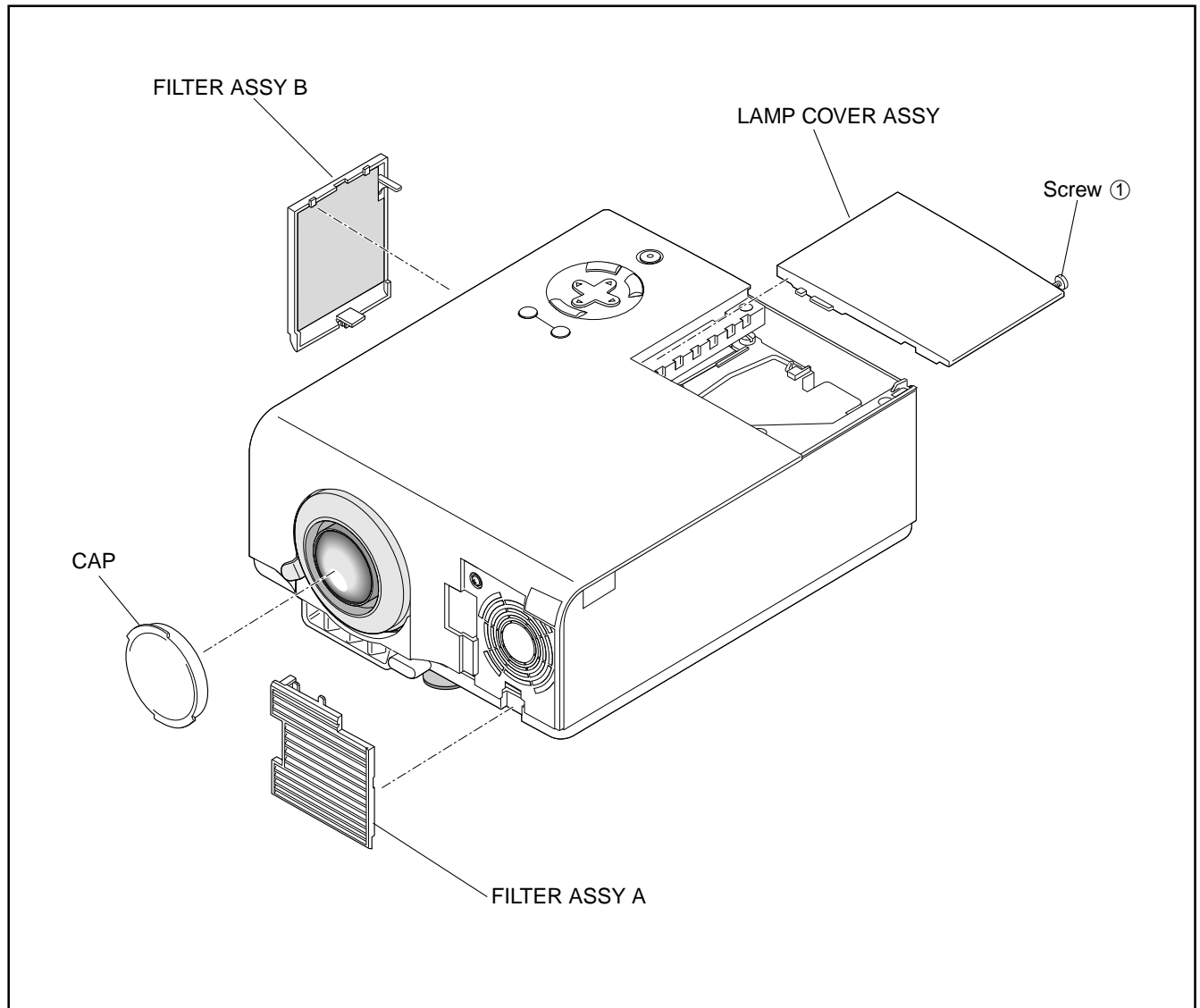
METHOD OF DISASSEMBLY

1. Main unit diagonal view



2. FILTER ASSY A/FILTER ASSY B/LAMP COVER ASSY/CAP

- (1) Loosen the one screw ①, and take out the LAMP COVER ASSY.
- (2) Take out the FILTER ASSY A/FILTER ASSY B/ and the CAP.



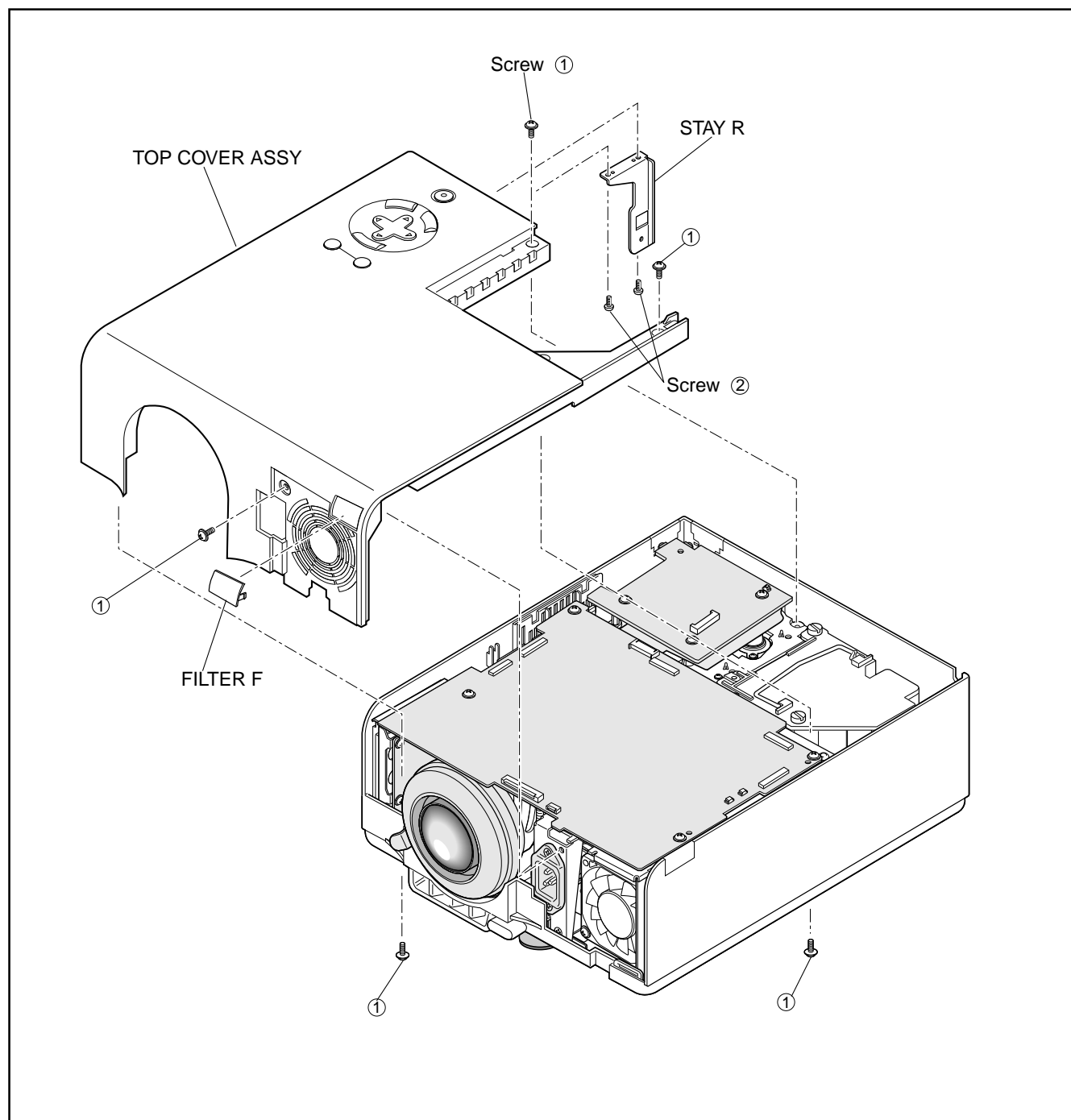
METHOD OF DISASSEMBLY

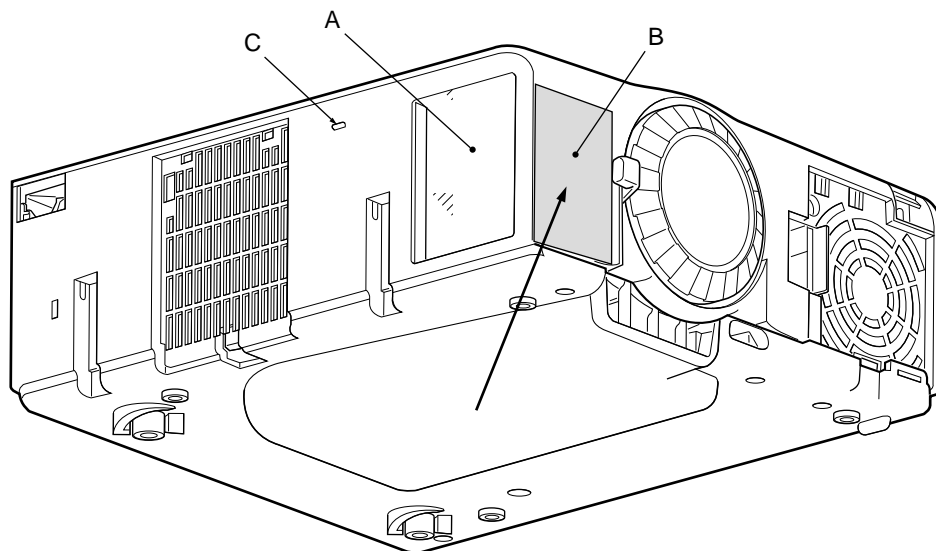
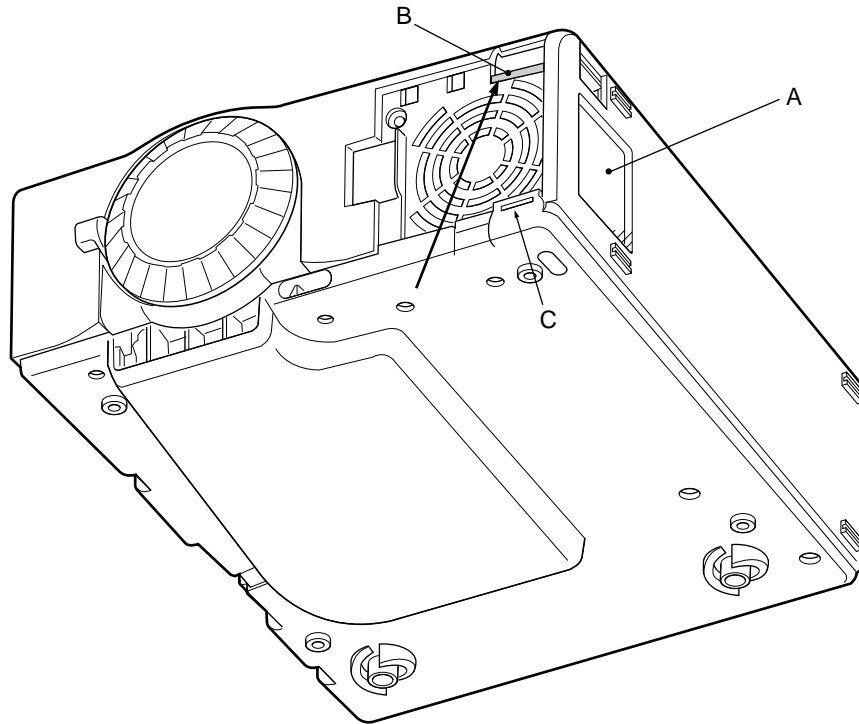
3. TOP COVER ASSY/STAY R/FILTER F

- (1) Remove the five screws ①, and take out the TOP COVER ASSY.
- (2) Remove the two screws ②, and take out the STAY R.

- (3) Remove the FILTER F.

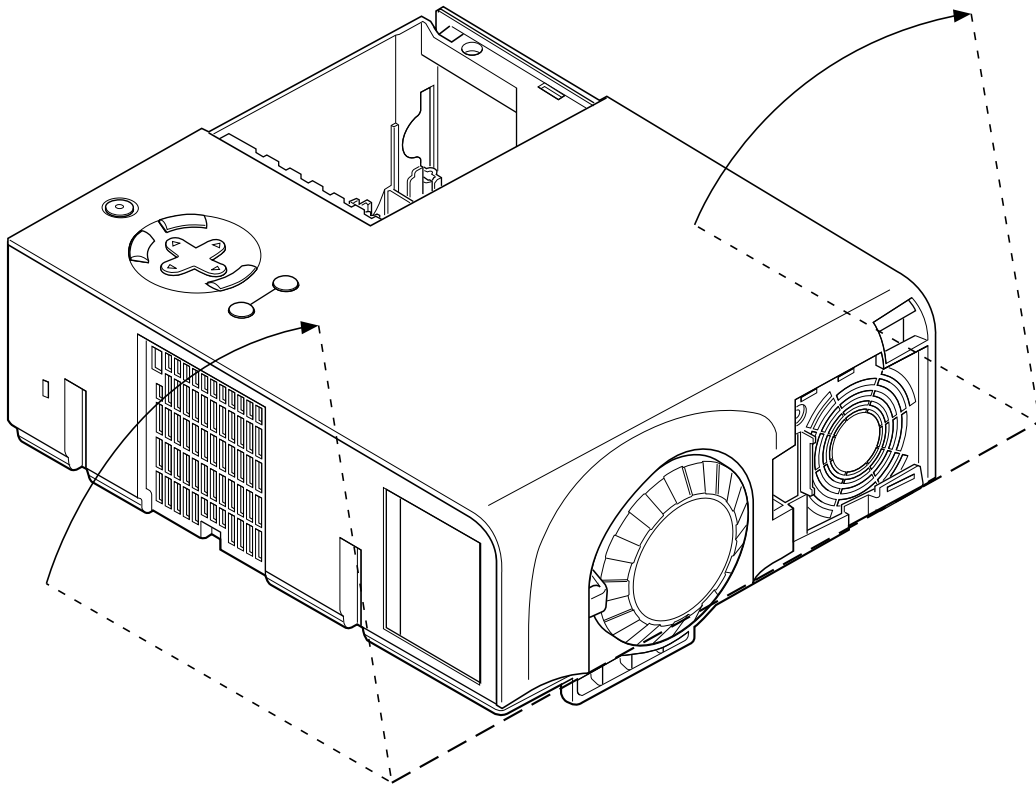
Note) Refer to P7-4 and P7-5.





- 1: Hold both sides of the set with both hands at Part A. Apply a force to Part B in the direction of the arrow (diagonally toward the top of the set). In this case, the force being applied should be as low as possible in order not to damage the switch.
- 2: Confirm that the claw of C (each side surface) has been disengaged.

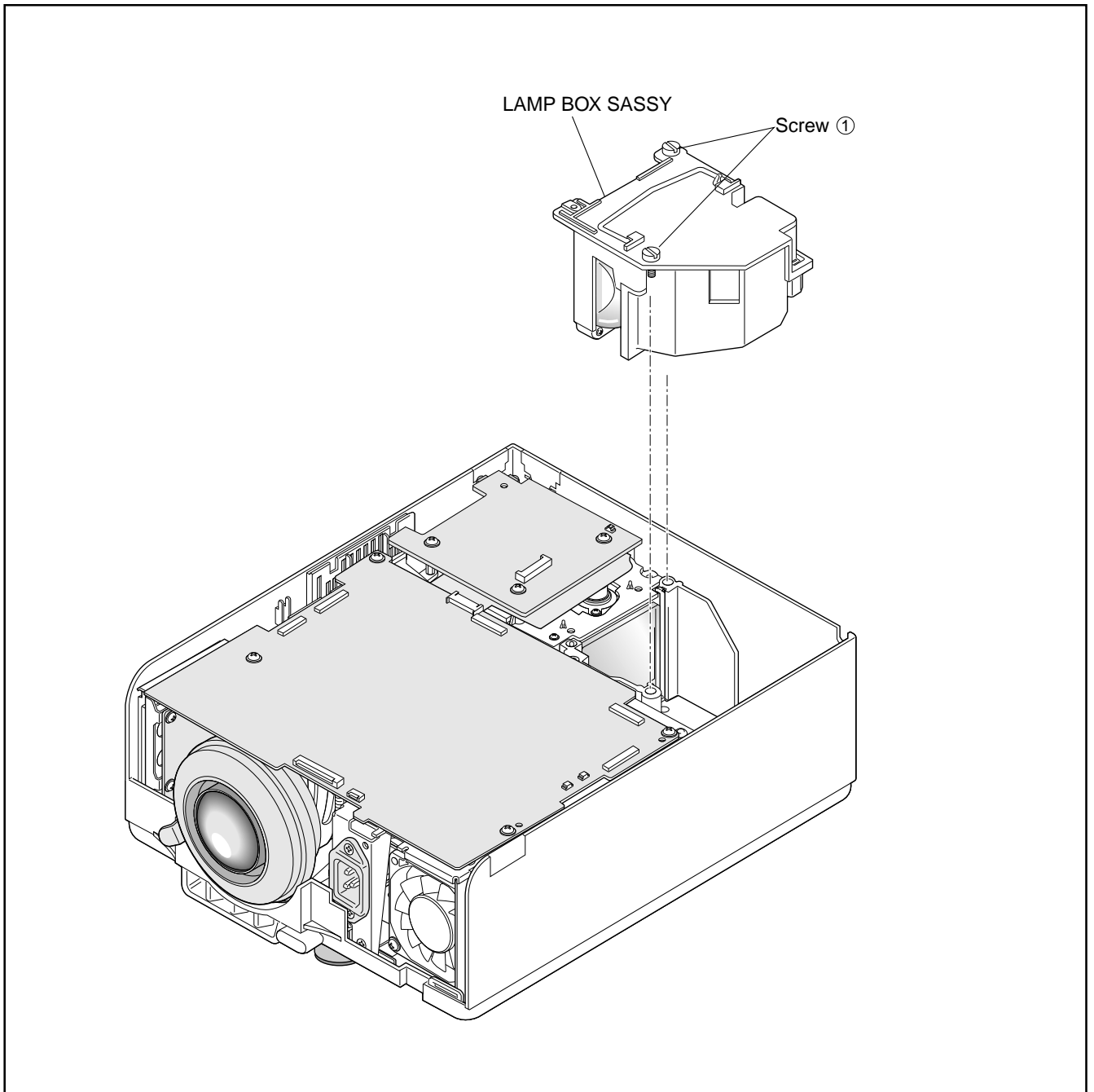
METHOD OF DISASSEMBLY



- 3: Remove the top cover in the direction of the arrow. At that time, this action should be done in the direction of rotation, with the front side of the cabinet regarded as a fulcrum. When mounting the top cover, the procedures should be reverse as those for the removal.

4. LAMP BOX SASSY

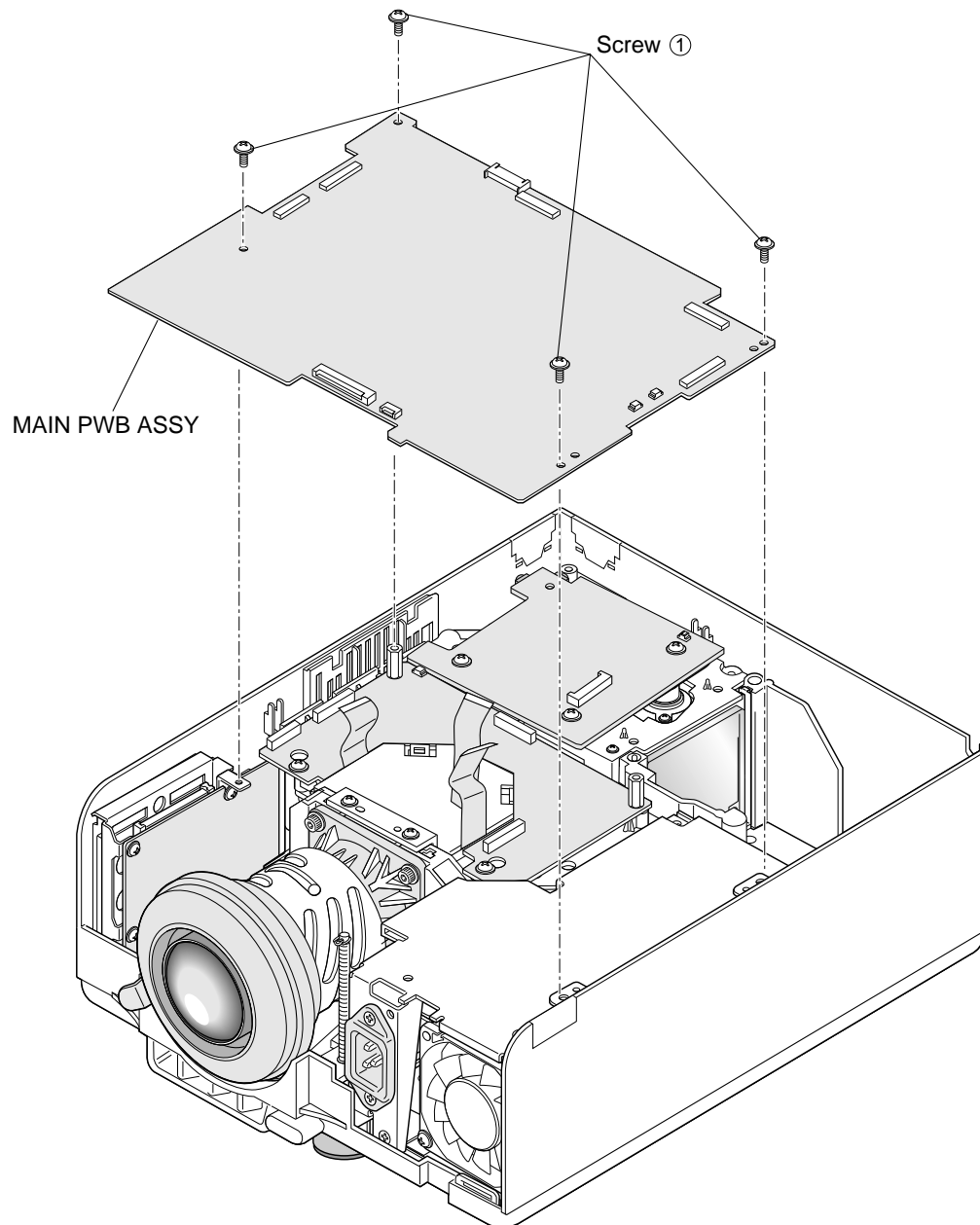
- (1) Loosen the two screws ①, and take out the LAMP BOX SASSY.



METHOD OF DISASSEMBLY

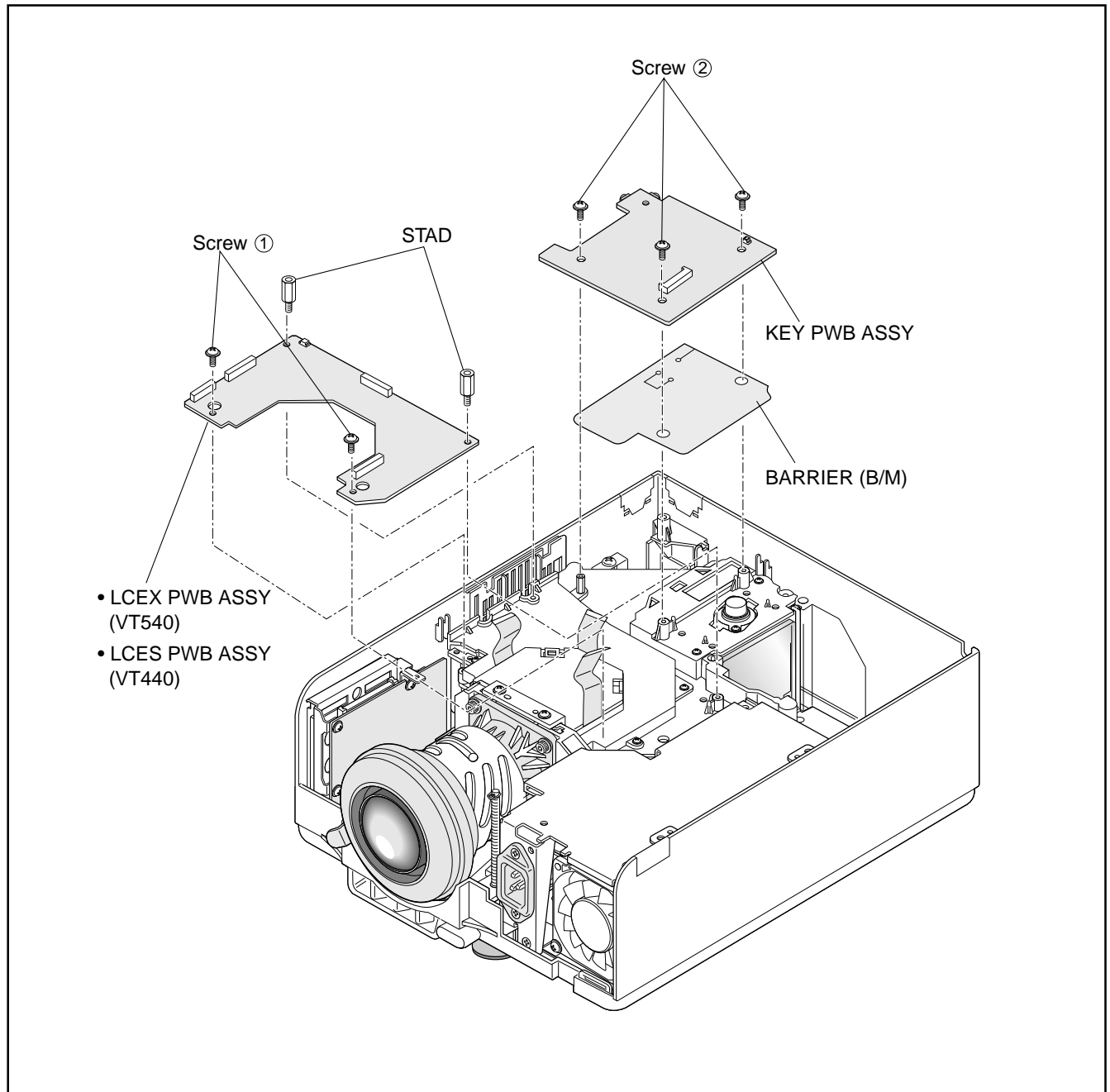
5. MAIN PWB ASSY

- (1) Remove the four screws ①, and take out the MAIN PWB ASSY.



6. LCEX PWB ASSY (VT540 System)/LCES PWB ASSY (VT440 System)/KEY PWB ASSY/ BARRIER (B/M)

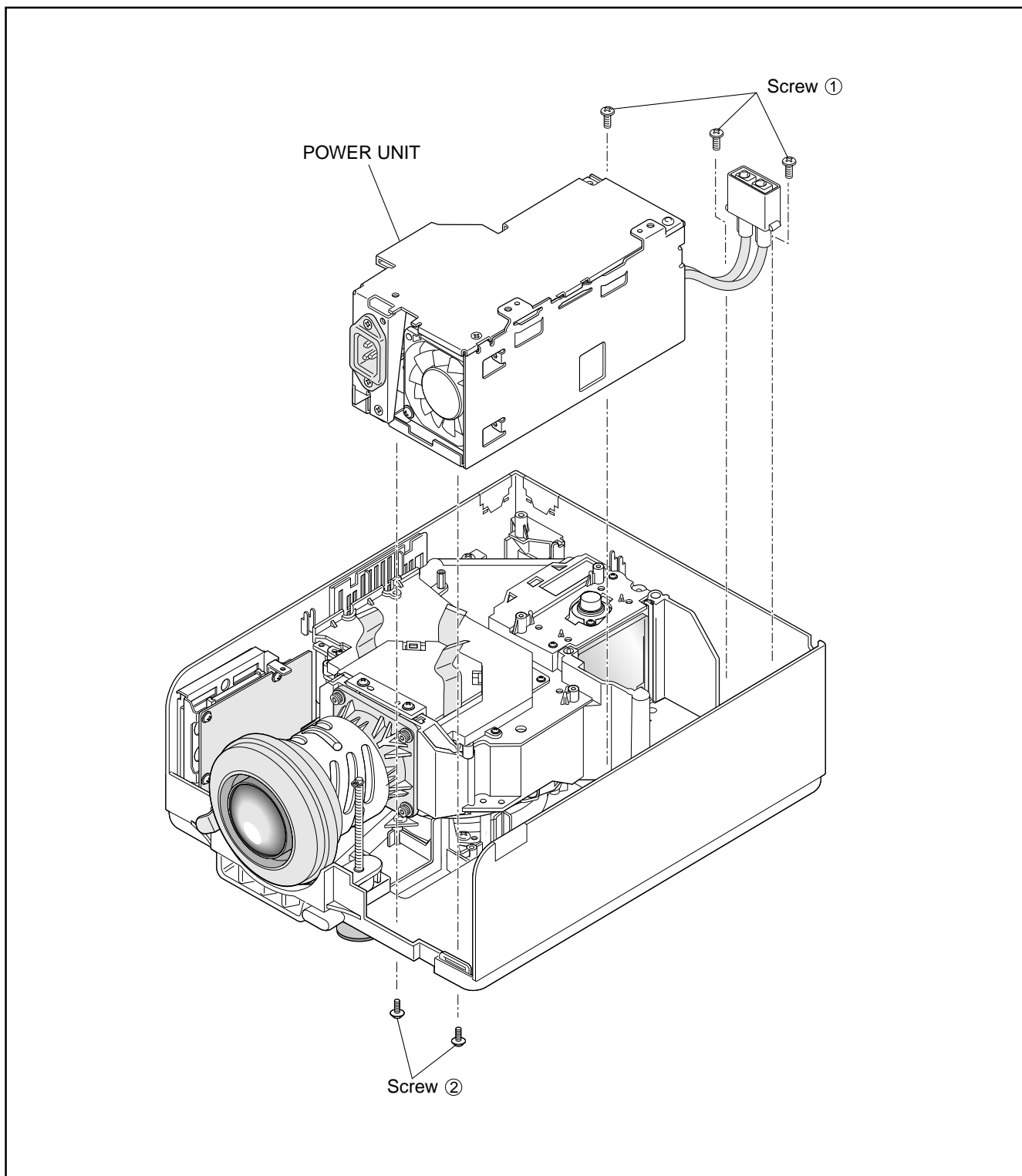
- (1) Remove the two screws ① and two studs, and take out the LCEX PWB ASSY (VT540 System) and the LCES PWB ASSY (VT440 System).
- (2) Remove the three screws ②, and take out the KEY PWB ASSY and the BARRIER (B/M).



METHOD OF DISASSEMBLY

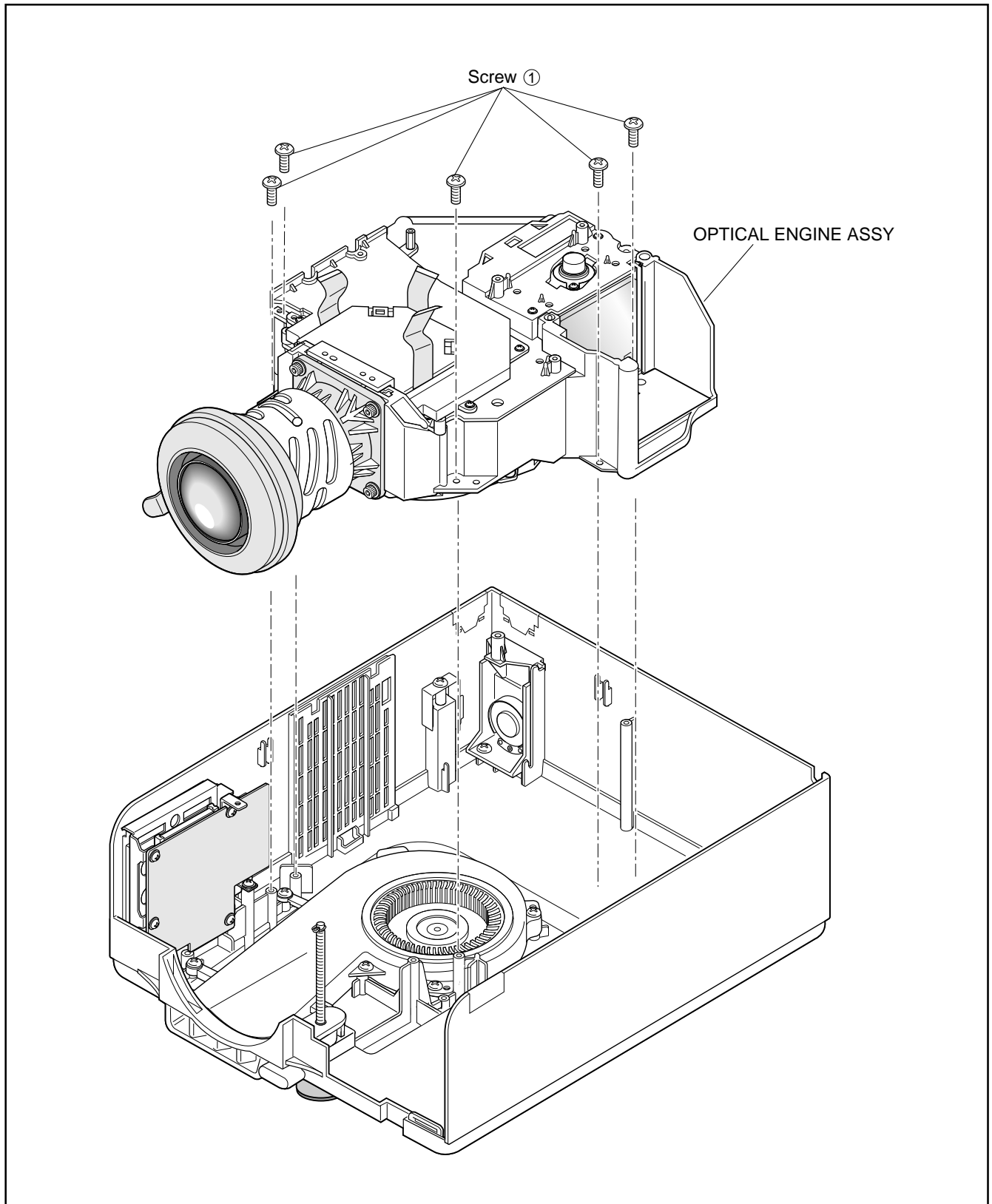
7. POWER UNIT

- (1) Remove the three screws ① and the two screws ②, and take out the POWER UNIT.



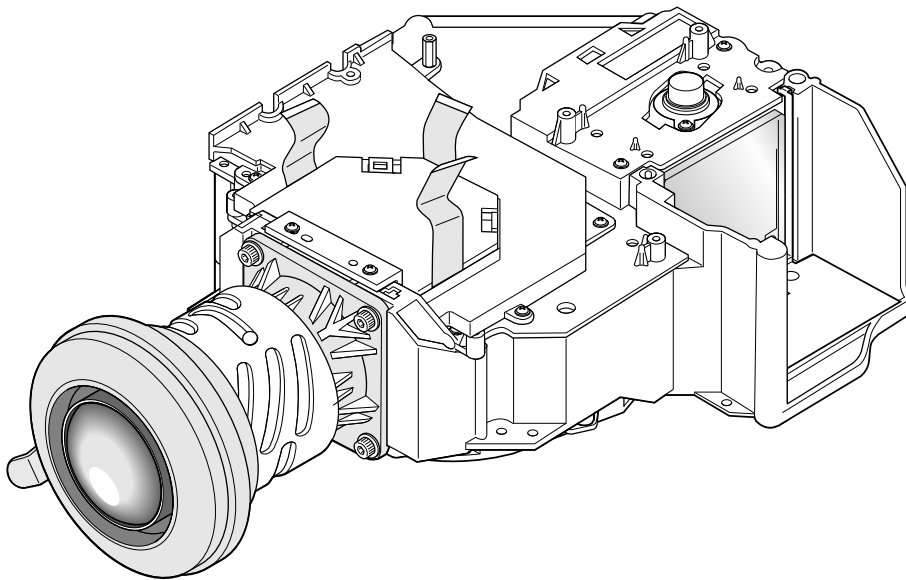
8. OPTICAL ENGINE ASSY

- (1) Remove the five screws ①, and take out the OPTICAL ENGINE ASSY.



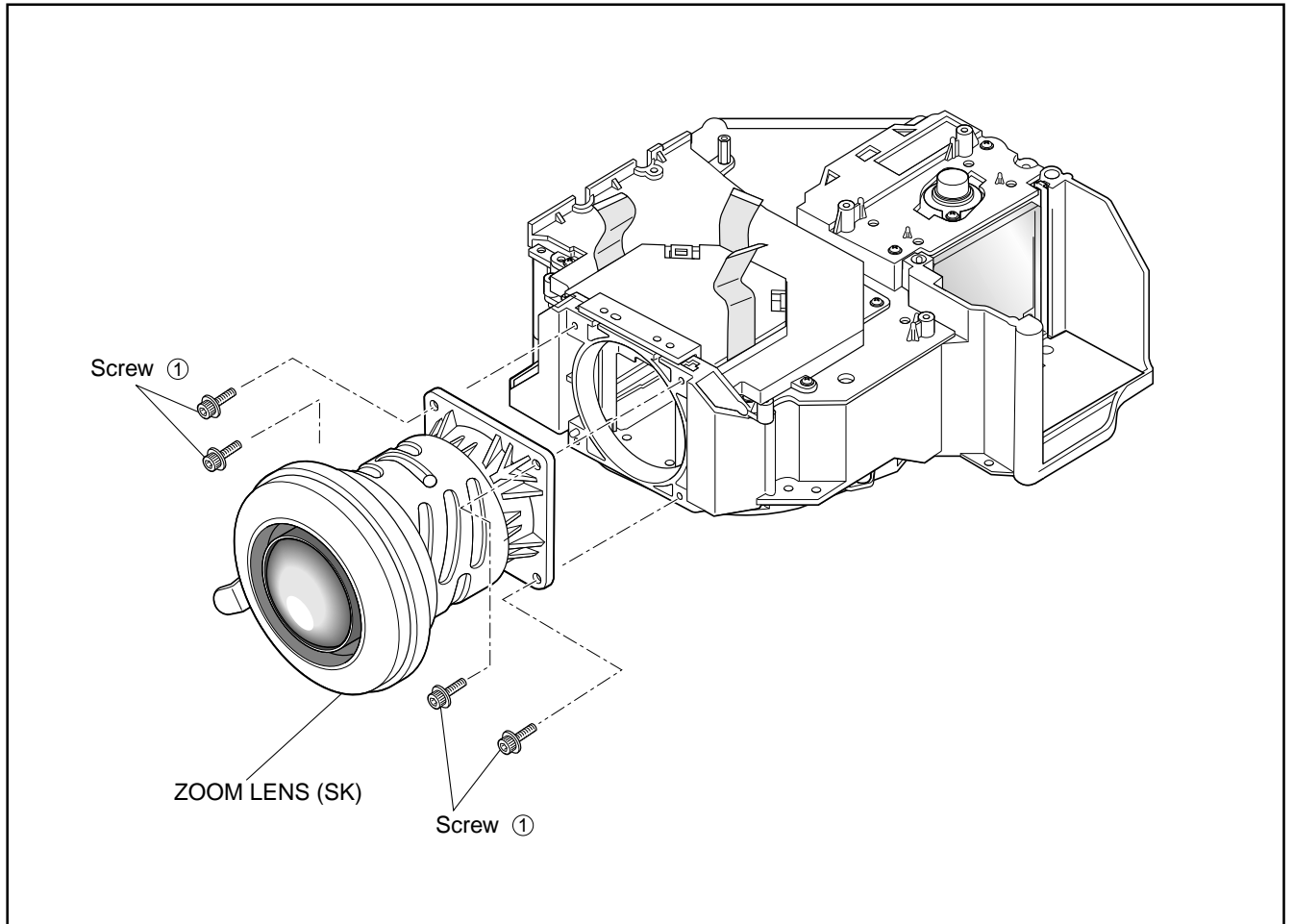
METHOD OF DISASSEMBLY

9. OPTICAL ENGINE ASSY



10. ZOOM LENS (SK)

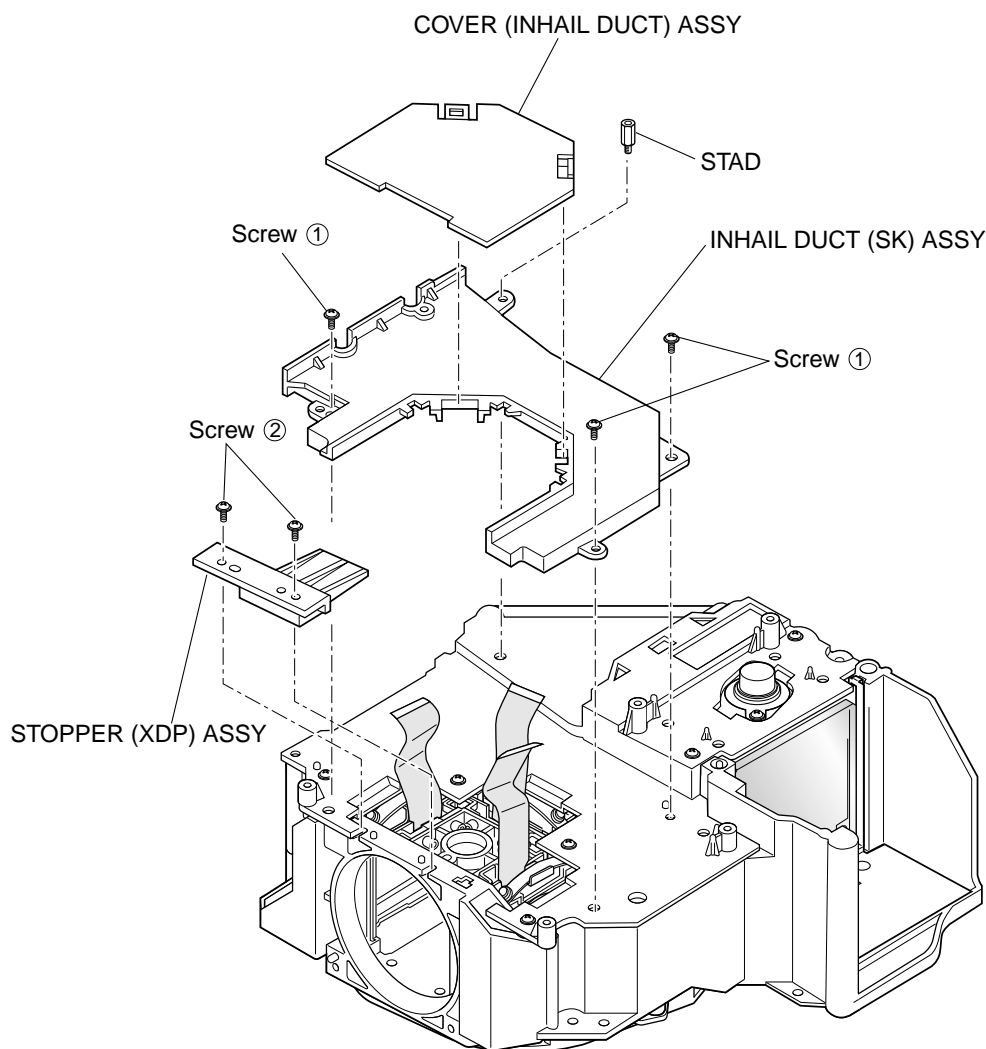
- (1) Remove the four screws ①, and take out the ZOOM LENS (SK).



METHOD OF DISASSEMBLY

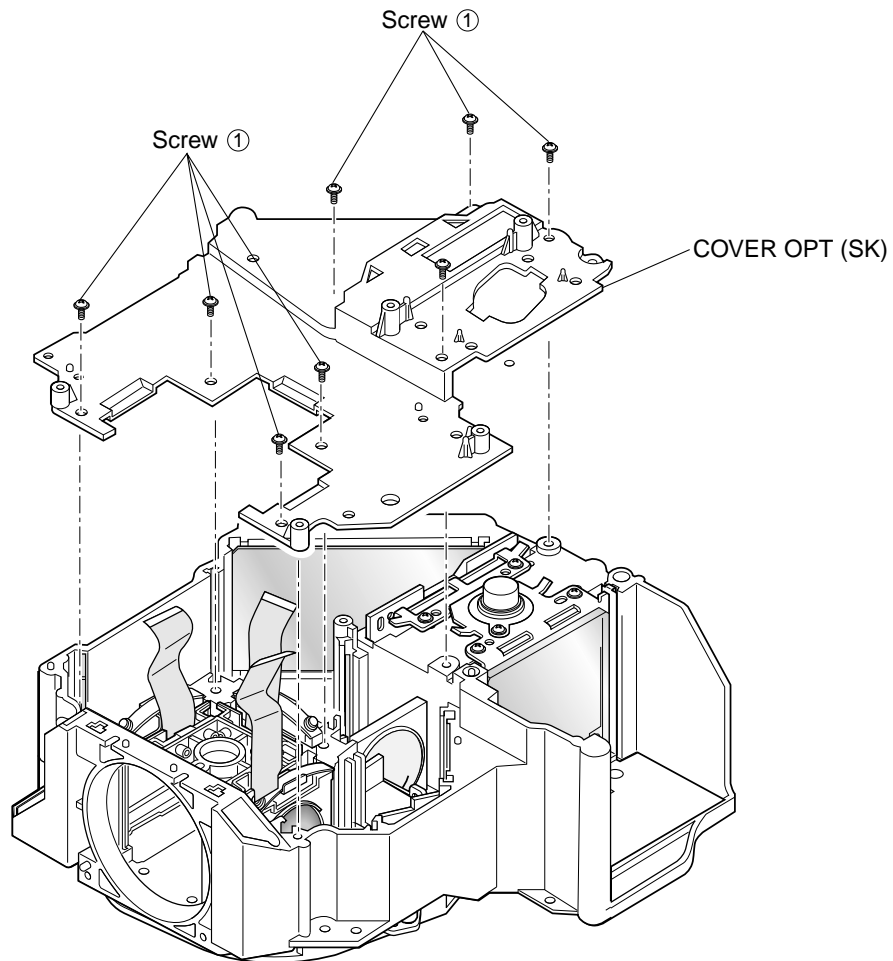
11. COVER (INHAIL DUCT) ASSY/INHAIL DUCT (SK) ASSY/STOPPER (XDP) ASSY

- (1) Remove the COVER (INHAIL DUCT) ASSY.
- (2) Remove the two screws ②, and take out the STOPPER (XDP) ASSY.
- (3) Remove the three screws ① and the stud, and take out the INHAIL DUCT (SK) ASSY.



12. COVER OPT (SK)

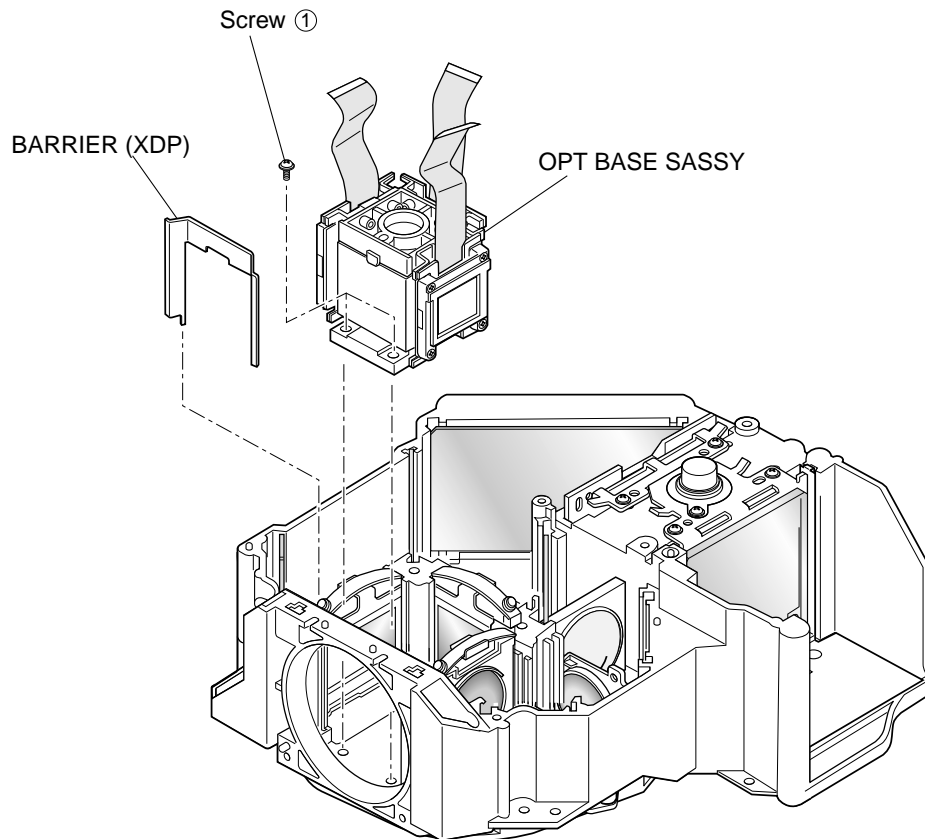
- (1) Remove the eight screws ①, and take out the COVER OPT (SK).



METHOD OF DISASSEMBLY

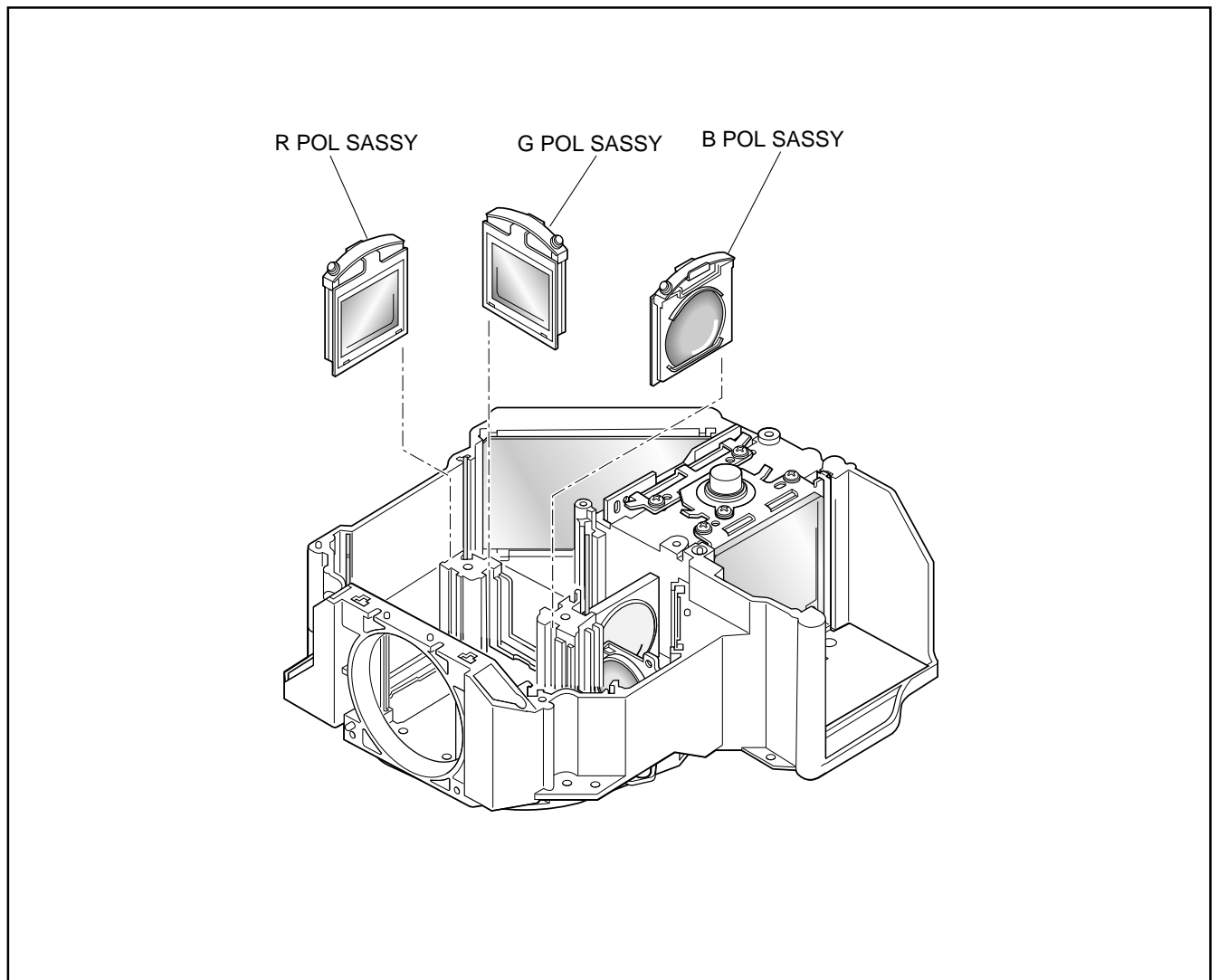
13. OPT BASE SASSY/BARRIER (XDP)

- (1) Remove the two screws ①, and take out the OPT BASE SASSY.
- (2) Remove the BARRIER (XDP).



14. R POL SASSY/G POL SASSY/B POL SASSY

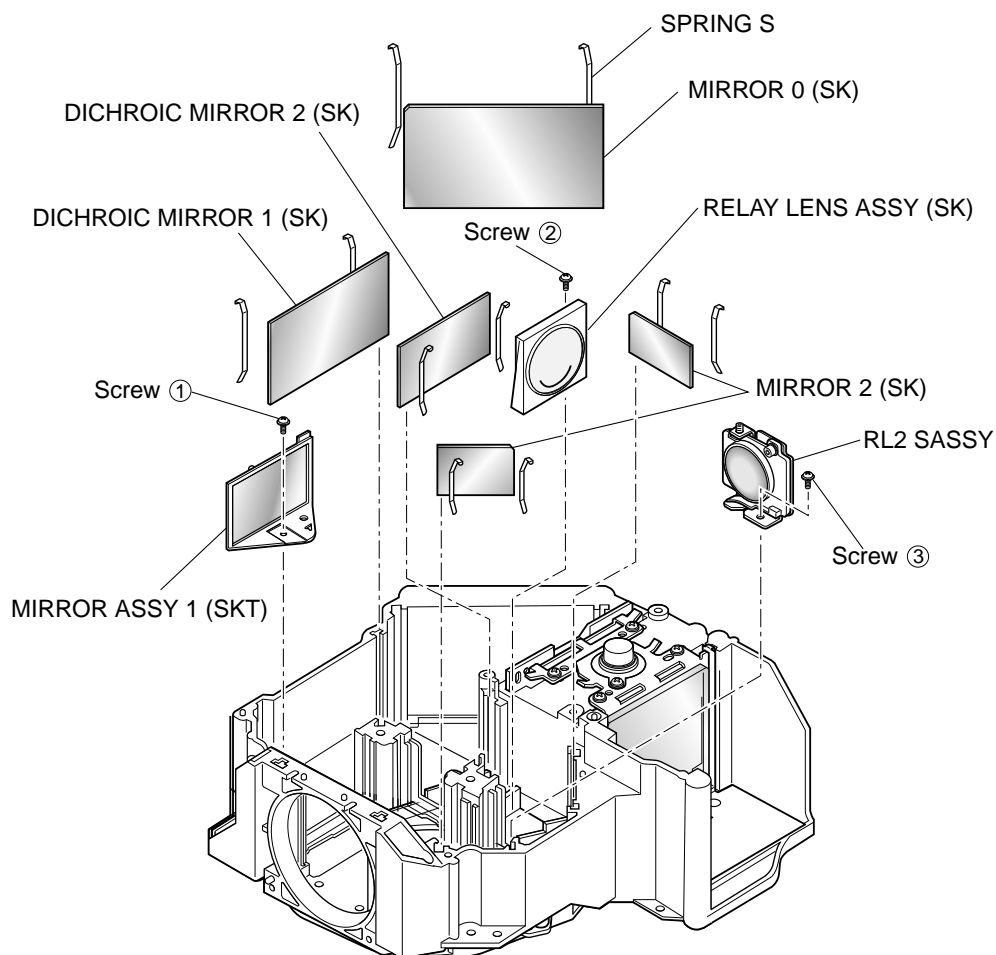
(1) Remove the R,G,B POL SASSY.



METHOD OF DISASSEMBLY

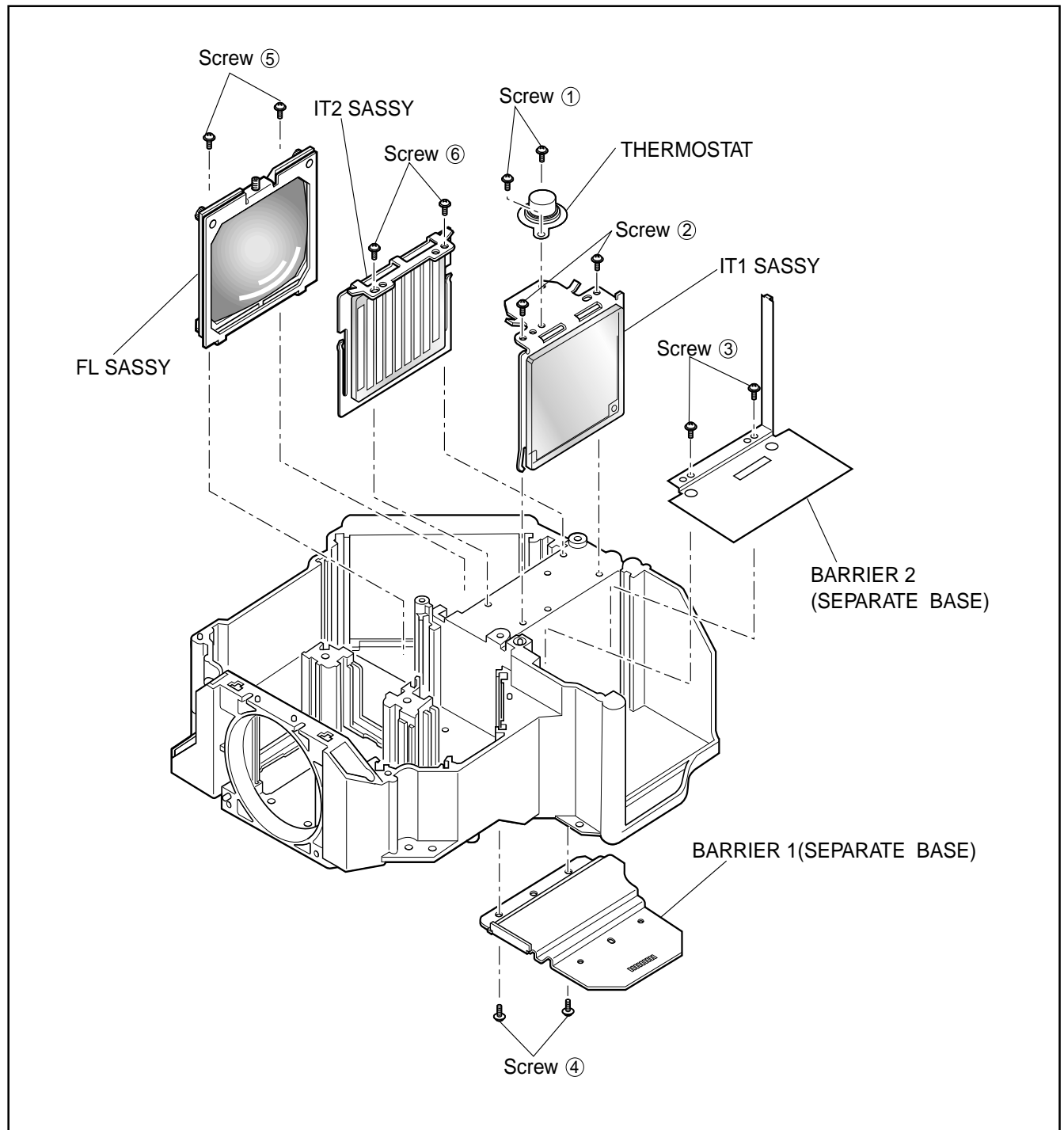
15. MIRROR ASSY1 (SKT)/DICHROIC MIRROR 1 (SK)/DICHROIC MIRROR 2 (SK)/MIRROR 0 (SK)/MIRROR 2 (SK)/RELAY LENS ASSY 1 (SK)/RL2 SASSY/SPRING S

- (1) Remove the one screw ①, and take out the MIRROR ASSY1 (SKT).
- (2) Remove the one screw ②, and take out the RELAY LENS ASSY 1 (SK).
- (3) Remove the one screw ③, and take out the RL2 SASSY.
- (4) Remove ten pieces of SPRING S, and take out one each of the DICHROIC MIRROR 1 (SK), DICHROIC MIRROR 2 (SK), MIRROR 0 (SK), and also the two pieces of MIRROR 2 (SK).



**16. FL SASSY/IT1 SASSY/IT2 SASSY/BARRIER 2 (SEPARATE BASE)/
BARRIER 1 (SEPARATE BASE)/THERMOSTAT**

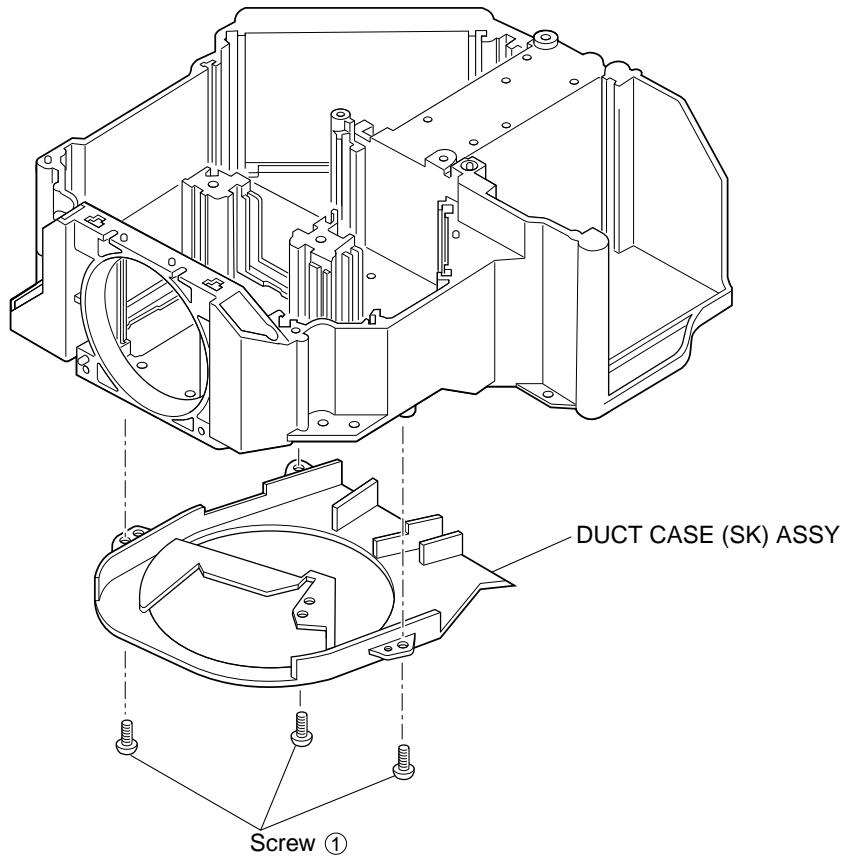
- (1) Remove the two screws ①, and take out the THERMOSTAT.
- (2) Remove the two screws ②, and take out the IT1 SASSY.
- (3) Remove the two screws ③, and take out the BARRIER 2 (SEPARATE BASE).
- (4) Remove the two screws ④, and take out the BARRIER 1 (SEPARATE BASE).
- (5) Remove the two screws ⑤, and take out the FL SASSY.
- (6) Remove the two screws ⑥, and take out the IT2 SASSY.



METHOD OF DISASSEMBLY

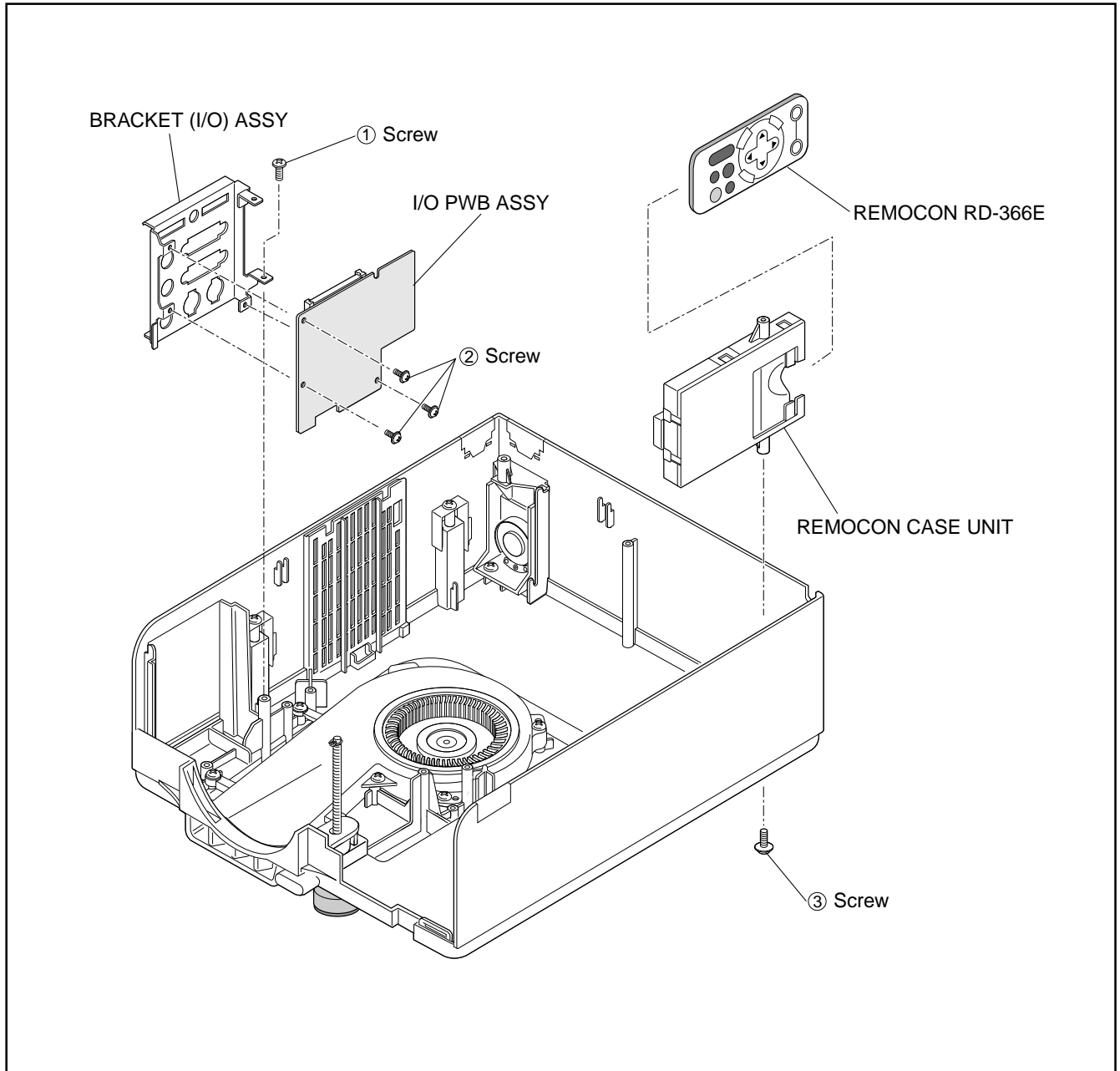
17. DUCT CASE (SK) ASSY

- (1) Remove the three screws ①, and take out the DUCT CASE (SK) ASSY.



18. BRACKET (I/O) ASSY/I/O PWB ASSY/REMOCON CASE UNIT

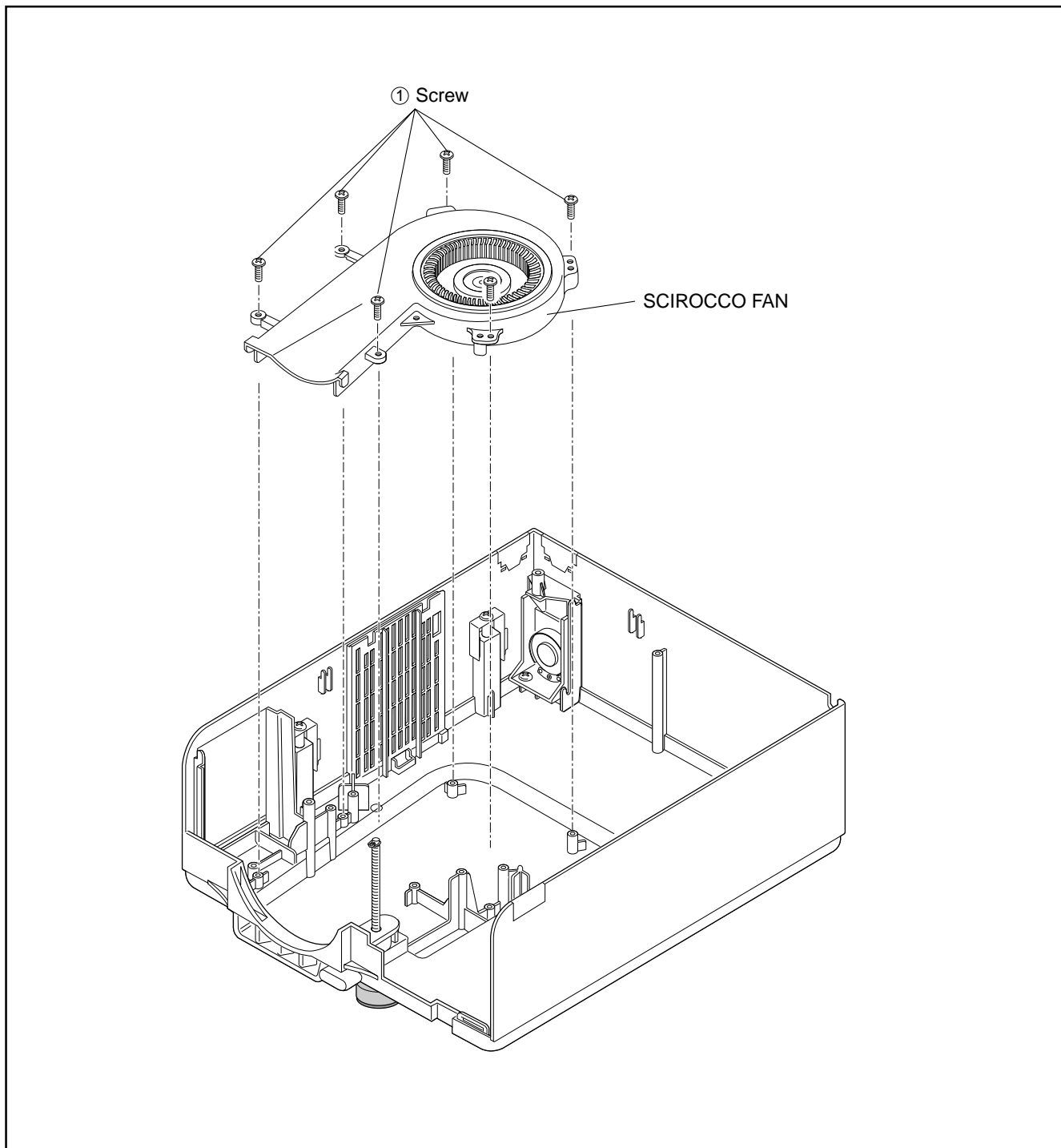
- (1) Remove the one screw ①, and take out the BRACKET (I/O) ASSY.
- (2) Remove the three screws ②, and take out the I/O PWB ASSY.
- (3) Remove the one screw ③, and take out the REMOCON CASE UNIT.



METHOD OF DISASSEMBLY

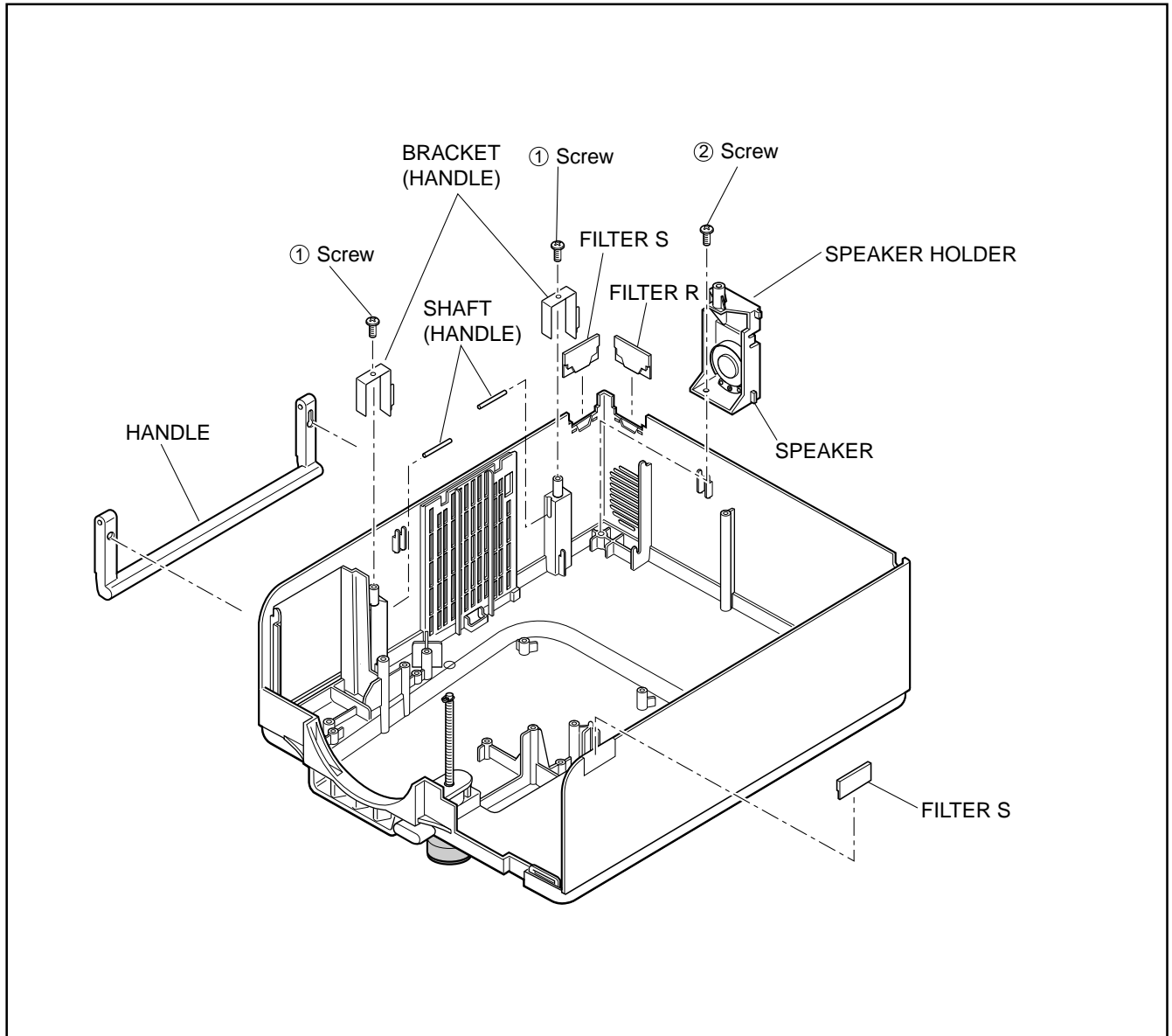
19. SCIROCCO FAN

- (1) Remove the five screws ①, and take out the SCIROCCO FAN.



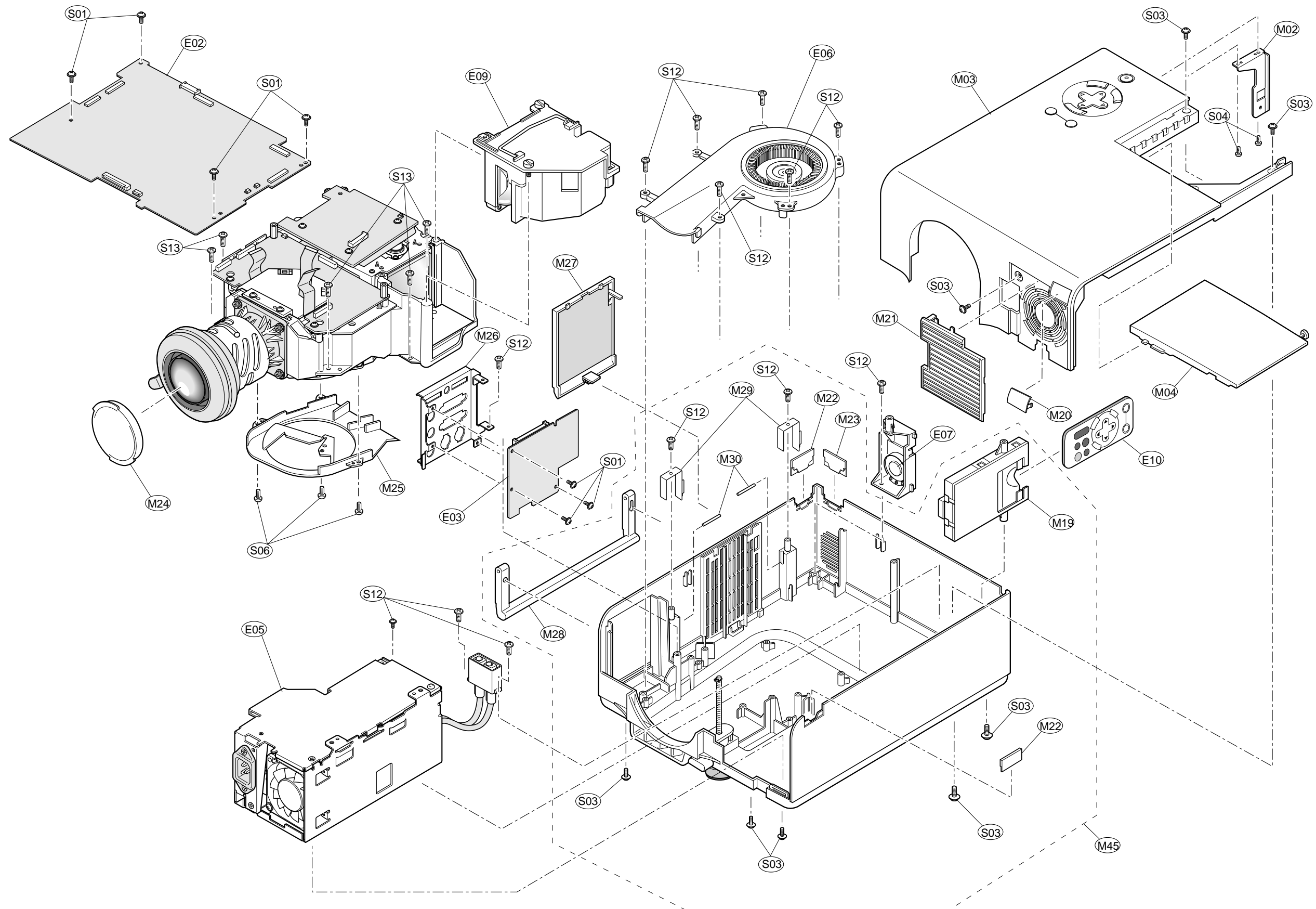
**20. HANDLE/BRACKET (HANDLE)/SHAFT (HANDLE)/SPEAKER/SPEAKER HOLDER/
FILTER S/FILTER R**

- (1) Remove the two screws ①, and take out the two BRACKET (HANDLE).
- (2) Remove the two SHAFT (HANDLE), and then take out the HANDLE.
- (3) Remove the one screw ②, and take out the SPEAKER HOLDER and the SPEAKER.

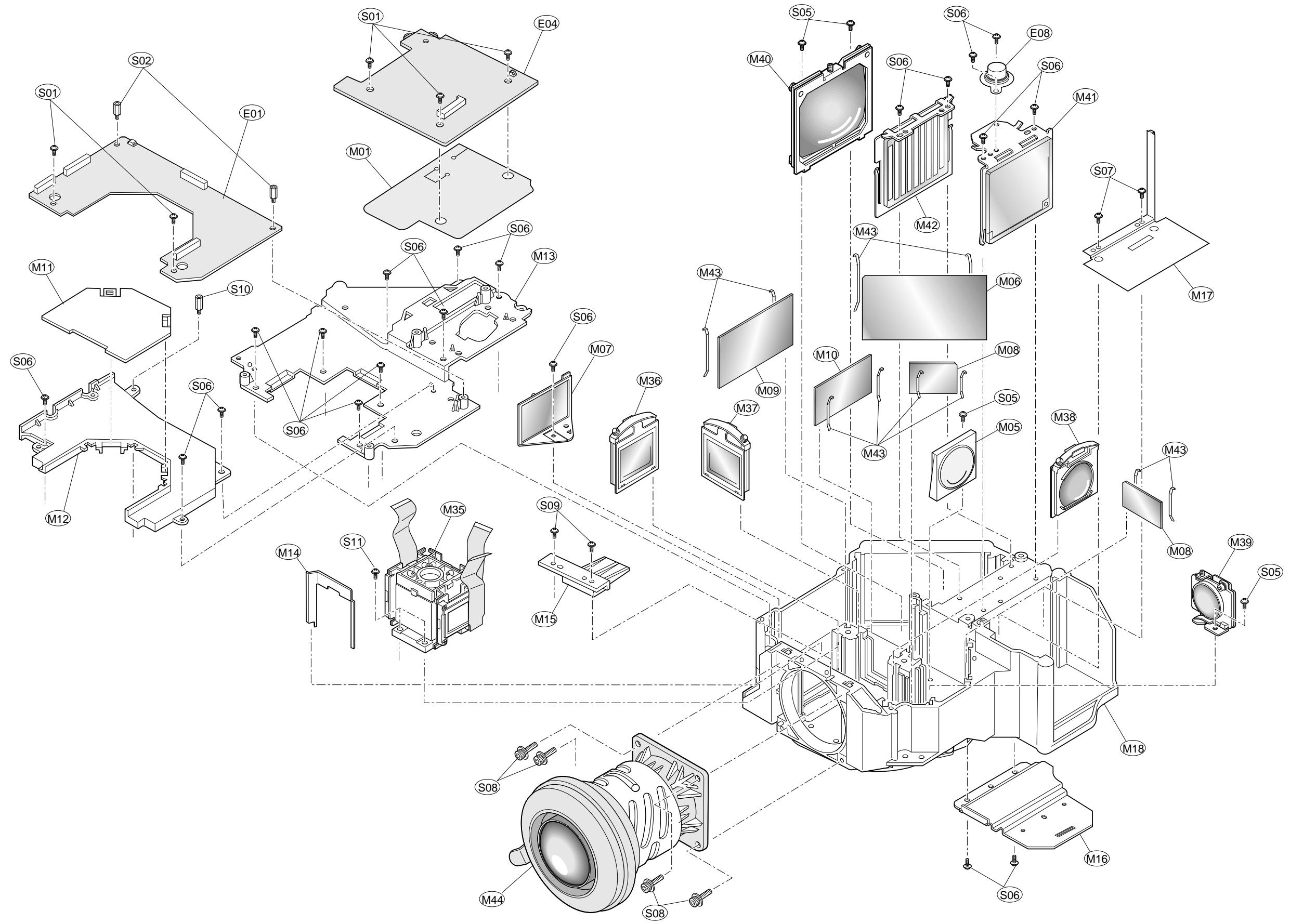


MEMO

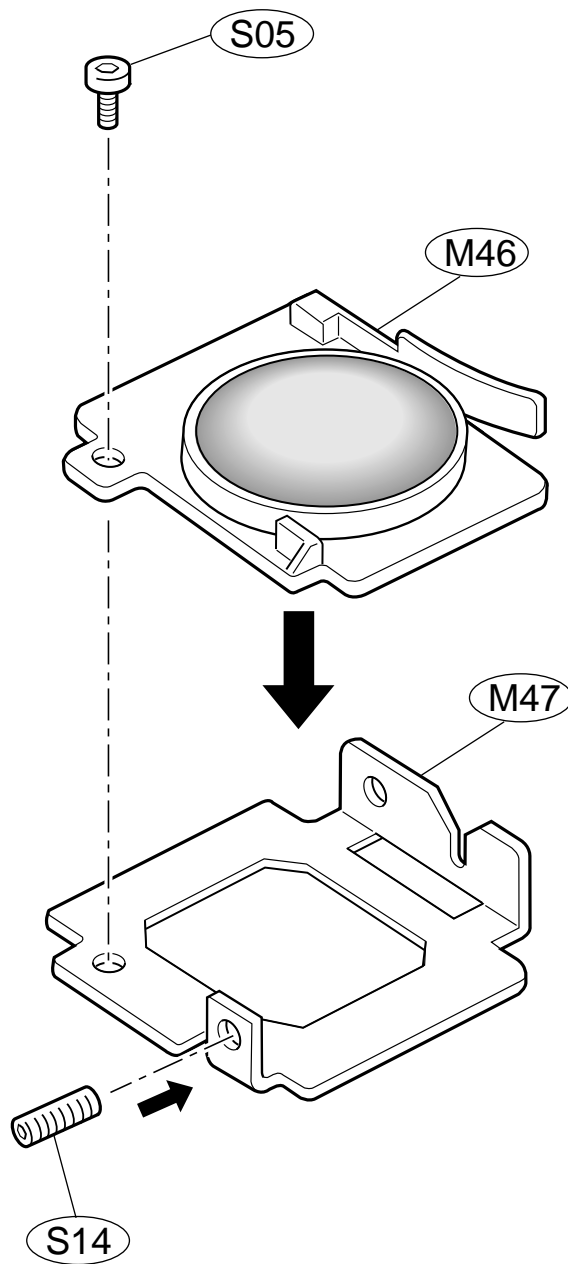
• MAIN BODY



• OPTICAL ENGINE

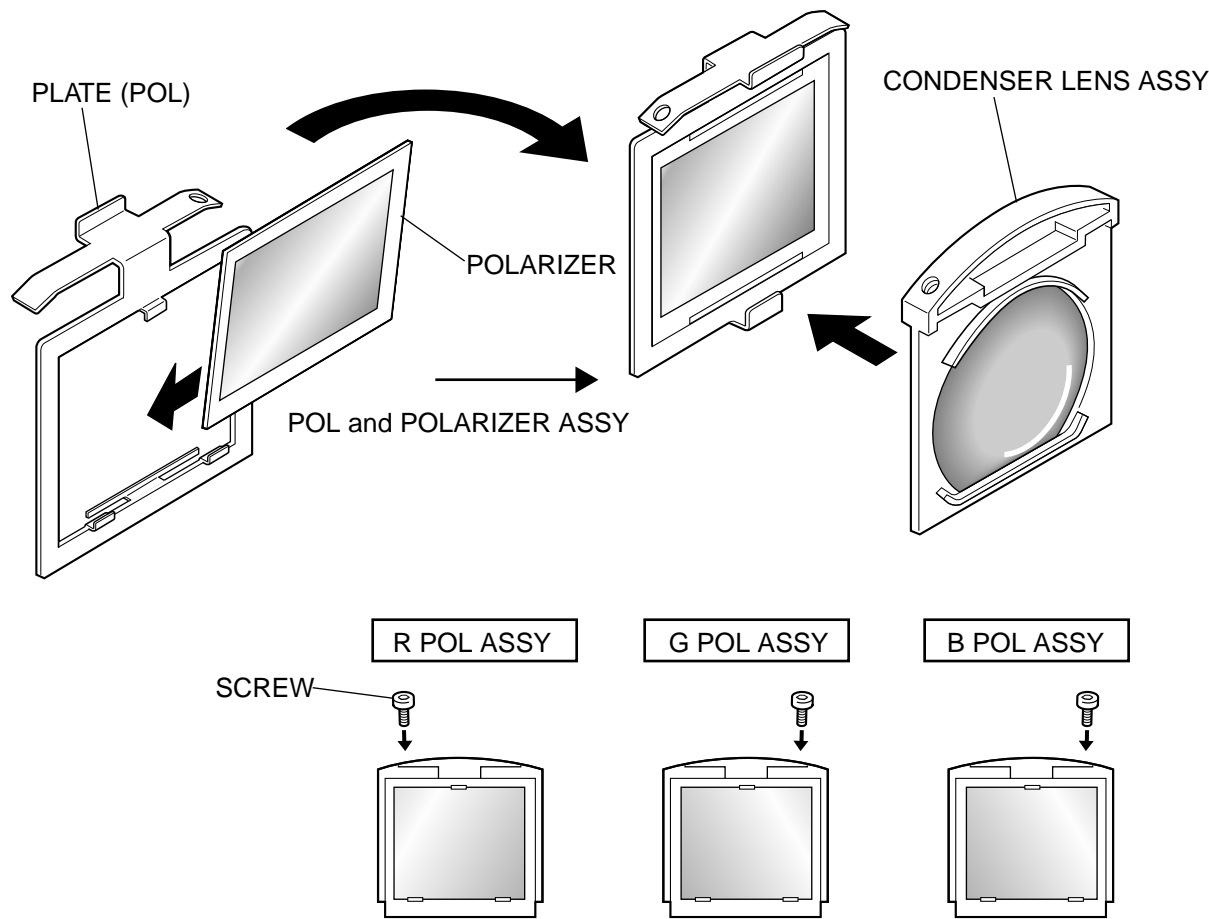


• RL2 SASSY



DISASSEMBLY

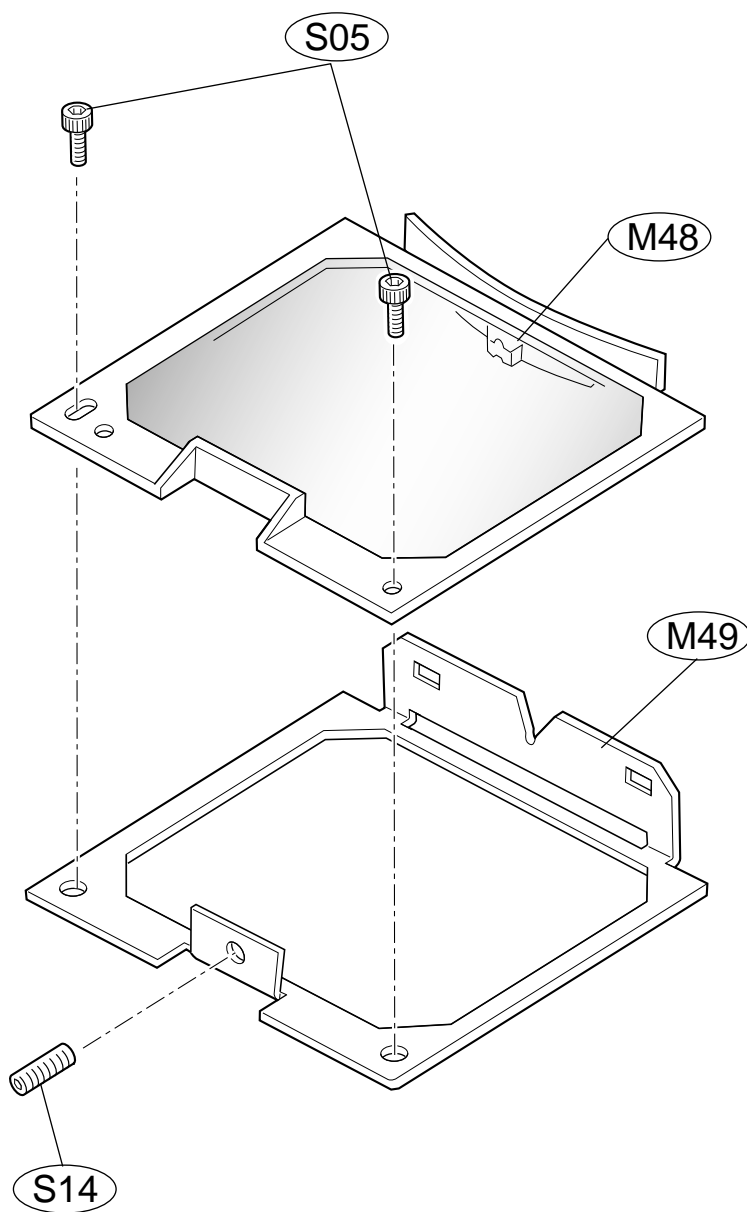
• POL SASSY



POL SASSY PART LIST

	R POL SASSY	G POL SASSY	B POL SASSY
COMPONENTS	PART NO	PART NO	PART NO
PLATE(POL)	24H36661	24H36661	24H36661
POLARIZER 1(SK)	12JS1551	_____	_____
POLARIZER 2(SK)	_____	12JS1561	_____
POLARIZER 3(SK)	_____	_____	12JS1571
CONDENSER LENS ASSY 1(SK)	12JS1361	12JS1361	_____
CONDENSER LENS ASSY 2(SK)	_____	_____	12JS1371
SCREW	24N04761	24N04761	24N04761

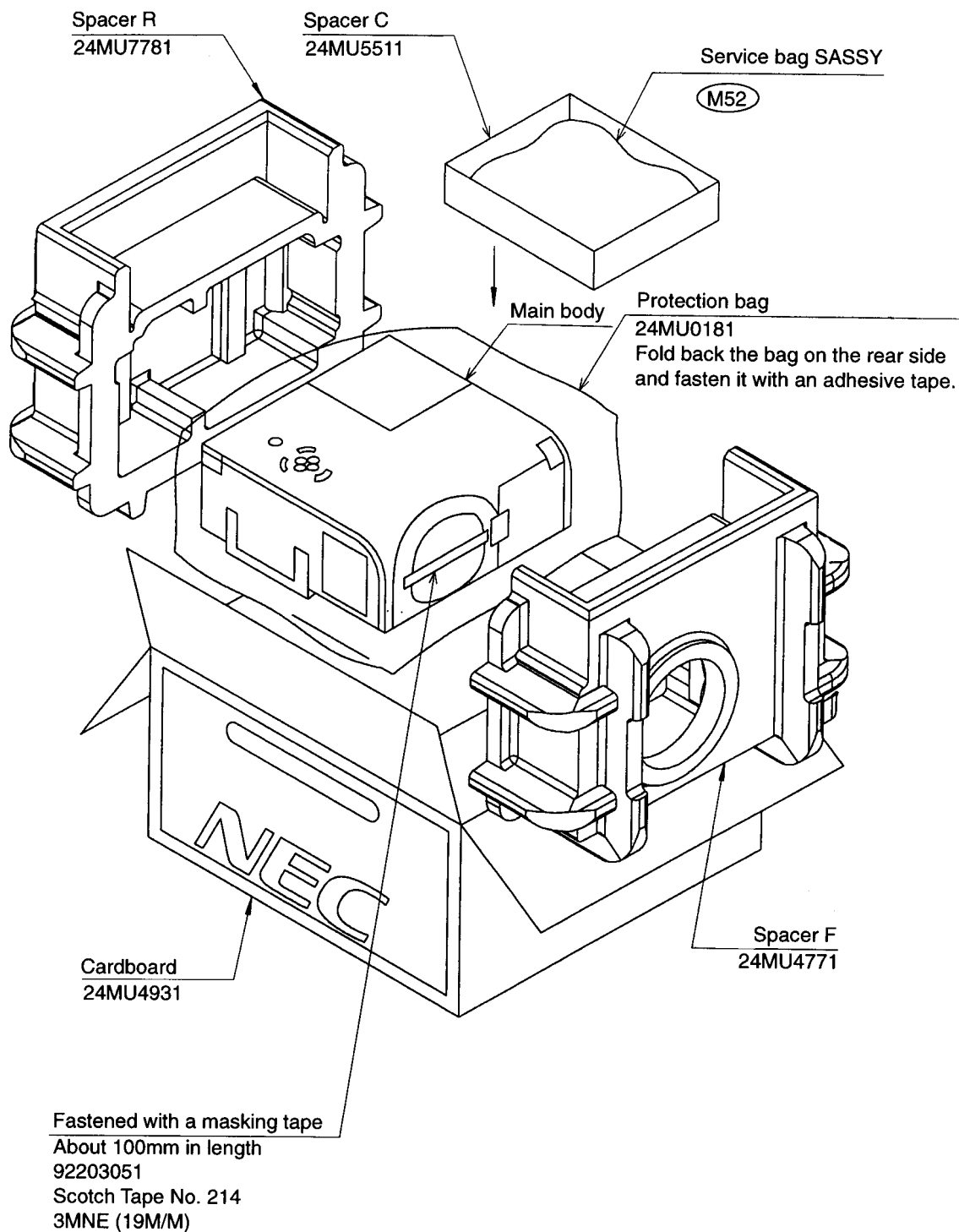
• FL SASSY



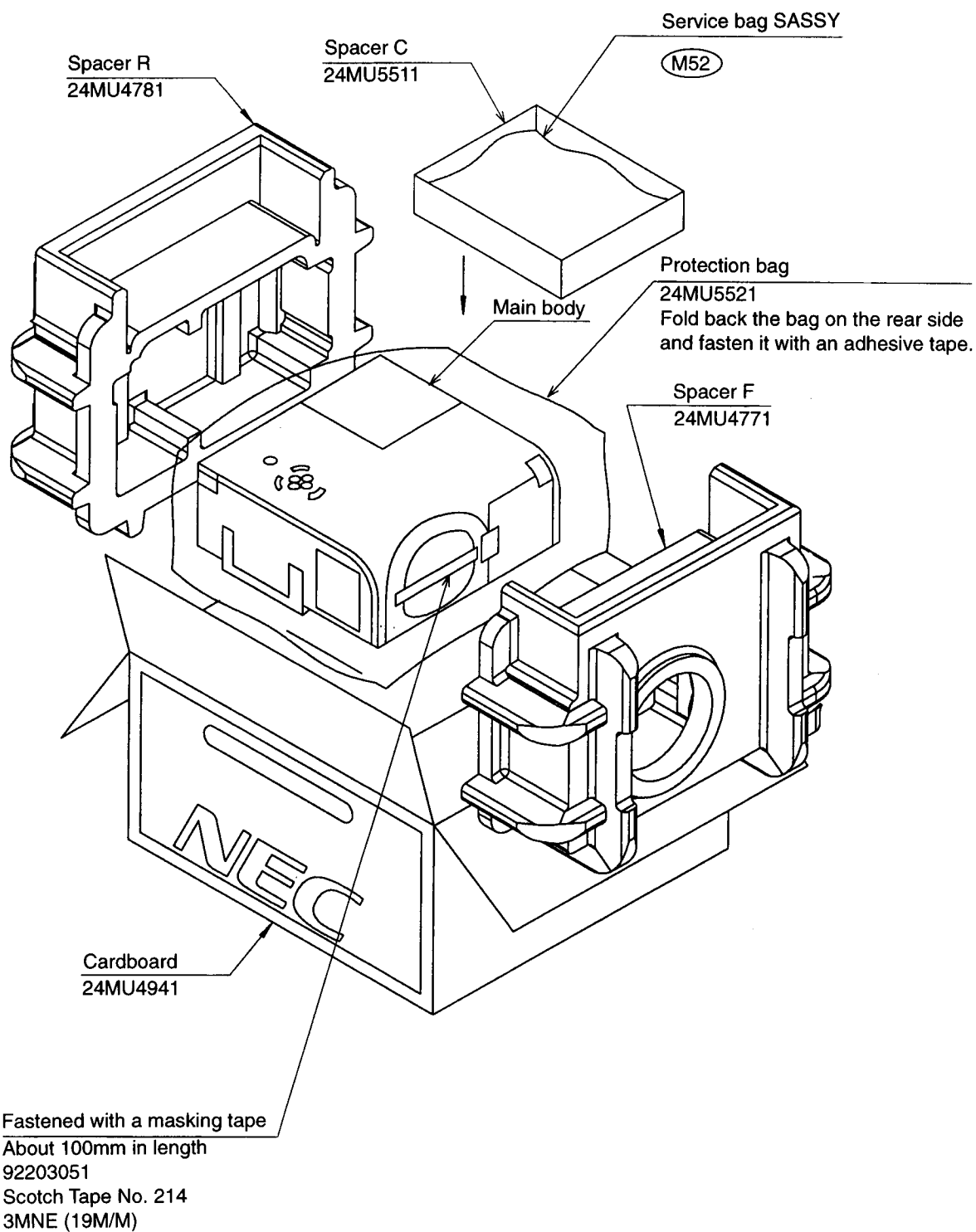
PACKAGING

Packing Procedures

1. VT440

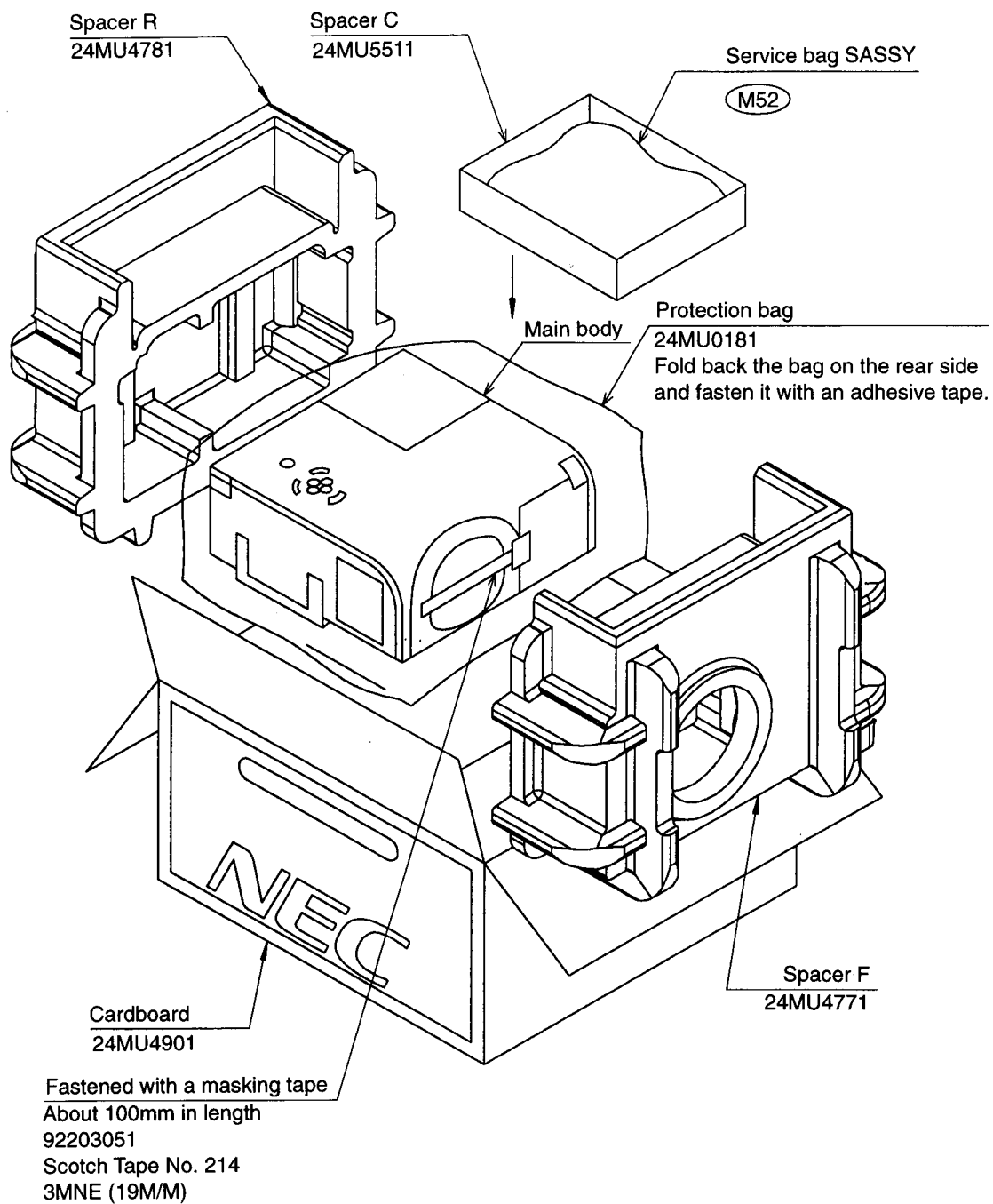


2. VT440G

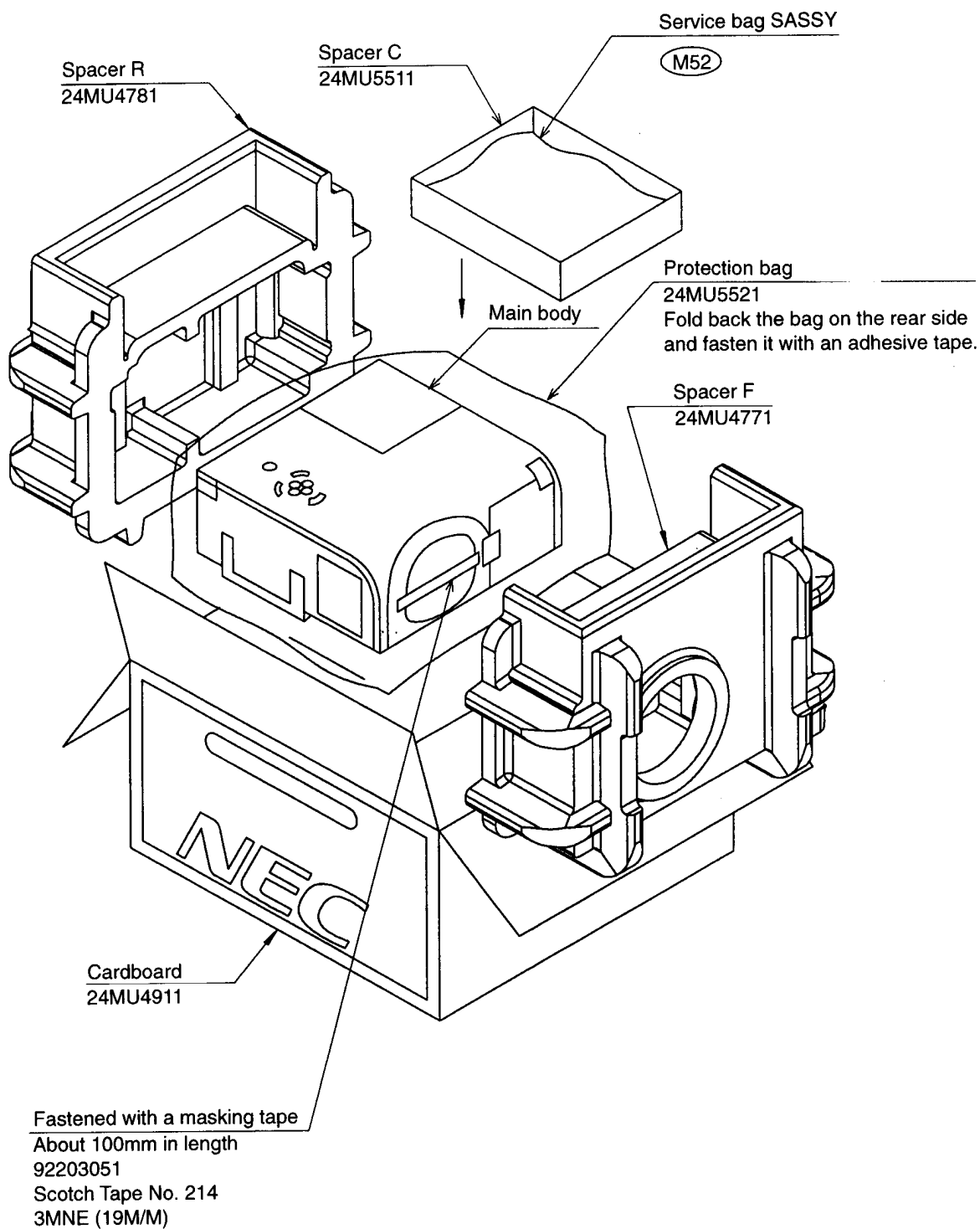


PACKAGING

3. VT540



4. VT540G



REPLACEMENT PART LIST ---

Notes:

- Parts orders must contain model name, parts number and description.
- When you place an order for spare parts, please refer to the respective service manual and mention the right parts number on your P.O. Sheets.
- The components identified by a  mark or with the symbol Nos. shaded are critical for safety. Replace only with parts number specified.
The letters NSP in the table indicate non-service parts.

1. VT440

SYMBOL	PART NO	DESCRIPTION
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*** PWB ASSYS ***

E01	935Y1D01	LCES PWB ASSY
E02	935Y1F01	MAIN PWB ASSY
E03	935X7NA1	I/O PWB ASSY
E04	935X7NB1	KEY PWB ASSY

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

E05	79646932	POWER UNIT
	73895159	CABLE,FFC 30P*38 P0.5 SO
	73895160	CABLE,FFC 40P*38 P0.5 SO
POBES	70ED2315	CONNECTOR,FPC 30P
POGES	70ED2315	CONNECTOR,FPC 30P
PORES	70ED2315	CONNECTOR,FPC 30P
POST	70ED2165	CONNECTOR,FPC 30P
POST	70ED2404	FPC CONNE FH12-30S-0.5SH
POSV	70ED2038	CONNECTOR,FFC 40P
POSV	70ED2166	CONNECTOR,FPC 40P
E06	31700104	SCIROCCO FAN
	38102078	THERMISTOR104JT-075-90271
E07	63099063	SPEAKER 40*28MM 8H 1W
	73W20077	CN2P(SP)220S,1685-26
	73WLW001	CN22P(MK)60W,1685-26
X1101	64003036	CRYSTAL RESONATOR
X1100	64003037	CRYSTAL RESONATOR
X3501	64KA1118	CRYSTAL OSCILLATOR
X3502	64KA1122	CRYSTAL OSCILLATOR
X3503	64KA1140	CRYSTALOSCILLATOR33.33333
SW3313	65904524	DETECTOR SWITCH
SW4100	65904524	DETECTOR SWITCH
SW3301	65AB1116	SW,SLIDE
	65CF1506	SWITCH,TACT
RL3100	65FK2102	RELAY
E08	66500003	THERMOSTAT
SW3312	66KA2008	DETECTOR SWITCH

*** APPEARANCE PARTS ***

S05	12851741	SPECIAL SCREW(PL-HM2.5*6)
S06	910E2511	PL-CPIMS*2.5*6*15BF
S11	24N04721	SCREW(WASCHER 2.5*10)
S09	910E2521	PL-CPIMS*2.5*8*15BF
S07	910E2531	PL-CPIMS*2.5*10*15BF
S01	910E306L	PL-CPIMS*3*10*3GF
S08	24N04781	SPECIAL SCREW(PL-HM3*16)
S03	910D3066	PL-CPIMS*3*10*3KF
S12	91613061	SCREW,#2CBTS*3*10*15BF
S13	91614031	SCREW,#2CBITS*4*12*15BF
	24N03651	STUD(D-SUB,M2.6*3GF)
	24N04352	SPECIAL SCREW(M4)
S02	24N04691	STAD(M3*14,M/FM)
S10	24N04701	STAD(M3*17.5,M/FM)
	24N04731	SCREW(CBIPS2*6,PRECOAT)
	24N04741	SCREW(CFIPS3*6*15BF)
S14	24N04751	SPECIAL SCREW(HLSS4*6)
	24N04761	SCREW(PL-HHIMS2*5)
	24N04771	SCREW(CBIPS 3*10*15BF)
	91052031	CFIMS2*6*15BF
S04	91283076	SCREW,#2CPTS*3*12*3KF
	91613076	SCREW,#2CBTS*3*12*3KF
	12J00291	CROSS PRISM(SKN)
	12J00301	CROSS PRISM(SKF)
	12J00351	POLARIZATION CONVERTER-S
	12J00361	POLARIZATION CONVERTER-S
	12J00371	FIELD LENS(SK)
	12J00381	CONDENSER LENS 1(SK)
	12J00391	CONDENSER LENS 2(SK)
	12J00401	RELAY LENS 1(SK)
	12J00411	RELAY LENS 2(SK)
	12J00421	MIRROR 1(SK)
M48	12JS1351	FIELD LENS ASSY(SK)
	12JS1361	CONDENSER LENS ASSY1(SK)
	12JS1371	CONDENSER LENS ASSY2(SK)
M05	12JS1381	RELAY LENS ASSY1(SK)
M46	12JS1391	RELAY LENS ASSY2(SK)
M44	12JS1431	ZOOM LENS(SK)
	12JS1441	INTEGRATOR1(SKA)
	12JS1451	INTEGRATOR2(SKA)
	OR 12JS1471	INTEGRATOR2(SKA)
	12JS1481	POLARIZATION CONVERTER-S
	OR 12JS1491	POLARIZATION CONVERTER-S
M06	12JS1501	MIRROR 0(SK)
M07	12JS1511	MIRROR ASSY1(SK)
M08	12JS1521	MIRROR 2(SK)

*** APPEARANCE PARTS ***

M09	12JS1531	DICHROIC MIRROR 1(SK)
M10	12JS1541	DICHROIC MIRROR 2(SK)
	12JS1551	POLARIZER 1(SK)
	12JS1561	POLARIZER 2(SK)
	12JS1571	POLARIZER 3(SK)
	12JS1581	REFLECTER LAMP(SK)
	12JS1601	COVER GLASS(SK)
	12JS1711	POLARIZER 3(SKK)
	12JS1721	MIRROR ASSY1(SKT)
	18775141	LABEL,SERIAL MANUFACTURE
	25765841	LABEL(1*10)
	25781322	LABEL,BARCODE
M19	24BS6621	REMOCON CASE UNIT
	24C02681	CLIP(DS-9UL)
	24C05911	TILT RIVET
	24D11271	BOTTOM COVER
	24D11421	TOP COVER(VT440)
M45	24DT7492	BOTTOM COVER ASSY
M03	24DT7665	TOP COVER ASSY
	24F29461	TILT FOOT(R)
	24F30581	CUSHION FOOT(R)
	24F31771	HOLDER(CL1)
	24F31781	HOLDER(CL2)
	24F31791	HOLDER(FL)
	24F31801	HOLDER(RL1)
	24F31811	HOLDER(RL2)
	24F31821	HOLDER(M1)
	24F31861	INDICATOR
M20	24F31871	FILTER F
	24F31881	TILT FOOT F
M28	24F31901	HANDLE
	24F31921	CUSHION (FRONTFOOT)
	24F31931	LAMP COVER
	24F31941	FILTER CASE A
	24F31951	FILTER CASE B
	24F31971	SPEAKER HOLDER
M22	24F31981	FILTER S
M23	24F31991	FILTER R
	24F32011	SEPARATE BASE(SK)
M13	24F32021	COVER OPT(SK)
	24F32031	DUCT CASE(SK)
	24F32041	INHAIL DUCT(SK)
	24F32051	COVER(INHAIL DUCT)
	24F32061	STOPPER(XDP)
	24F32071	LAMP BOX(F)
	24F32081	LAMP BOX(T)

*** APPEARANCE PARTS ***

M24 M04 M21 M27	24F32091	LAMP BOX(B)
	24F32561	TILTINSERT
	24FT6951	CAP
	24FT7312	LAMP COVER ASSY
M18 M25 M12 M11 M15	24FT7351	FILTER ASSY A
	24FT7362	FILTER ASSY B
	24FT7401	TILT FOOT ASSY
	24FT7431	SEPARATE BASE(SK) ASSY
M29 M02 M43 M30	24FT7441	DUCT CASE(SK)ASSY
	24FT7451	INHAIL DUCT(SK)ASSY
	24FT7461	COVER(INHAIL DUCT)ASSY
	24FT7471	STOPPER (XDP)ASSY
M16 M17 M14	24G05271	PUSH BUTTON
	24G05301	PUSH BOTTON(TILT)
	24H24411	HALF NUT
	24H35421	GRIP
M49 M47 M26	24H36621	PLATE(FL)
	24H36631	PLATE(IT1)
	24H36641	PLATE(IT2)
	24H36651	PLATE(RL2)
	24H36661	PLATE(POL)
	24H36701	BRACKET(HANDLE)
	24H36811	STAY R
	24H36821	SPRING S
	24H36861	SHAFT(HANDLE)
	24H37091	SPRING(TILT)
	24H37131	BARRIER (LAMP BOX)
	24H37161	SHAFT PIN
	24H37191	BARRIER1(SEPARATE BASE)
	24H37241	BARRIER2(SEPARATE BASE)
	24H37341	BARRIER(XDP)
	24HS2561	BRACKET(I/O)
	24HS2581	BARRIER(LAMP BOX)ASSY
	24HS2591	PLATE(FL)ASSY
	24HS2601	PLATE(RL2)ASSY
	24HS2621	BRACKET(I/O)ASSY
	24J15451	DOUBLE FACE ADHESIVE TAPE
	24J15731	BARRIER(TILTFOOTR)
	24J15751	FILTER(COVER)A
	24J15761	FILTER(COVER)B
	24J15811	BARRIER
	24J15821	CUSHION (SEPARATE BASE)
	24J15831	CUSHION (DUCT CASE)
	24J15841	CUSHION (INHAIL DUCT)
	24J15851	CUSHION(INHAIL COVER)
	24J15861	CUSHION (FL)

*** APPEARANCE PARTS ***

M01	24J15871	CUSHION (RL2)
	24J15971	BARRIER(B/M)
	24L34191	CAUTION LABEL(SERVICE)
	24L41311	CAUTION
	24L43502	CAUTION LABEL(LENS)
	24L43951	NAME PLATE(VT440)
	24L43981	LABEL(FUSE)
	24L44721	LABEL(INSTA CARE)
	24L44741	LABEL(VT LAMP)
	92203961	TAPE,SCOTCH SUPER
E09	955X7161	LAMP BOX SASSY
M36	955X7181	R POL SASSY
M37	955X7191	G POL SASSY
M38	955X7201	B POL SASSY
M40	955X7211	FL SASSY
M41	955X7241	IT1 SASSY
M42	955X7251	IT2 SASSY
M39	955X7261	RL2 SASSY
M35	955Y1131	OPT BASE SASSY

*** PRINTED & PACKING MATERIALS ***

M52	24M16261	ACCESSORY BAG
	24MU0181	PROTECTION BAG
	24MU4771	SPACER F
	24MU4781	SPACER R
	24MU4931	CARTON BOX
	24MU5511	FILLER C,CARTON
	24MU5521	PROTECTION BAG
M52	70810792	POWER CORD U3 L3 BK,L(L)
M52	78038751	QUICK REFERENCE VT540/440
M52	78038771	WARRANTY CARD
M52	78411391	USE'S MANUAL VT540/VT440
E10(M52)	79646751	RD-366E
M52	79646941	VT CABLE SET

*** VT CABLE SET ***

M52	73499369	CABLE,RGB
M52	70599172	ADAPTER D15P-MD15P
M52	24C05051	STRAP
M52	24C04534	PUSH RIVET

*** OPTION ***

REMOTE CONTROL KIT (98999243)

	73499328	CABLE SERIAL TO PS/2
	73499329	CABLE SERIAL TO MAC
	73499353	CABLE SIGNAL (DIN8P-D9P)
	79644991	UNIVERSAL IR RECIEVER(U)
	79645911	REM-T HAND UNIT RD-355E

2. VT440G

SYMBOL	PART NO	DESCRIPTION
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*** PWB ASSYS ***

E01	935Y1D01	LCES PWB ASSY
E02	935Y1F01	MAIN PWB ASSY
E03	935X7NA1	I/O PWB ASSY
E04	935X7NB1	KEY PWB ASSY

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

E05	79646932	POWER UNIT
	73895159	CABLE,FFC 30P*38 P0.5 SO
	73895160	CABLE,FFC 40P*38 P0.5 SO
POBES	70ED2315	CONNECTOR,FPC 30P
POGES	70ED2315	CONNECTOR,FPC 30P
PORES	70ED2315	CONNECTOR,FPC 30P
POST	70ED2165	CONNECTOR,FPC 30P
POST	70ED2404	FPC CONNE FH12-30S-0.5SH
POSV	70ED2038	CONNECTOR,FFC 40P
POSV	70ED2166	CONNECTOR,FPC 40P
E06	31700104	SCIROCCO FAN
	38102078	THERMISTOR104JT-075-90271
E07	63099063	SPEAKER 40*28MM 8H 1W
	73W20077	CN2P(SP)220S,1685-26
	73WLW001	CN22P(MK)60W,1685-26
X1101	64003036	CRYSTAL RESONATOR
X1100	64003037	CRYSTAL RESONATOR
X3501	64KA1118	CRYSTAL OSCILLATOR
X3502	64KA1122	CRYSTAL OSCILLATOR
X3503	64KA1140	CRYSTALOSCILLATOR33.33333
SW3313	65904524	DETECTOR SWITCH
SW4100	65904524	DETECTOR SWITCH
SW3301	65AB1116	SW,SLIDE
	65CF1506	SWITCH,TACT
RL3100	65FK2102	RELAY
E08	66500003	THERMOSTAT
SW3312	66KA2008	DETECTOR SWITCH

*** APPEARANCE PARTS ***

S05	12851741	SPECIAL SCREW(PL-HM2.5*6)
S06	910E2511	PL-CPIMS*2.5*6*15BF
S11	24N04721	SCREW(WASCHER 2.5*10)
S09	910E2521	PL-CPIMS*2.5*8*15BF
S07	910E2531	PL-CPIMS*2.5*10*15BF
S01	910E306L	PL-CPIMS*3*10*3GF
S08	24N04781	SPECIAL SCREW(PL-HM3*16)
S03	910D3066	PL-CPIMS*3*10*3KF
S12	91613061	SCREW,#2CBTS*3*10*15BF
S13	91614031	SCREW,#2CBITS*4*12*15BF
	24N03651	STUD(D-SUB,M2.6*3GF)
	24N04352	SPECIAL SCREW(M4)
S02	24N04691	STAD(M3*14,M/FM)
S10	24N04701	STAD(M3*17.5,M/FM)
	24N04731	SCREW(CBIPS2*6,PRECOAT)
	24N04741	SCREW(CFIPS3*6*15BF)
S14	24N04751	SPECIAL SCREW(HLSS4*6)
	24N04761	SCREW(PL-HHIMS2*5)
	24N04771	SCREW(CBIPS 3*10*15BF)
	91052031	CFIMS2*6*15BF
S04	91283076	SCREW,#2CPTS*3*12*3KF
	91613076	SCREW,#2CBTS*3*12*3KF
	12J00291	CROSS PRISM(SKN)
	12J00301	CROSS PRISM(SKF)
	12J00351	POLARIZATION CONVERTER-S
	12J00361	POLARIZATION CONVERTER-S
	12J00371	FIELD LENS(SK)
	12J00381	CONDENSER LENS 1(SK)
	12J00391	CONDENSER LENS 2(SK)
	12J00401	RELAY LENS 1(SK)
	12J00411	RELAY LENS 2(SK)
	12J00421	MIRROR 1(SK)
M48	12JS1351	FIELD LENS ASSY(SK)
	12JS1361	CONDENSER LENS ASSY1(SK)
	12JS1371	CONDENSER LENS ASSY2(SK)
M05	12JS1381	RELAY LENS ASSY1(SK)
M46	12JS1391	RELAY LENS ASSY2(SK)
M44	12JS1431	ZOOM LENS(SK)
	12JS1441	INTEGRATOR1(SKA)
	12JS1451	INTEGRATOR2(SKA)
	OR 12JS1471	INTEGRATOR2(SKA)
	12JS1481	POLARIZATION CONVERTER-S
	OR 12JS1491	POLARIZATION CONVERTER-S
M06	12JS1501	MIRROR 0(SK)
M07	12JS1511	MIRROR ASSY1(SK)
M08	12JS1521	MIRROR 2(SK)

*** APPEARANCE PARTS ***

M09	12JS1531	DICHROIC MIRROR 1(SK)
M10	12JS1541	DICHROIC MIRROR 2(SK)
	12JS1551	POLARIZER 1(SK)
	12JS1561	POLARIZER 2(SK)
	12JS1571	POLARIZER 3(SK)
	12JS1581	REFLECTER LAMP(SK)
	12JS1601	COVER GLASS(SK)
	12JS1711	POLARIZER 3(SKK)
	12JS1721	MIRROR ASSY1(SKT)
	18775141	LABEL,SERIAL MANUFACTURE
	25765841	LABEL(1*10)
	25781322	LABEL,BARCODE
M19	24BS6621	REMOCON CASE UNIT
	24C02681	CLIP(DS-9UL)
	24C05911	TILT RIVET
	24D11271	BOTTOM COVER
	24D11421	TOP COVER(VT440)
M45	24DT7492	BOTTOM COVER ASSY
M03	24DT7665	TOP COVER ASSY
	24F29461	TILT FOOT(R)
	24F30581	CUSHION FOOT(R)
	24F31771	HOLDER(CL1)
	24F31781	HOLDER(CL2)
	24F31791	HOLDER(FL)
	24F31801	HOLDER(RL1)
	24F31811	HOLDER(RL2)
	24F31821	HOLDER(M1)
	24F31861	INDICATOR
M20	24F31871	FILTER F
	24F31881	TILT FOOT F
M28	24F31901	HANDLE
	24F31921	CUSHION (FRONTFOOT)
	24F31931	LAMP COVER
	24F31941	FILTER CASE A
	24F31951	FILTER CASE B
	24F31971	SPEAKER HOLDER
M22	24F31981	FILTER S
M23	24F31991	FILTER R
	24F32011	SEPARATE BASE(SK)
M13	24F32021	COVER OPT(SK)
	24F32031	DUCT CASE(SK)
	24F32041	INHAIL DUCT(SK)
	24F32051	COVER(INHAIL DUCT)
	24F32061	STOPPER(XDP)
	24F32071	LAMP BOX(F)
	24F32081	LAMP BOX(T)

*** APPEARANCE PARTS ***

M24 M04 M21 M27	24F32091	LAMP BOX(B)
	24F32561	TILTINSERT
	24FT6951	CAP
	24FT7312	LAMP COVER ASSY
	24FT7351	FILTER ASSY A
	24FT7362	FILTER ASSY B
	24FT7401	TILT FOOT ASSY
	24FT7431	SEPARATE BASE(SK) ASSY
	24FT7441	DUCT CASE(SK)ASSY
	24FT7451	INHAIL DUCT(SK)ASSY
M18 M25 M12 M11 M15	24FT7461	COVER(INHAIL DUCT)ASSY
	24FT7471	STOPPER (XDP)ASSY
	24G05271	PUSH BUTTON
	24G05301	PUSH BOTTON(TILT)
	24H24411	HALF NUT
	24H35421	GRIP
	24H36621	PLATE(FL)
	24H36631	PLATE(IT1)
	24H36641	PLATE(IT2)
	24H36651	PLATE(RL2)
M29 M02 M43 M30	24H36661	PLATE(POL)
	24H36701	BRACKET(HANDLE)
	24H36811	STAY R
	24H36821	SPRING S
	24H36861	SHAFT(HANDLE)
	24H37091	SPRING(TILT)
	24H37131	BARRIER (LAMP BOX)
	24H37161	SHAFT PIN
	24H37191	BARRIER1(SEPARATE BASE)
	24H37241	BARRIER2(SEPARATE BASE)
M16 M17 M14	24H37341	BARRIER(XDP)
	24HS2561	BRACKET(I/O)
	24HS2581	BARRIER(LAMP BOX)ASSY
	24HS2591	PLATE(FL)ASSY
	24HS2601	PLATE(RL2)ASSY
	24HS2621	BRACKET(I/O)ASSY
	24J15451	DOUBLE FACE ADHESIVE TAPE
	24J15731	BARRIER(TILTFOOTR)
	24J15751	FILTER(COVER)A
	24J15761	FILTER(COVER)B
M49 M47 M26	24J15811	BARRIER
	24J15821	CUSHION (SEPARATE BASE)
	24J15831	CUSHION (DUCT CASE)
	24J15841	CUSHION (INHAIL DUCT)
	24J15851	CUSHION(INHAIL COVER)
	24J15861	CUSHION (FL)

*** APPEARANCE PARTS ***

M01	24J15871 24J15971 24L34191 24L41311 24L43502 24L43961 24L43981 24L44021 24L44721 24L44741 24L44971 24L45001 92203961	CUSHION (RL2) BARRIER(B/M) CAUTION LABEL(SERVICE) CAUTION CAUTION LABEL(LENS) NAME PLATE(VT440G) LABEL(FUSE) EAN LABEL LABEL(INSTA CARE) LABEL(VT LAMP) LABEL(LENZ) LABEL(3.5*20) TAPE,SCOTCH SUPER
E09	955X7161	
M36	955X7181	
M37	955X7191	
M38	955X7201	
M40	955X7211	
M41	955X7241	
M42	955X7251	
M39	955X7261	
M35	955Y1131	

*** PRINTED & PACKING MATERIALS ***

M52	24M16261 24MU4771 24MU4781 24MU4941 24MU5511 24MU5521	ACCESSORY BAG SPACER F SPACER R CARTON BOX FILLER C,CARTON PROTECTION BAG
M52	70810004	POWER CORD E3 L3 BK,L(L)
M52	78038751 78038771	QUICK REFERENCE VT540/440 WARRNTY CARD
M52	78411391	USE'S MANUAL VT540/VT440
E10(M52)	79646751	RD-366E
M52	79646941	VT CABLE SET

*** VT CABLE SET ***

M52	73499369	CABLE,RGB
M52	70599172	ADAPTER D15P-MD15P
M52	24C05051	STRAP
M52	24C04534	PUSH RIVET

*** OPTION ***

REMOTE CONTROL KIT (98999243)

	73499328 73499329 73499353 79644991 79645911	CABLE SERIAL TO PS/2 CABLE SERIAL TO MAC CABLE SIGNAL (DIN8P-D9P) UNIVERSAL IR RECIEVER(U) REM-T HAND UNIT RD-355E
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VT540

3. VT540

SYMBOL	PART NO	DESCRIPTION
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*** PWB ASSYS ***

E01	935X7D01	LCEX PWB ASSY
E02	935X7F01	MAIN PWB ASSY
E03	935X7NA1	I/O PWB ASSY
E04	935X7NB1	KEY PWB ASSY

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

E05	79646932	POWER UNIT
	73895159	CABLE,FFC 30P*38 P0.5 SO
	73895160	CABLE,FFC 40P*38 P0.5 SO
POBES	70ED2315	CONNECTOR,FPC 30P
POGES	70ED2315	CONNECTOR,FPC 30P
PORES	70ED2315	CONNECTOR,FPC 30P
POST	70ED2165	CONNECTOR,FPC 30P
POST	70ED2404	FPC CONNE FH12-30S-0.5SH
POSV	70ED2038	CONNECTOR,FFC 40P
POSV	70ED2166	CONNECTOR,FPC 40P
E06	31700104	SCIROCCO FAN
	38102078	THERMISTOR104JT-075-90271
E07	63099063	SPEAKER 40*28MM 8H 1W
	73W20077	CN2P(SP)220S,1685-26
	73WLW001	CN22P(MK)60W,1685-26
X1101	64003036	CRYSTAL RESONATOR
X1100	64003037	CRYSTAL RESONATOR
X3501	64KA1118	CRYSTAL OSCILLATOR
X3502	64KA1122	CRYSTAL OSCILLATOR
X3503	64KA1140	CRYSTALOSCILLATOR33.33333
SW3313	65904524	DETECTOR SWITCH
SW4100	65904524	DETECTOR SWITCH
SW3301	65AB1116	SW,SLIDE
	65CF1506	SWITCH,TACT
RL3100	65FK2102	RELAY
E08	66500003	THERMOSTAT
SW3312	66KA2008	DETECTOR SWITCH

*** APPEARANCE PARTS ***

S05	12851741	SPECIAL SCREW(PL-HM2.5*6)
S06	910E2511	PL-CPIMS*2.5*6*15BF
S11	24N04721	SCREW(WASCHER 2.5*10)
S09	910E2521	PL-CPIMS*2.5*8*15BF
S07	910E2531	PL-CPIMS*2.5*10*15BF
S01	910E306L	PL-CPIMS*3*10*3GF
S08	24N04781	SPECIAL SCREW(PL-HM3*16)
S03	910D3066	PL-CPIMS*3*10*3KF
S12	91613061	SCREW,#2CBTS*3*10*15BF
S13	91614031	SCREW,#2CBITS*4*12*15BF
	24N03651	STUD(D-SUB,M2.6*3GF)
	24N04352	SPECIAL SCREW(M4)
S02	24N04691	STAD(M3*14,M/FM)
S10	24N04701	STAD(M3*17.5,M/FM)
	24N04731	SCREW(CBIPS2*6,PRECOAT)
	24N04741	SCREW(CFIPS3*6*15BF)
S14	24N04751	SPECIAL SCREW(HLSS4*6)
	24N04761	SCREW(PL-HHIMS2*5)
	24N04771	SCREW(CBIPS 3*10*15BF)
	91052031	CFIMS2*6*15BF
S04	91283076	SCREW,#2CPTS*3*12*3KF
	91613076	SCREW,#2CBTS*3*12*3KF
	12J00291	CROSS PRISM(SKN)
	12J00301	CROSS PRISM(SKF)
	12J00351	POLARIZATION CONVERTER-S
	12J00361	POLARIZATION CONVERTER-S
	12J00371	FIELD LENS(SK)
	12J00381	CONDENSER LENS 1(SK)
	12J00391	CONDENSER LENS 2(SK)
	12J00401	RELAY LENS 1(SK)
	12J00411	RELAY LENS 2(SK)
	12J00421	MIRROR 1(SK)
M48	12JS1351	FIELD LENS ASSY(SK)
	12JS1361	CONDENSER LENS ASSY1(SK)
	12JS1371	CONDENSER LENS ASSY2(SK)
M05	12JS1381	RELAY LENS ASSY1(SK)
M46	12JS1391	RELAY LENS ASSY2(SK)
M44	12JS1431	ZOOM LENS(SK)
	12JS1441	INTEGRATOR1(SKA)
	12JS1451	INTEGRATOR2(SKA)
	OR 12JS1471	INTEGRATOR2(SKA)
	12JS1481	POLARIZATION CONVERTER-S
	OR 12JS1491	POLARIZATION CONVERTER-S
M06	12JS1501	MIRROR 0(SK)
M07	12JS1511	MIRROR ASSY1(SK)
M08	12JS1521	MIRROR 2(SK)

*** APPEARANCE PARTS ***

M09	12JS1531	DICHROIC MIRROR 1(SK)
M10	12JS1541	DICHROIC MIRROR 2(SK)
	12JS1551	POLARIZER 1(SK)
	12JS1561	POLARIZER 2(SK)
	12JS1571	POLARIZER 3(SK)
	12JS1581	REFLECTER LAMP(SK)
	12JS1601	COVER GLASS(SK)
	12JS1711	POLARIZER 3(SKK)
	12JS1721	MIRROR ASSY1(SKT)
	18775141	LABEL,SERIAL MANUFACTURE
	25765841	LABEL(1*10)
	25781322	LABEL,BARCODE
M19	24BS6621	REMOCON CASE UNIT
	24C02681	CLIP(DS-9UL)
	24C05911	TILT RIVET
	24D11271	BOTTOM COVER
	24D11261	TOP COVER(VT540)
M45	24DT7492	BOTTOM COVER ASSY
M03	24DT7485	TOP COVER ASSY
	24F29461	TILT FOOT(R)
	24F30581	CUSHION FOOT(R)
	24F31771	HOLDER(CL1)
	24F31781	HOLDER(CL2)
	24F31791	HOLDER(FL)
	24F31801	HOLDER(RL1)
	24F31811	HOLDER(RL2)
	24F31821	HOLDER(M1)
	24F31861	INDICATOR
M20	24F31871	FILTER F
	24F31881	TILT FOOT F
	24F31901	HANDLE
	24F31921	CUSHION (FRONTFOOT)
	24F31931	LAMP COVER
	24F31941	FILTER CASE A
	24F31951	FILTER CASE B
	24F31971	SPEAKER HOLDER
M22	24F31981	FILTER S
M23	24F31991	FILTER R
	24F32011	SEPARATE BASE(SK)
M13	24F32021	COVER OPT(SK)
	24F32031	DUCT CASE(SK)
	24F32041	INHAIL DUCT(SK)
	24F32051	COVER(INHAIL DUCT)
	24F32061	STOPPER(XDP)
	24F32071	LAMP BOX(F)
	24F32081	LAMP BOX(T)

*** APPEARANCE PARTS ***

	24F32091	LAMP BOX(B)
	24F32561	TILTINSERT
M24	24FT6951	CAP
M04	24FT7311	LAMP COVER ASSY
M21	24FT7351	FILTER ASSY A
M27	24FT7361	FILTER ASSY B
	24FT7401	TILT FOOT ASSY
M18	24FT7431	SEPARATE BASE(SK) ASSY
M25	24FT7441	DUCT CASE(SK)ASSY
M12	24FT7451	INHAIL DUCT(SK)ASSY
M11	24FT7461	COVER(INHAIL DUCT)ASSY
M15	24FT7471	STOPPER (XDP)ASSY
	24G05271	PUSH BUTTON
	24G05301	PUSH BOTTON(TILT)
	24H24411	HALF NUT
	24H35421	GRIP
	24H36621	PLATE(FL)
	24H36631	PLATE(IT1)
	24H36641	PLATE(IT2)
	24H36651	PLATE(RL2)
	24H36661	PLATE(POL)
M29	24H36701	BRACKET(HANDLE)
M02	24H36811	STAY R
M43	24H36821	SPRING S
M30	24H36861	SHAFT(HANDLE)
	24H37091	SPRING(TILT)
	24H37131	BARRIER (LAMP BOX)
	24H37161	SHAFT PIN
M16	24H37191	BARRIER1(SEPARATE BASE)
M17	24H37241	BARRIER2(SEPARATE BASE)
M14	24H37341	BARRIER(XDP)
	24HS2561	BRACKET(I/O)
	24HS2581	BARRIER(LAMP BOX)ASSY
M49	24HS2591	PLATE(FL)ASSY
M47	24HS2601	PLATE(RL2)ASSY
M26	24HS2621	BRACKET(I/O)ASSY
	24J15451	DOUBLE FACE ADHESIVE TAPE
	24J15731	BARRIER(TILTFOOTR)
	24J15751	FILTER(COVER)A
	24J15761	FILTER(COVER)B
	24J15811	BARRIER
	24J15821	CUSHION (SEPARATE BASE)
	24J15831	CUSHION (DUCT CASE)
	24J15841	CUSHION (INHAIL DUCT)
	24J15851	CUSHION(INHAIL COVER)
	24J15861	CUSHION (FL)

*** APPEARANCE PARTS ***

M01	24J15871 24J15971 24L34191 24L41311 24L43502 24L43921 24L43981 24L44721 24L44741 92203961	CUSHION (RL2) BARRIER(B/M) CAUTION LABEL(SERVICE) CAUTION CAUTION LABEL(LENS) NAME PLATE(VT540) LABEL(FUSE) LABEL(INSTA CARE) LABEL(VT LAMP) TAPE,SCOTCH SUPER
E09	955X7161	
M36	955X7181	
M37	955X7191	
M38	955X7201	
M40	955X7211	
M41	955X7241	
M42	955X7251	
M39	955X7261	
M35	955Y7131	

*** PRINTED & PACKING MATERIALS ***

M52	24M16261 24MU0181 24MU4771 24MU4781 24MU4901 24MU5511 24MU5521	ACCESSORY BAG PROTECTION BAG SPACER F SPACER R CARTON BOX FILLER C,CARTON PROTECTION BAG
M52	70810792	POWER CORD U3 L3 BK,L(L)
M52	78038751	QUICK REFERENCE VT540/440
M52	78038771	WARRANTY CARD
M52	78411391	USE'S MANUAL VT540/VT440
E10(M52)	79646751	RD-366E
M52	79646941	VT CABLE SET

*** VT CABLE SET ***

M52	73499369	CABLE,RGB
M52	70599172	ADAPTER D15P-MD15P
M52	24C05051	STRAP
M52	24C04534	PUSH RIVET

*** OPTION ***

REMOTE CONTROL KIT (98999243)

	73499328	CABLE SERIAL TO PS/2
	73499329	CABLE SERIAL TO MAC
	73499353	CABLE SIGNAL (DIN8P-D9P)
	79644991	UNIVERSAL IR RECIEVER(U)
	79645911	REM-T HAND UNIT RD-355E

4. VT540G

SYMBOL	PART NO	DESCRIPTION
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*** PWB ASSYS ***

E01	935X7D01	LCEX PWB ASSY
E02	935X7F01	MAIN PWB ASSY
E03	935X7NA1	I/O PWB ASSY
E04	935X7NB1	KEY PWB ASSY

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

E05	79646932	POWER UNIT
	73895159	CABLE,FFC 30P*38 P0.5 SO
	73895160	CABLE,FFC 40P*38 P0.5 SO
POBES	70ED2315	CONNECTOR,FPC 30P
POGES	70ED2315	CONNECTOR,FPC 30P
PORES	70ED2315	CONNECTOR,FPC 30P
POST	70ED2165	CONNECTOR,FPC 30P
POST	70ED2404	FPC CONNE FH12-30S-0.5SH
POSV	70ED2038	CONNECTOR,FFC 40P
POSV	70ED2166	CONNECTOR,FPC 40P
E06	31700104	SCIROCCO FAN
	38102078	THERMISTOR104JT-075-90271
E07	63099063	SPEAKER 40*28MM 8H 1W
	73W20077	CN2P(SP)220S,1685-26
	73WLW001	CN22P(MK)60W,1685-26
X1101	64003036	CRYSTAL RESONATOR
X1100	64003037	CRYSTAL RESONATOR
X3501	64KA1118	CRYSTAL OSCILLATOR
X3502	64KA1122	CRYSTAL OSCILLATOR
X3503	64KA1140	CRYSTALOSCILLATOR33.33333
SW3313	65904524	DETECTOR SWITCH
SW4100	65904524	DETECTOR SWITCH
SW3301	65AB1116	SW,SLIDE
	65CF1506	SWITCH,TACT
RL3100	65FK2102	RELAY
E08	66500003	THERMOSTAT
SW3312	66KA2008	DETECTOR SWITCH

*** APPEARANCE PARTS ***

S05	12851741	SPECIAL SCREW(PL-HM2.5*6)
S06	910E2511	PL-CPIMS*2.5*6*15BF
S11	24N04721	SCREW(WASCHER 2.5*10)
S09	910E2521	PL-CPIMS*2.5*8*15BF
S07	910E2531	PL-CPIMS*2.5*10*15BF
S01	910E306L	PL-CPIMS*3*10*3GF
S08	24N04781	SPECIAL SCREW(PL-HM3*16)
S03	910D3066	PL-CPIMS*3*10*3KF
S12	91613061	SCREW,#2CBTS*3*10*15BF
S13	91614031	SCREW,#2CBITS*4*12*15BF
	24N03651	STUD(D-SUB,M2.6*3GF)
	24N04352	SPECIAL SCREW(M4)
S02	24N04691	STAD(M3*14,M/FM)
S10	24N04701	STAD(M3*17.5,M/FM)
	24N04731	SCREW(CBIPS2*6,PRECOAT)
	24N04741	SCREW(CFIPS3*6*15BF)
S14	24N04751	SPECIAL SCREW(HLSS4*6)
	24N04761	SCREW(PL-HHIMS2*5)
	24N04771	SCREW(CBIPS 3*10*15BF)
	91052031	CFIMS2*6*15BF
S04	91283076	SCREW,#2CPTS*3*12*3KF
	91613076	SCREW,#2CBTS*3*12*3KF
	12J00291	CROSS PRISM(SKN)
	12J00301	CROSS PRISM(SKF)
	12J00351	POLARIZATION CONVERTER-S
	12J00361	POLARIZATION CONVERTER-S
	12J00371	FIELD LENS(SK)
	12J00381	CONDENSER LENS 1(SK)
	12J00391	CONDENSER LENS 2(SK)
	12J00401	RELAY LENS 1(SK)
	12J00411	RELAY LENS 2(SK)
	12J00421	MIRROR 1(SK)
M48	12JS1351	FIELD LENS ASSY(SK)
	12JS1361	CONDENSER LENS ASSY1(SK)
	12JS1371	CONDENSER LENS ASSY2(SK)
M05	12JS1381	RELAY LENS ASSY1(SK)
M46	12JS1391	RELAY LENS ASSY2(SK)
M44	12JS1431	ZOOM LENS(SK)
	12JS1441	INTEGRATOR1(SKA)
	12JS1451	INTEGRATOR2(SKA)
	12JS1471	INTEGRATOR2(SKA)
	12JS1481	POLARIZATION CONVERTER-S
	12JS1491	POLARIZATION CONVERTER-S
M06	12JS1501	MIRROR 0(SK)
M07	12JS1511	MIRROR ASSY1(SK)
M08	12JS1521	MIRROR 2(SK)

*** APPEARANCE PARTS ***

M09	12JS1531	DICHROIC MIRROR 1(SK)
M10	12JS1541	DICHROIC MIRROR 2(SK)
	12JS1551	POLARIZER 1(SK)
	12JS1561	POLARIZER 2(SK)
	12JS1571	POLARIZER 3(SK)
	12JS1581	REFLECTER LAMP(SK)
	12JS1601	COVER GLASS(SK)
	12JS1711	POLARIZER 3(SKK)
	12JS1721	MIRROR ASSY1(SKT)
	18775141	LABEL,SERIAL MANUFACTURE
	25765841	LABEL(1*10)
	25781322	LABEL,BARCODE
M19	24BS6621	REMOCON CASE UNIT
	24C02681	CLIP(DS-9UL)
	24C05911	TILT RIVET
	24D11271	BOTTOM COVER
	24D11261	TOP COVER(VT540)
M45	24DT7492	BOTTOM COVER ASSY
M03	24DT7485	TOP COVER ASSY
	24F29461	TILT FOOT(R)
	24F30581	CUSHION FOOT(R)
	24F31771	HOLDER(CL1)
	24F31781	HOLDER(CL2)
	24F31791	HOLDER(FL)
	24F31801	HOLDER(RL1)
	24F31811	HOLDER(RL2)
	24F31821	HOLDER(M1)
	24F31861	INDICATOR
M20	24F31871	FILTER F
	24F31881	TILT FOOT F
M28	24F31901	HANDLE
	24F31921	CUSHION (FRONTFOOT)
	24F31931	LAMP COVER
	24F31941	FILTER CASE A
	24F31951	FILTER CASE B
	24F31971	SPEAKER HOLDER
M22	24F31981	FILTER S
M23	24F31991	FILTER R
	24F32011	SEPARATE BASE(SK)
M13	24F32021	COVER OPT(SK)
	24F32031	DUCT CASE(SK)
	24F32041	INHAIL DUCT(SK)
	24F32051	COVER(INHAIL DUCT)
	24F32061	STOPPER(XDP)
	24F32071	LAMP BOX(F)
	24F32081	LAMP BOX(T)

*** APPEARANCE PARTS ***

M24 M04 M21 M27	24F32091	LAMP BOX(B)
	24F32561	TILTINSERT
	24FT6951	CAP
	24FT7311	LAMP COVER ASSY
	24FT7351	FILTER ASSY A
	24FT7361	FILTER ASSY B
	24FT7401	TILT FOOT ASSY
	24FT7431	SEPARATE BASE(SK) ASSY
	24FT7441	DUCT CASE(SK)ASSY
	24FT7451	INHAIL DUCT(SK)ASSY
M18 M25 M12 M11 M15	24FT7461	COVER(INHAIL DUCT)ASSY
	24FT7471	STOPPER (XDP)ASSY
	24G05271	PUSH BUTTON
	24G05301	PUSH BOTTON(TILT)
	24H24411	HALF NUT
	24H35421	GRIP
	24H36621	PLATE(FL)
	24H36631	PLATE(IT1)
	24H36641	PLATE(IT2)
	24H36651	PLATE(RL2)
M29 M02 M43 M30	24H36661	PLATE(POL)
	24H36701	BRACKET(HANDLE)
	24H36811	STAY R
	24H36821	SPRING S
	24H36861	SHAFT(HANDLE)
	24H37091	SPRING(TILT)
	24H37131	BARRIER (LAMP BOX)
	24H37161	SHAFT PIN
	24H37191	BARRIER1(SEPARATE BASE)
	24H37241	BARRIER2(SEPARATE BASE)
M16 M17 M14	24H37341	BARRIER(XDP)
	24HS2561	BRACKET(I/O)
	24HS2581	BARRIER(LAMP BOX)ASSY
	24HS2591	PLATE(FL)ASSY
	24HS2601	PLATE(RL2)ASSY
	24HS2621	BRACKET(I/O)ASSY
	24J15451	DOUBLE FACE ADHESIVE TAPE
	24J15731	BARRIER(TILTFOOTR)
	24J15751	FILTER(COVER)A
	24J15761	FILTER(COVER)B
M49 M47 M26	24J15811	BARRIER
	24J15821	CUSHION (SEPARATE BASE)
	24J15831	CUSHION (DUCT CASE)
	24J15841	CUSHION (INHAIL DUCT)
	24J15851	CUSHION(INHAIL COVER)
	24J15861	CUSHION (FL)

*** APPEARANCE PARTS ***

M01	24J15871	CUSHION (RL2)
	24J15971	BARRIER(B/M)
	24L34191	CAUTION LABEL(SERVICE)
	24L41311	CAUTION
	24L43502	CAUTION LABEL(LENS)
	24L43931	NAME PLATE(VT540G)
	24L43981	LABEL(FUSE)
	24L44021	EAN LABEL
	24L44721	LABEL(INSTA CARE)
	24L44741	LABEL(VT LAMP)
	24L44971	LABEL(LENZ)
	24L45001	LABEL(3.5*20)
	92203961	TAPE,SCOTCH SUPER
E09	955X7161	
M36	955X7181	
M37	955X7191	
M38	955X7201	
M40	955X7211	
M41	955X7241	
M42	955X7251	
M39	955X7261	
M35	955Y7131	

*** PRINTED & PACKING MATERIALS ***

M52	24M16261	ACCESSORY BAG
	24MU4771	SPACER F
	24MU4781	SPACER R
	24MU4911	CARTON BOX
	24MU5511	FILLER C,CARTON
	24MU5521	PROTECTION BAG
M52	70810004	POWER CORD E3 L3 BK,L(L)
M52	78038751	QUICK REFERENCE VT540/440
M52	78038771	WARRNTY CARD
M52	78411391	USE'S MANUAL VT540/VT440
E10(M52)	79646751	RD-366E
M52	79646941	VT CABLE SET

*** VT CABLE SET ***

M52	73499369	CABLE,RGB
M52	70599172	ADAPTER D15P-MD15P
M52	24C05051	STRAP
M52	24C04534	PUSH RIVET

*** OPTION ***

REMOTE CONTROL KIT (98999243)

	73499328	CABLE SERIAL TO PS/2
	73499329	CABLE SERIAL TO MAC
	73499353	CABLE SIGNAL (DIN8P-D9P)
	79644991	UNIVERSAL IR RECIEVER(U)
	79645911	REM-T HAND UNIT RD-355E

VT440J

5. VT440J

SYMBOL	PART NO	DESCRIPTION
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*** PWB ASSYS ***

E01	935Y1D01	LCES PWB ASSY
E02	935Y1F01	MAIN PWB ASSY
E03	935Y1NA1	I/O PWB ASSY
E04	935Y1NB1	KEY PWB ASSY

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

E05	79646932	POWER UNIT
CN1	73895164	CABLE,FFC 30P*38 P0.5 SU
CN2	73895165	CABLE,FFC 40P*38 P0.5 SU
POBES	70ED2315	CONNECTOR,FPC 30P
POGES	70ED2315	CONNECTOR,FPC 30P
PORES	70ED2315	CONNECTOR,FPC 30P
POST	70ED2165	CONNECTOR,FPC 30P
POST	70ED2404	FPC CONNE FH12-30S-0.5SH
POSV	70ED2038	CONNECTOR,FFC 40P
POSV	70ED2166	CONNECTOR,FPC 40P
E06	31700104	SCIROCCO FAN
	38102078	THERMISTOR104JT-075-90271
E07	63099063	SPEAKER 40*28MM 8H 1W
	73W20077	CN2P(SP)220S,1685-26
	73WLW001	CN22P(MK)60W,1685-26
X1101	64003036	CRYSTAL RESONATOR
X1100	64003037	CRYSTAL RESONATOR
X3501	64KA1118	CRYSTAL OSCILLATOR
X3502	64KA1122	CRYSTAL OSCILLATOR
X3503	64KA1140	CRYSTALOSCILLATOR33.33333
SW3313	65904524	DETECTOR SWITCH
SW4100	65904524	DETECTOR SWITCH
SW3301	65AB1116	SW,SLIDE
	65CF1506	SWITCH,TACT
RL3100	65FK2102	RELAY
E08	66500003	THERMOSTAT
SW3312	66KA2008	DETECTOR SWITCH

*** APPEARANCE PARTS ***

S05	12851741	SPECIAL SCREW(PL-HM2.5*6)
S06	910E2511	PL-CPIMS*2.5*6*15BF
S11	24N04721	SCREW(WASCHER 2.5*10)
S09	910E2521	PL-CPIMS*2.5*8*15BF
S07	910E2531	PL-CPIMS*2.5*10*15BF
S01	910E306L	PL-CPIMS*3*10*3GF
S08	24N04781	SPECIAL SCREW(PL-HM3*16)
S03	910D3066	PL-CPIMS*3*10*3KF
S12	91613061	SCREW,#2CBTS*3*10*15BF
S13	91614031	SCREW,#2CBITS*4*12*15BF
	24N03651	STUD(D-SUB,M2.6*3GF)
	24N04352	SPECIAL SCREW(M4)
S02	24N04691	STAD(M3*14,M/FM)
S10	24N04701	STAD(M3*17.5,M/FM)
	24N04731	SCREW(CBIPS2*6,PRECOAT)
	24N04741	SCREW(CFIPS3*6*15BF)
S14	24N04751	SPECIAL SCREW(HLSS4*6)
	24N04761	SCREW(PL-HHIMS2*5)
	24N04771	SCREW(CBIPS 3*10*15BF)
	91052031	CFIMS2*6*15BF
S04	91283076	SCREW,#2CPTS*3*12*3KF
	91613076	SCREW,#2CBTS*3*12*3KF
	12J00291	CROSS PRISM(SKN)
	12J00301	CROSS PRISM(SKF)
	12J00351	POLARIZATION CONVERTER-S
	12J00361	POLARIZATION CONVERTER-S
	12J00371	FIELD LENS(SK)
	12J00381	CONDENSER LENS 1(SK)
	12J00391	CONDENSER LENS 2(SK)
	12J00401	RELAY LENS 1(SK)
	12J00411	RELAY LENS 2(SK)
	12J00421	MIRROR 1(SK)
M48	12JS1351	FIELD LENS ASSY(SK)
	12JS1361	CONDENSER LENS ASSY1(SK)
	12JS1371	CONDENSER LENS ASSY2(SK)
M05	12JS1381	RELAY LENS ASSY1(SK)
M46	12JS1391	RELAY LENS ASSY2(SK)
M44	12JS1431	ZOOM LENS(SK)
	12JS1441	INTEGRATOR1(SKA)
	12JS1451	INTEGRATOR2(SKA)
	OR 12JS1471	INTEGRATOR2(SKA)
	12JS1481	POLARIZATION CONVERTER-S
	OR 12JS1491	POLARIZATION CONVERTER-S
M06	12JS1501	MIRROR 0(SK)
M07	12JS1511	MIRROR ASSY1(SK)
M08	12JS1521	MIRROR 2(SK)

*** APPEARANCE PARTS ***

M09	12JS1531	DICHROIC MIRROR 1(SK)
M10	12JS1541	DICHROIC MIRROR 2(SK)
	12JS1551	POLARIZER 1(SK)
	12JS1561	POLARIZER 2(SK)
	12JS1571	POLARIZER 3(SK)
	12JS1581	REFLECTER LAMP(SK)
	12JS1601	COVER GLASS(SK)
	12JS1711	POLARIZER 3(SKK)
	12JS1721	MIRROR ASSY1(SKT)
	25617801	TAPE FORM
M19	24BS6621	REMOCON CASE UNIT
	24C02681	CLIP(DS-9UL)
	24C05911	TILT RIVET
	24C05601	SPLIT PIN
	24D11431	TOP COVER(VT440J)
M45	24DT7492	BOTTOM COVER ASSY
M03	24DT7675	TOP COVER ASSY
	24F29461	TILT FOOT(R)
	24F30581	CUSHION FOOT(R)
	24F31771	HOLDER(CL1)
	24F31781	HOLDER(CL2)
	24F31791	HOLDER(FL)
	24F31801	HOLDER(RL1)
	24F31811	HOLDER(RL2)
	24F31821	HOLDER(M1)
	24F31861	INDICATOR
M20	24F31871	FILTER F
	24F31881	TILT FOOT F
M28	24F31901	HANDLE
	24F31921	CUSHION (FRONTFOOT)
	24F31931	LAMP COVER
	24F31941	FILTER CASE A
	24F31951	FILTER CASE B
	24F31971	SPEAKER HOLDER
M22	24F31981	FILTER S
M23	24F31991	FILTER R
	24F32011	SEPARATE BASE(SK)
M13	24F32021	COVER OPT(SK)
	24F32031	DUCT CASE(SK)
	24F32041	INHAIL DUCT(SK)
	24F32051	COVER(INHAIL DUCT)
	24F32061	STOPPER(XDP)
	24F32071	LAMP BOX(F)
	24F32081	LAMP BOX(T)
	24F32091	LAMP BOX(B)
	24F32601	WASHER(LAMP)

*** APPEARANCE PARTS ***

M24	24FT6951	CAP
M04	24FT7312	LAMP COVER ASSY
M21	24FT7351	FILTER ASSY A
M27	24FT7362	FILTER ASSY B
	24FT7401	TILT FOOT ASSY
M18	24FT7431	SEPARATE BASE(SK) ASSY
M25	24FT7441	DUCT CASE(SK)ASSY
M12	24FT7451	INHAIL DUCT(SK)ASSY
M11	24FT7461	COVER(INHAIL DUCT)ASSY
M15	24FT7471	STOPPER (XDP)ASSY
	24G05271	PUSH BUTTON
	24G05301	PUSH BOTTON(TILT)
	24H24411	HALF NUT
	24H35421	GRIP
	24H36621	PLATE(FL)
	24H36631	PLATE(IT1)
	24H36641	PLATE(IT2)
	24H36651	PLATE(RL2)
	24H36661	PLATE(POL)
M29	24H36701	BRACKET(HANDLE)
	24H36741	TERMINAL BOARD
M02	24H36811	STAY R
M43	24H36821	SPRING S
M30	24H36861	SHAFT(HANDLE)
	24H37091	SPRING(TILT)
	24H37131	BARRIER (LAMP BOX)
M16	24H37191	BARRIER1(SEPARATE BASE)
M17	24H37241	BARRIER2(SEPARATE BASE)
	24H37321	BARRIER(LAMP COVER)
	24H37331	PLATE(I/O)
M14	24H37341	BARRIER(XDP)
	24HS2581	BARRIER(LAMP BOX)ASSY
M49	24HS2591	PLATE(FL)ASSY
M47	24HS2601	PLATE(RL2)ASSY
M26	24HS2621	BRACKET(I/O)ASSY
	24J15341	BARRIER(TOP)
	24J15451	DOUBLE FACE ADHESIVE TAPE
	24J15731	BARRIER(TILTFOOTR)
	24J15751	FILTER(COVER)A
	24J15761	FILTER(COVER)B
	24J15811	BARRIER
	24J15821	CUSHION (SEPARATE BASE)
	24J15831	CUSHION (DUCT CASE)
	24J15841	CUSHION (INHAIL DUCT)
	24J15851	CUSHION(INHAIL COVER)
	24J15861	CUSHION (FL)

*** APPEARANCE PARTS ***

M01	24J15871	CUSHION (RL2)
	24J15961	CUSHION2(INHAIL DUCT)
	24J15971	BARRIER(B/M)
	24J15981	SHEET A(SP)
	24J15991	SHEET B(SP)
	24J16021	CUSHION(FILTER)
	24J16041	CUSHION(10*6.5*T13)
	24K24401	INLAY(I/O)
	24L11331	LABEL(8*28)
	24L34401	CAUTION LABEL(SERVICE)
	24L41311	CAUTION
	24L42201	CAUTION LABEL(EARTH)
	24L43971	NAME PLATE
	24L44001	LABEL POS
	24L44741	LABEL(VT LAMP)
	24L44981	LABEL(LENS)
	24L45001	LABEL(3.5*20)
	92203961	TAPE SCOTCH SUPER
E09	955X7161	LAMP BOX SASSY
M36	955X7181	R POL SASSY
M37	955X7191	G POL SASSY
M38	955X7201	B POL SASSY
M40	955X7211	FL SASSY
M41	955X7241	IT1 SASSY
M42	955X7251	IT2 SASSY
M39	955X7261	RL2 SASSY
M35	955Y1131	OPT BASE SASSY

*** PRINTED & PACKING MATERIALS ***

M52	16761791	SERIAL LABEL
	24M15261	ENVELOPE(VL CLUB)
	24M16261	ACCESSORY BAG
	24MU4771	SPACER F
	24MU4781	SPACER R
	24MU4951	CARTON BOX
	24MU5511	FILLER C,CARTON
	24MU5521	PROTECTION BAG
M52	70800855	POWER CORD J3 L3 BK,L(L)
	78037724	VL CLUB LEAFLET
	78038111	VL CLUB REGISTRATION CARD
M52	78038761	QUICK REFERENCE (VT540J/440J)
M52	78047921	WARRANTY ENVELOPE 100*220
M52	78048302	WARRANTY CARD
M52	78411401	USE'S MANUAL VT540J/VT440J
E10(M52)	79646751	RD-366E
M52	79646941	VT CABLE SET

*** VT CABLE SET ***

M52	73499369	CABLE,RGB
M52	70599172	ADAPTER D15P-MD15P
M52	24C05051	STRAP
M52	24C04534	PUSH RIVET

*** OPTION ***

REMOTE CONTROL KIT(J) (98999245)

	73499328	CABLE SERIAL TO PS/2
	73499329	CABLE SERIAL TO MAC
	73499353	CABLE SIGNAL (DIN8P-D9P)
	79644981	UNIVERSAL IR RECIEVER(J)
	79645901	REM-T HAND UNIT RD-325\

VT540J

6. VT540J

SYMBOL	PART NO	DESCRIPTION
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*** PWB ASSYS ***

E01	935X7D01	LCEX PWB ASSY
E02	935X7F01	MAIN PWB ASSY
E03	935X7NA1	I/O PWB ASSY
E04	935X7NB1	KEY PWB ASSY

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

E05	79646932	POWER UNIT
CN1	73895164	CABLE,FFC 30P*38 P0.5 SU
CN2	73895165	CABLE,FFC 40P*38 P0.5 SU
POBES	70ED2315	CONNECTOR,FPC 30P
POGES	70ED2315	CONNECTOR,FPC 30P
PORES	70ED2315	CONNECTOR,FPC 30P
POST	70ED2165	CONNECTOR,FPC 30P
POST	70ED2404	FPC CONNE FH12-30S-0.5SH
POSV	70ED2038	CONNECTOR,FFC 40P
POSV	70ED2166	CONNECTOR,FPC 40P
E06	31700104	SCIROCCO FAN
	38102078	THERMISTOR104JT-075-90271
E07	63099063	SPEAKER 40*28MM 8H 1W
	73W20077	CN2P(SP)220S,1685-26
	73WLW001	CN22P(MK)60W,1685-26
X1101	64003036	CRYSTAL RESONATOR
X1100	64003037	CRYSTAL RESONATOR
X3501	64KA1118	CRYSTAL OSCILLATOR
X3502	64KA1122	CRYSTAL OSCILLATOR
X3503	64KA1140	CRYSTALOSCILLATOR33.33333
SW3313	65904524	DETECTOR SWITCH
SW4100	65904524	DETECTOR SWITCH
SW3301	65AB1116	SW,SLIDE
	65CF1506	SWITCH,TACT
RL3100	65FK2102	RELAY
E08	66500003	THERMOSTAT
SW3312	66KA2008	DETECTOR SWITCH

*** APPEARANCE PARTS ***

S05	12851741	SPECIAL SCREW(PL-HM2.5*6)
S06	910E2511	PL-CPIMS*2.5*6*15BF
S11	24N04721	SCREW(WASCHER 2.5*10)
S09	910E2521	PL-CPIMS*2.5*8*15BF
S07	910E2531	PL-CPIMS*2.5*10*15BF
S01	910E306L	PL-CPIMS*3*10*3GF
S08	24N04781	SPECIAL SCREW(PL-HM3*16)
S03	910D3066	PL-CPIMS*3*10*3KF
S12	91613061	SCREW,#2CBTS*3*10*15BF
S13	91614031	SCREW,#2CBITS*4*12*15BF
	24N03651	STUD(D-SUB,M2.6*3GF)
	24N04352	SPECIAL SCREW(M4)
S02	24N04691	STAD(M3*14,M/FM)
S10	24N04701	STAD(M3*17.5,M/FM)
	24N04731	SCREW(CBIPS2*6,PRECOAT)
	24N04741	SCREW(CFIPS3*6*15BF)
S14	24N04751	SPECIAL SCREW(HLSS4*6)
	24N04761	SCREW(PL-HHIMS2*5)
	24N04771	SCREW(CBIPS 3*10*15BF)
	91052031	CFIMS2*6*15BF
S04	91283076	SCREW,#2CPTS*3*12*3KF
	91613076	SCREW,#2CBTS*3*12*3KF
	12J00291	CROSS PRISM(SKN)
	12J00301	CROSS PRISM(SKF)
	12J00351	POLARIZATION CONVERTER-S
	12J00361	POLARIZATION CONVERTER-S
	12J00371	FIELD LENS(SK)
	12J00381	CONDENSER LENS 1(SK)
	12J00391	CONDENSER LENS 2(SK)
	12J00401	RELAY LENS 1(SK)
	12J00411	RELAY LENS 2(SK)
	12J00421	MIRROR 1(SK)
M48	12JS1351	FIELD LENS ASSY(SK)
	12JS1361	CONDENSER LENS ASSY1(SK)
	12JS1371	CONDENSER LENS ASSY2(SK)
M05	12JS1381	RELAY LENS ASSY1(SK)
M46	12JS1391	RELAY LENS ASSY2(SK)
M44	12JS1431	ZOOM LENS(SK)
	12JS1441	INTEGRATOR1(SKA)
	12JS1451	INTEGRATOR2(SKA)
	OR 12JS1471	INTEGRATOR2(SKA)
	12JS1481	POLARIZATION CONVERTER-S
	OR 12JS1491	POLARIZATION CONVERTER-S
M06	12JS1501	MIRROR 0(SK)
M07	12JS1511	MIRROR ASSY1(SK)
M08	12JS1521	MIRROR 2(SK)

*** APPEARANCE PARTS ***

M09	12JS1531	DICHROIC MIRROR 1(SK)
M10	12JS1541	DICHROIC MIRROR 2(SK)
	12JS1551	POLARIZER 1(SK)
	12JS1561	POLARIZER 2(SK)
	12JS1571	POLARIZER 3(SK)
	12JS1581	REFLECTER LAMP(SK)
	12JS1601	COVER GLASS(SK)
	12JS1711	POLARIZER 3(SKK)
	12JS1721	MIRROR ASSY1(SKT)
	25617801	TAPE FORM
	24BS6621	REMOCON CASE UNIT
	24C02681	CLIP(DS-9UL)
	24C05911	TILT RIVET
	24C05601	SPLIT PIN
	24D11431	TOP COVER(VT440J)
M45	24DT7492	BOTTOM COVER ASSY
	24DT7675	TOP COVER ASSY
	24F29461	TILT FOOT(R)
	24F30581	CUSHION FOOT(R)
	24F31771	HOLDER(CL1)
	24F31781	HOLDER(CL2)
	24F31791	HOLDER(FL)
	24F31801	HOLDER(RL1)
	24F31811	HOLDER(RL2)
	24F31821	HOLDER(M1)
	24F31861	INDICATOR
M20	24F31871	FILTER F
	24F31881	TILT FOOT F
M28	24F31901	HANDLE
	24F31921	CUSHION (FRONTFOOT)
	24F31931	LAMP COVER
	24F31941	FILTER CASE A
	24F31951	FILTER CASE B
	24F31971	SPEAKER HOLDER
M22	24F31981	FILTER S
M23	24F31991	FILTER R
	24F32011	SEPARATE BASE(SK)
M13	24F32021	COVER OPT(SK)
	24F32031	DUCT CASE(SK)
	24F32041	INHAIL DUCT(SK)
	24F32051	COVER(INHAIL DUCT)
	24F32061	STOPPER(XDP)
	24F32071	LAMP BOX(F)
	24F32081	LAMP BOX(T)
	24F32091	LAMP BOX(B)
	24F32561	TILTINSERT

*** APPEARANCE PARTS ***

M24	24F32601	WASHER(LAMP)
M04	24FT6951	CAP
M21	24FT7312	LAMP COVER ASSY
M27	24FT7351	FILTER ASSY A
	24FT7362	FILTER ASSY B
	24FT7401	TILT FOOT ASSY
M18	24FT7431	SEPARATE BASE(SK) ASSY
M25	24FT7441	DUCT CASE(SK)ASSY
M12	24FT7451	INHAIL DUCT(SK)ASSY
M11	24FT7461	COVER(INHAIL DUCT)ASSY
M15	24FT7471	STOPPER (XDP)ASSY
	24G05271	PUSH BUTTON
	24G05301	PUSH BOTTON(TILT)
	24H24411	HALF NUT
	24H35421	GRIP
	24H36621	PLATE(FL)
	24H36631	PLATE(IT1)
	24H36641	PLATE(IT2)
	24H36651	PLATE(RL2)
	24H36661	PLATE(POL)
M29	24H36701	BRACKET(HANDLE)
	24H36741	TERMINAL BOARD
M02	24H36811	STAY R
M43	24H36821	SPRING S
M30	24H36861	SHAFT(HANDLE)
	24H37091	SPRING(TILT)
	24H37131	BARRIER (LAMP BOX)
M16	24H37191	BARRIER1(SEPARATE BASE)
M17	24H37241	BARRIER2(SEPARATE BASE)
	24H37321	BARRIER(LAMP COVER)
	24H37331	PLATE(I/O)
	24H37341	BARRIER(XDP)
	24HS2581	BARRIER(LAMP BOX)ASSY
	24HS2591	PLATE(FL)ASSY
	24HS2601	PLATE(RL2)ASSY
M26	24HS2621	BRACKET(I/O)ASSY
	24J15341	BARRIER(TOP)
	24J15451	DOUBLE FACE ADHESIVE TAPE
	24J15731	BARRIER(TILTFOOTR)
	24J15751	FILTER(COVER)A
	24J15761	FILTER(COVER)B
	24J15811	BARRIER
	24J15821	CUSHION (SEPARATE BASE)
	24J15831	CUSHION (DUCT CASE)
	24J15841	CUSHION (INHAIL DUCT)
	24J15851	CUSHION(INHAIL COVER)

*** APPEARANCE PARTS ***

M01	24J15861	CUSHION (FL)
	24J15871	CUSHION (RL2)
	24J15961	CUSHION2(INHAIL DUCT)
	24J15971	BARRIER(B/M)
	24J15981	SHEET A(SP)
	24J15991	SHEET B(SP)
	24J16021	CUSHION(FILTER)
	24J16041	CUSHION(10*6.5*T13)
	24K24401	INLAY(I/O)
	24L11331	LABEL(8*28)
	24L34401	CAUTION LABEL(SERVICE)
	24L41311	CAUTION
	24L42201	CAUTION LABEL(EARTH)
	24L43941	NAME PLATE
	24L43991	LABEL POS
	24L44741	LABEL(VT LAMP)
	24L44981	LABEL(LENS)
	24L45001	LABEL(3.5*20)
	92203961	TAPE SCOTCH SUPER
E09	955X7161	LAMP BOX SASSY
M36	955X7181	R POL SASSY
M37	955X7191	G POL SASSY
M38	955X7201	B POL SASSY
M40	955X7211	FL SASSY
M41	955X7241	IT1 SASSY
M42	955X7251	IT2 SASSY
M39	955X7261	RL2 SASSY
M35	955X7131	OPT BASE SASSY

*** PRINTED & PACKING MATERIALS ***

M52	16761791	SERIAL LABEL
	24M15261	ENVELOPE(VL CLUB)
	24M16261	ACCESSORY BAG
	24MU4771	SPACER F
	24MU4781	SPACER R
	24MU4921	CARTON BOX
	24MU5511	FILLER C,CARTON
	24MU5521	PROTECTION BAG
M52	70800855	POWER CORD J3 L3 BK,L(L)
	78037724	VL CLUB LEAFLET
	78038111	VL CLUB REGISTRATION CARD
M52	78038761	QUICK REFERENCE (VT540J/440J)
M52	78047921	WARRANTY ENVELOPE 100*220
M52	78048302	WARRANTY CARD
M52	78411401	USE'S MANUAL VT540J/VT440J
E10(M52)	79646751	RD-366E
M52	79646941	VT CABLE SET

*** VT CABLE SET ***

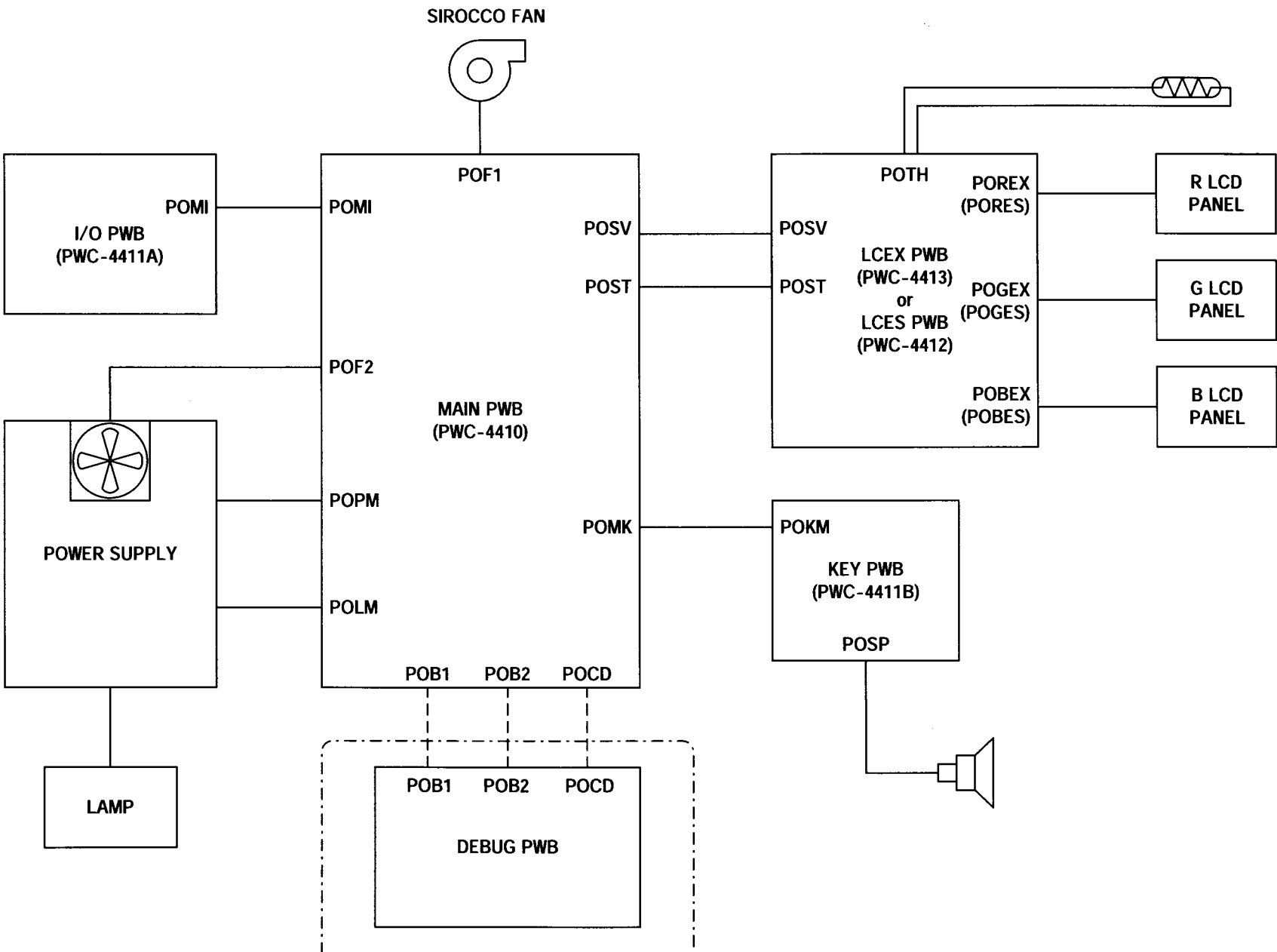
M52	73499369	CABLE,RGB
M52	70599172	ADAPTER D15P-MD15P
M52	24C05051	STRAP
M52	24C04534	PUSH RIVET

*** OPTION ***

REMOTE CONTROL KIT(J) (98999245)

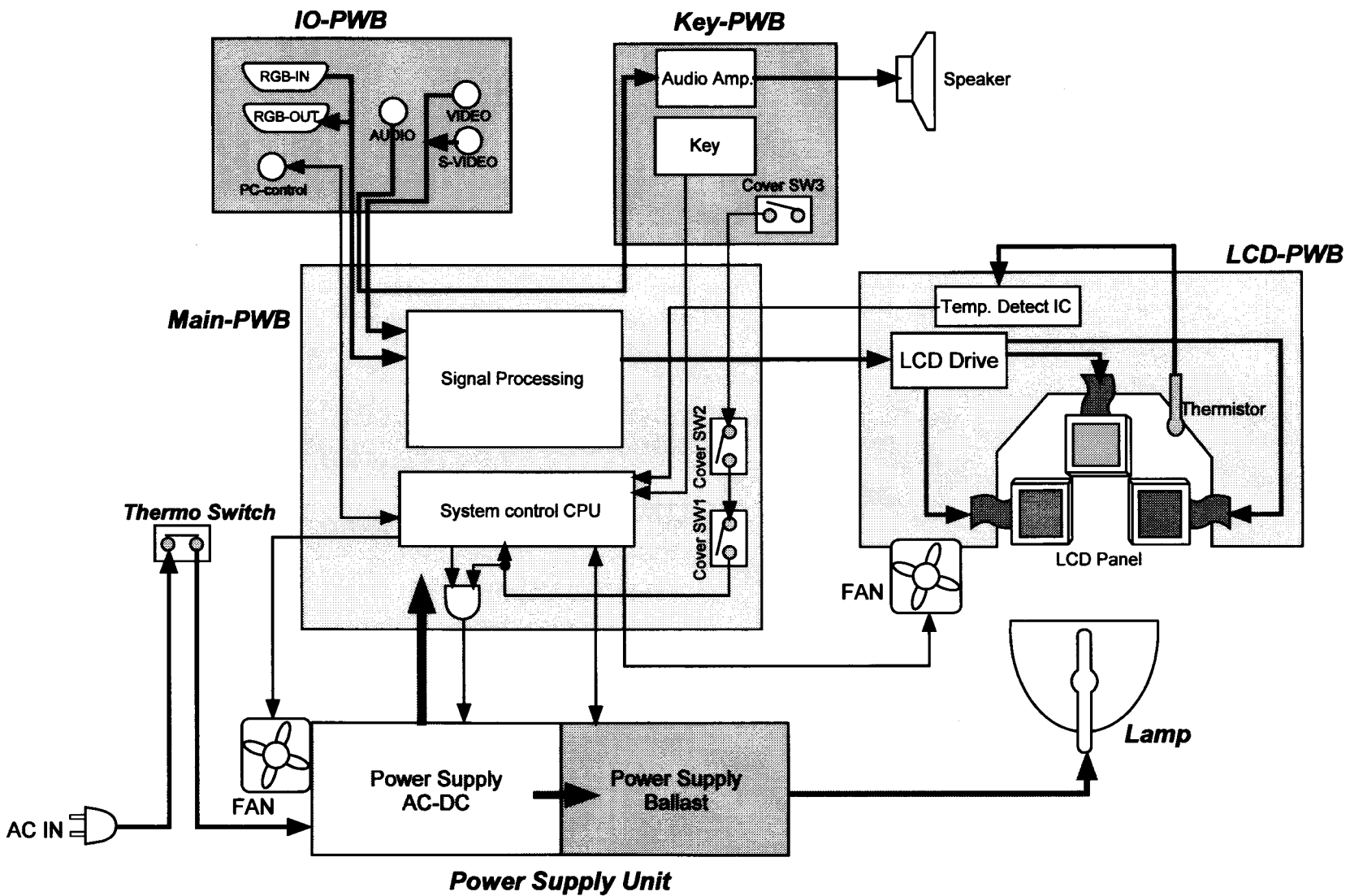
	73499328	CABLE SERIAL TO PS/2
	73499329	CABLE SERIAL TO MAC
	73499353	CABLE SIGNAL (DIN8P-D9P)
	79644981	UNIVERSAL IR RECIEVER(J)
	79645901	REM-T HAND UNIT RD-325

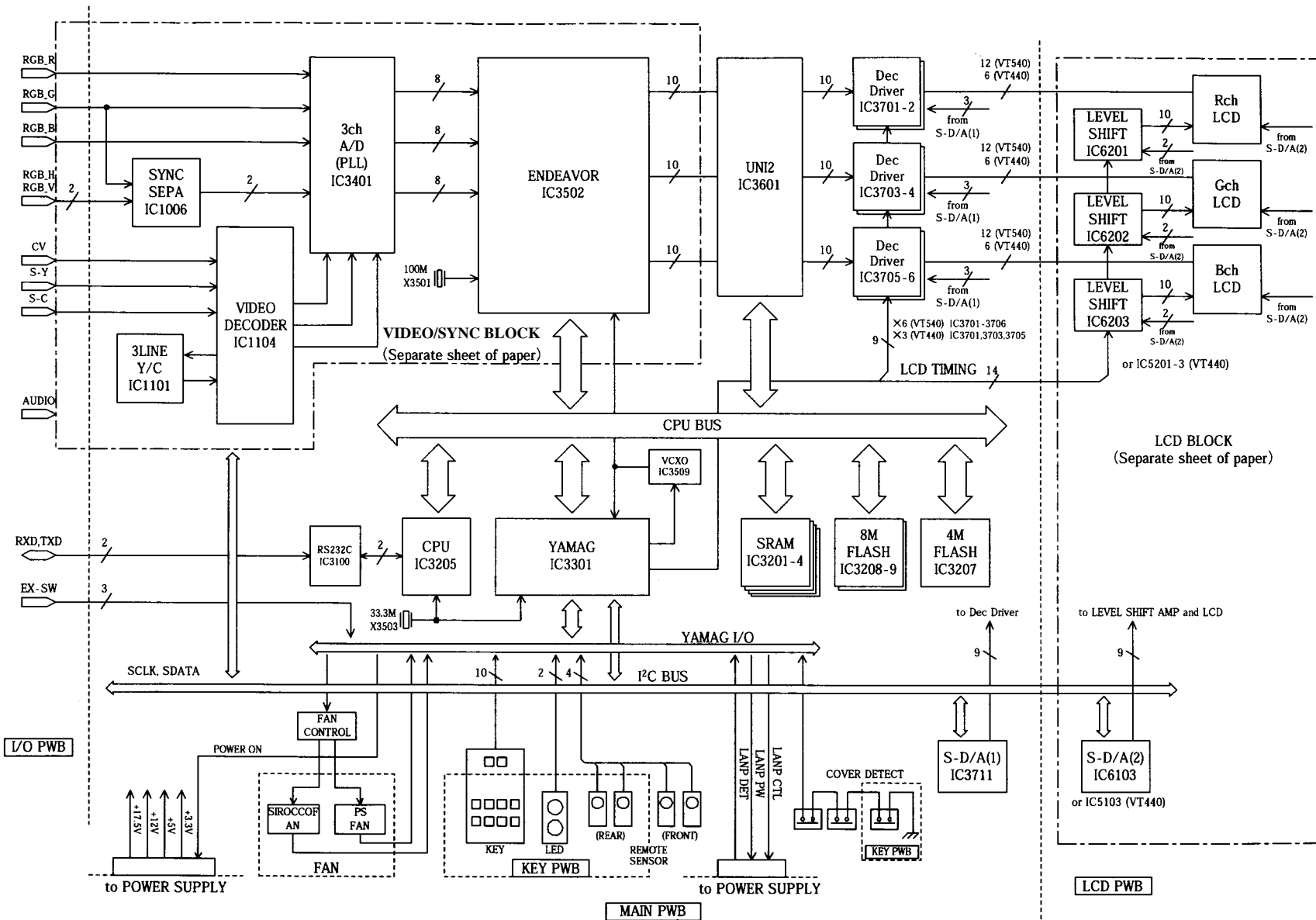
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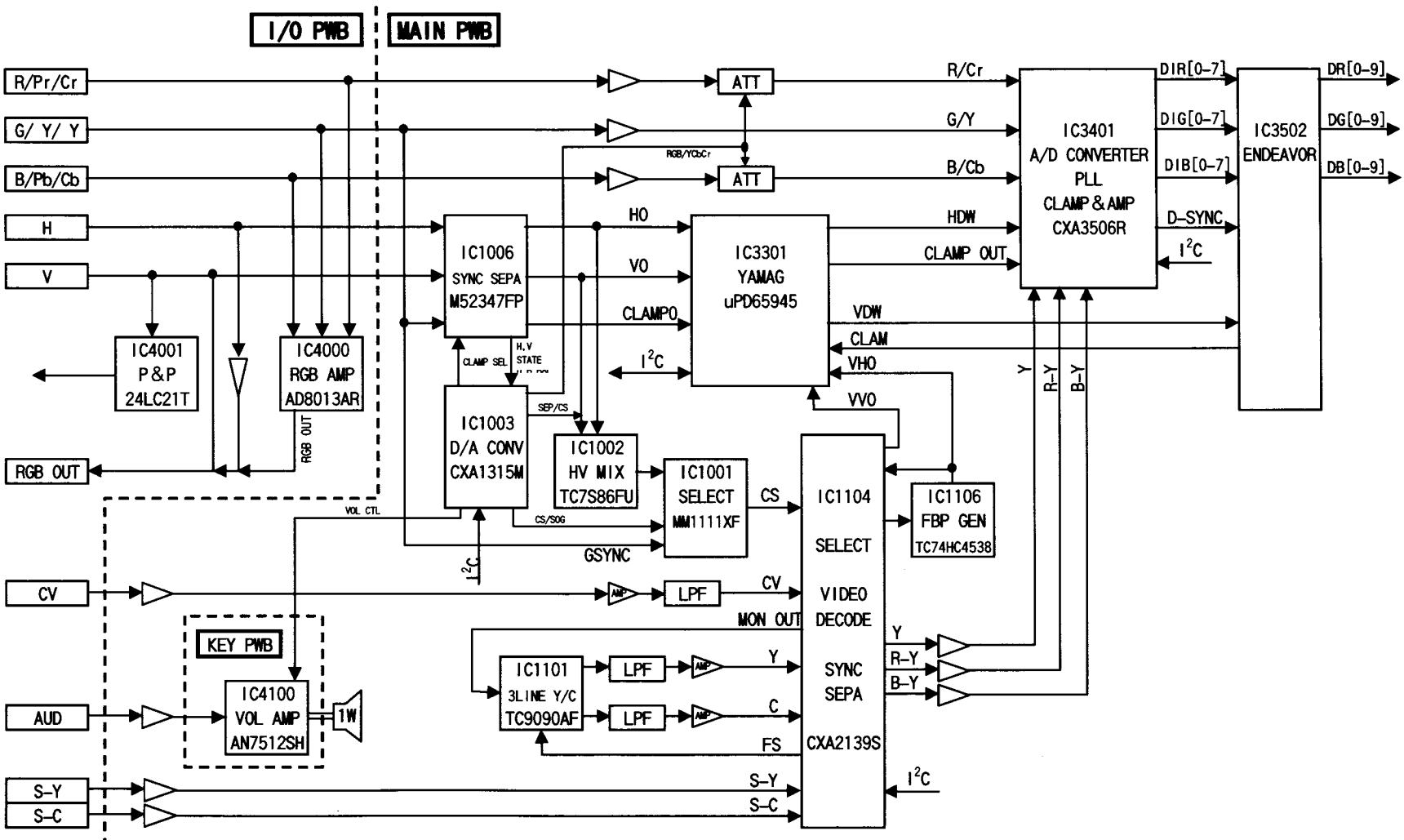
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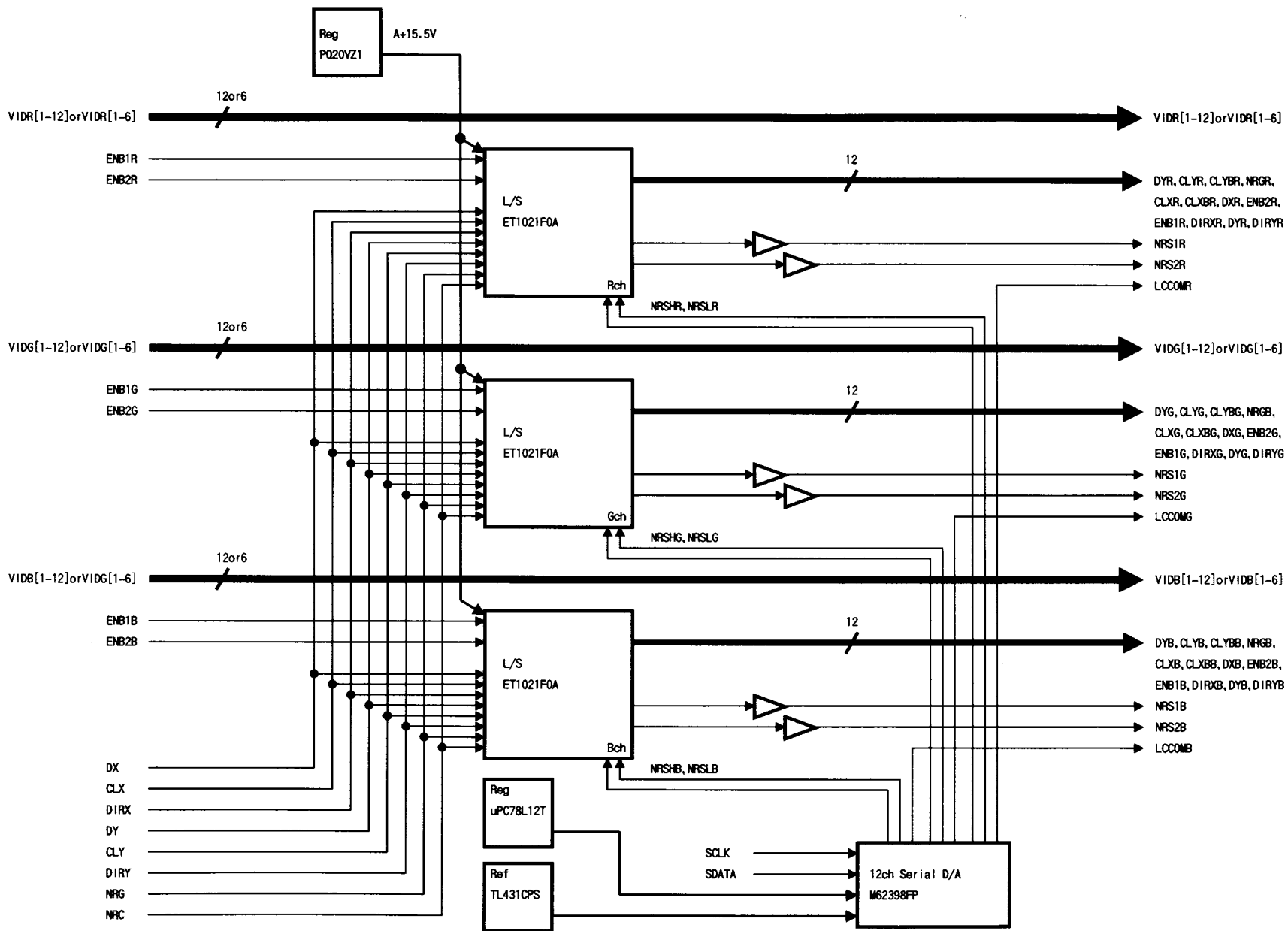


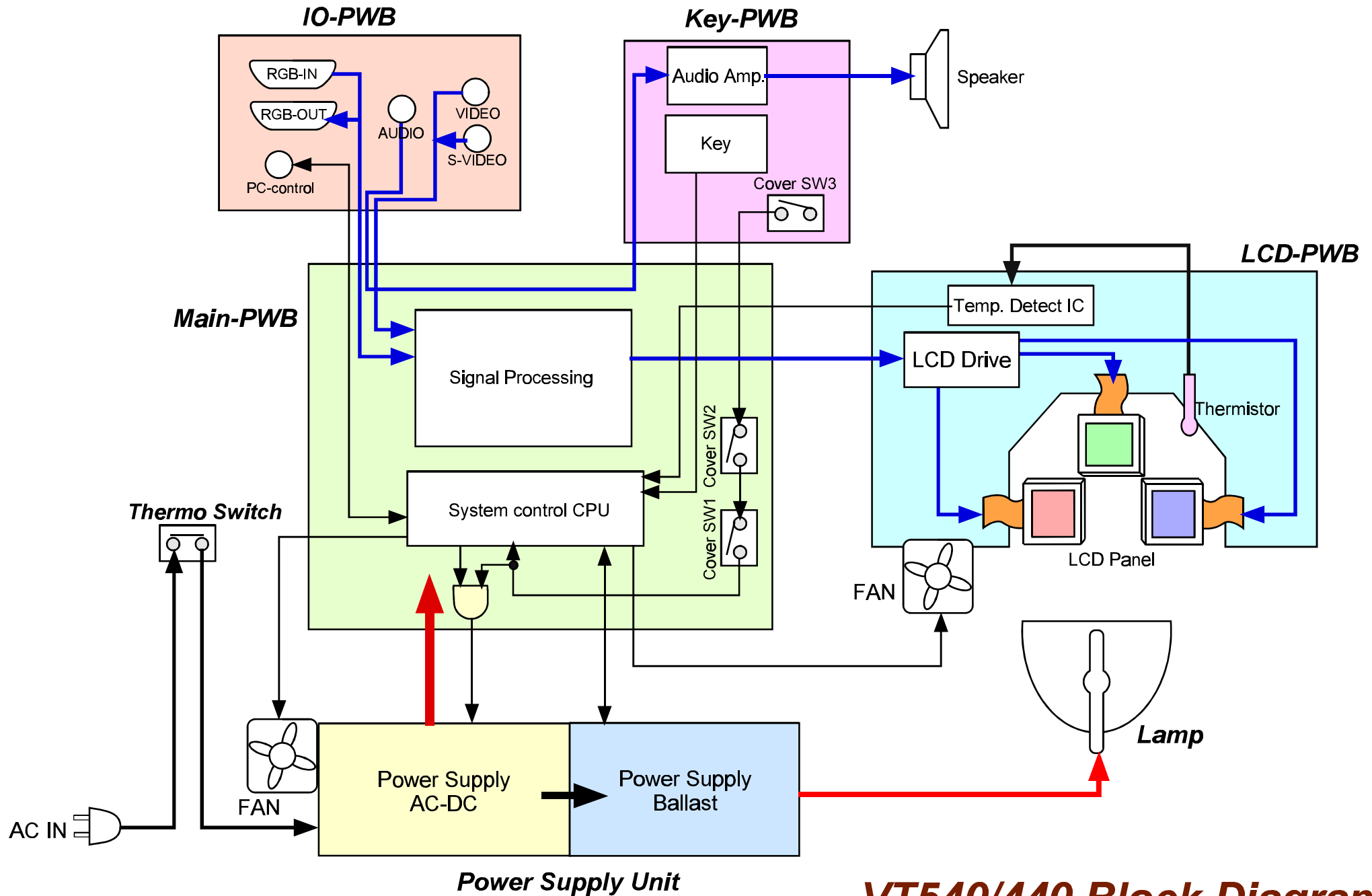
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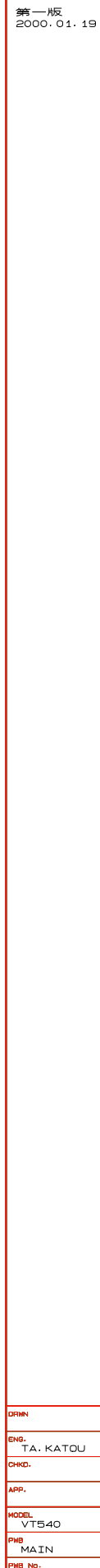
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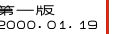
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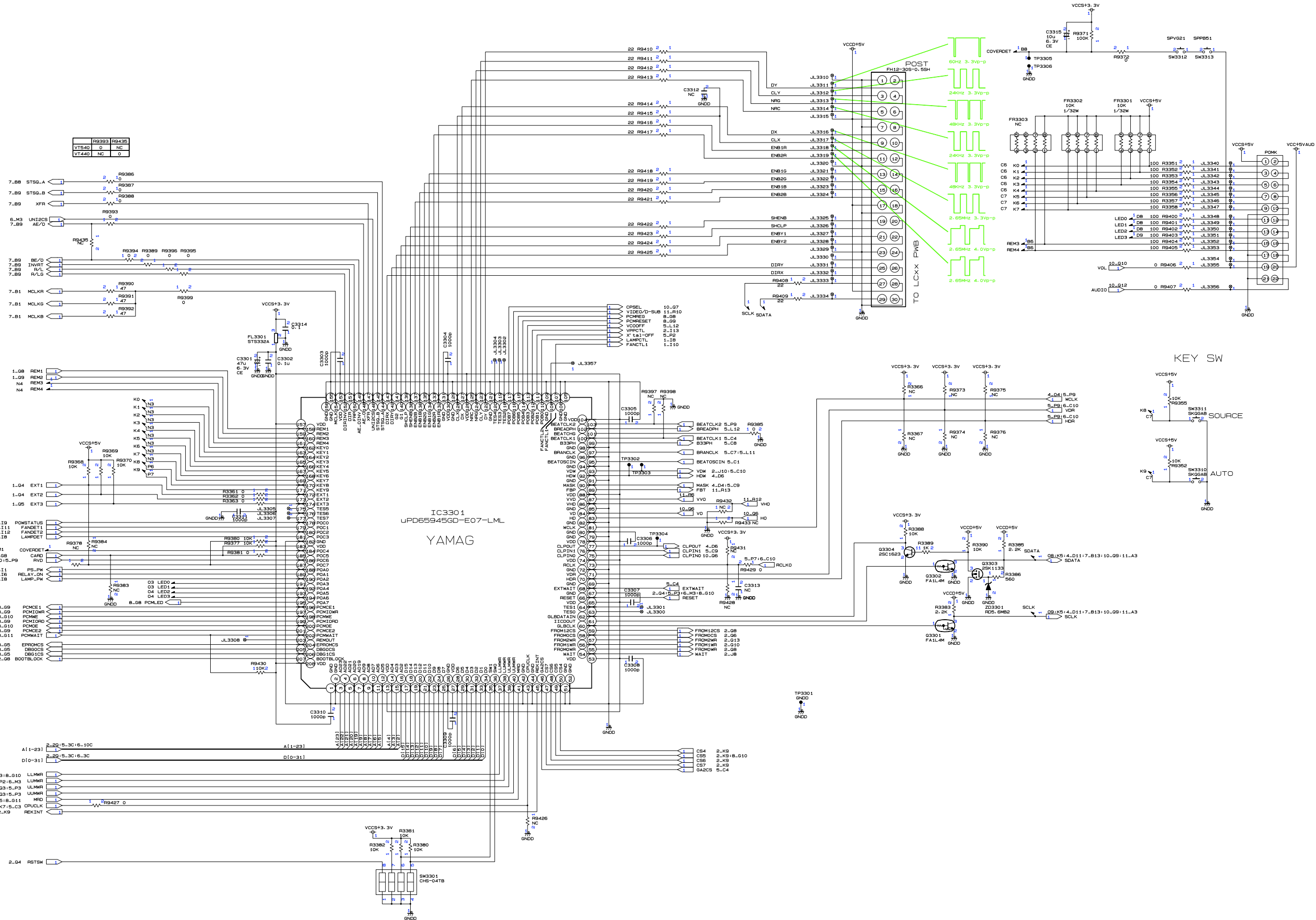


VT540/440 Block Diagram

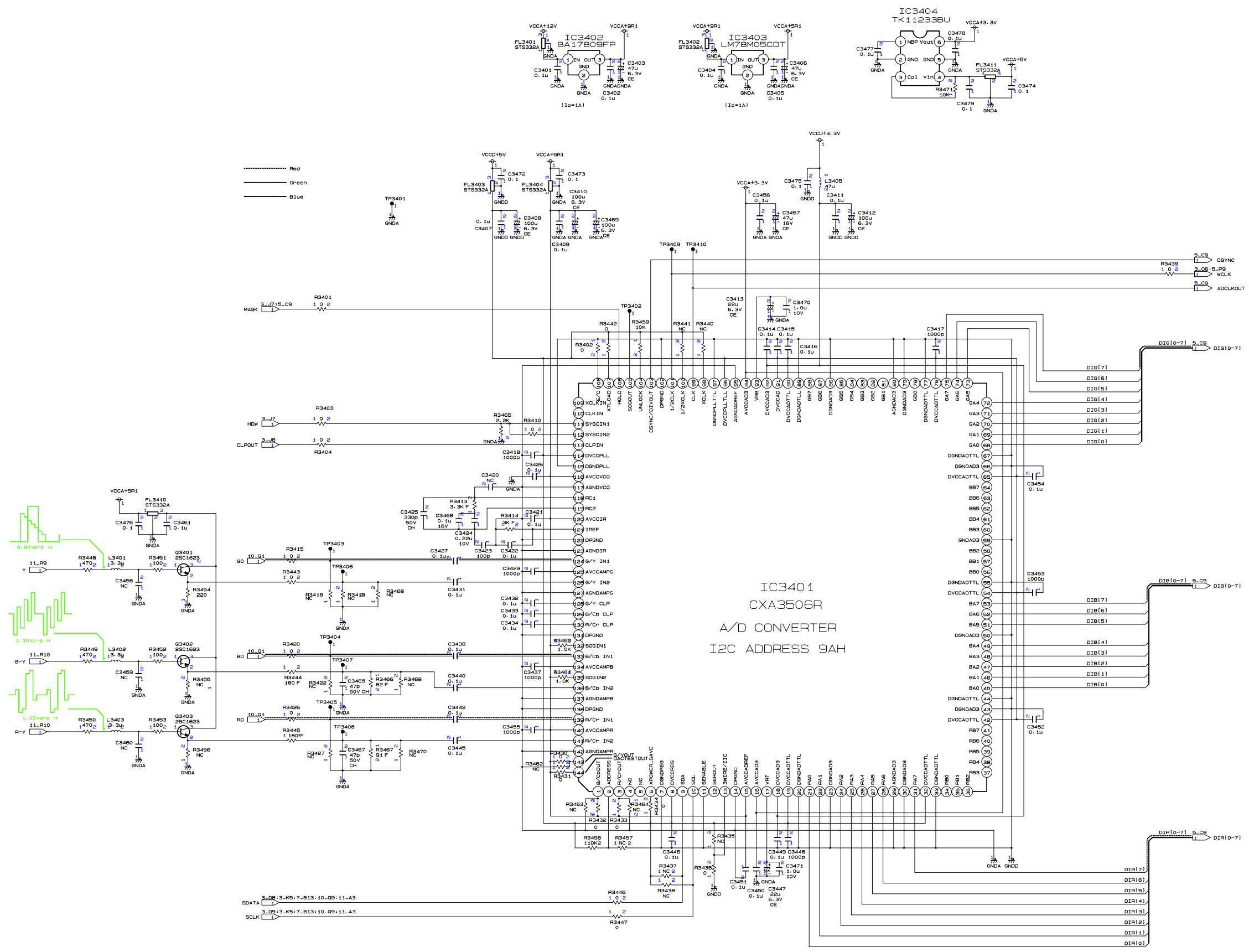




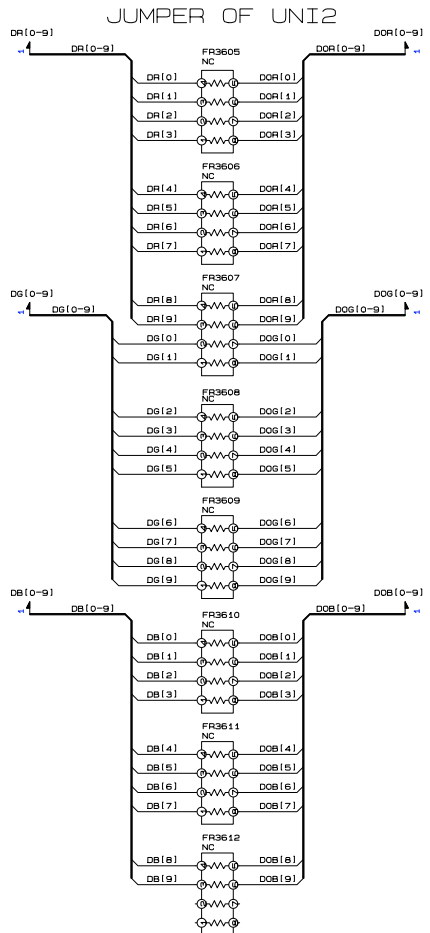
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VT440	NC	0



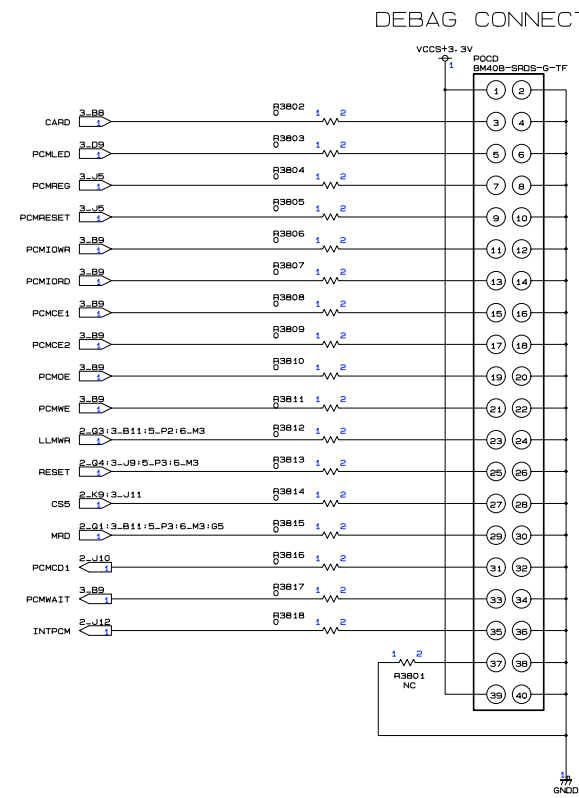
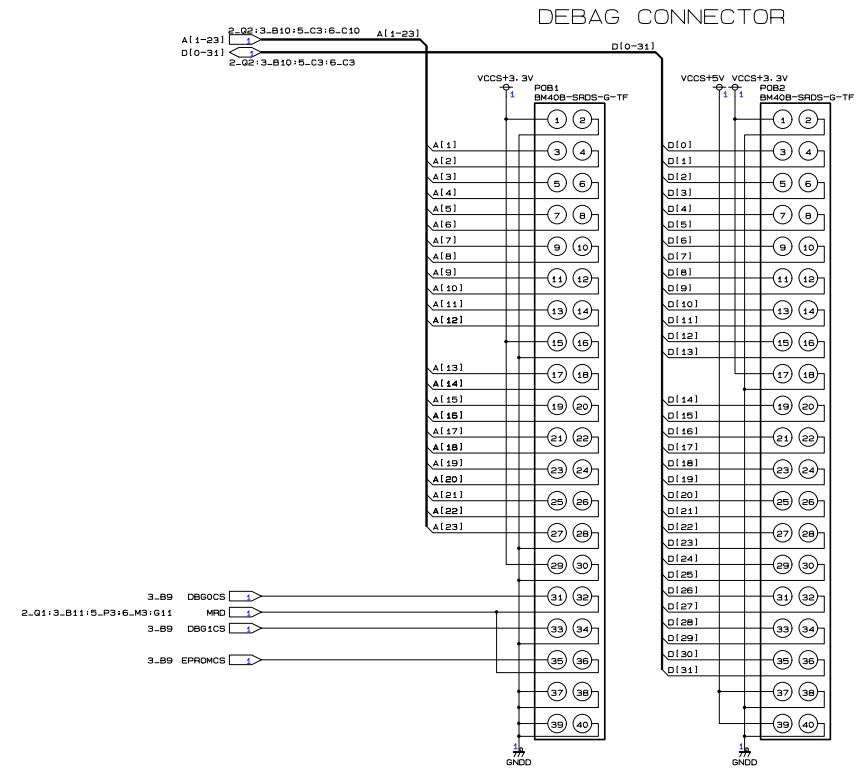
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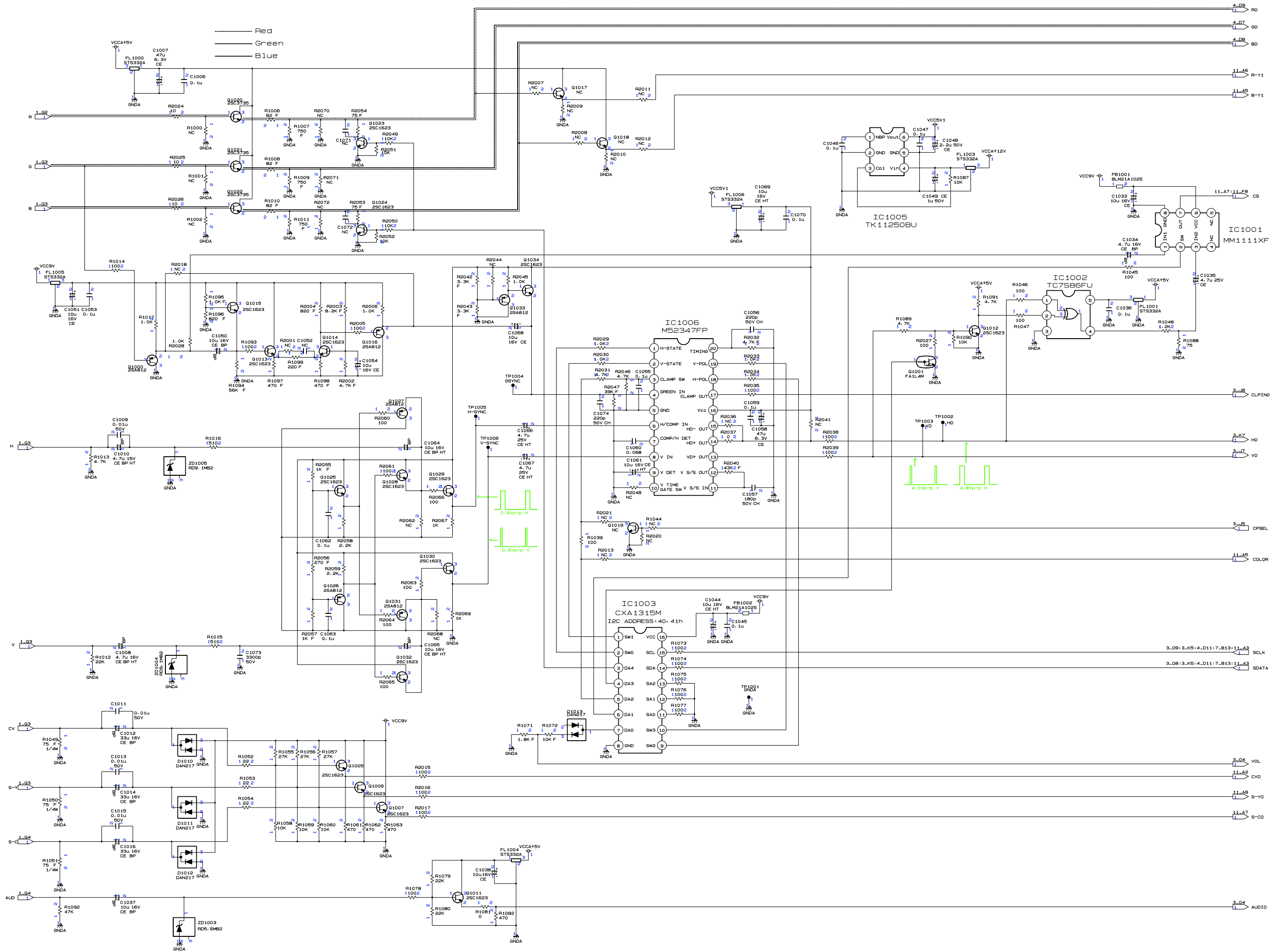


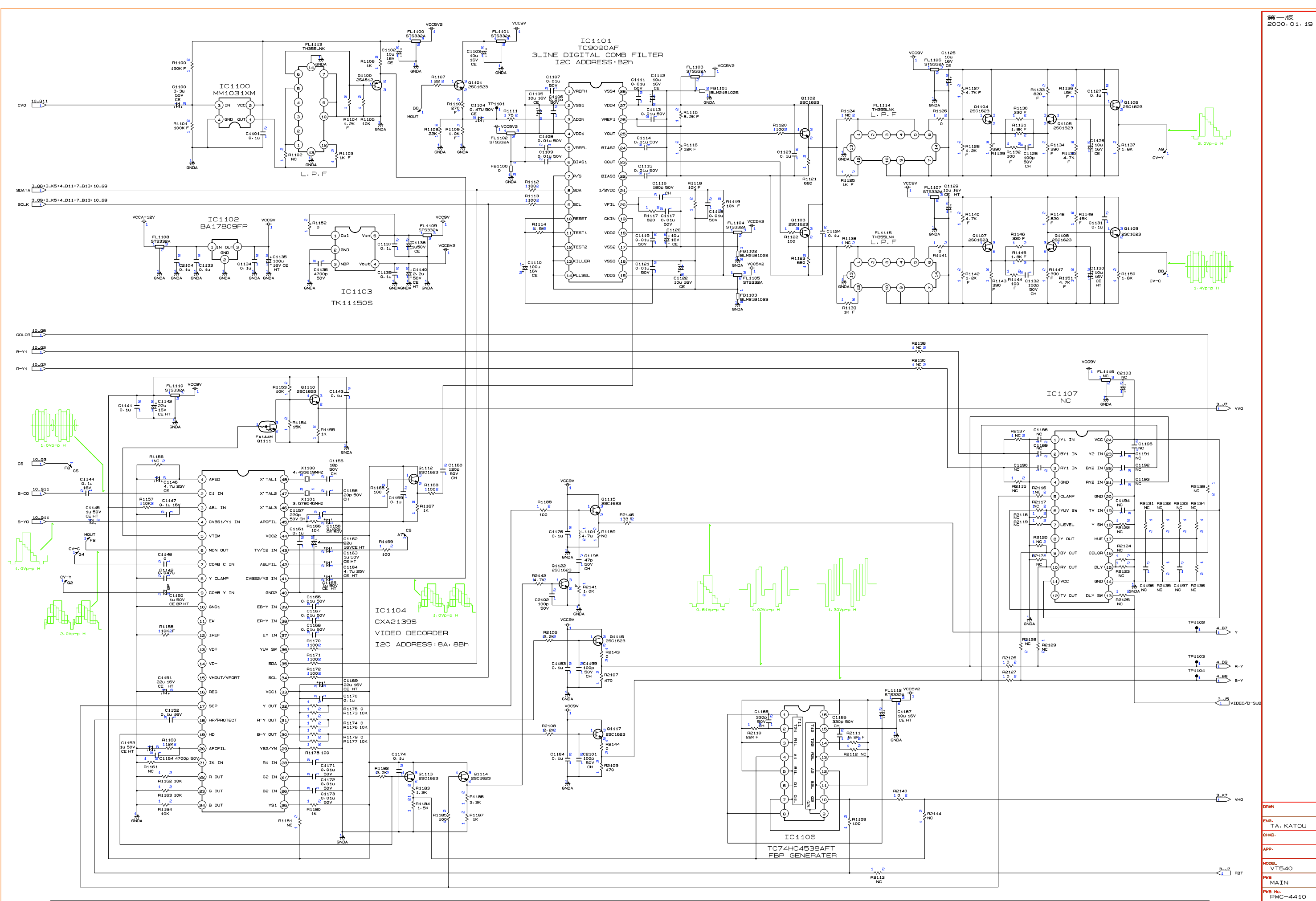




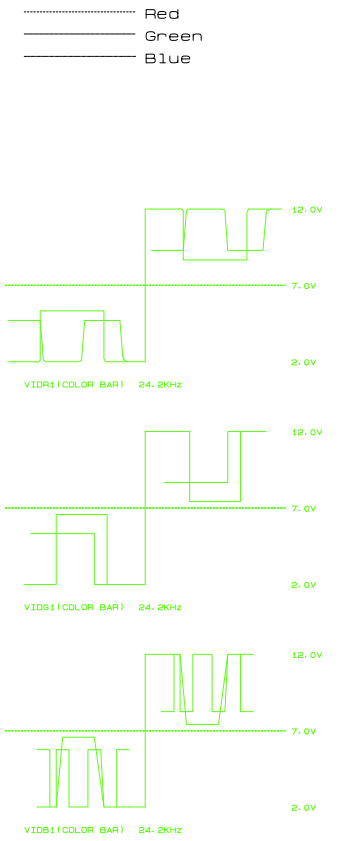
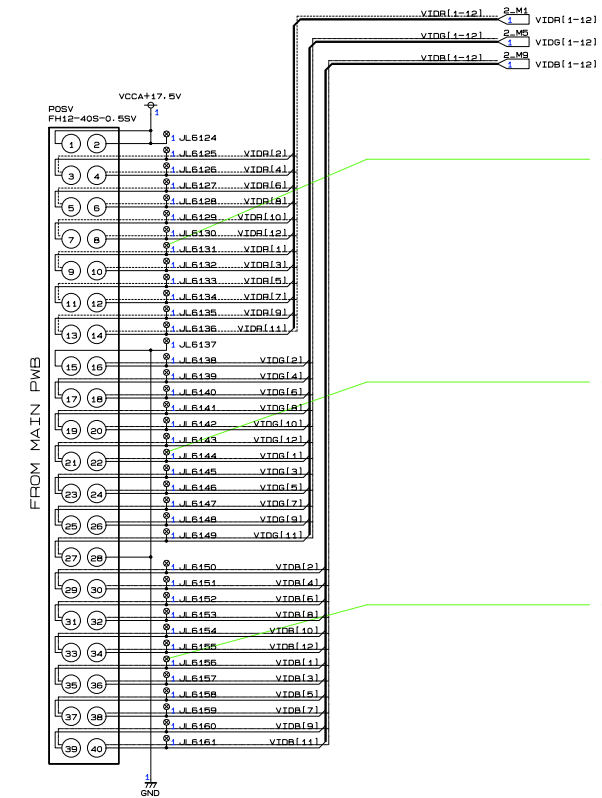
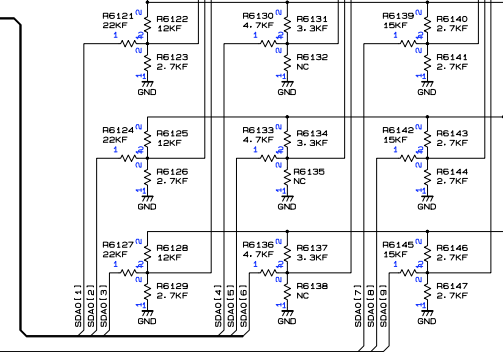
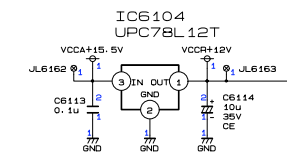
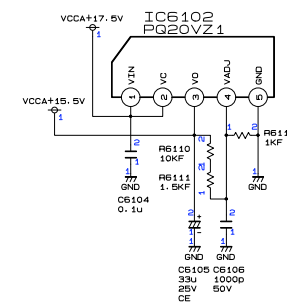
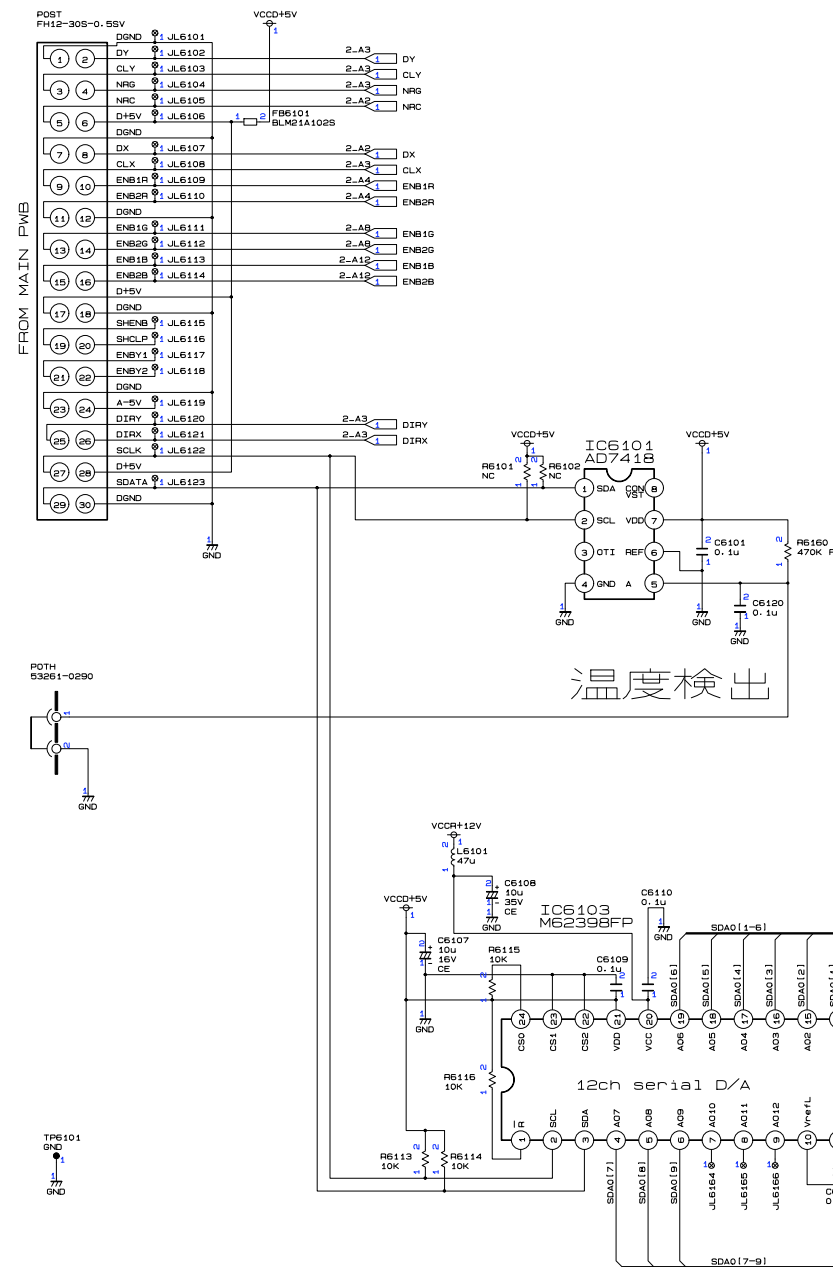




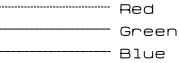




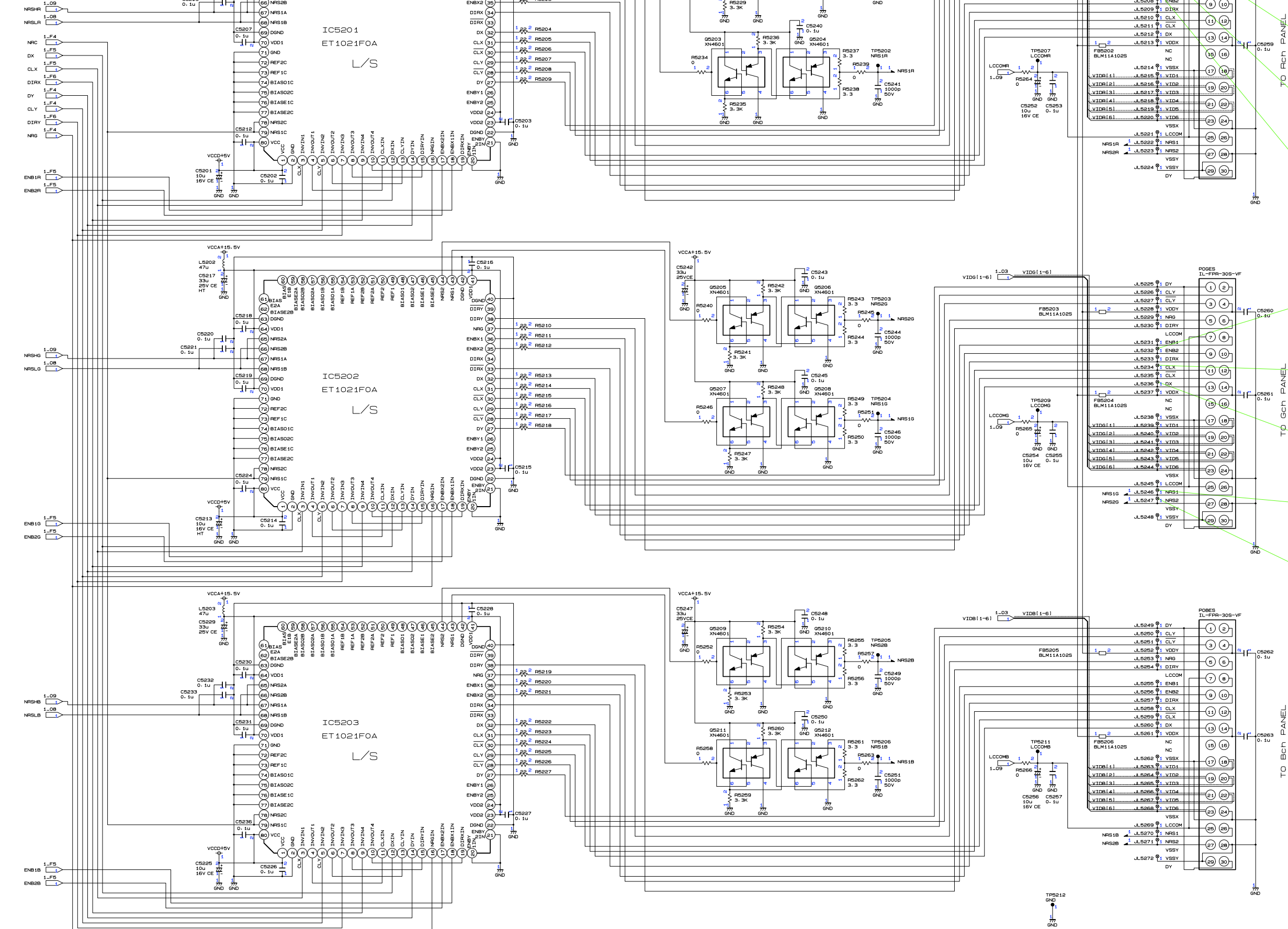
VT540 ONLY



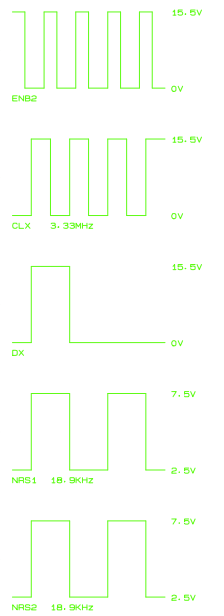
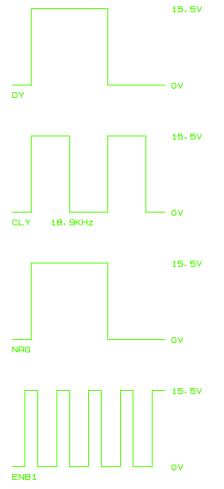
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2-A6 NRS1G
2-A10 NRS1B
2-A2 NRS1H
2-A6 NRS1I
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2-M3 LCCOMR
2-M7 LCCOMG
2-M11 LCCOMB



VT440 ONLY



Red
Green
Blue



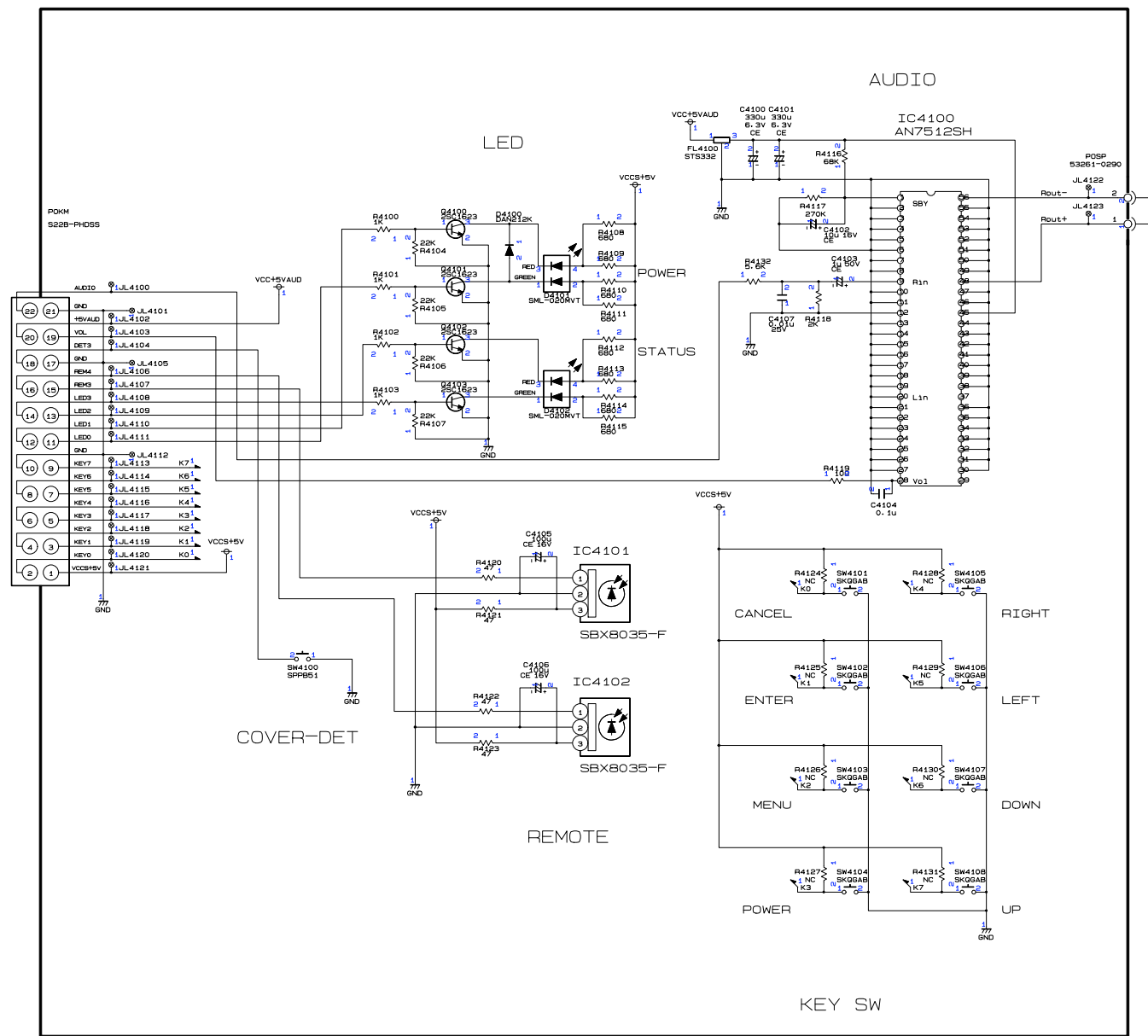
第一版
2000.01.19

NEC

PANEL DRIVE BLOCK

DOWN
ENG.
M. TAKAHASHI
CHKD.
APP.
MODEL
VT440
PWB
LCES
PWB NO.
PWC-4412
7820161 12/4







REVISIONS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523	
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