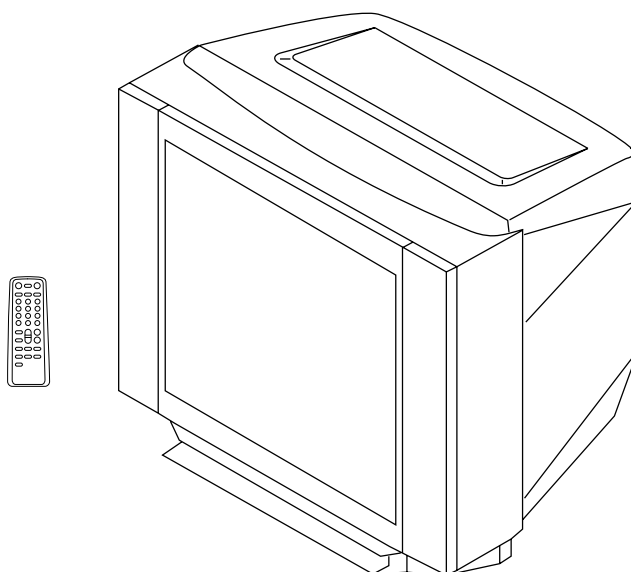


SERVICE MANUAL

BG-3S CHASSIS

<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>	<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>
<i>KV-XF21M83</i>	<i>RM-952</i>	<i>India</i>	<i>SCC-U22E-A</i>				
<i>KV-XF21M93</i>	<i>RM-952</i>	<i>India</i>	<i>SCC-U22F-A</i>				



TRINITRON[®] COLOR TV
SONY[®]

SPECIFICATIONS

		Note
Power requirements	110-240 V AC, 50/60 Hz	
Power consumption (W)	Indicated on the rear of the TV	
Television system	B/G, I, D/K, M	
Color system	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58	
Stereo/Bilingual system	NICAM Stereo/Bilingual B/G; I: A2 Stereo/Bilingual (German) B/G	KV-XF21M93 only
Channel coverage		
B/G	VHF: E2 to E12 / UHF: E21 to E69 / CATV: S01 to S03, S1 to S41	
I	UHF: B21 to B68 / CATV: S01 to S03, S1 to S41	
D/K	VHF: C1 to C12, R1 to R12 / UHF: C13 to C57, R21 to R60 CATV: Z1 to Z39, S01 to S03, S1 to S41	
M	VHF: A2 to A13 / UHF: A14 to A79 / CATV: A-8 to A-2, A to W+4, W+6 to W+84	
⏏ (Antenna)	75-ohm external terminal	
Audio output	3W + 3W	
3D WOOFER	9W	
Number of terminal		
📺 (Video)	Input: 2 Output: 1	Phono jacks; 1 V _{P-P} , 75 ohms
≥ (Audio)	Input: 2 Output: 1	Phono jacks; 500 mVrms
🎧 (Headphone)	Output: 1	Minijack
Picture tube	21 inch	
Tube size (cm)	54	Measured diagonally
Screen size (cm)	51	Measured diagonally
Dimension (w/h/d, mm)	640 × 470 × 498	
Mass (kg)	29	

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SELF DIAGNOSTIC FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/TIMER lamp will automatically begin to flash.

The number of times the lamp flashes translates to a probable source of the problem. A definition of the STANDBY/TIMER lamp flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

1. DIAGNOSTIC TEST INDICATORS

When an errors occurs, the STANDBY/TIMER lamp will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the lamp will identify the first of the problem areas.

Result for all of the following diagnostic items are displayed on screen. No error has occurred if the screen displays a "0".

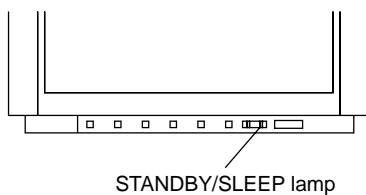
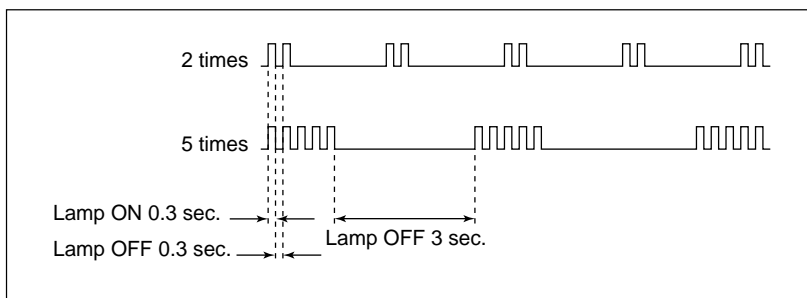
Diagnostic Item Description	No. of times STANDBY/TIMER lamp flashes	Self-diagnostic display/Diagnostic result	Probable Cause Location	Detected Symptoms
• Power does not turn on	Does not light	—	<ul style="list-style-type: none"> • Power cord is not plugged in. • Fuse is burned out F4601 (F) 	<ul style="list-style-type: none"> • Power does not come on. • No power is supplied to the TV. • AC power supply is faulty.
<ul style="list-style-type: none"> • +B overcurrent (OCP) or overvoltage (OVP) • Vertical deflection stopped • Horizontal deflection overdrive 	2 times	002:000 or 002:001~255 003:001~255 004:001~255 at the same time	<ul style="list-style-type: none"> • H.OUT Q511 is shorted. (A board) • IC1800 is shorted. (C5 board) • -13V is not supplied. (A board) • IC 503 faulty (A board) • IC 301 faulty (A board) 	<ul style="list-style-type: none"> • Power does not come on. • Load on power line is shorted. • Has entered standby state after horizontal raster. • Vertical deflection pulse is stopped. • Power line is shorted or power supply is stopped.
• White balance failure (no PICTURE)	5 times	005:000 or 005:001~225	<ul style="list-style-type: none"> • G2 is improperly adjusted. (Note 2) • CRT problem. • Video OUT IC1800 is faulty. (C5 board) • IC301 is faulty. (A board) • No connection A board to C5 board. 	<ul style="list-style-type: none"> • No raster is generated. • CRT cathode current detection reference pulse output is small.
• Micro reset	—	101:00 or 101:001~225	<ul style="list-style-type: none"> • Discharge CRT (C5 Board) • Static discharge • External noise 	<ul style="list-style-type: none"> • Power is shut down shortly, after this return back to normal. • Detect Micro latch up.

Note 1: If a + B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously.

The symptom that is diagnosed first by the microcontroller is displayed on the screen.

Note 2: Refer to screen (G2) Adjustment in section 3-4 of this manual.

2. DISPLAY OF STANDBY/TIMER LIGHT FLASH COUNT



<u>Diagnostic Item</u>	<u>Flash Count*</u>
+B overcurrent/overvoltage	2 times
Vertical deflection stopped	
White balance failure	5 times

* One flash count is not used for self-diagnostic.

3. STOPPING THE STANDBY/TIMER FLASH

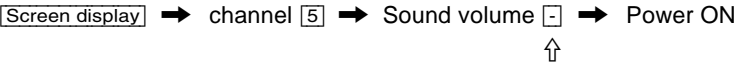
Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY/TIMER lamp from flashing.

4. SELF-DIAGNOSTIC SCREEN DISPLAY

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurrences of failure for confirmation on the screen:

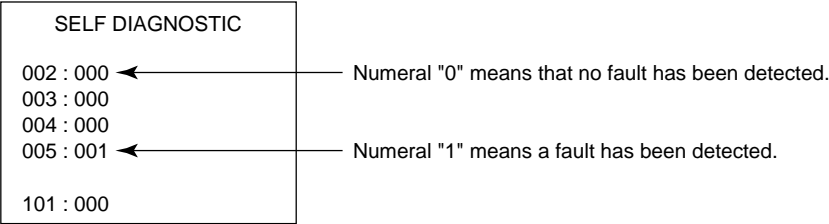
[To Bring Up Screen Test]

In standby mode, press buttons on the remote commander sequentially in rapid succession as shown below:



Note that this differs from entering the service mode (mode volume [+]).

Self-Diagnosis screen display



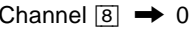
5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to “0”.

Unless the result display is cleared to “0”, the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

[Clearing the result display]

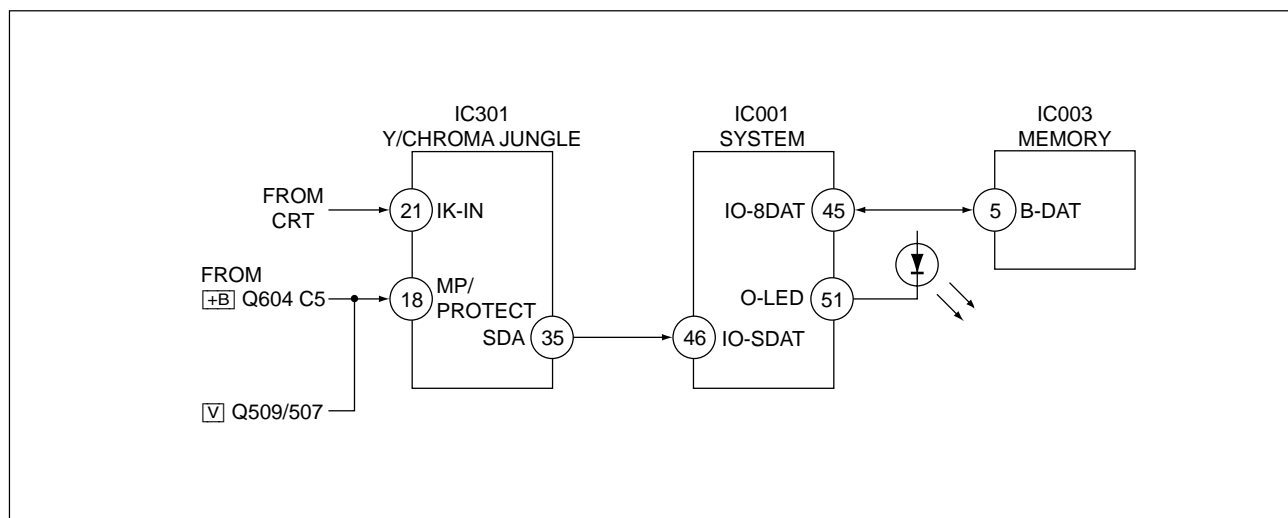
To clear the result display to “0”, press buttons on the remote commander sequentially as shown below when the diagnostic screen is being displayed.



[Quitting Self-diagnostic screen]

To quit the entire self-diagnostic screen, turn off the power switch on the remote commander or the main unit.

6. SELF-DIAGNOSTIC CIRCUIT



+B overcurrent (OCP)

Occurs when an overcurrent on the +B(135) line is detected by Q604. If Q604 goes to ON and the voltage to pin 18 of IC301 should go down when V.SYNC is more than seven verticals in a period, the unit will automatically turn off.

Vertical deflection stopped

Occurs when an absence of the vertical deflection pulse is detected by Q509 and IC001 shut down the power supply.

Vertical deflection overcurrent

Occurs when an overcurrent on V drive line is detected by Q507. Power supply will be shut down when detect this by IC001.

White balance failure

If the RGB levels* do not balance or become low level within 5 seconds, this error will be detected by IC301. TV will stay on, but there will be no picture.

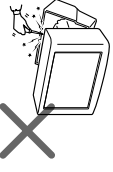

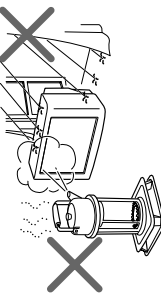
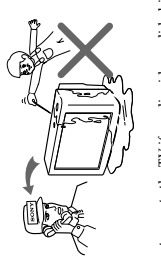
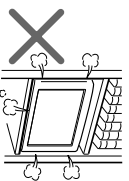
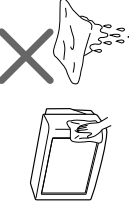


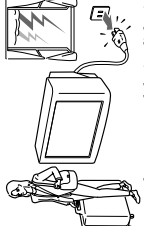

* (Refers to the RGB levels of the AKB detection Ref pulse that detects IK.)

SECTION 1
GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

WARNING

- Dangerously high voltages are present inside the TV.
- Operate the TV only between 110 – 240 V AC.

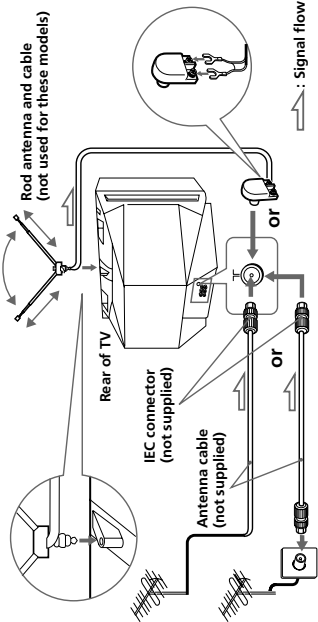
Using Your New TV

Getting Started

Step 1

Connect the antenna

If you wish to connect a VCR, see the "Connecting a VCR" diagram below.

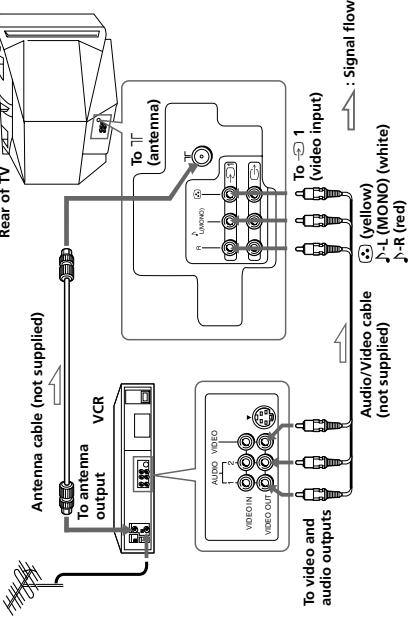


Note

- You are advised to use an outdoor antenna for better reception.

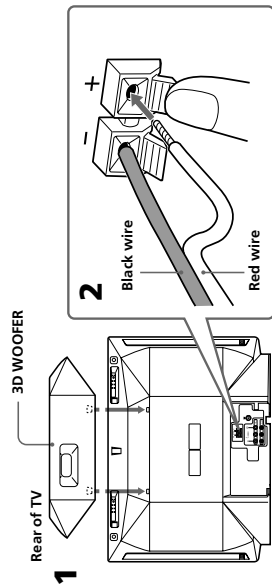
Connecting a VCR

To watch the video, press (see page 13).



Connecting the 3D WOOFER

You can enjoy high quality sound by connecting the 3D WOOFER.



1 Attach the 3D WOOFER into the footholds on the top of your TV.

2 Connect the wires to the 3D WOOFER (8Ω) terminals at the rear of your TV. The red wire should be connected to the ⊕ red terminal and the black wire to the ⊖ black terminal.

Notes

- Connect only the supplied 3D WOOFER; otherwise your TV may malfunction.
- Unplug your TV from the wall outlet when connecting the 3D WOOFER. To prevent a malfunction caused by a short circuit of the terminals, make sure that none of the 3D WOOFER wire strands stick out, making contact with the neighbouring speaker terminal.

Using Your New TV

Notes

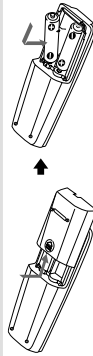
- If you connect a monaural VCR, connect the yellow plug to ⊕ (the yellow jack) and the black plug to ♀-L (MONO) (the white jack).
- If you connect a VCR to the ⊐ (antenna) terminal, preset the signal output from the VCR to the program number 0 on the TV.
- When no signal is input to the connected video equipment, the TV screen becomes blue.

CAUTION

Do not connect the power cord until you have completed making all other connections; otherwise a minimum leakage current might flow through the antenna and other terminals to ground.

Step 2

Insert the batteries into the remote

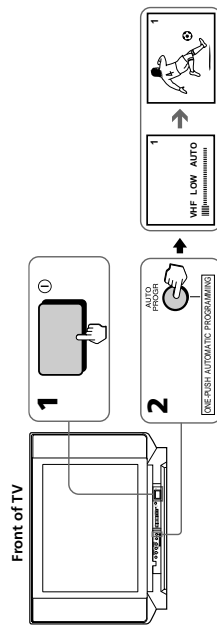


Note

- Do not use old batteries nor use different types of batteries together.

Step 3

Preset the channels automatically



Tips

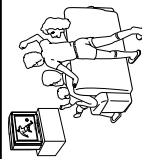
- If you want to stop automatic channel presetting, press SELECT twice.
- If your TV has preset an unwanted channel or cannot preset a particular channel, then preset your TV manually (see page 10).

Note

- During automatic channel presetting, your TV screen will indicate "B/G", "I", "D/K" or "M" for the TV system.

Now You Are Ready...

To watch your TV, see page 12.

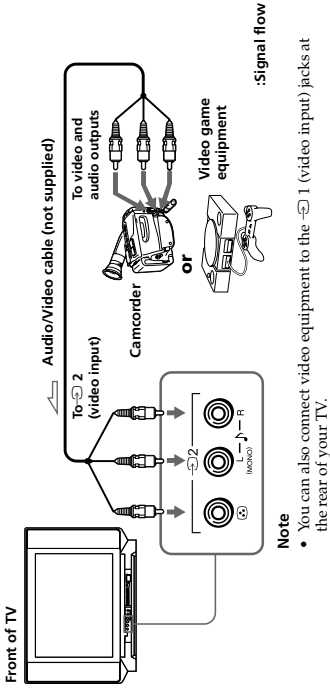


Connecting optional components

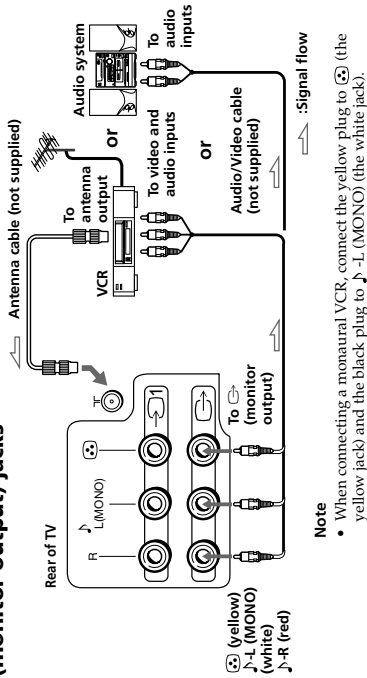
You can connect optional audio/video components, such as a VCR, multi disc player, camcorder, video game or stereo system.

To watch the picture of the connected equipment, press (see page 13).

Connecting a camcorder/video game equipment using the (video input) jacks



Connecting audio/video equipment using the (monitor output) jacks



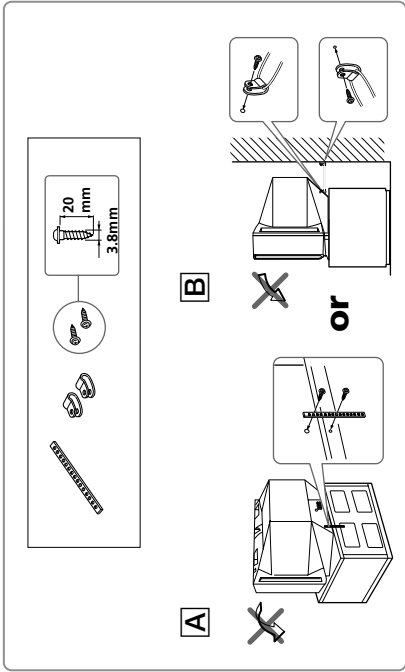
Securing the TV

To prevent the TV from falling, secure the TV using one of the following methods:

A With the supplied screws, attach the band to the TV stand and to the rear of the TV using the provided hole.

or

B Put the cord or chain through the clamps to secure the TV against a wall or pillar.

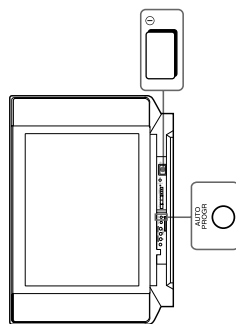


Note

- Use only the supplied screws. Use of other screws may damage the TV.

Presetting channels

You can preset up to 100 TV channels in numerical sequence from program number 1 using the remote and the buttons on your TV as well.



Using Your New TV

Presetting channels automatically

- 1 Press to turn on the TV.
- 2 Press AUTO PROGR. →

Note (KV-XF21M50 only)

- During automatic channel presetting, your TV screen will indicate "B/G", "I", "D/K" or "M" for the TV system.

To preset channels automatically from a specified program number

- (1) Press SELECT until "AUTO PROGRAM" appears.
- (2) Press + or –, The on-screen display will start flashing.
- (3) Press PROGR +/- or the number buttons until the desired program number appears.
- (4) Press + or –.

continued

Using Your New TV 9

Presetting channels (continued)

Presetting channels manually

- 1 Press SELECT until "MANUAL PROGRAM" appears.
- 2 Press + or –, →
- 3 Press PROGR +/- or the number buttons until the desired program number appears. or
- 4 Press + or – until the desired channel picture appears.
- 5 Press SELECT.

To change the TV system setting

If the picture or sound is abnormal when receiving programs through the (antenna) terminal

- (1) Press SELECT until "TV SYS" appears.

TV SYS: B/G

- (2) Press + or – to select the appropriate TV system until the picture or sound quality is optimal.



10 Using Your New TV

To change the color system setting

If the color is abnormal when receiving programs through the ㊦ (antenna) terminal or the ㊧ (video input) jack

- (1) Press SELECT until "COL. SYS" appears.
- (2) Press + or - to select the appropriate color system until the color is optimal.

COL. SYS: AUTO



Tip

- Normally set "COL. SYS" to "AUTO".

Skipping program numbers

- 1 Press PROG +/- or the number buttons until the unused or unwanted program number appears.
- 2 Press SELECT until "MANUAL PROGRAM" appears.
- 3 Press + or -.
- 4 Press PIC MODE.
- 5 Press SELECT.

To preset the skipped program number again

Preset the channel automatically or manually.

Tip

- You can also use SELECT and +/- on the TV to preset channels and skip program numbers.

To use the fine tuning (FINE) function

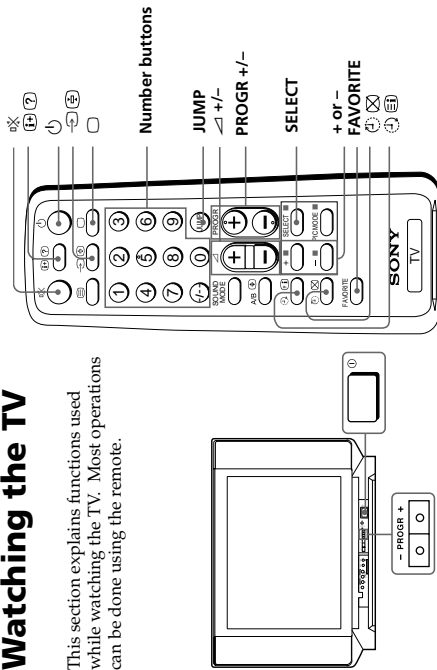
The fine tuning (FINE) function may help to reduce the following problems: incomplete Teletext display (KV-XF21M61/XF21M65 only), double images and lines moving across the TV screen.

You can use the fine tuning function as below:

- (1) Select the program number you want to adjust.
- (2) Press SELECT until "MANUAL PROGRAM" appears on the screen.
- (3) Press + or - on the remote control once.
- (4) Press ㊦ to display "FINE" on the screen.
- (5) Press + or - continuously until the above problems are minimized. The + or - icon on the screen flashes while tuning.
- (6) Press SELECT to return to normal screen.

Watching the TV

This section explains functions used while watching the TV. Most operations can be done using the remote.



1 Press ㊦ to turn on the TV.

When the TV is in the standby mode (the ㊦ indicator on the TV is lit red), press ㊦ on the remote or PROG +/- on the TV.



2 Press PROG +/- or the number buttons to select the TV program.

For double digit numbers, press +/-, then the number (e.g., for 25, press +/-, then 2 and 5).



or



3 Press +/- to adjust the volume.



Using Your New TV

Watching the TV (continued)**Additional tasks**

To	Do this
Turn off temporarily	Press . The indicator on the TV lights up red.
Turn off completely	Press on the TV.
Mute the sound	Press .
Watch the video input (VCR, camcorder, etc.)	Press to select "VIDEO 1" or "VIDEO 2". To return to the TV program, press .
Jump back to the previous channel	Press JUMP.
Display the on-screen information*	Press .
Adjust the volume of each TV program automatically	Press SELECT repeatedly until "INTELLIGENT VOL" appears, then press + or – to select "ON". To cancel, select "OFF".

Adjust the picture position when it is not aligned to the TV screen

PIC ROTATION

The or icon on the screen flashes while adjusting.

* The picture, sound, and either the program number or video mode are displayed. The on-screen display for the picture and sound information disappears after about 3 seconds.

Changing the on-screen display language

- Press SELECT until "LANGUAGE / اللغة : ENGLISH" appears on the screen.
- Press + or – to select "عربي".

Tip

- You can also use SELECT and on the TV to select the on-screen display language.

12 | Using Your New TV

Watching the TV (continued)**Setting the Wake Up timer**

- Press until the desired period of time appears.
- Select the TV program or video mode you want to display when you wake up.
- Press or set the Sleep timer if you want the TV to turn off automatically. The indicator on the TV lights up orange.

To cancel the Wake Up timer

Press until "WAKE UP TIMER: OFF" appears or turn off the TV's main power.

Notes

- The Wake Up timer starts immediately after the on-screen display disappears.
- If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up timer, the TV automatically goes into the standby mode. To continue watching the TV, press any button or control on the TV or the remote.

Setting the Sleep timer

- Press until the desired period of time appears.
- Press until "SLEEP TIMER: OFF" appears or turn the TV off.

14 | Using Your New TV

Advanced Operations

Customizing the picture and sound

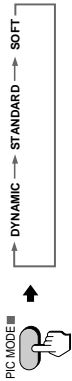
You can customize the picture and sound by selecting the picture and sound modes or by adjusting its settings.

You can change the sound effect by selecting the surround mode.

Selecting the picture and sound modes

To select the picture mode

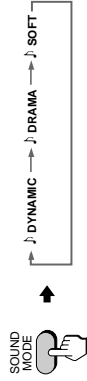
Press PIC MODE repeatedly until you get the desired picture mode.



Select	To
DYNAMIC	receive high contrast pictures.
STANDARD	receive normal contrast pictures.
SOFT	receive mild pictures.

To select the sound mode

Press SOUND MODE repeatedly until you get the desired sound mode.



Select	To
DYNAMIC	listen to dynamic and clear sound that emphasizes the low and high sound.
DRAMA	listen to sound that emphasizes vocals and background music.
SOFT	receive soft sound.

continued

Customizing the picture and sound (continued)

Adjusting the picture and sound settings

1 Press SELECT until the desired setting appears.



Each time you press SELECT, the setting item will change as follows:

2 Press + or - to adjust the item.



3 To adjust other items, repeat steps 1 to 2.

* "HUE" can be adjusted for the NTSC system only.

Notes

- When you select a picture or sound mode, the adjusted settings will be reset according to the selected mode.
- You can also use SELECT and +/- on the TV to adjust the picture and sound settings.

Selecting the surround mode

1 Press SELECT repeatedly until "SURROUND" appears.



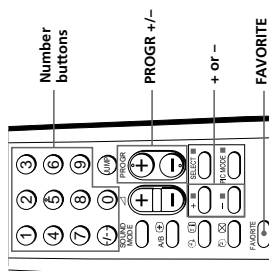
2 Press + or - to select the desired surround sound.



Select	To
MOVIE	listen to sound that spreads out over a large area, giving the feeling of being at a movie theatre.
MUSIC	listen to the sound that gives the feeling of being at a live concert.
OFF	turn off the surround sound.

Viewing your favorite channels

You can display six of your favorite channels for quick and easy selection. You can change the favorite channel setting as well.



Selecting a favorite channel

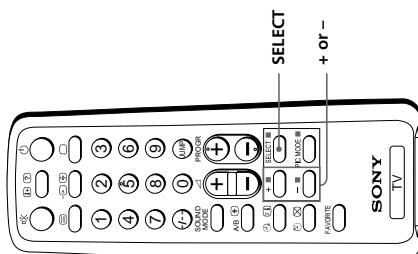
- 1 Press FAVORITE.
FAVORITE CH
@PR01 @PR02 @PR03
@PR04 @PR05 @PR06
- 2 Press the number button from 1 to 6 to select the desired channel.
When you use the FAVORITE CH feature for the first time, six preset channels will appear.



Changing the favorite channel setting

- 1 Press SELECT until "FAVORITE CH SET UP" appears.
FAVORITE CH SET UP
@PR01 @PR02 @PR03
@PR04 @PR05 @PR06
- 2 Press + or - to select the favorite channel you want to change (e.g. @PR03).
FAVORITE CH SET UP
@PR01 @PR02 @PR03
@PR04 @PR05 @PR06
- 3 Press PROG +/-, or number buttons to change the program number.
PROG
1 2 3
4 5 6
7 8 9
0
or
+ -
- 4 Repeat steps 2 and 3 to set other favorite channels.
- 5 Press SELECT.

Blocking the channels (CHILD LOCK)

You can prevent a child from watching certain programs by using the buttons on the remote control.



- 1 Select the TV program you want to lock.
- 2 Press SELECT until "CHILD LOCK" appears on the screen.
CHILD LOCK OFF
- 3 Press + or - to select "ON".
The  symbol appears on the screen.
To unlock the channel, press + or - to select "OFF". The  symbol disappears from the screen.

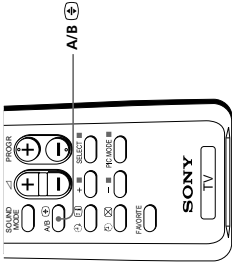
Note

- If you preset a locked channel, that particular channel will be unlocked automatically.

Selecting a stereo or bilingual or program

(KV-XF21M93 only)

You can enjoy stereo sound or bilingual programs of NICAM and A2 (German) stereo systems.



Press A/B repeatedly until you receive the sound you want.

The on-screen display changes to show the selected sound and the CD indicator on the TV lights up red.



When receiving a NICAM program

Broadcasting	On-screen display (Selected sound)
NICAM stereo	<div>NICAM (Stereo sound) → MONO (Regular sound)</div>
NICAM bilingual	<div>NICAM MAIN (Main sound) → NICAM SUB (Sub sound) → MONO (Regular sound)</div>
NICAM monaural	<div>NICAM MAIN (Main sound) → MONO (Regular sound)</div>

continued

Selecting a stereo or bilingual program (continued)

When receiving an A2 (German) program

Broadcasting	On-screen display (Selected sound)
A2 (German) stereo	<div>MONO (Regular sound) → STEREO (Stereo sound)</div>
A2 (German) bilingual	<div>MAIN (Main sound) → SUB (Sub sound)</div>

Notes

- If the signal is very weak, the sound becomes monaural automatically.
- If the stereo sound is noisy when receiving a NICAM program, select "MONO". The sound becomes monaural, but the noise is reduced.

Receiving area for NICAM and A2 (German) programs

System	Receiving area
NICAM	Hong Kong, Singapore, New Zealand, Malaysia, Thailand, etc.
A2 (German)	Australia, Malaysia, Thailand, etc.

- Before receiving a NICAM stereo program in China, please check the NICAM broadcast condition at your area. When receiving a NICAM stereo program, the receiving condition might vary depending on area. In addition, different strength of the NICAM broadcast signal might affect the receiving quality.

If the sound is distorted or noisy when receiving a monaural program through the antenna terminal

Press A/B repeatedly until "MONO" appears on the screen.

To cancel the monaural sound setting, press A/B again until "AUTO" appears on the screen.



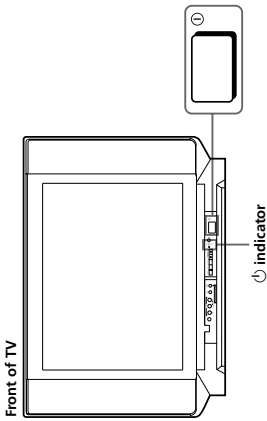
Notes

- The "MONO" or "AUTO" setting is memorized for each program position.
- You cannot receive stereo broadcast signal when the TV is in the "MONO" setting. Normally set the TV to "AUTO."

Additional Information

Self-diagnosis
function

Your TV is equipped with a self-diagnosis function. If there is a problem with your TV, the indicator flashes red. The number of times the indicator flashes indicates the possible causes.

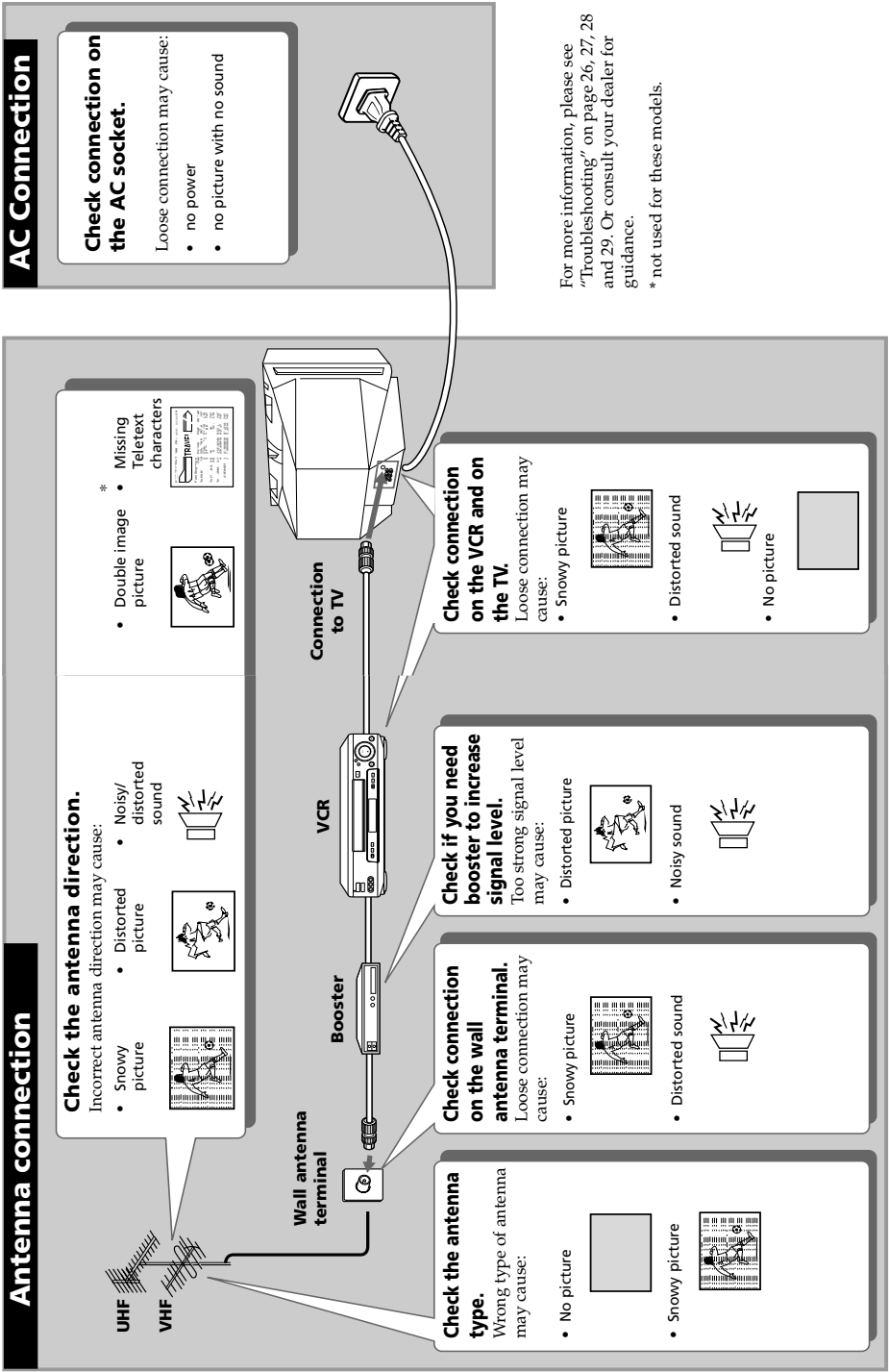


- 1 Check that the indicator flashes red a number of times between 3-second intervals.
- 2 Count the number of times the indicator flashes.
- 3 Press (main power) to turn off your TV.
- 4 Inform your nearest Sony service center about the number of times the indicator flashes.
Be sure to note the model name and serial number located on the rear of your TV.

Additional Information

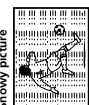





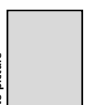



Troubleshooting Shortcuts











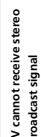

For better viewing, please check the following connections.





Troubleshooting


If you find any problem while viewing your TV, please check the following guide. If any problem persists, contact your Sony dealer.

Symptom	Solutions	Possible cause
 Snowy picture	<ul style="list-style-type: none"> Check the antenna cable and connection on the TV, VCR and on the wall. (page 4) Press SELECT until "MANUAL PROGRAM" appears on the screen then preset the channel again. (page 10) Check the antenna type (VHF/UHF). Contact a Sony dealer for advice. Adjust the antenna direction. Contact a Sony dealer for advice. Try using a booster. 	<ul style="list-style-type: none"> Connection is loose or the cable is damaged. Channel presetting is inappropriate or incomplete. The antenna type is inappropriate. The antenna direction is inappropriate. Signal transmission is low.
 Noisy sound		
 Distorted picture	<ul style="list-style-type: none"> Turn off or disconnect the booster if it is in use. 	<ul style="list-style-type: none"> Broadcast signals are too strong.
 Noisy sound		
 Good picture	<ul style="list-style-type: none"> If the sound of all the channels are noisy, check the TV system (TV SYS) setting (page 10), then press AUTO PROGRAM to preset the channels again (page 9). If the sound of some channels are noisy, select the channel, then select the appropriate TV system (TV SYS). (page 10) 	<ul style="list-style-type: none"> The TV system setting or channel presetting is inappropriate or incomplete.
 Noisy sound		
 No picture	<ul style="list-style-type: none"> Check the power cord, antenna and the VCR connections. Press  (power). Press  (main power) on the TV to turn off the TV for about five seconds, then turn it on again. 	<ul style="list-style-type: none"> The power cord, antenna or VCR is not connected. The TV is not turned on.
 No sound		

Symptom	Solutions	Possible cause
 Good picture	<ul style="list-style-type: none"> Press  + to increase the volume level. Press  to cancel the muting. Press A/B  until a better sound is heard. (KV-XF21M93 only) 	<ul style="list-style-type: none"> The volume level is too low. The sound is muted. Broadcast signal has a transmission problem.
 No sound		
 Dotted lines or stripes	<ul style="list-style-type: none"> Do not use a hair dryer or other equipment near the TV. Adjust the antenna direction for minimum interference. Contact a Sony dealer for advice. 	<ul style="list-style-type: none"> There is local interference from cars, neon signs, hair dryers, power generators, etc.
 Double images or "ghosts"	<ul style="list-style-type: none"> Use a highly directional antenna. Use the fine tuning (FINE) function. (page 11) Adjust the antenna direction. Contact a Sony dealer for advice. Turn off or disconnect the booster if it is in use. 	<ul style="list-style-type: none"> Broadcast signals are reflected by nearby mountains or buildings. The antenna direction is inappropriate. Use of a booster is inappropriate.
 No color	<ul style="list-style-type: none"> Press SELECT until "COLOR" appears on the screen, then press + or - to adjust the color level. (page 16) Press SELECT until "COL SYS" appears on the screen, then check the color system setting (usually set this to "AUTO"). (page 11). 	<ul style="list-style-type: none"> The color level setting is too low. The color system setting is inappropriate.
 Abnormal color patches	<ul style="list-style-type: none"> Adjust the antenna direction. Contact a Sony dealer for advice. Keep external speakers or other electrical equipment away from the TV. Do not move the TV while the TV is turned on. Press  (main power) on the TV to turn off the TV for about five minutes, then turn it on again. 	<ul style="list-style-type: none"> The antenna direction is inappropriate. The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV.
 TV cannot receive stereo broadcast signal	<ul style="list-style-type: none"> Press A/B  until "AUTO" appears on the screen (KV-XF21M93 only) 	<ul style="list-style-type: none"> The stereo reception setting is inappropriate.

Troubleshooting (continued)

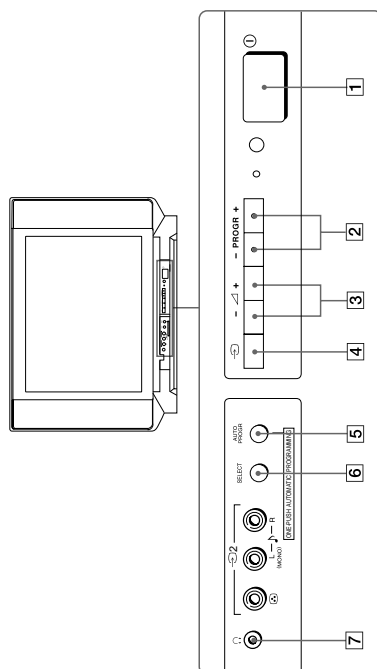
Symptom	Solutions	Possible cause
Stereo broadcast sound switches on and off or is distorted. or The sound switches between monaural and stereo frequently. (KV-XF21M93 only)	<ul style="list-style-type: none">• Check the antenna cable and connection on the TV, VCR and on the wall. (page 4)• Adjust the antenna direction. Contact a Sony dealer for advice.	<ul style="list-style-type: none">• Connection is loose or the cable is damaged.• The antenna direction is inappropriate.
	<ul style="list-style-type: none">• Press A/B  until a better sound is heard.• Press SELECT until "PIC ROTATION" appears on the screen, then press + or - to align the picture to the TV screen. (page 12)	<ul style="list-style-type: none">• Broadcast signal has a transmission problem.• The terrestrial magnetism affects your TV set.
 Lines moving across the TV screen.	<ul style="list-style-type: none">• Use the fine tuning (FINE) function. (page 11)	<ul style="list-style-type: none">• There is interference from external sources, e.g., heavy machineries, nearby broadcast station.

Symptom	Solutions	Possible cause
The  indicator on your TV flashes red a number of times between 3-second intervals.	<ul style="list-style-type: none">• Contact your nearest Sony service center. (page 23)	<ul style="list-style-type: none">• Your TV may need service.
TV cabinet creaks.	—	<ul style="list-style-type: none">• Changes in room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.
A "boom" sound is heard when the TV is turned on.	—	<ul style="list-style-type: none">• The TV's demagnetizing function is working. This does not indicate a malfunction.

Identifying parts and controls

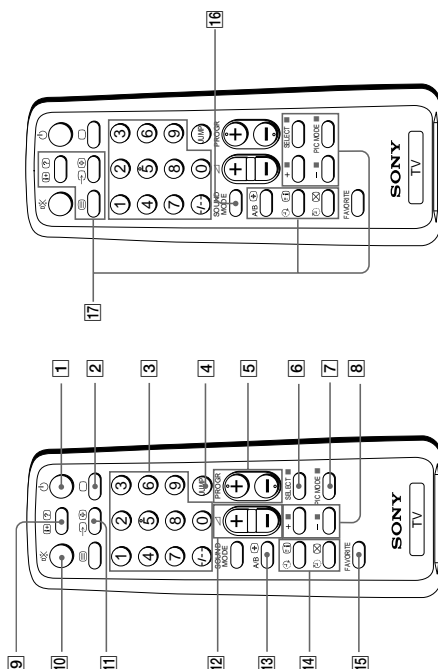
Refer to the pages indicated in parentheses () for details.

Front panel



- 1 ① (main power) button (12)
- 2 PROGRAM +/- (program) buttons (12)
- 3 +/- (volume) buttons (12)
- 4 TV/VIDEO button (13)
- 5 AUTO PROGRAM (program) button (5)
- 6 SELECT button (10)
- 7 ⑦ (headphone) jack

Remote Control



- 1 ① (power) button (12)
- 2 ② (TV) button (13)
- 3 Number buttons (12)
- 4 JUMP button (13)
- 5 PROGRAM +/- buttons (12)
- 6 SELECT button (10)
- 7 PIC MODE button (15)
- 8 +/- buttons (10)
- 9 ⑨ (display) button (13)
- 10 ⑩ (muting) button (13)
- 11 ⑪ (video) button (13)
- 12 +/- (volume) buttons (12)
- 13 A/B button
- 14 Timer setting buttons (14)
- 15 ⑮ (wake up timer)
- 16 ⑯ (sleep timer)
- 17 FAVORITE button (17)

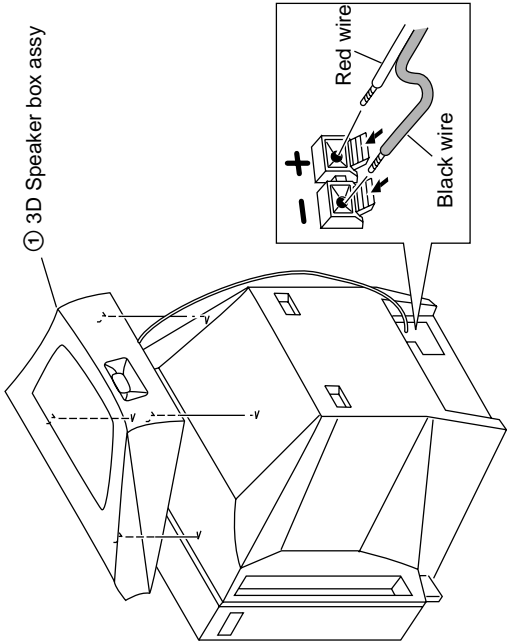
- 16 SOUND MODE button (15)
- 17 Teletext operation buttons (not used for these models)
- ③ (text)
- ④ (reveal)
- ⑤ (hold)
- ⑥ (index)
- ⑦ (text clear)
- ⑧ (FASTEXT: red, green, yellow, blue)

Names/symbols of buttons on the remote are indicated in different colors to represent the available functions.

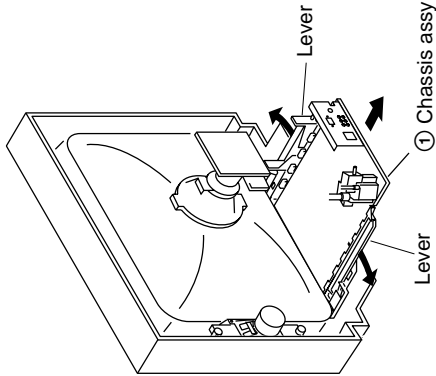
Label color	Button function
White	For general TV operations
Green	For Teletext operations

SECTION 2
DISASSEMBLY

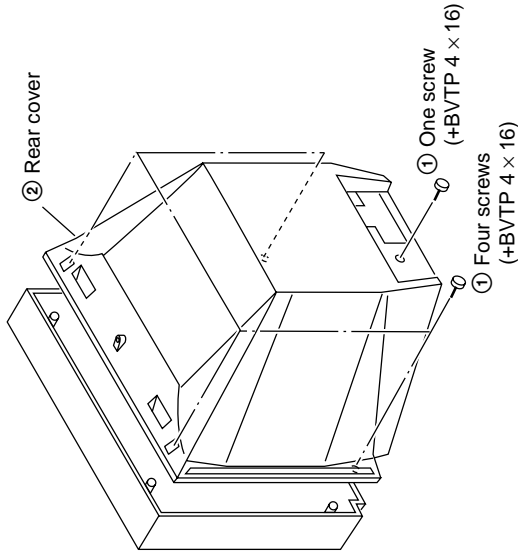
2-1. 3D SPEAKER BOX REMOVAL



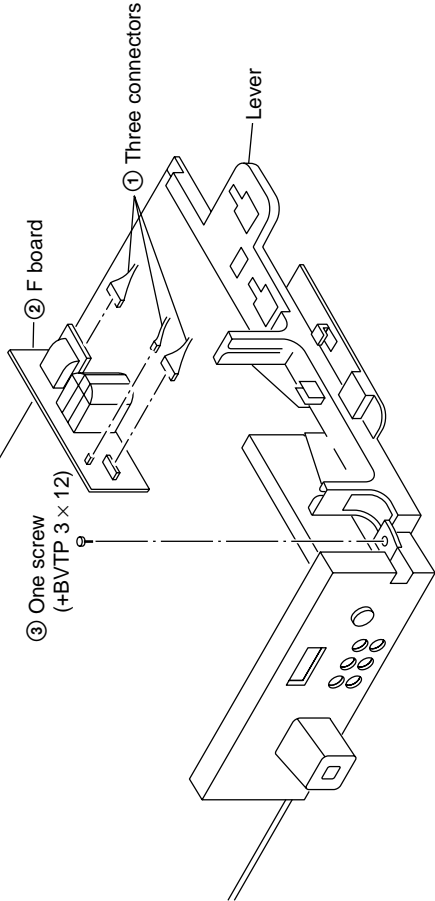
2-3. CHASSIS ASSY REMOVAL



2-2. REAR COVER REMOVAL

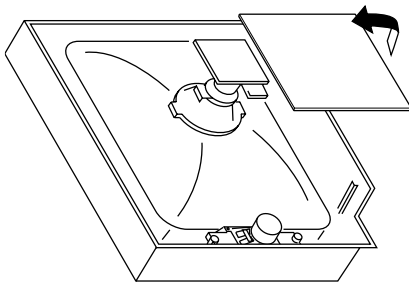


2-4. F BRACKET REMOVAL

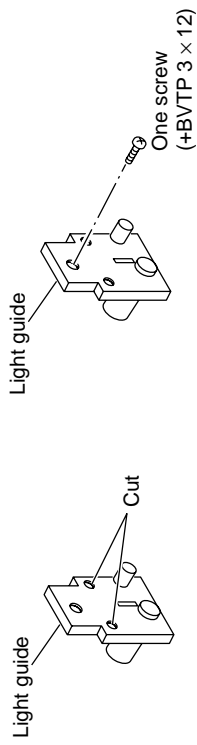


2-5. SERVICE POSITION

(Note: Remove F Bracket first.)



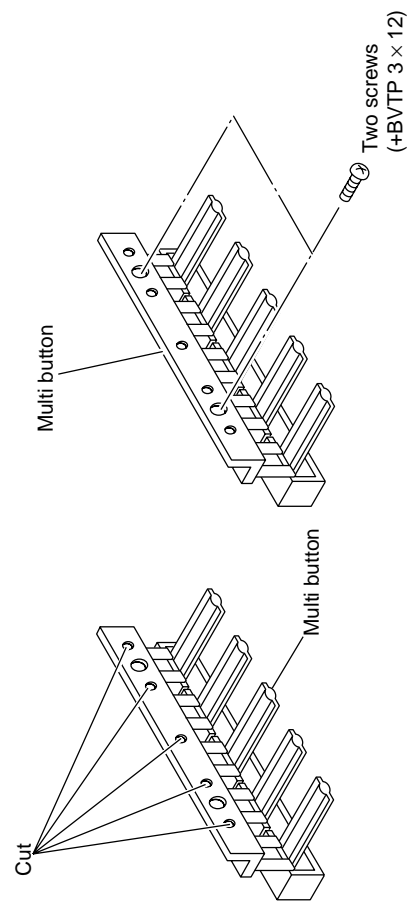
2-6-2. REPLACEMENT OF LIGHT GUIDE



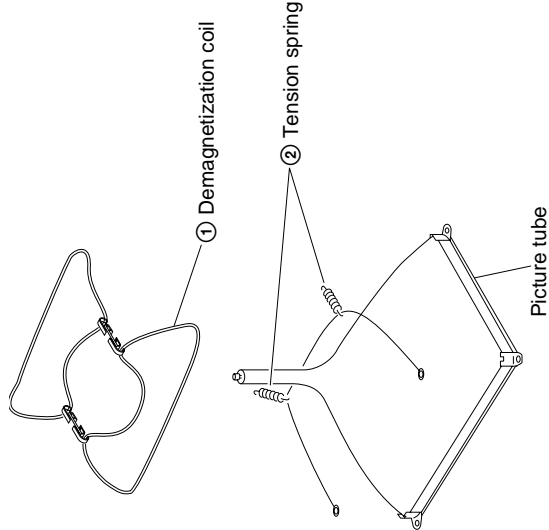
2-6. REPLACEMENT OF PARTS

For replacement of the Multi Button and Light Guide, cut the welded portions from them, exchange with the new parts, and fix them with screws (+BV/TP) respectively.

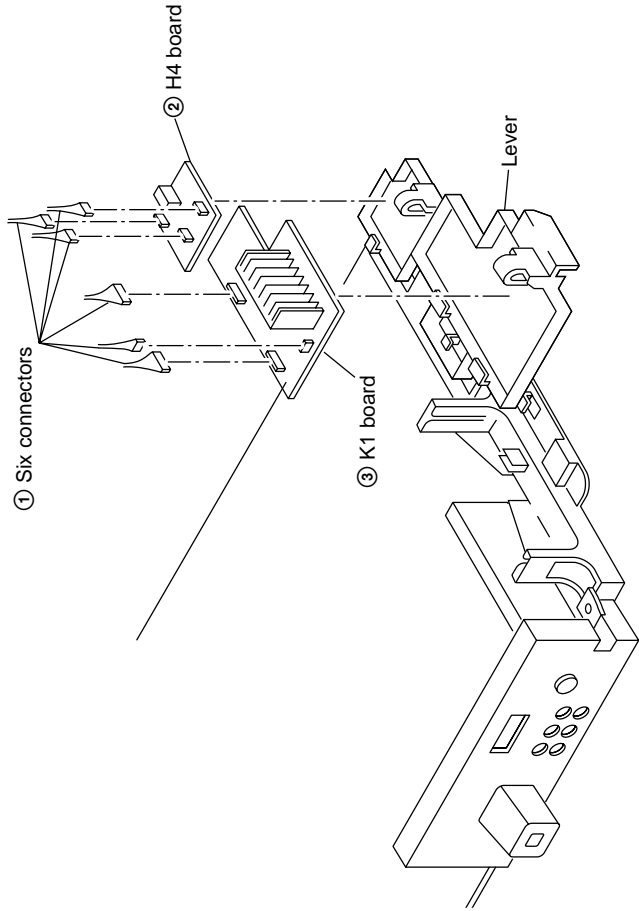
2-6-1. REPLACEMENT OF MULTI BUTTON



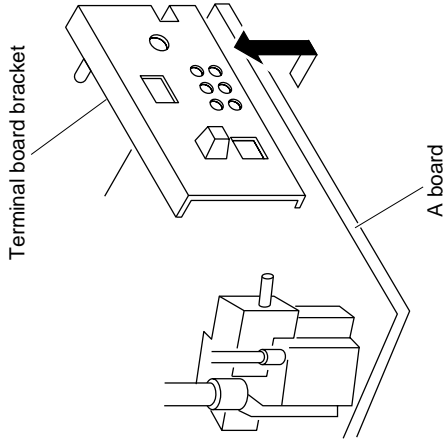
2-9. DEGAUSS COIL REMOVAL



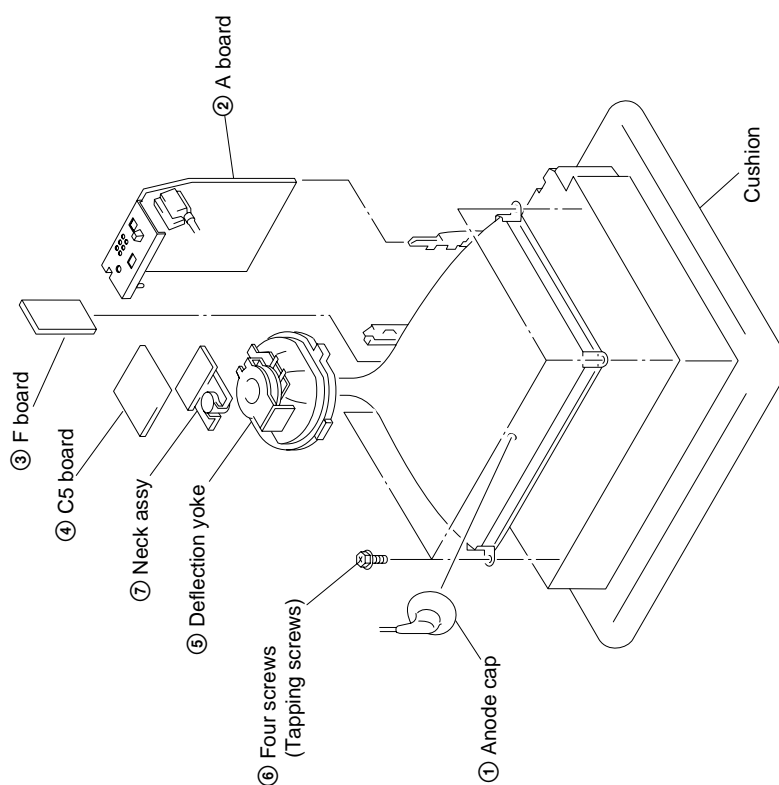
2-7. H4 AND K1 BOARDS REMOVAL



2-8. TERMINAL BRACKET REMOVAL



2-10. PICTURE TUBE REMOVAL

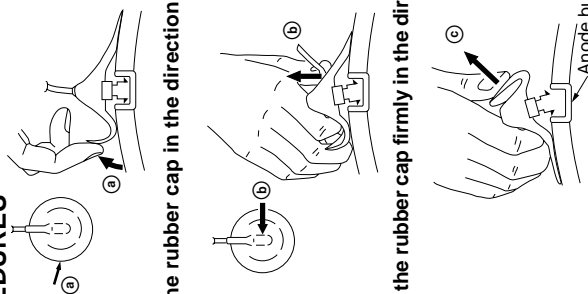


• REMOVAL OF ANODE-CAP

NOTE : After removing the anode, short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT.

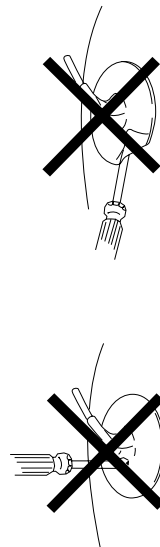
• REMOVING PROCEDURES

- ① Turn up one side of the rubber cap in the direction indicated by the arrow ①.
- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ②.
- ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ③.



• HOW TO HANDLE AN ANODE-CAP

- ① Do not damage the surface of anode-caps with sharp shaped objects.
 - ② Do not press the rubber too hard so as not to damage the inside of anode-cap.
 - ③ A metal fitting called the shatter-hook terminal is built into the rubber.
- Do not turn the foot of rubber over too hard.
The shatter-hook terminal will stick out or damage the rubber.



SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switches should be set as follows unless otherwise noted:
PICTURE control normal
BRIGHTNESS control normal

.....

Preparation :

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input a white signal with the pattern generator.
Contrast } normal
Brightness }
2. Position neck assy as shown in Fig3-2.
3. Set the pattern generator raster signal to a green raster.
4. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side.
(See Figures 3-1 through 3-3.)
5. Move the deflection yoke forward and adjust so that the entire screen is green. (See Figure 3-1.)
6. Switch the raster signal to blue, then to red and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws and DY spacers.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it.
(See Figure 3-4.)

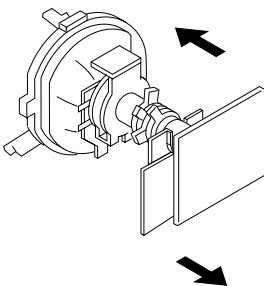


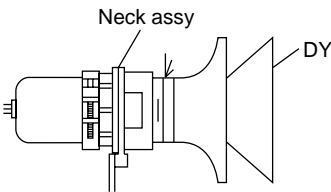
Fig. 3-1

Perform the adjustments in the following order :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope



Note:
Neck Assy is exactly behind
DY (no gap between Neck
Assy and DY)

Fig. 3-2

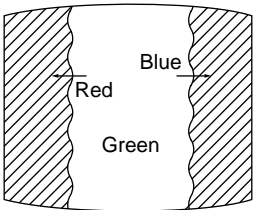


Fig. 3-3

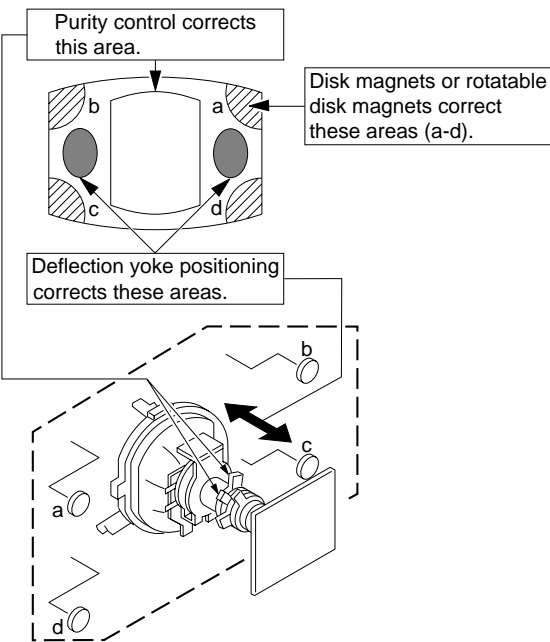


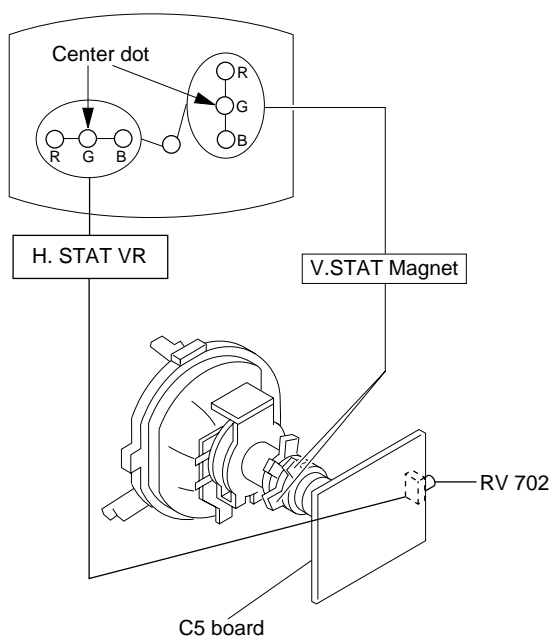
Fig. 3-4

3-2. CONVERGENCE

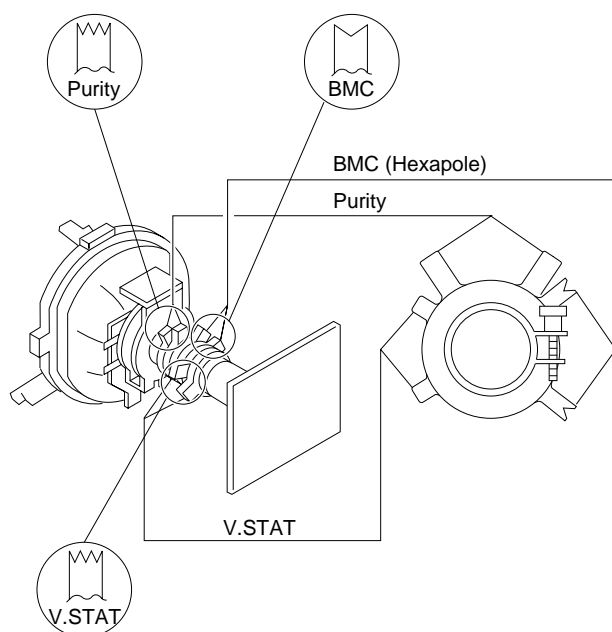
Preparation :

- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

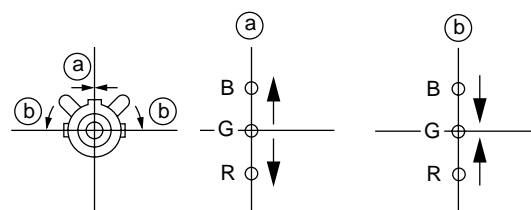
(1) Horizontal and Vertical Static Convergence



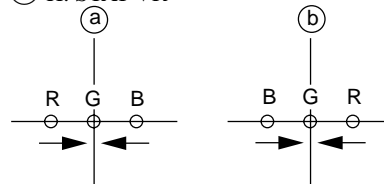
(Moving vertically), adjust the V. STAT magnet so that the red, green and blue dots are on top of each other at the center of the screen.



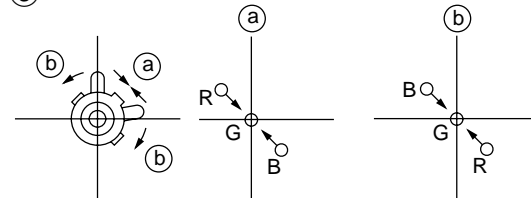
① V. STAT



② H. STAT VR

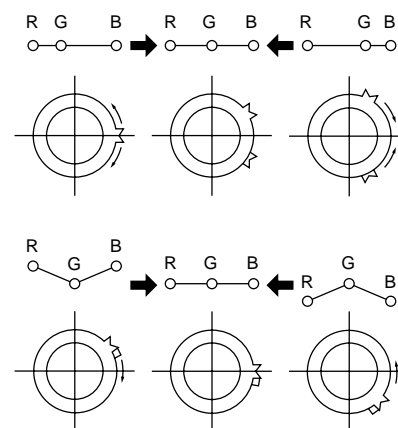


③

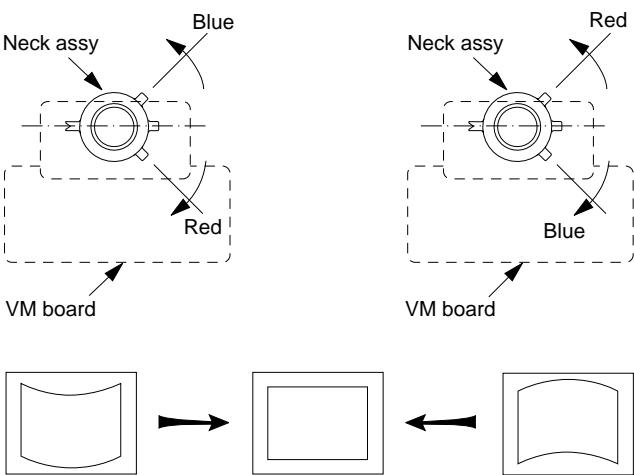


④ BMC (Hexapole) Magnet.

If the red, green and blue dots are not balanced or aligned, then use the BMC magnet to adjust in the manner described below.



- ④ Y separation axis correction magnet adjustment.
1. Receive the cross-hatch signal and adjust [PICTURE] to [MIN] and [BRIGHTNESS] to [STANDARD] .
 2. Adjust the Y separation axis correction magnet on the neck assembly so that the horizontal lines at the top and bottom of the screen are straight.

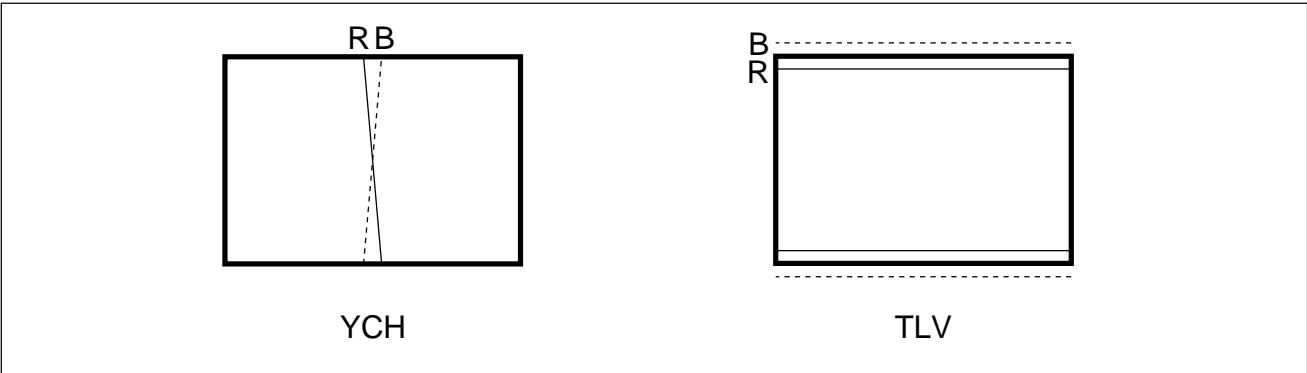


- Note**
1. The Red and Blue magnets should be equally far from the horizontal center line.
 2. Do not separate the Red and Blue magnets too far. (Less than 8 mm)

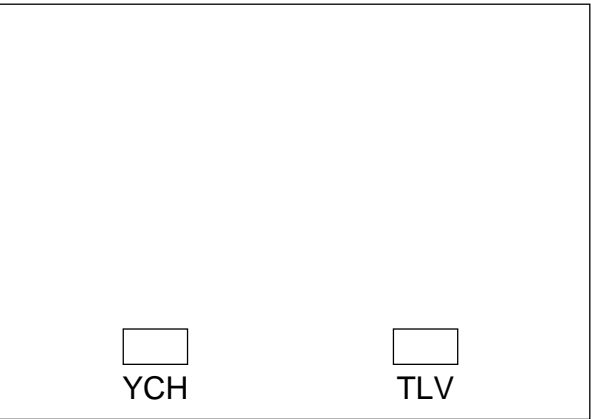
(2) Dynamic Convergence Adjustment

Preparation:

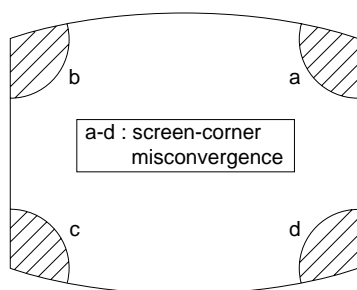
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence



on DY

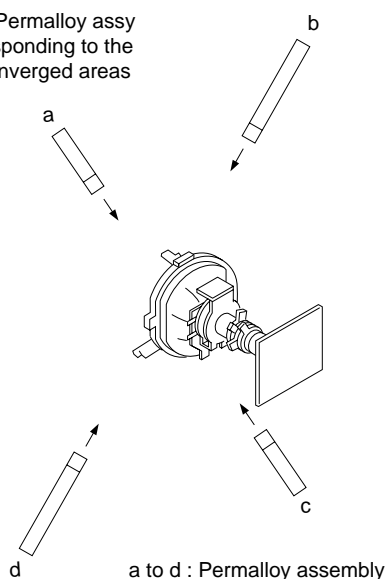


(3) Screen-corner Convergence



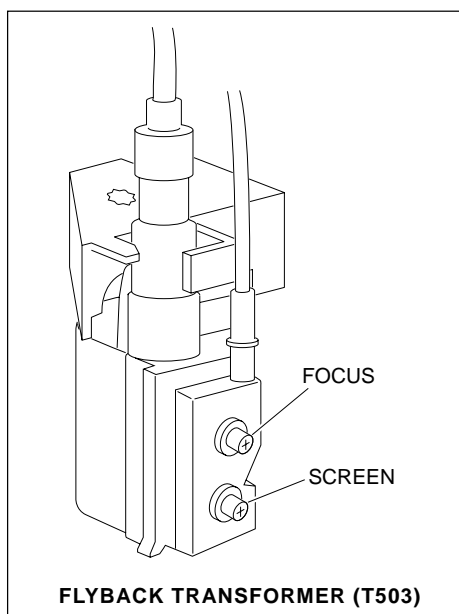
Fix a Permalloy assy corresponding to the misconverged areas.

Fix a Permalloy assy corresponding to the misconverged areas



3-3. FOCUS ADJUSTMENT

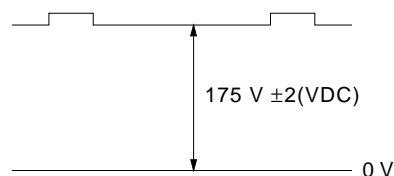
Adjust FOCUS control on the flyback transformer for the best focus.



3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G2 (SCREEN) ADJUSTMENT

- 1) Set the PICTURE to normal.
- 2) Put to VIDEO input mode without signals.
- 3) Connect R, G and B of the C5 board cathode to the oscilloscope.
- 4) Adjust BRIGHTNESS to obtain the cathode voltage to the value below.
- 5) Adjust G2 (Screen) on FBT until picture shows the point before cut-off.

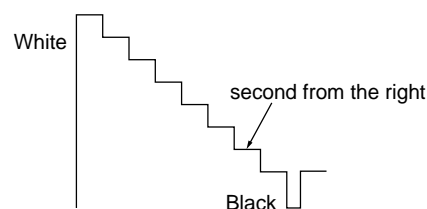


2. WHITE BALANCE ADJUSTMENT

- 1) Set to Service Mode (Refer Section 4-1: ADJUSTMENTS WITH COMMANDER).
- 2) Input white raster signal.
- 3) Set the PICTURE to minimum.
- 4) Select GCT (WHB 4) and BCT (WHB 5) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
- 5) Set the PICTURE to maximum.
- 6) Select GDR (WHB 1) and BDR (WHB 2) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
- 7) Write into the memory by pressing [MUTING] then [0].

3. SUB BRIGHT ADJUSTMENT

- 1) Set to service mode.
- 2) Input a staircase signal of black to white from the pattern generator.
- 3) BRIGHTNESS 50%.
PICTURE MINIMUM
- 4) Select SBR (WHB7) with [1] and [4], and adjust SBR (WHB7) level with [3] and [6] so that the second stripe from the right is dimly lit.

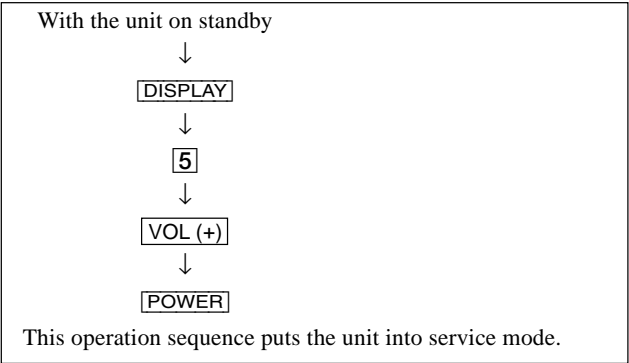


SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ADJUSTMENTS WITH COMMANDER

Service adjustments are made with the RM-952 that comes with this unit.

a. ENTERING SERVICE MODE



b. METHOD OF CANCELLATION FROM SERVICE MODE

Set the standby condition (Press **POWER** button on the commander), then press **POWER** button again, hereupon it becomes TV mode.

c. METHOD OF WRITE INTO MEMORY

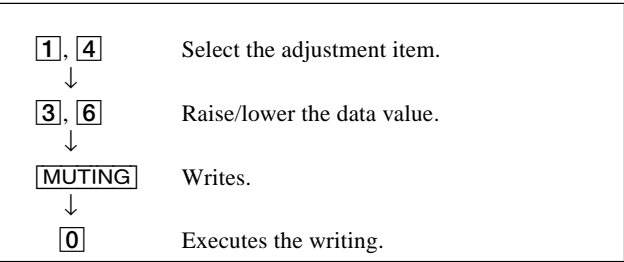
- 1) Set to Service Mode.
- 2) Press **1** (UP) and **4** (DOWN), select an item of adjustment.
- 3) Press **MUTING** button and it will indicate WRITE on the screen.
- 4) Press **0** button to write into memory.

d. MEMORY WRITE CONFIRMATION METHOD

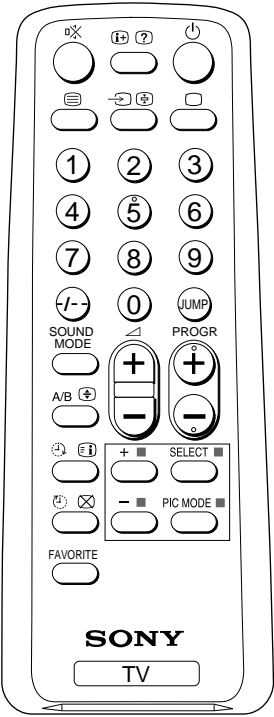
- 1) After adjustment, pull out the plug from AC outlet, and then plug into AC outlet again.
- 2) Turn the power switch ON and set to Service Mode.
- 3) Call the adjusted items again to confirm adjustments were made.

The screen display is :

Device Name	Item Name	Item No	Data	Marking of virgin NVM	Mode	
GEO	HPS	00	1C	■	SERVICE	50 ← PAL, SECAM : 50
601S	59	1.0C	7F	0	000A	NTSC : 60
Suffix No (OEM Code)	Software version				Total Power-On time (hours)	



- 7, 0 All the data becomes the values in memory.
- 8, 0 All user control goes to the standard state.
- 5, 0 Service data initialization (Be sure not to use usually.)
- 2, 0 Write 50Hz adjustment data to 60Hz, or vice versa.



RM-952

4-2. ADJUSTMENT METHOD

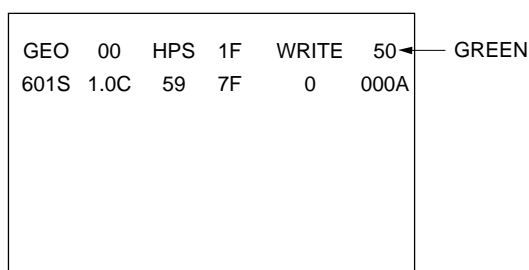
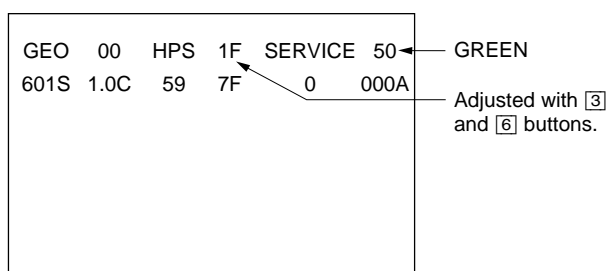
Item Number 00 of device GEO

This explanation uses H-Position as an example.

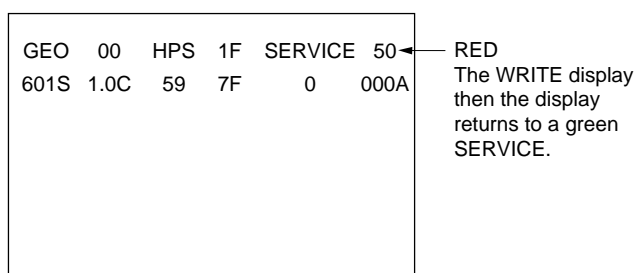
1. Select "GEO 00 HPS" with the **[1]** and **[4]** buttons.
2. Raise/lower the data with the **[3]** and **[6]** buttons.
3. Select the optimum state. (The standard is 1F for PAL reception.)
4. Write with the **[MUTING]** button. (The display changes to WRITE.)
5. Execute the writing with the **[0]** button. (The WRITE display will be changed to red color while excuting, and back to SERVICE.)

Use the same method for all Items. Use **[1]** and **[4]** to select the adjustment item, use **[3]** and **[6]** to adjust, write with **[MUTING]**, then execute the write with **[0]**.

Note : 1. In **[WRITE]**, the data for all items are written into memory together.
2. For adjustment items that have different standard data between 50Hz or 60Hz, be sure to use the respective input signal after adjustment.



Written with **[MUTING]**



Write executed with **[0]**

Adjustment Item Table

Device Name	Functionality		Note	Data Range	Function	Note for Different Data	Register No. (bit)	Slava Address	RAM Address (bit)
	No	Name							
GEO	0	HPS	7	3F	H Position	50/60HZ	12 (7-2)	CXA2130S(88H)	82 (7-2)
	1	HSZ	1F	3F	H Size	50/60HZ	11 (7-2)		81 (7-2)
	2	PAP	1F	3F	Pin Amp	50/60HZ	13 (7-2)		83 (7-2)
	3	TLT	7	0F	Trapezium	50/60HZ	15 (7-4)		85 (7-4)
	4	VPS	1F	3F	V Position	50/60HZ	0F (7-2)		7F (7-2)
	5	VSZ	1F	3F	V Size	50/60HZ	0E (7-2)		7E (7-2)
	6	SCO	7	0F	S Correction	50/60HZ	10 (7-4)		80 (7-4)
	7	VLN	7	0F	V Linearity	50/60HZ	10 (3-0)		80 (3-0)
	8	BOW	7	0F	AFC Bow	50/60HZ	16 (7-4)		86 (7-4)
	9	AGL	7	0F	AFC-Angle	50/60HZ	16 (3-0)		86 (3-0)
WHB	0A	UPN	1F	3F	Upper Pin	50/60HZ	14 (7-2)	CXA2130S(88H)	84 (7-2)
	0B	LPN	2F	3F	Lower Pin	50/60HZ	18 (7-2)		88 (7-2)
	0C	HBL	0	1	H Blanking on/off	50/60HZ	18 (1)		67 (1)
	0D	LBL	7	0F	Left H Blanking	50/60HZ	17 (7-4)		87 (7-4)
	0E	RBL	7	0F	Right H Blanking	50/60HZ	17 (3-0)		87 (3-0)
	0	RDR	2A	3F	R Drive	DYNAMIC/others	09 (7-2)		8F (7-2)
	1	GDR	2A	3F	G Drive	DYNAMIC/others	0A (7-2)		90 (7-2)
	2	BDR	2A	3F	B Drive	DYNAMIC/others	0B (7-2)		91 (7-2)
	3	RCT	7	0F	R Cutoff	SECAM/others	07 (3-0)		93 (3-0)
	4	GCT	7	0F	G Cutoff	SECAM/others	08 (7-4)		94 (7-4)
SAJ	5	BCT	7	0F	B Cutoff	SECAM/others	08 (3-0)	CXA2130S(88H)	94 (3-0)
	6	BMN	15	1F	Brightness Minimum Data		97		97
	7	SBR	28	3F	Sub Brightness Control		98		98
	0	PMX	33	3F	Picture Maximum Data				96
	1	SHU	8	0F	Sub Hue Control	TV/Video			99
	2	SSH	3	0F	Sub Sharpness Control	TV/Video			9A
	3	SCL	1F	3F	Sub Color Control	NTSC/others			9B
	0	EHT	4	0F	EHT Comp	50/60HZ	15 (3-0)		85 (3-0)
	1	GMA	2	03	Gamma Correction	NTSC/others	0B (1-0)		1A1 (1-0)
	2	YDL	6	0F	Y Delay	PAL/SECAM/NTSC	0C (3-0)		8C (3-0)
VP	3	SST	1	03	SECAM ID Start Position		1B (1-0)	CXA2130S(88H)	6A (1-0)
	4	SSP	1	03	SECAM ID Stop Position		1B (3-2)		6A (3-2)
	5	SLV	2	03	SECAM ID Level		1C (1-0)		6B (1-0)
	6	SBF	22	3F	SECAM BELL fo		1C (7-2)		6B (7-2)
	7	DYC	0	1	Dynamic Color on/off		0A (1)		59 (1)
	8	ABL	1	1	ABL Mode Switching (STANDARD ALWAYS 0)		09 (1)		58 (1)
	9	VTH	1	1	ABL Detection Vth Switching		09 (0)		58 (0)
	0A	SFO	1	1	FO Switching for Sharpness	NTSC/others	05 (1)		198 (1)
	0B	DCX	1	1	DC Trans. Ratio Switching		06 (1)		55 (1)
	0C	SHT	1	1	Pre-/Overshoot ratio Switch	NTSC/others	06 (0)		199 (0)


Adjustment Item Table

Device Name	Functionality		Note	Data Range	Function	Note for Different Data	Register No. (bit)	Slava Address	RAM Address (bit)	
	No	Name								
VP	0D	HDW	0	1	H Drive Pulse Width Switch	TV/Video/Text	00 (6)	TDA7429	4F (6)	
	0E	AFC	1	03	AFC Gain Control		0F (1-0)		8D (1-0)	
	0F	HOS	7	0F	H Oscillation		0C (7-4)		5B (7-4)	
	10	HSS	0	1	Slice Level of H Sync Sep.	50/60Hz	0D (1)		5C (1)	
	11	VSS	0	1	Slice Level of V Sync Sep.		0D (0)		5C (0)	
	12	HMS	0	1	Macro Vision C/m off/on		0E (0)		7E (0)	
	13	YUV	0	1	YUV Switch Control	Video only	01 (0)		50 (0)	
	14	CDV	2	3	CD mode for Video		0D (5-4)		1A1 (5-4)	
	15	RON	1	1	R ON		01 (3)		50 (3)	
	16	GON	1	1	G ON	not memorized	01 (2)		50 (2)	
	17	BON	1	1	B ON	not memorized	01 (1)		50 (1)	
	18	PON	1	1	P ON	not memorized	00 (7)		4F (7)	
	19	BLK	0	1	BLK Off	not memorized	12 (0)		61 (0)	
	1A	VMC	0	1	VM Off		13 (0)		62 (0)	
AP	0	INF	0	3F	Input Attenuation When surround off		00 (5-0)	19F (5-0)		
	1	INS	0	3F	Input Attenuation When surround on		02	1A0 (5-0)		
	2	PH1	0	3	Phase 1 Register Selection		#4 (3-0)	76 (1-0)		
	3	PH2	0	3	Phase 2 Register Selection			76 (3-2)		
	4	PH3	0	3	Phase 3 Register Selection			76 (5-4)		
	5	PH4	0	3	Phase 4 Register Selection			76 (7-6)		
	6	BCS	2	3	Bass Center Shift		#5 (3-0)	1A8 (1-0)		
	7	TCS	2	3	Treble Center Shift			1A9 (1-0)		
8	TRF	2	3	RF Treble Offset	#5 (3-0)	1A9 (5-4)				
MSP	0	WST	15	FF	W/G Stereo Threshold		MSP3415D (84H)	157 (7-0)		
	1	WBT	EA	FF	W/G Bilingual Threshold			158 (7-0)		
	2	WLL	5	FF	W/G Monaural Threshold			159 (7-0)		
	3	WAC	0	0F	W/G Agreement Count			15A (3-0)		
	4	WDL	30	FF	W/G Search Delay			15B (7-0)		
	5	NDL	20	FF	NICAM Search Delay			15C (7-0)		
	6	SDL	10	FF	Stereo status Read Delay			15D (7-0)		
	7	AGC	0	1	AGC Switch Auto/Constant			108 (7)		
	8	REL	0D	3F	AGC Gain at Constant Mode			108 (6-1)		
	9	CRM	0	1	Carrier muting on/off			107 (1)		
	0A	ACO	1	1	Audio Clock out on/off			10C (5)		
	0B	FP	1B	7F	FM Prescale for non-M system			16C (6-0)		
	0C	FPM	32	7F	FM Prescale for M system			16D (6-0)		
	0D	FH	36	7F	FM Prescale for HDEV			16E (6-0)		
	0E	FHM	65	7F	FM Prescale for HDEV and M			16F (6-0)		
	0F	WGP	2A	7F	W/G Prescale			170 (6-0)		
	10	NIP	6D	7F	NICAM Prescale			138 (6-0)		
	11	ERR	50	FF	Auto FM switch Threshold			166 (7-0)		
	12	VOL	6D	FF	Loud Speaker gain 7000h to 7ffh			1A7 (7-0)		
									0000 (15-4)	

Adjustment Item Table

Device Name	Functionality		Note	Data Range	Function	Note for Different Data	Register No. (bit)	Slava Address	RAM Address (bit)
	No	Name							
TXT	0	TXH	1	3	Teletext Horizontal Position			(58H)	18D (1-0)
	1	TXV	0	3	Teletext Vertical Position				18D (6-4)
OPM	0	OSH	0A	3F	OSD H Position	Option-Misc			AC (7-2)
	1	COM	0	03	Comb Selection				A5 (7-6)
	2	APC	1	1	APC Switch				A4 (5)
	3	TSY	0	03	TV Sys at Auto TV Sys				A4 (4-3)
	4	MUT	0	1	No Signal Mute				A4 (0)
	5	AFM	0	1	Auto FM switch				A4 (1)
	6	RFB	0	3	C-BPF Control				A5 (5-4)
	7	TVO	0	7	Tilt to V-Angle Offset				A5 (2-0)
OPB	8	DBL	0	1	Disable Blueback Function				A4 (2)
	0	OP1	0	FF	Optional Bits 1 (see below)	Option-Bits			45
	1	OP2	0	FF	Optional Bits 2 (see below)				46
	2	OP3	0	FF	Optional Bits 3 (see below)				47

NOTE

-  shaded items are fixed data.
- Standard data listed on the Adjustment Item Table are reference values, therefore it may be different for each model and for each mode.
- Note for Different Data Those are the standard data values written on the microprocessor. Therefore, the data values of the modes and stored respectively in the memory.
In case of a device replacement, adjustment by rewriting the data value is necessary for some items.

ITEM INFORMATION.

No. OPB0 OP1

Item	XTAL 4.43	XTAL 3.58	SECAM	2nd. Lang	B/G	I	D/K	M
KV-XF21M83	1	1	1	1	1	1	1	1
KV-XF21M93	1	1	1	1	1	1	1	1

No. OPB1 OP2

Item	TOP	NICAM	HDEV	Thai Bil	Dis Fav	DVD Input	AV Input	
KV-XF21M83	0	0	1	0	0	0	1	1
KV-XF21M93	0	1	1	0	0	0	1	1

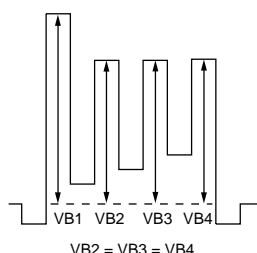
No. OPB2 OP3

Item	Pic Rot	2199 Curve	Auto PIC	Auto TV sys	US ST	AV Mono	11 KEY	Color SW
KV-XF21M83	1	0	1	1	0	1	0	0
KV-XF21M93	1	0	1	1	0	0	0	0

4-3. PICTURE QUALITY ADJUSTMENTS

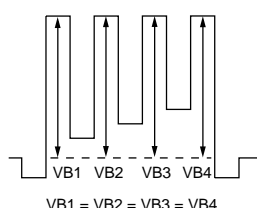
SUB COLOR ADJUSTMENT

1. Input a PAL color-bar.
2. Set to the following condition:
PICTURE 100%, BRIGHTNESS 50%, COLOR 50%
3. Connect an oscilloscope to pin ① (B OUT) of CN305, A board.
4. Set to Service Mode and select SAJ 3 'SCL' with [1] and [4] of the commander then adjust to VB2=VB3=VB4 with [3] and [6].
5. Press [MUTING] → [0] of the commander to write the data.
6. Adjust SAJ 3 'SCL' as step 2 to 5 when receiving NTSC color-bar.



SUB HUE ADJUSTMENT

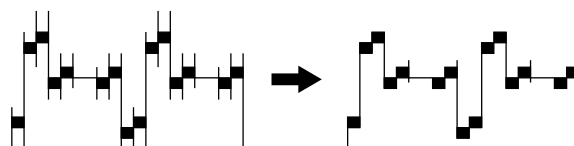
1. Select Video 1.
2. Input a NTSC color-bar, video into Video 1.
3. Set the following condition:
PICTURE 100%, BRIGHTNESS 50%, COLOR 50%
4. Connect an oscilloscope to pin ① (B OUT) of CN305, A board.
5. Select SAJ 1 'SHU' with [1] and [4] of the commander by setting to Service Mode and adjust to VB1=VB2=VB3=VB4 with [3] and [6].



6. Press [MUTING] → [0] of the commander to write the data.

BELL FILTER ADJUSTMENT

1. Input SECAM color-bar signal.
2. Connect the dual-trace oscilloscope to the pin ⑨ (R-Y) of CN303 (not mounted).
3. Adjust SERVICE MODE, ITEMS 'SBF' as shown below.



4-4. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

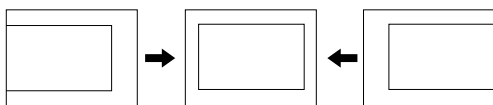
When replacing IC003 (MEMORY), be sure to change IC001 (μ-COM) to the following new IC at the same time.
IC001(μ-CON):CXP86449-614S

1. Enter to Service Mode.
2. Press commander buttons [5] and [0] (Data Initialize), and [2] and [0] (Data Copy) to initialize the data.
3. Call each item number and check if the respective screen shows the normal picture.
In cases where items are not well adjusted, rectify the items with fine adjustment.
Write the data per each item number ([MUTING] + [0]).
4. Select item numbers "OPB0" (OP1), "OPB1" (OP2) and "OPB2" (OP3) and respectively set the bit per model with command buttons [3] and [6].
5. Press commander buttons [8] and [0] (Test Normal) to return to the data that was set on the shipment from the factory.
(This will also cancel Service Mode.)

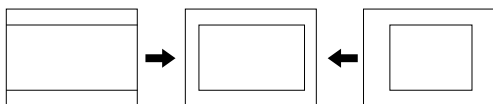
4-5. PICTURE DISTORTION ADJUSTMENT

Item Number 00 – 0B

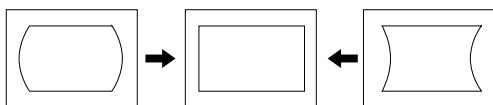
GEO 0 HSH (H POSITION)



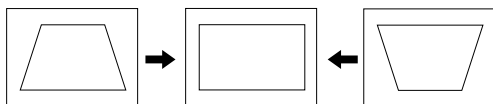
GEO 1 HSZ (H SIZE)



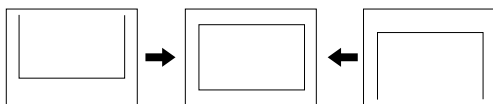
GEO 2 PAP (PIN AMP)



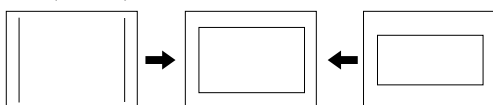
GEO 3 TILT (TRAPEZIUM)



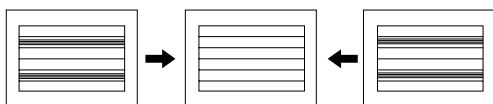
GEO 4 VSH (V POSITION)



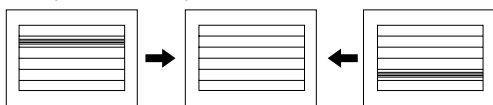
GEO 5 VSZ (V SIZE)



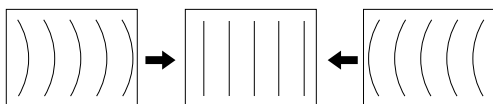
GEO 6 SCR (VERTICAL S-Correction)



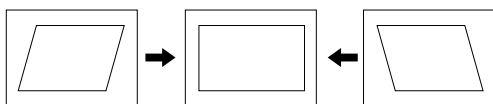
GEO 7 VLN (V LINEARITY)



GEO 8 VBOW (AFC.BOW)

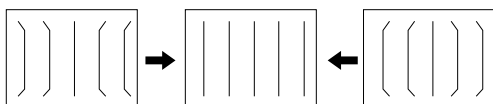


GEO 9 AGL (AFC.ANGLE)



GEO 0A UCP (UPPER CORNER PIN)

GEO 0B LCP (LOWER CORNER PIN)



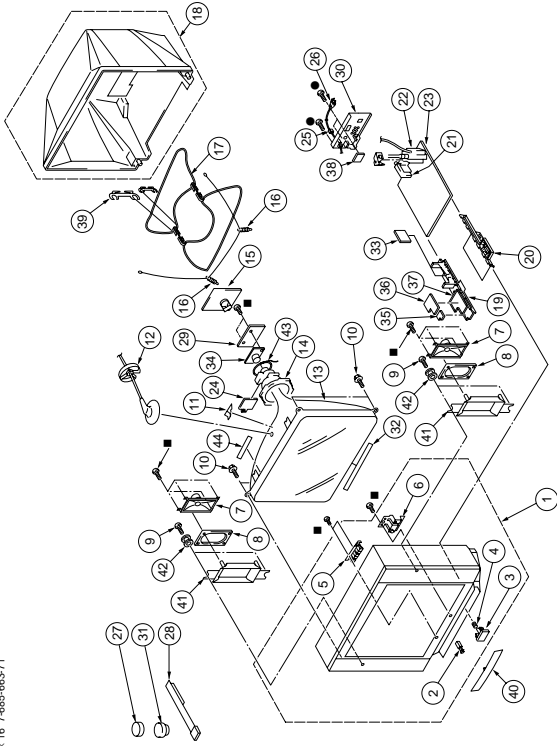
SECTION 6
EXPLODED VIEW

- NOTE:**
- Items with no part number and no description are not stocked because they are seldom required for routine service. Some delay in obtaining these items should be anticipated when ordering these items.
 - The construction parts of an assembled product are not stocked. The correlation number in the remark column.

6-1. CHASSIS

- : BV/TP3 × 12 7-685-648-79
- : BV/TP4 × 16 7-685-663-71

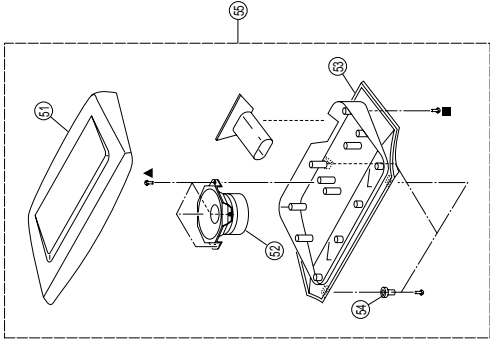
The components identified by shading and mark Δ are critical parts. Replace only with part number specified.



REF. NO.	PART NO.	DESCRIPTION	REMARK
1	X-4036-644-1	BUSNET ASSY	2-6
2	4-070-137-01	COIL WINDING	
3	4-070-137-01	COIL WINDING	
4	4-056-405-11	SPRING COMPRESSION	
5	4-070-135-01	BUTTON, MULTI	
6	* 4-070-136-01	GUIDE, LIGHT	
7	1-529-125-11	SPEAKER (13X7CM)	
8	4-069-797-31	CUSHION, SPEAKER (S)	
9	4-302-404-03	SCREW WASHER HEAD (PH-2X16)	
10	4-305-808-01	SCREW (S), TAPPING	
11	4-046-600-11	SWITCH, DY	
12	* 3-704-372-41	HOLDER, HV CABLE	
13	Δ 8-738-809-05	PICTURE TUBE (AST1PT000)	
14	4-070-137-01	COIL WINDING (V12JKA-S)	
15	* A-1331-948-A	MOUNTED PWB, CS	
16	4-569-318-61	SPRING, TENSION	
17	Δ 1-410-946-11	COIL, DEMAGNETIC	
18	4-070-137-01	COIL WINDING	
19	* 4-070-139-01	PWB(R), GUIDE	
20	* 4-070-138-01	PWB(R), GUIDE	
21	8-598-451-00	TUNER, FSS DTF-WG441 (KVXF21M83)	
22	Δ 1-453-293-11	TUNER, FSS DTF-LG433 (KVXF21M83)	
23	* A-1298-997-A	TRANSFORMER ASSY, HYBACK (KS1736-M044)	
24	* A-1298-998-A	TRANSFORMER ASSY, HYBACK COMPLETE (KVXF21M83)	
25	4-057-714-01	PIECE ASSY, TLI CORRECTION	
26	4-022-115-21	HOLDER, AC CORD	
27	Δ 1-574-063-22	CORE POWER (WITH CONNECTOR) 25A/250V	
28	1-452-032-00	MAGNET DISC	
29	4-051-736-21	PIECE A/00, CONV. CORRECT	
30	* A-132-486-A	MOUNTED PWB, VM1	
31	4-070-140-01	BRACKET, TERMINAL	
32	1-452-094-00	CIRCULAR DISC, MAGNET B	
33	4-069-651-01	SHEET, BLOTTER	
34	* A-1241-372-A	MOUNTED PWB, F	
35	* A-1372-467-A	MOUNTED PWB, H4	
36	* A-1380-613-A	MOUNTED PWB, K1	
37	4-070-140-01	BRACKET, TERMINAL PCB	
38	* A-1352-324-A	MOUNTED PWB, S	
39	4-064-883-11	HOLDER, DCC	
40	X-4036-646-1	DOOR ASSY, CONTROL	
41	4-070-142-01	BRATTLE, SPEAKER	
42	4-774-745-21	CUSHION (A)	
43	1-452-728-61	COIL, NA ROTATION (RE154)	
44	4-069-652-51	CUSHION (HS BAND)	

6-2. 3D SPEAKER

- ▲ 7-685-661-71 SCREW B/VTB 4 × 12
- 7-685-663-71 SCREW B/VTB 4 × 16



REF.NO.	PART NO.	DESCRIPTION	REMARK
51	* 4-967-201-01	3D WOOFER (UPPER)	
52	* 1-803-937-21	SPEAKER (10CM)	
53	* 1-803-937-21	SPEAKER (10CM)	
54	* 4-968-528-01	FOOT	
55	A-1501-48-A	BOX ASSY. SPEAKER (3D)	

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ▲ are critical for safety. Replaces only with part number specified.

When indicating parts by reference number, please include the board name.

• Items marked "▲" are not stocked since they are required only in the event of an emergency. Some delay should be anticipated when ordering these items.

- All resistors are in ohms
- F: Nonflammable
- CAP:QCTORS
- MF: μ F, PF: pF, μ UF

COILS

- MMH: mH, μ H: μ H

REF.NO.	PART NO.	DESCRIPTION	REMARK
* A-1298-907-A	A BOARD COMPLETE (KV-XF21M83)		
* A-1298-908-A	A BOARD COMPLETE (KV-XF21M93)		
* 4-400-983-41	TERMINAL BOARD (D)		
* 4-405-304-01	HOLDER, LED		
* 4-070-141-01	HOLDER, FET, P, SW (-)		
4-382-854-21	SCREW (M3X14), P, SW (+)		
4-382-854-21	SCREW (M3X14), P, SW (+)		
7-685-648-79	SCREW -B/VTB 3X12 TYPE N S		
<CAPACITOR>			
C04	1-163-001-91	CERAMIC CHIP 220PF	10%, 50V
C05	1-163-001-91	CERAMIC CHIP 220PF	10%, 50V
C06	1-164-004-91	CERAMIC CHIP 0.1MF	10%, 25V
C07	1-126-933-11	ELECT	20%, 16V
C08	1-163-005-91	CERAMIC CHIP 470PF	10%, 50V
C09	1-163-005-91	CERAMIC CHIP 470PF	10%, 50V
C10	1-163-005-91	CERAMIC CHIP 470PF	10%, 50V
C11	1-163-005-91	CERAMIC CHIP 470PF	10%, 50V
C12	1-126-933-11	ELECT	20%, 16V
C13	1-126-967-11	ELECT	47MF
C14	1-126-967-11	ELECT	47MF
C15	1-163-009-11	CERAMIC CHIP 0.001MF	10%, 50V
C16	1-163-009-11	CERAMIC CHIP 0.001MF	10%, 50V
C17	1-163-009-11	CERAMIC CHIP 0.001MF	10%, 50V
C18	1-126-933-11	ELECT	20%, 16V
C19	1-126-933-11	ELECT	20%, 16V
C20	1-126-933-11	ELECT	20%, 16V
C21	1-126-933-11	ELECT	20%, 16V
C22	1-126-933-11	ELECT	20%, 16V
C23	1-126-933-11	ELECT	20%, 16V
C24	1-126-933-11	ELECT	20%, 16V
C25	1-126-933-11	ELECT	20%, 16V
C26	1-126-933-11	ELECT	20%, 16V
C27	1-126-933-11	ELECT	20%, 16V
C28	1-126-933-11	ELECT	20%, 16V
C29	1-126-933-11	ELECT	20%, 16V
C30	1-126-933-11	ELECT	20%, 16V
C31	1-126-933-11	ELECT	20%, 16V
C32	1-126-933-11	ELECT	20%, 16V
C33	1-126-933-11	ELECT	20%, 16V
C34	1-126-933-11	ELECT	20%, 16V
C35	1-126-933-11	ELECT	20%, 16V
C36	1-126-933-11	ELECT	20%, 16V
C37	1-126-933-11	ELECT	20%, 16V
C38	1-126-933-11	ELECT	20%, 16V
C39	1-126-933-11	ELECT	20%, 16V
C40	1-126-933-11	ELECT	20%, 16V
C41	1-126-933-11	ELECT	20%, 16V
C42	1-126-933-11	ELECT	20%, 16V
C43	1-126-933-11	ELECT	20%, 16V
C44	1-126-933-11	ELECT	20%, 16V
C45	1-126-933-11	ELECT	20%, 16V
C46	1-126-933-11	ELECT	20%, 16V
C47	1-126-933-11	ELECT	20%, 16V
C48	1-126-933-11	ELECT	20%, 16V
C49	1-126-933-11	ELECT	20%, 16V
C50	1-126-933-11	ELECT	20%, 16V
C51	1-126-933-11	ELECT	20%, 16V
C52	1-126-933-11	ELECT	20%, 16V
C53	1-126-933-11	ELECT	20%, 16V
C54	1-126-933-11	ELECT	20%, 16V
C55	1-126-933-11	ELECT	20%, 16V
C56	1-126-933-11	ELECT	20%, 16V
C57	1-126-933-11	ELECT	20%, 16V
C58	1-126-933-11	ELECT	20%, 16V
C59	1-126-933-11	ELECT	20%, 16V
C60	1-126-933-11	ELECT	20%, 16V
C61	1-126-933-11	ELECT	20%, 16V
C62	1-126-933-11	ELECT	20%, 16V
C63	1-126-933-11	ELECT	20%, 16V
C64	1-126-933-11	ELECT	20%, 16V
C65	1-126-933-11	ELECT	20%, 16V
C66	1-126-933-11	ELECT	20%, 16V
C67	1-126-933-11	ELECT	20%, 16V
C68	1-126-933-11	ELECT	20%, 16V
C69	1-126-933-11	ELECT	20%, 16V
C70	1-126-933-11	ELECT	20%, 16V
C71	1-126-933-11	ELECT	20%, 16V
C72	1-126-933-11	ELECT	20%, 16V
C73	1-126-933-11	ELECT	20%, 16V
C74	1-126-933-11	ELECT	20%, 16V
C75	1-126-933-11	ELECT	20%, 16V
C76	1-126-933-11	ELECT	20%, 16V
C77	1-126-933-11	ELECT	20%, 16V
C78	1-126-933-11	ELECT	20%, 16V
C79	1-126-933-11	ELECT	20%, 16V
C80	1-126-933-11	ELECT	20%, 16V
C81	1-126-933-11	ELECT	20%, 16V
C82	1-126-933-11	ELECT	20%, 16V
C83	1-126-933-11	ELECT	20%, 16V
C84	1-126-933-11	ELECT	20%, 16V
C85	1-126-933-11	ELECT	20%, 16V
C86	1-126-933-11	ELECT	20%, 16V
C87	1-126-933-11	ELECT	20%, 16V
C88	1-126-933-11	ELECT	20%, 16V
C89	1-126-933-11	ELECT	20%, 16V
C90	1-126-933-11	ELECT	20%, 16V
C91	1-126-933-11	ELECT	20%, 16V
C92	1-126-933-11	ELECT	20%, 16V
C93	1-126-933-11	ELECT	20%, 16V
C94	1-126-933-11	ELECT	20%, 16V
C95	1-126-933-11	ELECT	20%, 16V
C96	1-126-933-11	ELECT	20%, 16V
C97	1-126-933-11	ELECT	20%, 16V
C98	1-126-933-11	ELECT	20%, 16V
C99	1-126-933-11	ELECT	20%, 16V
C100	1-126-933-11	ELECT	20%, 16V
C101	1-126-933-11	ELECT	20%, 16V
C102	1-126-933-11	ELECT	20%, 16V
C103	1-126-933-11	ELECT	20%, 16V
C104	1-126-933-11	ELECT	20%, 16V
C105	1-126-933-11	ELECT	20%, 16V
C106	1-126-933-11	ELECT	20%, 16V
C107	1-126-933-11	ELECT	20%, 16V
C108	1-126-933-11	ELECT	20%, 16V
C109	1-126-933-11	ELECT	20%, 16V
C110	1-126-933-11	ELECT	20%, 16V
C111	1-126-933-11	ELECT	20%, 16V
C112	1-126-933-11	ELECT	20%, 16V
C113	1-126-933-11	ELECT	20%, 16V
C114	1-126-933-11	ELECT	20%, 16V
C115	1-126-933-11	ELECT	20%, 16V
C116	1-126-933-11	ELECT	20%, 16V
C117	1-126-933-11	ELECT	20%, 16V
C118	1-126-933-11	ELECT	20%, 16V
C119	1-126-933-11	ELECT	20%, 16V
C120	1-126-933-11	ELECT	20%, 16V
C121	1-126-933-11	ELECT	20%, 16V
C122	1-126-933-11	ELECT	20%, 16V
C123	1-126-933-11	ELECT	20%, 16V
C124	1-126-933-11	ELECT	20%, 16V
C125	1-126-933-11	ELECT	20%, 16V
C126	1-126-933-11	ELECT	20%, 16V
C127	1-126-933-11	ELECT	20%, 16V
C128	1-126-933-11	ELECT	20%, 16V
C129	1-126-933-11	ELECT	20%, 16V
C130	1-126-933-11	ELECT	20%, 16V
C131	1-126-933-11	ELECT	20%, 16V
C132	1-126-933-11	ELECT	20%, 16V
C133	1-126-933-11	ELECT	20%, 16V
C134	1-126-933-11	ELECT	20%, 16V
C135	1-126-933-11	ELECT	20%, 16V
C136	1-126-933-11	ELECT	20%, 16V
C137	1-126-933-11	ELECT	20%, 16V
C138	1-126-933-11	ELECT	20%, 16V
C139	1-126-933-11	ELECT	20%, 16V
C140	1-126-933-11	ELECT	20%, 16V
C141	1-126-933-11	ELECT	20%, 16V
C142	1-126-933-11	ELECT	20%, 16V
C143	1-126-933-11	ELECT	20%, 16V
C144	1-126-933-11	ELECT	20%, 16V
C145	1-126-933-11	ELECT	20%, 16V
C146	1-126-933-11	ELECT	20%, 16V
C147	1-126-933-11	ELECT	20%, 16V
C148	1-126-933-11	ELECT	20%, 16V
C149	1-126-933-11	ELECT	20%, 16V
C150	1-126-933-11	ELECT	20%, 16V
C151	1-126-933-11	ELECT	20%, 16V
C152	1-126-933-11	ELECT	20%, 16V
C153	1-126-933-11	ELECT	20%, 16V
C154	1-126-933-11	ELECT	20%, 16V
C155	1-126-933-11	ELECT	20%, 16V
C156	1-126-933-11	ELECT	20%, 16V
C157	1-126-933-11	ELECT	20%, 16V
C158	1-126-933-11	ELECT	20%, 16V
C159	1-126-933-11	ELECT	20%, 16V
C160	1-126-933-11	ELECT	20%, 16V
C161	1-126-933-11	ELECT	20%, 16V
C162	1-126-933-11	ELECT	20%, 16V
C163	1-126-933-11	ELECT	20%, 16V
C164	1-126-933-11	ELECT	20%, 16V
C165	1-126-933-11	ELECT	20%, 16V
C166	1-126-933-11	ELECT	20%, 16V
C167	1-126-933-11	ELECT	20%, 16V
C168	1-126-933-11	ELECT	20%, 16V
C169	1-126-933-11	ELECT	20%, 16V
C170	1-126-933-11	ELECT	20%, 16V
C171	1-126-933-11	ELECT	20%, 16V
C172	1-126-933-11	ELECT	20%, 16V
C173	1-126-933-11	ELECT	20%, 16V
C174	1-126-933-11	ELECT	20%, 16V
C175	1-126-933-11	ELECT	20%, 16V
C176	1-126-933-11	ELECT	20%, 16V
C177	1-126-933-11	ELECT	20%, 16V
C178	1-126-933-11	ELECT	20%, 16V
C179	1-126-933-11	ELECT	20%, 16V
C180	1-126-933-11	ELECT	20%, 16V
C181	1-126-933-11	ELECT	20%, 16V
C182	1-126-933-11	ELECT	20%, 16V
C183	1-126-933-11	ELECT	20%, 16V
C184	1-126-933-11	ELECT	20%, 16V
C185	1-126-933-11	ELECT	20%, 16V
C186	1-126-933-11	ELECT	20%, 16V
C187	1-126-933-11	ELECT	20%, 16V
C188	1-126-933-11	ELECT	20%, 16V
C189	1-126-933-11	ELECT	20%, 16V
C190	1-126-933-11	ELECT	20%, 16V
C191	1-126-933-11	ELECT	20%, 16V
C192	1-126-933-11	ELECT	20%, 16V
C193	1-126-933-11	ELECT	20%, 16V
C194	1-126-933-11	ELECT	20%, 16V
C195	1-126-933-11	ELECT	20%, 16V
C196	1-126-933-11	ELECT	20%, 16V
C197	1-126-933-11	ELECT	20%, 16V
C198	1-126-933-11	ELECT	20%, 16V
C199	1-126-933-11	ELECT	20%, 16V
C200	1-126-933-11	ELECT	20%, 16V
C201	1-126-933-11	ELECT	20%, 16V
C202	1-126-933-11	ELECT	20%, 16V
C203	1-126-933-11	ELECT	20%, 16V
C204	1-126-933-11	ELECT	20%, 16V
C205	1-126-933-11	ELECT	20%, 16V
C206	1-126-933-11	ELECT	20%, 16V
C207	1-126-933-11	ELECT	20%, 16V
C208	1-126-933-11	ELECT	20%, 16V
C209	1-126-933-11	ELECT	20%, 16V
C210	1-126-933-11	ELECT	20%, 16V
C211	1-126-933-11	ELECT	20%, 16V
C212	1-126-933-11	ELECT	20%, 16V
C213	1-126-933-11	ELECT	20%, 16V
C214	1-126-933-11	ELECT	20%, 16V
C215	1-126-933-11	ELECT	20%, 16V
C216	1-126-933-11	ELECT	20%, 16V
C217	1-126-933-11	ELECT	20%, 16V
C218	1-126-933-11	ELECT	20%, 16V
C219	1-126-933-11	ELECT	20%, 16V
C220	1-126-933-11	ELECT	20%, 16V
C221	1-126-933-11	ELECT	20%, 16V
C222	1-126-933-11	ELECT	20%, 16V
C223	1-126-933-11	ELECT	20%, 16V
C224	1-126-933-11	ELECT	20%, 16V
C225	1-126-933-11	ELECT	20%, 16V
C226	1-126-933-11	ELECT	20%, 16V
C227	1-126-933-11	ELECT	20%, 16V
C228	1-126-933-11	ELECT	20%, 16V
C229	1-126-933-11	ELECT	20%, 16V
C230	1-126-933-11	ELECT	20%, 16V
C231	1-126-933-11	ELECT	20%, 16V
C232	1-126-933-11	ELECT	20%, 16V
C233	1-126-933-11	ELECT	20%, 16V
C234	1-126-933-11	ELECT	20%, 16V
C235	1-126-933-11	ELECT	20%, 16V
C236	1-126-933-11	ELECT	20%, 16V
C237	1-126-933-11	ELECT	20%, 16V
C238	1-126-933-11	ELECT	20%, 16V
C239	1-126-933-11	ELECT	20%, 16V
C240	1-126-933-11	ELECT	20%, 16V
C241	1-126-933-11	ELECT	20%, 16V
C242	1-126-933-11	ELECT	20%, 16V
C243	1-126-933-11	ELECT	20%, 16V
C244	1-126-933-11	ELECT	20%, 16V
C245	1-126-933-11	ELECT	20%, 16V
C246	1-126-933-11	ELECT	20%, 16V
C247	1-126-933-11	ELECT	20%, 16V
C248	1-126-933-11	ELECT	20%, 16V
C249	1-126-933-11	ELECT	20%, 16V
C250	1-126-933-11	ELECT	20%, 16V
C251	1-126-933-11	ELECT	20%, 16V
C252	1-126-933-11	ELECT	20%, 16V
C253	1-126-933-11	ELECT	20%, 16V
C254	1-126-933-11	ELECT	20%, 16V
C255	1-126-933-11	ELECT	20%, 16V
C256	1-126-933-11	ELECT	20%, 16V
C257	1-126-933-11	ELECT	20%, 16V
C258	1-126-933-11	ELECT	20%, 16V
C259	1-126-933-11	ELECT	20%, 16V

The components identified by shading
and mark Δ are critical for safety.
Replace only with part number specified.

A

REF. NO.	PART NO.	DESCRIPTION	REMARK		
C574	1-107-636-11	ELECT	10MF	20%	160V
C577	1-106-395-00	MYLAR	0.15MF	10%	200V
C582	1-164-004-91	CERAMIC CHIP	0.1MF	10%	25V
C600 Δ	1-104-705-51	FILM	0.1MF	20%	250V
C604	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C605 Δ	1-127-943-51	CERAMIC	330PF	10%	250V
C606 Δ	1-127-943-51	CERAMIC	330PF	10%	250V
C607	1-161-830-00	CERAMIC	0.0047MF	99%	500V
C608	1-161-830-00	CERAMIC	0.0047MF	99%	500V
C609	1-126-968-11	ELECT	100MF	20%	50V
C610	1-125-797-91	ELECT	10MF	20%	50V
C611	1-161-830-00	CERAMIC	0.0047MF	99%	500V
C612	1-161-830-00	CERAMIC	0.0047MF	99%	500V
C613	1-117-752-11	ELECT(BLOCK)	330MF	20%	450V
C614	1-125-797-91	ELECT	10MF	20%	50V
C616	1-130-202-00	FILM	0.022MF	10%	400V
C617	1-107-792-11	CERAMIC	100PF	5%	1KV
C618	1-125-893-11	FILM	680PF	3%	1.5KV
C619 Δ	1-119-886-51	CERAMIC	470PF	10%	250V
C620	1-163-267-91	CERAMIC CHIP	470PF	10%	50V
C621	1-102-114-00	CERAMIC	470PF	10%	50V
C622	1-102-074-00	CERAMIC	0.001MF	10%	50V
C623	1-104-665-11	ELECT	100MF	20%	25V
C624	1-104-331-11	CERAMIC	0.0022MF	10%	1KV
C625	1-102-002-00	CERAMIC	680PF	10%	500V
C627	1-102-002-00	CERAMIC	680PF	10%	500V
C628	1-126-942-61	ELECT	1000MF	20%	25V
C629	1-125-797-91	ELECT	10MF	20%	50V
C630	1-124-347-00	ELECT	100MF	20%	160V
C631	1-128-550-11	ELECT	2200MF	20%	50V
C633	1-104-999-11	MYLAR	0.1MF	10%	200V
C634	1-126-934-11	ELECT	220MF	20%	16V
C635	1-104-665-11	ELECT	100MF	20%	10V
C636	1-104-760-51	CERAMIC CHIP	0.047MF	10%	50V
C639	1-164-004-91	CERAMIC CHIP	0.1MF	10%	25V
C640	1-164-004-91	CERAMIC CHIP	0.1MF	10%	25V
C641	1-102-002-00	CERAMIC	680PF	10%	500V
C642	1-126-943-11	ELECT	2200MF	20%	25V
C643	1-126-933-11	ELECT	100MF	20%	16V
C644	1-104-331-11	CERAMIC	0.0022MF	10%	1KV
C645	1-137-605-11	FILM	0.01MF	10%	250V
C646	1-107-679-91	ELECT	10MF	20%	450V
C647	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C649	1-126-940-11	ELECT	330MF	20%	25V
C650	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C651	1-163-267-91	CERAMIC CHIP	470PF	10%	50V
C652	1-126-965-11	ELECT	22MF	20%	50V
C653	1-126-967-11	ELECT	47MF	20%	50V
C657	1-101-821-00	CERAMIC	0.0022MF		500V
C658	1-164-004-91	CERAMIC CHIP	0.1MF	10%	25V
C901	1-136-153-00	FILM	0.01MF	5%	50V
C902	1-136-153-00	FILM	0.01MF	5%	50V
C905	1-125-805-91	ELECT	4.7MF	20%	50V
C906	1-164-346-91	CERAMIC CHIP	1MF	10%	16V
C907	1-163-267-91	CERAMIC CHIP	470PF	10%	50V
C908	1-163-267-91	CERAMIC CHIP	470PF	10%	50V
C909	1-164-346-91	CERAMIC CHIP	1MF	10%	16V

REF. NO.	PART NO.	DESCRIPTION	REMARK		
C910	1-126-967-11	ELECT	47MF	20%	50V
C911	1-126-967-11	ELECT	47MF	20%	50V
C912	1-164-004-91	CERAMIC CHIP	0.1MF	10%	25V
C913	1-126-933-11	ELECT	100MF	20%	16V
C914	1-163-267-91	CERAMIC CHIP	470PF	10%	50V
<CONNECTOR>					
CN104	1-695-915-11	TAB (CONTACT)			
CN201 *	1-564-510-11	PLUG, CONNECTOR 7P			
CN202 *	1-785-608-11	PIN, CONNECTOR 4P			
CN203 *	1-564-506-11	PLUG, CONNECTOR 3P			
CN204 *	1-564-506-11	PLUG, CONNECTOR 3P			
CN305 *	1-564-509-11	PLUG, CONNECTOR 6P			
CN306 *	1-564-510-11	PLUG, CONNECTOR 7P			
CN505	1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P			
CN506	4-352-844-01	PIN, LEAD, COATING			
CN507 *	1-564-507-11	PLUG, CONNECTOR 4P			
CN601 *	1-580-843-11	PIN, CONNECTOR (POWER)			
CN602 *	1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P			
CN604 *	1-573-963-11	PIN, CONNECTOR (PC BOARD) 3P			
CN605 *	1-564-507-11	PLUG, CONNECTOR 4P			
CN609 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P			
CN901 *	1-564-509-11	PLUG, CONNECTOR 6P			
<COMPOSITION CIRCUIT BLOCK>					
CP301	1-467-554-21	FILTER BLOCK, COMB			
<DIODE>					
D001	8-719-988-61	DIODE 1SS355TE-17			
D005	8-719-988-61	DIODE 1SS355TE-17			
D006	8-719-988-61	DIODE 1SS355TE-17			
D100	8-719-404-50	DIODE MA111-TX (KV-XF21M93 ONLY)			
D203	8-719-914-42	DIODE DA204K			
D300	1-216-295-91	SHORT CHIP 0			
D301	8-719-988-61	DIODE 1SS355TE-17			
D306	8-719-988-61	DIODE 1SS355TE-17			
D307	8-719-988-61	DIODE 1SS355TE-17			
D308	8-719-988-61	DIODE 1SS355TE-17			
D309	8-719-159-10	DIODE RD5.1SB-T2			
D311	8-719-988-61	DIODE 1SS355TE-17			
D312	8-719-988-61	DIODE 1SS355TE-17			
D313	8-719-988-61	DIODE 1SS355TE-17			
D314	8-719-988-61	DIODE 1SS355TE-17			
D315	8-719-988-61	DIODE 1SS355TE-17			
D316	8-719-069-57	DIODE UDZS-TE17-6.8B			
D401	8-719-158-35	DIODE RD9.1SB			
D402	8-719-158-35	DIODE RD9.1SB			
D403	8-719-158-35	DIODE RD9.1SB			
D404	8-719-158-35	DIODE RD9.1SB			
D405	8-719-158-35	DIODE RD9.1SB			
D406	8-719-158-35	DIODE RD9.1SB			
D504	8-719-302-43	DIODE ELIZ			
D505	8-719-988-61	DIODE 1SS355TE-17			

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REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
D506	8-719-911-19	DIODE 1SS119-25				<FERRITE BEAD>	
D507	8-719-988-61	DIODE 1SS355TE-17		FB103	1-410-397-21	FERRITE	1.1UH
D508	8-719-988-61	DIODE 1SS355TE-17		FB501	1-410-397-21	FERRITE	1.1UH
D509	1-216-073-91	RES,CHIP 10G	5%	FB502	1-410-397-21	FERRITE	1.1UH
D510	8-719-988-61	DIODE 1SS355TE-17	1/10W	FB600	1-410-397-21	FERRITE	1.1UH
				FB601	1-410-397-21	FERRITE	1.1UH
D511	8-719-988-61	DIODE 1SS355TE-17					
D512	8-719-988-61	DIODE 1SS355TE-17		FB602	1-410-397-21	FERRITE	1.1UH
D513	8-719-908-03	DIODE GP08D		FB603	1-410-397-21	FERRITE	1.1UH
D517	8-719-945-80	DIODE ERC06-15S		FB604	1-410-397-21	FERRITE	1.1UH
D518	8-719-900-26	DIODE ERD29-08J		FB605	1-412-911-31	FERRITE	0UH
				FB607	1-410-397-21	FERRITE	1.1UH
D520	1-216-295-91	SHORT CHIP 0					
D521	8-719-302-43	DIODE ELIZ		FB608	1-412-911-31	FERRITE	0UH
D522	8-719-302-43	DIODE ELIZ		FB611	1-410-397-21	FERRITE	1.1UH
D523	8-719-302-43	DIODE ELIZ		FB613	1-410-397-21	FERRITE	1.1UH
D527	8-719-908-03	DIODE GP08D		FB615	1-410-397-21	FERRITE	1.1UH
D528	8-719-908-03	DIODE GP08D				<IC>	
D531	8-719-988-61	DIODE 1SS355TE-17		IC001	8-752-905-20	IC CXP86449-614S	
D532	8-719-988-61	DIODE 1SS355TE-17		IC002	8-759-371-21	IC MM1319AFBE	
D602	8-719-911-19	DIODE 1SS119-25		IC003	8-759-370-34	IC ST24C08FB6	
D603	8-719-150-92	DIODE RD33EB3T		IC100	8-759-042-02	IC S-80743AL-A7-S (KV-XF21M93 ONLY)	
				IC201	8-759-339-60	IC TA8248K	
D604	8-719-028-72	DIODE RGP02-17EL-6433					
D605	8-719-510-53	DIODE D4SB60L		IC203	8-759-553-40	IC TDA7429S	
D606	8-719-108-18	THYRISTOR 5P6M		IC301	8-752-088-39	IC CXA2130S	
D607	8-719-404-50	DIODE MA111-TX		IC502	8-759-700-07	IC NJM2903M	
D608	8-719-110-53	DIODE RD20ESB2		IC503	8-759-980-58	IC TDA8172	
				IC601	8-749-013-75	IC STR-F6654	
D609	8-719-311-31	DIODE RU-1P					
D610	8-719-043-76	DIODE AK04V0		IC602	8-749-920-61	IC SE-135N	
D611	8-719-073-86	DIODE AU-01Z-WS		IC603	8-759-701-59	IC NJM78M09FA	
D613	8-719-073-86	DIODE AU-01Z-WS		IC604	8-759-231-53	IC TA7805S	
D614	8-719-073-86	DIODE AU-01Z-WS		IC901	8-742-041-12	HYB IC SBX1981-11	
				IC901	8-742-041-12	HYB IC SBX1981-11	
D616	8-719-067-18	DIODE RN4Z				<JACK>	
D618	8-719-067-18	DIODE RN4Z		J401	1-779-850-11	JACK BLOCK, PIN 6P	
D620	8-719-110-72	DIODE RD30ESB2		J902	1-770-329-11	JACK, PIN 3P	
D622	8-719-071-39	DIODE FMU-G26S					
D623	8-719-978-65	DIODE DTZ-TT11-15B				<CHIP CONDUCTOR>	
				JR002	1-216-295-91	SHORT CHIP	0
D624	8-719-404-50	DIODE MA111-TX		JR003	1-216-295-91	SHORT CHIP	0
D625	8-719-158-39	DIODE RD10SB		JR004	1-216-295-91	SHORT CHIP	0
D627	8-719-073-84	DIODE 31DQ06-FC5		JR005	1-216-295-91	SHORT CHIP	0
D628	8-719-911-19	DIODE 1SS119-25		JR006	1-216-295-91	SHORT CHIP	0
D631	8-719-068-00	DIODE ERC04-06SE					
				JR007	1-216-295-91	SHORT CHIP	0
D632	8-719-068-00	DIODE ERC04-06SE		JR008	1-216-295-91	SHORT CHIP	0
D633	8-719-948-45	DIODE ERA22-08		JR009	1-216-295-91	SHORT CHIP	0
D634	8-719-404-50	DIODE MA111-TX		JR010	1-216-295-91	SHORT CHIP	0
D635	8-719-404-50	DIODE MA111-TX		JR011	1-216-295-91	SHORT CHIP	0
D636	8-719-510-02	DIODE D1NS4					
				JR012	1-216-295-91	SHORT CHIP	0
D637	8-719-109-96	DIODE RD6.8ESB1		JR013	1-216-295-91	SHORT CHIP	0
D638	8-719-510-48	DIODE D1N20R		JR014	1-216-295-91	SHORT CHIP	0
D901	8-719-158-35	DIODE RD9.1SB		JR015	1-216-295-91	SHORT CHIP	0
D902	8-719-158-35	DIODE RD9.1SB		JR016	1-216-295-91	SHORT CHIP	0
D903	8-719-158-35	DIODE RD9.1SB					
D904	8-719-158-35	DIODE RD9.1SB					
D905	8-719-158-35	DIODE RD9.1SB					
D906	8-719-045-19	DIODE SPB-26MVWF					
		<CONNECTOR>					
DY1	* 1-580-798-11	CONNECTOR PIN (DY) 6P					

The components identified by shading
and mark Δ are critical for safety.
Replace only with part number specified.

A

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
JR018	1-216-295-91	SHORT CHIP	0	<TRANSISTOR>			
JR019	1-216-295-91	SHORT CHIP	0	Q002	8-729-230-49	TRANSISTOR 2SC2712-YG	
JR102	1-216-295-91	SHORT CHIP	0	Q003	8-729-027-23	TRANSISTOR DTA114EKA-T146	
JR107	1-216-295-91	SHORT CHIP	0 (KV-XF21M93 ONLY)	Q004	8-729-900-53	TRANSISTOR DTC114EK	
JR109	1-216-295-91	SHORT CHIP	0 (KV-XF21M83 ONLY)	Q101	8-729-230-49	TRANSISTOR 2SC2712-YG	
JR202	1-216-295-91	SHORT CHIP	0	Q201	8-729-424-67	TRANSISTOR UN2216	
JR301	1-216-295-91	SHORT CHIP	0	Q202	8-729-424-67	TRANSISTOR UN2216	
JR303	1-216-295-91	SHORT CHIP	0	Q203	1-801-806-11	TRANSISTOR DTC144EKA-T146	
JR401	1-216-295-91	SHORT CHIP	0	Q204	8-729-216-22	TRANSISTOR 2SA1162-G	
JR403	1-216-295-91	SHORT CHIP	0	Q205	1-801-806-11	TRANSISTOR DTC144EKA-T146	
JR404	1-216-295-91	SHORT CHIP	0	Q206	1-801-806-11	TRANSISTOR DTC144EKA-T146	
JR405	1-216-295-91	SHORT CHIP	0	Q207	1-801-806-11	TRANSISTOR DTC144EKA-T146	
JR500	1-216-295-91	SHORT CHIP	0	Q301	8-729-216-22	TRANSISTOR 2SA1162-G	
JR501	1-216-295-91	SHORT CHIP	0	Q302	8-729-230-49	TRANSISTOR 2SC2712-YG	
JR600	1-216-295-91	SHORT CHIP	0	Q303	8-729-216-22	TRANSISTOR 2SA1162-G	
				Q305	8-729-216-22	TRANSISTOR 2SA1162-G	
<COIL>				Q306	8-729-216-22	TRANSISTOR 2SA1162-G	
L002	1-414-856-11	INDUCTOR	10UH	Q307	8-729-230-49	TRANSISTOR 2SC2712-YG	
L003	1-414-180-11	INDUCTOR	3.3UH	Q308	8-729-216-22	TRANSISTOR 2SA1162-G	
L005	1-414-233-22	INDUCTOR CHIP	0UH	Q312	8-729-216-22	TRANSISTOR 2SA1162-G	
L101	1-414-856-11	INDUCTOR	10UH	Q313	8-729-230-49	TRANSISTOR 2SC2712-YG	
L102	1-414-856-11	INDUCTOR	10UH	Q315	1-801-806-11	TRANSISTOR DTC144EK-T146	
L103	1-414-856-11	INDUCTOR	10UH	Q401	8-729-424-67	TRANSISTOR UN2216	
L104	1-414-856-11	INDUCTOR	10UH	Q402	8-729-424-67	TRANSISTOR UN2216	
L105	1-414-856-11	INDUCTOR	10UH	Q403	8-729-216-22	TRANSISTOR 2SA1162-G	
L204	1-414-856-11	INDUCTOR	10UH	Q404	8-729-216-22	TRANSISTOR 2SA1162-G	
L301	1-414-189-31	INDUCTOR	100UH	Q503	8-729-230-49	TRANSISTOR 2SC2712-YG	
L302	1-414-185-41	INDUCTOR	22UH	Q505	8-729-931-45	TRANSISTOR IRF614	
L501	1-412-525-31	INDUCTOR	10UH	Q506	8-729-140-96	TRANSISTOR 2SD774-34	
L502	1-422-613-11	COIL, AIR CORE		Q507	8-729-216-22	TRANSISTOR 2SA1162-G	
L503	1-412-525-31	INDUCTOR	10UH	Q509	8-729-230-49	TRANSISTOR 2SC2712-YG	
L504	1-412-525-31	INDUCTOR	10UH	Q511	8-729-016-32	TRANSISTOR 2SC4927-01	
L505	1-412-525-31	INDUCTOR	10UH	Q601	8-729-023-22	TRANSISTOR 2SD2114K	
L506	1-412-525-31	INDUCTOR	10UH	Q602	8-729-230-49	TRANSISTOR 2SC2712-YG	
L507	1-459-111-00	INDUCTOR	10MMH	Q603	8-729-027-23	TRANSISTOR DTA114EKA-T146	
L508	1-412-525-31	INDUCTOR	10UH	Q604	8-729-200-17	TRANSISTOR 2SA1091-O	
L509	1-459-390-00	INDUCTOR	390UH	Q605	8-729-044-30	TRANSISTOR 2SK2845-LB102	
L510	1-416-972-11	COIL, HORIZONTAL LINEARITY		Q606	8-729-230-49	TRANSISTOR 2SC2712-YG	
L512	1-412-549-31	INDUCTOR	1MMH	Q607	8-729-922-37	TRANSISTOR 2SD2144S-UVW	
L513	1-412-549-31	INDUCTOR	1MMH	Q608	8-729-230-49	TRANSISTOR 2SC2712-YG	
L515	1-459-104-00	COIL, WITH CORE		Q901	1-801-806-11	TRANSISTOR DTC144EKA-T146	
L518	1-408-611-31	INDUCTOR	47UH	Q902	1-801-806-11	TRANSISTOR DTC144EKA-T146	
L601	1-412-527-11	INDUCTOR	15UH	<RESISTOR>			
L901	1-408-603-31	INDUCTOR	10UH	R001	1-414-233-22	INDUCTOR CHIP	0UH
L902	1-408-603-31	INDUCTOR	10UH	R002	1-216-025-91	RES,CHIP	100 5% 1/10W
L905	1-414-856-11	INDUCTOR	10UH	R003	1-216-073-91	RES,CHIP	10G 5% 1/10W
<PHOTO COUPLER>				R004	1-216-025-91	RES,CHIP	100 5% 1/10W
PH600 Δ	8-749-924-35	PHOTO COUPLER ON3171-R		R005	1-216-025-91	RES,CHIP	100 5% 1/10W
<IC LINK>				R007	1-216-295-91	SHORT CHIP	0
PS200	1-532-675-21	LINK, IC 1.5A/150V		R008	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
				R010	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
				R011	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
				R012	1-216-065-91	RES,CHIP	4.7K 5% 1/10W

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REF. NO.	PART NO.	DESCRIPTION	REMARK			REF. NO.	PART NO.	DESCRIPTION	REMARK		
R013	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	R213	1-216-073-91	RES,CHIP	10G	5%	1/10W
R014	1-216-025-91	RES,CHIP	100	5%	1/10W	R214	1-216-073-91	RES,CHIP	10G	5%	1/10W
R015	1-216-025-91	RES,CHIP	100	5%	1/10W	R215	1-216-059-91	RES,CHIP	2.7K	5%	1/10W
R016	1-216-025-91	RES,CHIP	100	5%	1/10W	R216	1-216-059-91	RES,CHIP	2.7K	5%	1/10W
R017	1-216-049-91	RES,CHIP	1K	5%	1/10W	R217	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R018	1-216-033-91	RES,CHIP	220	5%	1/10W	R218	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R019	1-216-073-91	RES,CHIP	10G	5%	1/10W	R219	1-216-025-91	RES,CHIP	100	5%	1/10W
R021	1-216-073-91	RES,CHIP	10G	5%	1/10W	R220	1-216-025-91	RES,CHIP	100	5%	1/10W
R022	1-216-033-91	RES,CHIP	220	5%	1/10W	R221	1-216-295-91	SHORT CHIP	0		
R024	1-216-057-91	RES,CHIP	2.2K	5%	1/10W	R222	1-216-295-91	SHORT CHIP	0		
R025	1-216-057-91	RES,CHIP	2.2K	5%	1/10W	R225	1-216-033-91	RES,CHIP	220	5%	1/10W
R026	1-216-057-91	RES,CHIP	2.2K	5%	1/10W	R226	1-216-033-91	RES,CHIP	220	5%	1/10W
R027	1-216-073-91	RES,CHIP	10G	5%	1/10W	R227	1-216-033-91	RES,CHIP	220	5%	1/10W
R028	1-216-073-91	RES,CHIP	10G	5%	1/10W	R228	1-249-389-11	CARBON	4.7	5%	1/4W
		(KV-XF21M93 ONLY)				R229	1-216-073-91	RES,CHIP	10G	5%	1/10W
R029	1-216-049-91	RES,CHIP	1K	5%	1/10W	R230	1-216-069-91	RES,CHIP	6.8K	5%	1/10W
R031	1-216-049-91	RES,CHIP	1K	5%	1/10W	R231	1-216-295-91	SHORT CHIP	0		
R035	1-216-025-91	RES,CHIP	100	5%	1/10W	R234	1-249-389-11	CARBON	4.7	5%	1/4W
R036	1-216-025-91	RES,CHIP	100	5%	1/10W	R235	1-216-069-91	RES,CHIP	6.8K	5%	1/10W
R037	1-216-025-91	RES,CHIP	100	5%	1/10W	R236	1-216-069-91	RES,CHIP	6.8K	5%	1/10W
R040	1-216-025-91	RES,CHIP	100	5%	1/10W						
R041	1-216-025-91	RES,CHIP	100	5%	1/10W	R237	1-216-308-91	METAL CHIP	4.7	5%	1/10W
R042	1-216-295-91	SHORT CHIP	0			R301	1-216-073-91	RES,CHIP	10G	5%	1/10W
R043	1-216-025-91	RES,CHIP	100	5%	1/10W	R302	1-216-295-91	SHORT CHIP	0		
R044	1-216-025-91	RES,CHIP	100	5%	1/10W	R303	1-216-049-91	RES,CHIP	1K	5%	1/10W
R045	1-414-233-22	INDUCTOR CHIP	0UH			R304	1-216-073-91	RES,CHIP	10G	5%	1/10W
R046	1-216-049-91	RES,CHIP	1K	5%	1/10W	R305	1-216-051-91	RES,CHIP	1.2K	5%	1/10W
R047	1-414-233-22	INDUCTOR CHIP	0UH			R306	1-216-073-91	RES,CHIP	10G	5%	1/10W
R048	1-216-073-91	RES,CHIP	10G	5%	1/10W	R307	1-216-025-91	RES,CHIP	100	5%	1/10W
R050	1-216-073-91	RES,CHIP	10G	5%	1/10W	R308	1-216-025-91	RES,CHIP	100	5%	1/10W
R053	1-216-049-91	RES,CHIP	1K	5%	1/10W	R309	1-216-025-91	RES,CHIP	100	5%	1/10W
R055	1-216-073-91	RES,CHIP	10G	5%	1/10W	R310	1-216-025-91	RES,CHIP	100	5%	1/10W
R056	1-216-073-91	RES,CHIP	10G	5%	1/10W	R311	1-216-017-91	RES,CHIP	47	5%	1/10W
R061	1-216-033-91	RES,CHIP	220	5%	1/10W	R312	1-216-041-91	RES,CHIP	470	5%	1/10W
R062	1-216-041-91	RES,CHIP	470	5%	1/10W	R313	1-216-053-91	RES,CHIP	1.5K	5%	1/10W
R063	1-216-037-91	RES,CHIP	330	5%	1/10W	R314	1-216-045-00	METAL CHIP	680	5%	1/10W
R064	1-216-037-91	RES,CHIP	330	5%	1/10W	R316	1-216-053-91	RES,CHIP	1.5K	5%	1/10W
R065	1-216-037-91	RES,CHIP	330	5%	1/10W	R317	1-216-077-91	REGISTER	0		
R066	1-216-049-91	RES,CHIP	1K	5%	1/10W	R318	1-216-051-91	RES,CHIP	1.2K	5%	1/10W
R101	1-216-025-91	RES,CHIP	100	5%	1/10W	R319	1-216-025-91	RES,CHIP	100	5%	1/10W
		(KV-XF21M93 ONLY)				R320	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R102	1-216-025-91	RES,CHIP	100	5%	1/10W	R321	1-216-073-91	RES,CHIP	10G	5%	1/10W
		(KV-XF21M93 ONLY)				R322	1-216-033-91	RES,CHIP	220	5%	1/10W
R105	1-216-295-91	SHORT CHIP	0			R326	1-216-295-91	SHORT CHIP	0		
R109	1-216-041-91	RES,CHIP	470	5%	1/10W	R331	1-216-295-91	SHORT CHIP	0		
R111	1-216-025-91	RES,CHIP	100	5%	1/10W	R332	1-216-033-91	RES,CHIP	220	5%	1/10W
R112	1-216-025-91	RES,CHIP	100	5%	1/10W	R333	1-216-073-91	RES,CHIP	10G	5%	1/10W
R113	1-216-047-00	METAL CHIP	820	5%	1/10W	R334	1-216-129-91	METAL CHIP	2.2M	5%	1/10W
R202	1-216-053-91	RES,CHIP	1.5K	5%	1/10W	R335	1-216-045-00	METAL CHIP	680	5%	1/10W
R203	1-216-049-91	RES,CHIP	1K	5%	1/10W	R338	1-216-033-91	RES,CHIP	220	5%	1/10W
R204	1-216-069-91	RES,CHIP	6.8K	5%	1/10W	R340	1-216-025-91	RES,CHIP	100	5%	1/10W
R205	1-216-069-91	RES,CHIP	6.8K	5%	1/10W	R345	1-216-081-91	RES,CHIP	22K	5%	1/10W
R206	1-216-049-91	RES,CHIP	1K	5%	1/10W	R346	1-216-051-91	RES,CHIP	1.2K	5%	1/10W
R207	1-216-053-91	RES,CHIP	1.5K	5%	1/10W	R347	1-216-051-91	RES,CHIP	1.2K	5%	1/10W
R208	1-216-069-91	RES,CHIP	6.8K	5%	1/10W	R348	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R209	1-216-069-91	RES,CHIP	6.8K	5%	1/10W	R349	1-216-073-91	RES,CHIP	10G	5%	1/10W
R211	1-216-033-91	RES,CHIP	220	5%	1/10W	R350	1-216-061-91	RES,CHIP	3.3G	5%	1/10W
R212	1-216-033-91	RES,CHIP	220	5%	1/10W	R351	1-216-053-91	RES,CHIP	1.5K	5%	1/10W

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REF. NO.	PART NO.	DESCRIPTION	REMARK			REF. NO.	PART NO.	DESCRIPTION	REMARK		
R354	1-216-057-91	RES,CHIP	2.2K	5%	1/10W	R535	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R355	1-216-057-91	RES,CHIP	2.2K	5%	1/10W	R536	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R356	1-216-057-91	RES,CHIP	2.2K	5%	1/10W	R537	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
						R540	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R357	1-216-079-00	METAL CHIP	18K	5%	1/10W	R541	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R358	1-216-049-91	RES,CHIP	1K	5%	1/10W						
R359	1-216-033-91	RES,CHIP	220	5%	1/10W	R542	1-216-295-91	SHORT CHIP	0		
R360	1-216-033-91	RES,CHIP	220	5%	1/10W	R543	1-249-426-11	CARBON	5.6K	5%	1/4W F
R361	1-216-073-91	RES,CHIP	10G	5%	1/10W	R544	1-215-918-00	METAL OXIDE	1.5K	5%	3W F
						R545	1-216-077-91	REGISTER	0		
R362	1-216-075-91	RES,CHIP	12K	5%	1/10W	R546	1-216-077-91	REGISTER	0		
R363	1-216-079-00	METAL CHIP	18K	5%	1/10W						
R364	1-216-295-91	SHORT CHIP	0			R547	1-216-085-00	METAL CHIP	33K	5%	1/10W
R365	1-216-033-91	RES,CHIP	220	5%	1/10W	R549	1-215-451-00	METAL	18K	1%	1/4W
R366	1-216-073-91	RES,CHIP	10G	5%	1/10W	R550	1-216-097-91	RES,CHIP	100K	5%	1/10W
						R551	1-220-961-91	METAL CHIP	2.2K	5%	1/2W
R367	1-216-073-91	RES,CHIP	10G	5%	1/10W	R552	1-216-057-91	RES,CHIP	2.2K	5%	1/10W
R370	1-216-033-91	RES,CHIP	220	5%	1/10W						
R376	1-216-081-91	RES,CHIP	22K	5%	1/10W	R553	1-215-457-00	METAL	33K	1%	1/4W
R377	1-216-121-91	RES,CHIP	1M	5%	1/10W	R554	1-215-457-00	METAL	33K	1%	1/4W
R378	1-216-031-91	RES,CHIP	180	5%	1/10W	R556	1-215-437-00	METAL	4.7K	1%	1/4W
						R557	1-216-345-11	METAL OXIDE	0.47	5%	1W F
R401	1-216-049-91	RES,CHIP	1K	5%	1/10W	R558	1-220-961-91	METAL CHIP	2.2K	5%	1/2W
R402	1-216-073-91	RES,CHIP	10G	5%	1/10W						
R403	1-216-073-91	RES,CHIP	10G	5%	1/10W	R559	1-220-969-91	METAL CHIP	10K	5%	1/2W
R404	1-216-073-91	RES,CHIP	10G	5%	1/10W	R560	1-216-073-91	RES,CHIP	10G	5%	1/10W
R405	1-216-049-91	RES,CHIP	1K	5%	1/10W	R562	1-249-401-11	CARBON	47	5%	1/4W
						R565	1-216-073-91	RES,CHIP	10G	5%	1/10W
R406	1-216-073-91	RES,CHIP	10G	5%	1/10W	R567	1-216-105-91	METAL CHIP	220K	5%	1/10W
R407	1-216-049-91	RES,CHIP	1K	5%	1/10W						
R408	1-216-049-91	RES,CHIP	1K	5%	1/10W	R568	1-249-383-11	CARBON	1.5	5%	1/4W F
R409	1-216-041-91	RES,CHIP	470	5%	1/10W	R570	1-216-069-91	RES,CHIP	6.8K	5%	1/10W
R410	1-216-113-91	RES,CHIP	470K	5%	1/10W	R571	1-215-437-00	METAL	4.7K	1%	1/4W
						R573	1-216-089-91	REGISTER	0		
R411	1-216-113-91	RES,CHIP	470K	5%	1/10W	R577	1-215-913-11	METAL OXIDE	220	5%	3W F
R412	1-216-041-91	RES,CHIP	470	5%	1/10W						
R413	1-216-021-91	RES,CHIP	68	5%	1/10W	R578	1-216-369-00	METAL OXIDE	1	5%	2W F
R414	1-216-113-91	RES,CHIP	470K	5%	1/10W	R579	1-216-097-91	RES,CHIP	100K	5%	1/10W
R415	1-216-113-91	RES,CHIP	470K	5%	1/10W	R580	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
						R581	1-208-798-11	RES,CHIP	4.7K	0.50%	1/10W
R416	1-216-077-91	REGISTER	0			R585	1-249-391-11	CARBON	6.8	5%	1/4W F
R417	1-216-077-91	REGISTER	0								
R418	1-216-113-91	RES,CHIP	470K	5%	1/10W	R588	1-215-888-00	METAL OXIDE	220	5%	2W F
R419	1-216-022-00	METAL CHIP	75	5%	1/10W	R589	1-215-888-00	METAL OXIDE	220	5%	2W F
R426	1-216-033-91	RES,CHIP	220	5%	1/10W	R590	1-215-465-00	METAL	68K	1%	1/4W
						R591	1-260-288-11	CARBON	0.47	5%	1/2W F
R505	1-216-101-91	RES,CHIP	150K	5%	1/10W	R593	1-260-288-11	CARBON	0.47	5%	1/2W F
R506	1-216-085-00	METAL CHIP	33K	5%	1/10W						
R507	1-249-389-11	CARBON	4.7	5%	1/4W F	R594	1-260-288-11	CARBON	0.47	5%	1/2W F
R508	1-215-910-00	METAL OXIDE	68	5%	3W F	R596	1-215-920-11	METAL OXIDE	3.3K	5%	3W F
R509	1-215-911-11	METAL OXIDE	100	5%	3W F	R597	1-247-750-11	CARBON	680	5%	1/2W F
						R599	1-249-389-11	CARBON	4.7	5%	1/4W
R510	1-215-885-00	METAL OXIDE	68	5%	2W F	R600	1-220-976-91	METAL MELF	56K	5%	1/2W
R511	1-215-911-11	METAL OXIDE	100	5%	3W F						
R516	1-216-081-91	RES,CHIP	22K	5%	1/10W	R601	1-249-418-11	CARBON	1.2K	5%	1/4W F
R518	1-220-948-91	METAL	100	5%	1/2W	R602	1-249-389-11	CARBON	4.7	5%	1/4W F
R520	1-215-445-00	METAL	10K	1%	1/4W	R603	1-215-485-00	METAL	470K	1%	1/4W
						R604	1-216-097-91	RES,CHIP	100K	5%	1/10W
R522	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	R606	1-216-308-91	METAL CHIP	4.7	5%	1/10W
R523	1-220-952-91	METAL MELF	330	5%	1/2W						
R525	1-218-776-11	METAL CHIP	1M	0.50%	1/10W	R607	1-220-965-91	METAL CHIP	4.7K	5%	1/2W
R526	1-208-798-11	RES,CHIP	4.7K	0.50%	1/10W	R608	1-240-205-91	CARBON	22M	5%	1/2W
R527	1-216-001-91	RES,CHIP	10	5%	1/10W	R609	1-216-057-91	RES,CHIP	2.2K	5%	1/10W
						R610	1-216-073-91	RES,CHIP	10G	5%	1/10W
R528	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	R611	1-216-089-91	REGISTER	0		
R529	1-216-635-11	METAL CHIP	220	0.50%	1/10W						
R531	1-220-963-91	METAL MELF	3.3K	5%	1/2W	R612	1-216-045-00	METAL CHIP	680	5%	1/10W
R533	1-220-958-91	REGISTER	0			R614	1-216-041-91	RES,CHIP	470	5%	1/10W
R534	1-216-361-00	METAL OXIDE	0.22	5%	2W F	R615	1-216-350-11	METAL OXIDE	1.2	5%	1W F

KV-XF21M83/XF21M93
RM-952



The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
R616	1-260-302-51	CARBON	6.8 5% 1/2W F
R617	1-247-791-91	CARBON	22 5% 1/4W
R619	1-260-128-11	CARBON	270K 5% 1/2W
R620	1-215-915-11	METAL OXIDE	470 5% 3W F
R622	1-216-400-11	METAL OXIDE	8.2 5% 3W F
R623	1-216-095-91	RES,CHIP	82K 5% 1/10W
R624	1-216-089-91	REGISTER	0
R626	1-216-049-91	RES,CHIP	1K 5% 1/10W
R627	1-240-251-11	CMT,MELF	6.8 5% 10W
R629	1-247-747-11	CARBON	470 5% 1/2W F
R630	1-249-429-11	CARBON	10K 5% 1/4W F
R631	1-216-089-91	REGISTER	0
R632	1-202-933-61	FUSIBLE	0.1 10% 1/2W F
R634	Δ 1-218-265-91	METAL	8.2M 5% 1W
R635	1-216-492-11	METAL OXIDE	82K 5% 3W F
R636	1-215-924-00	METAL OXIDE	15K 5% 3W F
R637	1-216-492-11	METAL OXIDE	82K 5% 3W F
R639	1-216-363-00	METAL OXIDE	0.33 5% 2W F
R640	1-220-956-91	METAL MELF	680 5% 1/2W
R641	1-216-362-11	METAL OXIDE	0.27 5% 2W F
R642	1-220-959-91	METAL MELF	1.5K 5% 1/2W
R643	1-220-963-91	METAL MELF	3.3K 5% 1/2W
R644	1-220-959-91	METAL MELF	1.5K 5% 1/2W
R646	1-215-924-00	METAL OXIDE	15K 5% 3W F
R647	1-249-401-11	CARBON	47 5% 1/4W
R648	1-216-057-91	RES,CHIP	2.2K 5% 1/10W
R649	1-220-958-91	REGISTER	0
R650	1-215-882-00	METAL OXIDE	22 5% 2W F
R652	1-215-900-11	METAL OXIDE	22K 5% 2W F
R653	1-215-873-00	METAL OXIDE	4.7K 5% 1W F
R657	1-260-127-11	CARBON	220K 5% 1/2W
R659	1-216-049-91	RES,CHIP	1K 5% 1/10W
R660	1-216-073-91	RES,CHIP	10G 5% 1/10W
R661	1-215-873-00	METAL OXIDE	4.7K 5% 1W F
R680	1-216-308-91	METAL CHIP	4.7 5% 1/10W
R901	1-220-952-91	METAL MELF	330 5% 1/2W
R902	1-220-952-91	METAL MELF	330 5% 1/2W
R903	1-216-022-00	METAL CHIP	75 5% 1/10W
R904	1-216-033-91	RES,CHIP	220 5% 1/10W
R905	1-216-113-91	RES,CHIP	470K 5% 1/10W
R906	1-216-077-91	REGISTER	0
R907	1-216-113-91	RES,CHIP	470K 5% 1/10W
R908	1-216-077-91	REGISTER	0
R909	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
R910	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
R911	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R912	1-216-041-91	RES,CHIP	470 5% 1/10W
R913	1-216-049-91	RES,CHIP	1K 5% 1/10W
R914	1-216-055-91	RES,CHIP	1.8K 5% 1/10W
R915	1-216-061-91	RES,CHIP	3.3G 5% 1/10W
R916	1-216-017-91	RES,CHIP	47 5% 1/10W
R917	1-216-041-91	RES,CHIP	470 5% 1/10W
R918	1-216-041-91	RES,CHIP	470 5% 1/10W
<RELAY>			
RY601	1-755-266-11	RELAY, AC POWER	

REF. NO.	PART NO.	DESCRIPTION	REMARK
<SWITCH>			
S502	1-572-707-11	SWITCH, LEVER	
S600	Δ 1-571-433-31	SWITCH, PUSH (AC POWER)	
S901	1-692-431-21	SWITCH, TACTILE	
S902	1-692-431-21	SWITCH, TACTILE	
S903	1-692-431-21	SWITCH, TACTILE	
S904	1-692-431-21	SWITCH, TACTILE	
S905	1-692-431-21	SWITCH, TACTILE	
S906	1-692-431-21	SWITCH, TACTILE	
S907	1-692-431-21	SWITCH, TACTILE	
<TRANSFORMER>			
T501	1-437-195-11	TRANSFORMER, HORIZONTAL DRIVE	
T503	Δ 1-453-293-11	TRANSFORMER ASSY, FLYBACK (NX-1748/M3A4)	
T601	1-424-682-11	TRANSFORMER, LINE FILTER	
T603	Δ 1-433-512-31	TRANSFORMER, CONVERTER (SRT)	
T604	Δ 1-431-852-11	TRANSFORMER, CONVERTER (SRT)	
<THERMISTOR>			
THP600	1-810-961-11	THERMISTOR, POSITIVE	
<TUNER>			
TU101	8-598-449-00	TUNER, FSS BTF-LG433 (KV-XF21M83)	
TU101	8-598-451-00	TUNER, FSS BTF-WG441 (KV-XF21M93)	
<CRYSTAL>			
X001	1-579-125-11	VIBRATOR, CERAMIC	
X301	1-781-134-21	VIBRATOR, CRYSTAL	
X302	1-781-132-21	VIBRATOR, CRYSTAL	

* A-1331-948-A MOUNTED PWB, C5			

4-382-854-11 SCREW (M3X10), P, SW (+)			
<CAPACITOR>			
C701	1-162-114-00	CERAMIC	0.0047MF 2KV
C702	1-102-074-00	CERAMIC	0.001MF 10% 50V
C703	1-107-651-11	ELECT	4.7MF 20% 250V
C704	1-130-202-00	FILM	0.022MF 5% 400V
C706	1-104-664-11	ELECT	47MF 20% 16V
C708	1-102-114-00	CERAMIC	470PF 10% 50V
C709	1-102-114-00	CERAMIC	470PF 10% 50V
C710	1-102-114-00	CERAMIC	470PF 10% 50V
C712	1-102-116-00	CERAMIC	680PF 10% 50V
C713	1-102-116-00	CERAMIC	680PF 10% 50V
C714	1-102-116-00	CERAMIC	680PF 10% 50V
C716	1-126-933-11	ELECT	100MF 20% 16V
C717	1-101-880-00	CERAMIC	47PF 5% 50V

The components identified by shading
and mark Δ are critical for safety.
Replace only with part number specified.

C5

REF. NO.	PART NO.	DESCRIPTION		REMARK		REF. NO.	PART NO.	DESCRIPTION		REMARK	
C736	1-102-114-00	CERAMIC	470PF	10%	50V	Q707	8-729-200-17	TRANSISTOR 2SA1091-O			
C737	1-102-114-00	CERAMIC	470PF	10%	50V	Q708	8-729-200-17	TRANSISTOR 2SA1091-O			
C746	1-102-114-00	CERAMIC	470PF	10%	50V	Q709	8-729-200-17	TRANSISTOR 2SA1091-O			
C1803	1-125-797-91	ELECT	10MF	20%	50V	Q710	8-729-119-78	TRANSISTOR 2SC2785-HFE			
C1804	1-125-797-91	ELECT	10MF	20%	50V	Q711	8-729-119-78	TRANSISTOR 2SC2785-HFE			
C1809	1-126-942-61	ELECT	1000MF	20%	25V	Q712	8-729-119-78	TRANSISTOR 2SC2785-HFE			
						Q1802	8-729-119-78	TRANSISTOR 2SC2785-HFE			
<CONNECTOR>						<RESISTOR>					
CN701	1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P				R703	1-249-496-11	CARBON	100K	5%	1/2W
CN702	1-695-915-11	TAB (CONTACT)				R705	1-216-380-11	METAL OXIDE	8.2	5%	2W F
CN703 *	1-564-509-11	PLUG, CONNECTOR 6P				R706	1-215-417-00	METAL	680	1%	1/4W
CN704	1-695-915-11	TAB (CONTACT)				R707	1-215-413-00	METAL	470	1%	1/4W
CN1801 *	1-564-507-11	PLUG, CONNECTOR 4P				R708	1-216-379-11	METAL OXIDE	6.8	5%	2W F
CN1802 *	1-564-506-11	PLUG, CONNECTOR 3P				R710	1-215-922-11	METAL OXIDE	6.8K	5%	3W F
		<DIODE>				R711	1-247-752-11	CARBON	1K	5%	1/2W
D701	8-719-911-19	DIODE 1SS119-25				R712	1-215-922-11	METAL OXIDE	6.8K	5%	3W F
D702	8-719-911-19	DIODE 1SS119-25				R713	1-247-752-11	CARBON	1K	5%	1/2W
D703	8-719-911-19	DIODE 1SS119-25				R714	1-215-922-11	METAL OXIDE	6.8K	5%	3W F
D707	8-719-911-19	DIODE 1SS119-25				R715	1-247-752-11	CARBON	1K	5%	1/2W
D708	8-719-911-19	DIODE 1SS119-25				R719	1-215-480-00	METAL	300K	1%	1/4W
D709	8-719-911-19	DIODE 1SS119-25				R720	1-249-923-11	CARBON	1K	5%	1/4W F
D710	8-719-911-19	DIODE 1SS119-25				R721	1-215-489-00	METAL	680K	1%	1/4W
D711	8-719-911-19	DIODE 1SS119-25				R722	1-249-923-11	CARBON	1K	5%	1/4W F
D712	8-719-911-19	DIODE 1SS119-25				R723	1-215-479-00	METAL	270K	1%	1/4W
D713	8-719-911-19	DIODE 1SS119-25				R724	1-249-923-11	CARBON	1K	5%	1/4W F
D714	8-719-911-19	DIODE 1SS119-25				R725	1-220-961-91	METAL CHIP	2.2K	5%	1/2W
D715	8-719-911-19	DIODE 1SS119-25				R726	1-220-961-91	METAL CHIP	2.2K	5%	1/2W
D716	8-719-911-19	DIODE 1SS119-25				R727	1-220-961-91	METAL CHIP	2.2K	5%	1/2W
D717	8-719-121-26	DIODE RD9.1ESL2				R728	1-220-949-91	METAL MELF	150	5%	1/2W
D1803	8-719-911-19	DIODE 1SS119-25				R729	1-220-949-91	METAL MELF	150	5%	1/2W
D1804	8-719-911-19	DIODE 1SS119-25				R730	1-220-949-91	METAL MELF	150	5%	1/2W
D1808	8-719-908-03	DIODE GP08D				R731	1-249-399-11	CARBON	33	5%	1/4W
		<IC>				R732	1-249-399-11	CARBON	33	5%	1/4W
IC1800	8-759-822-38	IC LA6510				R733	1-249-399-11	CARBON	33	5%	1/4W
		<JACK>				R734	1-247-739-11	CARBON	100	5%	1/2W
J701 Δ	1-251-239-11	SOCKET, CRT				R738	1-220-948-91	METAL	100	5%	1/2W
		<COIL>				R739	1-220-948-91	METAL	100	5%	1/2W
L701	1-410-667-31	INDUCTOR		22UH		R740	1-220-948-91	METAL	100	5%	1/2W
L710	1-408-609-41	INDUCTOR		33UH		R755	1-249-418-11	CARBON	1.2K	5%	1/4W
L711	1-408-609-41	INDUCTOR		33UH		R756	1-249-418-11	CARBON	1.2K	5%	1/4W
L712	1-408-609-41	INDUCTOR		33UH		R757	1-249-418-11	CARBON	1.2K	5%	1/4W
		<TRANSISTOR>				R1802	1-249-387-11	CARBON	3.3	5%	1/4W F
Q704	8-729-326-11	TRANSISTOR 2SC2611				R1803	1-249-387-11	CARBON	3.3	5%	1/4W F
Q705	8-729-326-11	TRANSISTOR 2SC2611				R1805	1-220-969-91	METAL CHIP	10K	5%	1/2W
Q706	8-729-326-11	TRANSISTOR 2SC2611				R1806	1-220-965-91	METAL CHIP	4.7K	5%	1/2W
						R1808	1-220-965-91	METAL CHIP	4.7K	5%	1/2W
						R1809	1-220-974-91	METAL CHIP	33K	5%	1/2W
						R1810	1-220-974-91	METAL CHIP	33K	5%	1/2W
						R1811	1-220-974-91	METAL CHIP	33K	5%	1/2W
						R1812	1-220-974-91	METAL CHIP	33K	5%	1/2W
						R1821	1-220-974-91	METAL CHIP	33K	5%	1/2W
						R1822	1-220-974-91	METAL CHIP	33K	5%	1/2W
						R1823	1-220-966-91	METAL CHIP	5.6K	5%	1/2W
						R1824	1-220-974-91	METAL CHIP	33K	5%	1/2W

KV-XF21M83/XF21M93
RM-952



The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
		<VARIABLE RESISTOR>	
RV702	1-241-656-21	RES, ADJ, METAL FILM 110M	

	* A-1241-372-A	MOUNTED PWB, F *****	
	1-533-223-11	HOLDER, FUSE	
	* 4-374-846-01	COVER, CAPACITOR, CAP TYPE	
		<CAPACITOR>	
C654	1-117-703-11	CERAMIC 0.0047MF 99% 250V	
C4602 \triangle	1-104-708-51	FILM 0.47MF 20% 250V	
		<CONNECTOR>	
CN4601 *	1-580-843-11	PIN, CONNECTOR (POWER)	
CN4602 *	1-580-843-11	PIN, CONNECTOR (POWER)	
CN4603	1-695-915-11	TAB (CONTACT)	
		<FUSE>	
F4601 \triangle	1-532-237-11	FUSE, TIME-LAG (BET) 3.15A/250V	
		<RESISTOR>	
R4601 \triangle	1-202-719-91	SOLID 1M 10% 1/2W	
		<TRANSFORMER>	
T4601	1-424-682-11	TRANSFORMER, LINE FILTER	
T4602	1-424-682-11	TRANSFORMER, LINE FILTER	
		<VARISTOR>	
VDR461	1-801-073-31	VARISTOR TNR14V471K660	

	* A-1372-647-A	MOUNTED PWB, H4 *****	
		<CONNECTOR>	
CN4901 *	1-564-507-11	PLUG, CONNECTOR 4P	
CN4902 *	1-564-509-11	PLUG, CONNECTOR 6P	
CN4903 *	1-564-507-11	PLUG, CONNECTOR 4P	

REF. NO.	PART NO.	DESCRIPTION	REMARK
		<JACK>	
J4901	1-750-264-11	JACK	

	* A-1388-252-A	MOUNTED PWB, J3 *****	
		<CONNECTOR>	
CN3451 *	1-564-518-11	PLUG, CONNECTOR 3P	
		<DIODE>	
D3451	8-719-110-72	DIODE RD30ESB2	
D3452	8-719-110-72	DIODE RD30ESB2	
D3453	8-719-110-72	DIODE RD30ESB2	
D3454	8-719-110-72	DIODE RD30ESB2	
		<JACK>	
J3451	1-694-467-11	TERMINAL, PUSH (2P)	

	* A-1380-613-A	MOUNTED PWB, K1 *****	
	4-382-854-11	SCREW (M3X10), P, SW (+)	
		<CAPACITOR>	
C4201	1-126-961-11	ELECT 2.2MF 20% 50V	
C4202	1-126-961-11	ELECT 2.2MF 20% 50V	
C4203	1-130-495-00	MYLAR 0.1MF 5% 50V	
C4204	1-126-961-11	ELECT 2.2MF 20% 50V	
C4205	1-130-495-00	MYLAR 0.1MF 5% 50V	
C4206	1-126-964-11	ELECT 10MF 20% 50V	
C4208	1-126-934-11	ELECT 220MF 20% 16V	
C4209	1-126-943-11	ELECT 2200MF 20% 25V	
C4210	1-126-961-11	ELECT 2.2MF 20% 50V	
C4211	1-126-961-11	ELECT 2.2MF 20% 50V	
C4212	1-128-551-11	ELECT 22MF 20% 25V	
C4213	1-126-943-11	ELECT 2200MF 20% 25V	
C4214	1-126-943-11	ELECT 2200MF 20% 25V	
C4215	1-126-933-11	ELECT 100MF 20% 16V	
C4216	1-126-934-11	ELECT 220MF 20% 16V	
C4217	1-126-964-11	ELECT 10MF 20% 50V	
C4273	1-126-964-11	ELECT 10MF 20% 50V	

K₁ **VM₁**

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The components identified by shading
and mark Δ are critical for safety.
Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
<RESISTOR>				MISCELLANEOUS			

R5901	1-220-951-91	METAL	220	5%	1/2W		
R5902	1-249-414-11	CARBON	560	5%	1/4W	F	
R5903	1-247-735-11	CARBON	47	5%	1/2W	F	
R5904	1-220-952-91	METAL MELF	330	5%	1/2W		
R5905	1-220-958-91	REGISTER	0				
R5906	1-220-958-91	REGISTER	0				
R5907	1-220-958-91	REGISTER	0				
R5908	1-249-383-11	CARBON	1.5	5%	1/4W	F	
R5909	1-220-951-91	METAL	220	5%	1/2W		
R5910	1-220-946-81	METAL MELF	68	5%	1/2W		
R5911	1-249-439-11	CARBON	68K	5%	1/4W		
R5912	1-220-975-91	METAL MELF	47K	5%	1/2W		
R5914	1-220-946-81	METAL MELF	68	5%	1/2W		
R5915	1-220-969-91	METAL CHIP	10K	5%	1/2W		
R5916	1-220-959-91	METAL MELF	1.5K	5%	1/2W		
R5917	1-220-957-91	METAL MELF	820	5%	1/2W		
R5918	1-220-969-91	METAL CHIP	10K	5%	1/2W		
R5919	1-249-417-11	CARBON	1K	5%	1/4W	F	
R5920	1-249-439-11	CARBON	68K	5%	1/4W		
R5921	1-215-912-11	METAL OXIDE	150	5%	3W	F	
R5922	1-220-955-91	METAL MELF	560	5%	1/2W		
R5923	1-249-383-11	CARBON	1.5	5%	1/4W	F	
R5925	1-249-401-11	CARBON	47	5%	1/4W	F	
R5929	1-215-880-00	METAL OXIDE	10	5%	2W	F	
R5930	1-220-954-91	METAL MELF	470	5%	1/2W		
R5931	1-220-954-91	METAL MELF	470	5%	1/2W		
R5932	1-220-954-91	METAL MELF	470	5%	1/2W		
R5933	1-220-954-91	METAL MELF	470	5%	1/2W		
R5934	1-220-970-91	METAL MELF	12K	5%	1/2W		
R5935	1-220-969-91	METAL CHIP	10K	5%	1/2W		

				ACCESSORIES AND PACKING MATERIALS			

				3-701-910-00	SCREW, SPECIAL (DIA. 3.8X20)		
				3-865-541-11	MANUAL, INSTRUCTION		
				* 4-065-594-01	BAG, PROTECTION		
				* 4-070-145-01	INDIVIDUAL CARTON		
				* 4-070-146-01	CUSHION (UPPER)(ASSY)		
				* 4-070-147-01	CUSHION (LOWER)(ASSY)		
				4-392-003-31	BAND, HOLD		
				4-392-004-21	CLIP		

				REMOTE COMMANDER			

				1-418-163-11	REMOTE COMMANDER (RM-952)		
				9-939-697-01	BATTERY COVER, REMOTE COMMANDER		