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COLOR TV **SERVICE MANUAL**

CHASSIS : MC-019A

**MODEL : Lafinion 55RE
Lafinion 55RQ**

CAUTION

BEFORE SERVICING THE CHASSIS,
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



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SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by Δ in the Schematic Diagram and Replacement Parts List.

It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.

Do not modify the original design without permission of manufacturer.

General Guidance

An **Isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and its components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Due to high vacuum and large surface area of picture tube, extreme care should be used in **handling the Picture Tube**. Do not lift the Picture tube by its Neck.

X-RAY Radiation

Warning:

The source of X-RAY RADIATION in this TV receiver is the High Voltage Section and the Picture Tube.

For continued X-RAY RADIATION protection, the replacement tube must be the same type tube as specified in the Replacement Parts List.

To determine the presence of high voltage, use an accurate high impedance HV meter.

Adjust brightness, color, contrast controls to minimum.

Measure the high voltage.

The meter reading should indicate

23.5 ; 1.5KV: 14-19 inch, 26 ; 1.5KV: 19-21 inch,
29.0 ; 1.5KV: 25-29 inch, 30.0 ; 1.5KV: 32 inch

If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.

Before returning the receiver to the customer,

always perform an **AC leakage current check** on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

Leakage Current Cold Check(Antenna Cold Check)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.

If the exposed metallic part has a return path to the chassis, the measured resistance should be between $1M\Omega$ and $5.2M\Omega$.

When the exposed metal has no return path to the chassis the reading must be infinite.

An other abnormality exists that must be corrected before the receiver is returned to the customer.

Leakage Current Hot Check (See below Figure)

Plug the AC cord directly into the AC outlet.

Do not use a line Isolation Transformer during this check.

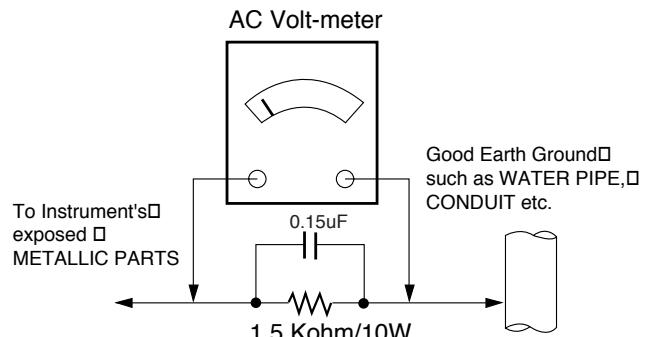
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.

Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.

Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which is corresponds to 0.5mA.

In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

Leakage Current Hot Check circuit



SERVICING PRECAUTIONS

CAUTION: Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the SAFETY PRECAUTIONS on page 3 of this publication.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before;
 - a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
 - b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
 - c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.
- CAUTION:** A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.
- d. Discharging the picture tube anode.
2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe. Do not test high voltage by "drawing an arc".
3. Discharge the picture tube anode only by (a) first connecting one end of an insulated clip lead to the degaussing or kine aquadag grounding system shield at the point where the picture tube socket ground lead is connected, and then (b) touch the other end of the insulated clip lead to the picture tube anode button, using an insulating handle to avoid personal contact with high voltage.
4. Do not spray chemicals on or near this receiver or any of its assemblies.
5. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable nonabrasive applicator; 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength)

CAUTION: This is a flammable mixture.

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

6. Do not defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
7. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
8. Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.
Always remove the test receiver ground lead last.
9. Use with this receiver only the test fixtures specified in this service manual.

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

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect

transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

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

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

General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range of 500°F to 600°F.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a small wirebristle (0.5 inch, or 1.25cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique
 - a. Allow the soldering iron tip to reach normal temperature. (500°F to 600°F)
 - b. Heat the component lead until the solder melts.
 - c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.
- CAUTION:** Work quickly to avoid overheating the circuit board printed foil.
6. Use the following soldering technique
 - a. Allow the soldering iron tip to reach a normal temperature (500°F to 600°F)
 - b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.

- c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.
- CAUTION:** Work quickly to avoid overheating the circuit board printed foil.
- d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

IC Remove/Replacement

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

Remov

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacemen

1. Carefully insert the replacement IC in the circuit boare.
2. Carefully bend each IC lead against the circuit foil pad and solder it.
3. Clean the soldered areas with a small wire-bristle brush.
(It is not necessary to reapply acrylic coating to the areas).

"Small-Signal" Discrete Transistor

Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.
2. Bend into a "U" shape the end of each of three leads remaining on the circuit board.
3. Bend into a "U" shape the replacement transistor leads.
4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

Power Output, Transistor Device

Removal/Replacement

1. Heat and remove all solder from around the transistor leads.
2. Remove the heatsink mounting screw (if so equipped).
3. Carefully remove the transistor from the heat sink of the circuit board.
4. Insert new transistor in the circuit board.
5. Solder each transistor lead, and clip off excess lead.
6. Replace heatsink.

Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.
2. Bend the two remaining leads perpendicula y to the circuit board.
3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
4. Securely crimp each connection and solder it.
5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and if necessary, apply additional solder.

Fuse and Conventional Resistor

Removal/Replacement

1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
 2. Securely crimp the leads of replacement component around notch at stake top.
 3. Solder the connections.
- CAUTION:** Maintain original spacing between the replaced component and adjacent components and the circuit board to prevent excessive component temperatures.

Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board causing the foil to separate from or "lift-off" the board. The following guidelines and procedures should be followed whenever this condition is encountered.

At IC Connections

To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).
2. carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and clip off any excess jumper wire.

At Other Connections

Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involoves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side. Carefully crimp and solder the connections.

CAUTION: Be sure the insulated jumper wire is dressed so the it does not touch components or sharp edges.

SPECIFICATIONS

Note : Specification and others are subject to change without notice for improvement.

- **Video input system:**

PAL-B/G, D/K, I/I
SECAM-B/G, D/K,L/L'
NTSC M
NTSC 4.43

SOUND IF : 33.4MHz (B/G)
32.9MHz (I/I)
32.4MHz (D/K)
34.4MHz (M)

- **Intermediate Frequency (Unit : MHz)**

VISION IF : 38.9MHz
COLOR IF : 34.47MHz(4.43)
35.32MHz(3.58) : NTSC-M
(VIF-4.25000MHz) : SECAM
(VIF-4.40625MHz)

● **Power requirement :** 110~240V, 50/60Hz

● **Power consumption :** 95

● **STAND-BY :** 3W

- **Tuning range**

Band	For TV				For CATV
	B/G	D/K	I/I	NTSC	
VHF-Low	Ch2-4	Ch1-5		Ch2-13	S1-S3', S1
VHF-High	Ch5-12	Ch6-12	Ch4-13		S2-S10, S11-S20
Hyper					S21-S41
UHF	Ch21-69			Ch14-69	

- **Tuning system :**

FVS
100 Programme memory
200 Programme memory(W/O TXT)

● **Feature :** Auto programme/Manual programme

CSM (Color Status Memory)

Auto Sleep

Turbo Picture & Sound

Programme Editing

PSM (Picture Status Memory)

Teletext (TOP/FLOF/LIST)

ACMS

Auto Volume Level

Game

SSM(Sound Status Memory)

Favorite Program

- **Antenna input impedance :** VHF/UHF 75 ohm, unbalanced

- **OSD (On Screen Display) :** EASY-MENU

- **Voice coil impedance :** 8 ohm

- **Sound output :** 7W_{rms} (MAX)
Dual/Stereo : A2/NICAM(Option)

- **External connection :** Head Phone Jack

A/V in : 2

PERI Connector(Full Scart) : 1

DVD in

- **External In/Output**

Audio-In:0.5Vrms±3dB, over 10Kohm

Audio-Out:0.5Vrms±3dB, below 1Kohm

Video-In/Out:1Vp-p±3dB, 75ohm

DVD In Y: 1Vp-p±3dB

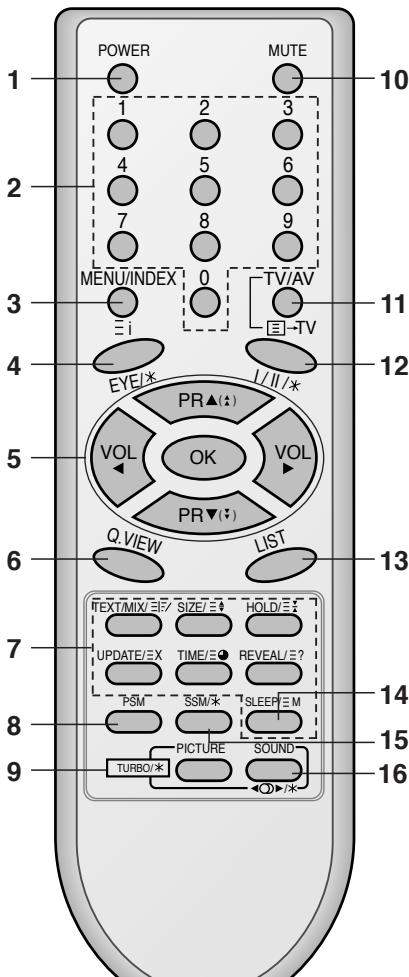
Pb,Pr: 0.7Vp-p±3dB

DESCRIPTION OF CONTROLS

All the functions can be controlled with the remote control handset. Some functions can also be adjusted with the buttons on the front panel of the set.

Remote control handset

Before you use the remote control handset, please install the batteries. See the next page.



(With TELETEXT)

1. **POWER**
switches the set on from standby or off to standby.
2. **NUMBER BUTTONS**
switches the set on from standby or directly select a number.
3. **MENU (or INDEX)**
selects a menu.
selects an index page in the teletext mode (only TELETEXT models).
4. **EYE/* (option)**
switches the eye function on or off.
5. **▲(▲) / ▼(▼) (Programme Up/Down)**
selects a programme or a menu item.
switches the set on from standby.
scans programmes automatically.
6. **◀ / ▶ (Volume Up/Down)**
adjusts the volume.
adjusts menu settings.
7. **OK**
accepts your selection or displays the current mode.
8. **Q.VIEW**
returns to the previously viewed programme.
selects a favorite programme.
9. **TELETEXT BUTTONS (option)**
These buttons are used for teletext.
For further details, see the 'Teletext' section.
10. **PSM (Picture Status Memory)**
recalls your preferred picture setting.
11. **TURBO PICTURE / SOUND BUTTON (option)**
selects Turbo picture and sound.

10. MUTE

switches the sound on or off.

11. TV/AV

selects TV or AV mode.

clears the menu from the screen.

switches the set on from standby.

12. I/II/* (option)

selects the language during dual language broadcast. (option)

selects the sound output.

13. LIST

displays the programme table.

14. SLEEP

sets the sleep timer.

15. SSM/* (option) (Sound Status Memory)

recalls your preferred sound setting.

16. SURROUND (↔*) (option)

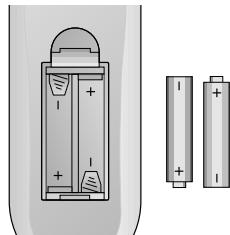
selects surround sound.

* : No function

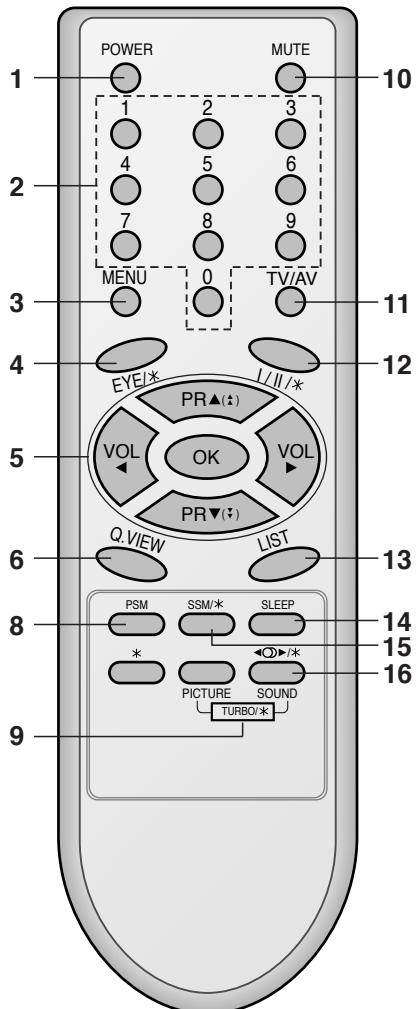
COLOURED BUTTONS : These buttons are used for teletext (only TELETEXT models) or programme edit.

Battery installation

The remote control handset is powered by two AAA type batteries. To load the batteries, turn the remote control handset over and open the battery compartment. Install two batteries as indicated by the polarity symbols (+ and -) marked inside the compartment.



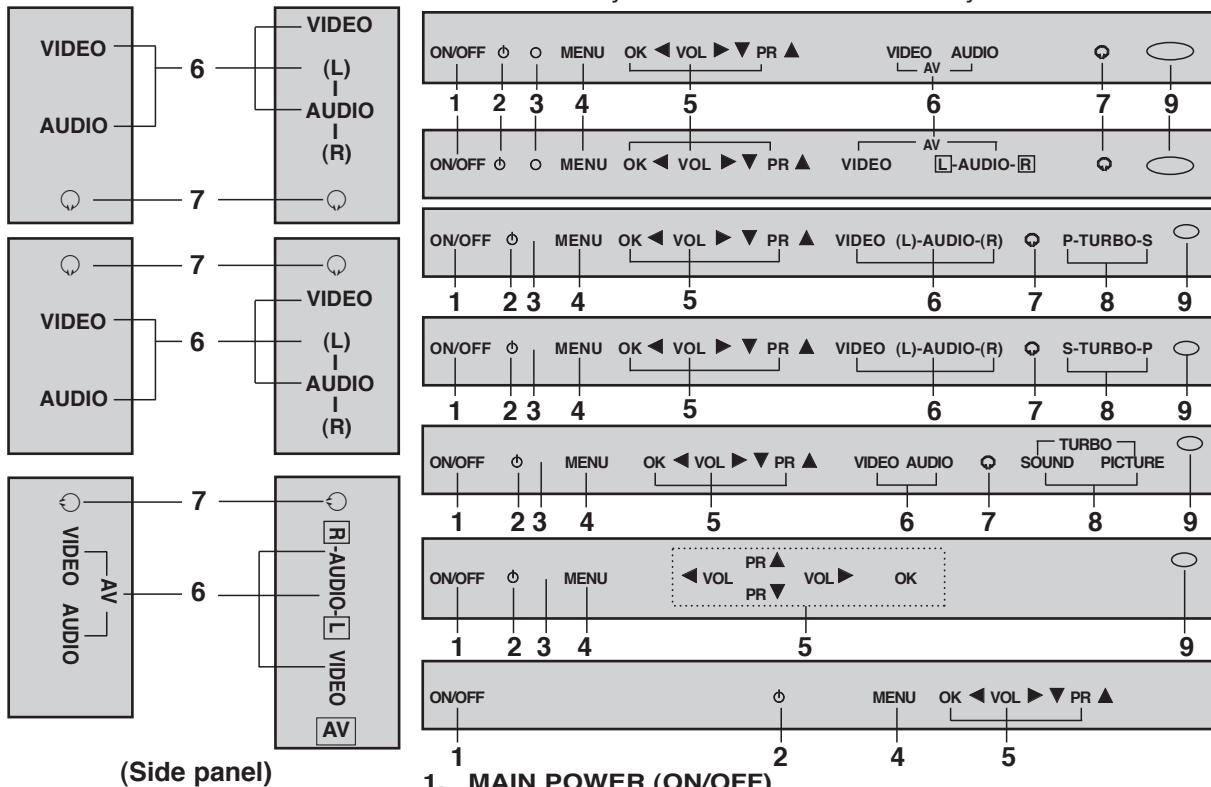
Note : To avoid damage from possible battery leakage, remove the batteries if you do not plan to use the remote control handset for an extended period of time.



(Without TELETEXT)

Front panel

Shown is a simplified representation of the front or side panel. Here shown may be somewhat different from your set.



- MAIN POWER (ON/OFF)**
switches the set on or off.
- POWER/STANDBY INDICATOR**
illuminates brightly when the set is in standby mode.
dims when the set is switched on.
blinks when signal is input from the remote control.
- REMOTE CONTROL SENSOR**
- MENU**
selects a menu.
- OK**
accepts your selection or displays the current mode.
◀ / ▶ (Volume Up/Down)
adjusts the volume.
adjusts menu settings.
▲ / ▼ (Programme Up/Down)
selects a programme or a menu item.
switches the set on from standby.
- AUDIO (or AUDIO-L/R)/VIDEO IN SOCKETS (AV) (option)**
Connect the audio/video out sockets of external equipment to these sockets.
Note :If both the input jacks on the front panel and back panel have been connected to external equipments simultaneously, only the input jacks on the front/side panel can be received.
- HEADPHONE SOCKET (option)**
Connect the headphone plug to this socket.
- TURBO SOUND/PICTURE (option)**
switches Turbo sound or Turbo picture on or off.
- EYE (option)**
adjusts picture according to the surrounding conditions.

ADJUSTMENT

● Safety Precautions

1. It is safe to adjust after using insulating transformer between the power supply line and chassis input to prevent the risk of electric shock and protect the instrument.
2. Never disconnect leads while the TV receiver is on.
3. Don't short any portion of circuits while power is on.
4. The adjustment must be done by the correct appliances. But this is changeable in view of productivity.
5. Unless otherwise noted, set the line voltage to 110~240Vac ±10%, 50/60Hz.
6. The adjustment of TV should be performed after warming up for 20 minutes.

● Test Equipment required

1. Multimeter (volt meter)
2. Oscilloscope
3. 10:1 PROBE
4. Color Analyzer

● CDL Data Adjustment(LINE SVC-0)

- 1) Press the SVC button to get into the SVC-0 Mode.
- 2) Press the Channel UP/DOWN button to select CDL12.
- 3) Press the Volume UP/DOWN button until the CDL data is the same as the Table below.

	21" FCD	14,16" CPT	15" CPT	20,21" CPT
CDL Data	12	8	10	12
Remark	FLAT		FLAT	

4) Press the OK(■) button to memorize the data.

● OPTION Data Adjustment(OPTION-1,OPTION-2)

- 1) Press OK buttons on both TV set and Remote Controller at the same time to get into SVC mode.
- 2) Press the Yellow button several times to find OPTION-1 or OPTION-2.
- 3) Input the correspond OPTION data referring to Table below with the numeric buttons.
- 4) Press the OK(■) button to memorize the data.

Table 1. OPTION 1 Function

Option	Code	Function	Remark
C MUTE	0	ACTIVE	
	1	NOT ACTIVE	
DVD	0	W/O DVD	
	1	DVD(REAR JACK)	
2 IN 1	0	W/O 2 IN 1TUNER	
	1	WITH 2 IN 1TUNER	
TOP	0	FLOF TXT	
	1	TOP TXT	
SCART	0	PHONO JACK	
	1	SCART JACK	

Option	Code	Function	Remark
TBS	0	W/O TBS	
	1	WITH TBS	
EYE	0	W/O EYE	
	1	WITH EYE	
4 KEY	0	W/O 4 KEY	
	1	WITH 4 KEY	
MONO	0		
	1	FORCED MONO	

Table 2. OPTION 2 Function

Option	Code	Function	Remark
BCF	0	Auto Abnormal ON	
	1	Not Used	
GAME	0	W/O GAME PACK	
	1	WITH GAME PACK	
200 PRO	0	100 PRO	
	1	200 PRO	
CHA + AU	0	Except China,Australia	
	1	China,Australia	
DUAL	0	W/O DUAL	
	1	WITH DUAL	
ACMS	0	Australia	
	1	Except Australia	
T-SCH	0	W/O TURBO SEARCH	
	1	WITH TURBO SEARCH	
T-P/S	0	W/O TURBO P/S	
	1	WITH TURBO P/S	
CURVE	0	NORMAL VOLUME CURVE	
	1	M-A,India VOLUME CURVE	

Table 3. OPTION 3 Function

Option	Code	Function	Remark
RESER VED	0	***	
	1	***	
HOTEL	0	W/O HOTEL	
	1	W/HOTEL	
SYSTEM	0	BG/L	
	1	BG/I/DK	
	2	BG/I/DK/M	
	3	BG/I/DK DUAL	
	4	BG/I/DK/M DUAL	
	5	2nd IF BG	
	6	2nd IF I	
	7	2nd IF DK	

Option	Code	Function	Remark
OSD-L (EU)	0	ENG. ONLY	English
	1	EU-7EA	English,Deutsch,Francais,Italiano,Espanol
	2	EU ALL	English,Nederlands,Svenska,Dansk,Suomi,Por tugues,Romaneste,Polski,Cesky,Pycknn
	3	EU EAST	English,Romaneste,Polski,Cesky,Pycknn,Magyar
OSD-L (M-ASIA)	0	ENG. ONLY	English
	1	ARABIC	English,Arab,,Urdu,French
	2	PARSI	English,Parsi,Urdu,French
	3	ARAB,FARSI,URDE	English,French,Arab,Urdu,Parsi
OSD-L (E-ASIA)	0	ENG.ONLY	English
	1	ASIA-ALL	English,Malay,Vietnam,Indonesian,Thai
OSD-L (CH+HI)	0	ENG.ONLY	English
	1	E+CHINA	English,Chinese
	2	E+HINDI	English,Hindi
TXT-L (EU)	0	W-EU	
	1	E-EU	
	2	CYRILLIC	
	3	UKRAINIAN	
TXT-L (E-ASIA)	0	WEST-EU	
TXT-L (ARAB)	0	WEST-EU	
	1	ARABIC	
TXT-L (FARSI)	0	WEST-EU	
	1	FARSI	

● AGC Adjustment (SERVICE 1)

Test Point : AGC TP (C101)
 Adjust : Remote Controller

- 1) Connect RF signal ($70\text{dB}\pm0.2\text{dB}$) and turn on the TV.
 i. Standard adjustment Channel
 - EU 05 Ch. ($f_{\text{rf}} = 175.25\text{MHz}$)
- 2) Press the OK buttons on TV set and Remote Controller at the same time to get into SVC-0 mode.
- 3) Press the Channel UP/DOWN button on the Remote Controller several times to find AGC??.
- 4) Press the Volume UP/DOWN button until the AGC Voltage is the same as the Table below.
- 5) Press the OK(**■**) button to memorize the data.

Tuner P/N	6700VPF009G	6700VPF016A
Marker	LG Innotek(W/S TUNER)	DAEWOO(W/S TUNER)
AGC Voltage	$2.7\pm 0.05\text{V}$	$2.7\pm 0.05\text{V}$

Tuner P/N	6700VPF009S	
Marker	LG Innotek(TBS TUNER)	
AGC Voltage	$2.5\pm 0.05\text{V}$	

● FOCUS Adjustment

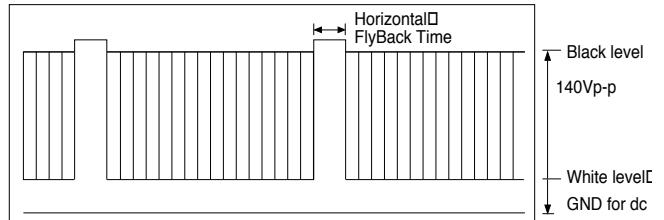
Test Point : RK (Red Cathode of CPT Board)
 Adjust : Screen Volume of FBT

- 1) Tune the TV set to receive a PAL 05CH.
- 2) Adjust the Focus Volume of FBT for best focus.

● Screen Voltage Adjustment

Test Point : Observing Display
 Adjust : Focus Volume of FBT

- 1) Connect the probe of oscilloscope to the RK (Red Cathode) of CPT Board.
- 2) Set the oscilloscope to 50V/div and 20Us/div and after putting GND line upon the lowest grid line of the scope by pressing GND button,enter into DC mode.
- 3) Tune the TV set to receive a PAL-B/G 05CH.
- 4) Adjust Screen Volume of FBT so that the waveform is the same as below figure (DC $140\pm3\text{V}$).



14"	OTHERS
DC $130\text{V}\pm3\text{V}$	DC $140\text{V}\pm3\text{V}$

● White Balance Adjustment.(LINE SVC-0)

NOTE : This adjustment should be performed after screen voltage adjustment.

- 1) Tune the TV set to receive an 100% white pattern.
- 2) Press OK(**■**) buttons on TV set and remote controller at the same time to get into SVC mode.
- 3) Press Yellow button on remote controller. (Standard mode)
- 4) Press Channel UP/DOWN button for desirous function adjustment.
- 5) Adjust VOL+ or VOL-button in each status of "RG--"/"BG--" for X= 272 ± 8 , Y= 288 ± 8 with color analyzer.(Europe Model: X= 288 ± 8 , Y= $295\pm X=272\pm8$, 11,000K)

Status	Initial Data	Remark
RG	31	
GG	31	
BG	31	
BLO-R	31	
BLO-G	31	

- 7) Press the OK(**■**) button to memorize the data.

● Deflection Data Adjustment (Line SVC-1)

NOTE: To enter SVC mode, press "OK" buttons on both TV set and the Remote control at the same time.

1. Preparation for Deflection Adjustment

- 1) At SVC mode, press the Yellow colored button.
And then, deflection data adjustment OSD (SVC1 mode) will be displayed.
- 2) Tune the TV set to receive a PAL 05 CH and set the ARC mode is standard.

2. Deflection Initial Setup Data

Status	Default	21" FLAT S/S	21" FLAT LG
VL	31	31	31
VA	31	31	31
VS	31	31	31
HS	31	31	31
SC	25	25	25

3. Deflection Adjustment Procedure

VL (Vertical Linearity)

Adjust so that the boundary line between upper and lower half is in accord with geometric horizontal center of the CPT.

VA (Vertical Amplitude)

Adjust so that the circle of a digital circle pattern may be located within the effective screen of the CPT.

SC (Vertical "S" Correction)

Adjust so that all distance between each horizontal lines are to be the same.

VS (Vertical Shift)

Adjust so that the horizontal center line of a digital circle pattern is in accord with geometric horizontal center of the CPT.

HS (Horizontal Shift)

Adjust so that the vertical center line of a digital circle pattern is in accord with geometric vertical center of the CPT.

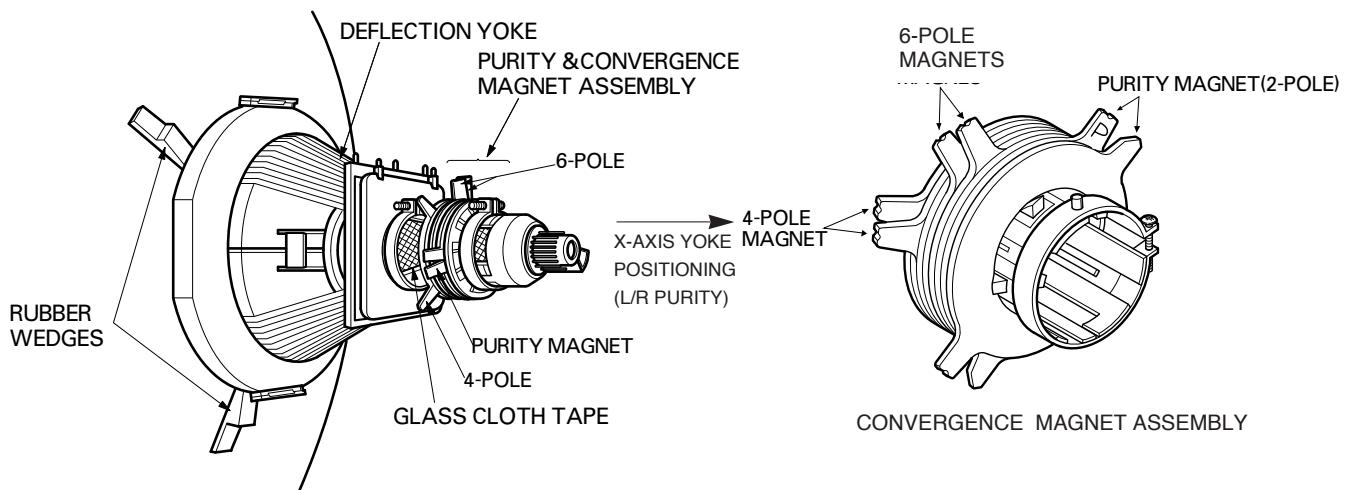
Press the OK(■) button to memorize the data.

PURITY & CONVERGENCE ADJUSTMENT

Caution:

Convergence and Purity have been factory aligned. Do not attempt to tamper with these alignments. However, the effects of adjacent receiver components, or replacement of picture tube or deflection yoke may require the need to readjust purity any convergence.

5. Reconnect the internal degaussing coil.
6. Position the beam bender locking rings at the 9 o'clock position and the other three pairs of tabs (2,4 and 6 pole magnets) at the 12 o'clock position.



i Purity Adjustment

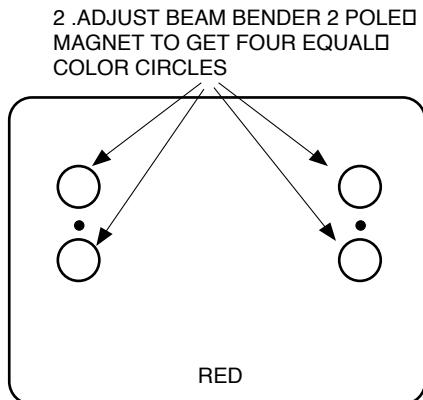
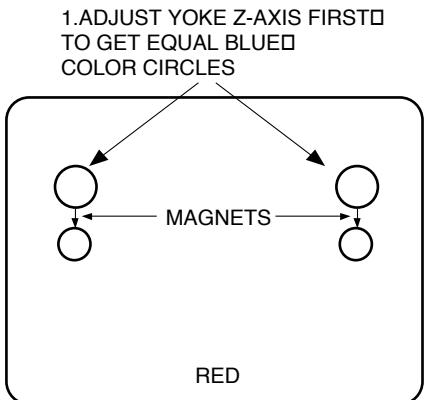
This procedure DOES NOT apply to bonded yoke and picture tube assemblies.

The instrument should be at room temperature (60 degrees F or above) for six (6) hours and be operating at low beam current (dark background) for approximately 20 to 30 minutes before performing purity adjustments.

CAUTION: Do not remove any trim magnets that may be attached to the bell of the picture tube.

1. Remove the AC power and disconnect the internal degaussing coil.
2. Remove the yoke from the neck of the picture tube.
3. If the yoke has the tape version beam bender, remove it and replace it with a adjustable type beam bender (follow the instructions provided with the new beam bender)
4. Replace the yoke on the picture tube neck, temporarily remove the three (3) rubber wedges from the bell of the picture tube and then slide the yoke completely forward.

7. Perform the following steps, in the order given, to prepare the receiver for the purity adjustment procedure.
 - a. Face the receiver in the "magnetic north" direction.
 - b. Externally degauss the receiver screen with the television power turned off.
 - c. Turn the television on for approximately 10 seconds to perform internal degaussing and then turn the TV off.
 - d. Unplug the internal degaussing coil. This allows the thermistor to cool down while you are performing the purity adjustment. DO NOT MOVE THE RECEIVER FROM ITS "MAGNETIC NORTH" POSITION.
 - e. Turn the receiver on and obtain a red raster by increasing the red bias control (CW) and decreasing the bias controls for the remaining two colors (CCW).
 - f. Attach two round magnets on the picture tube screen at 3 o'clock and 9 o'clock positions, approximately one (1) inch from the edge of the mask (use double-sided tape).



8. Referring to above, perform the following two steps:
 - a. Adjust the yoke Z-axis to obtain equal blue circles.
 - b. Adjust the appropriate beam bender tabs to obtain correct purity (four equal circles).
9. After correct purity is set, tighten the yoke clamp screw and remove the two screen magnets.
10. Remove the AC power and rotate the receiver 180 degrees (facing "magnetic south").
11. Reconnect the internal degaussing coil.
12. Turn the receiver on for 10 seconds (make sure the receiver came on) to perform internal degaussing, and then turn the receiver off.
13. Unplug the internal degaussing coil.
14. Turn on the receiver and check the purity by holding one (1) round magnet at the 3 o'clock and a second round magnet at 9 o'clock position. If purity is not satisfactory, repeat steps 8 through 14.
15. Turn off the receiver and reconnect the internal degaussing coil.

i Convergence Adjustment

Caution: This procedure DOES NOT apply to bonded yoke and picture tube assemblies.

Do not use screen magnets during this adjustment procedure. Use of screen magnets will cause an incorrect display.

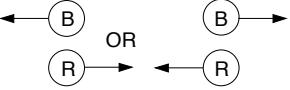
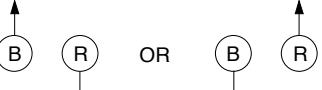
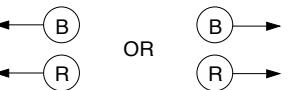
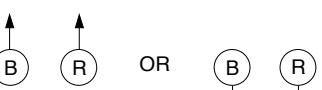
1. Remove AC power and disconnect the internal degaussing coil.
2. Apply AC Power and set the brightness to the Picture Reset condition. Set the Color control to minimum.
3. Make a horizontal line.
4. Adjust the Red, Green and Blue Bias controls to get a dim white line.
5. Restore the screen by removing the horizontal line.

6. Reconnect the internal degaussing coil and apply AC power.
7. Turn the receiver on for 10 seconds to perform internal degaussing and then turn the receiver off again.
8. Unplug the internal degaussing-coil.
9. Turn on the receiver, connect a signal generator to the VHF antenna terminal and apply a crosshatch signal.

Caution: During the convergence adjustment procedure, be very careful not to disturb the purity adjustment tabs are accidentally move, purity should be confirmed before proceeding with the convergence adjustments.

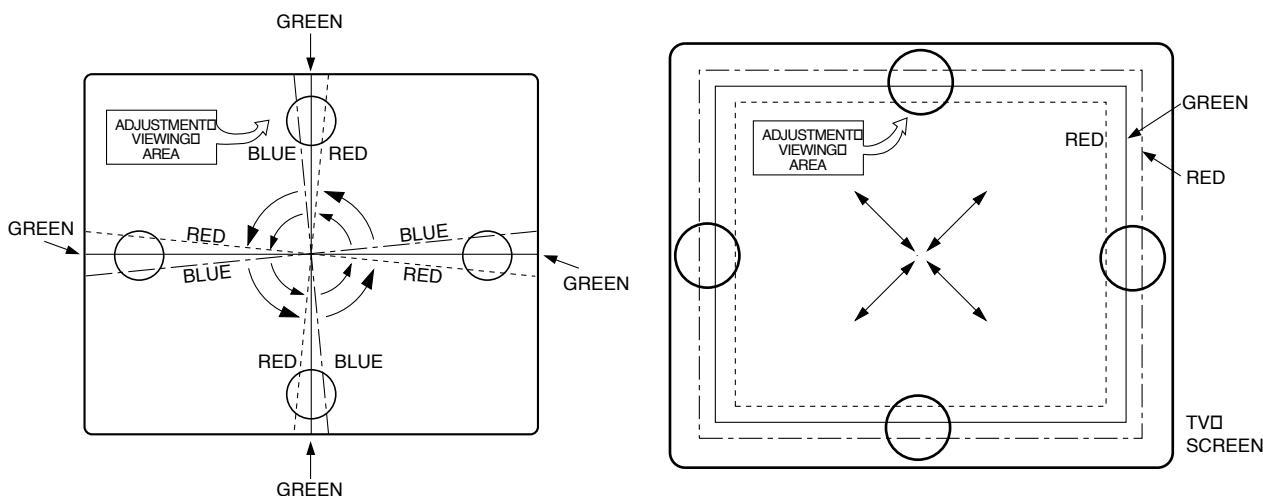
Note: Make sure the focus is set correctly on this instrument before proceeding with the following adjustment.

10. Converge the red and blue vertical lines to the green vertical line at the center of the screen by performing the following steps (below TABLE).
 - a. Carefully rotate both tabs of the 4-pole ring magnet simultaneously in opposite directions from the 12 o'clock position to converge the red and blue vertical lines.
 - b. Carefully rotate both tabs of the 6-pole ring magnet simultaneously in opposite directions form the 12 o'clock position to converge the red and blue (now purple) vertical lines with the green vertical line.
11. Converge the red and blue horizontal with the green line at the center of the screen by performing the following steps. (below TABLE)
 - a. Carefully rotate both tabs of the 4-pole ring magnet simultaneously in the same direction (keep the spacing between the two tabs the same) to converge the red and blue horizontal lines.
 - b. Carefully rotate both tabs of the 6-pole ring magnet simultaneously in same direction (keep the spacing between the two tabs the same) to converge the red and blue (now purple) horizontal lines with the green horizontal line.
 - c. Secure the tabs previously adjusted by locking them in place with the locking tabs on the beam bender.

RING PAIRS	ROTATION DIRECTION OF BOTH TABS	MOVEMENT OF RED AND BLUE BEAMS
4 POLE	OPPOSITE	
	SAME	
6 POLE	OPPOSITE	
	SAME	

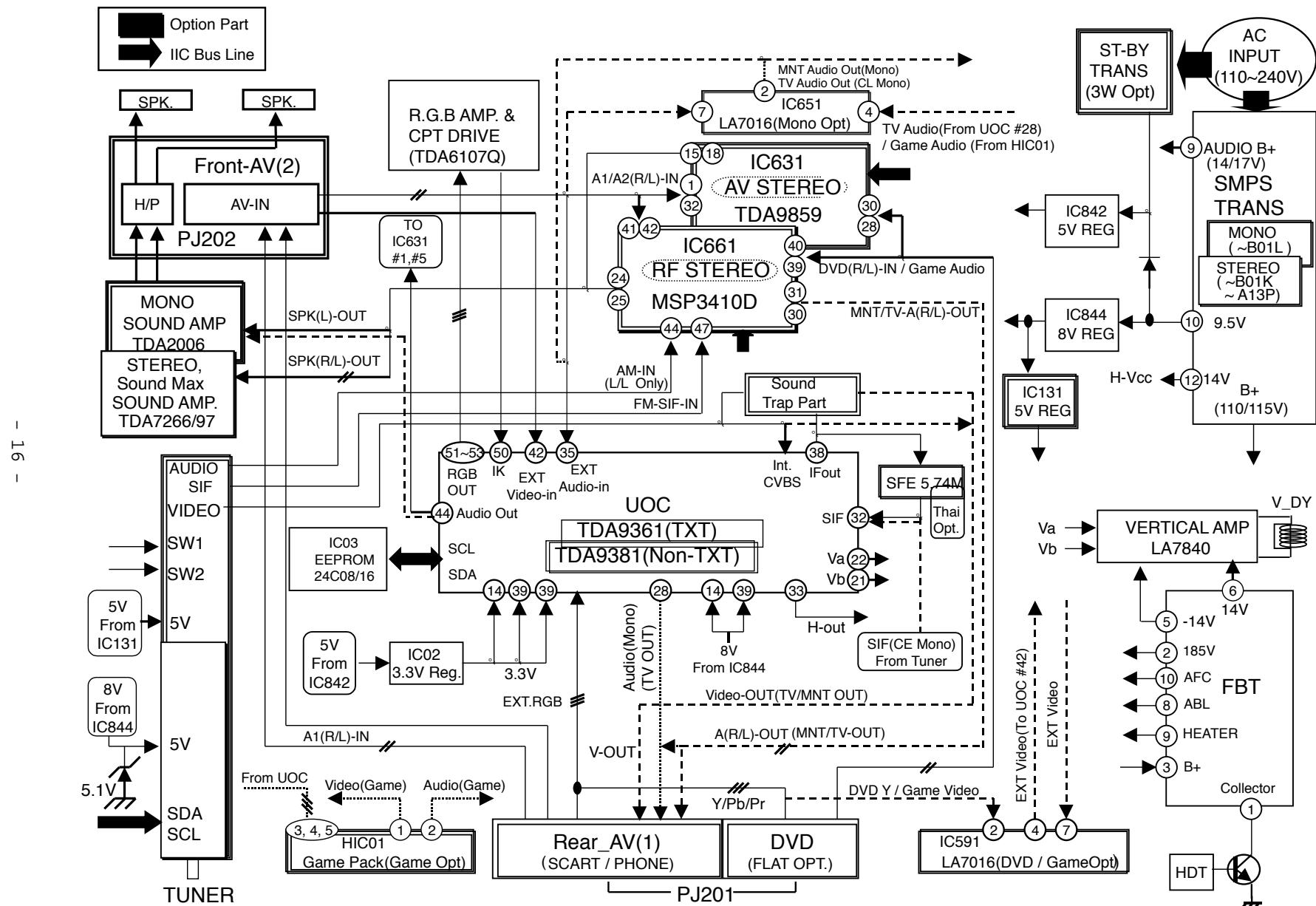
UP/DOWN ROCKING OF THE YOKE
CAUSES OPPOSITE ROTATION OF RED
AND BLUE RASTERS

LEFT/RIGHT ROCKING OF THE YOKE
CAUSES OPPOSITE SIZE CHANGE OF THE
RED AND BLUE RASTERS



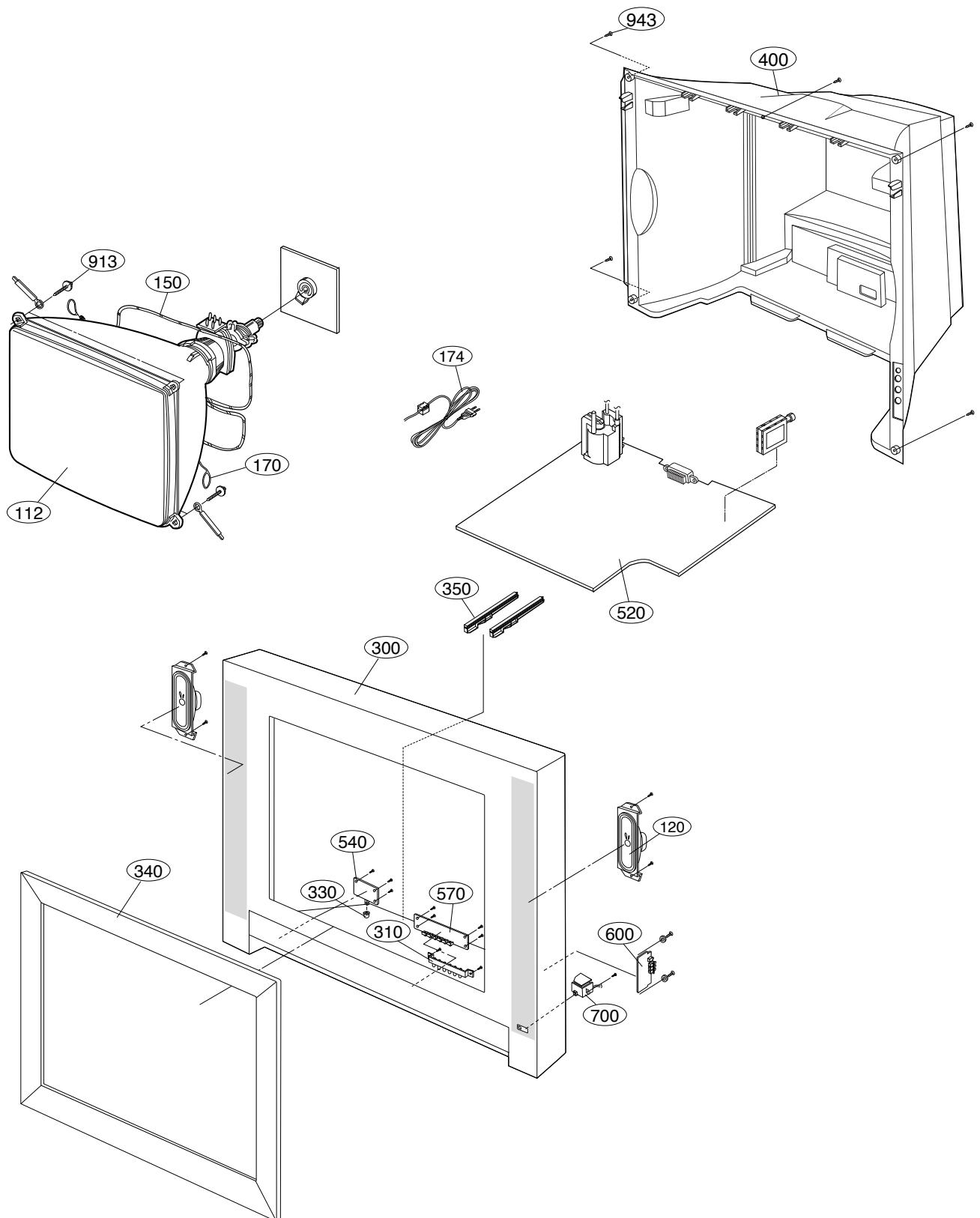
12. While watching the 6 o'clock positions on the screen, rock the front of the yoke in a vertical (up/down) direction to converge the red and blue vertical lines. (Fig upper left)
13. Temporarily place a rubber wedge at the 12 o'clock position to hold the vertical position of the yoke.
14. Check the 3 o'clock and 9 o'clock areas to confirm that the red and blue horizontal lines are converged. If the lines are not converged, slightly offset the vertical tilt of the yoke (move the rubber wedge if necessary) to equally balance the convergence error of the horizontal lines at 3 o'clock and 9 o'clock and the vertical lines at 6 o'clock and 12 o'clock.
15. Place a 1.5 inch piece of glass tape over the rubber foot at the rear of the 12 o'clock wedge.
16. While watching the 6 o'clock and 12 o'clock areas of the screen, rock the front of the yoke in the horizontal (left to right) motion to converge the red and blue horizontal lines. (Fig. upper right)
17. Temporarily place a rubber wedge at the 5 o'clock and 7 o'clock positions to hold the horizontal position of the yoke.
18. Check the 3 o'clock and 9 o'clock areas to confirm that the red and blue vertical lines are converged. If the lines are not converged, slightly offset the horizontal tilt of the yoke (move the temporary rubber wedges if necessary) to equally balance the convergence error of the horizontal lines at 6 o'clock and 12 o'clock and the vertical lines at 3 o'clock and 9 o'clock.
19. Using a round magnet confirm purity at the center, right and left sides and corners. See Purity Adjustment Procedure.
20. Reconfirm convergence and apply a 1.5 inch piece of glass tape over the rubber foot at the rear of the 5 o'clock and the 7 o'clock wedges.

BLOCK DIAGRAM



MEMO

EXPLODED VIEW



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

EXPLODED VIEW PARTS LIST

LOCA. NO	PART NO	DESCRIPTION
Δ 112	2426GDB30CA	CPT SET, A51QDJ279X(PB) 00Q7NP FREE,BARE
120	6400VA0025C	SPEAKER,FULLRANGE C163P03K1450 ESTEC 80HM 15/20W 84DB OTHERS 57X193X53
Δ 150	150-D02X	COIL,DEGAUSSING CU 21 60TURN 12 OHM D02N (NYLON)
Δ 170	170-A01N	CPT EARTH, 21 64T 2LUG 1P HSG CL-21Q20ET(PC-99DA)
Δ 174	174-009D	POWER CORD, POWER(W/HOLD,HOUSING,L=160,4.0
300	3091V00521H	CABINET ASSEMBLY RE-21FC40 STEREO MC019A SET 79A
310	5020V00837C	BUTTON, CONTROL RT-21FC40 (#79A) ABS, HF-380 6KEY NON
330	5020V00553Q	BUTTON, POWER RT-21FC40RQ (#79A SPARY) ABS, HF-380 1KEY NON
340	3211V00142A	FRAME ASSEMBLY, FRONT RE-21FC40 .
350	343-B52C	SUPPORTER, PCB 40AF CANADA
400	3809V00363L	BACK COVER ASSEMBLY, RT-21FC40RQ DVD(1PHONE) NON
520	6871VMMMP09Q	PWB(PCB) ASSEMBLY,MAIN MC019A RT-21FC40RQ.ARLLKP
520	6871VMMQ62G	PWB(PCB) ASSEMBLY,MAIN MC019A RT-21FC40RXQ.ADSLKK
540	6871VSMX01C	PWB(PCB) ASSEMBLY,SUB MC019A RT-21FC40VQ.ATLLKX
540	6871VSMX01D	PWB(PCB) ASSEMBLY,SUB POWER MC019A RT (HONG KONG)
570	6871VSMX02A	PWB(PCB) ASSEMBLY,SUB CONT MC019A RE-21FC40RX.CONTROL
600	6871VSMX00A	PWB(PCB) ASSEMBLY,SUB MC019A RE-21FC40RX.SIDE AV+TRANSFER(EYE+PRE-AMP)
600	6871VSMX00B	PWB(PCB) ASSEMBLY,SUB MC019A 21FC40 SIDE-AV LGEMA8
700	0IGL120104J	IC,DRAWING YGCA-T065A DIP 6P
913	332-057B	SCREW,DRAWING VASSY,HEXAGON HEAD
943	1PTF0403116	SCREW TAP TITE(P),TRUSS HEAD +D4.0 L16.0 MSWR3/FZB

REPLACEMENT PARTS LIST

LOCA. NO	PART NO	DESCRIPTION	LOCA. NO	PART NO	DESCRIPTION
IC					
IC01	OICTMPH006C	TDA9361PS/N2/4I,0793 PHILIPS 64P	D806	0DD100009AM	EU1ZV(1) TP SANKEN
IC02	OIMCRAU001A	S1117-33PI AUK KOREA TO220 3P ST 3.3V	D807	0DD300009AC	RU3AMV(1) TP SANKEN
IC03	OIAL241610B	AT24C16A-10PI-2.7 8PIN DIP ST EEPROM NON	D808	0DD060009AC	TVR06J GENERAL TP - 600V 250NSEC -
IC130	OIMCRSG004A	L7805CV SGS-THOMSON 3PIN TO220 ST	D901	0DR210009AC	BAV21 TP DO35 200V 0.2A 1A 50SEC 100A
IC301	OISA784070A	LA7840 7S VERTICAL	D902	0DR210009AC	BAV21 TP DO35 200V 0.2A 1A 50SEC 100A
IC591	OISA701600A	LA7016 8S ANALOG S/W	D903	0DR210009AC	BAV21 TP DO35 200V 0.2A 1A 50SEC 100A
IC603	OIMCRAU002A	S7142M AUK KOREA 3P TO-92M TP 4.2V	D904	0DR140049AC	1N4004A T-81 TP DO41 500V 1.0A 30A - 10UA
IC662	OIFA753307A	KA75330ZTA(KA7533ZTA) 3P,TO-92 TP 3.3V	DB801	0DD260000BB	BRIDGE D2SBA60(STK) SHINDENKEN
IC801	OILI817000G	LTV817M-VB 4P,DIP BK PHOTO COUPLER	LD01	0DD000000BA	SA5711-B(DL-1LO(S)) BK AMBER -
IC802	OILI817000G	LTV817M-VB 4P,DIP BK PHOTO COUPLER	ZD01	0DZ910009AJ	MTZJ9.1B TP ROHM-K DO34 0.5W 9.1V 5UA -
IC802	OILI817000G	LTV817M-VB 4P,DIP BK PHOTO COUPLER	ZD101	0DZ510009AK	GDZJ5.1B TP GRANDE DO34 0.5W 5.1V
IC803	OISK665413C	STR-F6654R(LF1352) 5 SIP BK STR MC00AA	ZD441	0DZ620009AK	GDZJ6.2B TP GRANDE DO34 0.5W 6.2V
IC804	OISK110000A	SE110N(LF12) 3P 110V ERROR AMP	ZD442	0DZ820009BF	GDZJ8.2B TP GRANDE DO34 0.5W 8.2V
IC842	OIMCRUK002A	S78DL05 AUK 3P,TO92 TP 5V-REGULATOR	ZD443	0DZ330009DG	GDZJ33B TP GRANDE DO34 0.5W 33.0V
IC901	OIPH610700B	TDA6107JF/N3 9P ST RGB AMP	ZD501	0DZ820009BF	GDZJ8.2B TP GRANDE DO34 0.5W 8.2V
TRANSISTOR					
Q1101	OTR198009BA	2SA1980Y TP AUK	C01	0CN1020K519	1000P 50V K B TA52
Q201	OTR198009BA	2SA1980Y TP AUK	C02	0CN1030F679	10000P 16V M Y TA52
Q211	OTR198009BA	2SA1980Y TP AUK	C03	0CE107DD618	100UF STD 10V M FL TP5
Q212	OTR534309AA	2SC5343Y TP AUK	C04	0CC2400K415	24P 50V J NP0 TP
Q213	OTR534309AA	2SC5343Y TP AUK	C05	0CC2400K415	24P 50V J NP0 TP
Q214	OTR534309AA	2SC5343Y TP AUK	C07	0CE107DD618	100UF STD 10V M FL TP5
Q215	OTR534309AA	2SC5343Y TP AUK	C10	0CE107DD618	100UF STD 10V M FL TP5
Q216	OTR534309AA	2SC5343Y TP AUK	C101	0CN1030F679	10000P 16V M Y TA52
Q301	OTR198009BA	2SA1980Y TP AUK	C102	0CE105DK618	1UF STD 50V M FL TP5
Q402	OTRSA10002A	TT2140 SANYO ST TO220F 1500V 6A H-OUT TRA	C107	0CE107DD618	100UF STD 10V M FL TP5
Q442	OTR233109AA	KSC2331-Y TP SAMSUNG TO-92L	C109	0CE476DK618	47UF STD 50V M FL TP5
Q551	OTR198009BA	2SA1980Y TP AUK	C113	0CN1020K519	1000P 50V K B TA52
Q552	OTR198009BA	2SA1980Y TP AUK	C1201	0CN1020K519	1000P 50V K B TA52
Q552	OTR534309AA	2SC5343Y TP AUK	C1203	0CN1020K519	1000P 50V K B TA52
Q571	OTR198009BA	2SA1980Y TP AUK	C1204	0CN2210K519	220P 50V K B TA52
Q621	OTR534309AA	2SC5343Y TP AUK	C121	0CN1010K519	100P 50V K B TA52
Q671	OTR198009BA	2SA1980Y TP AUK	C1256	0CN2210K519	220P 50V K B TA52
Q672	OTR198009BA	2SA1980Y TP AUK	C1260	0CE226DF618	22UF STD 16V M FL TP5
Q801	OTR102009AB	KRC102M(KRC1202) KEC TP NA NA NA	C1263	0CE226DF618	22UF STD 16V M FL TP5
Q802	OTR102009AB	KRC102M(KRC1202) KEC TP NA NA NA	C131	0CE107DD618	100UF STD 10V M FL TP5
Q806	OTR102009AB	KRC102M(KRC1202) KEC TP NA NA NA	C201	0CE227DD618	220UF STD 10V M FL TP5
DIODE					
D301	ODD400509AA	1N4005 TP KEC	C208	0CE226DF618	22UF STD 16V M FL TP5
D401	ODR150009EA	RGP15J TP GULF DO15 600V 1.5A 50A 250NSEC 5UA	C209	0CE226DF618	22UF STD 16V M FL TP5
D403	ODD414809ED	1N4148 TP GRANDE	C210	0CN1030F679	10000P 16V M Y TA52
D441	ODD060009AC	TVR06J GENERAL TP - 600V 250NSEC	C213	0CX4700K409	47P 50V J SL TA52
D442	ODD060009AC	TVR06J GENERAL TP - 600V 250NSEC -	C221	0CE475DK618	4.7UF STD 50V 20% FL TP 5
D443	ODD060009AC	TVR06J GENERAL TP - 600V 250NSEC -	C222	0CE475DK618	4.7UF STD 50V 20% FL TP 5
D501	ODD414809ED	1N4148 TP GRANDE	C223	0CE475DK618	4.7UF STD 50V 20% FL TP 5
D571	ODD414809ED	1N4148 TP GRANDE	C258	0CN1030F679	10000P 16V M Y TA52
D802	ODD100009AM	EU1ZV(1) TP SANKEN	C259	0CN1030F679	10000P 16V M Y TA52
D803	ODD414809ED	1N4148 TP GRANDE	C301	0CQ1041N509	0.1UF D 100V 10% PE TP5
			C302	0CQ3931N509	0.039UF D 100V 10% PE TP5
			C303	0CK1810W515	180P 500V K B TS
CAPACITOR					

For Capacitor & Resistors, the characters at 2nd and 3rd digit in the P/No. means as follows;	CC, CX, CK, CN : Ceramic CQ : Polyester CE : Electrolytic	RD : Carbon Film RS : Metal Oxide Film RN : Metal Film RF : Fusible
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LOCA. NO	PART NO	DESCRIPTION	LOCA. NO	PART NO	DESCRIPTION
C304	0CE107DJ618	100UF STD 35V M FL TP5	C661	0CX4700K409	47P 50V J SL TA52
C307	0CQ6821N509	0.0068UF D 100V 10% PE TP5	C662	0CX4700K409	47P 50V J SL TA52
C401	181-013Q	MPP 400V 0.36UF J	C663	0CE227DD618	220UF STD 10V M FL TP5
C402	0CE475DP618	4.7UF STD 160V 20% FL TP 5	C664	0CN1030F679	10000P 16V M Y TA52
C403	181-015E	MPP 1600V 0.0068UF H	C665	0CN1030F679	10000P 16V M Y TA52
C404	0CK8210W515	820P 500V K B TS	C666	0CE335DK618	3.3UF STD 50V 20% FL TP 5
C405	181-091U	R 220PF 2KV 10%, -10% R/TP TP7.5	C667	0CN3320F569	3300P 16V K X TA52
C441	0CQ1531N509	0.015UF D 100V 10% PE TP5	C668	0CN3320F569	3300P 16V K X TA52
C443	0CE477DH618	470UF STD 25V M FL TP5	C669	0CE226DF618	22UF STD 16V M FL TP5
C444	0CE475DR618	4.7UF STD 250V 20% FL TP 5	C670	0CE106DF618	10UF STD 16V M FL TP5
C446	0CE477DH618	470UF STD 25V M FL TP5	C671	0CE107DD618	100UF STD 10V M FL TP5
C447	0CQ3321N509	0.0033UF D 100V 10% PE TP5	C672	0CE106DF618	10UF STD 16V M FL TP5
C449	181-009V	PP 200V 0.047UF K	C673	0CN1030F679	10000P 16V M Y TA52
C452	0CE106DK618	10UF STD 50V M FL TP5	C674	0CN1030F679	10000P 16V M Y TA52
C477	0CQ3321N509	0.0033UF D 100V 10% PE TP5	C675	0CE106DF618	10UF STD 16V M FL TP5
C501	0CF2241L438	0.22UF D 63V 5% TP 5 M/PE NI	C676	0CF3341L438	0.33UF D 63V 5% TP 5 M/PE NI
C502	0CN1030F679	10000P 16V M Y TA52	C677	0CF3341L438	0.33UF D 63V 5% TP 5 M/PE NI
C503	0CE107DD618	100UF STD 10V M FL TP5	C678	181-007G	MPE ECQ-V1H334JL3(TR), 50V 0.33UF J
C504	0CE225DK618	2.2UF STD 50V 20% FL TP 5	C679	181-007G	MPE ECQ-V1H334JL3(TR), 50V 0.33UF J
C505	0CQ2221N509	0.0022UF D 100V 10% PE TP5	C680	0CN1030F679	10000P 16V M Y TA52
C506	0CE105DK618	1UF STD 50V M FL TP5	C681	0CE106DF618	10UF STD 16V M FL TP5
C507	0CQ2221N509	0.0022UF D 100V 10% PE TP5	C684	0CN1030F679	10000P 16V M Y TA52
C508	0CE476DF618	47UF STD 16V M FL TP5	C685	0CE106DF618	10UF STD 16V M FL TP5
C509	0CE106DF618	10UF STD 16V M FL TP5	C686	0CX5600K409	56P 50V J SL TA52
C51	0CN1030F679	10000P 16V M Y TA52	C687	0CX5600K409	56P 50V J SL TA52
C511	0CE105DK618	1UF STD 50V M FL TP5	C688	0CX5600K409	56P 50V J SL TA52
C512	0CN1020K519	1000P 50V K B TA52	C689	0CC0200K115	2PF D 50V 0.5 PF NP0 TR
C513	0CN1020K519	1000P 50V K B TA52	C690	0CC0200K115	2PF D 50V 0.5 PF NP0 TR
C514	0CQ1041N455	0.1UF D 100V 5% PP NI FM7.5	C801	0CE107BJ618	100UF KME 35V M FL TP5
C517	0CE106DF618	10UF STD 16V M FL TP5	C802	181-091U	R 220PF 2KV 10%, -10% R/TP TP7.5
C524	0CN1030F679	10000P 16V M Y TA52	C803	0CK4710W515	470PF 500V K B TR
C530	0CQ1041N509	0.1UF D 100V 10% PE TP5	C804	0CQ1041N509	0.1UF D 100V 10% PE TP5
C534	0CN1030F679	10000P 16V M Y TA52	C806	0CE337KV6A0	330UF SLT 450V 20% VNSN BULK
C538	0CF4741L438	0.47UF D 63V 5% TP 5 M/PE NI	C807	0CK10201515	1000P 1KV K B TS
C540	0CN2230H949	22000P 25V Z FTA52	C808	0CK10201515	1000P 1KV K B TS
C541	0CN2230H949	22000P 25V Z FTA52	C811	181-120K	2200PF 4KV M E FMTW LEAD 4.5
C542	0CN2230H949	22000P 25V Z FTA52	C812	0CE108DH618	1000UF STD 25V M FL TP5
C551	0CX4700K409	47P 50V J SL TA52	C813	0CK4710W515	470PF 500V K B TR
C561	0CE107DD618	100UF STD 10V M FL TP5	C815	0CK4710W515	470PF 500V K B TR
C573	0CE107DF618	100UF STD 16V M FL TP5	C816	0CN1030F679	10000P 16V M Y TA52
C574	0CQ1021N509	0.001UF D 100V 10% PE TP5	C817	0CK4710W515	470PF 500V K B TR
C593	0CE475DK618	4.7UF STD 50V 20% FL TP 5	C818	0CE107BH618	100UF KME 25V M FL TP5
C594	0CQ1041N509	0.1UF D 100V 10% PE TP5	C819	181-091Y	R 680PF 2KV 10%, -10% R/TP TP7.5
C595	0CE475DK618	4.7UF STD 50V 20% FL TP 5	C820	0CE227DP650	220UF STD 160V M FM7.5 BULK
C601	0CE226DF618	22UF STD 16V M FL TP5	C821	181-120N	1000PF 4KV M E FMTW LEAD4.5
C602	181-007F	MPE ECQ-V1H224JL3(TR), 50V 0.22UF J	C823	0CK4710K515	470PF 50V K B TR
C603	0CQ4721N509	0.0047UF D 100V 10% PE TP5	C825	181-091P	SL 270PF 1KV 10%, -10% R/TP TP5
C605	0CQ4721N509	0.0047UF D 100V 10% PE TP5	C828	0CE107DF618	100UF STD 16V M FL TP5
C606	181-007F	MPE ECQ-V1H224JL3(TR), 50V 0.22UF J	C829	0CF1021047A	1000PF D 800V 5% TP 7.5 M/PP NI
C607	0CN1030F679	10000P 16V M Y TA52	C830	0CE475DK618	4.7UF STD 50V 20% FL TP 5
C612	0CE477DH618	470UF STD 25V M FL TP5	C831	0CE108BF618	1000UF KME 16V M FL TP5

For Capacitor & Resistors,	CC, CX, CK, CN : Ceramic	RD : Carbon Film
the characters at 2nd and 3rd digit in the P/No. means as follows;	CO : Polyester	RS : Metal Oxide Film
	CE : Electrolytic	RN : Metal Film
		RF : Fusible

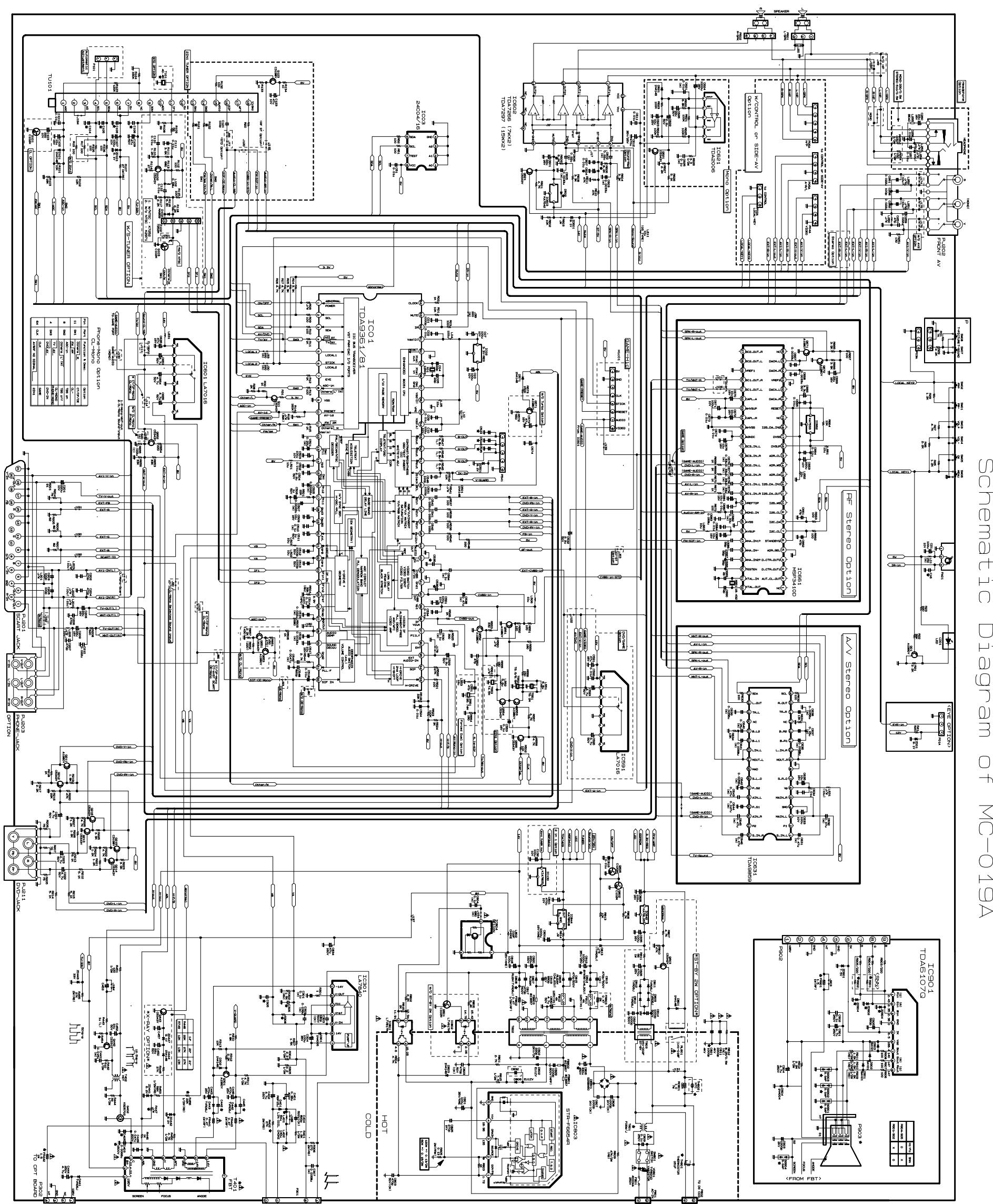
LOCA. NO	PART NO	DESCRIPTION	LOCA. NO	PART NO	DESCRIPTION
C832	181-091P	SL 270PF 1KV 10%,-10% R/TP TP5	P1101A	366-009D	2.36PAI 1P . K/M AUTO
C834	0CE227DP650	220UF STD 160V M FM7.5 BULK	P1101B	366-009D	2.36PAI 1P . K/M AUTO
C834	0CE476CP618	47UF SHL,SD 160V 20% FL TP 5	P1102	387-A03D	3P 2.5MM 250MM H-B UL1007AWG26
C835	0CE107DF618	100UF STD 16V M FL TP5	P1102	387-A03G	3P 2.5MM 400MM H-B UL1007AWG26
C841	0CE477DD618	470UF STD 10V M FL TP5	P1103A	366-009D	2.36PAI 1P . K/M AUTO
C901	0CE475DR618	4.7UF STD 250V 20% FL TP 5	P1103B	366-009D	2.36PAI 1P . K/M AUTO
C902	0CQ1044R539	0.1UF TE 250V 10% M/PE NI TP5	P1104	387-A03G	3P 2.5MM 400MM H-B UL1007AWG26
C903	0CK12202510	1200P 2KV K B S	P1107	387-A04E	4P 2.5MM 300MM H-B UL1007AWG26
C904	0CE475DR618	4.7UF STD 250V 20% FL TP 5	P1111	366-009D	2.36PAI 1P . K/M AUTO
C905	0CN5610K519	560P 50V K B TA52	P1205	387-A10H	10P 2.5MM 450MM H-B UL1007AWG26
R655	0CN1030F679	10000P 16V M Y TA52	P1206	387-A05H	5P 2.5MM 450MM H-B UL1007AWG26
COIL & INDUCTOR			P301	366-043K	35929-0410 MOLEX 4PIN 8.0-6.0MM
J57	OLA0102K119	INDUCTOR,AXIAL LEAD10UH K 2.3*3.4 TP	P601	366-932B	2.5MM 3P GIL-G LG CABLE S (STICK)
L04	OLA1000K119	INDUCTOR,AXIAL LEAD100UH K 2.3*3.4 TP	P602	366-932C	2.5MM 4P GIL-G LG CABLE S (STICK)
L05	OLA0102K119	INDUCTOR,AXIAL LEAD10UH K 2.3*3.4 TP	P801A	366-009D	2.36PAI 1P . K/M AUTO
L10	OLA0102K119	INDUCTOR,AXIAL LEAD10UH K 2.3*3.4 TP	P801A	366-009D	2.36PAI 1P . K/M AUTO
L1202	OLA0102K119	INDUCTOR,AXIAL LEAD10UH K 2.3*3.4 TP	P801B	366-009D	2.36PAI 1P . K/M AUTO
L1205	OLA0102K119	INDUCTOR,AXIAL LEAD10UH K 2.3*3.4 TP	P802A	366-009D	2.36PAI 1P . K/M AUTO
L1253	OLA0472K119	INDUCTOR,AXIAL LEAD47UH K 2.3*3.4 TP	P802B	366-009D	2.36PAI 1P . K/M AUTO
L1254	OLA0472K119	INDUCTOR,AXIAL LEAD47UH K 2.3*3.4 TP	P902	387-603E	9P 2.5MM 430MM B-B UL1007AWG26
L210	OLA0102K119	INDUCTOR,AXIAL LEAD10UH K 2.3*3.4 TP	P903	366-009D	2.36PAI 1P . K/M AUTO
L401	6140VE0001V	60UH 0.6PHY 69.5TURN CH-1012S MC019A	RESISTOR		
L402	6140VB0001F	130UH 0.45PHY 55.5TURN CH-1012S MC019A	C531	0RD1103F609	110K OHM 1/6 W 5.00% TA52
L501	OLA0102K119	INDUCTOR,AXIAL LEAD10UH K 2.3*3.4 TP	C546	0RD1103F609	110K OHM 1/6 W 5.00% TA52
L502	OLA0102K119	INDUCTOR,AXIAL LEAD10UH K 2.3*3.4 TP	D813	0RS0272H609	27 OHM 1/2 W 5.00% TA52
L503	OLA0102K119	INDUCTOR,AXIAL LEAD10UH K 2.3*3.4 TP	FR441	0RF0470J607	0.47 OHM 1 W 5.00% TA62
L506	OLA0102K119	INDUCTOR,AXIAL LEAD10UH K 2.3*3.4 TP	FR442	0RF0151J607	1.5 OHM 1 W 5.00% TA62
L611	OLA0102K049	INDUCTOR,AXIAL LEAD10UH 10% TP 5.0X14 TA52	FR443	0RF0470J607	0.47 OHM 1 W 5.00% TA62
L661	OLA0102K119	INDUCTOR,AXIAL LEAD10UH K 2.3*3.4 TP	FR802	0RF0470H609	0.47 OHM 1/2 W 5.00% TA52
L662	OLA0102K119	INDUCTOR,AXIAL LEAD10UH K 2.3*3.4 TP	FR901	0RF0151J607	1.5 OHM 1 W 5.00% TA62
L663	OLA0102K119	INDUCTOR,AXIAL LEAD10UH K 2.3*3.4 TP	J149	0RD1001F609	1K OHM 1/6 W 5% TA52
L801	150-C02F	COIL,CHOKE82UH PHY TURN	J154	0RD1001F609	1K OHM 1/6 W 5% TA52
L802	150-C02F	COIL,CHOKE82UH PHY TURN	J30	0RD2200F609	220 OHM 1/6 W 5.00% TA52
R443	OLA0101K119	INDUCTOR,AXIAL LEAD1.0UH K 2.3*3.4 TP	J33	0RD2200F609	220 OHM 1/6 W 5.00% TA52
R545	OLA0681K119	INDUCTOR,AXIAL LEAD6.8UH K 2.3*3.4 TP	J39	0RD2200F609	220 OHM 1/6 W 5.00% TA52
R546	OLA0681K119	INDUCTOR,AXIAL LEAD6.8UH K 2.3*3.4 TP	J69	0RD1500F609	150 OHM 1/6 W 5.00% TA52
R547	OLA0681K119	INDUCTOR,AXIAL LEAD6.8UH K 2.3*3.4 TP	L10	0RD0102F609	10 OHM 1/6 W 5% TA52
T402	6170VC0003A	TRANSFORMER,DRUM 10*12 JSUH BASE 10MM	R01	0RD1002F609	10K OHM 1/6 W 5% TA52
CONNECTOR			R03	0RD1000F609	100 OHM 1/6 W 5% TA52
P01A	366-932B	2.5MM 3P GIL-G LG CABLE S (STICK)	R04	0RD3301F609	3.3K OHM 1/6 W 5.00% TA52
P01B	366-922B	2.5MM 3P GIL-G LG CABLE R/A (B TO C)	R05	0RD3301F609	3.3K OHM 1/6 W 5.00% TA52
P02A	366-932B	2.5MM 3P GIL-G LG CABLE S (STICK)	R06	0RD4701F609	4.7K OHM 1/6 W 5% TA52
P02B	387-A03G	3P 2.5MM 400MM H-B UL1007AWG26	R06	0RD4701F609	4.7K OHM 1/6 W 5% TA52
P03B	387-A05C	5P 2.5MM 200MM H-B UL1007AWG26	R07	0RD4701F609	4.7K OHM 1/6 W 5% TA52
P05A	366-921J	GIL-G-10P LGC 10PIN 2.54MM STICK	R09	0RD1000F609	100 OHM 1/6 W 5% TA52
P06A	366-932D	GIL-G-05P LGC 5PIN 2.54MM STICK	R10	0RD1000F609	100 OHM 1/6 W 5% TA52
P07A	366-932C	2.5MM 4P GIL-G LG CABLE S (STICK)	R105	0RD1000F609	100 OHM 1/6 W 5% TA52
P102	366-009D	2.36PAI 1P . K/M AUTO	R106	0RD1000F609	100 OHM 1/6 W 5% TA52
P103	366-932B	2.5MM 3P GIL-G LG CABLE S (STICK)	R107	0RS0272J607	27 OHM 1 W 5.00% TA62

For Capacitor & Resistors, the characters at 2nd and 3rd digit in the P/No. means as follows;	CC, CX, CK, CN : Ceramic CQ : Polyester CE : Electrolytic	RD : Carbon Film RS : Metal Oxide Film RN : Metal Film RF : Fusible
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LOCA. NO	PART NO	DESCRIPTION	LOCA. NO	PART NO	DESCRIPTION
R11	ORD1001F609	1K OHM 1/6 W 5% TA52	R312	0RD2201F609	2.2K OHM 1/6 W 5.00% TA52
R1101	ORD1201F609	1.2K OHM 1/6 W 5% TA52	R313	0RD1002F609	10K OHM 1/6 W 5% TA52
R1102	ORD3601F609	3.6K OHM 1/6 W 5.00% TA52	R401	0RD1501A609	1.5K OHM 1/2 W(7.0) 5.00% TA52
R1104	ORD1601F609	1.6K OHM 1/6 W 5.00% TA52	R402	0RS2702K607	27K OHM 2 W 5.00% TA62
R1105	ORD1201F609	1.2K OHM 1/6 W 5% TA52	R41	0RD6200F609	620 OHM 1/6 W 5.00% TA52
R1121	ORD2200F609	220 OHM 1/6 W 5.00% TA52	R442	0RD5100A609	510 OHM 1/2 W(7.0) 5.00% TA52
R1122	ORD3902F609	39K OHM 1/6 W 5.00% TA52	R444	0RD0392A609	39 OHM 1/2 W(7.0) 5.00% TA52
R1123	ORD2201F609	2.2K OHM 1/6 W 5.00% TA52	R446	0RD1001F609	1K OHM 1/6 W 5% TA52
R12	ORD1001F609	1K OHM 1/6 W 5% TA52	R447	0RD1501F609	1.5K OHM 1/6 W 5% TA52
R121	ORD1001F609	1K OHM 1/6 W 5% TA52	R447	0RD2401F609	2.4K OHM 1/6 W 5.00% TA52
R122	ORD1001F609	1K OHM 1/6 W 5% TA52	R450	0RD4701A609	4.7K OHM 1/2 W(7.0) 5.00% TA52
R1254	ORD2200H609	220 OHM 1/2 W 5.00% TA52	R451	0RD0392H609	39 OHM 1/2 W 5.00% TA52
R1255	ORD2200H609	220 OHM 1/2 W 5.00% TA52	R453	0RS5602H609	56K OHM 1/2 W 5.00% TA52
R13	ORD1000F609	100 OHM 1/6 W 5% TA52	R455	0RS2702K607	27K OHM 2 W 5.00% TA62
R15	ORD1000F609	100 OHM 1/6 W 5% TA52	R456	0RS2202H609	22K OHM 1/2 W 5.00% TA52
R16	ORD4701F609	4.7K OHM 1/6 W 5% TA52	R501	0RD2202F609	22K OHM 1/6 W 5% TA52
R201	ORD0512F609	51 OHM 1/6 W 5.00% TA52	R503	0RD2200F609	220 OHM 1/6 W 5.00% TA52
R204	ORD0752F609	75 OHM 1/6 W 5.00% TA52	R504	0RN3902F409	39K OHM 1/6 W 1.00% TA52
R205	ORD0752F609	75 OHM 1/6 W 5.00% TA52	R51	0RD1000F609	100 OHM 1/6 W 5% TA52
R206	ORD0752F609	75 OHM 1/6 W 5.00% TA52	R518	0RD3302F609	33K OHM 1/6 W 5% TA52
R207	ORD0752F609	75 OHM 1/6 W 5.00% TA52	R52	0RD1000F609	100 OHM 1/6 W 5% TA52
R208	ORD1001F609	1K OHM 1/6 W 5% TA52	R521	0RD1000F609	100 OHM 1/6 W 5% TA52
R212	ORD5101F609	5.1K OHM 1/6 W 5.00% TA52	R522	0RD2702F609	27K OHM 1/6 W 5.00% TA52
R213	ORD5101F609	5.1K OHM 1/6 W 5.00% TA52	R523	0RD1003F609	100K OHM 1/6 W 5% TA52
R214	ORD5101F609	5.1K OHM 1/6 W 5.00% TA52	R524	0RD3001F609	3K OHM 1/6 W 5.00% TA52
R215	ORD5101F609	5.1K OHM 1/6 W 5.00% TA52	R526	0RD1001F609	1K OHM 1/6 W 5% TA52
R216	ORD2202F609	22K OHM 1/6 W 5% TA52	R526	0RD2001F609	2K OHM 1/6 W 5% TA52
R217	ORD2201F609	2.2K OHM 1/6 W 5.00% TA52	R526	0RD2201F609	2.2K OHM 1/6 W 5.00% TA52
R218	ORD1001F609	1K OHM 1/6 W 5% TA52	R537	0RD1000F609	100 OHM 1/6 W 5% TA52
R218	ORD2001F609	2K OHM 1/6 W 5% TA52	R538	0RD1000F609	100 OHM 1/6 W 5% TA52
R219	ORD1801F609	1.8K OHM 1/6 W 5.00% TA52	R539	0RD1000F609	100 OHM 1/6 W 5% TA52
R220	ORD4702F609	47K OHM 1/6 W 5% TA52	R540	0RD1000F609	100 OHM 1/6 W 5% TA52
R221	ORD1201F609	1.2K OHM 1/6 W 5% TA52	R542	0RD1002F609	10K OHM 1/6 W 5% TA52
R221	ORD1801F609	1.8K OHM 1/6 W 5.00% TA52	R544	0RD2701F609	2.7K OHM 1/6 W 5% TA52
R222	ORD4701F609	4.7K OHM 1/6 W 5% TA52	R548	0RD2200F609	220 OHM 1/6 W 5.00% TA52
R223	ORD3901F609	3.9K OHM 1/6 W 5% TA52	R551	0RD2200F609	220 OHM 1/6 W 5.00% TA52
R224	ORD1201F609	1.2K OHM 1/6 W 5% TA52	R552	0RD2200F609	220 OHM 1/6 W 5.00% TA52
R225	ORD3901F609	3.9K OHM 1/6 W 5% TA52	R553	0RD3300F609	330 OHM 1/6 W 5.00% TA52
R226	ORD4701F609	4.7K OHM 1/6 W 5% TA52	R554	0RD4701F609	4.7K OHM 1/6 W 5% TA52
R227	ORD1201F609	1.2K OHM 1/6 W 5% TA52	R555	0RD1800F609	180 OHM 1/6 W 5.00% TA52
R228	ORD1301F609	1.3K OHM 1/6 W 5.00% TA52	R559	0RD1800F609	180 OHM 1/6 W 5.00% TA52
R228	ORD1801F609	1.8K OHM 1/6 W 5.00% TA52	R572	0RD5600F609	560 OHM 1/6 W 5% TA52
R251	ORD0752F609	75 OHM 1/6 W 5.00% TA52	R573	0RD2403F609	240K OHM 1/6 W 5.00% TA52
R301	ORD0101F609	1 OHM 1/6 W 5.00% TA52	R601	0RD4701F609	4.7K OHM 1/6 W 5% TA52
R302	ORN1501F409	1.5K OHM 1/6 W 1.00% TA52	R602	0RD1002F609	10K OHM 1/6 W 5% TA52
R304	ORD0221A609	2.2 OHM 1/2 W(7.0) 5.00% TA52	R603	0RD3900F609	390 OHM 1/6 W 5% TA52
R305	ORD0221A609	2.2 OHM 1/2 W(7.0) 5.00% TA52	R604	0RD2401F609	2.4K OHM 1/6 W 5.00% TA52
R306	0RS2700K607	270 OHM 2 W 5.00% TA62	R606	0RD5601F609	5.6K OHM 1/6 W 5% TA52
R307	ORD1501F609	1.5K OHM 1/6 W 5% TA52	R608	0RD2401F609	2.4K OHM 1/6 W 5.00% TA52
R310	ORD1801F609	1.8K OHM 1/6 W 5.00% TA52	R609	0RD5601F609	5.6K OHM 1/6 W 5% TA52
R311	ORD4701A609	4.7K OHM 1/2 W(7.0) 5.00% TA52	R610	0RD4702F609	47K OHM 1/6 W 5% TA52

LOCA. NO	PART NO	DESCRIPTION	LOCA. NO	PART NO	DESCRIPTION
R611	ORD4702F609	47K OHM 1/6 W 5% TA52	A1	3828VA0443A	MANUAL,OWNERS NEU/LAFINION 55 LG EN 126H TX
R662	ORD1000F609	100 OHM 1/6 W 5% TA52	A1	3828VA0443H	MANUAL,OWNERS RUS/BZ03 126H TX 340M 7YRS
R663	ORD1000F609	100 OHM 1/6 W 5% TA52	A1	3828VA0443K	MANUAL,OWNERS AK/ME28 126H TX
R664	ORD1002F609	10K OHM 1/6 W 5% TA52	A2	6710V00126H	REMOTE CONTROLLER,MC019A TXT
R665	ORD3901F609	3.9K OHM 1/6 W 5% TA52	A3	5010V00004B	ANTENNA,3SECTION 750MM NTSC W/ADP SLIM
R666	ORD3901F609	3.9K OHM 1/6 W 5% TA52	ACCESSORIES		
R667	ORD102F609	10 OHM 1/6 W 5% TA52	MISCELLANEOUS		
R670	ORD1001F609	1K OHM 1/6 W 5% TA52	FP801	0FS4001B53C	FUSE,4000MA 250 V 5.2X20 CY/CEI
R671	ORD1001F609	1K OHM 1/6 W 5% TA52	P901	6620VBC003A	SOCKET (CIRC),CPT PCS030A 8PIN 14/360
R801	ORD2701F609	2.7K OHM 1/6 W 5% TA52	PJ1202	6613V00004F	JACK ASSY PPJ107F A/V 3P DOUBLE S/W
R802	ORD2201F609	2.2K OHM 1/6 W 5.00% TA52	PJ1203	380-068D	JACK, UEJ-CV-003 E/P WITH S/W STEREO(068B) D3.5
R803	ORD1001F609	1K OHM 1/6 W 5% TA52	PJ201	6612VJH023A	JACK, PPJ126A PARK ELEC A/V 11P DVD/AV
R804	ORD4701F609	4.7K OHM 1/6 W 5% TA52	SK901	6620VBC003A	SOCKET (CIRC),CPT PCS030A 8PIN 14/360
R805	180-A01P	0.13 OHM 2 W 5% TA62 RWR	T401	6174V-6006E	FBT,BSC23-N0107 20/21 YINYANG 6174V-6006C
R806	ORD2401F609	2.4K OHM 1/6 W 5.00% TA52	TH801	163-051F	THERMISTOR,PTC J503P84D140M290Q
R808	ORD4701F609	4.7K OHM 1/6 W 5% TA52	TU101	6700MF0001E	TUNER,TAFD-Z242D LG MULTI FS 4SYS,DIN
R809	ORS4702K607	47K OHM 2 W 5.00% TA62	VD1111	164-003G	VARISTOR,TVR621D14A THINKING 620V 10%
R812	ORK8204H609	8.2M OHM 1/2 W 5.00% TA52	X01	156-A02B	RESONATOR,CRYSTAL,12.000MHZ 30PPM 16PF BK
R813	ORD1002F609	10K OHM 1/6 W 5% TA52			
R815	ORD0751A609	7.5 OHM 1/2 W(7.0) 5.00% TA52			
R816	ORD2001F609	2K OHM 1/6 W 5% TA52			
R903	ORD2200F609	220 OHM 1/6 W 5.00% TA52			
R904	ORD2200F609	220 OHM 1/6 W 5.00% TA52			
R904	ORD2200F609	220 OHM 1/6 W 5.00% TA52			
R905	ORD2200F609	220 OHM 1/6 W 5.00% TA52			
R905	ORD2200F609	220 OHM 1/6 W 5.00% TA52			
R906	ORD1000F609	100 OHM 1/6 W 5% TA52			
R907	ORD1000F609	100 OHM 1/6 W 5% TA52			
R908	ORD1000F609	100 OHM 1/6 W 5% TA52			
R909	ORS1501H609	1.5K OHM 1/2 W 5.00% TA52			
R910	ORS1501H609	1.5K OHM 1/2 W 5.00% TA52			
R911	ORS1501H609	1.5K OHM 1/2 W 5.00% TA52			
R912	ORD2204A609	2.2M OHM 1/2 W(7.0) 5.00% TA52			
RC801	180-822N	RWR 7W 1.0 OHM J PD			
SWITCH					
SW01	140-315A	TACT SKHV17910B LG C&D NON 12V			
SW02	140-315A	TACT SKHV17910B LG C&D NON 12V			
SW03	140-315A	TACT SKHV17910B LG C&D NON 12V			
SW04	140-315A	TACT SKHV17910B LG C&D NON 12V			
SW05	140-315A	TACT SKHV17910B LG C&D NON 12V			
SW06	140-315A	TACT SKHV17910B LG C&D NON 12V			
SW1101	6600VM2002A	SDKEA3 ALPS IEC 250V 8A HORIZONTAL 480G			
FILTER & CRYSTAL					
FB801	125-022R	BI3857 FEELUX 5.7X3.6MM AXIAL 26MM			
FB802	125-022R	BI3857 FEELUX 5.7X3.6MM AXIAL 26MM			
FB802	125-022R	BI3857 FEELUX 5.7X3.6MM AXIAL 26MM			
FB803	125-022R	BI3857 FEELUX 5.7X3.6MM AXIAL 26MM			
T801	150-F06J	SQE2930 18MH PHY TURN			
Z551	6200VCT001B	LT5.5MH BAOTONG 5.5MHZ 166-B02C			

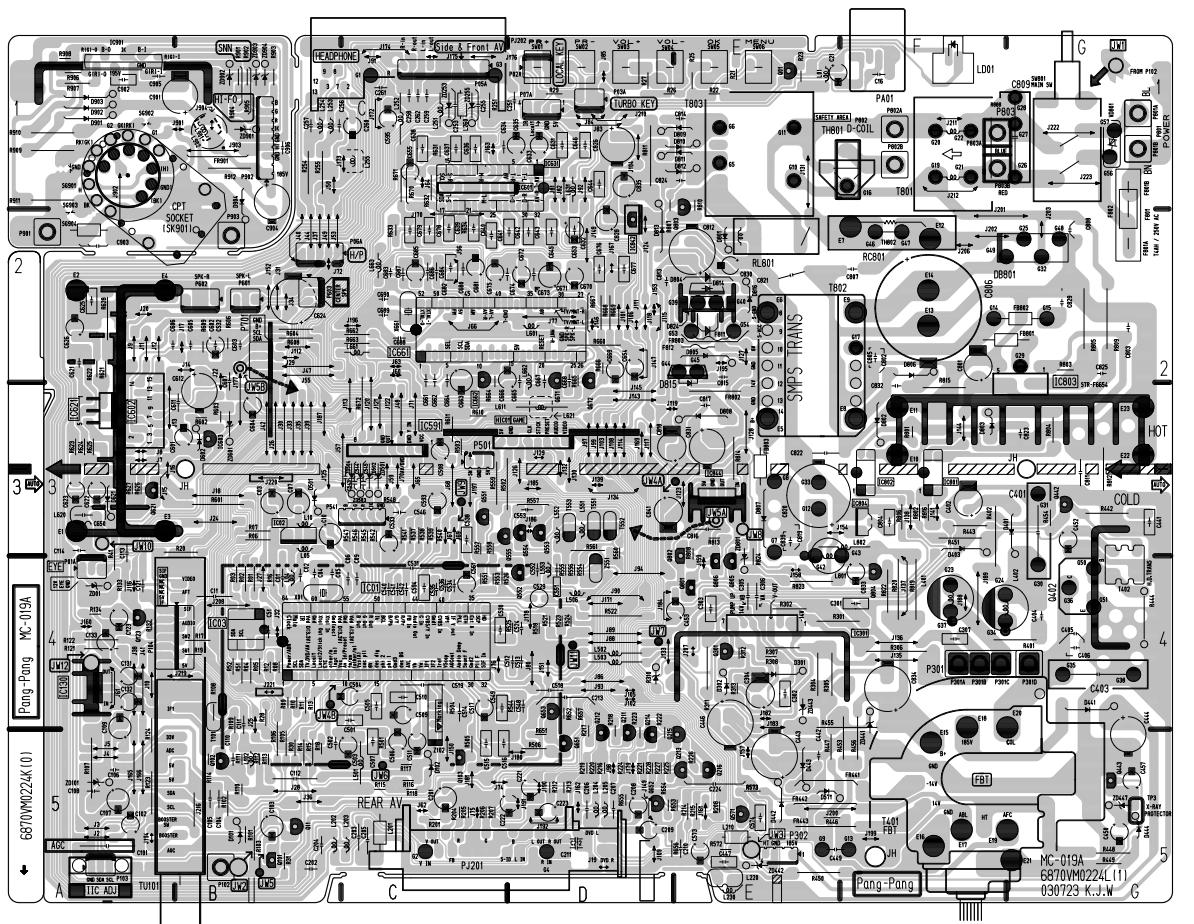
Schematic Diagram of MC-019A



- STEREO

<p>Since this is basic circuit diagram. the value of capacitors and some partial connection are subject to be</p>	<p>Value of resistor.</p>	<p>Observation of voltages and waveforms</p>
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MAIN & CPT



PRINTED CIRCUIT BOARD

COMPONENT LOCATION GUIDE

C01.....B4	C441.....G3	C633.....D1	C826.....D1	F9001.....B1	P701.....B2	R16.....B4	R306.....F4	R625.....A3	SW06.....E1
C02.....B3	C442.....G5	C634.....C1	C828.....D2	HIC01.....D3	P901.....B2	R17.....B4	R307.....E4	R626.....A3	SW01.....G1
C03.....B3	C443.....G5	C635.....C1	C829.....D2	IC01.....B4	P902.....B1	R18.....B4	R308.....E4	R627.....A3	T101.....B4
C04.....B4	C444.....G5	C636.....C1	C830.....D2	IC02.....B4	P903.....B2	R19.....B4	R310.....E4	R628.....A3	T401.....F5
C05.....B4	C445.....G5	C637.....C1	C831.....E3	IC03.....B4	P904.....A4	R20.....A4	R311.....E4	R631.....C1	T402.....G4
C06.....B3	C446.....G5	C638.....C2	C832.....F3	IC301.....E4	P905.....A1	R21.....E1	R312.....E4	R632.....C2	T551.....D3
C07.....B3	C449.....F5	C639.....C2	C833.....F4	IC301.....E4	P906.....A1	R22.....E1	R313.....E4	R633.....C2	T552.....D3
C08.....B3	C450.....F5	C640.....C2	C834.....F4	IC301.....E4	P907.....A1	R23.....E1	R314.....E4	R634.....C2	T553.....D3
C09.....B3	C451.....F5	C641.....C2	C835.....F4	IC601.....D1	P908.....A1	R24.....E1	R442.....F4	R635.....C2	T554.....D3
C10.....B3	C452.....F5	C642.....D2	C839.....E3	IC602.....A3	P909.....A1	R25.....E1	R443.....F3	R636.....C2	T555.....D3
C11.....B4	C453.....E4	C643.....D2	C840.....E3	IC621.....A3	P910.....A1	R26.....E1	R444.....G4	R637.....C2	T556.....D3
C21.....E1	C457.....G5	C644.....D1	C841.....D3	IC631.....A1	P911.....A1	R27.....E1	R445.....F3	R638.....C2	T557.....D3
C51.....B4	C502.....C5	C645.....D2	C842.....F3	IC632.....A2	P912.....B2	R102.....B5	R446.....F5	R639.....C2	T558.....D3
C101.....A5	C503.....C5	C646.....D1	C903.....A2	IC661.....C2	P913.....A4	R30.....B1	R447.....E5	R640.....C2	T559.....D3
C103.....A5	C504.....C5	C647.....D1	C904.....A1	IC662.....C2	P914.....A1	R31.....B1	R448.....G5	R641.....C2	T560.....D3
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C111.....B5	C513.....D4	C651.....D3	C908.....A1	IC666.....C2	P918.....A1	R35.....B1	R452.....G3	R645.....C2	X02.....B4
C112.....B5	C514.....D4	C652.....D3	C909.....A1	IC667.....C2	P919.....A1	R36.....B1	R453.....G3	R646.....C2	X03.....B4
C113.....A4	C515.....C5	C653.....D3	C910.....A1	IC668.....C2	P920.....A1	R37.....B1	R454.....G3	R647.....C2	X04.....B4
C114.....A4	C516.....C5	C654.....D3	C911.....A1	IC669.....C2	P921.....A1	R38.....B1	R455.....G3	R648.....C2	X05.....B4
C121.....C4	C517.....C4	C655.....D3	C912.....A1	IC670.....C2	P922.....A1	R39.....B1	R456.....G3	R649.....C2	X06.....B4
C123.....A4	C518.....C4	C656.....D3	C913.....A1	IC671.....C2	P923.....A1	R40.....B1	R457.....G3	R650.....C2	Z01.....A4
C131.....A4	C519.....C4	C657.....D3	C914.....A1	IC672.....C2	P924.....A1	R41.....B1	R458.....G3	R651.....C2	Z02.....A4
C132.....A4	C520.....C4	C658.....D3	C915.....A1	IC673.....C2	P925.....A1	R42.....B1	R459.....G3	R652.....C2	Z03.....A4
C133.....A4	C521.....C4	C659.....D3	C916.....A1	IC674.....C2	P926.....A1	R43.....B1	R460.....G3	R653.....C2	Z04.....A4
C200.....C5	C522.....C4	C660.....D3	C917.....A1	IC675.....C2	P927.....A1	R44.....B1	R461.....G3	R654.....C2	Z05.....A4
C202.....C5	C523.....C4	C661.....D3	C918.....A1	IC676.....C2	P928.....A1	R45.....B1	R462.....G3	R655.....C2	Z06.....A4
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C208.....C5	C528.....C4	C666.....D3	C923.....A1	IC681.....C2	P933.....A1	R50.....B1	R467.....G3	R660.....C2	Z11.....A4
C209.....C5	C529.....C4	C667.....D3	C924.....A1	IC682.....C2	P934.....A1	R51.....B1	R468.....G3	R661.....C2	Z12.....A4
C210.....C5	C530.....C4	C668.....D3	C925.....A1	IC683.....C2	P935.....A1	R52.....B1	R469.....G3	R662.....C2	Z13.....A4
C211.....C5	C531.....C4	C669.....D3	C926.....A1	IC684.....C2	P936.....A1	R53.....B1	R470.....G3	R663.....C2	Z14.....A4
C212.....C5	C532.....C4	C670.....D3	C927.....A1	IC685.....C2	P937.....A1	R54.....B1	R471.....G3	R664.....C2	Z15.....A4
C213.....C5	C533.....C4	C671.....D3	C928.....A1	IC686.....C2	P938.....A1	R55.....B1	R472.....G3	R665.....C2	Z16.....A4
C214.....C5	C534.....C4	C672.....D3	C929.....A1	IC687.....C2	P939.....A1	R56.....B1	R473.....G3	R666.....C2	Z17.....A4
C215.....C5	C535.....C4	C673.....D3	C930.....A1	IC688.....C2	P940.....A1	R57.....B1	R474.....G3	R667.....C2	Z18.....A4
C216.....C5	C536.....C4	C674.....D3	C931.....A1	IC689.....C2	P941.....A1	R58.....B1	R475.....G3	R668.....C2	Z19.....A4
C217.....C5	C537.....C4	C675.....D3	C932.....A1	IC690.....C2	P942.....A1	R59.....B1	R476.....G3	R669.....C2	Z20.....A4
C218.....C5	C538.....C4	C676.....D3	C933.....A1	IC691.....C2	P943.....A1	R60.....B1	R477.....G3	R670.....C2	Z21.....A4
C219.....C5	C539.....C4	C677.....D3	C934.....A1	IC692.....C2	P944.....A1	R61.....B1	R478.....G3	R671.....C2	Z22.....A4
C220.....C5	C540.....C4	C678.....D3	C935.....A1	IC693.....C2	P945.....A1	R62.....B1	R479.....G3	R672.....C2	Z23.....A4
C221.....C5	C541.....C4	C679.....D3	C936.....A1	IC694.....C2	P946.....A1	R63.....B1	R480.....G3	R673.....C2	Z24.....A4
C222.....C5	C542.....C4	C680.....D3	C937.....A1	IC695.....C2	P947.....A1	R64.....B1	R481.....G3	R674.....C2	Z25.....A4
C223.....C5	C543.....C4	C681.....D3	C938.....A1	IC696.....C2	P948.....A1	R65.....B1	R482.....G3	R675.....C2	Z26.....A4
C224.....C5	C544.....C4	C682.....D3	C939.....A1	IC697.....C2	P949.....A1	R66.....B1	R483.....G3	R676.....C2	Z27.....A4
C225.....C5	C545.....C4	C683.....D3	C940.....A1	IC698.....C2	P950.....A1	R67.....B1	R484.....G3	R677.....C2	Z28.....A4
C226.....C5	C546.....C4	C684.....D3	C941.....A1	IC699.....C2	P951.....A1	R68.....B1	R485.....G3	R678.....C2	Z29.....A4
C227.....C5	C547.....C4	C685.....D3	C942.....A1	IC700.....C2	P952.....A1	R69.....B1	R486.....G3	R679.....C2	Z30.....A4
C228.....C5	C548.....C4	C686.....D3	C943.....A1	IC701.....C2	P953.....A1	R70.....B1	R487.....G3	R680.....C2	Z31.....A4
C229.....C5	C549.....C4	C687.....D3	C944.....A1	IC702.....C2	P954.....A1	R71.....B1	R488.....G3	R681.....C2	Z32.....A4
C230.....C5	C550.....C4	C688.....D3	C945.....A1	IC703.....C2	P955.....A1	R72.....B1	R489.....G3	R682.....C2	Z33.....A4
C231.....C5	C551.....C4	C689.....D3	C946.....A1	IC704.....C2	P956.....A1	R73.....B1	R490.....G3	R683.....C2	Z34.....A4
C232.....C5	C552.....C4	C690.....D3	C947.....A1	IC705.....C2	P957.....A1	R74.....B1	R491.....G3	R684.....C2	Z35.....A4
C233.....C5	C553.....C4	C691.....D3	C948.....A1	IC706.....C2	P958.....A1	R75.....B1	R492.....G3	R685.....C2	Z36.....A4
C234.....C5	C554.....C4	C692.....D3	C949.....A1	IC707.....C2	P959.....A1	R76.....B1	R493.....G3	R686.....C2	Z37.....A4
C235.....C5	C555.....C4	C693.....D3	C950.....A1	IC708.....C2	P960.....A1	R77.....B1	R494.....G3	R687.....C2	Z38.....A4
C236.....C5	C556.....C4	C694.....D3	C951.....A1	IC709.....C2	P961.....A1	R78.....B1	R495.....G3	R688.....C2	Z39.....A4
C237.....C5	C557.....C4	C695.....D3	C952.....A1	IC710.....C2	P962.....A1	R79.....B1	R496.....G3	R689.....C2	Z40.....A4
C238.....C5	C558.....C4	C696.....D3	C953.....A1	IC711.....C2	P963.....A				



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