JVC

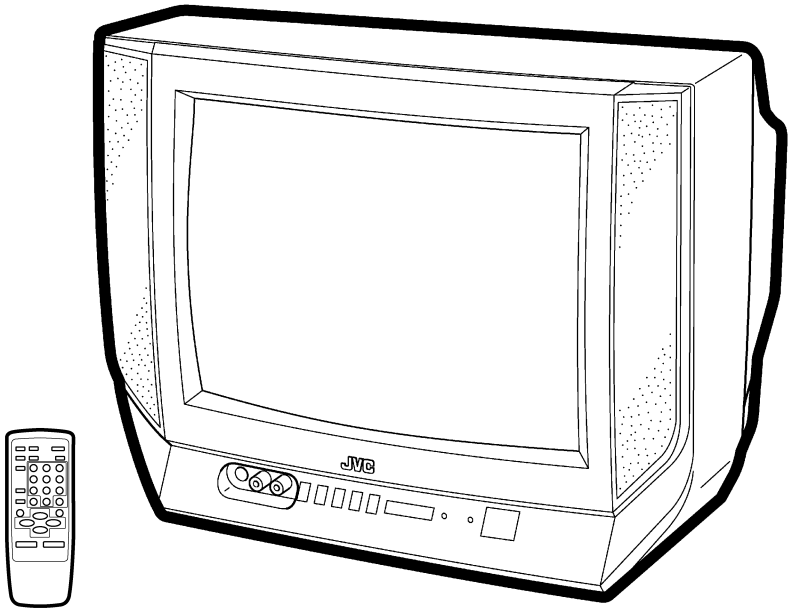
SCHEMATIC DIAGRAMS

COLOUR TELEVISION

AV-14F71/VT

BASIC CHASSIS
CG

CD-ROM No.SML200111



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No.51918
Nov. 2001

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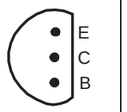
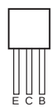
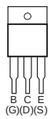
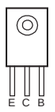
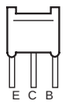
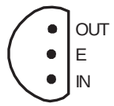
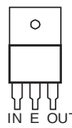
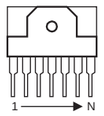
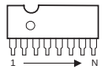
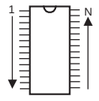
SEMICONDUCTOR SHAPES

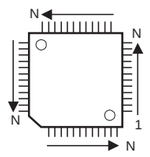
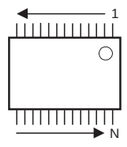
TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR 

IC

BOTTOM VIEW	FRONT VIEW			TOP VIEW
				

CHIP IC

TOP VIEW		
		

STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the ⚠ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal : Colour bar signal

(2)Setting positions of each knob/button and variable resistor : Original setting position when shipped

(3)Internal resistance of tester :DC 20kΩ/V

(4)Oscilloscope sweeping time :H ⇒ 20µS/div
:V ⇒ 5mS/div
:Others ⇒ Sweeping time is specified

(5)Voltage values :All DC voltage values

∗ Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL [EXAMPLE]

● In the PW board :R1209 → R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

● Resistance value

No unit	:[Ω]
K	:[K Ω]
M	:[M Ω]

● Rated allowable power

No indication	:1/ 16 [W]
Others	:As specified

● Type

No indication	:Carbon resistor
OMR	:Oxide metal film resistor
MFR	:Metal film resistor
MPR	:Metal plate resistor
UNFR	:Uninflammable resistor
FR	:Fusible resistor

∗ Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

● Capacitance value

1 or higher	:[pF]
less than 1	:[µF]

● Withstand voltage

No indication	:DC50[V]
Others	:DC withstand voltage [V]
AC indicated	:AC withstand voltage [V]

∗ Electrolytic Capacitors
47/50[Example]:Capacitance value [µF]/withstand voltage[V]

● Type

No indication	:Ceramic capacitor
MM	:Metalized mylar capacitor
PP	:Polypropylene capacitor
MPP	:Metalized polypropylene capacitor
MF	:Metalized film capacitor
TF	:Thin film capacitor
BP	:Bipolar electrolytic capacitor
TAN	:Tantalum capacitor

(3)Coils

No unit	:[µH]
Others	:As specified

(4)Power Supply

 :B1 :B2 (12V)

 :9V  :5V

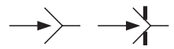
∗ Respective voltage values are indicated

(5)Test point

 :Test point  :Only test point display

(6)Connecting method

 :Connector  :Wrapping or soldering

 :Receptacle

(7)Ground symbol

⊥ :LIVE side ground
⏚ :ISOLATED(NEUTRAL) side ground
⏚ :EARTH ground
▽ :DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏚) side GND.Therefore, care must be taken for the following points.

(1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

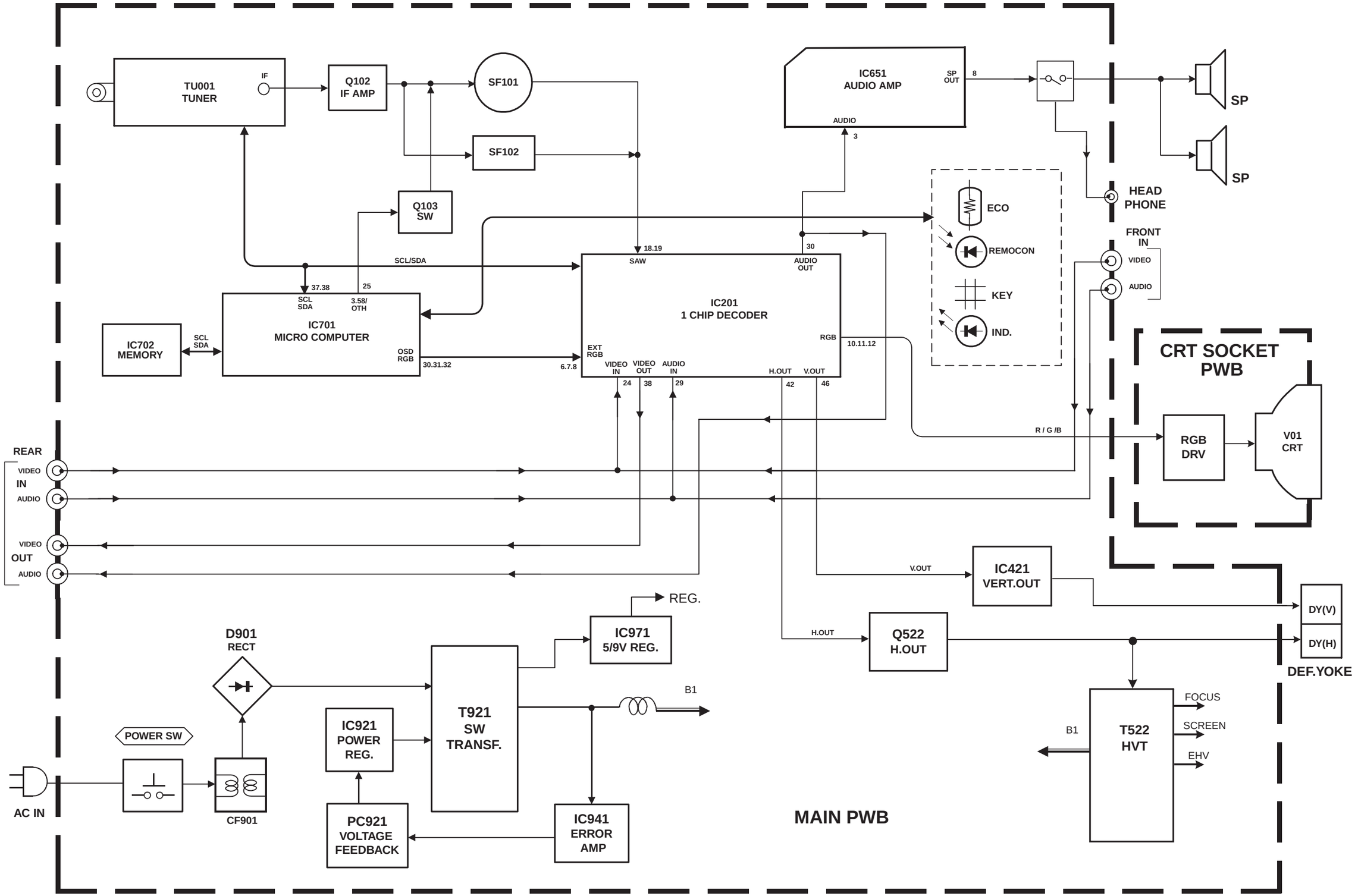
(2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected , a fuse or any parts will be broken.

◇ **Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.**

NOTE

◇ **Due improvement in performance, some part numbers show in the circuit diagram may not agree with those indicated in the part list.**
When ordering parts, please use the numbers that appear in the Parts List.

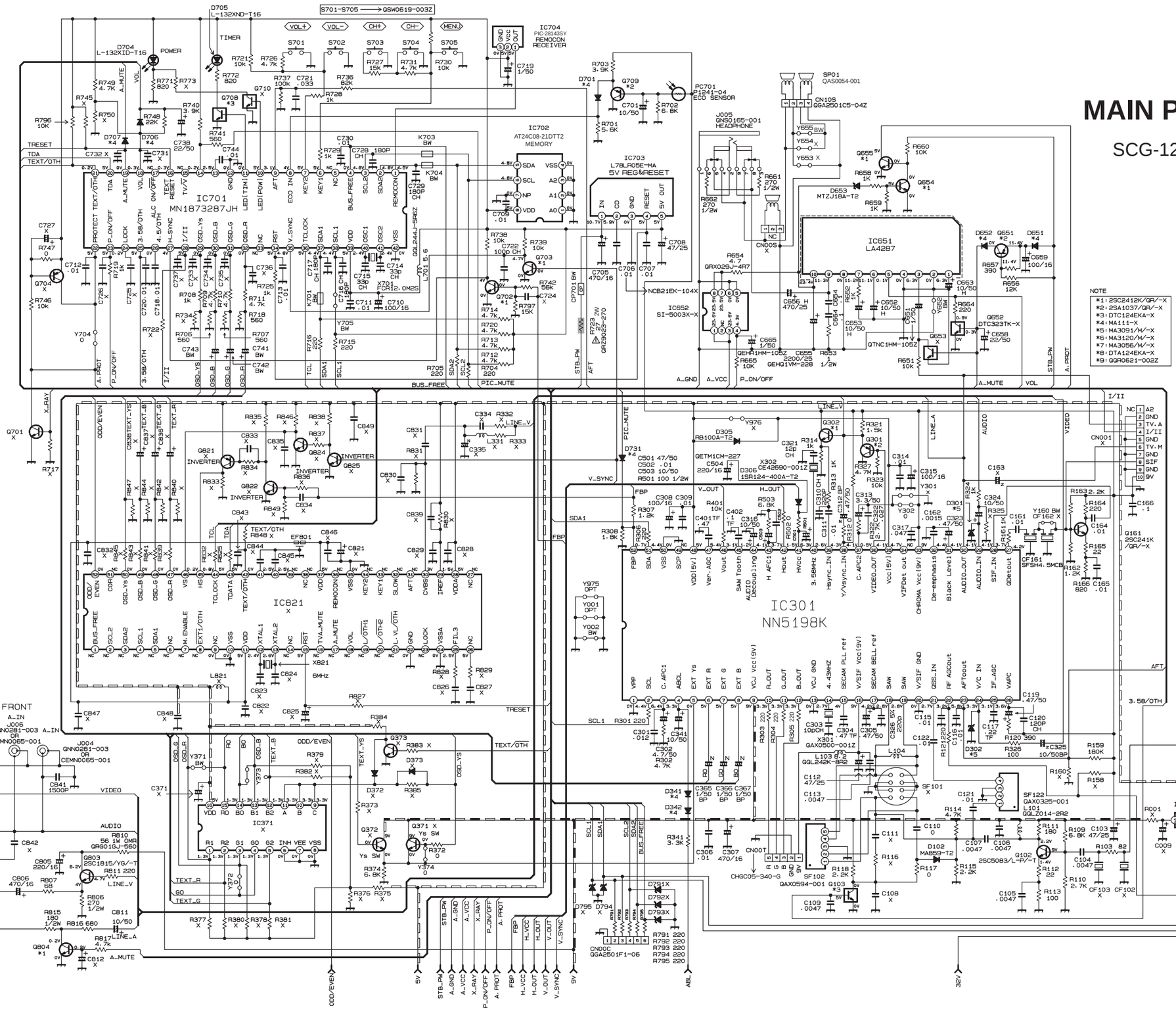
BLOCK DIAGRAM



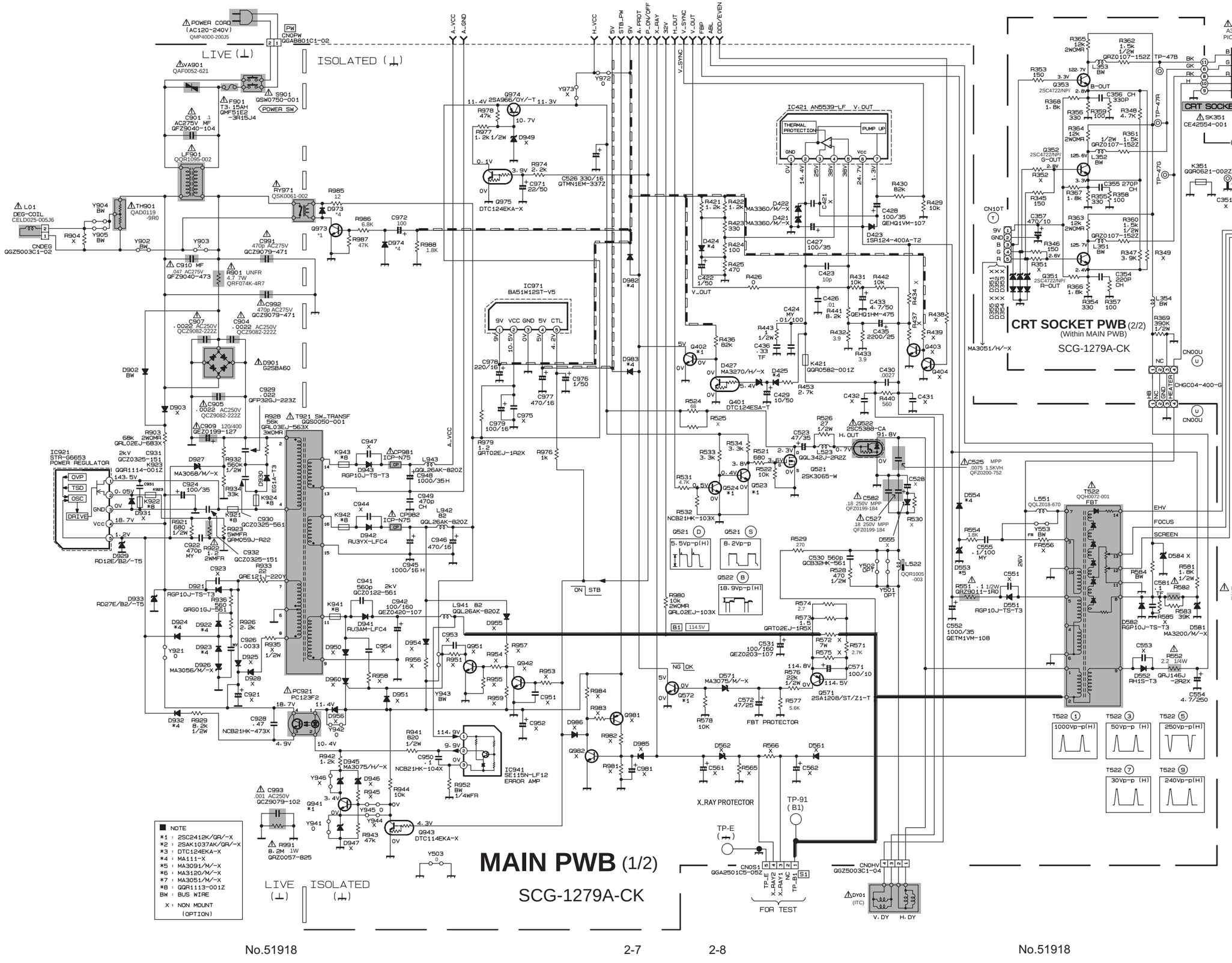
CIRCUIT DIAGRAMS *MAIN PWB CIRCUIT DIAGRAM* (1/2)

MAIN PWB

SCG-1279A-CK



MAIN PWB CIRCUIT DIAGRAM (2/2)



■ NOTE
*1 : 2SC2412K/QR/-X
*2 : 2SAK1037AK/QR/-X
*3 : DTC124EKA-X
*4 : MA111-X
*5 : MA3091/M/-X
*6 : MA3120/M/-X
*7 : MA3051/M/-X
*8 : QQR1113-001Z
BW : BUS WIRE
X : NON MOUNT (OPTION)

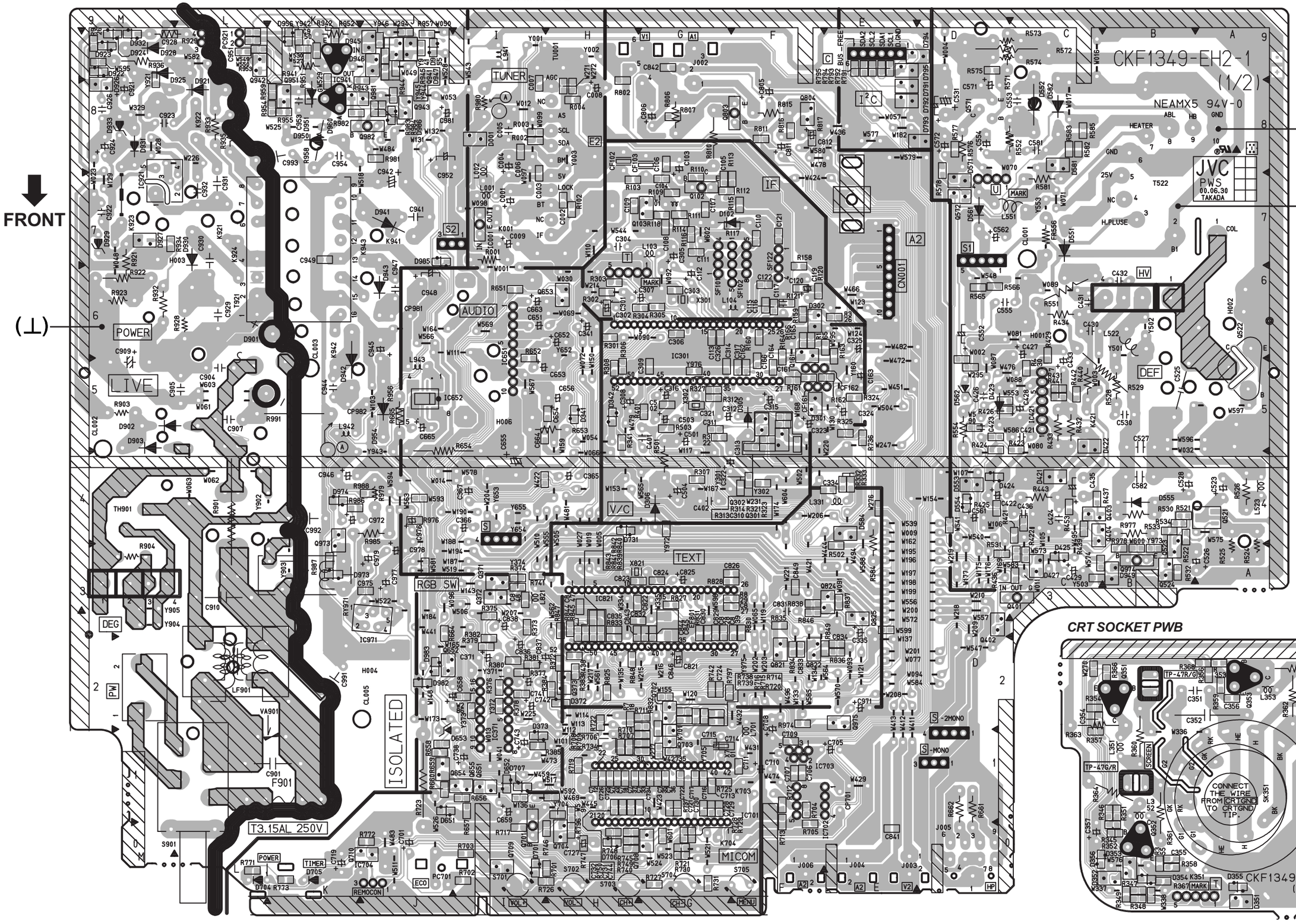
LIVE (⊥) ISOLATED (⊥)

MAIN PWB (1/2)

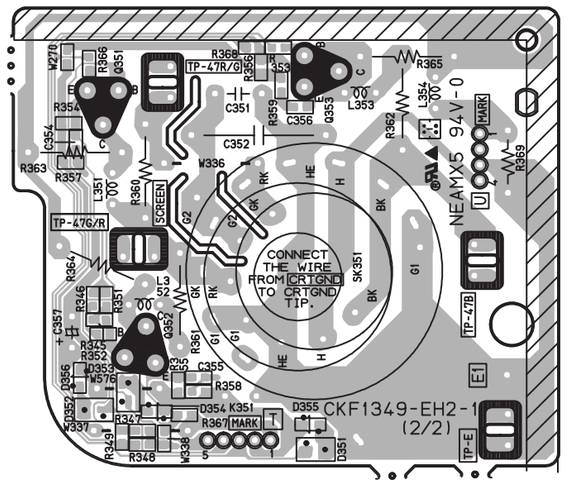
SCG-1279A-CK

PATTERN DIAGRAMS *MAIN PWB & CRT SOKET PWB PATTERN*

MAIN PWB



CRT SOCKET PWB



VP0111
DP6060

JVC

VICTOR COMPANY OF JAPAN, LIMITED

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AV14F71VT-H #999

Printed in Japan
VP 0111
DP6060

PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety. Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are filled with lines —— in the Parts No. columns will not be supplied.
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

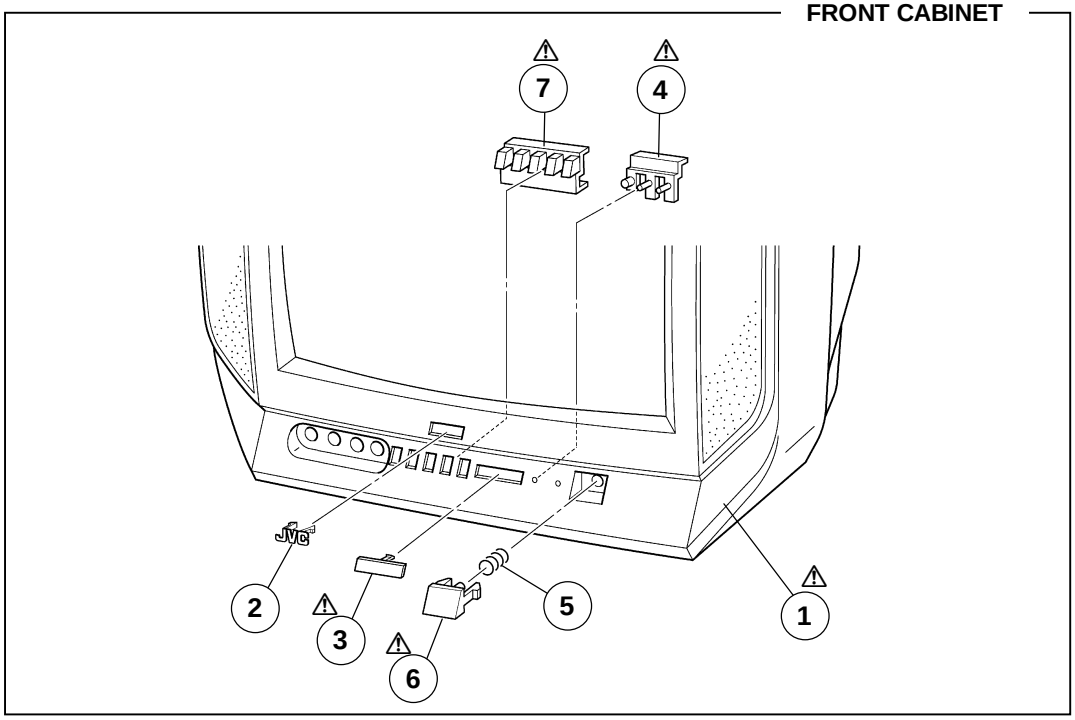
TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

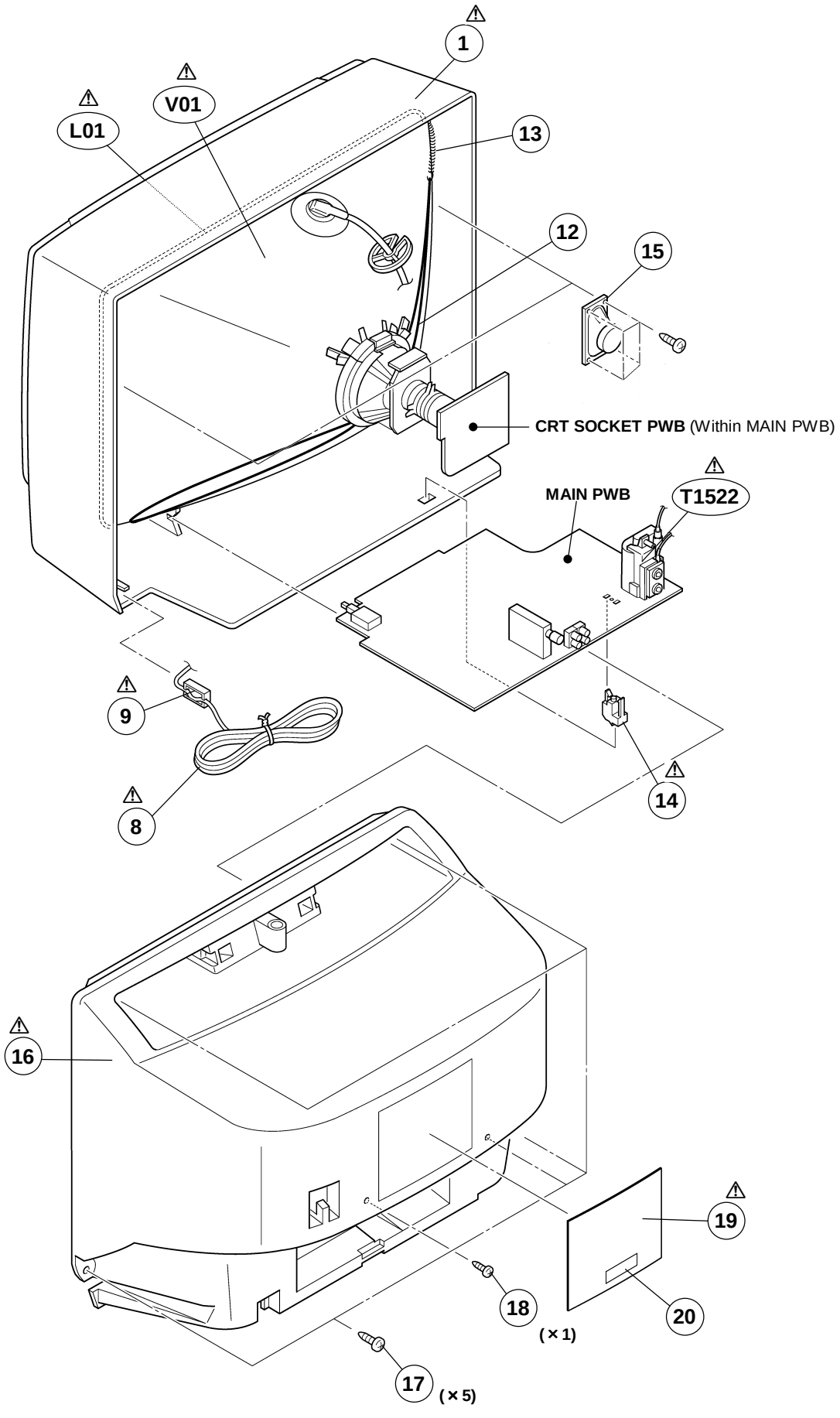
CONTENTS

EXPLODED VIEW PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description
⚠	V01	A34JLL91X84	PICTURE TUBE(C)	Inc.DY,PC MAGNET, WEDGE
⚠	L01	CELD025-005J6	DEG.COIL	
⚠	T1522	QQH0072-001	H.V.TRANSF.	
⚠	1	LC10831-016A-HK	FRONT CABINET	
	2	CM46880-002-H	JVC MARK	
⚠	3	LC30617-001C-H	E.E. WINDOW	
⚠	4	LC30618-001B-H	L.E.D.LENS	
	5	CM35235-003-H	SPRING	
⚠	6	LC30616-004A-H	POWER KNOB	
⚠	7	LC20292-004A-H	CONTROL KNOB	
⚠	8	QMP40D0-200J5	POWER CORD	
⚠	9	CM47005-A01-H	POWER CORD CLAMP	
	12	CHGB0016-0A	BRAIDED WIRE	
	13	A48457-4-S	SPRING	
⚠	14	CM48144-002-H	PWB STOPPER	
	15	QAS0054-001	SPEAKER	(×2)SP01
⚠	16	CM12961-D01-KH	REAR COVER	
	17	QYSBSFG4016Z	TAPPING SCREW	(×5)
	18	QYSBSF3010Z	TAPPING SCREW	(×1)
⚠	19	GG20016-003A-E	RATING LABEL	
	20	GG40015-001A-E	SERIAL LABEL	

EXPLODED VIEW




1
V01
L01
13
12
15
CRT SOCKET PWB (Within MAIN PWB)
MAIN PWB
T1522
9
8
14
16
19
18
(× 1)
20
17
(× 5)

PRINTED WIRING BOARD PARTS LIST

MAIN P.W. BOARD ASS'Y (SCG-1279A-CK)

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R1002-03	NRSA02J-221X	MG R	220Ω 1/10W J
	R1004	NRSA02J-563X	MG R	56kΩ 1/10W J
	R1102	NRSA02J-750X	MG R	75Ω 1/10W J
	R1103	NRSA02J-820X	MG R	82Ω 1/10W J
	R1109	NRSA02J-682X	MG R	6.8kΩ 1/10W J
	R1110	NRSA02J-272X	MG R	2.7kΩ 1/10W J
	R1111	NRSA02J-181X	MG R	180Ω 1/10W J
	R1112	NRSA02J-220X	MG R	22Ω 1/10W J
	R1113	NRSA02J-101X	MG R	100Ω 1/10W J
	R1114	NRSA02J-472X	MG R	4.7kΩ 1/10W J
	R1115	NRSA02J-222X	MG R	2.2kΩ 1/10W J
	R1117	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
	R1118	NRSA02J-222X	MG R	2.2kΩ 1/10W J
	R1120	NRSA02J-391X	MG R	390Ω 1/10W J
	R1121	NRSA02J-221X	MG R	220Ω 1/10W J
	R1159	NRSA02J-184X	MG R	180kΩ 1/10W J
	R1161	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1162	NRSA02J-122X	MG R	1.2kΩ 1/10W J
	R1163	NRSA02J-222X	MG R	2.2kΩ 1/10W J
	R1164	NRSA02J-221X	MG R	220Ω 1/10W J
	R1165	NRSA02J-220X	MG R	22Ω 1/10W J
	R1166	NRSA02J-821X	MG R	820Ω 1/10W J
	R1301	NRSA02J-221X	MG R	220Ω 1/10W J
	R1302	NRSA02J-472X	MG R	4.7kΩ 1/10W J
	R1303-06	NRSA02J-221X	MG R	220Ω 1/10W J
	R1307	NRSA02J-122X	MG R	1.2kΩ 1/10W J
	R1308	NRSA02J-182X	MG R	1.8kΩ 1/10W J
	R1312	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
	R1313	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1314	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1321	NRSA02J-152X	MG R	1.5kΩ 1/10W J
	R1322	NRSA02J-272X	MG R	2.7kΩ 1/10W J
	R1323	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1324	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1326	NRSA02J-101X	MG R	100Ω 1/10W J
	R1327	NRSA02J-475X	MG R	4.7MΩ 1/10W J
	R1341	NRSA02J-332X	MG R	3.3kΩ 1/10W J
	R1345-46	NRSA02J-151X	MG R	150Ω 1/10W J
	R1347	NRSA02J-392X	MG R	3.9kΩ 1/10W J
	R1348	NRSA02J-472X	MG R	4.7kΩ 1/10W J
	R1353	NRSA02J-151X	MG R	150Ω 1/10W J
	R1354-56	NRSA02J-331X	MG R	330Ω 1/10W J
	R1357-59	NRSA02J-101X	MG R	100Ω 1/10W J
	R1360-62	QRZ0107-152Z	C R	1.5kΩ 1/2W K
	R1363-65	QRL029J-123	OM R	12kΩ 2W J
	R1366	NRSA02J-182X	MG R	1.8kΩ 1/10W J
	R1367	NRSA02J-182X	MG R	1.8kΩ 1/10W J
	R1368	NRSA02J-182X	MG R	1.8kΩ 1/10W J
	R1369	QRE122J-394	C R	390kΩ 1/2W J
	R1372	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
	R1374	NRSA02J-682X	MG R	6.8kΩ 1/10W J
	R1401	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1421-22	NRSA02J-122X	MG R	1.2kΩ 1/10W J
	R1423	NRSA02J-331X	MG R	330Ω 1/10W J
	R1424	NRSA02J-101X	MG R	100Ω 1/10W J
	R1425	NRSA02J-471X	MG R	470Ω 1/10W J
	R1426	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
	R1429	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1430	NRSA02J-823X	MG R	82kΩ 1/10W J
	R1431	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1432-33	QRE122J-3R9	C R	3.9Ω 1/2W J
	R1436	NRSA02J-823X	MG R	82kΩ 1/10W J
	R1440	QRE122J-561	C R	560Ω 1/2W J
	R1441	NRSA02J-822X	MG R	8.2kΩ 1/10W J
	R1442	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1443	QRE122J-1R0	C R	1.0Ω 1/2W J
	R1453	NRSA02J-272X	MG R	2.7kΩ 1/10W J
	R1501	QRE122J-101	C R	100Ω 1/2W J

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R1502	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
	R1503	NRSA02J-682X	MG R	6.8kΩ 1/10W J
	R1521	NRSA02J-681X	MG R	680Ω 1/10W J
	R1522	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1524	QRL03EJ-680X	OM R	68Ω 3W J
	R1526	QRE121J-270Y	C R	27Ω 1/2W J
	R1528	QRE122J-471	C R	470Ω 1/2W J
	R1529	QRG029J-271	OM R	270 Ω 2W J
	R1531	NRSA02J-472X	MG R	4.7kΩ 1/10W J
	R1532	NCB21HK-103X	C CAP.	0.01µF 50V K
	R1533-34	NRSA02J-332X	MG R	3.3kΩ 1/10W J
⚠	R1551	QRZ9011-1R0	F R	1.0 Ω 1/2W J
⚠	R1552	QRJ146J-2R2X	C R	2.2Ω 1/4W J
	R1554	QRE122J-182	C R	1.8kΩ 1/2W J
	R1571	QRE122J-272	C R	2.7kΩ 1/2W J
	R1573	QRT02EJ-1R5X	MF R	1.5Ω 2W J
	R1574	QRT02EJ-2R7X	MF R	2.7Ω 2W J
	R1576	QRE122J-223	C R	22kΩ 1/2W J
	R1577	NRSA02J-562X	MG R	5.6kΩ 1/10W J
	R1578	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1581	QRE122J-182	C R	1.8kΩ 1/2W J
⚠	R1582	NRSA02J-273X	MG R	27kΩ 1/10W J
	R1583	NRSA02J-393X	MG R	39kΩ 1/10W J
	R1651	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1652	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1653	QRE122J-1R0	C R	1.0Ω 1/2W J
	R1654	QRX029J-4R7	MF R	4.7Ω 2W J
	R1656	NRSA02J-123X	MG R	12kΩ 1/10W J
	R1657	NRSA02J-391X	MG R	390Ω 1/10W J
	R1658	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1659	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1660	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1661-62	QRE122J-271	C R	270Ω 1/2W J
	R1664	NRSA02J-221X	MG R	220Ω 1/10W J
	R1665	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1701	NRSA02J-562X	MG R	5.6kΩ 1/10W J
	R1702	NRSA02J-682X	MG R	6.8kΩ 1/10W J
	R1703	NRSA02J-392X	MG R	3.9kΩ 1/10W J
	R1704-05	NRSA02J-221X	MG R	220Ω 1/10W J
	R1706-07	NRSA02J-561X	MG R	560Ω 1/10W J
	R1708	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1709-14	NRSA02J-472X	MG R	4.7kΩ 1/10W J
	R1715-16	NRSA02J-221X	MG R	220Ω 1/10W J
	R1718	NRSA02J-561X	MG R	560Ω 1/10W J
	R1719	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1720	NRSA02J-472X	MG R	4.7kΩ 1/10W J
	R1721	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1723	QRZ9023-270	F R	27 Ω 2W J
	R1725	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1726	NRSA02J-472X	MG R	4.7kΩ 1/10W J
	R1727	NRSA02J-153X	MG R	15kΩ 1/10W J
	R1728	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1729	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1730	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1731	NRSA02J-472X	MG R	4.7kΩ 1/10W J
	R1736	NRSA02J-823X	MG R	82kΩ 1/10W J
	R1737	NRSA02J-104X	MG R	100kΩ 1/10W J
	R1738-39	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1740	NRSA02J-392X	MG R	3.9kΩ 1/10W J
	R1741	NRSA02J-561X	MG R	560Ω 1/10W J
	R1742	NRSA02J-563X	MG R	56kΩ 1/10W J
	R1746	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1747	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
	R1748	NRSA02J-223X	MG R	22kΩ 1/10W J
	R1749	NRSA02J-472X	MG R	4.7kΩ 1/10W J
	R1771-72	NRSA02J-821X	MG R	820Ω 1/10W J
	R1791-95	NRSA02J-221X	MG R	220Ω 1/10W J
	R1796	NRSA02J-103X	MG R	10kΩ 1/10W J

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R1797	NRSA02J-153X	MG R	15kΩ 1/10W J
	R1802	NRSA02J-750X	MG R	75Ω 1/10W J
	R1806	QRE122J-271	C R	270Ω 1/2W J
	R1807	NRSA02J-680X	MG R	68Ω 1/10W J
	R1810	QRG01GJ-560	OM R	56Ω 1W J
	R1811	NRSA02J-221X	MG R	220Ω 1/10W J
	R1815	QRE121J-181Y	C R	180Ω 1/2W J
	R1816	NRSA02J-681X	MG R	680Ω 1/10W J
	R1817	NRSA02J-472X	MG R	4.7kΩ 1/10W J
⚠	R1901	QRF074K-4R7	UNF R	4.7Ω 7W K
	R1903	QRL02EJ-683X	OM R	68kΩ 2W J
	R1921	QRE122J-681	C R	680Ω 1/2W J
⚠	R1922	QRT029J-1R2	MF R	1.2Ω 2W J
	R1923	QRM059J-R22	MP R	0.22Ω 5W J
	R1926	NRSA02J-222X	MG R	2.2kΩ 1/10W J
	R1928	QRL03EJ-563X	OM R	56kΩ 3W J
	R1929	QRE121J-822Y	C R	8.2kΩ 1/2W J
	R1932	QRE122J-564	C R	560kΩ 1/2W J
	R1933	QRE121J-220Y	C R	22Ω 1/2W J
	R1934	NRSA02J-333X	MG R	33kΩ 1/10W J
	R1936	QRG01GJ-561	OM R	560Ω 1W J
	R1941	QRE122J-821	C R	820Ω 1/2W J
	R1942	NRSA02J-122X	MG R	1.2kΩ 1/10W J
	R1943	NRSA02J-473X	MG R	47kΩ 1/10W J
	R1944	NRSA02J-103X	MG R	10kΩ 1/10W J
	R1974	NRSA02J-222X	MG R	2.2kΩ 1/10W J
	R1976	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1977	QRE122J-122	C R	1.2kΩ 1/2W J
	R1978	NRSA02J-473X	MG R	47kΩ 1/10W J
	R1979	QRT02EJ-1R2X	MF R	1.2Ω 2W J
	R1980	QRL02EJ-103X	OM R	10kΩ 2W J
	R1985	QRE121J-120Y	C R	12Ω 1/2W J
	R1986	NRSA02J-682X	MG R	6.8kΩ 1/10W J
	R1987	NRSA02J-473X	MG R	47kΩ 1/10W J
	R1988	NRSA02J-182X	MG R	1.8kΩ 1/10W J
⚠	R1991	QRZ0057-825	C R	8.2MΩ 1W J
	CAPACITOR			
	C1001	QETM1HM-106	E CAP.	10µF 50V M
	C1002	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1004	QETM1CM-227	E CAP.	220µF 16V M
	C1005	QFV81HJ-104	MF CAP.	0.1µF 50V J
	C1008	QETM1HM-475	E CAP.	4.7µF 50V M
	C1103	QETM1EM-476	E CAP.	47µF 25V M
	C1104-07	NCB21HK-472X	C CAP.	4700pF 50V K
	C1109	NCB21HK-472X	C CAP.	4700pF 50V K
	C1110	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
	C1112	QETM1EM-476	E CAP.	47µF 25V M
	C1113	NCB21HK-472X	C CAP.	4700pF 50V K
	C1115-16	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1117	QFV81HJ-224	MF CAP.	0.22µF 50V J
	C1119	QETM1HM-474	E CAP.	0.47µF 50V M
	C1120	NDC21HJ-121X	C CAP.	120pF 50V J
	C1121-22	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1161	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1162	NCB21HK-152X	C CAP.	1500pF 50V K
	C1164-65	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1166	NCB21HK-104X	C CAP.	0.1µF 50V K
	C1301	NCB21HK-123X	C CAP.	0.012µF 50V K
	C1302	QETM1HM-475	E CAP.	4.7µF 50V M
	C1303	NDC21HJ-100X	C CAP.	10pF 50V J
	C1304	QFV81HJ-474	MF CAP.	0.47µF 50V J
	C1305	QETM1HM-474	E CAP.	0.47µF 50V M
	C1306	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1307	QETM1CM-477	E CAP.	470µF 16V M
	C1308	QETM1CM-107	E CAP.	100µF 16V M
	C1309	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1310	NDC21HJ-221X	C CAP.	220pF 50V J
	C1311	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1312	QENC1HM-474Z	BP E CAP.	0.47µF 50V M

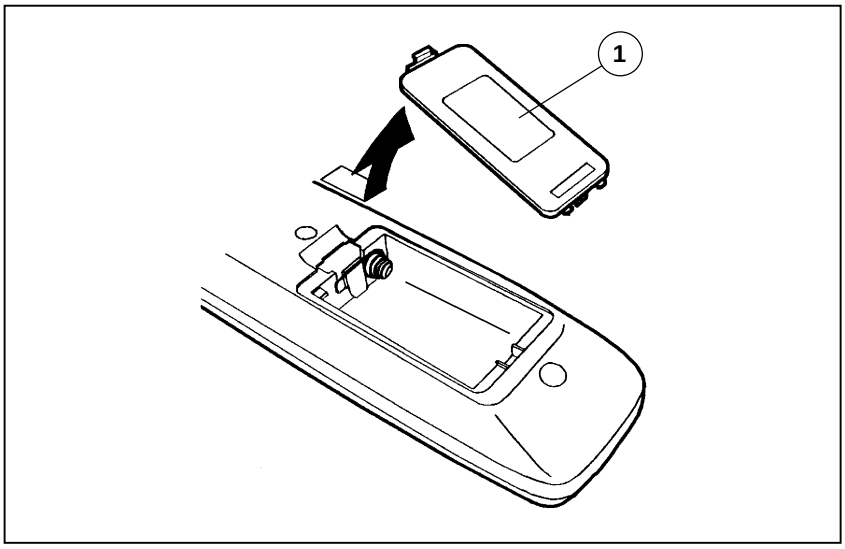
⚠	Symbol No.	Part No.	Part Name	Description
	CAPACITOR			
	C1313	QETN1HM-335Z	E CAP.	3.3µF 50V M
	C1314	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1315	QETM1CM-107	E CAP.	100µF 16V M
	C1316	QETM1HM-106	E CAP.	10µF 50V M
	C1317	NCB21HK-473X	C CAP.	0.047µF 50V K
	C1321	NDC21HJ-120X	C CAP.	12pF 50V J
	C1322	NCB21HK-273X	C CAP.	0.027µF 50V K
	C1323	QETM1HM-474	E CAP.	0.47µF 50V M
	C1324	QETM1HM-106	E CAP.	10µF 50V M
	C1325	QENB1HM-106	BP E CAP.	10µF 50V M
	C1326	NCS21HJ-221X	C CAP.	220pF 50V J
	C1341	QETM1HM-106	E CAP.	10µF 50V M
⚠	C1352	QFZ0097-103	MM CAP.	0.01µF 1250V K
	C1354	NDC21HJ-221X	C CAP.	220pF 50V J
	C1355	NDC21HJ-271X	C CAP.	270pF 50V J
	C1356	NDC21HJ-331X	C CAP.	330pF 50V J
	C1357	QETN1AM-477Z	E CAP.	470µF 10V M
	C1365-67	QENB1HM-105	BP E CAP.	1µF 50V M
	C1401	QFV81HJ-474	MF CAP.	0.47µF 50V J
	C1402	QFV81HJ-104	MF CAP.	0.1µF 50V J
	C1422	QETM1HM-105	E CAP.	1µF 50V M
	C1423	QCS32HJ-100Z	C CAP.	10pF 500V J
	C1424	QFLB2AJ-103	M CAP.	0.01µF 100V J
	C1426	QFLB1HJ-103	M CAP.	0.01µF 50V J
	C1427	QETM1VM-107	E CAP.	100µF 35V M
	C1428	QEHQ1VM-107	E CAP.	100µF 35V M
	C1429	QETM1HM-106	E CAP.	10µF 50V M
	C1430	QFN32AJ-272Z	M CAP.	2700pF 100V J
	C1433	QEHQ1HM-475	E CAP.	4.7µF 50V M
	C1435	QETM1EM-228	E CAP.	2200µF 25V M
	C1436	QFV81HJ-334	MF CAP.	0.33µF 50V J
	C1501	QETM1HM-476	E CAP.	47µF 50V M
	C1502	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1503	QETM1HM-106	E CAP.	10µF 50V M
	C1504	QETM1CM-227	E CAP.	220µF 16V M
	C1523	QTMN1VM-476Z	E CAP.	47µF 35V M
⚠	C1525	QFZ0200-752	MPP CAP.	7500pF1.5kVH ±3%
	C1526	QTMN1EM-337Z	E CAP.	330µF 25V M
⚠	C1527	QFZ0199-184	MPP CAP.	0.18µF 250V J
	C1530	QCB32HK-561	C CAP.	560pF 500V K
	C1531	QEZ0203-107	E CAP.	100µF 160V M
	C1552	QETM1VM-108	E CAP.	1000µF 35V M
	C1554	QETM2EM-475	E CAP.	4.7µF 250V M
	C1555	QFLC2AJ-104Z	M CAP.	0.1µF 100V J
	C1571	QETM1AM-107	E CAP.	100µF 10V M
	C1572	QETM1EM-476	E CAP.	47µF 25V M
	C1581	QFV81HJ-104	MF CAP.	0.1µF 50V J
⚠	C1582	QFZ0199-184	MPP CAP.	0.18µF 250V J
	C1651	QTNC1HM-105Z	E CAP.	1.0µF 50V M
	C1652-53	QEHQ1HM-106	E CAP.	10µF 50V M
	C1654	NCB21HK-104X	C CAP.	0.1µF 50V K
	C1655	QEHQ1VM-228	E CAP.	2200µF 35V M
	C1656	QEHQ1EM-477	E CAP.	470µF 25V M
	C1657	QCB31HK-103	C CAP.	0.01µF 50V K
	C1658	QETM1HM-226	E CAP.	22µF 50V M
	C1659	QETM1CM-107	E CAP.	100µF 16V M
	C1663	QEHQ1HM-106	E CAP.	10µF 50V M
	C1664	NCB21HK-104X	C CAP.	0.1µF 50V K
	C1665	QEHR1HM-105Z	E CAP.	1.0µF 50V M
	C1701	QETM1HM-106	E CAP.	10µF 50V M
	C1705	QETM1CM-477	E CAP.	470µF 16V M
	C1706	NCB21EK-104X	C CAP.	0.1µF 25V K
	C1707	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1708	QETM1EM-476	E CAP.	47µF 25V M
	C1709	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1710	QETM1CM-107	E CAP.	100µF 16V M
	C1711-13	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1714-15	NDC21HJ-330X	C CAP.	33pF 50V J
	C1716-17	NDC21HJ-181X	C CAP.	180pF 50V J
	C1718	NCB21HK-103X	C CAP.	0.01µF 50V K
	C1719	QETM1HM-105	E CAP.	1µF 50V M

⚠	Symbol No.	Part No.	Part Name	Description
	CAPACITOR			
	C1720	NCB21HK-103X	C CAP.	0.01μF 50V K
	C1721	NCB21HK-333X	C CAP.	0.033μF 50V K
	C1722	NDC21HJ-101X	C CAP.	100pF 50V J
	C1728-29	NDC21HJ-181X	C CAP.	180pF 50V J
	C1730	NCB21HK-103X	C CAP.	0.01μF 50V K
	C1738	QETM1HM-226	E CAP.	22μF 50V M
	C1744	NCB21HK-103X	C CAP.	0.01μF 50V K
	C1805	QETM1CM-227	E CAP.	220μF 16V M
	C1806	QETM1CM-477	E CAP.	470μF 16V M
	C1811	QETM1HM-106	E CAP.	10μF 50V M
	C1841	NCB21HK-152X	C CAP.	1500pF 50V K
⚠	C1901	QFZ9040-104	MF CAP.	0.1μFAC275V M
⚠	C1904	QCZ9082-222Z	C CAP.	2200pFAC250V M
⚠	C1905	QCZ9082-222Z	C CAP.	2200pFAC250V M
⚠	C1907	QCZ9082-222Z	C CAP.	2200pFAC250V M
⚠	C1909	QEZ0199-127	E CAP.	120μF 400V M
⚠	C1910	QFZ9040-473	MF CAP.	0.047μFAC275V M
	C1922	QFLB1HJ-471	M CAP.	470pF 50V J
	C1924	QETM1VM-107	E CAP.	100μF 35V M
	C1926	QFLC1HJ-332Z	M CAP.	3300pF 50V J
	C1928	NCB21HK-473X	C CAP.	0.047μF 50V K
	C1929	QFP32GJ-223Z	PP CAP.	0.022μF 400V J
	C1930	QCZ0325-561	C CAP.	560pF 2kV K
	C1931-32	QCZ0325-151	C CAP.	150pF 2kV K
	C1941	QCZ0122-561	C CAP.	560pF 2kV K
	C1942	QEZ0420-107	E CAP.	100μF 160V M
	C1945	QEHQ1CM-108	E CAP.	1000μF 16V M
	C1946	QEHR1CM-477Z	E CAP.	470μF 16V M
	C1948	QEHQ1VM-108	E CAP.	1000μF 35V M
	C1949	NDC21HJ-471X	C CAP.	470pF 50V J
	C1950	NCB21HK-104X	C CAP.	0.1μF 50V K
	C1971	QETM1HM-226	E CAP.	22μF 50V M
	C1972	QETM1CM-107	E CAP.	100μF 16V M
	C1976	QETM1HM-105	E CAP.	1μF 50V M
	C1977	QETM1CM-477	E CAP.	470μF 16V M
	C1978	QETM1CM-227	E CAP.	220μF 16V M
	C1979	QETM1CM-107	E CAP.	100μF 16V M
⚠	C1991	QCZ9079-471	C CAP.	470pFAC250V K
⚠	C1992	QCZ9079-471	C CAP.	470pFAC250V K
⚠	C1993	QCZ9079-102	C CAP.	1000pFAC250V M
	TRANSFORMER			
⚠	T1522	QQH0072-001	H.V.TRANSF.	
⚠	T1921	QQS0050-001	SWITCH.TRANSF.	
	COIL			
	L1001	QQL242K-8R2	COIL	8.2μH K
	L1101	QQLZ014-2R2	PEAKING COIL	
	L1103	QQL242K-8R2	COIL	8.2μH K
	L1522	QQR1005-003	LINEARITY COIL	
	L1523	QQL342J-2R2Z	INDUCTOR	
	L1551	QQLZ018-670	HEATER CHOKE	
	L1701	QQL244J-5R6Z	COIL	5.6μH J
	L1941-43	QQL26AK-820Z	COIL	82μH K
	DIODE			
	D1001	MA3330/L/-X	ZENER DIODE	
	D1102	1SS85-T2	SI.DIODE	
	D1301-02	MA3091/M/-X	ZENER DIODE	
	D1305	RB100A-T2	SI.DIODE	
	D1306	1SR124-400A-T2	SI.DIODE	
	D1341-42	MA111-X	SI.DIODE	
	D1421-22	MA3360/M/-X	ZENER DIODE	
	D1423	1SR124-400A-T2	SI.DIODE	
	D1424-25	MA111-X	SI.DIODE	
	D1427	MA3270/H/-X	ZENER DIODE	
	D1551	RGP10J-TS-T3	SI.DIODE	
	D1552	RH1S-T3	SI.DIODE	
	D1553	MA3091/M/-X	ZENER DIODE	
	D1554	MA111-X	SI.DIODE	
	D1571	MA3075/M/-X	ZENER DIODE	

⚠	Symbol No.	Part No.	Part Name	Description
	DIODE			
	D1581	MA3200/M/-X	ZENER DIODE	
	D1582	RGP10J-TS-T3	SI.DIODE	
	D1651-52	MA111-X	SI.DIODE	
	D1653	MTZJ18A-T2	ZENER DIODE	
	D1701	MA111-X	SI.DIODE	
	D1704	L-132XID-T16	L.E.D.(RED)	
	D1705	L-132XND-T16	L.E.D.(RED)	
	D1706-07	MA111-X	SI.DIODE	
	D1731	MA111-X	SI.DIODE	
⚠	D1901	G2SBA60	BRIDGE DIODE	
	D1921	RGP10J-TS-T3	SI.DIODE	
	D1922-24	MA111-X	SI.DIODE	
	D1926	MA3056/M/-X	ZENER DIODE	
	D1927	MA3068/M/-X	ZENER DIODE	
	D1929	RD12E/B2/-T5	ZENER DIODE	
	D1930	EG1A-T3	SI.DIODE	
	D1932	MA111-X	SI.DIODE	
	D1933	RD27E/B2/-T5	ZENER DIODE	
	D1941	RU3AM-LFC4	SI.DIODE	
	D1942	RU3YX-LFC4	SI.DIODE	
	D1943	RGP10J-TS-T3	SI.DIODE	
	D1945	MA3075/H/-X	ZENER DIODE	
	D1973-74	MA111-X	SI.DIODE	
	D1982-83	MA111-X	SI.DIODE	
	TRANSISTOR			
	Q1102	2SC5083/L-P/-T	SI.TRANSISTOR	
	Q1103	DTC124EKA-X	DIGI.TRANSISTOR	
	Q1161	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1301	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q1302	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1351-53	2SC4722/NP/	SI.TRANSISTOR	
	Q1401	DTC124ESA-T	DIGI.TRANSISTOR	
	Q1402	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1521	2SK3065-W	F.E.T.	
⚠	Q1522	2SC5388-CA	SI.TRANSISTOR	H.OUT
	Q1523-24	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1571	2SA1208/ST/Z1-T	SI.TRANSISTOR	
	Q1572	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1651	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q1652	DTC323TK-X	DIGI.TRANSISTOR	
	Q1654-55	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1702-03	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1708	DTC124EKA-X	DIGI.TRANSISTOR	
	Q1709	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q1803	2SC1815/YG/-T	SI.TRANSISTOR	
	Q1804	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1941	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1943	DTC114EKA-X	DIGI.TRANSISTOR	
	Q1973	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1974	2SA966/OY/-T	SI.TRANSISTOR	
	Q1975	DTC124EKA-X	DIGI.TRANSISTOR	
	IC			
	IC1301	NN5198K	I.C.(M)	
	IC1421	AN5539-LF	I.C.(MONO-ANA)	
	IC1651	LA4287	I.C.(MONO-ANA)	
	IC1652	SI-5003X-X	I.C.(HYBRID)	
	IC1701	MN1873287JH	I.C.	
	IC1702	AT24C08-21DTT2	I.C.	(SERVICE)
	IC1703	L78LR05E-MA	I.C.(MONO-ANA)	
	IC1704	PIC-28143SY	IFR DETECT UNIT	
	IC1921	STR-G6653	I.C.(HYBRID)	
	IC1941	SE115N-LF12	I.C.(HYBRID)	
	IC1971	BA51W12ST-V5	I.C.(MONO-ANA)	
	OTHERS			
		LC30114-001C-H	L.E.D.HOLDER	
		CM35921-005-H	CDS HOLDER	
	CF1161	SFSH4.5MCB	CERAMIC FILTER	
⚠	CP1981	ICP-N75	I.C.PROTECT	
⚠	CP1982	ICP-N75	I.C.PROTECT	

⚠	Symbol No.	Part No.	Part Name	Description
	OTHERS			
⚠	F1901	QMF51E2-3R15J4	FUSE	3.15A
	FC1901	CEMG002-001Z	FUSE CLIP	
	J1002	QNN0384-001	PIN JACK	
	J1003	QNN0281-003	PIN JACK	
	J1004	QNN0281-002	PIN JACK	
	J1005	QNS0165-001	PIN JACK	
	J1006	QNN0281-002	PIN JACK	
	K1001	QQR0621-002Z	BEADS CORE	
	K1351	QQR0621-002Z	BEADS CORE	
	K1421	QQR0582-001Z	BEADS CORE	
	K1921-22	QQR1113-001Z	FERRITE BEADS	
	K1923	QQR1114-001Z	FERRITE BEADS	
	K1924	QQR1113-001Z	FERRITE BEADS	
	K1941-43	QQR1113-001Z	FERRITE BEADS	
⚠	LF1901	QQR1095-002	LINE FILTER	
	PC1701	P1241-04	C.D.S.	
⚠	PC1921	PC123F2	I.C.(PH.COUPLER)	
⚠	RY1971	QSK0061-002	RELAY	
	S1701	QSW0619-003Z	PUSH SWITCH	VOL+
	S1702	QSW0619-003Z	PUSH SWITCH	VOL-
	S1703	QSW0619-003Z	PUSH SWITCH	CH+
	S1704	QSW0619-003Z	PUSH SWITCH	CH-
	S1705	QSW0619-003Z	PUSH SWITCH	MENU
⚠	S1901	QSW0750-001	PUSH SWITCH	POWER SW
	SF1102	QAX0594-001	SAW FILTER	
	SF1122	QAX0325-001	SAW FILTER	
⚠	SK1351	CE42554-001	C.R.T.SOCKET	
⚠	TH1901	QAD0119-9R0	P.THERMISTOR	
	TU1001	QAU0186-002	AMP TUNER	
⚠	VA1901	QAF0052-621	VARISTOR	
	X1301	QAX0500-001Z	CRYSTAL	
	X1302	CE42690-001Z	CRYSTAL	
	X1701	FCR12.0M2S	CER.RESONATOR	

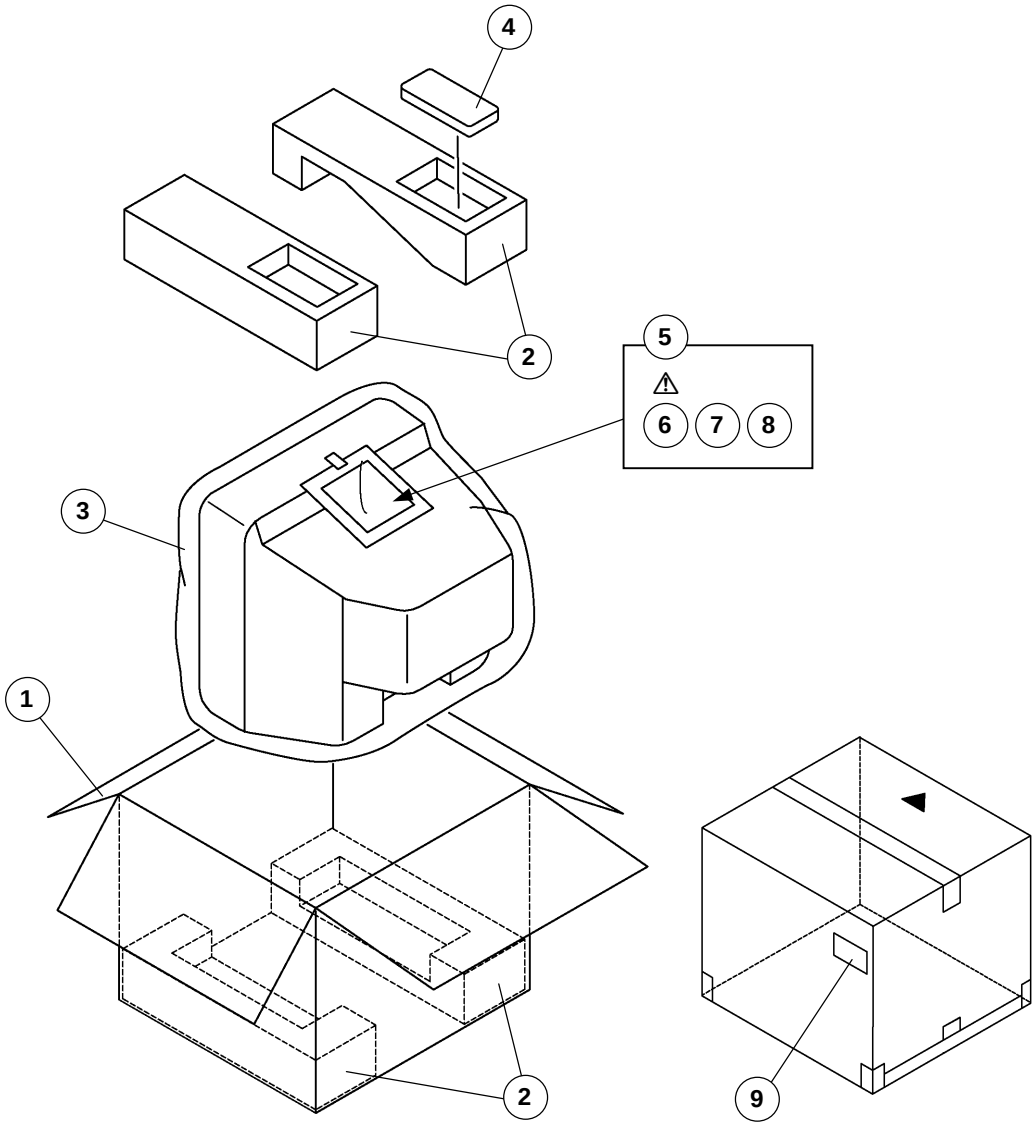
REMOTE CONTROL UNIT



REMOTE CONTROL UNIT PARTS LIST (RM-C364GY-1H)

⚠ Ref.No.	Part No.	Part Name.	Description
1	25-1168F	BATTERY COVER	

PACKING



PACKING PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description
	1	GG10007-017A-E	PACKING CASE	
	2	LC10833-002B-H	CUSHION ASSY	4pcs in 1set
	3	GG30033-002A-E	POLY BAG	
	4	RM-C367GY-1H	REMOCON UNIT	
	5	GG30034-001A-E	POLY BAG	
⚠	6	LCT1032-001A	INST BOOK	
	7	CEAB005-00AJ1	MATCHING BOX	
	8	CM35847-00B-H	ROD ANTENNA	
	9	GG40015-001A-E	SERIAL LABEL	

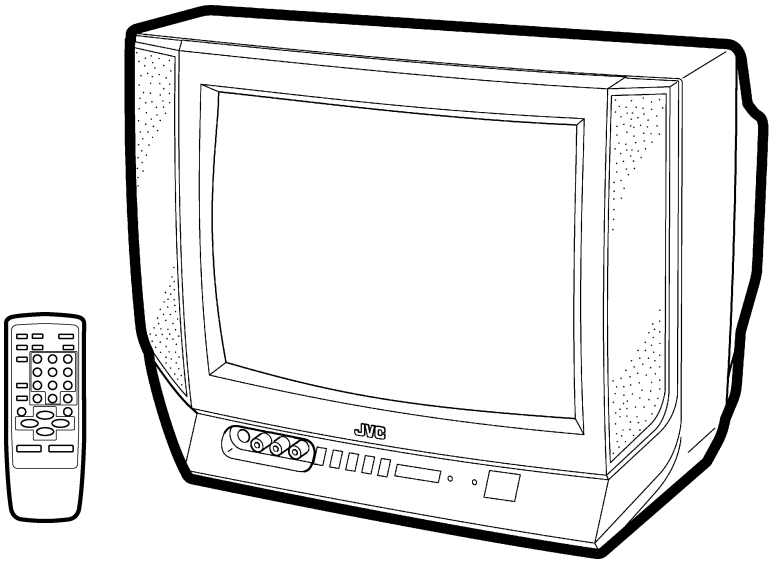
JVC

SERVICE MANUAL

COLOUR TELEVISION

BASIC CHASSIS
CG

AV-14F71/VT



CONTENTS

No. 51918
Nov. 2001

SPECIFICATIONS

ITEM		CONTENT
Dimensions(W × H × D)		462mm × 340.5mm × 375mm
Mass		10kg
TV RF System		B/G, I, D/K, K1,M
Colour System	RF Mode	PAL / SECAM / NTSC3.58 / NTSC4.43
	VIDEO Mode	PAL / SECAM / NTSC3.58 / NTSC4.43
Picture Tube		Visible size: 34cm measured diagonally
High Voltage		22.5kV±1.5kV(at zero beam current)
Receiving Frequency	VHF (VL)	46.25MHz～168.25MHz
	VHF (VH)	175.25MHz～463.25MHz
	UHF	471.28MHz～863.25MHz
	CATV	Cable TVs of Mid (X-Z, S1-S10) Super (S11-S20) & Hyper (S21-S41) bands receivable
Intermediate Frequency	VIF Carrier	38.0MHz
	SIF Carrier	32.5MHz(5.5MHz) / 33.5MHz(4.5MHz) 31.5MHz (6.5MHz) 32.0MHz (6.0MHz)
Colour Sub Carrier Frequency		PAL (4.43MHz), SECAM (4.40625MHz / 4.25MHz) NTSC (3.58MHz / 4.43MHz)
Power Input	Operating Voltage	AC90～260V, 50 / 60Hz
	Rated Voltage	AC110～240V, 50 / 60Hz
Power Consumption		70W (Max) / 47W(Avg.)
Speaker		5cm × 9 cm, Oval type × 2
Audio Output		3W (monaural)
Aerial Input Terminal		75Ω Unbalanced
Input	Video	1V(p-p), 75Ω, RCA × 2 (Front / Rear)
	Audio	500mV(rms) (-4dBs), High impedance, RCA × 2 (Front / Rear)
Output	Video	1V(p-p), 75Ω, RCA × 1
	Audio	500mV(rms) (-4dBs), Low impedance, RCA × 1
Headphone jack		3.5mm mini jack
Remote Control Unit		RM-C367GY (Battery size : AA / R06 / UM-3 × 2)

Design and specifications are subject to change without notice.

SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.

3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.

4. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⏦) side GND and EARTH : (⏚) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.

5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).

6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.

7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.

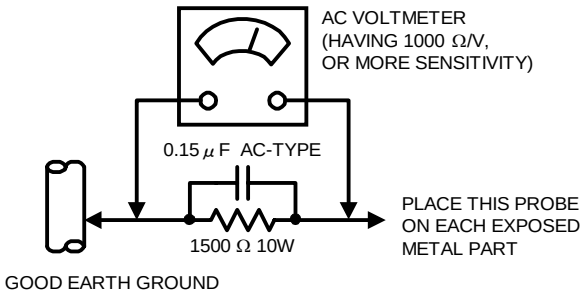
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

9. **Isolation Check**
   (Safety for Electrical Shock Hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.
(. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

(2) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

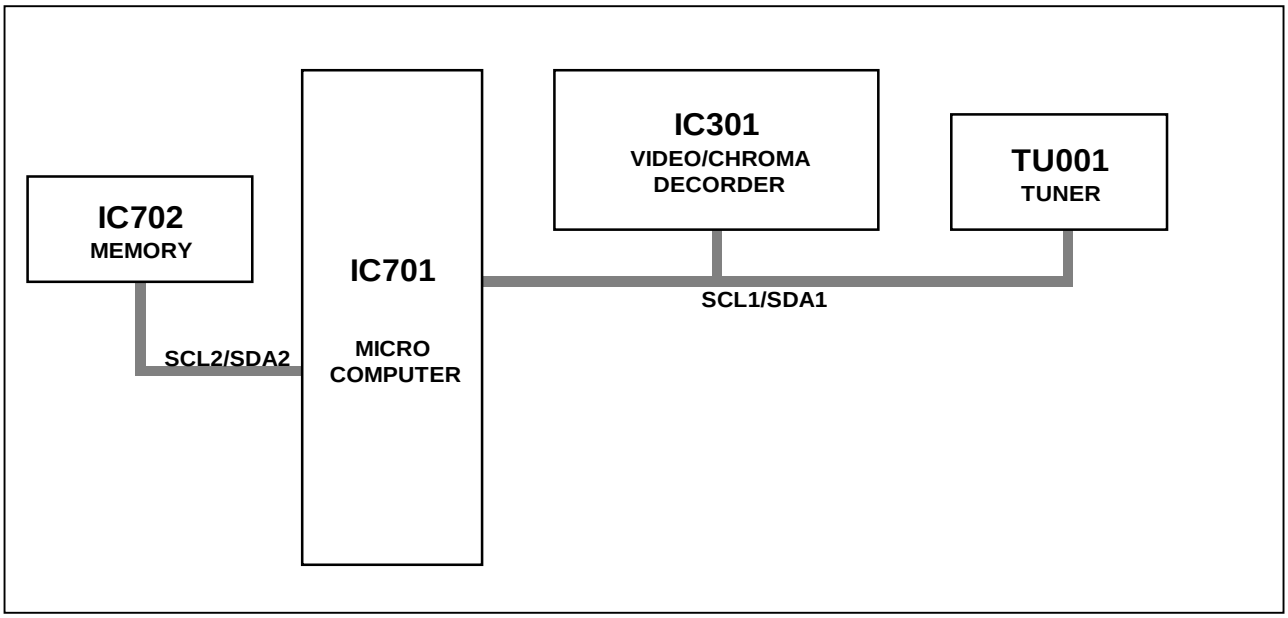
● **Alternate Check Method**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



FEATURES

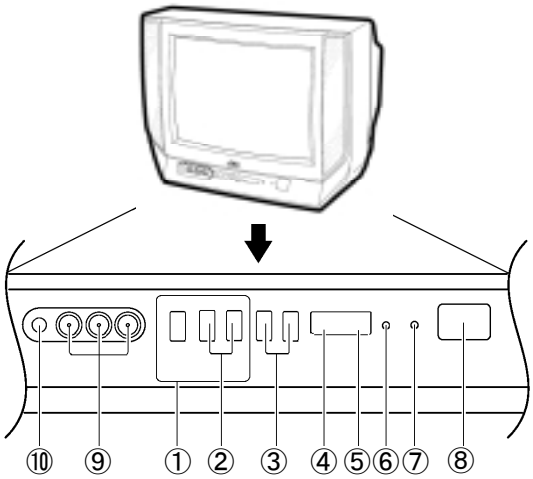
- New chassis design enables use of an interactive on-screen control.
- Wide range voltage (110V～240V) AC power input
- With AUDIO / VIDEO INPUT & OUTPUT terminal.
- MUTING button can reduce the audio level to zero instantly.
- Functional remote control to operate TV set (for channel select, volume control, power ON/OFF, etc.) from a distance.
- I^2C bus control utilizes single chip ICs for IF, V/C, DEF. VSM PRESET, PRESET & TURBO TIMER.
- By means of AUTO PROGRAM, the TV stations can be selected automatically and the TV channels can also be rearranged automatically.
- Built-in ECO MODE (ECONOMY, ECOLOGY)
  In accordance with the brightness in a room, the brightness and / of contrast of the picture can be adjusted automatically to make the optimum picture which is easy on the eye.
- Built-in ON TIMER, RETURN + & CHILD LOCK.

SYSTEM BLOCK DIAGRAM



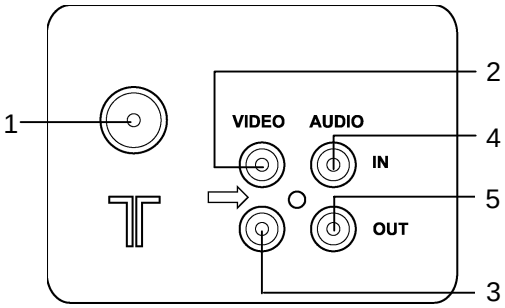
FUNCTION

■FRONT PANEL



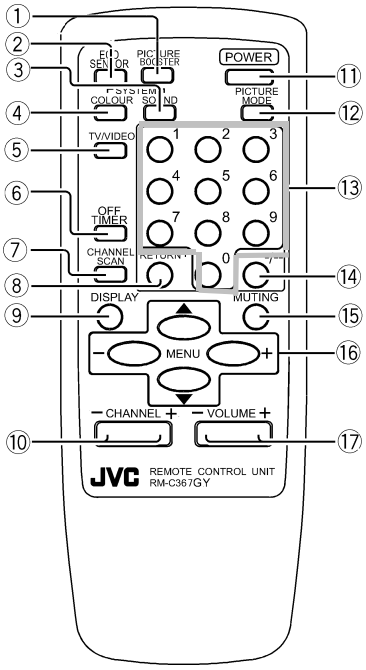
1	MENU buttons
2	CHANNEL −/+ buttons
3	VOLUME −/+ buttons
4	ECO sensor
5	REMOTE CONTROL sensor
6	ON TIMER lamp
7	POWER lamp
8	MAIN POWER button
8	A/V INPUT terminal
A	HEADPHONE jack

■REAR PANEL



1	ANT Terminal
2	VIDEO INPUT Terminal
3	VIDEO OUTPUT Terminal
4	AUDIO INPUT Terminal
5	AUDIO OUT PUT Terminal

■REMOTE CONTROL UNIT



1	PICTURE BOOSTER key
2	ECO SENSOR key
3	COLOUR SYSTEM key
4	COLOUR SYSTEM key
5	TV/VIDEO key
6	OFF TIMER key
7	CHANNEL SCAN key
8	RETURN+key
9	DISPLAY key
A	CHANNEL−/+ key
B	POWER key
C	PICTURE MODE key
D	Number (CH.) key
E	−/−−key
F	MUTING key
G	MENU key MENU ▲/▼ key MENU −/+ key
H	VOLUME−/+ key

SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Unplug the power plug.
2. As shown in figure, remove the 5 screws marked Ⓐ and a screw marked Ⓑ .
3. Withdraw the rear cover toward you.

REMOVING THE MAIN PW BOARD

- After removing the rear cover.

1. Slightly raise the both sides of the MAIN PW BOARD by hand and remove the PWB stopper marked Ⓒ from the front cabinet.
2. Withdraw the MAIN PW BOARD backward.
   (If necessary, take off the wire clamp, connectors etc.)

REMOVING THE SPEAKER

- After removing the rear cover.

1. As shown in figure, remove the **4** screws marked Ⓓ .
2. Follow the same steps when removing the other hand speaker.

CHECKING THE MAIN PW BOARD

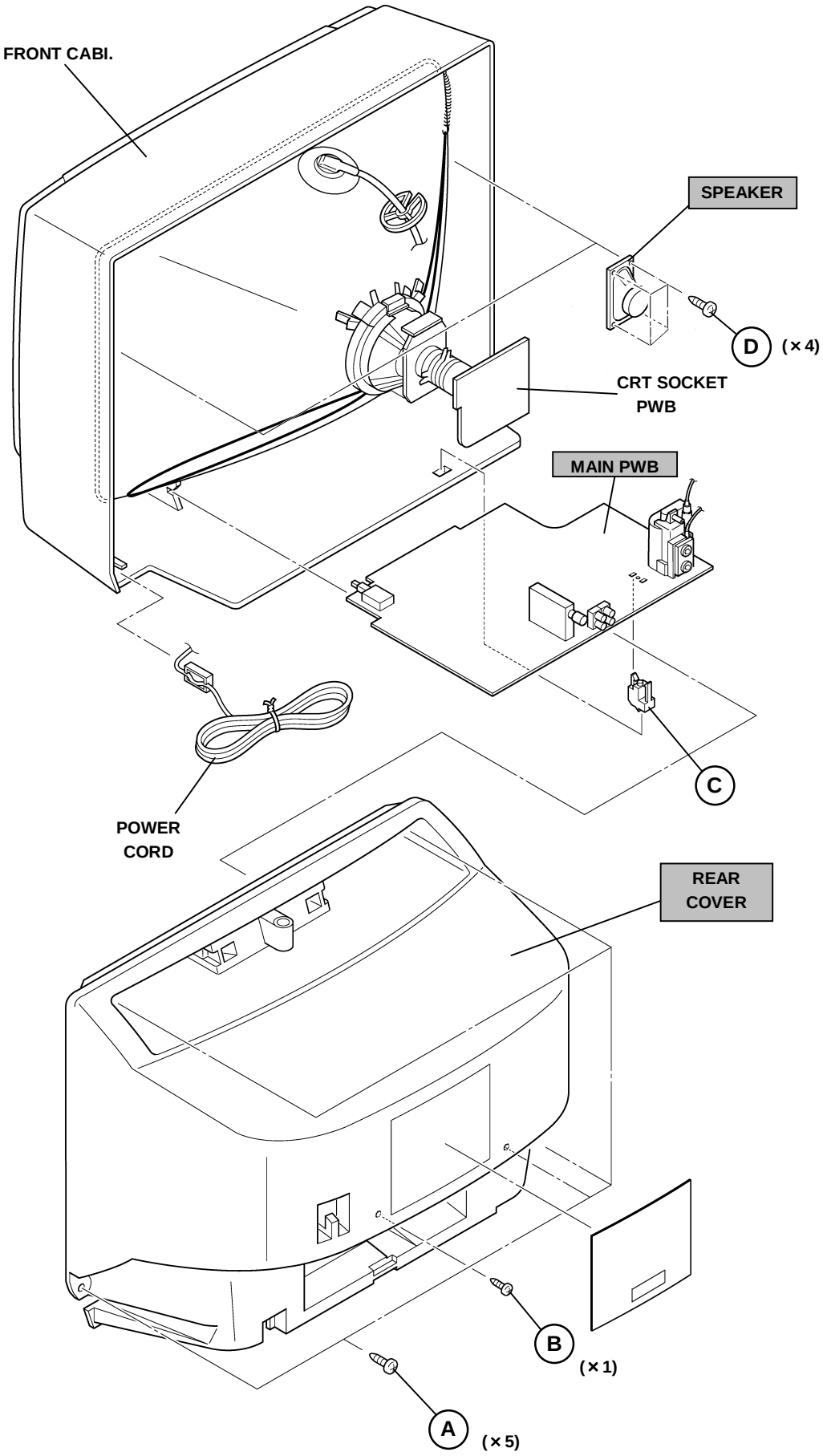
1. To check the back side of the PW Board.
4. Pull out the MAIN PW Board. (Refer to REMOVING THE MAIN PW Board)
   1) Erect the PW Board vertically so that you can easily check the back side of the PW Board.

[CAUTION]

- When erecting the PW Board, be careful so that there will be no contacting with other PW Board.
- Before turning on power, make sure that the CRT earth wire and other connector are properly connected.

WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.


FRONT CABI.
SPEAKER
D
(× 4)
CRT SOCKET
PWB
MAIN PWB
C
POWER
CORD
REAR
COVER
B
(× 1)
A
(× 5)

REPLACEMENT OF MEMORY ICs

1. MEMORY ICs

This model uses memory ICs. This memory IC data are for proper operation of the video and deflection circuits.
When replacing memory ICs, be sure to use ICs written with the initial values of data.

2. PROCEDURE FOR REPLACING MEMORY ICs

(1) Power off
Switch the power off and disconnect the power plug from the wall outlet.

(2) Replace ICs
Be sure to use memory ICs written with the initial data values.

(3) Power on
Connect the power plug into the wall outlet and switch the power on.

(4) Check and set SYSTEM CONSTANT SET

- It must not adjust without adjustment signals.

1) Press the **DISPLAY** key and the **PICTURE MODE** key of the REMOTE CONTROL UNIT simultaneously.
2) The SERVICE MENU screen of Fig. 1 will be displayed.
3) While the SERVICE MENU is displayed, again press the **DISPLAY** key and **PICTURE MODE** key simultaneously, and the SYSTEM CONSTANT SET screen of Fig. 2 will be displayed.
4) Check the setting values of the SYSTEM CONSTANT SET of Table 1 If the value is different, select the setting item with the **MENU** ▼/▲key, and set the correct value with the **MENU** - / + key.
5) Press the **DISPLAY** key twice, and return to the normal screen.

(5) Receive channel of setting
Refer to the **OPERATING INSTRUCTIONS** and set the receive channels (channels preset) as described

(6) User Setting
Check the user setting value of Table 2, and if setting value is different, set the correct value.
For setting, refer to the **OPERATING INSTRUCTIONS**.

(7) Setting of SERVICE MENU
Verify the setting items of the SERVICE MENU, and reset where necessary.
For setting, refer to the **SERVICE ADJUSTMENTS**.

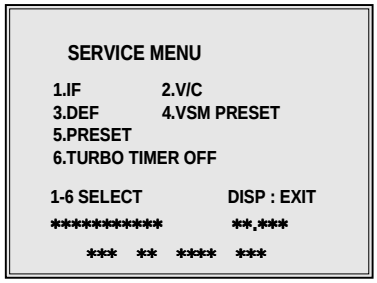


Fig.1

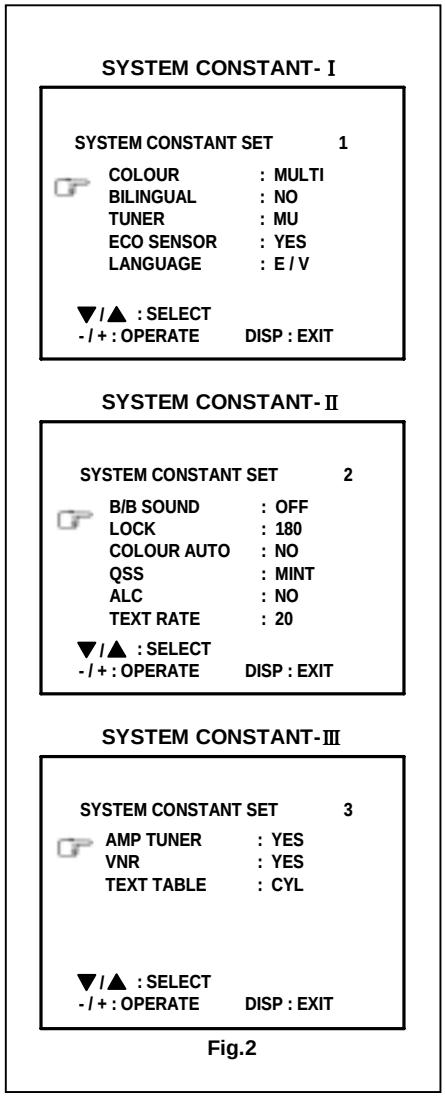
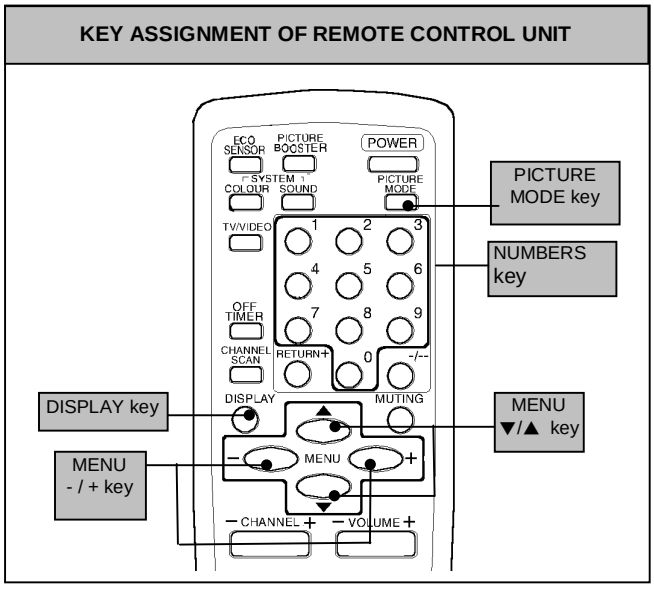


Fig.2



SETTING OF SYSTEM CONSTANT SET

Setting item	Setting contents	Setting value
COLOUR	MULTI. → TRIPLE → PAL	MULTI
BILINGUAL	YES → NO	NO
TUNER	MU→MA	MU
ECO SENSOR	YES → NO	YES
LANGUAGE	E/V → E	E/V
B/B SOUND	ON → OFF	OFF
LOCK	YES ↔10 ↔20 ↔~ ↔230 ↔ 240 ↔250	180
COLOUR AUTO	YES → NO	NO
QSS	MINT →MQSS	MINT
ALC	YES → NO	NO
TEXT RATE	10 ↔20 ↔40 ↔80	20
AMP TUNER	YES → NO	YES
VNR	YES → NO	NO
TEXT TABLE	ARA → CYL	CYL

Table 1

USER SETTING VALUES

Setting item	Setting value	Setting item	Setting value
SUB POWER	ON	LANGUAGE	VIET
CHANNEL POSITION	1 POSITION	CHANNEL PRESET	Refer to OPERATING INSTRUCTION
VOLUME	About 10	ECO SENSOR	OFF
TV/VIDEO	TV	VNR	OFF
ON SCREEN DISPLAY	POSITION INDICATION	AUTO SHUTOFF	OFF
COLOUR SYSTEM	PAL	ON TIMER	PR1 0:00
SOUND SYSTEM	B / G	BLUE BACK	OFF
OFF TIMER	OFF OSD.Shows 00	CHILD LOCK	OFF
PICTURE MODE (VSM)	BRIGHT	PICTURE BOOSTER	OFF

Table 2

INITIAL SETTING VALUE OF SERVICE MENU

1. **Adjustment of the SERVICE MENU is made on the basis of the initial setting values ; however, the new setting values which set the screen in its optimum condition may differ from the initial setting.**
2. **Do not change the initial Setting Values of the Setting (Adjustment) items not listed In "ADJUSTMENT".**

3. V/C

Setting item \ Colour system		Variable range	Initial setting value			
			PAL	SECAM	NTSC 3.58	NTSC 4.43
1. CUT OFF	RED	-128～+127	-50	←	←	←
	GREEN					
	BLUE					
2. DRIVE	RED	-128～+127	+ 0	←	←	←
	BLUE					
3. BRIGHT		-127～+127	+ 0	←	←	←
4. CONT.		-63～+63	+ 0	←	←	←
5. COLOUR		-63～+63	+ 0	←	←	←
6. TINT	TV	-63～+63	——	——	+ 0	+ 0
	VIDEO		——	——	+ 8	+ 0
7. SECAM BL ADJ.		-31～+31	+ 0	←	←	←
8. SHARP Do Not Adj.	TV	-32～+31	- 15(Fixed)	←	←	←
	VIDEO		+5(Fixed)			
9. AMP T.SHARD Do Not Adj.			- 14	←	←	←

3. DEFLECTION

Setting item	Variable range	Initial setting value	
		fv : 50Hz MODE	fv : 60Hz MODE
1. VER. POSITION	-04 ～ +03	- 2	- 3
2. HOR. POSITION	-16 ～ +15	+1	+ 4
3. VER. HEIGHT	-64 ～ +63	-40	+ 0
4. VER. LINEARITY	-32 ～ +31	+13	- 3
5. VER. SCURVE	-32 ～ +31	-32	+ 0
6. HOR. VCO ADJUST Do Not Adj.	-63 ～ +62	+ 0	+ 0

4.VSM PRESET

VSM preset mode / VSM Setting item	BRIGHT	STANDARD	SOFT
TINT SETTING VALUE	+15	←	←
COLOUR SETTING VALUE	+15	←	←
BRIGHT SETTING VALUE	+15	←	←
CONT. SETTING VALUE	+30	+15	+11
SHARP SETTING VALUE	+15	←	+12

5. PRESET

The items in the following table, it is no requirement for adjustment.
If values had changed by the miss operation, set the initial setting values in the following table.

Colour System **Do Not Adjust**

Setting item		Initial setting value (Fixed value)			
		PAL	SECAM	NTSC 3.58	NTSC 4.43
1. C TRAP FIX		1	1	1	1
2. SHARP PEAK		0	0	0	0
3. ABL		1	1	1	1
4. GAMMA		0	0	0	0
5. Y. DELAY TIME	TV	0	2	2	3
	VIDEO	0	2	0	2
6. BLACK EXP START		+3	+3	+3	+3
7. C-BPF	TV	1	1	0	0
	VIDEO	1	1	1	1
8. CW / SCP		0	0	0	0
9. VIF DET LEVEL		0	0	0	0
11. IF AGC MIN		0	0	0	0
12. VIF AGC		0	0	0	0
13. VIF PMOD		0	0	0	0
19. VNR		15	15	15	15
20. RGB LIM		1	1	1	1
21. RGB LIMIT LEVEL		2	2	2	2
23. TEXT H. POSITION		-3	-3	-3	-3
24. READ DATA		———	———	———	———

Sound System **Do Not Adjust**

Setting item	B/G	I	D/K	M
10. SIF DET LEVEL	+0	+0	+0	+0
14. SIF BPF BW ADJUST	+0	+0	+0	+0
15. SIF TRAP FO ADJUST	+0	+0	+0	+0
16. SIF TRAP FO ADJUST 2	+0	+0	+0	+0
17. SIF -TRAP	0	0	0	0
18. SIF -BPF	0	0	0	1
22. SIF SW	1	1	1	0

REPLACEMENT OF IC301 (IF V/C DECODER)

- **For the IC301(IF V/C DECODER) of this model, all data are written in the micro-computer. So, write the data in the micro-computer in accordance with the following procedures before starting adjustment.**

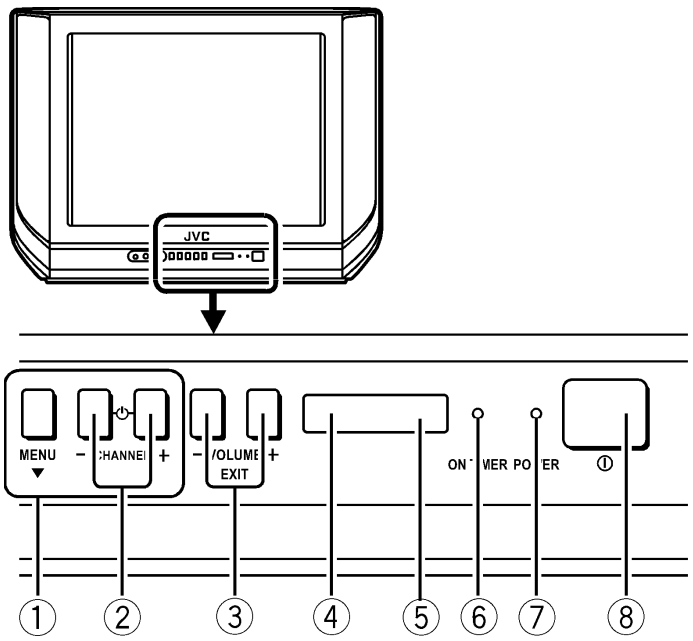
REPLACING PROCEDURES

(1) Turn the POWER OFF.

(2) Replace the IC301 with a new one.

(3) While pressing MENU button and VOL+ button ON the FRONT CABINET simultaneously, turn the POWER ON. When the POWER is turned ON, the data is written in the micro-computer immediately.

LOCATIONS OF FRONT PANEL BUTTONS AND LAMPS



1	MENU buttons
2	CHANNEL −/+ buttons (MENU −/+ buttons)
3	VOLUME −/+ buttons (MENU −/+ buttons)
4	ECO sensor
5	REMOTE CONTROL sensor
6	ON TIMER lamp
7	POWER lamp
8	MAIN POWER button

SERVICE ADJUSTMENT

BEFORE STARTING SERVICE ADJUSTMENT

1. **There are 2 way of adjusting this TV: One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.**
2. **The adjustment with the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to its optimum condition may differ from the initial setting values.**
3. Make sure that connection is correctly made to AC power source.
4. Turn on the power of the set and equipment before use, and start the adjustment procedures after waiting at least 30 minutes.
5. Unless otherwise specified, prepare the most suitable reception or input signal for adjustment.
6. **Never touch any adjustment parts, which are not specified in the list for this adjustment VRs, transforms, condensers, etc.**
7. Preparation for adjustment
   Unless otherwise specified in the adjustment instructions, preset the following functions with the REMOTE CONTROL UNIT.
   User mode position

PICTURE MODE (VSM)	BRIGHT
VNR	OFF
TINT / COLOUR / BRIGHT CONT. / SHARP	CENTER
BLUE BACK	OFF
OFF TIMER	OFF
ECO SENSOR	OFF
AUTO SHUT OFF	OFF

MEASURING INSTRUMENT AND FIXTURES

1. DC voltmeter (or digital voltmeter)
2. Oscilloscope
3. Signal generator (Pattern generator) [PAL / SECAM / NTSC]
4. Remote control unit

ADJUSTMENT ITEMS

Adjustment item	Adjustment item
B1 POWER SUPPLY	DEFLECTION circuit adjustment
FOCUS adjustment	VSM PRESET setting
IF circuit adjustment	PURITY/ CONVERGENCE adjustment
V/C (Video / Chroma) circuit adjustment	

BASIC OPERATION OF SERVICE MENU

- **The adjustment using SERVICE MENU**

The following adjustment items use the SERVICE MENU in the series of the adjustment. The adjustments are made on the basis of the initial setting values. The adjustment values which adjust the screen to the optimum condition can be different from the initial setting values. With the SERVICE MENU, various settings can be made, and they are broadly classified in the following items of settings.

1.IF ····· Adjustment of the IF circuits.
2.V/C ····· Adjustment of the VIDEO/CHROMA circuit.
3.DEF ····· Adjustment of the DEFLECTION circuit.
4.VSM PRESET ····· Adjustment of the initial setting values of VSM condition as STANDARD, SOFT and BRIGHT. (VSM : Video Status Memory)
5.PRESET ····· Adjustment of the RF circuit **[Do not adjust]**.
6.TURBO TIMER····· For quick setting the TIMER count value, adjustable not only by minuets but also by second. **[Should be OFF]**.

- **Key operation of the SERVICE MENU**

[Enter to SERVICE MENU]

Press the **DISPLAY** key and the **PICTURE MODE** key of the REMOTE CONTROL UNIT simultaneously. Then enter the SERVICE MENU mode as shown in Fig.1.

[Exit from SERVICE MENU]

When complete the adjustment work, press the **DISPLAY** key to return to the SERVICE MENU.
And then press the **DISPLAY** key again, return to the normal screen.

[Select from SERVICE MENU]

In SERVICE MENU, press the number (1～6) key of the remote control unit, to select any of the adjustment items.
The colours which selected item characters are changed.

SERVICE MENU

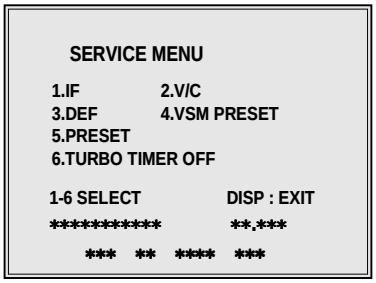
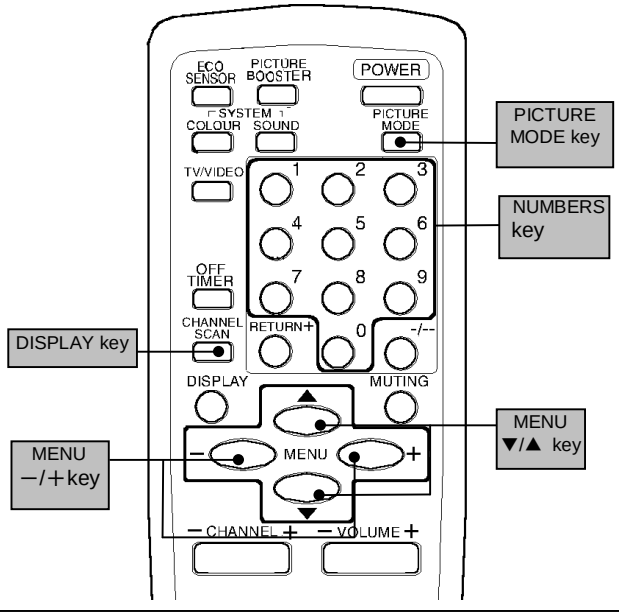


Fig.1

KEY ASSIGNMENT OF REMOTE CONTROL UNIT



[Method of setting]

1. IF

[1. VCO]

① 1 Key····· Select **1.IF**.

② 1 Key····· Select **1.VCO**

③ The VCO (CW) screen will be displayed a allow mark when the AFC voltage is at a certain level.

④ DISPLAY Key····· As you press this key twice, you will return to the **SERVICE MENU**.

[2. DELAY POINT]

① 1 Key····· Select **1.IF**.

② 2 Key····· Select **2.DELAY POINT**.

③ MENU -/+ ····· Set (adjust) the setting values of the setting items.

④ DISPLAY Key····· When this is pressed twice, you will return to the **SERVICE MENU**.

2.V/C, 3.DEF and **4.VSM PRESET**

① 2~4Key ····· Select one from **2. V/C, 3. DEF** and **4. VSM PRESET**.

② MENU ▼/▲ Key ····· Select setting items.

③ MENU -/+ ····· Adjust the values of the items.

④ DISPLAY Key····· When this is pressed , return to the **SERVICE MENU**.

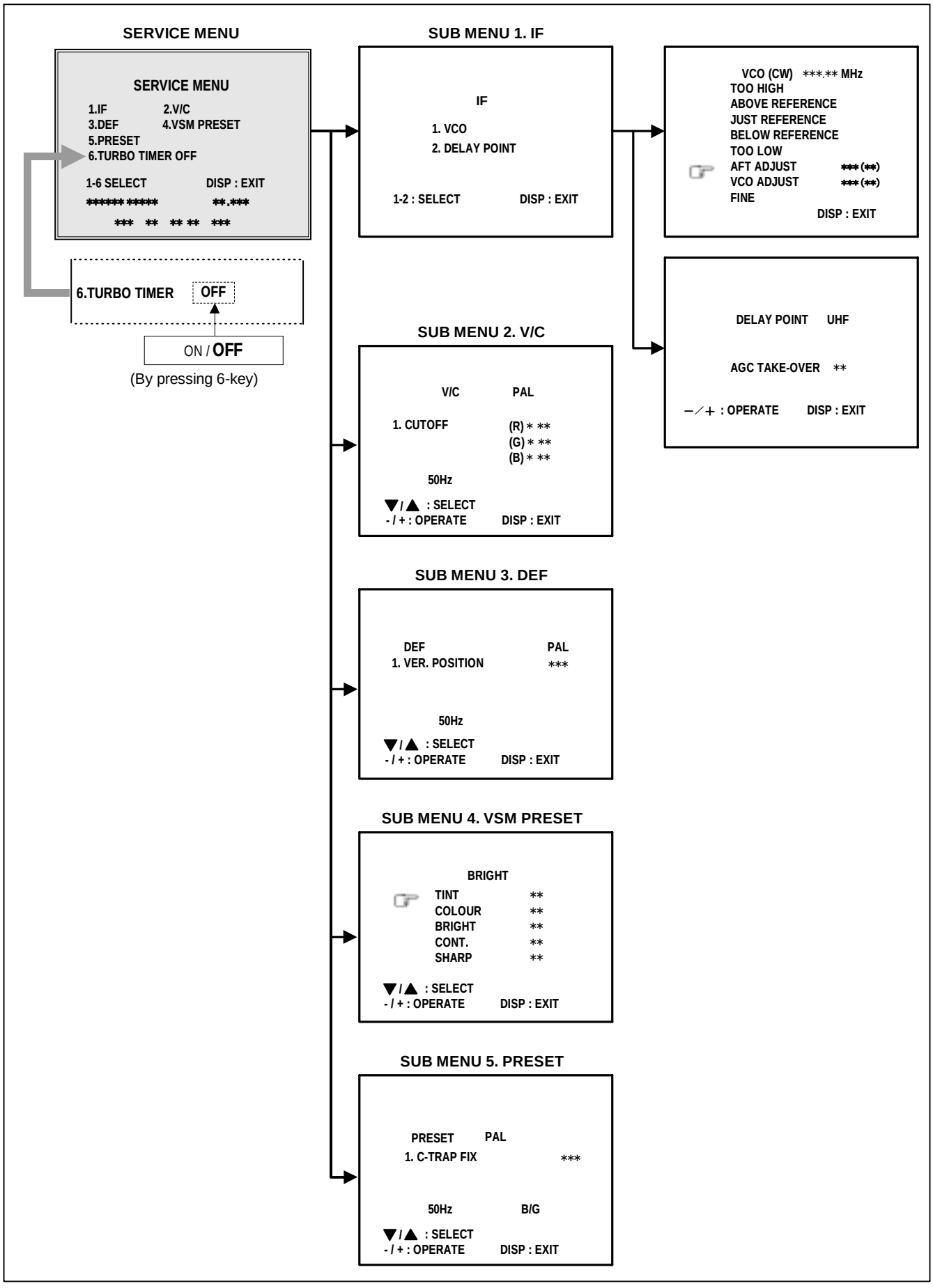
6.TURBO TIMER

① By pressing the 6 key, you can change the ON or OFF (**should be OFF**).

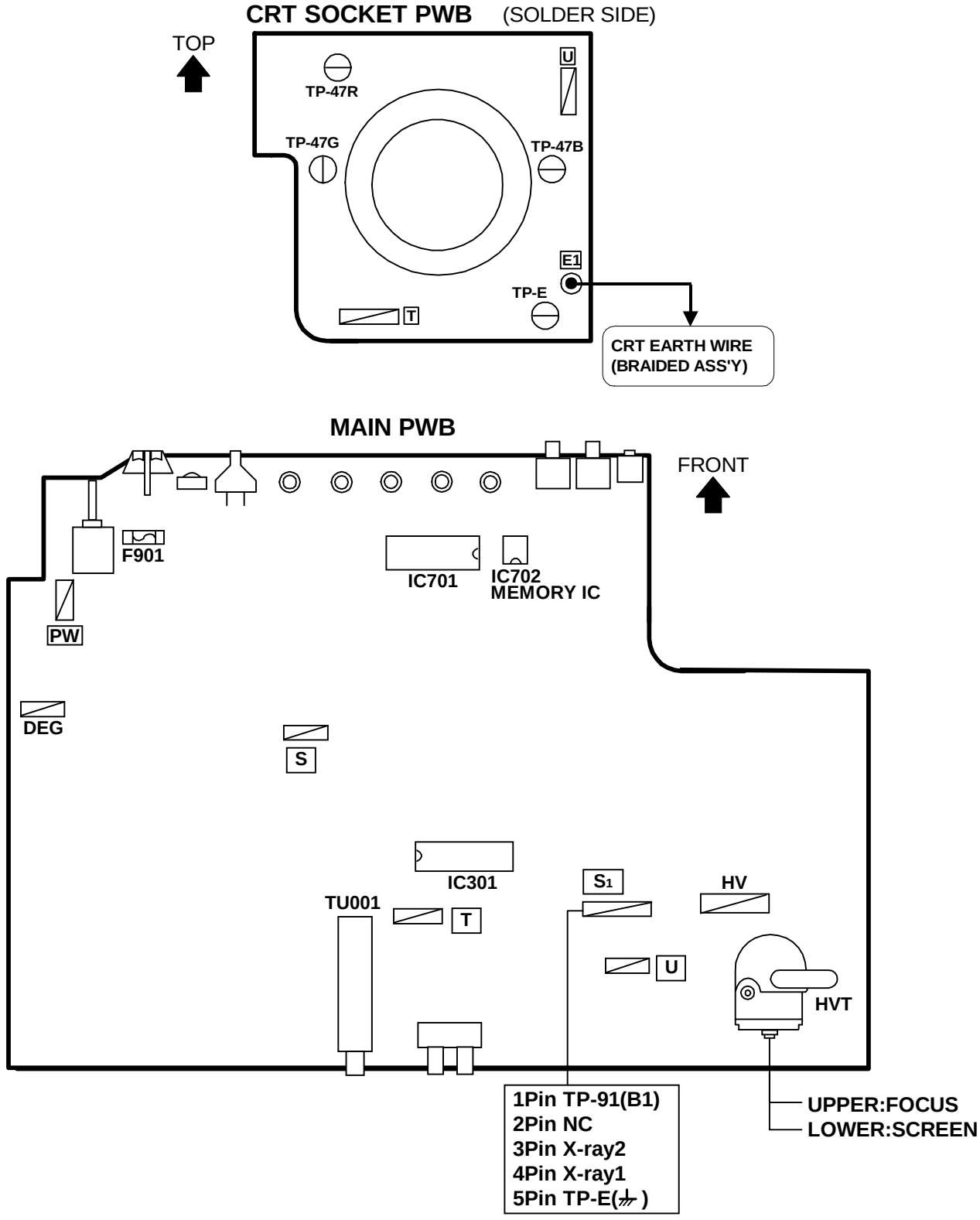
(Should be OFF)

∗ If it is ON, the timer in TIMER mode changes from 1 minute into 1 sec temporarily.
(It is easier to checks the Operation of TIMER)
If you turn the TV power off, this setting becomes OFF automatically.

SERVICE MENU FLOW CHART



ADJUSTMENT LOCATIONS



ADJUSTMENTS

B1 POWER SUPPLY

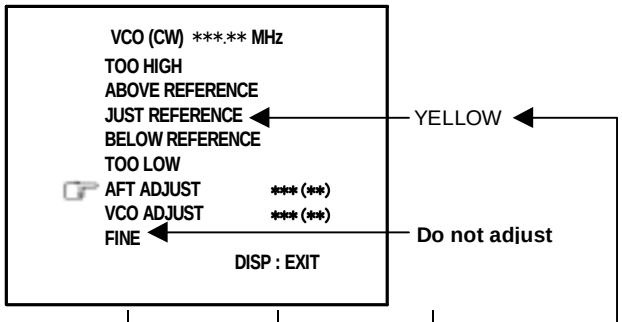
Item	Measuring instrument	Test point	Adjustment part	Description
Check of B1 Power Supply	**Signal generator** **DC Volt-meter**	**TP-91 (B1)** **TP-E (⏚)**		1. Input a whole black signal. 2. Connect a DC voltmeter to TP-91(B1) and TP-E (⏚). 3. Make sure that the voltage is DC114.5±1.5V.

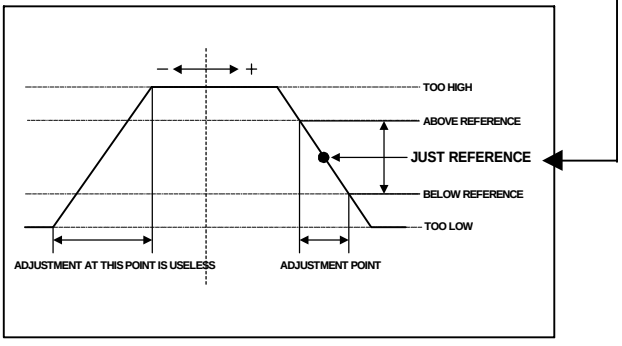
FOCUS ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of FOCUS	**Signal generator**		**FOCUS VR** **[In HVT]**	1. Input a cross-hatch signal. 2. While watching the screen, adjust the FOCUS VR to make the vertical and horizontal lines as fine and sharp as possible. 3. Make sure that when the screen is darkened, the lines remain in good focus.

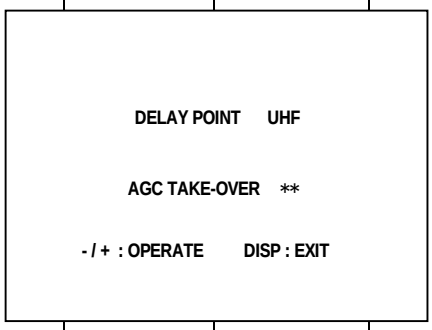
IF CIRCUIT ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of VCO(CW)	**Signal generator** **Remote control unit**		**1. VCO**	●Please use signal generator which is correct proof about the sending frequency. 1. Input the PAL full colour bar (210.25MHz) signal. 2. Select 1.IF from the **SERVICE MENU**. 3. Press 1 key and select **1.VCO**. 4. Select **VCO ADJUST** with **MENU** ▲/▼ key. 5. Press **MENU** -/+ key until the colour of the characters TOO HIGH changes blue to yellow. Then gradually press the **MENU** -/+ key until the TOO LOW changes yellow. At this time, confirm that the value of **VCO ADJUST** is near +00. 6. Select **AFT ADJUST** with **MENU** ▲/▼ key. 7. Press **MENU** -/+ key until the characters JUST REFERENCE changes blue to yellow. 8. Press the **DISPLAY** key three times to return to normal screen.





Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of DELAY POINT (AGC)	**Signal generator** **Remote control unit**		**DELAY POINT** **(AGC TAKE-OVER)**	1. Input a black and white signal (colour off). 2. Select **1. IF** from the SERVICE MENU. 3. Select **2. DELAY POINT** by pressing the **2** key on the remote control unit. 4. Set the setting values of the setting items as shown bellow table. 5. Then adjust the MENU - or + key until video noise disappears. 6. Turn to other channels and make sure that there are no irregularities.

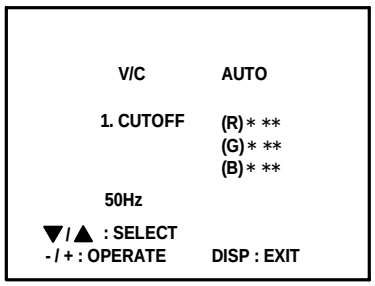


Setting Item		Variable range	Initial setting value
DELAY POINT (AGC TAKE OVER)	**NTSC 3.58**	0～127	48
	OTHER		43

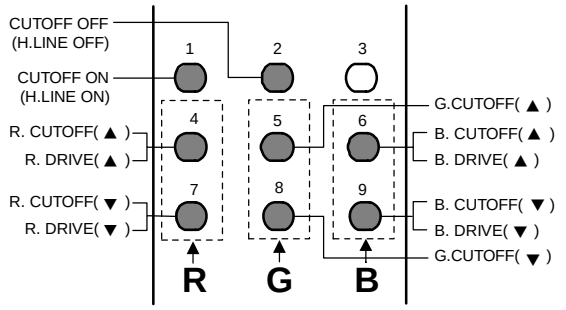
VIDEO / CHROMA CIRCUIT ADJUSTMENT

The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values.
The setting values which adjust the screen to the optimum condition can be different from the initial setting values.
Do not change the initial setting values of the setting items not listed in "ADJUSTMENT".

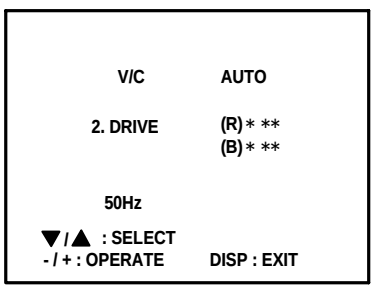
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of WHITE BALANCE (Low light)	**Signal generator** **Remote control unit**		**1. CUT OFF (R)** **CUT OFF (G)** **CUT OFF (B)** **SCREEN VR** **[IN HVT]**	1. Input a black and white signal (colour off). 2. Select **2. V/C** from the SERVICE MENU, then select **1. CUT OFF** (R), (G) and (B) . 3. Set each value to initial setting value with 4～9 keys of the remote control unit. 4. Press the **1** key of the remote control unit to show the single horizontal line on screen. 5. Turn the **SCREEN VR** fully counter-clockwise, then slowly turn it clockwise to where one of a red, blue or green colour is faintly visible. 6. Use keys **4～9** of the remote control unit and adjust the other 2 colours which except the appeared colour to where the single horizontal line appears white. 7. Turn the **SCREEN VR** to where the single horizontal line glows faintly. 8. Press the **2** key to turn off the single horizontal line. 9. Press the **DISPLAY** key twice to return to the normal screen.
Adjustment of WHITE BALANCE (High light)	**Signal generator** **Remote control unit**		**2. DRIVE (R)** **DRIVE (B)**	1. Input a black and white signal (colour off). 2. Select **2. V/C** from the SERVICE MENU. 3. Select **2. DRIVE (R) / (B)** with MENU ▼/▲ key, and set each value to initial setting value with 4 and 7 or 6 and 9 keys of the remote control unit. 4. Use the keys **4** and **7** or **6** and **9** to produce a white screen 5. Press the DISPLAY key twice to return to the nomal screen.



KEY ASSIGNMENT OF REMOTE CONTROL UNIT



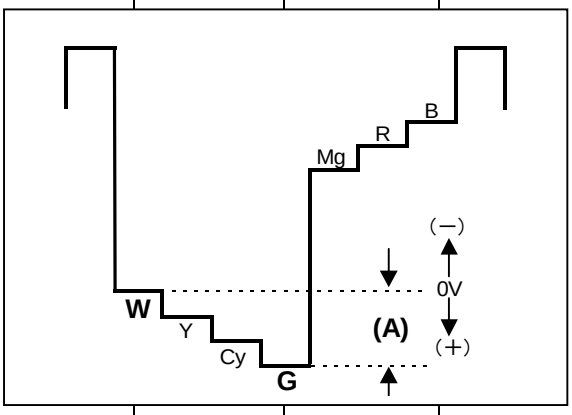
Adjustment item		Variable range	Initial setting value
1. CUT OFF	R	-128～+127	-50
	G	-128～+127	-50
	B	-128～+127	-50



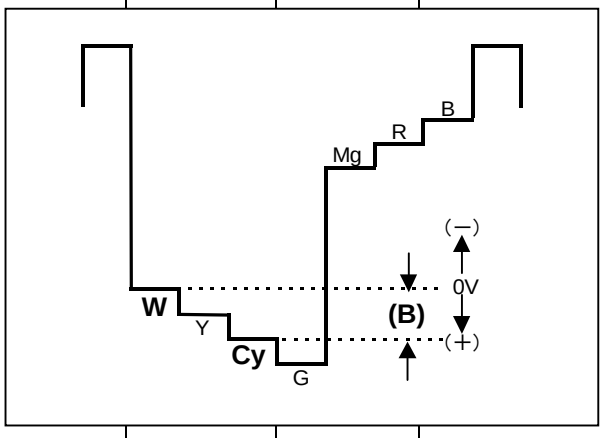
Adjustment item		Variable range	Initial setting value
2. DRIVE	R	-128～+127	+0
	B	-128～+127	+0

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB BRIGHT	**Remote control unit**		**3. BRIGHT**	1. Receive any broadcast. 2. Select **2. V/C** from SERVICE MENU. 3. Select **3. BRIGHT** with the MENU ▼/▲key. 4. Set the initial setting value with the MENU - or + key. 5. If the brightness is not the best with the initial set value, make fine adjustment until you get the best brightness.
Adjustment of SUB CONT.	**Remote control unit**		**4. CONT.**	1. Receive any broadcast. 2. Select **2. V/C** from SERVICE MENU. 3. Select **4. CONT**. with the MENU ▼/▲key. 4. Set the initial setting value with the MENU - or + key. 5. If the contrast is not the best with the initial set value, make fine adjustment until you get the best contrast.
Adjustment of SUB COLOUR I	**Remote control unit**		**5. COLOUR**	**[Method of adjustment without measuring instrument]**
			PAL COLOUR	1. Receive a PAL broadcast. 2. Select **2. V/C** from the SERVICE MENU. 3. Select **5. COLOUR** with the MENU ▼/▲ key. 4. Set the initial setting value for PAL COLOUR with the MENU - or + key. 5. If the colour is not the best with the initial set value, make fine adjustment until you get the best colour.
			SECAM COLOUR	1. Receive a SECAM broadcast. 2. Make fine adjustment of SECAM COLOUR as previously.
			NTSC 3.58 COLOUR	1. Receive a NTSC 3.58MHz broadcast. 2. Make similar fine adjustment of NTSC 3.58 COLOUR as previously.
			NTSC 4.43 COLOUR	When NTSC 3.58 adjustment completed, NTSC 4.43 will be automatically set at the respective values.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR Ⅱ	**Signal generator** **Oscillo-scope** **Remote control unit**	**TP-47R/G** **TP-E (⏚)** **[CRT SOCKET PWB]**	**5. COLOUR**	**[Method of adjustment using measuring instrument]**
				1. Input a PAL full field colour bar signal (75% white). 2. Select **2. V/C** from SERVICE MENU. 3. Select **5. COLOUR** with the MENU ▼/▲ key. 4. Set the initial setting value of PAL COLOUR with the MENU - or + key. 5. Connect the oscilloscope between TP-47R/G and TP-E. 6. Adjust PAL COLOUR to bring the value of **(A)** in the illustration to **+9V** (W-G). (Voltage value between (**W**) and (**G**))
			SECAM COLOUR	1. Input a SECAM full field colour bar signal (75% white). 2. Set the initial setting value of SECAM COLOUR with the MENU - or + key. 3. Adjust SECAM COLOUR to bring the value of **(A)** in the illustration to **+5V** (W-G). (Voltage value between (**W**) and (**G**))
			NTSC 3.58 COLOUR	1. Input a NTSC 3.58 full field colour bar signal (75% white). 2. Set the initial setting value of NTSC 3.58 COLOUR with the MENU - or + key. 3. Adjust NTSC 3.58 COLOUR to bring the value of **(A)** in the illustration to **+7V** (W-G). (Voltage value between (**W**) and (**G**))
			NTSC 4.43 COLOUR	When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

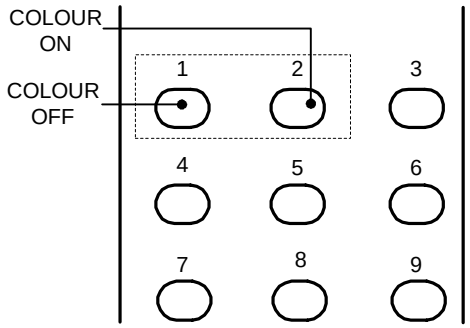


Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of TINT Ⅰ	**Signal generator** **Remote control unit**		**6. TINT**	**[Method of adjustment without measuring instrument]**
			NTSC 3.58 TINT	1. Input a NTSC 3.58 full field colour bar signal (75% white). 2. Select **2. V/C** from SERVICE MENU. 3. Select **6. TINT** with the MENU ▼/▲ key. 4. Set the initial setting value of NTSC 3.58 with the MENU - or + key. 5. If you cannot get the best tint with the initial setting value, make fine adjustment until you get the best tint.
			NTSC 4.43 TINT	When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.
Adjustment of TINT Ⅱ	**Signal generator** **Oscillo-scope** **Remote control unit**	**TP-47R/G** **TP-E (⏚)** **[CRT SOCKET PWB]**	**6. TINT**	**[Method of adjustment using measuring instrument]**
			NTSC 3.58 TINT	1. Input a NTSC 3.58 full field colour bar signal (75% white). 2. Select **2. V/C** from SERVICE MENU. 3. Select **6. TINT** with the MENU ▼/▲ key. 4. Set the initial setting value of NTSC 3.58 with the MENU - or +key. 5. Connect the oscilloscope between TP-47R/G and TP-E. 6. Adjust NTSC 3.58 TINT to bring the value of **(B)** in the illustration to **+5V** (W-Cy). (Voltage value between (**W**) and **Cy**))
			NTSC 4.43 TINT	When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.



Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SECAM BLACK OFFSET	**Remote control unit** **Signal generator**		**7.SECAM BL ADJUST**	**[Method of adjustment using measuring instrument]** 1. Receive a SECAM full field colour bar signal. 2. Select **2. V/C** from SERVICE MENU. 3. Select **7. SECAM BL ADJUST** with ▼/▲MENU key. 4. Set the initial setting value with the – or + MENU key. 5. Switch the ①key (colour OFF) and ②key (colour ON) on the remote control and make sure that there is no colour on the black and white screen. 6. If the black and white screen is not best with the initial setting value, make fine adjustment until you get the best black and white screen. 7. While watching the screen, adjust the value to be the same colour between ON & OFF by Ten key on the remote control unit. 8. Press the DISPLAY key twice to return to the normal screen.

KEY ASSIGNMENT OF REMOTE CONTROL UNIT



DEFLECTION CIRCUIT ADJUSTMENT

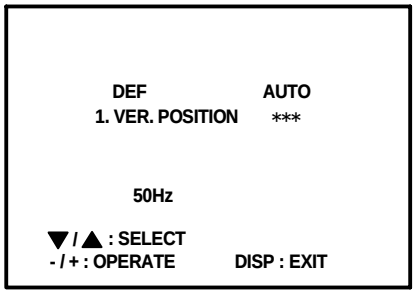
- There are 2 modes of adjustment (setting value) ------ ① 50Hz mode and ② 60Hz mode ----- depending upon the kind of signals (vertical frequency 50Hz / 60Hz).
- When adjusted in mode ① , mode ② will be automatically set.

The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values.
The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>Adjustment of V.HEIGHT & V.POSITION</td><td>Signal generator

Remote control unit</td><td></td><td>1. VER. POSITION
3. VER. HEIGHT</td><td>1. Input a cross-hatch signal.
2. Select 3. DEF. from SERVICE MENU.
3. Select 1. VER. POSITION with the MENU ▼/▲ key.
4. Set the initial setting value 1. VER. POSITION with the MENU - / + key.
5. Adjust 1.VER. POSITION to make V=V" as shown in Fig.2 with the MENU - / + key.
6. Select 3. V. HEIGHT with the MENU ▼/▲ key.
7. Set the initial setting value with the MENU - / + key.
8. As shown in Fig.1, adjust VER. HEIGHT and make the vertical screen size 92% of the picture size with the MENU - / + keys of remote control unit.</td></tr>
<tr><td>Adjustment of HOR. POSITION</td><td>Signal generator

Remote control unit</td><td></td><td>2.HOR. POSITION</td><td>9. Input a circle pattern signal.
10. Select 2. HOR POSITION with the MENU ▼/▲ key.
11. Set the initial setting value of 2. HOR. POSITION with the MENU - / + key.
12. Adjust 2. HOR. POSITION to make H=H" as shown in Fig.2 with the MENU - / + key.</td></tr>
</table>



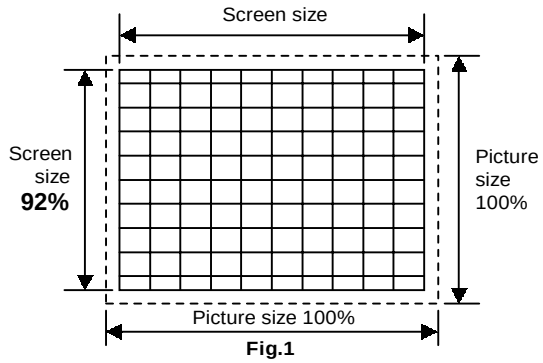


Fig.1

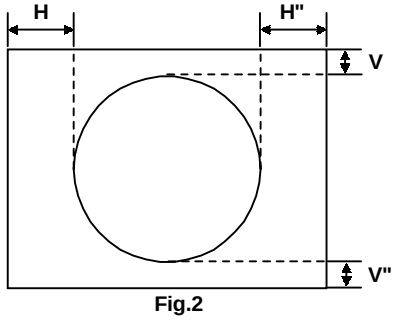


Fig.2

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of VER. LIN. & VER. SCURVE	**Signal generator** **Remote control unit**		**4. VER. LIN.** **5. VER. SCURVE**	● **When the vertical linearity has been deteriorated remarkably, perform the following steps.** 13. Input a cross-hatch signal. 14. Select **4. VER. LIN.** with the MENU ▼/▲ key. 15. Set the initial setting value of **4. VER LIN.** with the MENU - / + key. 16. Select **5. VER. SCURVE** with the MENU ▼/▲ key. 17. Set the initial setting value of **5. VER. SCURVE** with the MENU - / + key. 18. Adjust **4. VER. LIN.** and **5. VER. SCURVE** so that the spaces of each line as shown in Fig.3 on **TOP**, **CENTER** and **BOTTOM** become uniform.
				Make sure that the adjustment is properly done on the screen of 60Hz mode. **[NOTE]** ● Adjust to make both 50Hz & 60Hz are the same v. size and fine straight line. ● When adjust again, adjust 50Hz mode first. ● When adjust in 60Hz mode, only 60Hz mode is adjust.

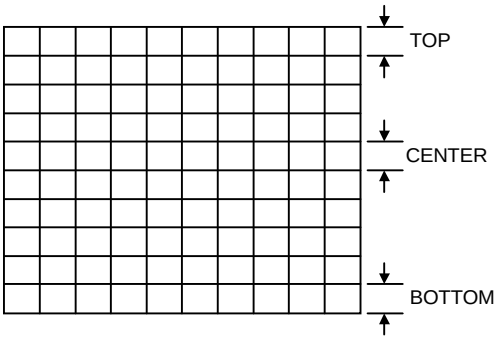
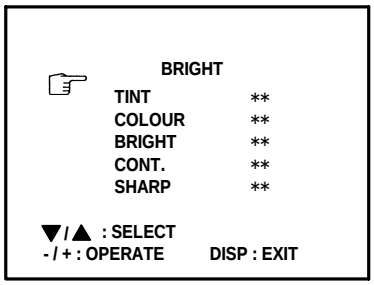


Fig.3

VSM PRESET SETTING

Item	Measuring instrument	Test point	Adjustment part	Description
Setting of VSM PRESET	**Remote control unit**		**TINT** **COLOUR** **BRIGHT** **CONT.** **SHARP**	1. Select **4. VSM PRESET** from the SERVICE MENU. 2. Select BRIGHT with the PICTURE MODE key. 3. Adjust the MENU ▼/▲ and MENU - or + key to bring the set values of **TINT ～ SHARP** to the values shown in the table. 4. Respectively select the VSM PRESET mode for SOFT and STANDARD, and make similar adjustment as in 3 above.

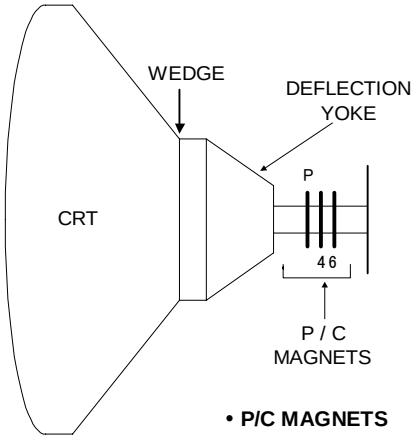


Mode / item	BRIGHT	STANDARD	SOFT
TINT	+15	←	←
COLOUR	+15	←	←
BRIGHT	+15	←	←
CONT.	+30	+15	+11
SHARP	+15	←	+12

PURITY / CONVERGENCE ADJUSTMENT

PURITY ADJUSTMENT

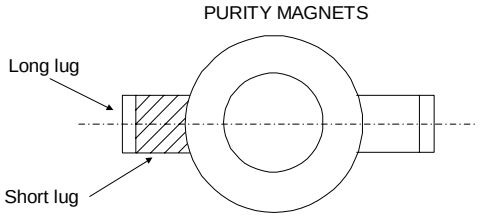
1. Demagnetize CRT with the demagnetizer.
2. Loosen the retainer screw of the deflection yoke.
3. Remove the wedges.
4. Input a green raster signal from the signal generator, and turn the screen to green raster.
5. Move the deflection yoke backward.
6. Bring the long lug of the purity magnets on the short lug and position them horizontally. (Fig.2)
7. Adjust the gap between two lugs so that the GREEN RASTER will come into the center of the screen. (Fig.3)
8. Move the deflection yoke forward, and fix the position of the deflection yoke so that the whole screen will become green.
9. Insert the wedge to the top side of the deflection yoke so that it will not move.
10. Input a crosshatch signal.
11. Verify that the screen is horizontal.
12. Input red and blue raster signals, and make sure that purity is properly adjusted.



• P/C MAGNETS

P : PURITY MAGNET
4 : 4 POLES (convergence magnets)
6 : 6 POLES (convergence magnets)

Fig.1



Bring the long lug over the short lug and position them horizontally.

Fig.2

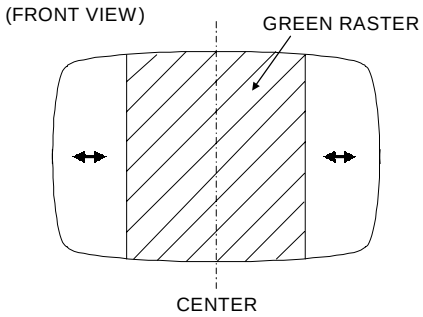


Fig.3

STATIC CONVERGENCE ADJUSTMENT

1. Input a crosshatch signal.
2. Using 4-pole convergence magnets, overlap the red and blue lines in the center of the screen (Fig.1) and turn them to magenta (red/blue).
3. Using 6-pole convergence magnets, overlap the magenta(red/blue) and green lines in the center of the screen and turn them to white.
4. Repeat 2 and 3 above, and make best convergence.

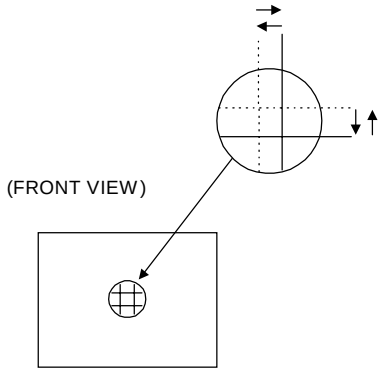


Fig.1

DYNAMIC CONVERGENCE ADJUSTMENT

1. Move the deflection yoke up and down and overlap the lines in the periphery. (Fig. 2)
2. Move the deflection yoke left to right and overlap the lines in the periphery. (Fig. 3)
3. Repeat 1 and 2 above, and make best convergence.

(FRONT VIEW)

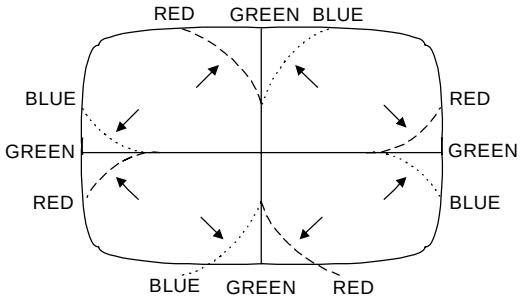


Fig.2

- After adjustment, fix the wedge at the original position.
  Fasten the retainer screw of the deflection yoke.
  Fix the 6 magnets with glue.

(FRONT VIEW)

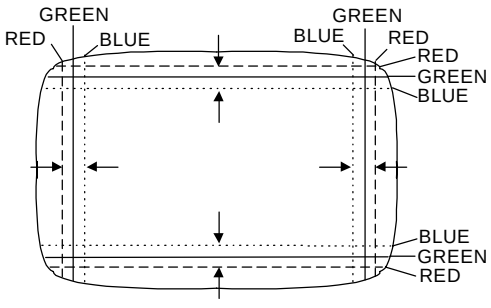


Fig.3

REPLACEMENT OF CHIP COMPONENT

■ CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

■ SOLDERING IRON

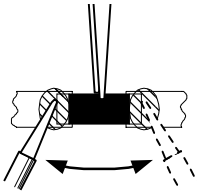
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

■ REPLACEMENT STEPS

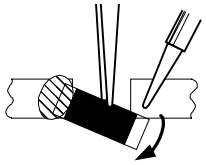
1. How to remove Chip parts

◆ **Resistors, capacitors, etc**

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

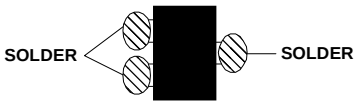


(2) Shift with tweezers and remove the chip part.

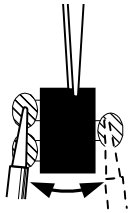


◆ **Transistors, diodes, variable resistors, etc**

(1) Apply extra solder to each lead.



(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

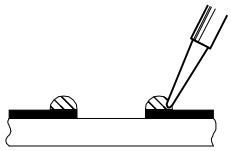


Note : After removing the part, remove remaining solder from the pattern.

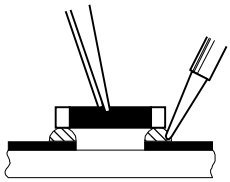
2. How to install Chip parts

◆ **Resistors, capacitors, etc**

(1) Apply solder to the pattern as indicated in the figure.



(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

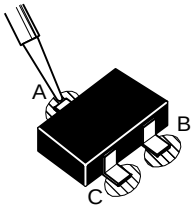


◆ **Transistors, diodes, variable resistors, etc**

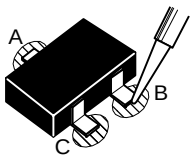
(1) Apply solder to the pattern as indicated in the figure.

(2) Grasp the chip part with tweezers and place it on the solder.

(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.



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