

JVC

SERVICE MANUAL

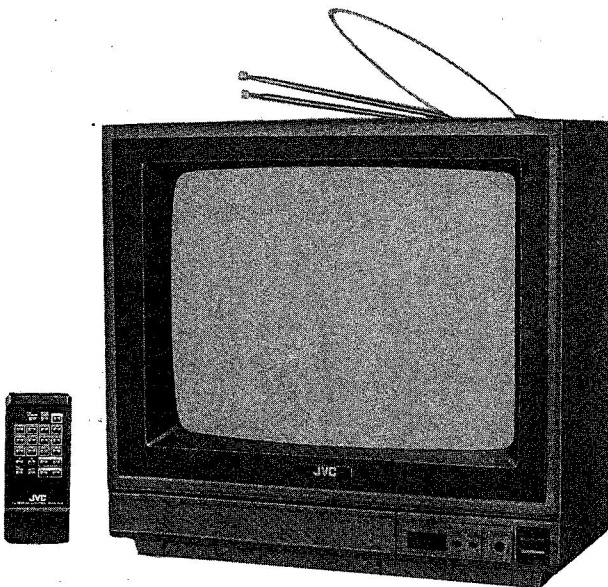
14" COLOR TV

MODEL C-1336 (CAT)

CONTENTS

Specifications	1
Safety Precaution	2
Features	2
Outline	2~3
Functions	4~5
How to Remove for Service	6
Service Adjustment	7
Replacement Parts List	8~15
* WITH SCHEMATIC DIAGRAM & SERVICE ADJUSTMENT (NTSC)	

- BASIC CHASSIS: VX-SHASSIS
- SAME TYPE MODEL: C-1350



SPECIFICATIONS

Dimension : (W) 37.0 cm × (D) 37.8 cm × (H) 35.0 cm
 Weight : 10.3 kg
 GND. : Live & Neutral GND.

TV System & Color System

VHF/UHF : CCIR(M), NTSC

TV Receiving Channel & Frequency

V_L Band (2~6) : 54 MHz ~ 88 MHz
 V_H Band (7~13) : 174 MHz ~ 216 MHz
 UHF Band (14~69) : 470 MHz ~ 806 MHz

Intermediate Frequency

Video IF Carrier : 45.75 MHz
 Sound IF Carrier : 41.25 MHz (4.5 MHz)
 Color Sub Carrier : 3.58 MHz
 ANT. Input Impedance: 75 Ω Unbalanced (VHF)
 300 Ω Balanced (UHF)

Power Input : AC120 V, 60 Hz
 Input Current : 1.15 A
 Picture Tube : 14" In-Line Type
 Viewable Picture Size: (W) 28.1 cm × (H) 21.1 cm
 High Voltage : 24 kV ± 1 kV (at zero beam current)

Speaker : 8 cm round type, 8 Ω
 Audio Power Output : 1.2 W
 Video Input : 1 V_{p-p}, 75 Ω
 Audio Input : 390 mV_{rms} (−6 dB) High Impedance

Tube : 1
 IC. : 12 (in TV), 1 (in Remocon)
 Transistor : 23 (in TV), 2 (in Remocon)

(Design and specifications subject to change without notice)

SAFETY PRECAUTION

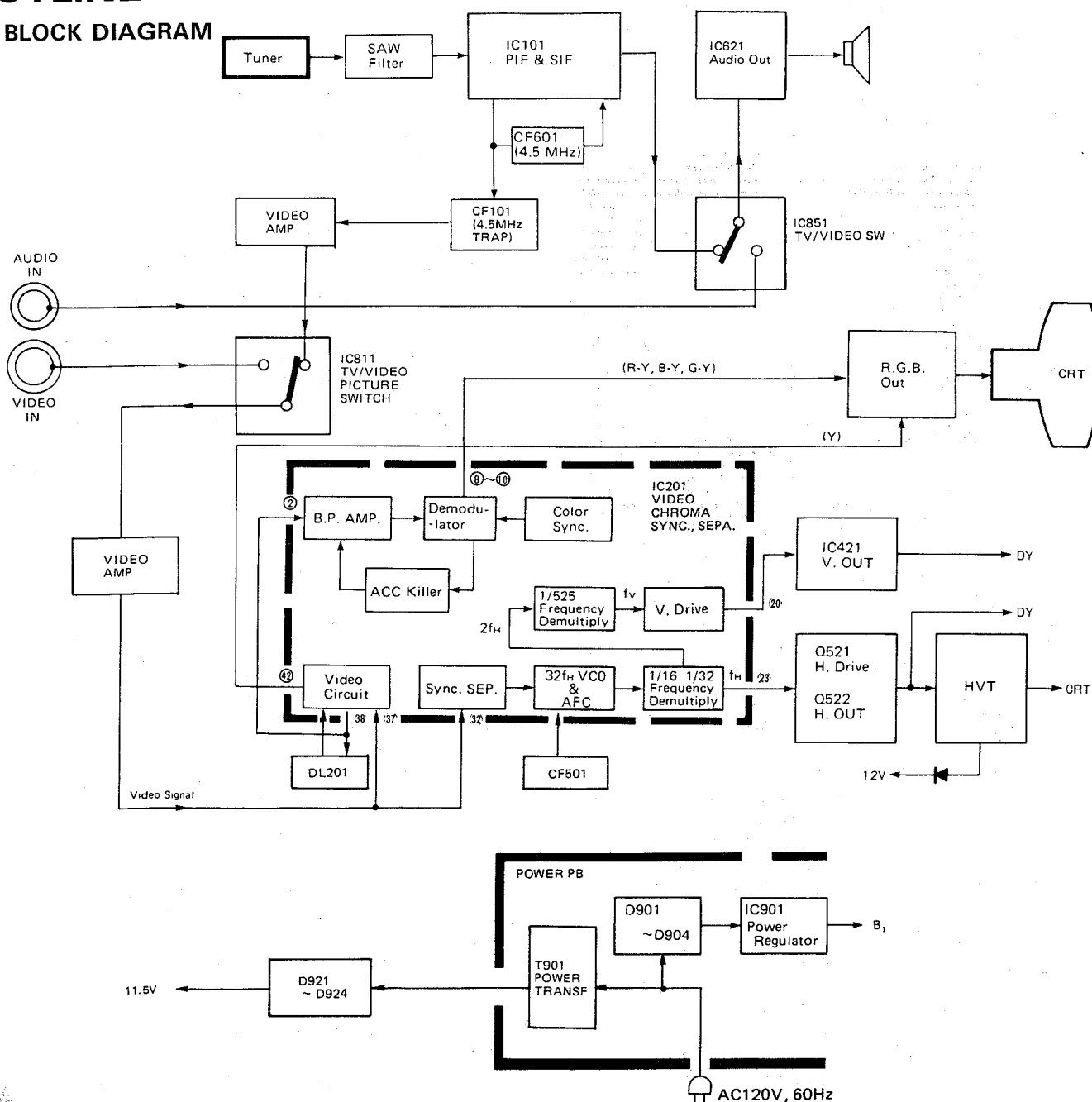
As for safety precautions including electric shock prevention, use of designated components, or safety inspection after servicing, refer to the appended NTSC.

FEATURES

- Adopts IC's into which video, sync, and chroma circuits are one-pack incorporated. Also employed is a new-type chassis mounted with a one-chip microcomputer for sensor control.
- On-screen display of channels, sound volume and video.
- Provided with a 60-min. sleep timer.
- Remote-control device facilitates selections on channels, sound volume, power ON/OFF, muting, sleep timer, TV/video and on-screen.
- With audio, video input terminal.
- Channel display button permits free changing of channel displays.

OUTLINE

■ BLOCK DIAGRAM



■ Video, Sync. and chroma circuit in this model are incorporated into a 42 pin LSI(IC201), eliminating the need for adjusting color Sync., V. Sync. and H. Sync.

1. Video signals video-detected by the IC101 and video signals from VIDEO IN terminal are input into the No. ③② and No. ③⑦ pins of IC201 through switching IC. Those signals input through the No. ③⑦ pin are subjected to pedestal clamping/picture adjusting and output through the No. ③⑧ pin.

After being delayed by the DL201, these signals are once more input into the IC201, subjected to brightness adjustment and amplification, and then distributed to respective chroma output circuits through outputting from the No. ④② pin (Y signals).

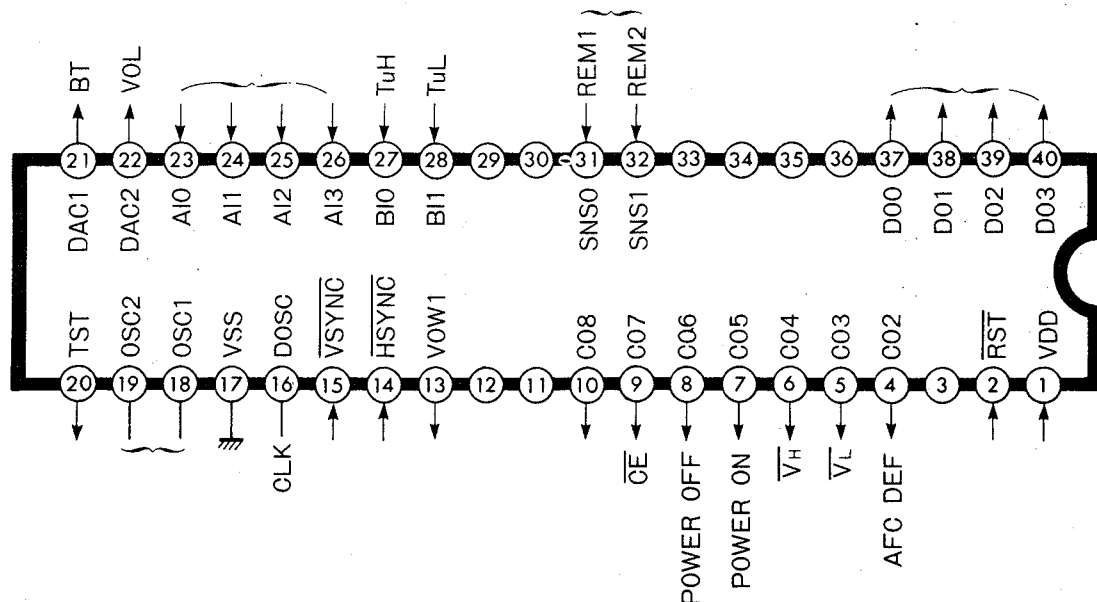
2. On the other hand, the other group of signals than signals input through No. ③⑦ pin and output through No. ③⑧ pin passes through the BPT, is input through the No. ② pin

pin of IC201, and is demodulated after being subjected to BP amplifying by the chroma signal circuits, outputting color difference signals through the No. ⑧, ⑨ and ⑩ pins.

Meanwhile, those signals input through the No. ③② pin — namely, sync. signals are separated by the sync. separation circuits in IC201 and input into the AFC circuit in IC201.

3. The 32fH oscillation circuit in IC201 is a free-run type requiring no adjustment by the VCO using a CF501 ceramic filter. H. frequency is obtained by dividing it into 1/32 and output through No. ②③ pin, while V. frequency is obtained by dividing it into 1/525 after effecting 1/16 frequency demultiply to get 2fH, and output through No. ②① pin after V. drive. Refer to the BLOCK DIAGRAM for repair service.

• IC721 SENSOR CONTROL IC

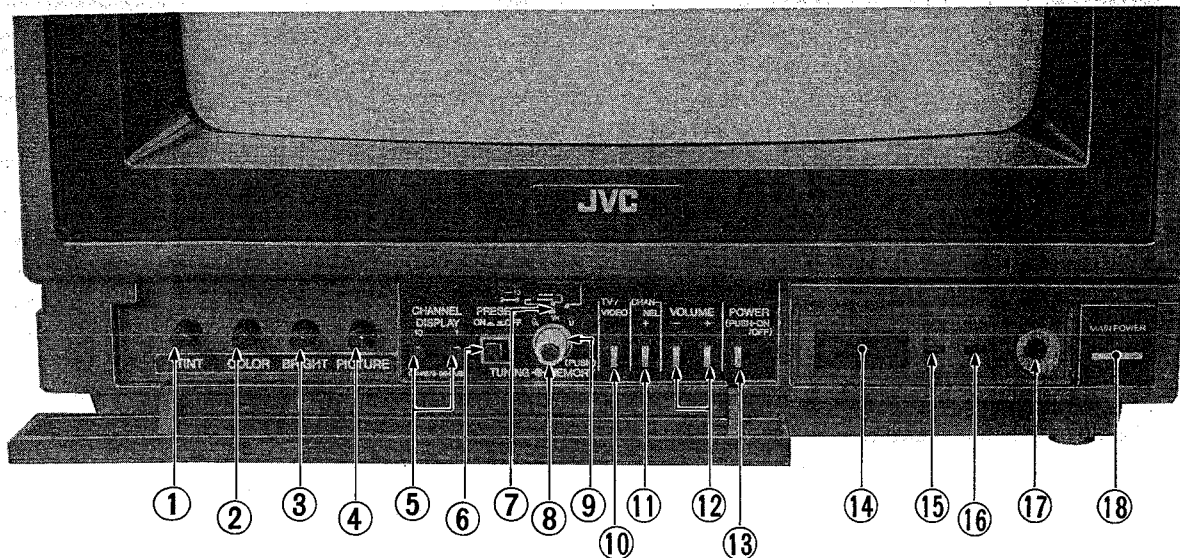


PIN FUNCTIONS

Pin No.	Name	Function	Pin No.	Name	Function
1	VDD	+ 5 V power supply input	16	CLK (DOSC)	Oscillation terminal for on-screen display
2	RST	Reset input	17	GND (VSS)	Grounding
		Resetting under "L" with main power supply "ON"	18	(OSC1)	} External-connection terminal for CPU clock oscillation circuit (500 kHz)
4	AFC DEF (C02)	AFC defeat output	19	(OSC2)	
5	VL (C03)	Band switching output	20	(TST)	Sleep timer display output
6	VH (C04)	"	21	BT (DAC1)	Tuning DA converter output
7	POWER ON (C05)	Power supply "ON" output	22	VOL (DAC2)	Sound-volume-controlling
8	POWER OFF (C06)	Power supply "OFF" output			DA converter output
9	CE (C07)	Chip enable output	23 ~ 26	(AI0 ~ AI3)	4-bit key scan input
10	(C08)	Program output	27	TuH (BIO)	} Tuning signal input (input from presetting comparator)
13	(VOW1)	On-screen display letter output	28	TuL (BI1)	
14	(HSYNC)	H. sync signal input (negative polarity)	31	REM1 (SNS0)	} Remote-controlled data input
15	(VSYNC)	V. sync signal input (negative polarity)	32	REM2 (SNS1)	
			37 ~ 40	(D00 ~ D03)	4-bit key scan output

FUNCTIONS

(Front view)



■ FRONT CONTROL

① Tint control

② Color control

③ Bright control

④ Picture control

⑤ Channel display button

This button causes the display of received channel numbers on the screen.

"1-place" button Each pressing changes channel "0" through "9".

"10-place" button Each pressing changes channel "no display" and "1" through "9".

* Only the channel display changes.

* Selection of broadcasting stations is not possible.

• Channel Memory Presetting

⑤ CH. display button/ ⑥ preset button/ ⑦ Band Switch/ ⑧ Memory button/ ⑨ Tuning-knob

1. Press the **preset button** "ON".
2. Press the channel button (on remote-control device) of the desired channels.
3. Preset the **band switch** as follows:
For memorizing channels 2~6 → VL (VHF)
For memorizing channels 7~13 → VH (VHF)
For memorizing channels 14~69 → U (UHF)
4. Rotate the **tuning knob** and receive pictures from those broadcasting stations desired to be memorized.
5. By pressing the **channel display button**, display the channel number of the broadcasting station from which the picture was displayed.
6. Press the **memory button** (the channel display flickers once).
7. After completing the memorizing of all desired station channels, press the **preset button** "OFF".

* Prior to shipment from the factory, standard presetting to permit sequential channel changing from channel 2 through 13 is applied to the TV units.

⑥ **Preset button** (AFC (Automatic fine-tune control))

No exclusive AFC < ON ⇄ OFF > switch is provided on this TV unit; However by setting the Preset button "ON", the AFC circuit can be switched "OFF".

⑩ **TV/Video button**

Each time the TV/Video button is pressed, the mode is set to TV mode or Video mode.

* In TV mode, the input at the antenna terminal is used. In Video mode, the input at the Video input terminal is used.

⑪ **Channel up-button**

⑫ **Volume up-Down button**

⑬ **Power button**

Press the power button while the unit is in standby mode, then, power is supplied and the TV set operates. Press the power button again to turn the power off. The unit is set to standby mode.

⑭ **Remocon Sensor**

⑮ **Sleep timer indicator**

Lights when the sleep timer button (on remote control device) is pressed to set the sleep timer. When the sleep timer is released, the indicator goes off.

⑯ **Main power indicator**

Lights when the main power button is pressed. Goes off when the main power is shut off.

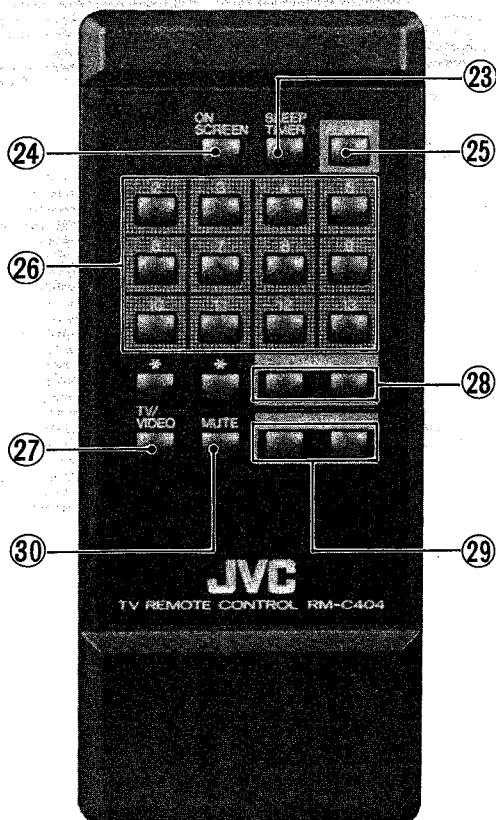
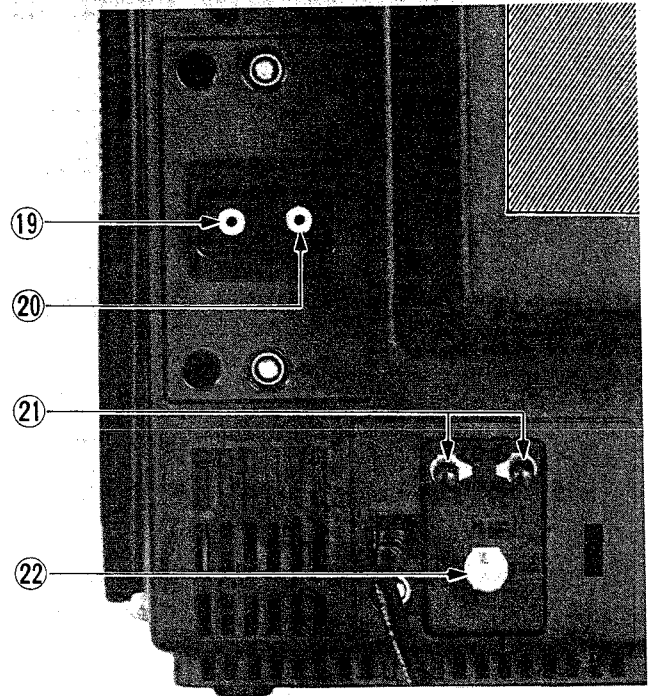
⑰ **Earphone jack**

⑱ **Main Power button**

Press the main power button. Then, the main power indicator lights and the unit is set to standby mode. Press the button again to turn the main power off.

■ REAR TERMINAL

- ①⑨ **Video input terminal**
The terminal for monitoring by connecting the video output from a video camera, VTR or other equipment.
- ②⑩ **Audio input terminal**
The terminal for monitoring by connecting the audio output from a videocamera, VTR or other equipment.
- ②⑪ **UHF antenna terminal**
300 Ω feeder from UHF outdoor antenna or UHF loop antenna.
- ②⑫ **VHF antenna terminal**
75 Ω coaxial cable from VHF outdoor antenna or 300 Ω feeder from VHF rod antenna [Though the Conversion plug (300 Ω \rightarrow 75 Ω)]
* For better reception, use the outdoor VHF & UHF antenna.



■ REMOTE CONTROL

- ②③ **Sleep timer button**
- ②④ **On-screen button**
When the on-screen button is pressed, screen display is obtained. Press it again to turn the display off.
- ②⑤ **Power button**
Press the power button when the TV set is in standby mode. Then, the TV set is activated. Press the button again to turn the power off. The TV set is set to standby mode.
- ②⑥ **Direct channel button**
- ②⑦ **TV/Video button**
- ②⑧ **Up/down channel button**
- ②⑨ **Up/down Volume button**
Digits indicating the sound volume (00 — 50) are displayed on the screen for numerical checking of the volume.
- ③⑩ **Mute button**
Press the mute button. Then the volume indication digits become "00" and the sound disappears while the button is pressed. Press the button again to obtain the sound again (reset).

HOW TO REMOVE FOR SERVICE

■ REMOVING THE REAR COVER

1. Remove the seven screws (A) shown in Fig. 1 and detach the rear cover by pulling it backward.

* When reinstalling the rear cover, carefully push it inward after inserting the main PC Board into the rear cover groove.

■ REMOVING THE MAIN P.B. & POWER P.B. CHASSIS

* After removing the rear cover.

1. Remove the three screws marked (A) in Fig. 2. Then remove the anode wire and other wires (if necessary).
2. Withdraw the main PB and power PB chassis backward along the rail.

* When conducting a check with power supplied, be sure to confirm that the CRT earth wire is connected to the CRT socket board and the main P.B.

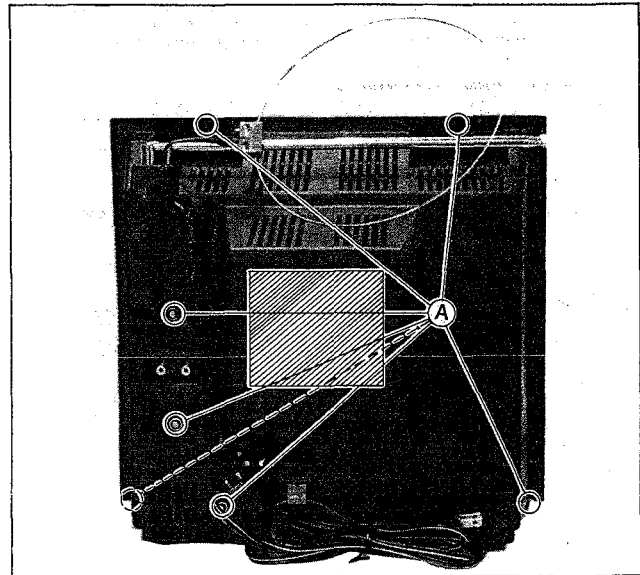


Fig. 1

■ WIRE CLAMPING AND TYING BAND

1. Be sure to clamp the wire.
2. Never remove the tying band used for wire clamping. Should it be removed, be sure to reclamp the wire in its original position.

(Be sure to use insulating material.)

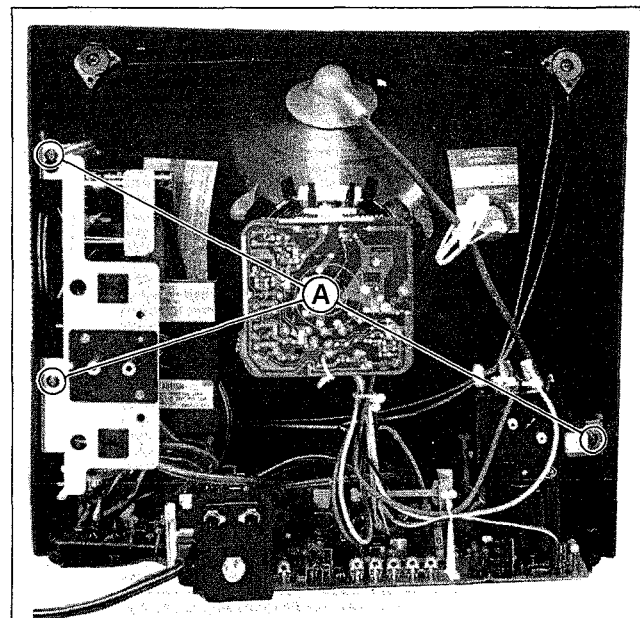


Fig. 2

SERVICE ADJUSTMENTS

REGARDING GENERAL OR CHROMA ADJUSTMENTS, REFER TO THE APPENDED NTSC.
AS TO THE FOLLOWING ITEMS, OBSERVE THE RESPECTIVE INSTRUCTIONS GIVEN HEREIN.

As for the test points and respective volume adjusting positions, refer to the schematic diagram and the section on "alignment locations" appearing in the same diagram.

■ NOTICE FOR APPENDED "NTSC" ADJUSTMENT

As to the following adjustment, adjust by referring to appended NTSC adjustment.

- Safety precaution
- Purity, Convergence and White balance
- Horizontal Line
- B1 Voltage adjustment
- Sub Picture adjustment
- Sub Tint adjustment • Noise adjustment
- Sub Color adjustment
- V. Height adjustment
- On-Screen (CLK) adjustment
- V. IF adjustment
- RF. AFC adjustment
- S. IF adjustment

■ HOW TO CHECK THE HIGH VOLTAGE HOLD DOWN CIRCUIT

1. High voltage hold down circuit.
After repair of the high voltage hold down circuit shown in Fig. 1, this circuit shall be checked to operate collectly.
2. Checking method of the high voltage hold down circuit.
 - (1) Make the short circuit across the R905, 470 Ω 15 W UNF R (shown in Fig. 2, []) under normal operating condition.
 - (2) Confirm the picture goes out.

■ SUB BRIGHTNESS

1. Set the Bright, Color, Tint and picture knobs to central position respectively.
2. Adjust the sub bright VR (R231) to obtain the optimum brightness.

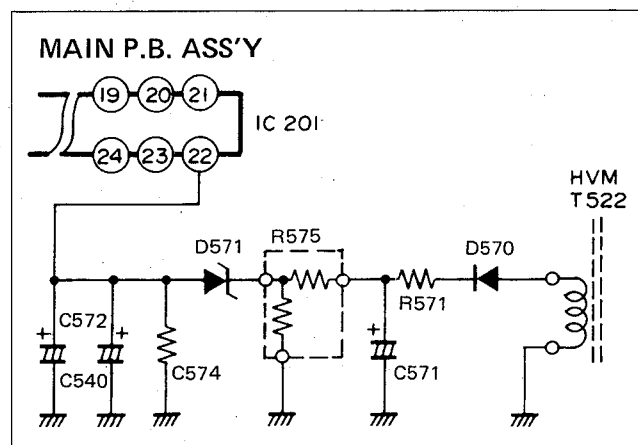


Fig. 1

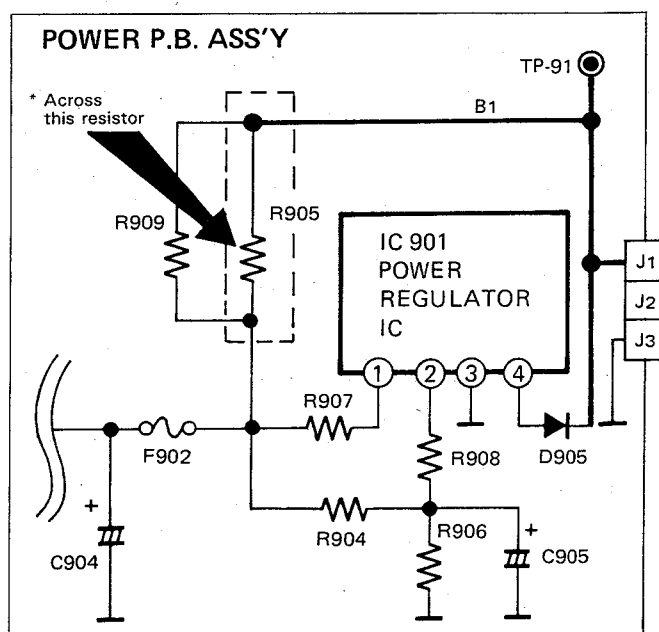
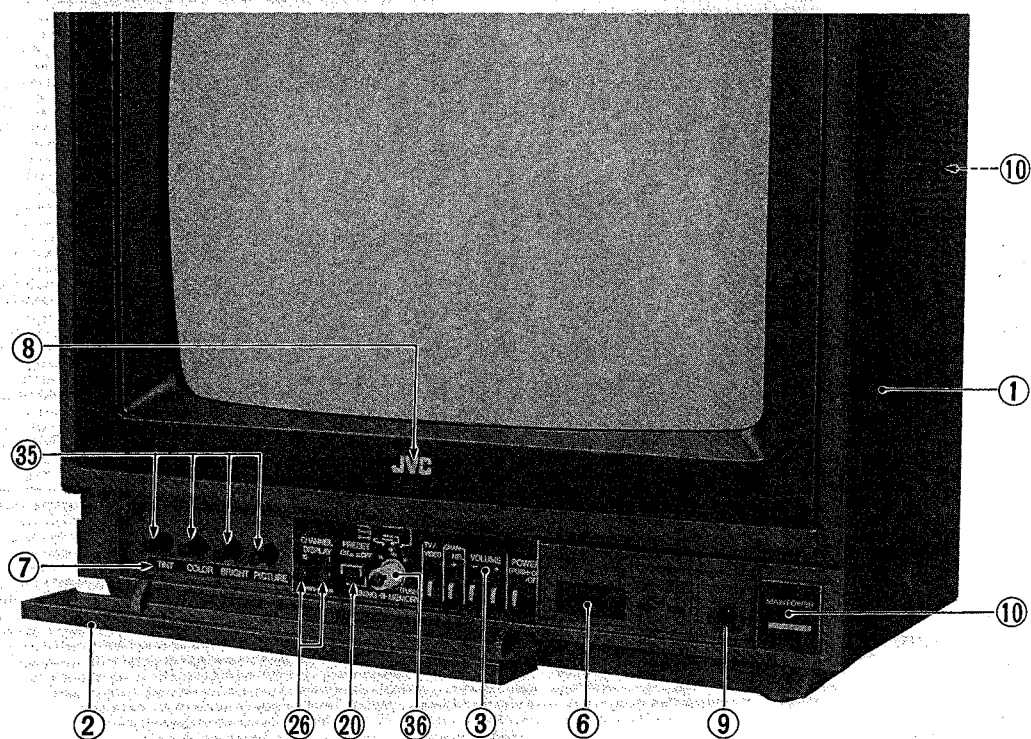
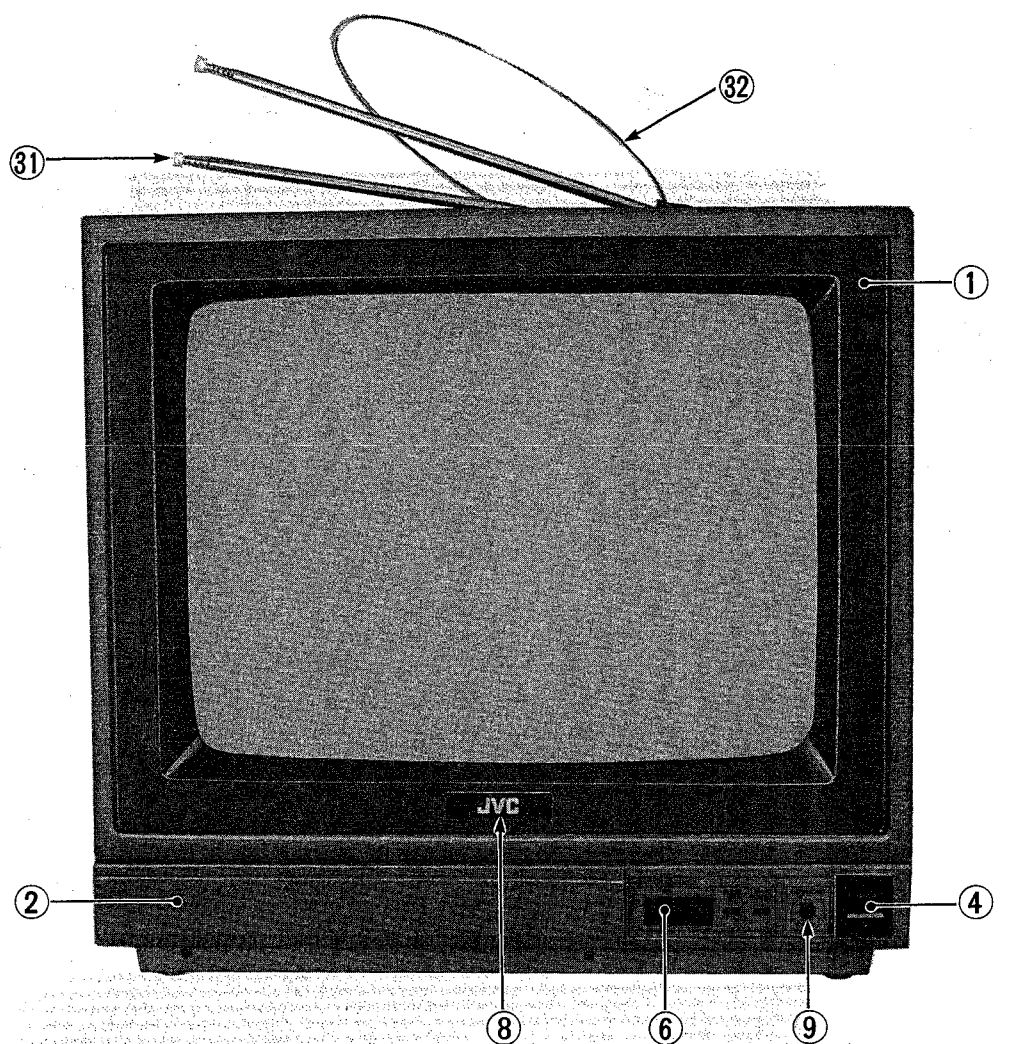


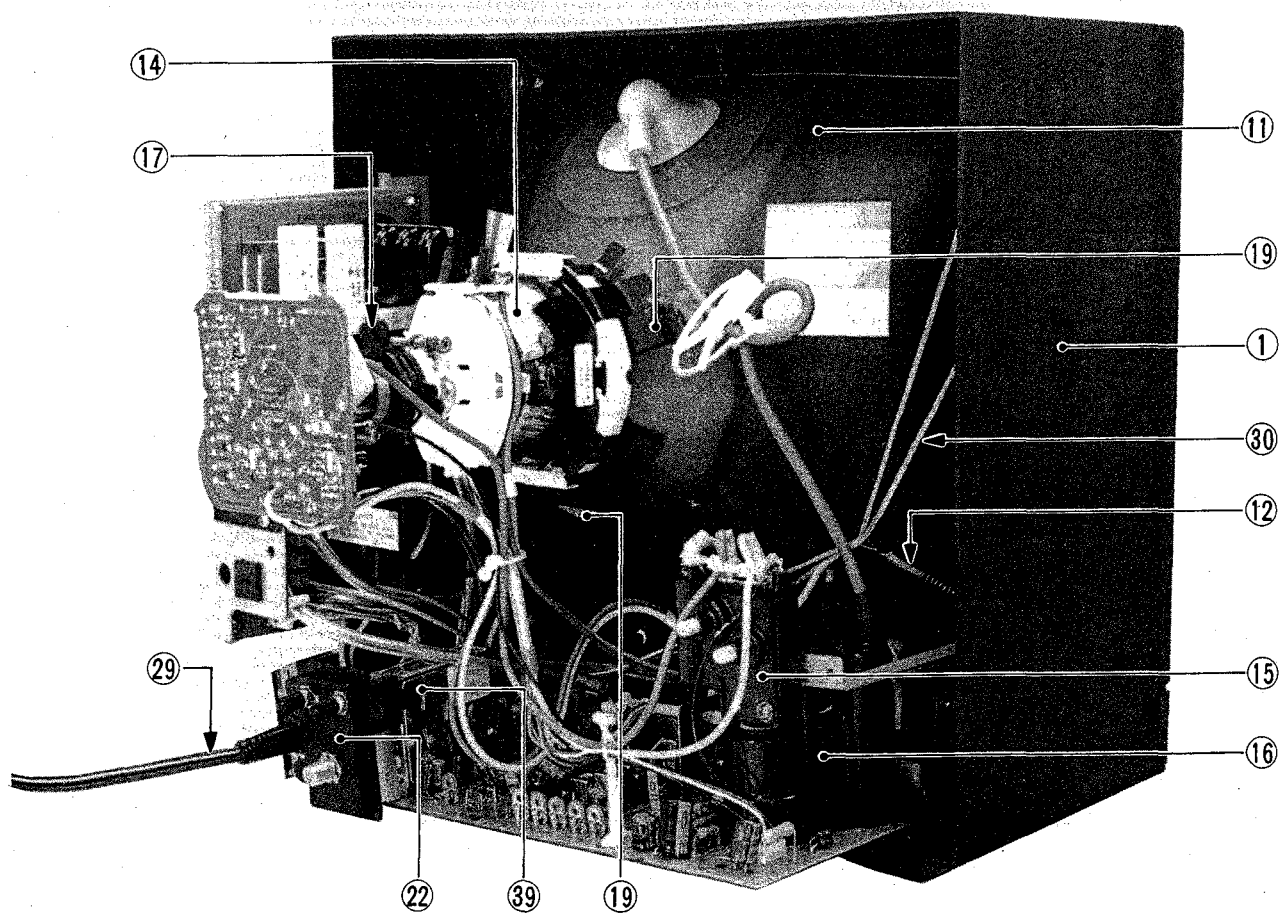
Fig. 2

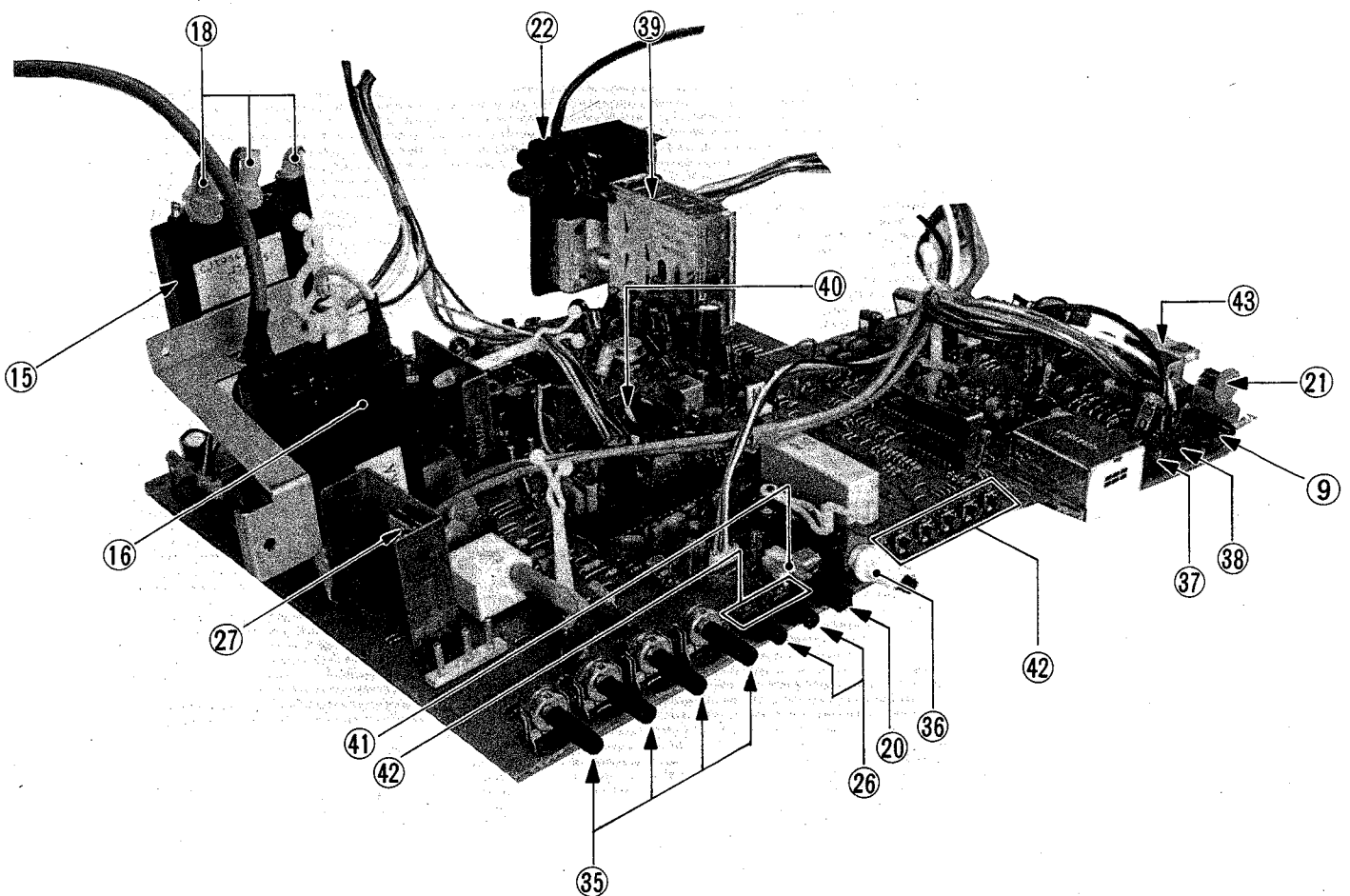
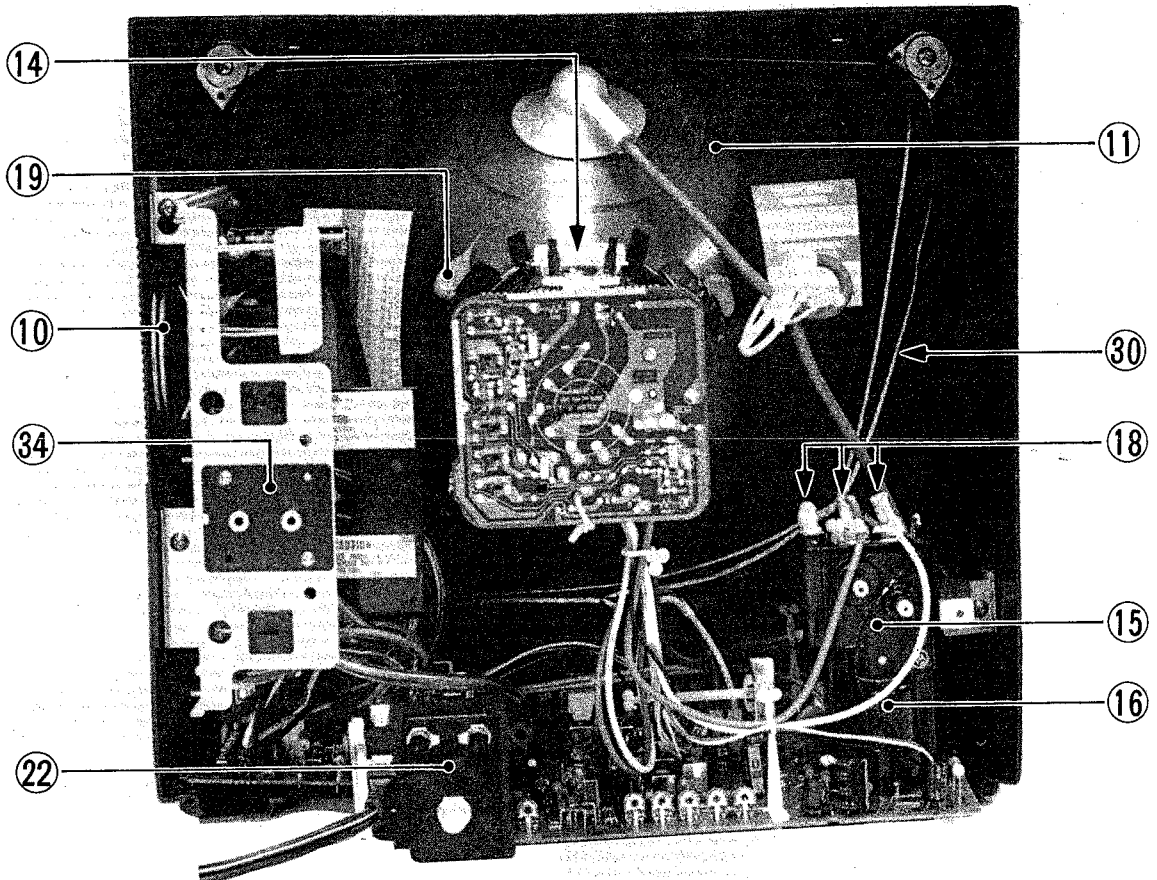
REPLACEMENT PARTS LIST

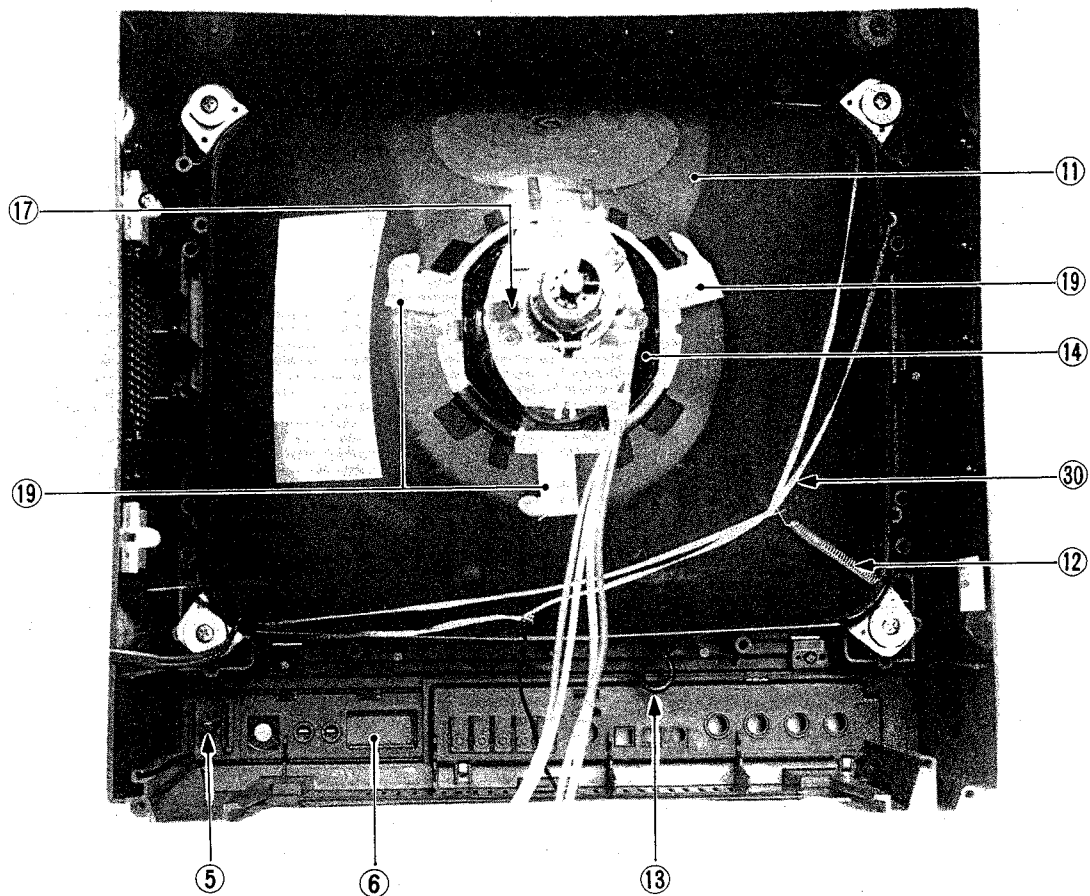
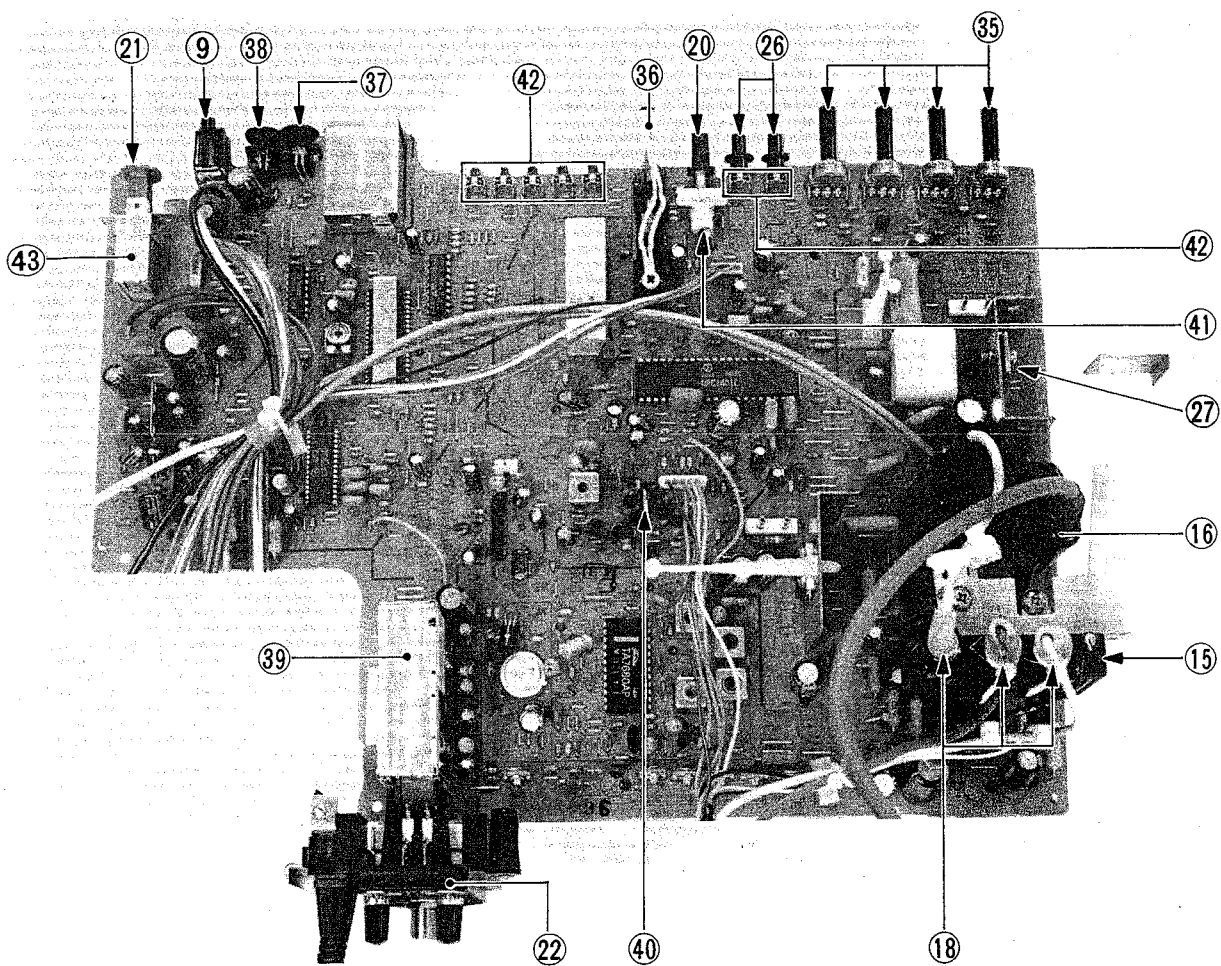
CHASSIS AND CABINET PARTS LIST

VIEW No.	SYMBOL No.	△	PART No.	PART NAME	REMARK
1			CM10200-00S-M0	Front Cabinet Ass'y	
2			CM30845-017	Door	Within Front Cabinet Ass'y
3			CM41673-004	Operation Sheet	"
4			CM41674-004	Push Knob (Main power)	"
5			CM30861-001	Spring (Main power)	"
6			CM41675-00E-V0	Remocon Window	
7			CM41891-001	Control Plate	Within Front Cabinet Ass'y
8			C40590	JVC Mark	"
9	J1621		CEX40288-001	Earphone Jack	
10	SP01		EAS-8P16ST	Speaker	
11	V01	△	CPJ3708VBK1U-T	Picture Tube	
12			A48457	Spring (Picture Tube)	
13	L01	△	C30172-P	Degaussing Coil	
14	DY01	△	CE20095-00A-KD	Def Yoke	
15		△	CJ39544-756-75	Focus Pack	
16	T1522	△	CJ26433-00A-KD	HV Transf.	
17			CE40305-00B	PC Magnet	
18			A46445	Focus Cover	(x3)
19			CE40764-00A	Wedge Ass'y	(x3)
20			CM41678-B01	Push Knob	Preset Switch
21			CM41677-A01	Knob Cap.	Main Power
22		△	CM30926-00B-V0	Ant. Terminal Ass'y	
23			CM10193-007-MT	Rear Cover	
24			CM21033-001-T	Rating Label	
25			GBSA4016N	Tap Screw	(x7)
26			CM41887-001	Push Knob	(x2) CH display
27	Q1522	△	2SD1554	Si Transistor	H. Out
28			N47971	Cord Clamp	
29		△	QMP1650-244R	Power Cord	
30			CH30168-00B	Braided Ass'y	
31			A37963-BA	Rod Ant. Ass'y	
32			C40910-A	UHF Loop Antenna	
33			CE40128-002	75 Ω Conv. Adaptor	
34		△	CM20615-A0A	AV Terminal Ass'y	
35	R1230, R1240 R1330, R1333		QVCA002-CB14M	VR	(x4) Bright, Picture, Tint, Color
36	R1701		A76104-20K	VR Ass'y (Band SW, Memory, Tuning)	
37	D1706		SEL1910D	LED	Sleep Timer Indicator
38	D1926		SLR-54UR5	"	Main Power Indicator
39	UV1001	△	AK7012EZ-B03	VHF/UHF E. Tuner	
40	S1201		QSL4A13-C02	Lever Switch	Service Switch
41	S1701		QST3101-C03	Push Switch	Preset Switch
42	S1702~8		QSP4H11-C03	"	CH Display, Power
					CH +, Vol. ±, TV/Video
43	S1901	△	QSP2J11-C01	Power Switch	Main Power









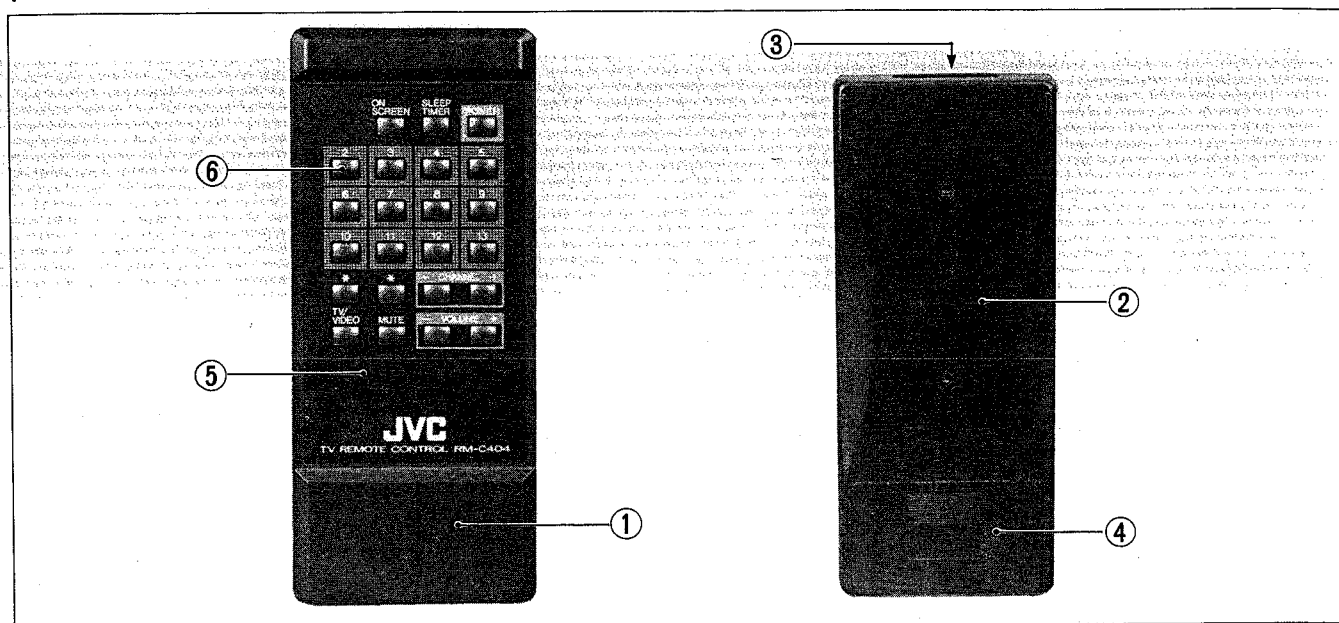
SX-1158A (MAIN P.B. ASS'Y)

SYMBOL No.	△	PART No.	PART NAME	REMARK	SYMBOL No.	△	PART No.	PART NAME	REMARK
VARIABLE RESISTOR					C1629	△	QETB1AM-477	E Cap.	470μF 10V M
R1104		CEX40197-014	VR	10kΩ B (Noise)	C1631	△	QETB1CM-228	"	2200μF 16V "
R1230		QVCA002-CB14M	"	" (Bright)	C1813	△	QET61CR-336Z	"	33μF " "
R1231		CEX40197-023	"	2kΩ B (Sub Bright)	C1852		QEN61HM-105Z	BP E Cap.	1μF 50V "
R1240		QVCA002-CB14M	"	10kΩ B (Picture)	C1901	△	QCZ9016-222A	C Cap.	2200pF AC 125V "
R1241		CEX40197-014	"	" (Sub Picture)	C1922	△	QET61CR-476Z	E Cap.	47μF 16V "
R1330		QVCA002-CB14M	"	" (Tint)	C1531	△	QET51ER-477	"	470μF 25V "
R1333		" -CB14M	"	" (Color)	TRANSFORMER				
R1341		CEX40197-014	"	" (Sub Tint)	T1103		A75588-B	AFC Transf.	
R1342		" -014	"	" (Sub Color)	T1104		A75899	CW Transf.	
R1352		CEX40202-014	"	" (B. Cutoff)	T1301		A75196	3.58 BP Transf.	
R1354		" -014	"	" (G. Cutoff)	T1521	△	CE40361-00B	H. Drive Transf.	
R1356		" -014	"	" (R. Cutoff)	T1601		CE40121-101	SIF Transf.	
R1369		" -022	"	200Ω B (G. Drive)	T1602		A75583	S Take Off Transf.	
R1371		" -022	"	200Ω B (R. Drive)	T1781		CE40304-001	BP Transf.	
R1404		CEX40197-013	"	1kΩ B (V. Height)	COIL				
R1701		A76104-20K	"	20kΩ B (Preset VR)	L1102		A76186-1.0Z	Peaking Coil	1μH
R1723		CEX40202-023	"	2kΩ B (CLK)	L1103		" -15Z	"	15μH
RESISTOR					L1105		" -8.2	"	8.2μH
R1010	△	QRD149J-150S	CR	15Ω 1/4W J	L1120		" -1.5	"	1.5μH
R1011	△	QRG029J-183	OM R	18kΩ 2W "	L1201		CE40547-330	"	33μH
R1012	△	" -183A	"	" " " "	L1301		A76186-2.7	"	2.7μH
R1116	△	QRD149J-100S	CR	10Ω 1/4W "	L1303		" -15Z	"	15μH
R1357	△	QRG019J-153S	OMR	15kΩ 1W "	L1351		QQL043K-181	"	180μH
R1358	△	" -153S	"	" " " "	L1521		A76186-100	"	100μH
R1359	△	" -153S	"	" " " "	L1602		" -22Z	"	22μH
R1373	△	QRD161J-3R9Y	CR	3.9Ω 1/6W "	L1721		" -2.2	"	2.2μH
R1410	△	QRX019J-4R7S	MF R	4.7Ω 1W "	L1771		CE40547-121	"	120μH
R1431	△	" -2R2S	"	2.2Ω " " "	L1815		A76186-12Z	"	12μH
R1524	△	QRG019J-221S	OM R	220Ω " " "	DIODE				
R1526	△	" -472S	"	4.7kΩ " " "	D1001		1SS133-Y	Si. Diode	
R1527	△	QRD161J-273Y	CR	27kΩ 1/6W "	D1031		"	"	
R1528	△	" -683Y	"	68kΩ " " "	D1201		1SS178-Y	"	
R1532	△	QRX029J-6R8	MF R	6.8Ω 2W "	D1203		1SS133-Y	"	
R1533	△	" -5R6A	"	5.6Ω " " "	D1204		"	"	
R1554	△	QRG029J-332	OM R	3.3kΩ " " "	D1231		"	"	
R1561	△	QRX019J-4R7S	MF R	4.7Ω 1W "	D1421	△	1SR35-100-F	"	
R1562	△	" -1R5S	MF R	1.5Ω " " "	D1422	△	05AZ75	Zener Diode	
R1571	△	" -4R7S	"	4.7Ω " " "	D1431	△	V19E-4	Si. Diode	
R1574	△	QRD161J-472Y	CR	4.7kΩ 1/6W "	D1501		MA4120(M)-Y	Zener Diode	
R1575	△	CJ39520-00V	R Block	" " " "	D1521	△	RH1S-LFA1	Si. Diode	
R1582	△	QRD122J-680S	CR	68Ω 1/2W "	D1531	△	1SR124-400V-F	"	
R1628	△	QRD161J-4R7Y	"	4.7Ω 1/6W J	D1561	△	1SR124-400V-F	"	
R1812	△	" -560Y	"	56Ω " " "	D1570		1SS81	"	
R1901	△	QRC122K-225E	Comp. R	2.2MΩ 1/2W K	D1571	△	HZ7B2LV1	Zener Diode	
R1923	△	QRD141J-102SY	CR	1kΩ 1/4W J	D1581		1SS133-Y	Si. Diode	
CAPACITOR					D1591	△	1SR124-400-F	"	
C1005		QEC01HM-104MZ	E Cap.	0.1μF 50V M	D1701~4		1SS133-Y	"	
C1007	△	QET51CR-477	"	470μF 16V R	D1706		SEL1910D	LED	Sleep Timer ind.
C1110		QCT25CH-121AZ	C Cap.	120pF 50V J	D1707		1SS133-Y	Si. Diode	
C1111		" -180AZ	"	18pF " " "	D1711~14		"	"	
C1113		QEC01HM-474MZ	E Cap.	0.47μF " M	D1720~22		"	"	
C1201		QEN61HM-475Z	BP E Cap.	4.7μF " "	D1723,24		"	"	
C1208	△	QETB1CM-228	E Cap.	2200μF 16V "	D1741		"	"	
C1308		QEN51HM-335	BP E Cap.	3.3μF 50V "	D1751		MA4047(M,H)-Y	Zener Diode	
C1355		QCZ9017-102M	C Cap.	1000pF 3KV P	D1753		MA4270(M)-Y	"	
C1423	△	QEU51VM-107M	E Cap.	100μF 35V M	D1762		1N34A	Ge.Diode	
C1431	△	QETB1VM-477	"	470μF 35V "	D1781		PD49PI	Photo Diode	
C1507		QFP31HG-272S	PP Cap.	2700pF 50V G	D1791		1SS133-Y	Si. Diode	
C1522	△	QET61HR-105Z	E Cap.	1μF " M	D1821		"	"	
C1526	△	QFZ0081-6701S	MPP Cap.	6700pF 1.6KV ±3%	D1871		"	"	
C1527	△	QEZ0077-106M	E Cap.	10μF 250V H	D1921~24	△	1SR35-100-F	"	
C1528	△	QET52CR-336	"	33μF 160V R	D1925	△	1SS133-Y	"	
C1529		QFZ0067-534S	PP Cap.	0.53μF 200V K	D1926		SLR-54UR5	LED	Main Power ind.
C1532	△	QETB1CM-108	E Cap.	1000μF 16V M	D1927		RD12F(B1)	Zener Diode	
C1561	△	QETB1CM-477	"	470μF 16V "	D1928		MA4150(M)	Si. Diode	
C1571	△	QET61ER-107Z	"	100μF 25V "					
C1572	△	QET51AR-107	"	100μF 10V R					

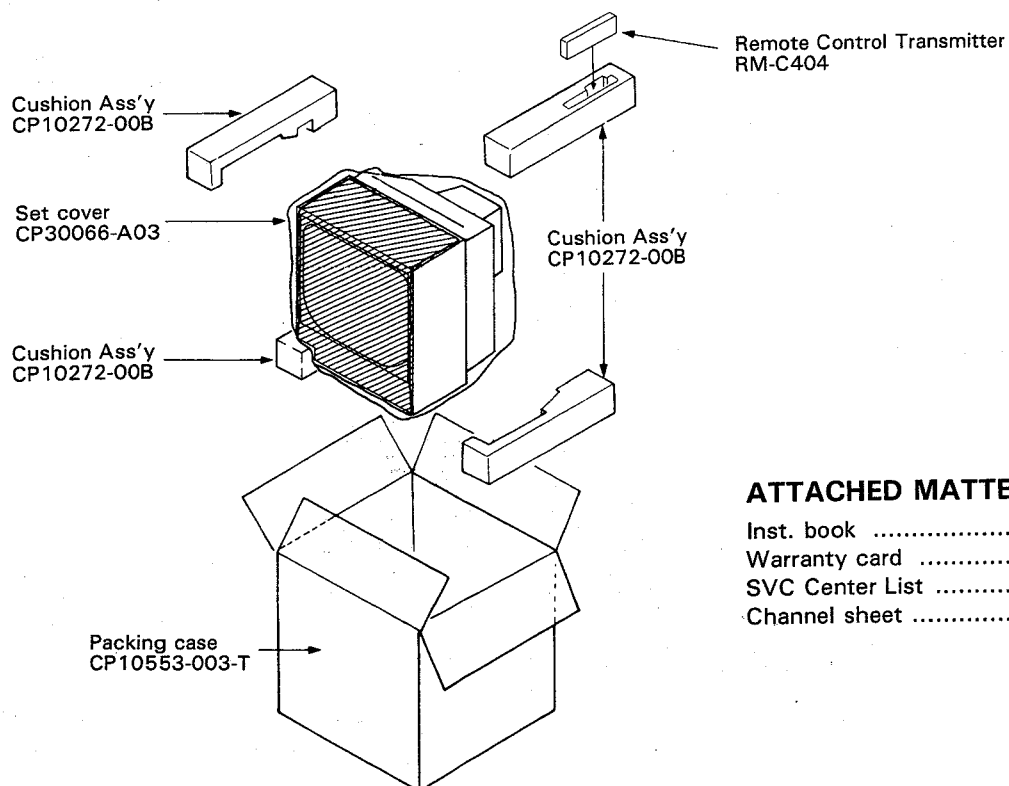
SYMBOL No.	△	PART No.	PART NAME	REMARK	SYMBOL No.	△	PART No.	PART NAME	REMARK
D1929 D1930		1SR35-100-F 1SS133-Y	Si. Diode "		IC1621 IC1721 IC1741 IC1781 IC1791 IC1811 IC1851		AN5265 MN14821VVZ MN1219 μPC1373HA(MS) μPD4049UBC LA7016 LA7016	IC " " " " " "	or TC4049BP
TRANSISTOR Q1001 Q1031 Q1101 Q1120 Q1321 Q1351~53 Q1381 Q1521 Q1522 Q1721 Q1722 Q1761 Q1762 Q1763 Q1764 Q1765 Q1822 Q1921 Q1922		2SK105(E,F) 2SC1740(Q,R)-L 2SA1015(Y,GR)L 2SC1360 2SC1740(Q,R)-L 2SC2482 2SC3187 2SC1627A 2SD1554 2SC1740(Q,R)-L 2SC1740(Q,R) 2SC1740(Q,R)-L 2SA1015(Y,GR)L 2SC1740(Q,R)-L " -L 2SA1015(Y,GR)L 2SC1815(Y,GR)L 2SC1815(Y,GR)L 2SB642(Q,R)	FET Si. Transistor " Si. Transistor " " " " " " " " " " " " " " "	or 2SK301(O,P) or 2SC1627	OTHERS CF1101 CF1501 CF1601 CF1721 DL1201 J1621 SF1101 S1201 S1701 S1702 S1703 S1704 S1705 S1706 S1707 S1708 S1901 UV1001 X1301	△	CE40085-00BJ1 CE40124-45A CSB503F2 A74603-C CSB500E CE40372-001 CEX40288-001 CE40050-204 QSL4A13-C02 QST3101-C03 QSP4H11-C03 " -C03 " -C03 " -C03 " -C03 " -C03 " -C03 " -C03 QSP2J11-C01 AK7012EZ-B03 A76351-D	CRT Socket Ceramic Trap Ceramic Resonat Ceramic Filter " Delay Line Earphone Jack Saw Filter Lever Switch Push Switch " " " " " " " " " UHF/VHF E. Tuner Crystal	Service Switch Reset Power CH + TV/Video Vol + Vol - CH. Display CH. Display Main Power
IC IC1001 IC1101 IC1201 IC1421		LA7930 TA7680AP UPC1401C AN5515	IC " " "			△			

SX-9125A (POWER P.B. ASS'Y)

SYMBOL No.	△	PART No.	PART NAME	REMARK	SYMBOL No.	△	PART No.	PART NAME	REMARK
RESISTOR R9901 R9904 R9905 R9906 R9907 R9908 R9909		QRF076K-2R0 QRD122J-822S QRF154J-471 QRD142J-224S QRXQ29J-3R9 QRD142J-391S QRF154J-471	UNF R CR UNF R CR MF R CR UNF R	2Ω 7W K 8.2kΩ 1/2W J 470Ω 15W " 220kΩ 1/4W " 3.9Ω 2W " 390Ω 1/4W " 470Ω 15W "	DIODE D9202 D9901~5		1S1555-K 1S1887A	Si. Diode "	
CAPACITOR C9901~3 C9904 C9905 C9906 C9907 C9908		QCZ9025-472A QEU72DM-567M QET52CR-106 QFZ9025-104M QFZ9025-473M QCZ9016-332A	C Cap. E Cap. " MF Cap. " C Cap.	4700pF AC125V P 560μF 200V M 10μF 160V R 0.1μF AC125V M 0.047μF AC125V M 3300pF AC125V M	TRANSISTOR Q9201 Q9202		2SB642(Q,R) 2SD637(Q,R)	Si. Transistor "	
TRANSFORMER T9901		CE41109-001J1	Power Transf.		IC IC9901	△	STR3130	IC	
					OTHERS F9901 LF9901 TH9901 RY9901	△	QMF66U1-4R0S QMF53U1-1R25S CE40247-00B A75511 CESK002-001	Fuse " Line Filter Posistor Relay	4A 1.25A

(REMOTE CONTROL TRANSMITTER RM-C404)**(REMOTE CONTROL TRANSMITTER PARTS LIST)**

VIEW No.	SYMBOL No.	△	PART No.	PART NAME	REMARK
1			UR64CS119	Front Case	
2			UR64CS120	Bottom Case	
3			UR64SB125	Filter	
4			UR64EC121	Battery Cover	
5			UR64PP136AA	Panel	
6			UR64BT123B	Button	

(PACKING DIAGRAM)**ATTACHED MATTERS**

Inst. book C1336-CA-IBA-T
 Warranty card BT-20025H
 SVC Center List BT-20071A
 Channel sheet CM43794-003-T

JVC

JVC CANADA INC.

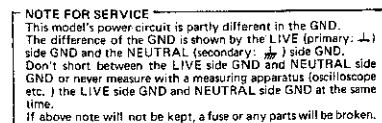
Subsidiary of Victor Company of Japan, Limited

Head Office : 21 Finchdene Square Scarborough, Ontario M1S 1A7 (416) 293-1311



Printed in Japan
8610 OZAKI

SCHEMATIC DIAGRAM



JVC C-1336 (CAT) SCHEMATIC DIAGRAM

NOTICE

The voltage reading and waveform were measured at each point with a multi-meter and an oscilloscope while receiving a service colour bar signal with a sufficient sensitivity. The measurements were made with each VR under the condition just after the shipment. The figures of the signal circuits may be more or less different after adjustments, so use the figures simply for reference.

Multimeter used

DC 20k Ω /V

Given figures are all DC voltages.

Sweep speed of oscilloscope

H \rightarrow 20 μ S/div. V \rightarrow 5 mS/div.

Others \rightarrow sweep speed specified

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

SAFETY

FR (\sim W^{FR}) denotes a fusible resistor which operates as a fuse. When replacing fusible resistors parts indicated with black shading (■) in the circuit diagrams, be sure to ensure safety by using designated parts.

As to other parts too, use designated parts to maintain safety and performance.

INDICATION OF PARTS SYMBOL

Inside board (Example) SX-1158A : R1209—R209

Outside board (Example) R0001—R01

SCHEMATIC DIAGRAM INDICATION

Resistor

- Resistance value
Without unit: [Ω] K : [k Ω] M : [M Ω]
- Rated allowable power
Without indication : 1/6W, Others Indicated
- Type
Without indication : Carbon resistor
OMR : Oxide metal film resistor
UNF : Unflammable resistor
MF R : Metal film resistor
FR : Fusible resistor

* Composition resistor 1/2 [W] is indicated as 1/2S or Comp.

Capacitor

- Capacitance
Above 1 [pF] : Below 1 [μ F]
- Withstand voltage
Without indication : DC 50 [V]
Others : DC withstand voltage [V]
AC indicated : AC withstand voltage [V]
- Indications for electrolytic capacitors are as follows.
(Example)
47/50 \rightarrow capacitance [μ F] / withstand voltage [V]
- Type
Without indication : Ceramic capacitor
MY : Mylar capacitor
MM : Metalized mylar capacitor
PP : Polypropylene capacitor
MPP : Metalized polypropylene capacitor
NP : Nonpolar electrolytic capacitor
BP : Bipolar electrolytic capacitor
TAN. : Tantalum capacitor

Coil

Without unit : [μ H]

Connection method

- : Connector, \rightarrow : Receptacle
- : Wrapping or soldering

Power Supply

— : B1 Voltage — : B2 Voltage (12V)
— : 11.5V

* Respective voltage values are indicated on schematic diagram.

Test point & GND. symbol.

- ⦿ : Test point by miniature GT pin
- : Only test point display
- ⊥ : Live (Primary) side ground
- ≡ : Neutral (Secondary) side ground

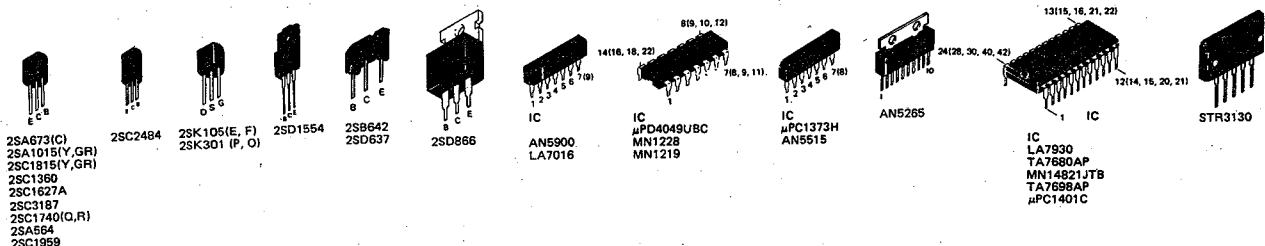
NOTE FOR SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (primary: ⊥) side GND and the NEUTRAL (secondary: ≡) side GND.

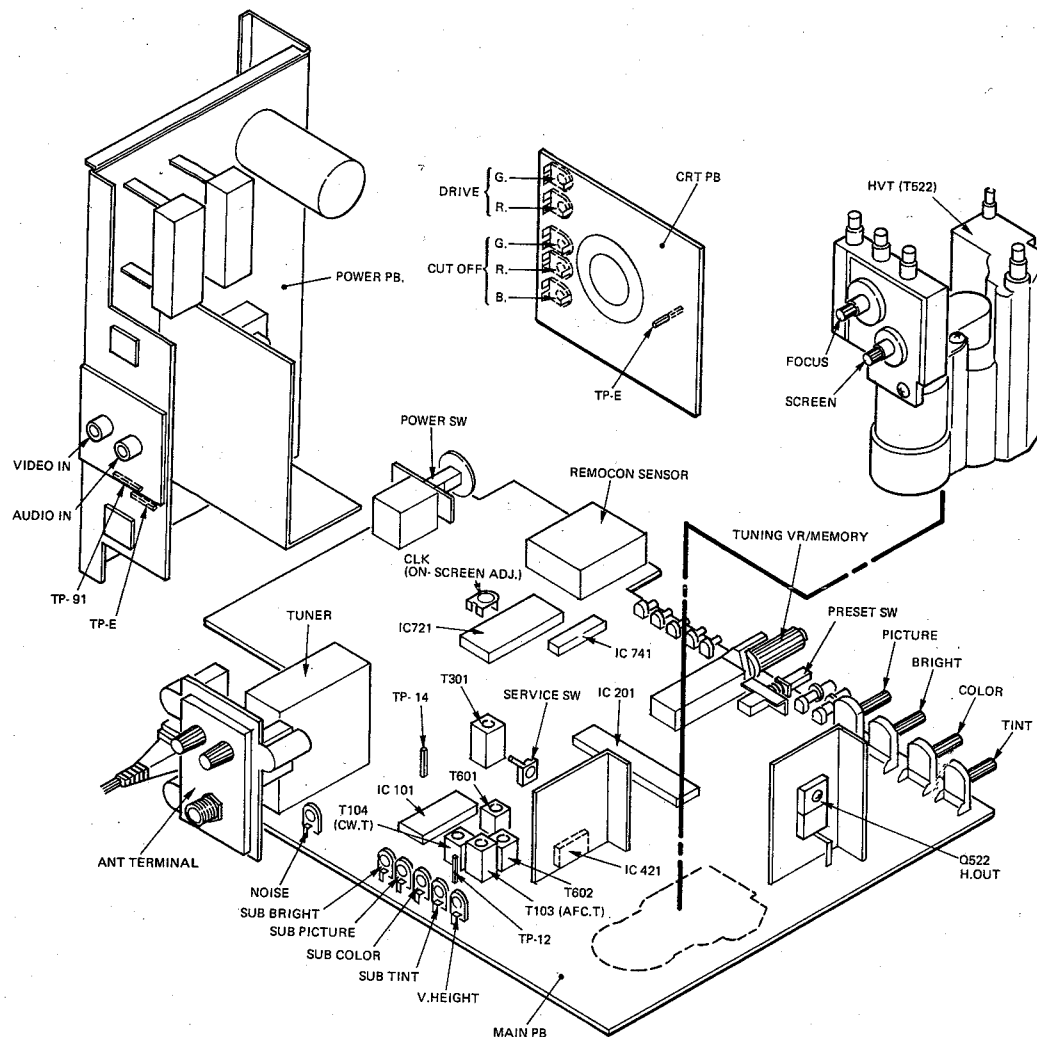
Don't short between the LIVE side GND and NEUTRAL side GND or never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND at the same time.

If above note will not be kept, a fuse or any parts will be broken.

BASINGS OF TRANSISTORS & ICs



■ ALIGNMENT LOCATION



■ PARTS LIST (Shaded Parts in the schematic diagram)

Symbol No.	Parts No.	Parts Name	Symbol No.	Parts No.	Parts Name
SX-1158A (MAIN PB ASS'Y)			D1431	V19E-4	Si. Diode
R1010	QRD143J-150S	CR	D1521	RH1S-LFA1	"
R1011	QRG029J-183	OM R	D1531	1SR124-400V-F	"
R1012	" -183A	"	D1561	"	"
R1116	QRD149J-100S	CR	D1571	HZ7B2LV1	Zener Diode
R1357-59	QRG019J-153S	OM R	D1591	1SR124-400-F	Si. Diode
R1373	QRD161J-3R9Y	CR	D1921~24	1SR35-100-F	"
R1410	QRX019J-4R7S	MF R	D1925	1SS133-Y	"
R1431	" -2R2S	"	Q1521	2SC1627A	Transistor
R1524	QRG019J-221S	OM R	Q1522	2SD1554	"
R1526	" -472S	"	IC1421	AN5515	IC
R1527	QRD161J-273Y	CR	S1901	QSP2J11-C01	Power SW
R1528	" -683Y	"	UV1001	AK7012EZ-803	VHF/UHF E Tuner
R1532	QRX029J-6R8	MF R		CE40085-00BJ1	CRT Socket
R1533	" -5R6A	"	SX-9125A (POWER PB ASS'Y)		
R1554	QRG029J-332	OM R	R9901	QRF076K-2R0	UNF R
R1561	QRX019J-4R7S	MF R	R9904	QRD122J-822S	CR
R1562	" -1R5S	"	R9905	QRF154J-471	UNF R
R1571	" -4R7S	"	R9906	QRD142J-224S	CR
R1574	QRD161J-472Y	CR	R9907	QRX029J-3R9	MF R
R1575	CJ39520-00V	R Block	R9908	QRD142J-391S	CR
R1582	QRD122J-680S	CR	R9909	QRF154J-471	UNF R
R1628	QRD161J-4R7Y	"	C9901~3	QCZ9025-472A	C Cap.
R1812	" -560Y	"	C9904	OEJ72DM-567M	E Cap.
R1901	QRC122K-225E	Comp. R	C9905	QET52CR-106	"
R1923	QRD141J-102SY	CR	C9906	QFZ9025-104M	MF Cap.
C1007	QET51CR-477	E Cap.	C9907	" -473M	"
C1208	QETB1CM-228	"	C9908	QCZ9016-332A	C Cap.
C1423	QEU51VM-107M	"	T9901	CE41109-001J1	Power Transf.
C1431	QETB1VM-477	"	D9901~5	1S1887A	Si. Diode
C1522	QET61HR-105Z	"	IC9901	STR3130	IC
C1526	QFZ0081-6701S	MPP Cap.	F9901	QMF66U1-4R0S	Fuse
C1527	QE20077-106M	E Cap.	F9902	QMF53U1-1R25S	"
C1528	QET52CR-336	"	LF9901	CE40247-00B	Line Filter
C1531	QET51ER-477	"	TH9901	A75511	Posistor
C1532	QETB1CM-108	"	RY9901	CESK002-001	Relay
C1561	" -477	"	OUTSIDE OF PB ASS'Ys		
C1571	QET61ER-107Z	"	V01	CPJ370BVBK1U-T	Picture Tube
C1572	QET51AR-107	"	DY01	CE20095-00A-KD	Def. Yoke Ass'y
C1629	QETB1AM-477	"	L01	C30172-P	Degaussing Coil
C1631	QETB1CM-228	"		OMP1650-244R	Power Cord
C1813	QET61CR-336Z	"		CJ26433-00A-KD	HV Transf.
C1901	QCZ9016-222Z	C Cap.		CJ39544-756-75	Focus Pack
C1922	QET61CR-476Z	E Cap.		CM30926-00B-V0	Antenna Terminal Ass'y
T1521	CE40361-00B	H. Drive Transf.		CM20615-A0A	AV Terminal Ass'y
D1421	1SR35-100-F	Si. Diode			
D1422	05AZ95	Zener Diode			

CK10258-001-1

NEUTRAL
SIDE
LIVE SIDENEUTRAL
LIVE

LIVE GND

LIVE SIDE
NEUTRAL SIDENEUTRAL
GND

SAFETY PRECAUTION

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 receiver 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 television sets 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 (Δ) 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 in Service manual may create shock, fire, or other hazards.
4. **Use isolation transformer when hot chassis.**
The chassis and any sub-chassis contained in some product are connected to one side of the AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some product when the HOT chassis is exposed.
5. **Don't short between the LIVE side ground and NEUTRAL 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 (primary: \perp) side GND and the NEUTRAL (secondary: ///) side GND. Don't short between the LIVE side GND and NEUTRAL side GND or never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND at the same time.
If above note will not be kept, a fuse or any parts will be broken.
6. If any repair has been made to the chassis, it is recommended that the B_1 setting should be checked or adjusted (See ADJUSTMENT OF B_1 VOLTAGE).
7. 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.
8. 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 $10k\Omega$ 2W resistor to the anode button.
9. 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.
10. **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, channel selector 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 1,100V AC (r.m.s.) for a period of one second. Withstand a voltage of 1,100V AC (r.m.s.) to an appliance rated up to 120V, and 3,000V 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

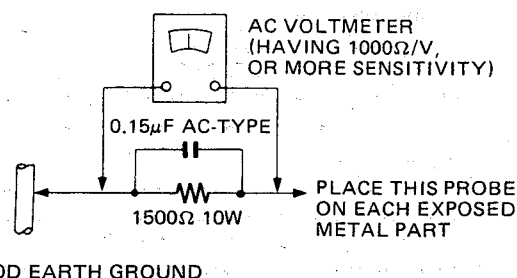
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known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

• 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 1,000 ohms per volt or more sensitivity in the following manner. Connect a $1,500\Omega$ 10W resistor paralleled by a $0.15\mu F$ 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 0.35V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).



11. High voltage hold down circuit check.

After repair of the high voltage hold down circuit, this circuit shall be checked to operate correctly.

See item "How to check the high voltage hold down circuit".

PURITY, CONVERGENCE AND WHITE BALANCE

* The locations of SERVICE SWITCH, SCREEN VR, CUT-OFF VR and DRIVE VR are described in the ALIGNMENT LOCATION of the schematic diagram.

PICTURE TUBE

The picture tube is a precision in-line gun type. For this picture tube, dynamic convergence is carried out by a precision deflection yoke which eliminated the use of convergence yoke and convergence circuit. The adjustment of picture tube is therefore made easier as only the adjustment of static convergence by using a magnetic is enough. The deflection yoke and purity/convergence magnets assembly has been set at the factory and requires no field adjustments.

However, should the assembly be accidentally jarred or tampered with, some or all adjustments may be necessary.

COLOR PURITY & VERTICAL CENTER

Loosen yoke retaining screw (Fig. B-1). With a sharp knife cut between the picture tube and the bond. Remove wedges completely and clean off dried adhesive from the picture tube. PAINT is used to lock the tabs of the purity/convergence magnet assembly in place (Fig. B-1). The paint must be removed with the end of a screwdriver before any adjustments are attempted.

(As to models equipped with a magnet locking ring, beforehand loosen it.)

1. Select no signal UHF channel.
2. Let the purity tabs come in line horizontally as is shown in Fig. B-2. A long tab should be in the same direction as the other short tab.
3. Move the yoke slowly backward.
4. Turn the GREEN CUT-OFF VR to maximum and the RED and BLUE CUT-OFF VR to minimum. Then adjust the SCREEN VR so that the green band can be seen best. (Fig. B-3.)
5. Rotate the two tabs in the opposite directions and with them kept at an angle, together in either direction so that the green band is centered on the picture tube.
6. Check the vertical center position by displaying a horizontal line. Unless correct, bring it to the center by rotating the two tabs, kept at an angle, together in either direction. (Fig. B-4)
7. Repeat steps 5 and 6 alternately until the green band and the vertical center come to the center.
8. Move the yoke slowly towards the bell of the tube so that the whole surface of the picture tube is filled with a green pure raster.
9. Turning RED or BLUE CUT-OFF VR to maximum and GREEN CUT-OFF VR to minimum, make sure of a red or blue pure raster.
10. Secure yoke retaining screw (do not install wedges at this time).

(As to models equipped with a magnet locking ring, secure it and keep six magnets from moving even if it is touched slightly.)

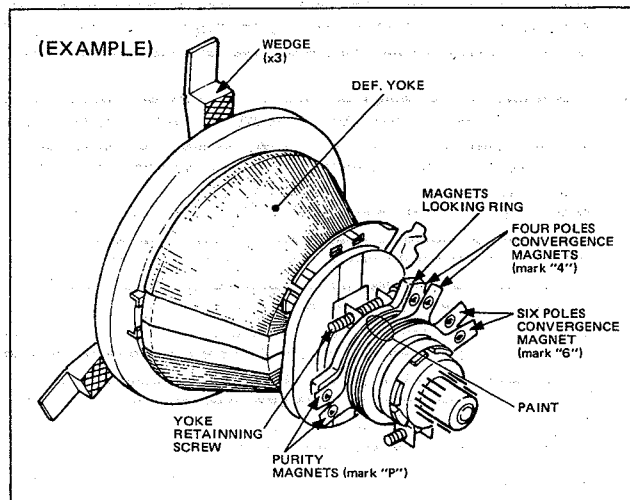


Fig. B-1

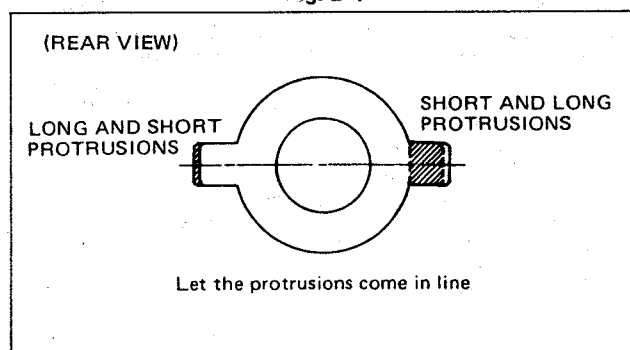


Fig. B-2

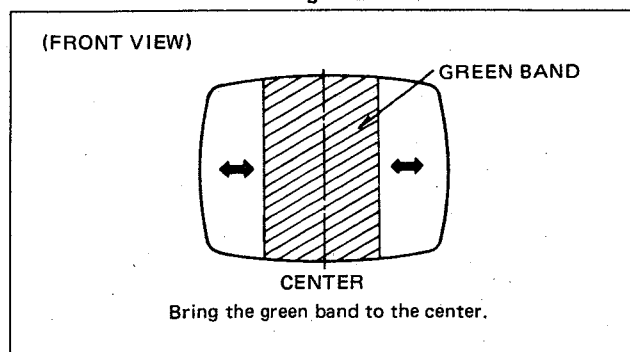
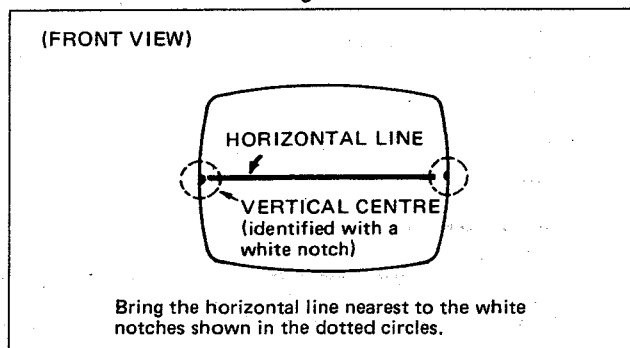


Fig. B-3



STATIC CONVERGENCE & DYNAMIC CONVERGENCE

1. Connect a crosshatch generator to the antenna terminals and adjust BRIGHTNESS and CONTRAST control for a distinct pattern.
2. Adjust the convergence around the edges of the picture tube by tilting the yoke, up-down and left-right, and temporarily install one wedge at the top of the yoke. (Fig. B-7, 8, 9)
3. Rotate the front pair of tabs (four pole convergence magnet) as a unit to minimize the separation of the red and blue lines around the center of the screen. To adjust the convergence of red and blue, vary the angle between the tabs. (Fig. B-5)
4. Rotate the rear pair of tabs (six pole convergence magnets) as a unit to minimize the separation of the magenta (R/B) and green lines. (Fig. B-6)
5. Adjust the spacing of the rear tabs to converge the magenta and green lines.
6. Apply paint to fix six magnets
(As to models equipped with a magnet locking ring, tighten it.)
7. Remove the wedge installed temporarily on the yoke.
8. Tilting the angle of the yoke up, down and sideways, and adjust the yoke so as to obtain the circumference convergence. (Fig. B-8, 9)
9. Insert three wedges to the position as shown in Fig. B-10 to obtain the best circumference convergence.
10. Wedge has a backing of double sided adhesive tape. Therefore, tear off one side of adhesive tape, and fix the wedges.
11. White balance adjustment (Black & White tracking) can now be performed.

WHITE BALANCE ADJUSTMENT (Black and White Tracking)

1. Display a monochrome pattern.
2. Set the RED and GREEN DRIVE VR for their mechanical center.
3. Turn the RED, GREEN and BLUE CUT-OFF VRs and the SCREEN VR fully counterclockwise.
4. Display a horizontal line. (refer to "HORIZONTAL LINE")
5. Turn SCREEN VR slowly clockwise until a very faint horizontal line appears.
6. Turn the CUT-OFF VRs of the color which has appeared first, clockwise by about 10° and then adjust the SCREEN VR again so that the color may shine faintly.
7. Turn the other color CUT-OFF VRs slowly clockwise until a reasonable white line appears.
8. Return the monochrome pattern. (refer to "HORIZONTAL LINE")
9. Adjust the RED and GREEN DRIVE VRs for best white highlights.

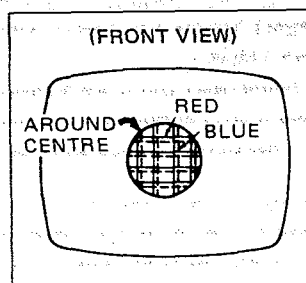


Fig. B-5

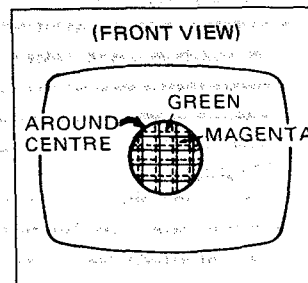


Fig. B-6

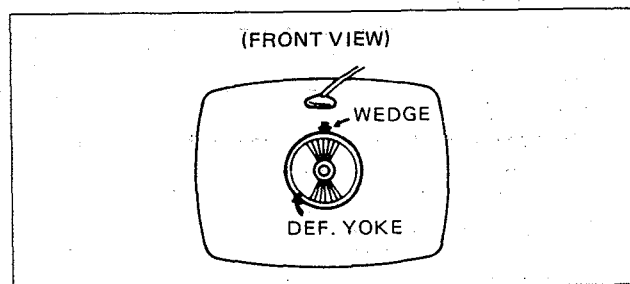


Fig. B-7

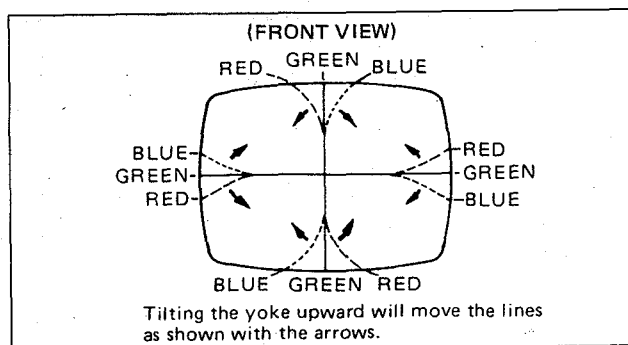


Fig. B-8

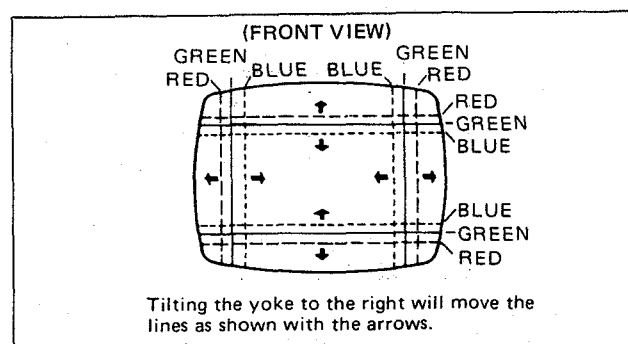


Fig. B-9

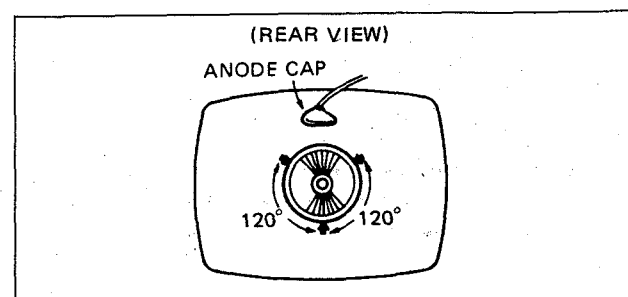


Fig. B-10



SERVICE ADJUSTMENTS

- * ADJUSTMENTS EXCEPT THE FOLLOWING DESCRIPTION ARE MENTIONED IN THE SERVICE MANUAL TEXT.
- * SOME ITEM OF ADJUSTMENT METHOD IS NOT APPLICABLE TO SOME MODEL.
IN SUCH A CASE OMIT THE ITEM.
- * Adjustments except the following description are mentioned in the service manual text.
- * Use the undermentioned adjustment methods after repair or for readjustment of misadjustment.
- * The locations of the under mentioned adjustment parts are described in the "Alignment Location" of the Schematic Diagram.
- * Test point pins are not indicated in the printed circuit board, but in the Schematic Diagram under certain circumstances. In this case, look for test points, which are indicated in the Schematic Diagram, on the printed circuit board; and use it for test points even if there are not test point pins.

B₁ VOLTAGE

Confirm that B₁ voltage exists between TP-91 and GND.

NOTE

1. Some model's power circuit is partly different in the GND.
The difference of the GND is shown by the LIVE (primary: ) side GND and NEUTRAL (secondary: ) side GND.
In this case, use a suitable ground by checking whether LIVE side GND or NEUTRAL side GND in each schematic diagram.
2. Use isolation transformer when hot chassis.
The chassis and any sub-chassis contained in some product are connected to one side of the AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some product when the HOT chassis is exposed.
3. The tester used should be periodically calibrated at 20kΩ/V.

SUB CONTRAST AND SUB BRIGHT

1. Set the CONTRAST, BRIGHT, PICTURE, and the COLOR knobs to the central position respectively (where they click).
If STANDARD BUTTON provided, press it.
(If EE SWITCH provided, Select the EE SWITCH OFF.)
2. Then align both the SUB CONTRAST VR and SUB BRIGHT VR until an ideal picture is obtained.

BLACK LEVEL AND SUB BRIGHT

- BLACK LEVEL and SUB BRIGHT VR are correlated. Do not adjust them carelessly.
- 1. Set the CONTRAST, BRIGHT, PICTURE and the COLOR knobs to the central position respectively (where they click).
If STANDARD BUTTON provided, press it.
(If EE SWITCH provided, select the EE SWITCH OFF.)
- 2. Turn the BLACK LEVEL VR fully clockwise.
Receive a high-contrast picture and adjust brightness with the SUB BRIGHT VR in the usual way.
(Turn the SUB BRIGHT VR while observing vertical flyback line; stop turning it just before vertical flyback line turns black.)

3. Turn the BLACK LEVEL VR counterclockwise, and adjust it so that black objects appear pure black and vivid.
4. Confirm the adjusted status on every channel.

SUB TINT AND SUB COLOR

1. Set the CONTRAST, BRIGHT, PICTURE and the COLOR knobs to the central position respectively (where they click).
If STANDARD BUTTON provided, press it.
(If EE SWITCH provided, select the EE SWITCH OFF.)
2. Adjust the SUB TINT VR and SUB color VR to obtain human skin natural color.

SUB PICTURE

1. Set the CONTRAST, BRIGHT, PICTURE and the COLOR knobs to the central position respectively (where they click).
* If STANDARD BUTTON provided, press it. (If EE switch provided, select the EE SW, OFF.)
2. Adjust the SUB PICTURE VR until an ideal picture is obtained.

3.58 MHz TRAP

1. Connect a color bar generator to the antenna terminal.
2. Connect oscilloscope probe to DELAY LINE output side.
3. Adjust the 3.58 MHz TRAP (T201) so that the 3.58 MHz signal is minimized. (Fig. C-1)

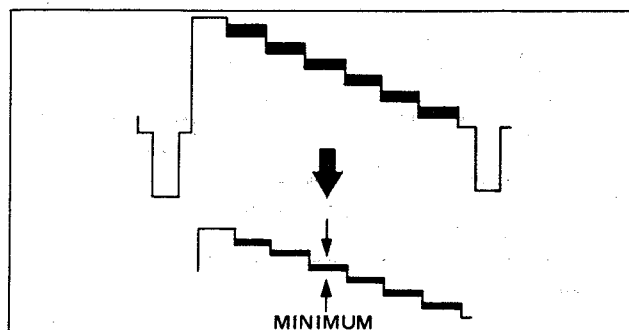


Fig. C-1

- * Some item of adjustment method is NOT applicable to some model. In such a case omit the item.
- * Adjustments except the following description are mentioned in the service manual test.
- * Use isolation transformer when HOT chassis.

COMB FILTER

1. Connect a color bar generator to the antenna terminal.
2. Connect an oscilloscope to COMB FILTER "Y" output position (TP-42). Magnify the color signal portions of the color bar waveform so that the 3.58 MHz elements become easy to observe.
3. Adjust PHASE Transf. (T201 and T202), and minimize the 3.58 MHz elements.
4. Regulate the COMB FILTER adjustment VR to further minimize the 3.58 MHz elements. (Fig. C-1)
5. Repeat steps 3 and 4 to fully minimize the 3.58 MHz elements. (Fig. C-1)

VERTICAL HEIGHT AND LINEARITY

1. Set color bar generator to crosshatch or a pattern with which symmetry can be checked.
2. Reduce the vertical size with the VERTICAL HEIGHT VR.
3. Adjust the vertical symmetry with the VERTICAL LINEARITY VR.
4. Readjust the VERTICAL HEIGHT so that the picture extends to normal size.

VERTICAL HEIGHT

1. Set the color bar generator to crosshatch or pattern with which symmetry can be checked.
2. Adjust the vertical symmetry with the VERTICAL HEIGHT VR.

NOISE

(RF A.G.C. Delay)

This control is set at the factory and rarely requires any adjustment. If a snowy picture appears on a medium to weak station adjust the noise control.

1. Turn control fully clockwise (or counterclockwise), maximum noise in picture.
2. Slowly turn VR counterclockwise (or clockwise) until snow or noise in picture just disappears.

Note: Check operation on strong channels. If overloading occurs (bending, poor color, loss of color sync, etc.) make compromise adjustment.

4.5 MHz TRAP

1. Tune in a local color station preferably a program with the least amount of movement and continuous audio.
2. Adjusting the V. IF DET. OUT Transf. (T105) so that beating with sound signal disappears.

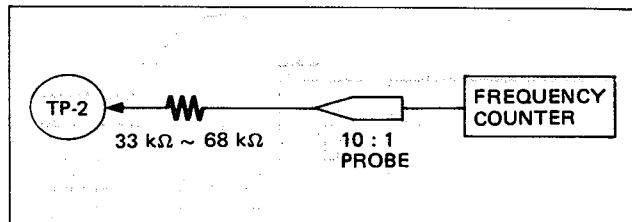
HORIZONTAL WIDTH

Adjust H.WIDTH control coil by turning it with a hexagonal adjusting bar only if RIGHT and LEFT sides of pictures can't be seen.

FOCUS

Adjust FOCUS VR for best overall definition and picture detail at normal brightness and contrast.

REFERENCE FREQUENCY OSCILLATOR



Connect as shown above and adjust C205 (ceramic trimmer capacitor) so that the oscillation frequency is 4500.000 kHz \pm 20 Hz or receive UHF AIR at AFC OFF position and adjust C205 so that the AIR becomes just tuning.

HORIZONTAL OSCILLATOR

1. Set the H. FREQ. VR to the mechanical center position.
2. Connect the jumper clip between TP-33B and earth.
3. Adjust the H. FREQ. VR until picture is in view and locks or drift slowly back and forth.
4. Remove the jumper clip.
5. Make sure that the set maintains horizontal sync, when channels are switched.

COLOR SYNC.

1. Receive a color bar signal.
2. Connect two jumper wires between TP-50 and TP-E and between TP-51A and TP-51B.
3. While rotating a TRIMMER CONDENSER using a non-metallic screwdriver, adjust it until the horizontal striped patterns with color become stationary or are slowly moving.
4. Remove jumper clips.
5. Confirm that color sync is not disrupted when channels are switched.

H. CENTER

Centering is completed at the factory, although it may become distorted when CRT is changed.

In such case, selecting the H. CENTER SWITCH moves the picture left or right.
(Some model have H. CENTER TIP.)

VERTICAL CENTER

Centering is completed at the factory, although it may become distorted when CRT is changed.

In such case, selecting the V. CENTER SWITCH moves the picture up or down. (Some model have V. CENTER TIP.)

- * Some item of adjustment method is NOT applicable to some model. In such a case omit the item.
- * Adjustments except the following description are mentioned in the service manual test.
- * Use isolation transformer when HOT chassis.

ON SCREEN

1. Display characters on the screen.
2. As shown in the Fig. C-2, adjust the character positions with the CLK VR (On screen adj. VR).
3. Confirm that the characters are also located approximately at the same positions on other channels.

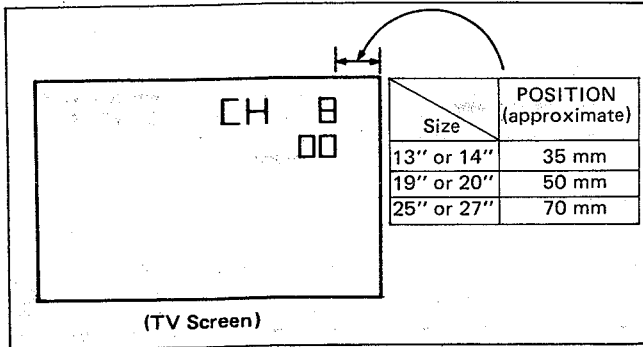


Fig. C-2

V. IF

1. Connect a color bar generator to antenna terminal.
(When the signal is too strong, use the attenuator.)
2. Connect DC voltmeter (or tester) between AGC terminal of E. Tuner and earth.
3. Rotate NOISE VR so that RF. AGC voltage becomes $DC\ 4.5\ V \pm 1\ V$.
4. Adjust CW transformer so that the indicator becomes to minimum and also confirm that picture in optimum conditions is obtained.
5. Confirm the adjustment of NOISE VR.

HORIZONTAL LINE

CUT-OFF SERVICE SWITCH

Select the CUT-OFF SERVICE SWITCH from N to S and a HORIZONTAL LINE will appear.

(When returning a monochrome pattern select the CUT-OFF SERVICE SWITCH from S to N and a monochrome pattern will appear.)

CUT-OFF SERVICE TIP

Reconnect the CUT-OFF SERVICE TIP from N to S and a HORIZONTAL LINE will appear.

(When returning a monochrome pattern reconnect the CUT-OFF SERVICE TIP from S to N and a monochrome pattern will appear.)

VIDEO CUT WIRER

Connect a jumper wire between TP-35A and TP-35B, after removing the VIDEO CUT WIRE, and a monochrome pattern will appear.

(Reconnect the VIDEO CUT WIRE to the normal position, after removing the jumper wire from TP-35A and TP-35B.)

RF. AFC

1. Connect a color bar generator to antenna terminal.
2. Adjust AFC transformer so that the voltage of TP-16 becomes $DC\ 7.0\ V \pm 0.5\ V$.
(Confirm to swing between about 9 V and 4 V previously.)

S. IF

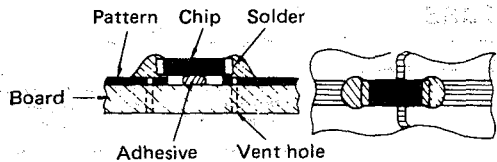
1. Tune in a local station preferably a program with the continuous audio.
2. Adjust TAKE OFF Transf. (T601) and S. IF Transf. (T602) so that the sound becomes to maximum without distortion.

REPLACEMENT OF THE CHIP

* CHIPS ARE NOT USED ON CERTAIN MODELS. REFER TO THE DESCRIPTIONS ON THIS PAGE ONLY WHEN WORKING ON MODELS ON WHICH CHIPS ARE EMPLOYED.

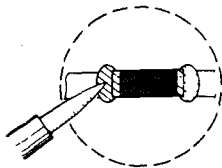
* Replacement of the chip on printed circuit board can be performed easily as follows.

1 When mounted [Resistor · Capacitor]

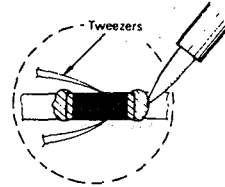


2 Removal of the chip

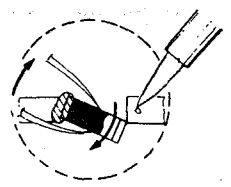
(1) Remove either of the soldered contacts.



(2) Hold the chip with tweezers and remove the other contact.



(3) Work the chip free from the adhesive with tweezers.

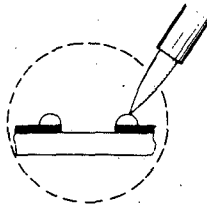


3 Preheating and soldering of chip pieces

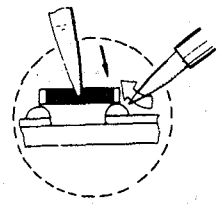
Be sure to preheat chip pieces (except the transistor) especially the capacitor before soldering with hot air, about 150°C (hair dryer or such can be used) for about 2 minutes. Then, immediately solder with an iron of about 30W.

4 Replacing the chip pieces

(1) Apply the solder to the board first.



(2) Hold the chip with tweezers and solder it in place, hold the iron at a 45° angle when soldering.

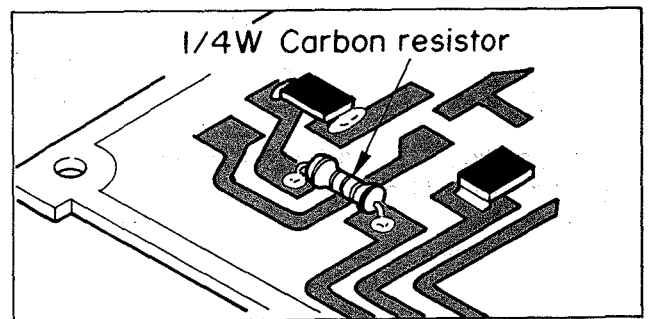


■ Discrete parts can be substitutionally mounted as shown in the figure on the right.

Mounting is also possible by passing the wires from the board front side (parts side) through the chip soldering hole (vent hole of registration part).

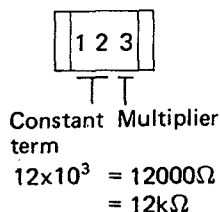
Substitute parts are as follows.

- Chip Metal Glaze Resistor
 - Carbon Resistor 1/4W ±5%
- Chip Ceramic Capacitor
 - Ceramic Capacitor 50V ±5%

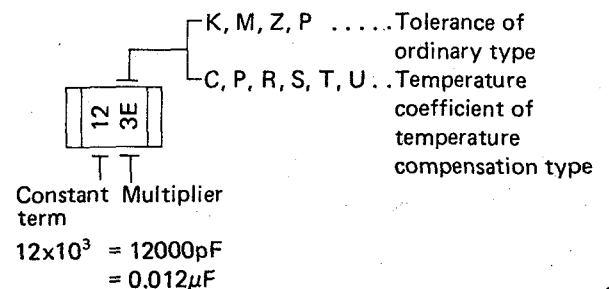


■ Decoding of chip parts constant terms

< Chip Metal Glaze Resistor >



< Chip Ceramic Capacitor >



REPLACEMENT PARTS LIST INFORMATION

* UTILIZE THE INFORMATION ON THIS PAGE IN COMBINATION WITH THE REPLACEMENT PARTS LIST. WHEN ORDERING REPLACEMENT PARTS PLEASE SPECIFY THE PART NUMBER AS SHOWN IN THIS LIST INCLUDING PART NAME, AND MODEL NUMBER. COMPLETE INFORMATION WILL HELP EXPEDITE THE ORDER.

PRODUCT SAFETY NOTE

Components identified by the Δ symbol in the PARTS LIST and the shaded areas on the Schematic have special characteristics important to safety. Before replacing any of these components read carefully the SAFETY PRECAUTION on Page A of this Service Manual. DO NOT degrade the safety of the set through improper servicing.

1. ABBREVIATED WORD OF RESISTORS AND CAPACITORS

RESISTOR

C R : Carbon Resistor
Comp. R : Composition Resistor
OM R : Oxide Metal Film Resistor
V R : Variable Resistor
MF R : Metal Film Resistor
CMF R : Coating Metal Film Resistor
UNF R : Unflamable Resistor


F R : Fusible Resistor
CH MG R : Chip Metal Glaze Resistor

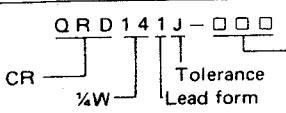
CAPACITOR


C Cap. : Ceramic Capacitor
M Cap. : Mylar Capacitor
E Cap. : Electrolytic Capacitor

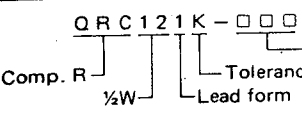
BP E Cap. : Bi-Polar (or Non-Polar) Electrolytic Capacitor
MM Cap. : Metalized Mylar Capacitor
PP Cap. : Polypropylene Capacitor
MPP Cap. : Metalized PP Capacitor
PS Cap. : Polystyrol Capacitor
Tan. Cap. : Tantal Capacitor
CH C Cap. : Chip Ceramic Capacitor


2. FOLLOWING RESISTORS AND CAPACITORS OF STANDARD ELECTRICAL COMPONENTS ARE OMITTED FROM THIS PARTS LIST. EACH PART NUMBER OF THESE STANDARD REPLACEMENT COMPONENTS IS DEFINED AS FOLLOWS.

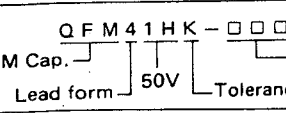
Carbon Resistor (C R): Lead form ()

Rating	Part No.
$\frac{1}{4}W$	
$\frac{1}{2}W$	QRD121J-□□□

Composition Resistor (Comp. R): Lead form ()

Rating	Part No.
$\frac{1}{4}W$	

Mylar Capacitor (M Cap.): Lead form ()

Withstand Voltage	Part No.
50V	
100V	QFM42AK-□□□
200V	QFM42DM-□□□

3. DECODING OF TOLERANCE AND CONSTANT TERM

TOLERANCE

J: $\pm 5\%$ K: $\pm 10\%$ M: $\pm 20\%$ N: $\pm 30\%$ H: $+50\%$
-10%

Z: $+80\%$ P: $+100\%$ R: $+30\%$ F: $\pm 1\%$
-20% -0 -10%

CONSTANT TERM

• Carbon Resistor ($\frac{1}{4}W$, $\pm 5\%$ Tolerance)


QRD141J-□□□

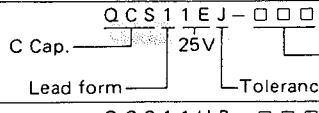
CONSTANT TERM.


$\begin{matrix} \square & \square & \square \\ \uparrow & \uparrow & \uparrow \end{matrix}$
 $\begin{matrix} 2.7\Omega & \rightarrow & QRD141J-2R7 \\ 47k\Omega & \rightarrow & 47 \times 10^3 \rightarrow QRD141J-473 \end{matrix}$

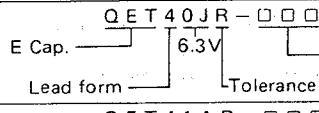
$\begin{matrix} 1 & R & 0 & \rightarrow & 1.0\Omega \\ \vdots & & \vdots & & \vdots \\ 9 & R & 7 & \rightarrow & 9.7\Omega \end{matrix}$

$\begin{matrix} 1 & 0 & \square & \rightarrow & 10\Omega \text{ means } 10 \times 10^0 (\Omega) \\ \vdots & & \vdots & & \vdots \\ 8 & 2 & \square & \rightarrow & 82\Omega \text{ means } 82 \times 10^0 (\Omega) \end{matrix}$

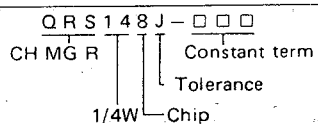
Ceramic Capacitor (C Cap.): Lead form ()

Withstand Voltage	Parts No.
25V	
50V	QCS11HP-□□□
500V	QCS12HP-□□□

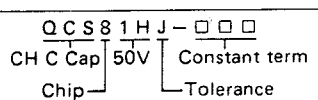
Electrolytic Capacitor (E Cap.): Lead form ()

Withstand Voltage	Parts No.
6.3V	
10V	QET41AR-□□□
16V	QET41CR-□□□
25V	QET41ER-□□□
50V	QET41HR-□□□

Chip Metal Glaze Resistor (CH MG R)

Chip name	Chip No.	Substitutional Part No.
CH MG R		QRD141J-□□□ CR $\frac{1}{4}W \pm 5\%$

Chip Ceramic Capacitor (CH C Cap)

Chip name	Chip No.	Substitutional Part No.
CH C Cap		QCS11HJ-□□□ C Cap 50V $\pm 5\%$

• Ceramic Capacitor (50 Volts, $\pm 5\%$ Tolerance)

QCS11HJ-□□□

CONSTANT TERM.

$\begin{matrix} \square & \square & \square \\ \uparrow & \uparrow & \uparrow \end{matrix}$
 $\begin{matrix} 5pF & \rightarrow & QCS11HJ-5R0 \\ 680pF & \rightarrow & 68 \times 10^1 \rightarrow QCS11HJ-681 \\ 3300pF & \rightarrow & 33 \times 10^2 \rightarrow QCS11HJ-332 \end{matrix}$

$\begin{matrix} 1 & R & 0 & \rightarrow & 1.0pF \\ \vdots & & \vdots & & \vdots \\ 8 & R & 0 & \rightarrow & 8.0pF \end{matrix}$

$\begin{matrix} 1 & 0 & \square & \rightarrow & 10\Omega \text{ means } 10 \times 10^0 (pF) \\ \vdots & & \vdots & & \vdots \\ 8 & 8 & \square & \rightarrow & 88\Omega \text{ means } 88 \times 10^0 (pF) \end{matrix}$