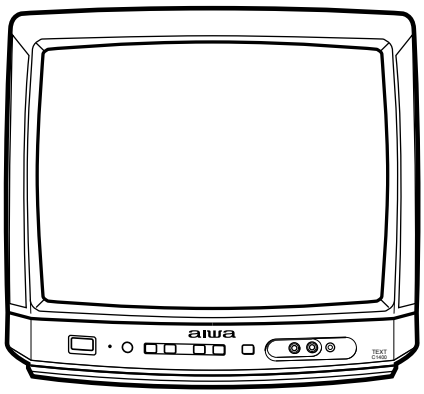
aiwa
SERVICE

TV-C1400 KY EZY KHY



SERVICE MANUAL

COLOR TELEVISION

aiwa

S/M Code No. 09-009-352-0N1

DATA

To make the best use of this equipment, make sure to obey the following items when repairing (or mending).

1. Do not damage or melt the tunicate of the leading wire on the AC1 side, including the power supply cord.
2. Do not soil or stain the letters on the spec. inscription plates, notice labels, fuse labels, etc.
3. When repairing the part extracted from the conducted side of the board pattern, fix it firmly with applying bond to the pattern and the part.
4. Restore the following items after repairing.

1) Conditions of soldering of the wires (especially, the distance on the AC1 side).
2) Conditions of wiring, bundling of wires, etc.
3) Types of the wries.
4) Attachment conditions of all types of the insulation.

5. After repairing, always measure the insulation resistance and perform the voltage-withstand test (See Fig-1).

1) The insulation resistance must be 7.3 MΩ to 10.1 MΩ when applying 500V per second.
2) In the voltage withstand test, apply 3.0 kV for 1 minute and check that the GO lamp lights.

* Breaking current set to 10 mA.
* Connect the safety checker as shown in Fig-1, then measure the resistance and perform the test.
* Do not touch the equipment during testing.
* For details of the safety checker, refer to the supplied Operation manual.

Insulation resistance: 7.3 MΩ to 10.1 MΩ(500 V/s)
Voltage-withstand: 3.0 kV for 1 minute

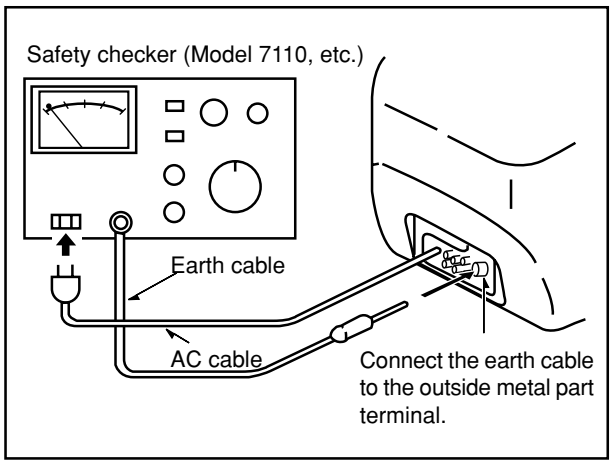


Fig-1

When servicing and checking on the TV, note the followings.

1. Keep the notices
   As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.
2. Avoid an electric shock.
   There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.
3. Use the designated parts.
   The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety.
   Therefore, the part which is replaced should be used the part which has the same character. Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.
4. Put parts and wires in the original position after assembling or wiring.
   There are parts which use the insulation material such as a tube or tape for safety, or which are assembled so that these parts do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.
5. Take care of the cathode-ray tube.
   By setting an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion.
   However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.
6. Avoid an X-ray.
   Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc. Therefore, when repairing the high voltage peripheral circuit, use the designated parts and do not change the circuit. Repairing except indicates causes rising of high voltage, and the cathode-ray tube emits an X-ray.
7. Perform a safety check after servicing.
   Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the places serviced.

⚠ Safety Components Symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to confirm to special Safety Specifications.
Therefore, when replacing a component with this symbol make absolutely sure that you use a designated part.

SPECIFICATIONS

Tuner system	Frequency synthesized tuner
Picture tube	14 in. (34 cm “V”), 90 degree deflection
TV system	PAL (B/G, D/K, I), SECAM (D/K, L)
Channel coverage	VHF: E2-E12
	UHF: E21-E69
	CABLE: S1-S41
Antenna input	75 ohms, unbalanced
Video input	1.0 Vp-p, 75 ohms, unbalanced
Video output	1.0 Vp-p, 75 ohms, unbalanced
Audio input	-3.8 dBs, 50 kohm
Audio output	-3.8 dBs less than 1 kohm
Operating temperature	5°C to 40°C
Power requirements	220-240 V AC, 50 Hz
Power consumption	58 watts
Standby	2 watts
Dimensions	364(W) x 315(H) x 364(D) mm
	($14^3/_8$ x $12^1/_2$ x $14^3/_8$ in.)
Weight	Approx. 10.5 kg (23.1 lbs.)

• Design and specifications are subject to change without notice.

ACCESSORIES LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	8A-JB8-901-010		IB,K (E) -C1400<KY>
1	8A-JB8-903-010		IB,EZ (EGDSI)<EZY>
1	8A-JB8-904-010		IB,KH (E/R/CZ/PO) -C1400<KHY>
2	8A-JB4-610-010		RC UNIT,RC-AVT02

DISASSEMBLY INSTRUCTIONS

1. REAR CABINET REMOVAL

(1) Remove eight screws ①, then remove the rear cabinet in the direction of the arrow.
(See Figure1-1)

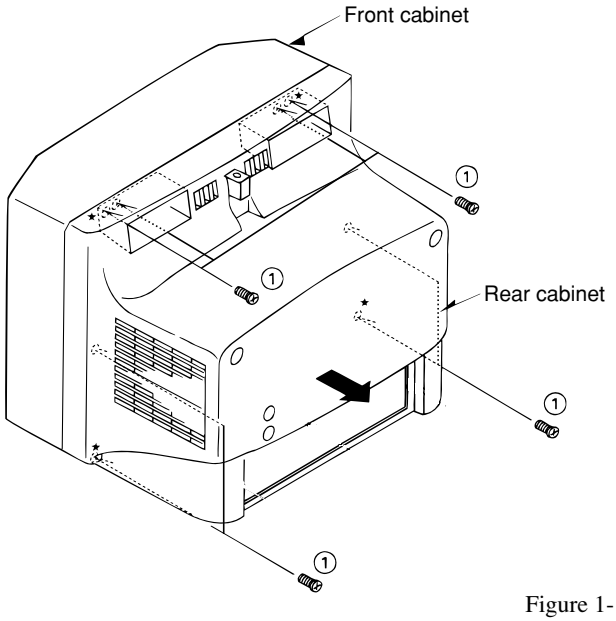


Figure 1-1

2. HIGH-VOLTAGE CAP (ANODE CAP) REMOVAL

2-1. Cautions before Removing

Discharge the anode voltage

(1) The anode voltage is not discharged completely from the CRT of this unit even after the power is turned off. Be sure to discharge the residual anode voltage before removing the anode cap.

Do not use pliers

(2) Do not use pliers, etc. to remove the anode cap. If you used pliers and bent the hook to remove the cap, the spring characteristics of the hook could be lost, and when reinstalled, the cap would come off from the CRT anode button easily, causing an accident.

Do not turn the anode cap

(3) If the anode cap is turned in the direction of its circumference, the hook is likely to come off.

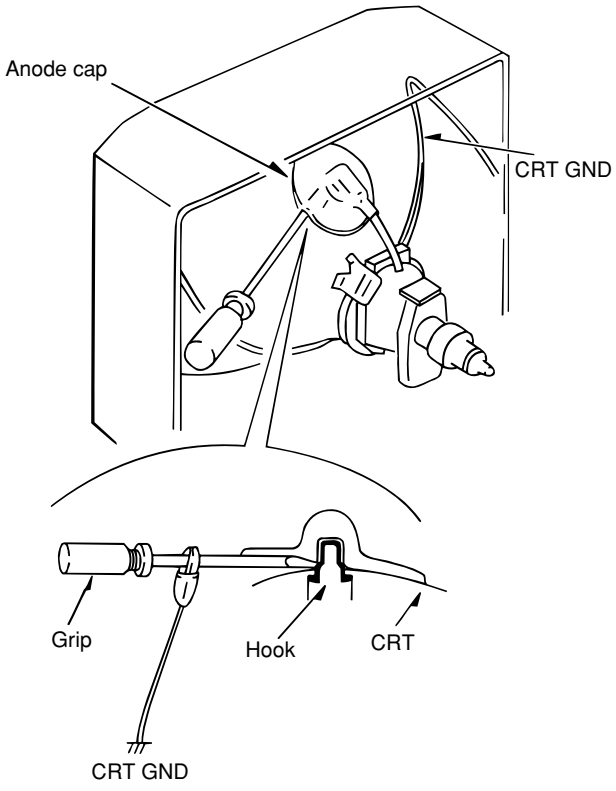


Figure 2-1

2-2. Anode Cap Removal

Discharge the anode voltage. (See Figure 2-1)

(1) Connect a flat-bladed screwdriver to the CRT GND via an alligator clip.
(2) Use a tester to check the end of the screwdriver and ground of the TV for continuity.
(3) Touch the hook with the end of the screwdriver.
Caution : Be careful not to damage the anode cap.
(4) Turn over the anode cap.
Caution : Be careful not to damage the anode cap.

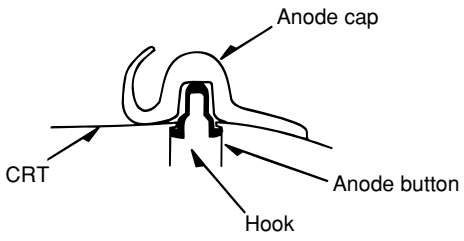


Figure 2-2

(5) Push the anode cap with your thumb in the direction of arrow ① as shown in the figure, then lift the cap in the direction of arrow ② to release the hook on one side. (See Figure 2-3)

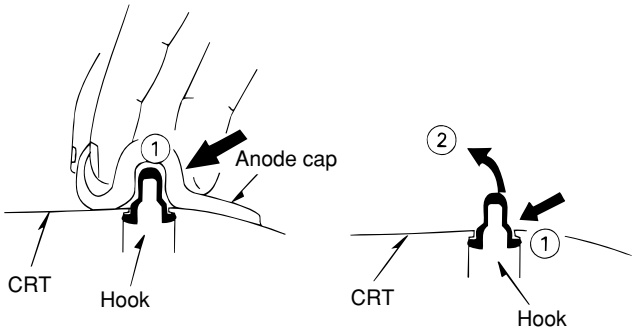


Figure 2-3

(6) Turn over the anode cap on the side where the hook was released and pull out the cap in the direction opposite to that on which the cap was pushed. (See Figure 2-4)
Caution : Do not pull out the anode cap straight up.
: Do not pull the cap forcibly. After removing the cap, check that the hook is not deformed.

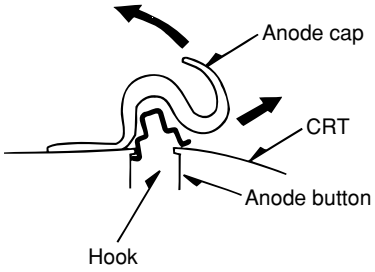


Figure 2-4

3. ANODE CAP REINSTALLTION

Observe the cautions carefully so that no accident occurs due to a defect in installing the anode cap and so it does not come off.

3-1. Caution before Reinstalling

Never turn the anode cap after installing it

Never re-use the hook when it has been deformed

(1) If the anode cap is turned after it is installed, it may come off. Therefore, arrange the high-voltage cable before attaching the anode cap. (See Figure 3-1)
(2) If you have attached the anode cap before arranging the high-voltage cable, arrange the cable carefully so the cap does not turn.

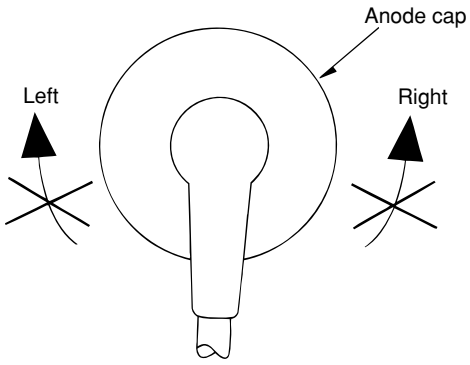


Figure 3-1

3-2. Anode cap reinstallation

(1) Use a clean cloth moistened slightly with alcohol to clean the installation section. (See Figure 3-2)
Caution : Check that the installation section is free from dust, foreign matter, etc.
(2) Coat the anode cap installation circumference with an appropriate amount of the specified silicone grease (KS-650N).
Caution : Be careful that silicone grease does not enter the anode button.

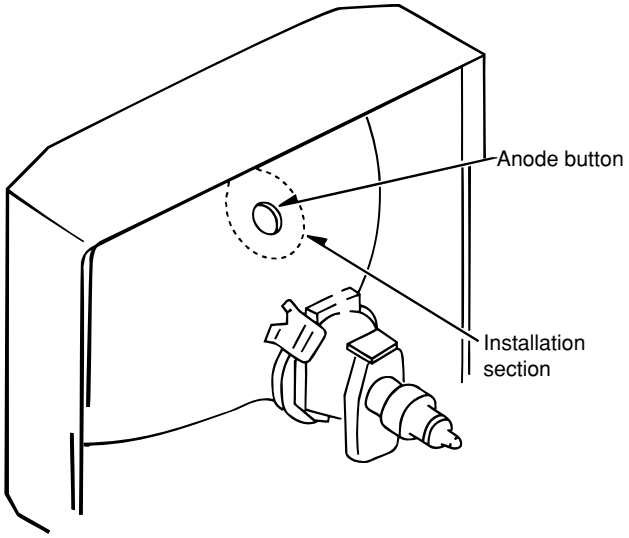


Figure 3-2

(3) Eliminate twisting, etc. of the high-voltage cable and arrange it so that no twisting occurs. (See Figure 3-3)
Caution : If the cable is not arranged correctly, the anode cap could turn and cause an installation defect.

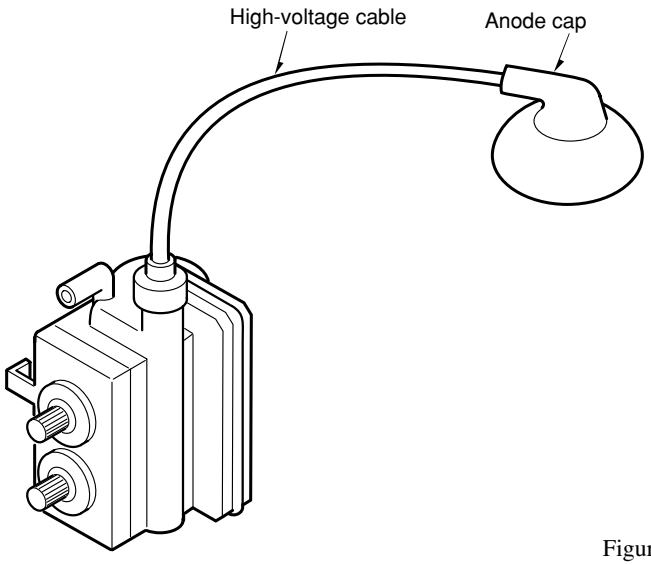


Figure 3-3

(4) Turn over the rubber cap symmetrically on the left and right. (See Figure 3-4)
Caution : Take great care not to damage the anode cap.

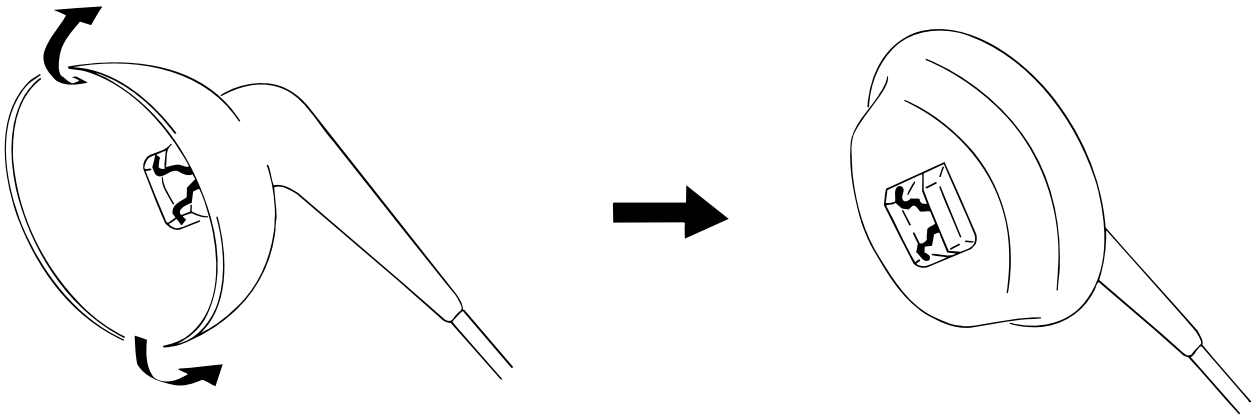


Figure 3-4

(5) Fit your forefinger over the projection at the center of the cap and hold the cap between your thumb and middle finger. (See Figure 3-5)

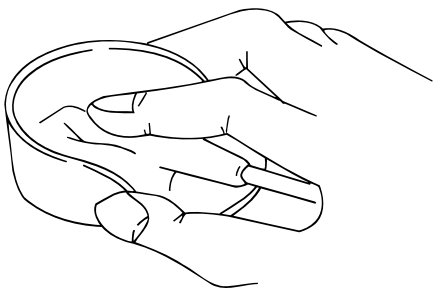
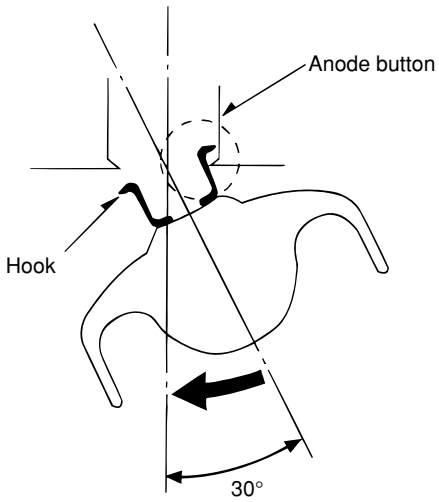


Figure 3-5

(6) Apply the hook on one side to the anode button as shown on the figure. (See Figure 3-6)
Caution : Check that the hook is held securely.
(7) Apply the hook on the other side to the anode button as shown in Figure 3-7.



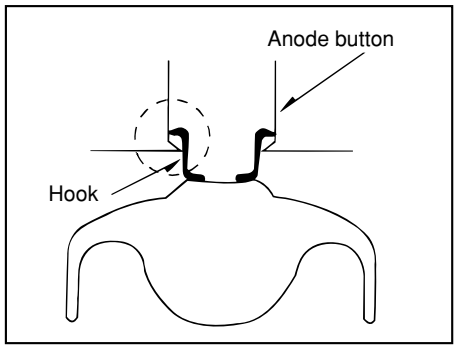


Figure 3-7

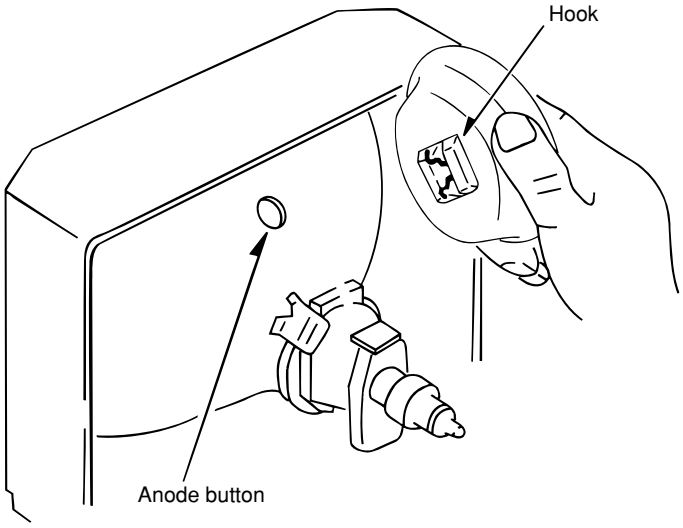


Figure 3-6

(8) Pull the anode cap slightly with the rubber cap turned over and visually check that the hook is engaged securely.
(9) Release your hand from the rubber cap of the anode cap.
Caution : Cover the anode cap so that it does not lift.
(10) Hold the skirt of the andoe cap slightly to improve the close contact between the cap and CRT.
(11) Check that the anode cap is in close contact with the CRT. (See Figure 3-8)

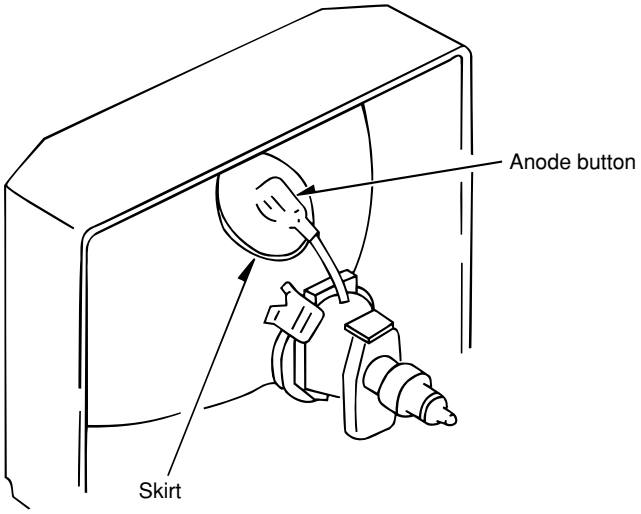


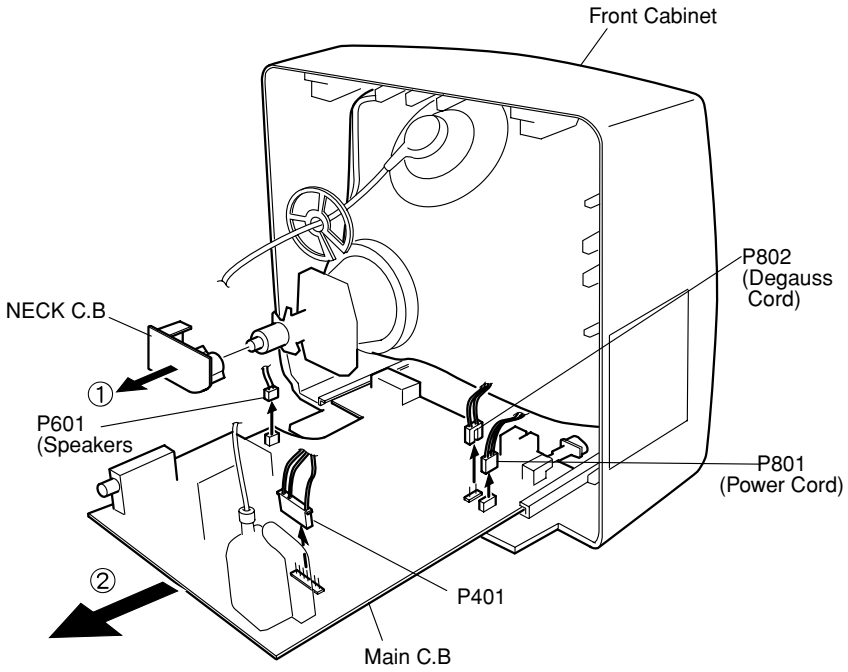
Figure 3-8

4. NECK C.B. REMOVAL

(1) Remove the NECK C.B. in the direction of arrow ① (See Figure 4-2).

5. MAIN C.B REMOVAL

(1) Remove connector (P601).
(2) Remove connector (P801).
(3) Remove connector (P802).
(4) Remove connector (P401).
(5) Pull out the MAIN C.B. in the direction of the arrow ② (See Figure 4-2).



ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

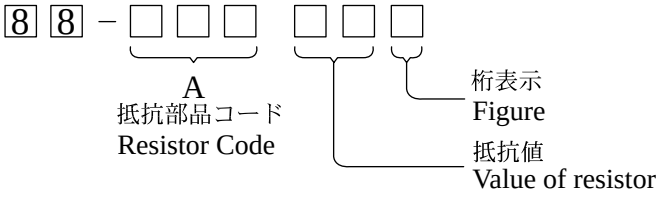
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	SI-AL2-416-00B		IC,AT24C16-10PC
	S1-DW1-95D-E2Q		C-IC,DW92195B7T-DE2
	S1-KA7-805-000		IC,KA7805
	S1-KRT-300-000		IC,KRT30
	S1-STV-223-8DQ		C-IC,STV2238D
⚠	S4-850-M04-710		MODULE POWER DPM001T1A
	S1-STV-813-100		IC,STV8131
	87-JB1-605-010		IC,TDA1771
	S1-TDA-610-3Q0		IC,TDA6103Q
	S1-TDA-726-7A0		IC,TDA7267A
TRANSISTOR			
	87-A30-492-080		TR,2SC5343Y
	ST-KTC-320-700		TR,KTC3207
	87-A30-050-010		TR,2SD2499
	ST-R33-300-9DB		TR,STA933-Y
⚠	ST-2SK-267-100		TR,2SK2671
	ST-KSA-101-3Y0		TR,KSA1013Y
DIODE			
	87-A40-246-080		DIODE,1N4148
	SD-1SS-85T-A00		DIODE,1SS85TA
	SD-UZ3-3B0-000		ZENER,UZ-33B
	SD-TZX-5V1-B00		ZENER,TZX5V1B
	SD-BYW-360-000		DIODE,BYW36
	SD-BY2-280-000		DIODE,BY228
	SD-TZX-5V6-B00		ZENER,TZX5V6B
	SD-UZ3-R9B-000		ZENER,UZ-3.9B
	SD-BYW-760-000		DIODE,BYW76
	SD-BYW-340-000		DIODE,BYW34
	SD-R2M-000-000		ZENER,R2M
	SD-LT2-A05-G00		DIODE,LT2A05G
MAIN C.B			
C101	87-015-695-010		CAP,E 1MF-50V
C102	87-010-408-040		CAP,E 4.7MF-50V
C103	87-010-285-010		CAP,E 2200MF-16V
C301	87-016-593-080		CAP,E 470MF-35V
C302	SC-CXB-3A4-71K		CAP,CER 4700PF-1KV
C303	87-A10-493-080		CAP,E 1000MF-25V
C304	87-016-638-080		CAP,E 22MF-50V
C306	87-010-393-010		CAP,E 100MF-35V
C313	87-015-695-010		CAP,E 1MF-50V
C401	SC-MYE-2D3-64J		CAP,M 0.36MF-200V
C402	S0-E7T-B01-0M0		CAP,E 1MF-160V
C404	SC-MYT-3C6-92J		CAP,M 6900PF-1.6KV
C406	87-010-976-010		CAP,CER 1000PF-500V
C411	SC-MYN-1J1-05K		CAP,M 1MF-63V
C420	87-010-553-080		CAP,E 47MF-16V
C421	87-010-545-080		CAP,E 33MF-250V
C501	87-015-694-080		CAP,E 0.47MF-50V
C502	87-015-695-010		CAP,E 1MF-50V
C503	87-010-553-080		CAP,E 47MF-16V
C504	87-015-696-080		CAP,E 2.2MF-50V
C506	87-015-696-080		CAP,E 2.2MF-50V
C507	87-010-112-040		CAP,E 100MF-16V
C511	87-010-553-080		CAP,E 47MF-16V
C512	87-015-695-010		CAP,E 1MF-50V
C513	87-010-405-040		CAP,E 10MF-50V
C514	87-015-695-010		CAP,E 1MF-50V
C515	87-015-695-010		CAP,E 1MF-50V
C516	87-015-695-010		CAP,E 1MF-50V
C517	87-015-695-010		CAP,E 1MF-50V
C520	87-010-553-080		CAP,E 47MF-16V
C522	87-010-553-080		CAP,E 47MF-16V
C523	87-015-695-010		CAP,E 1MF-50V
C524	87-015-695-010		CAP,E 1MF-50V
C601	87-010-553-080		CAP,E 47MF-16V
C602	87-010-544-080		CAP,E 0.1MF-50V
C606	87-016-126-080		CAP,E 470MF-16V
C611	87-010-553-080		CAP,E 47MF-16V
C620	87-010-405-040		CAP,E 10MF-50V
C702	87-015-695-010		CAP,E 1MF-50V
C703	87-010-553-080		CAP,E 47MF-16V
C704	87-010-237-910		CAP,E 1000MF-16V
C706	87-015-694-080		CAP,E 0.47MF-50V
C801	SC-L1S-C34-74M		CAP,0.47MF-275V
C803	SC-CXF-3A4-72Z		CAP,CER 4700PF-1KV
C804	SC-CXF-3A4-72Z		CAP,CER 4700PF-1KV
C805	87-A10-003-090		CAP,E 100MF-400V
C807	SC-MYU-3C2-22J		CAP,M 2200PF-1.6KV
C809	87-A12-170-010		CAP,CER 1000PF-4.0KV
C812	87-A12-170-010		CAP,CER 1000PF-4.0KV
C814	SC-CYR-3A4-71K		CAP,CER 470PF-1KV
C815	87-016-249-090		CAP,E 100MF-160V
C818	87-016-249-090		CAP,E 100MF-160V
C819	87-016-299-080		CAP,E 10MF-100V
C820	87-A10-493-080		CAP,E 1000MF-25V
C822	87-010-112-040		CAP,E 100MF-16V
C825	87-016-638-080		CAP,E 22MF-50V
C826	87-010-408-040		CAP,E 4.7MF-50V
C827	87-010-285-010		CAP,E 2200MF-16V
C828	87-010-112-040		CAP,E 100MF-16V
C829	87-010-405-040		CAP,E 10MF-50V
C830	87-016-126-080		CAP,E 470MF-16V
C842	87-016-515-080		CAP,CER 1000PF-1KV
C850	87-010-553-080		CAP,E 47MF-16V
D706	SD-LH2-PR0-000		LED BLOCK LH-2P-R
⚠F801	S5-FSC-B40-22R		FUSE CERA 4A 250V
JS02	S4-859-109-950		JACK PIN BOARD PH-JB-9710A
L101	S5-8N0-000-044		COIL VCO TRF-V010
L301	S5-CPZ-100-K04		COIL PEAKING 10UH 10.5MM
L511	S5-CPZ-100-K02		COIL PEAKING 10UH 3.5MM
L601	S5-CPZ-109-M02		COIL PEAKING 1UH 3.5MM
L602	S5-CPZ-109-M02		COIL PEAKING 1UH 3.5MM
L604	S5-CPZ-109-M02		COIL PEAKING 1UH 3.5MM
L701	S5-CPZ-100-K02		COIL PEAKING 10UH 3.5MM
L702	S5-CPZ-569-K02		COIL PEAKING 5.6UH 3.5MM
L800	S5-8Q0-000-093		COIL DELAY LINE RS208
⚠L801	S5-PLF-24A-300		FILTER LINE LF-24A3
L802	S5-MC0-000-100		COIL BEAD MD-5
L803	S5-MC0-000-100		COIL BEAD MD-5
L805	S5-8C4-500-079		COIL CHOKE L-45
L806	S5-CPZ-390-K04		COIL PEAKING 39UH 10.5MM
P101	S4-859-231-620		CONN WAFER YW025-03
P401	S4-859-240-020		CONN WAFER YFW500-05
P601	S4-859-231-620		CONN WAFER YW025-03
⚠P801	S4-859-287-320		CONN WAFER MKS2822
P802	S4-859-242-220		CONN WAFER YFW800-02
P601A	S4-850-703-S50		CONN AS YH025
R302	87-022-576-010		RES,R METAL 2.2-2W
R303	87-022-642-090		RES,R METAL 270-2W
R307	SR-N02-B18-1JS		RES,R METAL 180-2W
R308	SR-N02-B18-1JS		RES,R METAL 180-2W
R309	SR-N02-B18-1JS		RES,R METAL 180-2W
R310	SR-N02-B18-1JS		RES,R METAL 180-2W
R402	87-025-590-060		RES,R M-OXIDE 15K-2W
⚠R403	SR-S02-Y43-9JS		RES,R M-OXIDE 4.3-2W
R410	SR-N02-B13-2JS		RES,METAL 1.3K-2W
R503	SR-N01-B30-0JS		RES,METAL 30-1W
⚠R801	SD-EC1-40M-290		POSISTOR ECPCC140M290
R802	SR-X07-C33-9JF		RES,CEM 3.3-7W
R808	SR-S02-Y82-8JS		RES,R M-OXIDE 0.82-2W
R819	SR-S02-Y27-8JS		RES,R M-OXIDE 0.27-2W
R850	87-A00-618-090		RES,METAL 18-2W

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
⚠RLY1	S5-SC0-101-338		SW RELAY DQ5D1-O(M)
SF101	S5-PG3-962-M00		FILTER SAW G 3962-M
SF102	S5-PK9-650-M00		FILTER SAW K9650M
SJ01	S4-859-200-401		SOCKET RGB
SW701	S5-S50-101-Z90		SW TACT SKHV10910A
SW702	S5-S50-101-Z90		SW TACT SKHV10910A
SW703	S5-S50-101-Z90		SW TACT SKHV10910A
SW704	S5-S50-101-Z90		SW TACT SKHV10910A
SW705	S5-S50-101-Z90		SW TACT SKHV10910A
⚠SW801	S5-S40-101-146		SW POWER PUSH SS-160-7-B
T401	S5-0D1-0A3-000		TRANS DRIVE TD-10A3
⚠T402	S5-0H0-000-202		FBT FUY20C001
⚠T801	S5-0M4-042-A50		TRANS SMPS TSM-4042A5
U101	S4-859-719-930		TUNER VARACTOR DT5-BF18D
W101	S4-851-900-130		GROUND TUNER AS DS-W1015-S

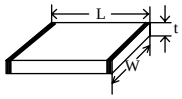
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
X501	S5-XE4-R43-36B		X'TAL,4.433619MHZ 15PP
X502	S5-XE3-R57-95B		X'TAL,3.579545MHZ
X701	S5-XE4-R00-00C		X'TAL,4.000000MHZ 20PP
⚠Z801	SD-SVC-471-D14		VARISTOR,SVC471D14A
ZZ100	S4-8B4-544-A01		TRANSMITTER REMOCON R-44A01
ZZ131	S5-8G0-000-084		COIL DEGAUSSING DC-1450
NECK C.B			
C902	87-016-082-010		CAP,M 0.1MF-250V
C905	87-016-082-010		CAP,M 0.1MF-250V
C906	87-012-397-090		CAP,CER 1000PF-2KV
P901	S4-850-709-N02		CONNECTOR YBNH250
⚠SCT1	S4-859-303-430		SOCKET CRT PCS633A

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード Resistor Code : A
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

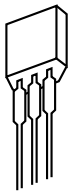
TRANSISTOR ILLUSTRATIONS

E C B

2SC5343
STA933

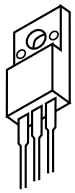
B E C

KSA1013



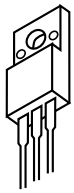
E C B

KTC3207



B C E

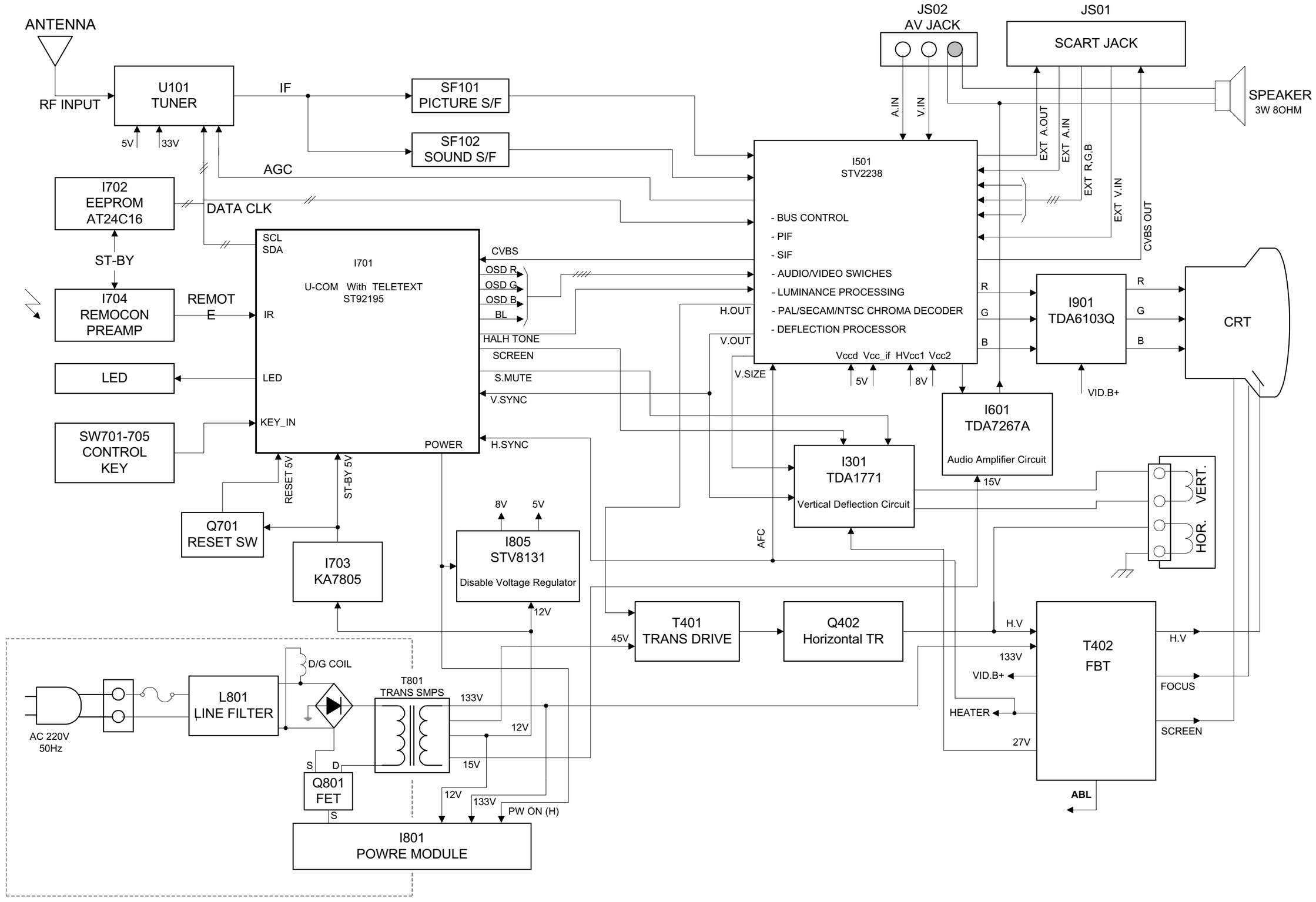
2SD2499



G D S

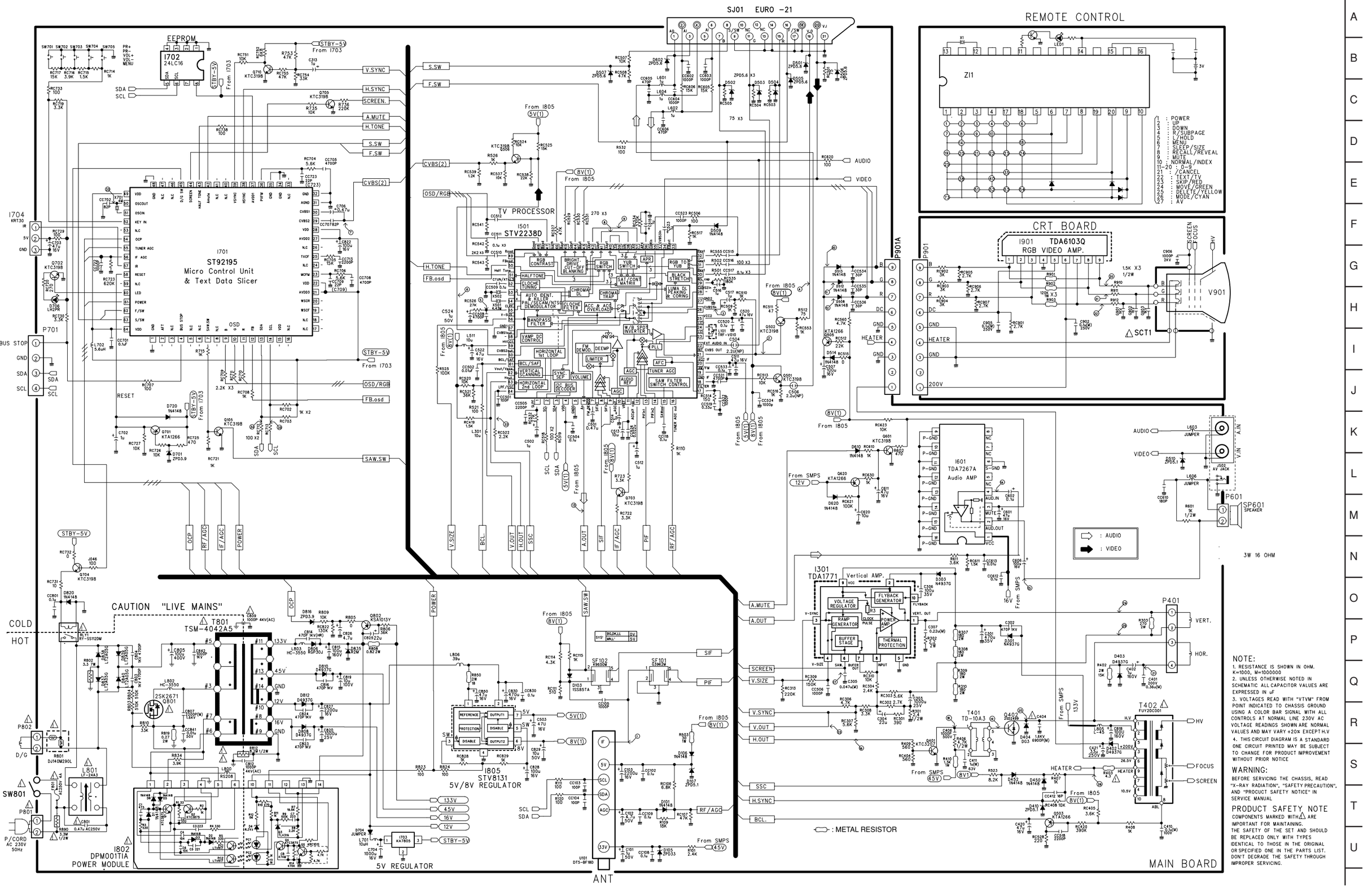
2SK2671

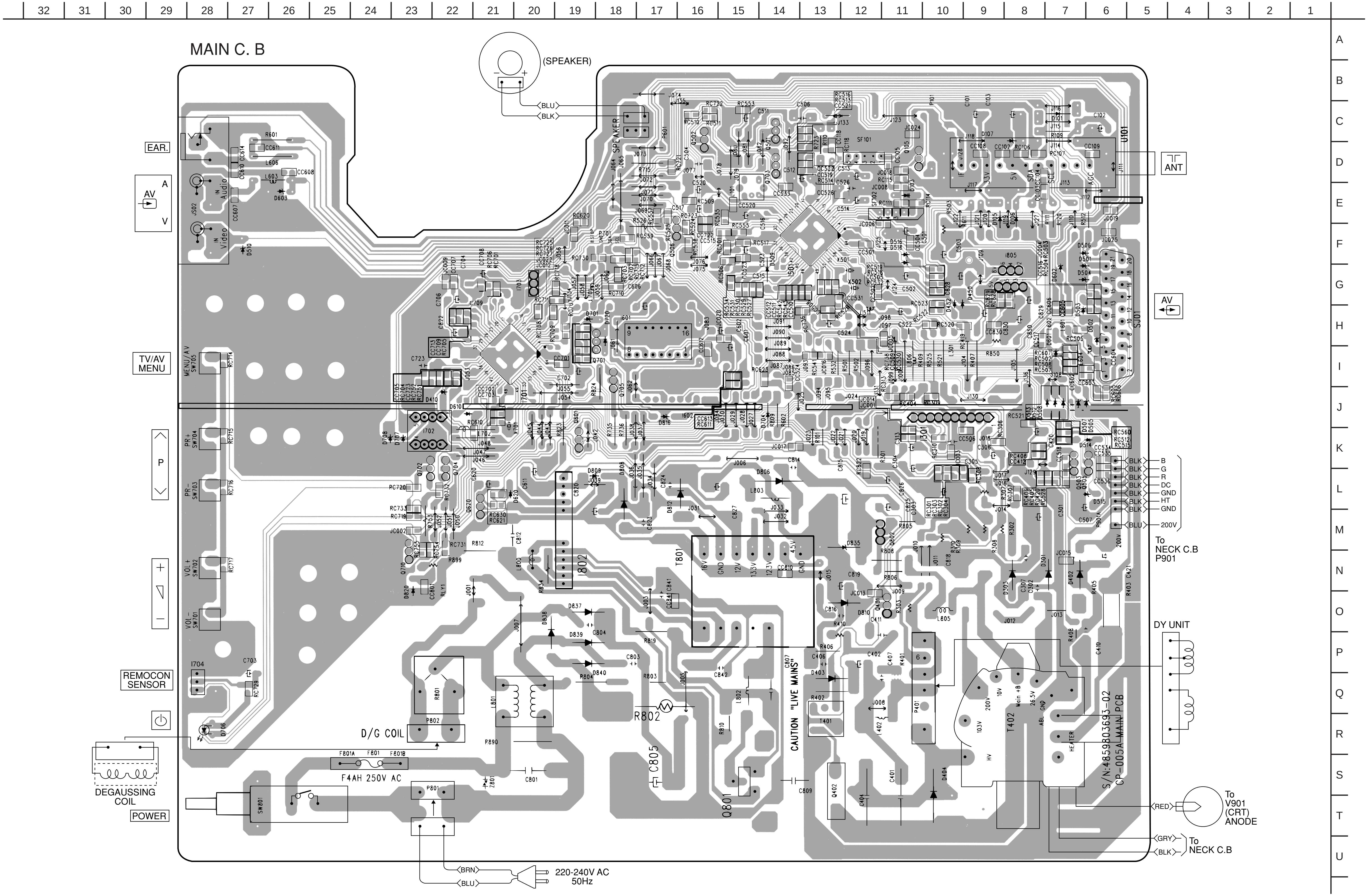
BLOCK DIAGRAM



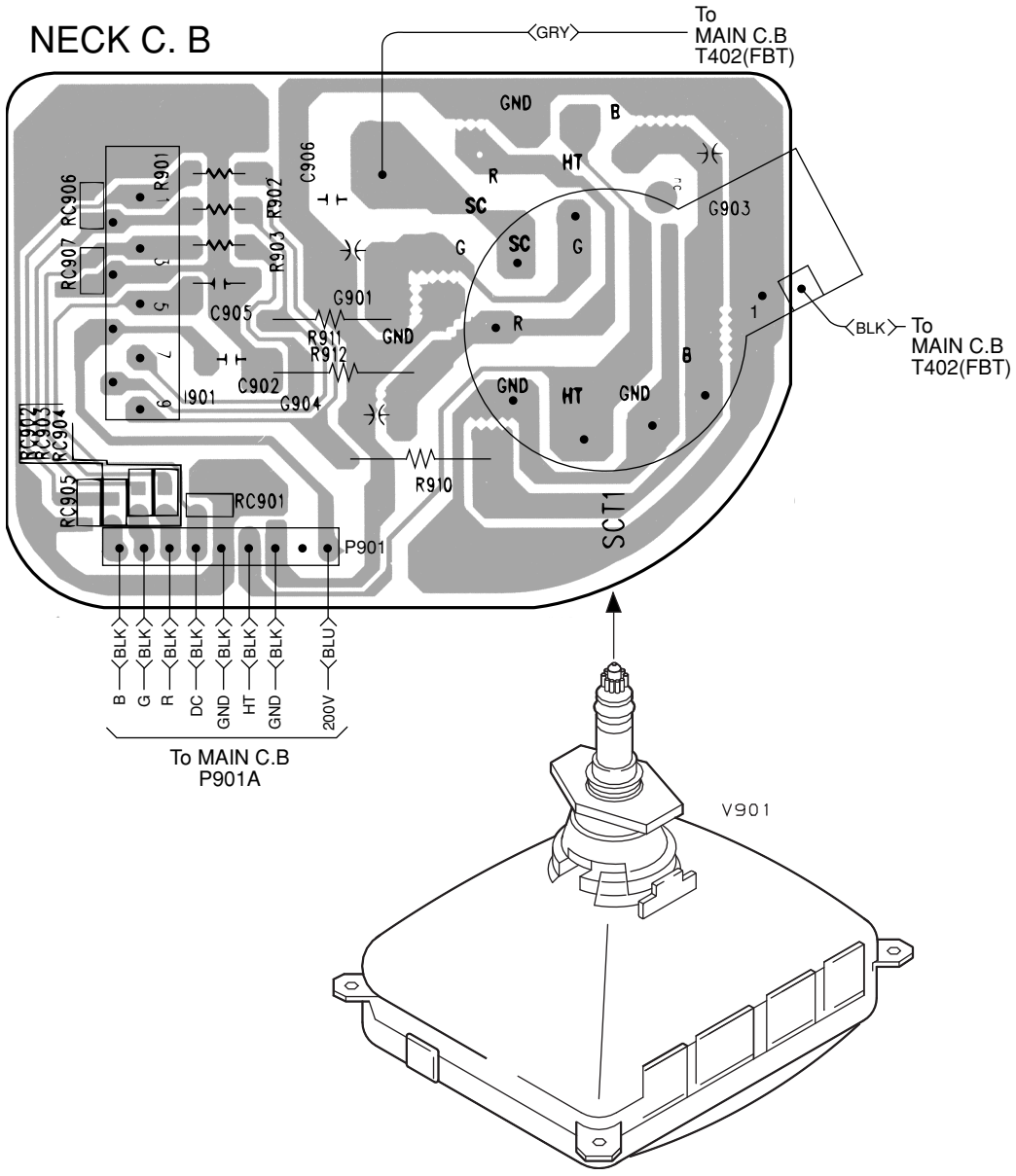
LINE NAME	Connect ①	MAP	Connect ②	MAP	Connect ③	MAP	Connect ④	MAP	Connect ⑤	MAP	Connect ⑥	MAP	Connect ⑦	MAP	Connect ⑧	MAP	Connect ⑨	MAP	Connect ⑩	MAP	Connect ⑪	MAP
SCL	I702	30-C	P701	32-J	I501	20-L	U101	20-T	I701	26-L												
SDA	I702	30-C	P701	32-J	I501	20-L	U101	20-T	I701	26-L												
STBY-5V	I703	22-U	Q704	31-N	Q701	28-K	I701	24-I	I702	28-C	R753	25-B										
AUDIO	RC620	12-E	J502	5-K																		
VIDEO	SJ01	12-E	J502	5-L																		
HEATER	R403	7-S	P901A	12-I																		
FB. OSD	RC708	24-J	I501	22-G																		
OSD R/G/B	I701	24-J	I501	22-E																		
HV	T402	4-R	V901	4-G																		
FOCUS	T402	4-S	V901	4-G																		
SCREEN	T402	4-S	V901	4-G																		
133V	R808	22-T	L805	7-R																		
45V	C819	22-T	R101	16-U	R410	10-S																
16V	C820	22-T	I601	9-O																		
12V	I802	22-U	Q620	13-L																		
5V(1)	I805	19-R	I501	15-K	I501	19-L	RC525	20-C														
8V	I805	19-S	R503	16-R	RC114	19-P	R523	9-S	RC405	7-T	RC623	13-K	I501	15-K	Q703	18-L	RC511	14-H	RC527	19-E	L511	22-I

SCHEMATIC DIAGRAM - 1 (MAIN SECTION)



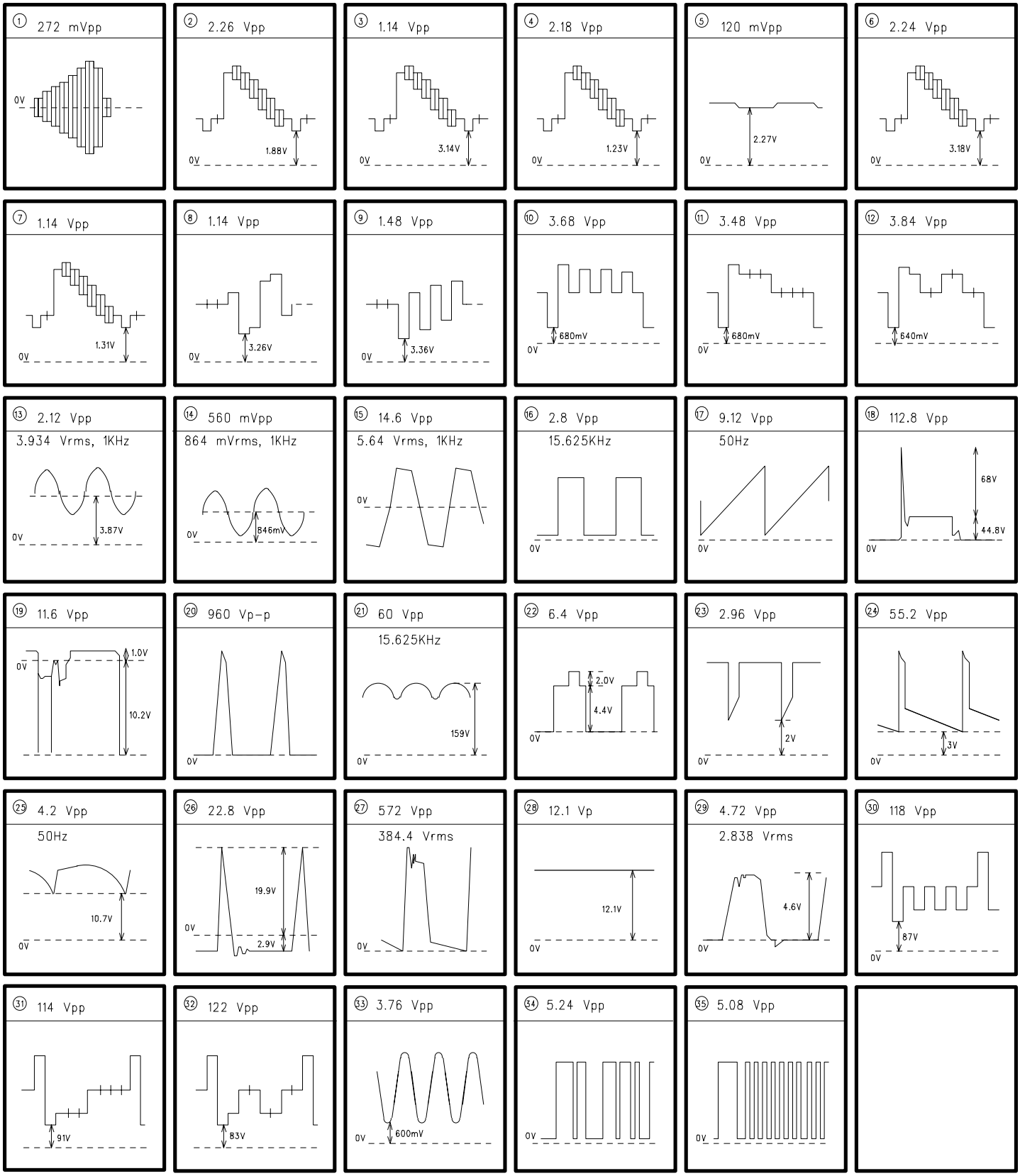


32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
A B C D E F G H I J K L M N O P Q R S T U
MAIN C. B
(SPEAKER)
BLU
BLK
EAR.
AV
A
V
TV/AV
MENU
P
REMOCON
SENSOR
DEGAUSSING
COIL
POWER
D/G COIL
F4AH 250V AC
CAUTION "LIVE MAINS"
ANT
AV
B
G
R
DC
GND
HT
GND
200V
To
NECK C.B
P901
DY UNIT
S/N:4859803693-02
CP-005A MAIN PCB
RED
To
V901
(CRT)
ANODE
GRY
To
NECK C.B
BRN
220-240V AC
50Hz


NECK C. B
GRY
To
MAIN C.B
T402(FBT)
BLK
To
MAIN C.B
T402(FBT)
GND
B
HT
R
SC
G
G903
G901
C905
R911
R912
C902
G904
R910
C906
R902
R903
R901
RC906
RC907
RC902
RC903
RC904
RC905
RC901
P901
SCT1
BLK
BLK
BLK
BLK
BLK
BLK
BLK
BLU
B
G
R
DC
GND
HT
GND
200V
To MAIN C.B
P901A
V901

WAVEFORMS

1. TEST EQUIPMENTS : DIGITAL OSCILOSCOPE (Tektronix TDX 460)
2. TEST CONDITIONS : PAL-B/G FULL COLOR BAR (NORMAL 1)
   1KHZ SINEWAVE(SOUND MAX)



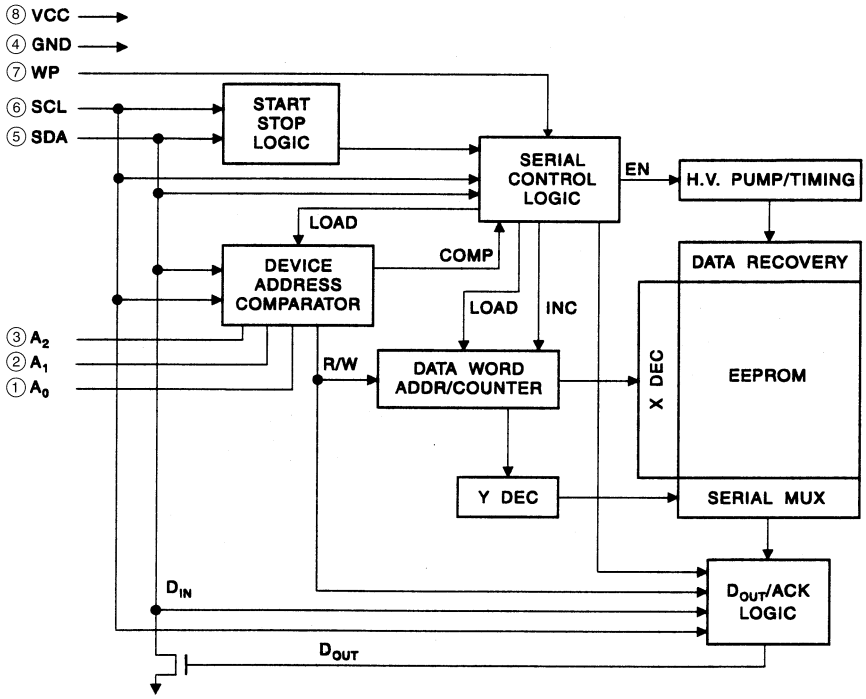
IC DESCRIPTION

IC, DW92195B7T-DE2

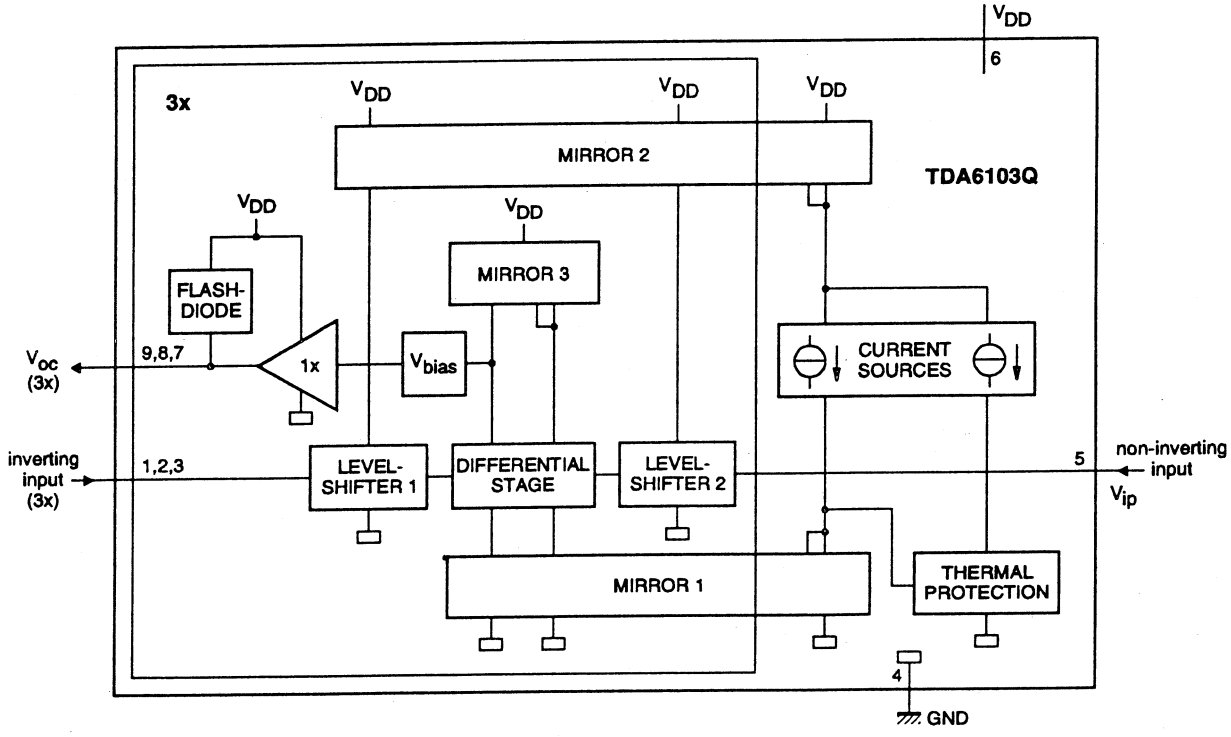
Pin No.	Pin Name	I/O	Description
1,32,34,35,48	GND	–	Ground
2	AFT	–	Not connected
3,5,6,8,16, 17,18,24,26, 33,47,53,59	NC	–	Not connected
4	BUS STOP	–	Stop BUS DATA
7	SAW SW	O	Switch SAW
9	OSD B	O	OSD B output
10	OSD G	O	OSD G output
11	OSD R	O	OSD R output
12	OSD FB	O	OSD FAST BLAKING output
13	SDA	O	BUS DATA output
14	SCL	O	BUS CLOCK output
15	VDD	–	Not connected
19	WSCF	–	Not connected
20	WSCR	–	Not connected
21,27,37	AVDD3,2,1	–	Power supply to connect 5 V
22,49,64	VDD	–	Power supply to connect 5 V
23	MCFM	–	————
25	TXCF	–	————
28	VDD	–	Power supply to connect 5 V
29	CVBS2	–	————
30	CVBS1	–	————
31	AGND	–	GND
36	PXFM	–	————
38	HSYNC	–	————
39	VSYNC	–	————
40,41,46	NC	–	Not connected
42	AMUTE	O	AUDIO MUTE
43	HALF TONE	I	HALF TONE
44	SCREEN	O	V. OSC STOP (When SCREEN is adjusted)
45	D/Q SW	O	Degauss coil switch
50	OSC OUT	O	Ceramic oscillator output
51	OSC IN	I	Ceramic oscillator input
52	KEY IN	I	Main KEY input
54	OCP	I	Over current protector
55	TUNER AGC	I	Tuner AGC input
56	IF AGC	I	IF AGC input
57	IR	I	Remote control signal input
58	$\overline{\text{RESET}}$	I	Reset
60	LED	O	Switch on LED
61	POWER	O	POWER/STANDBY
62	F/SW	I	RGB BLANKING input
63	S/SW	I	FUNCTION SW input

IC BLOCK DIAGRAMS

IC, TA24C16-10PC



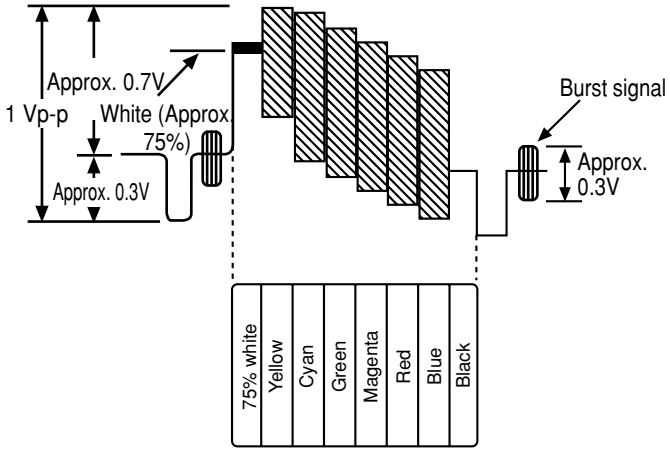
IC, TDA6103Q



ADJUSTMENT

SET-UP FOR ADJUSTMENT

Because the video signal output from a pattern generator is used as the adjustment signal input during adjustment, the video signal output from the pattern generator must conform with the specifications. Measure the output waveform across 75 Ω load. Confirm that the synchronizing signal has an amplitude of about 0.3 V, the video signal portion has an amplitude of about 0.7 V and the burst signal has an amplitude of about 0.3 V with flat envelope. Confirm that ratio of the burst signal amplitude and the red signal amplitude is 0.30 : 0.66. If the output signal does not conform with the specifications, calibrate the pattern generator. (Refer to pattern generator operation manual.)
Use the LEADER: LCG 404 for the pattern generator.



TV display

Color bar signal of a pattern generator

PRECAUTIONS BEFORE STARTING ADJUSTMENT

Satisfy the following setting conditions before starting adjustment.

- Allow warm-up of 20 minutes or longer. (Do not turn off during warm-up.)
- Set all picture quality controls of users' setting to initial set-up, unless otherwise specified.
- Picture quality reset
  1. Select "Picture" on the screen menu and press enter button.
  2. Select "Normal" and press enter button.
  3. Select "Reset" and press enter button.
- Set the pattern generatorś output level to 1.0Vp-p (across 75 Ω load).

1. CRT ADJUSTMENT

1-1. Precautions

(1) Receive the white raster signal, and then perform aging for at least 20 minutes.
(2) Demagnetize the area surronding the CRT with a degausser before making adjustments.
(3) Set the picture quality for each mode to the factory setting.
(4) Position the front screen facing the east as much as possible.

1-2. Purpose

(1) Beam landing adjustment (purity magnet)

Set the left/right balance of beam landing. If there is a discrepancy in this adjustment, a color irregularity will occur. After completion of the landing adjustment, it is necessary to perform convergence adjustment.

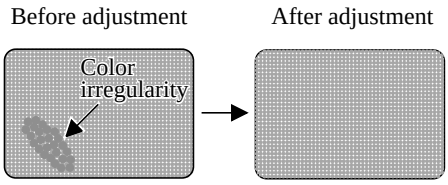
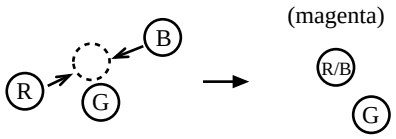


Fig. 1-1

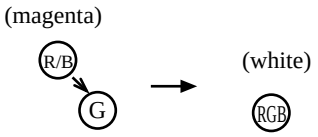
(2) Beam convergence adjustment (4-pole magnet)

Align the R beam with the B beam. The G beam does not move with this adjustment.



Align the R beam with the B beam
Fig. 1-2

(3) Beam convergence adjustment (6-pole magnet)
With a 4-pole magnet align the G beam with the already aligned R/B beam.



Align the G beam with the R/B beam
Fig. 1-3

(4) The composition of each magnet is as shown in Fig. 1-4.

In making adjustments, rotate the lock ring clockwise (looking from the CRT's back screen) and disengage.
Be careful not to loose the lock ring too much. If the magnet assembly has become shifted during adjustments, secure it to the position in Fig. 1-4.

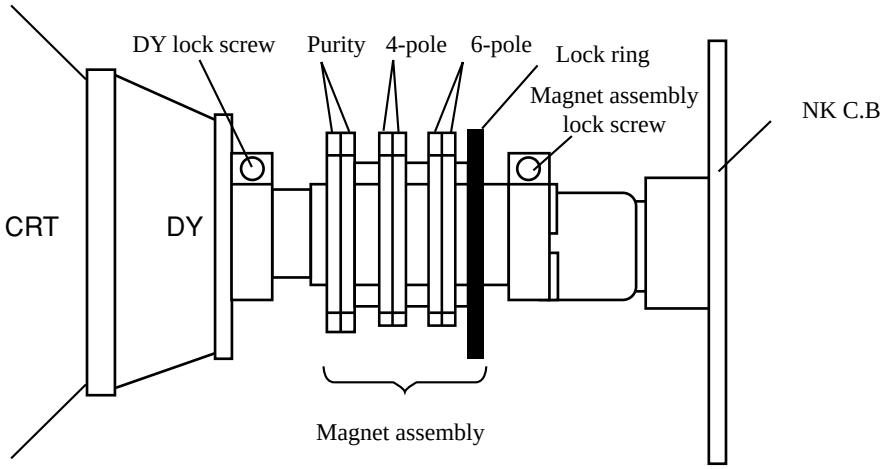


Fig 1-4

1-3. Beam Landing Adjustment

(1) Receive the green raster signal from the pattern generator.
(2) Loosen the magnet lock screw, and shift the magnet assembly backward (toward the neck).
(3) Loosen the DY lock screw, and shift the DY deflecting yoke backward (toward the neck).
(4) After opening the two purity magnets to the same angle, adjust the color width of the bands on both sides of the screen so that they are equal. (refer to Fig. 1-5 (a)).

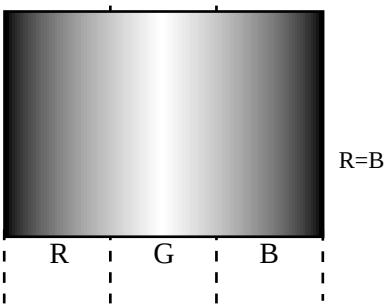


Fig 1-5 (a)

As shown in Fig. 1-5 (b), the purity magnet functions in relation to the electron beam.

(5) Gradually shift the deflecting yoke toward the front (toward the CRT funnel). Stop movement at the point when the screen has become completely green.

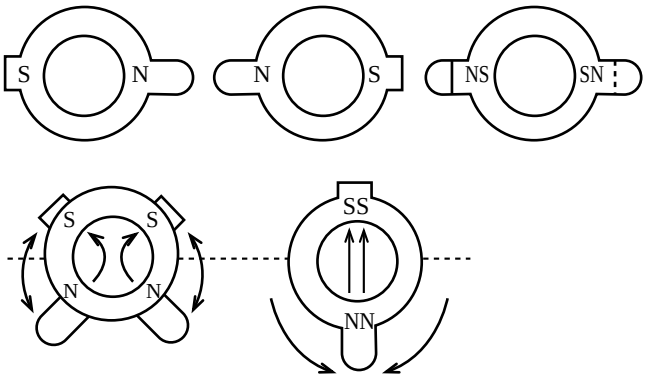


Fig 1-5 (b)

(6) Also, verify the respective monochromatics of red and blue.
(7) While looking at the screen, adjust the tilt of the deflecting yoke and tighten the DY lock screw.
(8) Shift the magnet assembly to the front (toward the CRT funnel), stop movement before the adjustment position and then tighten the magnet lock screw.
At this time, be careful not to shift the position of the purity magnet.

As there is occurrence of convergence distortion after completing the landing adjustments, be sure to carry out convergence adjustments.

If the color irregularities in the screen's corner section are not improved, correct them with the landing magnet. After using the landing magnet, be sure to demagnetize the CRT with degausser and verify that there is no occurrence of color irregularity. (refer to Fig. 1-6)

Landing magnet: 81-JTI-710-010
(two-sided adhesive tape) : 80-XVI-218-010 Cushion

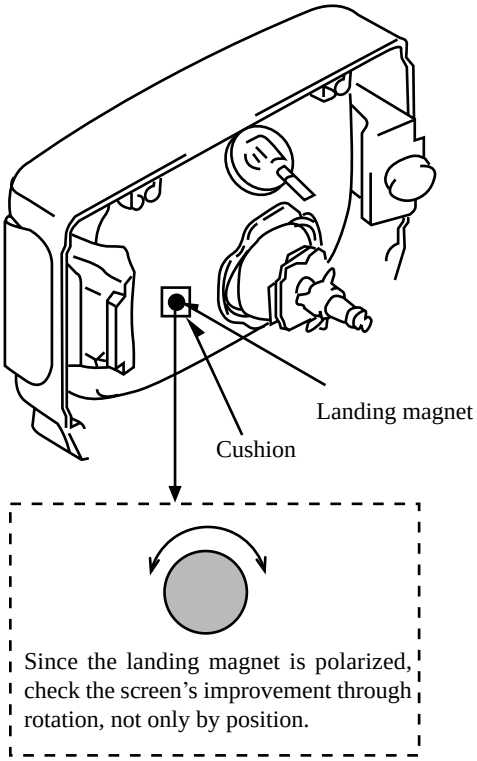


Fig 1-6

1-4. Beam Center Convergence Adjustment

Make adjustments on the convergence with 4-pole and 6-pole magnets. Operate each magnet in relation to the electron beam as shown in Figs. 1-7 and 1-8. When performing this adjustment, verify whether there is distortion in the focus adjustment. If necessary, carry out adjustments again.

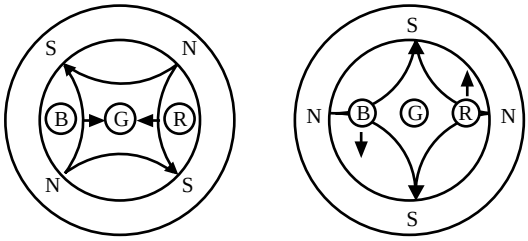


Fig 1-7

In Fig. 1-7, two 4-pole magnets are stacked together so as to be of the same polarity. Move the B and R beams to their respective direction, by rotating the two 4-pole magnets together. By adjusting the opening of the two magnets, it is possible to adjust the amount of the beam's movement.

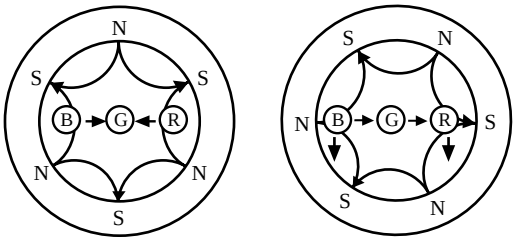


Fig 1-8

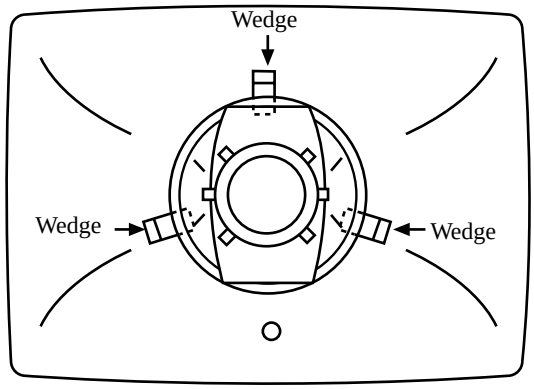
In Fig. 1-8, the two 6-pole magnets are stacked together so as to be of the same polarity. Move the B and R beams to their respective direction, by rotating the two 6-pole magnets together. By adjusting the opening of the two magnets, it is possible to adjust the amount of the beam's movement.

(1) Receive the dot pattern signal from the pattern generator.
(2) Pay attention to the center of the screen, and perform adjustments with two 4-pole magnets so that the R beam and B beam are perfectly aligned and become a magenta color. (Refer to Fig. 1-2)
(3) In the same way, pay attention to the screen, and perform adjustments with a 6-pole magnet so that the magenta beam and G beam are aligned and become a white dot. (Refer to Fig. 1-3)
(4) After adjustments are completed, secure all magnets with the lock link. (Refer to Fig. 1-4)

1-5. The Surrounding Convergence Adjustment

Perform this adjustment after completion of adjustment 1-4.

(1) Shake the deflecting yoke up, down to the right and left, and adjust any discrepancies in the screen's surroundings.
(2) Insert wedges in three locations in the gap between the deflecting yoke and the surface of the CRT funnel in order to secure the deflecting yoke. (Refer to Fig. 1-9)



Position of wedge

Fig. 1-9

2. ELECTRICAL ADJUSTMENT

1. Use the numeric keys on the remote control to set the receiving channel to Pr91.
2. Set Sharpness on the Picture Menu screen to 0.
3. Press the buttons on the remote control in the following order: Skip (R) → Move (G) → Menu

The following menu will appear on the TV screen:

SVC V0	
R BIAS	159
G BIAS	136
B BIAS	127
R DRIVE	35
G DRIVE	31
B DRIVE	32
V. CENTER	10
V.SIZE	23
H.CENTER	28
VCO	07
VCO FIN	107
VCO-L	05
VCO-L FIN	113
AGC	44
LED EAST	No
Pr	01
REMOCON	A

* To terminate the menu screen, press the power button on TV or remote control to turn power off.

4. AFT

PAL

Input frequency: 38.9 MHz

Measuring instrument: Pattern generator/PAL

4-1. Set the pattern generator frequency to 38.9 MHz.

4-2. Connect the pattern generator output (38.9 MHz) to the IF pin of tuner U101.

4-3. Choose VCO from the menu screen.

4-4. Press the "Vol+" button on the remote control: "Please wait!" will blink on the screen, and after several seconds, it will disappear.

SECAM

Input frequency: 34.2 MHz

Measuring instrument: Pattern generator/SECAM

4-5. Set the pattern generator frequency to 34.2 MHz.

4-6. Connect the pattern generator output (34.2 MHz) to the IF pin of tuner U101.

4-7. Choose VCO-L from the menu screen.

4-8. Press the "Vol+" button on the remote control: "Please wait!" will blink on the screen, and after several seconds, it will disappear.

5. Screen

Input signal: Stair-step

Adjustment point: SFR touched at lever part of FBT (T402).

Measuring instrument: Pattern generator/PAL

5-1. Set the TV to the "Normal I" mode.

5-2. Set the R/G/B Bias data values on the menu screen to 127.

5-3. Set the R/G/B Drive data values on the menu screen to 32.

5-4. Adjust the lower SFR of FBT (T402) so that the second scale from the right of stair-step starts to glow.

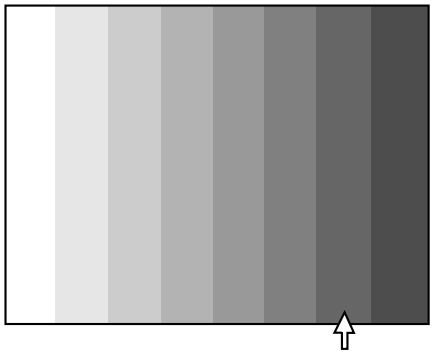


Fig. 5-1

6. White Balance

Input signal: White raster

Measuring instrument: Pattern generator/PAL

* Perform aging before adjustment for at least 20 minutes.

* Perform all adjustment steps several times.

Set the TV to the "Normal I" mode when performing adjustment steps 6-1 _ 6-9.

Bias Adjustment:

6-1. Supply white raster from the pattern generator.

6-2. Fix the bias value of the color, which is developed the most on the screen to 127, and use the Vol +/- buttons on the remote control to adjust the other two bias values so that the picture is white.

Drive Adjustment:

6-3. Use the Vol +/- buttons on the remote control to set the R Drive value to 63 so that the picture is reddish.

6-4. Lower the value until red disappears.

6-5. Use the Vol +/- buttons on the remote control to set the G Drive value to 63 so that the picture is greenish.

6-6. Lower the value until green disappears.

6-7. Use the Vol +/- buttons on the remote control to set the B Drive value to 63 so that the picture is bluish.

6-8. Lower the value until blue disappears.

6-9. Perform steps 6-1 _ 6-8 several times so that the picture is seen more white.

7. Focus

Input signal: Dot pattern

Adjustment point: SFR located at upper part of FBT (T402)

Measuring instrument: Pattern generator/PAL

Adjust SFR which is located at upper part of FBT (T402) in order to get the best focus for the dot.

8. AGC

Input signal: Color bar (ANT RF-Input)

Measuring instrument: Pattern generator/PAL

Test point: Tuner U101 AGC pin

8-1. Set the receiving frequency at Pr91 to that of pattern generator.

8-2. Connect an oscilloscope to the AGC pin of tuner U101.

8-3. Choose AGC from the menu screen.

8-4. Use the "P ∧ / ∨ " button on the remote control to set the value to maximum, and then set it to a value where the voltage at the test point is 1 V lower than the maximum.

<Simple Adjustment>

• Set the receiving frequency at Pr91 to that of pattern generator.

• Choose AGC from the menu screen.

• Use the "P∧ / ∨" button on the remote control to set the value to that where no noise or beat occurs.

9. Vertical Center

Input signal: Crosshatch

Measuring instrument: Pattern generator/PAL

9-1. Set the TV to the "Normal I" mode.

9-2. Choose V.CENTER from the menu screen.

9-3. Adjust the "Vol +/-" buttons on the remote control so that the dot mark at the center of crosshatch is positioned at the vertical center of screen.

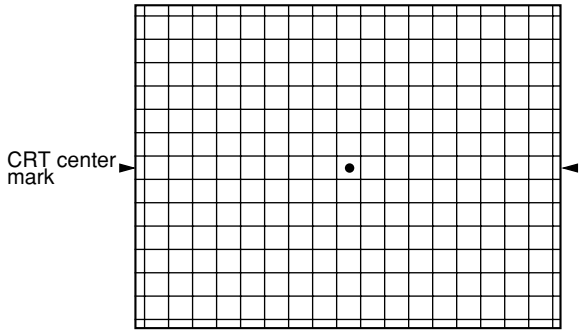


Fig.9-1

10. Vertical Size

Input signal: Crosshatch (with circle)

Measuring instrument: Pattern generator/PAL

10-1. Set the TV to the "Normal I" mode.

10-2. Choose V.SIZE from the menu screen.

10-3. Adjust the "Vol +/-" buttons on the remote control so that the dot mark at the center of crosshatch is positioned at the vertical center of screen, the circle is a perfect circle, and each hatch is square.

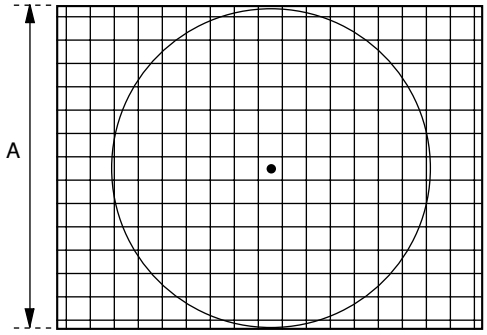


Fig.10-1

11. Horizontal Center

Input signal: Crosshatch

Measuring instrument: Pattern generator/PAL

11-1. Set the TV to the "Normal I" mode.

11-2. Choose H.CENTER from the menu screen.

11-3. Adjust the "Vol +/-" buttons on the remote control so that the dot mark at the center of crosshatch is positioned at the center of screen, and the number of squares on the left and right is the equal.

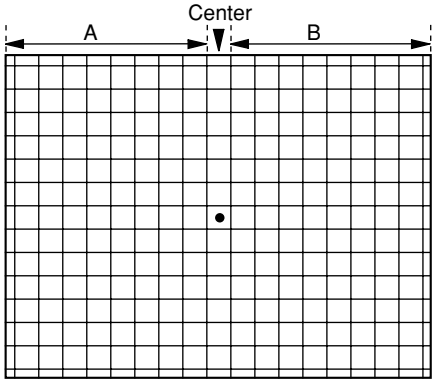
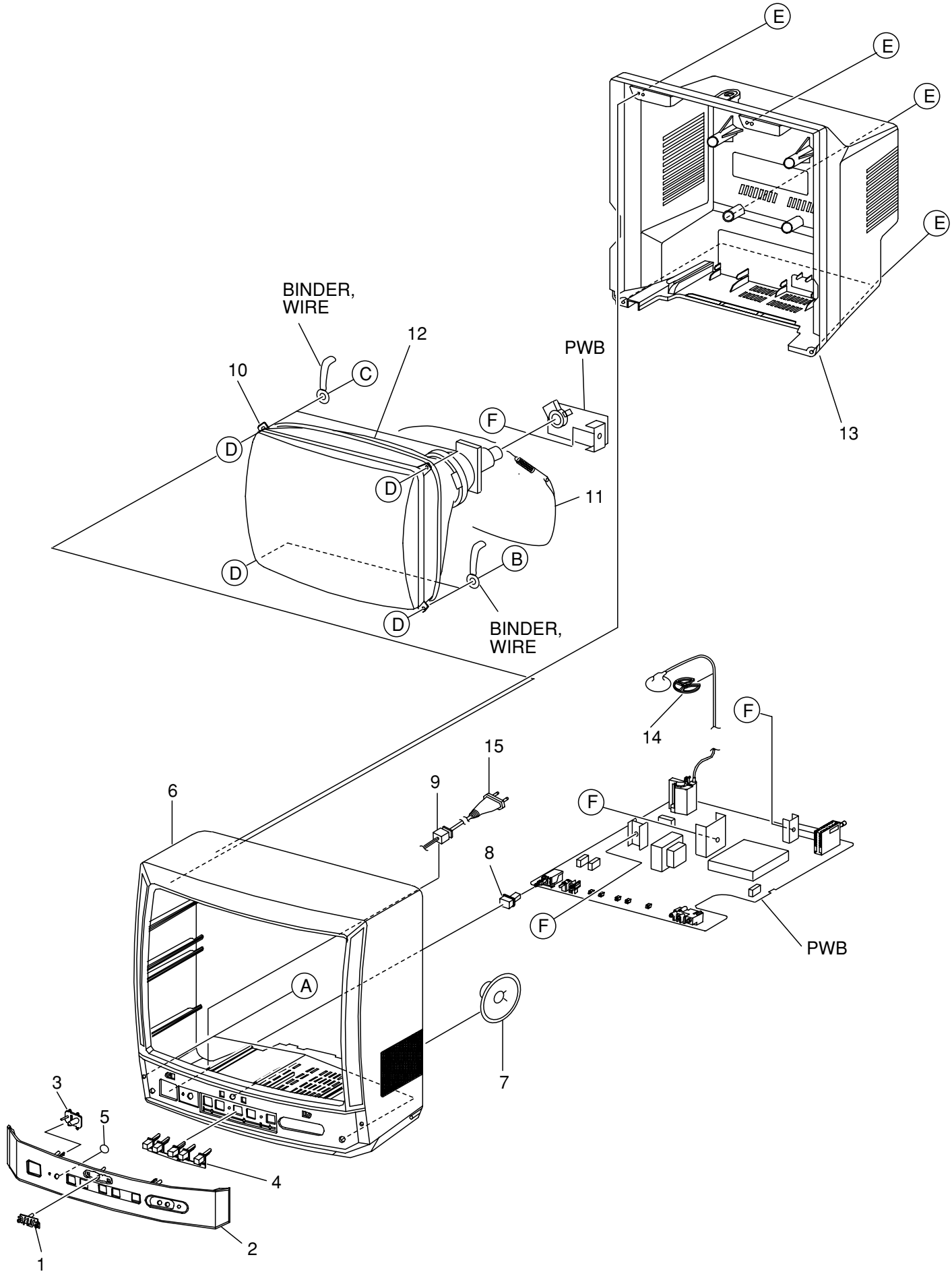


Fig.11-1

MECHANICAL EXPLODED VIEW 1/1



MECHANICAL MAIN PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S4-855-621-900		MARK BRAND ABS BK
2	8A-JB8-002-010		PANEL,FRONT
3	S4-855-542-200		DECO SENSOR PMMA
4	8A-JB8-003-010		BTN,CHANNEL
5	8A-JB8-004-010		LENS,SENSOR
6	8A-JB8-001-010		CABI,FRONT
7	S4-858-314-410		SPEAKER SP-77A05 3W 8 OHM
8	8A-JB8-005-010		BTN,POWER
9	S9-7P2-316-600		HOLDER AC CORD
⚠ 10	S4-859-608-640		CRT DOSA A34JLL90X89
11	S4-851-9A4-710		CRT GROUND AS 14A3
12	S5-8G0-000-084		COIL DEGAUSSING 14" DC-1450
13	8A-JB8-006-010		CABI,BACK
14	S4-856-818-300		CLAMP WIRE PH-WL-5034
⚠ 15	S4-859-906-210		CORD,POWER
A	87-741-096-410		SCREW TAPPTITE 3-10
B	S4-856-013-301		SCREW CRT FIXING AS L-140
C	S4-856-013-300		SCREW CRT FIXING AS L-80
D	S4-856-215-402		WASHER RUBBER
E	S7-172-401-412		SCREW TAPPING 4-14
F	87-741-095-410		SCREW TAPPTITE 3-8

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink
LA	Aqua Blue				

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