

# ADJUSTMENT INSTRUCTIONS

## 1. Safety Precautions

1. It is safe to adjust after using insulating transformer between the power supply line and chassis input to prevent the risk of electric shock and protect the instrument.
2. Never disconnect leads while the TV receiver is on.
3. Don't short any portion of circuits while power is on.
4. The adjustment must be done by the correct appliances.
5. Unless otherwise noted, set the line voltage to 230Vac $\pm$ 10%, 50Hz.
6. The adjustment of TV should be performed after warming up for 15 minutes.

## 2. Test Equipment required

1. RF signal generator (with pattern generator)
2. DC Power Supply
3. Multimeter (volt meter)
4. Oscilloscope
5. Color analyzer

## 3.DVCO Adjustment

- 1) This is for adjustment of VCT38XX,crystal oscillator frequency after receiving a company Digital pattern.(PAL:EU05CH,NTSC:13CH)
- 2) When entering adjustment mode by pressing IN-START button,DVCO adjustment is operating automatically. (T/X doesn't operating occasionally during DVCO adjustment.)

## 4. Focus Adjustment

### 4-1. Preparation for Adjustment

Tune the TV set to receive a digital pattern.

### 4-2. Adjustment Method

#### 1) Single Focus CPT

Adjust the upper Focus volume of FBT for the best focus of horizontal line A,vertical line B.

#### 2) Double Focus CPT

- 1) Adjust the lower Focus volume of FBT for the best focus of vertical line B.
- 2) Adjust the upper Focus volume of FBT for the best focus of area A.
- 3) Repeat above step 1) and 2) for the best overall focus.

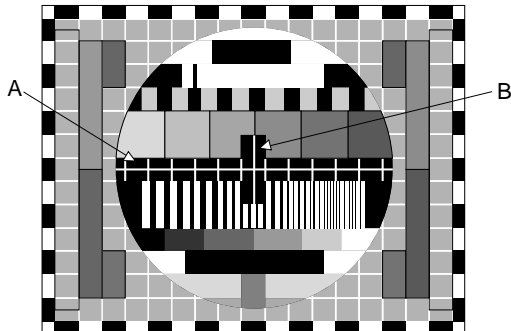


Fig. 1

## 5. Screen Voltage & White Balance Adjustment

### 5-1. Adjustment of screen manually (Using ADJ.Remote Control)

- 1) Receive the PAL or SECAM(NTSC) signal into RF mode regardless of channel.
- 2) If you press the "ADJ" button in LINE SVC mode(IN-START button),the LINE SVC mode changes to screen adjustment mode.
- 3) Turn the Sreen Volume of FBT to change luminance of White signal center as shown below.(Deviation  $\pm$  1FL)
- 4) Press the EXIT button (Like TV/AV) to exit SVC mode.

CPT & INCH	Luminance(Manual)	Note
29" FLAT	6 $\pm$ 1FL	Single Focus
25" FLAT	8 $\pm$ 1FL	
29" NORMAL	5 $\pm$ 1FL	
25" NORMAL	6 $\pm$ 1FL	
28" NORMAL	8 $\pm$ 1FL	

### 5-2. Adjustment of white balance manually(Line-SVC 1)

- 1) Tune the TV set to receive an 100% white pattern.
- 2) Adjust LOW Light status of CUT R,CUT B at CUT G:50.
- 3) Adjust HIGH Light status of WDR R,WDR B at WDR G:380.
- 4) Repeat above step 2) and 3) for the best condition each status of High Light and Low Light.

#### White Balance Color analyzer

Menu	EU	N-EU
X	288	268
Y	295	273
Color Temperature	9000°K	13000°K

#### White Balance Initial Data

Menu	Range	DATA
CUR R	0 ~ 511	50
CUR G	0 ~ 511	50
CUR B	0 ~ 511	50
WDR R	0 ~ 511	380
WDR G	0 ~ 511	380
WDR B	0 ~ 511	380

**NOTE :** When adjusting white balance automatically,connect the adjustment JIG in SVC mode.(When pressing IN-START,MUTE button on remote control for adjustment orderly,it changes to SVC mode and screen displays SVC.)

## 6. Deflection Data Adjustment (Line SVC-2)

**NOTE :** How to enter into the Line Service Mode with a remotecon.

- 1.Power off.
- 2.Press the Red button.
- 3.Press the Green button.
- 4.Press the Yellow button.
- 5.Press the Cyan button.
- 6.Press the OK button.
- 7.Power On.

### 6-1. Preparation for Deflection Adjustment

- 1) At adjustment mode(IN-START button on remote control of adjustment),changed to LINE SVC 2 mode to adjust the deflection.
- 2) Press Channel UP/DOWN button for desirous function Adjustment.
- 3) Press Volume UP/DOWN button to adjust the data.
- 4) Tune the TV set to receive a Digital pattern.(PAL:05CH)

**NOTE :** If production line doesn't the production line of LG TV, receive available deflection adjustment pattern.

### 6-2. Adjustment Method

**NOTE :** First,adjust deflection at N50Hz,W50Hz,Z50Hz of PAL signal.Then adjust deflection at N60Hz,W60Hz,Z60Hz of NTSC signal.  
In case of NTSC only model,adjust deflection of N60Hz,W60Hz,Z60Hz of NTSC signal.

Store the deflection adjustment data in EEPROM by using ENTER button before adjusting PIP position.

- 1) When adjusting a deflection,adjust N50Hz of PAL signal first and adjust a deflection at W50Hz,Z50Hz,N60Hz,W60Hz,Z60Hz of PAL signal.
- 2) Adjust a deflection as shown below  
PAL 4:3=> PAL 16:9=>PAL ZOOM=>NTSC 4:3=>NTSC 16:9=>NTSC ZOOM.
- 3) After finishing deflection adjustment,press the ENTER button to enter or exit in SVC mode.

#### VL (Vertical Linearity)

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

#### VA (Vertical Amplitude)

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

#### SC (Vertical "S" Correction)

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

#### VS (Vertical Shift)

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

#### HS (Horizontal Shift)

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

#### EW (Horizontal Width)

Adjust to that a digital circle pattern looks like exact circle.

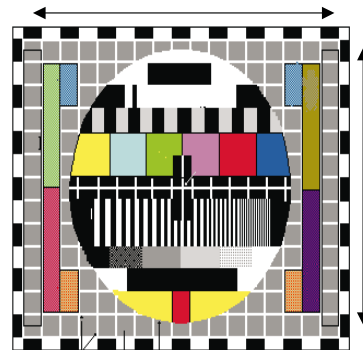


Fig. 2

#### EP (East-west Parabolar)

Adjust so that middle portion of the outermost left and right vertical line looks like parallel with vertical lines of the CPT.

#### EC (East-west Coner)

Adjust so that the vertical line at every 4 corners of the screen looks like parallel with the vertical lines of the CPT.

#### ET (East-west Trapezium)

Adjust to make the length of top horizontal line same with it of the bottom horizontal line.

#### PIP (PIP Position)

Adjust until the distance between PIP and main picture becomes about 1~2mm.

**25/29" LG FLAT CPT(CT-25Q20RB)**

ITEM	RANGE	N50Hz	W50Hz	Z50Hz
VA	0050~00CF	009A	22	11
VL	0025~00BF	00F3	3	0
SC	0000~009F	00D0	0	0
VS	0600~0900	0774	0	0
HS	0000~003F	0019	0	0
EW	0400~0EFF	0B96	22	0
ET	0700~08FF	07DE	0	0
EP	06E0~0840	07BF	19	-14
ES	06A0~0AFF	085C	0	0
EC	0790~08E0	082B	0	0
PIP P	0790~08E0	0007	0	0

**29" S/S SEB FLAT CPT**

ITEM	RANGE	N50Hz	W50Hz	Z50Hz
VA	0050~00CF	00A3	-22	11
VL	0025~00BF	00F5	0	0
SC	0000~009F	00D0	0	0
VS	0600~0900	0744	0	0
HS	0000~003F	0016	0	0
EW	0400~0EFF	0E40	0	0
ET	0700~08FF	07E9	0	0
EP	06E0~0840	07B4	22	-14
ES	06A0~0AFF	0840	0	0
EC	0790~08E0	0840	0	0
PIP P	0790~08E0	0000B	0	0

**25/29" FST CPT**

ITEM	RANGE	N50Hz		W50Hz		Z50Hz		N60Hz		W60Hz		Z60Hz	
		25"	29"	25"	29"	25"	29"	25"	29"	25"	29"	25"	29"
VA	0050~00CF	0092	008A	-22	-22	14	14	0	0	-22	-22	-5	-5
VL	0025~00BF	00FF	00F8	0	0	0	0	-5	-5	-5	-5	0	0
SC	0000~009F	00E1	00E1	0	0	0	0	0	0	0	0	0	0
VS	0600~0900	07FF	0733	0	0	0	0	43	43	43	43	43	43
HS	0000~003F	0016	001C	0	0	0	0	4	4	4	4	4	4
EW	0400~0EFF	0C36	0C59	0	0	0	0	15	15	15	15	15	15
ET	0700~08FF	07FC	07F3	0	0	0	0	-6	-6	-6	-6	-16	-16
EP	06E0~0840	07B3	07BF	25	25	-16	-16	-2	-2	15	15	-16	-16
ES	06A0~0AFF	0864	085F	29	29	29	29	0	0	44	44	44	44
EC	0790~08E0	083F	073E	0	0	0	0	12	12	12	12	12	12
PIP P	0790~08E0	0009	0009	0	0	0	0	0	0	0	0	0	0

**28" LGPD FLAT CPT**

ITEM	RANGE	16: 9		14: 9		ZOOM		STANDARD	
		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz
VA	0050~00CF	0083	0083	008F	008E	00A7	00A7	0083	0084
VL	0025~00BF	00FD	00FA	00FD	00A	00FD	00F8	00FD	00F9
SC	0000~009F	00F0	00F0	00F0	00F0	00F0	00F0	00F0	00F0
VS	0600~0900	0729	0753	0732	0756	073B	075D	0741	0753
HS	0000~003F	0016	0014	0016	0014	0016	0014	0016	0014
EW	0400~0EFF	0A6E	0A62	0A6E	0A68	0A6E	0A68	0A6E	0A68
ET	0700~08FF	07FF	07FD	07FF	07E8	07FF	07EA	07FD	07EA
EP	06E0~0840	07B7	07B6	07A9	07AB	078E	078B	07B3	07B6

ITEM	RANGE	16: 9		14: 9		ZOOM		STANDARD	
		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz
VA	0050~00CF	0083	0083	008F	008E	00A7	00A7	0083	0084
VL	0025~00BF	00FD	00FA	00FD	00A	00FD	00F8	00FD	00F9

## 7. SVC Data & PSM,SSM Data.

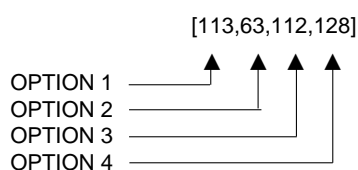
### PICTURE SETTING DATA (LINE SVC-3)

Menu	Range	25/29" LG Flat	29" S/S-Flat	25" FST	28" FST	29" FST	28" FLAT
DVCO(Digital VCO)							
IBRM(BLACK CURRENT)	0~1FFH	00C8	00C8	00C8	00C8	00C8	00C8
WDRM(WHITE CURRENT)	0~3FFH	0190	0190	0190	0190	0190	0190
BCLT(BCL THERSHOLD	0~7FFH	0055	0055	0050	0050	0050	0050
BCLTM(BCL TIME)	0~1FFH	0007	0007	0007	0007	0007	0007
BCLGA(BCL GAIN)	0~1FFH	0007	0007	0007	0007	0007	0007
SVGA(SVM GAIN)		000D	000D	000D	000D	000D	000D
SVDEL(SVM DELAY)		0007	0007	0007	0007	0007	0007
SVD1(SVM DELAY1)		0003	0003	0003	0003	0003	0003
LDLY(L DELAY)		FFFC	FFFE	FFFE	FFFE	FFFE	
DSCC(Discharge Sample)	0~01FF	000D	000D	0009		0007	0008
DSCV(Vertical Discharge)	0~01FF	FB80	FB80	FDC0		FD80	FB80

## 8. OPTION Adjustment (OPTION-1,2, 3,Teletext)

### 8-1. Preparation for Adjustment

- 1) This decides funtion in accordance with model.  
Press the SVC TX adjustment button(IN-START button) at SVC mode,then adjust the option at OPTION 1,2,3,4 mode.
- 2) Mark the option adjustment data like [111,11,111,11] in BOM.



● Mark of BOM

LEVEL	PART NO.	SPECIFICATION	DESCRIPTION	JOB EXP.
1.	3141VMN382A	MAIN[MC-022A]	CHASSIS ASSY	OP[113,63,112,128]

The OPTION 1 data is 113,OPTION 2 data is 63,the oOPTION 3 data is 112,the OPTION 4 data is 128 in this model.

### 8-2. Adjustment Method

- 1) Input data directly by the buttons corresponded with OPTION1 ??(0~255), OPTION2 ??(0~255), OPTION3 ???(0~127),OPTION 4 ???(0 ~255).
- 2) Select each OPTION function by the CH Up/Down button and then set up each OPTION by the VOL Up/Down button.

### 8-3. OPTION 1 Function

Option	Code	Function	Remark
WIDE	0	4:3 NORMAL MODEL	
	1	WIDE FLAT MODEL	
TOP	0	W/O TOP(FLOP BASIC)	
	1	WITH TOP	
ACMS	0	Without ACMS funtion	Only Austrailia
	1	With ACMS funtion	
CH+AU	0	ALL NATION	
	1	Frequency Table	
EYE	0	WITHOUT EYE	
	1	WITH EYE	
DEG	0	Without DEGAUSSING	
	1	With DEGAUSSING	
TILT	0	WITHOUT TILT	
	1	WITH TILT	
KEY	0	6 KEY	
	1	4KEY(H80,K90,K30)	

### 8-5. OPTION 3 Function

Option	Code	Function	Remark
GAME	0	W/O GAME	TXT Model
	1	GAME PACK GAME(HINDI MICOM)	W/O TXT Model
MONO	0	FORCED MONO NOT SETTING	
	1	FORCED MONO SETTING	
AV2	0	WITH 1 AV JACK(BACK)	PAL model ALL
	1	WITH 2 AV JACK(BACK)	
TBS	0	BOOSTER CONTROL disable	1 TUNER Model
	1	BOOSTER CONTROL enable	2 PIP only
WOOF	0	W/O WOOFER	
	1	WITH WOOFER	
PIP	0	1 TUNER PIP or W/O PIP	1 PIP or W/O PIP
	1	2 TUNER PIP	2 PIP
SYS	0	B/G,I,D/K	CE/RE-MODEL
	1	B/G,I,D/K,L/L'	CL/RL-MODEL
	2	B/G,I,D/K,M	CT/RT-MODEL
	3	RESERVED	

### 8-4. OPTION 2 Function

Option	Code	Function	Remark
TURBO	0	Without TURBO search	EU
	1	With TURBO search	
C MUTE	0	Not CARRIER MUTE	MONO MODEL DEFAULT
	1	CARRIER MUTE	
A2 ST	0	NICAM	
	1	NICAM & FM STEREO	
DUAL	0	NO SAVE DUAL/SOUND Condition	EU(CE,CL Model)
	1	SAVE DUAL SOUND Condition	NON EU(CT Model)
SCART	0	PHONE JACK	
	1	SCART JACK	
V-CUR	0	NORMAL VOLUME CURVE	
	1	RUSHED VOLUME CURVE	
DVD	0	Without DVD INPUT	
	1	With DVD INPUT	
HOTEL	0	Without HOTEL OPTION	
	1	With HOTEL OPTION	
M-VOL	0~100	MAX VOLUME	With HOTEL mode

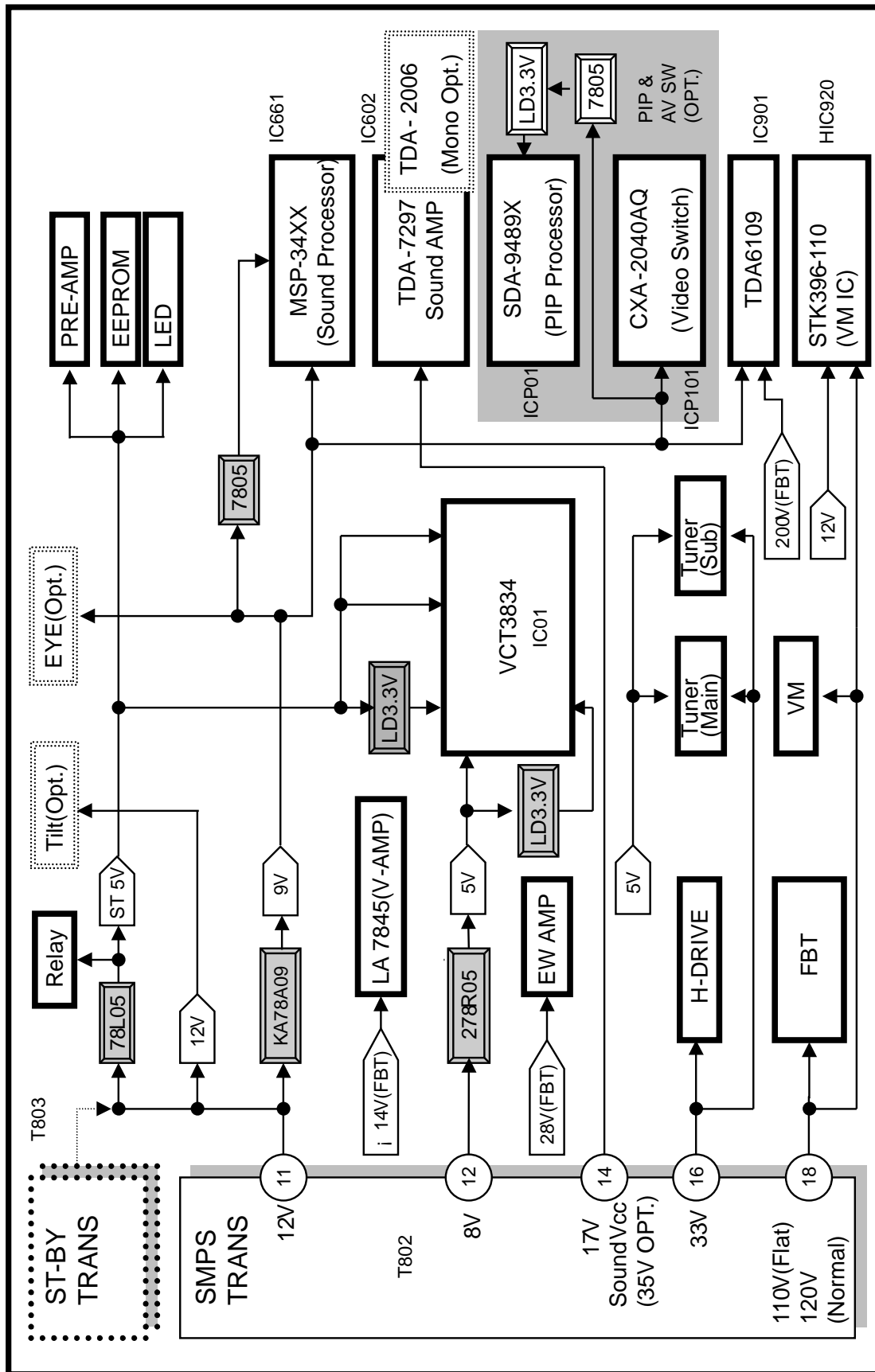
### 8-6. SOUND PRE-SCALER

Menu	DATA
FP(FM PRE-SCALER)	0016
NP(NICAM PRE-SCALER)	0056
SP(SCART PRE-SCALER)	0013
S1 VOL(SCART1 PRE-SCALER)	0064
S2 VOL(SCART2 PRE-SCALER)	0064
AGC-L(AUTO GAIN CONT.LIMIT)	00C5

## 8-7. OPTION 4 Function

OPTION	CODE	FUNTION	
OSD LANG.	0	English Only(Eng.)	Arab.Asia
	1	Arab(Eng/Fr/Arab)	3834
	2	Urdu(Eng/Fr/Arab/Urdu)	
	3	Asia(Eng/Fr/Indonesia)	
	0	English Only(Eng.)	Farsi
	1	Arab(Eng/Fr/Arab)	3834
	2	Farsi(Eng/Fr/Arab/Farsi)	
	0	English Only(Eng.)	Arab-Asia
	1	Arab(Eng/Fr/Arab)	3804
	2	Urdu(Eng/Fr/Arab/Urdu)	
	3	Arab all(Eng/Fr/Arab/Urdu/Farsi)	
	4	Farsi ONLY(Eng/Farsi)	
	5	Asia(Eng/Fr/Indonesia/Malay)	
	0	English Only(Eng.)	WEST-EU
	1	EU-7(E.Ger/Fr/Ita/Spain/Holand/Port)	3834 Only(W/TXT)
	2	EU-NORTH(E-Ger/Fr/Holand/Swe/Nor/Den/Fin)	
	0	English Only(Eng.)	EAST-EU
	1	Cyrilic(E.Russia)	3834 Only(W/TXT)
	2	EU-EAST(E.Ger/Rum/Pin/Hung/Chez)	
	3	EU-EAST All(E-Ger/Rum/Pol/Hung/Chez/Russia)	
	0	English Only(Eng.)	EU-ALL
	1	EU-7(E.Ger/Fr/Ita/Spain/Holand/Port)	3804 Only(W/O TXT)
	2	EU-NORTH(E-Ger/Fr/Holand/Swe/Nor/Den/Fin)	
	3	Cyrilic(E.Russia)	
	4	EU-EAST(E.Ger/Rum/Pin/Hung/Chez)	
	5	EU-EAST All(E-Ger/Rum/Pol/Hung/Chez/Russia)	
	0	English Only(Eng.)	28" Wide Flat
	1	EU-5(E.Ger/Fr/Ita/Spain)	3834 Only(W/TXT)
	0	English Only(Eng.)	Hindi-China-Viet.
	1	Vietnam(E.Vietnam)	3804 Only(W/O TXT)
	2	Hindi(E.Hindi)	
	3	China(E.China)	
	0	Eng/Spain/Port	
	1	Spain/Port/Eng	
	2	Port/Spain/Eng	
	3	Eng/Fr	
	0	KOrean Only	Korea Version

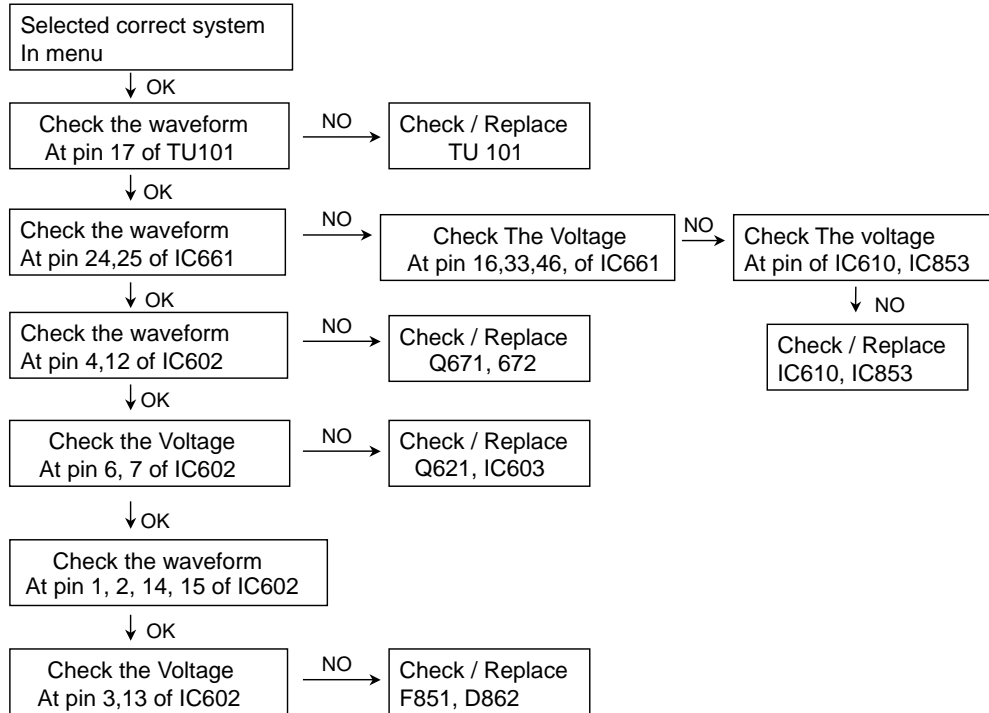
OPTION	CODE	FUNTION	
TXT-L	0	WEST-EU	Farsi only 3834 only(W/TXT)
	1	EAST-EU	
	2	Turkey	
	3	Cyrillic3	
	5	Arab/English	
	8	Farsi/English	
	0	WEST-EU	Arab-Asia 3834 only(W/TXT)
	1	EAST-EU	
	2	Turkey	
	3	Cyrillic3	
	5	Arab/English	
	0	WEST-EU	WEST EU 3834 only(W/TXT)
	1	EAST-EU	
	2	Turkey	
	6	Cyrillic3	
	0	WEST-EU	EAST EU 3834 only(W/TXT)
	1	EAST-EU	
	2	Turkey	
	6	Cyrillic3	
	0	WEST-EU	28" WIDE FLAT 3834 only(W/TXT)
	1	EAST-EU	
	2	Turkey	
	4	Cyrillic3	
	5	Arab/English	
	6	Farsi/English	



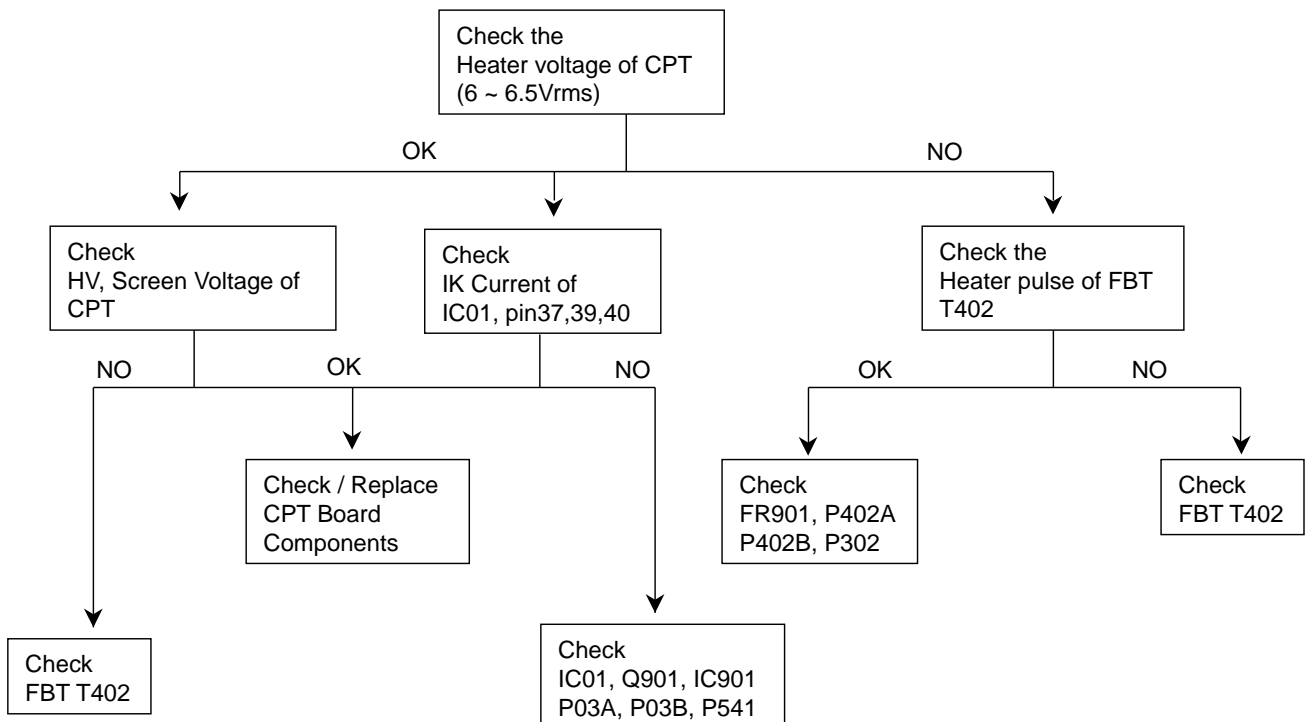


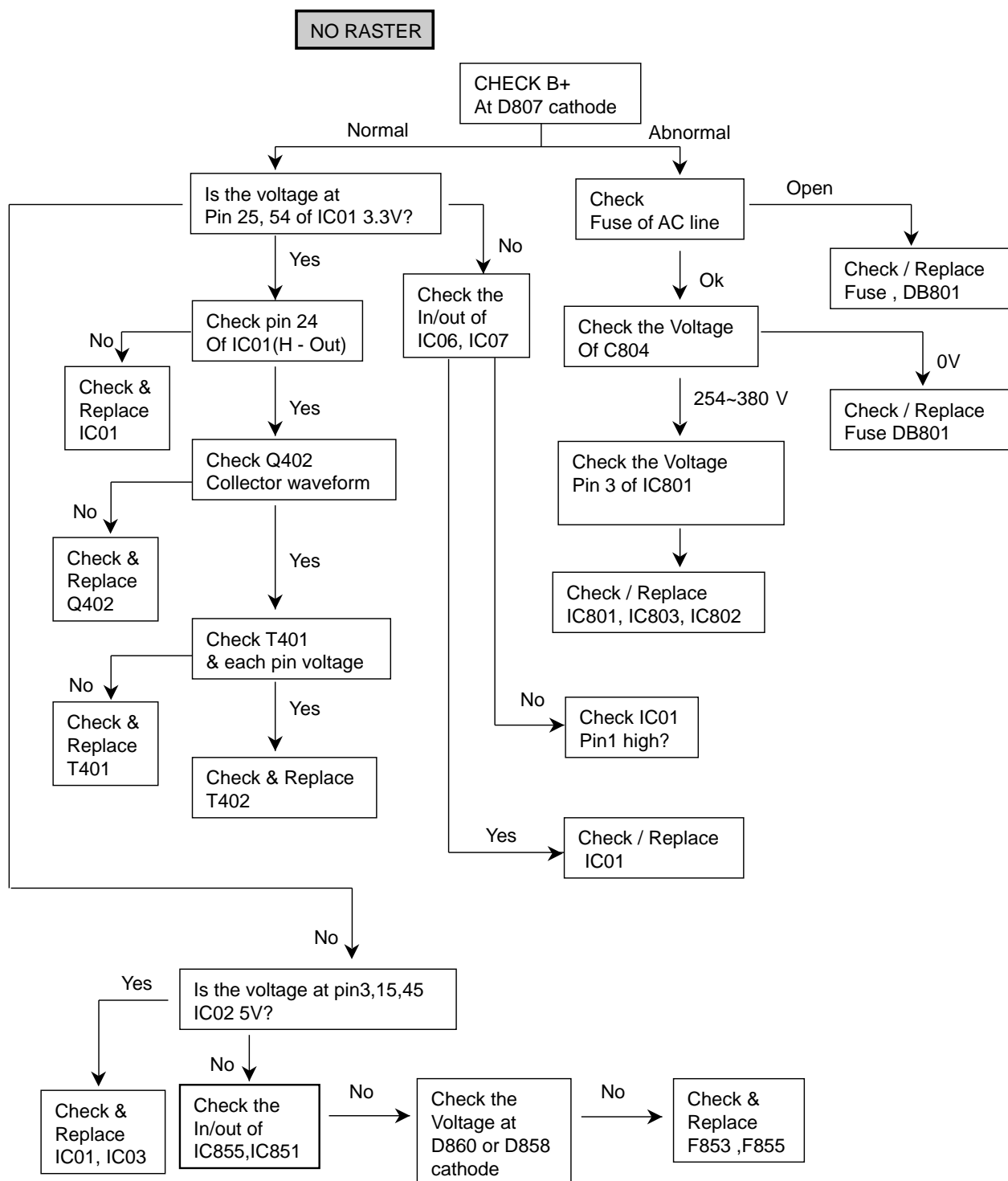
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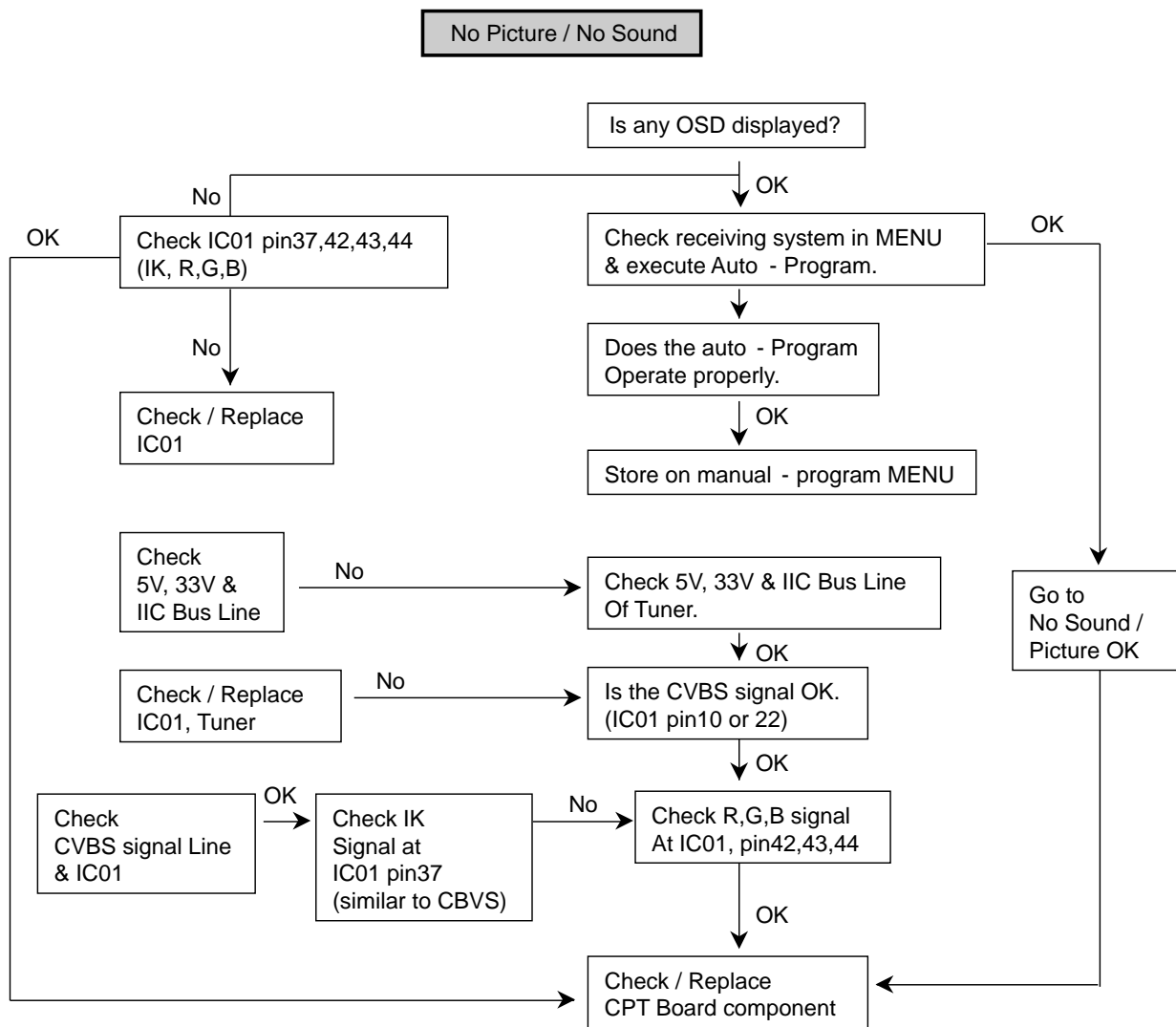
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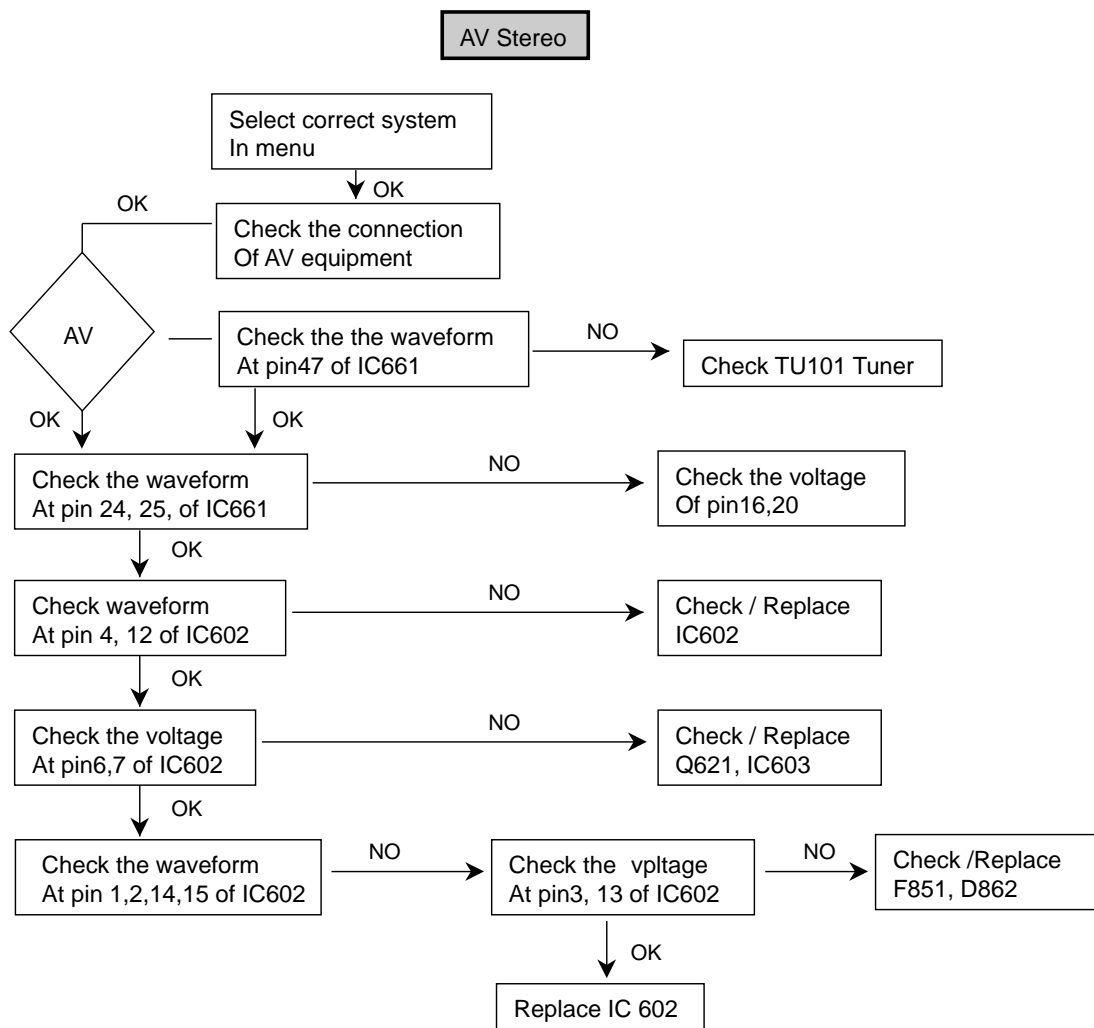


## No Raster / Sound OK

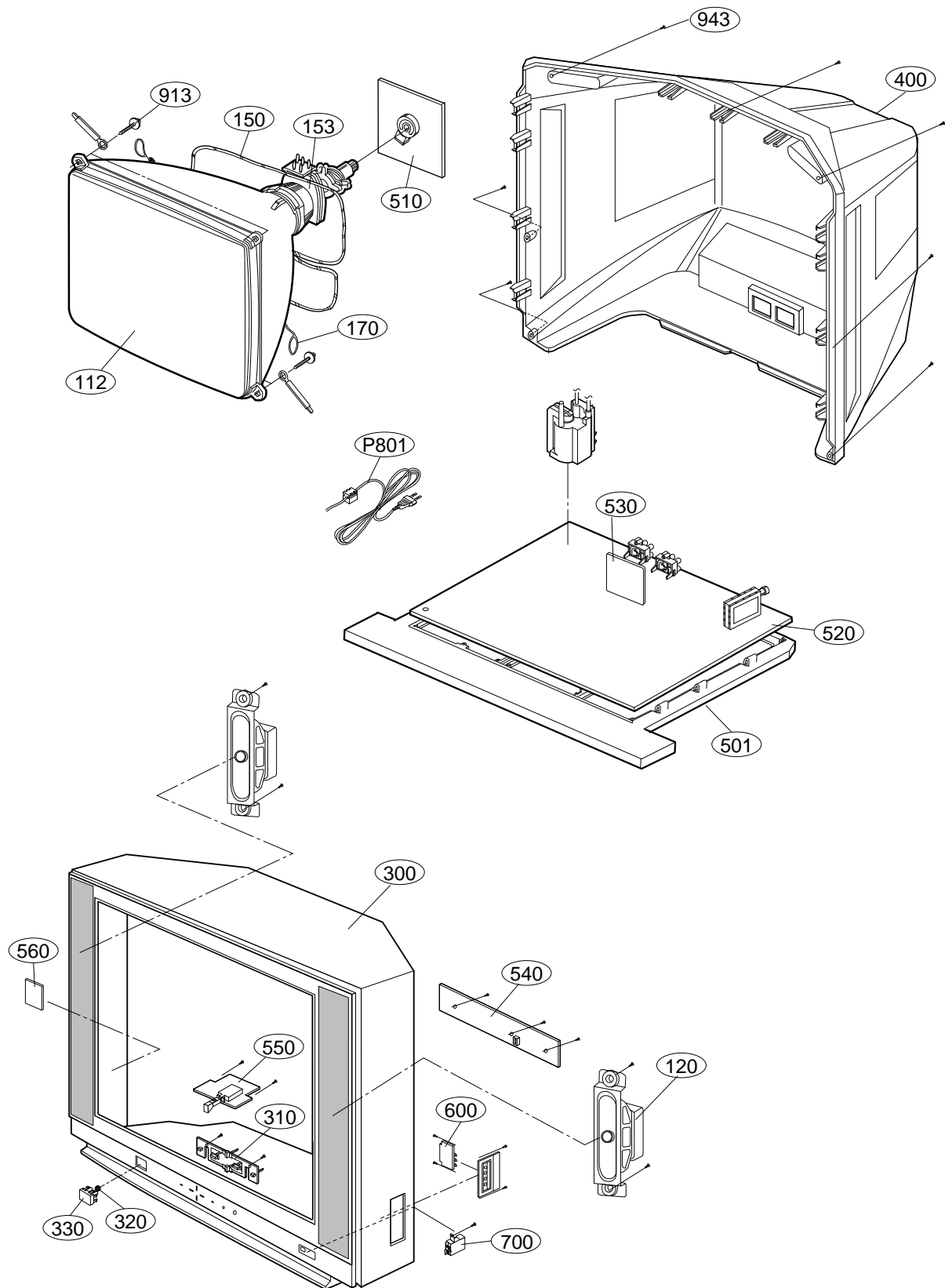









# EXPLODED VIEW



## EXPLODED VIEW PARTS LIST

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

LOCA. NO	PART NO	DESCRIPTIONS
 112	6341V29006D	CPT ASSEMBLY A68QCP893X001
120	6400VA0033A	SPEAKER,GENERAL F1562C-6229 8OHM 10/2
 150	6140VC2005F	COIL,DEGAUSSING 29 FLAT ASSY(W) SELLA
 170	170-844K	CPT EARTH 29" 98T 4LUG
300	3091V00324J	CABINET ASSY
310	5020V00394B	BUTTON
320	320-062E	SPRING,KNOB
330	5020V00518B	BUTTON W/O SPRAY .
400	3809V00242H	BACK COVER ASSY(2-SCART)
501	3210V00083B	FRAME,MAIN
510	6871VSMB26B	PWB ASSY,CPT 022A (CPT/VM)CE 29" S/S
520	6871VMMC17A	PWB ASSY,MAIN
540	6871VSMB27C	PWB ASSY,CONT
550	6871VSMD01B	PWB ASSY,POWER 022A Q40 RE(CE) MODEL
560	6871VSM842A	PWB ASSY,CURRENT HARMONICS STANDARD
600	6871VSMB28L	PWB ASSY,A/V 022A SIDE Q40(CE/RE)
700	0IGL120104A	IC,CDS SENSOR MODULE(P1201-04)
913	332-229H	SCREW ASSY HEXAGON HEAD
943	1PTF0403116	SCREW,TAP TITE(P) D4.0 L16.0 MSWR3/FZB
 P801	174-009V	POWER CORD(W/HOLD,HOUSING)L=400,4.0

**SVC. SHEET : 3854VA0098A-S**