JVC

SERVICE MANUAL

COLOUR TELEVISION

AV28T25EKS
AV28T25EKB
AV28T55EKS
AV28T25EIS

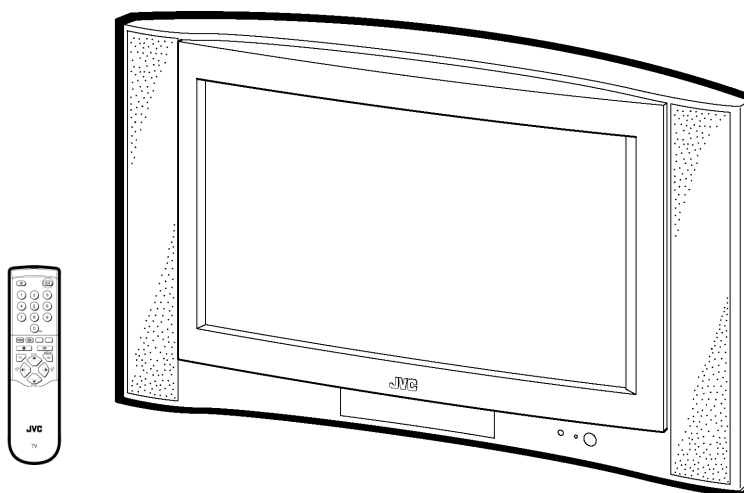| BASIC CHASSIS |
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| JL |

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No. 51942
Apr. 2002

AV28T25EKS
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SPECIFICATIONS

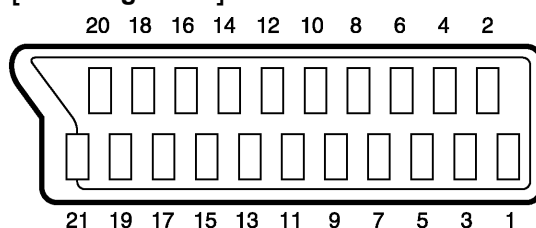| Item	Content	
	AV28T25EKS / AV28T25EKB / AV28T55EKS	**AV28T25EIS**
Dimensions (W × H × D)	854mm × 507.5mm × 493.5mm	
Mass	43.0kg	
TV RF System	CCIR (I)	
Colour System	PAL	
	NTSC (Only in EXT mode)	
Stereo System	NICAM	
Teletext System	FLOF (Fastext)	
	WST(Standard system)	
Receiving Frequency		
VHF	———————	47MHz ～ 470MHz
UHF	470MHz ～ 862MHz	470MHz ～ 862MHz
Intermediate Frequency		
VIF Carrier	38.9MHz (I)	
SIF Carrier	32.9MHz (6.0MHz:I)	
Colour Sub Carrier Freq.		
PAL	4.43MHz	
NTSC	3.58MHz / 4.43MHz	
Power Input	AC 220V～240V , 50Hz	
Power Consumption	180W(Max) / 120W(Avg)	
	Standby : 3W	
Aerial Input Term	75 Ω unbalanced, Coaxial	
Picture Tube	Visible size : 66cm, Measured diagonally	
High Voltage	31.0kV $^{+1kV}_{-1.5kV}$ (at zero beam current)	
Speaker	6.5cm × 13cm Oval type × 2	
Audio Output	10W + 10W	
EXT-1/EXT-2/EXT-3 **(Input / Output)**	21-pin Euro connector (SCART socket)	
EXT-4 (Input) Video	1Vp-p 75Ω (RCA pin jack)	
Audio (L/R)	500mVrms(-4dBs), High Impedance (RCA pin jack)	
S / Video	Y : 1Vp-p POSITIVE (Negative sync Provided, when terminated with 75Ω)	
	C : 0.286Vp-p (Burst signal, when terminated with 75Ω)	
AUDIO OUT (Variable)	0～1Vrms, Low Impedance (RCA pin jack × 2)	
Headphone jack	Stereo mini jack (φ 3.5mm)	
Remote Control Unit	RM-C55H-1C(AV28T25EKS/AV28T55EKS) (AAA/R03 dry battery × 2) RM-C51-1C (AV28T25EKB) (AAA/R03 dry battery × 2)	RM-C55H-1C (AAA/R03 dry battery × 2)

Design & specifications are subject to change without notice.

■21-pin Euro connector (SCART socket) : EXT-1 / EXT-2 / EXT-3

(P-P= Peak to Peak, S-W= Sync tip to white peak, B-W= Blanking to white peak)

Pin No.	Signal Designation	Matching Value	EXT-1	EXT-2	EXT-3
1	AUDIO R output	500mVrms(Nominal), Low impedance	O (TV OUT)	O (LINE OUT)	NC
2	AUDIO R input	500mVrms(Nominal), High impedance	O	O	O
3	AUDIO L output	500mVrms(Nominal), Low impedance	O (TV OUT)	O (LINE OUT)	NC
4	AUDIO GND		O	O	O
5	GND (B)		O	O	O
6	AUDIO L input	500mVrms(Nominal), High impedance	O	O	O
7	B input	$700mV_{B-W}$, 75Ω	O	NC	NC
8	FUNCTON SW (SLOW SW)	Low : 0-3V, High : 8-12V, High impedance	O	O	O
9	GND (G)		O	O	O
10	SCL3		NC	O	NC
11	G input	$700mV_{B-W}$, 75Ω	O	NC	NC
12	SDA3		NC	O	NC
13	GND (R)		O	O	O
14	GND (Y$_S$)		O	NC	NC
15	R / C input	R : $700mV_{B-W}$, 75Ω C : $300mV_{P-P}$, 75Ω	O (only R)	O (only C)	O (only C)
16	Ys input	Low : 0 - 0.4, High : 1 - 3V, 75Ω	O	NC	NC
17	GND(VIDEO output)		O	O	O
18	GND(VIDEO input)		O	O	O
19	VIDEO output	$1V_{P-P}$(Negative going sync), 75 Ω	O (TV)	O (LINE OUT)	NC
20	VIDEO / Y input	$1V_{P-P}$(Negative going sync), 75 Ω	O	O	O
21	COMMON GND		O	O	O

[Pin assignment]

20 18 16 14 12 10 8 6 4 2

21 19 17 15 13 11 9 7 5 3 1

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AV28T25EKB
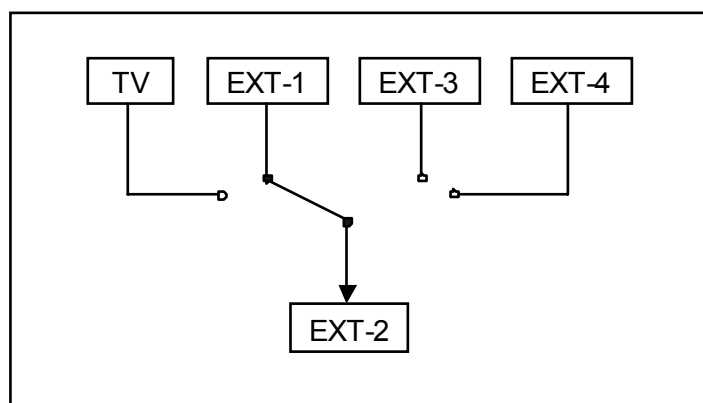AV28T55EKS
AV28T25EIS

SAFETY PRECAUTIONS

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

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

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

4. The leads in the products are routed and dressed with ties, clamps, tubing's, barriers and the like to be separated from live parts, high temperature parts, moving parts and / or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

WARNING

1. The equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

FEATURES

- By preference, users can select the picture size from REGULAR, PANORAMIC, FULL, 14:9 ZOOM, 16:9 ZOOM, 16:9 ZOOM SUB TITLE modes. When the TV unit received WSS picture signal, the picture can be changed to 16:9 ZOOM mode automatically.
- The TELETEXT SYSTEM has a built-in FASTEXT, and WST system.
- Because this TV unit corresponds to multiplex broadcast, users can enjoy music programs and sporting events with live realism. In addition, BILINGUAL programs can be heard in their original language.

- Users can make VCR dubbing of picture and sound by controlling the AV selector to select an optional source at the EXT-2 output shown in figure.

MAIN DIFFERENCE LIST

⚠ Part Name	AV28T25EKS	AV28T25EKB	AV28T55EKS	AV28T25EIS
⚠ F.CABI ASSY	LC11313-002B-U	LC11313-005B-U	LC11313-002B-U	←
⚠ REAR COVER	LC11282-001C-U	LC11282-002C-U	LC11282-001C-U	←
⚠ AV BOARD	LC11010-004A-U	LC11010-005A-U	LC11010-004A-U	←
JVC MARK	LC41250-002C-U	LC41250-003C-U	LC41250-002C-U	←
RC HAND UNIT	RM-C55H-1C	RM-C51-1C	RM-C55H-1C	←
REG CARD	AEM3148-001-E	←	←	———
CENTER PANEL	LC21065-001A-U	LC21065-002A-U	LC21065-001A-U	←
⚠ RATING LABEL	LC11364-003A-U	LC11364-013A-U	LC11364-012A-U	LC11364-016A-U
⚠ POWER KNOB	LC31201-003A-U	LC31201-006A-U	LC31201-003A-U	←
EURO LABEL	AEM1064-003-E	AEM1064-025-E	AEM1064-024-E	AEM1064-005-E
MAIN PWB	SJL-1002A-U2	←	←	SJL-1006A-U2

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SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Unplug the power cord.
2. Remove the 13 screws marked **A** as shown in the Fig. 1.
3. Withdraw the rear cover toward you.

REMOVING THE SIDE CONTROL JACK ASSEMBLY

● After removing the rear cover.
1. Remove the screw marked **B** as shown in the Fig.1.
2. While slightly raise the side control jack assembly, remove the 2 claws under the side control jack assembly.
3. Disconnect the connector "**SR**", "**SL**", "**S**", "**F**" and "**CN016**" as shown in Fig 2.

REMOVING THE SIDE CONTROL PWB

● After removing the rear cover and side control jack assembly.
1. Remove the 3 claws **C** from back side of the side control jack assembly as shown in Fig.2.
2. Pull out the SIDE CONTROL PWB.

REMOVING THE CHASSIS

● After removing the rear cover.
1. Slightly raise the both sides of the chassis by hand and remove the two claws under the both sides of the chassis from the front cabinet.
2. Withdraw the chassis backward.
   (If necessary, take off the wire clamp, connectors etc.)

REMOVING THE POWER & DEF. PWB

● After removing the CHASSIS.
1. Remove the 3 screws marked **H** as shown in the Fig.1.
2. Remove the POWER & DEF. PWB up ward.

REMOVING THE SPEAKER

● After removing the rear cover.
1. Remove the 2 screws marked **D**, and remove the speaker holder as shown in Fig. 1.
NOTE : When removing the screws marked **D** of the speaker remove the lower side screw first, and then remove the upper one.
2. Remove the 2 screws **E** attaching the speaker.
3. Follow the same steps when removing the other hand speaker.

REMOVING THE AV TERMINAL BOARD

● After removing the rear cover.
1. Remove the 3 screws marked **F** as shown in the Fig. 1.
2. Remove the 2 claws marked **G** under the CHASSIS as shown in Fig. 3.
3. Remove the AV TERMINAL BOARD slightly in the direction of arrow **X** as shown in Fig. 3.

CHECKING THE PW BOARD

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

[CAUTION]
● When erecting the chassis, be careful so that there will be no contacting with other PW Board.
● Before turning on power, make sure that the wire connector is properly connected.
● When conducting a check with power supplied, be sure to confirm that the CRT EARTH WIRE (BRAIDED ASS'Y) is connected to the CRT SOCKET PW board.

WIRE CLAMPING AND CABLE TYING

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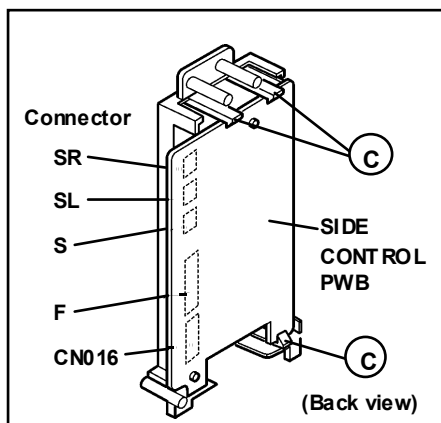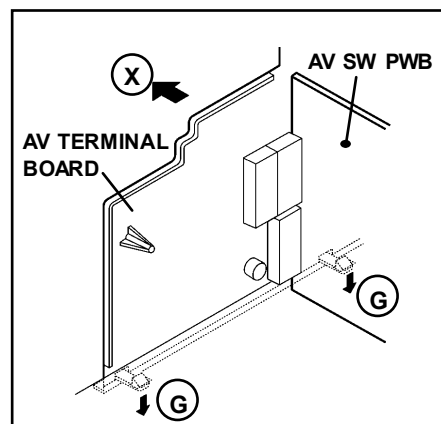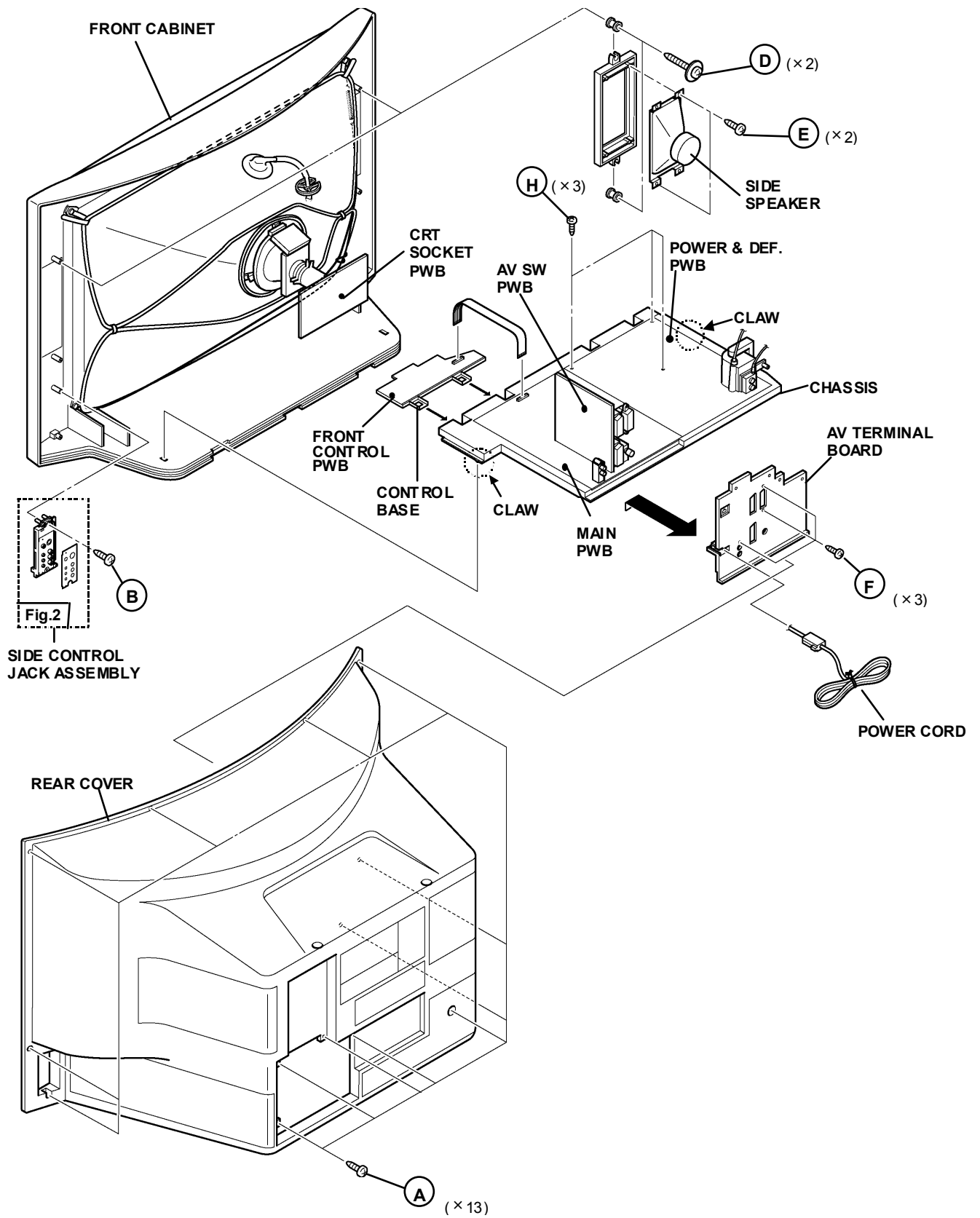

Fig. 2

Fig. 3

FRONT CABINET

CRT SOCKET PWB

AV SW PWB

POWER & DEF. PWB

CLAW

CHASSIS

(D) (×2)

(E) (×2)

SIDE SPEAKER

(H) (×3)

AV TERMINAL BOARD

FRONT CONTROL PWB

CONTROL BASE

CLAW

MAIN PWB

(F) (×3)

(B)

Fig.2

SIDE CONTROL JACK ASSEMBLY

POWER CORD

REAR COVER

(A) (×13)

Fig. 1

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REMOVING THE CRT

* Replacement of the CRT should be performed by 2 or more persons.

• After removing the cover, chassis etc.,

1. Putting the CRT change table on soft cloth, the CRT change table should also be covered with such soft cloth (shown in Fig.4).

2. While keeping the surface of CRT down, mount the TV set on the CRT change table balanced will as shown in Fig.5.

3. Remove 4 screws marked by arrows with a box type screw driver as shown in Fig.5.

• Since the cabinet will drop when screws have been removed, be sure to support the cabinet with hands.

4. After 4 screws have been removed, put the cabinet slowly on cloth (At this time, be carefully so as not to damage the front surface of the cabinet) shown in Fig.6.

• The CRT should be assembled according to the opposite sequence of its dismounting steps.

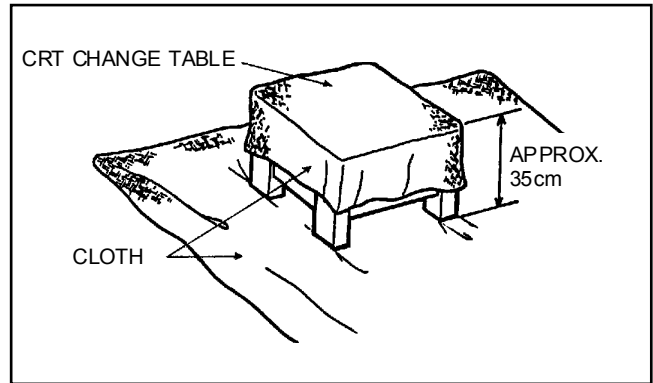* The CRT change table should preferably be smaller that the CRT surface, and its height be about 35cm.
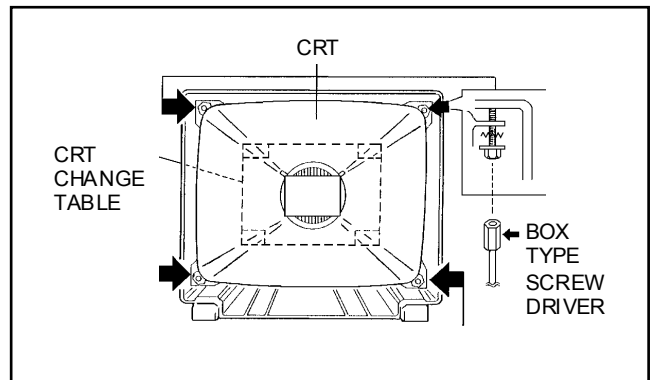

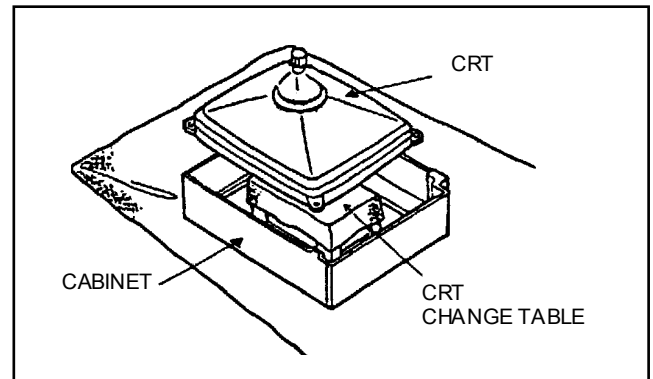
Fig. 4

Fig. 5

Fig. 6

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REPLACEMENT OF MEMORY ICs

1. Memory ICs

This TV use memory ICs. In the memory ICs, there are memorized data for correctly operating the video and deflection circuits. When replacing memory ICs, be sure to use ICs written with the initial values of data.

2. Procedure for replacing memory ICs

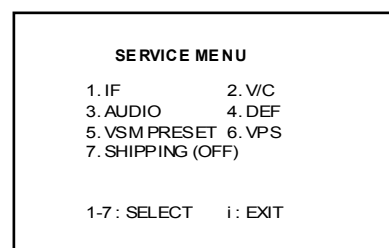| PROCEDURE |
|---|
| (1) **Power off**
Switch the power off and unplug the power cord from the outlet. |
| (2) **Replace ICs**.
Be sure to use memory ICs written with the initial data values. |
| (3) **Power on**
Plug the power cord into the outlet and switch the power on. |
| (4) **Check and set SYSTEM CONSTANT SET :**
 * It must not adjust without signal.

1) Press the INFORMATION key and the MUTING key of the REMOTE CONTROL UNIT simultaneously.
2) The SERVICE MENU screen of Fig. 1 will be displayed.
3) While the SERVICE MENU is displayed, press the INFORMATION key and MUTING key simultaneously, and the SYSTEM CONSTANT SET screen of Fig. 2 will be displayed.
4) Check the setting values of the SYSTEM CONSTANT SET of Table 1. If the value is different, select the setting item with the FUNCTION UP/DOWN key, and set the correct value with the FUNCTION -/+ key.
5) Press the MENU key to memorize the setting value.
6) Press the INFORMATION key twice, and return to the normal screen. |
| (5) **Setting of receive channels**
Set the receive channel.
For setting, refer to the OPERATING INSTRUCTIONS. |
| (6) **User settings**
Check the user setting values of Table 2, and if setting value is different, set the correct value.
For setting, refer to the OPERATING INSTRUCTIONS. |
| (7) **Setting of SERVICE MENU**
Verify the setting items of the **SERVICE MENU** of Table 3, and reset where necessary.
For setting, refer to the SERVICE ADJUSTMENTS. |

```
                SERVICE MENU

    1. IF              2. V/C
    3. AUDIO           4. DEF
    5. VSM PRESET   6. VPS
    7. SHIPPING (OFF)


    1-7 : SELECT      i : EXIT
```

Fig.1

```
          SYSTEM CONSTANT SET
         MODEL=JL_EURO(*. ****)

           1. DESTINATION : EK

           JVC JL EURO V00
               *** ****

    - +     OK : STORE      i : EXIT
```

Fig.2

NAME OF REMOTE CONTROL KEY

Names of key	key
INFORMATION	ⓘ
MUTING	⊠
MENU	OK
FUNCTION UP/DOWN	▲ ▼
FUNCTION -/+	◄ ►

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SETTING VALUES OF SYSTEM CONSTANT SET (TABLE 1)

Setting item	Setting content	Setting value		Setting item	Setting content	Setting value
1.DESTINATION	→EK→ EI →EP┐	AV28T25EKS AV28T25EKB AV28T55EKS	AV28T25EIS	4.TV SPEAKER	YES←→ NO	NO
				5.COMB	YES←→ NO	NO
		EK	EI	6.PICTUR TILT	YES←→ NO	NO
2.DOLBY	YES←→ NO	NO		7.FLAT	YES←→ NO	YES
3.BBE	YES←→ NO	NO		8.3-D	YES←→ NO	NO

USER SETTING VALUES (TABLE 2)

Setting item	Initial setting value	Setting item	Initial setting value
SOUND LEVEL	10	SUB POWER	ON
SHIPPING CHANNEL	1	ZOOM MODE	PANORAMIC

USER MENU SETTING			
PICTURE SETTING		EXT SETTING	
TINT CONTRAST BRIGHT SHARP COLOUR	COOL REFER to VSM PRESET	DUBBING	EXT-1→EXT-2
PICTURE FEATURES		FEATURES	
AUTO VNR COLOUR SYSTEM 4:3 AUTO ASPECT	AUTO TV : According to preset CH EXT : AUTO PANORAMIC	SLEEP TIMER BLUE BACK CHILD LOCK DECODER (EXT-2)	OFF ON ID : No.**** ALL CH OFF OFF
SOUND SETTING		INSTALL	
STEREO / I · II BASS TREBLE BALANCE BBE HYPER SOUND SPEAKER	⬭ CENTER CENTER CENTER ON OFF ON	LANGUAGE EDIT/MANUAL DEMO	ENGLISH PRESET CH only The others : BLANK OFF

SERVICE MENU SETTING ITEMS (TABLE 3)

Setting item	Setting value	Setting item	Setting value
1. IF	VCO	4. DEF.	1. V-SHIFT 2. V-SIZE 3. SUBTITLE 4. H-CENT 5. H-SIZE 6. EW-PIN 7. TRAPEZ 8. EW. COR. L 9. EW. COR. H 10. V. S-COR 11. V- LIN 12. H-BLK-R 13. H-BLK-L 14. V-EHT 15. H-EHT 16. EHT-GAIN
2. V / C	1. CUT OFF 2. DRIVE 3. BRIGHT 4. CONT. 5. COLOUR 6. HUE 7. BLACK OFFSET (Only SECAM) 8. SHARP		
3. AUDIO (Do not adjust)	1. ERROR LIMIT 2. A2 ID THR 3. BASS 4. TREBLE	5. VSM PRESET ┌ COOL │ NORMAL └ WARM	1. BRIGHT 2. CONT. 3. COLOUR 4. SHARP 5. HUE 6. R DRIVE 7. B DRIVE
		6. VPS (Do not adjust)	VPS PDC WSS
		7. SHIPPING (Do not adjust)	ON / OFF

REPLACEMENT OF CHIP COMPONENT

■ CAUTIONS

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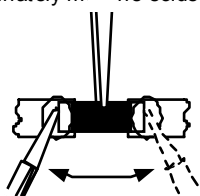
■ SOLDERING IRON

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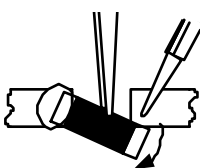2. A 30w soldering iron is recommended for easily removing parts.

■ REPLACEMENT STEPS

1. How to remove Chip parts

◆ **Resistors, capacitors, etc**

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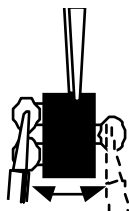
(2) Shift with tweezers and remove the chip part.

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

(1) Apply extra solder to each lead.

SOLDER ◁ ○○ ▮ ○ ─ **SOLDER**

(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.
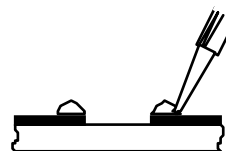
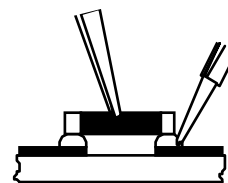*Note : After removing the part, remove remaining solder from the pattern.*

2. How to install Chip parts

◆ **Resistors, capacitors, etc**

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

(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.
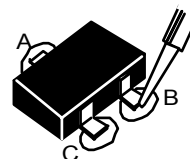
◆ **Transistors, diodes, variable resistors, etc**

(1) Apply solder to the pattern as indicated in the figure.
(2) Grasp the chip part with tweezers and place it on the solder.
(3) First solder lead **A** as indicated in the figure.
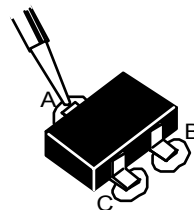
(4) Then solder leads **B** and **C**.

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SERVICE ADJUSTMENTS

BEFORE STARTING SERVICE ADJUSTMENT

1. **There are 2 ways of adjusting this TV: One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.**

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

3. Make sure that connection is correctly made to AC power source.

4. Turn on the power of the TV and measuring instrument for warming up for at least 30 minutes before starting adjustment.

5. If the receive or input signal is not specified, use the most appropriate signal for adjustment.

6. Never touch parts (such as variable resistors, transformers and condensers) not shown in the adjustment items of this service adjustment.

7. Preparation for adjustment (presetting):
   Unless otherwise specified in the adjustment items, preset the following functions with the REMOTE CONTROL UNIT:

   ● Setting position

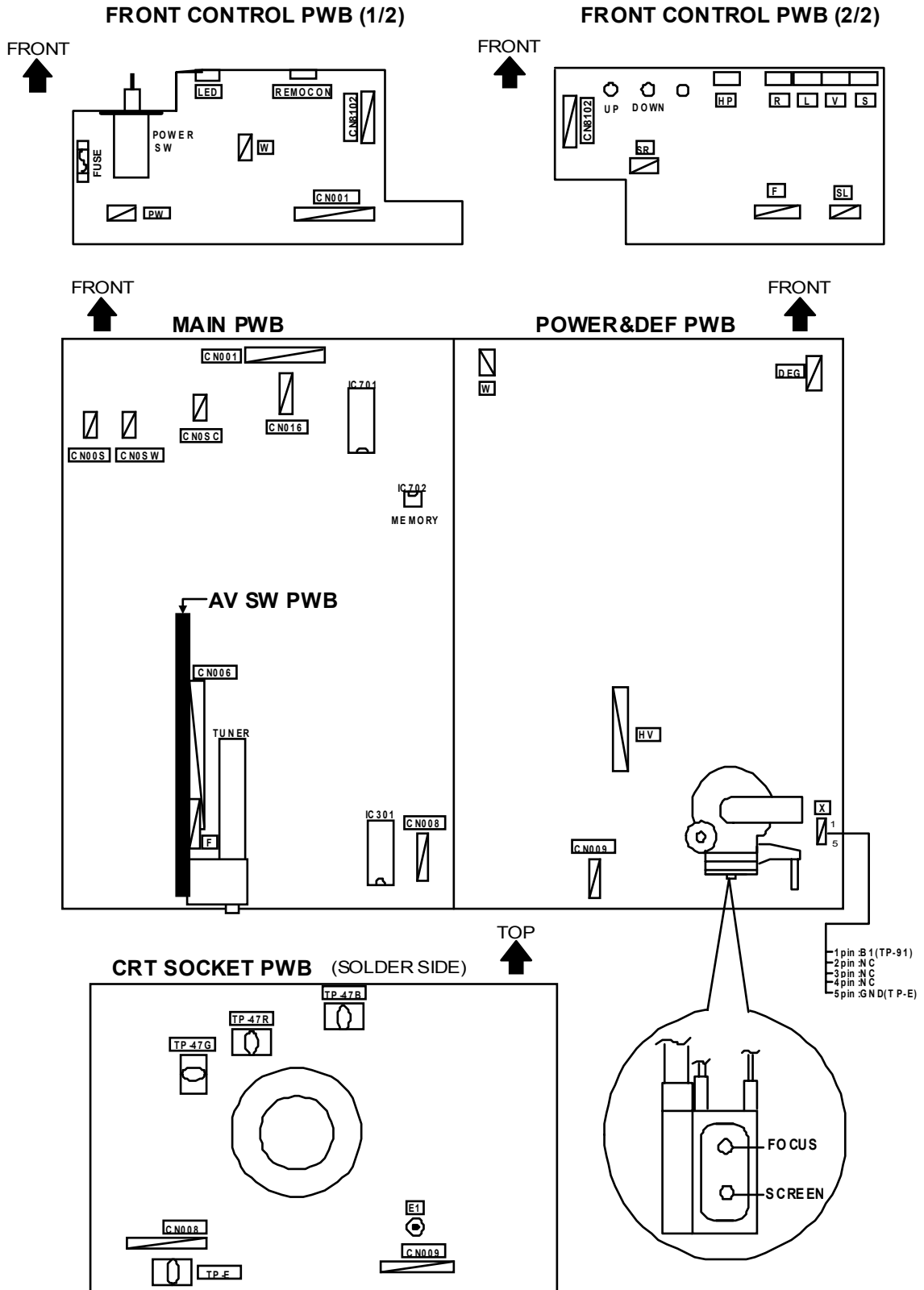 | PICTURE MODE (VSM) | NORMAL |
   |---|---|
   | SLEEP TIMER | OFF |
   | BALANCE | CENTER |
   | ZOOM | PANORAMIC |

MEASURING INSTRUMENT AND FIXTURES

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

ADJUSTMENT ITEMS

● B1 POWER SUPPLY check.
● HIGH VOLTAGE check.
● FOCUS Adjustment.
● IF circuit adjustment.
● VSM preset adjust setting.
● VIDEO / CHROMA circuit adjustment.
● DEFLECTION circuit adjustment.
● H BLANKING adjustment.
● AUDIO circuit adjustment. (Do not adjust)

ADJUSTMENT LOCATIONS

FRONT CONTROL PWB (1/2)

FRONT

LED   REMOCON   CN8102
POWER SW
FUSE   W
CN001
PW

FRONT CONTROL PWB (2/2)

FRONT

CN8102   UP   DOWN   HP   R   L   V   S
SR
F   SL

FRONT

MAIN PWB

CN001
IC701
CN0SC   CN016
CN00S   CN0SW
IC702
MEMORY

→ **AV SW PWB**

CN006
TUNER
F
IC301   CN008

FRONT

POWER&DEF PWB

W   DEG
HV
X
1
5
CN009

1pin :B1(TP-91)
2pin :NC
3pin :NC
4pin :NC
5pin :GND(TP-E)

FOCUS
SCREEN

TOP

CRT SOCKET PWB (SOLDER SIDE)

TP 47B
TP 47R
TP 47G
E1
CN008
CN009
TP-E

AV28T25EKS
AV28T25EKB
AV28T55EKS
AV28T25EIS

BASIC OPERATION SERVICE MENU

1. **TOOL OF SERVICE MENU OPERATION**
   Operate the SERVICE MENU with the REMOTE CONTROL UNIT.

2. **SERVICE MENU ITEMS**
   With the SERVICE MENU, various settings (adjustments) can be made, and they are broadly classified in the following items of settings (adjustments):

   (1) **1. IF** · This mode adjusts the setting values of the IF circuit.
   (2) **2.V/C** · · · · · · · · · · · · · · · · · · · This mode adjusts the setting values of the VIDEO / CHROMA circuit.
   (3) **3.AUDIO** · · · · · · · · · · · · · · · · · This mode adjusts the setting values of the multiplicity SOUND circuit. **(Do not adjust)**
   (4) **4. DEF** · · · · · · · · · · · · · · · · · · This mode adjusts the setting values of the DEFLECTION circuit for each aspect mode given below.

REGULAR	(50/60Hz)
PANORAMIC	(50/60Hz)
14:9 ZOOM	(50/60Hz)
16:9 ZOOM	(50/60Hz)
16:9 SUB TITLE	(50/60Hz)
FULL	(50/60Hz)

   (5) **5.VSM PRESET** · · · · · · · · · · · · This mode adjusts the initial setting values of COOL, NORMAL and WARM.
       (VSM: Video Status Memory)
   (6) **6.VPS** · · · · · · · · · · · · · · · · · · This mode shows the monitor of the VPS, PDC and WSS. **(Do not adjust)**
       (VPS : Video Program System, PDC : Program Delivery Code, WSS : Wide Screen Signalling)
   (7) **7.SHIPPING** · · · · · · · · · · · · · · · This menu is set at shipping. **(Do not adjust)**

3. **BASIC OPERATION OF SERVICE MENU**
   (1) **How to enter SERVICE MENU**
       Press the INFORMATION key and the MUTING key of the REMOTE CONTROL UNIT simultaneously, and the SERVICE MENU screen of Fig. 1 will be displayed.
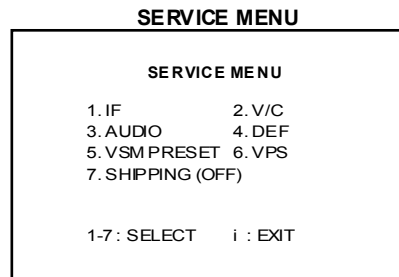
SERVICE MENU

```
        SERVICE MENU

   1. IF           2. V/C
   3. AUDIO        4. DEF
   5. VSM PRESET   6. VPS
   7. SHIPPING (OFF)


   1-7 : SELECT    i : EXIT
```

Fig. 1

   (2) **Selection of SUB MENU SCREEN**
       Press one of keys 1~7 of the REMOTE CONTROL UNIT and select the SUB MENU SCREEN (See Fig. 3), form the SERVICE MENU.
       SERVICE MENU → SUB MENU

           1. IF
           2. V / C
           3. AUDIO
           4. DEF.
           5. VSM PRESET
           6. VPS
           7. SHIPPING

NEME OF REMOTE CONTOROL KEY

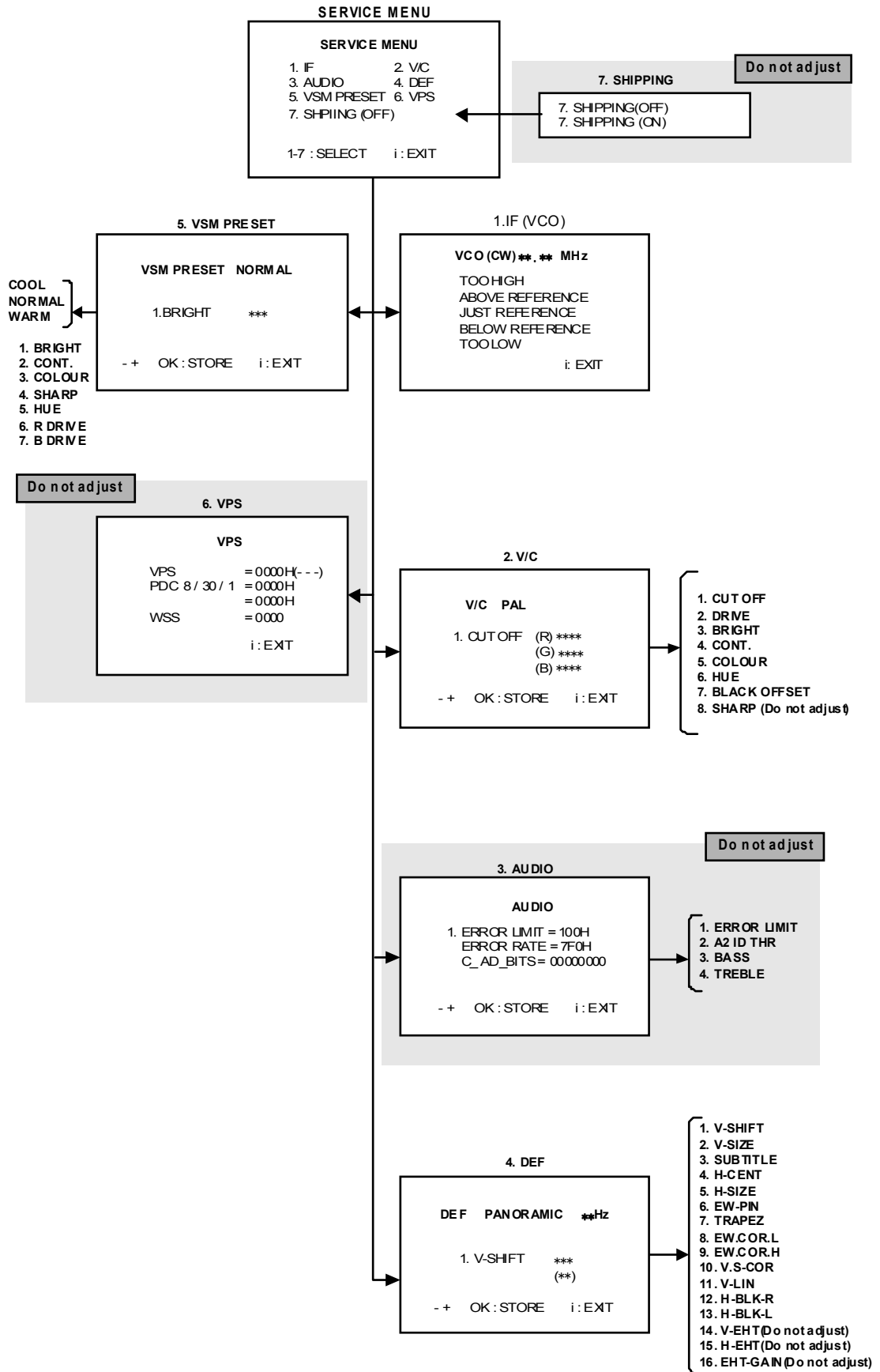| Names of key	key
INFORMATION	ⓘ
MUTING	🔇
MENU	OK
FUNCTION UP/DOWN	▲ ▼
FUNCTION -/+	◀ ▶

Fig.2

SERVICE MENU

SERVICE MENU

1. IF   2. V/C
3. AUDIO   4. DEF
5. VSM PRESET 6. VPS
7. SHPIING (OFF)

1-7 : SELECT   i : EXIT

7. SHIPPING   Do not adjust

7. SHIPPING(OFF)
7. SHIPPING (ON)

5. VSM PRESET

VSM PRESET NORMAL

1.BRIGHT   ***

- +   OK : STORE   i : EXIT

COOL
NORMAL
WARM

1. BRIGHT
2. CONT.
3. COLOUR
4. SHARP
5. HUE
6. R DRIVE
7. B DRIVE

1.IF (VCO)

VCO (CW) **.** MHz

TOO HIGH
ABOVE REFERENCE
JUST REFERENCE
BELOW REFERENCE
TOO LOW

i: EXIT

Do not adjust

6. VPS

VPS

VPS   = 0000H(- - -)
PDC 8 / 30 / 1 = 0000H
           = 0000H
WSS   = 0000

i : EXIT

2. V/C

V/C   PAL

1. CUT OFF (R) ****
          (G) ****
          (B) ****

- +   OK : STORE   i : EXIT

1. CUT OFF
2. DRIVE
3. BRIGHT
4. CONT.
5. COLOUR
6. HUE
7. BLACK OFFSET
8. SHARP (Do not adjust)

Do not adjust

3. AUDIO

AUDIO

1. ERROR LIMIT = 100H
   ERROR RATE = 7F0H
   C_AD_BITS = 00000000

- +   OK : STORE   i : EXIT

1. ERROR LIMIT
2. A2 ID THR
3. BASS
4. TREBLE

4. DEF

DEF   PANORAMIC   **Hz

1. V-SHIFT   ***
            (**)

- +   OK : STORE   i : EXIT

1. V-SHIFT
2. V-SIZE
3. SUBTITLE
4. H-CENT
5. H-SIZE
6. EW-PIN
7. TRAPEZ
8. EW.COR.L
9. EW.COR.H
10. V.S-COR
11. V-LIN
12. H-BLK-R
13. H-BLK-L
14. V-EHT(Do not adjust)
15. H-EHT(Do not adjust)
16. EHT-GAIN(Do not adjust)

Fig. 3 SUB MENU SCREEN

AV28T25EKS
AV28T25EKB
AV28T55EKS
AV28T25EIS

(3) **Method of Setting**

1) Method of Setting **1.IF**

[VCO]

① 1 Key · Select 1.IF.

② The VCO (CW) screen will be displayed in yellow when the AFC voltage is at a certain level and in blue when it is at other levels.

③ INFORMATION Key · · · · · · · · · · · Return to the SERVICE MENU screen.

2) Method of setting **2.V/C, 3.AUDIO, 4.DEF** and **5.VSM PRESET.**

① 2～5 Key · · · · · · · · · · · · · · · · · · · Select one from **2.V/C, 3.AUDIO, 4.DEF** and **5.VSM PRESET**.

② FUNCTION UP / DOWN Key · · · · Select setting items.

③ FUNCTION -/+ · · · · · · · · · · · · · · · · Set (adjust) the setting values of the setting items.
(Use the number keys of the REMOTE CONTROL UNIT for setting of WHITE BALANCE.
For the setting, refer to each item concerned.)

④ MENU Key · · · · · · · · · · · · · · · · · · Memorize the setting value.
(Before storing the setting values in memory, do not press the CH, TV, POWER ON / OFF key -
if you do, the values will not be stored in memory.)

⑤ INFORMATION Key · · · · · · · · · · · Return to the **SERVICE MENU** screen.

3) Method of setting **6.VPS** and **7.SHIPPING**.

6.VPS · This mode displayed monitor of VPS systems. **(Do not adjust)**

7.SHIPPING · · · · · · · · · · · · · · · · · · · When the MAIN POWER is turned on with the state of SHIPPING ON, you get a mode that
initializes every existing set value including language selection. Because this mode is set at the
factory upon completion of the adjustment, you need not to use it for service.
(Do not adjust in this mode.)

(4) **Release of SERVICE MENU**

1) After completing the setting, return to the SERVICE MENU, then again press the INFORMATION key.
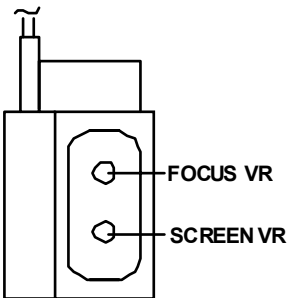
ADJUSTMENTS

CHECK ITEM

Item	Measuring instrument	Test point	Adjustment part	Description
B1 POWER SUPPLY Check	Signal generator DC voltmeter Remote control unit	TP-91(B1) TP-E(⏚) [X connector on POWER DEF PWB]		1. Receive a any broadcast. 2. Push the "ZOOM" key and select the PANORAMIC mode. 3. Select 2.V/C from the SERVICE MENU. 4. Select 1. CUT OFF with Function UP/DOWN key. 5. Show one horizontal line with the 1 key. 6. Turn the SCREEN VR, the whole black screen display. 7. Connect a DC voltmeter to TP-91(B1) and TP-E(⏚). 8. Make sure that the voltage is DC143.0V±2.0V. 9. Readjust the SCREEN VR to appear the horizontal line faintly, and cancel the horizontal line to press the 2 key.
HIGH VOLTAGE Check	Signal generator DC volunteer Remote control unit	CRT anode Chassis GND		1. Receive a any broadcast. 2. Push the "ZOOM" key and select the PANORAMIC mode. 3. Select 2.V/C from the SERVICE MENU. 4. Select 1.CUT OFF with Function UP/DOWN key. 5. Show one horizontal line with the 1 key. 6. Turn the SCREEN VR, the whole black screen display. 7. Connect a DC voltmeter to CRT ANODE and chassis GND. 8. Make sure that the voltage is DC 31.0kV $^{+1kV}_{-1.5kV}$. 9. Readjust the SCREEN VR to appear the horizontal line faintly, and connect the horizontal line to press 2 key.

ADJUSTMENT OF FOCUS

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

FOCUS VR

SCREEN VR

AV28T25EKS
AV28T25EKB
AV28T55EKS
AV28T25EIS

IF CIRCUIT ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of VCO	Remote control unit			● Under normal conditions, no adjustment is required. 1. Receive any broadcast. 2. Select 1.IF from the SERVICE MENU. 3. Check the characters colour of the JUST REFERENCE displayed to yellow.

VCO(CW) ***.** MHz ← fv
TOO HIGH
ABOVE REFERENCE
JUST REFERENCE ← YELLOW
BELOW REFERENCE
TOO LOW

i : EXIT

VSM PRESET ADJUST SETTING

Item	Measuring instrument	Test point	Adjustment part	Description
Setting of VSM PRESET	Remote control unit		1. BRIGHT 2. CONT. 3. COLOUR 4. SHARP 5. HUE 6. R DRIVE 7. B DRIVE	1. Select 5.VSM PRESET from the SERVICE MENU. 2. Select COOL with the MENU key of the remote control unit. 3. Adjust the FUNCTION UP/DOWN and -/+ key to bring the set values of 1.BRIGHT ～ 7.B DRIVE to the values shown in the table. 4. Press the MENU key and memorize the set value. 5. Respectively select the VSM PRESET mode for NORMAL and WARM, and make similar adjustment as in 3 above. 6. Press the MENU key and memorize the set value. * Refer to OPERATING INSTRUCTIONS for the PICTURE MODE.

VSM preset mode / Setting item	COOL	NORMAL	WARM
1. BRIGHT SETTING VALUE	+0	+0	+0
2. CONT. SETTING VALUE	+12	+10	+2
3. COLOUR SETTING VALUE	+6	+0	-2
4. SHARP SETTING VALUE	+0	+0	-2
5. HUE SETTING VALUE	+0	+0	+0
6. R DRIVE SETTING VALUE	-20	+0	+16
7. B DRIVE SETTING VALUE	+23	+0	-13

SETTING VALUES OF VSM PRESET

VIDEO / CHROMA CIRCUIT ADJUSTMENT

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

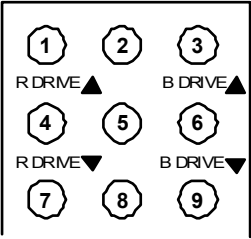| Setting Item (Adjustment Item)		Initial setting value
1. CUTOFF	R	-100
	G	-100
	B	-100
2. DRIVE	R	+0
	B	+0
3. BRIGHT		+0
4. CONT.		-10

Setting item / Colour system	PAL	NTSC 3.58 NTSC 4.43
5. COLOUR	+5	+5
6. HUE		+2
7. BLACK OFFSET (SECAM only) (Do not adjust) R-Y		
B-Y		
8. SHARP (Do not adjust)	-20	←

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of WHITE BALANCE (Low Light)	Signal generator Remote control unit		1.CUT OFF (R)*** (G)*** (B)*** SCREEN VR [In FBT]	● Set the PICTURE MODE to NORMAL. 1. Receive a black and white signal (colour off). 2. Select 2.V/C from the SERVICE MENU. 3. Select 1.CUT OFF with the FUNCTION UP/DOWN key. 4. Push the "ZOOM" key and select the "REGULAR" mode. 5. Show one horizontal line with the 1 key. 6. Gradually turn the SCREEN VR from the left end to the right direction to bring one of the red, green or blue colour faintly visible. 7. Press 4~9 key, and bring out the other 2 colours and make one horizontal line visible in white. 8. Turn the SCREEN VR and bring one white horizontal line faintly visible. 9. Press 2 key, turn off 1.CUT OFF screen. 10. Press the MENU key and memorize the set value. NOTE: This adjustment is done by the REGULAR mode.

Remote Control Unit

H.LINE ON (1) H.LINE OFF (2) (3)
R CUTOFF▲ (4) G CUTOFF▲ (5) B CUTOFF▲ (6)
R CUTOFF▼ (7) G CUTOFF▼ (8) B CUTOFF▼ (9)

AV28T25EKS
AV28T25EKB
AV28T55EKS
AV28T25EIS

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of WHITE BALANCE (High Light)	Signal generator Remote control unit		2. DRIVE (R) ∗ ∗ ∗ (B) ∗ ∗ ∗	• The adjustment for Low Light WHITE BALANCE should be finished. • Set the PICTURE MODE to NORMAL. 1. Receive a black and white signal (colour off). 2. Push the "ZOOM" key and select the "PANORAMIC" mode. 3. Select 2.V/C from the SERVICE MENU. 4. Select 2.DRIVE with the FUNCTION UP/DOWN key. 5. Change the screen colour to white with 4 key or 7 key (Drive of Red), 6 key or 9 key (Drive of Blue). 6. Press the MENU key, and memorize the set values.
Adjustment of SUB BRIGHT	Remote control unit		3. BRIGHT	1. Receive any broadcast. 2. Push the "ZOOM" key and select "PANORAMIC" mode. 3. Select 2.V/C from the SERVICE MENU. 4. Select 3.BRIGHT with the FUNCTION UP/DOWN key. 5. Set the initial setting value with the FUNCTION -/+ key. 6. If the brightness is not the best with the initial setting value, make fine adjustment until you get the best brightness. 7. Press the MENU key and memorize the set value.
Adjustment of SUB CONTRAST	Remote control unit		4. CONT.	1. Receive any broadcast. 2. Push the "ZOOM" key and select the "PANORAMIC" mode. 3. Select 2.V/C from the SERVICE MENU. 4. Select 4.CONT with the FUNCTION UP/DOWN key. 5. Set the initial setting value with the FUNCTION -/+ key. 6. If the contrast is not the best with the initial setting value, make fine adjustment until you get the best contrast. 7. Press the MENU key and memorize the set value.

REMOTE CONTROL UNIT

```
   (1)     (2)     (3)
 R DRIVE▲       B DRIVE▲
   (4)     (5)     (6)
 R DRIVE▼       B DRIVE▼
   (7)     (8)     (9)
```

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR I	Remote control unit		**5.COLOUR (PAL~NTSC)**	**[Method of adjustment without measuring instrument]**
			PAL COLOUR	(PAL COLOUR) 1. Receive PAL broadcast. 2. Push the "ZOOM" key and select the "PANORAMIC" mode. 3. Select 2.V/C from the SERVICE MENU. 4. Select 5.COLOUR with the FUNCTION UP/DOWN key. 5. Set the initial setting value for PAL COLOUR with the FUNCTION - or + key. 6. If the colour is not the best with the initial set value, make fine adjustment until you get the best colour. 7. Press the MENU key and memorize the set value.
			NTSC COLOUR	(NTSC 3.58 COLOUR) 1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal from the EXT terminal. 2. Make similar fine adjustment of NTSC 3.58 COLOUR in the same manner as for above. .... (NTSC 4.43 COLOUR) 1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

AV28T25EKS
AV28T25EKB
AV28T55EKS
AV28T25EIS

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR II	Signal generator Oscilloscope Remote control unit	TP-47B TP-E(⏚) [CRT SOCKET PWB]	5.COLOUR (PAL∼NTSC) PAL COLOUR	**[Method of adjustment using measuring instrument]** (PAL COLOUR) 1. Receive a PAL full field colour bar signal (75% white). 2. Push the "ZOOM" key and select the "PANORAMIC" mode. 3. Select 2.V/C from the SERVICE MENU. 4. Select 5.COLOUR with the FUNCTION UP/DOWN key. 5. Set the initial setting value of PAL COLOUR with the FUNCTION - or + key. 6. Connect the oscilloscope between TP-47B and TP-E(⏚) on the CRT SOCKET PWB. 7. Adjust PAL COLOUR and bring the value of **(A)** in the illustration to the values as shown given billow table (Voltage difference between white (W) and blue (B)). 8. Press the MENU key and memorize the setting value. | VOLTAGE (W-B) | |---|
+2V	
			NTSC COLOUR	(NTSC 3.58 COLOUR) 1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. 2. Set the initial setting value of NTSC 3.58 COLOUR with the FUNCTION -/+ key. 3. Adjust NTSC 3.58 COLOUR and bring the value of **(A)** in the illustration to the values as shown given billow table (Voltage difference between white (W) and blue (B)). 4. Press the MENU key and memorize the setting value. | VOLTAGE (W-B) | |---|
0V	 (NTSC 4.43 COLOUR) 1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

Diagram in table:

(A)
(-)
0
(+)
W   Cy   Mg   B

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB HUE I	Remote control unit		6. HUE	**[Method of adjustment without measuring instrument]**
			NTSC 3.58 HUE	[NTSC 3.58 HUE] 1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. 2. Push the "ZOOM" key and select the "PANORAMIC" mode. 3. Select 2.V / C from the SERVICE MENU. 4. Select 6. HUE with the FUNCTION UP/DOWN key. 5. Set the initial setting value of NTSC 3.58 HUE with the FUNCTION -/+ key. 6. If you cannot get the best hue with the initial setting value, make fine adjustment until you get the best hue. 7. Press the MENU key and memorize the set value.
			NTSC 4.43 HUE	[NTSC 4.43 HUE] 1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.
Adjustment of SUB HUE II	Signal generator Oscilloscope Remote control unit	TP-47B TP-E(⏚) [CRT SOCKET PWB]	6. HUE	**[Method of adjustment using measuring instrument]**
			NTSC 3.58 HUE	[NTSC 3.58 HUE] 1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. 2. Select 2.V/C from the SERVICE MENU. 3. Select 6. HUE with the FUNCTION UP/DOWN key. 4. Set the initial setting value of NTSC 3.58 HUE with the FUNCTION - or + key. 5. Connect the oscilloscope between TP-47B and TP-E(⏚) on the CRT SOCKET PWB. 6. Adjust NTSC 3.58 HUE to bring the value of **(B)** in the illustration to the values shown given billow table (voltage difference between white (W) and magenta (Mg)). 7. Press the MENU key and memorize the setting value VOLTAGE (W-Mg) | 0V
			NTSC 4.43 HUE	[NTSC 4.43 HUE] 1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

AV28T25EKS
AV28T25EKB
AV28T55EKS
AV28T25EIS
DEFLECTION CIRCUIT ADJUSTMENT

There are 6 modes of the adjustment.
(1) 50Hz mode (①PANORAMIC ②FULL ③REGULAR ④14:9 ZOOM ⑤16:9 ZOOM ⑥16:9 ZOOM SUB TITLE)
(2) 60Hz mode (each aspect mode) ····· Depending upon the kind of signals (vertical frequency 50Hz / 60Hz).

- The adjustment using the remote control unit is made on the basis of the initial setting values.
- When the 50Hz PANORAMIC mode has been established, the setting of other modes will be done automatically.
  However, if the picture quality has not been optimized, adjust each mode again, respectively.
- The setting values which adjust the screen to the optimum condition can be different from the initial setting values.
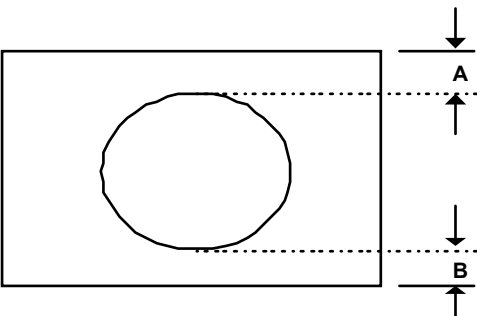
Initial setting value (1/2)

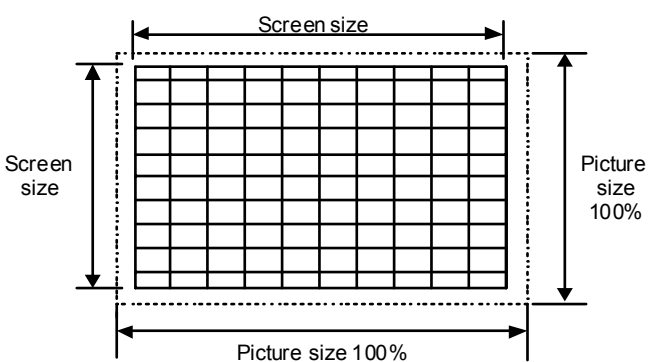| Setting item	Adjustment name	Initial setting value							
		PANORAMIC		14:9 ZOOM		16:9 ZOOM		16:9 ZOOM SUB TITLE	
		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz
1. V-SHIFT	Vertical center	+0	-1	+0	+0	+0	+0	+0	+0
2. V-SIZE	Vertical height	+0	-2	+10	+9	+22	+22	+28	+28
3. SUBTITLE	SUBTITLE BOTTOM Vertical linearity	-8	+0	+0	+0	+0	+0	+12	+12
4. H-CENT	Horizontal center	-3	+5	+0	+0	+0	+0	+0	+0
5. H-SIZE	Horizontal width	+0	-1	-5	-5	-7	-6	-7	-6
6. EW-PIN	Side pin correction	-10	+0	+0	+0	+0	+0	+0	+0
7. TRAPEZ	Trapezium distortion correction	+0	+0	+0	+0	+0	+0	+0	+0
8. EW.COR.L	CORNER PIN correction Low side	-1	+0	+0	+0	+0	+0	+0	+0
9. EW.COR.H	CORNER PIN correction High side	-1	+0	+0	+0	+0	+0	+0	+0
10.V.S-COR	Vertical height correction	+15	+0	-15	-15	-15	-15	-15	-15
11.V-LIN	Vertical Linearity	+0	+0	+0	+0	+0	+0	+0	+0
12.H-BLK-R	BLANKING POSITION of Right side	+0	+0	+22	+27	+0	+0	+0	+0
13.H-BLK-L	BLANKING POSITION of Left side	+0	+0	+12	+9	+0	+0	+0	+0
14.V-EHT (Do not adjust)	V size correction level caused by EHT change	-2	+0	+0	+0	+0	+0	+0	+0
15.H-EHT (Do not adjust)	H size correction level caused by EHT change	-3	+0	+0	+0	+0	+0	+0	+0
16.EHT-GAIN (Do not adjust)	Size correction gain caused by EHT change	+0	+0	+0	+0	+0	+0	+0	+0

Initial setting value (2/2)

Setting item	Adjustment name	Initial setting value			
		FULL		REGULAR	
		50Hz	60Hz	50Hz	60Hz
1. V-SHIFT	Vertical center	+0	+0	+0	+0
2. V-SIZE	Vertical height	-9	-9	-7	-7
3. SUBTITLE	SUBTITLE BOTTOM Vertical linearity	+0	+0	+0	+0
4. H-CENT	Horizontal center	+0	+0	+0	+0
5. H-SIZE	Horizontal width	-7	-6	-15	-15
6. EW-PIN	Side pin correction	+0	+0	+0	+0
7. TRAPEZ	Trapezium distortion correction	+0	+0	+0	+0
8. EW.COR.L	CORNER PIN correction Low side	+0	+0	+0	+0
9. EW.COR.H	CORNER PIN correction High side	+0	+0	+0	+0
10.V.S-COR	Vertical height correction	-15	-15	-15	-15
11.V-LIN	Vertical Linearity	+0	+0	+0	+0
12.H-BLK-R	BLANKING POSITION of Right side	+0	+0	+22	+27
13.H-BLK-L	BLANKING POSITION of Left side	+0	+0	+12	+9
14.V-EHT (Do not adjust)	Vsize correction level caused by EHT change	+0	+0	+0	+0
15.H-EHT (Do not adjust)	Hsize correction level caused by EHT change	+0	+0	+0	+0
16.EHT-GAIN (Do not adjust)	Size correction gain caused by EHT change	+0	+0	+0	+0

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of V-SHIFT	Signal generator Remote control unit		1.V-SHIFT	[50Hz PANORAMIC mode] 1. Receive a circle pattern signal of vertical frequency 50Hz. 2. Select 4.DEF from the SERVICE MENU. 3. Select 1.V-SHIFT with the FUNCTION UP/DOWN key. 4. Adjust V-SHIFT to make **A = B**. 5. Press the MENU key and memorize the set value. ∗ NOTE : Check the adjustment value above in other ZOOM mode, If it is a wrong adjustment, re-adjust in "PANORAMIC" mode and adjust by ＜11. V-LIN＞. And store the get value.
Adjustment of V-SIZE & SUBTITLE			2.V-SIZE 3.SUBTITLE	6. Receive a cross-hatch signal. 7. Select 2.V-SIZE and set the initial setting value. 8. Adjust V-SIZE and make sure that the vertical screen size of the picture size is in the bellow table. 9. Press the MENU key and memorize the set value. 10. When adjust the [SUBTITLE], select "3.SUBTITLE" and adjust to under part of picture size. 11. Input a NTSC VIDEO signal (60Hz) from the EXT terminal, and make sure that the vertical screen size is in the table below. 12. Press the MENU key and memorize the set value.

ASPECT MODE	PANORAMIC	14 : 9 ZOOM	16 : 9 ZOOM	16 : 9 ZOOM SUB TITLE	FULL	REGULAR
SCREEN TOP	87%	80%	73%	70%	92%	92%
SCREEN BOTTOM	87%	80%	73%	83%	92%	92%

[SCREEN SIZE]

AV28T25EKS
AV28T25EKB
AV28T55EKS
AV28T25EIS

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of HORIZONTAL CENTER			4.H-CENT.	13. Receive a circle pattern signal. 14. Select 4.H-CENT and set the initial setting value. 15. Adjust H-CENT to make C=D. 16. Press the MENU key and memorize the set value.
Adjustment of HORIZONTAL SIZE			5.H-SIZE	17. Receive a circle pattern signal. 18. Select 5.H-SIZE and set the initial setting value. 19. Adjust H-SIZE and make sure that the horizontal screen size of the picture size is in the bellow table. 20. Press the MENU key and memorize the set value. ∗ The numeric of the REGULAR and 14:9 ZOOM modes are shown the length of the 90% horizontal size position (**L**) as shown in the figure above. 21. Input a NTSC VIDEO signal (60Hz) from the EXT terminal, and make sure that the horizontal screen size of the each ASPECT mode is in the below table. 22. Press the MENU key and memorize the set value.
Adjustment of EW-PIN			6.EW-PIN	23. Select 6.EW-PIN and set the initial setting value 24. Adjust EW-PIN and make the 2nd.vertical lines at the left and right edges of the screen straight. Also make sure that the 3rd vertical lines are straight. 25. Press the MENU key and memorize the set value.

(Figure in HORIZONTAL CENTER row: C, D dimensions, 90% markers, circle pattern, L dimension)

(Figure in EW-PIN row: grid pattern with "Straight" label)

ASPECT MODE	PANORAMIC	14:9 ZOOM	16:9 ZOOM	16:9 ZOOM SUB TITLE	FULL	REGULAR
H SIZE	PAL=95% NTSC=94%	L=495mm	92%	92%	92%	L=450mm

[SCREEN SIZE]

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of TRAPEZIUM	Signal generator Remote control unit		7.TRAPEZ	26. Receive a cross-hatch signal. 27. Select 7.TRAPEZ with the FUNCTION UP/DOWN key. 28. Set the initial setting value of TRAPEZIUM with the FUNCTION - or + key. 29. Adjust TRAPEZIUM and bring the VERTICAL lines at the right and left edges of the screen parallel. 30. Press the MENU key and memorize the set value.
Adjustment of SIDE PIN CORRECTION HIGH/LOW	Signal generator Remote control unit		8.EW. COR. L 9.EW. COR. H	31. Select 8.EW. COR. L with the FUNCTION UP / DOWN key. 32. Set the initial setting value of EW. COR. L with the FUNCTION – or + key. 33. Adjust EW. COR. L, and bring the straight line at the low corner. 34. Select 9.EW. COR. H with the FUNCTION UP / DOWN key. 35. Set the initial setting value of EW. COR. H with the FUNCTION – or + key. 36. Adjust EW. COR. H, and bring the straight line at the upper corner. 37. Press the MENU key and memorize the set value.
Adjustment of V.LINEARITY & V-HEIGHT CORRECTION			10. V-S.CR 11. V-LIN	● When the vertical linearity has been deteriorated remarkably, perform the following steps. 38. Receive a cross-hatch signal. 39. Select 11.V-LIN with the FUNCTION UP / DOWN key. 40. Set the initial setting value of 11.V-LIN with the FUNCTION - / + key. 41. Select 10.V-S.COR with the FUNCTION UP / DOWN key. 42. Set the initial setting value of 10.V-S.COR with the FUNCTION - / + key. 43. Adjust 11.V-LIN and 10.V-S.COR so that the spaces of each line on TOP, CENTER and BOTTOM become uniform. NOTE: In "PANORAMIC" & "16 : 9 ZOOM SUBTITLE" mode, this adjustment should not be done. At first the adjustment in 50Hz-PANORAMIC mode should be done, then the data for the other zoom mode is corrected in the respective value at the same time. And confirm the deflection adjustment initial setting value in 60Hz PANORAMIC mode. If the adjustment in 50Hz each zoom mode has been done and stored, the data for the same aspect modes in 60Hz is corrected in the respective value. Only the data for the other aspect mode in 60Hz is corrected for itself.

AV28T25EKS
AV28T25EKB
AV28T55EKS
AV28T25EIS

H BLANKING ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of HORIZONTAL BLANKING			**H.BLK Capacitor [On MAIN PWB]**	1. Receive the PAL circle pattern signal. 2. Select 4.DEF from the SERVICE MENU. 3. Select the aspect [14:9 ZOOM] mode. 4. Select 12.H-BLK-R with the FUNCTION UP/DOWN key and adjust H-BLANKING so that 92% of the picture on the right side is displayed. 5. Select 13.H-BLK-L with the FUNCTION UP/DOWN key and adjust H-BLANKING so that 92% of the picture on the left side is displayed. 6. Press the MENU key and memorize the set value. 7. Select the aspect [REGULAR] mode. 8. Select 12.H-BLK-R with the FUNCTION UP/DOWN key and adjust H'.BLANKING so that 92% of the picture on the right side is displayed. 9. Select 13.H-BLK-L with the FUNCTION UP/DOWN key and adjust H-BLANKING so that 92% of the picture on the left side is displayed. 10.Press the MENU key and memorize the set value.

AUDIO CIRCUIT ADJUSTMENT

● Do not touch 3.AUDIO (1.CONC LIMIT, 2.A2 ID THR, 3.ALC, 4.BASS, 5.TREBLE) of the SERVICE MENU as it requires no adjustment.

3. AUDIO

Setting item	Variable range	fixed value
1. ERROR LIMIT*(Do not adjust)*	00H ～ FFH	10H
2. A2 ID THR*(Do not adjust)*	00H ～ FFH	19H
3. BASS *(Do not adjust)*	-17 ～ +17	+0
4. TREBLE *(Do not adjust)*	-17 ～ +17	+0