JVC AV-24WT2 EK

General Information

JF Chassis

Matrix

Item	See Model	Book
IF PCB Diagram	AV-32WR2EK	6

Recommended Safety Parts

Item	Part No.	Description			
(AV-24WT2EK)					
V01	WS6ESF002X03	ITC TUBE(ITC) (Inc.DY,PC,WED)			
L01	CELD068-001J2	DEGAUSSING COIL			
T2551	CETH022-00AJ1	H.V.TRANSF. (SERVICE)			
11	AEEMP003-185A	POWER CORD			
12	CM46618-A01-E	POWER CORD CLAMP			
13	CM12675-A04-KH	REAR COVER			
15	CM22875-018-E	RATING LABEL			
R1252	QRZ0054-470M	F R	47 OHM	1/4W	J
R1905	QRZ0111-474	C R	470kOHM	1/2W	K
C1910	QFZ9040-474N	MF CAP.	0.47 u FAC275V		M
F1901	QMF51D2-3R15J1	FUSE	3.15A		
LF1901	CE42144-001J2	LINE FILTER			
S1901	QSP4K21-C01	PUSH SWITCH MAIN POWER			
R2446	QRD14CJ-2R2SX	C R	2.2 OHM	1/4W	J
R2991	QRZ0057-825	C R	8.2MOHM	1W	J
C2531	QFZ0119-224S	MPP CAP.	0.22uF 200V ±3%		
C2902	QCZ9034-472A	C CAP.	4700 p FAC400V		P
C2903	QCZ9034-472A	C CAP.	4700 p FAC400V		P
C2904	QCZ9034-472A	C CAP.	4700 p FAC400V		P
C2934	QFZ9040-473N	MM CAP.	0.0471 u FAC275V		M
C2992	QCZ9041-471A	C CAP.	470 p FAC400V		K
C2993	QCZ9041-332A	C CAP.	3300 p FAC400V		M
T2901	CETS087-00134	SW TRANSF.			
D2901	D3SBA60	DIODE BRIDGE			
Q2521	BU2508AX	POWER TRANSISTOR H.OUT			
IC2902	TLP721F(D4-GR)	I.C.(PH.COUPLER)			
CP2952	ICP-N50-Y	I.C.PROTECT			
CP2953	ICP-N50-Y	I.C.PROTECT			
FR2551	QRZ0054-4R7M	F R	4.7 OHM	1/4W	J
FR2552	QRH017J-1R0M	F B	1 OHM	1W	J
FR2553	QRH017J-1R0M	F R	1 OHM	1W	J
FR2953	QRH017K-R56M	F R	0.56 OHM	1W	K
RY2901	CESK028-002	RELAY			
TH2901	CEKP002-003	W.P.THERMISTOR			
SK3001	CE42535-001J1	C.R.T. SOCKET			
9	CQ40350-001-E	INST.BOOK			
(AV-24WT2EN)					
V01	W56ESF002X03	ITC TUBE(ITC) (Inc.DY,PC,WED)			
L01	CELD0G8-001J2	DEGAUSSING COIL			
T2551	CETH022-00AJ1	H.V.TRANSF. (SERVICE)			
11	AEEMP001-185	POWER CORD			
12	CM46618-A01-E	POWER CORD CLAMP			
13	CM12675-A04-KH	REAR COVER			
15	CM23157-008-E	RATING LABEL For GBR/GER/ITA			
16	CM23049-004-E	RATING LABEL For GBR/ESP/FRA			
R1252	QRZ0054-470M	F R	47 OHM	1/4W	J
R1905	QRZ0111-474	C R	470kOHM	1/2W	K
C1910	QFZ9040-474N	MF CAP.	0.47uF AC275V		M
F1901	QMF51D2-3R15J1	FUSE	3.15A		
LF1901	CE42144-001J2	LINE FILTER			
S1901	QSP4K21-C01	PUSH SWITCH	MAIN POWER		
R2466	QRD14CJ-2R2SX	C R	2.2 OHM	1/4W	J
R2991	QRZ0057-825	C R	8.2MOHM	1W	J
C2531	QFZ0119-224S	MPP CAP.	0.22uF 200V ±3%		
C2902	QCZ9034-472A	C CAP.	4700 p FAC400V		P
C2903	QCZ9034-472A	C CAP.	4700 p FAC400V		P
C2904	QCZ9034-472A	C CAP.	4700 p FAC400V		P
C2934	QFZ9040-473N	MM CAP.	0.047 p FAC275V		M
C2992	QCZ9041-471A	C CAP.	470 p FAC400V		K
C2993	QCZ9041-332A	C CAP.	3300 p FAC400V		M
T2901	CETS087-001J4	SW TRANSF.			
D2901	D3SBA60	DIODE BRIDGE			
Q2501	BU2508AX	POWER TRANSISTOR H.OUT			
IC2902	TLP721F(D4-GR)	I.C.(PH.COUPLER)			
CP2952	ICP-N50-Y	I.C.PROTECT			
CP2953	ICP-N50-Y	I.C.PROTECT			
FR2551	QRZ0054-4R7M	F R	4.7 OHM	1/4W	J
FR2552	QRH017J-1R0M	F R	1 OHM	1W	J
FR2553	QRH017J-1R0M	F R	1 OHM	1W	J
FR2953	QRH017K-R56M	F R	0.56 OHM	1W	K
RY2901	CESK028-002	RELAY			
TH2901	CEKP002-003	W.P. THERMISTOR			
SK3001	CE42535-001J1	C.R.T. SOCKET			
9	CQ40348-001-E	INST BOOK For GBR/GER/FRA/NED/ITA			
10	CQ40349-001-E	INST BOOK For FIN/NOR/DEN/SWE/POR			

E²prom Replacement

REPLACEMENT OF MEMORY IC's

1. Memory IC
This TV use a non-volatile memory IC (EEPROM IC). In the memory IC are memorized data for correctly operating the video and deflection circuits. When replacing it, be sure to use a memory IC containing the initial values (not blank ones).

2. Procedure for replacing memory IC's

Procedure
1) Power off
Switch the power oft and unplug the power code from the outlet.
2) Replacing the memory IC.
Be sure to use memory ICs written with the initial data values.
3) Power on
Plug the power code into the outlet and switch the power on.
4) Check and set SYSTEM CONSTANT SET
1) Press the INFORMATION key and the MUTE key of the REMOTE CONTROL UNIT simultaneously.
2) The SERVICE MENU screen shown in Fig. 1 will be displayed.
3) While the SERVICE MENU is displayed, press the INFORMATION key and MUTE key simultaneously, and the SYSTEM CONSTANT SET screen shown in Fig. 2 will be displayed.
4) Check the setting value of the SYSTEM CONSTANT SET shown in 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 channels. For setting, refer to the OPERATING INSTRUCTIONS.
6) User Setting
Check the user setting value of Table 2, and if setting value is different, set the correct value. For setting, refer to the OPERATING INSTRUCTIONS.
7) Setting of SERVICE MENU
Verify the setting items of the SERVICE MENU of Table 3, and reset where necessary. For setting, refer to the SERVICE ADJUSTMENTS.
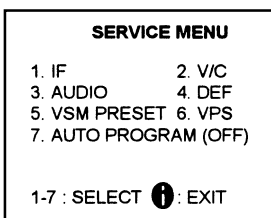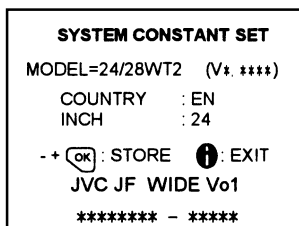
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        SERVICE MENU

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

    1-7 : SELECT  ⓘ : EXIT
```

Fig. 1

```
    SYSTEM CONSTANT SET

   MODEL=24/28WT2   (V‡.‡‡‡‡)

   COUNTRY    : EN
   INCH       : 24

   - + ⓄⓀ : STORE  ⓘ : EXIT
      JVC JF WIDE Vo1
      ******** - *****
```

Fig. 2

[AV-28WX1 EK]

REMOTE CONTROL KEYS

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

SETTING VALUES OF SYSTEM CONSTANT SET

Setting item
1. COUNTRY

Setting content
→ EN → EK

Setting value (AV-24WT2EN)
EN (24)

Setting item
2. INCH

Setting content
→ 24 → 28 → 32

Setting value (AV-24WT2EK)
EK (24)

USER SETTING VALUES

Setting item	Setting value
SUB POWER	ON
CHANNEL	1 POSITION
CHANNEL PRESET	See; OPERATING INSTRUCTIONS
VOLUME	Appropriate sound volume
DISPLAY	CHANNEL DISPLAY
TV/EXT	TV
ECO MODE	OFF
ZOOM MODE	REGULAR
COLOUR SYSTEM	AUTO
COOL/NORMAL/WARM	COOL
SLEEP TIMER	OFF
BLUE BACK	ON
ASPECT MODE	PANORAMIC
HYPERSOUND	OFF
BALANCE, BASS, TREBLE	CENTRE
LANGUAGE	ENGLISH
CHILD LOCK	ID No.:******

SERVICE MENU SETTING ITEMS

Service menu & Setting item
1. IF
1. VCO
2. DELAY POINT

2. V/C
1. CUT OFF
2. DRIVE
3. BRIGHT
4. CONT.
5. COLOUR (PAL/SECAM/NTSC)
6. TINT (NTSC)
7. BLACK OFFSET (SECAM)
8. SHARP
9. TEXT (RGB) CONT

3. AUDIO
1. CONC LIMIT (Do not adjust)
2. A2 ID THR (Do not adjust)

4. DEF.
1. TRAPEZ
2. V-SHIFT
3. V-SIZE
4. H-CENT
5. H-SIZE
6. EW-PIN
7. V-S. CR
8. V-LIN
9. V-EDGE
10. EW-COR
11. ABL POINT
12. ABL GAIN

5. VSM PRESET
COOL/NORMAL/WARM
1. BRIGHT
2. CONT.
3. COLOUR
4. SHARP
5. TINT
6. R DRIVE
7. B DRIVE
8. BASS
9.TREBLE

6. VPS (Do not adjust)
VPS

7. AUTO PROGRAM (Do not adjust)
ON / OFF

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. Turn on the power of the TV and measuring equipment for warming up for at least 30 minutes before starting adjustment.
4. Make sure that connection is correctly made to AC power source.
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:

1) PICTURE MODE (VSM)
COOL
2) SLEEP TIMER
OFF
3) DIGITAL SURROUND
OFF
4) BALANCE
CENTRE
5) ECO
OFF
6) ZOOM
REGULAR

MEASUREMENT EQUIPMENT AND FIXTURES
1. DC voltmeter (or digital voltmeter)
2. Oscilloscope

3. Signal generator (Pattern generator) [PAL / SECAM / NTSC]
4. Remote control unit

ADJUSTMENT ITEMS
• B1 power supply check
• FOCUS adjustment
• IF circuit adjustment
• VSM PRESET setting adjustment
• VIDEO / CHROMA circuit adjustment
• DEFLECTION circuit adjustment
• AUDIO circuit adjustment (Do not adjust)

BASIC OPERATION OF 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 data of the IF circuit.
2) 2. V/C
This mode adjusts the data of the VIDEO / CHROMA circuit.
3) 3. AUDIO
This mode adjusts DETECTION LEVEL of the signal for IC of NICAM multiplex broadcast. (Do not adjust).
4) 4. DEF
This mode adjusts the data of DEFLECTION circuit for each aspect mode given.

PANORAMIC	(50 / 60Hz)
REGULAR	(50 / 60Hz)
14:9 ZOOM	(50 / 60Hz)
16:9 ZOOM	(50 / 60Hz)
16:9 ZOOM 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 and PDC. (Do not adjust). (VPS : Video Program System, PDC : Program Delivery Code)
7) 7. AUTO PROGRAM
By turning the powerswitch on, you can get the state of AUTO PROGRAM. (Do not adjust)..

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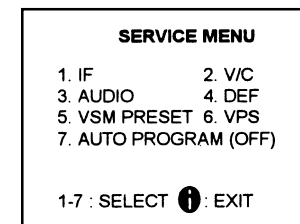
```
        SERVICE MENU

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

    1-7 : SELECT  ⓘ : EXIT
```
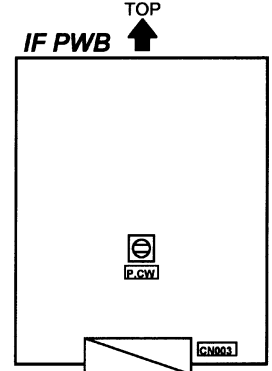
Fig. 1

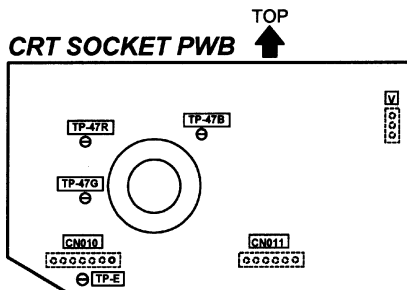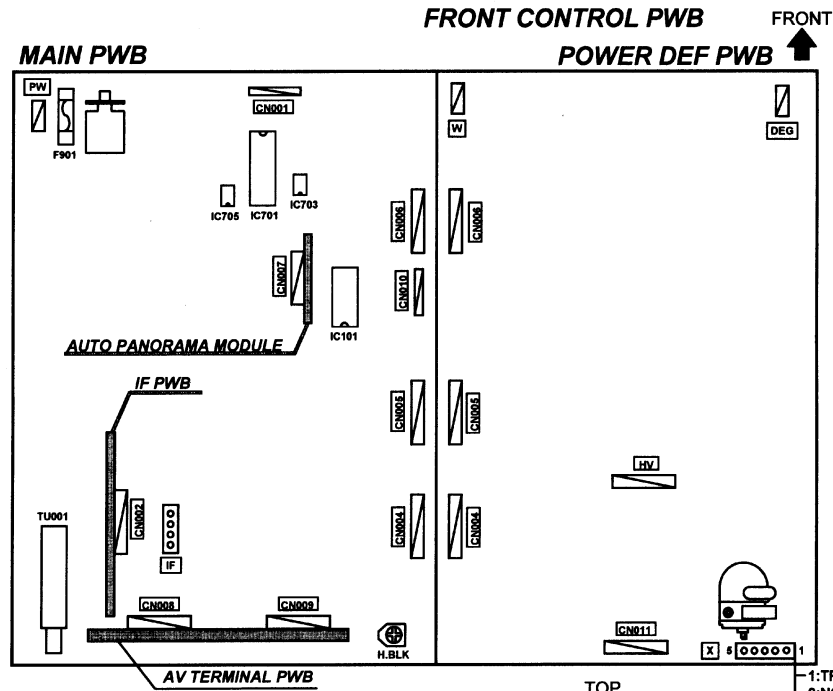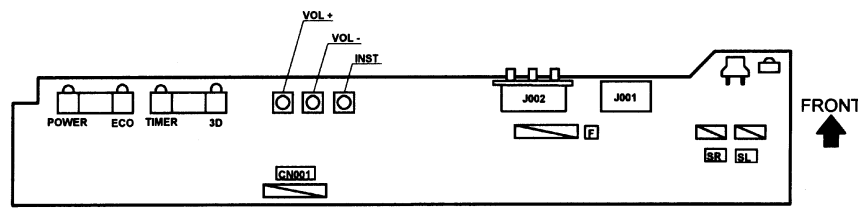**2) Selection of SUB MENU SCREEN**
1) Press one of the keys 1-7 of the REMOTE CONTROL UNIT, and select the SUB MENU SCREEN (See Fig. 3) from the SERVICE MENU.

SERVICE MENU -> SUB MENU
1.   IF
2.   V/C
3.   AUDIO
4.   DEF.
5.   VSM PRESET
6.   VPS
7.   AUTO PROGRAM

JVC AV-24WT2 EK

Adjustments Cont'd

ADJUSTMENT LOCATIONS

FRONT CONTROL PWB

MAIN PWB

POWER DEF PWB

AUTO PANORAMA MODULE

IF PWB

AV TERMINAL PWB

- 1:TP-91(B1)
- 2:NC
- 3:X-RAY1
- 4:X-RAY2
- 5:TP-E( )

CRT SOCKET PWB

Fig. 2

REMOTE CONTROL KEYS

Names of key	key
INFORMATION	①
MUTE	
MENU	OK
FUNCTION UP/DOWN	
FUNCTION -/+	

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2) Method of setting 2.V/C, 3. AUDIO, 4.DEF and 5.VSM PRESET.
1) 2 - 5 keys.
Select one from **2.V/C, 3. AUDIO, 4.DEF and 5.VSM PRESET.**
2) FUNCTION UP/DOWN key. Select setting items.
3) FUNCTION -/+ key. Set (adjust) the setting values of the setting items.(When 1 CUT OFF of 2.V/C is selected, press the 1 key, and the whole screen will change to a faint horizontal line appearing in its center. Press the 2 key, and the screen will return to the original 1 CUTOFF screen.)
4) MENU Key. Memorize the setting value. (Before storing the setting values in memory, do not press the CH, TV / VIDEO, DISPLAY, 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.AUTO PROGRAM.
6. VPS. This mode displayed monitor of VPS systems. Do not adjust
7. AUTO PROGRAM. When the MAIN POWER is turned on with the state of AUTO PROGRAM 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 INFOR-MATION key.

ADJUSTMENTS

Item
B1 power supply check

Measuring instrument
Signal generator
DC Voltmeter

Test point
TP-91
TP-E ( )
[X connector in MAIN PWB]

Description
1. Receive a whole black signal.
2. Connect a DC voltmeter to TP-91 and TP-E ( ).
3. Make sure that the voltage is DC143.2V ± 2.0V.

FOCUS Adjustment

Item
FOCUS Adjustment

Measuring instrument
Signal generator

Adjustment part
FOCUS VR [In HVT]

Description
1. Receive a cross-hatch signal.
2. While watching the screen, adjust the FOCUS VR to make the vertical and horizontal lines as fine and sharp as possible.
3. Make sure that when the screen is darkened, the lines remain in good focus.

IF CIRCUIT ADJUSTMENT

Item
Adjustment of VCO

(3) Method of Setting
1) Method of Setting **1. IF**
[1. VCO]
(2) 1 Key. Select 1.IF.
(2) 1 Key. Select 1.VCO.
(3) 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.
(4) INFORMATION Key. As you press this twice, you will return to the SERVICE MENU.

[2. DELAY POINT]
(1) 1 Key. Select 1.IF.
(2) 2 Key. Select 2.DELAY POINT.
(3) FUNCTION -/+. Set (adjust) the setting values of the setting items.
(4) MENU Key. Memorize the set value. (Before storing the setting values in memory, do not press the CH, TV / VIDEO, DISPLAY, POWER ON / OFF keys - it you do, the values will not be stored in memory.)
(5) INFORMATION Key. When this is pressed twice, you will return to the SERVICE MENU.
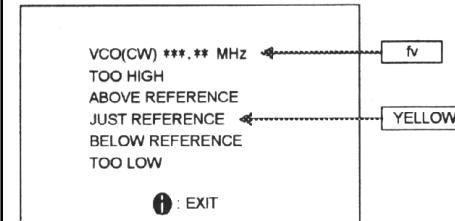

Measuring instrument
Remote control unit

Adjustment part
P. CW TRANSF. [In IF PWB]

Description
• Do not make any adjustment unless the adjustment is out of way and you cannot get correct PICTURE.
1. Select 1.IF from the SERVICE MENU.
2. Press 1 key and select 1.VCO.
3. Select a receivable broadcast channel with the CHANNEL key.
4. Turn the core of P. CW TRANSF. until the colour of the characters TOO HIGH displayed on the screen changes from blue to.Yellow. (Step 1)
5. Turn the core of P. CW TRANSF. until the colour of the characters TOO LOW changes from blue to Yellow. (Step 2)
6. Then slowly turn back the core of P. CW TRANSF. until the colour of the characters JUST REFFERENCE changes from blue to Yellow. (Step 3)
7. Press the INFORMATION key three times to return to normal screen.
8. Perform CHANNEL PRESET again, and make sure that each broadcast is being received properly.

Screen display	Step 1	→2	3
TOO HIGH	Yellow →	Blue →	Blue
ABOVE REFERENCE	Blue →	Blue →	Blue
JUST REFERENCE	Blue →	Blue →	Yellow
BELOW REFERENCE	Blue →	Blue →	Blue
TOO LOW	Blue →	Yellow →	Blue

Item
Adjustment of DELAY POINT

Measuring instrument
Remote control unit

Adjustment part
DELAY POINT (AGC TAKE-OVER)

Description
1. Receive a black and white signal (colour off).
2. Select 1 IF from the SERVICE MENU.
3. Select 2.DELAY POINT by pressing the 2 key on the remote control.
4. Adjust the FUNCTION - or + key until video noise disappears.
5. Press the MENU key and memorize the set value.
6. Turn to other channels and make sure that there are no irregularities.

Setting item (Adjustment item)	Variable range	Initial setting value
DELAY POINT (AGC TAKE-OVER)	0~63	30

Setting item (Adjustment item)
DELAY POINT (AGC TAKE-OVER)

Variable range: 0~63
Initial setting value: 30

Item
Setting of VSM PRESET ADJUST

Measuring instrument
Remote control unit

Adjustment part
1.   BRIGHT
2.   CONT.
3.   COLOUR
4.   SHARP
5.   TINT
6.   R DRIVE
7.   B DRIVE
8.   BASS
9.   TREBLE

Description
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 ~ 9.TREBLE 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.
6. Press the MENU key and memorize the set value.
* Refer to OPERATING INSTRUCTIONS for the PICTURE MODE.

Setting Item	VSM preset mode 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. TINT SETTING VALUE	+0	+0	+0
6. R DRIVE SETTING VALUE	-10	+15	+22
7. B DRIVE SETTING VALUE	-20	-25	-43
8. BASS SETTING VALUE	+8	+8	+8
9. TREBLE SETTING VALUE	+0	+0	+0

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.CONTRAST		+0

Setting item	Colour system	Initial setting value	
		PAL SECAM	NTSC 3.58 NTSC 4.43
5.COLOUR		+0	
6.TINT	Composite VIDEO		+0
	S VIDEO		+0
7.BLACK OFFSET	R-Y	+0	
	B-Y	+0	
8.SHARP		-10	
9.TEXT CONT		-30	

Item
Adjustment of WHITE BALANCE (Low Light)

Measuring instrument
Signal generator
Remote control unit
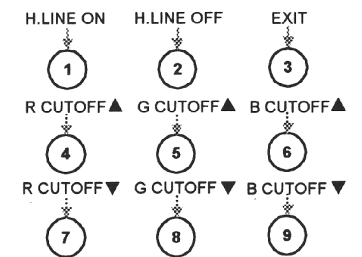
Adjustment part
1.CUT OFF
(R) …
(G) …
(B) …

SCREEN VR [In HVT]

Description
• Set the PICTURE MODE to COOL.

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. Show one honzontal line with the 1 key. With the SCREEN VR, adjust so that the horizontal line will not be too bright.
5. 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.
6. Press 4~9 key, and bring out the other 2 colours and make one horizontal line visible in white.
7. Turn the SCREEN VR and bring one white horizontal line faintly visible.
8. Press 2 key, turn off 1.CUT OFF screen.
9. Press the MENU key and memorize the set value.

Remote Control Unit

Item
Adjustment of WHITE BALANCE (High Light)

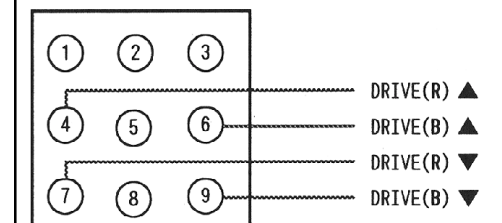**Measuring instrument**
Signal generator
Remote control unit

Adjustment part
2.DRIVE
(R) …
(B) …

Description
1. Receive a black and white signal (colour off).
2. Select 2.V/C from the SERVICE MENU.
3. Select 2.DRIVE with the FUNCTION UP/ DOWN key.
4. Change the screen colour to white with 4 key or 7 key (Drive of Red), 6 key or 9 key (Drive of Blue).
5. Press the MENU key, and memorize the set values.

REMOTE CONTROL UNIT

JVC AV-24WT2 EK

Adjustments Cont'd

Item
Adjustment of SUB BRIGHT

Measuring instrument
Remote control unit

Adjustment part
3.BRIGHT

Description
1. Receive any broadcast.
2. Select 2.V/C from the SERVICE MENU.
3. Select 3.BRIGHT with the FUNCTION UP/ DOWN key.
4. Set the initial setting value with the FUNC- TION -/+ key.
5. If the brightness is not the best with the initial setting value, make fine adjustment until you get the best brightness.
6. Press the MENU key and memorize the set value.

Item
Adjustment of SUB CONT.

Measuring instrument
Remote control unit

Adjustment part
4.CONT.

Description
1. Receive any broadcast.
2. Select 2.V/C from the SERVICE MENU.
3. Select 4.CONT with the FUNCTION UP/ DOWN key.
4. Set the initial setting value with the FUNC- TION - or + key.
5. If the contrast is not the best with the initial setting value, make fine adjustment until you get the best contrast.
6. Press the MENU key and memorize the set value.

Item
Adjustment of SUB COLOUR I

Measuring instrument
Remote control unit

Adjustment part
5.COLOUR (PAL~NTSC)

Description
[Method of adjustment without using measuring instrument]

Adjustment part
PAL COLOUR

Description
(PAL COLOUR)
1. Receive PAL broadcast.
2. Select 2.V/C from the SERVICE MENU.
3. Select 5.COLOUR with the FUNCTION UP/ DOWN key.
4. Set the initial setting value for PAL COLOUR with the FUNCTION - or + key.
5. If the colour is not the best with the initial set value, make fine adjustment until you get the best colour.
6. Press the MENU key and memorize the set value.

Adjustment part
SECAM COLOUR (AV-24WT2EN)

Description
(SECAM COLOUR)
1. Receive a SECAM broadcast. Make fine adjustment of SECAM COLOUR in the same manner as previously.

Adjustment part
NTSC COLOUR

Description
(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.

Item
Adjustment of SUB COLOUR II

Measuring instrument
Signal generator
Oscilloscope
Remote control unit

Test Point
TP-47B
TP-E ($\pm$)
[CRT SOCKET PWB]

Adjustment part
5.COLOUR
(PAL~NTSC)
[Method of adjustment using measuring instrument]

Adjustment part
PAL COLOUR

Description
(PAL COLOUR)
1. Receive a PAL full field colour bar signal (75% white).
2. Select 2.V/C from the SERVICE MENU.
3. Select 5.COLOUR with the FUNCTION UP/ DOWN key.
4. Set the initial setting value of PAL COLOUR with the FUNCTION - or + key.
5. Connect the oscilloscope between TP-47B and TP-E ($\pm$).
6. Adjust PAL COLOUR and bring the value of (A) in the illustration to +5V (voltage differ- ence between white (w) and blue (B)).
7. Press the MENU key and memorize the setting value.

Description
SECAM COLOUR (AV-24WT2EN)

Adjustment part
(SECAM COLOUR)
1. Receive a SECAM full field colour bar signal(75% white).
2. Set the initial setting value of SECAM COLOUR with the FUNCTION -/+ key.
3. Adjust SECAM COLOUR and bring the value of (A) of the illustration to +5V.
4. Press the MENU key and memorize the setting value.
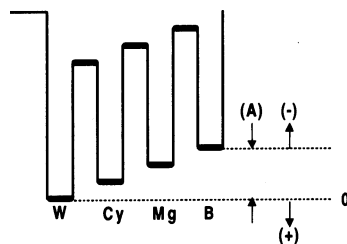
W   Cy   Mg   B   0
                        (A) (-)
                          (+)

Adjustment part
NTSC COLOUR

Description
(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) of the illustration to 0V (W~B).
4. Press the MENU key and memorize the setting value.
(NTSC 4.43 COLOUR)
1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

Item
Adjustment of SUB TINT I

Measuring instrument
Remote control unit

Adjustment part
6.TINT

Description
[Method of adjustment without using measuring instrument]

Adjustment part
NTSC 3.58 TINT

Description
[NTSC 3.58 TINT
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. TINT with the FUNCTION UP/ DOWN key.
4. Set the initial setting value of NTSC 3.58 TINT with the FUNCTION -/+ key.
5. If you cannot get the best tint with the initial setting value, make fine adjustment until you get the best tint.
6. Press the MENU key and memorize the set value.

Adjustment part
NTSC 4.43 TINT

Description
(NTSC 4.43 TINT)
1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.
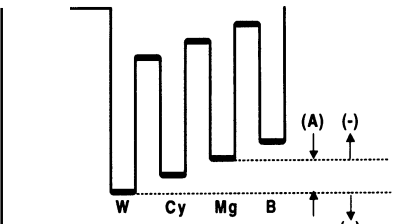
Item
Adjustment of SUB TINT II

Measuring instrument
Signal generator
Oscilloscope
Remote control unit

Test Point
TP-47B
TP-E ($\pm$)
[CRT SOCKET PWB]

Adjustment part
6. TINT

Description
[Method of adjustment using measuring instrument]

[NTSC 3.58 TINT]
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.TINT with the FUNCTION UP/DOWN key.
4. Set the initial setting value of NTSC 3.58 TINT with the FUNCTION - or + key.
5. Connect the oscilloscope between TP-47B and TP-E ($\pm$).
6. Adjust NTSC 3.58 TINT to bring the value of (A) in the illustration to +3V (voltage differ- ence between white (W) and magenta (Mg)).
7. Press the MENU key and memorize the setting value

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

Adjustment part
NTSC 4.43 TINT

Description
[NTSC 4.43 TINT]
1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.
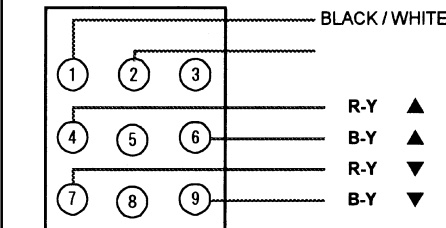
[ONLY AV-24WT2EN]

Item
Adjustment of BLACK OFFSET (SECAM) I

Measuring Instrument
Remote control unit

Adjustment part
7. BLACK OFFSET
(R-Y) ***
(B-Y) ***

Description
(Method of adjustment without measuring instrument]
1. Receive a SECAM broadcast.
2. Select 2. V/C from SERVICE MENU.
3. Select 7. BLACK OFFSET with the FUNC- TION UP/DOWN key.
4. Set the initial setting value for BLACK OFFSET (R-Y) and (B-Y) with 4 and 7 or 6 and 9 keys of the remote control.
5. If the picture is not the best with the initial setting value, make fine adjustment until you get the best picture.
6. Press the MENU key and memorize the setting value.

REMOTE CONTROL UNIT

BLACK / WHITE

① ② ③

④ ⑤ ⑥   R-Y ▲
                B-Y ▲
⑦ ⑧ ⑨   R-Y ▼
                B-Y ▼

Item
Adjustment of BLACK OFFSET (SECAM) II

Measuring instrument
Signal generator
Oscilloscope
Remote control unit

Test point
35 PIN (R-Y)
36 PIN (B-Y)
IC-101 OF MAIN PWB

Adjustment part
7. BLACK OFFSET
(R-Y) ***
(B-Y) ***

[Method of adjustment using measuring instrument]
1. Receive a SECAM COLOUR bar signal (full field colour bar 75% white).
2. Select 2. V/C from SERVICE MENU.
3. Seiect 7. BLACK OFFSET with the FUNC- TION UP/DOWN key.
4. Connect the oscilloscope between 35 pin of

IC-101 and TP-E ($\pm$).
5. By using 4 and 7 keys of the remote control, adjust the BLACK OFFSET (R-Y) so that it becomes the waveform changes from (a) to (b) shown in the figure.
6. Connect the oscilloscope between 36 pin of IC-101 and TP-E.
7. By using 6 and 9 keys of the remote control, adjust the BLACK OFFSET (B-Y) so that it becomes the waveform changes from (c) to (d) shown in the figure.
8. If the picture is not the best with the adjusted picture, make fine adjustment until you get the best picture.
9. Press the MENU key and memorize the setting value.

DEFLECTION CIRCUIT ADJUSTMENT
There are 5 modes of the adjustment
(1) 50Hz mode
(1) PANORAMIC
(2) FULL
(3) REGULAR
(4)14:9 ZOOM
(5)16:9 ZOOM
(6)16:9 ZOOM SUB TITLE

(2) 60Hz mode
(each aspect mode) depending upon the kind of signals (vertical frequency 50Hz / 60Hz).
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, respec- tively.
The 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.

[R-Y]

(a)   (b)

[B-Y]

(c)   (d)
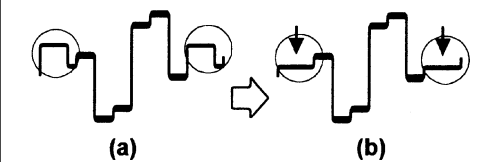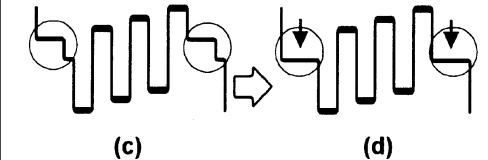
Item
Adjustment of TRAPEZ

Measuring Instrument
Signal generator
Remote control unit

Adjustment part
1.TRAPEZ

Description
[50Hz PANORAMIC mode]
1 Receive a cross-hatch signal of vertical frequency 50Hz.
2. Select 4.DEF from the SERVICE MENU.
3. Select 1 .TRAPEZ with the FUNCTION UP/ DOWN key.
4. Set the initial setting value of TRAPEZ with the FUNCTION - or + key.
5. Adjust TRAPEZ and bring the VERTICAL lines at the right and left edges of the screen parallel.

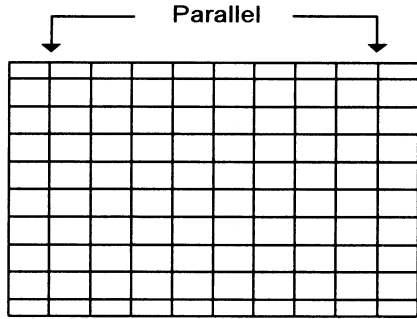| Setting item	Adjustment name	Initial setting value			
		50Hz mode			
		PANORAMIC	14:9 ZOOM	16:9 ZOOM	FULL
1.TRAPEZ	Trapezoidal distortion correction	-7	-1	-2	+2
2.V-SHIFT	Vertical center	-1	+0	-2	-1
3.V-SIZE	Vertical height	-12	+8	+30	-14
4.H-CENT	Horizontal center	-10	-10	-10	-10
5.H-SIZE	Horizontal width	+25	-11	-5	-5
6.EW-PIN	Side pin correction	-8	+1	+6	-7
7.V-S.CR	Vertical height correction	+5	-8	-5	-8
8.V-LIN	Vertical Linearity	+2	-1	+1	+0
9.V-EDGE	Vertical edge correction	+7	+0	+0	+0
10.EW-COR	Side pin four corner correction	+6	-3	+1	-11
11.ABL POINT	Auto beam limiter point	+0	+3	+0	+0
12.ABL GAIN	auto beam limiter gain	+0	+2	+0	+0

Table A

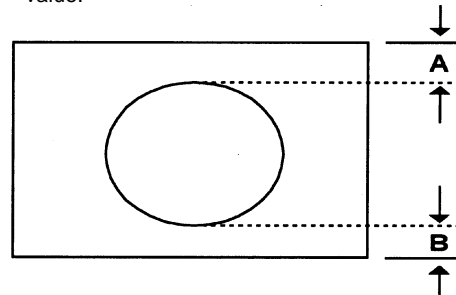| Setting item	Adjustment name	Initial setting value		
		50Hz mode		60Hz mode
		REGULAR	16:9 ZOOM SUB TITLE	PANORAMIC
1.TRAPEZ	Trapezoidal distortion correction	+0	+2	+1
2.V-SHIFT	Vertical center	-1	-17	+4
3.V-SIZE	Vertical height	-14	+20	-2
4.H-CENT	Horizontal center	-10	-10	-5
5.H-SIZE	Horizontal width	-22	-5	+0
6.EW-PIN	Side pin correction	-8	+3	+0
7.V-S.CR	Vertical height correction	-8	-5	+0
8.V-LIN	Vertical Linearity	+0	-7	+0
9.V-EDGE	Vertical edge correction	+0	+0	+0
10.EW-COR	Side pin four corner correction	-10	-1	-2
11.ABL POINT	Auto beam limiter point	+3	+0	+0
12.ABL GAIN	auto beam limiter gain	+2	+0	+0

Table B

JVC AV-24WT2 EK

Adjustments Cont'd

Parallel

Item
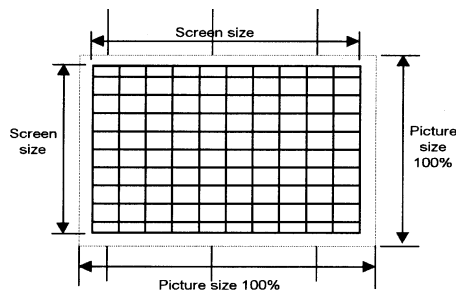Adjustment of V-SHIFT

Adjustment part
2.V-SHIFT

Description
6. Receive a circle pattern signal
7. Select 2.V-SHIFT and set the initial setting value.
8. Adjust V-SHIFT to make A = B.
9. Press the MENU key and memorize the set value.

Item
Adjustment of V-SIZE

Adjustment part
3.V. SIZE

Description
10.Receive a cross-hatch signal.
11. Select 3.V-SIZE and set the initial setting value.
12.Adjust V-SIZE and make sure that the vertical screen size of the picture size is in the table.
13. Press the MENU key and memorize the set value.
14.Input a NTSC VIDEO signal from the EXT terminal, and make sure that the vertical screen size of the RANORAMIC mode is in the table.
15.Press the MENU key and memorize the set value.

MODE	FULL	REGULAR	PANORAMIC	14:9 ZOOM	16:9 ZOOM	16:9 ZOOM SUB TITLE
SCREEN TOP	92%	92%	87%	80%	70%	70%
SCREEN BOTTOM	92%	92%	87%	60%	70%	83%

[SCREEN SIZE]

Item
Adjustment of H.CENTER

Adjustment part
4.H-CENT.

Description
16.Receive a circle pattern signal.
17.Select 4.H-CENT and set the initial setting value.
18.Adjust H-CENT to make C=D.
19.Press the MENU key and memorize the set value.
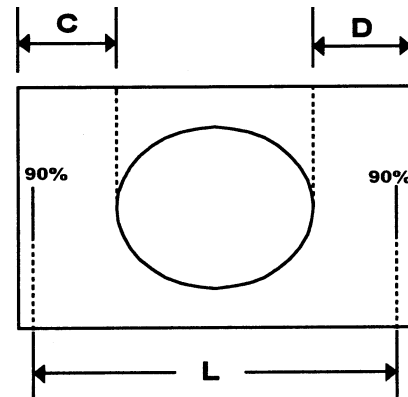
Item
Adjustment of H.SIZE

Adjustment part
5.H-SIZE

Description
20. Receive a cross-hatch signal.
21. Select 5.H-SIZE and set the initial setting value.
22. Adjust H-SIZE and make sure that the horizontal screen size of the picture size is in the table.
23. 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 previous figure.
24. Input a NTSC VIDEO signal from the EXT terminal, and make sure that the horizoutal screen size of the PANORAMIC mode is in the following table.
25. Press the MENU key and memorize the set value.

ASPECT MODE	FULL	REGULAR	PANORAMIC	14:9 ZOOM	16:9 ZOOM	16:9 ZOOM SUB TITLE
H SIZE	92%	L=365m/m	94%	L=425mm	92%	92%

[SCREEN SIZE]

Item
Adjustment of EW-PIN

Adjustment part
6. EW-PIN

Description
26. Select 6.EW-PIN and set the initial setting value
27. 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.
28. Press the MENU key and memorize the set value.

Straight
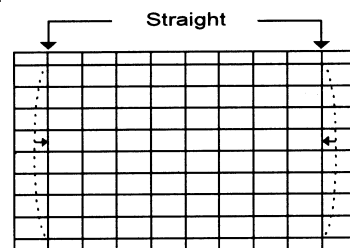
Item
Adjustment of V-S.CR, V-LIN, V-EDGE

Adjustment part
7.V-S.CR
8.V-LIN
9.V-EDGE

Description
* No alignment, but adjust this mode if result of no alignment is too bad.
29. Select 7.V-S.CR, 8.V-LIN and 9.V-EDGE and set the initial setting value.
30. Adjust each item to get exact square of cross-hatch pattern.
31. Press the MENU key and memorize the set value.
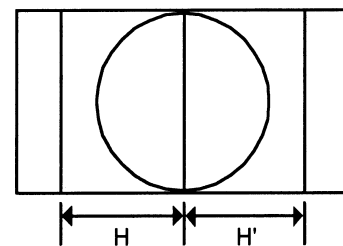
Item
Adjustment of EW-COR

Adjustment part
10.EW-COR

Description
* No alignment, but adjust this mode if result of no alignment is too bad.
32. Select 10.EW-COR and set the initial setting value.
33. Adjust EW-COR and make the vertical lines at the four corners of the screen straight
34. Press the MENU key and memorize the set value.
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 (NTSC EXT mode) 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.

Item
Adjustment of H.BLANKING

Adjustment part
H.BLK Capacitor [In MAIN PWB]

Description
1. Receive the PAL circle pattern in REGULAR mode.
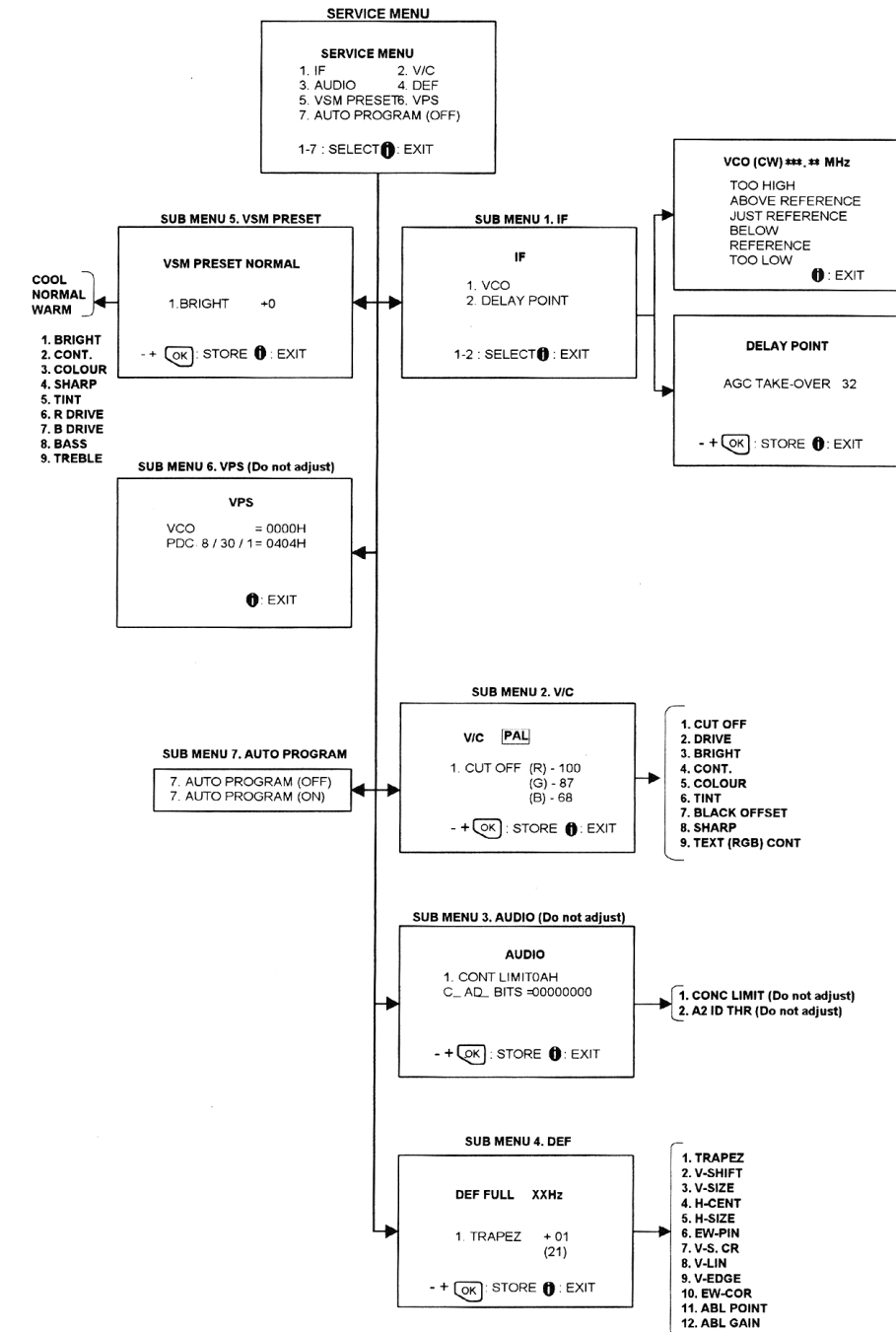2. Adjust the H.BLK capacitor to equalize widths H and H' as figure.

AUDIO CIRCUIT ADJUSTMENT
• Do not touch 3.AUDIO (1. CONC LIMIT, 2. A2 ID THR) of the SERVICE MENU as it requires no adjustment.
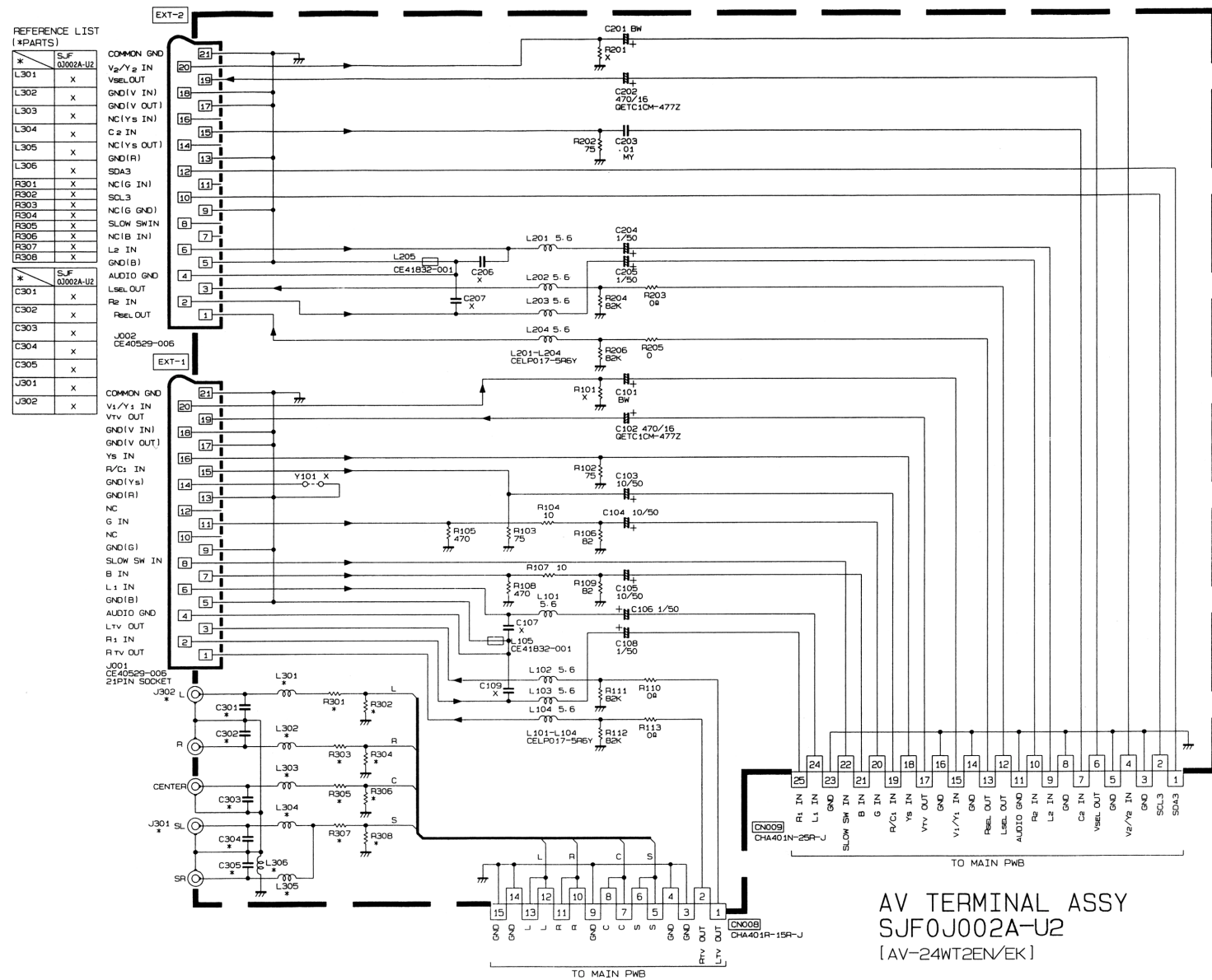
3. AUDIO

Setting item: 1. CONC LIMIT (Do not adjust)
Variable range: 00H~FFH
Fixed value: 0AH

Setting item: 2. A2 ID THR (Do not adjust)
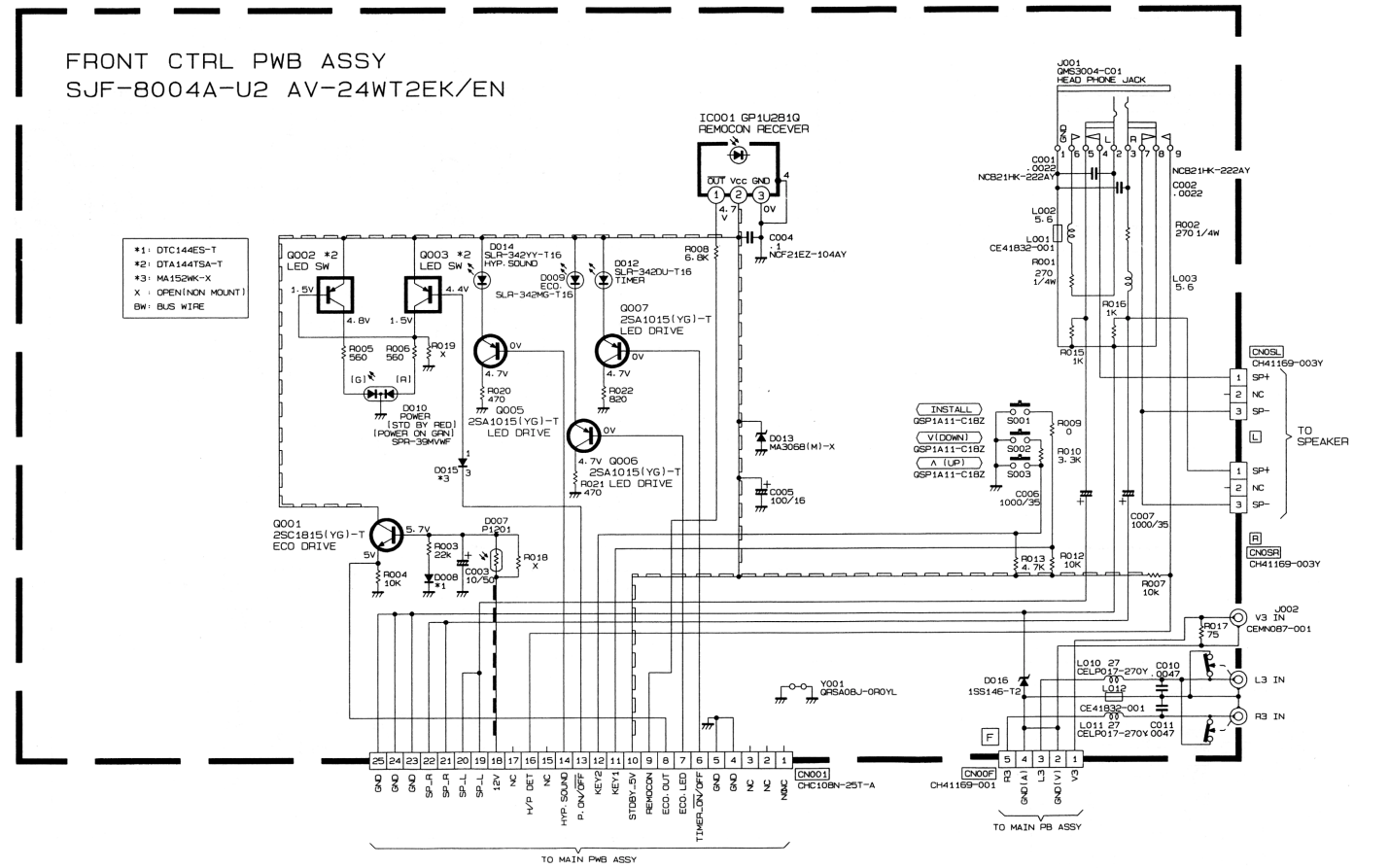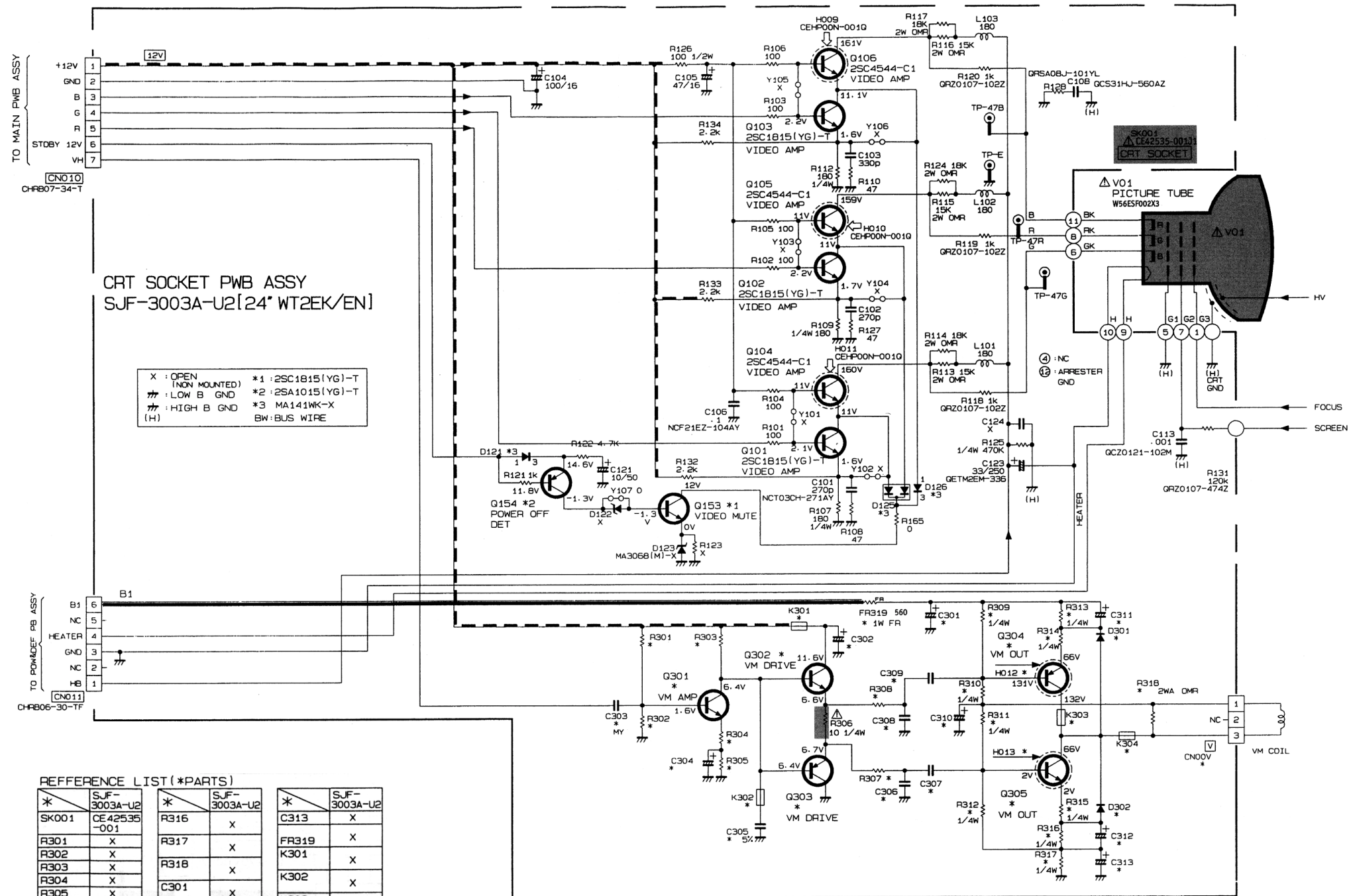**Variable range:** 00H~FFH
Fixed value: 19H

Sub Menu Screen

JVC AV-24WT2 EK

AV Terminal Diagram

Front Control Diagram

AV TERMINAL ASSY
SJF0J002A-U2
[AV-24WT2EN/EK]

FRONT CTRL PWB ASSY
SJF-8004A-U2 AV-24WT2EK/EN

JVC AV-24WT2 EK

CRT Diagram

REFFERENCE LIST (*PARTS)

*	SJF-3003A-U2	*	SJF-3003A-U2	*	SJF-3003A-U2
SK001	CE42535-001	R316	X	C313	X
R301	X	R317	X	FR319	X
R302	X			K301	X
R303	X	R318	X		
R304	X			K302	X
R305	X	C301	X		
R306	X	C302	X	K303	X
R307	X	C303	X	K304	X
R308	X	C304	X		
R309	X	C305	X	Q301	X
		C306	X	Q302	X
R310	X			Q303	X
		C307	X	Q304	X
R311	X			Q305	X
		C308	X	H012	X
R312	X	C309	X		
				H013	X
R313	X	C310	X		
R314	X			D301	X
		C311	X	D302	X
R315	X	C312	X	CN00V	X

MAIN PWB ASS'Y
SJF-1004A-U2 [AV-24WT2EN]
SJF-1904A-U2 [AV-24WT2EK]

MAIN PWB ASS'Y
SJF-1004A-U2 [AV-24WT2EN]
SJF-1904A-U2 [AV-24WT2EK]

POWER DEF PWB ASS'Y
SJF-2004A-U2 [AV-24WT2EN/EK]