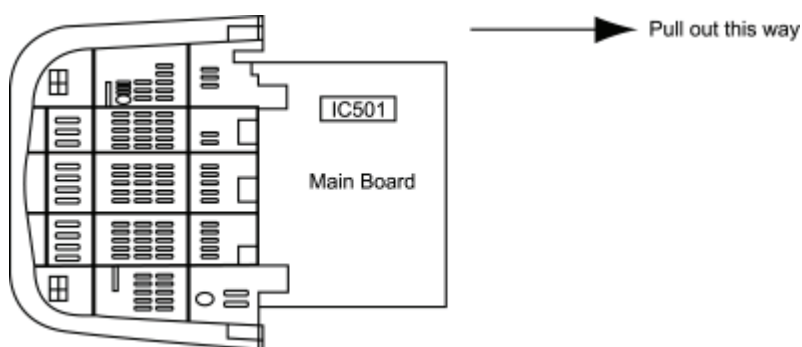


2.1 Service Position for E-Board

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1. Remove the back cover.
2. Stand the TV set as shown in Fig. 2.
3. Remove the A-Board from the TV set by pulling the main board out as shown in Fig. 2.

Fig. 2



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2.2 Factory Mode Adjustment

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- How to set :

To set the Factory mode, press Volume 0 dac on the TV and Timer Setting 30 min on the remote control and press Volume (-) Down button on the TV together press recall on the remote control.

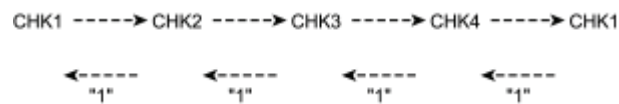
CHK should appear on right of TV screen.

To move from CHK1 to CHK2 mode, etc. please follow below rotation :

-
- To Set Self-Check :

Press the Volume Down button on TV then press the Off Timer button on remote control.

-



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2.3 Adjustment for White Balance

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Preparation:

1. Receive the white balance pattern and aging should have been performed over 30 minutes.
2. Set the picture menu to DYNAMIC NORMAL.
3. Degausse the CRT face.
4. Fix the CRT colour analyzer receiver unit to CRT face.

[Adjustment of Low Light.](#)

1. Adjustment Sub Bright, so that $Y = 6.3 \pm 1.0$ nit.
2. Adjustment R-CUT OFF, so that $X = 0.235 \pm 0.010$ nit.
3. Adjustment G-CUT OFF, so that $Y = 0.235 \pm 0.010$ nit.

[Adjustment of High Light](#)

1. Adjustment Sub Bright, so that $Y = 270$ nit.
2. Adjustment R-Drive, so that $X = 0.265 \pm 0.010$ nit.
3. Adjustment B-Drive, so that $Y = 0.265 \pm 0.010$ nit.

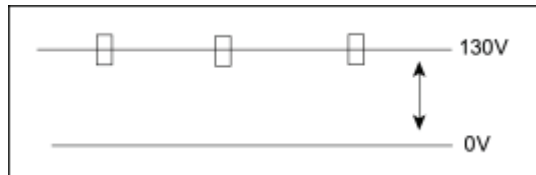
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2.4 Adjustment for CRT CUT OFF

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Preparation:

1. Connect the oscilloscope probe to TPL5.
2. Screen VR min.
3. Set the data Sub Bright, Bright.
4. In service Mode at “Bright” dac press [5] in factory mode to enter vertical line and adjust by Volume Down or Up button.
5. Adjust “Screen VR” until 1-H Line appears. (AKB OFF)
6. Adjust Bright, so the voltage at TPL5 is 130 volt.

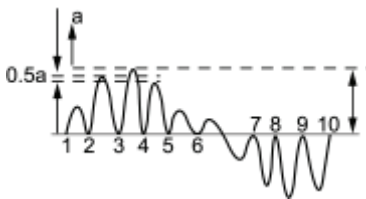


7. Press digit key “5” AKB ON and confirm in picture mode.

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2.5 Adjustment Procedure

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Item / Preparation		Adjustment Procedure	
+B Voltage		Confirm the DC voltage at the indicated test points, as follows :	
1.	Operate the TV set.		TPA 10 : $140.5 \pm 1.5V$
2.	Set control as follows :		TPA 8 : $8 \pm 1V$
	Brightness minimum		TPA 9 : $5 \pm 1V$
	Contrast minimum		TPA 21 : $175 \pm 15V$
RF AGC			
1.	Receive a colour bar signal at an RF level of $69 \pm 1-2$ dBu with 75Ω loaded.	1.	Select "RF AGC" indication in CHK2, on Screen by remote control at factory mode.
2.	Connect digital multimeter to RF AGC at Tuner.	2.	Set RF AGC by using remote control Volume (+) or Volume (-) button until voltage AGC at Tuner reaches $2.6 \pm 0.1V$ at TPA 15 (Tuner point).
		3.	Increase RF signal strength by 2dB, confirm AGC at Tuner voltage drop.
High Voltage			
1.	Receive the crosshatch pattern.	1.	Connect a DC voltage meter to TPA 20 and confirm the +B voltage is $140.5 \pm 1.5V$.
2.	Set to 0 Beam.		
	Screen VR minimum	2.	Connect a high frequency voltmeter to heater and confirm that voltage reads 6.3 ± 0.48 (VRMS).
	Contrast minimum		
		3.	Normalize the brightness and contrast.
Item / Preparation		Adjustment Procedure	
NTSC TINT COLOUR			
	Connect a short jumper between TPA 10 and TPA 20.	1.	Adjust Sub-Tint so that No. 2, 3 and 4 becomes level waveform is similar to Fig. 3.
	Press Main Menu and set system to use AV-NTSC (3.58 MHz).	2.	Confirm phase at Tint is changes more than ± 30 by Tint control.
	DYNAMIC Normal	3.	Confirm that colour level is maximum when colour DAC is adjusted to maximum position.
	ChannelCLR Set STD		Note: Use remote control only when adjusting user mode to Sub-Tint.
		<p>Fig. 3</p> 	

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2.6 PAL Colour

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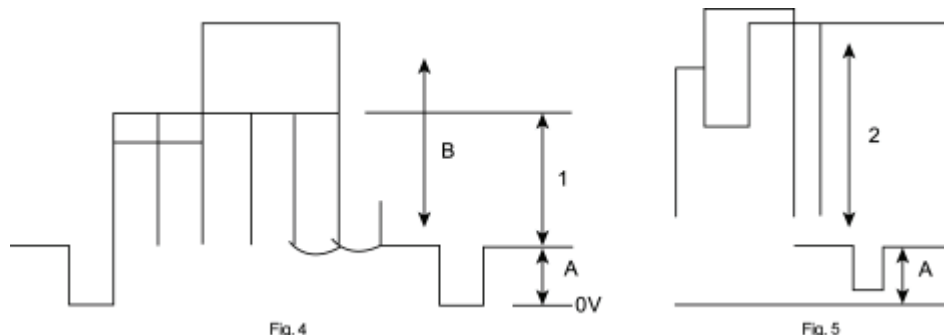
1. Receive the PAL B/G studio colour bar pattern and adjust local frequency at the best tuned position.
2. Pic Menu: Dynamic Normal, Confirm Contrast - 100AC, Sub Contrast - 21DAC.
3. Channel colour set ----- STD.
4. “CHK2” and press digit key “5” (AKB OFF) also confirm OSD become blue colour.
5. Set ABL OFF (Note : ABL is set off in (CHK2).
6. Set (A) to $2.3 \pm 0.2V$ by BRT (CHK2) at measurement point TPL 2 Fig. 4.

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2.7 Adjustment

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1. Connect oscilloscope probe to TPL 2 (G OUT) with 10k Ω series resistor and adjust Contrast so that (B) as in Fig. 4 is $2.6 \pm 0.1V$.
2. Adjust "Sub Colour" so that waveform as in Fig. 4 (1) $2.5 \pm 0.1V$.
3. Connect oscilloscope probe to TPL 1 (R OUT) with 10k Ω series resistor and confirm waveform as in Fig. 5 is (2) $2.7 \pm 0.4V$.
4. Set ABL ON (Note : Exit (CHK2 mode).
5. Press digit key "5" (AKB ON) and confirm the OSD become white colour.



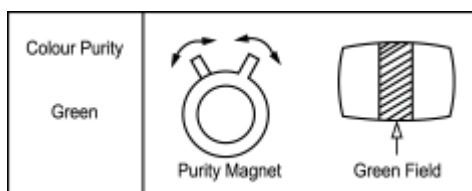
Before Colour Purity, Convergence and White Balance adjustment are attempted, V. Height, H. Centre and Focus adjustments must be completed.

Colour Purity

1. Set the Brightness and Contrast controls to their maximum positions.
2. Operate the TV set for 60 minutes.
3. Fully degauss the picture tube by using an external degaussing coil.
4. Apply a crosshatch pattern signal and adjust the static convergence magnets to the approximately correct position.
5. Receive a black and white signal.
6. Set the control as follows:
 Red.....minimum
 Green.....minimum
 Blue.....minimum
 Press the Shipping button on the remote control twice to select CRT Adjustment Mode to select low light.
7. Loosen the clamp screw for the Deflection Yoke A in Fig. 10 and move the Deflection Yoke as close to the purity magnet as possible.

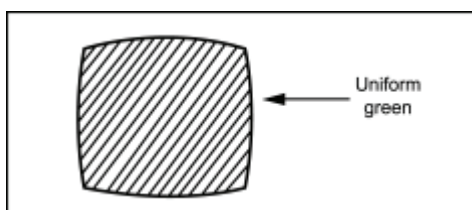
8. Adjust the purity magnetic rings so that a vertical green field is obtained at the centre of the screen.

Fig. 6



9. Slowly push the Deflection Yoke and set it where a uniform green field is obtained.

Fig. 7

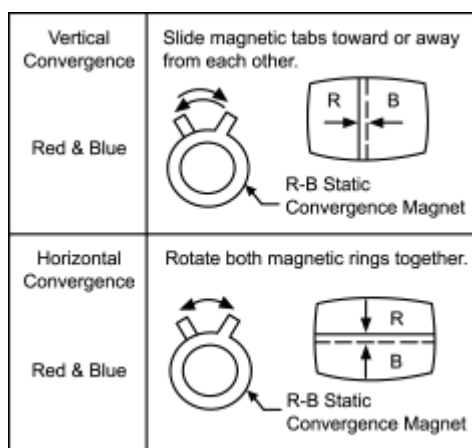


10. Re-adjust the Low Light controls to their correct settings and make sure that a uniform white field is obtained.
11. Tighten the clamp screw A in Fig. 10.

Convergence

1. Apply a crosshatch pattern signal and Normalize Contrast control to the maximum positions.
2. Adjust Brightness until the grey position of the crosshatch pattern just becomes black.
3. Adjust the Red and Blue line at the centre of the screen by rotating the R-B static.

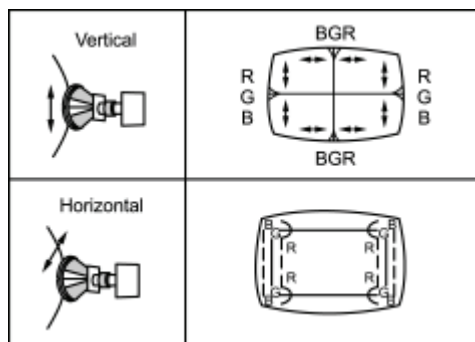
Fig. 8



4. Adjust Red and Blue with Green line at centre of the screen by rotating (RB)-G static convergence magnetic rings.

5. Lock convergence magnets with silicone sealer.
6. Remove the DY wedges and slightly tilt the Deflection Yoke vertically and horizontally to obtain the good overall convergence.

Fig. 9



7. Fix the Deflection Yoke by reinserting the DY wedges. Refer to Fig. 10.
8. If purity error is found, repeat “Colour Purity” adjustment.

Adjustment of CRT VRS

1. Preparation

- A. Set DY to CRT not to tilt up and down left and right deflection.
- B. Set CY to CRT and set CY magnet primarily (Fig.1)
 Purity magnet : Set purity magnet that 2 magnets are (TOP POSITION)
 VRS magnet : Set purity magnet 2 magnets are (HORIZONTAL POSITION)

2. Adjustment

- A. Receive that Cross Hatch pattern.
- B. Adjust V-SHIFT-50Hz.
- C. Set 2 magnets of horizontal position to up and down equally so that it will be the center part of CRT. (Fig. 2)

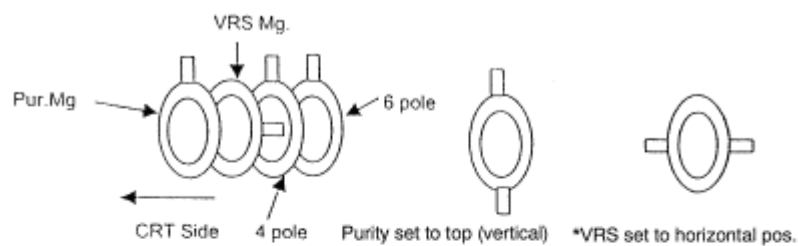


FIG 1.

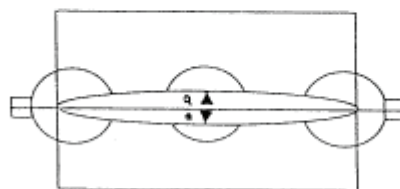
 $a \leq 0 \pm 1\text{mm}$

FIG 2.

Fig. 10

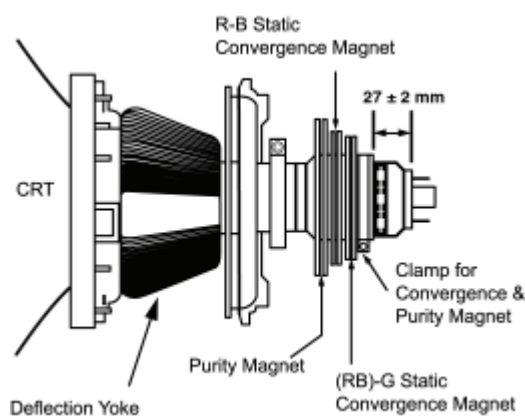
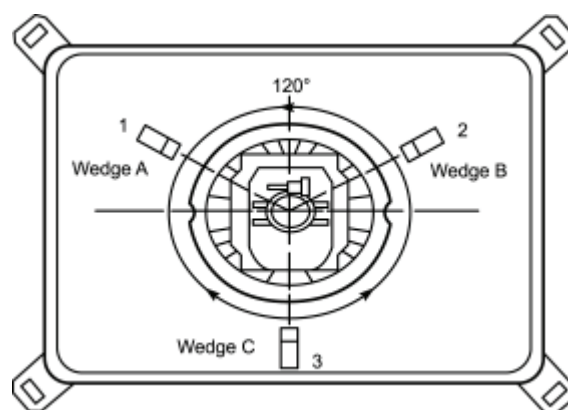


Fig. 11



Notes:

1. Wedge A, B and C should be inserted following the sequence of 1, 2 and 3 shown in Fig. 11.
2. The wedges should be set 120° apart from each other.
3. Be certain that three wedges are firmly fixed and the Deflection Yoke is tightly clamped in

place.

Otherwise the Deflection Yoke may shift its position and cause a loss of convergence and purity.

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