
5. Alignment and Adjustments

5-1 General Alignment Instructions

1. Usually, a color TV-VCR needs only slight touch-up adjustment upon installation. Check the basic characteristics such as height, horizontal and vertical sync and focus.
2. Observe the picture for good black and white details. There should be no objectionable color shading; if color shading is present, demagnetize, perform purity and convergence adjustments described below.
3. Use the specified test equipment or its equivalent.
4. Correct impedance matching is essential.
5. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test results.
6. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover nameplate.
7. Do not attempt to connect or disconnect any wires while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.
8. To protect against shock hazard, use an isolation transformer.

5-2 Automatic Degaussing

A degaussing coil is mounted around the picture tube, so that external degaussing after moving the TV should be unnecessary. But the receiver must be properly degaussed upon installation.

The degaussing coil operates for about 1 second after the power is switched ON. If the set is moved or turned in a different direction, the power should be OFF for at least 10 minutes.

If the chassis or parts of the cabinet become magnetized, poor color purity will result. If this happens, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube and the sides and front of the receiver. Slowly withdraw the coil to a distance of about 6 feet before turning power OFF.

If color shading persists, perform the following Color Purity and Convergence adjustments.

5-3 High Voltage Check

CAUTION: There is no high voltage adjustment on this chassis. The B+ power supply should be +130 volts (with full color-bar input and normal picture level).

1. Connect a digital voltmeter to the second anode of the picture tube.
2. Turn on the TV. Set the Brightness and Contrast controls to minimum (zero beam current).
3. Adjust the Brightness and contrast controls to both extremes. Ensure that the high voltage does not exceed 32 KV under any conditions.

5-4 RF AGC Adjustment

1. Tune to the strongest local station.
2. Enter the Service Mode to make adjustments.
3. Adjust the AGC control until noise (snow) disappears from the screen.

5-5 FOCUS Adjustment

1. Input a black and white signal.
2. Adjust the tuning control for clearest picture.
3. Adjust the FOCUS control for well defined scanning lines in the center area of the screen.

5-6 SCREEN Adjustment

1. Turn to an ACTIVE channel.
2. Adjust the VR screen for a normal picture is (no blooming or flyback line).
3. Adjust the SCREEN control for well defined scanning lines in the center area of the screen.

5-7 Purity Adjustment

- | | |
|--|---|
| 1. Warm up the receiver for at least 20 minutes. | 8. Tighten the convergence yoke. |
| 2. Plug in the CRT deflection yoke. Tighten the clamp screw. | 9. Slowly move the deflection yoke forward. Adjust for the best overall green screen. |
| 3. Plug the convergence yoke into the CRT and set it as shown in Fig. 5-1. | 10. Temporarily tighten the deflection yoke. |
| 4. Input a black and white signal. | 11. Produce blue and red rasters by adjusting the -low-light controls. Check for good purity in each field. |
| 5. Fully demagnetize the receiver by using an external degaussing coil. | 12. Tighten the deflection yoke. |
| 6. Turn the CONTRAST and BRIGHTNESS controls to maximum. | |
| 7. Loosen the clamp screw holding the yoke. Slide the yoke backward or forward to produce a vertical green belt. (Fig. 5-2). | |

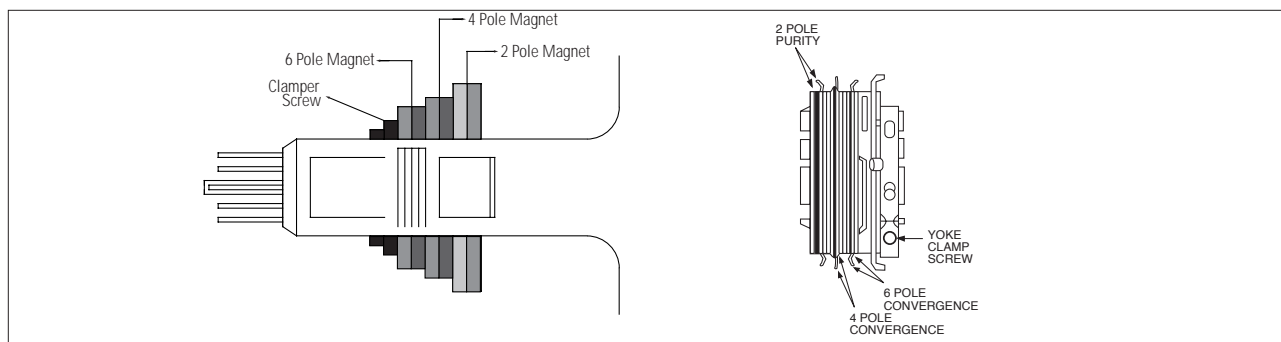


Fig. 5-1 Convergence Magnet Assembly

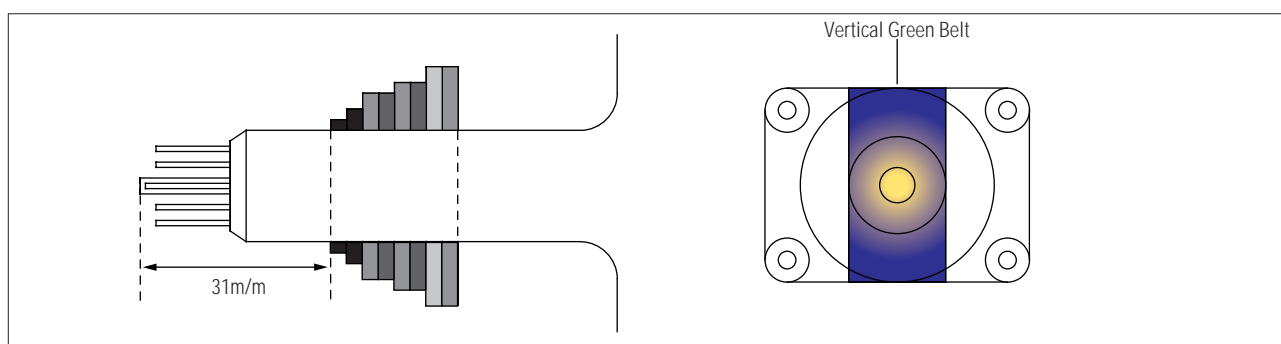


Fig. 5-2 Center Convergence Adjustment

5-8 Center Convergence Adjustment

1. Warm up the receiver for at least 20 minutes.
2. Adjust the BRIGHTNESS and CONTRAST controls for a well-defined picture.
3. Adjust the two tabs of the 4-pole magnets: Change the angle between them. Superimpose the red and the blue vertical lines in the center area of the screen.
4. Turn both tabs at the same time, keeping the angle constant: Superimpose the red and blue horizontal lines in the center of the screen.
5. Adjust two tabs of 6-pole magnets: Superimpose the red and blue lines with the green. Adjusting the angle affects the vertical lines, and rotating both magnets affects the horizontal lines.
6. Repeat adjustments 2~4, if necessary.
7. Since the 4-pole and 6-pole magnets interact, the dot movement is complex (Fig. 5-3).



Fig 5-3 Center Convergence Adjustment

5-9 Service Mode

1. Enter the Factory Mode. Press the remote-control keys in this sequence:



2. Use the channel and volume keys (up/down) to move the cursor. Select an alignment parameter.

service mode
adjustment
adjustment pip
adjustment 9170
test pattern
options
reset

3. Adjustment must be done for both 50Hz and 60Hz field rates.

00		YDL	0	VSC	0
AGC	25	TSC	25	STT	4
VCO	31	PSL	27	NSL	27
SBT	3	PVS	34	NVS	35
SCT	13	PVA	30	NVA	30
SCR	7	PHS	37	NHS	44
SC	15	PEW	45	NEW	44
RG	37	PEP	35	NEP	36
GG	31	PEC	15	NEP	15
BG	32	PET	35	NET	35

Adjustment

Table 5-1 Adjustment			
Function	OSD	Range	Note
CHANNEL NO	00	00~99	DIRECT NUMBER KEY IN
AUTO.GAIN CONTROL	AGC	00~63	
VOLTAGE CONTROL OSC.	VCO	00~127	RIGHT SIDE DIGIT IS CHANGE "L"↺"H"(RED COLOR):STOP
SUB BRIGHTNESS	SBT	00~13	
SUB CONTRAST	SCT	00~13	
SUB COLOR	SCR	00~23	
S-CORRECTION	SC	00~63	VERTICAL S-CORRECTION
RED GAIN	RG	00~63	HIGH LIGHT ADJUSTMENT
GREEN GAIN	GG	00~63	HIGH LIGHT ADJUSTMENT
BLUE GAIN	BG	00~63	HIGH LIGHT ADJUSTMENT

Table 5-1 Adjustment (Continued)			
Function	OSD	Range	Note
LUMINANCE (Y) DELAY	YDL	0~15	ONLY USED FOR TDA8844
TELETEXT SUB CONTRAST	TSC	0~63	ONLY USED FOR TTX MODEL
PAL VERTICAL SLOPE	PSL	0~63	PAL
PAL VERTICAL SHIFT	PVS	0~63	PAL
PAL VERTICAL AMPLITUDE	PVA	0~63	PAL
PAL HORIZONTAL SHIFT	PHS	0~63	PAL
PAL E-W WIDTH	PEW	0~63	PAL
PAL E-W PARABOLA	PEP	0~63	PAL
PAL E-W CORNER	PEC	0~63	PAL
PAL E-W TRAPEZIUM	PET	0~63	PAL
VERTICAL SCROLL	VSC	0~63	ONLY USED FOR TDA8844
SUB TINT (HUE)	STT	0~15	NTSC
NTSC VERTICAL SLOPE	NSL	0~63	NTSC
NTSC VERTICAL AMPLITUDE	NVA	0~63	NTSC
NTSC HORIZONTAL SHIFT	NHS	0~63	NTSC
NTSC E-W WIDTH	NEW	0~63	NTSC
NTSC E-W PARABOLA	NEP	0~63	NTSC
NTSC E-W CORNER	NEC	0~63	NTSC
NTSC E-W TRAPEZIUM	NET	0~63	NTSC

4. Access Adjustment PIP by pressing the channel keys (up/down).

00	
PCT	0
PTT	36
PHM	3
PVP	0
PHP	7

Table 5-2 PIP adjustment			
Function	OSD	Range	Note
PROGRAM NUMBER	00	0 ~ 99	DIRECT NUMERIC KEY IN
PIP CONTRAST	PCT	0 ~ 15	NO ADJUSTMENT
PIP TINT	PTT	0 ~ 63	60 HZ (PIP) ONLY
PIP HORIZONTAL MOVE	PHM	0 ~ 63	
PIP VERTICAL POSITION	PVP	0 ~ 63	NO ADJUSTMENT
PIP HORIZONTAL POSITION	PHP	0 ~ 63	

5. Access Adjustment TDA9170 by pressing the channel keys (up/down).

00	
BON	1
WD2	1
01	39
02	31
03	21
SSP	2

Table 5-3 Adjustment TDA9170			
Function	OSD	Range	Note
PROGRAM NUMBER	00	0 ~ 99	DIRECT NUMERIC KEY IN
BLACK OFFSET COMPENSATION ENABLE	BON	0/1	
WINDOW SELECT	WD2	0/1	
USER VARIABLE GAMMA	01	0 ~ 63	
ADAPTIVE GAMMA	02	0 ~ 63	
NON LINEARITY AMPLITUDE	03	0 ~ 63	
SUB SHARPNESS	SSP	0 ~ 15	

6. After the factory mode adjustments are completed, return to the first menu and set up "TEST PATTERN", "OPTIONS" and "RESET". Use the channel and volume keys to position the cursor and make a selection.

RED	PIP	M	
GREEN	TTX		FLOF
BLUE	NICAM		ON
WHITE	CRT		34N
	SCART		OFF
	CHIP		8375
	LNA		ON
	ASIA NICAM		OFF

TEST PATTERN

Table 5-4 Options		
Options	OSD	Note
PIP	L	SINGLE PIP (SDA9288) OR NO PIP FUNCTION
	S	SINGLE PIP (SDA9189)
	T	SINGLE PIP (TWO TUNER)
	M	MULTI PIP (TWO TUNER)
TTX	OFF	NO TELETEXT FUNCTION
	FLOF	PRIORITY : FLOF
	LIST	PRIORITY : LIST
NICAM	OFF	NO NICAM FUNCTION
	ON	BUILT IN NICAM FUNCTION
CRT	PLUS	12.8 : 9 CRT USED
	NORMAL	4 : 3 CRT USED
	25Q	25 INCH ; 12.8 : 9 CRT USED
	34N	34 INCH ; 4 : 3 CRT USED
SCART	ON	REAR BACK JACK WAS USED 21-PIN JACK
	OFF	REAR BACK JACK WAS USED RCA 9-PIN JACK
CHIP	8375	USING ONECHIP : TDA8375
	8844	USING ONECHIP : TDA8844
LNA	ON	BUILT IN LNA FUNCTION
	OFF	NO LNA FUNCTION

Table 5-4 Options (Continued)		
Options	OSD	Note
LANGUAGE	MULTI-16	ENG/ARAB/FRENCH/CHINESE/MALAYSIAN/ INDONESIAN/VIETNAMESE/THAI/RUSSIAN/CROATIAN/ BULGARIAN/POLISH/RUMANIAN/CZECH/TURKISH/HUNGARAN
	MidEast	ENG/ARAB/FRENCH
	Arabic	ENG/ARAB
	French	ENG/FRENCH
	Asia	ENG/CHINESE/MALAYSIAN/INDONESIAN/VIETNAMESE/THAI
	China	ENG/CHINESE
	Malaysia	ENG/MALAYSIAN
	Indonesia	ENG/INDONESIAN
	Vietnam	ENG/VIETNAMESE
	Thai	ENG/THAI
	E.Europe	ENG/RUSSIAN/CROATIAN/BULGARIAN/POLISH/ RUMANIAN/CZECH/ TURKISH/HUNGARAN
	M. Russia	ENG/RUSSIAN/CROATIAN/BULGARAN
	M. Poland	ENG/POLISH/RUMANIAN/CZECH
	M. Hungary	ENG/RUSSIAN/TURKISH/HUNGARAN
	Russia	ENG/RUSSIAN
	Croatia	ENG/CROATIAN
	Bulgaria	ENG/BULGARIA
	Poland	ENG/POLISH
	Rumania	ENG/RUMANIAN
	Czech	ENG/CZECH
	Turkey	ENG/TURKISH
	Hungary	ENG/HUNGARAN