

## 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 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 +135 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

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1. Turn to the strongest local station.
2. Turn the AGC control fully clockwise (VR101, on the MAIN board).
3. Adjust the AGC control until noise(snow)disappears from the screen.

## 5-5 FOCUS Adjustment

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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

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1. Turn to the 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

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

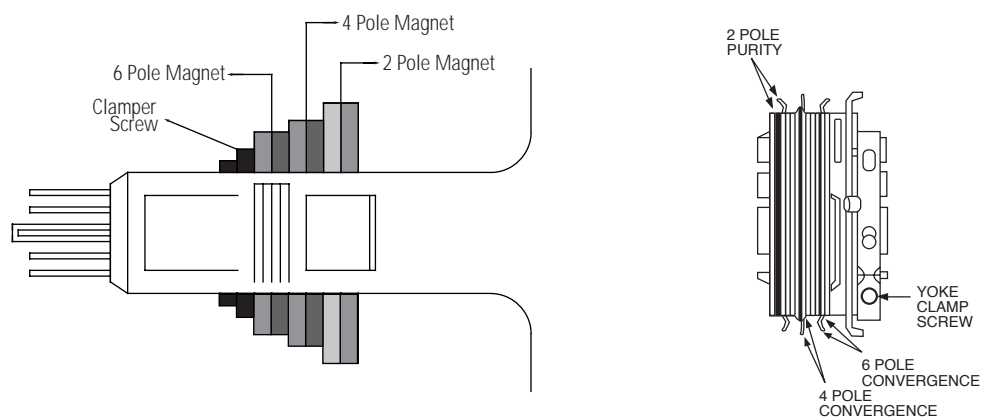


Fig. 5 - 1 Convergence Magnet Assembly

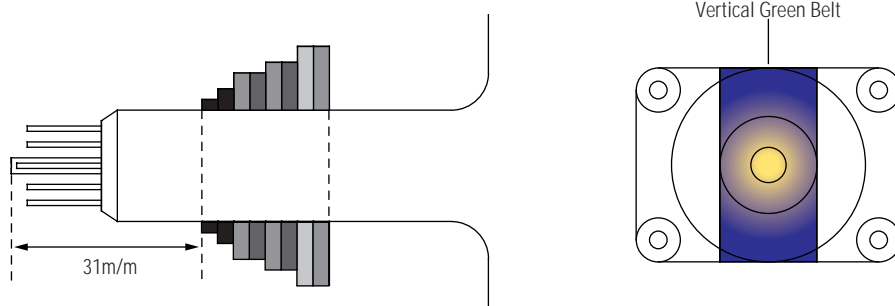


Fig. 5 - 2 Center Convergence Adjustment

## 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).

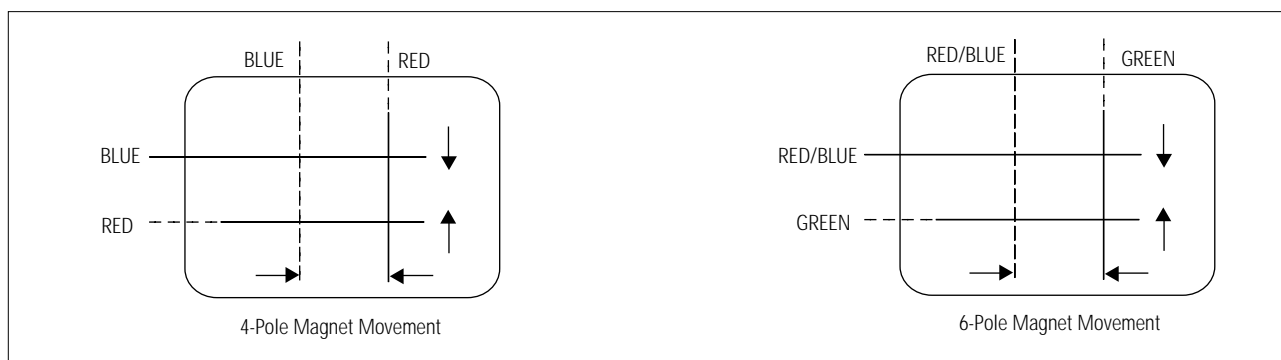


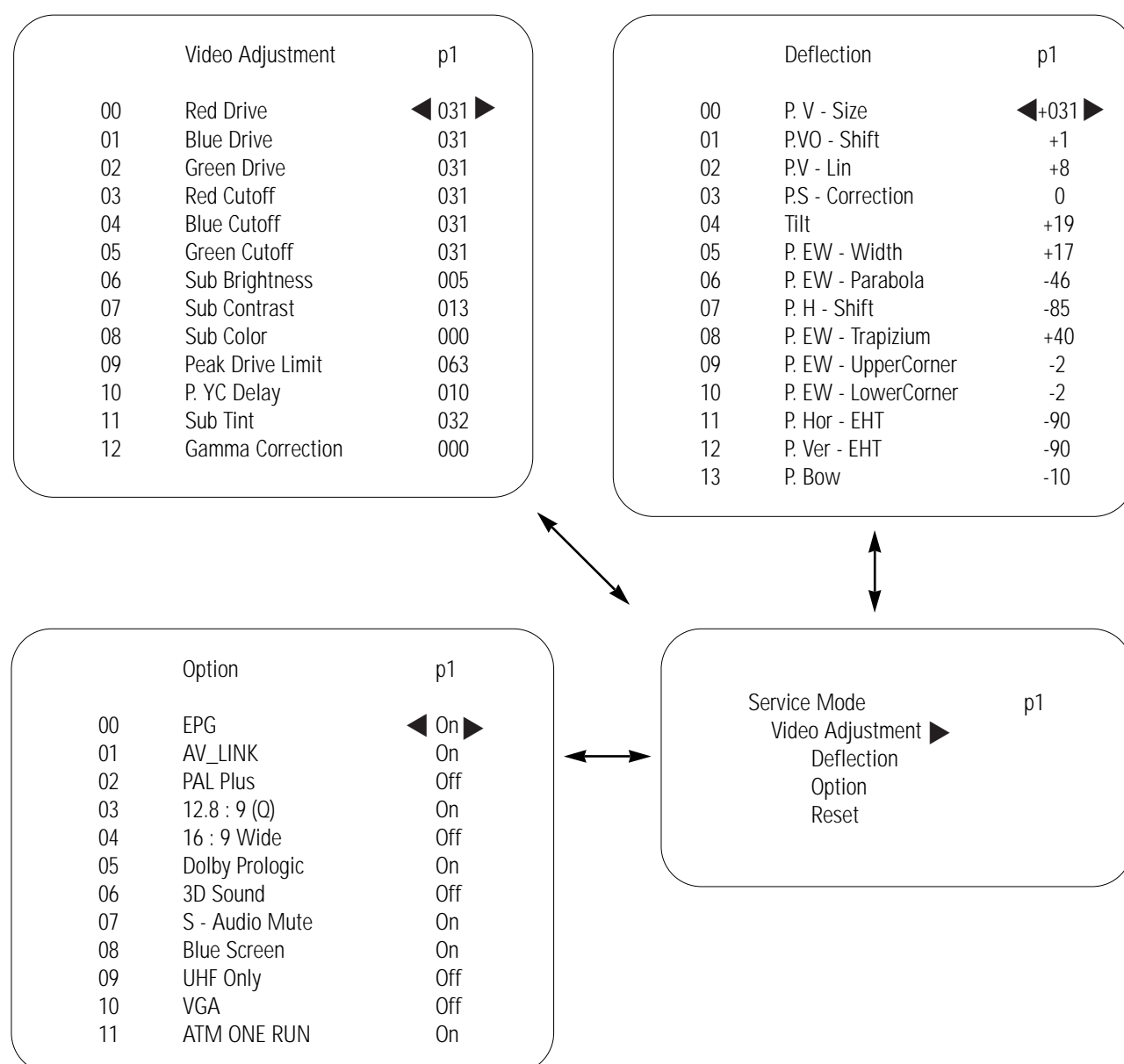
Fig 5-3 Center Convergence Adjustment

## 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. Use the volume keys (up/down) to adjust the value. Adjustment must be done separately for PAL, SECAM, NTSC color systems. (As soon as the TV receives a signal, it switches to the correct broadcast standard.) After adjustments are completed, press the picture off key to exit the Service Mode. Press digit keys directly to change channel number.



# MEMO