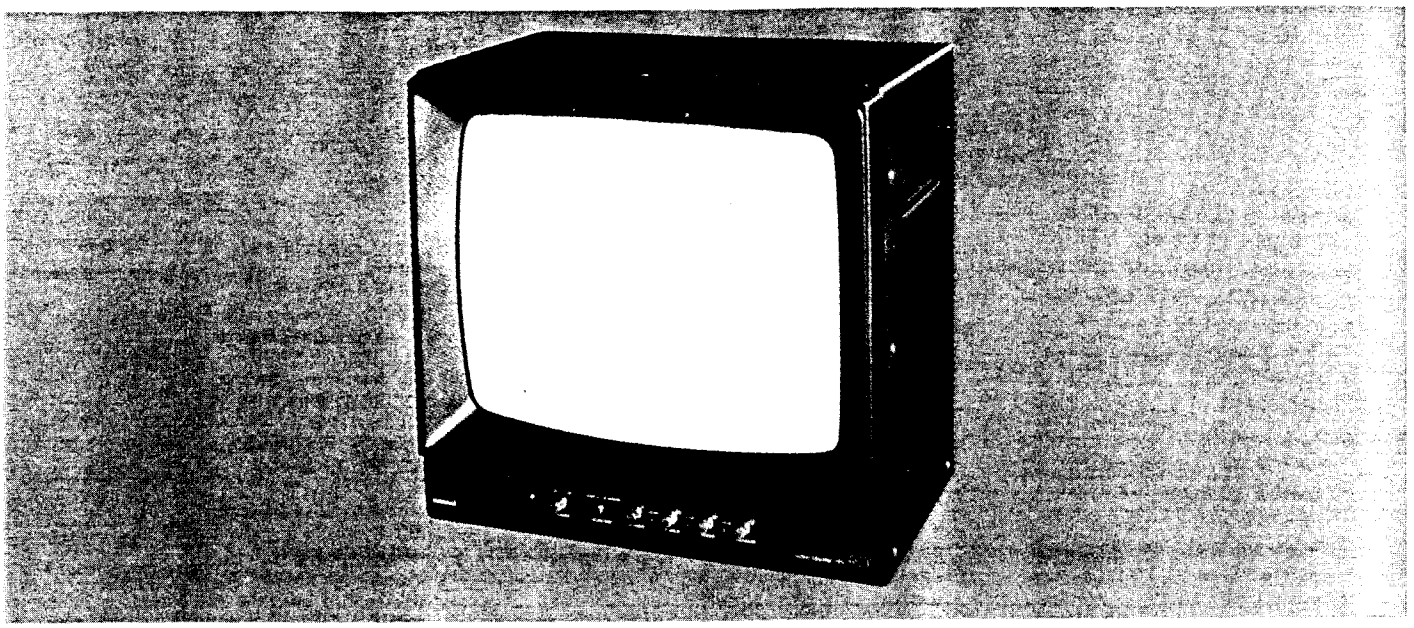
ORDER NO. VKD82110665C8

Service Manual

VIDEO MONITER

WV-5470



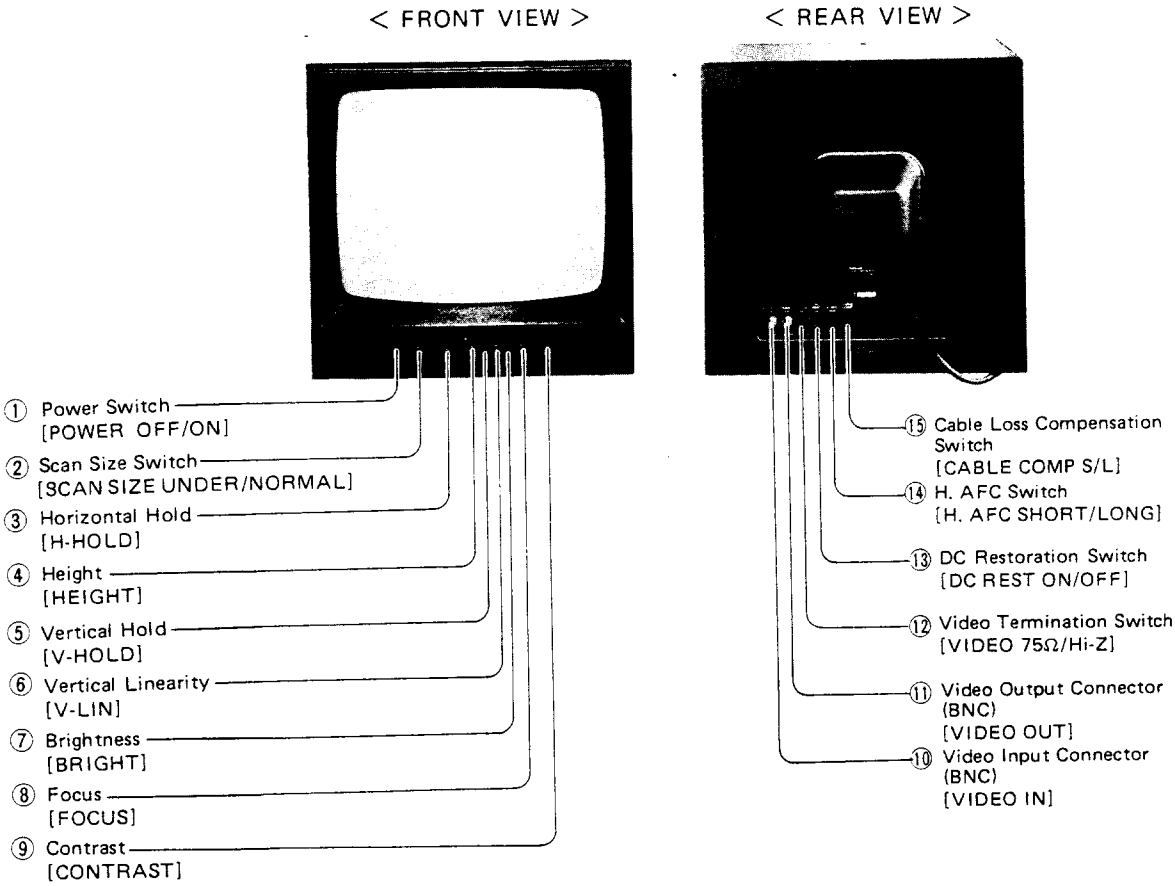
SPECIFICATIONS

Power Source:	WV-5470E/A: 240V AC, 50 Hz WV-5470E/C: 220V AC, 50 Hz WV-5470N: 115V or 230V AC resetable, 50/60 Hz
Power Consumption:	Approx. 45 watts
Video Input:	0.5~2.0 Vp-p composite/75Ω or Hi-Z looping through
Video Frequency Response:	More than 10 MHz
Horizontal Resolution:	More than 850 lines at center
Maximum Video Gain:	42 dB
H. AFC Time Constant:	Short time constant for industrial VTRs
Sweep Linearity:	Less than 5% at overscan
Sweep Geometry:	Less than 2% at overscan
Overscanning:	Approx. 5%
Scanning Size:	Overscan or underscan switchable
DC Restoration:	Yes
CRT:	17" diagonal (16-1/4" diagonal actual visual size)
High Voltage:	DC 15kV
Rackmounting:	Yes (with optional rack angle brackets)
Ambient Operating Temperature:	−10°C ~ +50°C
Ambient Operating Humidity:	Less than 90%
Dimensions:	420 (W) x 411 (H) x 378 (D) mm
Weight:	15kg

National/Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

MAJOR OPERATING COMPONENTS



CONTROLS AND THEIR FUNCTIONS

① Power Switch [POWER OFF/ON]
Turns power ON and OFF.

② Scan Size [SCAN SIZE UNDER/NORMAL]
Underscanning is obtained when depressed.

③ Horizontal Hold [H-HOLD]
Locks in the picture horizontally.

④ Height [HEIGHT]
Adjust the height of the picture.

⑤ Vertical Hold [V-HOLD]
Locks in the picture vertically.

⑥ Vertical Linearity [V-LIN]
Adjusts for vertical distortion of the picture.

⑦ Brightness Control [BRIGHT]
Turning this control clockwise increases the overall brightness.

⑧ Focus [FOCUS]

⑨ Contrast Control [CONTRAST]
Turning this control clockwise increases the picture contrast.

⑩ Video Input Connector [VIDEO IN] (BNC)

⑪ Video Output Connector [VIDEO OUT] (BNC)

⑫ Video Termination Switch [VIDEO 75Ω/Hi-Z]
When bridging or looping through the video signal, set this switch to Hi-Z position, and for other cases this switch should be set to 75Ω position.

⑬ DC restoration Switch [DC REST ON/OFF]
Switch to restore background of the picture.

⑭ H. AFC Switch [H. AFC SHORT/LONG]
Switch to SHORT position (short H. AFC time constant) for VTR playback.

⑮ Cable Loss Compensation Switch
See page 2.

CONNECTIONS

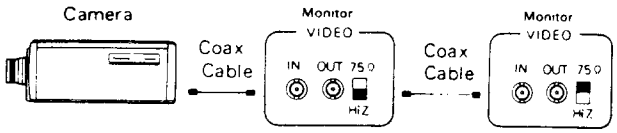
Power Cable

1. Keep the Monitor Power Switched OFF during connection.
2. Connect the Power Cord to a grounded electrical outlet.

Video Cable

1. Terminate the camera's output in a 75-ohm resistor at the furthest end of its cable run.

- Always set the last monitor's Termination Switch ⑫ to **75Ω**, and set the Termination Switches ⑫ of intermediate monitors to **Hi-Z.**



- Use 75-ohm coaxial cable. (3C-2V, 5C-2V, 7C-2V, 10C-2V)

2. Up to 10 monitors can be hooked up in this configuration before signal loss occurs. Total cable length should not exceed 150m.

3. Wiring Precautions:

- Do not bend coaxial cable into a curve whose radius is smaller than 10 times its diameter.
- Never staple the cable – not even with circular staples.
- Never crush or pinch the cable.

All these will change the impedance of the cable and cause poor picture quality.

Cable Loss Compensation Switch

1. Normally set this switch to **S** position.

2. When the cable is so long that the resolution deteriorates, select the appropriate coaxial cable and switch position according to the cable length as shown in the table.

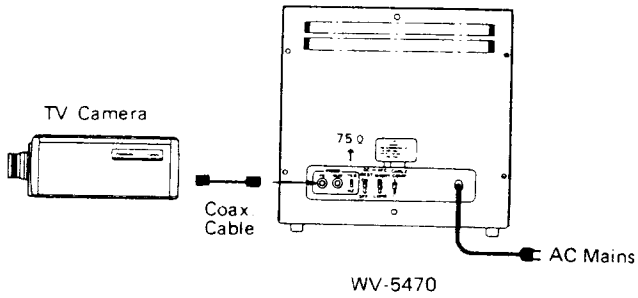
(Unit: m)

Position of Switch \ Kinds of Cable	3C-2V	5C-2V	7C-2V	10C-2V
S (Short)	250	500	600	800
L (Long)	500	750	1000	1250

3. A thicker coaxial cable is preferred and switch position **S** is most appropriate.
4. If many monitors are to be bridge-connected, choose the cable by the distance to the last monitor, and select the switch position of each monitor so that the best picture quality can be obtained.

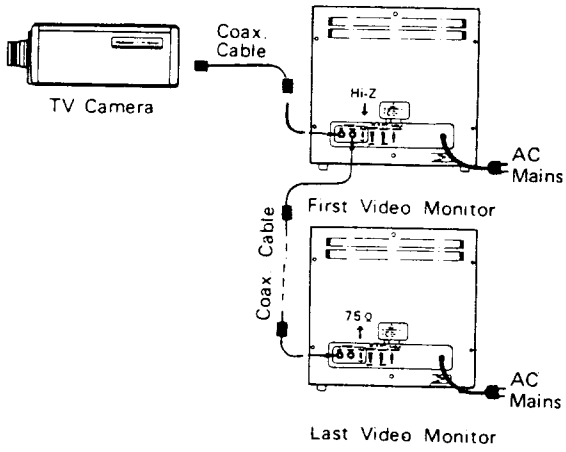
System Connections

1. Single Monitor Connection



- Connect the Video Input Connector ⑩ on the monitor to the Video Out Connector of the camera with 75-ohm coaxial cable.
- Set the Video Termination Switch ⑫ to **75Ω** position.

2. Multiple Monitor Connection



- Connect the Video Input Connector ⑩ on the video monitor to the Video Out Connector of the camera with 75-ohm coaxial cable.
- Connect the Video Output Connector ⑪ on the first monitor to the Video Input Connector ⑩ on the second monitor with 75-ohm coaxial cable. Continue until all monitors are connected.
- Set the Video Termination Switch ⑫ of the first and intermediate monitors to **Hi-Z** position. Then set the Video Termination Switch ⑫ of the last monitor to **75Ω** position.

ADJUSTMENT

■ TEST EQUIPMENT

- TV camera or Video Signal Generator
- Coaxial Cable (Impedance: 75Ω)
- Resolution Chart (YWV1400RB99)

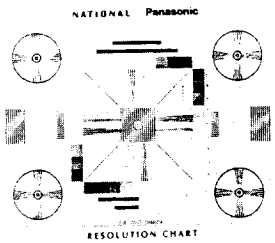


Fig. 1

■ SET UP FOR ADJUSTMENT

1) Adjustment using TV camera

- Connect the coaxial cable between the TV camera and the input of video monitor.
- Terminate the video input of monitor with 75 ohms.
- Position the resolution chart (YWV1400RB99) in front of the TV camera as shown in Fig. 2.

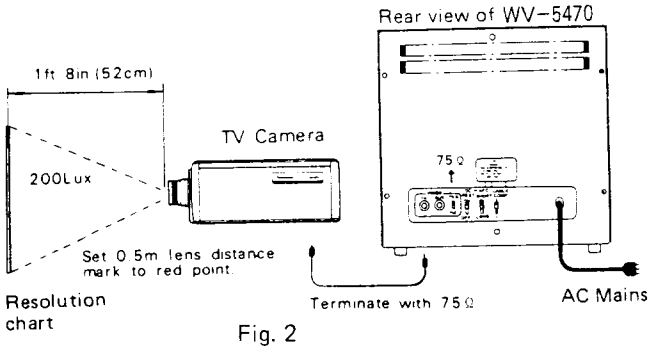


Fig. 2

2) Adjustment using video signal generator

- Connect the coaxial cable between the output of video signal generator and the input of video monitor.
- Set the video signal generator so that it provides the cross-hatch signal.

■ DISASSEMBLING FOR ADJUSTMENT

- Remove thirteen screws fixing the upper cover and remove the cover.(Fig. 3)

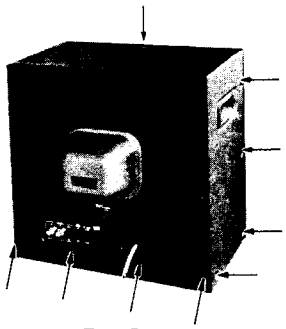


Fig. 3

→ Remove the screws.

- Remove the bottom cover by removing the six fixing screws.

■ ADJUSTMENT PROCEDURE

- Refer to page 5 for adjusting controls.
- Observe the monitor screen during the adjustment.

1. Vertical hold adjustment

Adjusts:	VR5 (V. HOLD) VR9 (V. SUB HOLD)

- Set V. HOLD VR5 at mechanical center.
- Adjust V. SUB HOLD VR9 to hold picture vertically.

2. Horizontal hold adjustment

Adjusts:	VR6 (H. HOLD) VR10 (H. SUB HOLD)

- Set H. HOLD VR6 at mechanical center.
- Adjust H. SUB HOLD VR10 to hold picture horizontally.

3. Picture tilt adjustment

Adjust:	Deflection coil

- Set the scan size switch to the underscan position.
- Loosen the deflection coil holding screw. (Fig. 4)

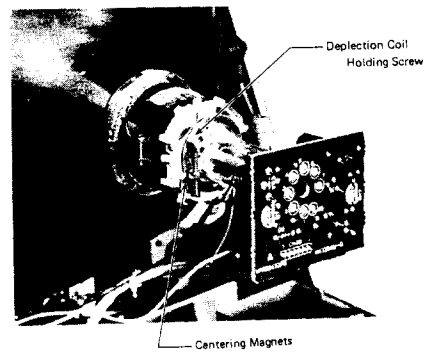


Fig. 4

- Turn the deflection coil until the raster on the monitor screen is straight.
- Carefully tighten the deflection coil holding screw.

4. Centering adjustment

Adjust:	Centering magnets

- Keep setting the scan size switch to the underscan position.
- Adjust the centering magnets (see Fig. 4) until the raster comes to the center of monitor screen.

5. Horizontal width adjustment

Adjust:	L6 (H-WIDTH)

- Set the scan size switch to the normal (overscan) position.
- Adjust H-WIDTH L6 to obtain full horizontal width plus a little overscanning.

6. Vertical height and linearity adjustment

Adjusts:	VR8 (HEIGHT) VR7 (V-LIN)

- Adjust HEIGHT VR8 and V-LIN VR7 so that the circle in the chart is nearly a true circle.

7. Sub-brightness adjustment

Adjusts:	VR1 (CONTRAST) VR4 (BRIGHTNESS) VR3 (SUB-BRIGHTNESS)

- Set the DC restoration switch to the ON position.
- Turn CONTRAST VR1 fully counterclockwise.
- Turn BRIGHTNESS VR4 fully clockwise, and then turn it back 180 degrees counterclockwise.
- Adjust SUB-BRIGHTNESS VR3 so that the raster will just appear.

8. Focus adjustment

Adjust:	VR2 (FOCUS)

- Adjust VR2 for best focus in the monitor.

■ VIDEO/DEFLECTION CIRCUIT BOARD REMOVAL

- When replacing the parts on the video/deflection circuit board, proceed following steps.

(1) Remove konbs from the front of the monitor.

(2) Remove two screws on the video/deflection circuit board. (Fig. 5)

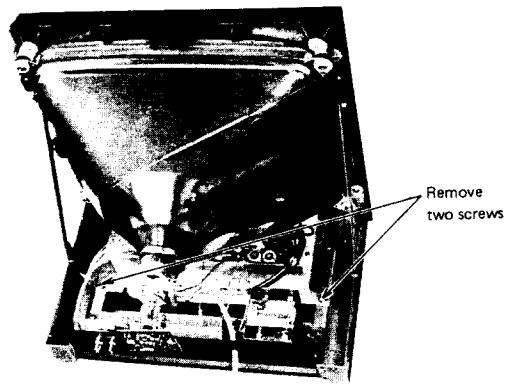


Fig. 5

- The video/deflection circuit board can be removed backward. (Fig. 6)

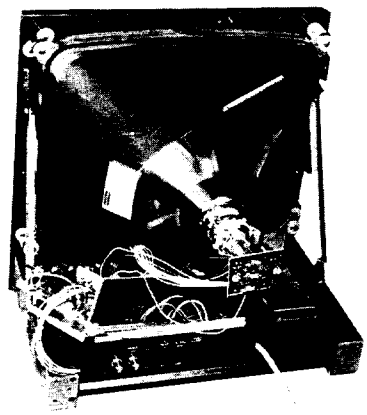
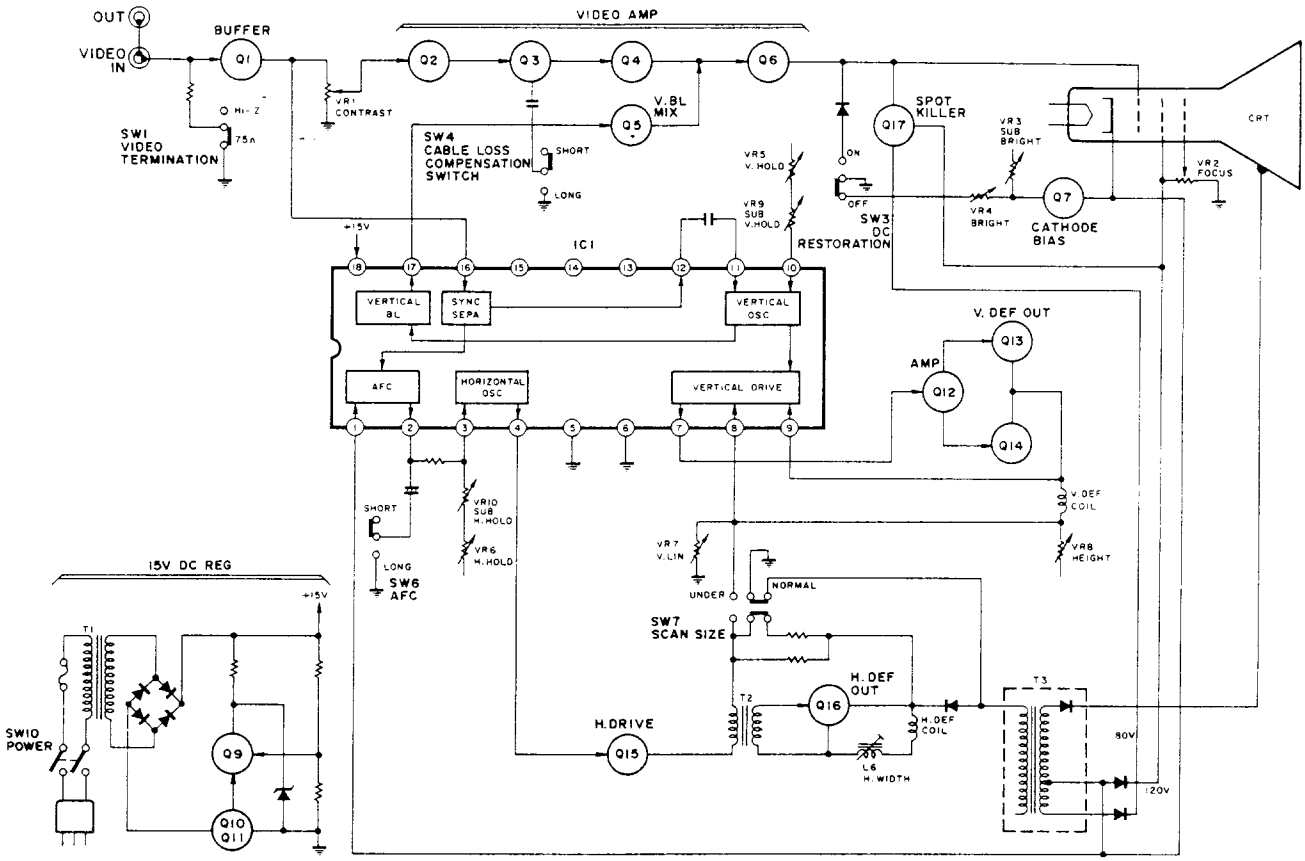
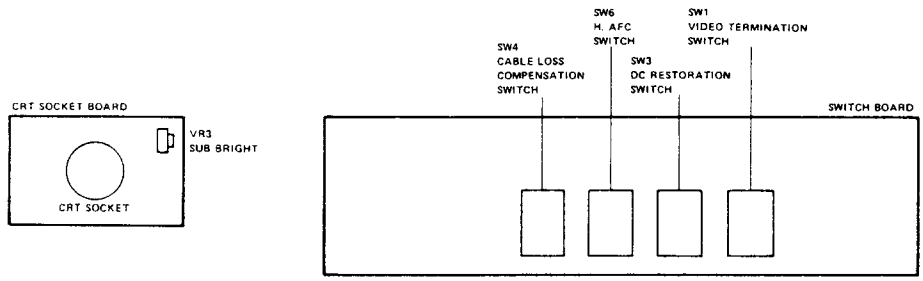


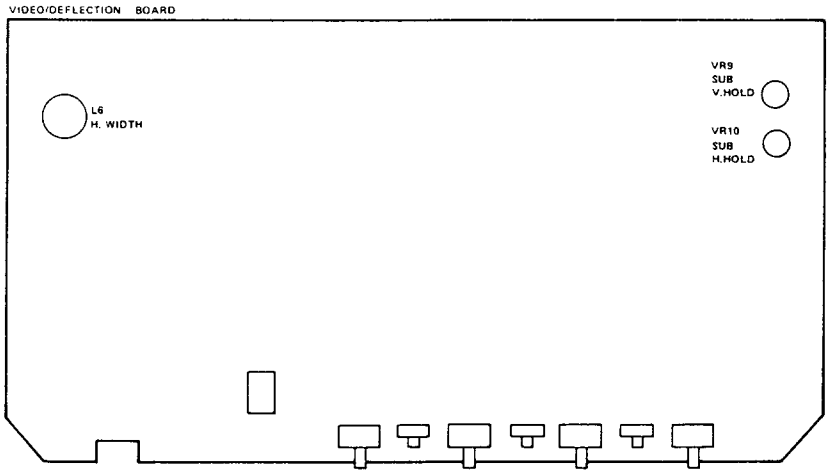
Fig. 6

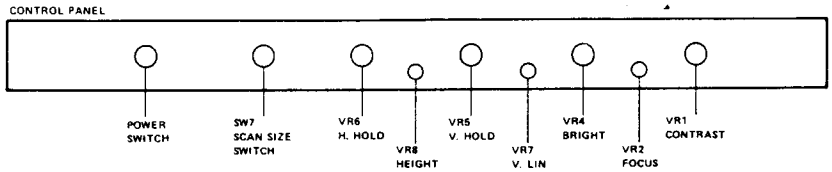
BLOCK DIAGRAM



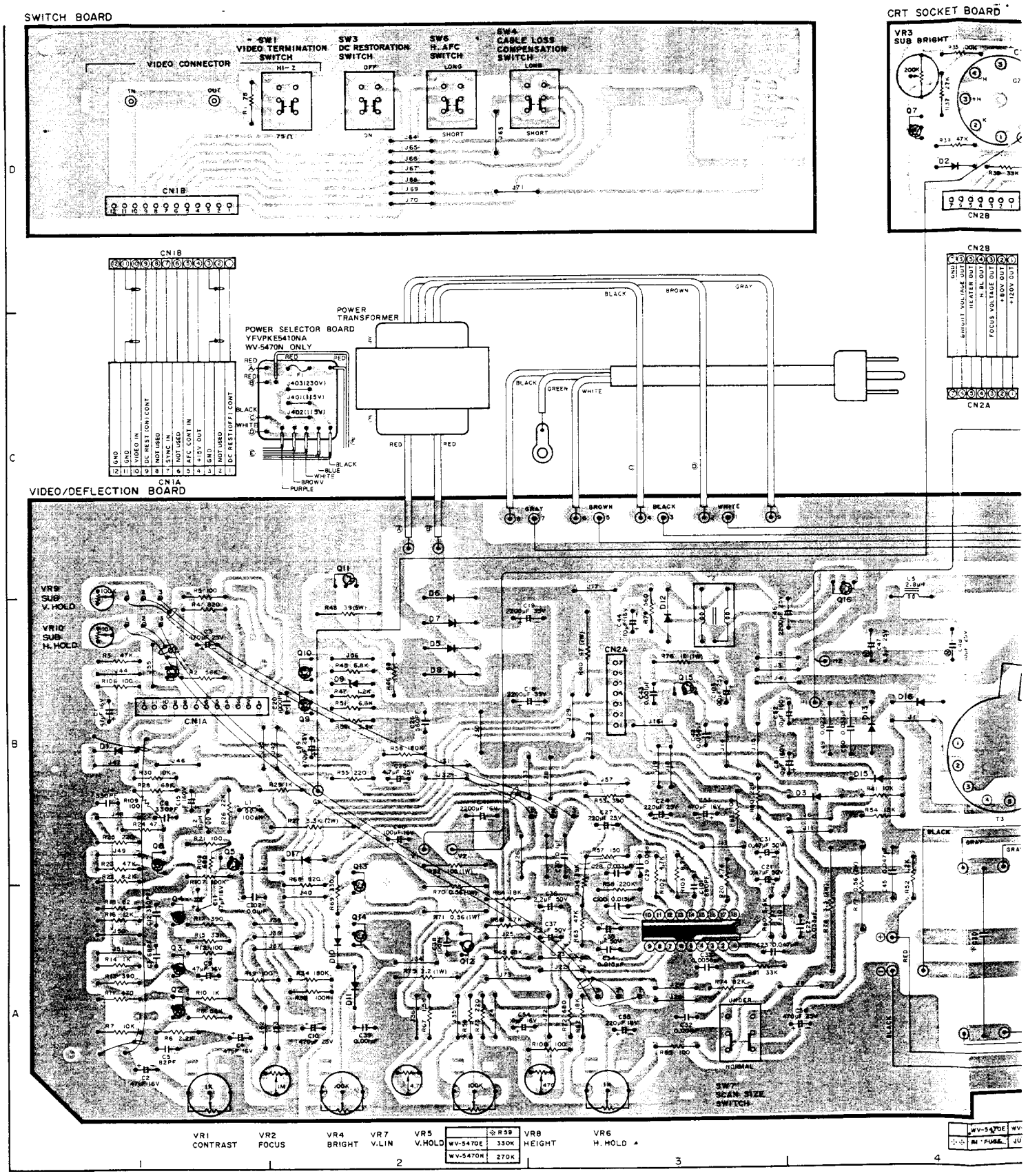
LOCATION OF ADJUSTING CONTROLS



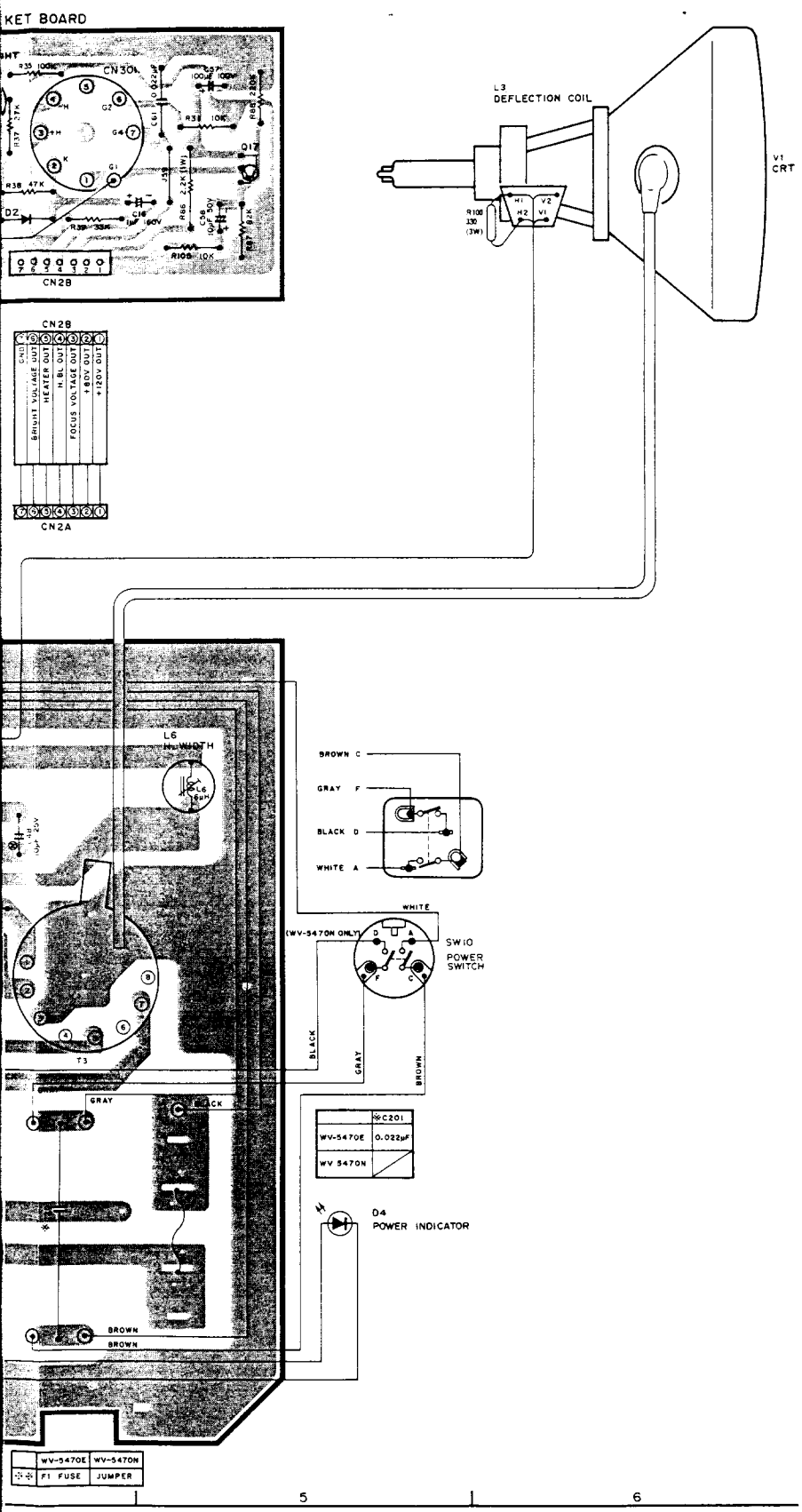




CONDUCTOR VIEW AND WI



ND WIRING DIAGRAM



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Q2	2SD636-RS	A1
Q3	2SB641-RS	A1
Q4	2SD636-RS	A1
Q5	2SD636-RS	B1
Q6	2SC2258	B1
Q7	2SA685	D4
Q9	2SA564A-RS	B2
Q10	2SC828A-ST	B2
Q11	2SC1983-0Y	C2
Q12	2SD636-RS	A2
Q13	2SC1226-QR	A2,B2
Q14	2SA699-QR	A2
Q15	2SC1567-RS	B3
Q16	2SD1163A	B4,C4
Q17	2SA685	D5
D1	OA91	B1
D2	YUDRU2M	D4
D3	YUDRU2M	B4
D4	LN21RPH	A5
D5	YWDR02Z	B2
D6	YWDR02Z	B2,C2
D7	YWDR02Z	B2
D8	YWDR02Z	B2
D9	YUDXZ090	B2
D10	MA150	A2
D11	MA150	A2
D12	YUDRU2M	B3,C3
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D15	YUDRU2M	B4
D16	YUDRU2M	B4
D17	MA150	B2

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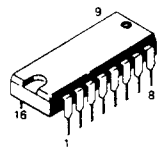

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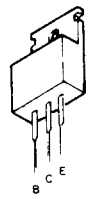

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2SC2258

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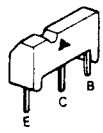

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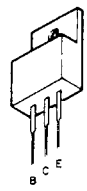

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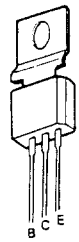

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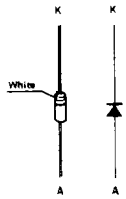

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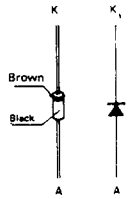

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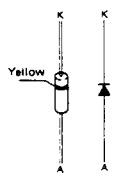

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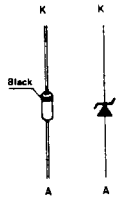

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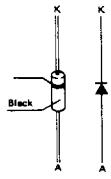

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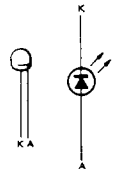
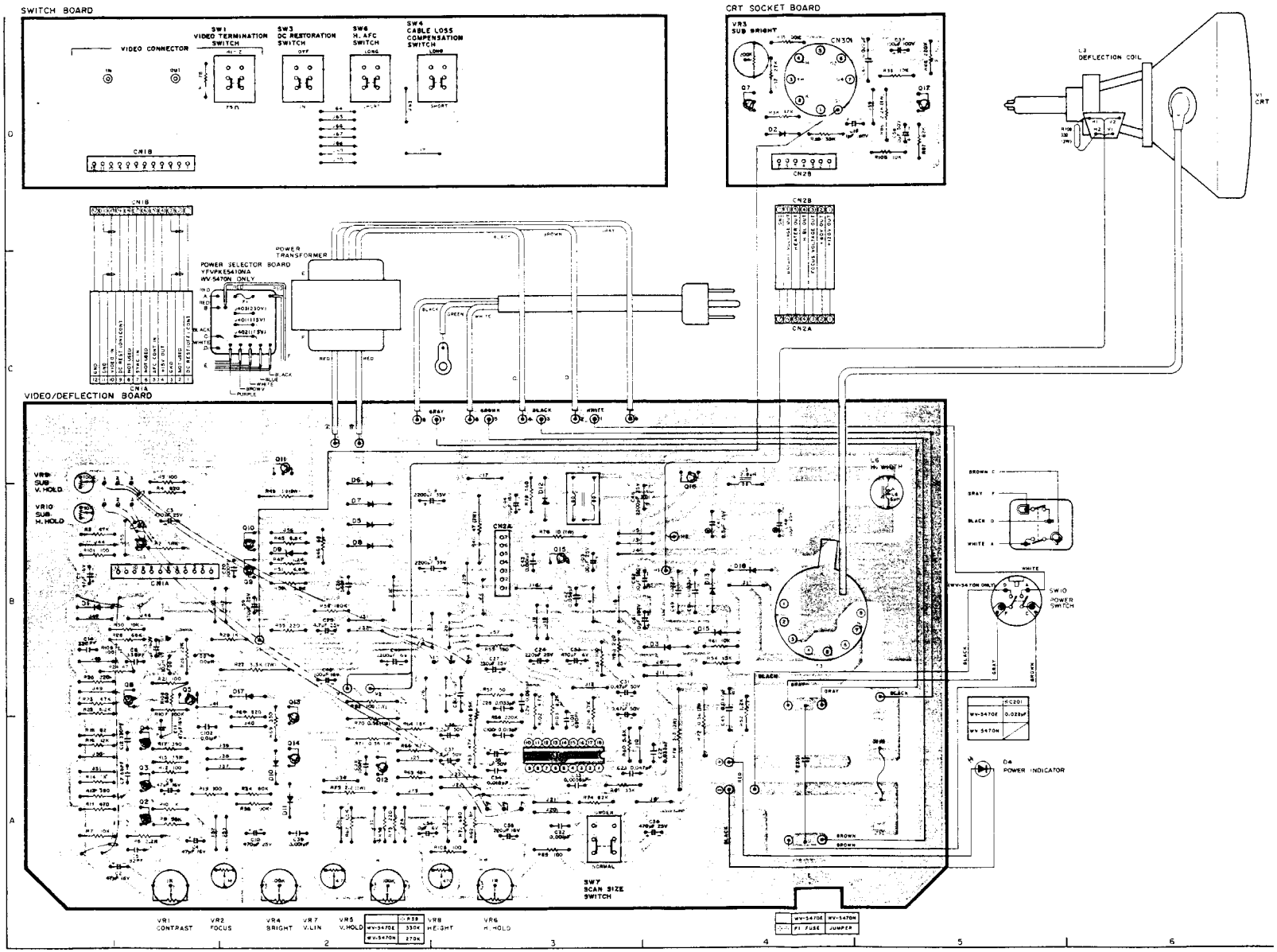


CONDUCTOR VIEW AND WIRING DIAGRAM



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Q2	2SD636-RS	A1
Q3	2SB641-RS	A1
Q4	2SD636-RS	A1
Q5	2SD636-RS	B1
Q6	2SC2258	B1
Q7	2SA685	D4
Q9	2SA564A-RS	B2
Q10	2SC828A-ST	B2
Q11	2SC1983-OY	C2
Q12	2SD636-RS	A2
Q13	2SC1226-QR	A2,B2
Q14	2SA699-QR	A2
Q15	2SC1567-RS	B3
Q16	2SD1163A	B4,C4
Q17	2SA685	D5
D1	OA91	B1
D2	YUDRU2M	D4
D3	YUDRU2M	B4
D4	LN21RPH	A5
D5	YWDR02Z	B2
D6	YWDR02Z	B2,C2
D7	YWDR02Z	B2
D8	YWDR02Z	B2
D9	YUDXZ090	B2
D10	MA150	A2
D11	MA150	A2
D12	YUDRU2M	B3,C3
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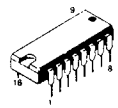

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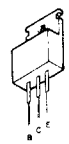

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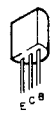

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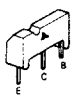

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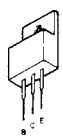
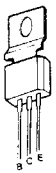
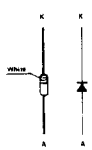


2SA699-QR
2SC1226-QR



MA150



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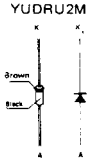
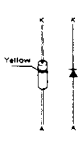


OA91



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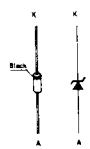

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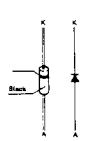
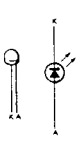
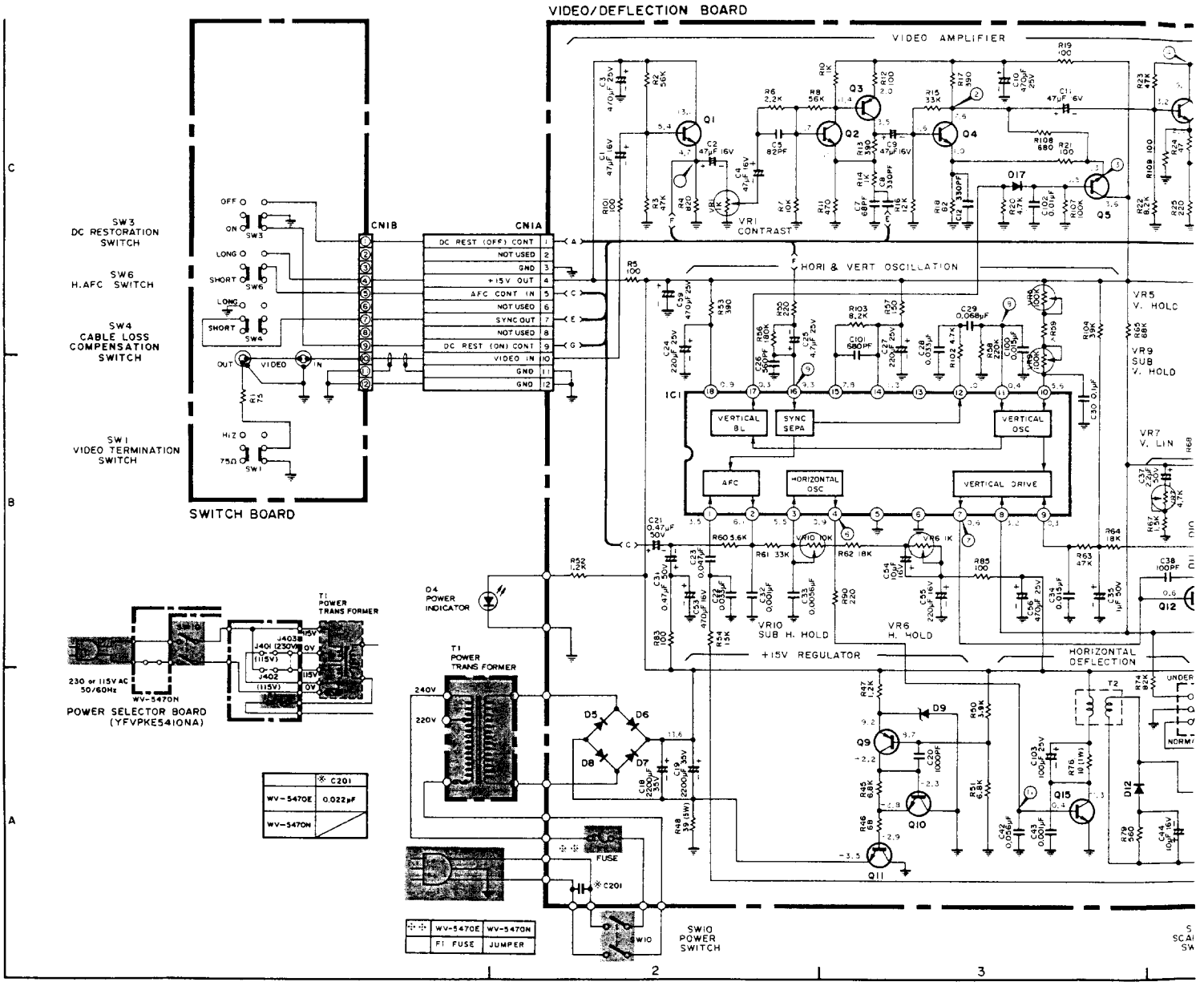


LN21RPH



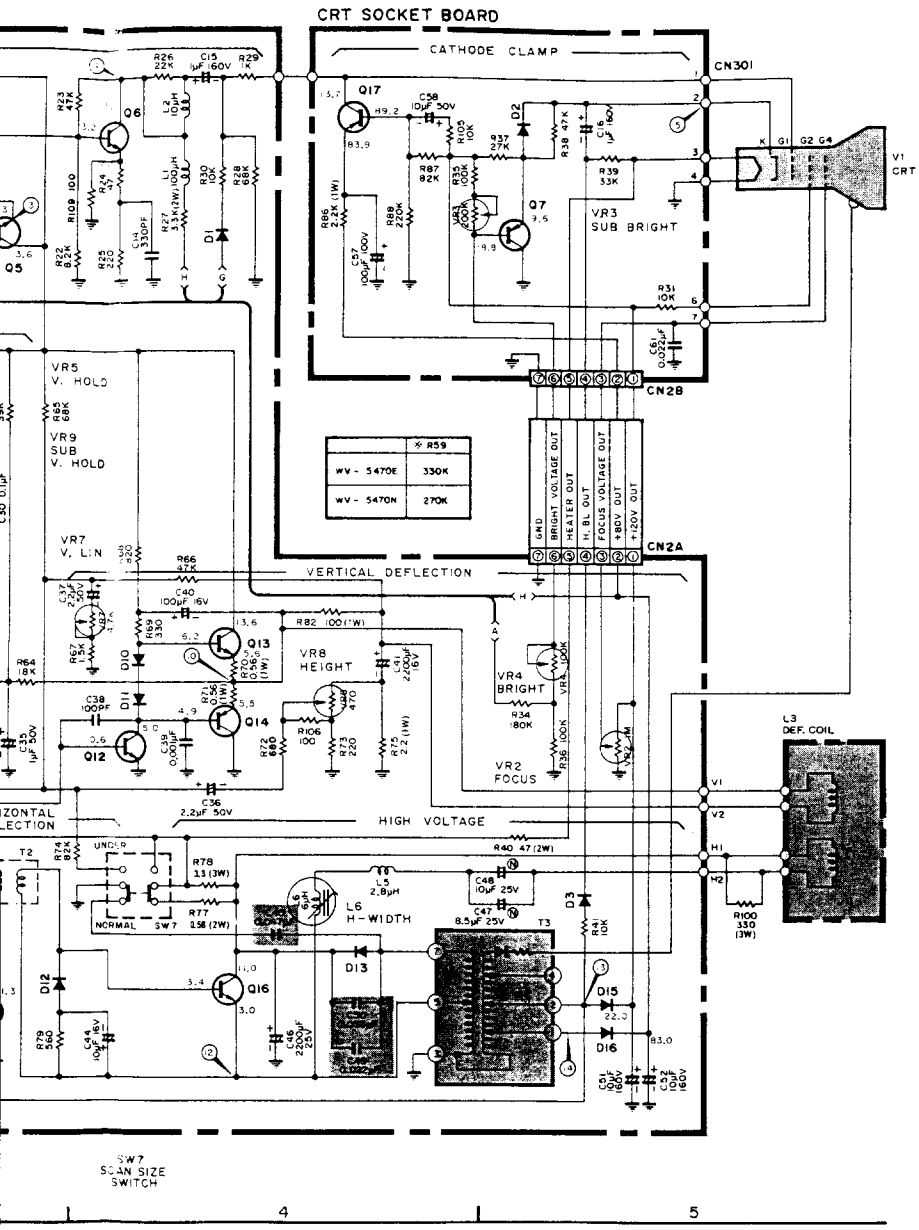
SCHEMATIC DIAGRAM



IC1	LA7820	B2,B3	Q12	2SD636-RS	B
Q1	2SD636-RS	C2	Q13	2SC1226-QR	B
Q2	2SD636-RS	C2,C3	Q14	2SA699-QR	B
Q3	2SB641-RS	C3	Q15	2SC1567-RS	A
Q4	2SD636-RS	C3	Q16	2SD1163A	A
Q5	2SD636-RS	C3	Q17	2SA685	C
Q6	2SC2258	C4	D1	OA91	C
Q7	2SA685	C5	D2	YUDRU2M	C
Q9	2SA564A-RS	A3	D3	YUDRU2M	A
Q10	2SC828A-ST	A3	D4	LN21RPH	B
Q11	2SC1983-0Y	A3	D5	YWDR02Z	A

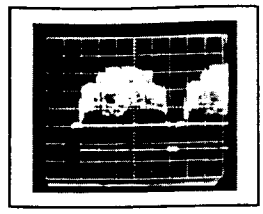
PRODUCT SAFETY NOTE

The shaded area on this schematic diagram incorporates special features important for protection from X-Radiation, fire and electrical shock hazards. When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

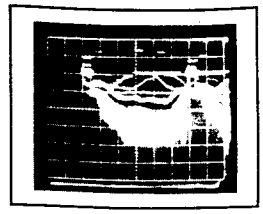


SIGNAL WAVEFORMS

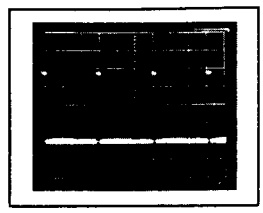
① 0.2V/DIV, 10μs/DIV



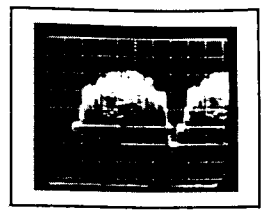
② 1V/DIV, 10μs/DIV



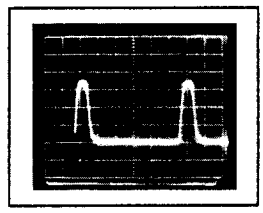
③ 1V/DIV, 5ms/DIV



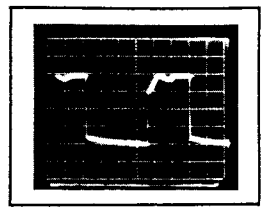
④ 10V/DIV, 10μs/DIV



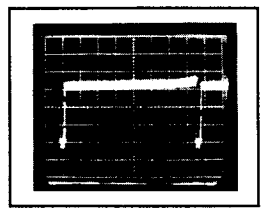
⑤ 20V/DIV, 10μs/DIV



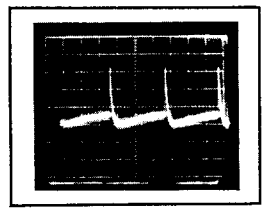
⑥ 0.5V/DIV, 10μs/DIV



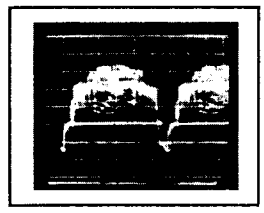
⑦ 0.2V/DIV, 2ms/DIV



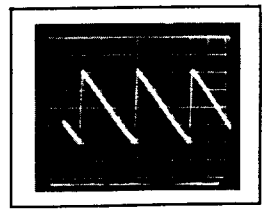
⑧ 0.5V/DIV, 5ms/DIV



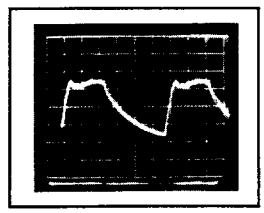
⑨ 0.2V/DIV, 10μs/DIV



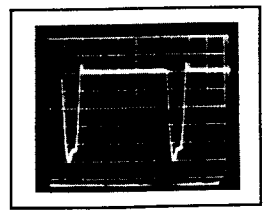
⑩ 5V/DIV, 5ms/DIV



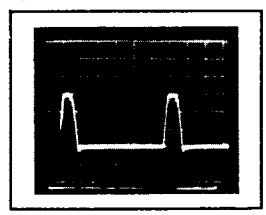
⑪ 0.2V/DIV, 10μs/DIV



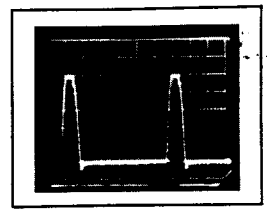
⑫ 20V/DIV, 10μs/DIV



⑬ 50V/DIV, 10μs/DIV

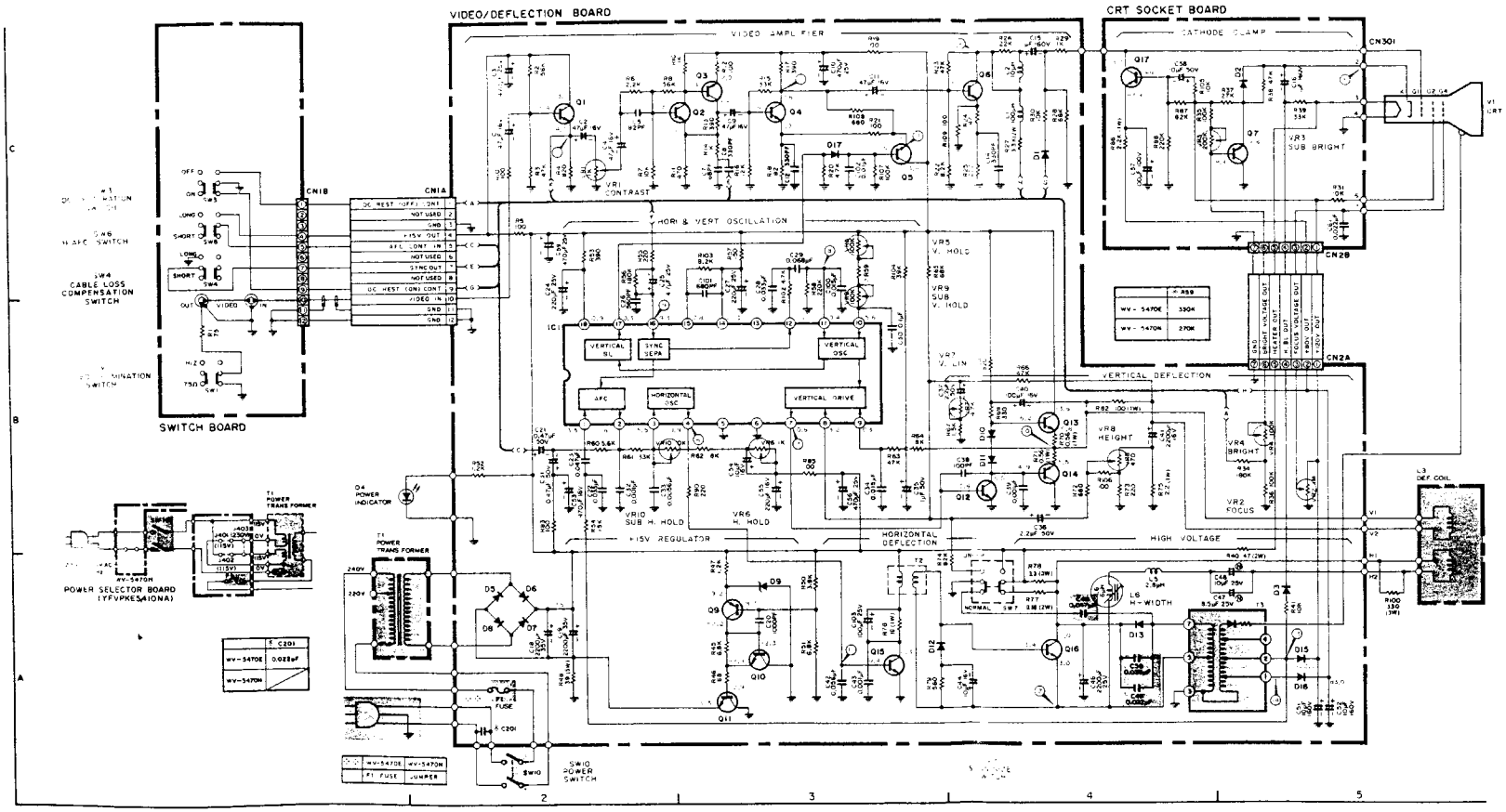


⑭ 20V/DIV, 10μs/DIV



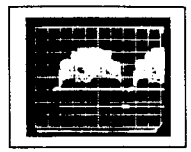
636-RS	B4	D6	YWDR02Z	A2
1226-QR	B4	D7	YWDR02Z	A2
699-QR	B4	D8	YWDR02Z	A2
1567-RS	A3	D9	YUDXZ090	A3
1163A	A4	D10	MA150	B4
685	C4	D11	MA150	B4
1	C4	D12	YUDRU2M	A3
DRU2M	C5	D13	YUDRU2M	A4
DRU2M	A5	D15	YUDRU2M	A5
1RPH	B1,B2	D16	YUDRU2M	A5
DR02Z	A2	D17	MA150	C3

SCHEMATIC DIAGRAM

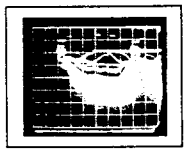


SIGNAL WAVEFORMS

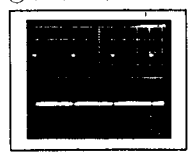
① 0.2V/DIV, 10μs/DIV



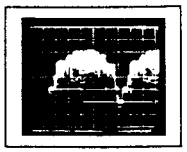
② 1V/DIV, 10μs/DIV



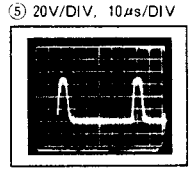
③ 1V/DIV, 5ms/DIV



④ 10V/DIV, 10μs/DIV

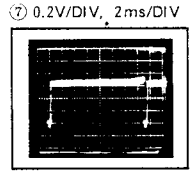


⑤ 20V/DIV, 10μs/DIV

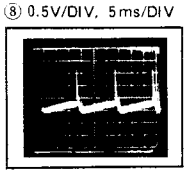


⑥ 0.5V/DIV, 10μs/DIV

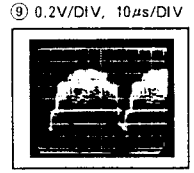
⑦ 0.2V/DIV, 2ms/DIV



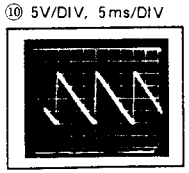
⑧ 0.5V/DIV, 5ms/DIV



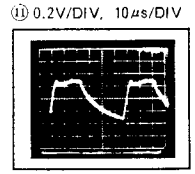
⑨ 0.2V/DIV, 10μs/DIV



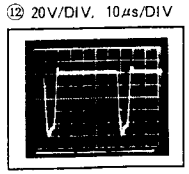
⑩ 5V/DIV, 5ms/DIV



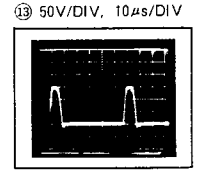
⑪ 0.2V/DIV, 10μs/DIV



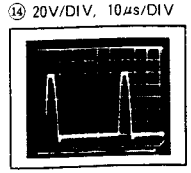
⑫ 20V/DIV, 10μs/DIV



⑬ 50V/DIV, 10μs/DIV



⑭ 20V/DIV, 10μs/DIV



PRODUCT SAFETY NOTE

The shaded area on this schematic diagram incorporates special features important for protection from X-Radiation, fire and electrical shock hazards. When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

IC1	LA7820	B2,B3	Q12	2SD636-RS	B4	D6	YWDR02Z	A2
Q1	2SD636-RS	C2	Q13	2SC1226-QR	B4	D7	YWDR02Z	A2
Q2	2SD636-RS	C2,C3	Q14	2SA699-QR	B4	D8	YWDR02Z	A2
Q3	2SB641-RS	C3	Q15	2SC1567-RS	A3	D9	YUDXZ090	A3
Q4	2SD636-RS	C3	Q16	2SD1163A	A4	D10	MA150	B4
Q5	2SD636-RS	C3	Q17	2SA685	C4	D11	MA150	B4
Q6	2SC2258	C4	D1	OA91	C4	D12	YUDRU2M	A3
Q7	2SA685	C5	D2	YUDRU2M	C5	D13	YUDRU2M	A4
Q9	2SA564A-RS	A3	D3	YUDRU2M	A5	D15	YUDRU2M	A5
Q10	2SC828A-ST	A3	D4	LN21RPH	B1,B2	D16	YUDRU2M	A5
Q11	2SC1983-0Y	A3	D5	YWDR02Z	A2	D17	MA150	C3

EXPLODED VIEW

PCB001	YFVPKB5470EA
PCB002	YFVPKC5470JA
PCB003	YFVPKD5470PA
PCB004	YFVPKE5410NA
V1	440CVB4
L3	YFYS33145
T1	YFPTE66E004
	YFPTE66N010
E1	YWKPLTSA-8
	YWHBS-3-08
	YWCE0099-08F
	YWVM0099-08
CN1	YWBNC-R
M1	YFV5BA0011A1
M2	YFV5WA0092A3
M3	YWV5350HR01
M4	YWV5350HR02
M5	YWV5350HR03A
M6	YFV2CA0005A4
M8	YFV2KA0042A3
M9	YFV5EA0110A3
M10	YFV4JA0039A4
M11	YFV5KA0028A2
M12	YFV5EA0109A2
M13	YFV2KA0045A2
M14	YFV2VA0001A4
M15	YWS-WB02
M16	YWSR6N6W-1
	YWSR5N4
M17	YFV7QA0200A4
	YFV7QA0201A4
	YFV7QA0199A4
M18	YWS-CULRB08
M19	YWV1000NUR2
M20	YFV7MA0028A4
M21	YFV7MA0029A4
M22	YW8-NBT
M23	YWS-XEGRB03A
M24	YFV2CA0007A4
M25	YFV7DA0003B4
M26	YFV7DA0004A4
M27	YVZC700RB50
M28	YW-8-UR01A
M40	YFV2KA0044A4
M41	YFV2FA0043A4
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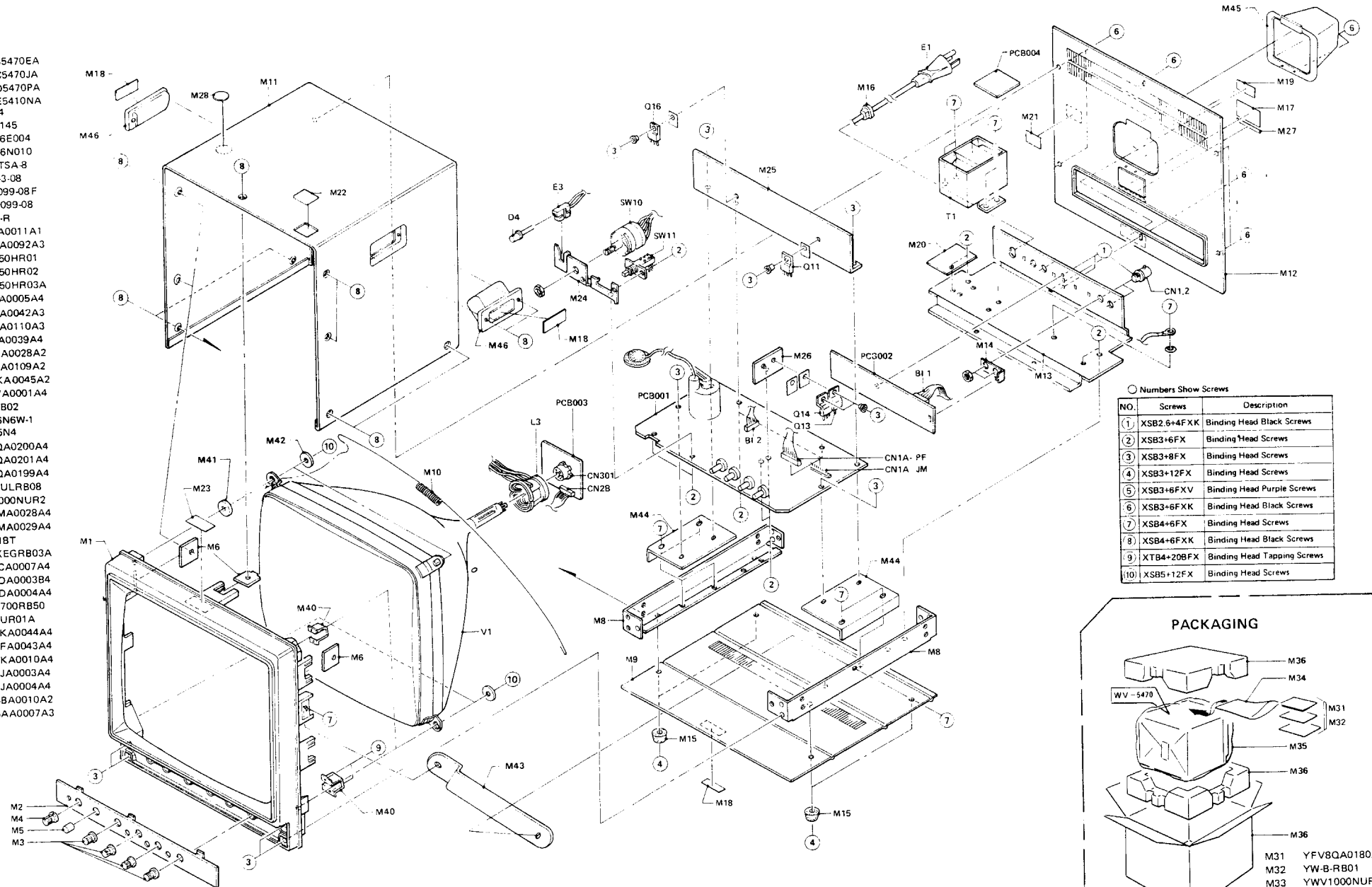

○ Numbers Show Screws

NO.	Screws	Description
1	XSB2.6+4FXK	Binding Head Black Screws
2	XSB3+6FX	Binding Head Screws
3	XSB3+8FX	Binding Head Screws
4	XSB3+12FX	Binding Head Screws
5	XSB3+6FXV	Binding Head Purple Screws
6	XSB3+6FXK	Binding Head Black Screws
7	XSB4+6FX	Binding Head Screws
8	XSB4+6FXK	Binding Head Black Screws
9	XTB4+20BFX	Binding Head Tapping Screws
10	XSB5+12FX	Binding Head Screws

PACKAGING

M31	YFV8QA0180AN
M32	YW-B-RB01
M33	YWV1000NUR2
M34	YWT20X35C03
M35	YWT80X90X1
M36	YFV9CA0196AN
	YFV9CA0197AN

Important Notice

REPLACEMENT PARTS LIST

1. Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
2. Components identified by * mark are new parts used from this model.

MODEL WV-5470E/N

WV–5470E/N MISCELLANEOUS

SYMBOL NO.		PART NO.	DESCRIPTION
V1	⚠	440CVB4	Cathode Ray Tube
R100		ERG3ANJ331	Metal 330Ω 3W
L3	⚠	YFYS33145	Deflection Coil Ass'y
T1	⚠	YFPTE66E004	Power Transformer for WV-5470E
		YFPTE66N010	Power Transformer for WV-5470N
E1		YWKPLTSA-8	AC Power Cord for WV-5470E/A
		YWHBS-3-08	AC Power Cord for WV-5470/B
		YWCE0099-08F	AC Power Cord for WV-5470/C
		YWVM0099-08	AC Power Cord for WV-5470/G
CN1		YWBNC-R	BNC Connector
M1	*	YFV5BA0011A1	Front Escutcheon
M2	*	YFV5WA0092A3	Operation Panel
M3		YWV5350HR01	Knob A (x4)
M4		YWV5350HR02	Knob B
M5		YWV5350HR03A	Push Knob
M6	*	YFV2CA0005A4	Nut Plate A (x5)
M8	*	YFV2KA0042A3	Mounting Bracket (x2)
M9	*	YFV5EA0110A3	Bottom Plate
M10	*	YFV4JA0039A4	CRT Ground Spring
M11	*	YFV5KA0028A2	Upper Cover
M12	*	YFV5EA0109A2	Rear Plate
M13	*	YFV2KA0045A2	Rear Chassis
M14	*	YFV2VA0001A4	Ground Plate (x2)
M15		YWS-WB02	Rubber Foot (x4)
M16		YWSR6N6W-1	Cord Clamp for 5470/E
		YWSR5N4	Cord Clamp for 5470/N
M17	*	YFV7QA0200A4	Main Label for WV-5470E/A
	*	YFV7QA0201A4	Main Label for WV-5470/BCG
	*	YFV7QA0199A4	Main Label for WV-5470N
M18		YWS-CULRB08	Caution Label for WV-5470/E(x3)
M19		YWV1000NUR2	Voltage Label for WV-5470E/AC,N
M20	*	YFV7MA0028A4	High Voltage Fuse Label
M21	*	YFV7MA0029A4	Serviceman Label for WV-5470/G
M22		YW8-NBT	National Label
M23		YWS-XEGRB03A	X-Lay Label for WV-5470/BCG
M27		YVZC700RB50	Serial No. Label
M28		YW-B-UR01A	Made in Japan Label for WV-5470/B
M40		YFV2KA0044A4	Mounting Angle for CRT
M41		YFV2FA0043A4	CRT Cushion
M42		YFV1KA0010A4	Washer
M43		YFV2JA0003A4	Support Bracket for CRT
M44		YFV2JA0004A4	Mounting Angle for Circuit Board (x2)
M45		YFV6BA0010A2	Rear Cover for CRT
M46		YFV6AA0007A3	Handle for Upper Cover

YFVPKB5470EA YFVPKB5470NA VIDEO/DEFLECTION BOARD

SYMBOL NO.		PART NO.	DESCRIPTION		
PCB001	*	YFVPKB5470EA	Printed Circuit Board Assembly for WV-5470E		
	*	YFVPKB5470NA	Printed Circuit Board Assembly for WV-5470N		
IC1		LA7820	IC		
Q1, 2		2SD636-RS	Transistor		
Q3		2SB641-RS	Transistor		
Q4, 5		2SD636-RS	Transistor		
Q6		2SC2258	Transistor		
Q9		2SA564A-RS	Transistor		
Q10		2SC828A-ST	Transistor		
Q11		2SC1983-OY	Transistor		
Q12		2SD636-RS	Transistor		
Q13		2SC1226-QR	Transistor		
Q14		2SA699-QR	Transistor		
Q15		2SC1567-RS	Transistor		
Q16		2SD1163A	Transistor		
D1		QA91	Diode		
D3		YUDRU2M	Diode		
D4		LN21RPH	LED		
D5~8		YWDR02Z	Diode		
D9		YUDXZ090	Diode		
D10, 11		MA150	Diode		
D12		YUDRU2M	Diode		
D13		YUDRU2M	Diode		
D15, 16		YUDRU2M	Diode		
D17		MA-150	Diode		
R2		ERD25FJ563	Carbon	56KΩ	1/4W
R3		ERD25FJ473	Carbon	47KΩ	1/4W
R4		ERD25FJ821	Carbon	820Ω	1/4W
R5		ERD25FJ101	Carbon	100Ω	1/4W
R6		ERD25FJ222	Carbon	2.2KΩ	1/4W
R7		ERD25FJ103	Carbon	10KΩ	1/4W
R8		ERD25FJ563	Carbon	56KΩ	1/4W
R10		ERD25FJ102	Carbon	1KΩ	1/4W
R11		ERD25FJ471	Carbon	470Ω	1/4W
R12		ERD25FJ101	Carbon	100Ω	1/4W
R13		ERD25FJ391	Carbon	390Ω	1/4W
R14		ERD25FJ102	Carbon	1KΩ	1/4W
R15		ERD25FJ333	Carbon	33KΩ	1/4W
R16		ERD25FJ123	Carbon	12KΩ	1/4W
R17		ERD25FJ391	Carbon	390Ω	1/4W
R18		ERD25FJ820	Carbon	82Ω	1/4W
R19		ERD25FJ101	Carbon	100Ω	1/4W
R20		ERD25FJ472	Carbon	4.7KΩ	1/4W
R21		ERD25FJ101	Carbon	100Ω	1/4W
R22		ERD25FJ822	Carbon	8.2KΩ	1/4W
R23		ERD25FJ473	Carbon	47KΩ	1/4W

SYMBOL NO.	PART NO.	DESCRIPTION		
R24	ERD25FJ470	Carbon	47Ω	1/4W
R25	ERD25FJ221	Carbon	220Ω	1/4W
R26	ERD25FJ223	Carbon	22KΩ	1/4W
R27	ERG2ANJ332	Metal	3.3KΩ	2W
R28	ERD25FJ683	Carbon	68KΩ	1/4W
R29	ERD25FJ102	Carbon	1KΩ	1/4W
R30	ERD25FJ103	Carbon	10KΩ	1/4W
R34	ERD25FJ184	Carbon	180KΩ	1/4W
R36	ERD25FJ104	Carbon	100KΩ	1/4W
R40	ERG2ANJ470	Metal	47Ω	2W
R41	ERD25FJ103	Carbon	10KΩ	1/4W
R45	ERD25FJ682	Carbon	6.8KΩ	1/4W
R46	ERD25FJ680	Carbon	68Ω	1/4W
R47	ERD25FJ122	Carbon	1.2KΩ	1/4W
R48	ERF5ZJ390	Wire Wound	39Ω	5W
R50	ERO25CKF3901	Metal	3.9kΩ	1/4W
R51	ERO25CKF6801	Metal	6.8KΩ	1/4W
R52	ERD25FJ122	Carbon	1.2KΩ	1/4W
R53	ERD25FJ391	Carbon	390Ω	1/4W
R54	ERD25FJ153	Carbon	15KΩ	1/4W
R55	ERD25FJ221	Carbon	220Ω	1/4W
R56	ERD25FJ184	Carbon	180KΩ	1/4W
R57	ERD25FJ151	Carbon	150Ω	1/4W
R58	ERD25FJ224	Carbon	220KΩ	1/4W
R59	ERD25FJ334	Carbon for WV-5470E	330kΩ	1/4W
R59	ERD25FJ274	Carbon for WV-5470N	270Ω	1/4W
R60	ERD25FJ562	Carbon	5.6KΩ	1/4W
R61	ERD25FJ333	Carbon	33KΩ	1/4W
R62	ERD25FJ183	Carbon	18KΩ	1/4W
R63	ERD25FJ473	Carbon	47KΩ	1/4W
R64	ERD25FJ183	Carbon	18KΩ	1/4W
R65	ERD25FJ683	Carbon	68KΩ	1/4W
R66	ERD25FJ473	Carbon	47KΩ	1/4W
R67	ERD25FJ152	Carbon	1.5KΩ	1/4W
R68	ERD25FJ821	Carbon	820Ω	1/4W
R69	ERD25FJ331	Carbon	330Ω	1/4W
R70,71	ERX1ANJR56	Metal	0.56Ω	1W
R72	ERD25FJ681	Carbon	680Ω	1/4W
R73	ERD25FJ221	Carbon	220Ω	1/4W
R74	ERD25FJ823	Carbon	82KΩ	1/4W
R75	ERX1ANJ2R2	Metal	2.2Ω	1W
R76	ERG1ANJ100H	Metal	10Ω	1W
R77	ERX2ANJR56	Metal	0.56Ω	2W
R78	ERX3ANJ3R3H	Metal	3.3Ω	3W
R79	ERD25FJ561	Carbon	560Ω	1/4W
R82	ERG1ANJ101	Metal	100Ω	1W
R83, 85	ERD25FJ101	Carbon	100Ω	1/4W
R90	ERD25FJ221	Carbon	220Ω	1/4W
R101	ERD25FJ101	Carbon	100Ω	1/4W
R102	ERD25FJ472	Carbon	4.7KΩ	1/4W
R103	ERD25FJ822	Carbon	8.2KΩ	1/4W
R104	ERD25FJ393	Carbon	39KΩ	1/4W
R106	ERD25FJ101	Carbon	100Ω	1/4W
R107	ERD25FJ104	Carbon	100KΩ	1/4W
R108	ERD25FJ681	Carbon	680Ω	1/4W
R109	ERD25FJ101	Carbon	100Ω	1/4W

SYMBOL NO.	PART NO.	DESCRIPTION		
VR1	EVHOTAS20B13	Variable Resistor	1KΩ	
VR2	SR29D1MB	Variable Resistor	1MΩ	
VR4, 5	EVHOTAS20B15	Variable Resistor	100KΩ	
VR6	EVHOTAS20B13	Variable Resistor	1KΩ	
VR7	YFSR29D4R7KB	Variable Resistor	4.7KΩ	
VR8	YWSR29D470B	Variable Resistor	470Ω	
VR9	YWH0651A100K	Variable Resistor	100KΩ	
VR10	YWH0651A10K	Variable Resistor	10KΩ	
C1, 2	ECEA1CS470	Electrolytic	47μF	16V
C3	ECEA1ES471	Electrolytic	470μF	25V
C4	ECEA1CS470	Electrolytic	47μF	16V
C5	ECCR1H820J	Ceramic	82pF	50V
C7	EUR1H680	Ceramic	68pF	50V
C8	ECKW/H331KB	Ceramic	330pF	50V
C9	ECEA1CS470	Electrolytic	47μF	16V
C10	ECEA1ES471	Electrolytic	470μF	25V
C11	ECEA1CS470	Electrolytic	47μF	16V
C12	ECKR1H331KB	Ceramic	330pF	50V
C14	ECKR1H331KB	Ceramic	330pF	50V
C15	ECEA2CS010	Electrolytic	1μF	100V
C18,19	ECEA1VS222E	Electrolytic	2200pF	35V
C20	ECKR1H102KB	Ceramic	1000pF	50V
C21	ECEA1HSR47	Electrolytic	0.47μF	50V
C22	ECQV05333JZ	Plastic	0.033μF	50V
C23	ECQV05473JZ	Plastic	0.047μF	50V
C24	ECEA1ES221	Electrolytic	220μF	25V
C25	ECEA1ES4R7	Electrolytic	4.7μF	25V
C26	ECCR1H561J	Ceramic	560pF	50V
C27	ECEA1ES221	Electrolytic	220μF	25V
C28	ECQV05333JZ	Plastic	0.033μF	50V
C29	ECQV05683JZ	Plastic	0.068μF	50V
C30	ECQV05104J	Plastic	0.10μF	50V
C31	ECEA1HSR47	Electrolytic	0.47μF	50V
C32	ECQP1102JZ	Plastic	1000pF	100V
C33	ECQP1562JZ	Plastic	5600pF	100V
C34	ECQV05153JZ	Plastic	0.015μF	50V
C35	ECEA50V1T	Electrolytic	1μF	50V
C36	ECEA50V2R2T	Electrolytic	2.2μF	50V
C37	ECEA1HS2R2	Electrolytic	2.2μF	50V
C38	ECKR1H101KB	Ceramic	100pF	50V
C39	ECQP1102JZ	Plastic	1000pF	100V
C40	ECEA1CS101	Electrolytic	100μF	16V
C41	ECEA1CS222	Electrolytic	2200μF	16V
C42	ECQV05563J	Plastic	0.056μF	100V
C43	ECQP1102JZ	Plastic	1000pF	50V
C44	ECEA1CS100	Electrolytic	10μF	16V
C45 ⚠	ECQM2473KZ	Plastic	0.047μF	200V
C46	ECEA1ES222E	Electrolytic	2200μF	25V
C47	ECEA25W8R5Z	Electrolytic	8.5μF	25V
C48	ECEA25W10Z	Electrolytic	10μF	25V
C49 ⚠	ECQM2223KZ	Plastic	0.022μF	200V
C50 ⚠	ECQM2333KZ	Plastic	0.033μF	200V
C51,52	ECEA2CS100E	Electrolytic	10μF	100V
C53	ECEA1CS471	Electrolytic	470μF	16V
C54	ECEA1CS100	Electrolytic	10μF	16V
C55	ECEA1CS221	Electrolytic	220μF	16V
C56	ECEA1ES471	Electrolytic	470μF	25V

SYMBOL NO.	PART NO.	DESCRIPTION
C59	ECEA1ES471	Electrolytic 470μF 25V
C100	ECQV05153JZ	Plastic 0.015μF 50V
C101	ECKR1H681KB	Plastic 680pF 50V
C102	ECKR1H103KB	Ceramic 0.01μF 50V
C103	ECEA1ES101	Electrolytic 100μF 25V
C201	ECN-C4A223M	Plastic 0.022μF 400V for WV-5470E
L1	YWFL5H-101K	Coil 100μH
L2	YWFL5H100K	Coil 10μH
L5	YFTLH2R8L	Coil 2.8μH
L6	YFTLH6R0W	Coil 6μH
T2	YFTLH3412K	H. Drive Transformer
T3 ⚠	ETF35L29V	Flyback Transformer
SW10 ⚠	EVQBQ8K20	Power Switch
SW11	YW1F01AC312	Scan Size Switch
F1 ⚠	YFTS400MA	1A Fuse for WV-5470E
E2	YWSN5053	Fuse Holder (x2) for WV-5470E
E3	YFSN005001	LED Holder
CN1A-JM	EMCS1252M	12 pin Jack Male
CN1A-PF	EMCM1230B32V	12 pin Connecting Wire Ass'y for CN1A and CN1B
BI 2	EMCL0730D35V	7 pin Connecting Wire Ass'y for CN2A and CN2B
M24	YFV2CA0007A4	Mounting Bracket for Switch
M25	YFV7DA0003B4	Heat Sink A
M26	YFV7DA0004A4	Heat Sink B

YFVPKC5470JA SWITCH BOARD

SYMBOL NO.	PART NO.	DESCRIPTION
PCB002 *	YFVPKC5470JA	Printed Circuit Board Assembly
R1,	ERD25FJ750	Carbon 75Ω 1/4W
SW1,3,4,6	YWSSC-322A	Slide Switch
BI 1	EMCM1230B32V	12 Pin Connecting Wire Ass'y for BI1 and CN1A

YFVPKD5470PA CRT SOCKET BOARD

SYMBOL NO.	PART NO.	DESCRIPTION
PCB003 *	YFVPKD5470PA	Printed Circuit Board Assembly
Q7, 17	2SA685	Transistor
D2	YUDRU2M	Diode
R31	ERD25FJ103	Carbon 10KΩ 1/4W
R35	ERD25FJ104	Carbon 100KΩ 1/4W
R37	ERD25FJ273	Carbon 27KΩ 1/4W
R38	ERD25FJ473	Carbon 47KΩ 1/4W
R39	ERD25FJ333	Carbon 33KΩ 1/4W
R86	ERG1ANJ222	Metal 2.2KΩ 1W
R87	ERD25FJ823	Carbon 82KΩ 1/4W
R88	ERD25FJ224	Carbon 220KΩ 1/4W
R105	ERD25FJ103	Carbon 10KΩ 1/4W
VR3	EVLS0AA00B25	Variable Resistor 200KΩ
C16	ECEA2CS010	Electrolytic 1μF 100V
C57	ECEA2AS101	Electrolytic 100μF 100V
C58	ECEA1HS100	Electrolytic 10μF 50V
C61	ECQM2223KZ	Plastic Capacitor 0.022μF 200V
CN301	YWTJS25640V	Socket
CN2B	EMCL0730D35V	7 pin connecting wire Ass'y for CN2B and CN2A

YFVPKE5410NA POWER SELECTOR BOARD

SYMBOL NO.	PART NO.	DESCRIPTION
PCB004 *	YFVPKE5410NA	Printed Circuit Board Assenbly
F1	YWST6-3A	3A Fuse
E2	YWSN5051	Fuse Holder
E3	YWTM028	Terminal

ACCESSORY PARTS/PACKAGING PARTS

SYMBOL NO.	PART NO.	DESCRIPTION
M31	YFV8QA0180AN	Operating Instructions
M32	YW-B-RB01	Warranty Card for WV-5470/B
M33	YWV1000NUR2	Voltage Label for WV-5470N
M34	YWT20X35C03	Polyethylene Bag for Operating Instructions or Power Card
M35	YWT80X90X1	Polyethylene Bag for Monitor TV
M36	YFV9CA0196AN	Packaging Case for WV-5470/AC,N
	YFV9CA0197AN	Packaging Case for WV-5470/BCG