

SERVICE MANUAL

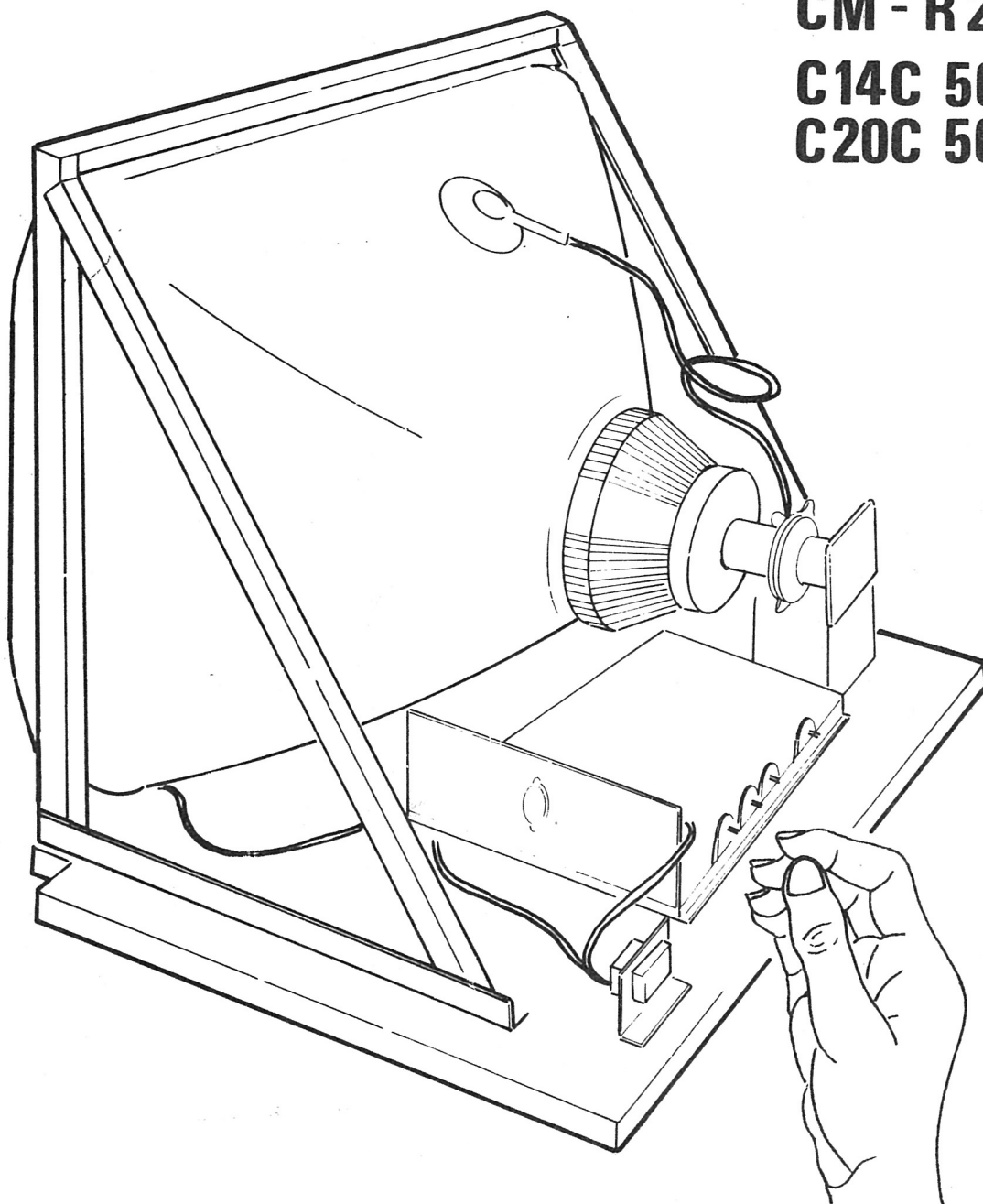
TV Monitor

MODEL CM - R 14

CM - R 20

C14C 5090

C20C 5091



TAITO CORPORATION

AAO17787

TABLE OF CONTENTS

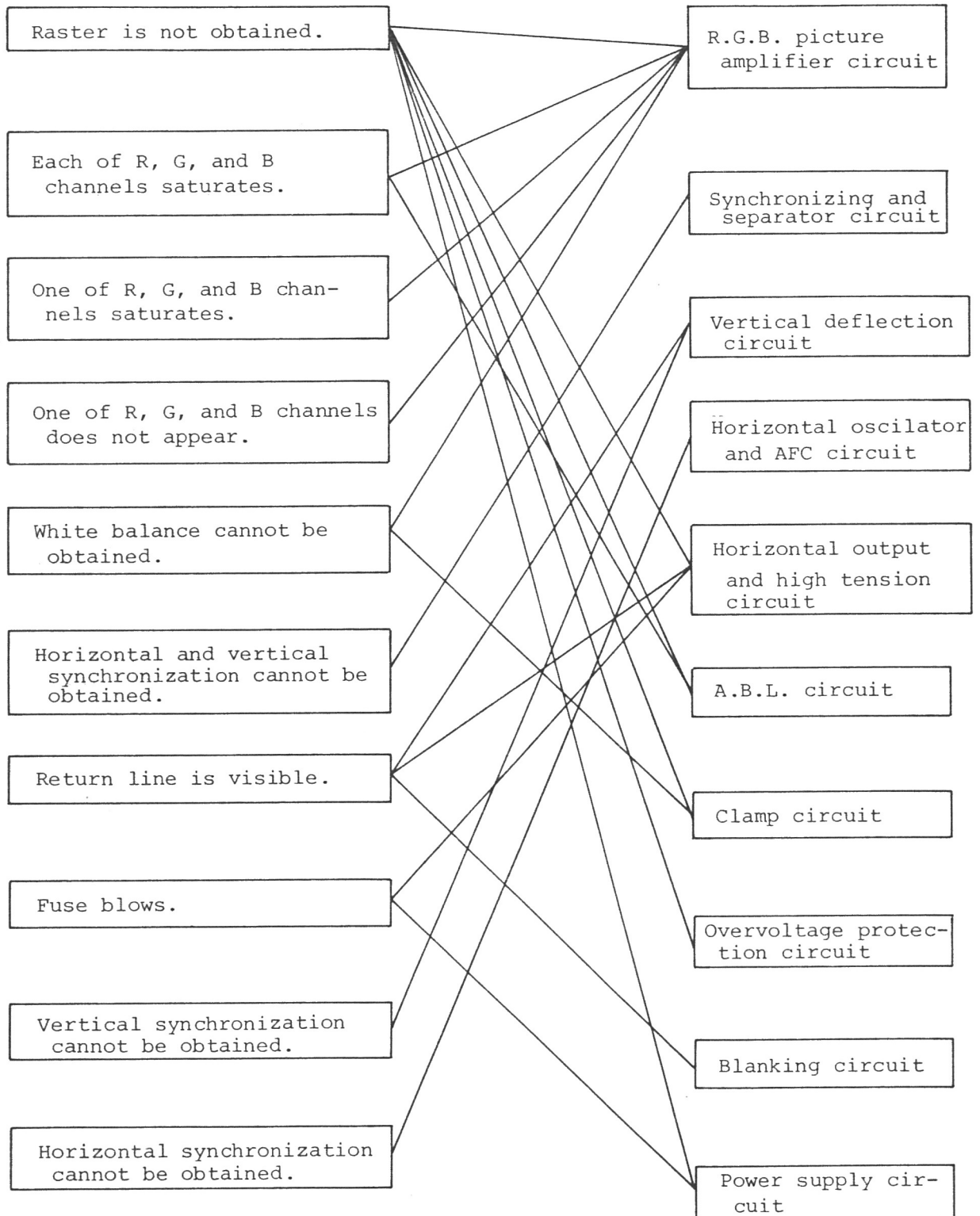
MODEL CM - R14

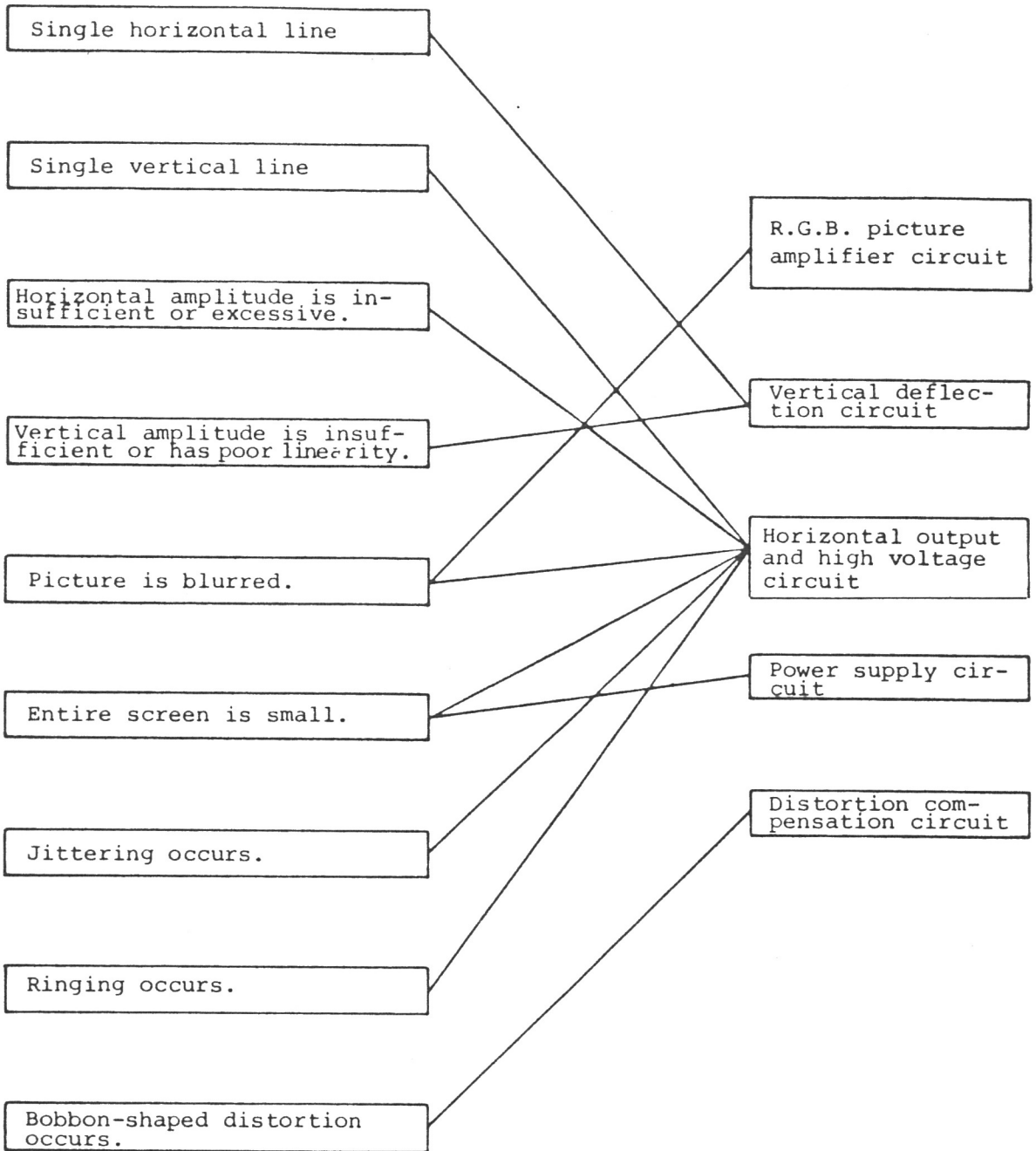
CM - R20

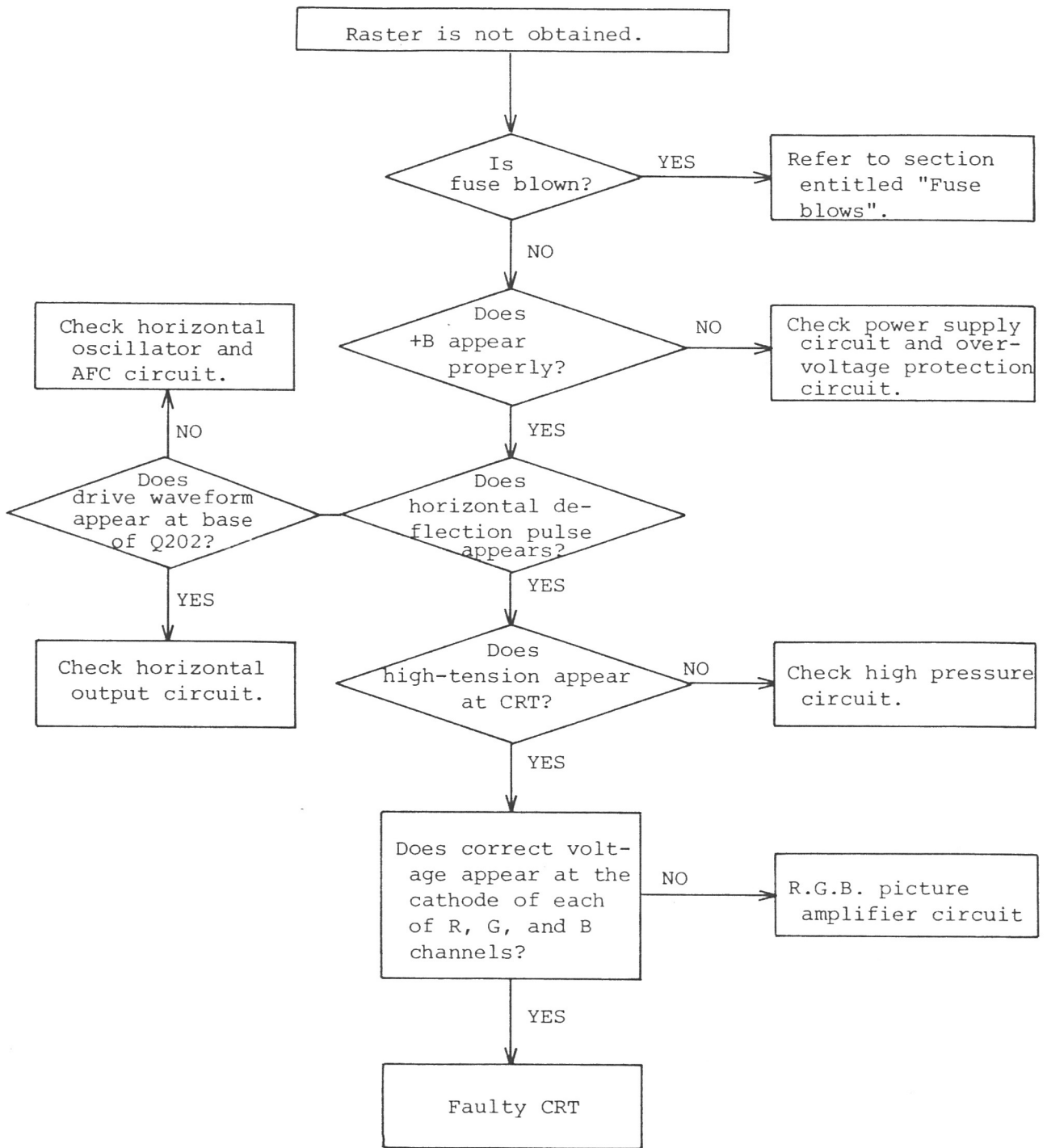
1.	Circuit Diagnosis In Terms Of Symptoms	1
2.	Troubleshooting In Terms Of Circuit	5
(1)	R. G. B. picture amplifier circuit	5
(2)	Synchronizing and separator circuit	6
(3)	Vertical deflection circuit	7
(4)	AFC horizontal oscillator circuit	8
(5)	Horizontal output, high-tension, and CRT circuits .	10
(6)	ABL and clamp circuits	11
(7)	Blanking circuit	13
(8)	Overvoltage protection circuit	14
(9)	Power supply circuit	14
3.	Operating Color Monitor	15
4.	Static Convergence Adjustment (Center Part of Screen)	19
5.	Dynamic Convergence Adjustment (Peripheral Part of Screen)	20
6.	Color Monitor System Diagram	21
7.	Method of Adjusting Color Monitor	22
8.	Parts List	33
9.	Electrical Diagram	

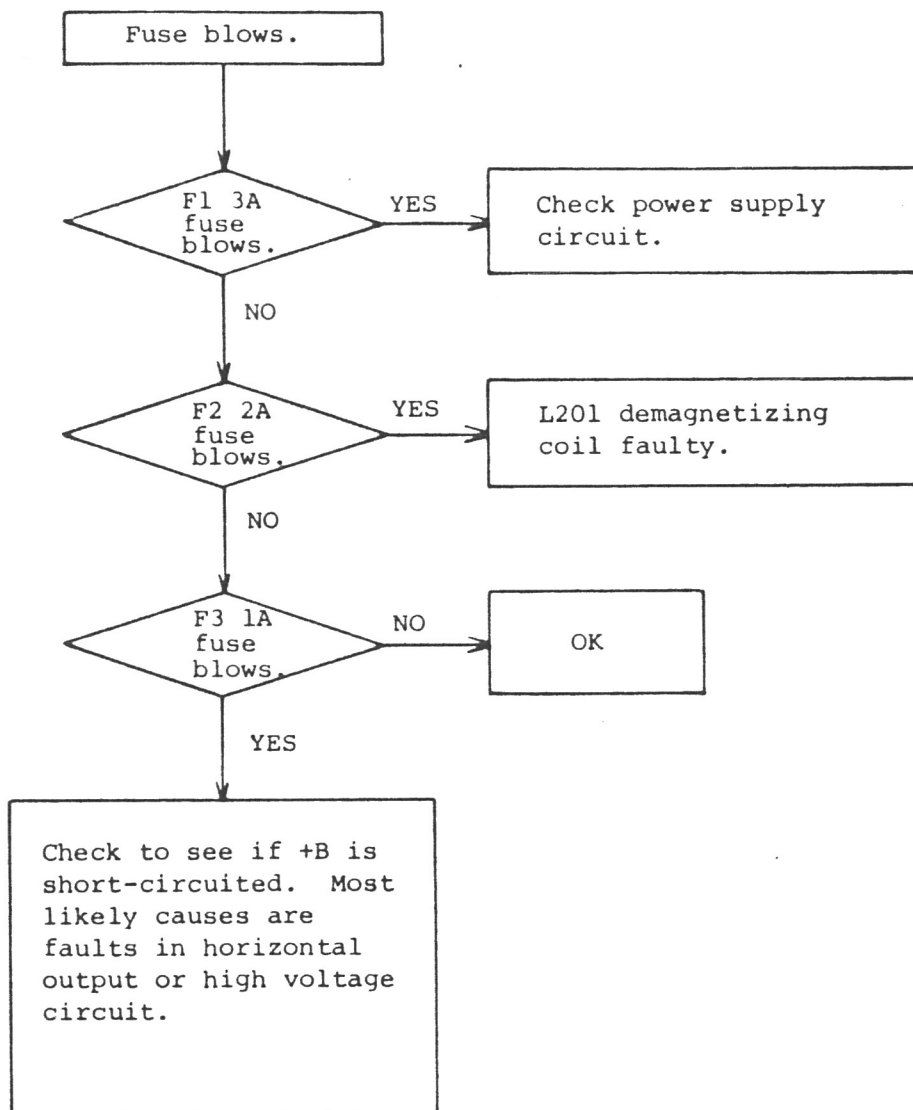
MODEL **CM - R 14**
CM - R 20

1. Circuit Diagnosis In Terms Of Symptoms





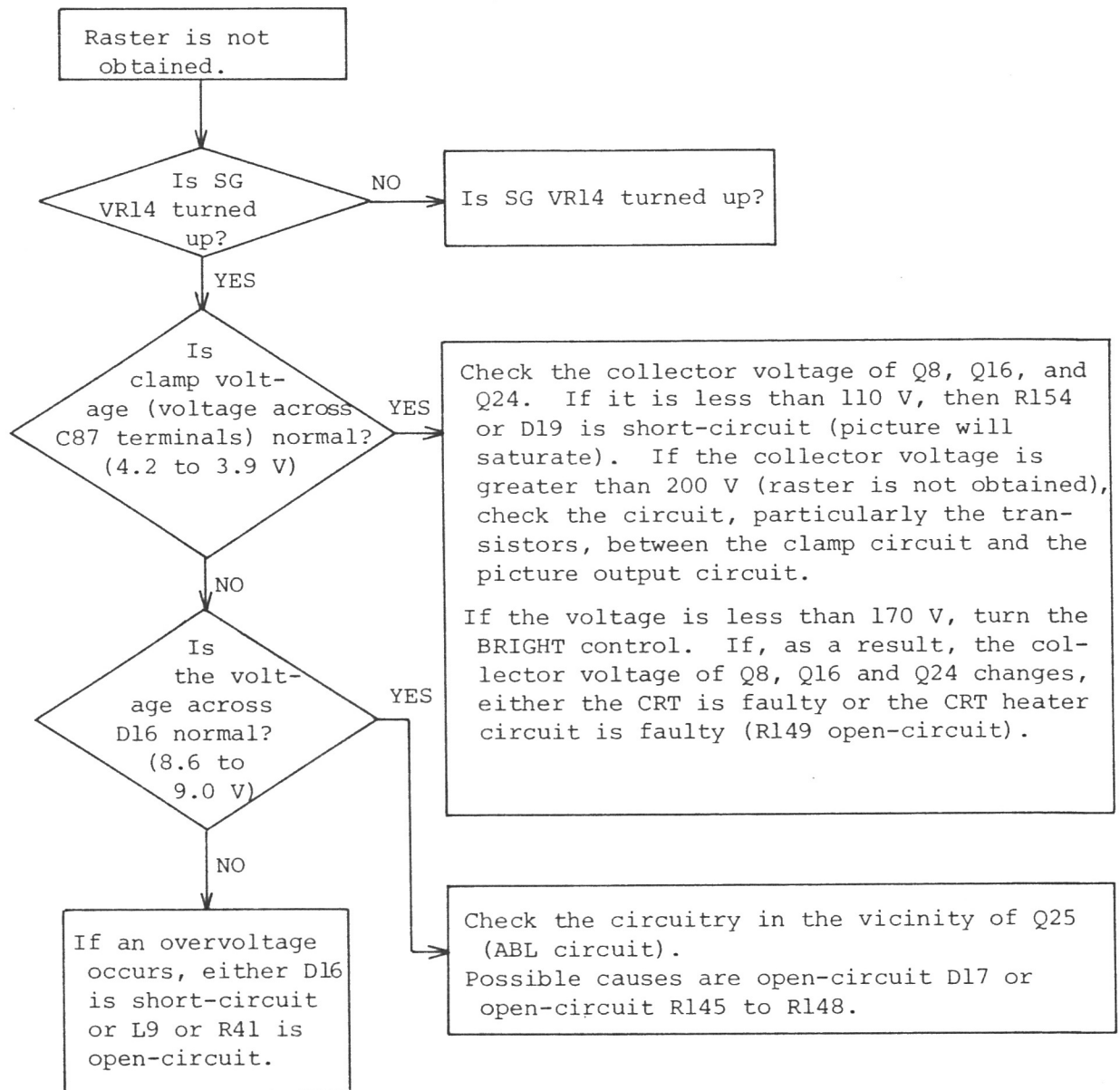




2. Troubleshooting In Terms Of Circuit

(1) R.G.B. picture amplifier circuit

The main symptoms are (1) lack of raster (2) one of the colors of the R.G.B. channels either does not appear or appears too strongly (3) white balance cannot be obtained.



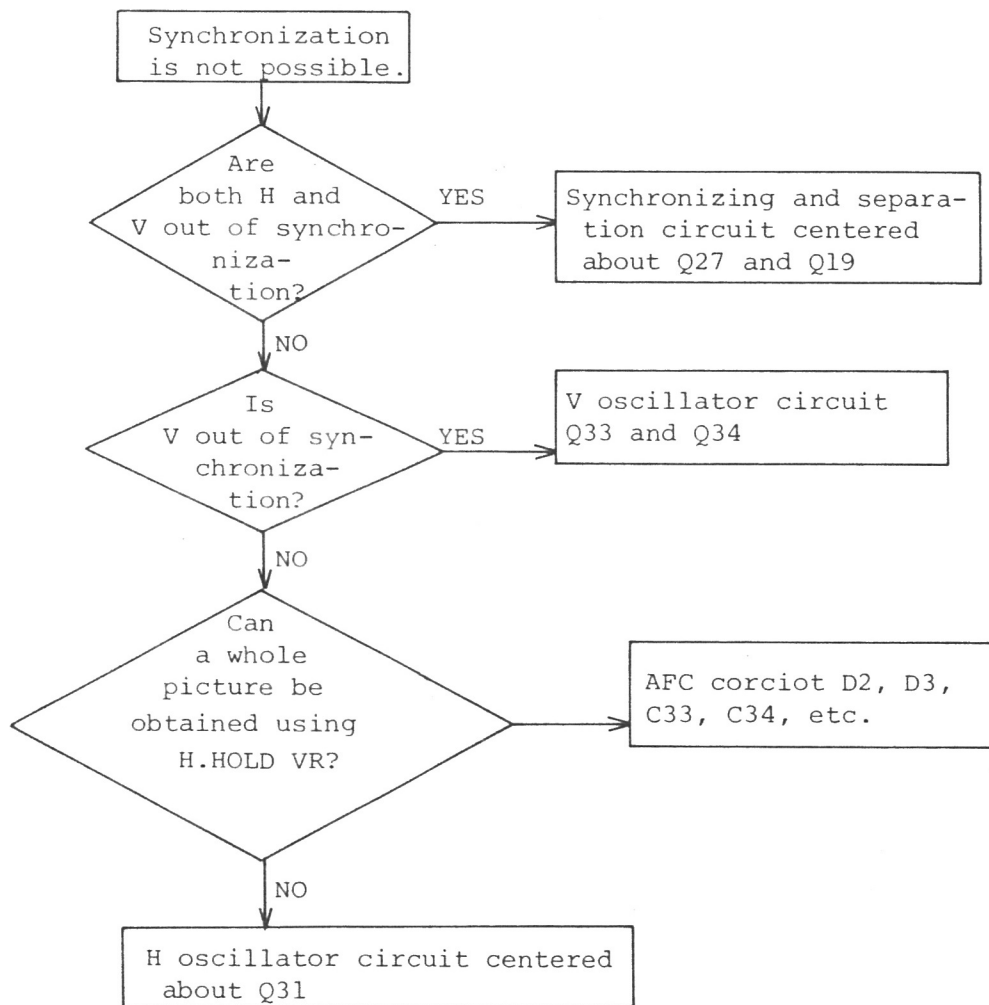
If white balance cannot be obtained, refer to the subsequent clamp circuit.

② One of the colors of the R.G.B. channels is not obtained.
 (Check circuitry subsequent to clamp circuit in the previously described manner to ensure that there are no faults.)

If the fault is in front of the clamp circuit, because the R channel is centered around Q1 and Q2, the G channel is centered around Q9 and Q10 and the B channel is centered around of Q16 and Q18, measure the DC voltage and compare voltage waveforms with those of the diagram to locate the fault. The most probable cause is an open-circuit resistor or transistor.

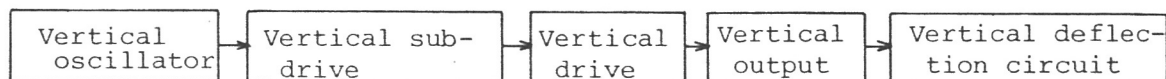
(2) Synchronizing and separator circuit

If the trouble is narrowed down to "Horizontal and vertical synchronization cannot be obtained or synchronization is weak", check whether both or one of the horizontal and vertical synchronization functions is faulty and then check the respective circuit or circuits.



(3) Vertical deflection circuit

This vertical oscillator circuit employs positive feedback. The sawtooth wave voltage is generated by the switching action of oscillator TR. In addition, this circuit has a 2-stage drive which maintains the linearity of the sawtooth wave at the OTL.



(Vertical deflection circuit system diagram)

The main symptoms due to a fault in this circuit are:

- 1 Picture becomes a single horizontal line.
- 2 V oscillator is wide or narrow.
- 3 V frequency is unstable.

Because this circuit constitutes a loop, even a partial fault will exert an influence on other circuits, making it difficult to locate faulty parts. As the number of parts is small, however, carry out a check on each block.

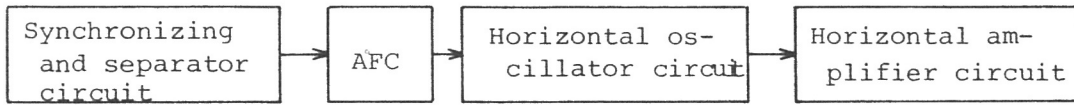
Repair example: Picture becomes a single horizontal line.

Likely fault point in oscillator circuit: Faulty Q22 and Q39,
Faulty VR9,
short-circuited C61 and C62,
short-circuited C59

Likely fault point in vertical drive circuit: Faulty Q35 and Q36,
open-circuited R123 and R118,
open-circuited R111 and R122

Likely fault point in vertical output and vertical deflection circuit: Faulty Q37 and Q38,
open-circuited L301,
open-circuited C70.
faulty D9

(4) AFC horizontal oscillator circuit

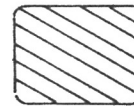


(Horizontal synchronizing and deflection circuit system diagram)

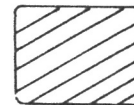
① Horizontal synchronization not obtained.

The nature of the fault can be determined to some extent by rotating the horizontal synchronization control.

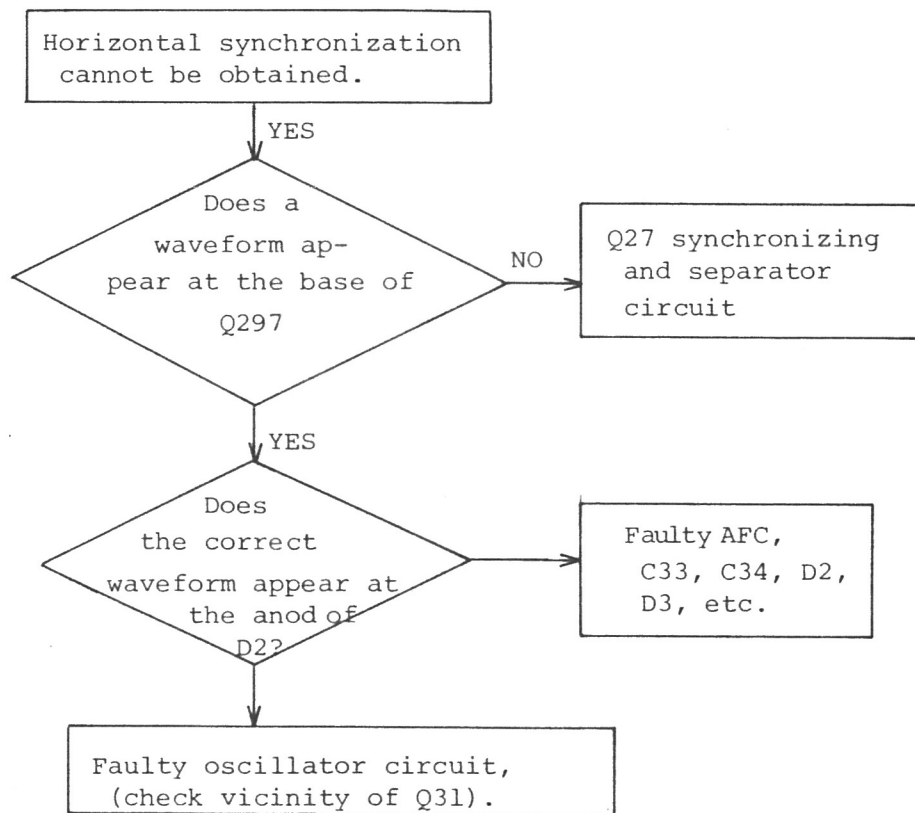
AFC H oscil- lator	A whole picture can be obtained. but is drifts to the left.
	A whole picture cannot be obtained and oblique stripes appear.
	A large bynber if struoe appear.



If the oblique lines go from top left to bottom right the oscillator frequency is high.

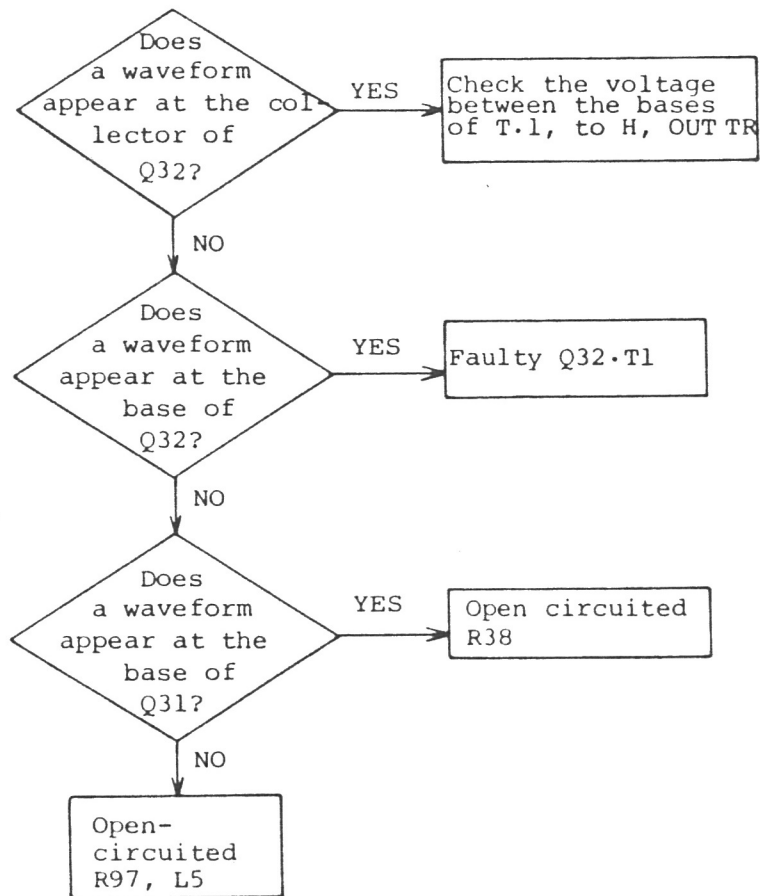


If the oblique lines go from top right to bottom left the oscillator frequency is low.



(2) Horizontal oscillator output not obtained (no raster obtained).

This fault occurs when a horizontal drive pulse is not applied to the base of the horizontal output transistor Q202. Trace the fault by observing the waveform at the various parts of the circuit.

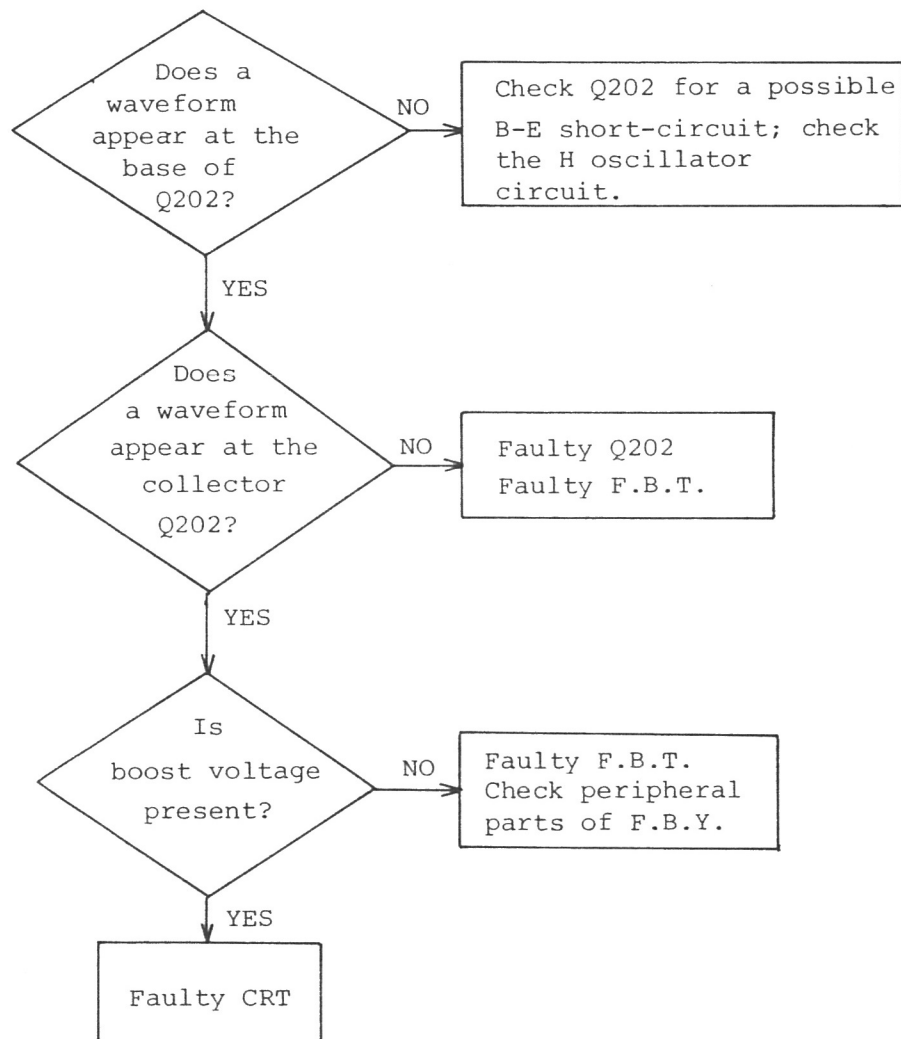


(5) Horizontal output, high-tension, and CRT circuit

The horizontal output circuit is designed to pass a 15.75 KHZ sawtooth current through the deflection coil. The high-tension circuit raises the large pulse voltage obtained from the horizontal output by means of F.B.T. T-3, and after rectification applies the resulting voltage of about 23 KV DC to the anode of the CRT.

Faulty which may arise on this circuit.

- ① Raster not obtained (when the high-tension is not applied to the CRT. This fault occurs when the high-tension is not applied to the CRT. Possible causes thus include the absence of a deflection pulse at the primary side of thw F.B.T. or a faulty in the F.B.T. itself.



② Single vertical line (H deflection not functioning)

This fault occurs when a sawtooth current does not pass through the deflection yoke. Possible causes are an open-circuit L301 or L7.

③ Ringing or jitter

Multiple images appear in the corner of the screen or fine noise pulses appear. The cause is a fault in a horizontal output high-tension circuit, particularly in the F.B.T.

(6) ABL and clamp circuits

When the CRT brightness exceeds a certain value, a large current will flow through the CRT, causing the load on the high-tension generating circuit to become excessively large, resulting in possible burnout of the horizontal output transistors. The ABL circuit is designed to prevent this.

Brightness does not change when the brightness control is rotated.

This fault is due to an open-circuit R143, even in the case where the CRT cathode potential remains constant despite rotating the brightness control.

Clamp circuit

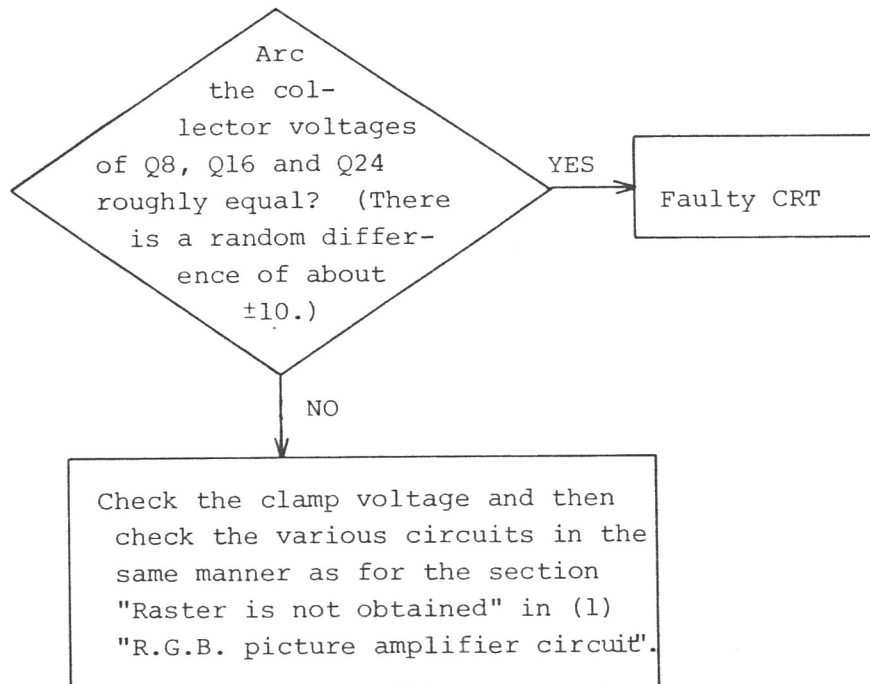
Clamping means regeneration of a DC level. A clamp pulse is used to maintain the reference level of the brightness signal at a constant value.

In this circuit this role is performed by transistors Q4, Q12 and Q20.

It uses the horizontal synchronizing pulse obtained from the synchronizing and separation circuit.

The main symptom of a fault occurring on the clamp circuit is as follows:

- White balance cannot be obtained.



Under normal operation, each of the R, G and B channels constitute the same circuit with the same voltages appearing at corresponding points. Accordingly, check points at which the voltage is abnormal by comparing them with the waveform diagram.

(7) Blanking circuit

Transistor Q39 is used for blanking. The pulses which are generated in the horizontal and vertical output circuits during the generation of the fly-back line are applied positively to the base of the transistor and taken off negatively from its collector, then applied to the base of the picture amplifier circuit.

- Possible symptoms due to a fault include the appearance of the fly-back line or turn-back line on the screen.

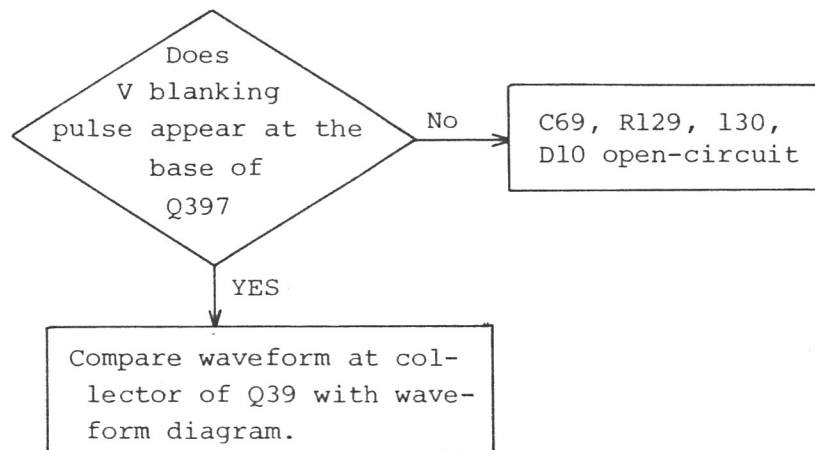
When an oblique white line appears on the screen, there is a fault in the vertical blanking circuit.

If white turn-back lines appear on the left and right sides of the screen when the H. HOLD control is rotated on account of a stripe signal, etc., there is a fault in the horizontal blanking circuit.

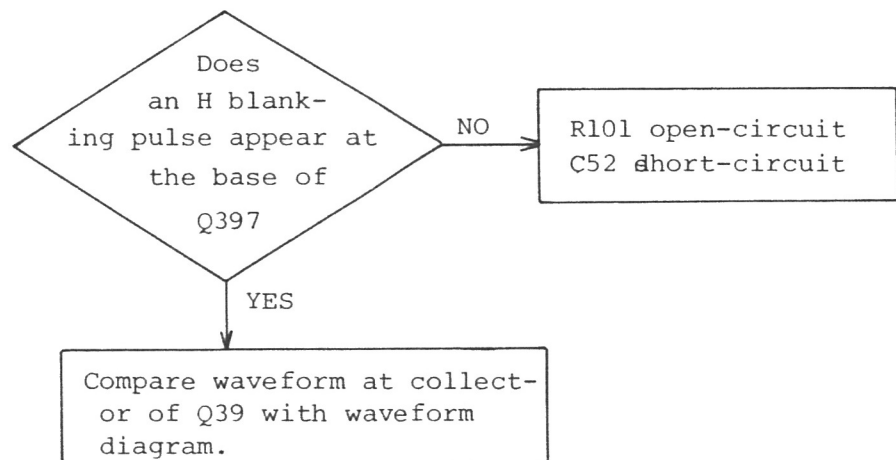
If one of the R, G or B fly-back lines appears, there is a fault in the blanking circuit corresponding to the particular color.

Repair example: Faulty vertical blanking circuit

A positive V blanking pulse having a pulse width of about 1 m appears at the base of Q39.



Horizontal blanking circuit fault



(8) Overvoltage protection circuit

If the +B voltage rises abnormally, the horizontal oscillator frequency will become high, causing a high voltage to be applied to the CRT with the attendant risk of X-ray emission. The overvoltage protection circuit is designed to prevent this by shutting off the horizontal oscillator if the +B voltage rises excessively.

The most likely symptom is the absence of a raster due to operation of the overvoltage circuit (on account of an improperly adjusted VR8 or a short-circuit in Q30, etc.)

If the circuit does not operate, possible causes are Q30, 2SF656, D5, etc.

(9) Power supply circuit

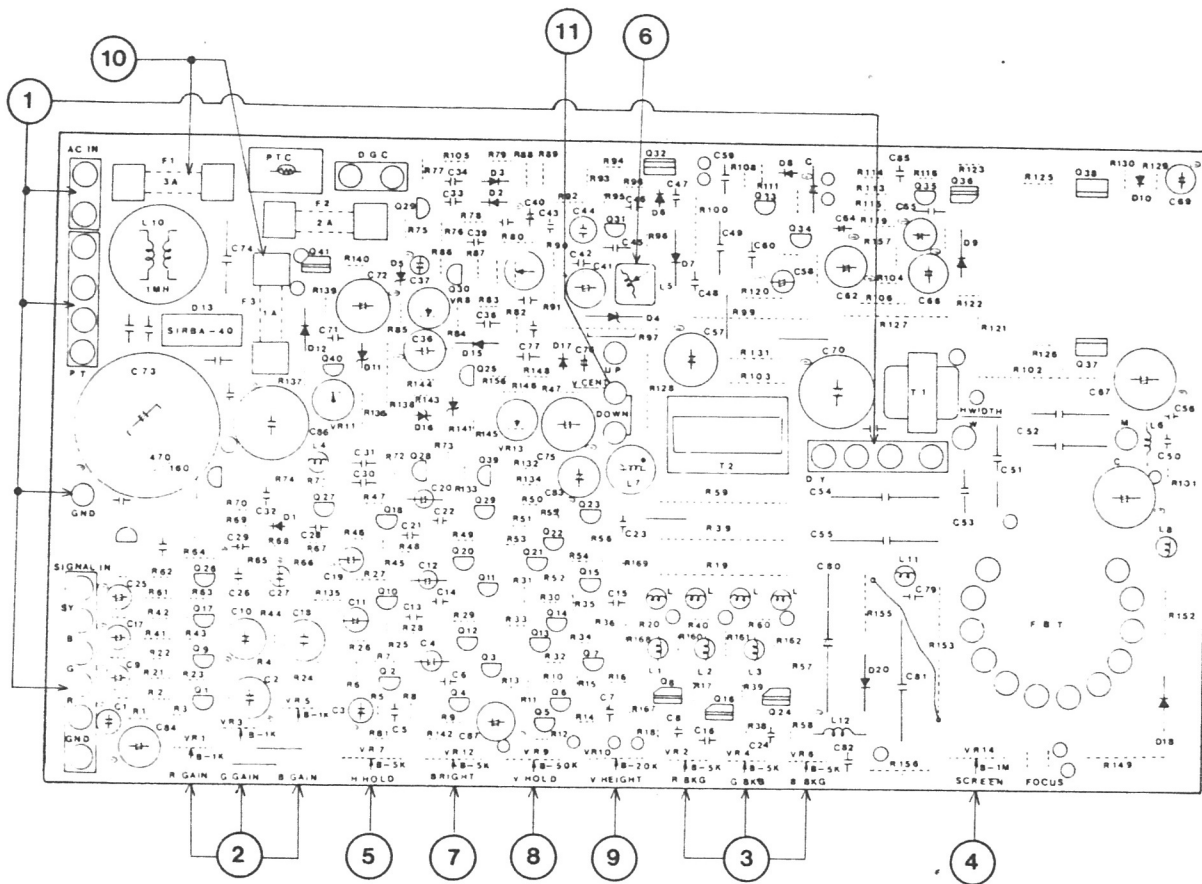
This circuit is designed to provide the necessary voltage to operate the various circuits in the unit. It includes a constant voltage circuit which serves to maintain a constant B supply against fluctuations in the commercial supply voltage or load current.

The main symptoms of a fault in the power supply are as follows:

- Raster is not obtained.
- Picture is small.
- Picture shakes.

Possible causes are a faulty rectifier diode D11, D12 or D13, faulty Q40 or a layer short in T-201.

3. Operating color monitor



Take note of the following precautions when using a CM series color monitor.

- 1 Check that the various connectors (1) including the DY connector, input connector, power supply connector and earth pin connector are properly connected up. Connect the earth pin connector to the main printed board and also to the CRT socket printed board.
- 2 If one of the following symptoms occurs on the picture after the power supply is turned on, read the corresponding instructions on the right hand side.

- (1) Color balance is poor: Adjust the R.GAIN, G.GAIN or B.GAIN control (2) as necessary to restore the color balance. If each of the VIDEO R.G.B. levels is equal to the TTL level (4 to 5 V_{p-p}), set the R.G.B. GAIN control (2) below the center point of its rotation angle. If it is increased above the center point the VIDEO AMP

circuit will saturate, resulting in a picture which leaves a trail. Conversely, if it is turned fully counterclockwise, the picture will disappear.

Color adjustment can be performed for each color by the BKG control (③) as well, however because this control has been factory adjusted to match the characteristics of the CRT and then paint-locked, it must not be tampered with except when replacing the CRT.

- (2) Picture drifts vertically: Adjust the setting of the V.HOLD control (⑧).
- (3) Picture drifts horizontally: Adjust the setting of the H.HOLD control (⑤). When this is ineffective, adjust the horizontal oscillator coil (⑥).
- (4) Picture does not appear: Check to see if fuse F1(3A) or F3(1A) (⑩) is blown. Next, rotate the BRIGHT control (⑦) clockwise. If a raster is not obtained even when the control is turned fully clockwise, check to see if the SCREEN control (④) has dropped to the left. Normally, the SCREEN control (④) is set at about the middle of its range.

3 This color monitor incorporates an overvoltage protection circuit. In the event of an instantaneous overvoltage condition, the overvoltage protection circuit will operate to cut off the picture. In such a case turn off the power supply to the monitor and reapply the power after a lapse of 40 to 60 seconds. The monitor will be reset and the picture will appear again.

4 Method of adjusting color balance when replacing CRT

- (1) Setting BKG control: The signal input is SYNC only (All three channels of the R.G.B. GAIN control ② may be rotated fully counterclockwise).

Adjust the SCREEN control (④) so that when the BRIGHT VR control (⑦) is rotated fully clockwise a very faint raster will be obtained, and then set the BKG control.

Rotate the BKG control (③) for all three channels fully clockwise. Back off the color from the brightest channel until a white raster is obtained. (In this case, the BKG control of the weakest channel should be rotated fully clockwise.)

Note: To perform adjustment on a B14 type unit, rotate the BKG control for all three channels fully counterclockwise and add color from the weakest channel until a white raster is obtained. (In this case, the BKG control of the strongest channel should be rotated fully counterclockwise.)

(2) Setting SCREEN control: Upon completion of the above BKG adjustments, adjust the SCREEN control (④) until the raster* is on the verge of cut-off.

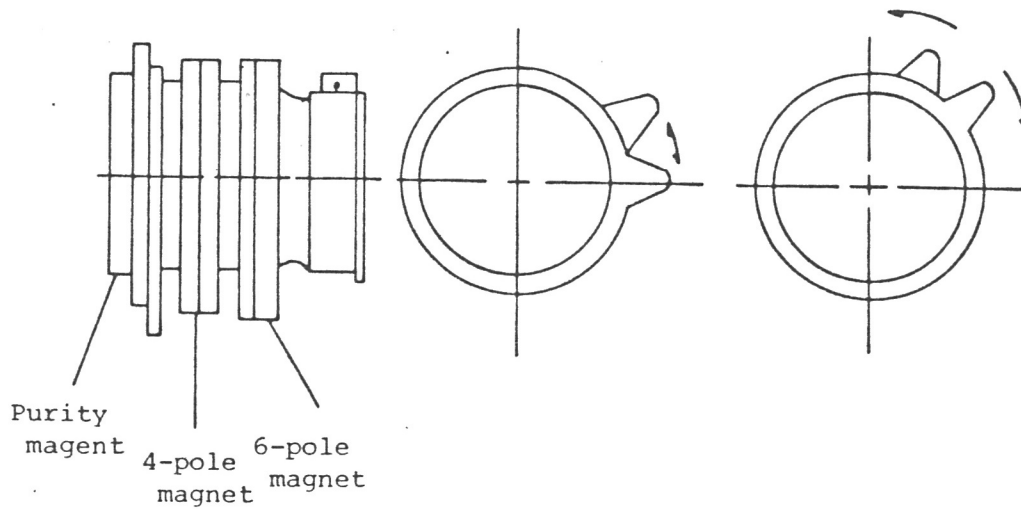
(3) Setting GAIN control: Apply R.G. and B signals and rotate the GAIN control (②) for all three channels by about 45° from the center position in the counterclockwise direction, then back off the BRIGHT control to obtain a suitable picture. Next, finely adjust the GAIN control until color balance is obtained.

* Raster: A raster is defined as a collection of scanning lines which appear with uniform brightness on the screen when the brightness level is raised by means of the SCREEN control, etc., under no-signal conditions.

5 Perform the following when shifting the raster up and down:

1. Do not jumper either A - B, B - C: Normal operation
2. Jumper between B - C: Raster will shift downwards.
3. Jumper between A - B: Raster will shift upwards.

5. Static Convergence Adjustment (Center Part Of Screen)

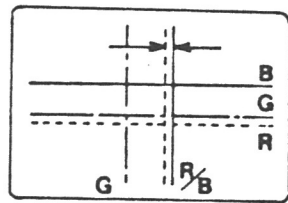


(i) Purity and convergence magnets ASS

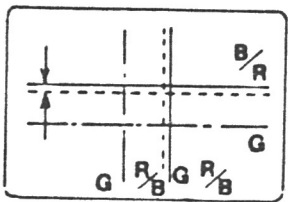
(ii) Open knob of magnet

(iii) Rotate while knob of magnet is open.

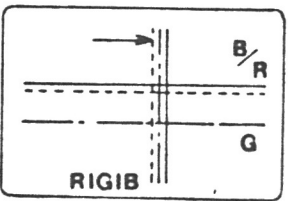
Adjustment procedure



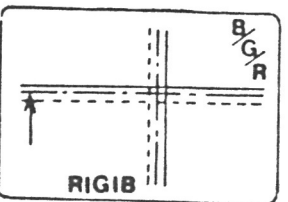
① Open the 4-pole magnet as shown in (ii) and align the blue and red vertical lines in the center of the screen (Fig. (a) at left).



② Rotate the 4-pole magnet as shown in (iii) and align the blue and red horizontal lines (Fig. (b) at left).



③ Open the 6-pole magnet as shown in (ii) and align the green vertical line at the center of the screen with the centers of the blue and red vertical lines (Fig. (c) at left).

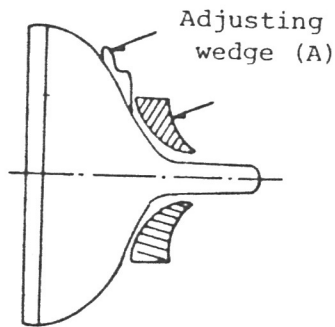


④ Rotate the 6-pole magnet as shown in (iii) and align the green horizontal line with the center of the blue and red horizontal lines (Fig. (d) at left).

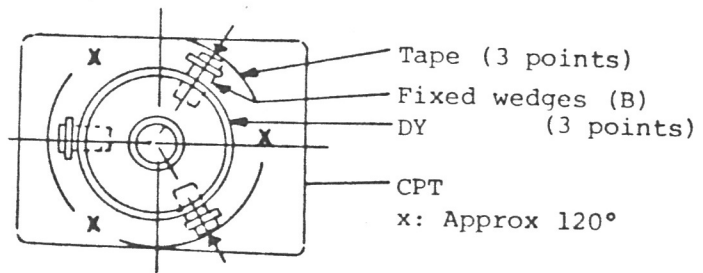
⑤ If the blue, red and green lines do not coincide at the center of the screen, repeat the above procedure from step ①.

(The three colors are shown slightly out of alignment to facilitate the above description.)

6. Dynamic Convergence Adjustment (Peripheral Part Of Screen)

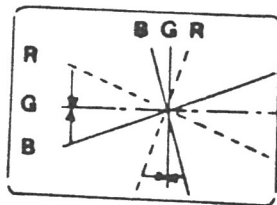


(i) Diagram showing insertion of adjusting wedge (A)

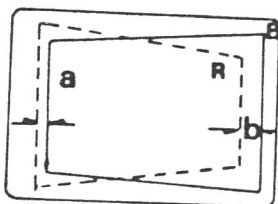


(ii) Diagram showing insertion of fixed wedges

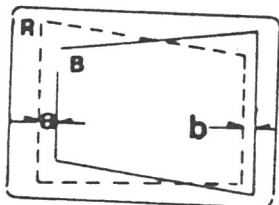
Adjustment procedure



- ① Gradually insert adjusting wedge (A) into the opening (top part) of DY as shown in (i), and align the red and blue vertical lines at the top and bottom of the screen and also the red and blue horizontal lines at the left and right of the screen (Fig. (a) at left).



- ② When the blue line is closer to the edge of the screen than the red line at the right hand side of the screen and $a < b$, as shown in Fig. (ii) at left, insert the fixed wedge (B) in the right hand funnel between DY and CPT as viewed from the rear of CPT in order to make $a = b$.

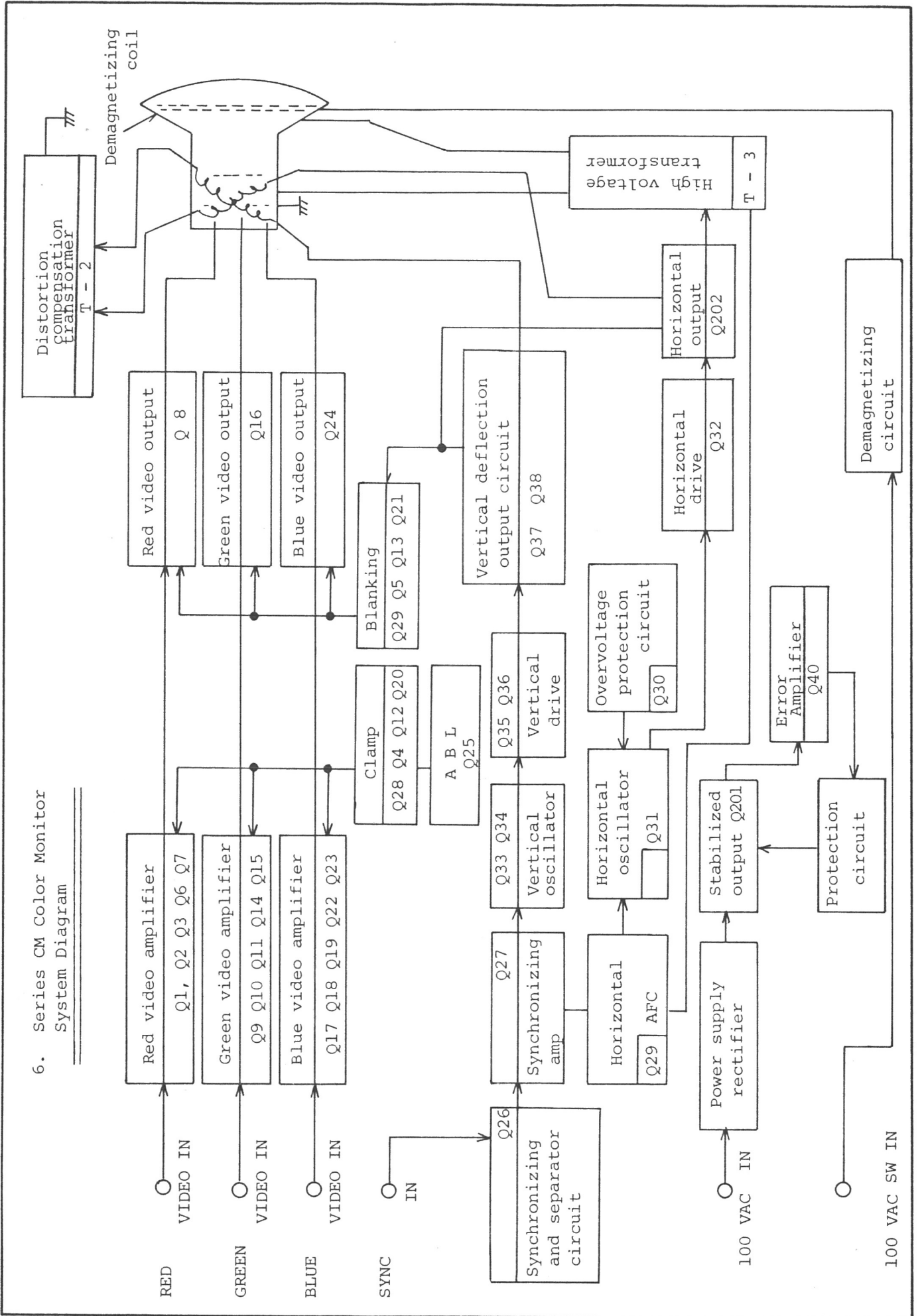


- ③ When the red line is closer to the edge of the screen than the blue line at the left hand side of the screen and $a < b$, as shown in Fig. (iii) at left, insert the fixed wedge (B) in the left hand funnel between DY and CPT as viewed from the rear of CPT in order to make $a = b$.

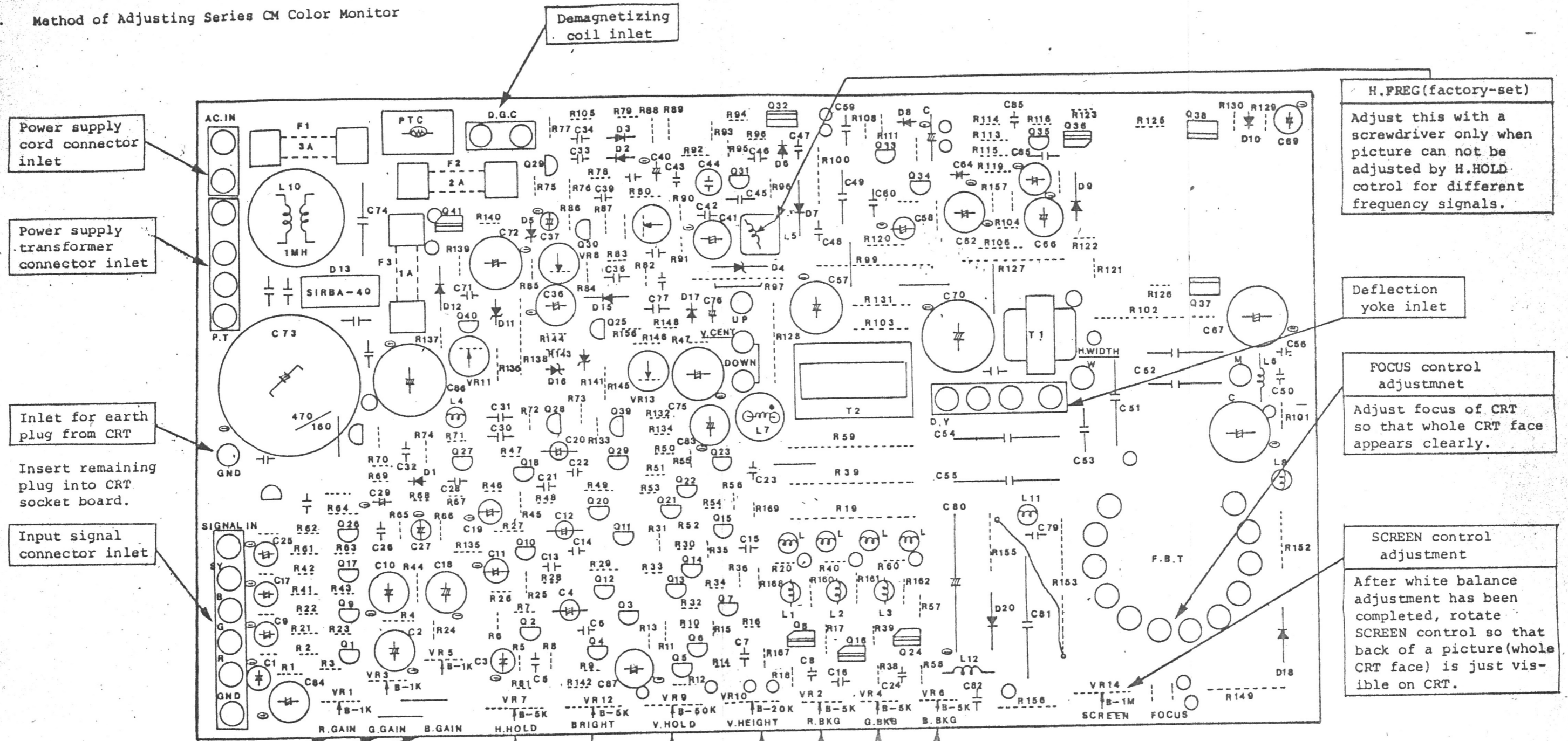
- ④ Insert 2 fixed wedges (B) at angles of about 120° with the fixed wedge (B) inserted in ② or ③ above and tape them as shown in Fig. (ii) above.

- ⑤ Remove adjusting wedge (A).

6. Series CM Color Monitor
System Diagram



7. Method of Adjusting Series CM Color Monitor



Power supply cord connector inlet

Power supply transformer connector inlet

Inlet for earth plug from CRT

Insert remaining plug into CRT socket board.

Input signal connector inlet

Demagnetizing coil inlet

H.PREG(factory-set)
Adjust this with a screwdriver only when picture can not be adjusted by H.HOLD control for different frequency signals.

Deflection yoke inlet

FOCUS control adjustment
Adjust focus of CRT so that whole CRT face appears clearly.

SCREEN control adjustment
After white balance adjustment has been completed, rotate SCREEN control so that back of a picture(whole CRT face) is just visible on CRT.

R., G., and B. GAIN control adjustment

Controls are factory-set to the position shown in left hand diagram. When input signal is small, however, move them slightly to the right, or conversely when input signal is large, move them to the left to obtain color balance.

Use when horizontal stripes appear on screen or when shifting picture slightly to the left or right.

Shift

Use when picture moves up or down without stopping

Use to adjust height of picture

Adjust to desired brightness

Picture white balance adjustment (used to compensate different characteristics of three electron guns)

Apply SYNC only to signal input (it is possible to rotate R, G, and B GAIN controls fully counter-clockwise).

Next, rotate BRIGHT control fully clockwise, then set each of R, G, and BBKG controls to counter-clockwise position.

Finally, rotate SCREEN control so that raster is just visible on CRT. At this time, carefully note which color is visible.

When raster is red: Rotate G.BKG to obtain a yellow raster, then rotate B.BKG until it turns white.

When raster is green: Rotate R.BKG to obtain a yellow raster, then rotate B.BKG until it turns white.

When raster is blue: Rotate R.BKG to obtain a purple(magenta) raster, then rotate G.BKG until it turns white.

TABLE OF CONTENTS

MODEL C14C 5090

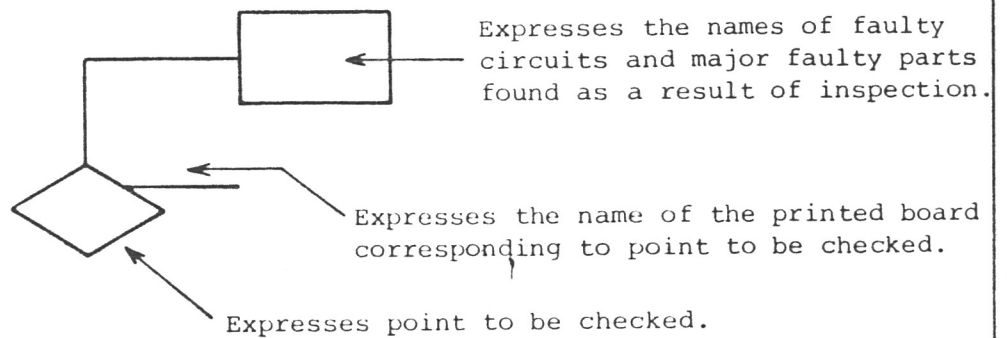
C20C 5091

1.	Method of Reading Flow Chart	23
2.	Precautions for Measuring and Operation	23
3.	Circuit Diagnosis In Terms Of Symptoms	24
	(1) Raster is not obtained	24
	(2) Faulty vertical oscillation amplitude	25
	(3) Single horizontal line	25
	(4) Faulty synchronization	26
	(5) Raster only obtained or picture is bright and fly-back	26
	(6) Picture is dark	27
4.	Operating Color Monitor	28
5.	Static Convergence Adjustment (Center Part of Screen)	19
6.	Dynamic Convergence Adjustment (Peripheral Part of Screen)	20
7.	Monitor System	31
8.	Method of Adjusting Color Monitor	32
9.	Parts List	42
10.	Electrical Diagram	

MODEL C14C 5090
C20C 5091

1. Method of Reading Flow Chart

- (1) The mode of expression in the flow is as follows:



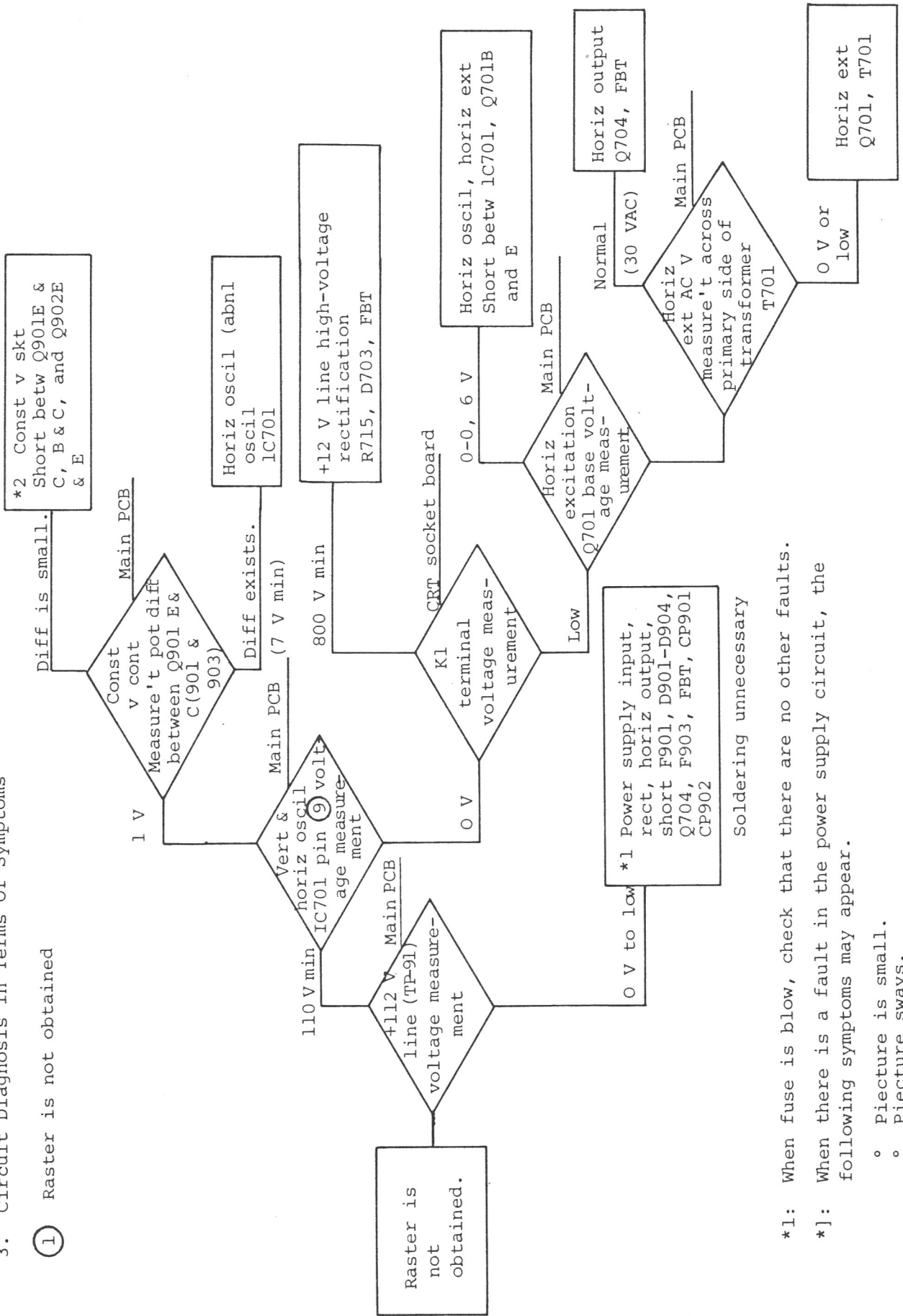
- (2) The voltage expressed on the flow chart may vary slightly depending upon the setting condition and the particular tester used.

2. Precautions For Measuring And Operation

- (1) If any parts become abnormally hot or produce a smell, immediately turn off the power supply.
- (2) Do not short circuit different circuits or terminals.
- (3) Carefully observe the symptoms appearing on the screen.
- (4) When performing voltage measurements, do not allow the tester probes to touch other terminals.
- (5) Measure voltage accurately.
- (6) When performing resistance measurements, set the meter to the smallest range.
- (7) Before replacing parts be sure to turn off the main power supply switch.
- (8) When replacing parts do not apply a soldering iron to the printed board for a long period of time.

3. Circuit Diagnosis In Terms Of Symptoms

① Raster is not obtained

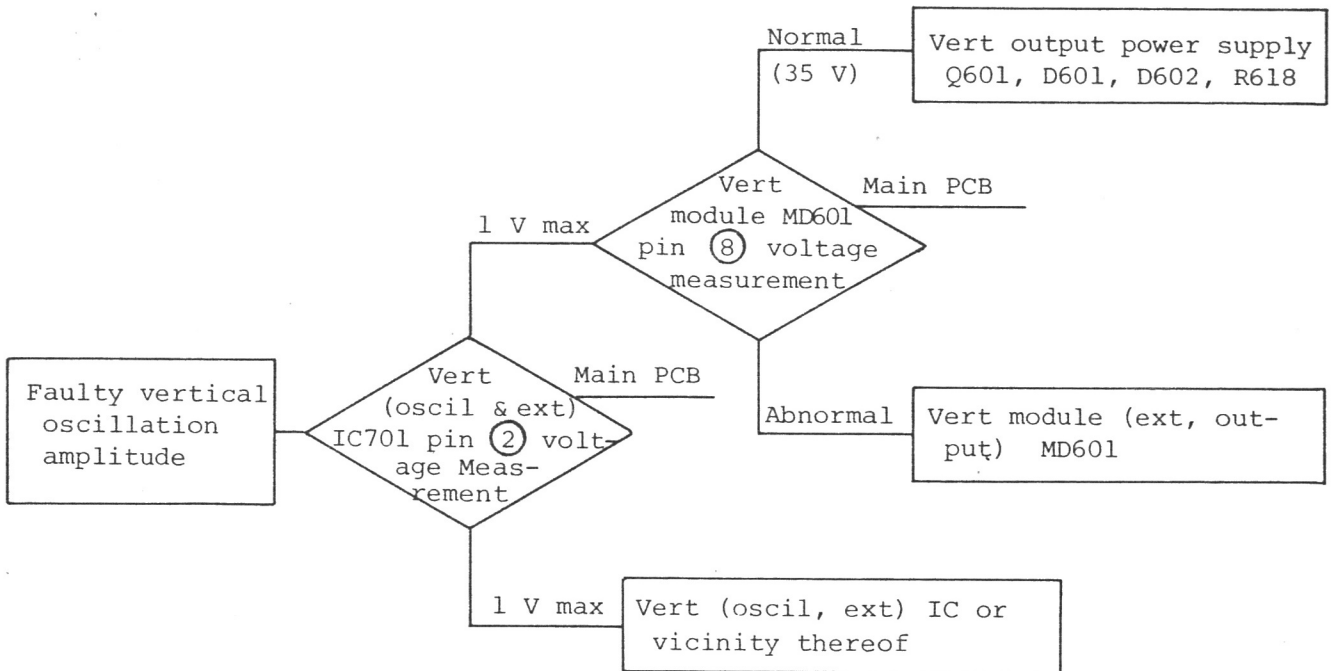


*1: When fuse is blow, check that there are no other faults.

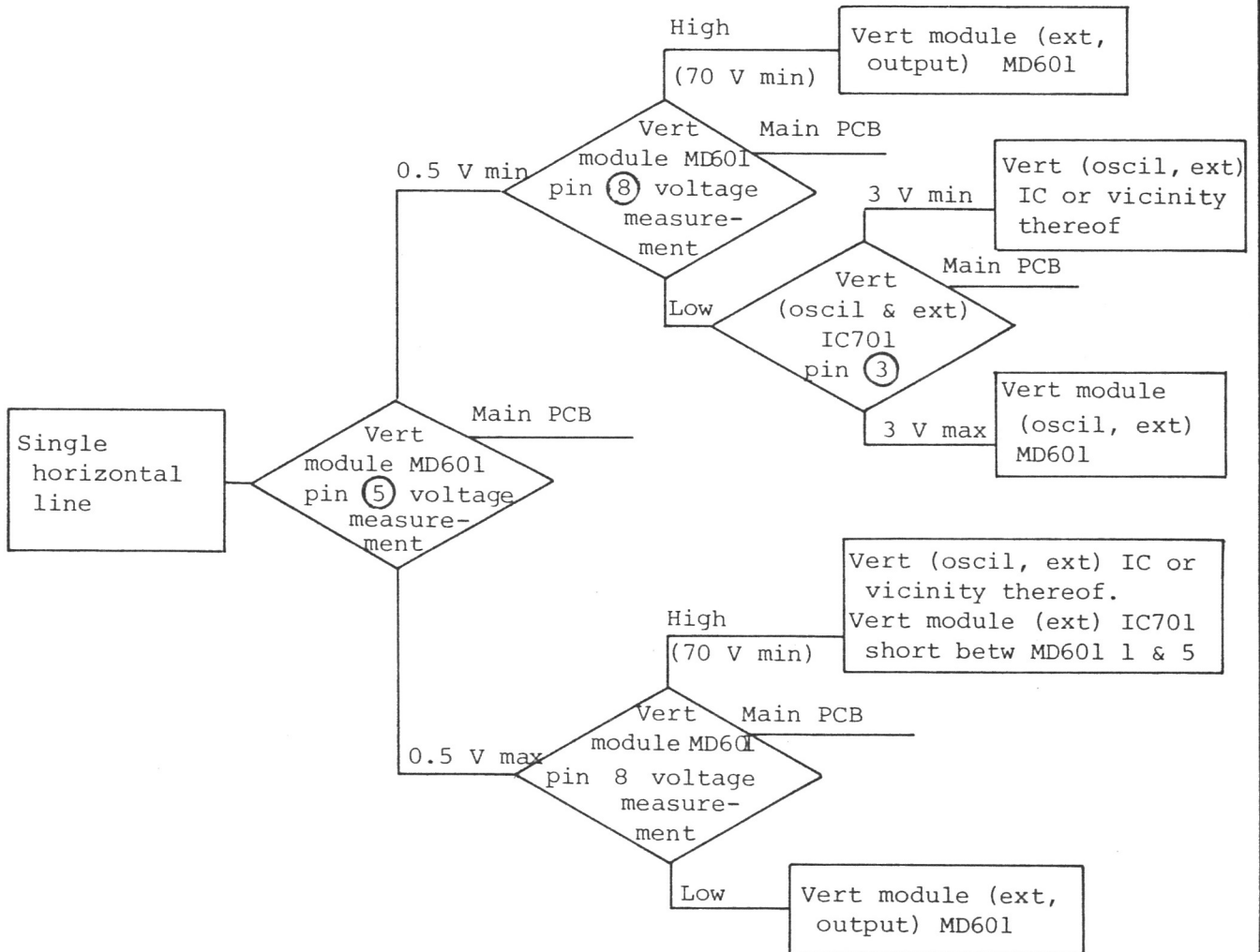
*]: When there is a fault in the power supply circuit, the following symptoms may appear.

- o Picture is small.
- o Picture sways.

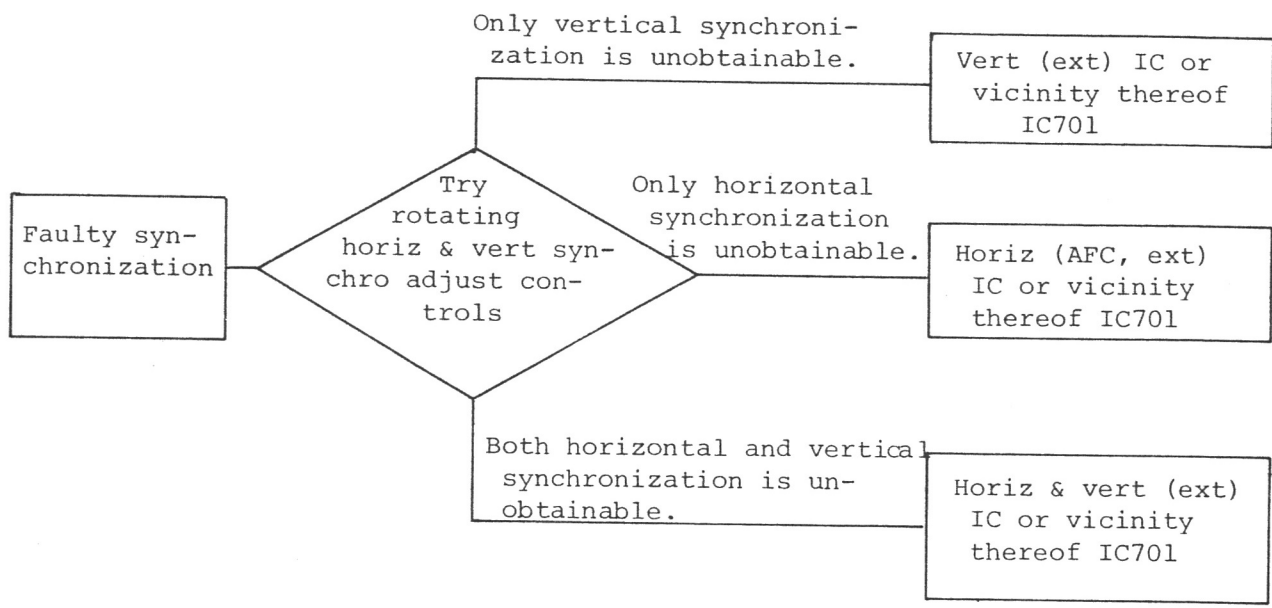
② Faulty vertical oscillation amplitude



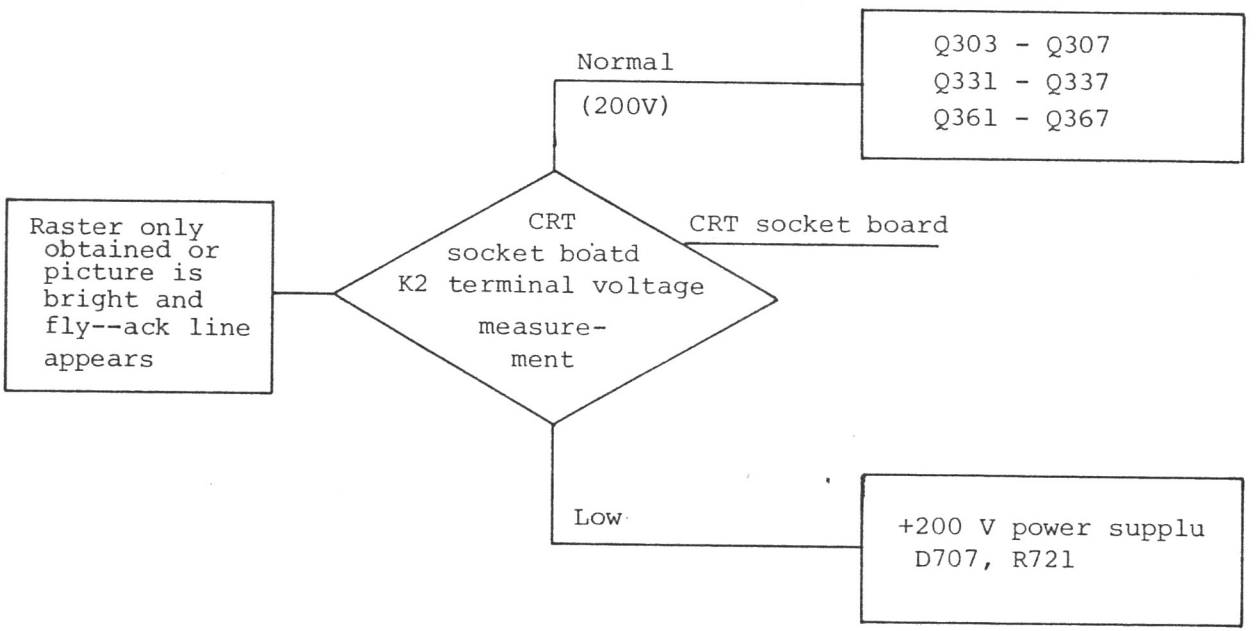
③ Single horizontal line



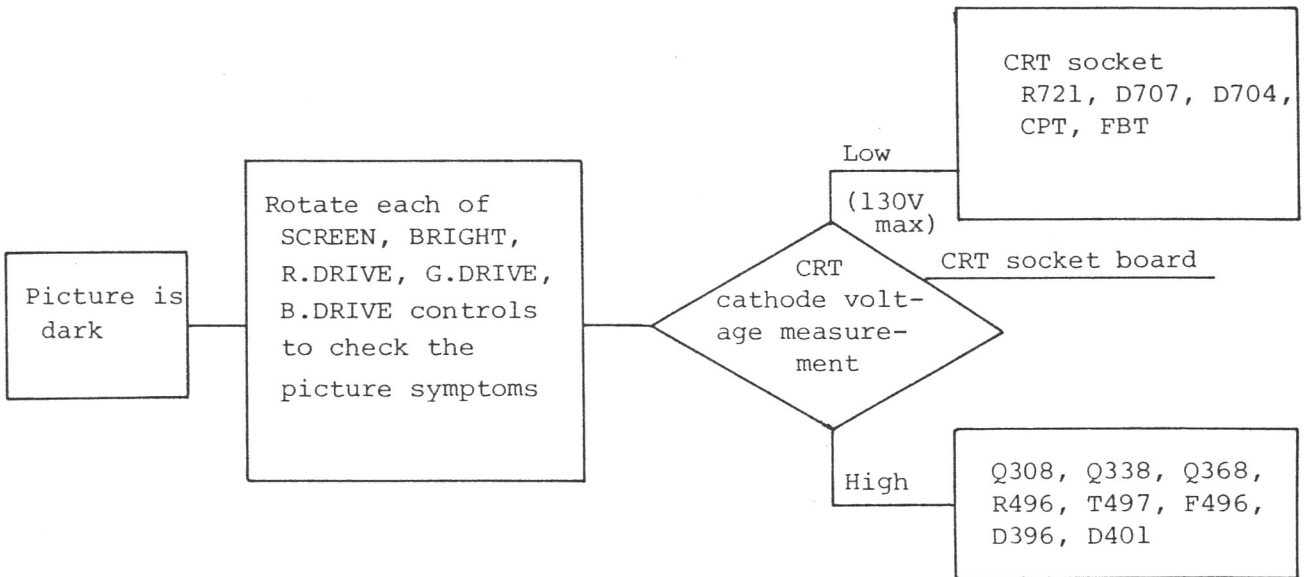
④ Faulty synchronization



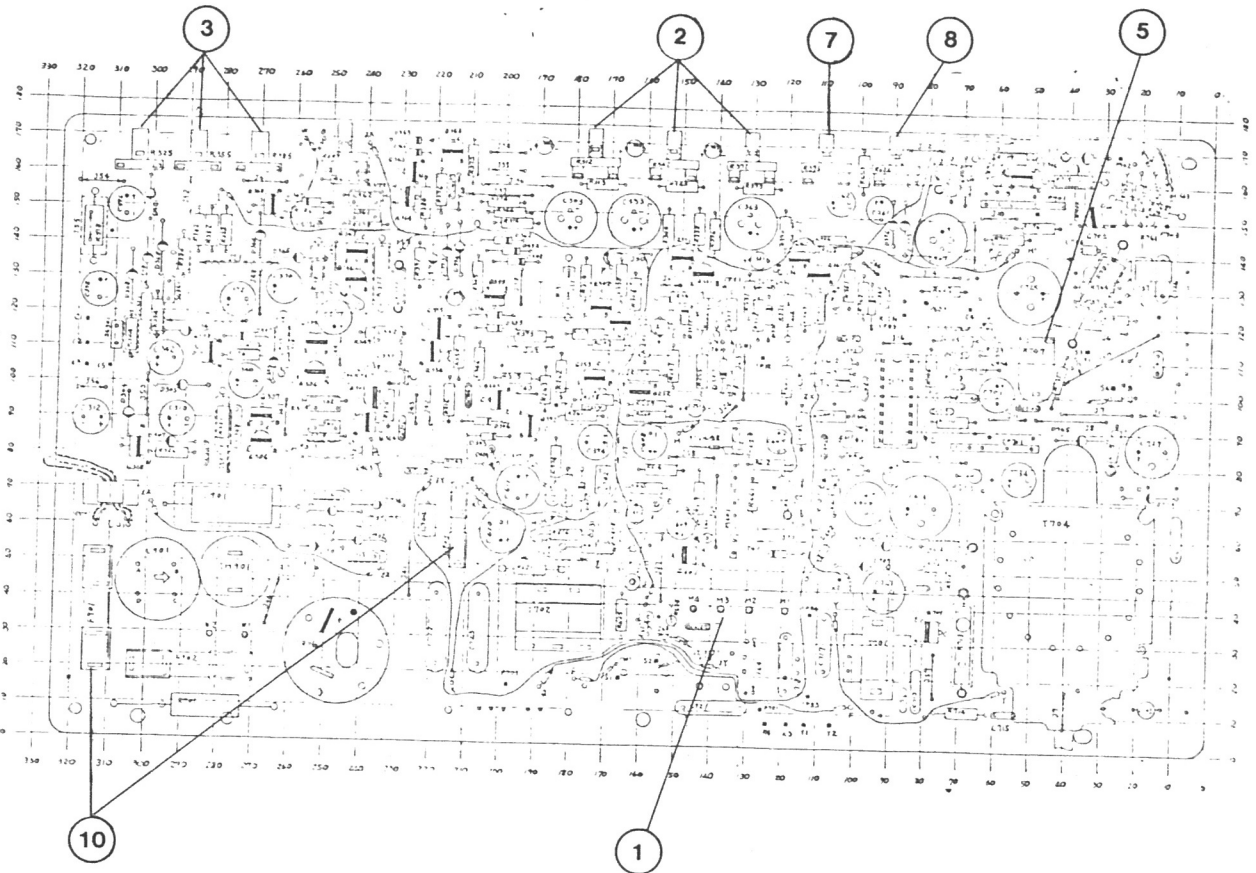
⑤ Raster only obtained or picture is bright and fly-back line appears



⑥ Picture is dark



4. Operating color monitor



Take note of the following precautions when using a CM series color monitor.

- 1 Check that the various connectors ((1)) including the DY connector, and earth pin connector are properly connected up. Connect the earth pin connector to the CRT socket printed board.
- 2 If one of the following symptoms occurs on the picture after the power supply is turned on, read the corresponding instructions on the right hand side.

(1) Color balance is poor: Adjust the R.DRIVE, G.DRIVE or B.DRIVE control ((2)) as necessary to restore the color balance. If each of the VIDEO R.G.B. levels is equal to the TTL level (4 to 5 V_{p-p}), set the R.G.B. DRIVE control ((2)) below the center point of its rotation angle. If it is increased above the center point the VIDEO

AMP circuit will saturate, resulting in a picture which leaves a trail. Conversely, if it is turned fully counterclockwise, the picture will disappear.

Color adjustment can be performed for each color by the BKG control ((3)) as well, however because this control has been factory adjusted to match the characteristics of the CRT and then paint-locked, it must not be tampered with except when replacing the CRT.

- (2) Picture drifts vertically: Adjust the setting of the V.HOLD control ((8)).
 - (3) Picture drifts horizontally: Adjust the setting of the H.HOLD control ((5)).
 - (4) Picture does not appear: Check to see if fuse F-901(4A) or F903(1A) ((10)) is blown. Next, rotate the BRIGHT control ((7)) clockwise. If a raster is not obtained even when the control is turned fully clockwise, check to see if the SCREEN control ((4)) has dropped to the left. Normally, the SCREEN control ((4)) is set at about the middle of its range.
- 3 This color monitor incorporates an overvoltage protection circuit. In the event of an instantaneous overvoltage condition, the overvoltage protection circuit will operate to cut off the picture. In such a case turn off the power supply to the monitor and re-apply the power after a lapse of 40 to 60 seconds. The monitor will be reset and the picture will appear again.
- 4 Method of adjusting color balance when replacing CRT

(1) Setting DRIVE control: The signal input is SYNC only (All three channels of the R.G.B. GAIN control (2) may be rotated fully counterclockwise).

Adjust the SCREEN control ((4)) so that when the BRIGHT VR control ((7)) is rotated fully clockwise a very faint raster will be obtained, and then set the BKG control.

Rotate the BKG control ((3)) for all three channels fully clockwise. Back off the color from the brightest channel until a white raster is obtained. (In this case, the BKG control of the weakest channel should be rotated fully clockwise.)

(2) Setting SCREEN control:

Upon completion of the above BKG adjustments, adjust the SCREEN control ((4)) until the raster* is on the verge of cut-off.

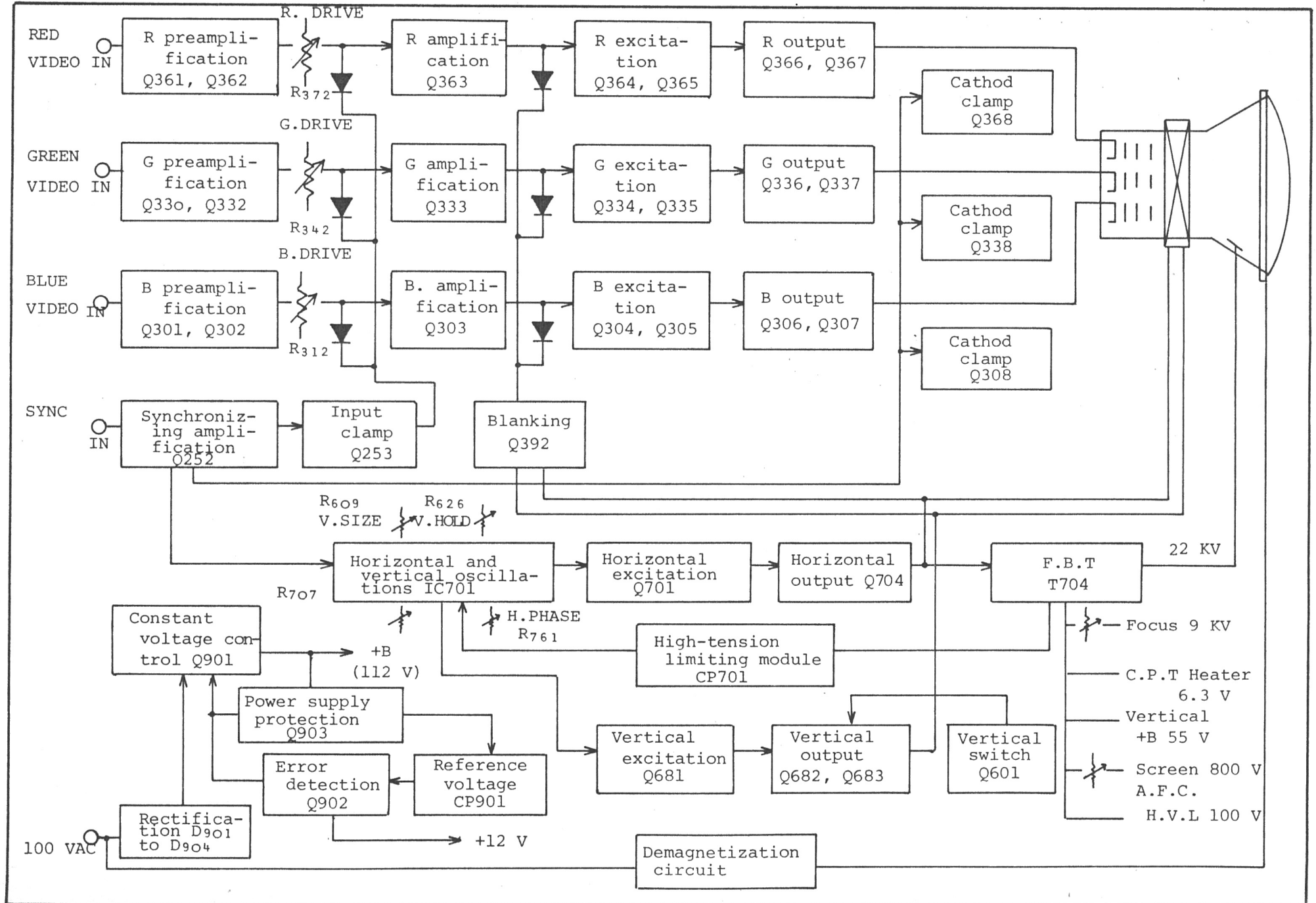
(3) Setting GAIN control:

Apply R.G. and B signals and rotate the GAIN control ((2)) for all three channels by about 45° from the center position in the counterclockwise direction, then back off the BRIGHT control to obtain a suitable picture. Next, finely adjust the GAIN control until color balance is obtained.

* Raster:

A raster is defined as a collection of scanning lines which appear with uniform brightness on the screen when the brightness level is raised by means of the SCREEN control, etc., under no-signal conditions.

7. Monitor System



8. Method of Adjusting Color Monitor

Picture white balance adjustment (used to compensate different characteristics of three electron guns)

Apply SYNC only to signal input (it is possible to rotate R, G, and B GAIN controls fully counter-clockwise).

Next, rotate BRIGHT control fully clockwise, then set each of R, G, and B BKG controls to fully counter-clockwise position.

Finally, rotate SCREEN control so that raster is just visible on CRT. At this time, carefully note which color is visible.

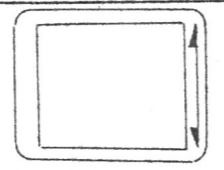
When raster is red: Rotate G.BKG to obtain a yellow raster, then rotate B.BKG until it turns white.

When raster is green: Rotate R.BKG to obtain a yellow raster, then rotate B.BKG until it turns white.

When raster is blue: Rotate R.BKG to obtain a purple (magenta) raster, then rotate G.BKG until it turns white.


V. SIZE

Use to adjust height of picture



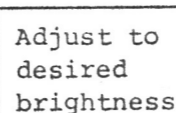
R., G., and B. GAIN control adjustment

Controls are factory-set to the position shown in left hand diagram. When input signal is small, however, move them slightly to the right, or conversely when input signal is large, move them to the left to obtain color balance.



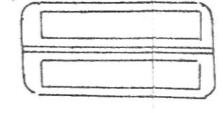
BRIGHT

Adjust to desired brightness.



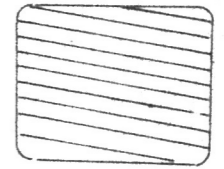
V. HOLD

Use when picture moves up or down without stopping

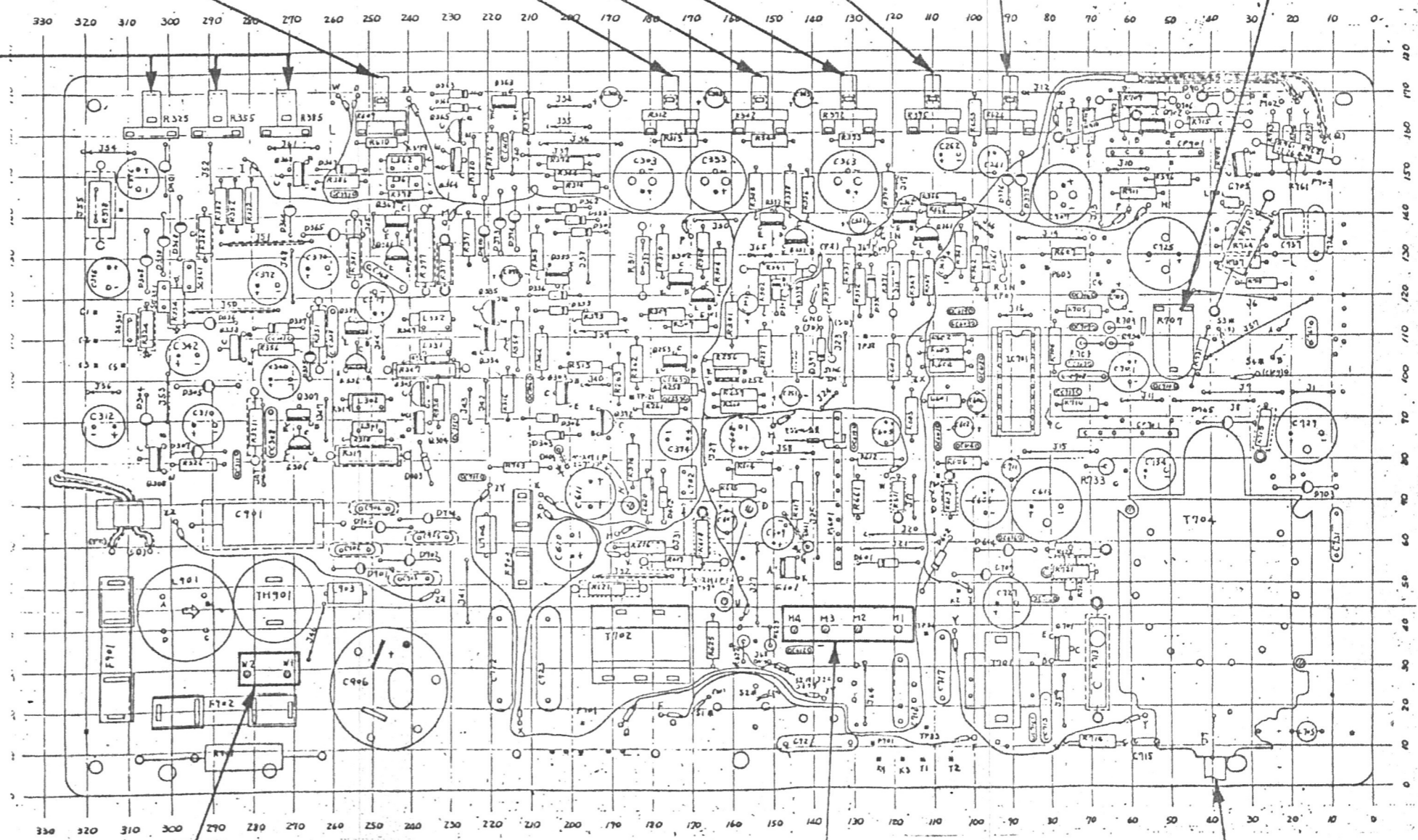


H. HOLD

Use when horizontal stripes appear on screen or when shifting the picture slightly to the left or right.



Shift



Demagnetizing coil inlet

Deflection yoke inlet

Built-in FOCUS control fly-back

FOCUS control adjustment

Adjust focus of CRT so that whole CRT face appears clearly.

Parts Name	Rating	Q'ty	Circuit No
Picture Tube	370ECB22 (14inch)	1	
	510NJB22 (20inch)	1	
Transistor	2SC945Q/P/R	2	Q1, Q2
"	2SA733Q/P/R	3	Q3, Q4, Q5
"	2SC945Q/P/R	1	Q6
"	2SA733Q/P/R	1	Q7
"	2SC1520	1	Q8
"	2SC945Q/P/R	2	Q9, Q10
"	2SA733Q/P/R	3	Q11, Q12, Q13
"	2SC945Q/P/R	1	Q14
"	2SA733Q/P/R	1	Q15
"	2SC1520	1	Q16
"	2SC945Q/P/R	2	Q17, Q18
"	2SA733Q/P/R	3	Q19, Q20, Q21
"	2SC945Q/P/R	1	Q22
"	2SA733Q/P/R	1	Q23
"	2SC1520	1	Q24
"	2SA733Q/P/R	1	Q25
"	2SC945Q/P/R	1	Q26
"	2SA733Q/P/R	1	Q27
"	2SC945Q/P/R	2	Q28, Q29
"	2SA733Q/P/R	1	Q31
"	2SC1514	1	Q32
"	2SC945Q/P/R	2	Q33, Q34
"	2SA733Q/P/R	1	Q35
"	2SC1520	1	Q36
"	2SD478	1	Q37
"	2SB568	1	Q38
"	2SC945Q/P/R	1	Q39
"	2SC1921	1	Q40
"	2SC1520	1	Q41

Parts Name	Rating	Q'ty	Circuit #
Transistor	2C1106	1	Q201
"	2C1942	1	Q202
Thyristor	03P-05M	1	Q30
Diode	1S953	1	D1
"	1N34A	2	D2, D3
"	RD11EB	1	D4
"	RD39EB	1	D5
"	1S953	1	D6
"	VO6C	1	D7
"	VD1212	2	D8, D9
"	VO6C	1	D10
"	RD11EB	1	D11
"	VO6C	1	D12
"	SIRBA-40	1	D13
"	UF-1	1	D15
"	RD9.1EB	1	D16
"	VO6C	1	D17
"	UF-1	1	D18
"	SF-1	1	D20
Thermistor	ERP-F5BOMO80F	1	PT C.
Horizontal Drive Transformer	T-1004	1	T1
Transformer		1	T2
Fly-Back Transformer		1	T3
Peaking Coil	56 μ H	3	L1, L2, L3
"	4.7mH	1	L4
Horizontal Oscillation Coil	M-2311B	1	L5
Chok Coil	0.4 μ H	1	L6
Peaking Coil	100 μ H	2	L8, L9
Line Filter	1mH	1	L10

Parts Name	Rating	Q'ty	Circuit #
Filter Coil	33 μ H	1	L11
Peaking Coil	220 μ F	1	L12
Degaussing Coil	DG-14	1	L201
Deflection Yoke		1	L301
Linearity Coil	L-1004	1	L401
Electrolytic Capacitor CE04W	47 μ F 10V	3	C1, C9, C17
"	220 μ F 16V	3	C2, C10, C18
"	22 μ F 16V	3	C3, C11, C19
" (Bi-Polar)	1 μ F 50V	3	C4, C12, C20
Ceramic Capacitor	47 pF 500V	3	C5, C13, C21
Polyester Film Capacitor	0.001 μ F 50V(K)	3	C6, C14, C22
Ceramic Capacitor	680 pF 500V(K)	3	C7, C15, C23
"	1,000 pF 500V(K)	3	C8, C16, C24
Electrolytic Capacitor CE04W	47 μ F 10V	1	C25
Polyester Film Capacitor	0.01 μ F 50V(K)	1	C26
Electrolytic Capacitor CE04W	1 μ F 50V	1	C27
Ceramic Capacitor	330 pF 500V(K)	1	C28
Tantalum Electrolytic Capacitor	0.33 μ F 35V(K)	1	C29
Ceramic Capacitor	330 μ F 500V(K)	2	C30, C31
Polyester Film Capacitor	0.01 μ F 50V(K)	1	C32
"	0.022 μ F 50V(K)	2	C33, C34
Metallized Plastic Film Capacitor	0.1 μ F 200V(K)	1	C35
Electrolytic Capacitor CE04W	10 μ F 160V	1	C36
" CE04W	2.2 μ F 50V	1	C37
Polyester Film Capacitor	0.033 μ F 50V(K)	1	C38
"	0.01 μ F 50V(K)	1	C39
Tantalum Electrolytic Capacitor	2.2 μ F 20V(K)	1	C40
Electrolytic Capacitor CE04W	100 μ F 16V	1	C41
Polyester Film Capacitor	0.015 μ F 50V(K)	1	C42
"	0.0022 μ F 50V(K)	1	C43
"	0.01 μ F 50V(K)	1	C44

Parts Name	Rating	Q'ty	Circuit No
Polyester Film Capacitor	0.047 μ F 100V(K)	1	C45
"	0.022 μ F 50V(K)	1	C46
Ceramic Capacitor	220 pF 500V(K)	1	C47
"	820 pF 500V(K)	1	C48
Polyester Film Capacitor	0.022 μ F 630V(K)	1	C49
Ceramic Capacitor	18 pF 500V(K)	1	C50
Polyester Film Capacitor	0.0068 μ F 1.2KV(K)	1	C51
"	0.033 μ F 630V(K)	1	C52
Ceramic Capacitor	1000 pF 2KV(K)	1	C53
Polyester Film Capacitor	0.22 μ F 400V(K)	2	C54, C55
Ceramic Capacitor	220 pF 500V(K)	1	C56
Electrolytic Capacitor CE04W	470 μ F 16V	1	C57
"	1 μ F 16.0V	1	C58
Polyester Film Capacitor	0.1 μ F 100V(K)	2	C59, C60
Tantalum Electrolytic Capacitor	10 μ F 16V(K)	1	C61
Electrolytic Capacitor CE04W	220 μ F 16V	1	C62
Tantalum Electrolytic Capacitor	47 μ F 16V(K)	1	C63
Electrolytic Capacitor CE04W	47 μ F 16V	1	C64
Ceramic Capacitor	220 pF 500V(K)	1	C65
Electrolytic Capacitor CE04W	10 μ F 160V	1	C66
"	33 μ F 160V	1	C67
Ceramic Capacitor	4700 pF 500V(K)	1	C68
Electrolytic Capacitor CE04W	1 μ F 160V	1	C69
"	100 μ F 160V	1	C70
Ceramic Capacitor	4700 pF 500V(K)	1	C71
Electrolytic Capacitor CE04W	22 μ F 160V	1	C72
"	470 μ F 160V	1	C73
Polyester Film Capacitor	0.047 μ F 630V(K)	1	C74
Electrolytic Capacitor (Bi-polar)	1 μ F 50V	1	C76
Polyester Film Capacitor	0.1 μ F 100V(K)	1	C77
Electrolytic Capacitor CE04W	1000 μ F 16V	1	C78

Parts Name	Rating	Q'ty	Circuit No
Polyester Film Capacitor	0.033 μ F 100V(K)	1	C79
Electrolytic Capacitor CE02W	10 μ F 160V	1	C80
Polyester Film Capacitor	0.033 μ F 630V(K)	1	C81
Ceramic Capacitor	1000 pF 500V(K)	1	C82
Electrolytic Capacitor CE04W	100 μ F 25V	2	C83, C84
Polyester Film Capacitor	0.01 μ F 50V(K)	1	C85
Electrolytic Capacitor CE04W	100 μ F 160V	1	C86
" " "	47 μ F 16V	1	C87
Carbon Film Resistor	330 Ω 1/4W J	3	R1, R21, R41
" " "	22K Ω 1/4W J	3	R2, R22, R42
" " "	27K Ω 1/4W J	3	R3, R23, R43
" " "	1K Ω 1/4W J	3	R4, R24, R44
" " "	8.2K Ω 1/4W J	3	R5, R25, R45
" " "	39K Ω 1/4W J	3	R6, R26, R46
" " "	1K Ω 1/4W J	3	R7, R27, R47
" " "	330 Ω 1/4W J	3	R8, R28, R48
" " "	330K Ω 1/4W J	3	R9, R29, R49
" " "	4.7K Ω 1/4W J	3	R10, R30, R50
" " "	560 Ω 1/4W J	3	R11, R31, R51
" " "	1K Ω 1/4W J	3	R12, R32, R52
" " "	12K Ω 1/4W J	3	R13, R33, R53
" " "	1K Ω 1/4W J	3	R14, R34, R54
" " "	100 Ω 1/4W J	3	R15, R35, R55
" " "	220 Ω 1/4W J	3	R16, R36, R56
" " "	3.9K Ω 1/4W J	6	R17, R37, R57 R18, R38, R58
Metal Oxide Film Resistor	6.8K Ω 1/4W J	3	R19, R39, R59
Carbon Film Resistor	470 Ω 1/4W J	3	R20, R40, R60
" " "	330 Ω 1/4W J	1	R61
" " "	22K Ω 1/4W J	1	R62
" " "	27K Ω 1/4W J	1	R63

Parts Name	Rating	Q'ty	Circuit No.
Carbon Film Resistor	1K Ω 1/4WJ	2	R64, R65
" "	220 Ω 1/4WJ	1	R66
" "	22K Ω 1/4WJ	2	R67, R68
" "	47K Ω 1/4WJ	1	R69
" "	2.7K Ω 1/4WJ	1	R70
" "	6.8K Ω 1/4WJ	1	R71
" "	1.5K Ω 1/4WJ	1	R72
" "	1K Ω 1/4WJ	1	R73
" "	15K Ω 1/4WJ	1	R74
" "	1.5K Ω 1/4WJ	1	R75
" "	390 Ω 1/4WJ	2	R76, R77
" "	5.6K Ω 1/4WJ	2	R78, R79
" "	4.7K Ω 1/4WJ	1	R80
" "	6.8K Ω 1/4WJ	1	R81
" "	3.9K Ω 1/4WJ	1	R82
" "	47 Ω 1/4WJ	1	R83
" "	39K Ω 1/4WJ	1	R84
" "	18K Ω 1/4WJ	1	R85
" "	2.7K Ω 1/4WJ	1	R86
" "	47 Ω 1/4WJ	1	R87
" "	2.2K Ω 1/4WJ	1	R88
" "	3.3K Ω 1/4WJ	1	R89
" "	15K Ω 1/4WJ	1	R90
" "	6.8K Ω 1/4WJ	1	R91
" "	2.2K Ω 1/4WJ	1	R92
" "	6.8K Ω 1/4WJ	1	R93
" "	680 Ω 1/4W ^J	1	R94
" "	470 Ω 1/4WJ	1	R95
" "	27 Ω 1/4WJ	1	R96
" "	8.2K Ω 2WJ	1	R97
" "	3.9K Ω 1/4WJ	1	R98

Parts Name	Rating	Q'ty	Circuit No
Carbon Film Resistor	8.2K Ω 2WJ	1	R99
" " "	3.3K Ω 1/2WJ	1	R100
" " "	39K Ω 1/2WJ	1	R101
Metal Oxide Film Resistor	4.7K Ω 3WJ	1	R102
Carbon Film Resistor	15 Ω 1WJ	1	R103
" " "	1.8 Ω 1/4WJ	1	R104
" " "	8.2K Ω 1/4WJ	1	R105
" " "	15K Ω 1/4WJ	1	R106
" " "	4.7K Ω 1/4WJ	1	R107
" " "	2.2K Ω 1/4WJ	1	R108
" " "	6.8K Ω 1/4WJ	1	R109
" " "	2.2K Ω 1/4WJ	1	R110
" " "	180K Ω 1/4WJ	1	R111
" " "	2.2K Ω 1/4WJ	1	R112
" " "	1K Ω 1/4WJ	1	R113
" " "	3.3K Ω 1/4WJ	1	R114
" " "	2.2K Ω 1/4WJ	1	R115
" " "	470 Ω 1/4WJ	1	R116
" " "	22 Ω 1/4WJ	1	R117
" " "	2.2K Ω 1/4WJ	1	R118
" " "	2.2K Ω 1/4WJ	1	R119
" " "	270 Ω 1/4WJ	1	R120
" " "	3.3K Ω 1/4WJ	2	R121, R122
" " "	27 Ω 1/4WJ	1	R123
" " "	5.6 Ω 1/4WJ	2	R125, R126
Cement Resistor	330 Ω 5WJ	1	R127
Carbon Film Resistor	4.7K Ω 2WJ	1	R128
" " "	6.8K Ω 1/4WJ	1	R129
" " "	4.7K Ω 1/4WJ	1	R130
" " "	470 Ω 1/2WJ	1	R131
" " "	1.2K Ω 1/4WJ	1	R132

Parts Name	Rating	Q'ty	Circuit №
Carbon Film Resistor	1K Ω 1/4W J	1	R133
" " "	4.7K Ω 1/4W J	1	R134
" " "	100 Ω 1/4W J	1	R135
" " "	27K Ω 1/2W J	1	R136
" " "	3.9K Ω 1/4W J	1	R137
" " "	8.2K Ω 2W J	1	R138
" " "	10K Ω 1/4W J	1	R139
" " "	15K Ω 1/4W J	1	R140
" " "	120 Ω 1/4W J	1	R141
" " "	1K Ω 1/4W J	1	R142
" " "	2.7K Ω 1/4W J	1	R143
" " "	3.3K Ω 1/4W J	1	R144
" " "	3.9K Ω 1/4W J	1	R145
" " "	10K Ω 1/4W J	1	R146
" " "	6.8K Ω 1/4W J	1	R147
" " "	10K Ω 1/4W J	1	R148
" " "	2.2 Ω 2W J	1	R149
" " "	100K Ω 1/4W J	1	R150
" " "	120K Ω 1/4W J	1	R151
Fuse Resistor	2.2 Ω 1/2W	1	R152
Carbon Film Resistor	15 Ω 1/2W J	1	R153
" " "	100K Ω 1W J	1	R155
" " "	680K Ω 1/2W J	1	R156
" " "	1.8 Ω 1/4W J	1	R157
" " "	2.2 Ω 1/4W J	1	R158
" " "	390 Ω 1/4W J	1	R159
" " "	15K Ω 1/4W J	3	R160, R161, R162
" " "	680 Ω 1/4W J	1	R163
" " "	75 Ω 1/4W J	3	R164, R165, R166
" " "	220 Ω 1/4W J	3	R167, R168, R169

Parts Name	Rating	Q'ty	Circuit #
Cement Resistor	220Ω20WJ	1	R201
Variable Resistor	B- 1KΩ	3	R1, R3, R5
" "	B- 5KΩ	3	R2, R4, R6
" "	B- 5KΩ	1	R7
" "	B- 10KΩ	1	R8
" "	B- 50KΩ	1	R9
" "	B- 20KΩ	1	R10
" "	B- 10KΩ	1	R11
" "	B- 5KΩ	1	R12
" "	B- 10KΩ	1	R13
" "	B- 2MΩ	1	R14
Fuse	3A	1	F1
"	2A	1	F2
"	1A	1	F3

Parts Name	Description	Qty	Circuit #
Picture Tube	370ESB 22Y(14inch)	1	
	510SJB 22Y(20inch)		
I.C	HA11235	1	IC701
I.C	IM-6232	1	M601
Transistor	2SA844(D)(E)	1	Q252
"	2SC458(C)(D)	1	Q253
"	2SC717TM	1	Q301
"	2SA673(C)(D)	1	Q302
"	2SA844(D)(E)	1	Q303
"	2SC1514VC	1	Q304
"	2SC717TM	1	Q305
"	2SC1514VC	1	Q306
"	2SB648(C)(D)	1	Q307
"	2SC1514VC	1	Q308
"	2SC717TM	1	Q331
"	2SA673(C)(D)	1	Q332
"	2SA844(D)(E)	1	Q333
"	2SC1514VC	1	Q334
"	2SC717TM	1	Q335
"	2SC1514VC	1	Q336
"	2SB648(C)(D)	1	Q337
"	2SC1514VC	1	Q338
"	2SC717TM	1	Q361
"	2SA673(C)(D)	1	Q362
"	2SA844(D)(E)	1	Q363
"	2SC1514VC	1	Q364
"	2SC717TM	1	Q365
"	2SC1514VC	1	Q366
"	2SB648(C)(D)	1	Q367
"	2SC1514VC	1	Q368
"	2SC458(C)(D)	1	Q392
"	2SC1722BK/2SC1722-05	1	Q701
"	2SC1942	1	Q704
"	2SC1831	1	Q901
"	2SC1921	1	Q902
Transistor	2SC458(C)(D)/2SC1740(Q)(R)	1	Q903
Thyristor	M21C(8)	1	Q601

Parts Name	Description	Qty	Circuit #
Solid State Module	HM7101	1	CP701
"	HM9102	1	CP901
"	HM9103	1	CP902
Diode	HZ-11(B)/(C)	1	D301
"	1S2076/1S2473H	1	D302
"	" "	1	D303
"	1SS82	1	D304
"	VO6CS	1	D305
"	1S2076/1S2473H	1	D306
"	" "	1	D307
"	VO6CS	1	D308
"	HZ11(B)/(C)	1	D331
"	1S2076/1S2473H	1	D332
"	" "	1	D333
"	1SS82	1	D334
"	VO6CS	1	D335
"	1S2076/1S2473H	1	D336
"	" "	1	D337
"	VO6CS	1	D338
"	HZ11(B)/(C)	1	D361
"	1S2076/1S2473H	1	D362
"	" "	1	D363
"	1SS82	1	D364
"	VO6CS	1	D365
"	1S2076/1S2473H	1	D366
"	" "	1	D367
"	VO6CS	1	D368
"	"	1	D393
"	"	1	D394
"	"	1	D395
"	"	1	D396
"	HZ-11(B)/(C)	1	D397
"	VO6CS	1	D400
"	"	1	D401
"	1S2076/1S2473H	1	D403
"	" "	1	D404

Parts Name	Description	Qty	Circuit #
Diode	1S2076/1S2473H	1	D61
"	VO6CS/SiB01 02	1	D62
"	1S2076A	1	D63
"	VO9G	1	D64
"	VO6CS	1	D61
"	VO9C	1	D73
"	V11N	1	D74
"	VO9C	1	D75
"	"	1	D77
"	1S2076/1S2473H	1	D79
"	SB-2CY	1	D70
"	V17C	1	D91
"	"	1	D92
"	"	1	D93
"	"	1	D94
"	RM-25	1	D95
"	VO6CS	1	D96
P.T.C. Thermistor		1	TH901
Horizontal Drive Transformer		1	T701
Spooling Distortion Compensating Transformer		1	T702
Fly-Back Transformer		1	T704
Peaking Coil	33 μ H	1	L301
"	130 μ H	1	L302
"	33 μ H	1	L331
"	130 μ H	1	L332
"	33 μ H	1	L361
"	130 μ H	1	L362
Heater Choking Coil		1	L601
Filter Coil	100 μ H	1	L702
Heater Choking Coil		1	L704
Filter Coil	18 μ H	1	L705
"	12 μ H	1	L706
Line Filter Coil		1	L901
Degaussing Coil		1	L902

Parts Name	Description	Qty	Circuit No
Heater Choking Coil		2	L903.L904
Deflection Yoke		1	D.Y
Spark Gap		3	SG301,SG331 SG361
Spark Gap		5	SG881,SG882 SG883,SG884 SG885
Electrolytic Capacitor	1 μ F. 50WV	1	C251
Ceramic Capacitor	330 pF, K. 50WV	1	C253
Electrolytic Capacitor	1 μ F 50WV	1	C261
" "	1 μ F 160WV	1	C262
Ceramic Capacitor	1500 pF K. 50WV	1	C263
Electrolytic Capacitor	3.3 μ F 25WV	1	C301
" "	330 μ F 16WV	1	C303
" "	2.2 μ F 50WV	1	C305
Ceramic Capacitor	0.01 μ F Z. 50WV	1	C306
" "	0.01 μ F P. 500WV	1	C308
Electrolytic Capacitor	2.2 μ F 315WV	1	C310
Ceramic Capacitor	0.0047 μ F P. 500WV	1	C311
Electrolytic Capacitor	3.3 μ F 315WV	1	C312
" "	3.3 μ F 25WV	1	C331
" "	330 μ F 16WV	1	C333
" "	2.2 μ F 50WV	1	C335
Ceramic Capacitor	0.01 μ F Z. 50WV	1	C336
" "	0.01 μ F P. 500WV	1	C338
Electrolytic Capacitor	2.2 μ F 315WV	1	C340
Ceramic Capacitor	0.0047 μ F P. 500WV	1	C341
Electrolytic Capacitor	3.3 μ F 315WV	1	C342
" "	3.3 μ F 25WV	1	C361
" "	330 μ F 16WV	1	C363
" "	2.2 μ F 50WV	1	C365
Ceramic Capacitor	0.01 μ F Z. 50WV	1	C366
" "	0.01 μ F P. 500WV	1	C368
Electrolytic Capacitor	2.2 μ F 315WV	1	C370
Ceramic Capacitor	0.0047 μ F P. 500WV	1	C371
Electrolytic Capacitor	3.3 μ F 315WV	1	C372
" "	100 μ F 16WV	1	C394

Parts Name	Description	Qty	Circuit #
Electrolytic Capacitor	3.3 μ F 315WV	2	C395, C396
" "	4.7 μ F 160WV	1	C397
" "	220 μ F 16WV	1	C398
Polyester Film Capacitor	0.033 μ F K. 50WV	1	C601
Electrolytic Capacitor	1 μ F 50WV	1	C602
Ceramic Capacitor	100 pF J. 50WV	1	C603
Tantalum Electrolytic Capacitor	2.2 μ F 20WV	1	C604
Electrolytic Capacitor	10 μ F 25WV	1	C605
" "	330 μ F 16WV	1	C606
" "	4.7 μ F 50WV	1	C607
" "	4.7 μ F 160WV	1	C608
" "	1 μ F 160WV	1	C609
" "	470 μ F 16WV	1	C610
" "	100 μ F 50WV	1	C611
Ceramic Capacitor	0.0047 μ F P. 500WV	1	C612
Electrolytic Capacitor	220 μ F 100WV	1	C613
Ceramic Capacitor	0.0047 μ F K. 500WV	1	C614
" "	220 pF K. 500WV	1	C616
" "	33 pF J. 500WV	1	C617
" "	150 pF J. 50WV	1	C618
" "	680 pF J. 50WV	1	C619
Electrolytic Capacitor	47 μ F 16WV	1	C701
" "	1 μ F 50WV	1	C705
Polyester Film Capacitor	0.0068 μ F K. 50WV	1	C706
" "	0.001 μ F K. 50WV	1	C707
" "	0.0047 μ F J. 630WV	1	C708
" "	0.015 μ F K. 50WV	1	C709
" "	0.047 μ F K. 50WV	1	C710
Electrolytic Capacitor	10 μ F 25WV	1	C711
Polyester Film Capacitor	0.022 μ F K. 50WV	1	C712
" "	0.022 μ F K. 200WV	1	C713
Oil-Impregnated Capacitor	0.068 μ F K. 1000WV	1	C714
Ceramic Capacitor	820 pF K. 500WV	1	C715
" "	220 pF K. 500WV	1	C716
Polyester Film Capacitor	0.027 μ F K. 630WV	1	C717
" "	0.022 μ F K. 630WV	1	C718
" "	0.1 μ F K. 200WV	1	C719
" "	0.027 μ F K. 630WV	1	C721

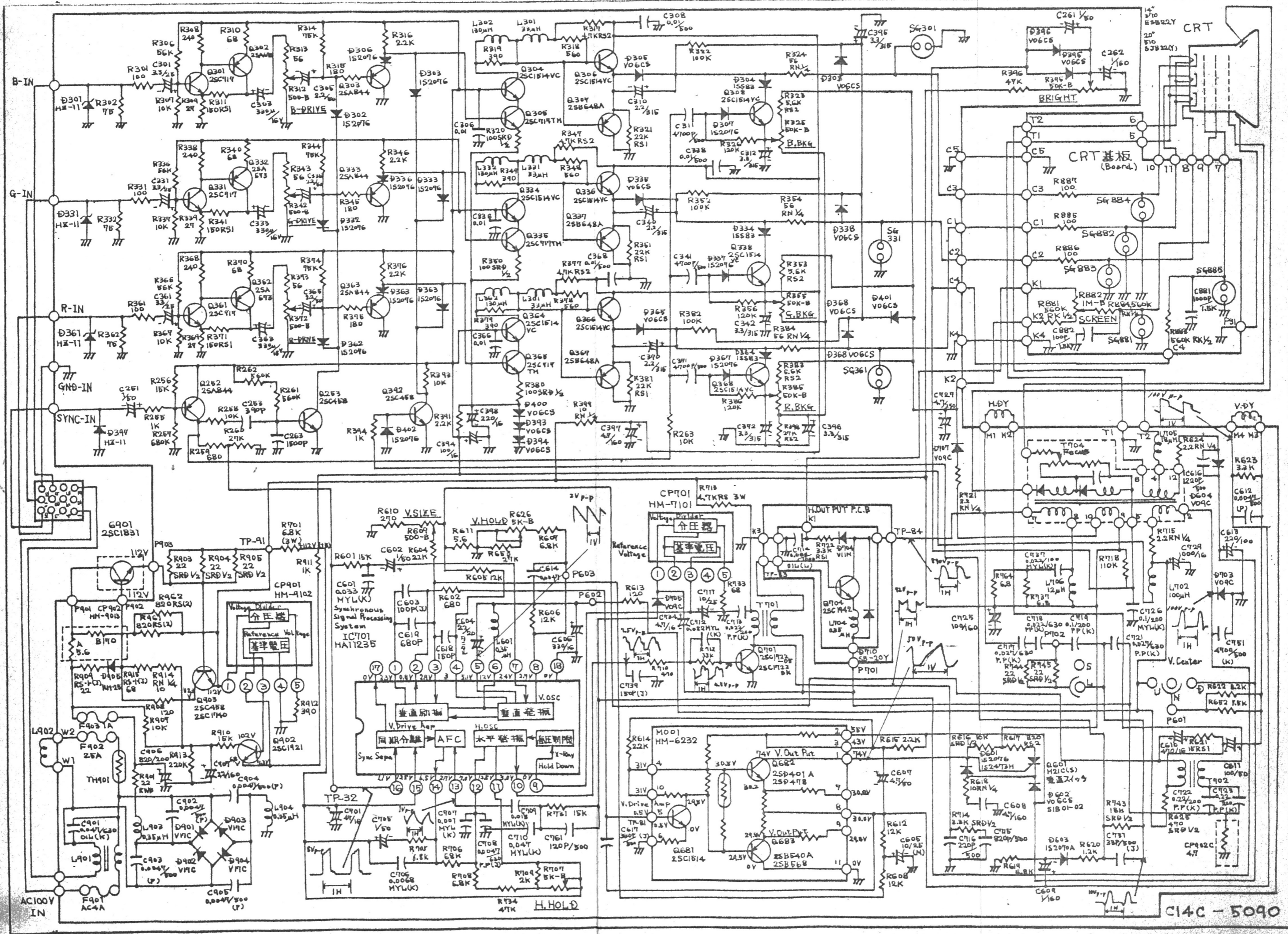
Parts Name	Description	Qty	Circuit #
Polyester Film Capacitor	0.022 μ F K. 200WV	2	C722, C723
Electrolytic Capacitor	100 μ F 160WV	1	C725
Polyester Film Capacitor	0.1 μ F K. 100WV	1	C726
Electrolytic Capacitor	4.7 μ F 250WV	1	C727
" "	1000 μ F 16WV	1	C729
Ceramic Capacitor	33 pF J. 500WV	1	C731
Electrolytic Capacitor	4.7 μ F 160WV	1	C734
Polyester Film Capacitor	0.022 μ F K. 100WV	1	C737
Ceramic Capacitor	150 pF J. 50WV	1	C739
" "	0.0047 μ F K. 500WV	1	C751
" "	120 pF J. 500WV	1	C761
" "	0.001 μ F 1KWV	1	C881
" "	100 pF 1.6KWV	1	C882
Oil-impregnated Capacitor	0.047 μ F K. 630WV	1	C901
Ceramic Capacitor	0.0047 μ F P. 500WV	1	C902
" "	" "	1	C903
" "	" "	1	C904
" "	" "	1	C905
Electrolytic Capacitor	820 μ F 200WV	1	C906
" "	22 μ F 160WV	1	C907
Carbon Film Resistor	1K Ω 1/4W J	1	R255
" "	15K Ω 1/4W J	1	R256
" "	680K Ω 1/4W J	1	R257
" "	10K Ω 1/4W J	1	R258
" "	680 Ω 1/4W J	1	R259
" "	2.7K Ω 1/4W J	1	R260
" "	560K Ω 1/4W J	2	R261, R262
" "	10K Ω 1/4W J	1	R263
" "	100 Ω 1/4W J	1	R301
" "	75 Ω 1/4W J	1	R302
" "	56K Ω 1/4W J	1	R306
" "	10K Ω 1/4W J	1	R307
" "	240 Ω 1/4W J	1	R308
" "	27 Ω 1/4W J	1	R309
" "	68 Ω 1/4W J	1	R310
Metal Oxide Film Resistor	150 Ω 1W J	1	R311
Carbon Film Resistor	56 Ω 1/4W J	1	R313

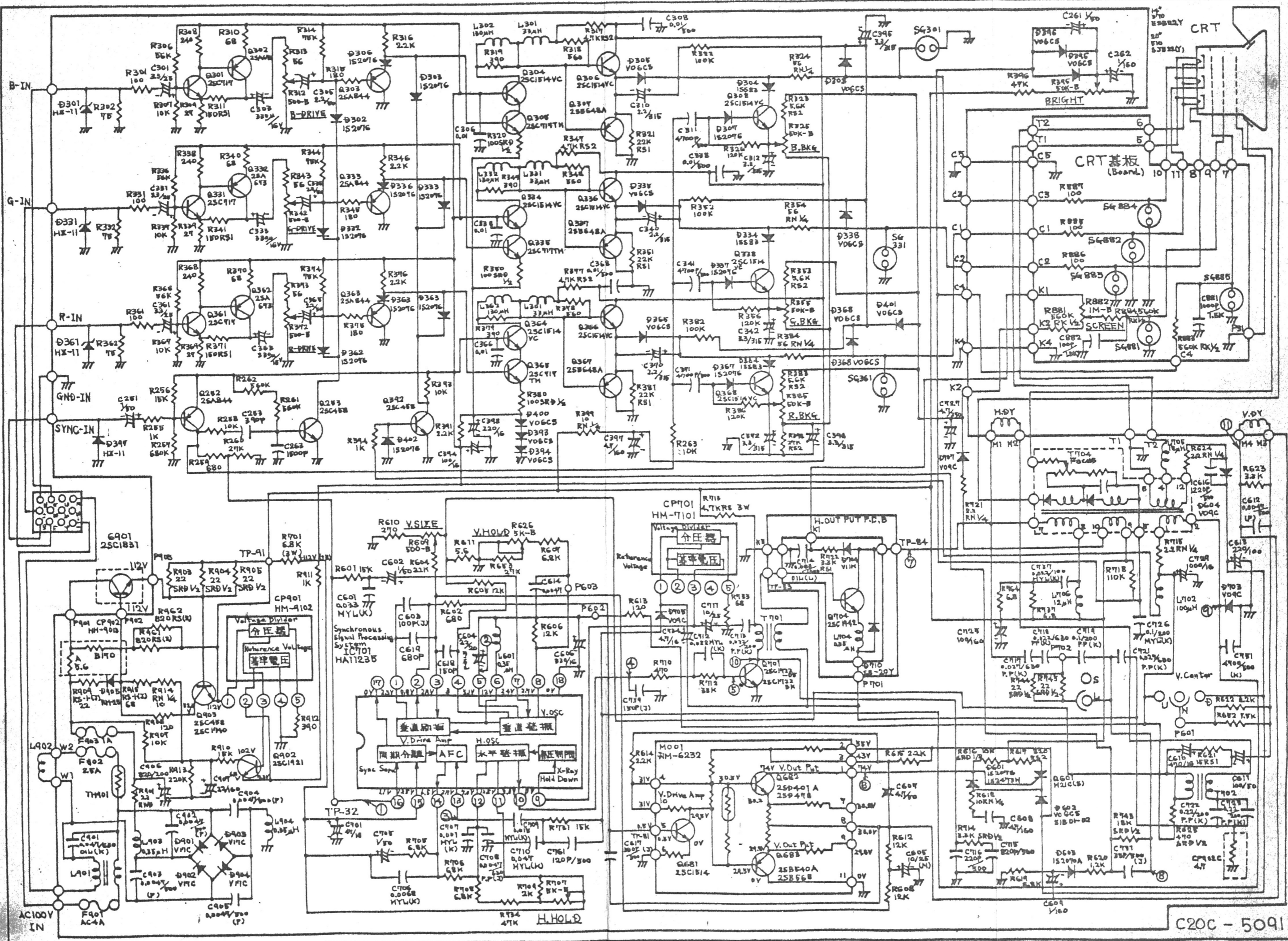
Parts Name	Description	Qty	Circuit #
Carbon Film Resistor	75K Ω 1/4W J	1	R314
" "	180 Ω 1/4W J	1	R315
" "	2.2K Ω 1/4W J	1	R316
Metal Oxide Film Resistor	4.7K Ω 2W J	1	R317
Carbon Film Resistor	560 Ω 1/4W J	1	R318
" "	390 Ω 1/4W J	1	R319
" "	110 Ω 1/2W J	1	R320
Metal Oxide Film Resistor	22K Ω 1W J	1	R321
Carbon Film Resistor	100K Ω 1/4W J	1	R322
Metal Oxide Film Resistor	5.6K Ω 2W J	1	R323
Carbon Film Resistor	120K Ω 1/4W J	1	R326
" "	100 Ω 1/4W J	1	R331
" "	75 Ω 1/4W J	1	R332
" "	56K Ω 1/4W J	1	R336
" "	10K Ω 1/4W J	1	R337
" "	240 Ω 1/4W J	1	R338
" "	27 Ω 1/4W J	1	R339
" "	68 Ω 1/4W J	1	R340
Metal Oxide Film Resistor	150 Ω 1W J	1	R341
Carbon Film Resistor	56 Ω 1/4W J	1	R343
" "	75K Ω 1/4W J	1	R344
" "	180 Ω 1/4W J	1	R345
" "	2.2K Ω 1/4W J	1	R346
Metal Oxide Film Resistor	4.7K Ω 2W J	1	R347
Carbon Film Resistor	560 Ω 1/4W J	1	R348
" "	390 Ω 1/4W J	1	R349
" "	110 Ω 1/2W J	1	R350
Metal Oxide Film Resistor	22K Ω 1W J	1	R351
Carbon Film Resistor	100K Ω 1/4W J	1	R352
Metal Oxide Film Resistor	5.6K Ω 2W J	1	R353
Carbon Film Resistor	120K Ω 1/4W J	1	R356
" "	100K Ω 1/4W J	1	R361
" "	75 Ω 1/4W J	1	R362
" "	56K Ω 1/4W J	1	R366
" "	10K Ω 1/4W J	1	R367
" "	240 Ω 1/4W J	1	R368
" "	27 Ω 1/4W J	1	R369
" "	68 Ω 1/4W J	1	R370

Parts Name	Description	Qty	Circuit #
Metal Oxide Film Resistor	150Ω 1W J	1	R371
Carbon Film Resistor	56Ω 1/4W J	1	R373
" "	75KΩ 1/4W J	1	R374
" "	180Ω 1/4W J	1	R375
" "	2.2KΩ 1/4W J	1	R376
Metal Oxide Film Resistor	4.7KΩ 1/4W J	1	R377
Carbon Film Resistor	560Ω 1/4W J	1	R378
" "	390Ω 1/4W J	1	R379
" "	110Ω 1/2W J	1	R380
Metal Oxide Film Resistor	22KΩ 1W J	1	R381
Carbon Film Resistor	100KΩ 1/4W J	1	R382
Metal Oxide Film Resistor	5.6KΩ 2W J	1	R383
Carbon Film Resistor	120KΩ 1/4W J	1	R386
" "	2.2KΩ 1/4W J	1	R391
" "	10KΩ 1/4W J	1	R393
" "	1KΩ 1/4W J	1	R394
" "	47KΩ 1/4W J	1	R396
Metal Oxide Film Resistor	27KΩ 2W J	1	R398
Carbon Film Resistor	24KΩ 1/4W J	1	R400
Carbon Film Resistor	15KΩ 1/4W J	1	R601
" "	680Ω 1/4W J	1	R602
" "	2.2KΩ 1/4W J	1	R604
" "	12KΩ 1/4W J	2	R605, R606
" "	6.8KΩ 1/4W J	1	R607
" "	12KΩ 1/4W J	1	R608
" "	270Ω 1/4W J	1	R610
" "	5.6Ω 1/4W J	1	R611
" "	12KΩ 1/4W J	1	R612
" "	120Ω 1/4W J	1	R613
" "	2.2KΩ 1/4W J	2	R614, R615
" "	10KΩ 1/2W J	1	R616
Metal Oxide Film Resistor	820Ω 2W J	1	R617
Carbon Film Resistor	6.8KΩ 1/4W J	1	R619
" "	1.2KΩ 1/4W J	1	R620
Metal Oxide Film Resistor	15Ω 1W J	1	R621
Carbon Film Resistor	3.9KΩ 1/4W J	1	R622
" "	3.3KΩ 1/4W J	1	R623

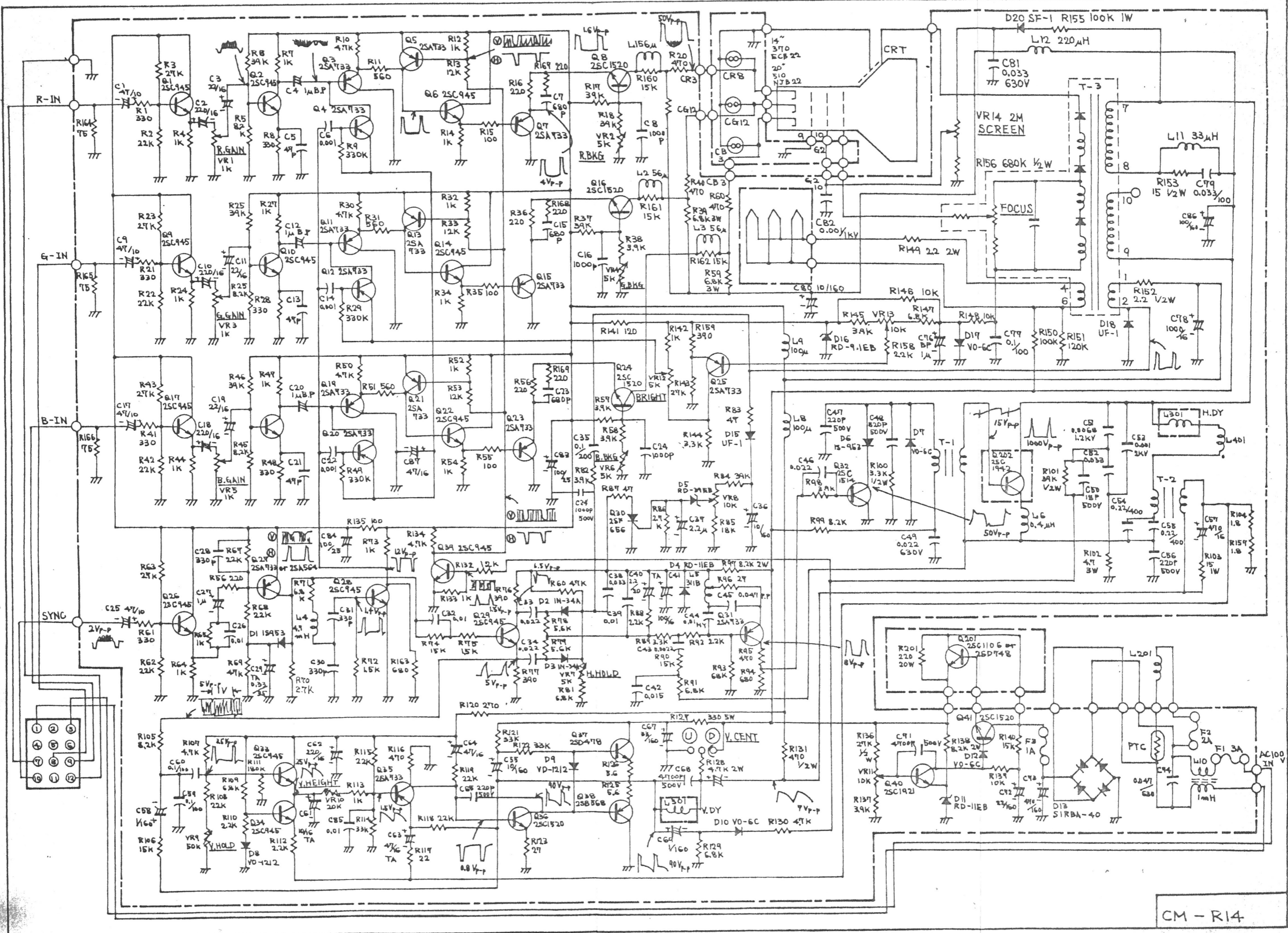
Parts Name	Description	Qty	Circuit #
Carbon Film Resistor	470Ω 1/2W J	1	R625
" "	27KΩ 1/4W J	1	R653
Metal Oxide Film Resistor	6.8KΩ 3W J	1	R701
Carbon Film Resistor	6.8KΩ 1/4W J	1	R705
" "	68KΩ 1/4W J	1	R706
" "	68KΩ 1/4W J	1	R708
" "	2KΩ 1/4W J	1	R709
" "	470Ω 1/4W J	1	R710
" "	3.3KΩ 1/4W J	1	R712
Metal Oxide Film Resistor	4.7KΩ 3W J	1	R713
Carbon Film Resistor	3.3KΩ 1/2W J	1	R714
" "	110KΩ 1/4W J	1	R718
Metal Oxide Film Resistor	3.3KΩ 1W J	1	R722
Carbon Film Resistor	4.3KΩ 1/4W J	1	R731
" "	68Ω 1/4W J	1	R733
" "	4.7KΩ 1/4W J	1	R734
" "	6.8Ω 1/4W J	1	R737
" "	18KΩ 1/2W J	1	R743
" "	2.2Ω 1/2W J	2	R744, R745
" "	6.8Ω 1/4W J	1	R764
Metal Oxide Film Resistor	560KΩ 1/2W J	3	R881, R883, R884
Carbon Film Resistor	100Ω 1/4W J	3	R885, R886, R887
Wire Wound Fixed Resistor	2.2Ω 6W	1	R901
Carbon Film Resistor	2.2Ω 1/2W J	3	R903, R904, R905
" "	10KΩ 1/2W J	1	R907
" "	120Ω 1/4W J	1	R908
Metal Oxide Film Resistor	22Ω 1W J	1	R909
Carbon Film Resistor	15KΩ 1/4W J	1	R910
" "	1KΩ 1/4W J	1	R911
" "	390Ω 1/4W J	1	R912
" "	220KΩ 1/4W J	1	R913
Metal Oxide Film Resistor	68Ω 1W J	1	R915
" "	1.5KΩ 2W J	2	R961, R962
Fuse Resistor	56Ω 1/4W J	3	R324, R354, R384
" "	10Ω 1/4W J	3	R399, R618, R624
" "	2.2Ω 1/4W J	2	R715, R721
Variable Resistor	B-500Ω	1	R312

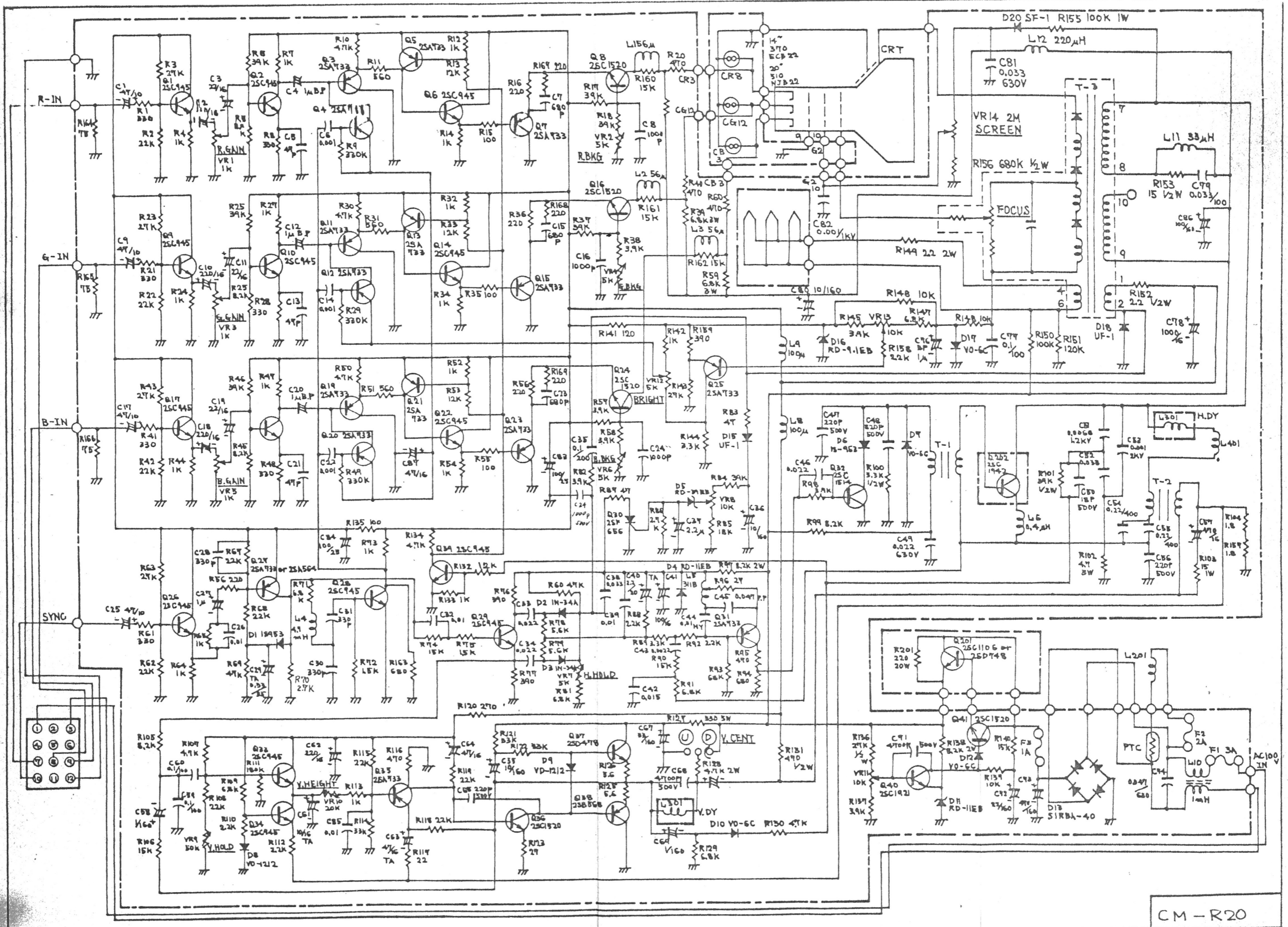
Parts Name	Description	Q'ty	Circuit #
Variable Resistor	B-50 K Ω	1	R325
" "	B-500 Ω	1	R342
" "	B-50 K Ω	1	R355
" "	B-500 Ω	1	R372
" "	B-50 K Ω	2	R385, R395
" "	B-500 Ω	1	R609
" "	B-5 K Ω	2	R626, R707
" "	B-1 M Ω	1	R882
Fuse	4 A	1	F901
"	2.5 A	1	F902
"	1 A	1	F903





C20C - 5091





CM-R20