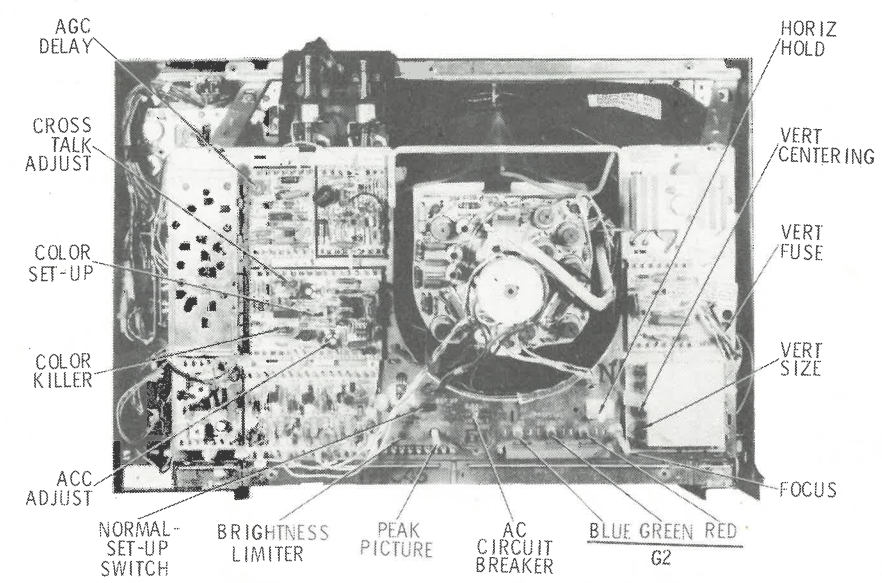


R215
CR218
CR217
R234
R204
R236
C204
T200
F201
C208
C207
C209
R209
C211
R211
R237
R262

CABINET—
REAR VIEW



DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL
Remove five screws holding cabinet back. Remove cabinet back. Remove all knobs.
Remove top two screws holding chassis, loosen side support bracket and two hinge screws holding vertical chassis. Set may be tilted back to a 45° angle for servicing.
Remove anode lead, picture-tube socket, yoke and convergence plugs, speaker leads, earphone jack, ground straps and tuner IF cable. Disconnect antenna leads and degaussing coil.
NOTE: Lay set face down on soft protective surface.

Remove four screws holding chassis. Remove chassis. Remove three screws holding side controls, six screws holding tuner, two screws holding top controls, and two screws holding remote control pickup. Remove tuner, side control, top controls and remote.

PICTURE TUBE REMOVAL
Follow Chassis Removal procedure. Remove four screws holding picture-tube shield. Remove four screws holding picture tube and remove picture tube. Do not lift picture tube by the neck.

SERVICING IN THE FIELD

CRT IMPLOSION PROTECTION AND CLEANING
Implosion protection is an integral part of the picture tube, cleaning accomplished without CRT removal.

FUSE DEVICES
A circuit breaker is used for low-voltage power-supply protection. (See photo, Cabinet-Rear View.)
A 1.5-amp fuse is used for CRT filament protection. (See Transistor Placement Chart.)
A .6-amp fuse is used for vertical sweep circuit protection. (See Transistor Placement Chart.)

LAMP ACCESSIBILITY
Tuner assembly must be removed. See Disassembly Instructions.

VHF TUNER
See Tuner folder for adjustments.

UHF TUNER
See Tuner folder for adjustments.

HORIZONTAL OSCILLATOR
Adjustment of the horizontal hold is accomplished by the proper setting of the horizontal hold coil. (See photo, Cabinet-Rear View.)

FOCUS
The focus may be varied by a focus control. (See photo, Cabinet-Rear View.)

AGC
The AGC may be varied by an AGC Delay control. (See photo, Cabinet-Rear View.)

CENTERING
Vertical centering is accomplished by proper adjustment of the vertical centering control. (See photo, Cabinet-Rear View.)

SET 1377 FOLDER 3
ZENITH
CHASSIS 17EC45, 19EC45

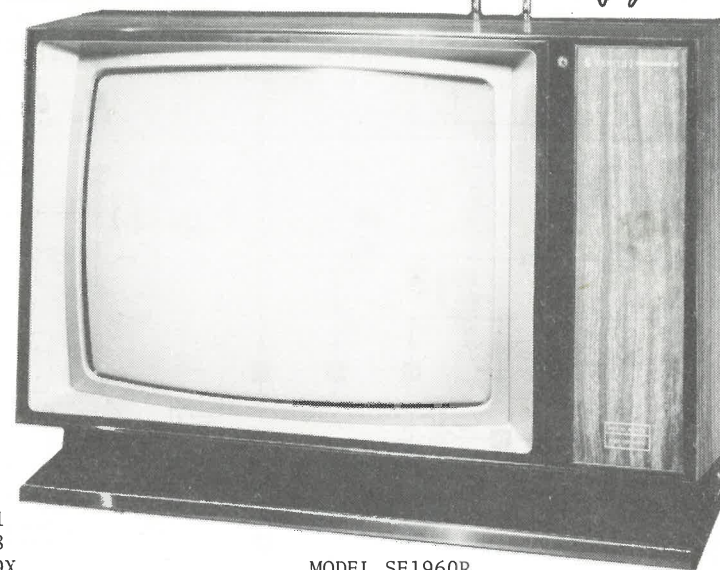
PHOTOFACT® Folder with CIRCUITRACE™

For Supplier Address See PHOTOFACT Index

ZENITH
CHASSIS 17EC45, 19EC45

COLOR TV

WARNING
HI VOLTAGE
MAY EXCEED
SOME CRT
OR TEST JIG
X-RAY RATINGS



MODEL SE1960R

MODEL	CHASSIS
E3855W	17EC45
E3860R,W	17EC45
E4025W	19EC45
E4030W,X	19EC45
E4035P	19EC45
E4037M	19EC45
E4541W	19EC45
E4545W	19EC45
E4547M	19EC45
E4549DE,P	19EC45
* SE1750R	17EC45
+ SE1960R	19EC45
T2832W	17EC45
T2839W	19EC45
T2856W	19EC45
T2857DE,P	19EC45

* Uses Remote Control Transmitter S-94828 & Receiver S-94929X.
+ Used Remote Control Transmitter S-94463 & Receiver S-94892X.

SAFETY PRECAUTIONS

Make sure line voltage does not exceed rating of set. Check high-voltage regulation and adjust to correct value.
Be sure shields and rear cover are in place and secure.

Beware of shock from high voltage or AC line. Discharge high voltage to HV cage only.
Use extreme care when handling picture tube. Do not bump, scratch, or exert undue strain.

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Convergence Board	6	VHF Tuner Set 1377, Folder 3-A	
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Luminance Module	29	Servicing in the Field	37
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The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. 4PD843

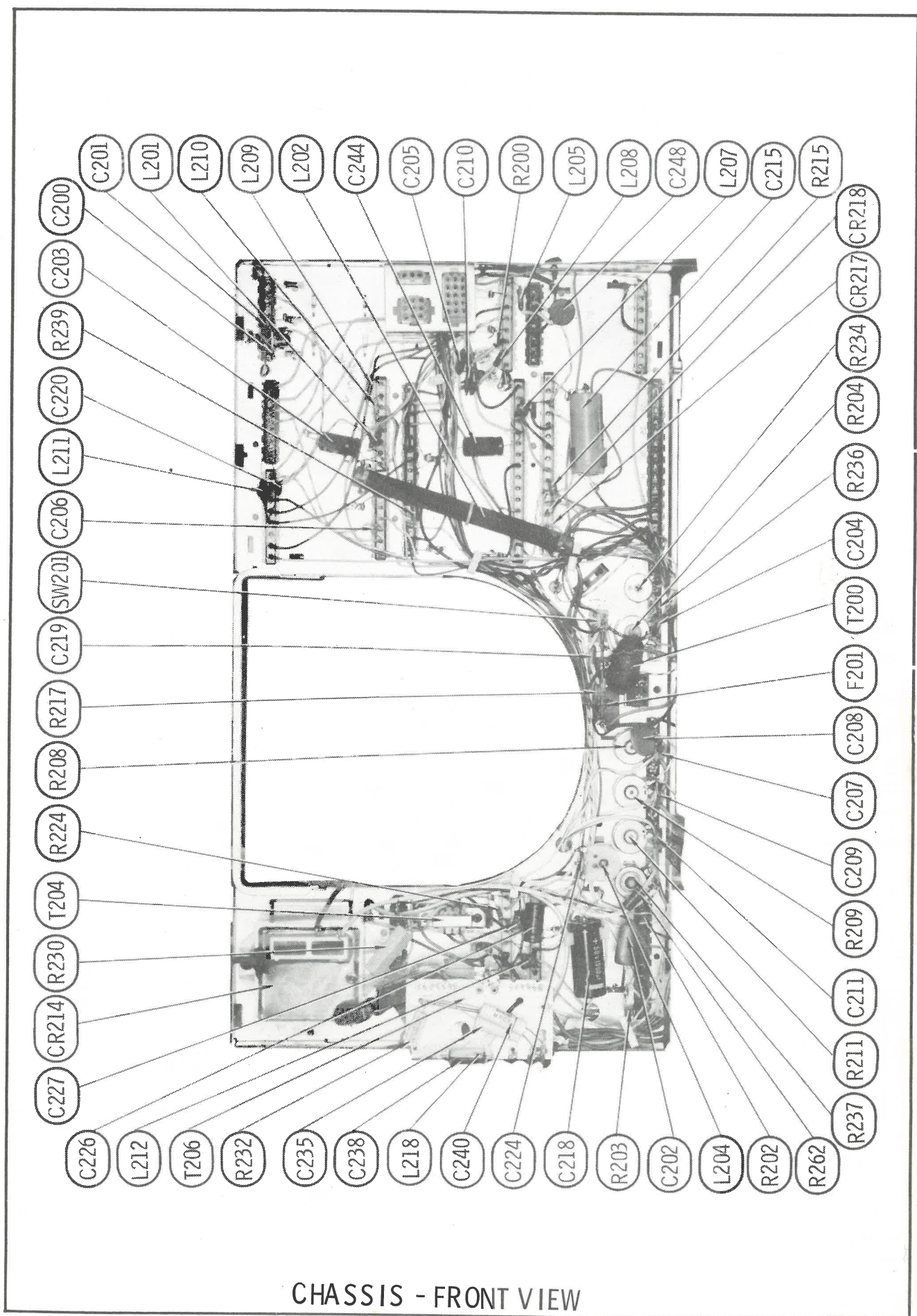
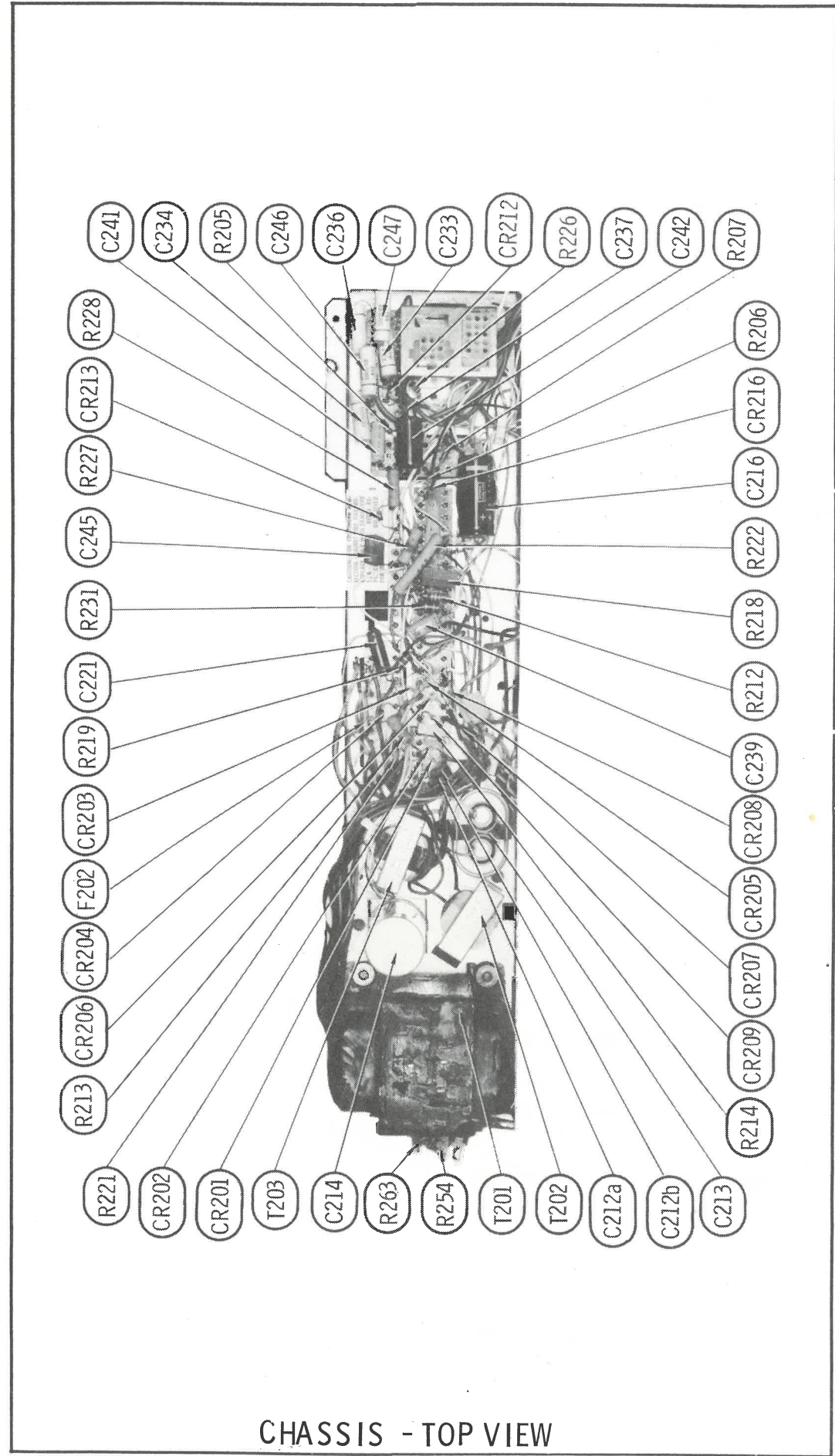
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DATE 2-74

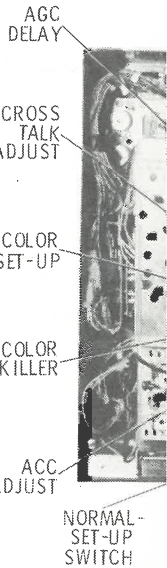
SET 1377 FOLDER 3

ZENITH
CHASSIS 17EC45, 19EC45

SET 1377 FOLDER 3



CABINET— REAR VIEW



CHASSIS REMOVAL

Remove five screws holding cabinet back. Move cabinet back. Remove all

Remove top two screws holding side support bracket and two holding vertical chassis. Set back to a 45° angle for servicing.

Remove anode lead, picture-tube and convergence plugs, speaker jack, ground straps and tuner II connect antenna leads and degauss.

NOTE: Lay set face down on soft surface.

CRT IMPLOSION PROTECTION AND CLEANING

Implosion protection is an integral part of the picture tube, cleaning accomplished by removal.

FUSE DEVICES

A circuit breaker is used for low power-supply protection. (See page 36 Rear View.)

A 1.5-amp fuse is used for CRT protection. (See Transistor Placement Chart.)

A .6-amp fuse is used for vertical circuit protection. (See Transistor Placement Chart.)

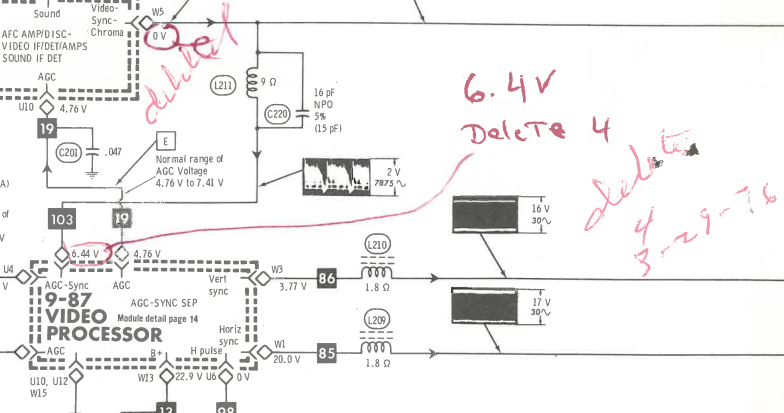
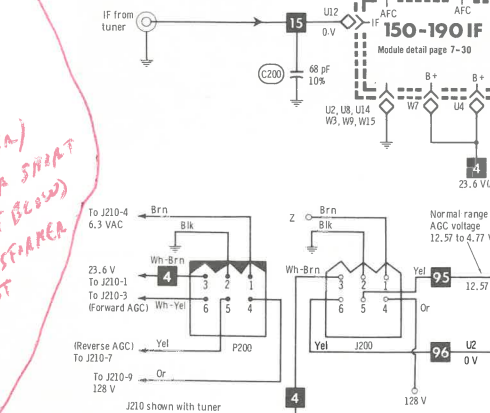
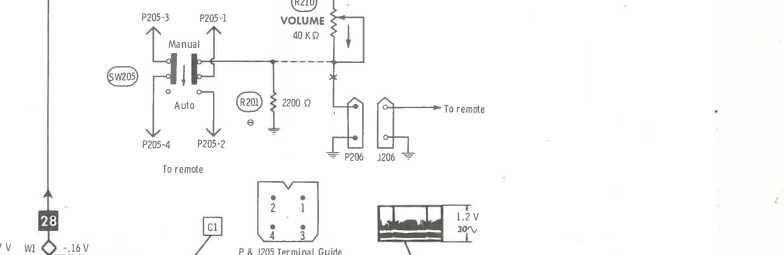
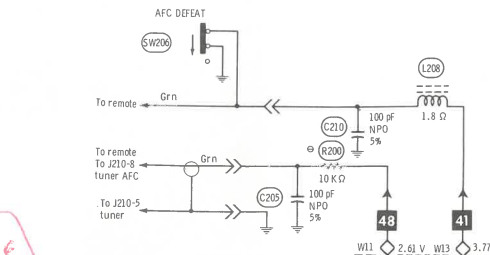
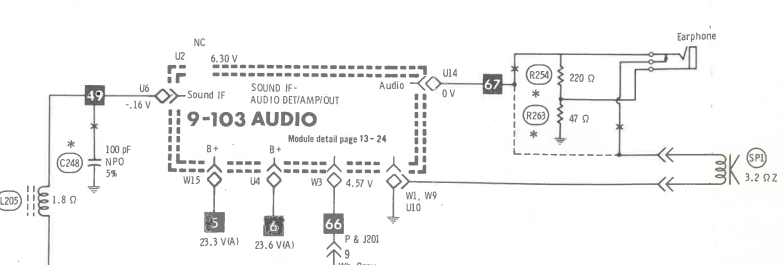
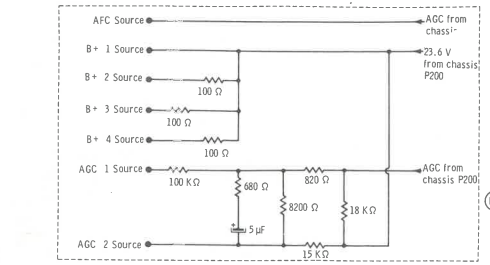
LAMP ACCESSIBILITY

Tuner assembly must be removed. See Instructions.

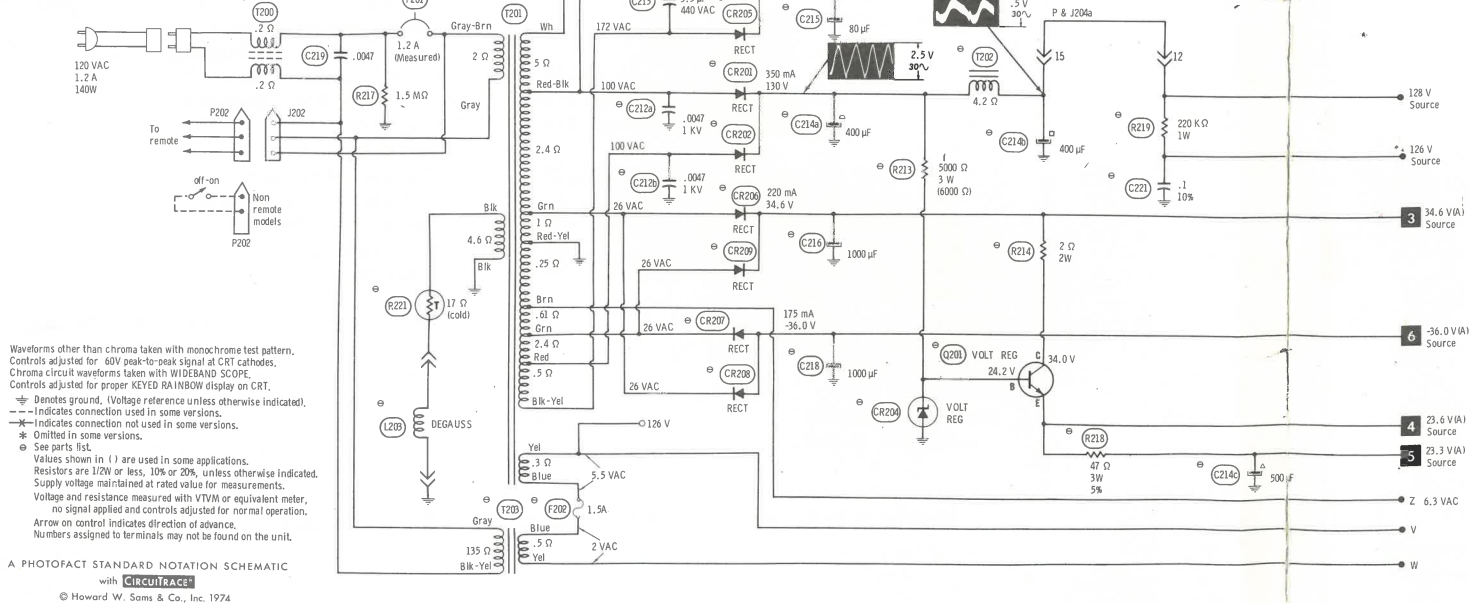
VHF TUNER

See Tuner folder for adjustments.

MEGR SERVICE TIP
(INFO ONLY)
IF LAMP (IN TUNER)
IS OUT, CHECK FOR SHORT
(FUSE MAY NOT BLOW)
THEN CHECK TRANSFORMER
OR WATTS
(TRANS COULD BE
DAMAGED)



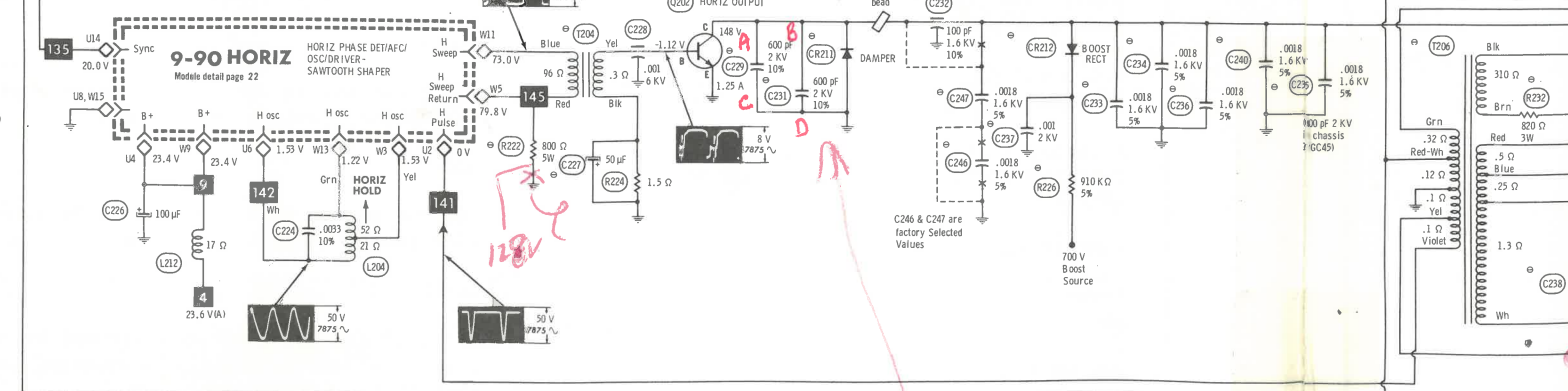
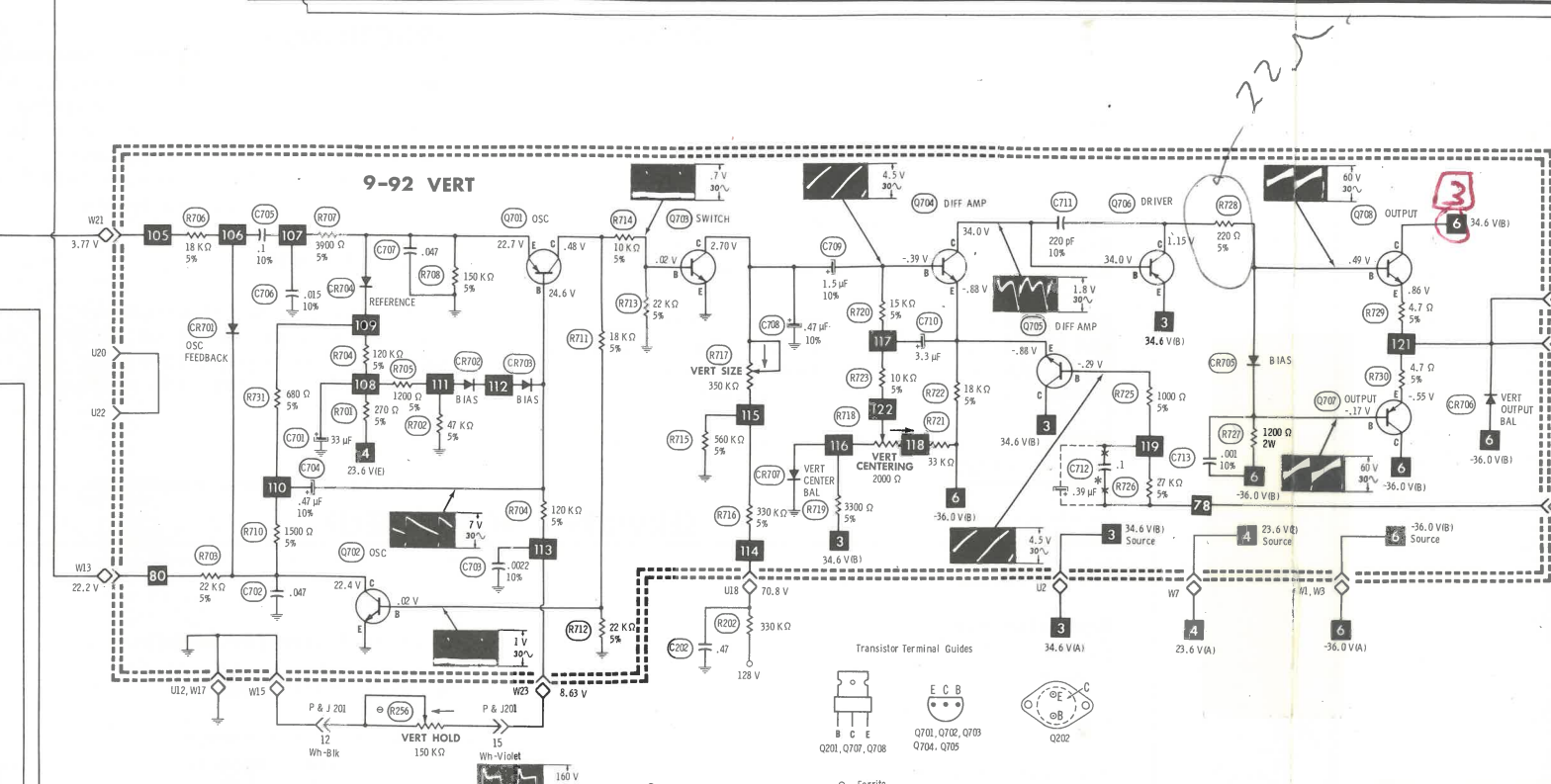
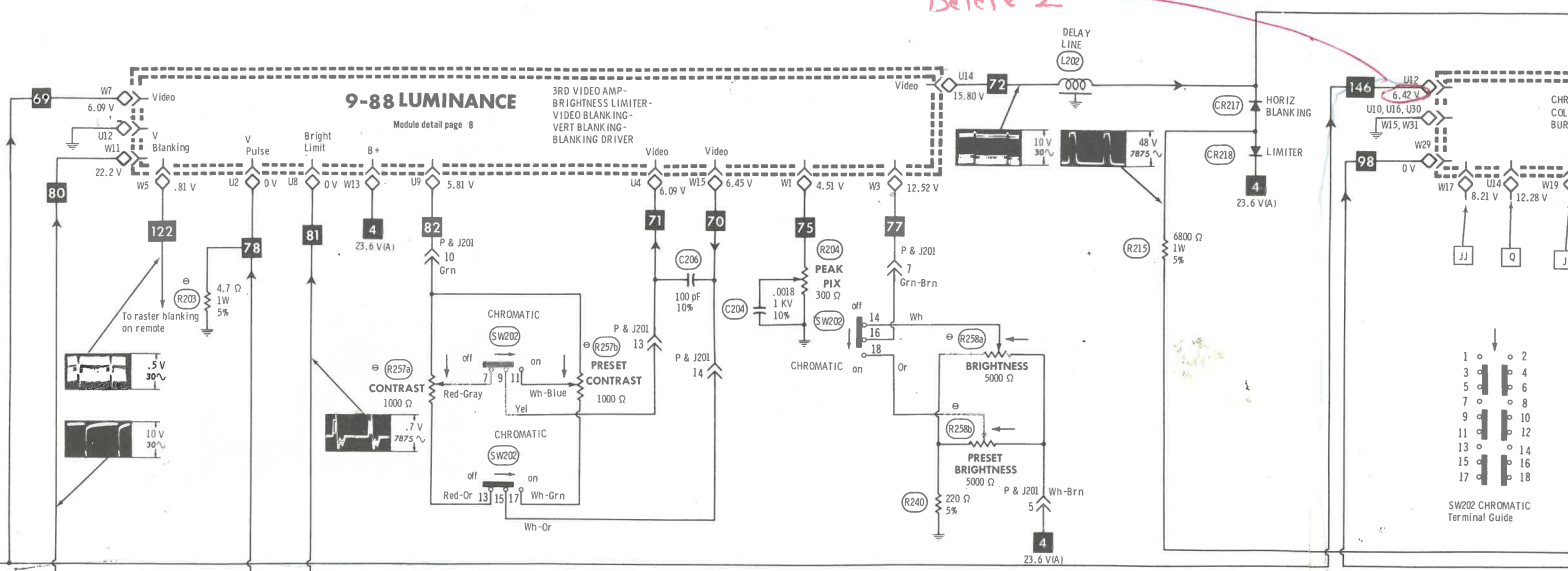
B+ DISTRIBUTION	Source	Connections
230 V(A) 128 V	1	6
128 V	2	2
34.6 V(A) 1	1	1
23.6 V(A) 12	1	12
23.3 V(A) 1	1	1
36.0 V(A) 2	1	2
Boost 700 V	2	2



Waveforms other than chroma taken with monochrome test pattern. Controls adjusted for 60V peak-to-peak signal at CRT cathodes. Chroma circuit waveforms taken with WIDE-BAND SCOPE. Controls adjusted for proper KEYED RAINBOW display on CRT. * Denotes ground. Voltage reference unless otherwise indicated. --- Indicates connection used in some versions. * Indicates connection not used in some versions. * Omitted in some versions. * See part list. Values shown in () are used in some applications. Resistors are 1/2W or less, 10% or 20%, unless otherwise indicated. Supply voltage maintained at rated value for measurements. Voltage and resistance measured with VTVM or equivalent meter, no signal applied and controls adjusted for normal operation. Arrow on control indicates direction of advance. Numbers assigned to terminals may not be found on the unit.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CircuitTracer
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WARNING HI VOLTAGE MAY EXCEED SOME CRT OR TEST JIG X-RAY RATINGS

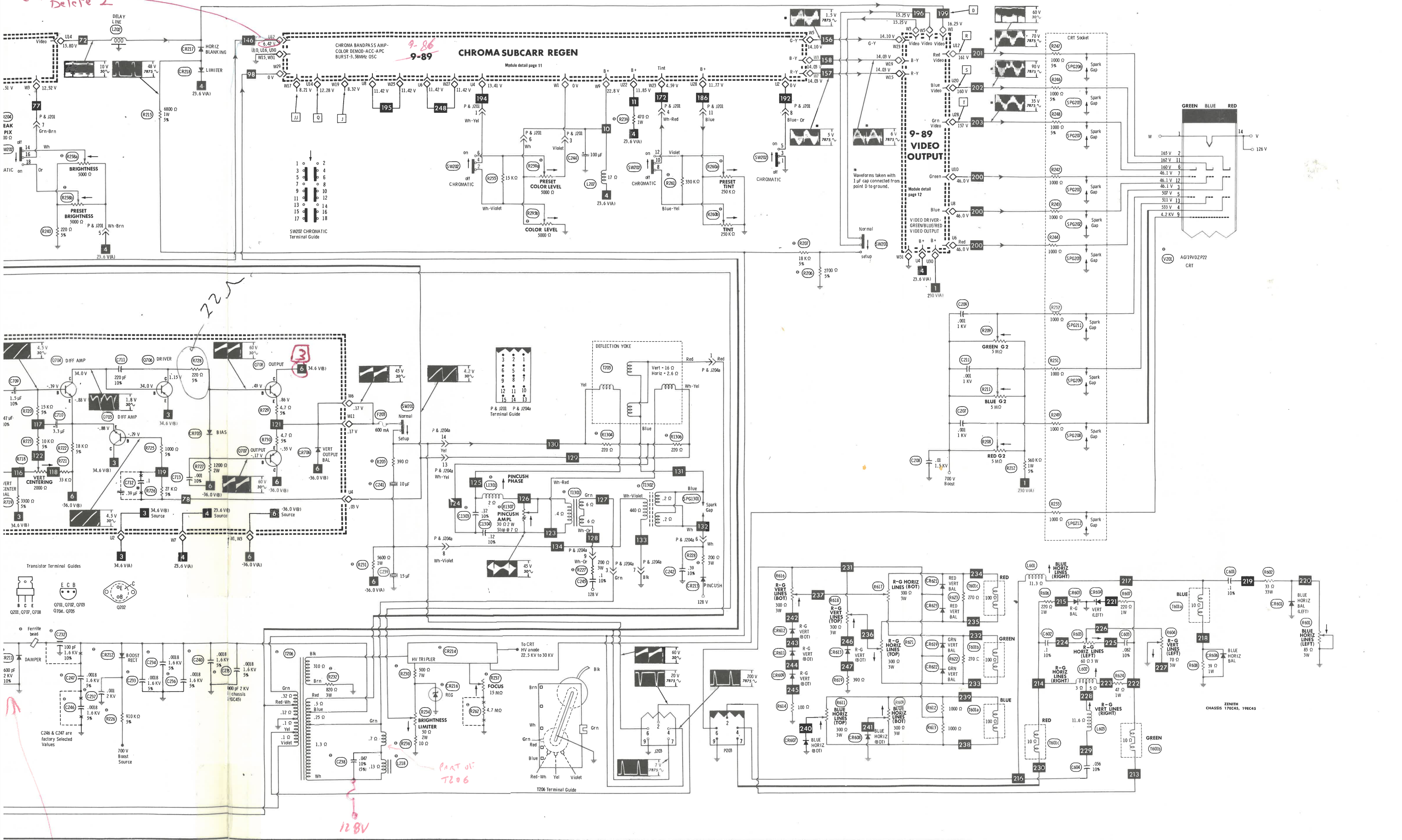


6.4 V Delete 2

6.4 V Delete 4
4-29-76

Some version use a 22-7853 & lack dual cap
def why that is to be replaced w/ 810-860 (includes cap)
3-14-77

6.4 V
Delete 2



Some version use a 22-7353 & had dual cap
that is to be replaced with 810-880 (includes cap 22-7304-01)

RESISTANCE MEASUREMENTS

ITEM	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	PIN 13	PIN 14
CRT	FIL	28 KΩ	80 KΩ	2.5 MΩ	2.5 MΩ	28 KΩ	80 KΩ	NC	80 MΩ	NC	28 KΩ	80 KΩ	2.5 MΩ	FIL
MEASUREMENTS BELOW TAKEN WITH METER HAVING .08V MAX BETWEEN PROBE TIPS														
IC401	470 KΩ	6500 Ω	5.5 MΩ	150 KΩ	1500 Ω	260 Ω	1100 Ω	1700 Ω	900 Ω	0 Ω	INF	4400 Ω	2300 Ω	6000 Ω
													PIN 15 4000 Ω	PIN 16 590 Ω
IC1001	35 KΩ	2500 Ω	8500 Ω	38 KΩ	0 Ω	1200 Ω	INF	INF	2000 Ω	2000 Ω	2000 Ω	260 Ω	7000 Ω	260 Ω
													PIN 15 25 KΩ	PIN 16 33 KΩ
IC1002	10 KΩ	800 Ω	800 Ω	3200 Ω	0 Ω	6500 Ω	650 Ω	1200 Ω	650 Ω	650 Ω	35 KΩ	35 KΩ	750 KΩ	750 KΩ
													PIN 15 33 KΩ	PIN 16 33 KΩ
IC1101	INF	INF	0 Ω	0 Ω	650 Ω	12 KΩ	8000 Ω	INF	5000 Ω	5000 Ω	INF	10 KΩ	5600 Ω	70K
IC1102	0 Ω	50 KΩ	0 Ω	0 Ω	0 Ω	INF	INF	INF	290 Ω	0 Ω	0 Ω	0 Ω	INF	0 Ω
ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C	
Q101	1100Ω	40 KΩ	2400Ω		Q703	0Ω	15 KΩ	500 KΩ		Q901	82Ω	INF	7000Ω	
Q102	680Ω	1500Ω	2400Ω		Q704	20 KΩ	40 KΩ	40 KΩ		Q902	0Ω	290Ω	2200Ω	
Q103	100Ω	750Ω	630Ω		Q705	20 KΩ	30 KΩ	40 KΩ		Q903	18 MΩ	7000Ω	220Ω	
Q104	680Ω	1800Ω	1200Ω		Q706	40 KΩ	40 KΩ	4 MΩ		Q904	18 MΩ	2800Ω	900Ω	
Q105	470Ω	1800Ω	950Ω		Q707	26Ω	7000 Ω	6000Ω		Q905	220Ω	10 KΩ	INF	
Q106	1150Ω	4000Ω	1800Ω		Q708	26Ω	4 MΩ	40 KΩ		Q1204	INF	900Ω	0Ω	
Q201	220Ω	20 KΩ	50 KΩ		Q801	270Ω	220 KΩ	2.5 MΩ		Q1205	INF	3000Ω	28 KΩ	
Q202	0Ω	2Ω	17 KΩ		Q802	200Ω	6500Ω	800Ω		Q1206	INF	3000Ω	28 KΩ	
Q701	150 KΩ	170 KΩ	17 KΩ		Q803	15Ω	180Ω	17 KΩ		Q1207	INF	3000Ω	28 KΩ	
Q702	0Ω	15 KΩ	3000Ω		Q804	330Ω	0Ω	5800Ω						

▲ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
● READING DEPENDS UPON POLARITY OF METER CONNECTIONS.

TROUBLESHOOTING CHECK CHART

The following chart lists component failures most likely to produce the indicated symptoms.

PICTURE or SOUND

No pic, no sound, no raster: Circuit Breaker, Fuses, LV Rects

No pic, no sound, has raster: Video IFs, Tuner Mixer/Output

No pic, no sound, has snow: Tuner RF/Mixer/Output/Osc

No pic, has sound, no raster: CRT

No pic, has sound, has raster: Video Amps/Driver

Has pic, no sound: Sound IF/Det, Audio Det/Amp/Output

Overloaded picture: AGC, Video Det

Low or excessive brightness: Brightness Limiter

SWEEP

No raster, has sound: Horiz Osc/Driver/Output, Damper,
HV Tripler, CRT

No vert deflection: Vert Osc/Switch/Diff Amp/Driver/Output

Poor vert lin or foldover: Vert Osc/Switch/Diff Amp/Driver/Output

Poor horiz lin or foldover: Horiz Output, Damper.

Narrow picture: LV Rects, Horiz Osc/Driver/Output, Damper

Vert off frequency: Vert Osc

Horiz off frequency: Horiz Phase Det/AFC/Osc

SYNC

No vert sync: Vert Osc

No horiz sync: Horiz Phase Det/AFC/Osc

No vert/horiz sync: Sync Sep

RASTER

Yellow (no blue): Blue Video Output, CRT

Cyan (no red): Red Video Output, CRT

Magenta (no green): Green Video Output, CRT

COLOR (B/W operating normally)

No color: Chroma Bandpass Amp, Burst

Weak color: Chroma Bandpass Amp

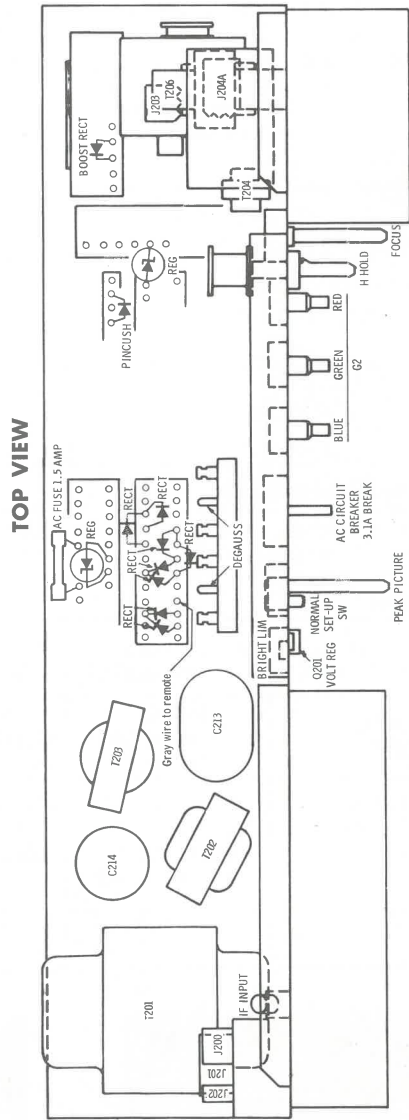
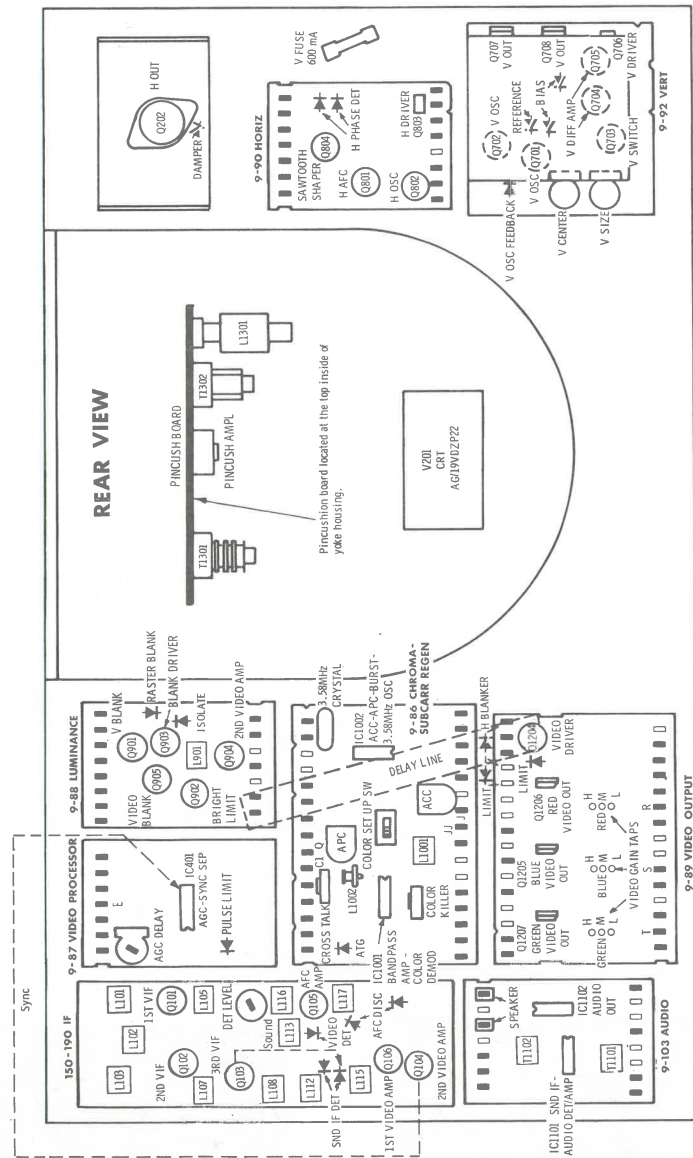
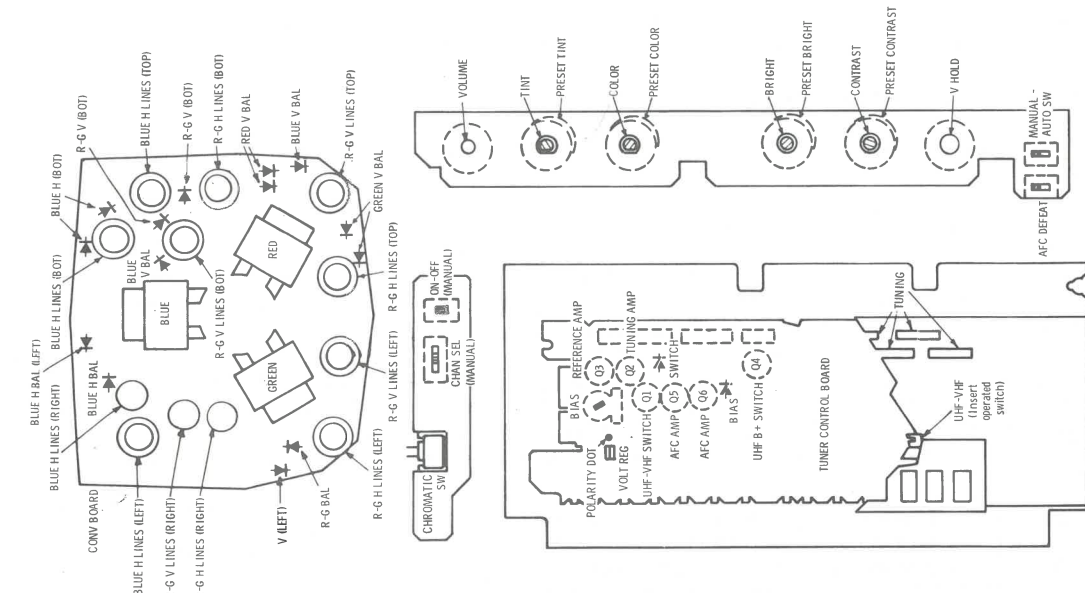
No color sync: Burst, 3.58MHz Osc

No green: Color Demod, Green Video Output

No blue: Color Demod, Blue Video Output

No red: Color Demod, Red Bideo Output

Incorrect hue (tint): Burst, Color Demod



TRANSISTOR PLACEMENT CHART

TV ALIGNMENT INSTRUCTIONS

Use an isolation transformer, or observe polarity, and maintain line voltage at 120VAC. Allow a 20-minute warm-up period for receiver and test equipment.
Suggested Alignment Tools: GC ELECTRONICS

L19 (VHF Tuner Output coil), L101, L102, L103, L105, L107, L108, L112, L113, L115, L116, L117, T1101, T1102 9296, 9297, 9300
L901 9440

PRELIMINARY INSTRUCTIONS

Set the channel selector to the highest unused channel. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. Use only enough generator output to provide a usable indication.
Note: Response may vary slightly from that shown.
Connect a +7.2 volt bias supply to E, low side to ground. Place AFC switch to off.
Connect a voltmeter to C1, low side to ground. With no signal, adjust Detector Level control, R125, for +8.5 volts DC ± 0.2 volts. Disconnect meter after making this adjustment.

VIDEO IF ALIGNMENT

CONNECT SCOPE	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
Vertical input to C1, low side to ground.	Thru .001mfd to A on VHF tuner, low side to ground.	44MHz (10MHz Sweep)	39.75MHz	Adjust L102 for MINIMUM. See Figure 1.
			41.25MHz	Adjust L112 Top and Bottom for MINIMUM. See Figure 1.
			47.25MHz	Adjust L103 Top and Bottom for MINIMUM. See Figure 1.
"	"	"	39.75MHz 41.25MHz 42.17MHz 44.00MHz 45.75MHz 47.25MHz	Adjust L101 Top and Bottom, L105 Top and Bottom, L107, L108, L113 and L19 (VHF tuner) for maximum gain and symmetry of response. L101 Bottom and L113 affect 45.75MHz marker L101 Top and L108 affect 44.00MHz. L105 and L107 affect 44.00MHz and 42.17MHz markers. L19 (VHF tuner) affects overall response. See Figure 2.

4.5MHz TRAP ALIGNMENT

Tune in a strong TV signal and set the contrast at maximum. Adjust the fine tuning until a beat pattern is visible on the screen. Adjust L115 for MINIMUM beat interference.

AFC ALIGNMENT

Connect as explained in preliminary instructions. Disconnect AFC output lead (white/blue wire). Adjust detector level as explained in preliminary instructions, if necessary.

CONNECT SCOPE	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
Vertical input to AFC output terminal.	Thru .001 uF to A on VHF tuner, low side to ground.	44.00MHz (10MHz Sweep)	45.75MHz	Adjust L116 and L117 Bottom for maximum gain and symmetry of response. See Fig.3.
"	"	"	"	Adjust L117 Top for placement fo 45.75MHz marker. See Figure 3.

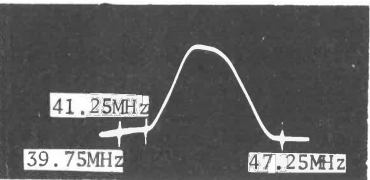


FIG. 1

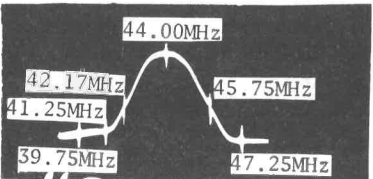


FIG. 2

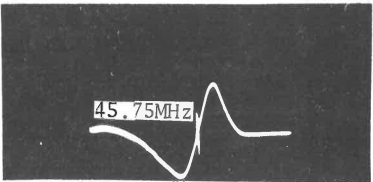


FIG. 3

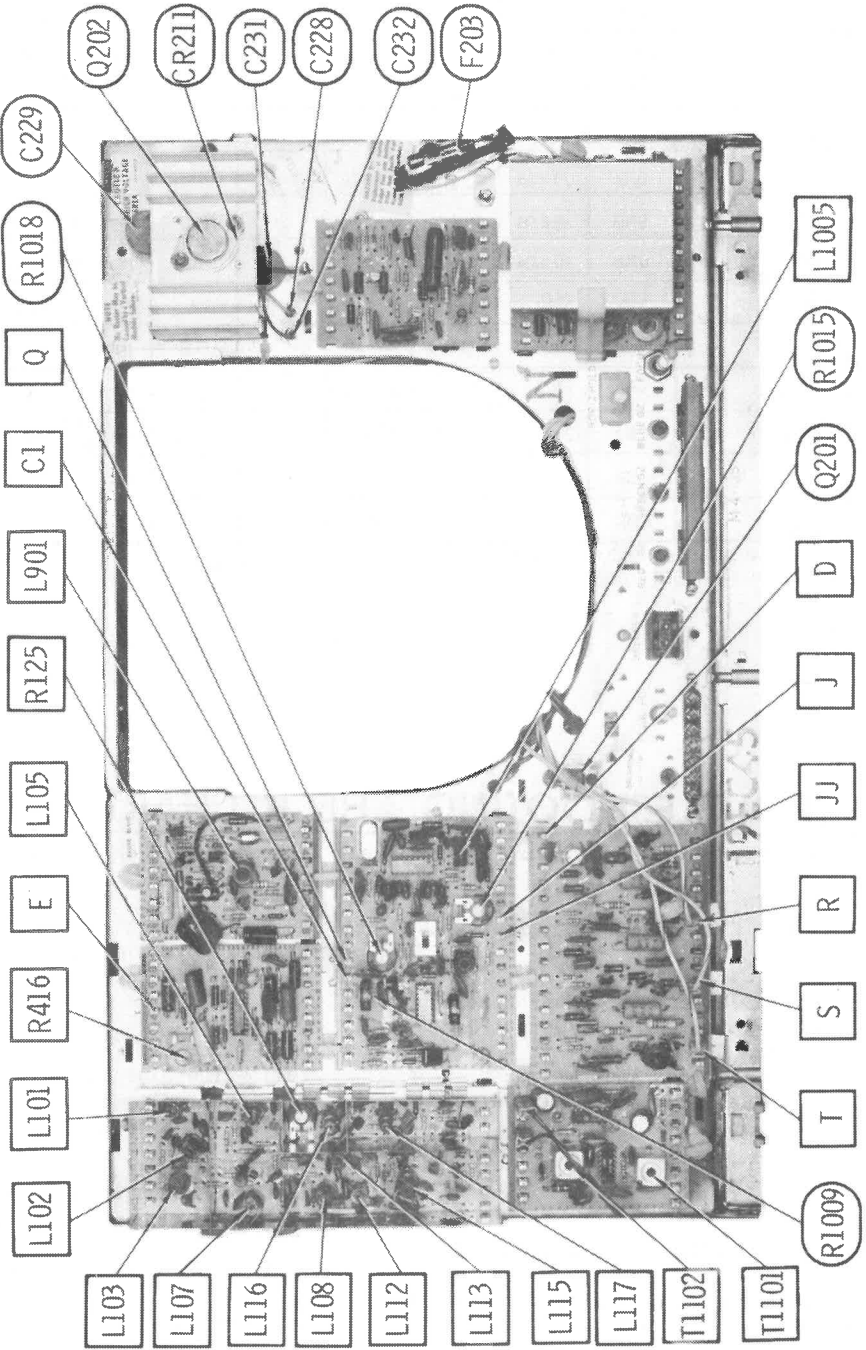
TV ALIGNMENT INSTRUCTIONS (Continued)

SOUND IF ALIGNMENT

Tune in a station and adjust T1101 (Black Dot) for maximum sound. Reduce signal strength at the antenna terminals until distortion appears. Continue to reduce the signal while aligning for undistorted output by adjusting T1102 (Green Dot).

3.58MHz TRAP ALIGNMENT

Connect scope and signal generator across 3.58MHz Trap, L901. Set generator for 3.58MHz and adjust L901 for maximum indication on scope. This adjustment is made with the set turned off.



CHASSIS-REAR VIEW

MISCELLANEOUS ADJUSTMENTS

HORIZONTAL SWEEP CIRCUIT ADJUSTMENT

Tune in a TV station and adjust all controls for normal operation. Adjust Horizontal Hold coil, L204, to a point where it is virtually impossible to lose horizontal sync while switching from channel to channel.

HIGH VOLTAGE ADJUSTMENT

This chassis uses a voltage regulating power transformer and therefore no high voltage adjustment is required. With all controls set for a normal picture, the high voltage should read no higher than 27.5KV for Chassis 17EC45 and 30KV for Chassis 19EC45.

AGC ADJUSTMENTS

The AGC delay control is set at the factory and normally will not need adjustment. To adjust the AGC delay control, tune in the weakest TV station available, but one without snow in the picture. Turn the AGC delay control to the right until snow appears in the picture; then turn control back until the snow just disappears. Check this setting against other weak stations in the area.

VERTICAL SIZE AND CENTERING

Adjust vertical size and vertical centering while observing a test pattern. There is no vertical linearity control on this chassis.

BRIGHTNESS LIMITER ADJUSTMENT

Disconnect the IF cable from the VHF tuner to IF module (for a no-signal input condition). Then set brightness and contrast controls to maximum. Proper placement of the video gain taps are necessary. The green and red taps must be set at the high (H) and the blue tap at medium (M) position.

Connect a low range volt meter across the Output Resistor, R1255, of the green video output transistor. Adjust the brightness limiter control for .55 volts.

After this adjustment is made, return the gain taps to their previous position and re-connect the IF cable to the VHF tuner.

COLOR KILLER ADJUSTMENT

Tune in a weak signal or reduce the signal at the antenna terminals to obtain a snowy picture. Set contrast, color level and color killer to maximum clockwise rotation. Slowly turn color killer counterclockwise until colored snow just disappears.

CROSSTALK ADJUSTMENT

Connect a color bar generator to antenna terminals. Tune in a color bar pattern. Connect a 1 uF, 25-volt electrolytic capacitor from point D to ground, to remove the luminance signal. Adjust the Crosstalk control, R1009, for optimum sharpness and clarity of both leading and trailing edges (sides) of the color bars.

ACC CONTROL ADJUSTMENT

Slide color set-up switch to the align position. Connect a VTVM from point Q to ground. Short across points J and JJ and observe meter reading. Remove short from test points and adjust ACC control, R1015, for an identical reading.

APC CONTROL ADJUSTMENT

Slide color set-up switch to the align position. Adjust APC control, R1018, for MINIMUM movement of color bars through picture. Return color set-up switch to normal position. Check for proper waveform as shown on schematic at R-Y, G-Y, and B-Y outputs: points R, T and S.

Connect scope to point R. Set tint control to mid-range. Adjust Hue coil, L1005, to obtain 6th bar crossover, waveform as shown on schematic.

PURITY ADJUSTMENTS

If the picture tube appears to be magnetized, use a degaussing coil to demagnetize tube and mounting brackets.

Turn the blue and green G2 controls counterclockwise and turn the red screen fully clockwise. Loosen the locking wing nuts of the deflection yoke assembly and slide it back without disturbing the position of the other neck components. Adjust the tabs on the purity magnet until a red spot appears at the center of the tube. Slide the deflection yoke forward to obtain a uniform red over the entire picture-tube face.

GRAY SCALE ADJUSTMENTS

To adjust, use a black and white picture that displays an adequate range of light levels, light and gray objects, dark objects, etc. Set brightness and contrast for a normal picture.

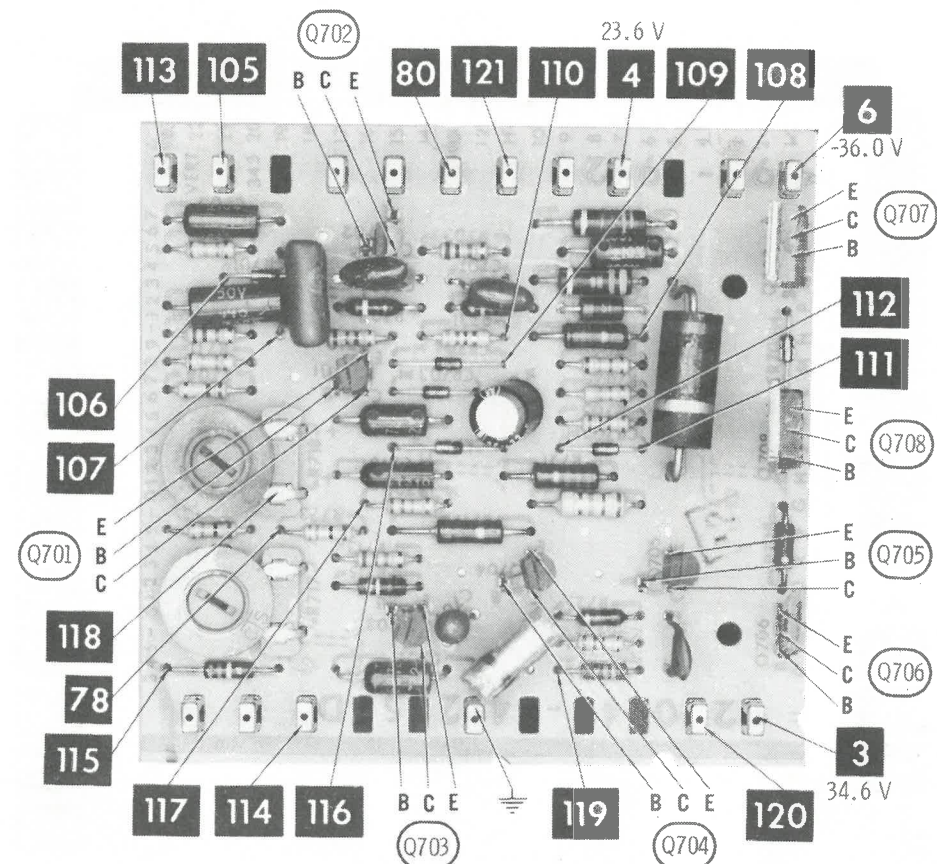
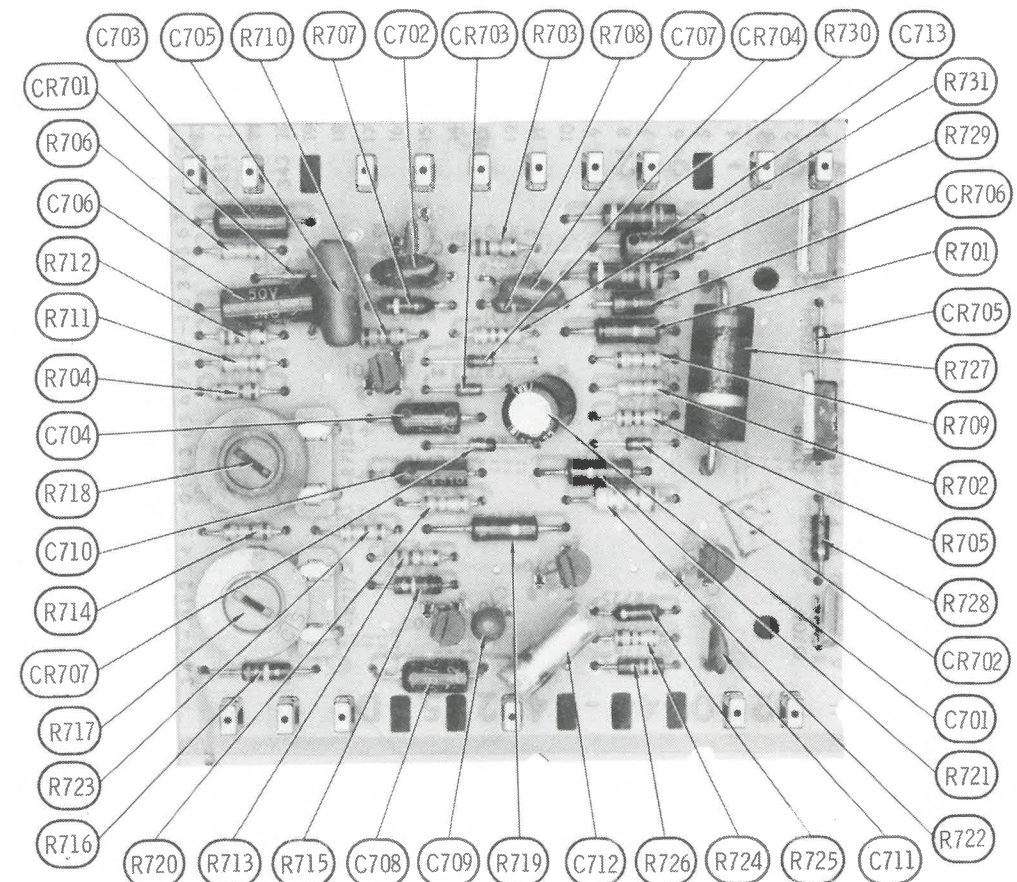
Place the normal set-up switch to set-up position. Place video output taps to high (H) position. Advance the screen controls (G2) one at a time, until each produces a barely visible line on the screen.

Return the normal-set-up switch to normal. If a slight color cast is present, relocate the appropriate video (chroma) gain taps to eliminate the color shading. Check overall black and white tracking by turning contrast and brightness controls through their entire range.

DYNAMIC PINCUSHION ADJUSTMENTS

Connect a crosshatch generator to the antenna terminals and adjust the set for a normal crosshatch pattern. Pincushion correction at the sides is fixed; no adjustment is provided. Top and bottom pincushion is factory adjusted and readjustment is seldom needed.

If necessary adjust the Pincushion Amplitude control, R1307, and Phase coil, L1301, until the top and bottom of the pattern is as straight as possible.

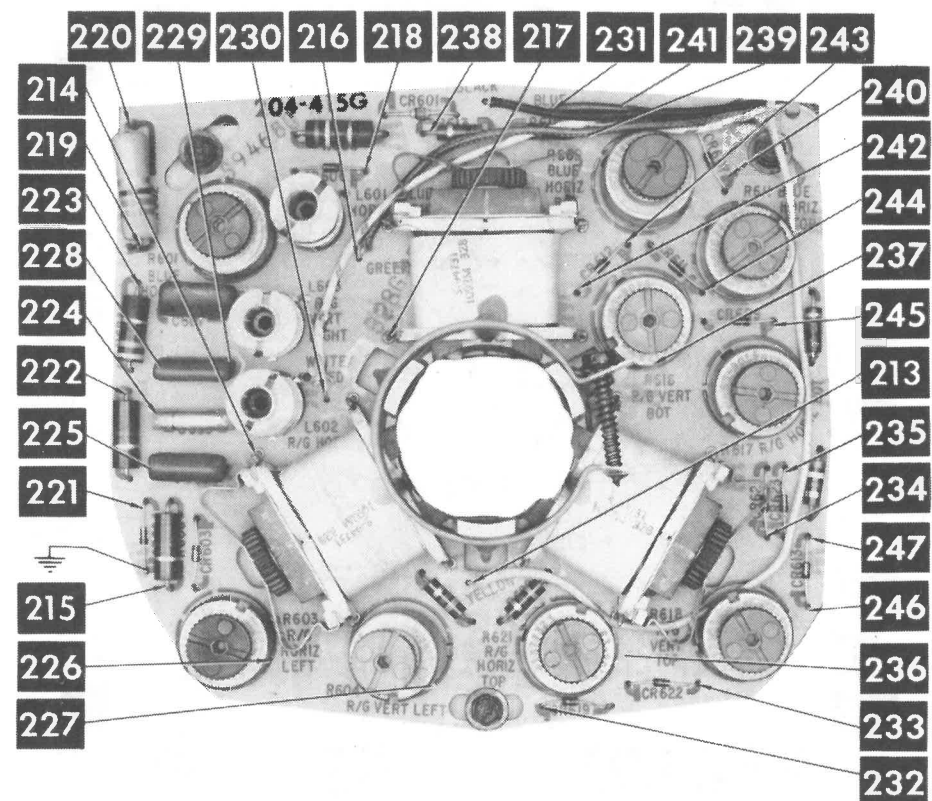
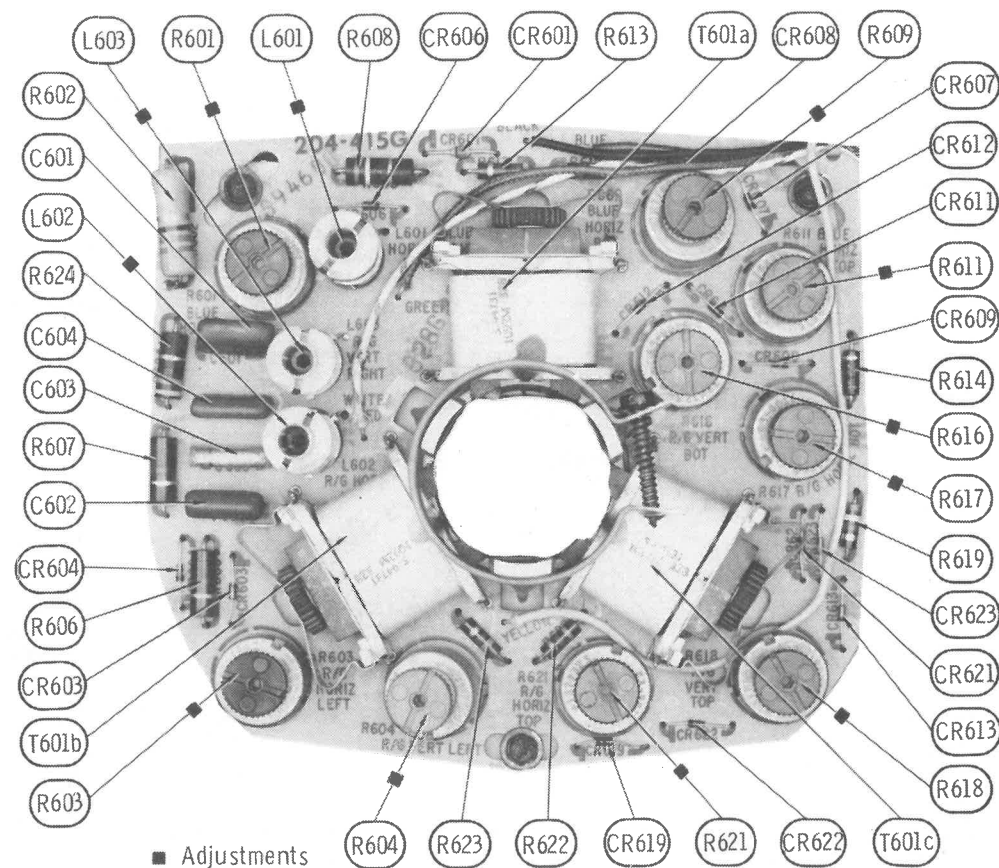


VERTICAL MODULE

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ZENITH
CHASSIS 17EC45, 19EC45

FOLDER 3



CONVERGENCE BOARD

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CONVERGENCE ADJUSTMENTS

Miscellaneous Adjustments should be made before proceeding to Convergence Adjustments. See Page 32. Connect dot/crosshatch generator to antenna terminals. Use dot pattern for center dot convergence. Use crosshatch pattern for all other adjustments. View pattern as displayed on TV screen. NOTE: Maintain center convergence throughout setup procedure.

Perform center dot convergence using convergence magnets.

Adjust R616 and R618 to converge red and green vertical center line from top to bottom of screen.

Adjust R617 and R621 to converge red and green horizontal lines along vertical center line from top to bottom of screen.

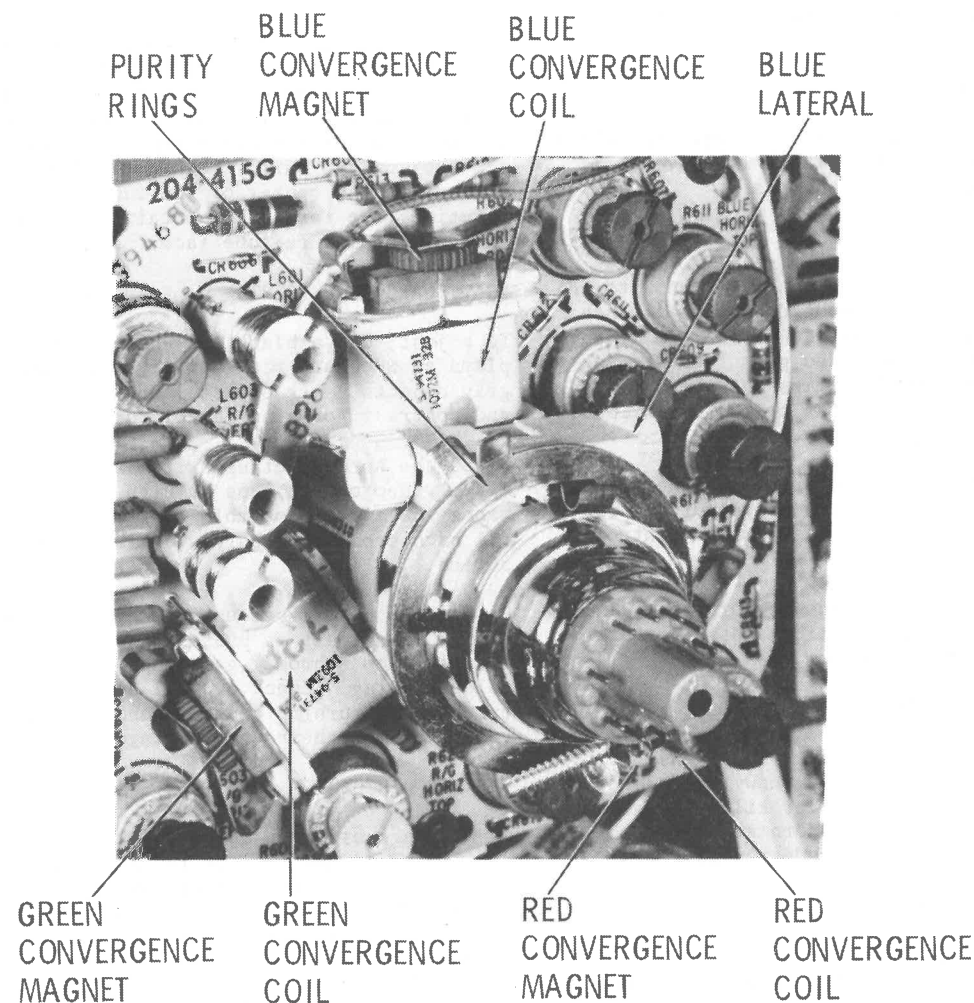
Adjust R603 and R604 to converge red and green vertical and horizontal lines, left side of screen.

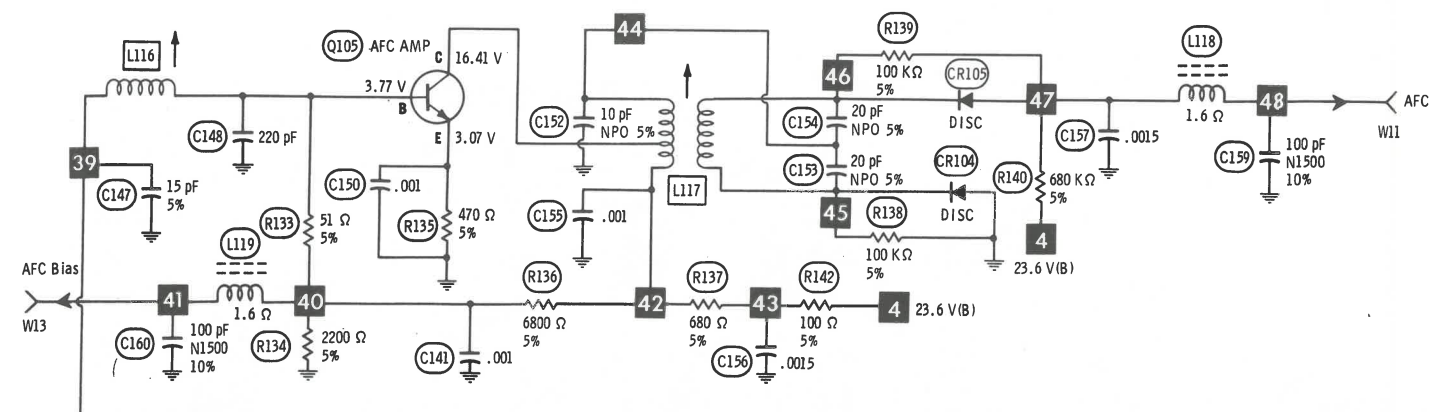
Adjust L602 and L603 to converge red and green vertical and horizontal lines, right side of screen.

Adjust R609 and R611 to converge blue horizontal lines along vertical center line from top to bottom of screen.

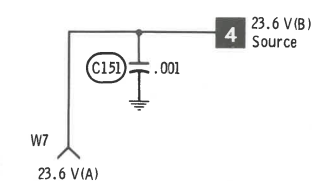
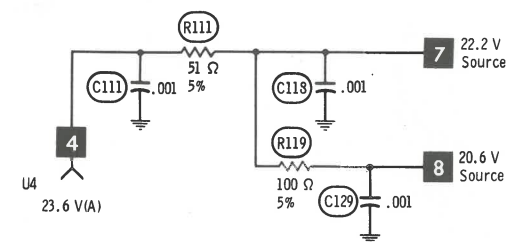
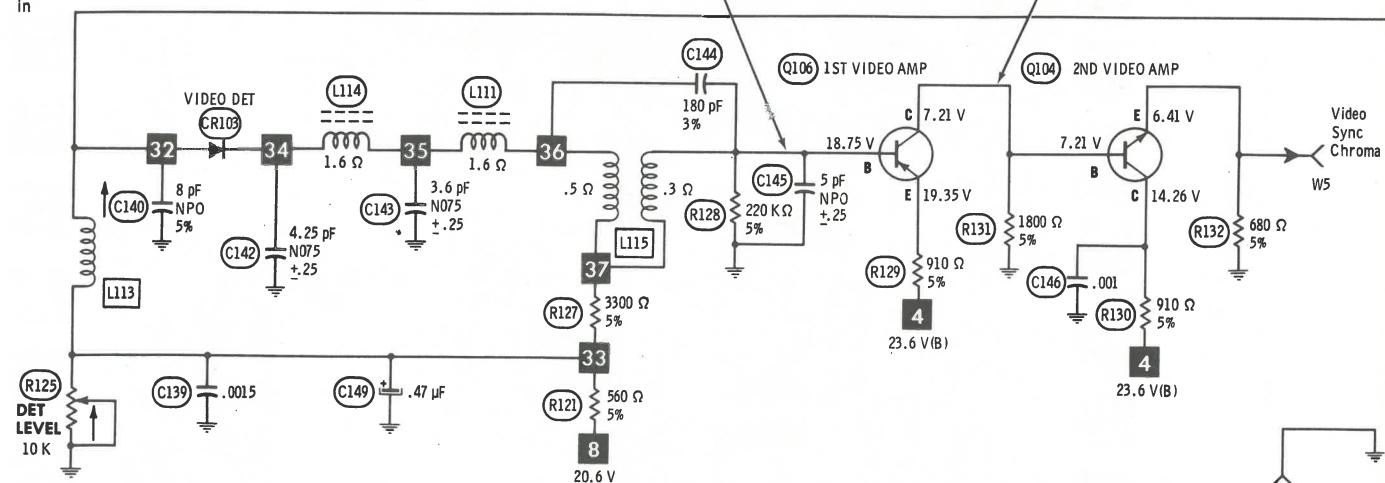
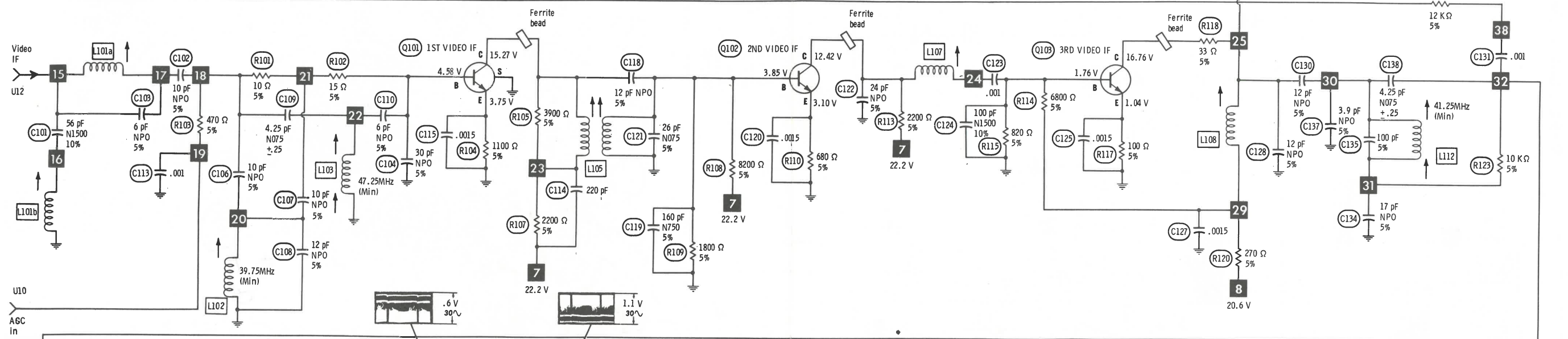
Adjust R601 and L601 to converge blue horizontal lines, left and right sides of screen.

Touch up appropriate controls if necessary.





150-190 IF



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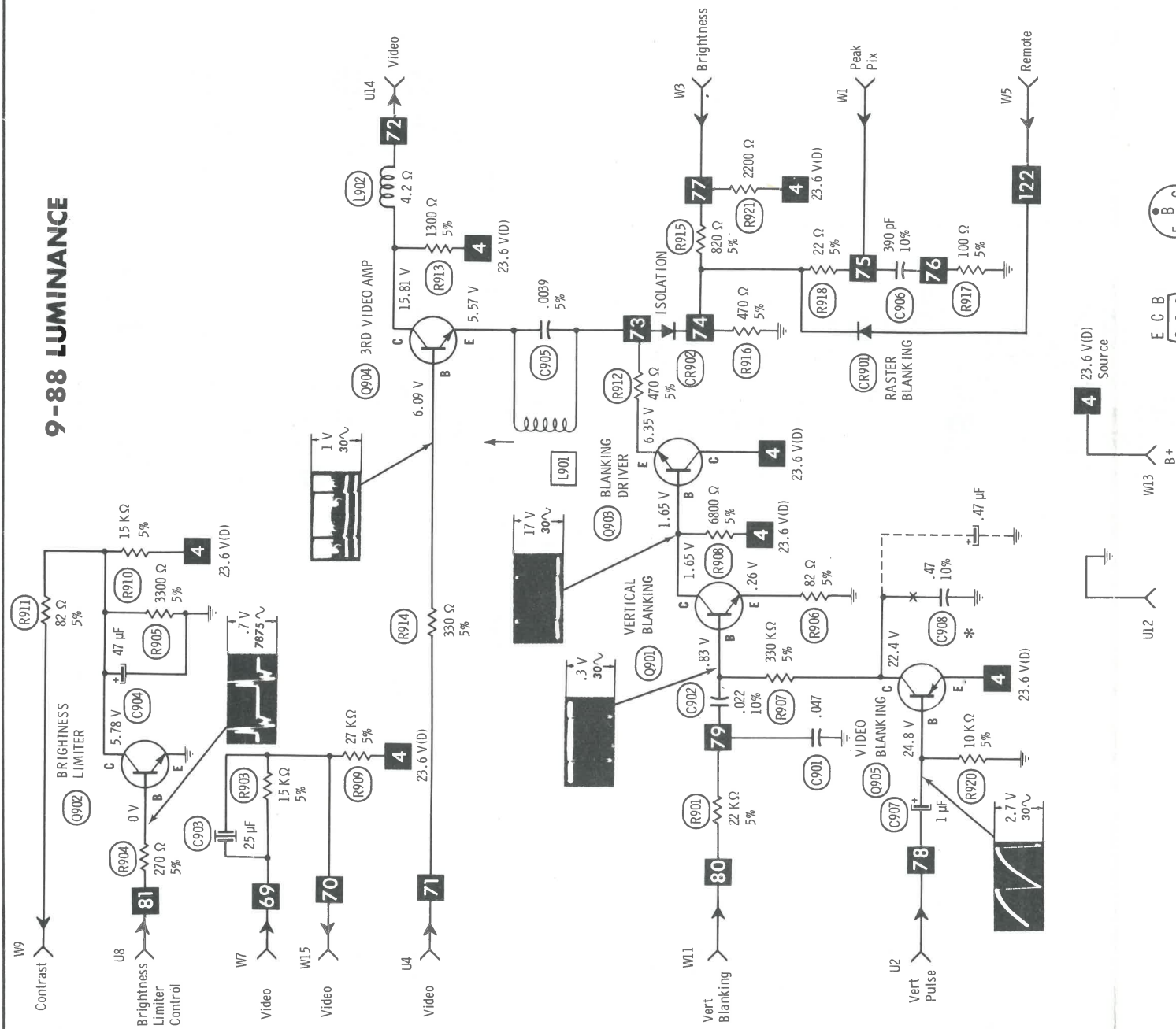
ZENITH
CHASSIS 17EC45, 19EC45

FOLDER 3

IF MODULE

SET 1377 FOLDER 3

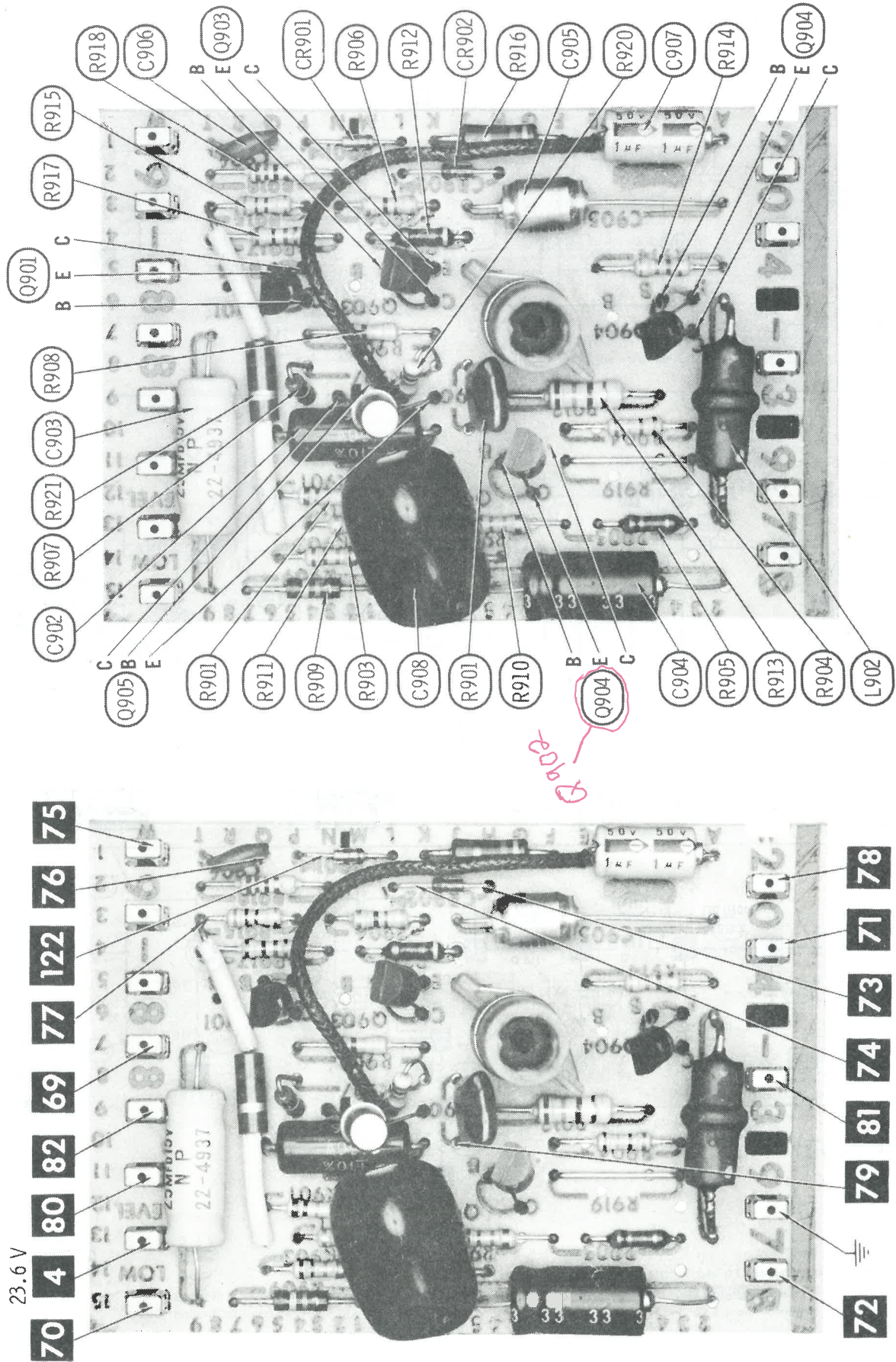
9-88 LUMINANCE



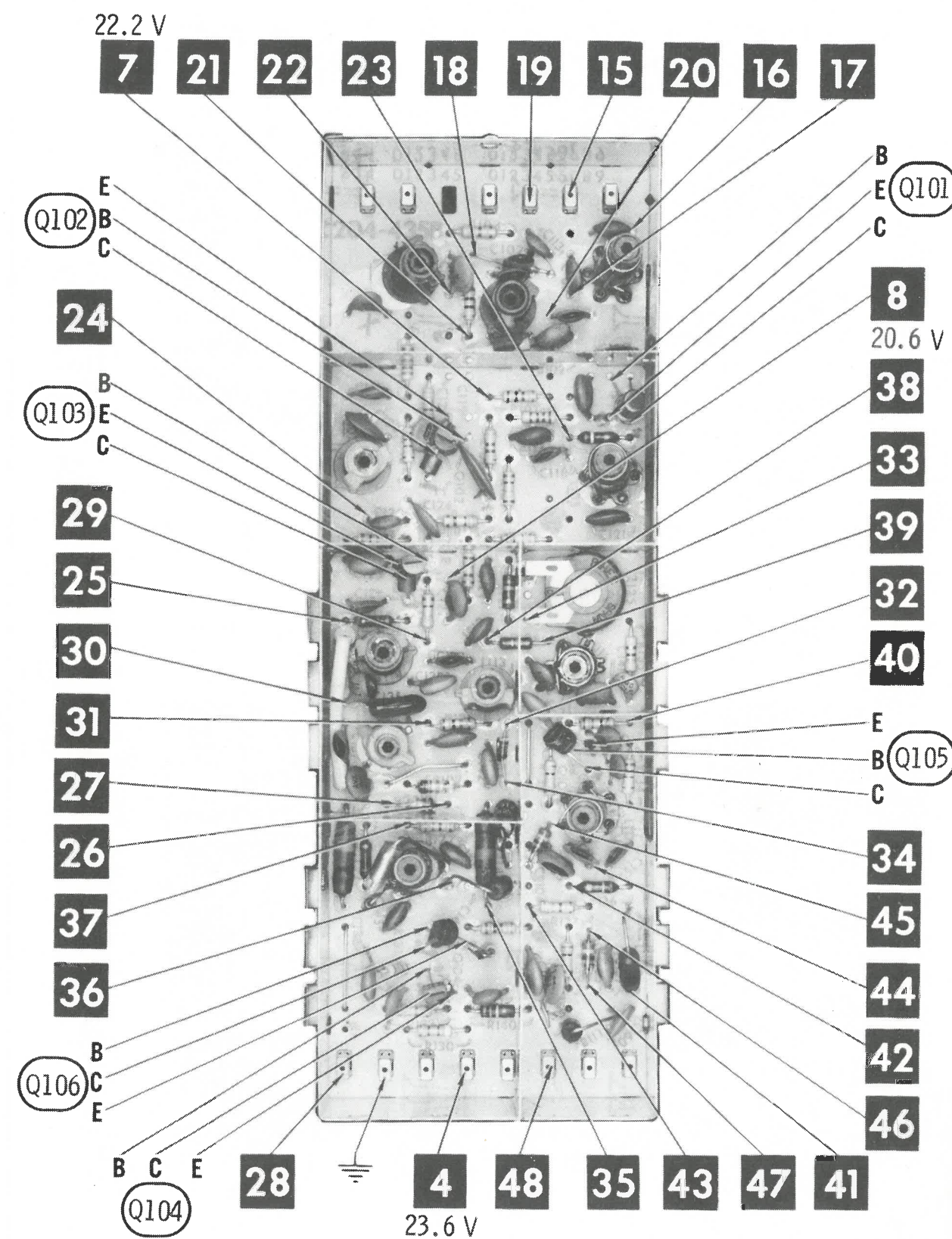
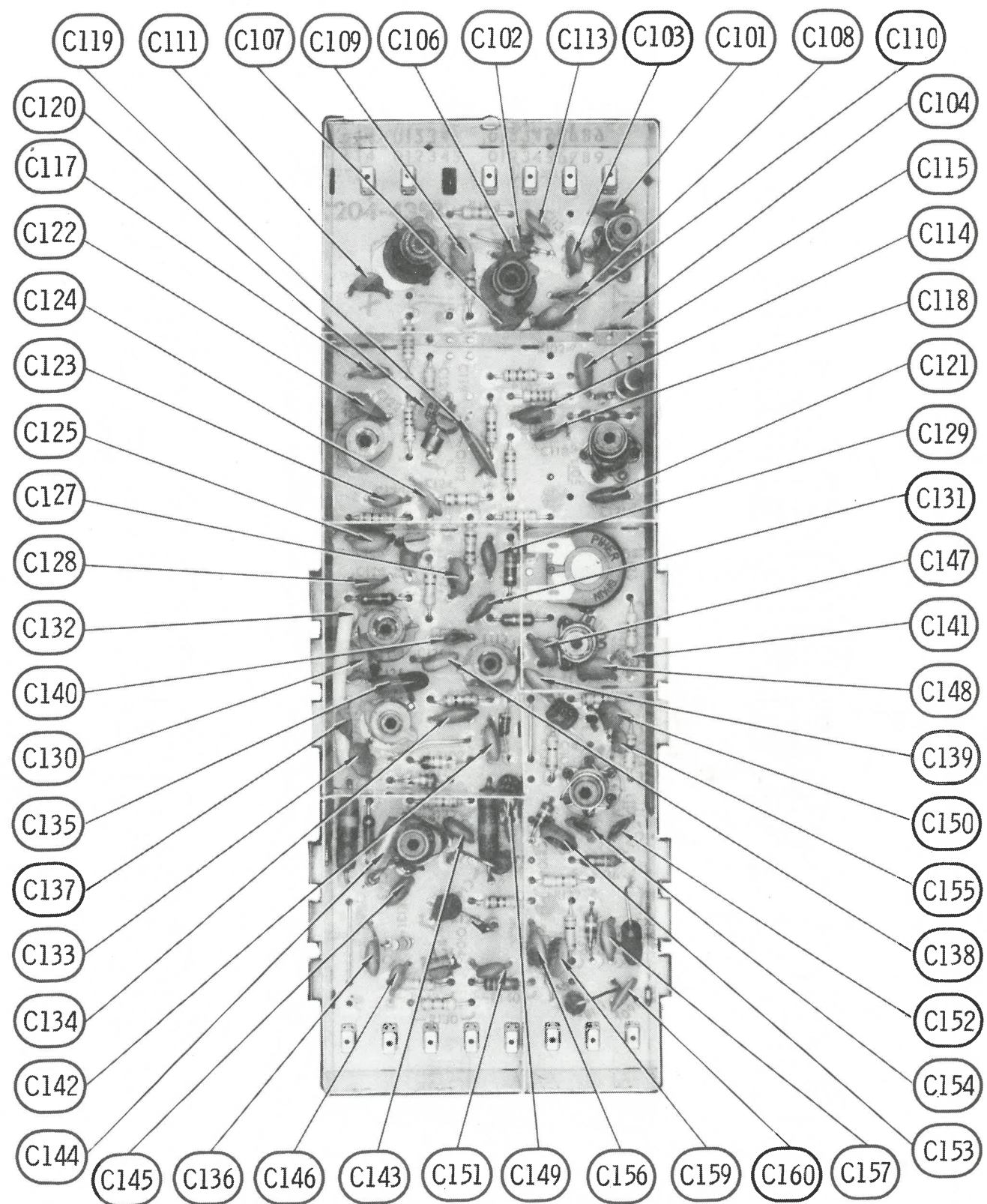
LUMINANCE MODULE

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with CIRCUITRACE[®]
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Transistor Terminal Guides
Q901, Q902
Q903, Q904
Q905



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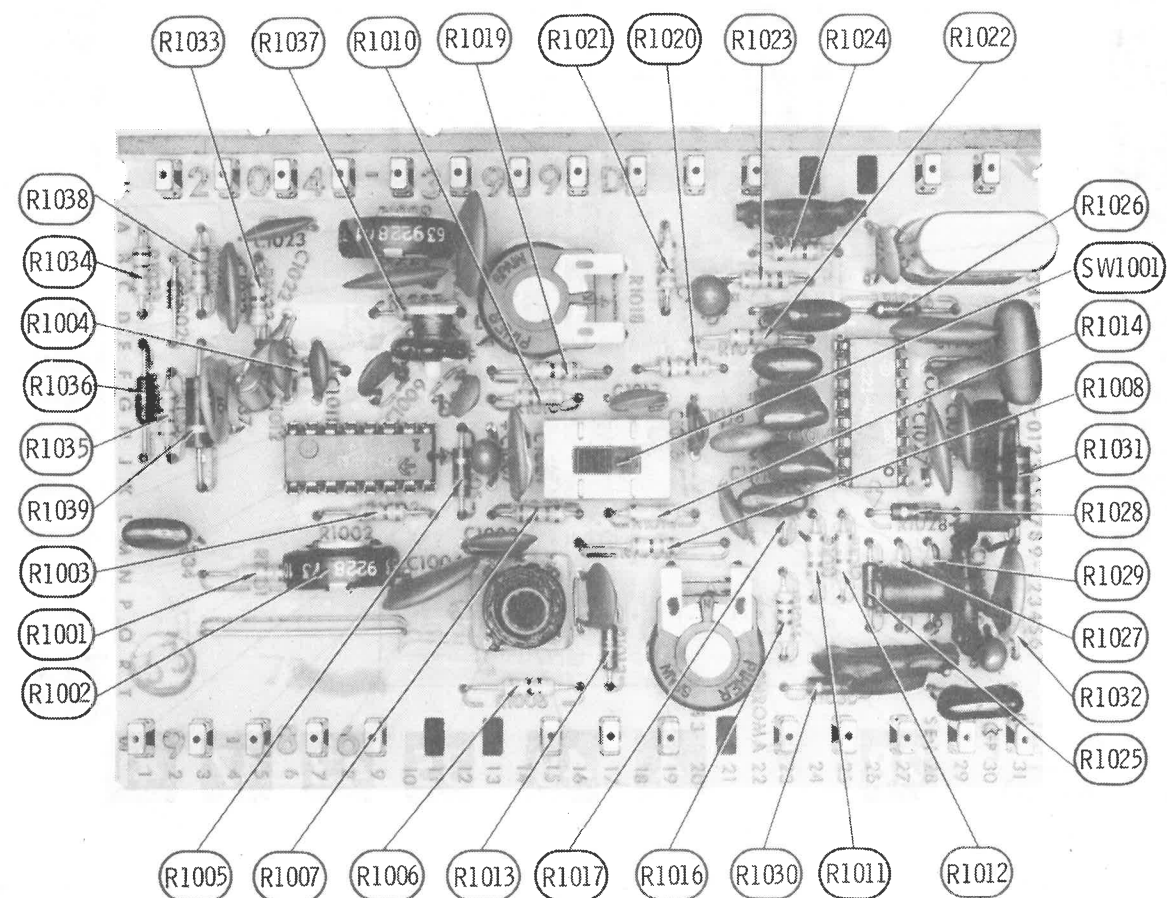
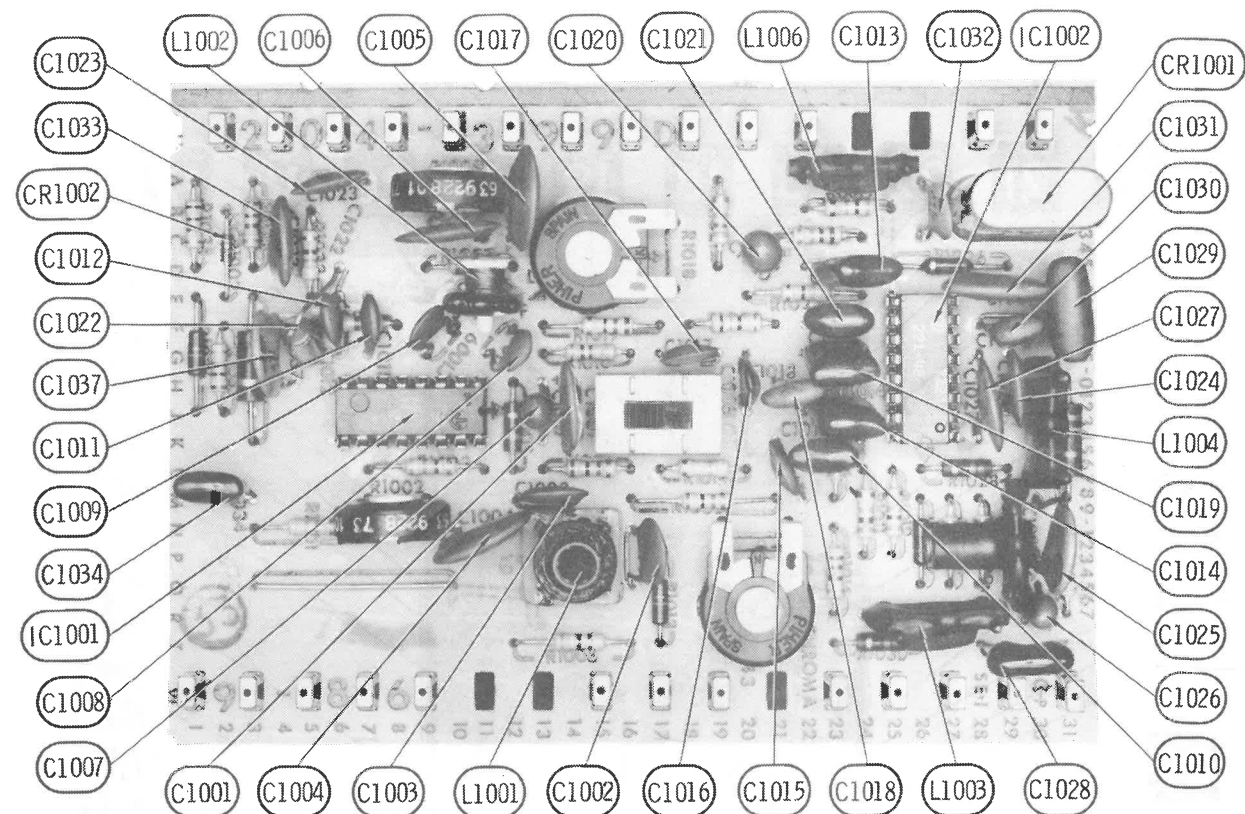


IF MODULE

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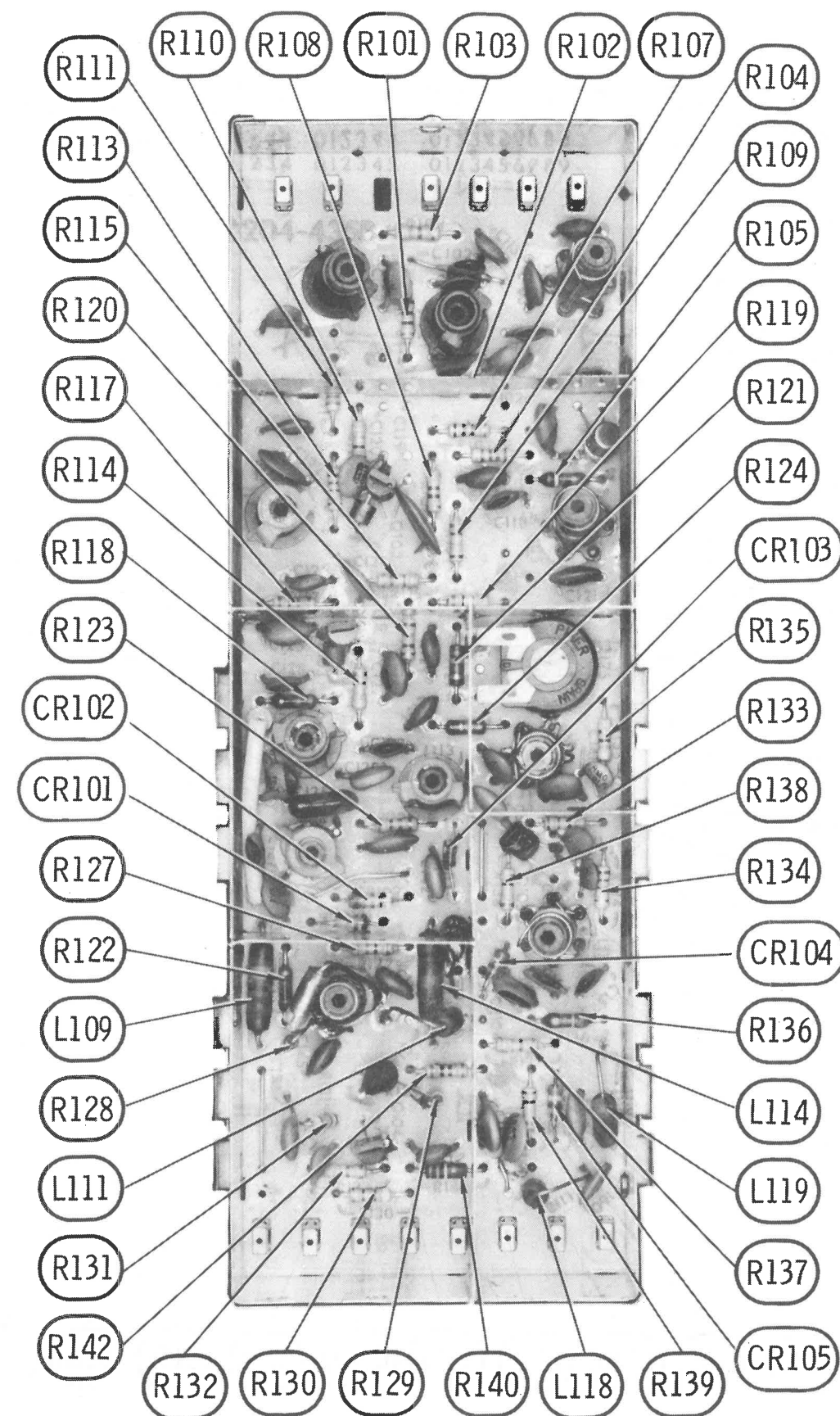
ZENITH
CHASSIS 17EC45, 19EC45

FOLDER 3

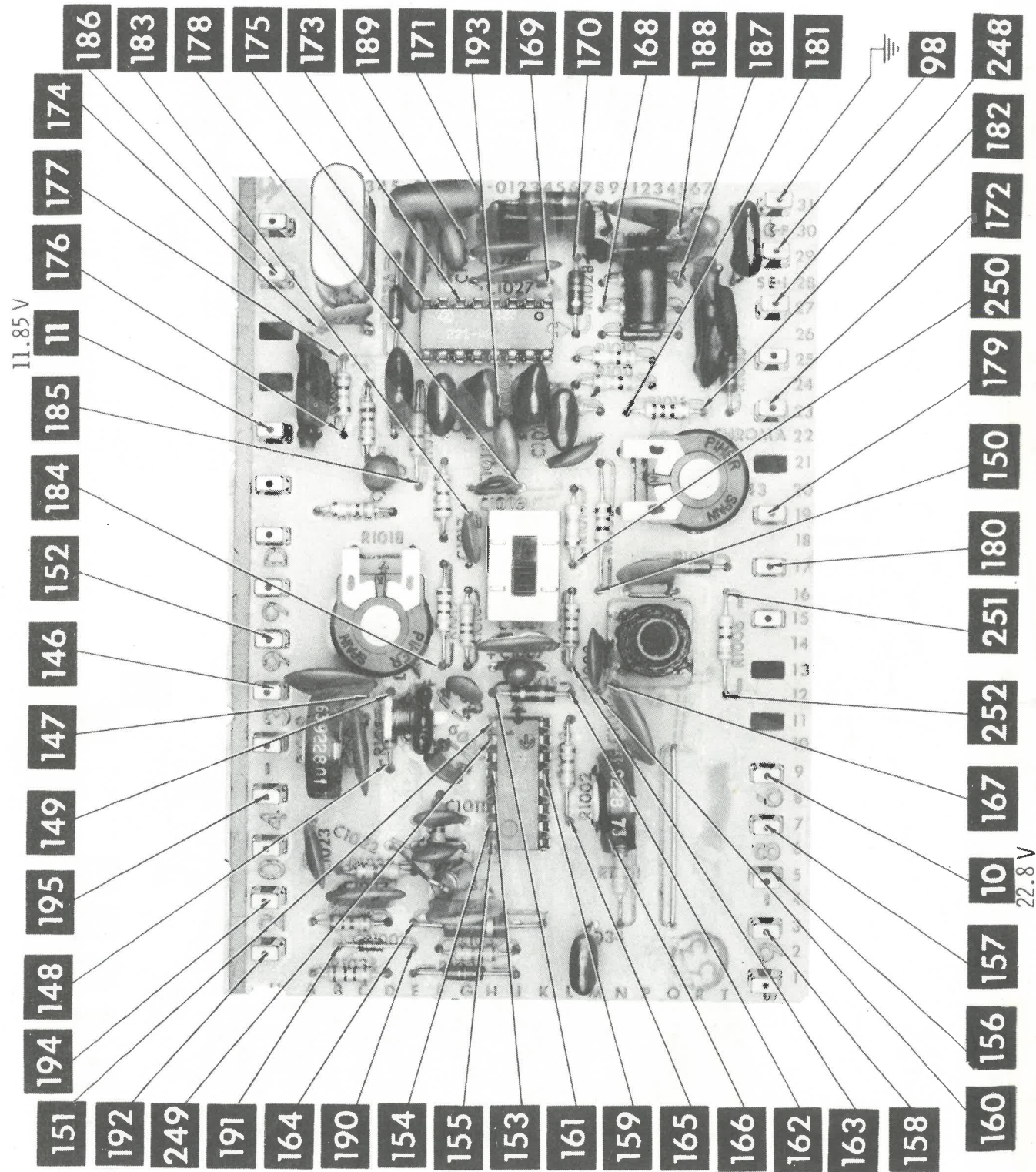


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CHROMA SUBCARRIER REGENERATOR MODULE

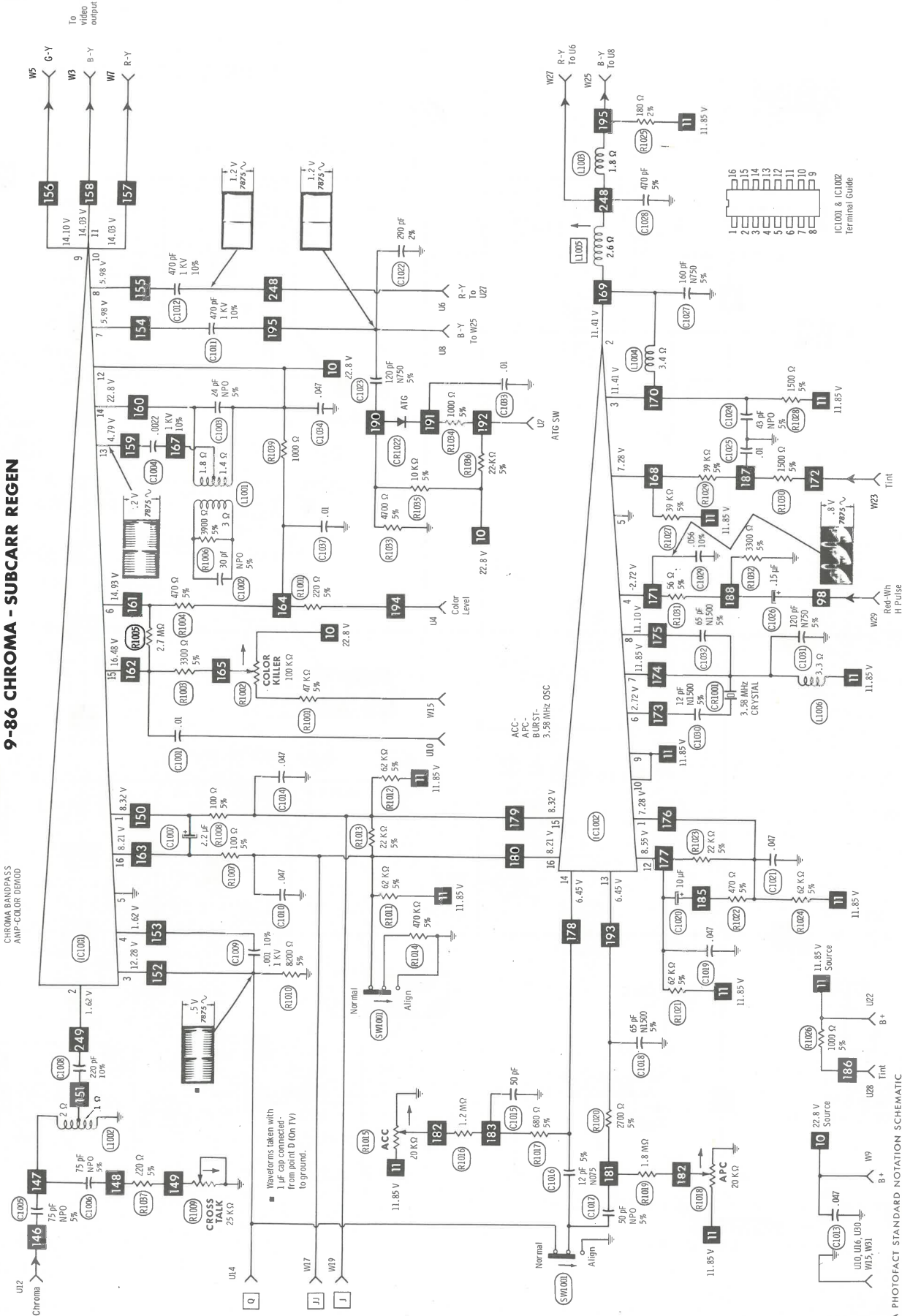


IF MODULE



CHROMA BANDPASS
AMP-COLOR DEMOD

9-86 CHROMA - SUBCARR REGEN

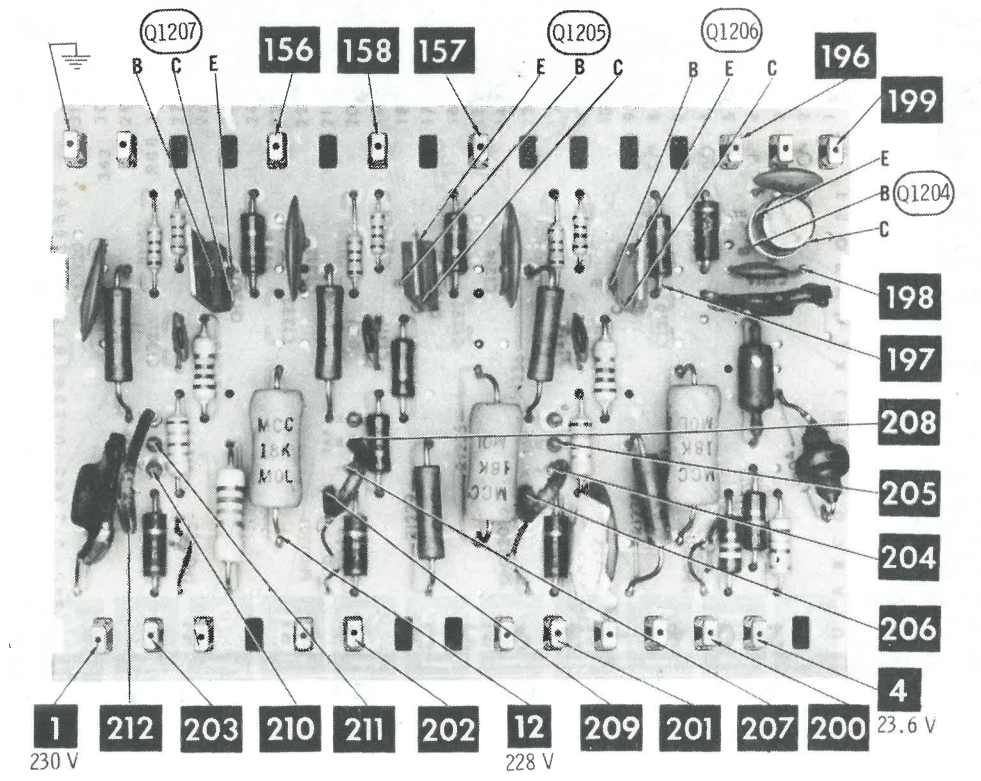
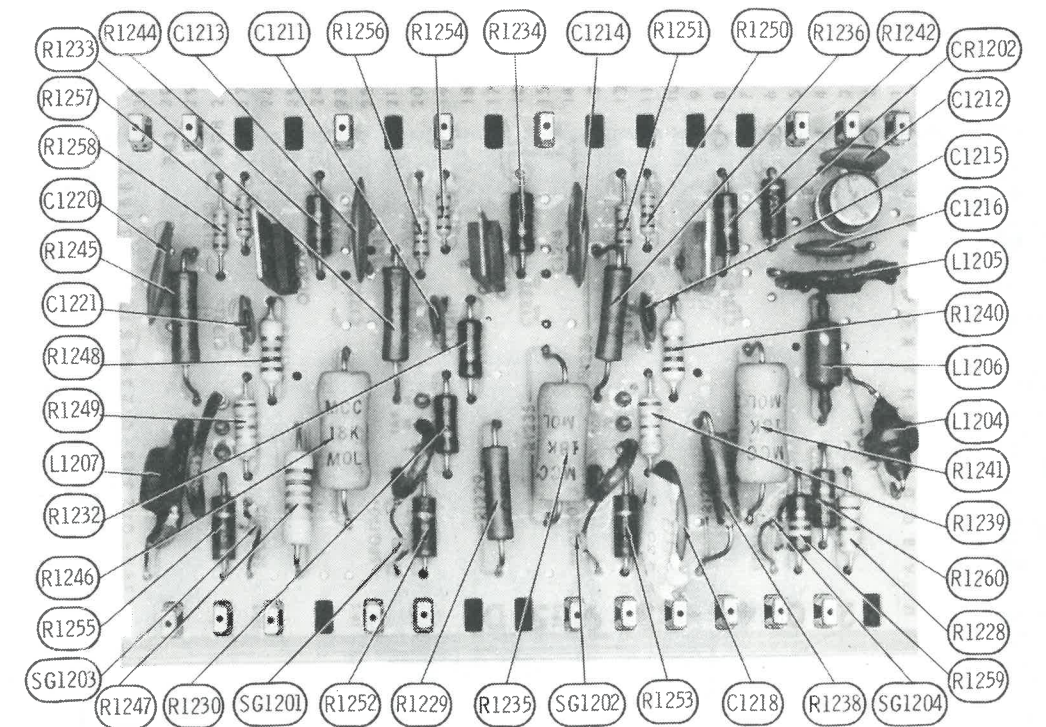
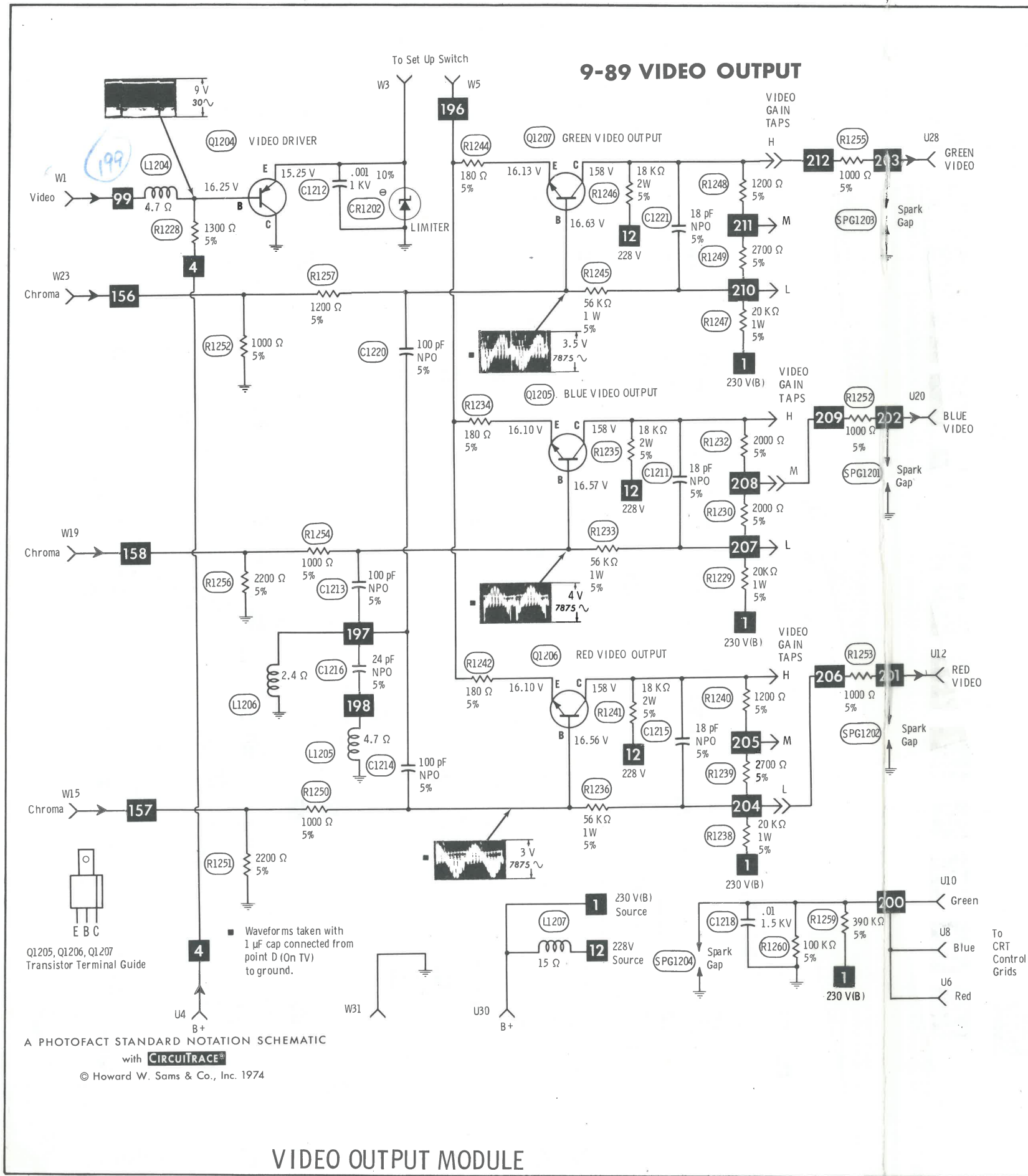


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ZENITH
CHASSIS 17EC45, 19EC45

FOLDER 3

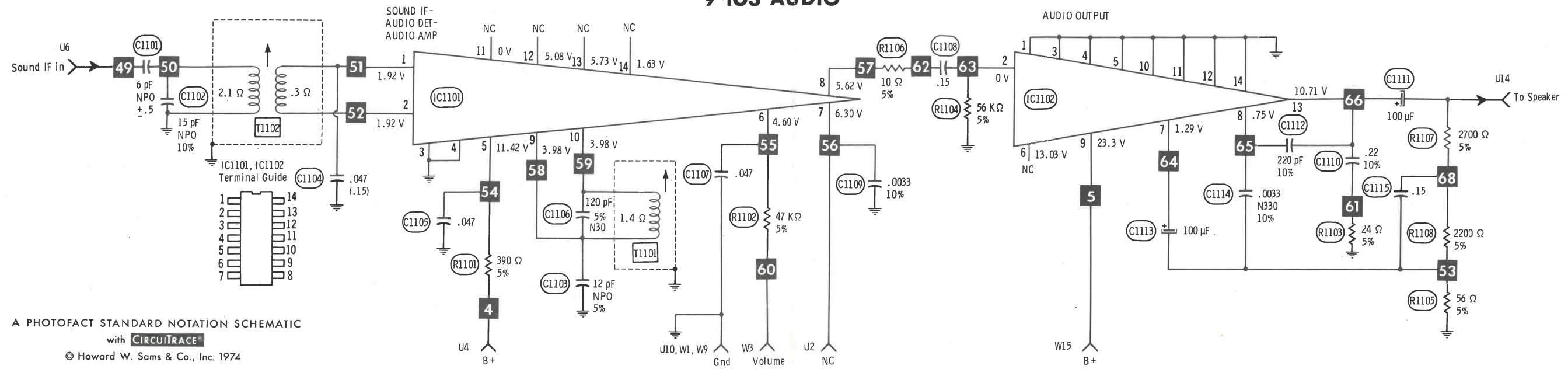
CHROMA SUBCARRIER REGENERATOR MODULE



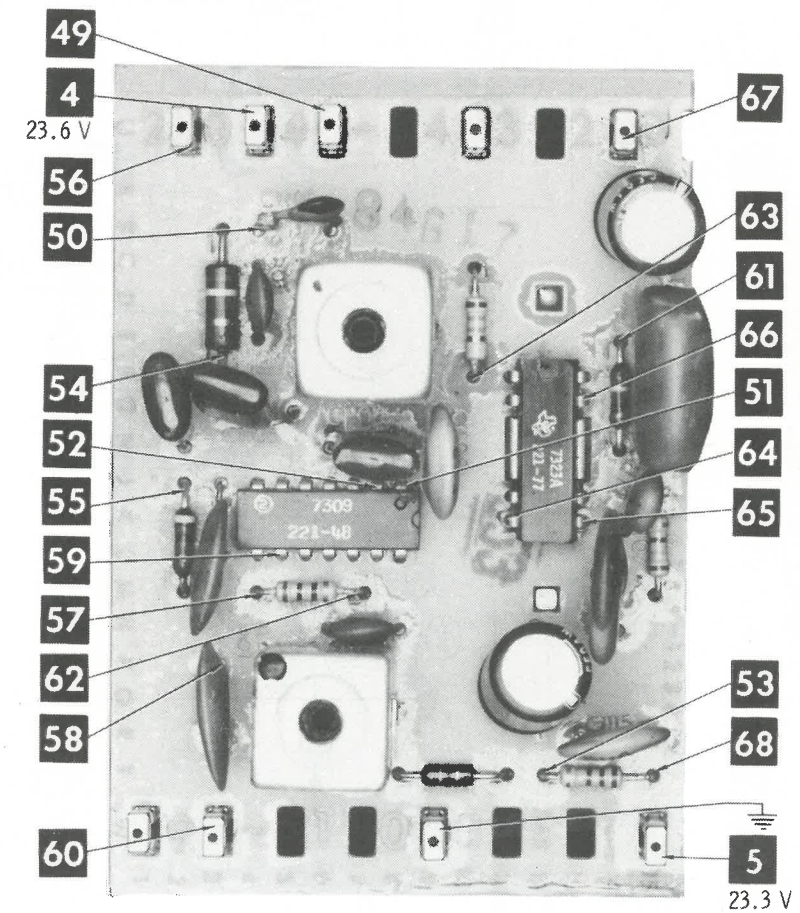
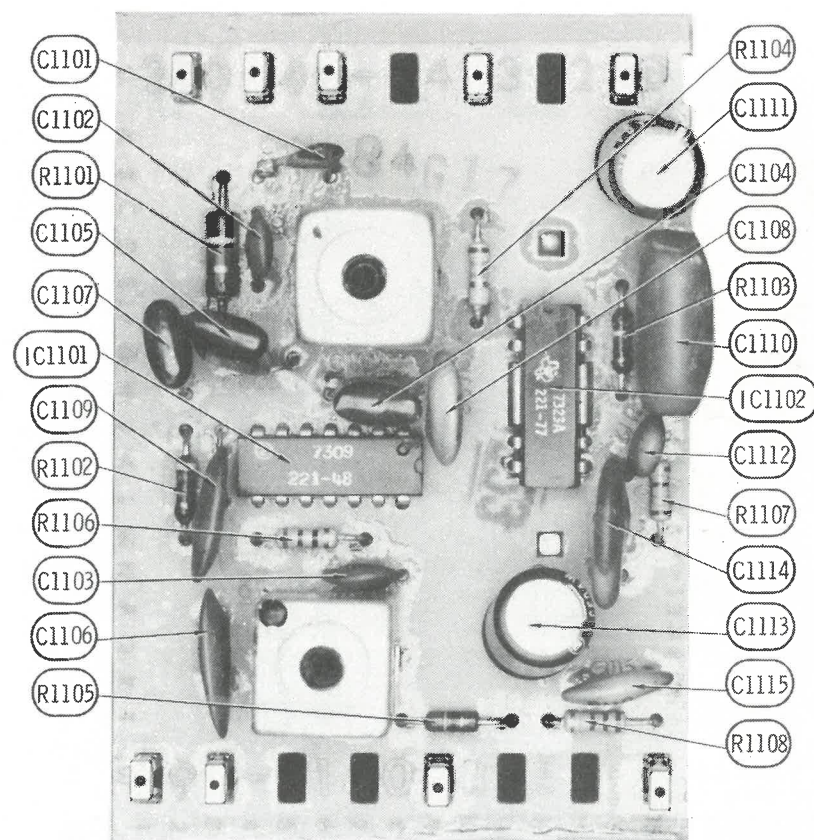
VIDEO OUTPUT MODULE

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9-103 AUDIO



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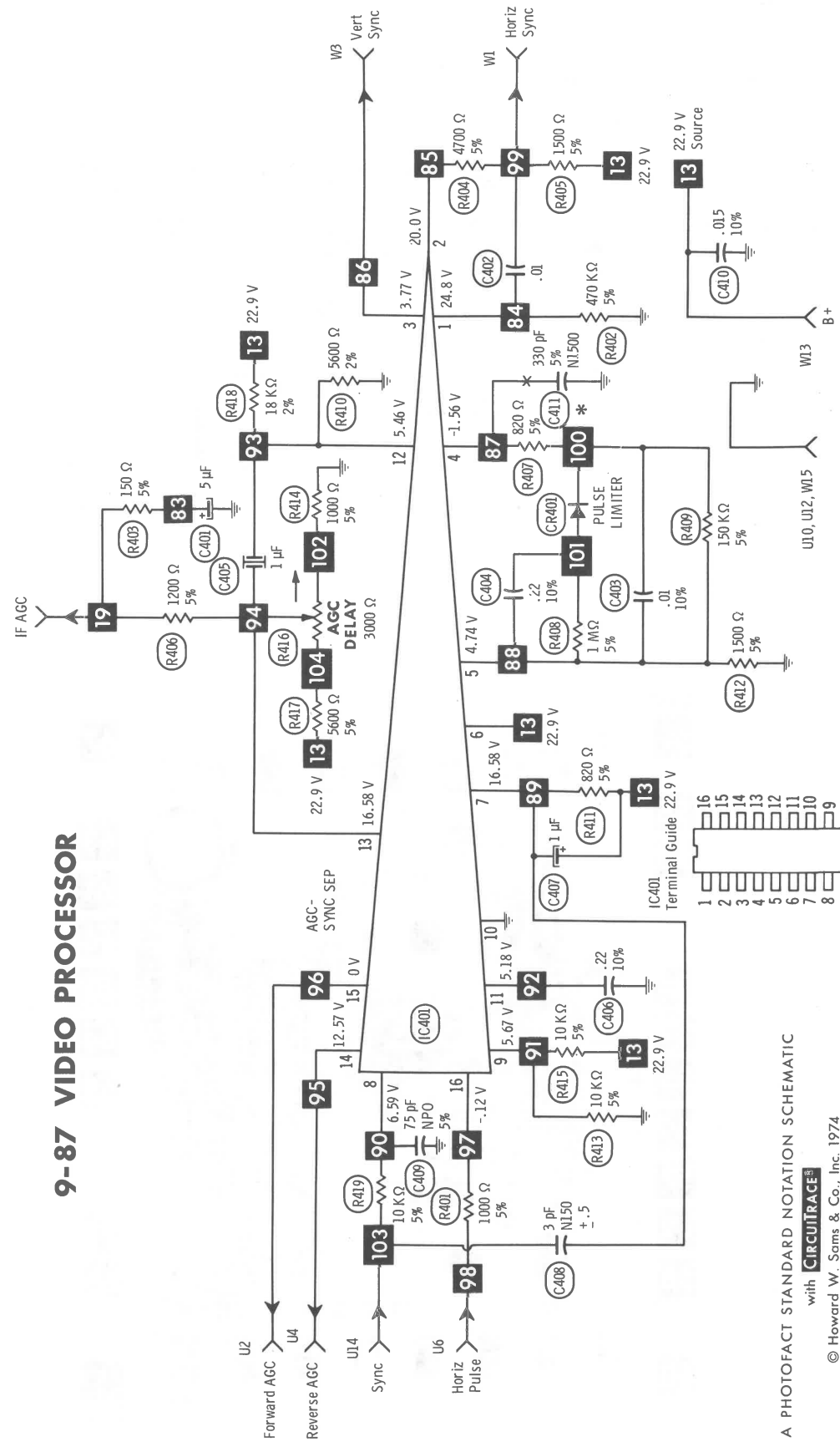
AUDIO MODULE

A Howard W. Sams **CIRCUITRACE** Photo

ZENITH
CHASSIS 17EC45, 19EC45

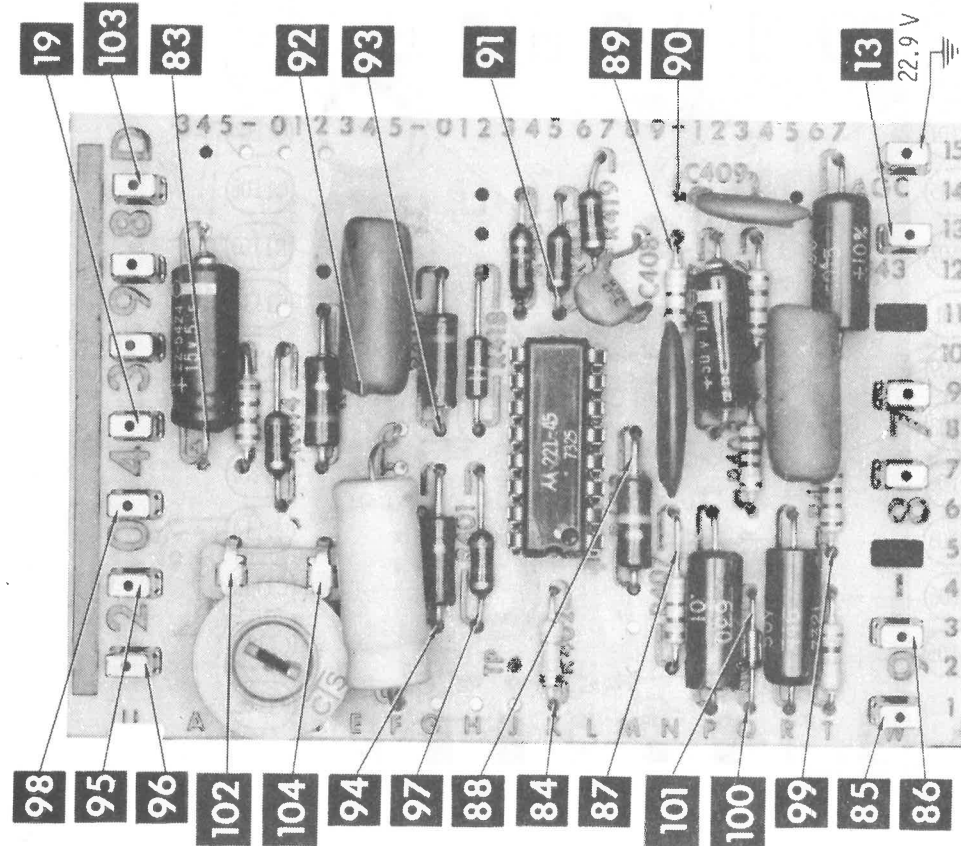
FOLDER 3

9-87 VIDEO PROCESSOR

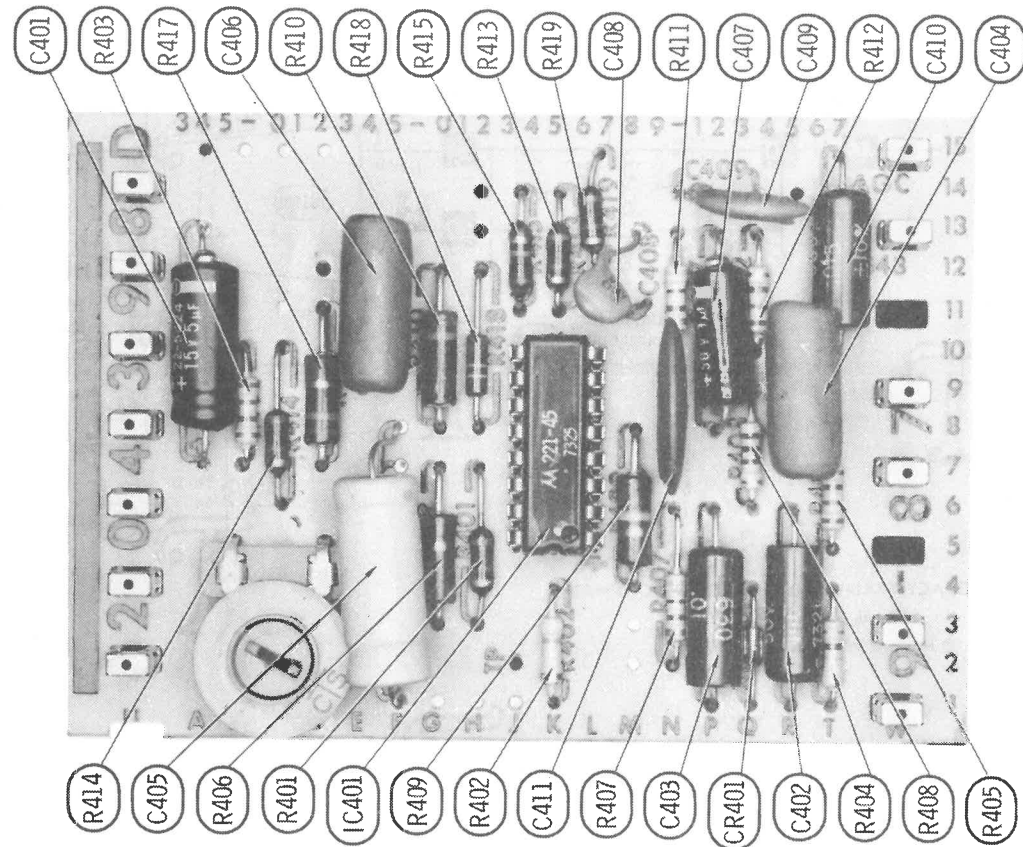


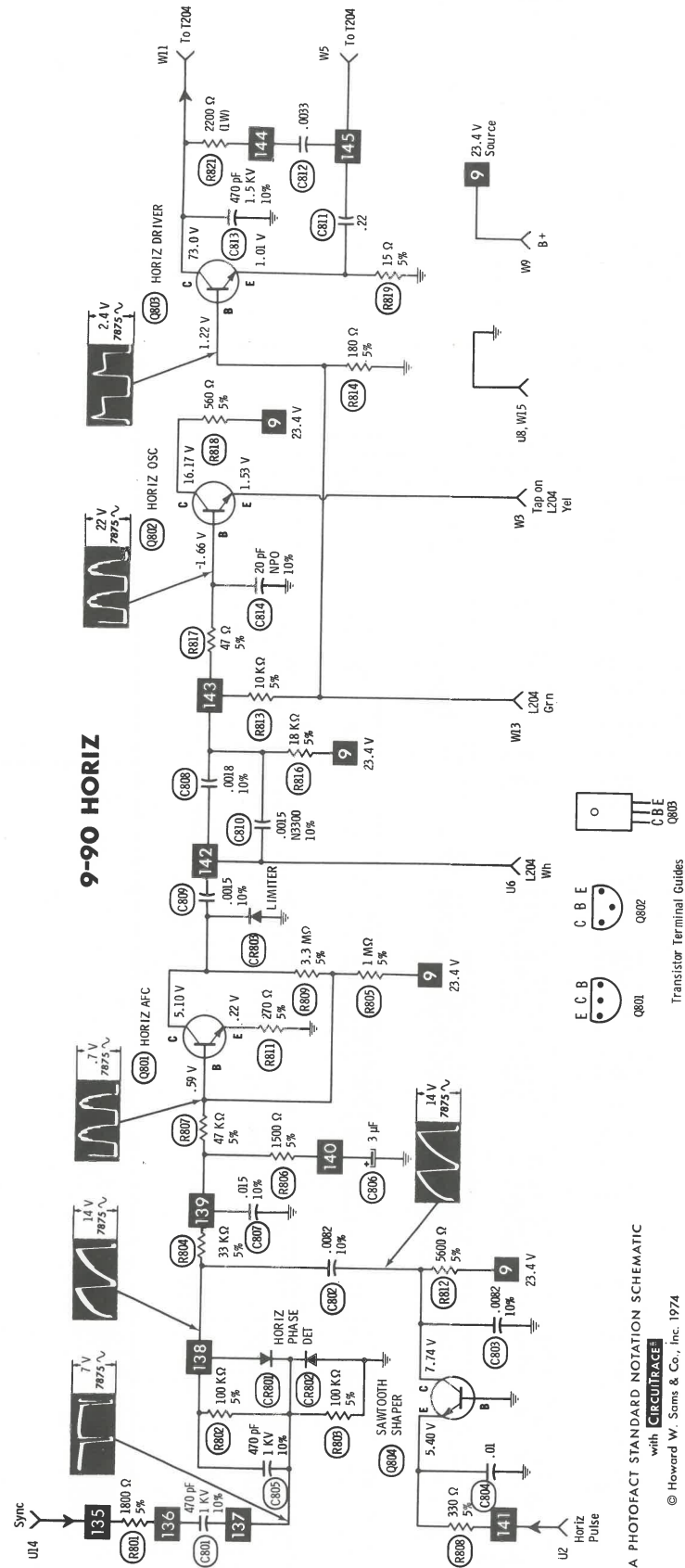
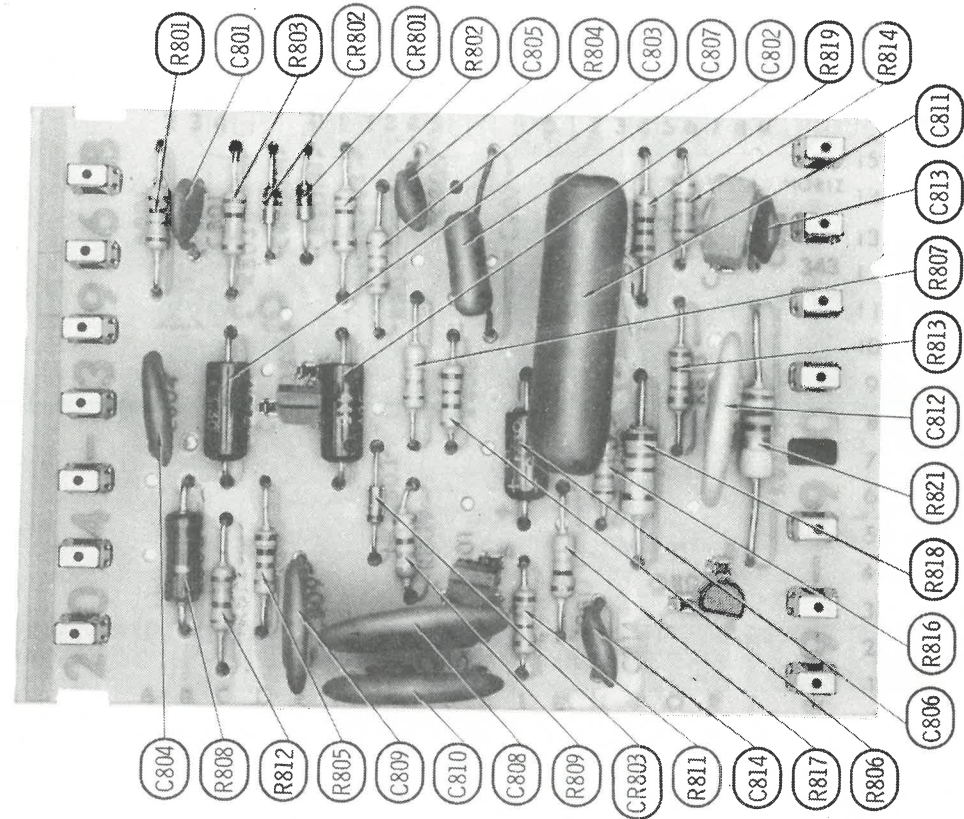
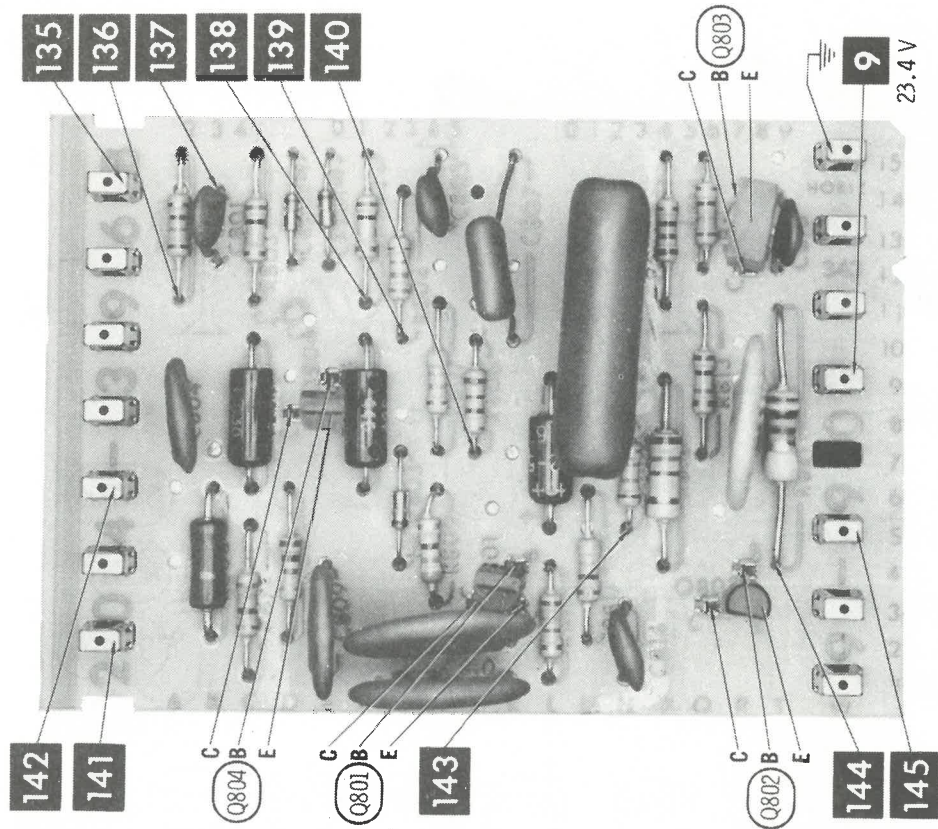
VIDEO PROCESSOR MODULE

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HORIZONTAL MODULE

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PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS[®] for the most up-to-date replacement.

MODULES/PLUG-IN BOARDS

ITEM No.	PART NAME	MFGR. PART No.	NOTES
	Module	9-86	Chroma Subcarrier Regenerator
	Module	9-87	Video Processor
	Module	9-88	Luminance
	Module	9-89	Video Output
	Module	9-90	Horizontal
	Module	9-92	Vertical
	Module	9-103	Audio
	Module	150-190	IF Sub-chassis

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	MFGR. PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V201	AG19VDZP22 # (1) 17VAKP22 # (2) AG23VCEP22				# For SAFETY, replace only with equivalent part.

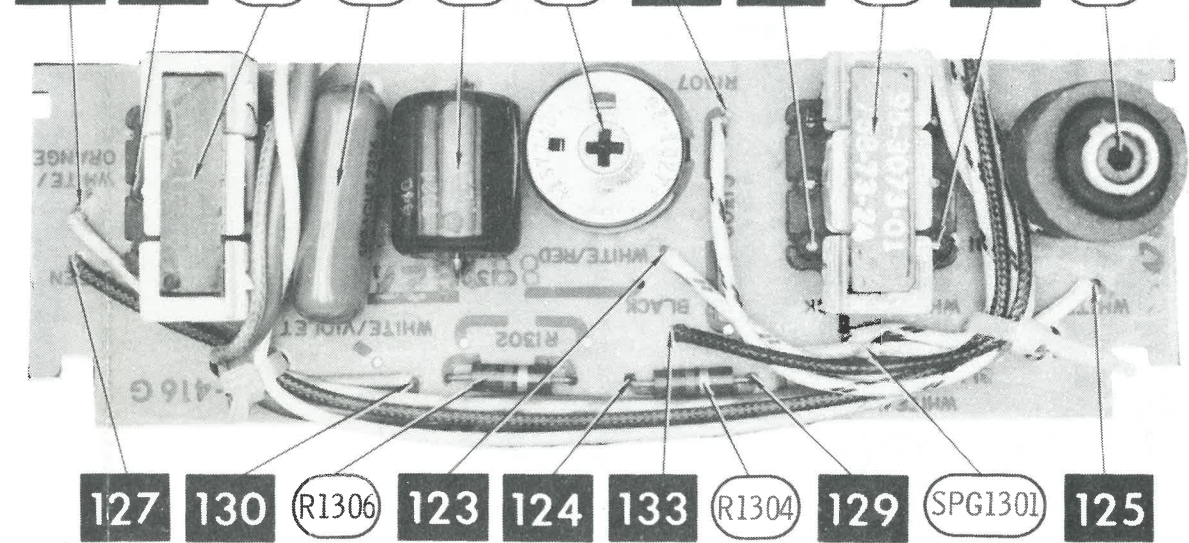
(1) Used in Chassis 19EC45.

(2) Used in Chassis 17EC45.

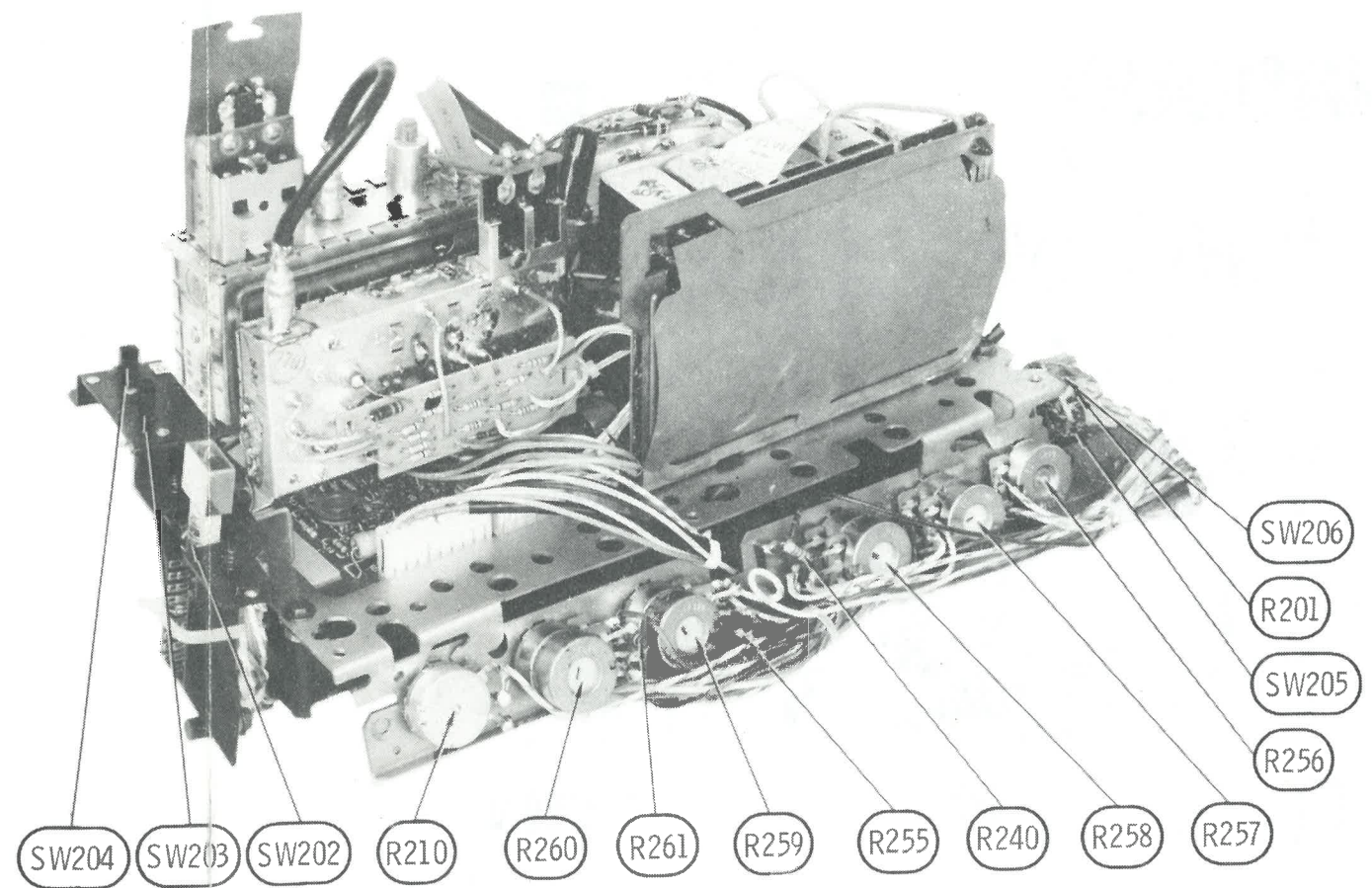
SEMICONDUCTORS

ITEM No.	TYPE / MFGR. No. / PART No.	REPLACEMENT DATA						
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
CR101	103-23	1N60	1N60	PTC206	HEP135	SK3088		ECG 109
CR102	103-23	1N60	1N60	PTC206	HEP135	SK3088		ECG 109
CR103	103-202	1N60	1N60	PTC206	HEP135	SK3088		ECG 109
CR104	103-90	1N34AS	1N34A	PTC207	HEP134	SK3087		ECG 109
CR105	103-90	1N34AS	1N34A	PTC207	HEP134	SK3087		ECG 109
CR201	212-76 #	GE-504A	806 or 5A6D	PTC202	HEPRO054	SK3017A or SK3032	RT210 or RT215	ECG 116 or ECG 117
CR202	212-76 #	GE-504A	806 or 5A6D	PTC202	HEPRO054	SK3017A or SK3032	RT210 or RT215	ECG 116 or ECG 117
CR203	212-76 #	GE-504A	806 or 5A6D	PTC202	HEPRO054	SK3017A or SK3032	RT210 or RT215	ECG 116 or ECG 117
CR204	103-105, 24 Zener #	GE-ZD-24		ZB24	HEP20423	SK3017A or SK3032	RT210 or RT215	ECG 5081
CR205	212-76 #	GE-504A	806 or 5A6D	PTC202	HEPRO054	SK3017A or SK3032	RT210 or RT215	ECG 116 or ECG 117
CR206	212-76 #	GE-504A	806 or 5A6D	PTC202	HEPRO054	SK3017A or SK3032	RT210 or RT215	ECG 116 or ECG 117
CR207	212-76 #	GE-504A	806 or 5A6D	PTC202	HEPRO054	SK3017A or SK3032	RT210 or RT215	ECG 116 or ECG 117
CR208	212-76 #	GE-504A	806 or 5A6D	PTC202	HEPRO054	SK3017A or SK3032	RT210 or RT215	ECG 116 or ECG 117
CR209	212-76 #	GE-504A	806 or 5A6D	PTC202	HEPRO054	SK3017A or SK3032	RT210 or RT215	ECG 116 or ECG 117
CR211	103-193 #	GE-511	D172	PTC216	HEPR3012	SK3130		ECG 506
CR212	103-193 #	GE-511	D172	PTC216	HEPR3012	SK3130		ECG 506
CR213	103-196 #	GE-511	D172	PTC216	HEPR3012	SK3130		ECG 506
CR214	212-141-01 #	6E548						
CR216	103-194 #	GE-ZD-7.5	Z-1207	PTC504	HEP20410	SK3039	RT239	ECG 138
CR217	103-142	GE-511	D172	PTC216	HEPR3012	SK3130		ECG 506
CR218	103-142	GE-511	D172	PTC216	HEPR3012	SK3130		ECG 506
CR401	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR601	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR603	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR604	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR606	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR607	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR608	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR609	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR611	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR612	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR613	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR619	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR621	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR622	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR623	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR701	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR702	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR703	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR704	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR705	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR706	103-254	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR707	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR801	103-142-01	GE-300 (7)	D200MP (6)	PTC215 (6)	HEPRO602 (7)	SK3100 (7)	RT218 (7)	ECG 178MP (6)
CR802	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR803	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR901	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR902	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR1002	103-142-01	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR1202	103-144-01	GE-ZD-24	Z-1220	ZB24	HEP20423	SK3064	RT248	ECG 5081
IC401	221-45							ECG 731
IC1001	221-69							ECG 791
IC1002	221-42	GEIC-4	IC509	PTC715	HEPC6070P	SK3075	TVCM-8	ECG 714
IC1101	221-48	GEIC-2	IC507	PTC726	HEPC6063P	SK3072	TVCM-11	ECG 712
IC1102	221-77							
Q101	121-501	GE-39	1RTR-70	PTC126	HEP709	SK3018	RT113	ECG 161
Q102	121-503 (1)	GE-60	1RTR-71	PTC136	HEP729	SK3117	RT113	ECG 161
Q103	121-509	GE-20	1RTR-71	PTC136	HEP53	SK3039	RT113	ECG 161
Q104	121-507 (1)	GE-20	1RTR-71	PTC136	HEP53	SK3039	RT113	ECG 161
Q105	121-508 (1)	GE-20	1RTR-71	PTC136	HEP53	SK3039	RT113	ECG 161
Q106	121-524	GE-61	TR-21	PTC132	HEP723	SK3018	RT113	ECG 161
Q107	121-526 (1)	GE-61	TR-21	PTC132	HEP723	SK3018	RT113	ECG 161
Q108	121-895	GE-17	1RTR-51	PTC136	HEP735	SK3018	RT112	ECG 108
Q109	121-925	GE-20	TR-21	PTC136	HEP719	SK3018	RT102	ECG 161
Q110	121-966 #	GE-22	TR-20	PTC103	HEP715	SK3025	RT115	ECG 159
Q201	121-831 #	GE-57	1RTR-55	PTC110	HEP5003	SK3054	RT154	ECG 152
Q202	121-831 #	GE-38	1RTR-68	PTC130	HEP740	SK3115		ECG 165
Q203	121-973	GE-20	TR-21	PTC136	HEP735	SK3122	RT102	ECG 123A
Q204	121-975	GE-20	TR-21	PTC136	HEP729	SK3122	RT102	ECG 123A
Q205	121-888 (1)	GE-20	TR-21	PTC136	HEP735	SK3122	RT102	ECG 123A
Q206	121-972	GE-20	TR-21	PTC136	HEP735	SK3122	RT102	ECG 123A
Q207	121-972	GE-20	TR-21	PTC136	HEP735	SK3122	RT102	ECG 123A
Q208	121-980	GE-58	1RTR-73	PTC124	HEP244	SK3085	RT157	ECG 189
Q209	121-988	GE-69 (9)	1RTR-77 (9)	PTC111 (9)	HEPS5006 (9)			ECG 153 (9)
Q210	121-969 (1)	GE-69 (9)	1RTR-77 (9)	PTC111 (9)	HEPS5006 (9)			ECG 153 (9)
Q211	121-970	GE-66 (9)	1RTR-76 (9)	PTC110 (9)	HEPS5000 (9)			ECG 152 (9)
Q212	121-967 (1)	GE-66 (9)	1RTR-76 (9)	PTC110 (9)	HEPS5000 (9)			ECG 152 (9)
Q213	121-931	GE-20	TR-21	PTC136	HEP728	SK3122	RT102	ECG 123A
Q214	121-888	GE-20	TR-21	PTC136	HEP729	SK3122	RT102	ECG 123A
Q215	121-755	GE-27	1RTR-78	PTC110	HEP244	SK3104	RT159	ECG 157
Q216	121-447	GE-20	TR-21	PTC136	HEP736	SK3124	RT114	ECG 123A
Q217	121-409	GE-20	TR-24	PTC136	HEP730	SK3124	RT102	ECG 123A
Q218	121-433 (1)	GE-20	TR-24	PTC136	HEP730	SK3124	RT102	ECG 123A

128 126 T1301 C1304 C1303 R1307 134 132 T1302 131 L1301



PINCUSHION BOARD

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TUNER ASSEMBLY

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS[®] for the most up-to-date replacement.

TRANSFORMERS (Sweep Circuits)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		MFG. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T204	Horiz Driver Yoke (Vert 3mh)	95-2895-02 #				# For SAFETY, replace only with equivalent part. (1) Used in Chassis 19E445. (2) Used in Chassis 17E445.
T205	90° (Vert 21.5mh)	95-3103				
T206	Horiz Output	S-96473 (1) #				
	Horiz Output	S-96471 (2) #				
T1301	Pincushion Amp	95-3125 #				
T1302	Pincushion	95-3073-01 #				

COILS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA					
		MFG. PART No.	MILLER PART No.	STANCOR PART No.	THORDARSON MEISSNER PART No.	TRIAD PART No.	WORKMAN PART No.
L204	Horiz Hold	S-56875	6211 (1)		HS-7 (1)	WLC-25 (1)	T104 (1)
L218	Fifth Harmonic	# (2)					
L601	Blue Horiz Lines (Right)						
L602	R/G Horiz Lines (Right)	20-3578					
L603	R/G Vert Lines (Right)	95-3111					
L1301	Pincushion Phase	20-3578					
T601	Convergence Yoke Assembly	20-3579 #					
a	Blue Coil	S-94731					
b	Green Coil	S-94731					
c	Red Coil	S-94731					
	Blue Coil	S-93510-01 (3)					
	Green Coil	S-93510-02 (3)					
	Red Coil or	S-93410-03 (3)					
	Blue Coil	S-93510-04 (3)					
	Green Coil	S-93510-05 (3)					
	Red Coil or	S-93510-06 (3)					
	Blue Coil	S-93510-07 (3)					
	Green Coil	S-93510-08 (3)					
	Red Coil	S-93510-09 (3)					

For SAFETY, replace only with equivalent part.
(1) Install plastic sleeve on adjustment screw.
(2) Part of Horizontal Output.
(3) Used in Model T2832W.

TRANSFORMER

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	MFG. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T203	120VAC @ .05AAC	2VAC @ .72AAC	95-3076-02 #				# For SAFETY, replace only with equivalent part

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	MFG. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T201	120VAC @ 1.2A AC	344VAC/CT @ .02ADC, Tap @ 200VAC/CT @ .35ADC, Tap @ 52VAC CT @ .175ADC, Tap @ 6.3VAC @ .114AAC	95-3123 #				# For SAFETY, replace only with equivalent part.
	5.5VAC @ .81A AC	120VAC					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFG. PART No.	QUAM PART No.	
SP1	3" x 5" PM 3.2 ohms	49-1253-01 49-1215-02 49-1234-02	35A05	Model SE1960R Models E3855W,E3860R/W, SE1750R, T2832W. Models E4541W/45W, EM4547M, E4549DE/P, T2856W, T2857DE/P. Models E4030W/X,E4025W,E4035P,E4037M, T2839W.

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA					
		PART No.		BUSS PART No.		LITTELFUSE PART No.	
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER
F201	Circuit Breaker Hold - 2.1 Amp Break - 3.67 Amp	85-976-02 #				815003	
F202	1.5A @ 250V, Pigtail	136-29 #		6JW 1.5		31801.5	
F203	0.6A @ 250V, Pigtail	136-87		6JW 0.6		318.600	

For SAFETY, replace only with equivalent part.

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES	
	UHF Antenna	1-127-01	2 Used, Models E3855W, E3860R/W, E4025W, SE1750R, SE1960R, T2832W. Models E4035P, E4037M. Models E4541W.	
	VHF Antenna	1-221		
	VHF Antenna	1-221-02		
	VHF Tuner	175-1505		
	VHF Tuner	175-1813		
	VHF Tuner	175-1813-01		
	VHF Tuner	175-2202-50		
	VHF Tuner	175-1814		
	VHF Tuner	175-2202-40		
	UHF Tuner	175-1607		
	UHF Tuner	175-1608	3.5B MHz	
	UHF Tuner	175-983		
	UHF Tuner	175-1950		
	UHF Tuner	S-90312		
	Crystal	103-152		
	Delay Line	S-91401-01 #		
	Degaussing Coil	#		
	Spark Gap	52-957		
	Spark Gap	52-957		Part of CRT Socket
	Spark Gap	52-957		
	Spark Gap	52-957		
	Switch	85-1353		
	Switch	S-96677 #		
	Switch	85-1290		
	Switch	85-1285		
	Switch	85-1288		
	Switch	S-96678 #		
	Switch	S-93348		
	Switch	85-1291	Normal-Set-up Chromatic Chromatic, On-Off, Used in Model T2832W. Chromatic, On-Off, Used in Models E4025W, E4035P, E4037M, T2839W. Chromatic, On-Off, Used in Models E4025W/35P/37M, E4541W/45W, T2856W, T2857DE/P. Chromatic, On-Off, Used in Model SE1750R. Chromatic, Used in Models E4030W/X. Chromatic, Used in Model E3855W. Chromatic, Used in Model E3860R. Auto-Manual AFC Defeat AFC, Used in Models E3855W, T2832W AFC, Used in Models E3860R/W, SE1750R. AFC, Used in Models E4030W/X. Normal-Align Purity and Lateral Assembly, Used in all models except T2832W. Purity and Lateral, Used in Model T2832W. Convergence	
	Switch	S-95707 #		
	Switch	S-95623 #		
	Switch	85-1282		
	Switch	S-95624		
	Switch	S-94857		
	Switch	85-1390		
	Magnet	S-96216		
	Magnet	S-94374		
	Printed Circuit Board	S-94680		
CR1001	Crystal		3.5B MHz	
L202	Delay Line			
L203	Degaussing Coil			
SPG201	Spark Gap	52-957		
thru SPG212	Spark Gap	52-957		
SPG1201	Spark Gap	52-957		
SPG1202	Spark Gap	52-957		
SPG1203	Spark Gap	52-957		
SW201	Switch	85-1353		
SW202	Switch	S-96677 #		
	Switch	85-1290	Normal-Set-up Chromatic Chromatic, On-Off, Used in Model T2832W. Chromatic, On-Off, Used in Models E4025W, E4035P, E4037M, T2839W. Chromatic, On-Off, Used in Models E4025W/35P/37M, E4541W/45W, T2856W, T2857DE/P. Chromatic, On-Off, Used in Model SE1750R. Chromatic, Used in Models E4030W/X. Chromatic, Used in Model E3855W. Chromatic, Used in Model E3860R. Auto-Manual AFC Defeat AFC, Used in Models E3855W, T2832W AFC, Used in Models E3860R/W, SE1750R. AFC, Used in Models E4030W/X. Normal-Align Purity and Lateral Assembly, Used in all models except T2832W. Purity and Lateral, Used in Model T2832W. Convergence	
	Switch	85-1291		
	Switch	S-95707 #		
	Switch	S-95623 #		
	Switch	85-1282		
	Switch	S-95624		
	Switch	S-94857		
	Switch	85-1390		
	Magnet	S-96216		
	Magnet	S-94374		
SW205	Switch	S-94680		
SW206	Switch		Part of CRT Socket	
	Switch	85-1282		
	Switch	S-95624		
	Switch	S-94857		
	Switch	85-1390		
	Magnet	S-96216		
	Magnet	S-94374		
	Printed Circuit Board	S-94680		
	Switch	85-1282		
	Switch	S-95624		
SW1001	Switch	S-94857		
	Switch	85-1390	Normal-Set-up Chromatic Chromatic, On-Off, Used in Model T2832W. Chromatic, On-Off, Used in Models E4025W, E4035P, E4037M, T2839W. Chromatic, On-Off, Used in Models E4025W/35P/37M, E4541W/45W, T2856W, T2857DE/P. Chromatic, On-Off, Used in Model SE1750R. Chromatic, Used in Models E4030W/X. Chromatic, Used in Model E3855W. Chromatic, Used in Model E3860R. Auto-Manual AFC Defeat AFC, Used in Models E3855W, T2832W AFC, Used in Models E3860R/W, SE1750R. AFC, Used in Models E4030W/X. Normal-Align Purity and Lateral Assembly, Used in all models except T2832W. Purity and Lateral, Used in Model T2832W. Convergence	
	Switch	S-96216		
	Switch	S-94374		
	Printed Circuit Board	S-94680		

For SAFETY, replace only with equivalent part.

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.	PART No.	PART No.	PART No.	PART No.
Cabinet Back	MODEL E3855W	MODEL E3860R	MODEL E3860W	MODEL E4025W	MODEL E4030W
Knob, AFC	14-10707-01	14-10709	14-10709-01	14-10689-01	14-10704
Knob, Brightness	46-9778	46-9778-02	46-9778-03	46-9778-08	
Knob, Color Level	46-9776	46-9795	46-9795	46-9775	
Knob, Contrast	46-9776	46-9795	46-9795	46-9775	46-9775
Knob, Horizontal Hold	46-5829	46-5829	46-5829	46-5829	46-5829
Knob, Tint	46-9778	46-9795	46-9795	46-9775	46-9775
Knob, Off-On	46-9778	46-9795	46-9795	46-9775	46-9778-07
Knob, UHF Tuning	46-9723				
Knob, Channel Selector	46-9725	S-94782	S-94782	S-94782	S-94728
Knob, Channel Selector (Higher and Lower)	46-9769	46-9788	46-9789	46-8267	46-9788
Knob, VHF Fine Tuning	46-9736	46-9784	46-9785	46-8264	46-9784
Knob, Vertical Hold	46-9776	46-9795	46-9795	46-9775	
Knob, Volume	46-9748	46-9796	46-9797	46-9775	46-9814
Cabinet Back	MODEL E4030X	MODEL E4035P	MODEL E4037M	MODEL E4541W	MODEL E4545W
Knob, AFC	14-10704-02	14-10689-01	14-10689-01	2-3710	2-3702
Knob, Brightness	46-9775	46-9778-08	46-9778-08	46-9778-09	46-9778-09
Knob, Color Level	46-9775	46-9775	46-9775		
Knob, Contrast	46-9775	46-9775	46-9775		
Knob, Horizontal Hold	46-5829	46-5829	46-5829	46-5829	46-5829
Knob, Tint	46-9790	46-9775	46-9775		
Knob, Off-On	46-9778	46-9778-07	46-9778-07		
Knob, Channel Selector	S-94782	S-95368	S-95368	S-94783	S-94783
Knob, Channel Selector (Higher and Lower)	46-9788	46-8267	46-8267	46-9789	46-9789
Knob, VHF Fine Tuning	46-9784	46-8264	46-8264	46-9785	46-9785
Knob, Vertical Hold	46-9776	46-9795	46-9795		
Knob, Volume	46-9814	46-9775	46-7662	46-7662	46-7662
Cabinet Back	MODEL E4547M	MODEL E4549DE	MODEL E4549P	MODEL SE1750R	MODEL SE1960R
Knob, AFC	14-10715	14-10716-01	14-10716	14-10709	14-10704-01
Knob, Brightness	46-9778-09	46-9778-09			
Knob, Color Level			46-9795		
Knob, Contrast			46-9795		
Knob, Horizontal Hold	46-5829	46-5829	46-5829	46-5829	46-5829
Knob, Tint	46-9783	S-94783	S-94783	46-9789	46-9791
Knob, Channel Selector	46-9789	46-9789	46-9785		
Knob, Channel Selector (Higher and Lower)	46-9785	46-9785			
Knob, VHF Fine Tuning					
Knob, Vertical Hold			46-9795		
Knob, Volume	46-7662	46-7662	46-9795	46-9792	46-9792
Cabinet Back	MODEL T2832W	MODEL T2839W	MODEL T2856W	MODEL T2857DE	MODEL T2857P
Knob, AFC	14-10706-02	14-10689-01	2-3702-01	2-3702	2-3702
Knob, Brightness	46-9778-01	46-9778-08	46-9778-09	46-9778-09	46-9778-09
Knob, Color Level	46-9774	46-9775			
Knob, Contrast	46-9774	46-9775			
Knob, Horizontal Hold	46-5829	46-5829	46-5829	46-5829	46-5829
Knob, Tint	46-9775	46-9775			
Knob, Off-On	46-9778-01	46-9778-07			
Knob, UHF Tuning	46-9743	46-9725	S-94783	S-94783	S-94783
Knob, Channel Selector	46-9742	46-9725	46-9789	46-9789	46-9789
Knob, Channel Selector (Higher and Lower)	46-9738	46-9729			
Knob, VHF Fine Tuning	46-9737	46-9723			
Knob, Vertical Hold	46-9774	46-9775			
Knob, Volume	46-9747	46-9775	46-7662	46-7662	46-7662

WIRING DATA

High Voltage Lead	Use BELDEN No. 8868 (25KV)
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor)
	8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
	8524 (Stranded) Available in 12 Colors
300-Ohm Tuner Input Lead	Use BELDEN No. 8225
300-Ohm Antenna Lead-in	Use BELDEN No. 8275 (Foam Core) or 8285 (Foam Jacketed)
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8464 (Round) - 4 Conductor
	8485 (Round) - 5 Conductor
	8488 (Round) - 8 Conductor

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)
Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS[®] for the most up-to-date replacement.

SEMICONDUCTORS

ITEM No.	TYPE / MFG. No. / PART No.	REPLACEMENT DATA					
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.	SPRAGUE PART

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS[®] for the most up-to-date replacement.

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENDO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C207	.001 1KV	#	CCD-102	DD-102	GP1000	GP210	10TS-D10
C208	.001 1KV	22-4671 #	CCD-102	DD-102	GP1000	GP210	10TS-D10
C209	.001 1KV	#	CCD-102	DD-102	GP1000	GP210	10TS-D10
C210	100 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C211	.001 1KV	#	CCD-102	DD-102	GP1000	GP210	10TS-D10
C212a	.0047 1KV	#	CCD-472	DD-472G	GP4700	JF247	10TS-D47
C212b	.0047 1KV	#	CCD-472	DD-472G	GP4700	JF247	10TS-D47
C213	3.5 uF 440VAC	22-7126-01 #	CCD-472	DD-472G	GP4700	JF247	10TS-D47
C219	.0047 150VAC	22-6276 #	CCD-472	DD-472G	GP4700	JF247	10TS-D47
C220	16 NPO	5%	CCD-180	DD-180	NP018	NP018	10TCC-Q18
C221	.1 200V 10%	#	2DP-3-104	DD-3-104	DPMS2P1	DPMS2P1	2PS-P10
C224	.0033 400V 10%	#	6DP-1-332	DD-1-332	DMF6D33	DMF6D33	6PS-D33
C228	.001 6KV	22-6864 #	CCD-102	DD-102	GP1000	GP210	10TS-D10
C229	600 2KV	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C231	600 2KV	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C232	100 1.6KV 10%	22-6461 #	CCD-102	DD-102	GP1000	GP210	10TS-D10
C233	.0018 1.6KV 5%	22-5001 #	CCD-102	DD-102	GP1000	GP210	10TS-D10
C234	.0018 1.6KV 5%	22-5001 #	CCD-102	DD-102	GP1000	GP210	10TS-D10
C235	.0018 1.6KV 5%	22-5001 #	CCD-102	DD-102	GP1000	GP210	10TS-D10
C236	.0018 1.6KV 5%	22-5001 #	CCD-102	DD-102	GP1000	GP210	10TS-D10
C237	.001 2KV	22-4979 #	CCD-102	DD-102	GP1000	GP210	10TS-D10
C238	.047 200V 10%	#	4DP-3-473	DD-3-473	DPMS6S47	DPMS6S47	4PS-S47
C240	.0018 1.6KV 5%	22-5001 #	CCD-102	DD-102	GP1000	GP210	10TS-D10
C242	.39 200V 10%	22-4410 #	2MPD-5-394	DD-5-394	DPMS2P1	DPMS2P1	2PS-P10
C245	.1 200V 10%	#	2DP-3-104	DD-3-104	DPMS2P1	DPMS2P1	2PS-P10
C246	.0018 1.6KV 5%	22-5001 #	CCD-102	DD-102	GP1000	GP210	10TS-D10
C247	.0018 1.6KV 5%	22-5001 #	CCD-102	DD-102	GP1000	GP210	10TS-D10
C248	100 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C402	.01 50V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C403	.01 50V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C404	.22 50V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C406	.22 50V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C408	.3 N150	+5	CCD-102	DD-102	GP1000	GP210	10TS-D10
C409	.75 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C410	.015 50V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C411	.330 N1500	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C602	.1 200V 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C603	.082 200V 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C604	.056 200V 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C702	.047 100V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C703	.0022 100V 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C705	.1 50V 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C706	.015 50V 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C707	.047 100V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C711	.1 50V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C712	.1 50V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C713	.001 100V 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C801	.470 1KV 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C802	.0082 50V 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C803	.0082 50V 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C804	.01 50V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C805	.470 1KV 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C807	.015 50V 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C808	.0018 10V 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C809	.0015 10V 10%	22-2490	CCD-102	DD-102	GP1000	GP210	10TS-D10
C810	.0015 N3300	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C811	.22 200V	22-6716	CCD-102	DD-102	GP1000	GP210	10TS-D10
C812	.0033 10V	22-6716	CCD-102	DD-102	GP1000	GP210	10TS-D10
C813	.470 1.5KV 10%	22-6716	CCD-102	DD-102	GP1000	GP210	10TS-D10
C814	.20 NPO	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C901	.047 100V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C902	.022 100V 10%	22-6716	CCD-102	DD-102	GP1000	GP210	10TS-D10
C906	.390 10V 10%	22-6716	CCD-102	DD-102	GP1000	GP210	10TS-D10
C908	.47 50V 10%	22-6716	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1001	.01 NPO	22-2550	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1002	.30 NPO	22-2550	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1003	.24 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1004	.0022 1KV 10%	22-2550	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1005	.75 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1006	.75 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1008	.220 10V 10%	22-2550	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1009	.001 1KV 10%	22-2550	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1010	.047 100V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1011	.470 1KV 10%	22-2550	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1012	.470 1KV 10%	22-2550	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1013	.047 100V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1014	.047 100V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1015	.50 5%	22-2379	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1016	.12 N075	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1017	.50 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1018	.65 N1500	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1019	.047 100V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1021	.047 100V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1022	.290 125V 5%	22-6273	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1023	.120 N750	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1024	.43 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1025	.01 160 N750	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1027	.160 100V 5%	22-5197	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1028	.470 100V 5%	22-5197	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1029	.056 50V 10%	22-5197	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1030	.12 N1500	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1031	.120 N750	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1032	.65 N1500	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1033	.01 10V	22-5825	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1034	.047 100V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1037	.01 NPO	+5	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1101	.15 NPO	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1102	.12 NPO	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1103	.047 100V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1104	.047 100V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1105	.047 100V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1106	.120 N30	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1107	.047 100V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1108	.15 12V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1109	.0033 10V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1110	.22 50V 10%	22-2670	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1111	.220 1 10%	22-2670	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1114	.0033 N330	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1115	.15 12V	10%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1211	.18 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1212	.001 1KV 10%	22-2515	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1213	.100 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1214	.100 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1215	.18 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1216	.24 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1218	.01 1.5KV	22-4671	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1220	.100 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1221	.18 NPO	5%	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1303	.12 200V 10%	22-4652 #	CCD-102	DD-102	GP1000	GP210	10TS-D10
C1304	.12 200V 10%	22-4652 #	CCD-102	DD-102	GP1000	GP210	10TS-D10

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
For SAFETY, replace only with equivalent part.

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFG.R. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R125	Detector Level	10K	63-9697-02	TSV-10K (1) or T-10K (1)	C-103 (1)	U201R103B	MTC14L4
R204	Peak Picture	300	63-8204 #	F1-5meg, SNK104, AK-45 or F1-5meg (2) SNK012		HLC5 (2)	PTA56L (2) or [UA56L (2), SN1000] or [RU56L (2), SN1000]
R208	Red Screen (G-2)	5meg	63-10139 #	F1-5meg, SNK104, AK-45 or F1-5meg (2) SNK012		HLC5 (2)	PTA56L (2) or [UA56L (2), SN1000] or [RU56L (2), SN1000]
R209	Green Screen (G-2)	5meg	63-10137 #	F1-5meg, SNK104, AK-45 or F1-5meg (2) SNK012		HLC5 (2)	PTA56L (2) or [UA56L (2), SN1000] or [RU56L (2), SN1000]
R210	Volume	40K	63-9943 #	F3-50K, SNF100		B17-123, TM8 or [BU11, CF98, SS4, DC1] *	RU54L, SL37, SD875 or [UA54R, SD875] or [P54R, SLF37, SF3000]
	Volume (Slider Type)	40K	63-7996 # (4)				
	Volume	40K	63-10208 # (5)				
	Volume	40K	63-10209 # (8)	F3-50K, SNK012		B17-123, TM4 or [BU11, CF98, SS6A] *	RU54R, SL37, SN1000 or [UA54R, SN1000]
	Volume	40K	63-10210 # (6)				
	Volume	40K	63-10257 # (7)				
R211	Blue Screen (G-2)	5meg	63-10138 #	F1-5meg, SNK104, AK-45 or F1-5meg (2) SNK012		HLC5 (2)	PTA56L (2) or [UA56L (2), SN1000] or [RU56L (2), SN1000]
R234	Brightness Limiter	50 2W	63-10141 #	WT-50 or WB-50		P115R500A	MR50T or MR50B
R237	Focus	15meg	63-10276 #	F1-150, SNK200	A47-150K-S, RN-3, TT-2 or [NP-150K-S, NML-A-300, TT-2]	B11-328, TM4, C3(3) or [BU11, CF72, SS6A] *	RU154L, SL37, SN2000
R256	Vert Hold	150K	63-10219 #	F1-150K, SNK012		B11-328, TM4 or [BU11, CF72, SS6A] *	RU154L, SL37, SN1000
	Vert Hold	150K	63-10216 # (5) (6)				
	Vert Hold	150K	63-10217 # (9)				
	Vert Hold	150K	63-10218 # (10)				
	Vert Hold	150K	63-10258 # (7)				
R257a	Contrast, Front	1000	63-10200-03 #				
b	Preset Contrast, Rear	1000	63-9286-03 (7) #				
	Contrast	1000	63-10200-01 #				
	Preset Contrast, Rear	1000	63-10200-02 # (9)				
	Contrast	1000	63-10200-03 # (10)				
	Preset Contrast, Rear	1000	63-10200-04 # (11)				
	Contrast	1000	63-10200-01 #				
	Preset Contrast, Rear	1000	63-10200-02 # (9)				
	Contrast	1000	63-10200-03 # (10)				
R258a	Brightness, Front	5000	63-10199-06 #				
b	Preset Brightness, Rear	5000	63-9286-01 #				
	Brightness	5000	63-10199-03 # (7)				
	Preset Brightness	5000	63-10199-04 # (9)				
	Brightness, Front	5000	63-10199-05 # (5) (6)				
	Preset Brightness, Rear	5000	63-10199-06 # (10)				
	Brightness, Front	5000	63-10199-07 # (11)				
	Preset Brightness, Rear	5000	63-10199-08 # (12)				
	Brightness, Front	5000	63-10199-09 # (13)				
	Preset Brightness, Rear	5000	63-10199-10 # (14)				
	Brightness, Front	5000	63-10199-11 # (15)				
	Preset Brightness, Rear	5000	63-10199-12 # (16)				
R259a	Color Level, Front	5000	63-10199-02 #				
b	Preset Color Level, Rear	5000	63-10199-03 # (17)				
	Color Level, Front	5000	63-10199-04 # (18)				
	Preset Color Level, Rear	5000	63-10199-05 # (19)				
	Color Level, Front	5000	63-10199-06 # (20)				
	Preset Color Level, Rear	5000	63-10199-07 # (21)				
	Color Level, Front	5000	63-10199-08 # (22)				
	Preset Color Level, Rear	5000	63-10199-09 # (23)				
	Color Level, Front	5000	63-10199-10 # (24)				
	Preset Color Level, Rear	5000	63-10199-11 # (25)				
R260a	Blue Horiz Lines, Left	85 3W	63-9022	TSV-2.5K (1) or T-2500 (1)	C-252 (1)	X201R302B	MTC33L4
R603	R/G Horiz Lines, Left	60 3W	63-9021	WP-100, WSK104			MR100P, MRS1250
R604	R/G Vert Lines, Left	70 3W	63-9015	WP-100, WSK104			MR100P, MRS1250
R609	Blue Horiz Lines, Bottom	300 3W	63-9021	WP-100, WSK104			MR100P, MRS1250
	Blue Horiz Lines, Top	300 3W	63-9016				
R616	R/G Vert Lines, Bottom	300 3W	63-9016				
R617	R/G Horiz Lines, Bottom	300 3W	63-9016				
	Bottom	300 3W	63-9016				
R618	R/G Vert Lines, Top	300 3W	63-9016				
R621	R/G Horiz Lines, Top	300 3W	63-9016				
R717	Vert Size	350K	63-9697-05	TSV-2.5K (1) or T-2500 (1)	C-252 (1)	U201R252B	MTC3253L4
R718	Vert Center	2000	53-9697-06	TSV-100K or T-100K		X201R104B	MTC23L4
R1002	Color Killer	100K	63-9228	TSV-25K or T-25K	C-104	X201R253B	MTC15L1
R1009	Crosstalk	25K	63-9228-01	T-20K (1) or TSV-25K (1)	C-253	X201R253B	MTC253L1
R1015	ACC (Chroma)	20K	63-9697	T-20K (1) or TSV-25K (1)	C-253 (1)	U201R253B	MTC24L4
R1018	APC	20K	63-9697	T-20K (1) or TSV-25K (1)	C-253 (1)	U201R253B	MTC24L4
R1307	Pincushion Ampl.	30 2W, 7 Stop	63-10278 #				
	Pincushion Ampl.	30 2W	63-10223 (13)				

VHF TUNER PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C36	.8-6 pF	22-6122					
C37	.001	22-6120-01					
C38	4	22-7069					
C39a	28		CCTO-300				10TCC-Q30
b	28		CCTO-300				10TCC-Q30
c	28		CCTO-300				10TCC-Q30
d	28		CCTO-300				10TCC-Q30
C40	.15	22-7252	4DP-4-154		DPMS4P15	EW4015	4PS-P16
C41	.001	22-6120-01					
C42	.001	22-6120-01					
C43	30	22-6147	*				10TCP-Q30

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

COILS (RF-IF)

ITEM No.	USE	MFR. PART No.	NOTES	ITEM No.	USE	MFR. PART No.	NOTES
L1	Ant Input	20-3582	(1)	L15	High Channel Mixer	20-3479	
L2	Ant Input	20-1819	(1)	L16	High Channel Mixer	20-3484	
L3	Ant Input	20-3583	(1)	L17		91-233	
L4	Ant Input	20-3505	(1)	L19	IF Output	20-3221	
L5	Ant Input	20-3594	(1)	L21	RF Choke	20-3270	
L6	Ant Input	20-3588	(1)	L22	High Channel Osc	20-3481	
L7	Low Channel Ant	20-3462		L23	RF Choke	20-3270	
L8	Low Channel Ant			L24	Low Channel Osc	20-3485	
L10	High Channel Ant	20-3606		T1	Antenna Filter Assembly	S-94807	
L12	RF Choke	20-3270					
L13	High Channel RF	20-3480					
L14	Low Channel RF	20-3483					

(1) Part of antenna filter assembly T1.

TUNER CONTROL PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

SEMICONDUCTORS

ITEM No.	TYPE / MFR. No. / PART No.	REPLACEMENT DATA						
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
CR1	103-142	GE-300	D200	PTC214	HEP0602	SK3100	RT218	ECG 177
CR2	103-237	GE-ZD-33	Z-1222	PTC512	HEP20426	SK3095	RT250	ECG 147
CR3	103-236, 33V Zener	GE-ZD-33	Z-1222	PTC512	HEP20426	SK3095	RT250	ECG 147
Q1	121-978	GE-22	TR-20	PTC103	HEP0602	SK3100	RT218	ECG 177
Q2	121-447	GE-20	IRTR-78	PTC110	HEP715	SK3025	RT115	ECG 159
Q3	121-447	GE-20	IRTR-78	PTC110	HEP244	SK3104	RT159	ECG 157
Q4	121-978	GE-22	TR-20	PTC103	HEP715	SK3025	RT115	ECG 159
Q5	121-499	GE-20	TR-24	PTC136	HEP730	SK3124	RT102	ECG 123A
Q6	121-699	GE-21	TR-20	PTC103	HEP708	SK3114	RT115	ECG 159

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	4.7 25V	22-7142-03	ME-1-G-005	EA30-5	WBR5-50	MTA5050	TVA-1203
C7	100 25V	22-7142-08	ME-7-G-100	EA30-100	WBR100-25	MTA100F35	TVA-1207
C9	47 16V	22-7141-07	ME-3-E-050	EA15-50	WBR50-25	MTA50E15	TVA-1150
C10	1 10V	22-4555	ME-1-D-001	EA15-2	WBR1-50	MTA1D50	TVA-1129.80

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	.1	200V 10%					
C2	.001	200V 10%	2DP-3-104	DD-102	DPMS2P1	EW2010	2PS-P10
C4	.015	100V 10%	CGD-102	DD-102	GP1000	GP210	10TS-D10
C6	.15	100V 10%	1DP-1-153	DD-153	DPMS6S15	EW1A115	22SP15391WD3
C8	.015	100V 10%	4DP-4-154	DD-153	DPMS4P15	EW4015	4PS-P16
C11	.1	200V 10%	1DP-1-153	DD-153	DPMS6S15	EW1A115	22SP15391WD3
			2DP-3-104		DPMS2P1	EW2010	2PS-P10

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA			
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.
R8	Bias	20K	63-9697	T-20K (1) or or 15V-25K (1)	C-253 (1)	U201R2538
R26	UHF-VHF Fine Tuning	100K	63-9233			
R27	UHF-VHF Fine Tuning	100K	63-9230			
R28	UHF-VHF Fine Tuning	100K	63-9233			
R29	UHF-VHF Fine Tuning	100K	63-9230			
R30	UHF-VHF Fine Tuning	100K	63-9233			
R31	UHF-VHF Fine Tuning	100K	63-9230			
R32	UHF-VHF Fine Tuning	100K	63-9233			
R33	UHF-VHF Fine Tuning	100K	63-9230			
R34	UHF-VHF Fine Tuning	100K	63-9233			
R35	UHF-VHF Fine Tuning	100K	63-9230			
R36	UHF-VHF Fine Tuning	100K	63-9233			
R37	UHF-VHF Fine Tuning	100K	63-9230			
R38	UHF-VHF Fine Tuning	100K	63-9233			
R39	UHF-VHF Fine Tuning	100K	63-9230			

(1) For horizontal mounting, bend the two outside terminals to fit PC board. Use jumper to connect center terminal to PC board.

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
S1	Switch	S-94270	
S2	Switch	S-94271	
S3	Switch	S-94270	Rotor Contact Assembly (Tuning Potentiometer)
			Rotor Contact Assembly
			Rotor Contact Assembly

SET 1377 FOLDER 3-A

ZENITH TUNERS USED WITH CHASSIS 17EC45, 19EC45

PHOTOFACT® Folder

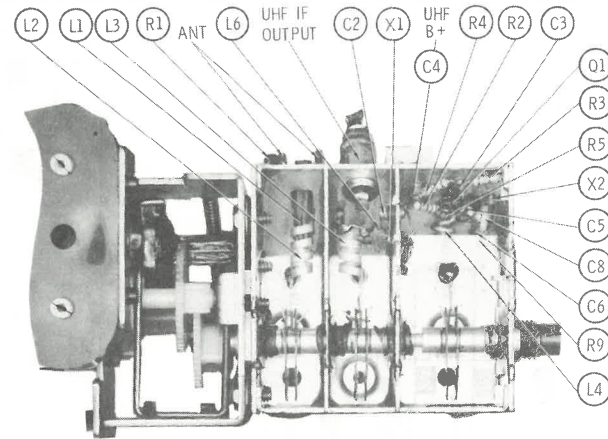
with CIRCUITRACE™

For Supplier Address See PHOTOFACT Index

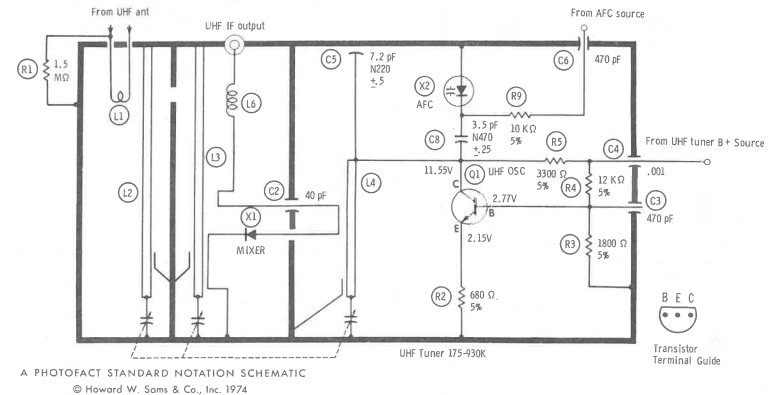
ZENITH TUNERS USED WITH CHASSIS 17EC45, 19EC45

IMPORTANT FILING NOTICE

This PHOTOFACT Folder covers equipment used with the TV chassis covered in PHOTOFACT SET 1377 FOLDER 3. File this Folder with the TV Folder in the yellow filing jacket provided.



UHF TUNER S-90312



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SEMICONDUCTORS UHF TUNER PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

ITEM No.	TYPE / MFR. No. / PART No.	REPLACEMENT DATA						
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
Q1	121-551	GE-11	IRTR-80	PTC115	HEP720	SK3039	RT108	ECG 108
X1	103-61	1N82A	1N82AG	PTC217	HEP700	SK3089		ECG 112
X2	103-104 (8)							

(8) Varactor

COILS (RF-IF)

ITEM No.	USE	MFR. PART No.	NOTES	ITEM No.	USE	MFR. PART No.	NOTES
L1	UHF Input	20-1373		L4	Oscillator	20-1557	
L2	RF	20-3558		L6	UHF IF Output	20-1261	
L3	Mixer	20-3555					

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	40	22-5060					
C3	470	22-5062					
C4	.001	22-4651					
C5	7.2 N220 5%	22-5366					
C6	470	22-5062					
C8	3.5 N470 ±.25	22-5367					

HOWARD W. SAMs & CO., INC. Indianapolis, Indiana 46206



The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed.

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DATE 2-74 SET 1377 FOLDER 3-A

ZENITH TUNERS USED WITH CHASSIS 17EC45, 19EC45

SET 1377 FOLDER 3-A

UHF TUNER PARTS LIST AND DESCRIPTION

175-1607 (When ordering parts, state Model, Part Number, and Description.)

SEMICONDUCTORS

ITEM No.	TYPE / MFR. No. / PART No.	REPLACEMENT DATA						
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
CR1	103-176 (8)	1N82A	1N82AG	PTC217	HEPRO700	SK3089	RT113	ECG 112
CR2	103-176 (8)							
CR3	103-176 (8)							
CR4	103-176 (8)							
CR5	5-88576							
Q1	121-779							
Q2	121-551							
Q2	121-551							

(8) Varactor

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	5	NPO 5%	22-5062		NP05		10TCC-V50
C2	470						
C3	27	5%	22-6226				
C4	30						
C5	470						
C6	30						
C7	4.7						
C8	470						
C9	470						
C10	24						
C11	40	N750 10%	22-6141				
C12	.002						
C13	27		22-4729				
C14	470						
C15	20	NPO ±.25	22-5062				
C16	2.2						
C17	470		22-5062				
C18	470						
C19	470	N750 ±.25	22-5062				
C21	3						

COILS (RF-IF)

ITEM No.	USE	MFR. PART No.	NOTES	ITEM No.	USE	MFR. PART No.	NOTES
L5	RF Choke	20-1653		L15	Mixer IF	20-3109	
L12	Osc. Coil	20-1768		L16	Osc. Coil	20-3107	
L13	Mixer Coupling	20-3108		T1	Ant. Input Balun	S-91982	
L14	IF Output	20-3110		T2	Ant. Balun and	S-91894	

VHF TUNER PARTS LIST AND DESCRIPTION

175-1505P (When ordering parts, state Model, Part Number, and Description.)

SEMICONDUCTORS

ITEM No.	TYPE / MFR. No. / PART No.	REPLACEMENT DATA						
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
CR1	103-178	1N82A	1N82AG	PTC217	HEPRO700	SK3089		ECG 112
CR2	103-178							
CR3	103-235 (8)	1N82A	1N82AG	PTC217	HEPRO700	SK3089		ECG 112
CR4	103-235 (8)							
CR5	103-178	1N82A	1N82AG	PTC217	HEPRO700	SK3089		ECG 112
CR6	103-178							
CR7	103-235 (8)	1N82A	1N82AG	PTC217	HEPRO700	SK3089		ECG 112
CR8	103-178							
CR9	103-235 (8)	1N82A	1N82AG	PTC217	HEPRO700	SK3089		ECG 112
CR10	103-178							
CR11	103-231, 16V Zener	1N82A	1N82AG	PTC217	HEPRO700	SK3089	RT246	ECG 5075
Q1	121-787	GE-20	Z-1214	ZB16	HEP20419	SK3063		
Q2	121-855	GE-11	IRTR-80	PTC115	HEP720	SK3018	RT107	ECG 107
Q3	121-841	GE-11	IRTR-80	PTC115	HEP720	SK3018	RT107	ECG 107
Q4	121-754	GE-11	IRTR-80	PTC115	HEP720	SK3018	RT107	ECG 107

(8) Varactor

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	4	N220 5%	22-7069				
C2	60						
C3	.001	N220 5%	22-7093-01				
C4	.8-3 pF						
C5	.001	N075 5%	22-6120-01				
C6	28						
C7	.001		22-6120-01				
C8	.001						
C9	.001		22-4948				
C10	.001						
C11	.001	NPO 5%	22-6120-01				
C12	18						
C13	.001		22-6120-01				
C14	.8-3 pF						
C15	.001		22-6120-01				
C16	.001						
C17	.001		22-6120-01				
C18	.001						
C19	6	N75 5%	22-6151				
C20	.001						
C21	4	N150 ±.25	22-6146				
C22	.001						
C23	.001		22-5564				
C24	.001						
C25	4	N150 5%	22-7552				
C26	.001						
C27	1.5		22-2424				
C28	3						
C29	30	N150 5%	22-4993				
C30	.001						
C31	.001		22-7183				
C32	30						
C33	.8-3 pF	N150 5%	22-6147				
C34	.001						
C35	68	NPO 5%	22-6120-01				

VHF TUNER PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C36	.8-6 pF	N220 5%	22-6122				
C37	.001						
C38	4		22-6120-01				
C39a	28						
C39b	28						
C39c	28						
C39d	28						
C40	.15						
C41	.001	50V 10%	22-7252				
C42	.001						
C43	30	N150 5%	22-6147				

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

COILS (RF-IF)

ITEM No.	USE	MFR. PART No.	NOTES	ITEM No.	USE	MFR. PART No.	NOTES
L1	Ant. Input	20-3582	(1)	L15	High Channel Mixer	20-3479	
L2	Ant. Input	20-1819	(1)	L16	High Channel Mixer	20-3484	
L3	Ant. Input	20-3583	(1)	L17		91-233	
L4	Ant. Input	20-3505	(1)	L19	IF Output	20-3221	
L5	Ant. Input	20-3594	(1)	L21	RF Choke	20-3270	
L6	Ant. Input	20-3588	(1)	L22	High Channel Osc	20-3481	
L7	Low Channel Ant	20-3462		L23	RF Choke	20-3270	
L8	Low Channel Ant			L24	Low Channel Osc	20-3485	
L10	High Channel Ant	20-3606		T1	Antenna Filter Assembly	S-94807	
L12	RF Choke	20-3270					
L13	High Channel RF	20-3480					
L14	Low Channel RF	20-3483					

(1) Part of antenna filter Assembly T1.

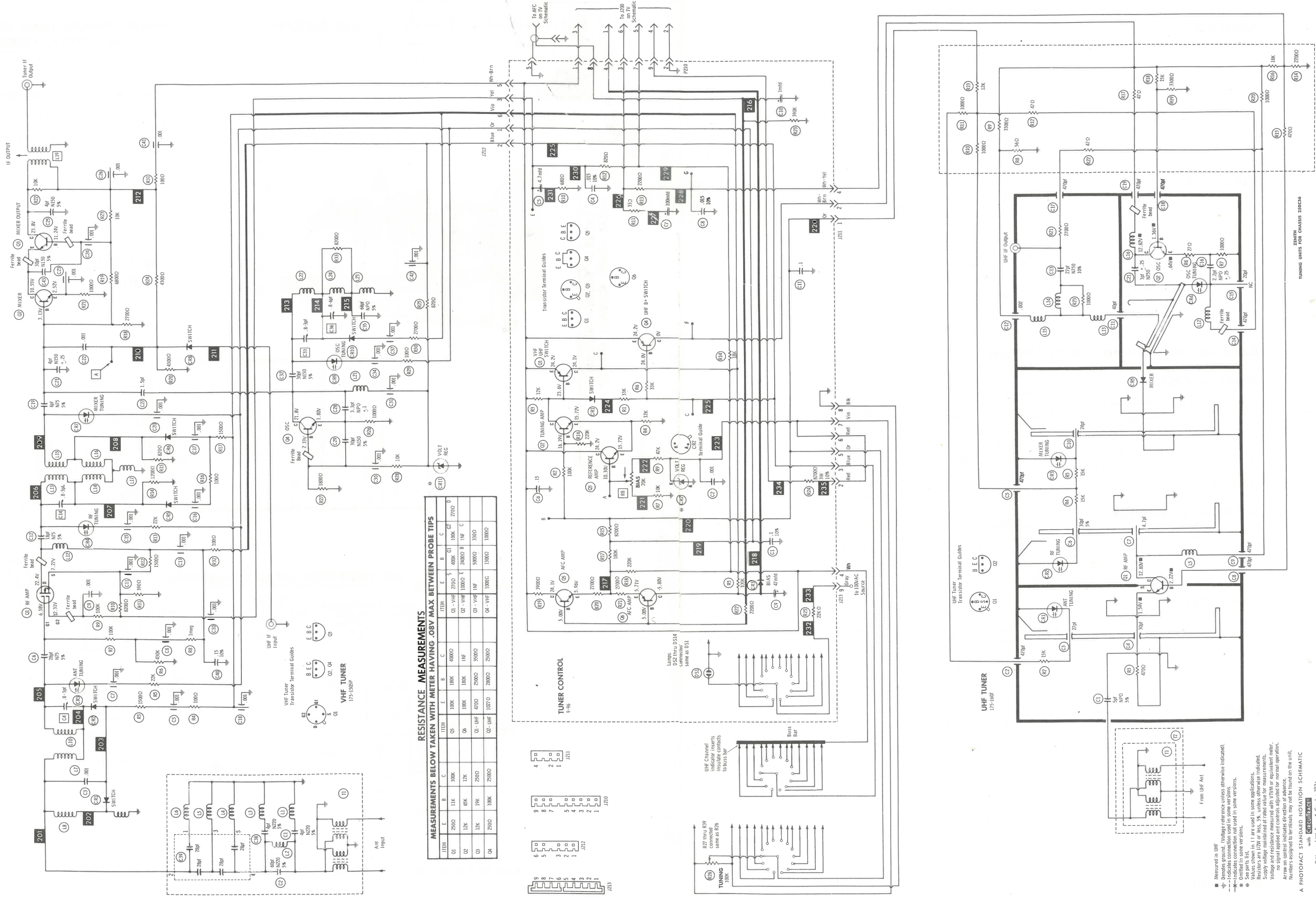
TUNER CONTROL PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

SEMICONDUCTORS

ITEM No.	TYPE / MFR. No. / PART No.	REPLACEMENT DATA						
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
CR1	103-142 103-237 103-236, 33V Zener	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR2		GE-ZD-33	Z-1222	PTC512	HEP20426	SK3095	RT250	ECG 147
CR3		GE-ZD-33	Z-1222	PTC512	HEP20426	SK3095	RT250	ECG 147
Q1		GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
Q2		GE-22	TR-20	PTC103	HEP715	SK3025	RT115	ECG 159
Q3		GE-20	IRTR-78	PTC110	HEP244	SK3104	RT159	ECG 157
Q4	121-447	GE-20	IRTR-78	PTC110	HEP244	SK3104	RT159	ECG 157
Q5	121-978	GE-22	TR-20	PTC103	HEP715	SK3025	RT115	ECG 159
Q6	121-499	GE-20	TR-24	PTC136	HEP730	SK3124	RT102	ECG 123A
Q6	121-699	GE-21	TR-20	PTC103	HEP708	SK3114	RT115	ECG 159

VHF TUNER 175-1505P UHF TUNER 175-1607



VHF TUNER PARTS LIST AND DESCRIPTION
SEMICONDUCTORS VHF TUNER 175-1813, 175-1813-01

REPLACEMENT DATA				
ITEM No.	TYPE / MFR. No. / PART No.	GENERAL ELECTRIC PART No.	MOTOROLA PART No.	SPRAGUE PART No.
Q1	121-787	GE-11	IRTR-80	RT107
Q2	121-784			
Q3	121-756			
X1	103-146 (8)			

(8) Varactor

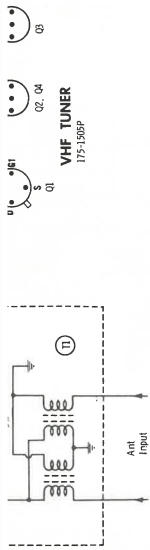
REPLACEMENT DATA				
ITEM No.	RATING	MFR. PART No.	ARCO/ELMENDO PART No.	SPRAGUE PART No.

CAPACITORS (cont)

REPLACEMENT DATA				
ITEM No.	RATING	MFR. PART No.	ARCO/ELMENDO PART No.	SPRAGUE PART No.
C21	.001	22-4728		
C22	10%	22-4913		
C23	.001	22-4728		
C24	.001	22-4728		
C25	.001	22-4728		
C26	.001	22-4728		
C27	.001	22-4728		
C28	.001	22-4728		
C29	.001	22-4728		
C30	.001	22-4728		
C31	.001	22-4728		
C32	.001	22-4728		
C33	.001	22-4728		
C34	.001	22-4728		
C35	.001	22-4728		

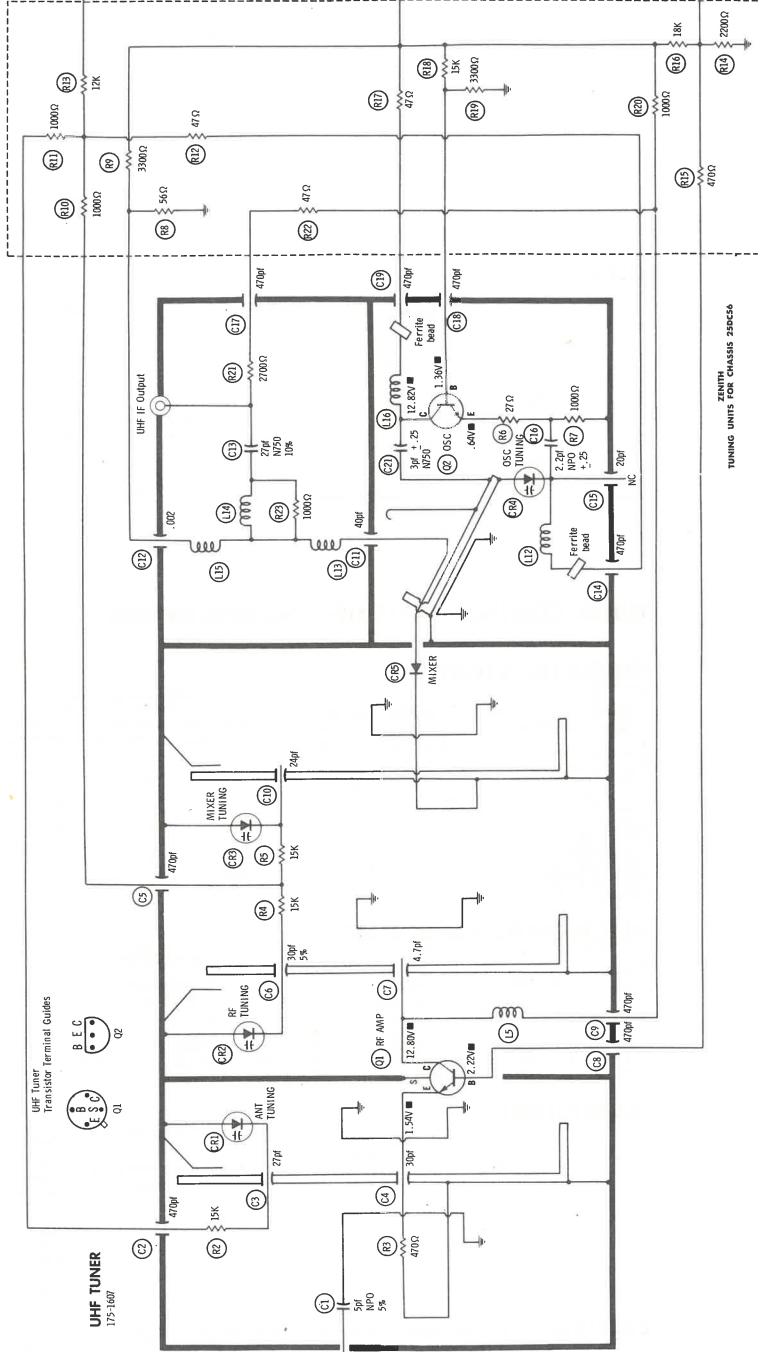
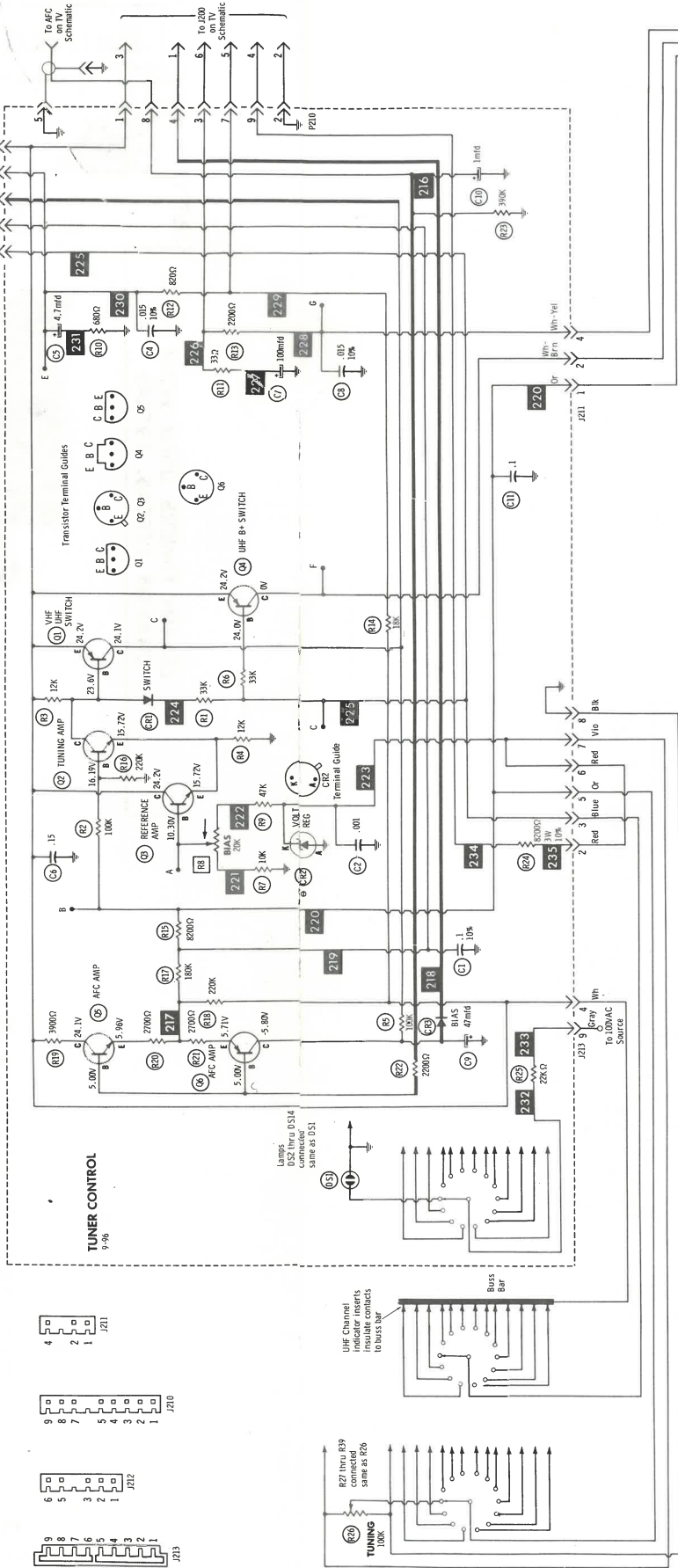
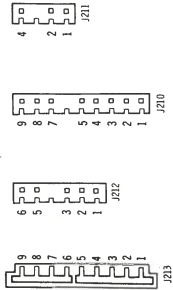
Not normally in distributor's stock. Available thru distributor on order to manufacturer.

COLE / DE IE



RESISTANCE MEASUREMENTS

MEASUREMENTS BELOW TAKEN WITH METER HAVING .08V MAX BETWEEN PROBE TIPS											
ITEM	E	B	C	ITEM	E	B	C	ITEM	E	B	C
Q1	250Ω	11K	300K	Q5	100K	180K	400Ω	Q1	VHF	270Ω	G1 100K 270Ω
Q2	12K	69K	12K	Q6	100K	180K	1M	Q2	VHF	1000Ω	2400Ω B 1M
Q3	12K	19K	250Ω	Q1	100K	470Ω	250Ω	330Ω	Q3	VHF	5000Ω 330Ω
Q4	250Ω	10K	250Ω	Q2	100K	102Ω	280Ω	250Ω	Q4	VHF	100Ω 330Ω 100Ω



VHF TUNER PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

REPLACEMENT DATA			
ITEM No.	TYPE / MFG. No. / PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.
Q1	121-787	GE-11	1RTR-80
Q2	121-784		
Q3	103-146 (8)		

CAPACITORS

REPLACEMENT DATA			
ITEM No.	RATING	MFG. PART No.	REPLACEMENT DATA
C1	4 N220 ±.25	22-5355	10TCR-V39
C2	36 N150 10%	22-4443	10TCP-Q39
C3	.001 N150 ±.25	22-4728	10TCC-V50
C4	4 N220 5%	22-7093	10TCR-V50
C5	4 N220 ±.25	22-7069	10TCR-V39
C6	.001 N150 ±.25	22-4728	10TCR-V39
C7	.001 N150 ±.25	22-4728	10TCR-V39
C8	.001 N150 ±.25	22-4728	10TCR-V39
C9	.001 N150 ±.25	22-4728	10TCR-V39
C10	.001 N150 ±.25	22-4728	10TCR-V39
C11	.001 N150 ±.25	22-4728	10TCR-V39
C12	.001 N150 ±.25	22-4728	10TCR-V39
C13	.001 N150 ±.25	22-4728	10TCR-V39
C14	.001 N150 ±.25	22-4728	10TCR-V39
C15	.001 N150 ±.25	22-4728	10TCR-V39
C16	.001 N150 ±.25	22-4728	10TCR-V39
C17	.001 N150 ±.25	22-4728	10TCR-V39
C18	.001 N150 ±.25	22-4728	10TCR-V39
C19	.001 N150 ±.25	22-4728	10TCR-V39

RESISTANCE MEASUREMENTS

MEASUREMENTS BELOW TAKEN WITH METER HAVING .08V MAX BETWEEN PROBE TIPS													
ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C
VHF Q1	240 Ω	400 K Ω	100 K Ω	Q2	UHF Q1	470 Ω	2500 Ω	3600 Ω		Q3	12 K Ω	14 K Ω	300 Ω
VHF Q2	1000 Ω	2300 Ω	INF	Q2	UHF Q2	1027 Ω	2800 Ω	2600 Ω		Q4	300 Ω	32 K Ω	2400 Ω
VHF Q3	INF	5000 Ω	330 Ω		Q1	240 Ω	12 K Ω	280 K Ω▲		Q5	100 K Ω	55 K Ω	4100 Ω
VHF Q4	1000 Ω	1500 Ω	1000 Ω		Q2	12 K Ω	79 K Ω	12 K Ω		Q6	100 K Ω	55 K Ω	INF

▲ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.

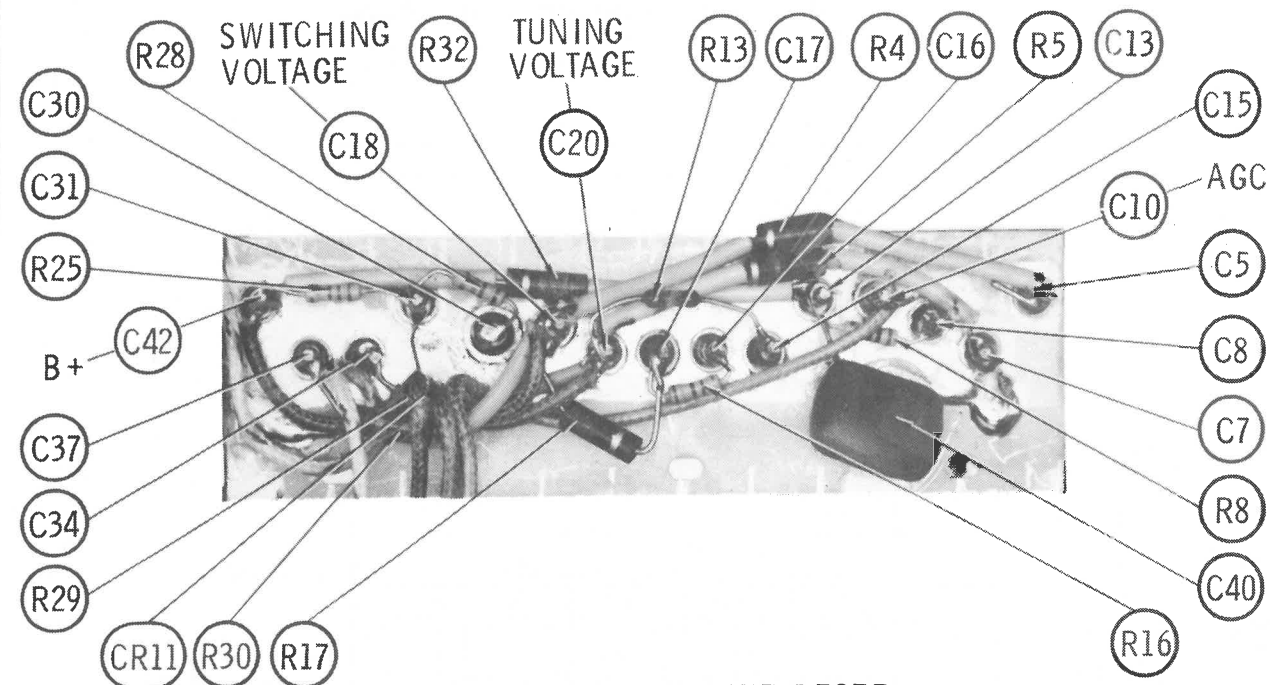
CAPACITORS (cont)

REPLACEMENT DATA			
ITEM No.	RATING	MFG. PART No.	REPLACEMENT DATA
C21	.001	22-4728	10TCC-V33
C22	.001	22-4728	10TCP-V56
C23	.001	22-4728	10TCP-V82
C24	.001	22-4728	10TCP-V33
C25	.001	22-4728	10TTS-D10
C26	.001	22-4728	10TTS-D10
C27	.001	22-4728	10TTS-D10
C28	.001	22-4728	10TTS-D10
C29	.001	22-4728	10TTS-D10
C30	.001	22-4728	10TTS-D10
C31	.001	22-4728	10TTS-D10
C32	.001	22-4728	10TTS-D10
C33	.001	22-4728	10TTS-D10
C34	.001	22-4728	10TTS-D10
C35	.001	22-4728	10TTS-D10

COILS (RF-IF)

REPLACEMENT DATA			
ITEM No.	USE	MFG. PART No.	REPLACEMENT DATA
L1	Antenna Filter	20-1819	Channel 1
L2	Antenna Filter	20-1819	Channel 1
L3	Antenna Filter	20-1819	Channel 1
L4	Antenna Filter	20-1819	Channel 1
L5	Antenna Filter	20-1819	Channel 1
L6	Antenna Filter	20-1819	Channel 1
L7	Antenna Filter	20-1819	Channel 1
L8	Antenna Filter	20-1819	Channel 1
L9	Antenna Filter	20-1819	Channel 1
L10	Antenna Filter	20-1819	Channel 1
L11	Antenna Filter	20-1819	Channel 1
L12	Antenna Filter	20-1819	Channel 1
L13	Antenna Filter	20-1819	Channel 1

(1) Includes L1 thru L6, C1, C2, C3, C4 and T2.



VHF TUNER 175-1505P

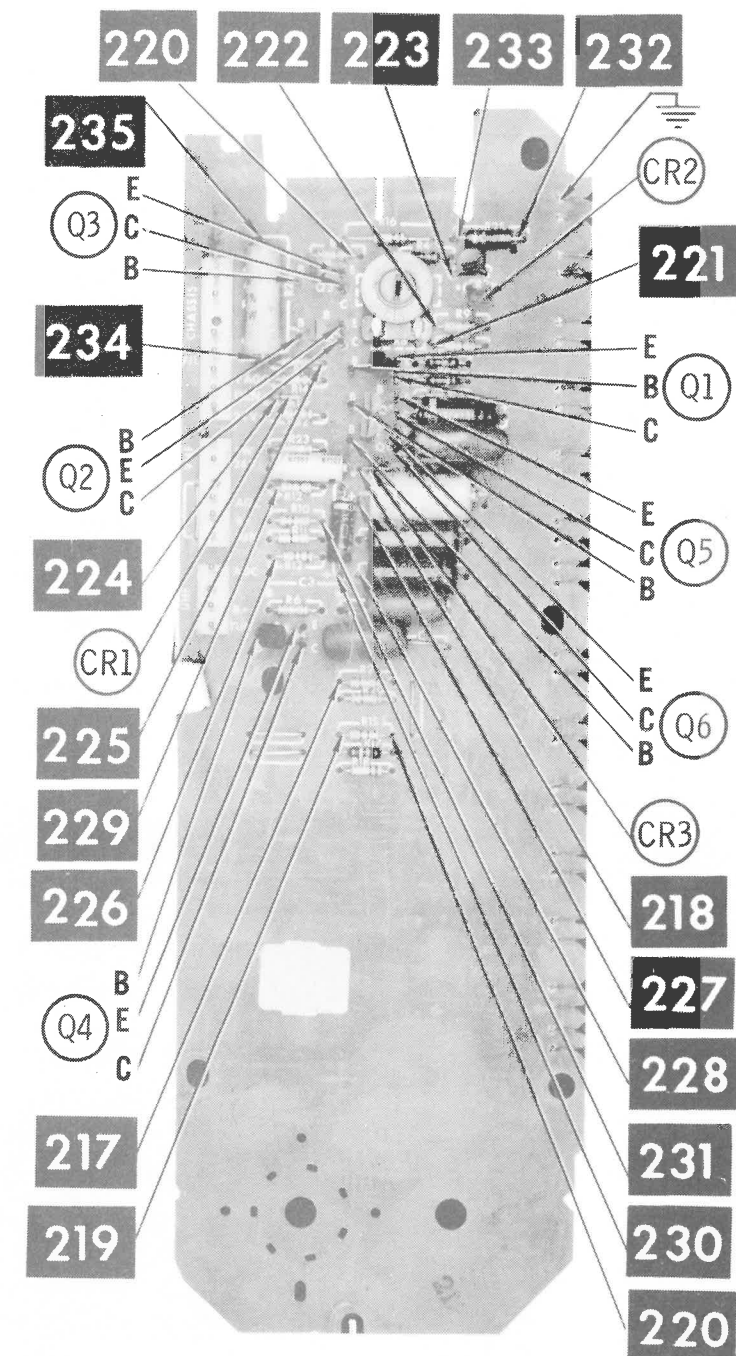
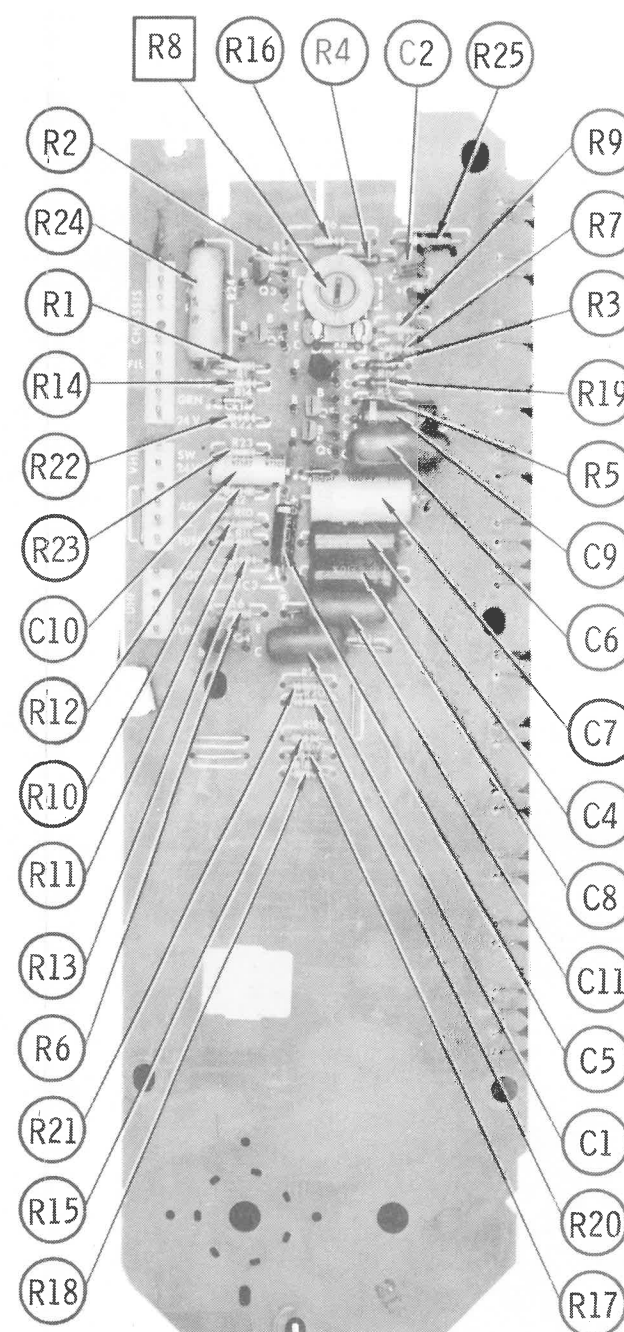
UHF AND/OR VHF TUNER ADJUSTMENTS

CHANNEL	BANDSWITCHING (VIOLET LEAD)	OSCILLATOR AND RF B+ BLUE LEAD	TUNING VOLTAGE RANGE ORANGE LEAD
2thru6	-9 Volts	+23.5Volts	1 to 9 Volts
7thru13	+23.5 Volts	+23.5Volts	10 to 25 Volts
1(UHF)	+23.5 Volts	0 Volts	

See Chart for tuning range. See schematic for measured voltages of tuning range. The manufacturer states a tuning range of .5 Volts to 28 Volts at the Orange lead of the UHF tuner. See schematic for measured tuning range at Orange lead of the UHF tuner.

Fourteen controls and fourteen indicating tabs provide flexible UHF or VHF station selection. Changing of the indicating tabs to desired UHF or VHF station will automatically switch channels to UHF or VHF. Individual indicators show approximate channels being received.

A service adjustment R8 is provided on the varactor tuner control center board. This control is a reference voltage sensor control. The control is factory preset and normally should not need adjusting. The voltage on the base of Q3 is manually set by this control to +7 Volts. This adjustment is made when the tuning voltage is zero volts.

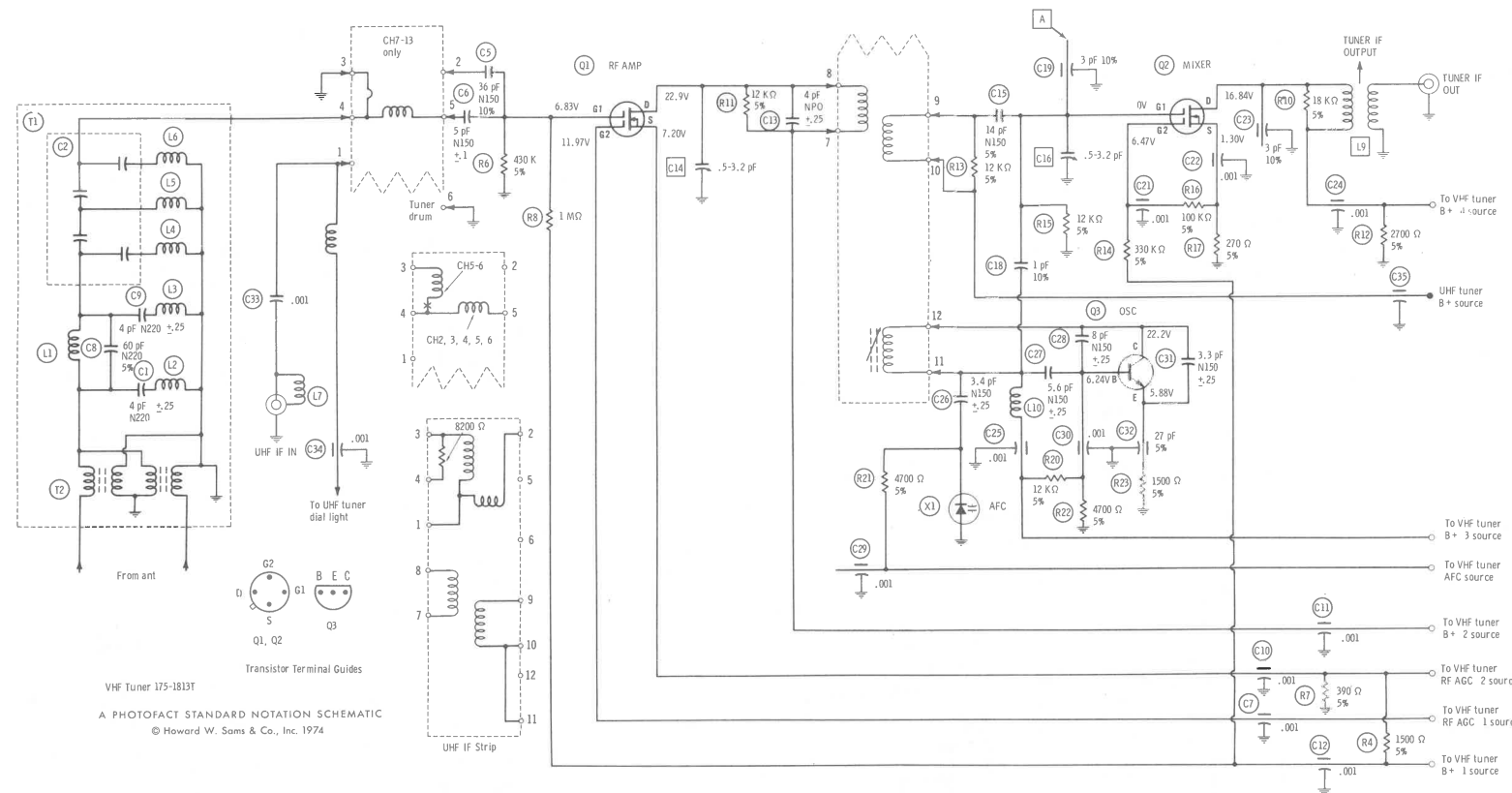


TUNER CONTROL

A Howard W. Sams CIRCUITRACE® Photo

ZENITH TUNERS USED WITH
CHASSIS 17EC45, 19EC45

FOLDER 3-A



VHF TUNER ALIGNMENT INSTRUCTIONS

OSCILLATOR ADJUSTMENTS

The oscillator slug for each channel is preset with the fine tuning control. Set AFT switch to the off position. Adjust the fine tuning for best picture and sound. AFT may be left off or turned on as desired.

RF AND MIXER ADJUSTMENTS

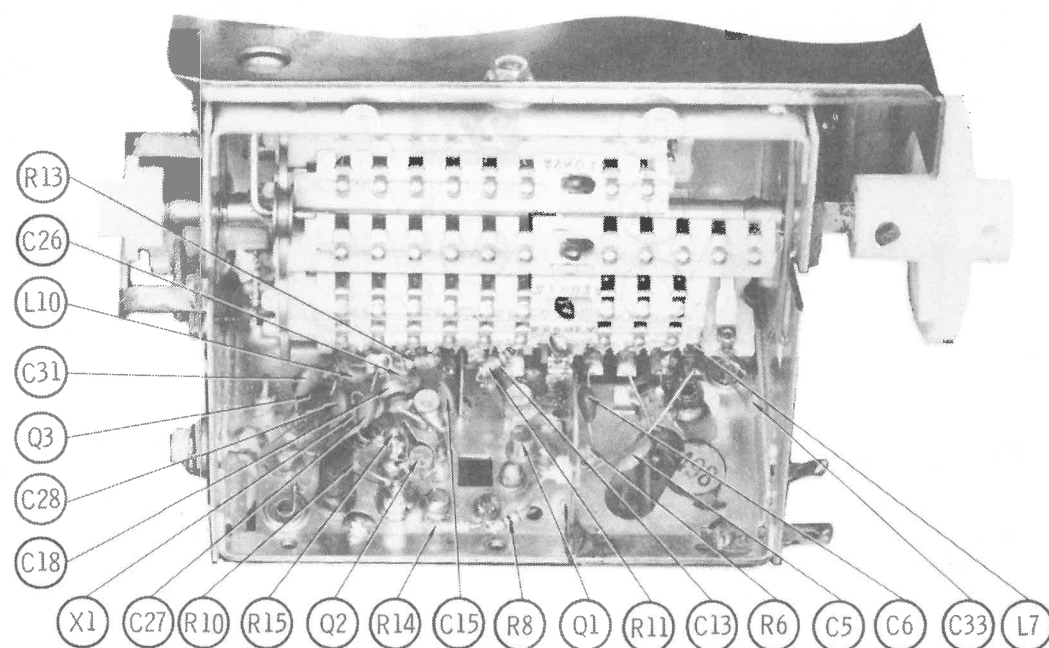
Connect the sweep generator across antenna terminals with 120-ohm carbon resistor in each lead. Refer to chart below for generator frequencies. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the scope for horizontal deflection. Use 10MHz sweep unless otherwise noted. Connect a variable bias to the RF AGC line at Point C. Adjust bias to obtain response curve showing no overload.

CHANNEL	CONNECT SCOPE	REMARKS
13	Vertical input to point A, low side to ground.	Adjust C14 and C16 for maximum gain and symmetry of response.
12 thru 2	Vertical input to point A, low side to ground.	Check all channels and make compromise adjustments of C14 and C16 if necessary.

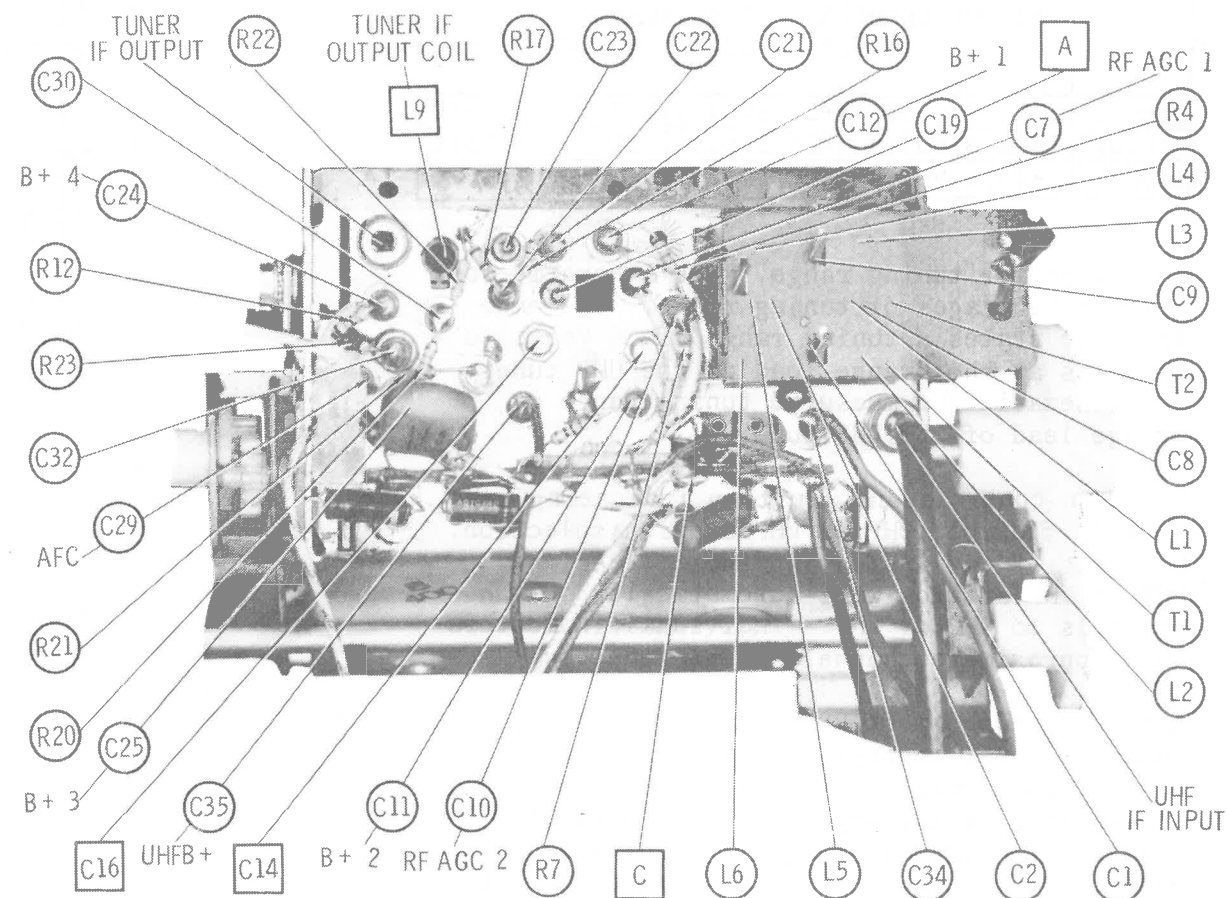
GENERATOR FREQUENCY					
Numbers in () indicate channel number					
SWEEP	MARKER	SWEEP	MARKER	SWEEP	MARKER
(2) 57MHz	55.25MHz	(6) 85MHz	83.25MHz	(10) 195MHz	193.25MHz
(3) 63MHz	59.75MHz		87.75MHz		197.75MHz
	61.25MHz	(7) 177MHz	175.25MHz	(11) 201MHz	199.25MHz
	65.75MHz		179.75MHz		203.75MHz
(4) 69MHz	67.25MHz	(8) 183MHz	181.25MHz	(12) 207MHz	205.25MHz
	71.75MHz		185.75MHz		209.75MHz
(5) 79MHz	77.25MHz	(9) 189MHz	187.25MHz	(13) 213MHz	211.25MHz
	81.75MHz		191.75MHz		215.75MHz

FIG. 201

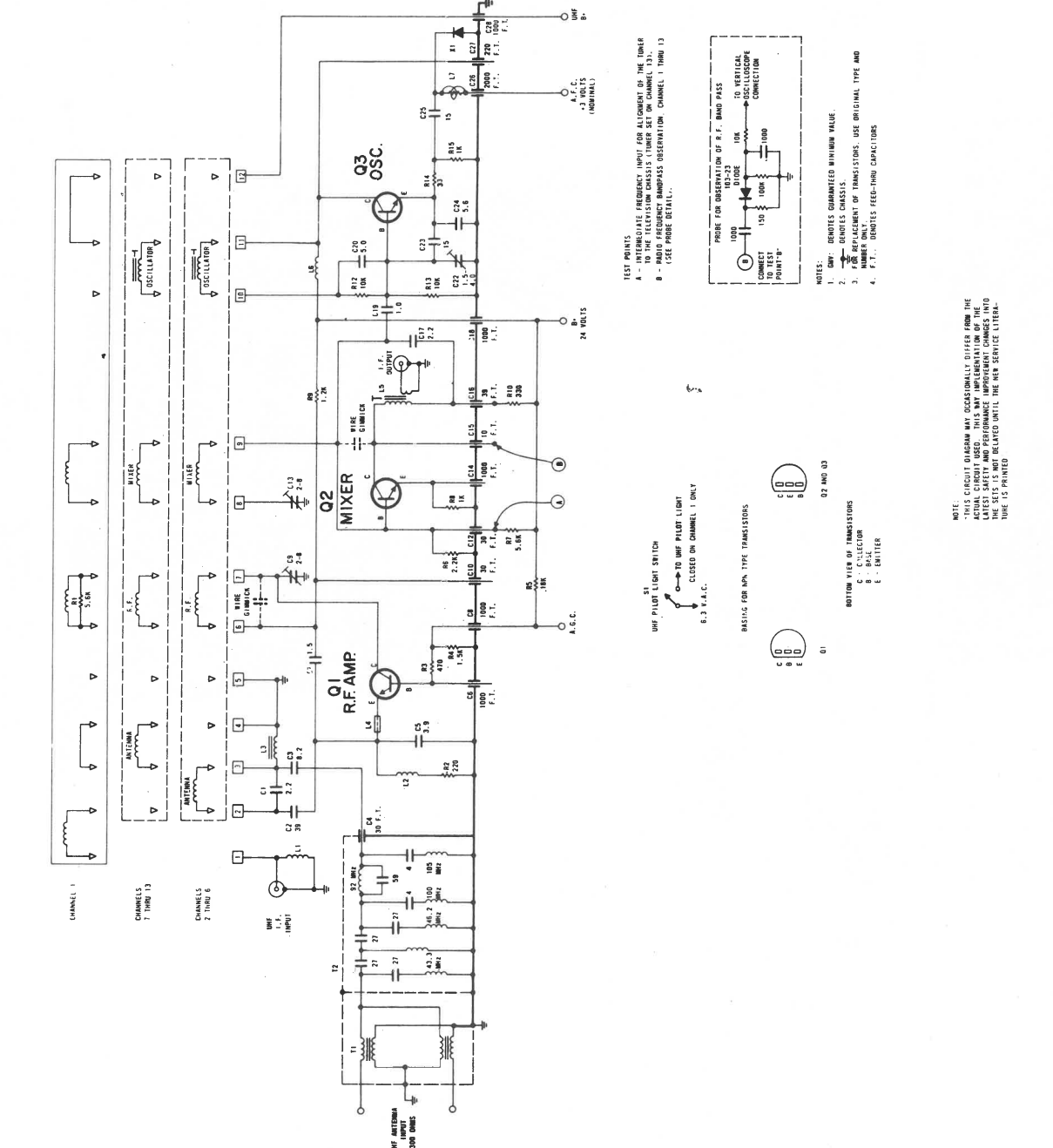
SOUND VIDEO



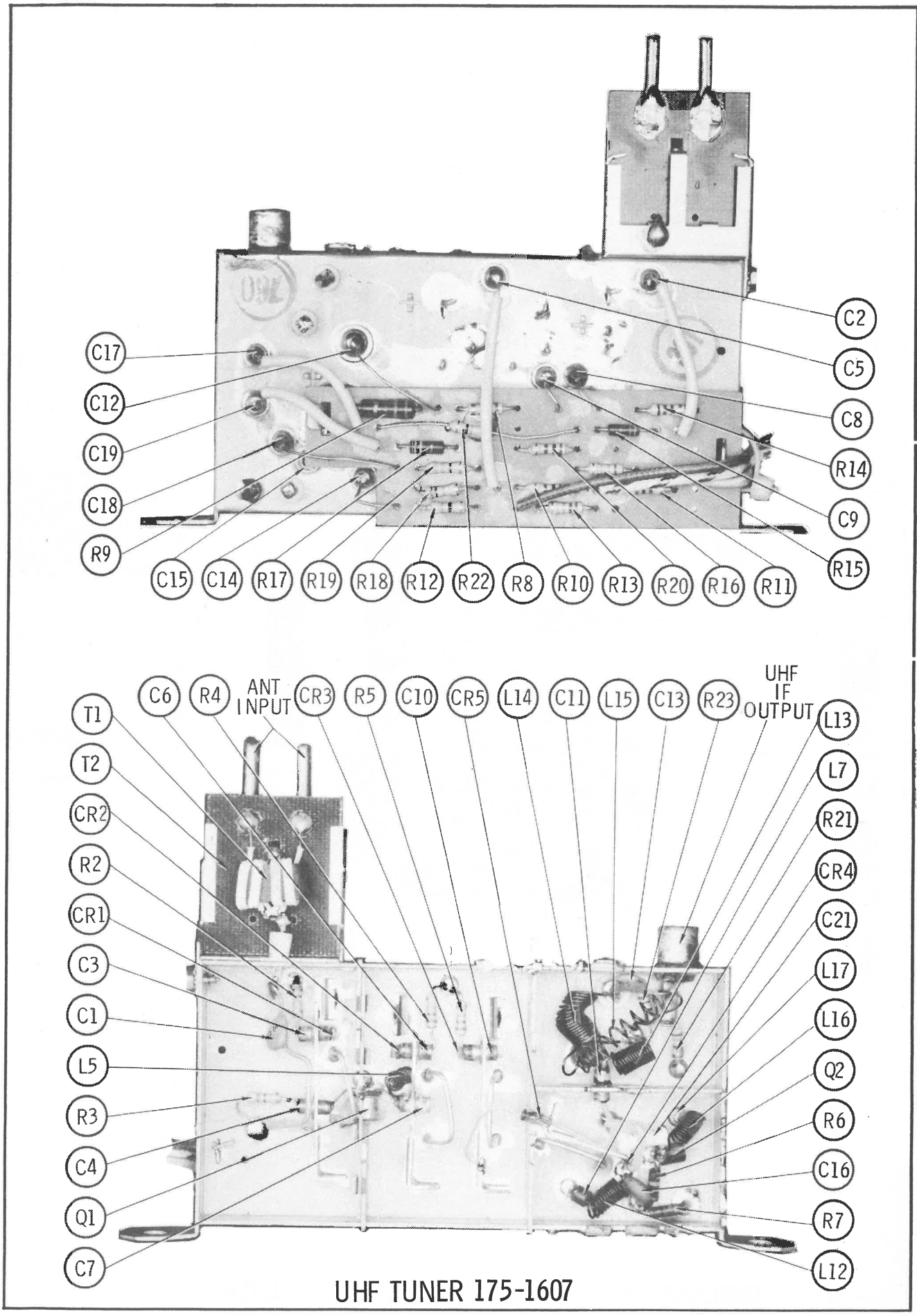
VHF TUNER 175-1813T, 175-1813-01



PART NUMBER	DESCRIPTION	QTY
22-7248	2.2 MFD 50V CAPACITOR - 10	10
22-7249	2.2 MFD 50V CAPACITOR - 10	10
22-7250	2.2 MFD 50V CAPACITOR - 10	10
22-7251	2.2 MFD 50V CAPACITOR - 10	10
22-7252	2.2 MFD 50V CAPACITOR - 10	10
22-7253	2.2 MFD 50V CAPACITOR - 10	10
22-7254	2.2 MFD 50V CAPACITOR - 10	10
22-7255	2.2 MFD 50V CAPACITOR - 10	10
22-7256	2.2 MFD 50V CAPACITOR - 10	10
22-7257	2.2 MFD 50V CAPACITOR - 10	10
22-7258	2.2 MFD 50V CAPACITOR - 10	10
22-7259	2.2 MFD 50V CAPACITOR - 10	10
22-7260	2.2 MFD 50V CAPACITOR - 10	10
22-7261	2.2 MFD 50V CAPACITOR - 10	10
22-7262	2.2 MFD 50V CAPACITOR - 10	10
22-7263	2.2 MFD 50V CAPACITOR - 10	10
22-7264	2.2 MFD 50V CAPACITOR - 10	10
22-7265	2.2 MFD 50V CAPACITOR - 10	10
22-7266	2.2 MFD 50V CAPACITOR - 10	10
22-7267	2.2 MFD 50V CAPACITOR - 10	10
22-7268	2.2 MFD 50V CAPACITOR - 10	10
22-7269	2.2 MFD 50V CAPACITOR - 10	10
22-7270	2.2 MFD 50V CAPACITOR - 10	10
22-7271	2.2 MFD 50V CAPACITOR - 10	10
22-7272	2.2 MFD 50V CAPACITOR - 10	10
22-7273	2.2 MFD 50V CAPACITOR - 10	10
22-7274	2.2 MFD 50V CAPACITOR - 10	10
22-7275	2.2 MFD 50V CAPACITOR - 10	10
22-7276	2.2 MFD 50V CAPACITOR - 10	10
22-7277	2.2 MFD 50V CAPACITOR - 10	10
22-7278	2.2 MFD 50V CAPACITOR - 10	10
22-7279	2.2 MFD 50V CAPACITOR - 10	10
22-7280	2.2 MFD 50V CAPACITOR - 10	10
22-7281	2.2 MFD 50V CAPACITOR - 10	10
22-7282	2.2 MFD 50V CAPACITOR - 10	10
22-7283	2.2 MFD 50V CAPACITOR - 10	10
22-7284	2.2 MFD 50V CAPACITOR - 10	10
22-7285	2.2 MFD 50V CAPACITOR - 10	10
22-7286	2.2 MFD 50V CAPACITOR - 10	10
22-7287	2.2 MFD 50V CAPACITOR - 10	10
22-7288	2.2 MFD 50V CAPACITOR - 10	10
22-7289	2.2 MFD 50V CAPACITOR - 10	10
22-7290	2.2 MFD 50V CAPACITOR - 10	10
22-7291	2.2 MFD 50V CAPACITOR - 10	10
22-7292	2.2 MFD 50V CAPACITOR - 10	10
22-7293	2.2 MFD 50V CAPACITOR - 10	10
22-7294	2.2 MFD 50V CAPACITOR - 10	10
22-7295	2.2 MFD 50V CAPACITOR - 10	10
22-7296	2.2 MFD 50V CAPACITOR - 10	10
22-7297	2.2 MFD 50V CAPACITOR - 10	10
22-7298	2.2 MFD 50V CAPACITOR - 10	10
22-7299	2.2 MFD 50V CAPACITOR - 10	10
22-7300	2.2 MFD 50V CAPACITOR - 10	10



Courtesy of the Manufacturer TURRET TRANSISTOR TUNERS 175-2200-50, 2202-50



ZENITH TUNERS USED WITH CHASSIS 17EC45, 19EC45

FOLDER 3-A

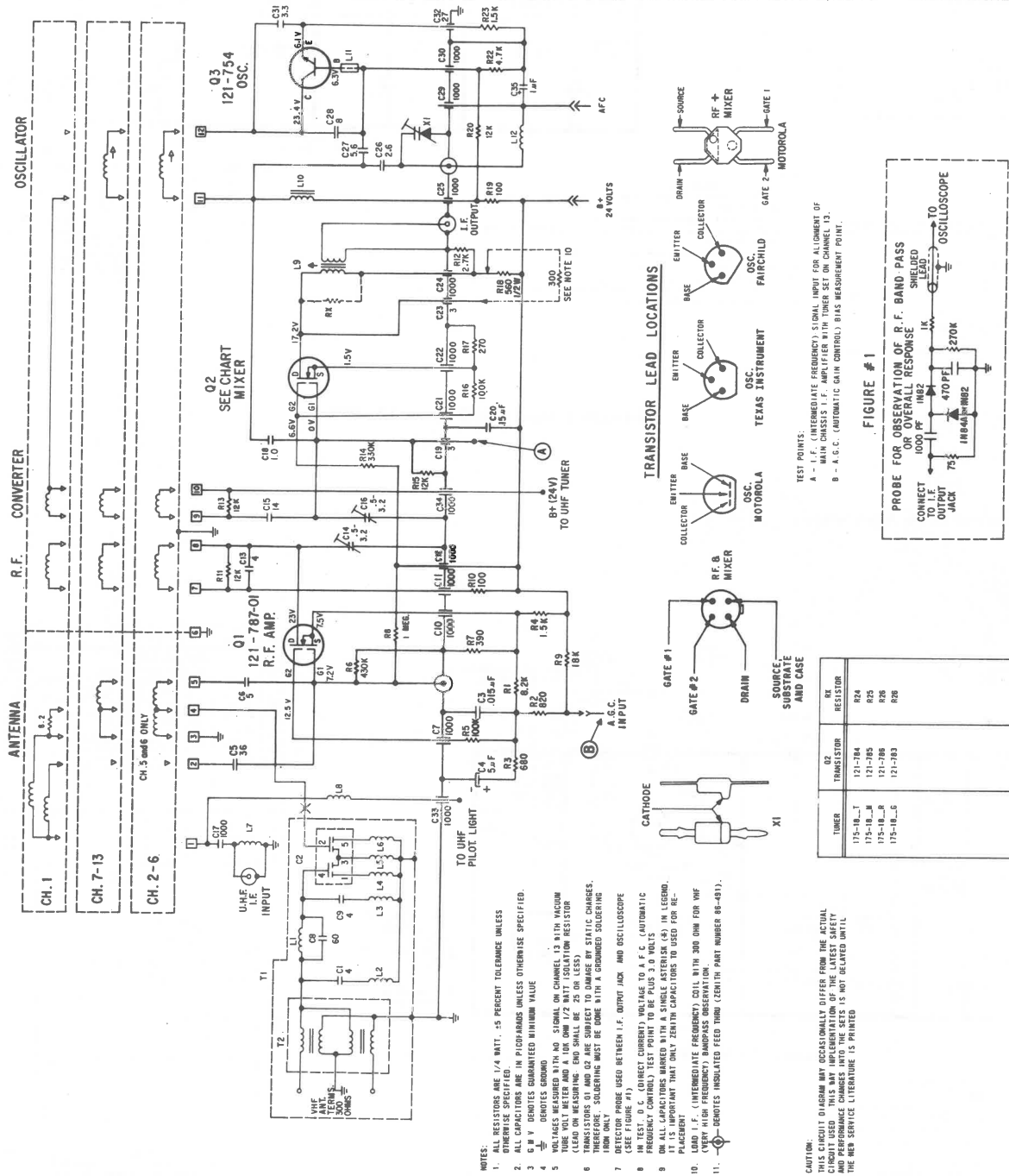


Fig. 18. Schematic Diagram, VHF Tuner 175-1814.

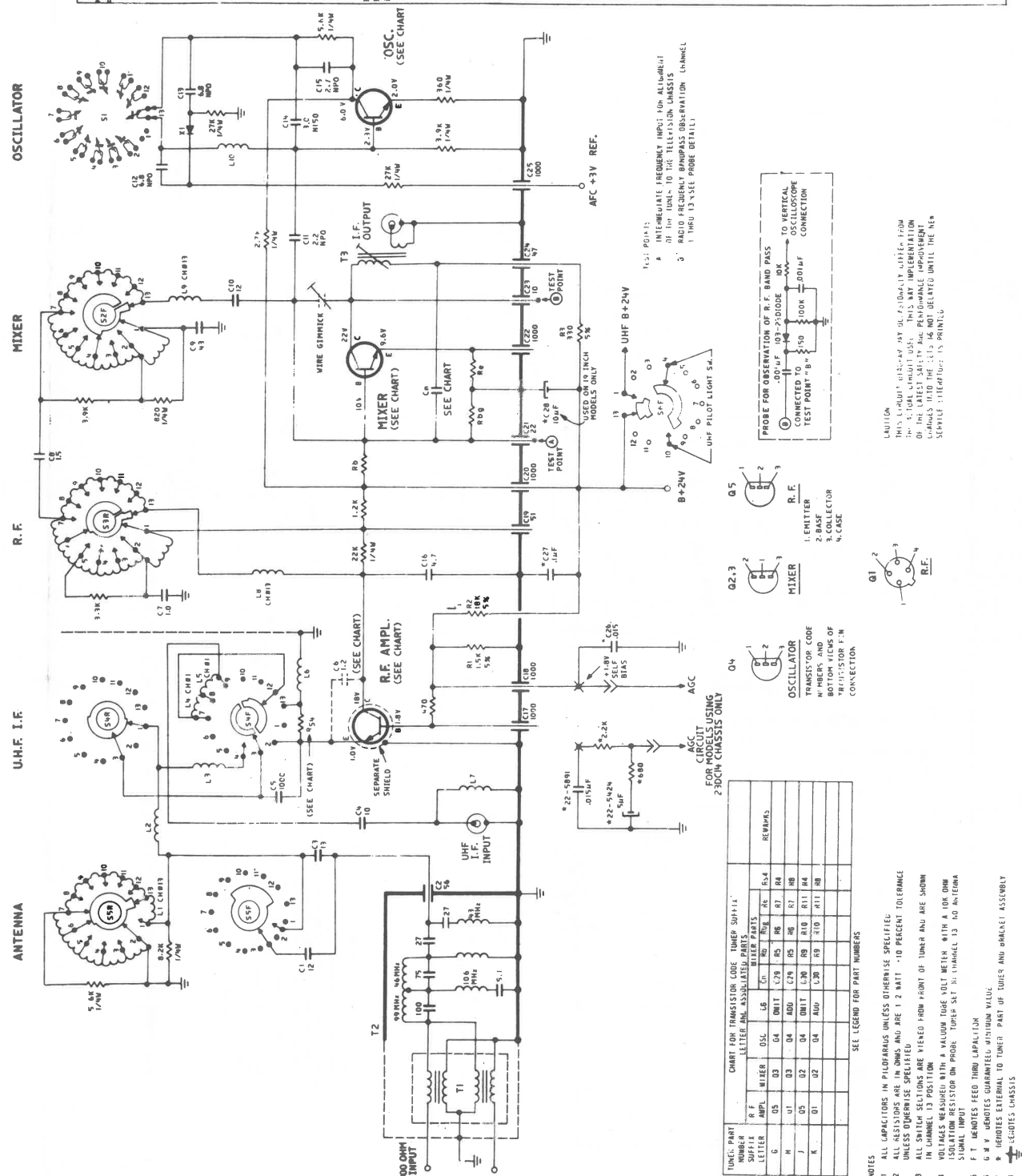


Fig. 16. Schematic Diagram, VHF Tuner 175-2200-40.

Courtesy of the Manufacturer



175-1608 UHF VARACTOR TUNER SCHEMATIC DIAGRAM

NOTES:

1. DENOTES CHASSIS. _____
2. FOR SERVICE TRANSISTOR REPLACEMENT, USE ONLY THE TYPE AND NUMBER THAT HAS ORIGINALLY SUPPLIED IN TUNER.
3. ALL CAPACITORS IN PICOPARAS UNLESS OTHERWISE SPECIFIED.
4. ALL RESISTORS IN OHMS AND ARE 0.5 WATT, PLUS OR MINUS 10 PERCENT TOLERANCE UNLESS OTHERWISE SPECIFIED.
5. P INDICATES PLUS OR MINUS 20 PERCENT TOLERANCE PERMISSIBLE.
6. G W Y DENOTES GUARANTEED MINIMUM VALUE.
7. F.T. DENOTES FEED THROUGH CAPACITOR.
8. * DENOTES EXTERNAL TO TUNER AND PART OF TUNER AND BRACKET ASSEMBLY.

SEE CHART FOR VALUES NOT GIVEN ON SCHEMATIC.

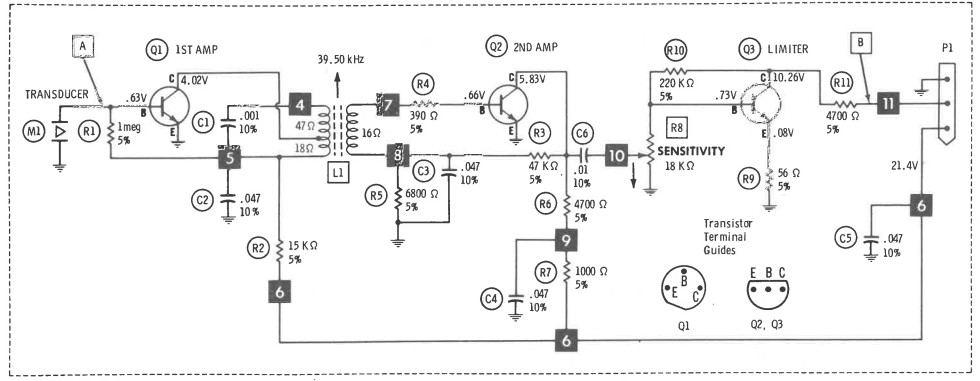


Schematic Diagram, UHF Tuner 175-983.



Schematic Diagram, UHF Tuner 175-1950.

THIS CIRCUIT DIAGRAM MAY OCCASIONALLY DIFFER FROM THE ACTUAL CIRCUIT USED. THIS WAY IMPLEMENTATION OF THE LATEST SAFETY AND PERFORMANCE IMPROVEMENT CHANGES INTO THE SETS IS NOT DELAYED UNTIL THE NEW SERVICE LITERATURE IS PRINTED.



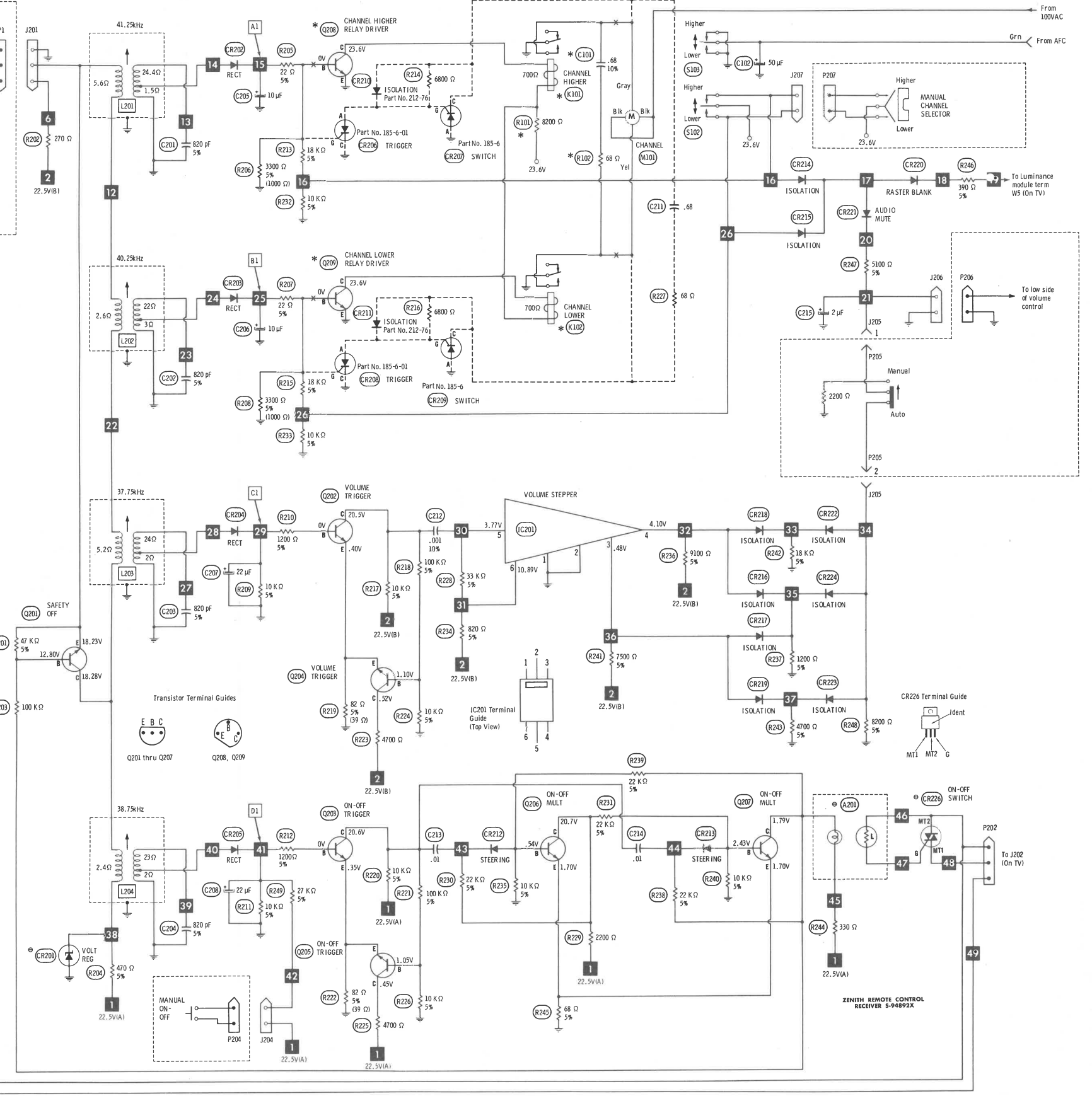
RESISTANCE MEASUREMENTS

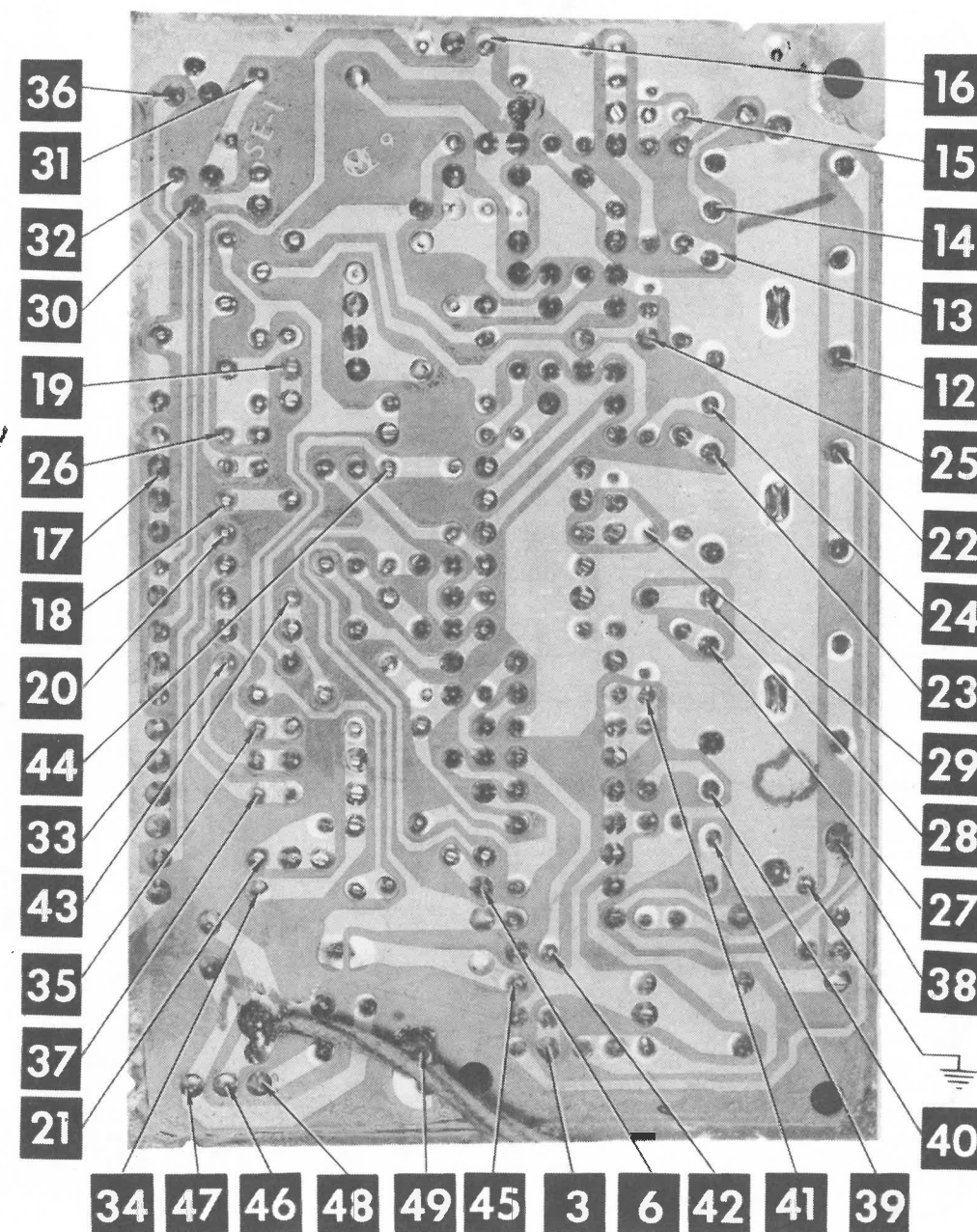
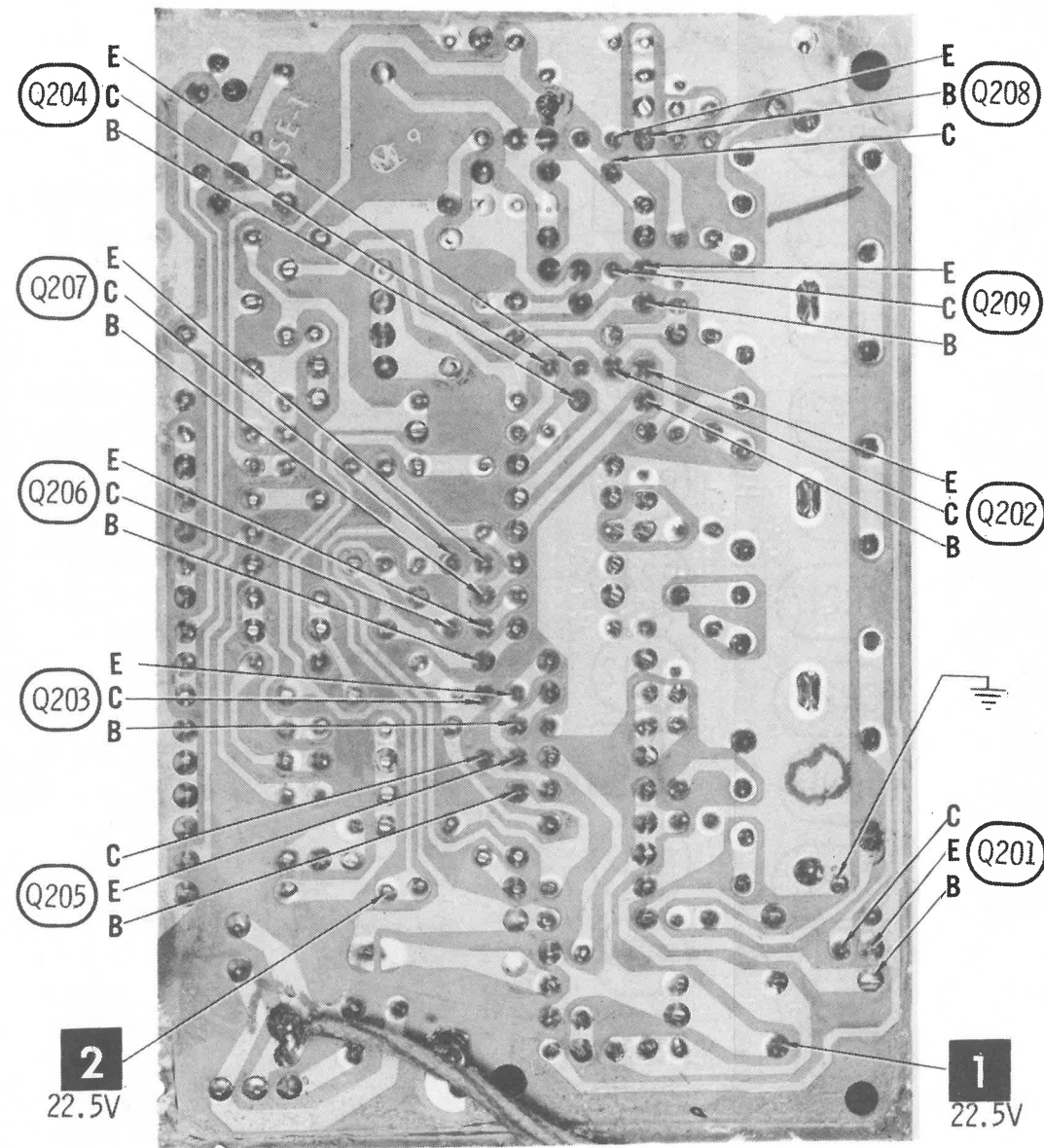
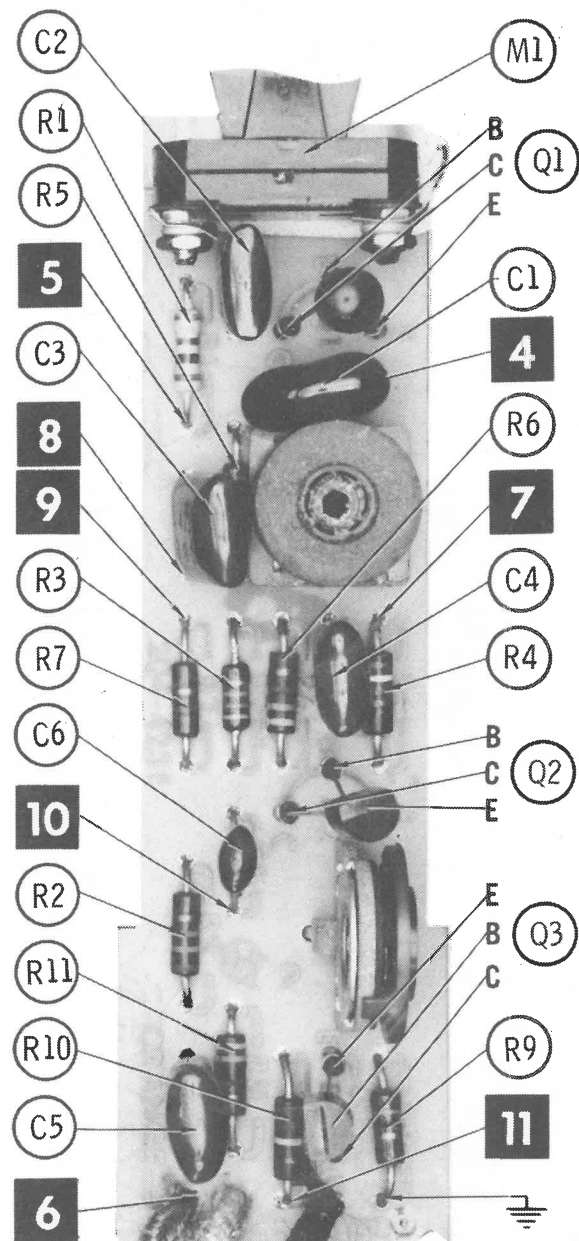
MEASUREMENTS BELOW TAKEN WITH METER HAVING .08V MAX BETWEEN PROBE TIPS

ITEM	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	PIN 13
IC201	0Ω	0Ω	15KΩ	12KΩ	15KΩ	12KΩ							
Q1	0Ω	1 MΩ	28 KΩ										
Q2	0Ω	6500 Ω	15 KΩ										
Q3	56 Ω	17 KΩ	18 KΩ										
Q201	14 KΩ	40 KΩ	14 KΩ										
Q202	82 Ω	10 KΩ	19 KΩ										
Q203	82 Ω	10 KΩ	19 KΩ										
Q204	82 Ω	9000 Ω	17 KΩ										
Q205	82 Ω	9000 Ω	18 KΩ										
Q206	68 Ω	8000 Ω	13 KΩ										
Q207	68 Ω	8000 Ω	13 KΩ										
Q208	0 Ω	2800 Ω	1040 Ω										
Q209	0 Ω	2800 Ω	1040 Ω										

▲ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.

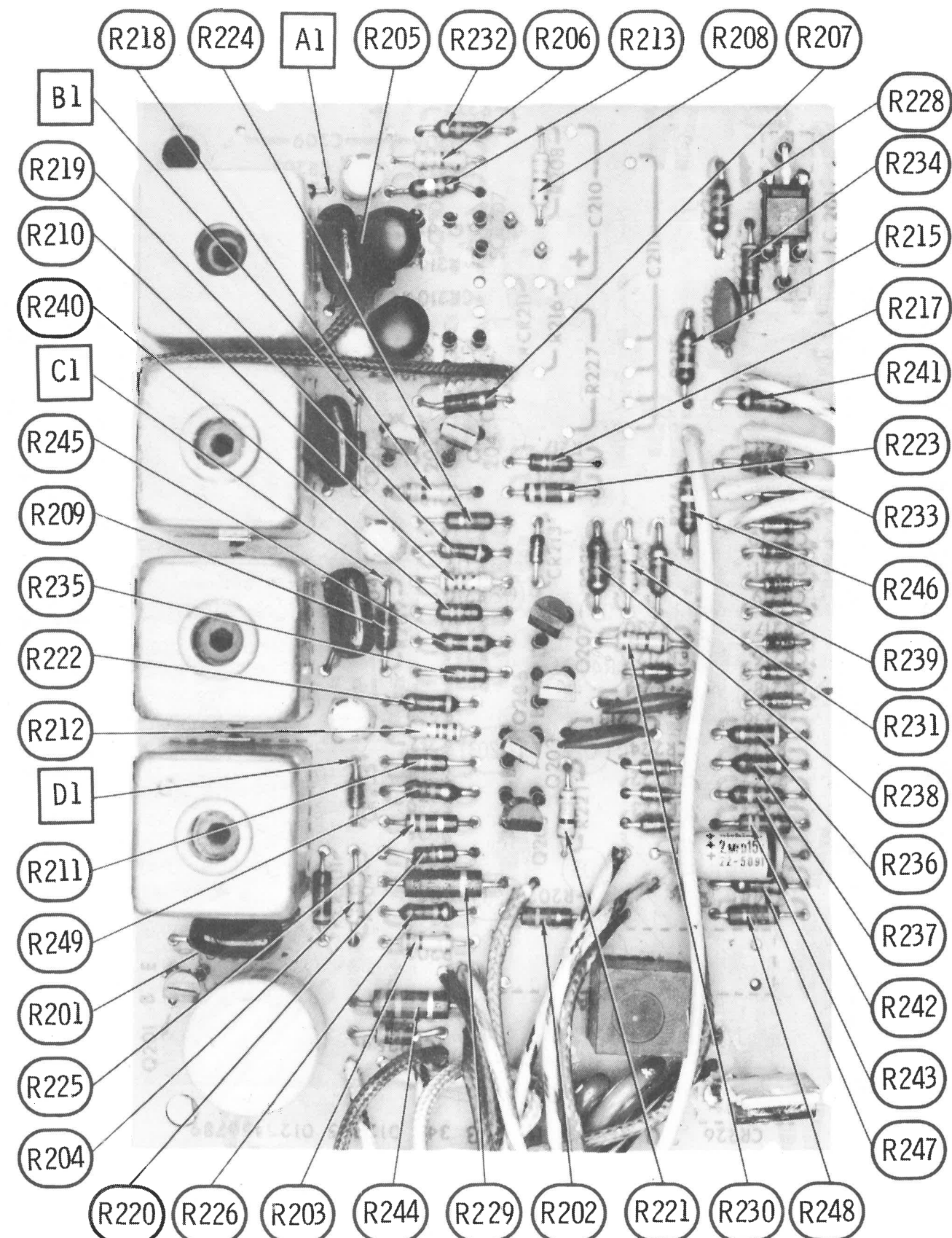
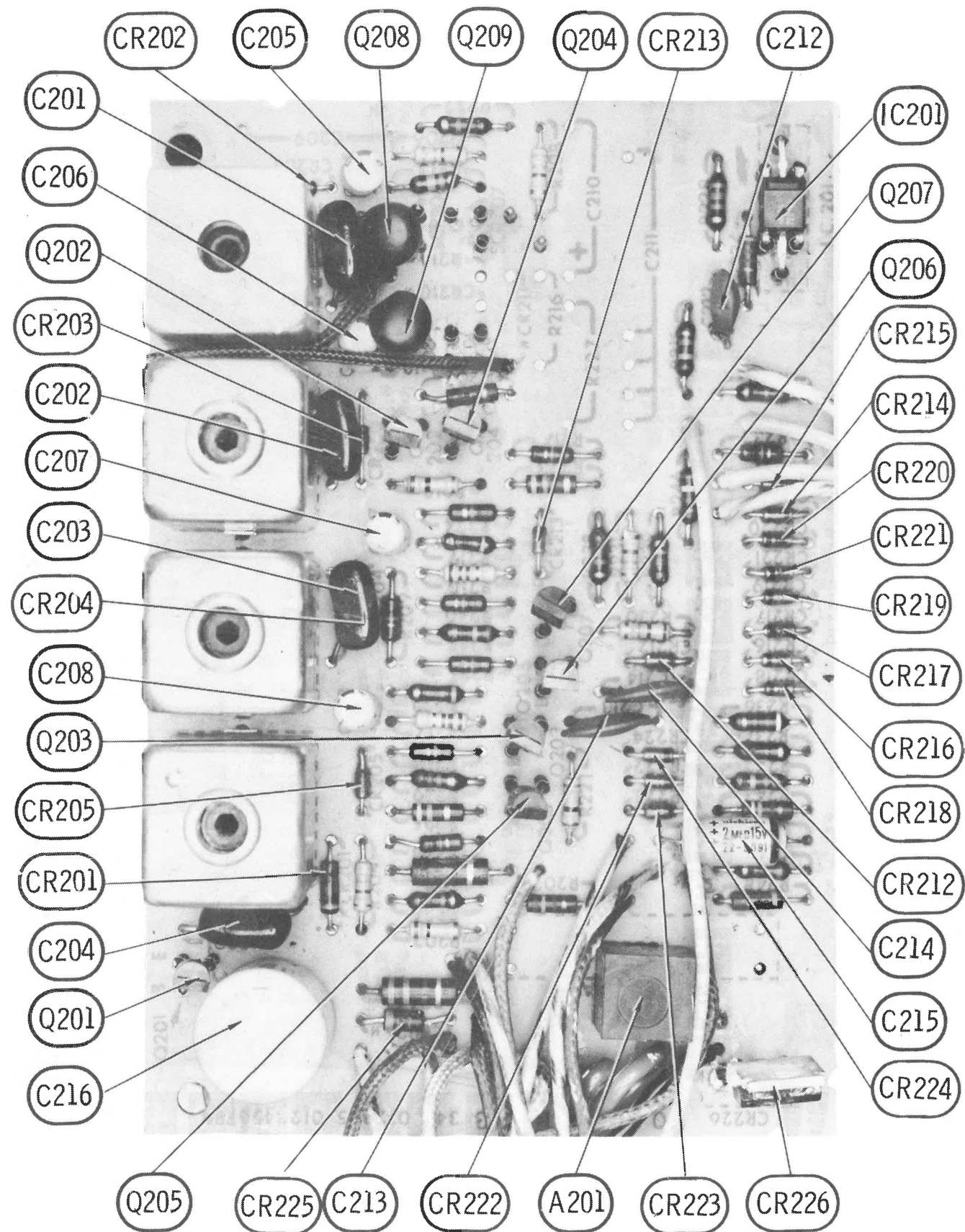
⊕ Denotes ground. (Voltage reference unless otherwise indicated).
 --- Indicates connection used in some versions.
 * Indicates connection not used in some versions.
 ⊙ Omitted in some versions.
 ⊙ See parts list.
 Values shown in () are used in some applications.
 Resistors are 1/2W or less, 10% or 20%, unless otherwise indicated.
 Supply voltage maintained at rated value for measurements.
 Voltage and resistance measured with VTVM or equivalent meter,
 no signal applied and controls adjusted for normal operation.
 Arrow on control indicates direction of advance.
 Numbers assigned to terminals may not be found on the unit.
 A PHOTOFACT STANDARD NOTATION SCHEMATIC
 with CIRCUITRACE
 © Howard W. Sams & Co., Inc. 1974





ZENITH REMOTE CONTROL
RECEIVER S-94892X, TRANSMITTER S-94463

FOLDER 3-B



SEMICONDUCTORS

ITEM No.	TYPE / MFR. No./PART No.	REPLACEMENT DATA				
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.
CR201	103-252	GE-20-18	Z-1216	PTC510	HEP20420	SK3100
CR202	103-252	GE-20-18	Z-1216	PTC214	HEP0602	SK3100
CR203	103-142	GE-300	D200	PTC214	HEP0602	SK3100
CR206	103-142	GE-300	D200	PTC214	HEP0602	SK3100
CR213	103-142	GE-300	D200	PTC214	HEP0602	SK3100
CR214	103-142	GE-300	D200	PTC214	HEP0602	SK3100
CR215	103-142	GE-300	D200	PTC214	HEP0602	SK3100
CR217	103-142	GE-300	D200	PTC214	HEP0602	SK3100
CR218	103-142	GE-300	D200	PTC214	HEP0602	SK3100
CR219	103-142	GE-300	D200	PTC214	HEP0602	SK3100
CR220	103-142	GE-300	D200	PTC214	HEP0602	SK3100
CR221	103-253 #	GE-300A	804 or 5440	PTC201 or PTC202	HEP0602	SK3032 or SK3033
CR222	185-8	221-76		PTC136	HEP726	SK3018
CR201	121-675	GE-20	TR-21	PTC136	HEP726	SK3018
CR202	121-675	GE-20	TR-21	PTC136	HEP726	SK3018
CR203	121-677	GE-20	TR-21	PTC136	HEP726	SK3018
CR204	121-677	GE-20	TR-21	PTC136	HEP726	SK3018
CR205	121-677	GE-20	TR-21	PTC136	HEP726	SK3018
CR206	121-675	GE-20	TR-21	PTC136	HEP726	SK3018
CR207	121-675	GE-20	TR-21	PTC136	HEP726	SK3018
CR208	121-675	GE-20	TR-21	PTC136	HEP726	SK3018
CR209	121-676	GE-20	TR-21	PTC136	HEP726	SK3018

FOR SAFETY, replace only with equivalent part.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.
C102	50	16V	ME-3-E-950	EAT5-50	MBR50-25	MTA50E15
C204	10	16V	ME-3-E-950	EAT5-50	MBR50-25	MTA50E15
C205	10	16V	ME-3-E-950	EAT5-50	MBR50-25	MTA50E15
C206	10	16V	ME-3-E-950	EAT5-50	MBR50-25	MTA50E15
C212	2.2	25V	ME-2-D-020	EA30-2	MBR2-50	MTA20E50
C213	220	50V	ME-1-G-002	EA30-2	MBR2-50	MTA20E50

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENDO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	.001 100V	10X	6DP-1-102	CPR-1000J	DPM5601	EMF1A210	225P1029 MD3
C2	.047 100V	10X	1DP-2-473		DPM5657	EMF1A147	225P4739 MD3
C3	.047 100V	10X	1DP-2-473		DPM5657	EMF1A147	225P4739 MD3
C5	.047 100V	10X	1DP-2-473		DPM5657	EMF1A147	225P4739 MD3
C6	.001 100V	10X	6DP-1-102	CPR-1000J	DPM5601	EMF1A210	225P1029 MD3
C101	.68 400V	5X	DM-19-821		CD19F821J500	EMF4068	256P68404
C202	.820 100V	5X	DM-19-821		CD19F821J500	EMF4068	256P820
C203	.820 100V	5X	DM-19-821		CD19F821J500	EMF4068	256P820
C210	.001	10X	6CD-102	DD-102	GP1000	SX382	MS-382
C211	.047	10X	1DP-2-473		DPM5657	EMF1A147	225P4739 MD3



The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed.

HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

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CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA		
			MFR. PART No.	CENTRALAB PART No.	CTS-IRC PART No.
R8	Sensitivity	18K	63-8576-01	T-20K or TSV-25K	X201R2538

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFR. PART No.			WORKMAN PART No.	MFR. PART No.
R3	47K 5% 1/4W F11m			R22	12K 5% 1/4W F11m		
R5	6800 5% 1/4W F11m			R22	12K 5% 1/4W F11m		

COILS (RF-IF)

ITEM No.	USE	PART No.	REPLACEMENT DATA		ITEM No.	USE	PART No.	REPLACEMENT DATA	
			MFR. PART No.	MEISSNER PART No.				MFR. PART No.	WORKMAN PART No.
L1	Bandpass Channel Higher	95-3114			L201	Bandpass Channel Lower	95-2870		
L201	Volume/on-off	95-2872			L203	Volume/on-off	95-2871		

TRANSFORMER (Power)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		PRI.	SEC. 1	MFR. PART No.			STANCOOR PART No.	THORDARSON PART No.	TRIAD PART No.
T101	120VAC @ .08AC		20VAC @ .08AC	95-3119					

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA			ITEM No.	DESCRIPTION	REPLACEMENT DATA		
		DEVI	HOLDER	PART No.			DEVI	HOLDER	PART No.
F101	Fuse, Chemical 150mA			136-102					

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
A201	Photo-optical Isolator	162-9 #	
K101	Relay	195-45	
K102	Relay	195-45	
M101	Motor	141-203	
S101	Switch	85-1412	
S102	Switch	85-1412	

FOR SAFETY, replace only with equivalent part.



ZENITH REMOTE CONTROL RECEIVER S-94929X, TRANSMITTER S-94828

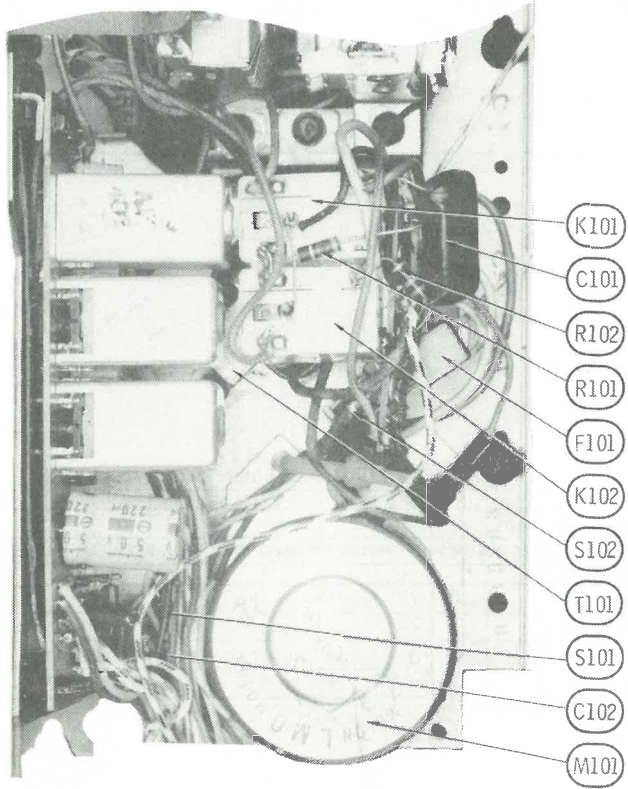
SET 1377 FOLDER 3-C

PHOTOFACT® Folder

with CIRCUITRACE®

IMPORTANT FILING NOTICE

This PHOTOFACT Folder covers equipment used with the TV chassis covered in PHOTOFACT SET 1377 FOLDER 3 . File this Folder with the TV Folder in the yellow filing jacket provided.



REMOTE CONTROL RECEIVER ALIGNMENT

Operate Remote Control Transmitter at approximately 10 feet from receiver or use a crystal controlled generator.				
GENERATOR COUPLING	GENERATOR FREQUENCY	CONNECT VTVM	ADJUST	REMARKS
Thru .1uF to Point A, low side to ground.	39.50MHz	DC probe to Point B, low side to ground.	L1* R8**	Adjust for maximum.
	38.75MHz	DC probe to Point B1, low side to ground.	L202	
	40.25MHz	DC probe to Point C1, low side to ground.	L203	
	41.25MHz	DC probe to Point A1, low side to ground.	L201	

*Factory preset and broad tuned. Adjust only if necessary.
**Correct setting is usually near mid-range.

ZENITH REMOTE CONTROL RECEIVER S-94929X, TRANSMITTER S-94828

SET 1377 FOLDER 3-C

