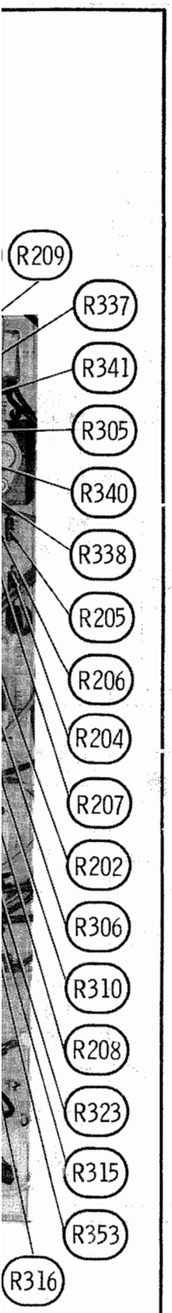
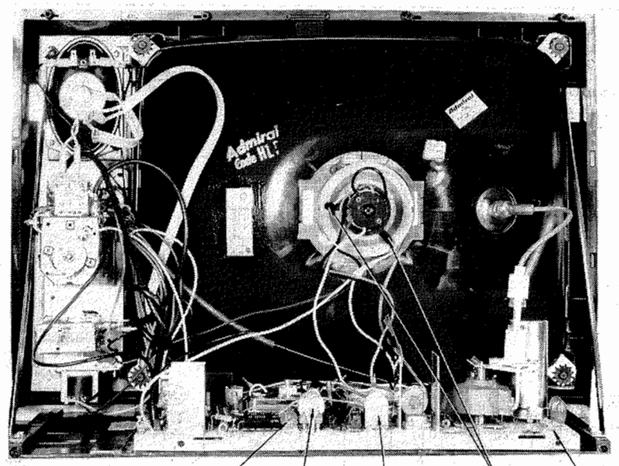




CABINET—REAR VIEW

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

Remove nine screws holding cabinet back, and disconnect antenna leads. Remove all knobs from cabinet.

Disconnect picture-tube socket, and high-voltage anode lead. Remove speaker leads and deflection yoke.

Remove one screw from bottom of cabinet holding chassis and slide chassis out as far as lead length will permit. Remove four screws holding tuner and control assembly. Remove tuner assembly.

PICTURE TUBE REMOVAL

Follow "Chassis Removal" procedure. Lay set face-down on a soft protective surface.

Remove four screws holding picture-tube bracket to cabinet front and remove picture tube. Do not lift 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 1.5-amp fuse is used for AC line protection. (See photo, Cabinet-Rear View.)

VHF TUNER

Set fine tuning at the center of its range and adjust oscillator slug (one for each channel) for best sound and picture.

UHF TUNER

The UHF tuner employs a detent mechanism for channel selection. Fine tuning is adjusted by rotating the fine tuning knob.

HORIZONTAL OSCILLATOR

Adjustment of the horizontal hold is accomplished by the proper setting of the Horizontal Hold Coil. (See photo, Cabinet-Rear View.)

AGC

The AGC may be varied by AGC and AGC Delay controls. (See Transistor Placement Chart.)

CENTERING

Centering is accomplished by proper adjustment of two magnetic rings located on the yoke rear cover.

PHOTOFACT® Folder with CIRCUITRACE®

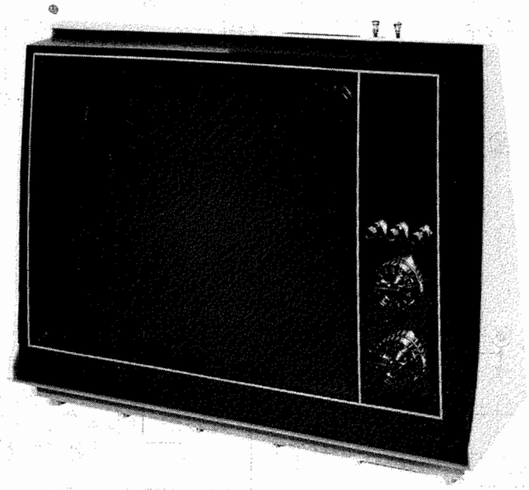
SET 1521 FOLDER 1

ADMIRAL CHASSIS
T2K8-/T3K8-/T8K6-/T9K6-1A/-1B/-2A/-2B

For Supplier Address See PHOTOFACT Index

MODEL	CHASSIS
19B617	T2K8-1B
19B617D	T8K6-1B
19B617DM	T8K6-2B
19B617M	T2K8-2B
19B628C	T2K8-1B
19B628CD	T8K6-1B
19B628CDM	T8K6-2B
19B628CM	T2K8-2B
22B613	T3K8-1B
22B613D	T9K6-1A
22B613DM	T9K6-2A
22B613M	T3K8-2B
22B615	T3K8-1B
22B615D	T9K6-1A
22B615DM	T9K6-2A
22B615M	T3K8-2B

Covering Chassis Run Code 10.



Model 19B617DM

SAFETY PRECAUTIONS

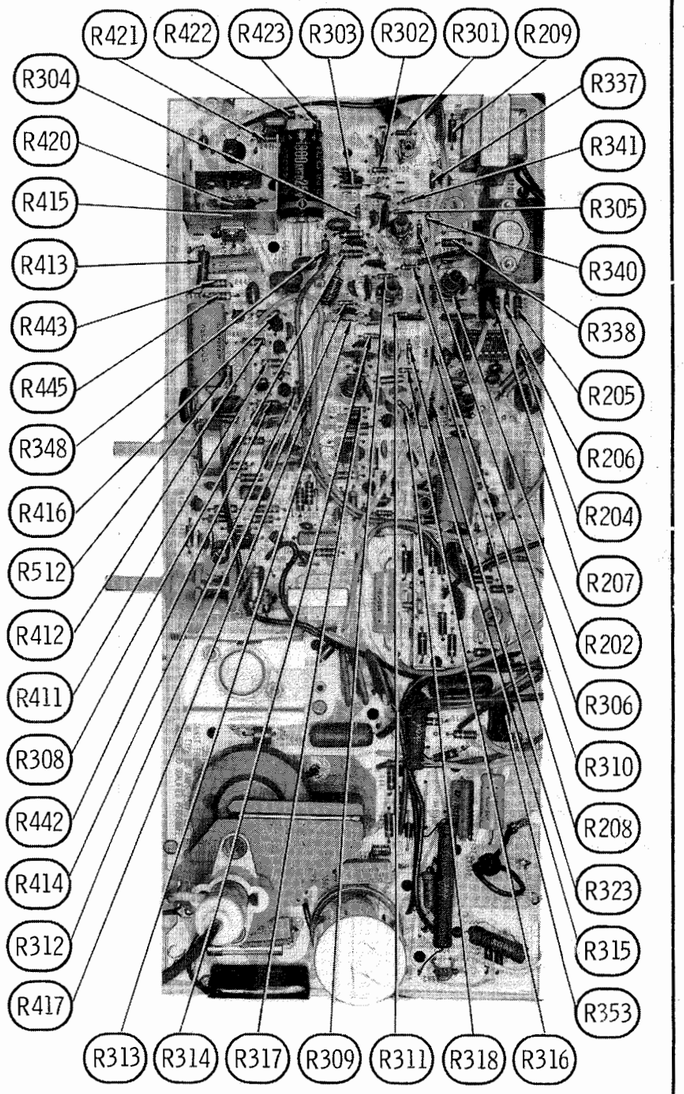
See page 7

INDEX

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

10 9 8 7 6 5 5PC1425 DATE 10-75 SET 1521 FOLDER 1

SET 1521 FOLDER 1



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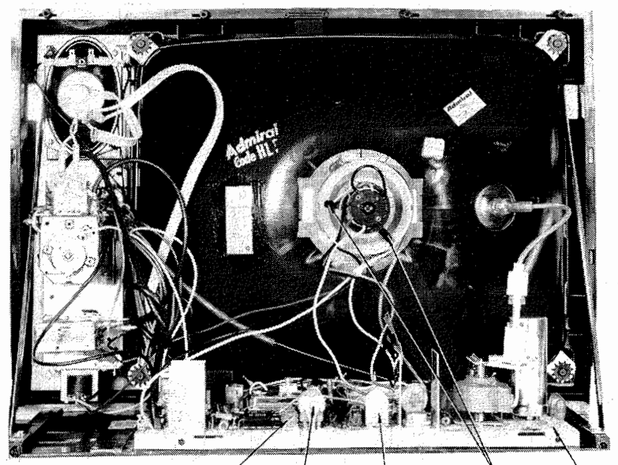

CABINET—REAR VIEW

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

Remove nine screws holding cabinet back, and disconnect antenna leads. Remove all knobs from cabinet.

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PICTURE TUBE REMOVAL

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UHF TUNER

The UHF tuner employs a detent mechanism for channel selection. Fine tuning is adjusted by rotating the fine tuning knob.

HORIZONTAL OSCILLATOR

Adjustment of the horizontal hold is accomplished by the proper setting of the Horizontal Hold Coil. (See photo, Cabinet-Rear View.)

AGC

The AGC may be varied by AGC and AGC Delay controls. (See Transistor Placement Chart.)

CENTERING

Centering is accomplished by proper adjustment of two magnetic rings located on the yoke rear cover.

PHOTOFACT® Folder with CIRCUITRA

For Supplier Address See

SET 1521 FOLDER 1

ADMIRAL CHASSIS
T2K8-/T3K8-/T8K6-/T9K6-1A/-1B/-2A/-2B

MODEL	CHASSIS
19B617	T2K8-1B
19B617D	T8K6-1B
19B617DM	T8K6-2B
19B617M	T2K8-2B
19B628C	T2K8-1B
19B628CD	T8K6-1B
19B628CDM	T8K6-2B
19B628CM	T2K8-2B
22B613	T3K8-1B
22B613D	T9K6-1A
22B613DM	T9K6-2A
22B613M	T3K8-2B
22B615	T3K8-1B
22B615D	T9K6-1A
22B615DM	T9K6-2A
22B615M	T3K8-2B

Covering Chassis Run Code 10.

SAFETY PI
See p

IN

HOWARD W. SAMS & CO.

Terminal Guides

Q304, Q306, Q307, Q404, Q409 — E B C

Q401, Q402, Q403, Q405, Q408, Q410 — E C B

Q301 thru Q303 — B E C

Q305 — E B C

Q406, Q407 — B C E

Q201, Q411 — E C B

IC201 (Top View) — 1 2 3 4 5 6 7 14 13 12 11 10 9 8

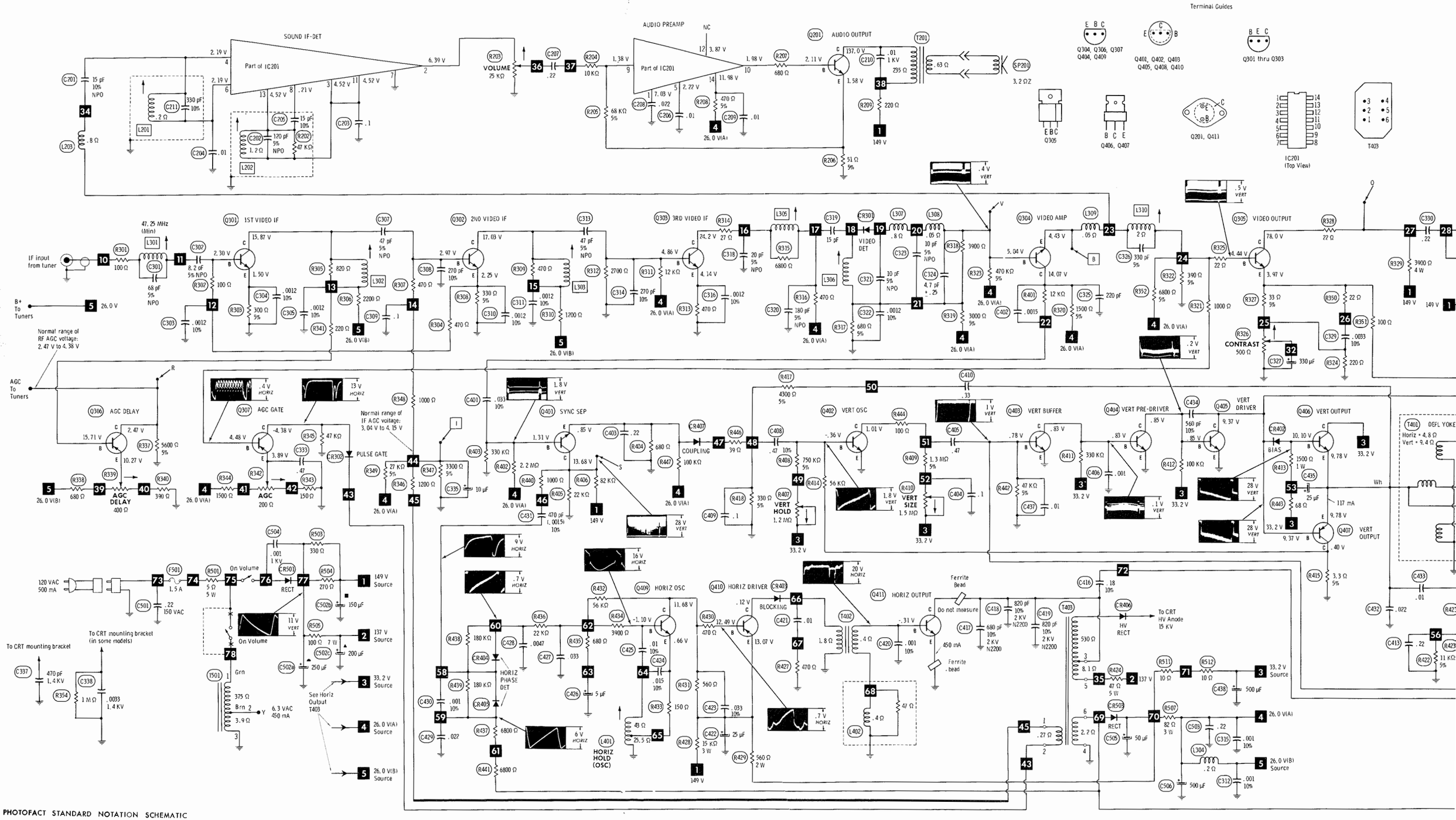
T403 — 3 4 2 5 1 6

- Circuitry not used in some versions
- Circuitry used in some versions
- ⊖ See parts list
- ⏚ Ground

Waveforms: triggered scope, keyed rainbow generator
Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Arrow at control indicates direction of advance.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 10% unless noted.
Value in ( ) used in some versions.

AUDIO PREAMP
Part of IC201
VOLUME 25 KΩ
AUDIO OUTPUT Q201
SP201 3.2 Ω
VIDEO DET
2ND VIDEO IF Q302
3RD VIDEO IF Q303
VIDEO AMP Q304
VIDEO OUTPUT Q305
CONTRAST 500 Ω
BRIGHTNESS 100 KΩ
V301 19VBXP4 CRT
Spark Gap SG401
Spark Gap SG402
PULSE GATE CR302
SYNC SEP Q401
HORIZ PHASE DET CR405
HORIZ OSC Q409
HORIZ DRIVER Q410
HORIZ OUTPUT Q411
HORIZ HOLD (OSC) L401
BLOCKING CR403
HV RECT CR406
To CRT HV Anode 15 KV
VERT OSC Q402
VERT BUFFER Q403
VERT PRE-DRIVER Q404
VERT DRIVER Q405
VERT OUTPUT Q406
VERT OUTPUT Q407
VERT BLANKING Q408
COUPLING CR407
VERT HOLD 1.2 MΩ
VERT SIZE 1.5 MΩ
BIAS CR402
DEFL YOKE T401
Horiz = 4.8 Ω
Vert = 9.4 Ω
Red
Wh
Blk
Yel
RECT CR503
Normal range of IF AGC voltage: 3.04 V to 4.15 V
See Horiz Output T403
149 V Source
137 V Source
33.2 V Source
26.0 V(A) Source
26.0 V(B) Source

ADMIRAL CHASSIS
T2K8-/T3K8-/T8K6-/T9K6-1A/-1B/-2A/-2B


Terminal Guides
SOUND IF-DET
Part of IC201
AUDIO PREAMP
Part of IC201
AUDIO OUTPUT
VOLUME
25 KΩ
Q304, Q306, Q307
Q404, Q409
Q401, Q402, Q403
Q405, Q408, Q410
Q301 thru Q303
Q305
Q406, Q407
Q201, Q411
IC201
(Top View)
T403
47.25 MHz
(Min)
IF input
from tuner
B+
To
Tuners
26.0 V
Q301 1ST VIDEO IF
Q302 2ND VIDEO IF
Q303 3RD VIDEO IF
Q304 VIDEO AMP
Q305 VIDEO OUTPUT
VIDEO
DET
CONTRAST
500 Ω
Normal range of
RF AGC voltage:
2.47 V to 4.38 V
AGC
To
Tuners
Q306 AGC DELAY
AGC
DELAY
400 Ω
Q307 AGC GATE
AGC
200 Ω
PULSE GATE
Normal range of
IF AGC voltage:
3.04 V to 4.15 V
Q401 SYNC SEP
COUPLING
VERT
HOLD
1.2 MΩ
Q402 VERT OSC
Q403 VERT BUFFER
Q404 VERT PRE-DRIVER
VERT
DRIVER
Q406 VERT OUTPUT
BIAS
Q407
VERT
OUTPUT
VERT
SIZE
1.5 MΩ
Wh
117 mA
DEFL YOKE
Horiz = 4.8 Ω
Vert = 9.4 Ω
120 VAC
500 mA
F501
1.5 A
On Volume
RECT
To CRT mounting bracket
(in some models)
To CRT mounting bracket
Grn
Brn 2
Y
3
6.3 VAC
450 mA
See Horiz
Output
T403
149 V
Source
137 V
Source
200 µF
33.2 V
Source
26.0 V(A)
Source
26.0 V(B)
Source
Q408 HORIZ OSC
HORIZ
PHASE
DET
HORIZ
HOLD
(OSC)
Q410 HORIZ DRIVER
BLOCKING
Q411 HORIZ OUTPUT
Ferrite
Bead
Do not measure
450 mA
Ferrite
bead
HV
RECT
To CRT
HV Anode
15 KV
BIAS
RECT
A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE®
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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	11KΩ	4400 Ω	4000 Ω	1500 Ω	4500 Ω	1500 Ω	0 Ω	50 Ω	68 KΩ	INF	4000 Ω	2400 Ω	4000 Ω	PIN 14 1000 Ω
V301	FIL	0 Ω	10 KΩ	0 Ω	NC	NC	150 KΩ	FIL						
ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C	
Q201	51Ω	INF	12 KΩ▲		Q307	240 Ω	1400 Ω	47 KΩ		Q407	INF ●	INF ●	3.3 Ω	
Q301	300 Ω	900 Ω	2700 Ω		Q401	680 Ω	330 KΩ	17 KΩ		Q408	300 Ω	18 KΩ	650 Ω	
Q302	330 Ω	4500 Ω	1800 Ω		Q402	0 Ω	50 KΩ	2 MΩ		Q409	175 Ω	57 KΩ	1700 Ω	
Q303	470 Ω	2200 Ω	1050 Ω		Q403	0 Ω	20 KΩ	330 KΩ		Q410	1100 Ω	2200 Ω	INF ●	
Q304	370 Ω	4000 Ω	2000 Ω		Q404	0 Ω	330 KΩ	100 KΩ		Q411	0 Ω	.7 Ω	10 KΩ▲	
Q305	200 Ω	400 Ω	1500 Ω▲		Q405	0 Ω	100 KΩ	INF ●						
Q306	460 Ω	3000 Ω	5600 Ω		Q406	INF ●	2000 Ω	650 Ω						

▲ 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 symptom.

SWEEP

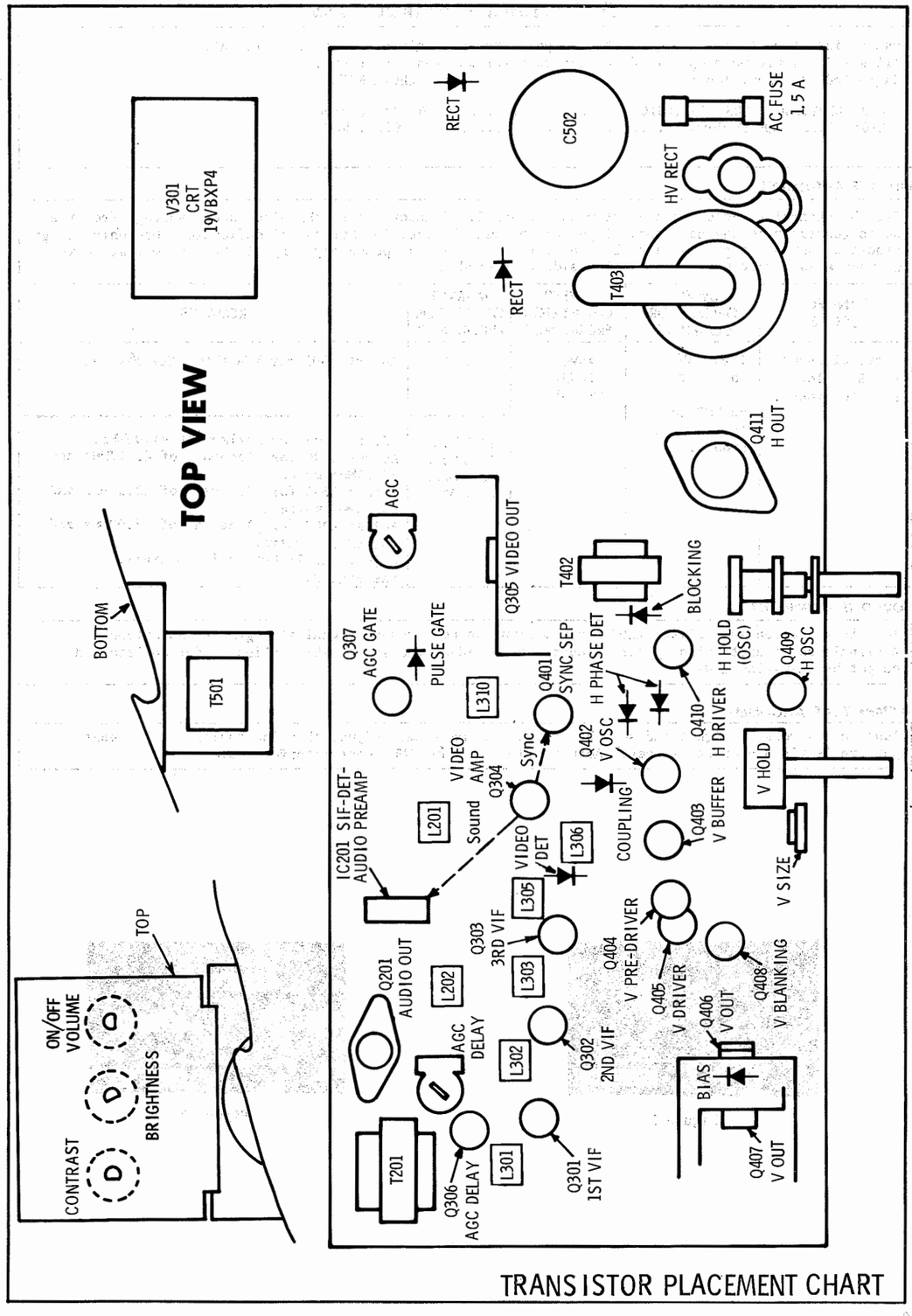
No raster, has sound: Horiz Osc/Driver/Blocking/Output, HV Rect, CRT
No vert deflection: Vert Coupling/Osc/Buffer/Pre/Driver/Out.
Poor vert lin or foldover: Vert Osc/Buffer/Pre/Driver/Out.
Poor horiz lin or foldover: Horiz Output
Narrow picture: LV Rects, Horiz Osc/Driver/Output
Vert off freq: Vert Osc/Buffer/Pre/Driver/Output
Horiz off freq: Horiz Phase Det/Osc

SYNC

No vert sync: Vert Coupling/Osc/Buffer/Pre/Driver/Out
No horiz sync: Horiz Phase Det/Osc
No vert/horiz sync: Sync Sep

PICTURE or SOUND

No pic, no sound, no raster: Fuse, LV Rects
No pic, no sound, has raster: Video IFs, Tuner Mixer
No pic, no sound, has snow: Tuner RF/Mixer/Osc
No pic, has sound, no raster: Video Output, CRT
No pic, has sound, has raster: Video Amp/Output
Has pic, no sound: Sound IF, Det, Audio Preamp/Out
Overloaded picture: AGC, Video Det



TRANSISTOR PLACEMENT CHART

TV ALIGNMENT INSTRUCTIONS

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

L301,L302,L303,L305,L306,L310 ..... 9296, 9297, 9300
L201, L202, VHF IF Output 9296, 9297, 9300

VIDEO IF ALIGNMENT

Set the channel selector to 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 +3.7 volt bias to I , low side to ground.

CONNECT SCOPE	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
Vertical input to B , low side to ground.	Thru .001uF to TP1 on VHF tuner, low side to ground.	44MHz (10MHz Sweep)	47.25MHz	Adjust L301 for MINIMUM. See Fig. 1.
			42.17MHz 44.00MHz 45.75MHz 47.25MHz	Adjust L303 for maximum at 44.00MHz. Adjust L306 for placement of 42.17MHz and 45.75MHz markers. Adjust L305 for placement of 42.17MHz and 44.00MHz markers. Adjust L302 for placement of 44.00MHz and 45.75MHz markers. Adjust VHF IF Output for overall. See Fig. 2.

SOUND IF ALIGNMENT

Tune in a station and adjust L202 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 L201.

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 L310 for MINIMUM beat interference.

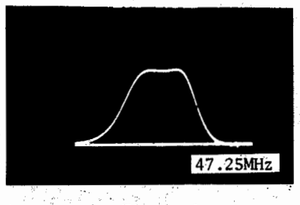


Figure 1

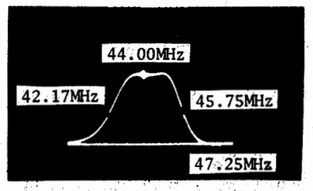
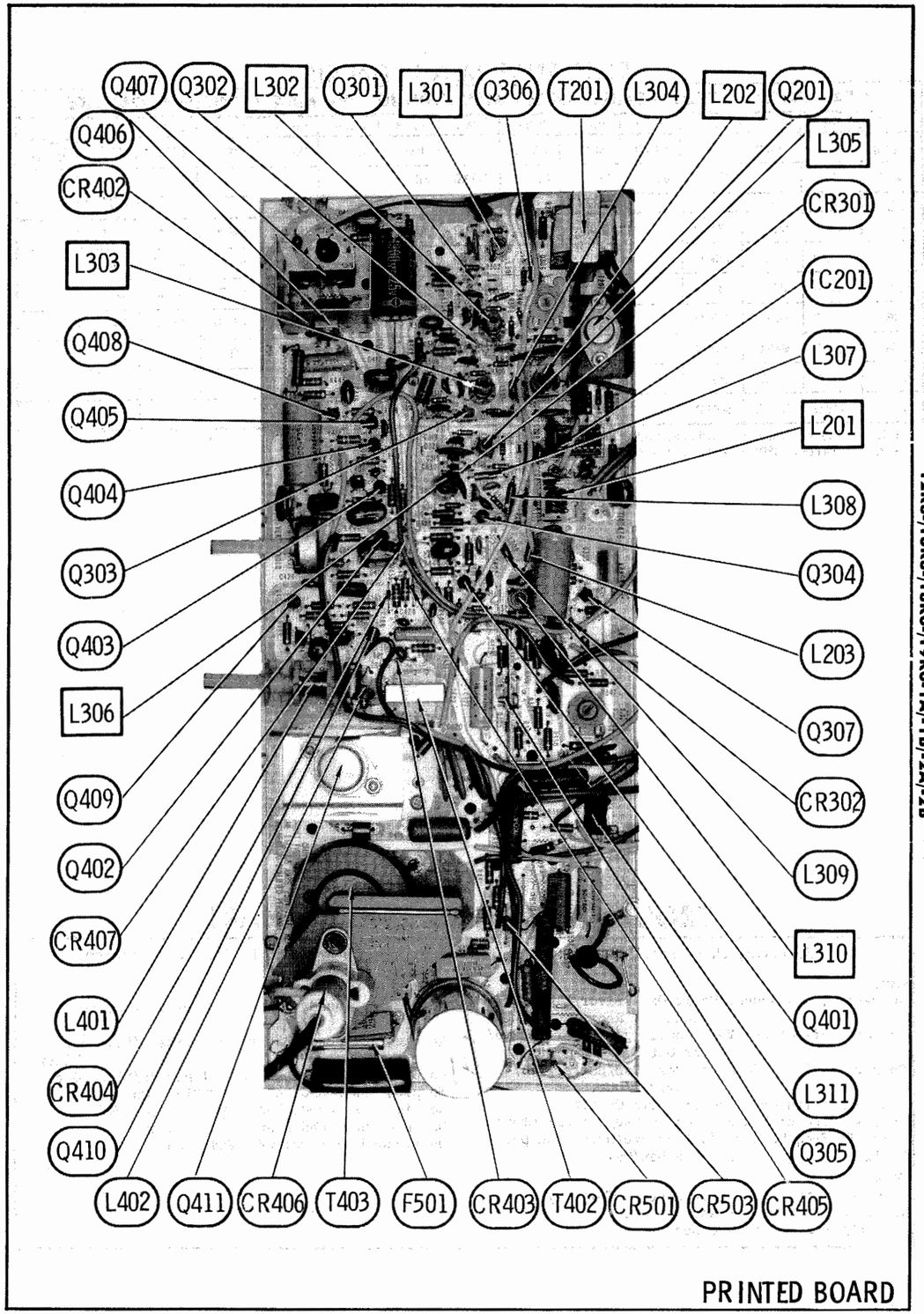


Figure 2



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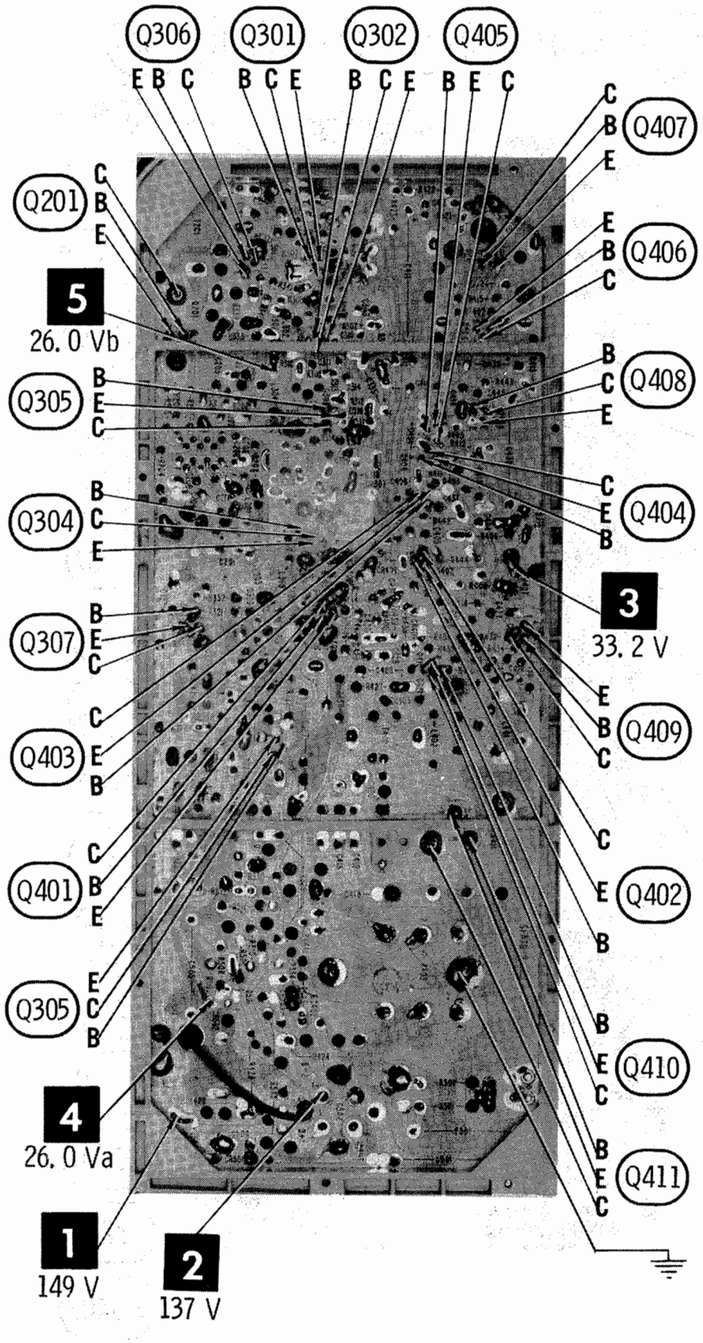
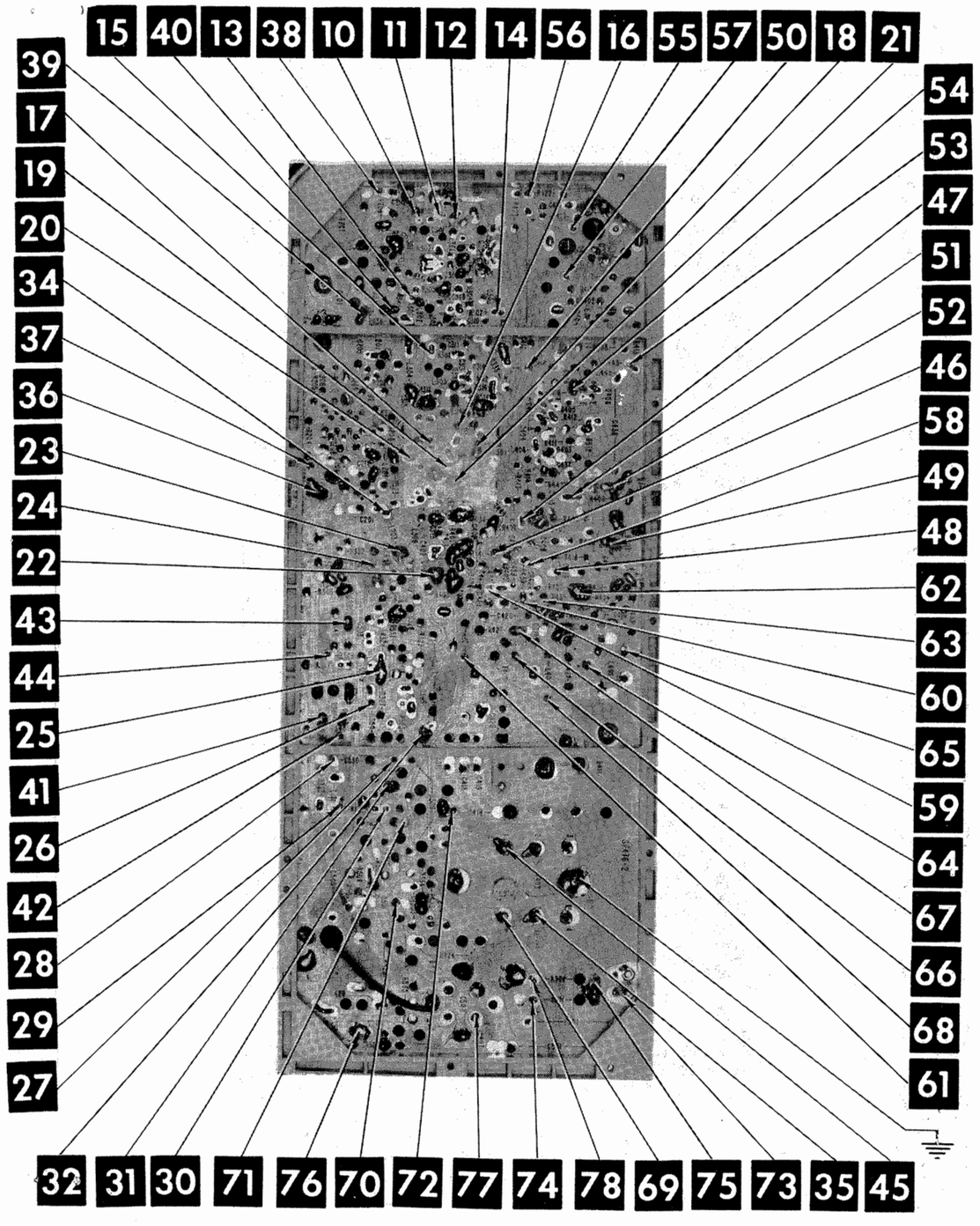
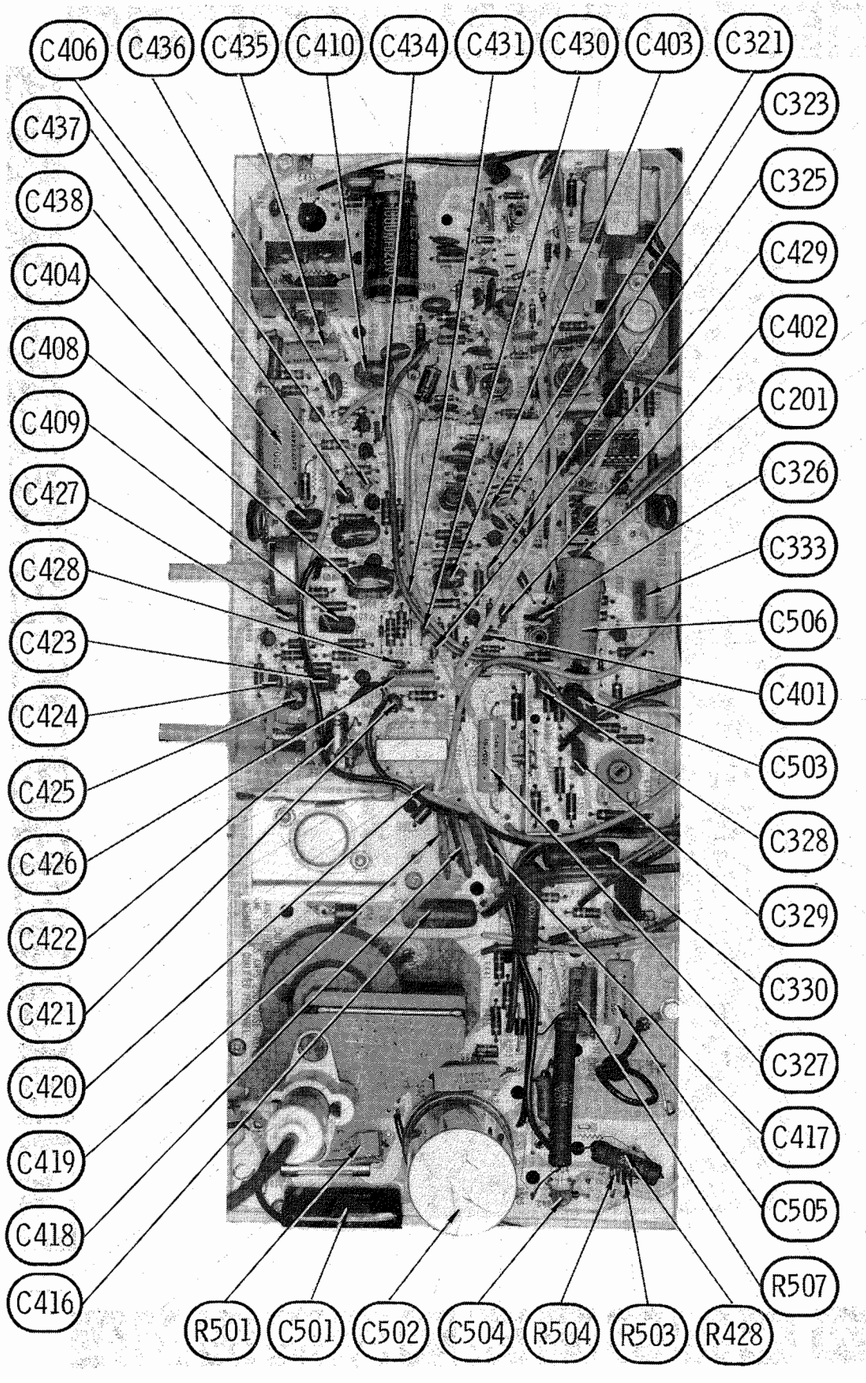




PRINTED BOARD

A Howard W. Sams CIRCUITRACE® Photo

PRINTED BOARD



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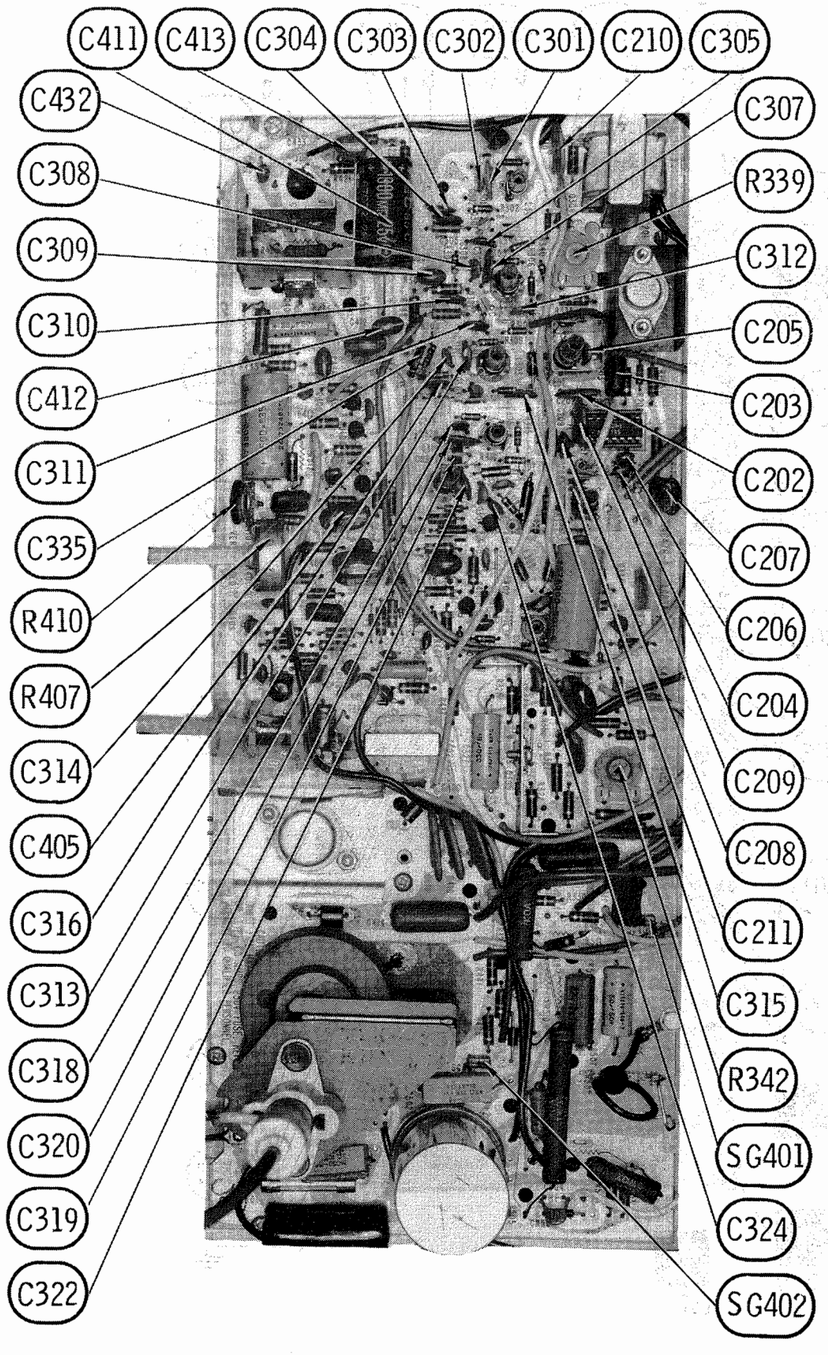

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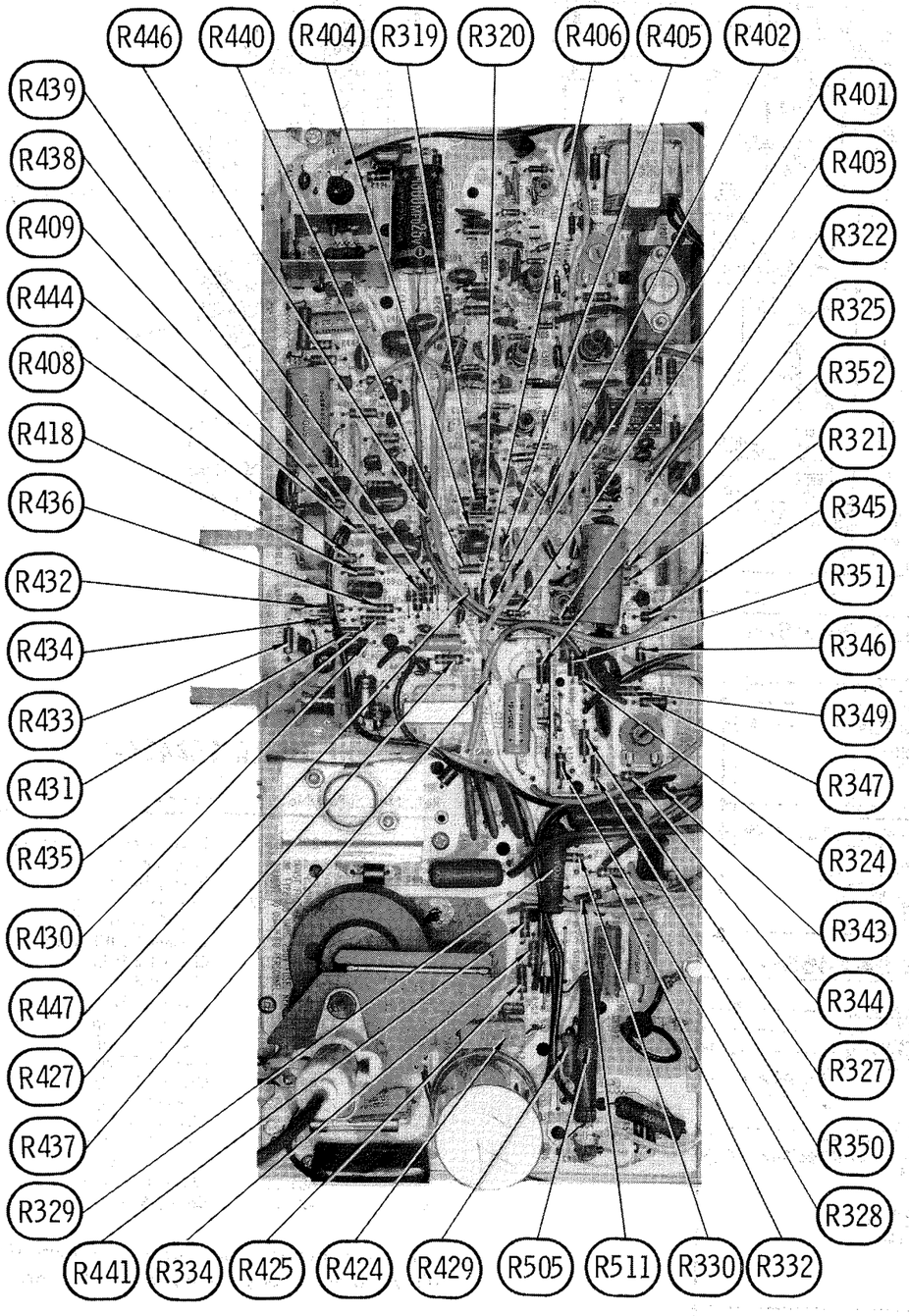


PRINTED BOARD

SAFETY PRECAUTIONS

Operation of receiver outside of cabinet or with back removed involves a shock hazard. Work on these models should only be performed by those who are thoroughly familiar with precautions necessary when working on high voltage equipment.

Exercise care when servicing this chassis with power applied. Many B plus and high voltage RF terminals are exposed which, if carelessly contacted, can cause serious shock or result in damage to the chassis. Maintain interconnecting ground lead connections between chassis, escutcheon, picture tube dag and tuner cluster when operating chassis.

These receivers have a "polarized" AC line cord and interlock. The AC plug is designed to fit into standard AC outlets in one direction only. The wide blade connects to the "ground side" and the narrow blade connects to the "hot side" of the AC line. This assures that the TV receiver is properly grounded to the house wiring. If an extension cord must be used, make sure it is of the "polarized" type.

Since the chassis of these receivers are connected to one side of the AC supply during operation, service should not be attempted by anyone not familiar with the precautions necessary when working on this type of equipment.

When it is necessary to make measurements or tests with AC power applied to the receiver chassis, an Isolation Transformer must be used as a safety precaution and to prevent possible damage to transistors. The Isolation Transformer should be connected between the TV line cord plug and the AC power outlet.

Certain HV failures can increase X-ray radiation. Receivers should not be operated with HV levels exceeding the specified rating for their chassis type. The maximum operating HV specified for the chassis used in these receivers is 16.2KV ± .8KV at zero beam current with a line voltage of 120V AC. Higher voltage may also increase possibility of failure in HV supply.

It is important to maintain specified values of all components in the horizontal and high voltage circuits and anywhere else in the receiver that could cause a rise in high voltage, or operating supply voltages. Refer to the Parts List and use ONLY exact replacement parts; especially picture tubes, semiconductor devices, transformers, coils, fuses and circuit breakers.

To determine the presence of high voltage, use an accurate, high impedance, HV meter connected between second anode lead and metal chassis frame only. When servicing the High Voltage System, remove static charge from it by connecting a 10K ohm resistor in series with an insulated wire (such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord disconnected from chassis.)

The picture tube used in this receiver employs integral implosion protection. Replace with tube of the same type number for continued safety. Do not lift picture tube by the neck. Handle the picture tube only when wearing shatter-proof goggles and after discharging the high voltage completely. Keep others without shatter-proof goggles away.

When removing springs or spring mounting parts from tuner, tuner cluster or chassis, shatter-proof goggles must be worn. Keep others without shatter-proof goggles away.

Some leads in the receiver have been secured with wire ties that are required for safe operation and/or correct performance. If any ties are removed for servicing, it is mandatory that the ties are replaced to secure the leads as originally manufactured. Non-reusable ties should be replaced with approved Part No. 50A102-1. Do not replace with other types.

Before returning the receiver to the user, perform the following safety checks:

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.

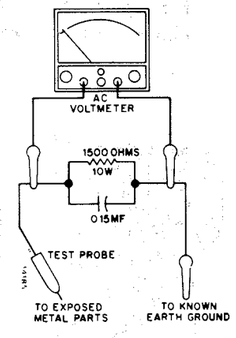
2. Replace all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators, etc.

3. To be sure that no shock hazard exists, check for leakage current in the following manner.

Plug the AC line cord into a polarized adaptor (Admiral Part No. 89A116-1). Plug the adaptor into a 120 Volt AC receptacle (do not use an Isolation Transformer for this test). Using two clip leads, connect a 1500 ohm, 10 watt resistor paralleled by a .15mf capacitor, in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit. Use a VTVM or VOM with 1000 ohms per volt, or higher, sensitivity to measure the AC voltage drop across the resistor. (See Diagram). Move the resistor connection to each exposed metal part having a return path to the chassis (antenna, metal, cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.

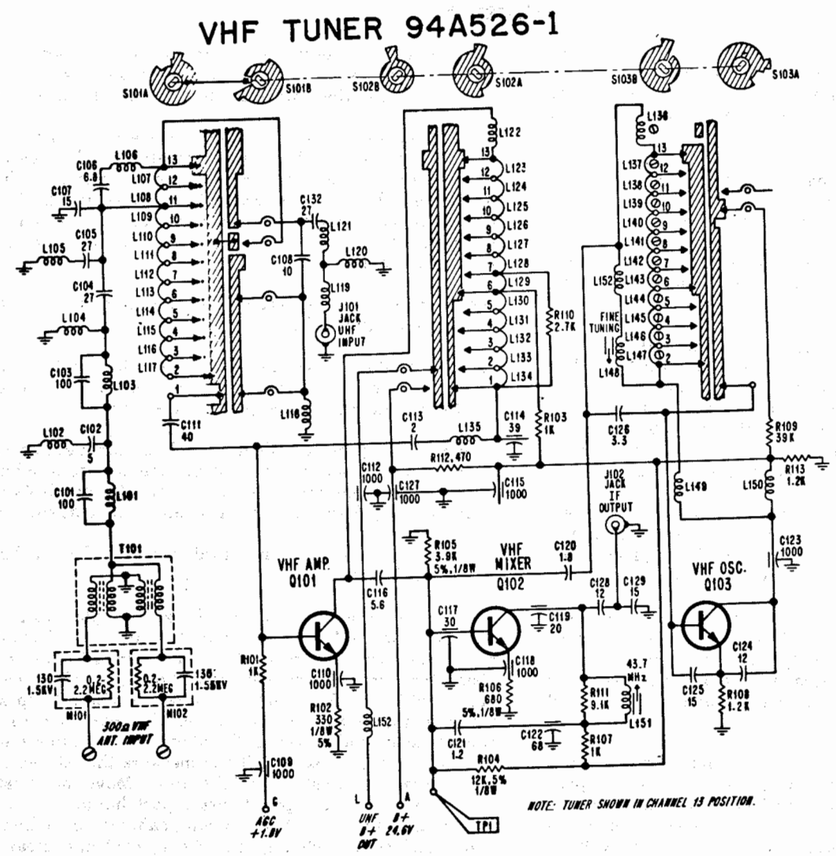
Any reading of 0.35 volt RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the receiver to the owner.

Reverse adaptor in the AC receptacle and repeat the above test.



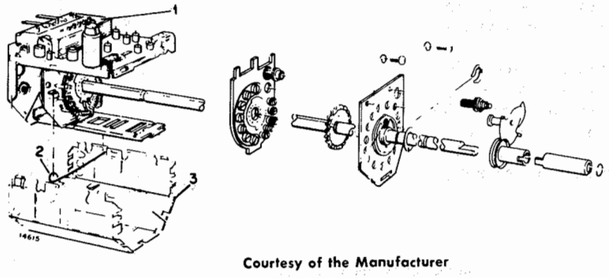
Courtesy of the Manufacturer

VHF TUNER 94A526-1



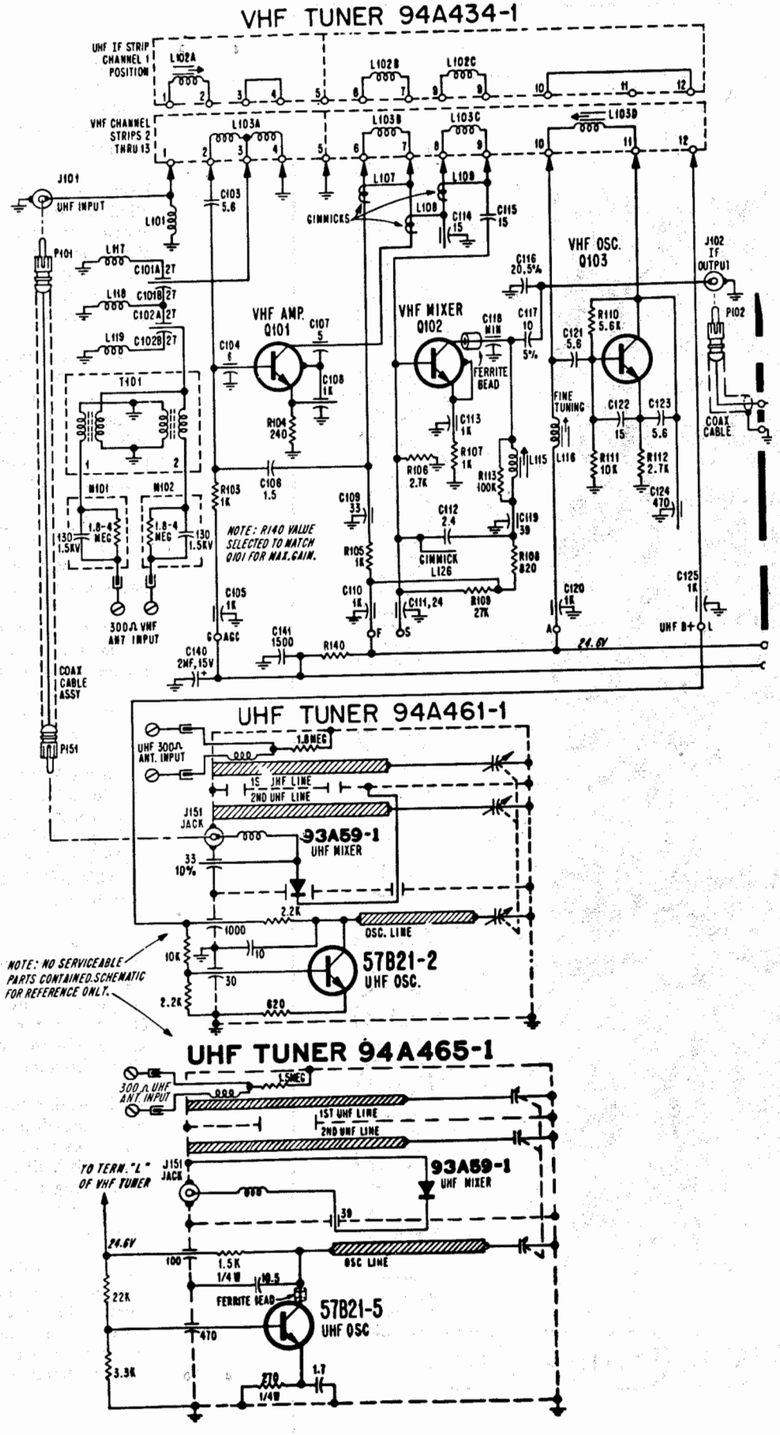
Ref. No.	Part No.	Description
1	98A40-61	Antenna Input Ass'y.
2	19A428-1	Spring, Ground
3	98A40-60	Cover, Shield

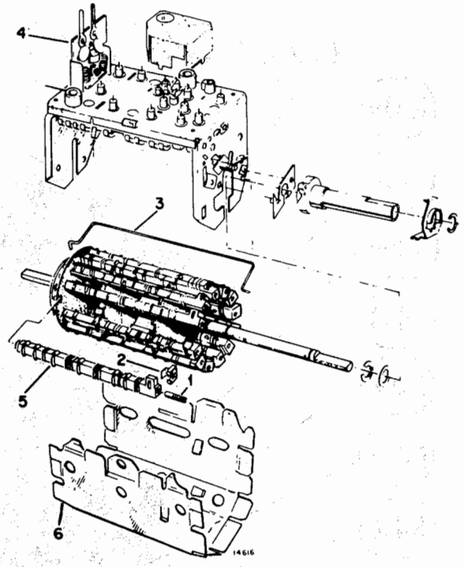
For repairs requiring parts other than those listed above, order a complete replacement tuner.



Courtesy of the Manufacturer

VHF TUNER 94A434-1





Ref. No.	Part No.	Description
1	1A290-23	Screw, Fine Tuning Adjust
2	18A461-3	Clip, Spring
3	18A359-10	Spring, Detent
4	700A638-539	Antenna Input Assy.
5		Strip, Channel Coil
	73A91-573	Channel 1 (UHF IF Strip)
	73A75-527	Channel 2 Strip
	73A76-527	Channel 3 Strip
	73A77-527	Channel 4 Strip
	73A78-527	Channel 5 Strip
	73A79-527	Channel 6 Strip
	73A80-527	Channel 7 Strip
	73A81-527	Channel 8 Strip
	73A82-527	Channel 9 Strip
	73A83-527	Channel 10 Strip
	73A84-527	Channel 11 Strip
	73A85-527	Channel 12 Strip
	73A86-527	Channel 13 Strip
6	15A2793-8	Cover, Shield

For repairs requiring parts other than those listed above, order a complete replacement tuner.

Courtesy of the Manufacturer

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.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T201	3500	3.2	79A124-7 T79C124-7-W (1)			(1) Number on Unit

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T501	120V AC @ .037A AC Tap @ 6.3V AC @ .45A AC		80A117-2 T-80D117-2-C(1)			(1) Number on Unit

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F501	1.5A @ 250V Quick-acting Pigtail	84A7-15		GJV 1 1/2		31801.5		

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
	VHF Antenna	69A353-2	
	UHF Antenna	69A304-3	
	VHF Tuner	94A526-1	
	VHF Tuner	94A434-1	
	UHF Tuner	94A465-1	
	UHF Tuner	94A461-1	
	UHF Tuner	94A523-1	
	UHF Tuner	94A522-1	
SG401	Spark Gap	62A2-5	
SG402	Spark Gap	62A2-5	
	AC Power Cord	89A122-31	Polarized
	Socket	87A159-16	CRT
	Printed Circuit Board	714A476-5	Less Parts
	Printed Circuit Board	A8858-4	With Parts

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

ITEM	PART No.
MODELS 19B617, 19B617M	
Cabinet Front	34A353-14
Cabinet Back	33A1614-10
Handle	37A330-10
Knob - Indicator - UHF	21A305-1
Knob - UHF Bar	33A1973-18
Knob - UHF Fine Tuning	33A2068-1
Knob - VHF Channel Selector	33A2069-7
Knob - VHF Fine Tuning	33A2070-2
Knob - On-Off-Volume, Contrast,Brightness	33A1810-41
MODELS 19B628C, 19B628CM	
Cabinet Front	34A353-15
Cabinet Back	33A1614-7
Handle	37A330-4
Knob - Indicator - UHF	21A305-1
Knob - On-Off-Volume, Contrast, Brightness	33A1810-41
Knob - UHF Bar	33A1973-6
Knob - UHF Fine Tuning	33A2068-1
Knob - VHF Channel Selector	33A2069-3
Knob - VHF Fine Tuning	33A2070-2
MODELS 22B613, 22B613M,22B615,22B615M	
Insert Control Panel	23A2082-3
Escutcheon	23A2098-1
Knob - Indicator - UHF	21A305-1
Knob - On-Off-Volume	33A1810-41
Knob - Brightness, Contrast	33A1810-49
Knob - Fine Tuning - UHF	33A2068-1
Knob - VHF Channel Selector	33A2069-2
Knob - VHF Fine Tuning	33A2070-2
Knob - Bar UHF Channel Selector	33A1973-6

ITEM	PART No.
MODELS 22B613D,22B613DM,22B615D,22B615DM	
Insert Control Panel	23A2082-3
Escutcheon	23A2098-1
Knob - UHF Indicator (Tenths)	21A290-16
Knob - UHF Indicator (Units)	21A291-11
Knob - VHF Fine Tuning	33A1483-1
Knob - UHF Bar	33A1786-2
Knob - UHF Fine Tuning	33A1787-1
Knob - VHF Channel Selector	33A1772-2
Knob - On-Off-Volume	33A1810-41
Knob - Contrast, Brightness	33A1810-49
MODELS 19B617D, 19B617DM	
Cabinet Front	34A353-14
Cabinet Back	33A1614-10
Handle	37A330-10
Knob - UHF Indicator (Tenths)	21A290-16
Knob - UHF Indicator (Units)	21A291-11
Knob - VHF Fine Tuning	33A1483-1
Knob - VHF Channel Selector	33A1772-28
Knob - UHF Bar	33A1786-2
Knob - UHF Fine Tuning	33A1787-1
Knob - On-Off-Volume,Contrast,Brightness	33A1810-41
MODELS 19B628CD, 19B628CDM	
Cabinet Front	34A353-15
Cabinet Back	33A1614-7
Handle	37A330-4
Knob - UHF Indicator (Tenths)	21A290-16
Knob - UHF Indicator (Units)	21A291-11
Knob - VHF Fine Tuning	33A1483-1
Knob - VHF Channel Selector	33A1772-28
Knob - UHF Bar	33A1786-2
Knob - UHF Fine Tuning	33A1787-1
Knob - On-Off-Volume,Contrast,Brightness	33A1810-41

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.

WIRING DATA

High Voltage Lead	Use BELDEN No.	8869 (17 KV)
Shielded Hook-up Wire	Use BELDEN No.	8401 or 8421 (Single-Conductor) 8208 (Two-Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No.	8528 (Solid) Available in 12 Colors 8522 (Stranded) Available in 12 Colors
300-Ohm Tuner Input Lead	Use BELDEN No.	8225
300-Ohm Antenna Lead-in	Use BELDEN No.	8230 or 8275
Antenna Rotor Cable	Use BELDEN No.	8464 (Flat) or 8484 (Round) 4-Conductor 8485 (Round) 5-Conductor 8488 (Round) 8-Conductor

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	MFGR. PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V301	19VBXP4 22VAUP4			19VBXP4 22VAUP4	

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
CR301		93A8-1	1N34AS	1N34A	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109
CR302		93A60-5	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR402		93A60-6	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR403		93A60-6	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR404		93A60-6	GE-300(7)	D200MP(6)	PTC214M(6)	HEPR0602(7)	RE 52(7)	SK3100(7)	RT-218(7)	ECG178MP(6)
CR405		93A60-6								
CR406		93A93-1	GECR-6		PTC212			SK3108		ECG504
CR407		93A64-1	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR501		93A52-1	GE-504A	806	PTC202	HEPR0054	RE 49	SK3017A	RT-210	ECG116
CR503		93A60-7	GE-504A	804	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
IC201		56A9-1			PTC745	HEPC6060P			TVCM-41	ECG748
Q201		57A192-10	GE-12	TR-81	PTC104	HEPS5011	RE 14	SK3131	RT-128	ECG124
Q301		57A139-4	GE-20	TR-24	PTC121	HEPS0020	RE 28	SK3117	RT-113	ECG161
Q302		57A139-4	GE-20	TR-24	PTC121	HEPS0020	RE 28	SK3117	RT-113	ECG161
Q303		57A138-4	GE-20	TR-24	PTC121	HEPS0024	RE 10	SK3117	RT-113	ECG108
Q304		57A191-12	GE-20	TR-33	PTC121	HEPS0015	RE 13	SK3137	RT-107	ECG123A
Q305		57A172-8(11) 57A207-8(1)(12)	GE-27 GE-40	TR-79 TR-78	PTC110 PTC117	HEPS5026 HEPS5024	RE 44 RE 23	SK3103 SK3040	RT-111 RT-110	ECG190 ECG154
Q306		57A185-12	GE-21	TR-19	PTC103	HEPS0019	RE 26	SK3138	RT-115	ECG159
Q307		57A185-12	GE-21	TR-19	PTC103	HEPS0019	RE 26	SK3138	RT-115	ECG159
Q401		57A184-12	GE-20	TR-33	PTC121	HEPS0015	RE 13	SK3137	RT-105	ECG123A
Q402		57A191-12	GE-20	TR-33	PTC121	HEPS0015	RE 13	SK3137	RT-107	ECG123A
Q403		57A191-12	GE-20	TR-33	PTC121	HEPS0015	RE 13	SK3137	RT-107	ECG123A
Q404		57A191-12	GE-20	TR-33	PTC121	HEPS0015	RE 13	SK3137	RT-107	ECG123A
Q405		57A184-12	GE-20	TR-33	PTC121	HEPS0015	RE 13	SK3137	RT-107	ECG123A
Q406		57A187-12(5)	GE-66	TR-76	PTC110	HEPS3024	RE 21	SK3054	RT-186	ECG152
Q407		57A188-12(5)	GE-69	TR-77	PTC111	HEPS3028	RE 22	SK3083	RT-185	ECG153
Q408		57A184-12	GE-20	TR-33	PTC121	HEPS0015	RE 13	SK3137	RT-105	ECG123A
Q409		57A191-12	GE-20	TR-33	PTC121	HEPS0015	RE 13	SK3137	RT-107	ECG123A
Q410		57A185-12	GE-21	TR-19	PTC103	HEPS0019	RE 26	SK3138	RT-115	ECG159
Q411		57A186-11	GE-38	TR-61	PTC129	HEPS5021	RE 32	SK3115		ECG165

(1) Used in some versions.
(5) Half of complementary pair.
(6) Matched pair.
(7) Two required - select matched pair.
(11) Use 90A22-1 Heat Sink only.
(12) Use 90A32-2 Heat Sink only.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA					
		MFGR. PART No.	ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C327	330 6V	67A200-331-1	ME-8-8-300	EA6-250	WBR300-35	TT6X300B	TVA-1102.1
C335	10 15V	67A200-100-3	ME-1-E-010	EA15-10	WBR10-25	TT15X10	TVA-1145
C411	1000 25V	67A200-102-4	ME-G1000	EA30-1000	WBR1000-25	MTA1000G25	TVA-1211
C422	25 25V	67A200-250-4	ME-3-G-025	EA30-25	WBR25-25	TC26C	TVA-1205
C426	5 15V	67A200-509-3	ME-1-E-005	EA15-5	WBR5-50	TT15X5	TVA-1144
C435	25 50V	67A200-250-7	ME-4-J-025	EA50-25	WBR25-50	MTA25E50	TVA-1306
C438	500 35V	67A200-501-6	ME-J500	EA50-500	WBR500-50	MTA500G50	TVA-1315
C502a	250 165V	67A30-11			CC0129.7A (1)	PFP318.87(2)	PCL-3454.8
b	150 150V						
c	200 150V						
C505	50 50V	67A200-500-7	ME-7-J-050	EA50-50	WBR50-50	MTA50E50	TVA-1308
C506	500 35V	67A200-501-6	ME-J500	EA50-500	WBR500-50	MTA500G50	TVA-1315

(1) Use printed circuit board adapter.
(2) Use FPA Adapter Kit.

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	MFGR. PART No.	REPLACEMENT DATA				
			ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	15 NPO 10%		CCT0-150	DTZ-15	NP015	CN0415	10TCC-Q15
C202	120 NPO 5%			DTZ-120		CN0312	10TCC-T12
C203	.1 50V		1MDF-3-104		DPMS2P1	EWF1A010	1PB-P10
C204	.01 50V		1MDF-1-103	CPJ-103	DPMS4S1	EWF1A110	1PB-S10
C205	15 10%		CCT0-150	DTZ-15	NP015	CN0415	10TCC-Q15
C206	.01 50V		1MDF-1-103	CPJ-103	DPMS4S1	EWF1A110	1PB-S10
C207	.22 50V		1MDF-4-224		DPMS2P22	EWF1A022	1PB-P22
C208	.022 50V		1MOF-1-223	CPJ-223	DPMS2S22	EWF1A122	1PB-S22
C209	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10
C210	.01 1KV		CCD-103	DD-1032	GP10000	GP110	10TS-S10
C211	330 10%		CCD-331	DD-331	GP330	GP333	10TS-T33
C301	68 NPO 5%			DTZ-68	NP068	CN0468	10TCC-Q68
C302	8.2 NPO 5%				NP08P2		10TCC-V82
C303	.0012 10%		CCD-122	DD-122		GP212	10TS-D12
C304	.0012 10%		CCD-122	DD-122		GP212	10TS-D12
C305	.0012 10%		CCD-122	DD-122		GP212	10TS-D12
C307	47 NPO 5%			DTZ-47	NP047	CN0447	10TCC-Q47
C308	270 10%		CCD-271	DD-271	GP270	GP327	10TS-T27
C309	.1 50V		1MDF-3-104		DPMS2P1	EWF1A010	1PB-P10
C310	.0012 10%		CCD-122	DD-122		GP212	10TS-D12
C311	.0012 10%		CCD-122	DD-122		GP212	10TS-D12
C312	.001 10%		CCD-102	DD-102		GP210	10TS-D10
C313	47 NPO 5%			DTZ-47	NP047	CN0447	10TCC-Q47
C314	270 10%		CCD-271	DD-271	GP270	GP327	10TS-T27
C315	.001 10%		CCD-102	DD-102		GP210	10TS-D10
C316	.0012 10%		CCD-122	DD-122		GP212	10TS-D12
C318	20 NPO 5%			DTZ-20	NP020	CN0420	10TCC-Q20
C319	15		CCT0-150	DTZ-15	NP015	CN0415	10TCC-Q15
C320	180 N150 5%	65A110-432		*		*	10TCP-T18
C321	10 NPO 5%			DTZ-10	NP010	CN0410	10TCC-Q10
C322	.0012 10%		CCD-122	DD-122		GP212	10TS-D12
C323	10 NPO 5%			DTZ-10	NP010	CN0410	10TCC-Q10
C324	4.7 ±.25						
C325	220		CCD-221	DD-221		GP322	10TS-T22
C326	330 5%		DM15-331J	CPR-330J	CD15FD331J03	SX333	424ME3300J501
C328	.001 10%		CCD-102	DD-102		GP210	10TS-D10
C329	.0033 10%		CCD-332				10TS-D33
C330	.22 200V		6DP-5-224		DPMS6P22	EWF6022	6PS-P22
C333	.47 50V		1MDF-4-474		OPMS2P47	EWF1A047	1PB-P47
C337	470 1.4KV	65A10-392		CI-471			
C338	.0033 1.4KV	65A10-447					
C401	.033 50V 10%		6DP-3-333		DPMS6S33	EWF6133	6PS-S33
C402	.0015		CCD-152	DD-152		GP215	10TS-D15
C403	.22 50V		1MDF-4-224		DPMS2P22	EWF1A022	1PB-P22
C404	.1 50V		1MDF-3-104		DPMS2P1	EWF1A010	1PB-P10
C405	.47 35V		1MDF-4-474		DPMS2P47	EWF1A047	1PB-P47
C406	.001 50V		1MOF-1-102	CPJ-102	DPMS6D1	EWF1A210	1PB-D10
C408	.47 50V 10%		1MDF-4-474		DPMS2P47	EWF1A047	1PB-P47
C409	.1 50V		1MDF-3-104		DPMS2P1	EWF1A010	1PB-P10
C410	.33 50V		1MDF-4-334		DPMS2P33	EWF1A033	1PB-P33
C412	.15 50V 10%		1MOF-3-154		DPMS2P15	EWF1A015	1PB-P15
C413	.22 50V		1MDF-4-224		DPMS2P22	EWF1A022	1PB-P22
C416	.18 400V 10%		4DP-5-204		DPMS4P2	PVC602	4PS-P20
C417	680 2KV N2200 10%	65A110-453				*	10TCY-T68
C418	820 2KV N2200 10%	65A110-452				*	10TCY-T82
C419	820 2KV N2200 10%	65A110-452				*	10TCY-T82
C420	.001 10%		CCD-102	DD-102		GP210	10TS-D10
C421	.01 50V		1MOF-1-103	CPJ-103	DPMS4S1	EWF1A110	1PB-S10
C423	.033 50V 10%		6DP-3-333		DPMS6S33	EWF6133	6PS-S33
C424	.015 50V 10%		1MDF-1-153	CPJ-153	OPMS4S15	EWF1A115	1PB-S15
C425	.01 200V 10%		4DP-1-103	CPR-10000J	DPMS4S1	EWF2110	2PB-S10
C427	.033 50V		6DP-3-333		DPMS6S33	EWF6133	6PS-S33
C428	.0047 50V		1MDF-1-472	CPJ-472	DPMS6D47	EWF1A247	1PB-D47
C429	.022 50V 10%		1MDF-1-223	CPJ-223	DPMS2S22	EWF1A122	1PB-S22
C430	.001 50V 10%		1MOF-1-102	CPJ-102	DPMS6D1	EWF1A210	1PB-D10
C431	470 10%		CCD-471	DD-471	GP470	GP347	10TS-T47
C432	.022 50V		1MDF-1-223	CPJ-223	OPMS2S22	EWF1A122	1PB-S22
C433	.01 50V		1MDF-1-103	CPJ-103	DPMS4S1	EWF1A110	1PB-S10
C434	560 10%		CCD-561	DD-561		GP356	10TS-T56
C436	.1 50V		1MDF-3-104		DPMS2P1	EWF1A010	1PB-P10
C437	.01 50V		1MDF-1-103	CPJ-103	OPMS4S1	EWF1A110	1PB-S10
C501	.22 150V AC	63A23-4					
C503	.22 50V		1MOF-4-224		DPMS2P22	EWF1A022	1PB-P22
C504	.001 1KV		CCD-102	DD-102		GP210	10TS-D10

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

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R329	3900 10% 4W Film	4G-3.9K	61A164-392
R413	1500 10% 1W Film	CB-1500	60A14-152 (60A109-152)(1)
R420	1.8 5% 2W Film		60A28-110
R424	47 10% 5W WW		61A105-470

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R428	12K 10% 3W Film	3G-12K	61A163-123
R429	560 10% 2W Film		61A162-561
R501	5 10% 5W WW	5W-SQ-5	61A20-118
R505	100 10% 7W Film	7G-100	61A167-101
R507	82 5% 3W WW		61A20-131

(1) Used in Chassis T2K8, T3K8

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.

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
R203	Volume/Switch	25K	75A1-219 75D1-219 (5)	F2-25K,SN100, KR-2	A47-25K-W,RN-3, SWE-20,TT-2 or [NP-25K-Z, NML-A-300, NWE-20, TT-2]	RU253A, SL37, SN875, US42 or [UA253A, SN875, US42]	BU11, CF92, SS6A, WF
	Volume/Switch	25K	75A1-224(19)				
	Volume/Switch	25K	75A1-226 (20) (21)				
R326	Contrast	500	75A1-220 75D1-220 (5)	F5-500, SN100	NP-500-V, NML-A-300, TT-2	RU52R, SL37, SN875 or[UA52R, SN875]	BU11, CF50, SS6A
	Contrast	500	75A1-222 (19)				
R333	Brightness	100K	75A1-221 75D1-221 (5)	F3-100K, SN100	NP-100K-V, NML-A-300, TT-2	UA15R, SN875	BU11, CF94, SS6A
	Brightness	100K	75A1-223 (19)				
R339	AGC Delay	400	75A101-50 75D101-50 (5)	TSV-500(3) or T-500 (3)	C-501 (3)	MTC52L4	U201R501B
R342	AGC	200	75A101-49 75D101-49 (5)	T-200 (3)		MTC22L4	U201R251B
R407	Vert Hold	1.2meg	75A191-1 75C191-1 (5)	F1-1.5Meg (18), SNK108	B47-1.5Meg-S(18), or[NP-1.5Meg-S(18) NML-A-300]	UA155L,SN2000 or [RU155L, SL37, SN2000] or PTA1254L	BU11, CF18, SS6A
R410	Vert Size	1.5meg	75A101-57 75C101-57 (5)	T-2Meg or TSV-2.2M		MTC26L1	X201R205B

(3) For horizontal mounting, bend the two outside terminals to fit PC board. Use jumper to connect center terminal to PC Board.
(5) Number on unit.
(18) Use original mounting bracket.
(19) Use in Models using Chassis T3K8 and T9K6.
(20) May be used in some versions of models using Chassis T8K6.
(21) Used in models using Chassis T2K8.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L201	Sound Input IF	72A317-1		23A225RPC	(1) Includes 47-ohm resistor.
L202	Sound Detector	72A317-6			
L203	RF Choke	73A31-19			
L301	47.25Mhz Trap	72A316-4		49A167MPC	
L302	1st Video IF	72A316-6			
L303	2nd Video IF	72A316-6			
L304	RF Choke	73A53-243		74F566AP	
L305	3rd Video IF	72A316-12		49A757MPC	
L306	Video Detector	72A316-5			
L307	RF Choke	73A31-19			
L308	RF Choke	73A31-20			
L309	RF Choke	73A31-21			
L310	4.5Mhz Trap	72A317-1		23A225RPC	
L311	Peaking (150uH)	73A55-13		72F154AP	
L402	Peaking (16mH)	73A136-1 (1)			

COILS & TRANSFORMERS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA				NOTES
		MFGR. PART No.	OTHER IDENTIFICATION	THORDARSON PART No.	TRIAD PART No.	
L401	Horiz. Osc. (Hold)	94A480-1	94B480-1			
T401	Yoke Horiz 3mH 114° Vert 24.5mH	70DA1089-15 70DA1089-16 (2)	75OC1089-15	Y192 (1)	YT-108-2 (1)	
T402	Horiz. Driver	79A167-1	T79C167-1-A			
T403	Horiz. Output	79A166-1	79D166-1			

(1) See Component Connection Data.
(2) Used in Chassis T9K6-1A/-2A

SWEEP COMPONENT CONNECTION DATA

ORIGINAL → / REPLACEMENT ↓	VERTICAL OUTPUT Original Connections	YOKE Original Connections	YOKE PLUG TO YOKE TERMINAL
		Red, Yel, Wh, Blk	
THORDARSON		Red, Yel, Wh, Blk	
TRIAD		Yel, Blk, Blu, Red (1)	

(1) Use original 820-ohm, 1-watt vertical damping resistor.