

SAFETY PRECAUTIONS

SERVICE WARNING

Only qualified service technicians who are familiar with safety checks and guidelines should perform service work. Before replacing parts, disconnect power source to protect electrostatically sensitive parts. Do not attempt to modify any circuit unless so recommended by the manufacturer. When servicing the receiver, use an isolation transformer between the line cord and power receptacle.

SERVICING THE HIGH VOLTAGE AND CRT

Use EXTREME CAUTION when servicing the high voltage circuits. To discharge static high voltage, connect a 10K ohms resistor in series with a test lead between the receiver and CRT anode lead. DO NOT lift the CRT by the neck. Always wear shatterproof goggles when handling the CRT to protect eyes in case of implosion.

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Be aware of the instructions and procedures covering X-ray radiation. In solid-state receivers and monitors, the CRT is the only potential source of X-rays. Keep an accurate high voltage meter available at all times. Check meter calibration periodically. Whenever servicing a receiver, check the high voltage at various brightness levels to be sure it is regulating properly. Keep high voltage at rated value, NO HIGHER. Excessive high voltage may cause X-ray radiation or failure of associated components. DO NOT depend on protection circuits to keep voltage at rated value. When troubleshooting a receiver with excessive high voltage, avoid close contact with the CRT. DO NOT operate the receiver longer than necessary. To locate the cause of excessive high voltage, use a variable AC transformer to regulate voltage. In present receivers, many electrical and mechanical components have safety related characteristics which are not detectable by visual inspection. Such components are identified by a # on both the schematic and the parts list. For SAFETY, use only equivalent replacement parts when replacing these components.

The listing of any available replacement part herein in no case constitutes a recommendation, warranty, or guarantee by Howard W. Sams & Company as to the quality and suitability of such replacement part. The numbers of the listed parts have been compiled from information furnished to Howard W. Sams & Company by the manufacturers of the specific type of replacement part listed.

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SAFETY CHECKS -- FIRE AND SHOCK HAZARD

Cold Leakage Checks for Receivers with Isolated Ground

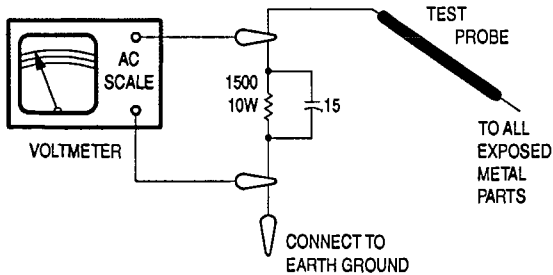
Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable). Use an ohmmeter to measure the resistance between the jumped AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with a return path should measure between 1M ohms and 5.2M ohms. Parts without a return path must measure infinity.

Hot Leakage Current Check

Plug the AC cord directly into an AC outlet. DO NOT use an isolation transformer. Use a 1500 ohms, 10W resistor in parallel with a .15µF capacitor to connect between any exposed metal parts on the receiver and a good earth ground. (See figure below.) Use an AC voltmeter with at least 5000 ohms per volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point. Voltage measurements should not exceed .75VAC, 500µA. Any value exceeding this limit constitutes a potential shock hazard and must be corrected. If the AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.

GENERAL GUIDELINES

Perform a final SAFETY CHECK before returning receiver to customer. Check repaired area for poorly soldered connections, and check entire circuit board for solder splashes. Check inner board wiring for pinched wires or wires contacting any high wattage resistors. Check that all control knobs, shields, covers, grounds, and mounting hardware have been replaced. Be sure to replace all insulators and restore proper lead dress.



95PF02755



PHOTOFACT® Technical Service Data

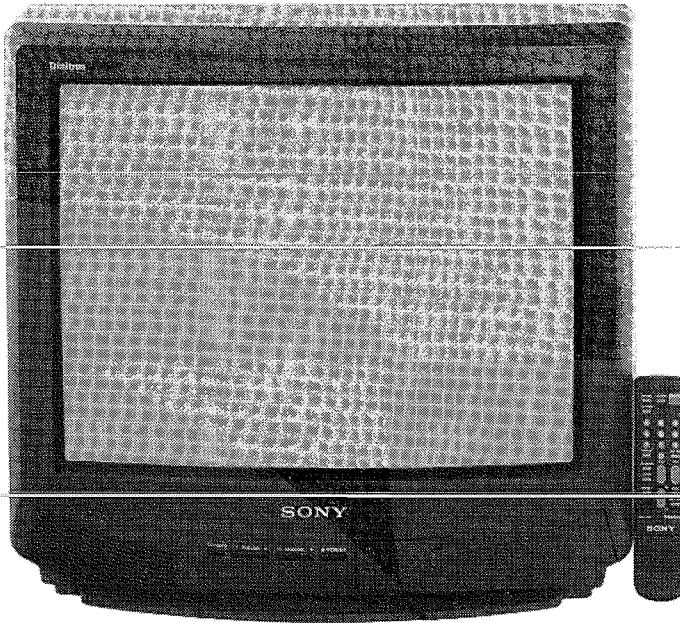
SET 3434

MODEL KV-20M10 (CHASSIS SCC-G92B-A, SCC-G94D

SONY

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SONY
Model KV-20M10 (Chassis SCC-G92B-A, SCC-G94D-A)



Complete coverage
for servicing a television receiver...

- Schematics
- Parts list
- Component locations
- Troubleshooting guide

Coverage includes these additional models and chassis:

MODEL	CHASSIS
KV-MT2000	SCC-G94C-A
KV-21R10	SCC-G93E-A
KV-2180R	SCC-G93B-A

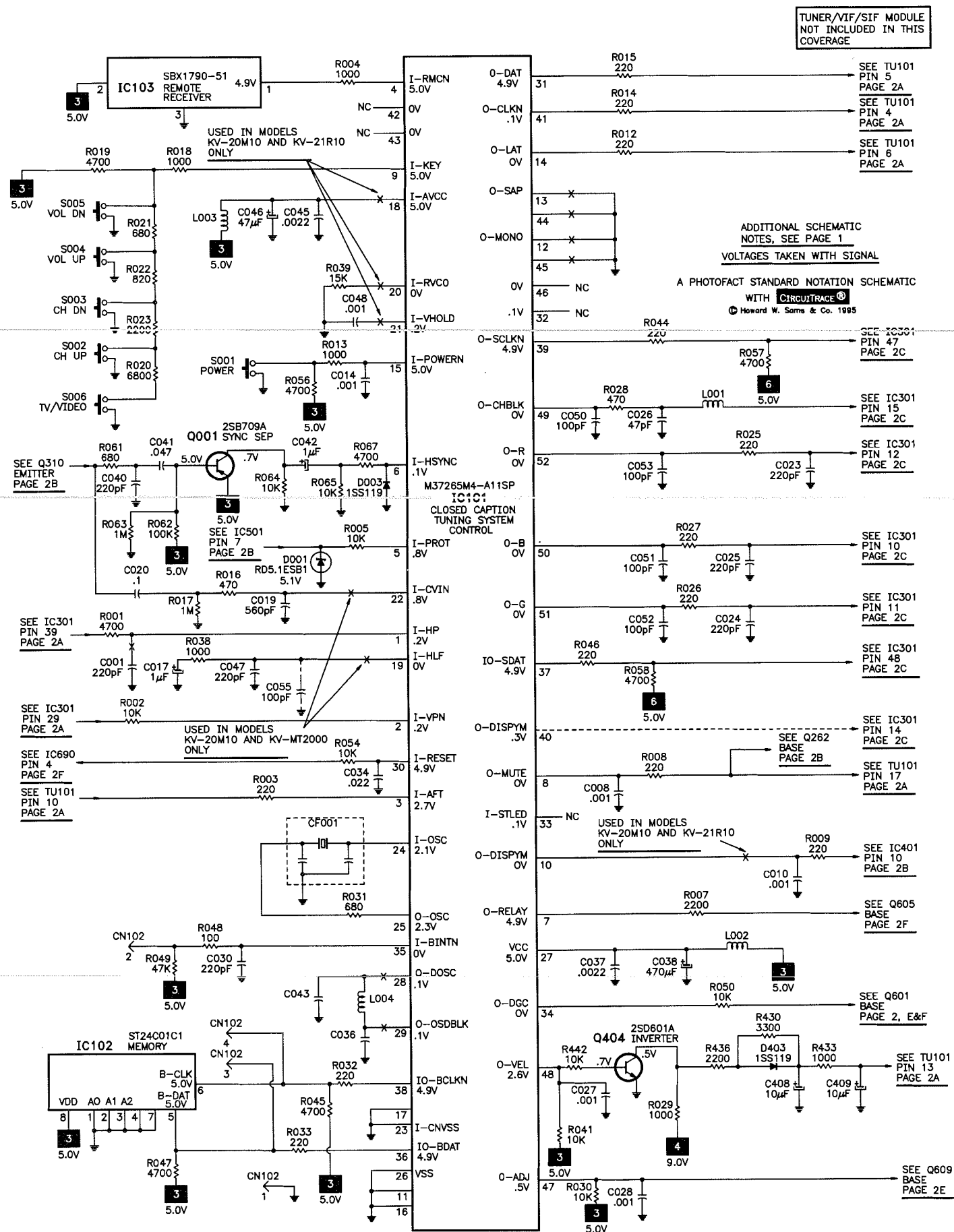


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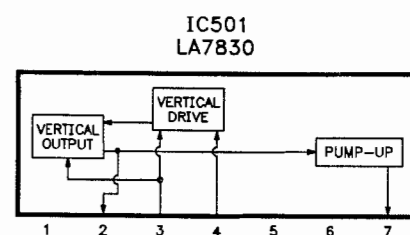
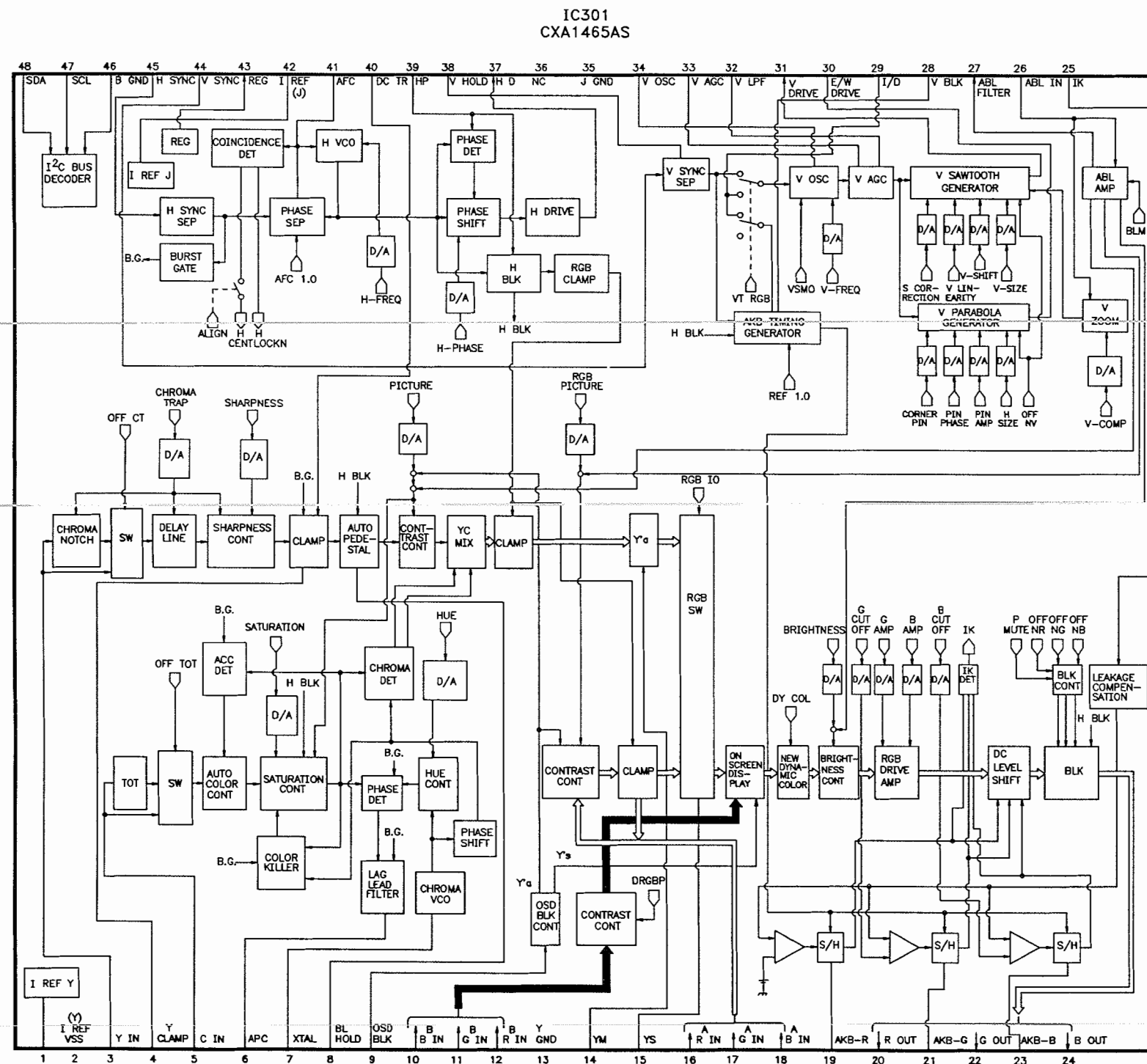
JANUARY 1995 SET 3434

For Supplier Address,
See PHOTOFACT Annual Index

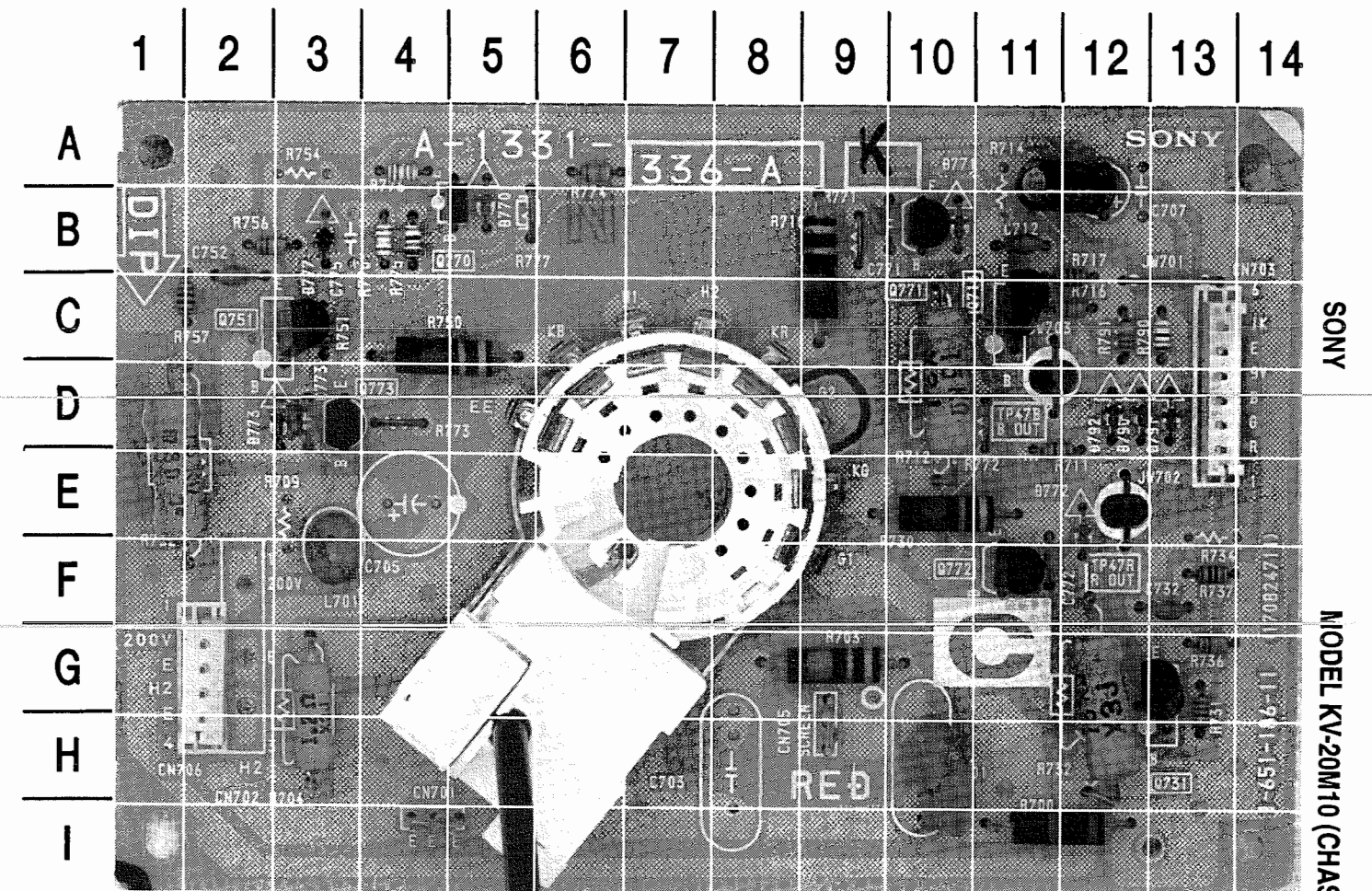
SYSTEM CONTROL SCHEMATIC



IC FUNCTIONS



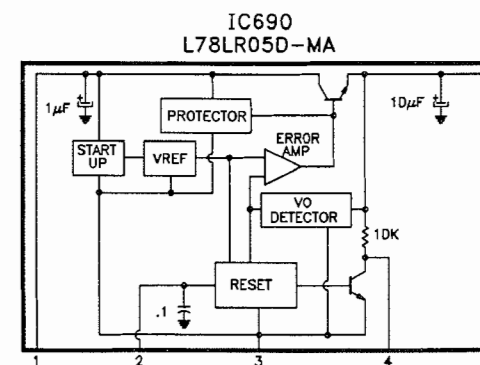
C BOARD



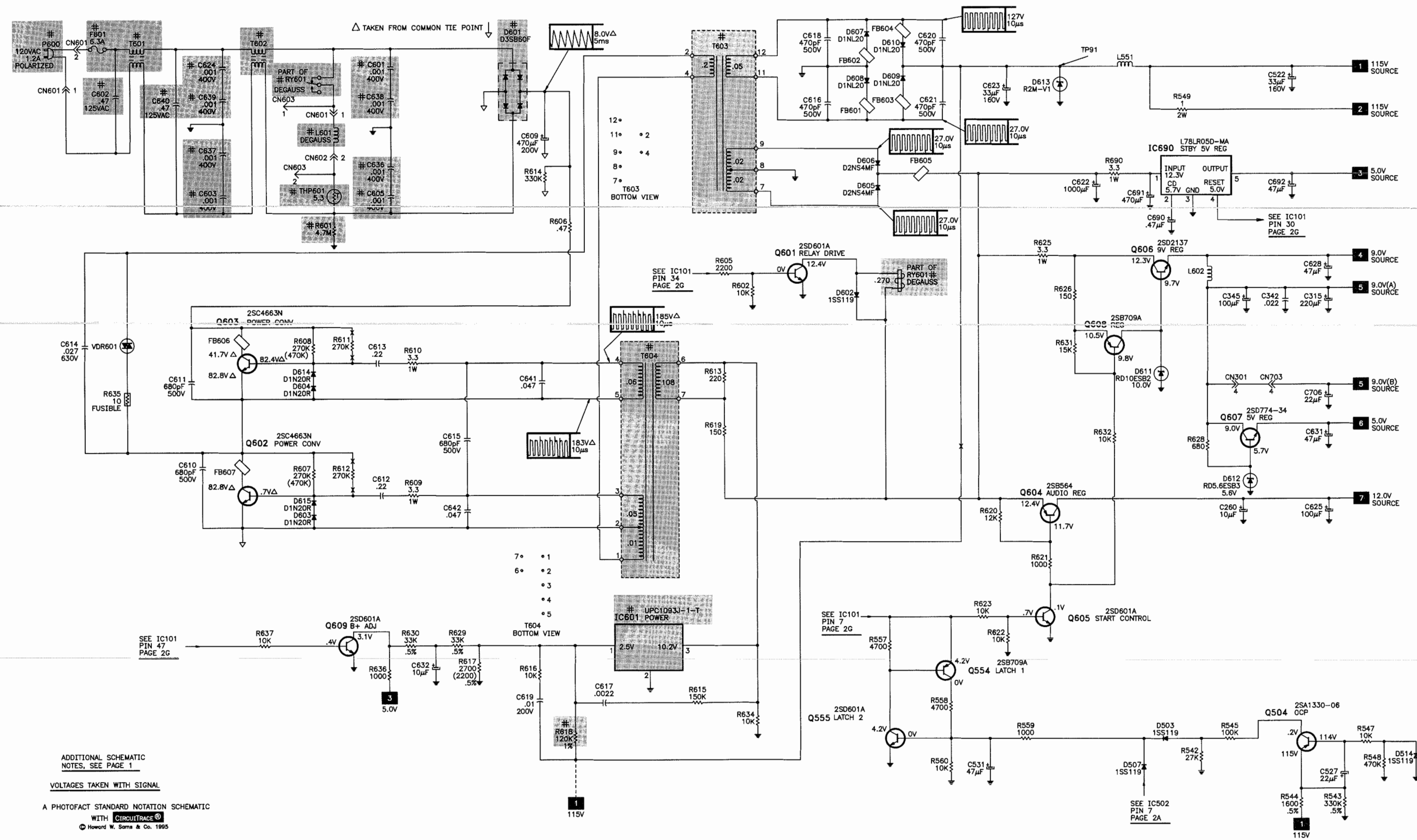
A HOWARD W. SAMS GRIDTRACE™ PHOTO

C BOARD, GRIDTRACE LOCATION GUIDE

C701	H-10	D772	E-12	Q773	D-3	R750	C-4
C706	A-12	D773	D-2	R700	I-11	R751	C-3
C712	B-11	D777	B-3	R703	G-9	R752	E-1
C732	F-13	D790	D-13	R704	G-3	R756	B-2
C752	B-2	D791	D-12	R710	B-9	R757	C-2
C771	B-9	D792	D-12	R711	D-11	R770	B-4
C772	F-11	J701	F-7	R712	D-12	R774	A-6
C773	D-3	L701	F-3	R716	C-12	R775	B-4
CN701	I-4	Q711	C-11	R717	B-12	R776	A-4
CN703	D-13	Q731	G-13	R730	E-10	R790	C-13
CN705	H-9	Q751	C-3	R731	G-13	R791	C-12
CN706	G-2	Q770	B-5	R732	G-12		
D770	B-5	Q771	B-10	R736	G-13		
D771	B-10	Q772	F-11	R737	F-13		



POWER SUPPLY SCHEMATIC



ADDITIONAL SCHEMATIC NOTES, SEE PAGE 1

VOLTAGES TAKEN WITH SIGNAL

A PHOTOFAC STANDARD NOTATION SCHEMATIC WITH CIRCUITTRACE[®] © Howard W. Sams & Co. 1995

SAFETY RELATED ADJUSTMENTS

R525 CONFIRMATION METHOD (HV HOLD DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components IC502, IC601, Q554, Q555, D505, D506, D507, D510, DY, C511, C513, C528, C531, R511, R519, R520, R523, R525, R527, R557, R558, R559, R560, R617, R618, and T504. Check that voltage at TP85 is higher than 90V with brightness and picture at maximum before performing confirmation procedure.

- 1. Connect a current meter to pin 7 of T504. Receive a white screen. Adjust picture and brightness so ABL current is 1440µA ± 100µA.
- 2. Connect a voltmeter to TP85, low side to ground. Connect a DC power supply positive lead to the anode of a blocking diode 1SS119 and the cathode to TP85, low side of DC power supply to ground. Increase DC power supply voltage gradually until picture just blanks out.
- 3. Check voltage on voltmeter and immediately turn DC power supply off.
- 4. Voltage should be less than or equal to 134V.
- 5. Receive a dot pattern. Adjust picture and brightness so ABL current is 140µA + 100µA - 50µA. Repeat steps 2 and 3.

- 6. Voltage should be less than or equal to 134V.
- 7. If R525 Confirmation Method (HV Hold-down Confirmation) cannot be satisfied, readjustment should be performed by altering the resistance value of R525.

B+ VOLTAGE CONFIRMATION AND READJUSTMENT

The following adjustment should always be performed when replacing the following components IC101, IC601, Q609, R030, R617, R618, R629, R630, R636, and R637.

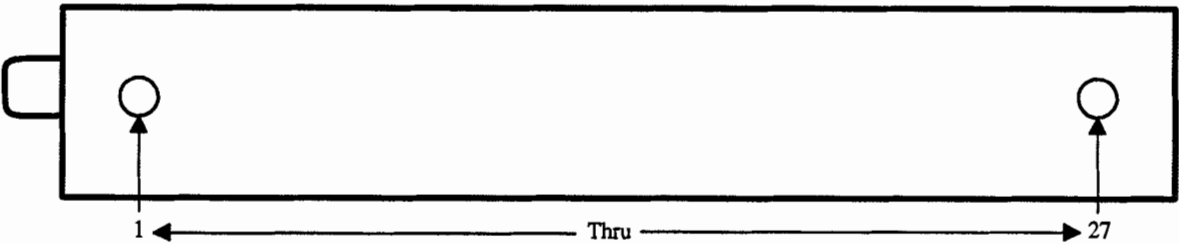
- 1. Supply 130VAC + 2.0VAC - 0VAC with variable AC transformer.
- 2. Receive a monoscope signal. Set picture and brightness to initial reset position.
- 3. Enter digital service adjustment mode (see Miscellaneous Adjustment) select PADJ and adjust for value of 63.
- 4. Confirm the voltage at TP91 is less than 123V.
- 5. If step 4 cannot be satisfied, replace the components. Repeat above steps.
- 6. Supply 120VAC ± 2.0VAC with variable AC transformer.
- 7. Select PADJ and adjust for 115V ± .5V at TP91.
- 8. Save adjustments to memory by pressing the mute button then the enter button.

TUNER / VIF / SIF MODULE (TU101) INFORMATION

TUNER / VIF / SIF MODULE (TU101) VOLTAGE CHART							
Pin	Voltage	Pin	Voltage	Pin	Voltage	Pin	Voltage
1	11.9V	9	8.9V	17	3.8V	25	0V
2	30.0V	10	3.9V	18	4.8V	26	0V
3	5.0V	11	0V	19	0V	27	4.3V
4	0V	12	0V	20	0V		
5	5.0V	13	.3V	21	0V		
6	.1V	14	3.4V	22	0V		
7	4.3V	15	2.4V	23	0V		
8	1.6V	16	4.3V	24	3.8V		

NOTE: Voltages remain the same for all channels.

TUNER / VIF / SIF MODULE (TU101) TERMINAL GUIDE



TROUBLESHOOTING

POWER SUPPLY

Check F601. If F601 is open, check D601, Q602, Q603, and C609. If F601 is good, apply 120VAC and check for 5.0V at pin 5 of IC690. If the voltage is missing, check Q603, Q602, T604, D601, IC690, IC601, and T603. If the voltage is present, turn the receiver on and check for 12.0V at the collector of Q604. If the voltage is missing, check Q504, Q555, Q554, Q605, Q604, Q608, Q606, and Q607. If voltages are present, refer to the "Horizontal" section of this Troubleshooting guide.
* Taken from common tie point.

HORIZONTAL

Inject a horizontal signal at the base of Q551. If deflection is now present, check Q550 and pins 37, 39, 41, and 45 of IC301. If there is no horizontal sweep, check Q551, T504, D504, D509, and D512. Horizontal linearity or foldover problems may be caused by C553, C554, C558, C559, and C523 being defective.

VERTICAL

Inject a vertical drive signal at pin 4 of IC501. If vertical deflection is now present, check IC502 and pins 29 thru 34, 38, and 44 of IC301. If there is still no vertical deflection, check IC501. Vertical linearity or foldover problems may be caused by IC502, C507, and C509 being defective.

VIDEO/CHROMA

Inject a video signal at base of Q310 and check for video on the CRT. If video is present, check TU101, IC401, Q402, and system control circuits. If video is missing on CRT, check for a video waveform at pin 3 of IC301. If video waveform is missing at pin 3 of IC301, check Q310. If video waveform is present at pin 3 of IC301, check for the proper waveforms at pins 20, 22, and 24 of IC301. If waveforms are missing, check IC301. If the proper waveforms are present, refer to the "Raster" section of this Troubleshooting guide.

RASTER

Check the CRT and CRT voltages. If red is missing, check pin 20 of IC301, Q711, and Q771. If green is missing, check pin 22 of IC301, Q731, and Q772. If blue is missing, check pin 24 of IC301, Q751, and Q773. If the raster has a keystone shape, check the deflection yoke. If the raster has height or width problems, refer to "Vertical," "Horizontal," or "Power Supply" sections of this Troubleshooting guide.

AUDIO

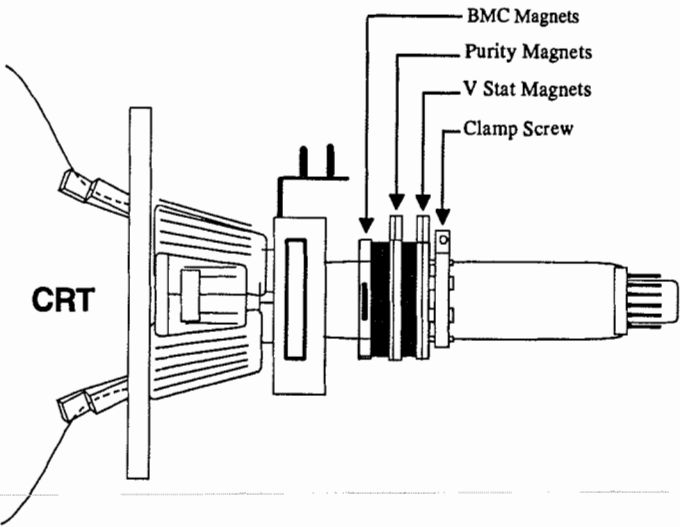
Select an active TV channel and check for an audio waveform at pin 5 of IC251. If there is no audio waveform, check IC401 and pins 16 and 14 of TU101. If audio waveform is present at pin 1 of IC251, check IC251, Q261, and Q262.

SCHEMATIC NOTES

- # For SAFETY use only equivalent replacement part, see parts list.
- * Circuitry not used in some versions.
- Circuitry used in some versions.
- ⬇ Ground
- ⬆ Chassis ground
- ⬇ Common tie point
- △ Taken from common tie point
- 3 Schematic CIRCUITRACE®: Voltage source tie point.
- A Cabling: Heavy lines reduce use of multiple lines.

Waveforms and voltages are taken from ground, unless noted otherwise.
Waveforms taken with triggered scope and colorbar signal.
Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions.
Supply voltages maintained as seen at input.
Voltages measured with digital meter and a 1000µV RF signal, with colorbar pattern, applied to antenna terminal.
Controls adjusted for normal operation.
Capacitors are 50 volts or less, 5% or greater unless noted.
Electrolytic capacitors are 50 volts or less, 20% or greater unless noted.
Resistors are 1/2W or less, 5% or greater unless noted.
Value in () used in some versions.
Measurements with switching as shown, unless noted.
Rated voltage shown on zener diodes.

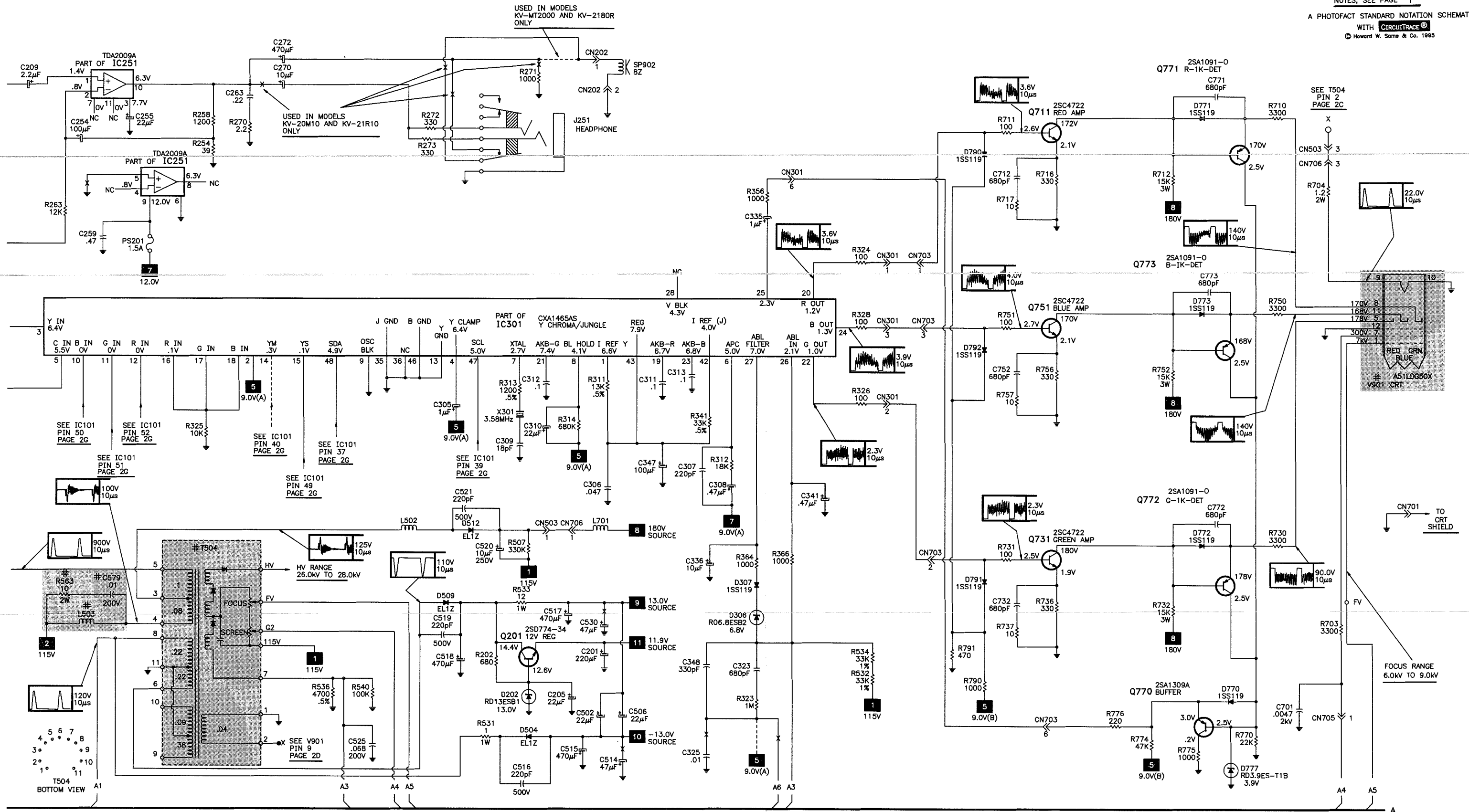
CRT NECK ASSEMBLY



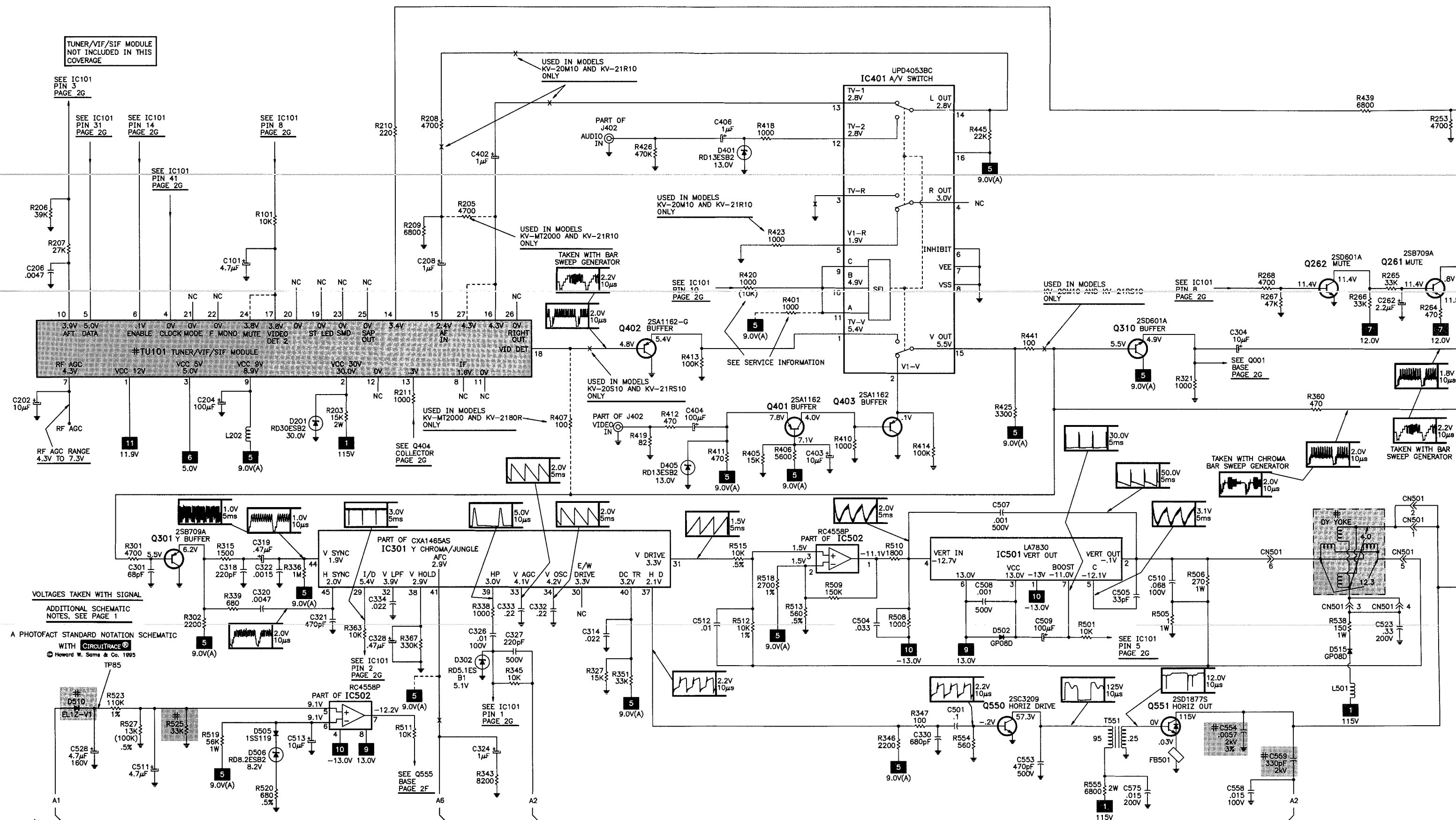
SERVICE INFORMATION

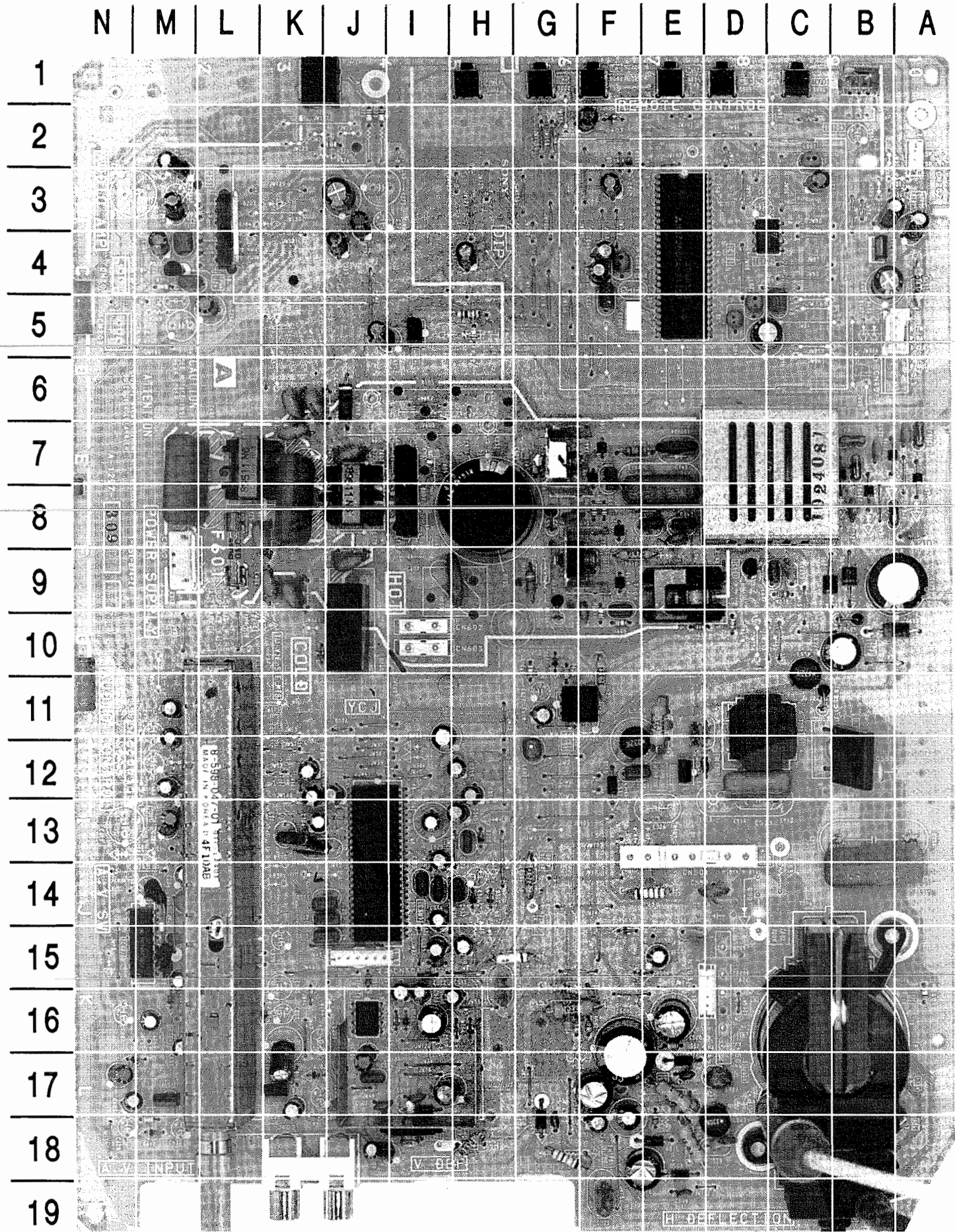
For: Model KV-20M10 Serial Numbers 8000001 thru 8025990.
Problem: Picture may have beat lines.
Solution: On the A board add a 22K 1/4W resistor from pin 9 of IC401 to pin 16 of IC401 and change the value of R420 to 10K 1/4W, see TV schematic page 2B.

VOLTAGES TAKEN WITH SIGNAL
ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 1
 PHOTOFACT STANDARD NOTATION SCHEMATIC
 WITH **CIRCUITRACE®**
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A BOARD - TOP VIEW

A BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE									
C017	F-4	C510	H-15	C641	E-8	FB603	B-7	R538	E-14
C020	F-5	C511	H-16	C642	E-8	FB604	B-7	R540	A-16
C038	C-5	C512	I-15	C690	A-3	FB605	B-10	R549	E-17
C042	F-3	C513	I-16	C691	B-4	FB606	G-9	R555	E-11
C046	F-4	C514	F-18	C692	B-3	FB607	G-8	R563	E-18
C101	M-11	C515	F-17	CF001	F-5	IC101	E-3	R601	J-6
C201	K-17	C516	G-18	CN202	A-2	IC102	D-3	R606	G-9
C202	M-15	C517	I-16	CN301	J-15	IC103	B-1	R607	F-8
C204	M-14	C518	E-18	CN401	A-5	IC251	L-3	R608	F-10
C205	K-17	C519	E-19	CN501	D-13	IC301	J-12	R609	E-8
C208	M-13	C520	E-16	CN503	D-15	IC401	N-14	R610	F-9
C209	M-2	C521	E-17	CN601	M-8	IC501	I-18	R611	F-10
C254	L-5	C522	F-17	CN602	I-10	IC502	J-16	R612	F-8
C255	M-3	C523	D-12	CN603	I-10	IC601	D-9	R614	G-7
C259	M-4	C525	F-19	D001	F-2	IC690	B-4	R618	C-9
C260	M-4	C527	E-15	D003	F-2	J251	J-1	R619	D-10
C262	J-4	C528	F-18	D201	K-16	J402	K-18	R620	H-5
C263	M-4	C530	I-16	D202	K-17	L001	C-2	R621	H-5
C270	J-3	C531	H-4	D302	H-13	L002	D-5	R625	F-11
C272	J-3	C553	D-12	D306	H-14	L004	D-5	R626	G-11
C304	K-13	C554	B-13	D307	H-14	L202	M-14	R628	M-18
C305	J-12	C558	E-15	D401	M-16	L501	F-12	R631	G-10
C308	K-12	C559	D-14	D403	F-2	L502	D-17	R635	F-7
C310	K-12	C575	E-11	D405	N-17	L503	D-18	R690	A-4
C311	K-14	C579	D-18	D502	I-17	L551	C-11	RY601	J-10
C312	K-14	C601	J-9	D503	F-15	L602	G-12	S001	H-1
C313	K-15	C602	M-7	D504	G-18	PS201	M-4	S002	G-1
C315	I-11	C603	K-7	D505	I-16	Q201	K-17	S003	F-1
C319	H-12	C605	J-7	D506	I-16	Q550	E-12	S004	E-1
C324	H-12	C609	H-8	D507	H-16	Q551	B-12	S005	D-1
C326	H-13	C610	G-8	D509	E-18	Q602	G-7	S006	C-1
C328	I-14	C611	F-10	D510	E-18	Q603	G-9	T504	B-17
C332	H-14	C612	F-7	D512	E-17	Q604	I-5	T551	D-11
C333	I-14	C613	F-9	D514	E-15	Q606	F-11	T601	L-7
C334	I-14	C614	E-8	D515	F-12	Q607	M-17	T602	J-8
C335	I-15	C615	E-8	D601	I-8	R202	K-17	T603	C-7
C336	I-14	C616	A-7	D602	K-10	R203	G-16	T604	E-9
C341	H-15	C617	C-9	D603	F-7	R270	M-4	THP601	H-9
C345	H-13	C618	A-8	D604	F-8	R271	J-2	TP85	F-18
C347	I-13	C619	C-9	D605	B-9	R272	J-2	TP91	B-10
C402	M-12	C620	B-7	D606	B-9	R273	J-2	TU101	L-14
C403	N-17	C621	B-8	D607	A-7	R401	M-15	VDR601	E-7
C404	N-17	C622	B-10	D608	B-7	R420	M-16	X301	K-13
C406	M-16	C623	A-9	D609	B-7	R505	H-15		
C408	F-2	C624	K-8	D610	B-8	R506	G-14		
C409	M-12	C625	J-5	D611	G-10	R507	E-16		
C501	F-12	C628	G-11	D612	M-18	R512	I-15		
C502	J-18	C631	M-16	D613	A-10	R518	J-15		
C504	J-17	C632	C-3	D614	F-9	R519	G-16		
C505	I-18	C636	K-6	D615	F-7	R523	E-18		
C506	J-17	C637	K-6	F601	L-9	R531	G-18		
C507	J-17	C638	K-9	FB501	C-11	R532	F-16		
C508	I-17	C639	K-9	FB601	A-8	R533	H-18		
C509	I-17	C640	K-8	FB602	A-7	R534	G-16		

PARTS LIST

Important Parts Information

- The parts listed here are those not usually available from a well-stocked supply cabinet or bin.
- Where items may be replaced with equivalent parts, several alternates are shown from participating vendors.
- On the parts lists, safety items are marked with a # to remind you that only exact replacements are recommended for these items.
- When ordering parts, state the model number, part number, and description.

Obtaining Parts

Many of these parts are available from your local Sams authorized distributor or the manufacturer of the equipment. Call Sams for the name of your nearest distributor:

800-428-7267

Or consult the Sams *Annual Index* for the address of the original equipment manufacturer.

Participating Vendors

Information on test equipment and replacement parts is listed in these pages for the following participating vendors. Consult the Sams *Annual Index* for their current address.

- Custom Components Corporation (Chek-A-Color)
- NTE Electronics, Inc. (NTE)
- Philips ECG Company (ECG)
- PTS Electronics Corporation (PTS)
- Sencore, Inc.
- Thomson Consumer Electronics, Inc. (SK, TCE)

SEMICONDUCTORS

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
D001	RD5.1ESB1	8-719-109-84	NTE5010A	ECG5010A	SK5A1
D003	1SS119	8-719-911-19	NTE519	ECG519	SK3100
D201	RD30ESB2	8-719-110-72	-	-	-
D202	RD13ESB1	8-719-110-35	-	-	-
D302	RD5.1ESB1	8-719-109-84	NTE5010A	ECG5010A	SK5A1
D306	RD6.8ESB2	8-719-109-97	NTE5014A	ECG5014A	SK6A8
D307	1SS119	8-719-911-19	NTE519	ECG519	SK3100
D401 (1)	RD13ESB2	8-719-110-36	-	-	-
D403	1SS119	8-719-911-19	NTE519	ECG519	SK3100
D405 (1)	RD13ESB2	8-719-110-36	-	-	-
D502	GP08D	8-719-908-03	NTE156	ECG156	SK3051
D503	1SS119	8-719-911-19	NTE519	ECG519	SK3100
D504	EL1Z	8-719-302-43	NTE587	ECG587	SK9937
D505	1SS119	8-719-911-19	NTE519	ECG519	SK3100
D506	RD8.2ESB2	8-719-110-08	-	-	-
D507	1SS119	8-719-911-19	NTE519	ECG519	SK3100
D509	EL1Z	8-719-302-43	NTE587	ECG587	SK9937
# D510	EL1Z-V1	8-719-302-44	NTE552	ECG552	SK9000
D512	EL1Z	8-719-302-43	NTE587	ECG587	SK9937
D514	1SS119	8-719-911-19	NTE519	ECG519	SK3100
D515	GP08D	8-719-908-03	NTE156	ECG156	SK3051
# D601	D3SB60F	8-719-510-51	NTE5310	ECG5310	SK5030
D602	1SS119	8-719-911-19	NTE519	ECG519	SK3100
D603, 04	D1N20R	8-719-510-48	-	-	-
D605, 06	D2S4MF	8-719-022-97	-	-	-
D607 Thru					
D610	D1NL20	8-719-510-26	NTE587	ECG587	SK9937
D611	RD10ESB2	8-719-110-17	NTE5019A	ECG5019A	SK10A
D612	RD5.6ESB3	8-719-109-90	NTE5011A	ECG5011A	SK5A6
D613	R2M-V1	-	-	-	-
	R2M	8-719-303-49	NTE570	ECG570	-
D614, 15	D1N20R	8-719-510-48	-	-	-
D770	1SS119	8-719-911-19	NTE519	ECG519	SK3100
D771 Thru					
D773	1SS119	8-719-911-19	NTE519	ECG519	SK3100
D777	RD3.9ES-T1B	-	-	-	-
	RD3.9ESB2	8-719-109-72	-	-	-
D790 Thru					
D792	1SS119	8-719-911-19	NTE519	ECG519	SK3100
IC101	M37265M4-A11SP	8-759-274-78	-	-	-
IC102	ST24C01C1	-	-	-	-
	ST24C01CB1	8-759-280-75	-	-	-
IC251	TDA2009A	8-759-980-43	-	-	-
IC301	CXA1465AS	8-752-059-67	-	-	-
IC401 (1)	MC14053BCP	-	NTE4053B	ECG4053B	SK4053B
	UPD4053BC	8-759-140-53	NTE4053B	ECG4053B	SK4053B
IC501	LA7830	8-759-801-98	NTE1773	ECG1773	SK9752
IC502	RC4558P	-	NTE778A	ECG778A	SK3465
	UPC4558C	8-759-145-58	NTE778A	ECG778A	SK3465
# IC601	UPC1093J-1-T	8-759-198-31	-	-	-
IC690	L78LR05D-MA	8-759-805-37	-	-	-
Q001	2SB709A	-	NTE2409	ECG2409	SK10100
	2SA1162-G	8-729-216-22	NTE2409	ECG2409	SK10100
Q201	2SD774-34	8-729-140-96	NTE382	ECG382	SK3250
Q261	2SB709A	-	NTE2409	ECG2409	SK10100
	2SA1162-G	8-729-216-22	NTE2409	ECG2409	SK10100

For SAFETY use only equivalent replacement part.
(1) Used in models KV-20M10 and KV-21R10 only.

SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

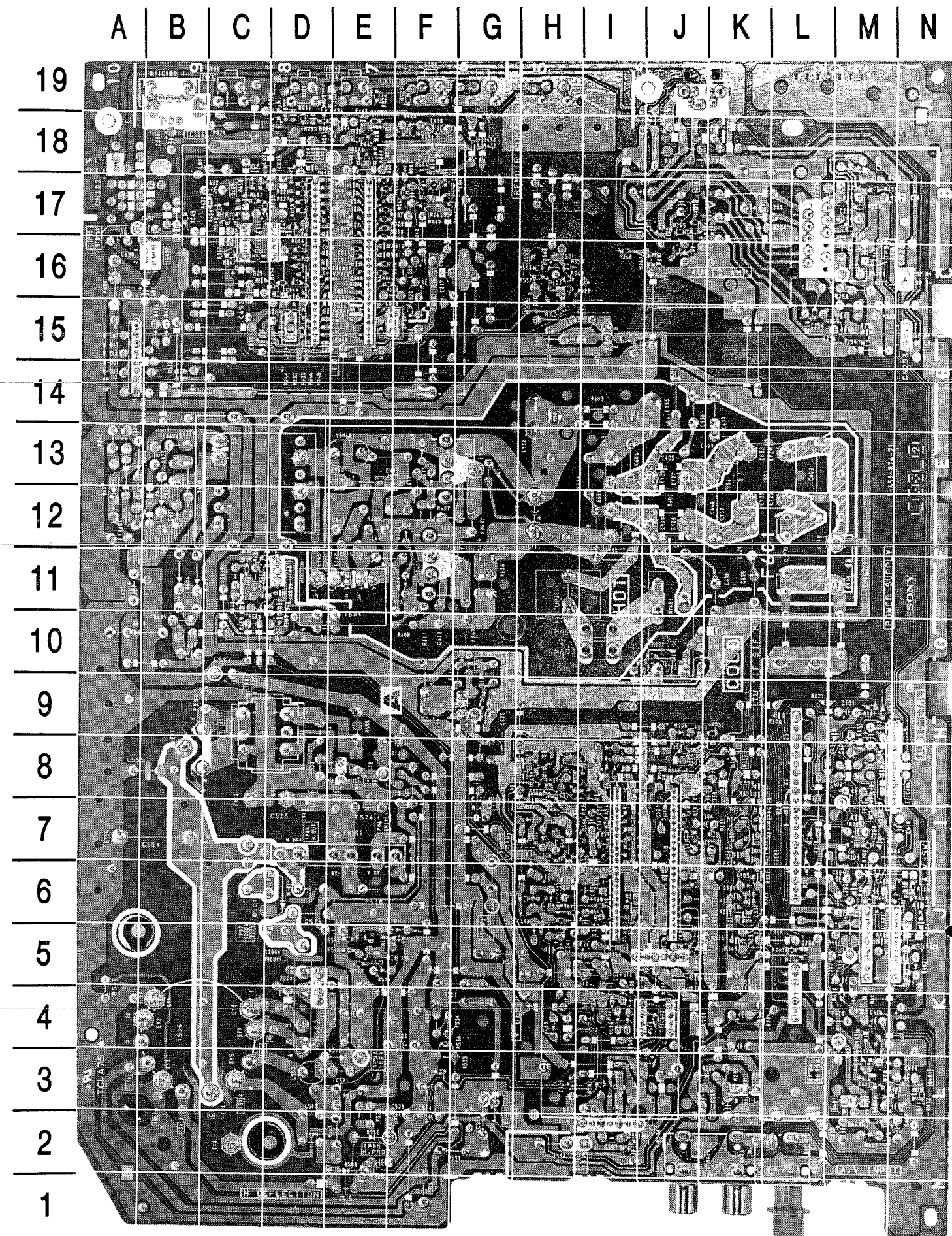
Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
Q262	2SD601A-Q	8-729-422-27	NTE2408	ECG2408	SK10099
Q301	2SB709A	-	NTE2409	ECG2409	SK10100
	2SA1162-G	8-729-216-22	NTE2409	ECG2409	SK10100
Q310	2SD601A-Q	8-729-422-27	NTE2408	ECG2408	SK10099
Q401 Thru					
Q403 (1)	2SA1162-G	8-729-216-22	NTE2409	ECG2409	SK10100
Q404	2SD601A-Q	8-729-422-27	NTE2408	ECG2408	SK10099
Q504	2SA1330-06	8-729-105-08	-	-	-
Q550	2SC3209	-	NTE399	ECG399	SK9352
	2SD774-34	8-729-140-96	NTE382	ECG382	SK3250
Q551	2SD1877S	-	-	-	-
	2SD1877S-SONY-CA	8-729-810-49	NTE2331	ECG2331	SK10088
Q554	2SB709A	-	NTE2409	ECG2409	SK10100
	2SA1162-G	8-729-216-22	NTE2409	ECG2409	SK10100
Q555	2SD601A-Q	8-729-422-27	NTE2408	ECG2408	SK10099
Q601	2SD601A-Q	8-729-422-27	NTE2408	ECG2408	SK10099
Q602, 03	2SC4663NPR-F	8-729-025-77	-	-	-
Q604	2SB564-LK-T	-	-	-	-
	2SB733-34	8-729-140-93	-	-	-
Q605	2SD601A-Q	8-729-422-27	NTE2408	ECG2408	SK10099
Q606	2SD2137-OP	8-729-423-99	-	-	-
Q607	2SD774-34	8-729-140-96	NTE382	ECG382	SK3250
Q608	2SB709A	-	NTE2409	ECG2409	SK10100
	2SA1162-G	8-729-216-22	NTE2409	ECG2409	SK10100
Q609	2SD601A-Q	8-729-422-27	NTE2408	ECG2408	SK10099
Q711, 31, 51	2SC4722N	-	-	-	-
	2SC2611	8-729-326-11	NTE157	ECG157	SK3747
Q770	2SA1309A	-	NTE2362	ECG2362	SK10094
	2SA1175-HFE	8-729-119-76	NTE2362	ECG2362	SK3114A
Q771 Thru					
Q773	2SA1091-O	8-729-200-17	NTE288	ECG288	SK3434

(1) Used in models KV-20M10 and KV-21R10 only.

CAPACITORS & ELECTROLYTICS

Item No.	Rating	Mfr. Part No.
# C554	.0057 3% 2kV	1-109-882-11
# C559	330pF 10% 2kV	1-162-115-91
# C579	.01 10% 200V	1-108-421-91
# C601	.001 10% 400V	1-161-741-71
# C602	.47 20% 125VAC	1-136-311-51
# C603, 05	.001 10% 400V	1-161-741-71
# C624	.001 10% 400V	1-161-741-71
# C636 Thru		
# C639	.001 10% 400V	1-161-741-71
# C640	.47 20% 125VAC	1-136-311-51
C701	.0047 2kV	1-162-114-00

For SAFETY use only equivalent replacement part.



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C001	E-17	Q601	J-10	R206	L-5	R425	M-6
C008	E-17	Q605	H-16	R207	L-5	R426	K-2
C010	E-17	Q608	G-9	R208	M-7	R430	F-18
C014	E-16	Q609	C-17	R209	M-7	R433	M-9
C019	E-15	R001	E-18	R210	L-7	R436	F-18
C023	C-18	R002	E-18	R211	L-6	R439	M-17
C024	C-17	R003	E-17	R253	M-17	R441	M-6
C025	C-17	R004	D-18	R254	M-15	R442	E-18
C026	C-18	R005	E-17	R258	L-15	R445	M-6
C027	D-17	R007	E-17	R263	J-17	R501	I-3
C028	D-17	R008	E-17	R264	J-17	R508	J-2
C030	D-16	R009	E-17	R265	J-17	R509	J-5
C034	D-15	R012	E-16	R266	J-17	R510	J-3
C036	D-15	R013	E-16	R267	J-16	R511	J-4
C037	D-15	R014	D-17	R268	I-16	R513	J-5
C040	F-17	R015	D-16	R301	H-8	R515	I-6
C041	F-17	R016	F-15	R302	H-8	R520	I-4
C043	D-15	R017	F-15	R311	J-8	R525	F-3
C045	E-16	R018	E-17	R312	J-7	R527	I-4
C047	E-16	R019	D-18	R313	J-7	R536	F-4
C048	E-15	R020	D-19	R314	J-8	R542	E-5
C050	D-17	R021	D-19	R315	I-8	R543	E-5
C051	D-17	R022	E-19	R321	K-7	R544	F-5
C052	D-17	R023	F-19	R323	H-6	R545	E-5
C053	D-17	R025	D-17	R324	J-5	R547	F-5
C206	L-5	R026	D-17	R325	J-6	R548	E-5
C301	H-8	R027	D-17	R326	J-5	R554	E-8
C306	I-7	R028	D-17	R327	I-7	R557	H-16
C307	J-7	R029	E-18	R328	J-5	R558	H-16
C309	K-7	R030	C-17	R336	H-7	R559	H-16
C314	I-7	R031	E-15	R338	I-7	R560	H-16
C318	I-8	R032	D-16	R339	I-8	R602	J-10
C320	I-8	R033	D-16	R341	I-7	R605	J-10
C321	I-8	R038	E-16	R343	H-7	R613	E-10
C322	I-7	R039	E-16	R345	G-7	R615	C-11
C323	H-6	R041	E-18	R346	I-7	R616	C-11
C325	I-7	R044	D-16	R347	H-7	R617	C-11
C327	G-8	R045	C-17	R351	I-7	R622	H-16
C330	H-7	R046	D-16	R356	I-5	R623	H-16
C342	I-8	R047	C-16	R360	J-7	R629	C-11
C348	H-6	R048	D-16	R363	I-6	R630	C-17
L003	F-4	R049	B-17	R364	H-6	R632	G-9
Q001	F-17	R050	D-16	R366	H-6	R634	C-11
Q261	J-17	R054	D-15	R367	I-7	R636	C-17
Q262	J-16	R056	G-18	R405	N-3	R637	C-17
Q301	H-8	R057	J-9	R406	M-3		
Q310	K-8	R058	J-8	R410	M-3		
Q401	M-3	R061	F-17	R411	M-3		
Q402	N-7	R062	F-17	R412	N-3		
Q403	M-4	R063	F-17	R413	N-6		
Q404	E-18	R064	F-17	R414	M-4		
Q504	E-5	R065	F-17	R418	M-4		
Q554	H-16	R067	F-17	R419	J-2		
Q555	H-16	R101	M-9	R423	N-5		

SONY

MODEL KV-20M10 (CHASSIS SCC-G92B-A, SCC-G94D-A)

PARTS LIST continued

CONTROLS & RESISTORS

Item No.	Function/Rating	Mfr. Part No.	NTE Part No.
R203	15K 5% 2W Nonflammable	1-215-899-11	2W315
R311	13K .5% 1/10W SMT	1-216-678-11	-
R313	1200 .5% 1/10W SMT	1-216-653-11	-
R341	33K .5% 1/10W SMT	1-216-687-11	-
R505	1 5% 1W Nonflammable	1-216-349-00	1W1D0
R506	270 5% 1W Nonflammable	1-216-429-00	1W127
R512	10K 1% 1/4W	1-215-445-00	-
R513	560 .5% 1/10W SMT	1-216-645-11	-
R515	10K .5% 1/10W SMT	1-216-675-11	-
R518	2700 1% 1/4W	1-215-431-00	-
R519	56K 5% 1W Nonflammable	1-216-443-11	1W356
R520	680 .5% 1/10W SMT	1-216-647-11	-
# R523	110K 1% 1/4W	1-215-470-00	-
# R525	33K 1/10W SMT	-	-
R527	13K .5% 1/10W SMT	1-216-678-11	-
	100K 1/10W SMT	-	-
R531	1 5% 1W Nonflammable	1-216-349-00	1W1D0
R532	33K 1% 1/4W	1-215-457-00	-
R533	12 5% 1W Nonflammable	1-216-421-71	1W012
R534	33K 1% 1/4W	1-215-457-00	-
R536	4700 .5% 1/10W SMT	1-216-667-11	-
R538	150 5% 1W Nonflammable	1-215-864-00	1W115
R543	330K .5% 1/10W SMT	1-218-764-11	-
R544	1600 .5% 1/10W SMT	1-216-656-11	-
R549	1 5% 2W Nonflammable	1-216-369-00	2W1D0
R555	6800 5% 2W Nonflammable	1-215-897-11	2W268
# R563	10 5% 2W Nonflammable	1-215-880-71	2W010
# R601	4.7M 20% 1/2W	1-202-892-91	HW547
R609, 10	3.3 5% 1W Nonflammable	1-216-355-11	1W3D3
# R617	2200 1/10W SMT	-	-
	2700 .5% 1/10W SMT	216-661-91	-
# R618	120K 1% 1/4W	1-215-471-91	-
R625	3.3 5% 1W Nonflammable	1-216-355-11	1W3D3
R629, 30	33K .5% 1/10W SMT	1-216-687-11	-
R635	10 5% 1/4W Fusible Nonflammable	1-212-857-00	-
R690	3.3 5% 1W Nonflammable	1-216-355-11	1W3D3
R704	1.2 5% 2W Nonflammable	1-216-370-11	2W1D2
R712	15K 5% 3W Nonflammable	1-215-924-00	3W315
R732	15K 5% 3W Nonflammable	1-215-924-00	3W315
R752	15K 5% 3W Nonflammable	1-215-924-00	3W315
# THP601	5.3 Cold PTC	1-810-511-21	-
VDR601	Varistor	1-810-551-21	-
# For SAFETY use only equivalent replacement part.			

COILS & TRANSFORMERS

Item No.	Function/Rating	Mfr. Part No.	On-Unit No.
# DY	Yoke 90°	8-451-440-11	8-451-440-11
	Horiz 2.5mH		
	Vert 23.9mH		
FB501	Ferrite Bead .45µH	1-410-396-41	-
FB601 Thru			
FB604	Ferrite Bead	1-412-911-11	-
# For SAFETY use only equivalent replacement part.			

COILS & TRANSFORMERS continued

Item No.	Function/Rating	Mfr. Part No.	On-Unit No.
FB605 Thru			
FB607	Ferrite Bead .45µH	1-410-396-41	-
L001	10µH	1-408-409-00	-
L002	100µH	1-408-421-00	-
L003 (1)	100µH	1-408-421-00	-
L004	-	-	-
L202	8.2µH	1-408-408-00	-
L501	3.3mH	1-412-553-11	-
L502	33µH	1-410-669-31	-
# L503	33µH	1-412-531-61	-
L551	47µH	1-412-533-21	-
# L601	Degaussing	1-409-707-31	-
L602	39µH	1-410-670-31	-
L701	47µH	1-410-671-31	-
# T504 (2)	Horizontal Output, Assembly	8-598-938-00	8-598-922-00
T551	Horizontal Driver	1-437-195-11	210-21
# T601, 02	Line Filter	1-423-895-11	89511
# T603	Converter Driver	1-426-819-11	817-11
# T604	Converter	1-423-906-31	906-31
# For SAFETY use only equivalent replacement part.			
(1) Used in models KV-20M10 and KV-MT2000 only.			
(2) Focus and screen controls are part of T504.			

TEST EQUIPMENT

Test equipment listed by participating manufacturer illustrates typical or equivalent equipment used by Sams engineers to obtain measurements. This equipment is compatible with most types used by field service technicians.

Equipment	Sencore No.
Oscilloscope	SC3100
Cenerators	
RGB	CM2000
Multiburst Signal	VG91
Color Bar	VG91
TV Stereo	VG91
Digital VOM	SC3100
Frequency Meter	SC3100
Hi-Voltage Probe	HP200
Accessory Probes	TP212
Isolation Transformer	PR57
Capacitance Analyzer	LC101, LC102
CRT Analyzer	CR70
AC Leakage Tester	PR57
Inductance Analyzer	LC101, LC102
Flyback Yoke Tester	TVA92
TV Stereo Power Monitor	SR68, PA81
Field Strength Meter	SL750
Transistor Tester	TF46
Video Analyzer	VG91, TVA92

MISCELLANEOUS

Item No.	Description	Mfr. Part No.	Notes
CF001	Crystal	1-579-952-21	Ceramic
F601	Fuse	1-576-193-11	6.3Amp, 125V, Fast Acting
IC103	Receiver	-	Remote (SBX1790-51)
	Receiver	8-741-790-11	Remote (SBX1790-11)
J251	Jack	1-568-267-21	Headphone, Used in models KV-20M10 and KV-21R10 only.
J402	Jack	1-695-239-11	Assembly, Used in models KV-20M10 and KV-21R10 only.
# P600	Line Cord	1-765-486-11	AC, Polarized
PS201	Fuse	1-532-637-91	1.5Amp
# RY601	Relay	1-755-018-11	Degaussing
S001	Switch	1-571-532-21	Power
S002	Switch	1-571-532-21	Channel Up
S003	Switch	1-571-532-21	Channel Down
S004	Switch	1-571-532-21	Volume Up
S005	Switch	1-571-532-21	Volume Down
S006	Switch	1-571-532-21	TV/Video
SP902	Speaker	1-504-311-11	2" X 3 1/2", 8 Ohms, 2.5W
# TU101	Module (1)	8-598-047-01	Tuner / VIF / SIF (BTF-LA401)
	Module (1)	8-598-047-00	Tuner / VIF / SIF (BTF-LA401)
# V901	CRT	8-738-768-05	A51LDG50X
X301	Crystal	1-760-190-41	3.58MHz
	Antenna	1-501-372-41	Rod, Used in models KV-20M10, KV-21R10, and KV-2180R only.
	Convergence	X-4308-815-0	Permalloy, Assembly
	Converter	1-417-182-11	Antenna, Used in models KV-20M10, KV-21R10, and KV-2180R only.
	Fuse Clip	1-533-223-11	For F601 (2 Used)
	Magnet	1-452-277-00	BMC
	Magnet	1-452-032-00	Disk
	Magnet	1-452-094-00	Rotatable Disk
	PC Board (1)	A-1297-309-A	A, Complete, Used in model KV-20M10 only.
	PC Board (1)	A-1297-363-A	A, Complete, Used in model KV-MT2000 only.
	PC Board (1)	A-1297-310-A	A, Complete, Used in model KV-21R10 only.
	PC Board (1)	A-1297-308-A	A, Complete, Used in model KV-2180R only.
	PC Board (1)	A-1331-336-A	C, Complete
#	Socket	1-251-182-11	CRT
	Transmitter	1-466-966-11	Remote (RM-Y116), Used in models KV-20M10 and KV-21R10 only.
	Transmitter	1-467-738-11	Remote (RM-Y123), Used in models KV-MT2000 and KV-2180R only.
	Wedge	4-041-361-01	Yoke Positioning
# For SAFETY use only equivalent replacement part.			
(1) Contact PTS Electronics Corporation for replacement; order by manufacturer's part number.			

CABINET PARTS

Item	Mfr. Part No.
Model KV-MT2000	
Button	4-039-595-01
Cabinet Assembly (1)	X-4031-962-1
Panel	4-039-576-01
Rear Cover	4-044-645-01
Remote Filter (Lens)	4-044-616-01
Model KV-20M10	
Button	4-044-879-01
Cabinet Assembly (1)	X-4031-919-1
Control Door	4-044-734-01
Rear Cover	4-044-723-01
Remote Filter (Lens)	4-044-877-01
Model KV-21R10	
Button	4-044-879-01
Cabinet Assembly (1)	X-4031-932-1
Control Door	4-044-734-01
Rear Cover	4-044-723-01
Remote Filter (Lens)	4-044-877-01
Model KV-2180R	
Button	4-039-595-01
Cabinet Assembly (1)	X-4031-962-1
Panel	4-039-576-01
Rear Cover	4-044-645-01
Remote Filter (Lens)	4-044-616-01
Remote Transmitter (RM-Y116)	
Battery Cover	9-903-826-01
Remote Transmitter (RM-Y123)	
Battery Cover	9-907-089-01
(1) Includes bezel assembly.	



Created with pride by the employees of Howard W. Sams & Company.

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MODEL KV-20M10 (CHASSIS SCC-G92B-A, SCC-G94D-A)