

SAFETY PRECAUTIONS

SERVICE WARNING

ONLY qualified service technicians who are familiar with safety checks and guidelines should perform service work. For continued SAFETY:

- 1. Before replacing parts, disconnect power source to protect electrostatically sensitive parts. Examples of typical electrostatically sensitive parts are integrated circuits, some field effect transistors, and semiconductor "chip" components.
- 2. Do not attempt to modify any circuit unless so recommended by the manufacturer.
- 3. When servicing chassis, use an isolation transformer between the line cord and power receptacle. Maintain AC line voltage at rated input.
- 4. Many electrical and mechanical parts are used in this VCR to provide protection against electrical shock, fire, and RF interference. These parts should be replaced with exact replacements only.
- 5. Use extreme caution when handling the printed circuit boards. Some semiconductor devices can be damaged easily by static electricity. Drain off any electrostatic charge on your body by touching a known earth ground. Wear a commercially available discharging wrist strap device. This should be removed prior to applying power to the VCR under test.
- 6. Use a grounded-tip, low voltage soldering iron. After removing an electrical assembly containing electrostatically sensitive parts, place the assembly on a conductive surface such as aluminum foil.
- 7. Minimize body movement to avoid building an electrostatic charge when handling electrostatically sensitive parts.
- 8. Use an isolation (times 10) probe on oscilloscope.
- 9. Do not remove or install boards with AC power applied.
- 10. Do not use freon-propelled sprays or vacuum operated desoldering devices. These can generate electrical charges sufficient to damage semiconductor devices.
- 11. This VCR is equipped with a grounded three-prong AC plug. This plug must fit into a grounded AC power outlet. Do not defeat the AC plug safety feature.
- 12. Periodically examine the AC power cord for damaged or cracked insulation.
- 13. The VCR cabinet is equipped with vents to prevent heat build-up. Never block, cover, or obstruct these vents. Instructions should be given, especially to children, that objects

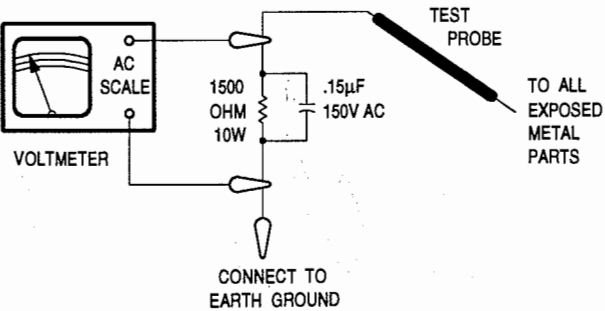
should not be dropped or pushed into the vents of the cabinet. This could cause shock or equipment damage.

- 14. Remove plug from AC outlet during electrical storms. Do not allow anything to rest on AC power cord. Unplug AC power cord from outlet before cleaning VCR.
- 15. Never use liquids or aerosols directly on the VCR. Spray on cloth and then apply to the VCR cabinet. Make sure the VCR is disconnected from the AC power line. Never expose the VCR to liquids. If exposed to liquids, turn the VCR off. Do not place the VCR near possible liquid sources.

SAFETY CHECKS -- FIRE AND SHOCK HAZARD

Hot Leakage Current Check

- 1. Plug the AC cord directly into AC outlet. DO NOT use an isolation transformer.
- 2. Use a 1500-ohm, 10-watt resistor in parallel with a .15-microfarad 150 Volts AC capacitor to connect between any exposed metal parts on the set and a good earth ground. (See figure below.)
- 3. 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.
- 4. Voltage readings should not exceed .3 volts RMS. Any value exceeding this limit constitutes a potential shock hazard and must be corrected.
- 5. If AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.



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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VCR-256

VCRfacts® Technical Service Data

VCR-256

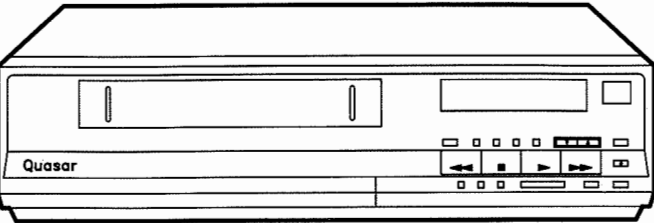
MODEL VH5370

QUASAR

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QUASAR  
Model VH5370



Coverage includes these additional models.

BRAND	MODEL	BRAND	MODEL
QUASAR	VH5371	QUASAR	VH5471
QUASAR	VH5470	QUASAR	VH5471-K
QUASAR	VH5470-K		

The following models are similar to this basic coverage and may effectively be repaired using this service information. However, minor differences may be found between these models and those in the basic coverage.

BRAND	MODEL	BRAND	MODEL
PANASONIC	PV-3700	PANASONIC	PV-4720-K
PANASONIC	PV-3700-K	PHILCO	VT8725AT01
PANASONIC	PV-3720	PHILCO	VT8730AT01
PANASONIC	PV-4700	SYLVANIA	VC8936AT01
PANASONIC	PV-4700-K	SYLVANIA	VC8942AT01
PANASONIC	PV-4720		

Essential coverage  
for servicing a video cassette recorder...

- Schematics
- Exploded Views
- Interconnect Diagram
- Mechanical Alignment
- Electrical Parts List
- Mechanical Parts List
- Waveforms
- Service Information



HOWARD W. SAMS & COMPANY

SEPTEMBER 1994 VCR-256

For Supplier Address,  
See PHOTOFACT Annual Index

VCR-256



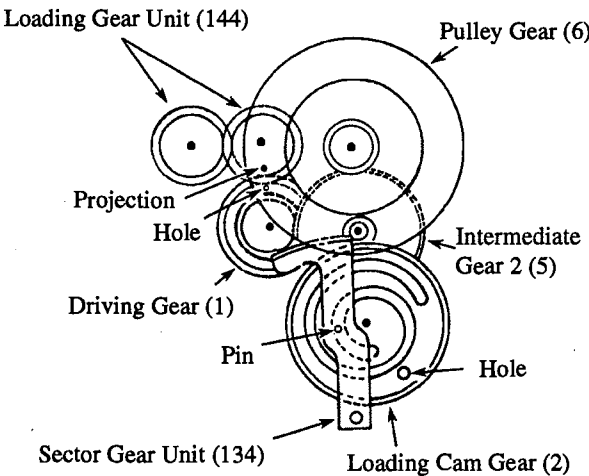
MECHANICAL ALIGNMENT

CHASSIS GEAR ALIGNMENT

Use figure 1 and exploded views for reference in the following steps. All gears must align exactly right, not one gear can be one tooth off.

- 1. Remove sub clutch base (105), sector gear unit (134), loading cam gear (2), pulley gear (6), driving gear (1), main lever unit (118), and mode select switch base unit (121).
- 2. Rotate loading gear until loading posts S (114) and T (116) units are in the fully unloaded position. The projection on the loading gear should be pointing directly towards the front of the unit.
- 3. Install the driving gear so that the hole on the driving gear aligns with the projection on the loading gear. Install C-ring to secure driving gear.
- 4. Slide the main lever unit so that the hole in the main lever unit aligns with the hole in the chassis.  
NOTE: This is the position for the main lever unit when the mode select switch base unit is to be installed.
- 5. Install loading cam gear with the simple slot side facing up. Position it so the hole aligns with the hole in the main lever unit and chassis. Install C-ring to secure loading cam gear.
- 6. Install sector gear unit with the pin in the inner slot, or the slot closest to the C-ring on loading cam gear. Install C-ring to secure sector gear unit.
- 7. Install pulley gear onto shaft and secure it with C-ring. Install loading belt (12).
- 8. Install sub clutch base, securing it with screws.
- 9. Confirm the main lever unit is in the position noted in step 4. Install the mode select switch base unit so that the movable projection on mode select switch base unit fits onto the tab on the main lever unit. Slide the mode select switch base unit sideways until the v-notch on projection lines up with v-notch on the mode select switch base unit case. Tighten screw to secure mode select switch base unit.
- 10. Turn the pulley gear unit to manually confirm the smooth movement of the mechanism.

Figure 1

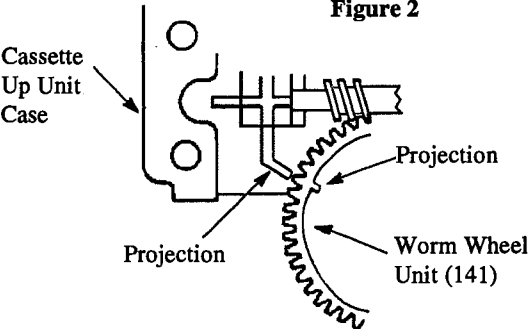


CASSETTE UP GEAR ALIGNMENT

Use figure 2 and exploded views for reference in the following steps.

- 1. Remove cassette up unit from the chassis. Remove loading motor spring (38), switch angle (36), worm wheel unit (141), main shaft gear R (9), worm shaft unit (140) and wiper gear R unit (129) from the right side of cassette up unit. Remove cassette compartment opener lever (75), wiper gear L unit (135) and main shaft unit (142) from the left side of cassette up unit.
- 2. Confirm that the pin on the cassette holder guide R unit (107) is at the furthest left in the slot of the side plate R (110).
- 3. Install wiper gear R unit so that the pin mentioned in step 2, fits into the slot of the wiper gear R unit. Secure with screw.
- 4. Install wiper gear L unit in the same manner as in step 3. Pull the ratchet lever (74) out of the way until wiper gear L unit is installed.
- 5. Install worm shaft unit. To install loosen the top plate from the body of cassette compartment.
- 6. Install main shaft into the left side. Align the gear on main shaft so that the projection on the wiper gear L unit meets the projection on the gear of the main shaft.
- 7. Install main shaft gear R on the right side in the same manner as in step 6. Confirm the projection points are aligned on the left and right side.
- 8. Install worm wheel unit, on the right side, so that the projection on the cassette up unit case and projection on worm wheel unit are aligned. See figure 2.
- 9. Install switch angle and loading motor spring with screws.
- 10. Install cassette compartment opener lever into the opening of cassette door. Snap the cassette compartment opener lever down onto the pin it was removed from. Confirm that the cassette door opens smoothly when the cassette compartment opener lever is pushed down.

Figure 2



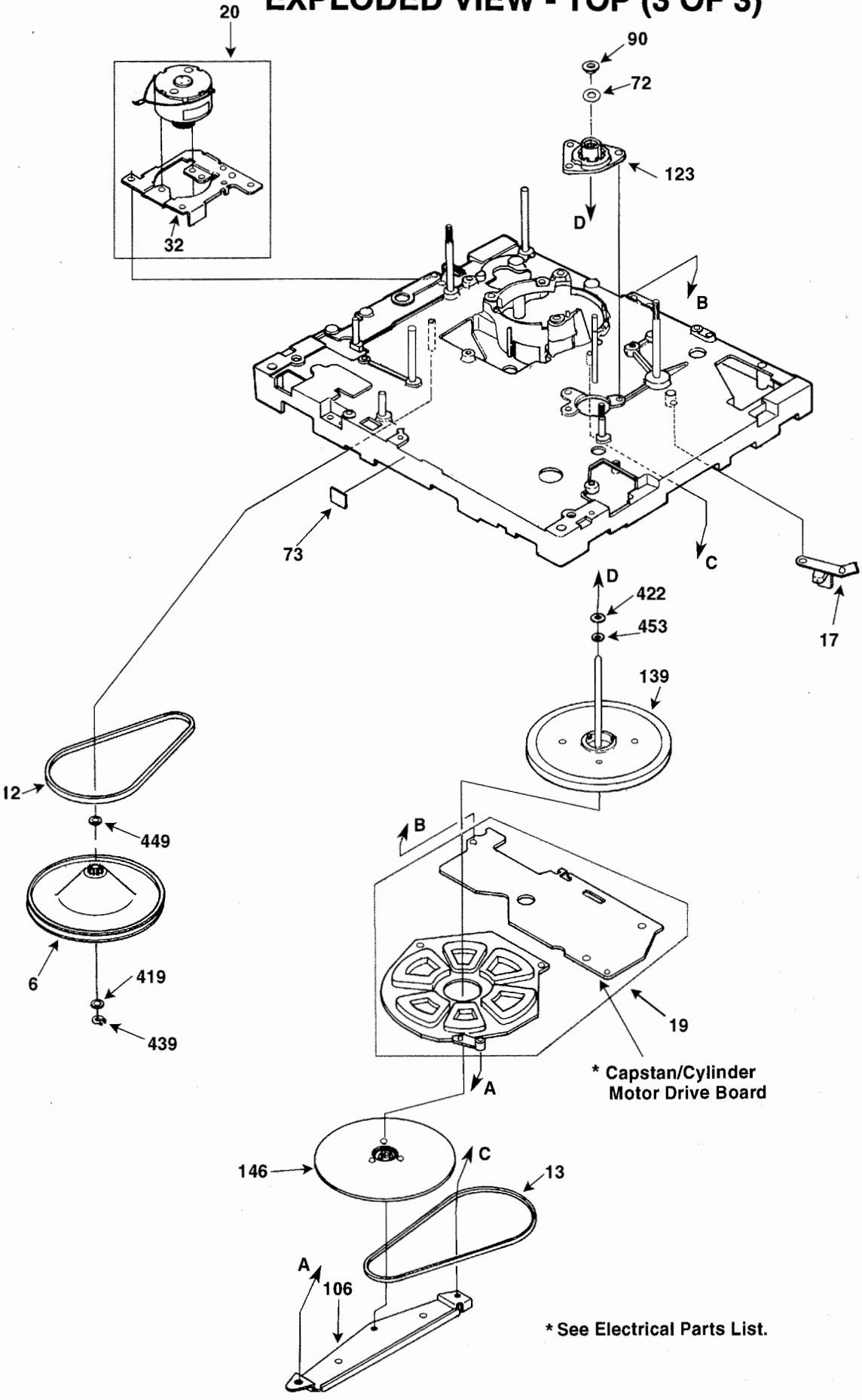
Numbers in parenthesis indicate the item number used in the mechanical parts list and exploded views.

MECHANICAL PARTS LIST

Item	Description	Part No.	Item	Description	Part No.	Item	Description	Part No.
1	Driving Gear	VDGS0039	62	Tension Spring	VMBS0625		Sub Clutch Arm Unit (2)	VXLS0480
2	Loading Cam Gear	VDGS0041	63	Inertia Roller Limiter	VMDS0063	129	Wiper Gear R Unit	VXLS0335
3	Intermediate Gear A	VDGS0066		Inertia Roller Limiter	VMDS0332	130	Idler Gear Arm	VXLS0382
4	Release Gear	VDGS0068	64	Switch Piece	VMDS0236	131	Arm Lever	VXLS0384
5	Intermediate Gear 2	VDGS0093	65	Side Plate L	VMDS0370	132	Idler Stopper	VXLS0390
6	Pulley Gear	VDGS0094	66	Cassette Holder Guide R	VMDS0371	134	Sector Gear Unit	VXLS0395
7	Idler Gear	VDGS0109	67	Cassette Holder Guide L	VMDS0372	135	Wiper Gear L Unit	VXLS0453
8	Intermediate Gear B	VDGS0097	68	Post Stopper T	VMDS0373	136	Idler Gear Arm	VXLS0454
9	Main Shaft Gear R	VDGS0099	69	Cassette Opener Guide	VMDS0376	137	Pressure Roller Lever Unit	VXLS0455
10	Supply Roller	VDPS0091	70	Post Stopper S	VMDS0444	138	Full Erase Head Module	VXLS0456
11	Clutch Pulley	VDPS0094	71	Capstan Holder Guide	VMDS0445		Full Erase Head Module	VXLS0470
12	Loading Belt	VDVS0052	72	Oil Pool	VMFS0103		Full Erase Head Module	VXLS0471
13	Capstan Belt	VDVS0053	73	Cushion	VMFS0108		Full Erase Head Module	VXLS0472
14	DD Cylinder Assembly (1)	VEGS0119	74	Ratchet Lever	VMLS0381	139	Capstan Rotor Unit	VXPS0136
	DD Cylinder Assembly (2)	VEGS0121	75	Cassette Compartment Opener Lever	VMLS0382	140	Worm Shaft Unit	VXPS0139
15	Upper Cylinder Assembly (1)	VEHS0145				141	Worm Wheel Unit	VXPS0146
	Upper Cylinder Assembly (2)	VEHS0146	76	Holder Guide Lever R	VMLS0433	142	Main Shaft	VXPS0156
16	A/C Head Module	VEHS0152	77	Cassette Opener	VMLS0434	143	Idler Frame Unit	VXPS0157
17	Capstan FG Head Module	VEHS0153	78	Change Arm B	VMLS0438	144	Loading Gear Unit	VXPS0158
18	Cassette Loading Motor Unit	VEMS0149	79	Soft Brake Arm S	VMLS0441	145	Clutch Gear Unit	VXPS0183
19	Capstan Stator Coil Assembly	VEMS0157	81	Holder Guide Lever L	VMLS0446	146	Capstan Pulley Unit	VXPS0185
20	Loading Motor Unit	VEMS0153	82	Release Lever	VMLS0447	147	Supply Reel Table Unit	VXRS0029
21	Blind Panel (1)	VGPS1372	83	Erase Head Lever	VMLS0497	148	Takeup Reel	
	Blind Panel Unit (2)	VYPS3778	84	Wiper Gear L	VMLS0536		Table Unit	VXRS0031
26	RT Connection Terminal	VJRS0006	85	Sub Clutch Arm	VMLS0537	149	Brake S Unit	VXZS0115
	RT Connection Terminal (3)	VJRS0035	86	Lock Piece	VMMS0029	150	Brake T Unit	VXZS0116
30	Shaft Holder Plate	VMAS0545	87	Collar	VMXS0035	151	Tension Band Unit	VXZS0118
32	Loading Motor Bracket	VMAS1216		Collar	VMXS0408	152	Soft Brake T Unit	VXZS0120
33	Cassette Compartment Top Plate	VMAS1329	88	Limiter Supporter	VMXS0475	155	Post Cap P4	VMXS0129
34	Cassette Holder	VMAS1330	89	Sleeve	VMXS0500	159	Wiper Gear R	VMLS0379
35	Cassette Guide	VMAS1331		Sleeve	VMXS0501	402	Adjust Screw	VHDS0041
36	Switch Angle	VMAS1332	90	Capstan Seal	VMX0251	416	Adjust Nut	VHNS0036
37	Grounding Plate F	VMAS1333	98	Shield Plate	VSCS0947	417	Idler Angle	VMAS0872
38	Loading Motor Spring	VMAS1334	102	Tape Remain Indicator	VXAS0737	418	O-Ring	VMGS0100
39	Pressure Roller Spring	VMBS0334	103	Roller Post Unit	VXAS0754	419	Silent Washer	VMGS0102
40	Soft Brake Spring S	VMBS0341	104	Dew Sensor Module	VXAS0890	420	Cut Washer (4)	VMXS0336
41	Adjust Spring	VMBS0404	105	Sub Clutch Base	VXAS0937	421	Cut Washer (4)	VMXS0376
42	Loading Spring	VMBS0434	106	Thrust Holder	VMAS1220	422	Capstan Thrust Washer	VMX0265
43	Sub Lever Spring	VMBS0438	107	Cassette Holder Guide R Unit	VXAS0983	423	Inertia Roller Upper Limiter	VNWS0002
44	Idler Stopper Spring	VMBS0440	108	Cassette Holder Guide L Unit	VXAS0984	424	M3 Nut	XNG3E
45	Cassette Holder Guide Spring R	VMBS0441	109	Cassette Holder Unit	VXAS0985	425	M5 Nut	XNG5E
46	Cassette Holder Guide Spring L	VMBS0442	110	Side Plate R	VXAS0987	437	Retaining Ring E-type 1.5	XUC15FP
47	Release Lever Spring	VMBS0443	111	Switch Angle Unit	VXAS0988	438	Retaining Ring E-type 2.5	XUC25FP
48	Wiper Spring R	VMBS0444	112	Loading Base 1 Unit	VXAS0994	439	Retaining Ring C-type 3	XUEV3VW
49	Wiper Spring L	VMBS0445	113	Shaft Holder Block S Unit	VXAS0995	440	Retaining Ring C-type 4	XUEV4FP
50	Ratchet Lever Spring	VMBS0446	114	Loading Post S Unit	VXAS0996	441	Retaining Ring C-type 4	XUEV4VW
51	Sub Clutch Arm Spring (1)	VMBS0480	115	Shaft Holder Block T Unit	VXAS0997	442	Poly Slider Washer 2	XWGV2D5G
	Sub Clutch Arm Spring (2)	VMBS0664	116	Loading Post T Unit	VXAS0998	443	Poly Slider Washer 3	XWGV3D54G
52	Soft Brake Spring T	VMBS0524	117	Shaft Holder Plate	VXAS0999	444	Poly Slider Washer 5	XWGV5D9G
53	Brake Arm Spring	VMBS0631	118	Main Lever Unit	VXAS1000	445	Washer 4	XWG4D10
54	Supply Inertia Spring	VMBS0577	119	Sub Lever	VXAS1001	446	Washer 5	XWG5J12
55	Change Arm Spring	VMBS0614	120	Sub Lever Unit	VXAS1002	447	Poly Washer 3 t=0.25	XWXV3A54
56	Adjust Spring	VMBS0615	121	Mode Select Switch Base Unit	VXAS1006	448	Poly Washer 3 t=0.25	XWXV3A8
57	A/C Head Spring	VMBS0616	122	Grounding Plate	VXBS0025	449	Poly Washer 3 t=0.5	XWXV3D54
58	Erase Head Lever Spring	VMBS0617	123	Capstan Holder	VXDS0020	450	Poly Washer 3 t=0.5	XWXV3D8
59	Idler Arm Spring	VMBS0618	124	FF Slide Lever Unit	VXKS0388	451	Poly Washer 3 t=0.13	XWXV3Z54
60	Blind Panel Spring (1)	VMBS0634	125	Tension Arm Unit	VXLS0276	452	Poly Washer 3 t=0.13	XWXV3Z8
	Blind Panel Spring (2)	VMBS0619	126	Loading Arm R Unit	VXLS0320	453	Poly Washer 3	XWXV35D6
61	Post Spring P4	VMBS0623	127	Loading Arm L Unit	VXLS0321	454	Poly Washer 3	XWXV4D9
			128	Sub Clutch Arm Unit (1)	VXLS0331			

- (1) Used in models VH5370 and VH5371 only.
- (2) Used in models VH5470, VH5470-K, VH5471, and VH5471-K only.
- (3) Used in some versions of models VH5470, VH5470-K, VH5471, and VH5471-K only.
- (4) This is not a reusable item. If removed, install a new one.

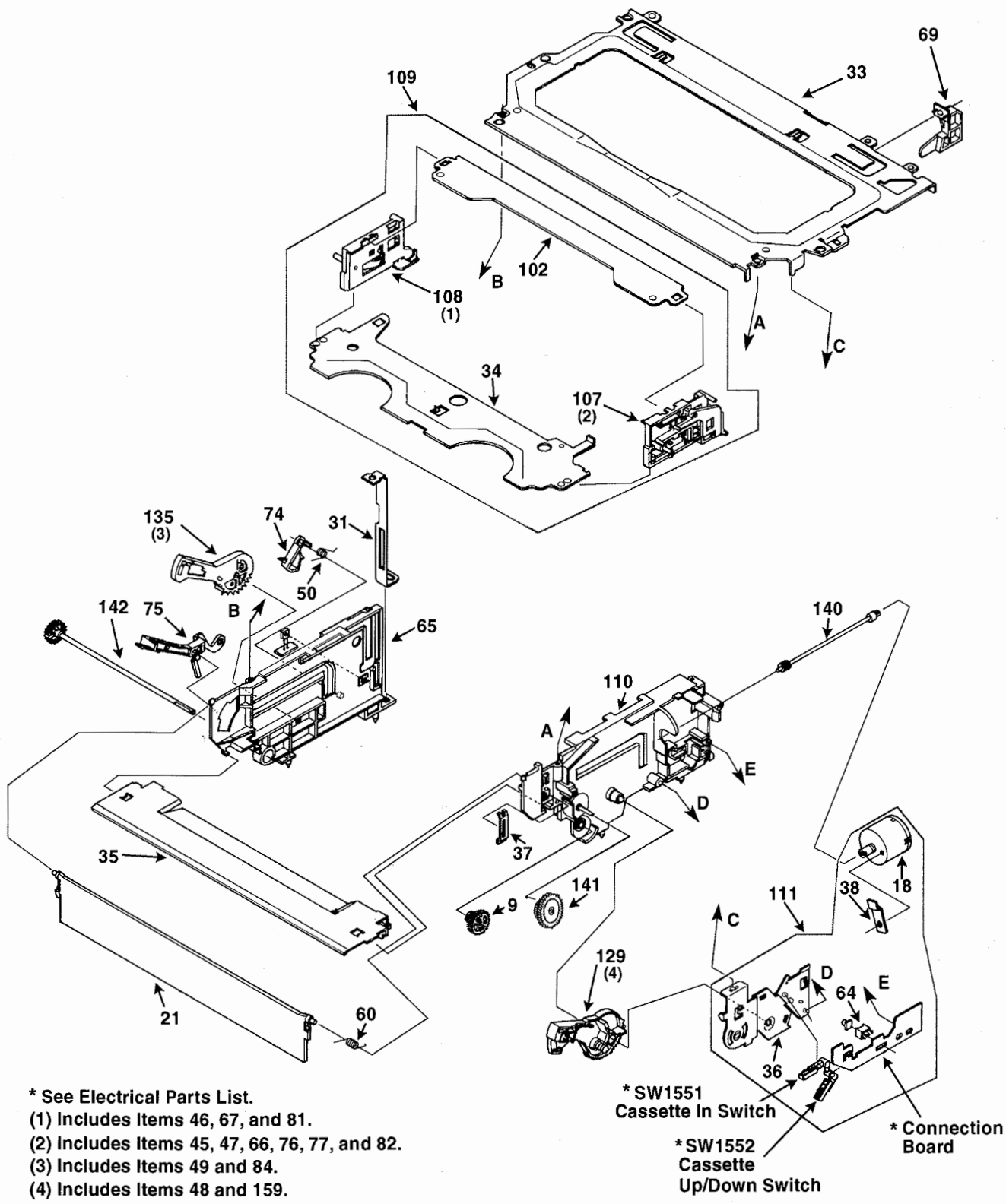
EXPLODED VIEW - TOP (3 OF 3)



\* Capstan/Cylinder Motor Drive Board

\* See Electrical Parts List.

EXPLODED VIEW - CASSETTE UP UNIT



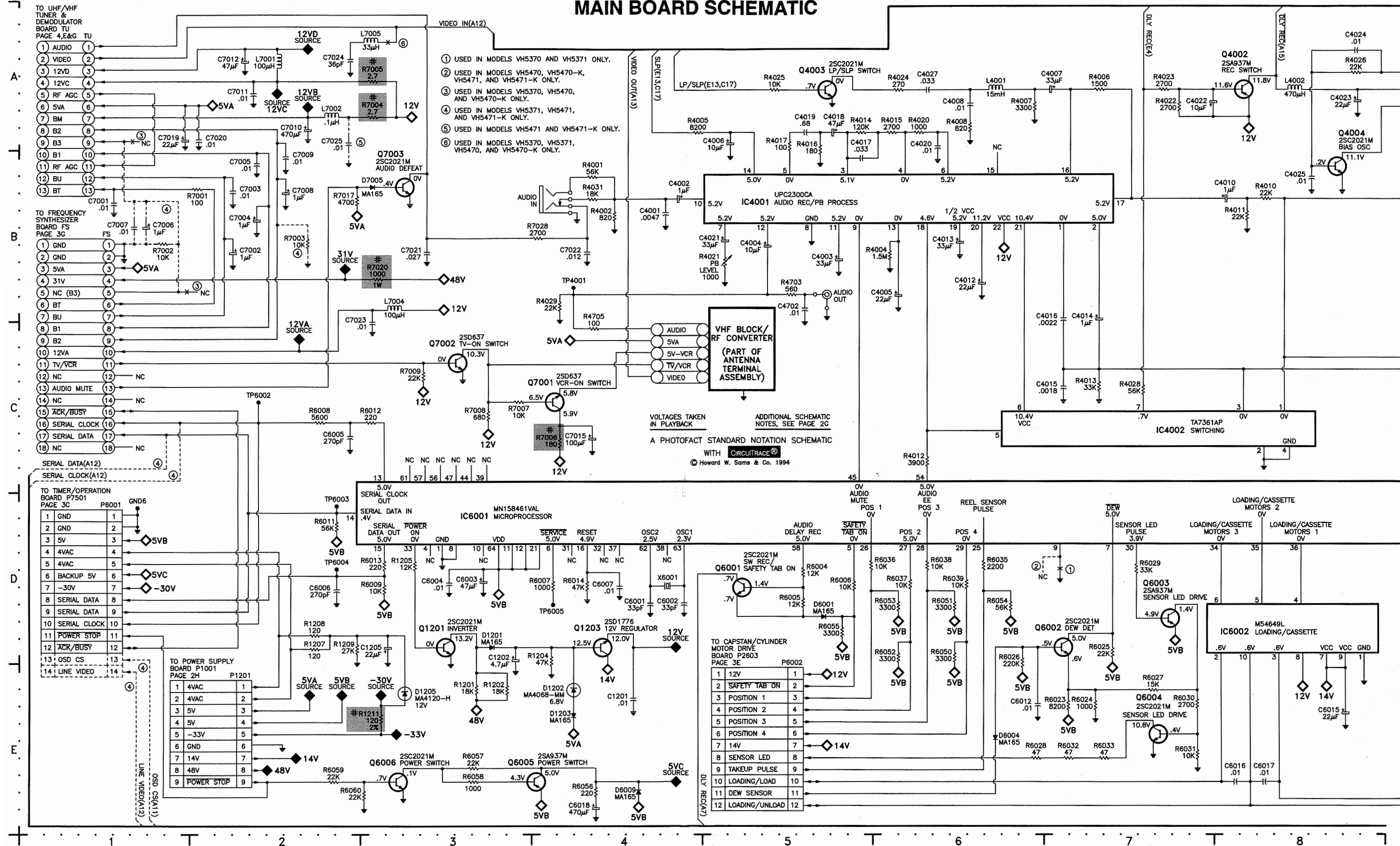
- \* See Electrical Parts List.
- (1) Includes Items 46, 67, and 81.
- (2) Includes Items 45, 47, 66, 76, 77, and 82.
- (3) Includes Items 49 and 84.
- (4) Includes Items 48 and 159.

\* SW1551  
Cassette In Switch

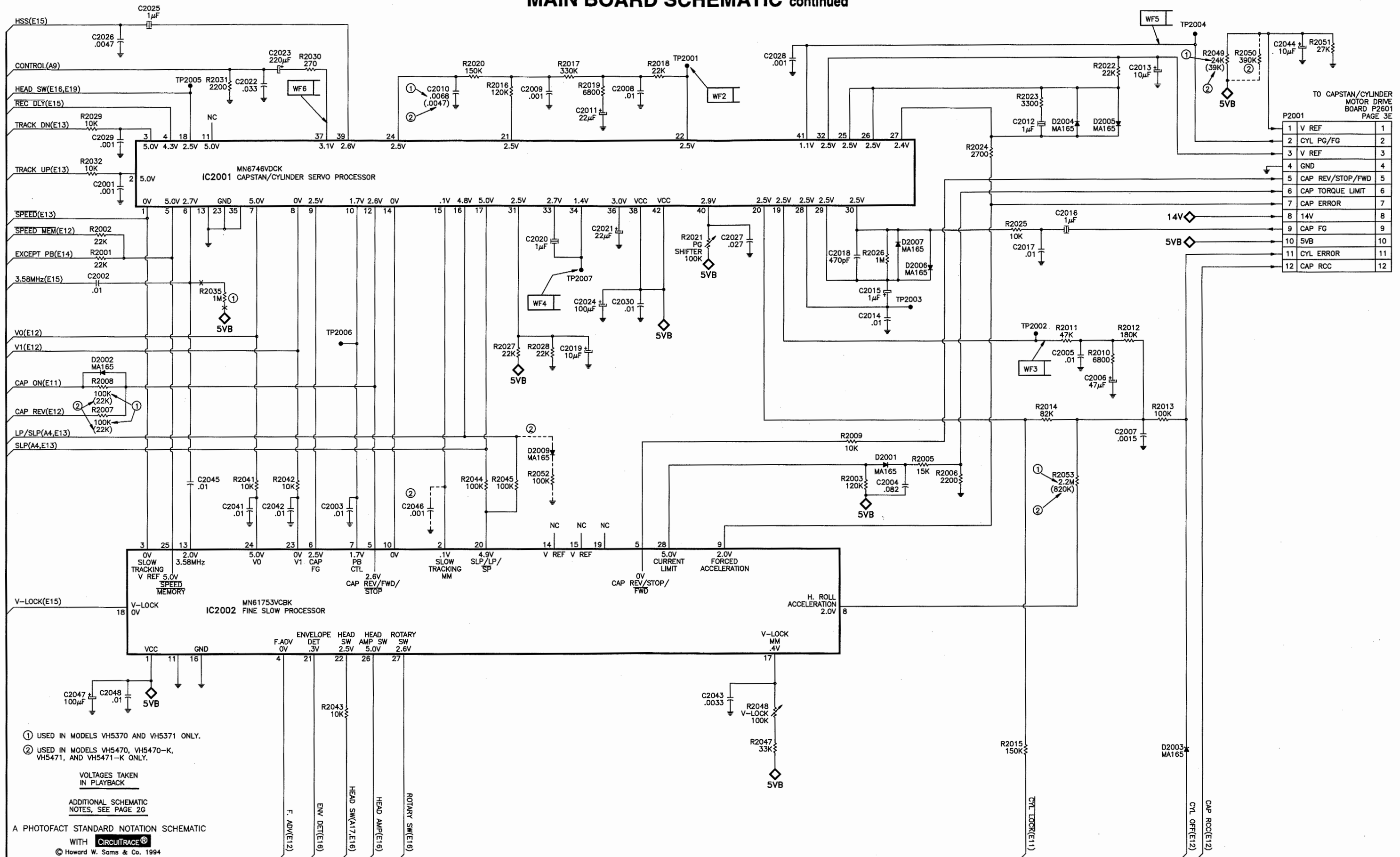
\* SW1552  
Cassette  
Up/Down Switch

\* Connection  
Board

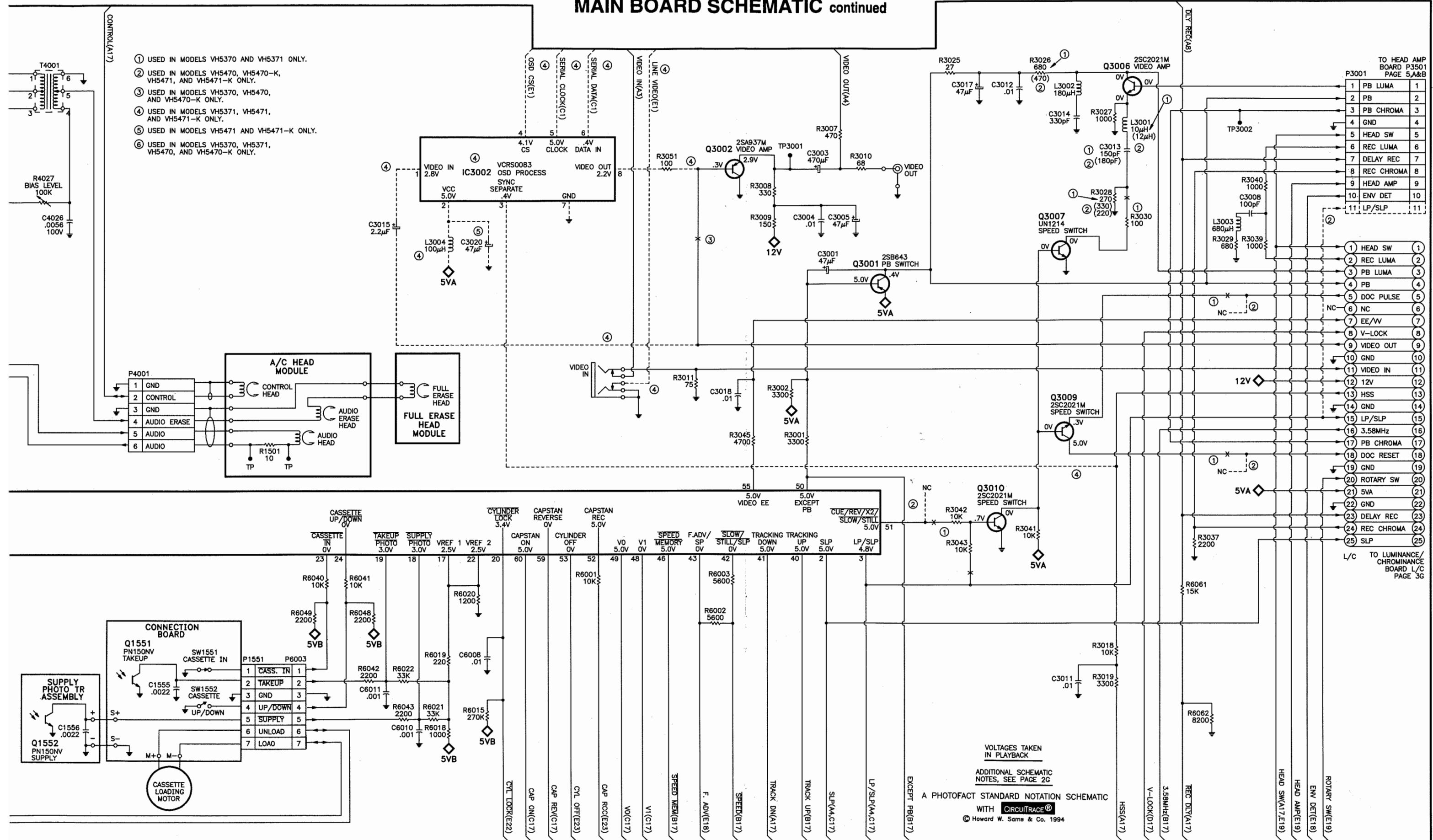




# MAIN BOARD SCHEMATIC continued



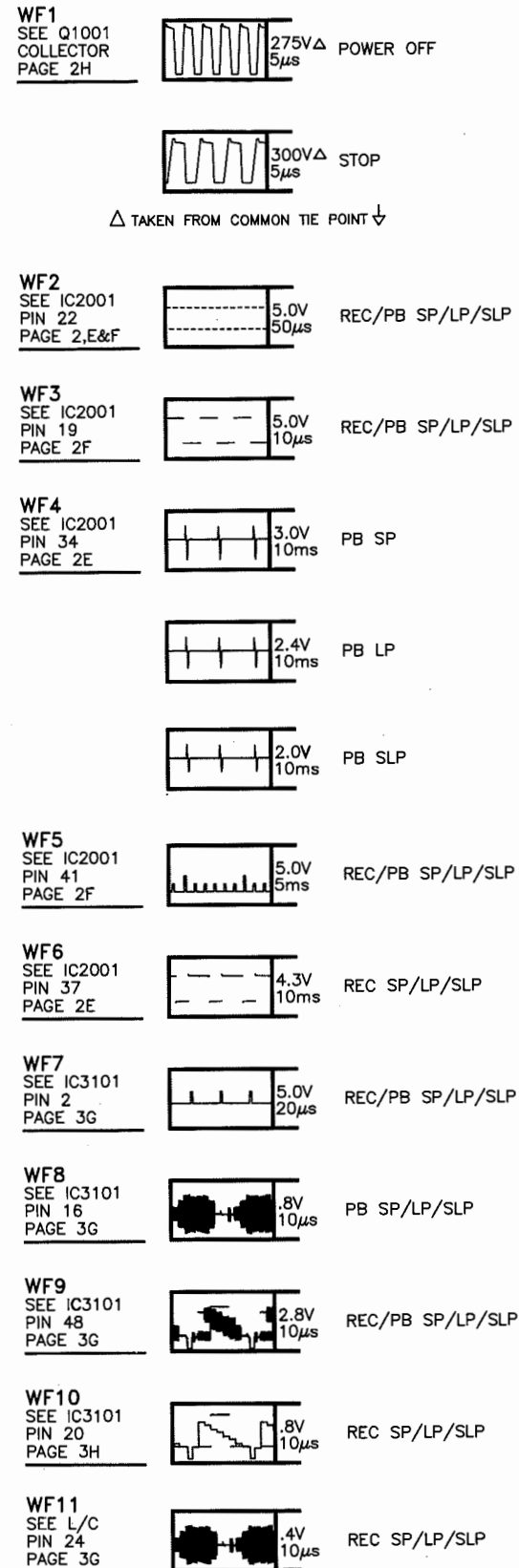
# MAIN BOARD SCHEMATIC continued



C

D

## WAVEFORMS



G

## SCHEMATIC NOTES

- # For SAFETY use only equivalent replacement part, see parts list.
- ✱ Circuitry not used in some sets.
- Circuitry used in some versions.
- ⊥ Ground
- ⏏ Chassis ground
- ▽ Common tie point
- △ Taken from common tie point
- ◆ 12V SOURCE CIRCUITRACE® point where a voltage source is developed in the power supply or on a board.
- ◆ 12V CIRCUITRACE® point where a previously developed voltage source supplies voltage on a board.
- ◇ CIRCUITRACE® point where a component, or a board, connects to a voltage source supply.
- Cabling: Heavy lines reduce use of multiple lines.

Voltages are taken from ground, unless noted otherwise. Waveforms are taken from ground, unless noted otherwise. Waveforms taken with triggered scope and NTSC color bar generator with window pattern. Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions. Supply voltages maintained as seen at input.

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.

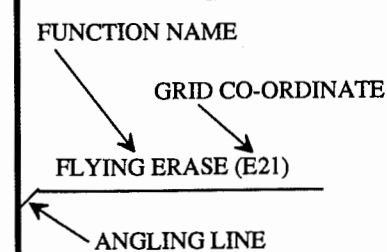
Resistors are 1/2 W or less, 5% or greater unless noted. Value in ( ) used in some versions.

Measurements with switching as shown, unless noted. Rated voltage shown on zener diodes.

Terminal identification may not be found on unit.

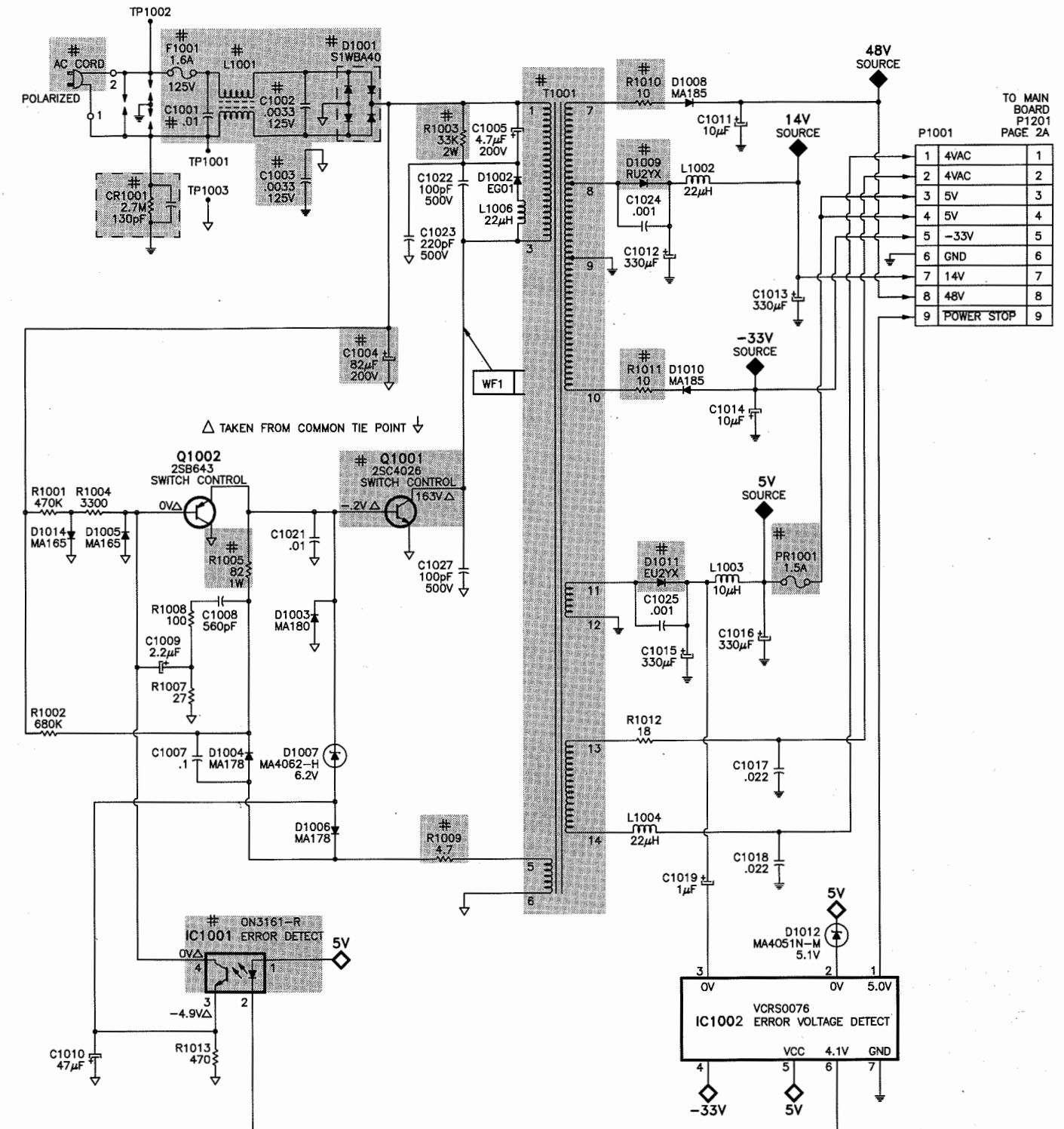
If a board schematic has a grid locator at the left and bottom sides, function names and (grid co-ordinates) are added to lines shown entering or exiting the heavy cabling line. The (grid co-ordinates) help to locate where the other connecting points to the same line are located on the same schematic or on another schematic of the same board. A further help has been to use an angling line to indicate direction of the same line exiting the heavy cabling line.

### EXAMPLE



H

## POWER SUPPLY BOARD SCHEMATIC



QUASAR

MODEL VH5370

VOLTAGES TAKEN  
IN PLAYBACK

A PHOTOFACIT STANDARD NOTATION SCHEMATIC

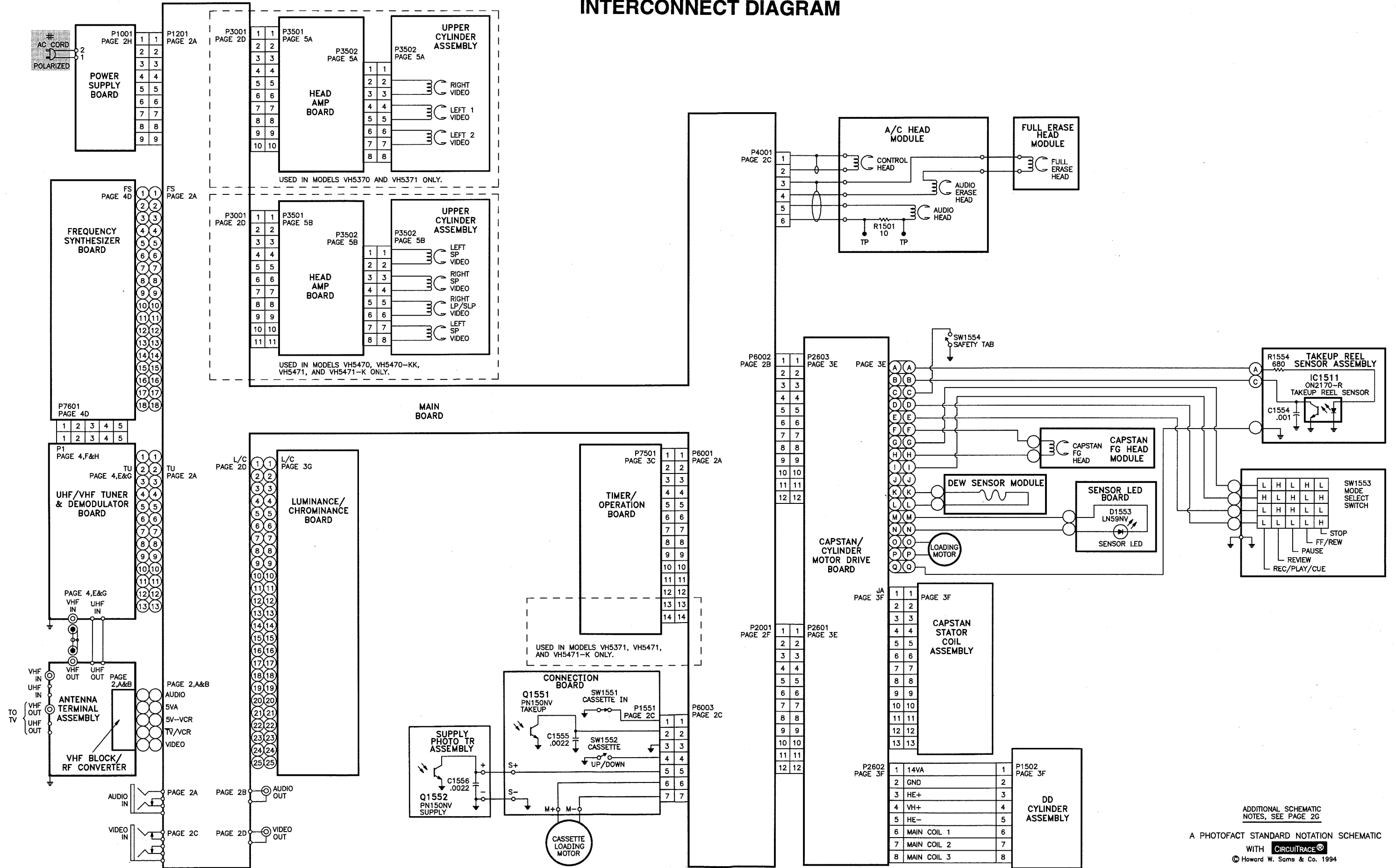
WITH CIRCUITRACE®  
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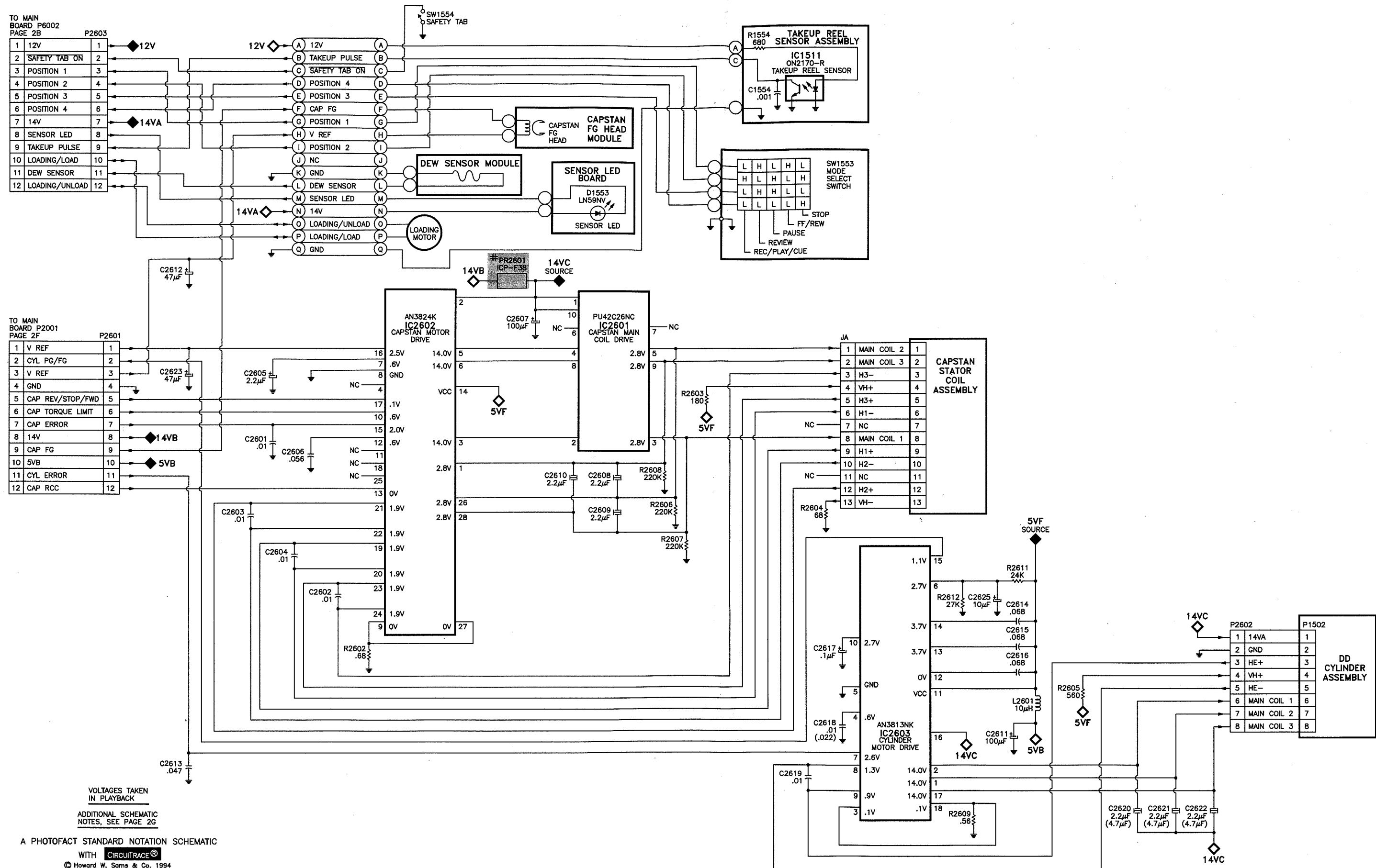
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INTERCONNECT DIAGRAM

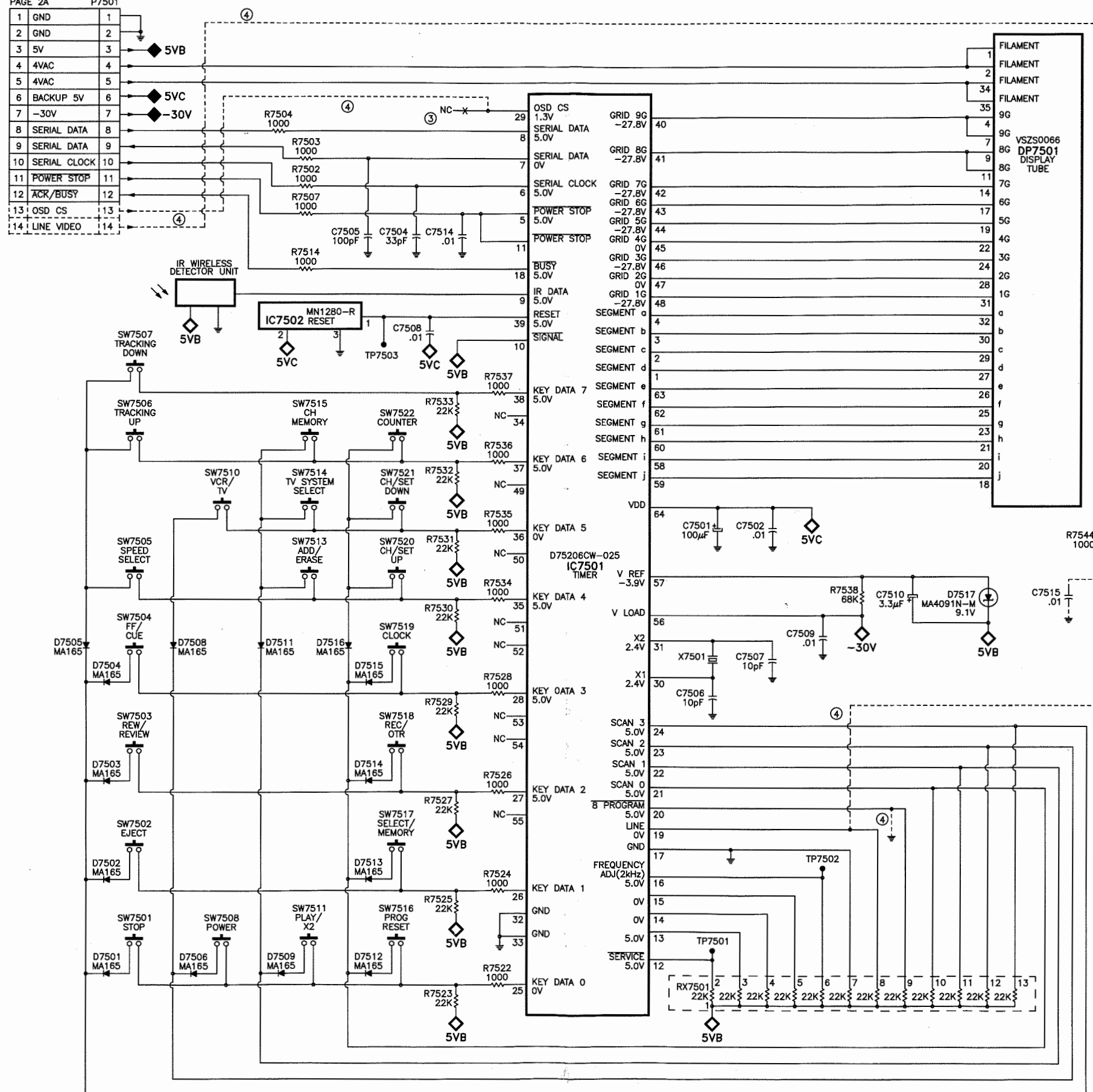


ADDITIONAL SCHEMATIC NOTES, SEE PAGE 2G  
A PHOTOFAC STANDARD NOTATION SCHEMATIC  
WITH CIRCUITACE®  
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## CAPSTAN / CYLINDER MOTOR DRIVE BOARD SCHEMATIC



TO MAIN  
BOARD P6001  
PAGE 2A P7501



③ USED IN MODELS VH5370, VH5470,  
AND VH5470-K ONLY.

④ USED IN MODELS VH5371, VH5471,  
AND VH5471-K ONLY.

VOLTAGES TAKEN  
IN PLAYBACK

ADDITIONAL SCHEMATIC  
NOTES, SEE PAGE 2G

### A PHOTOFAC STANDARD NOTATION SCHEMATIC

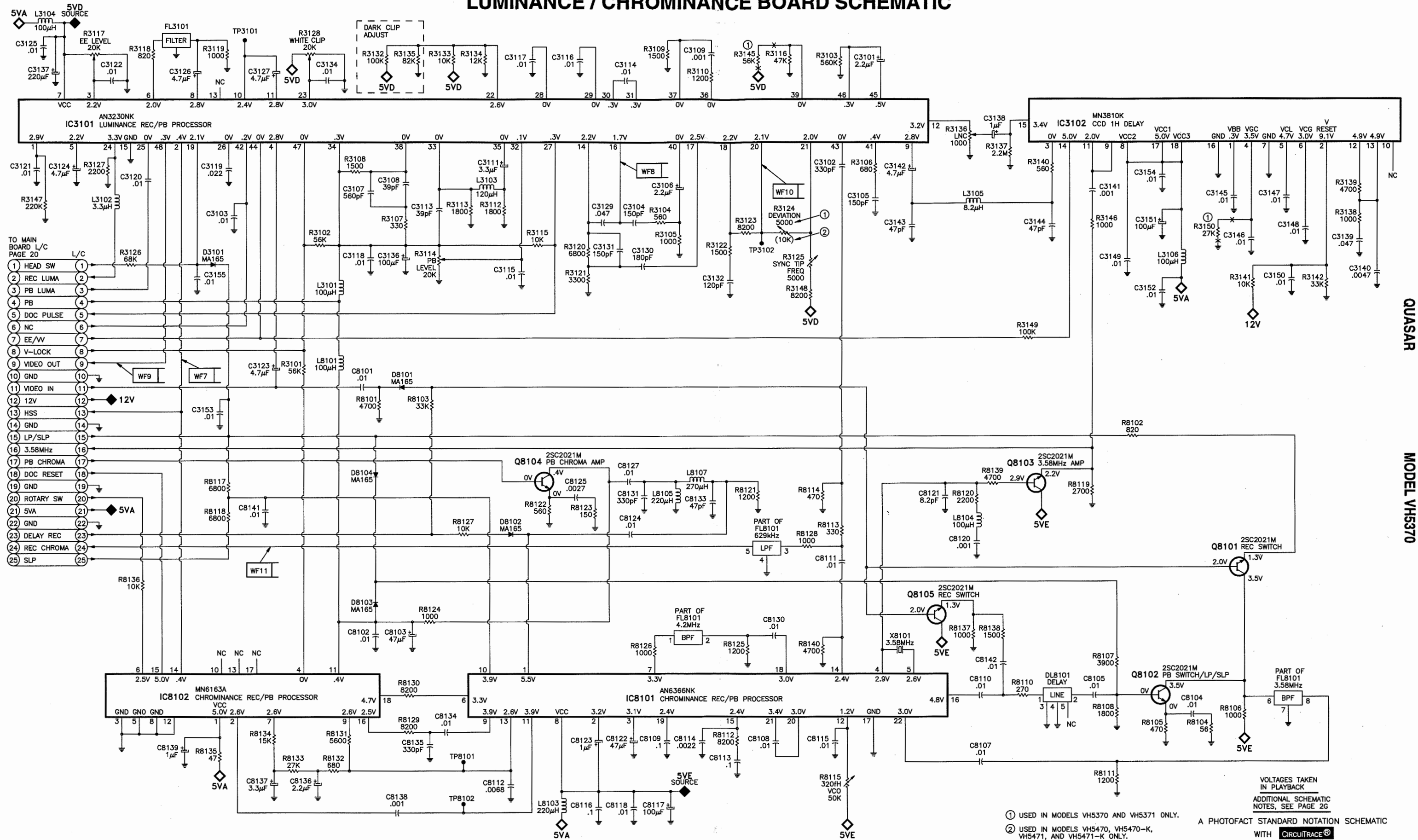
WITH **CIRCUITRACE®**

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G

## LUMINANCE / CHROMINANCE BOARD SCHEMATIC

H



QUASAR

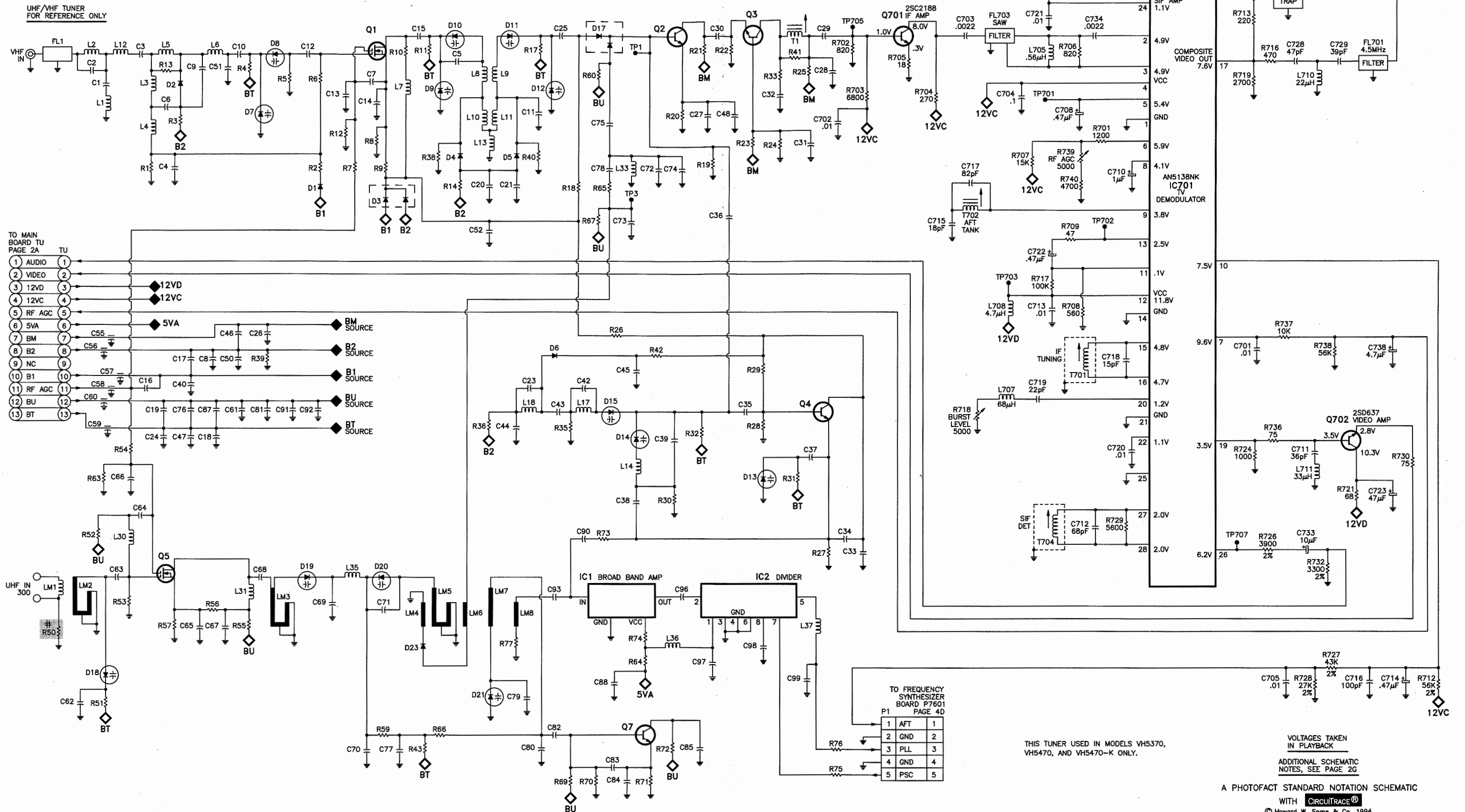
MODEL VH5370

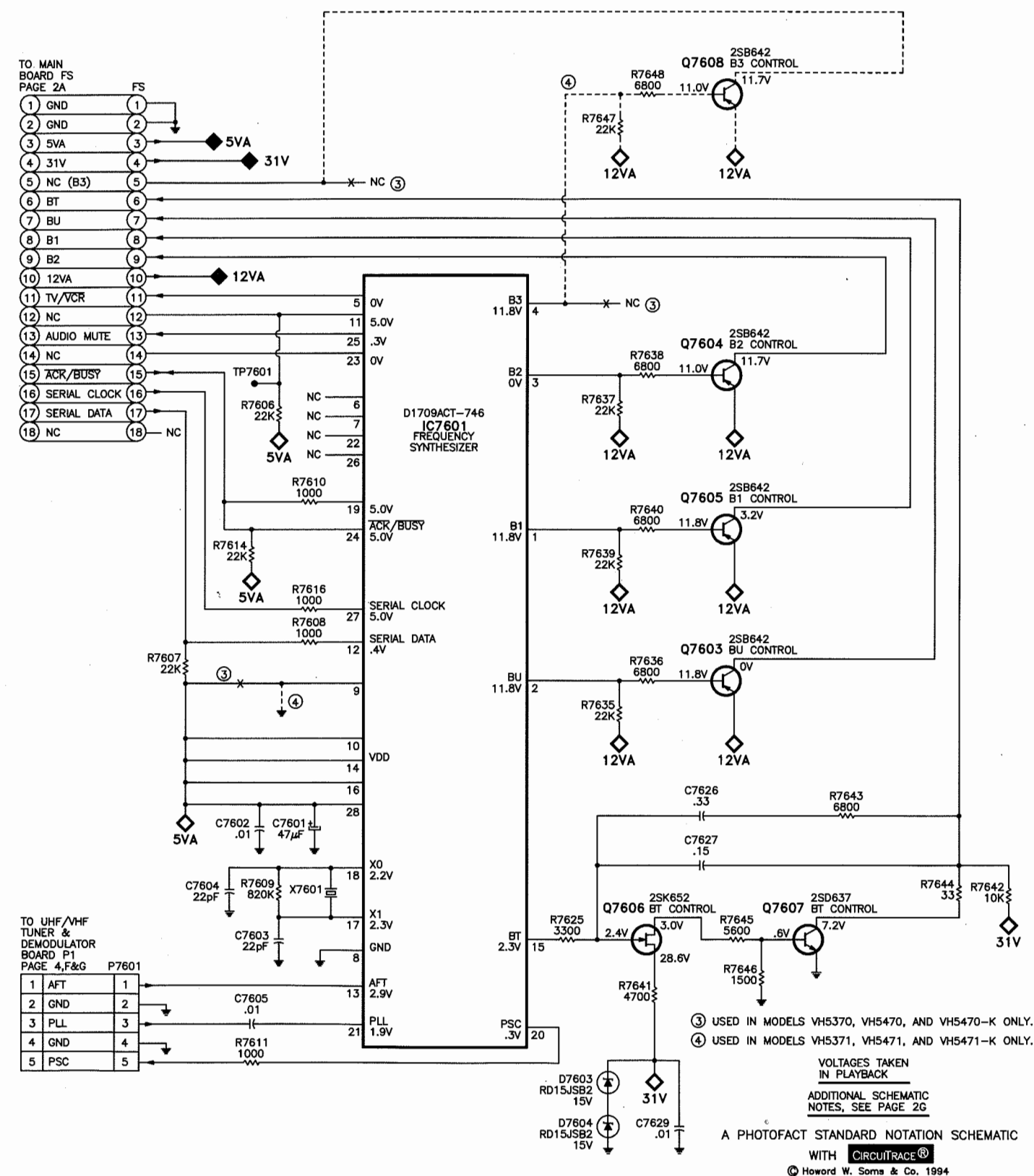




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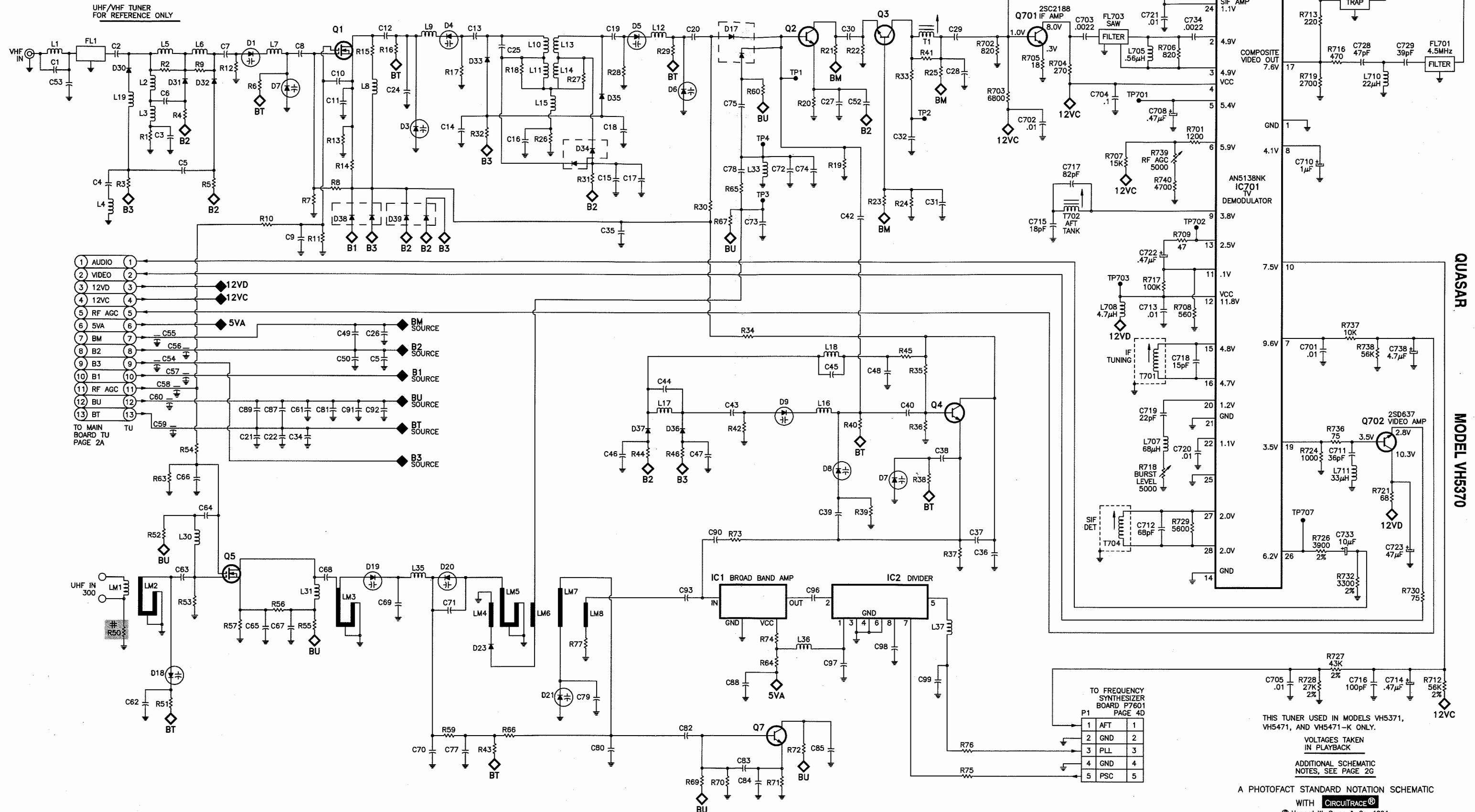
# UHF / VHF TUNER & DEMODULATOR BOARD (Models VH5370, VH5470, and VH5470-K)



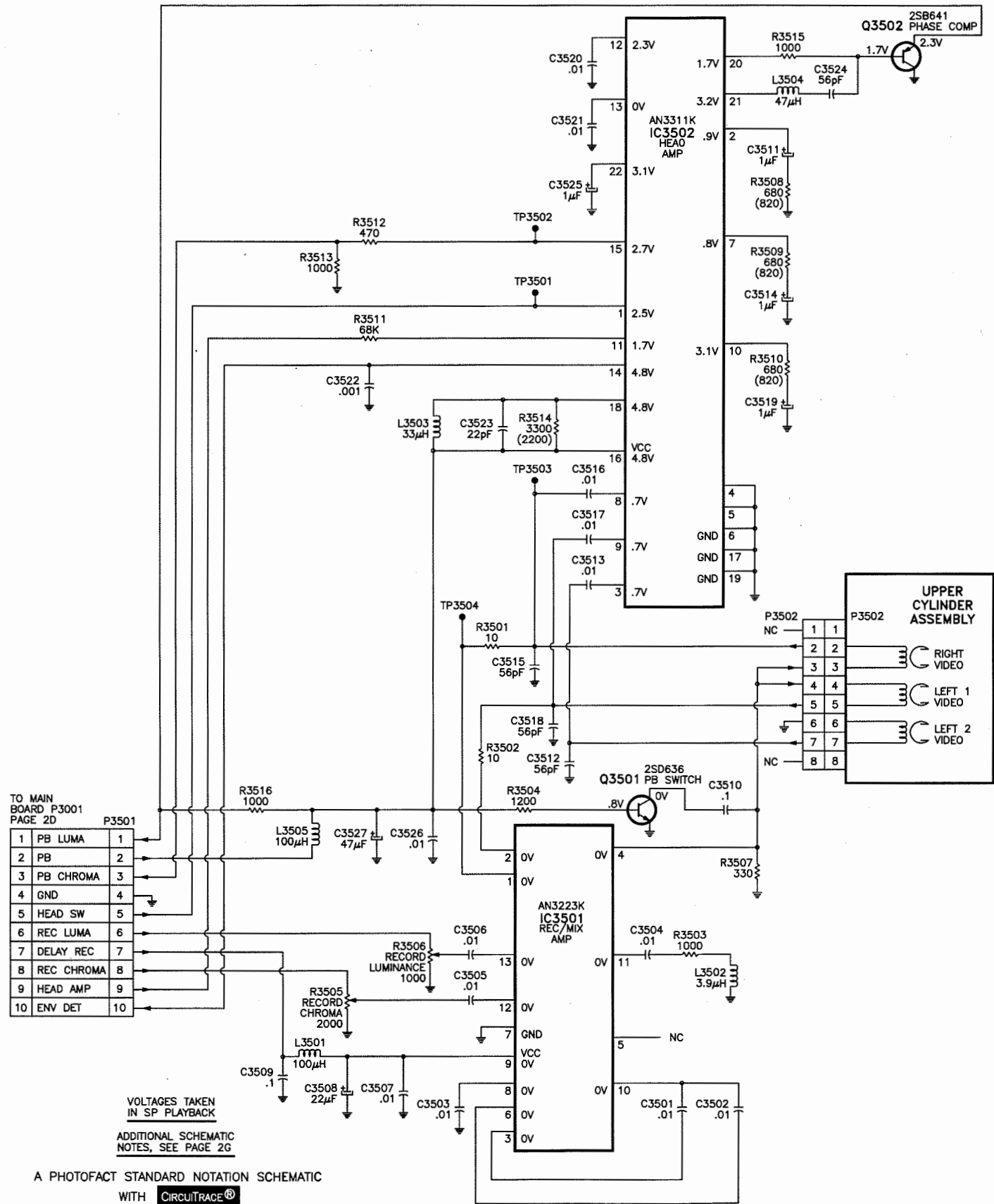


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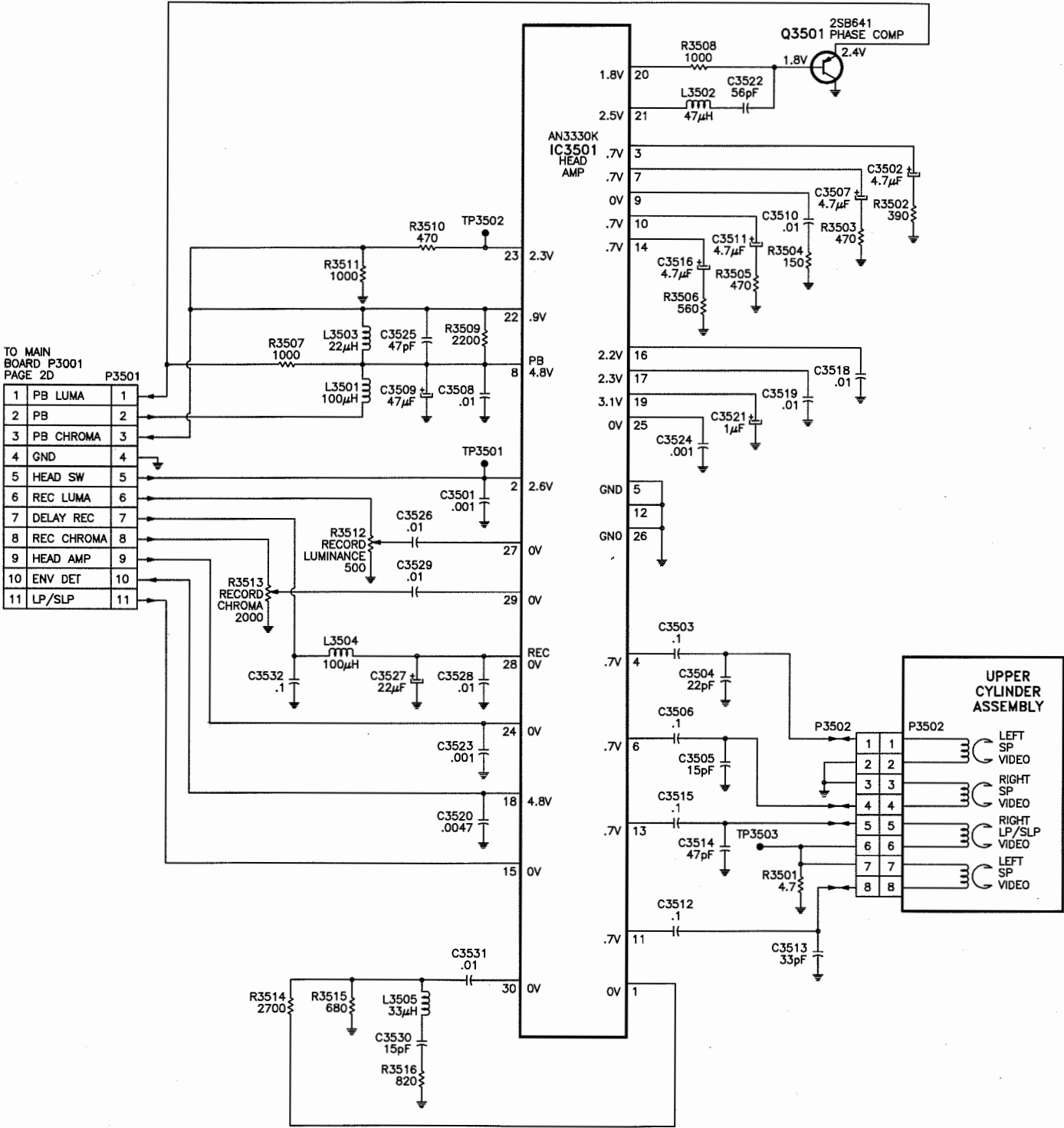
# UHF / VHF TUNER & DEMODULATOR BOARD (Models VH5371, VH5471, and VH5471-K)



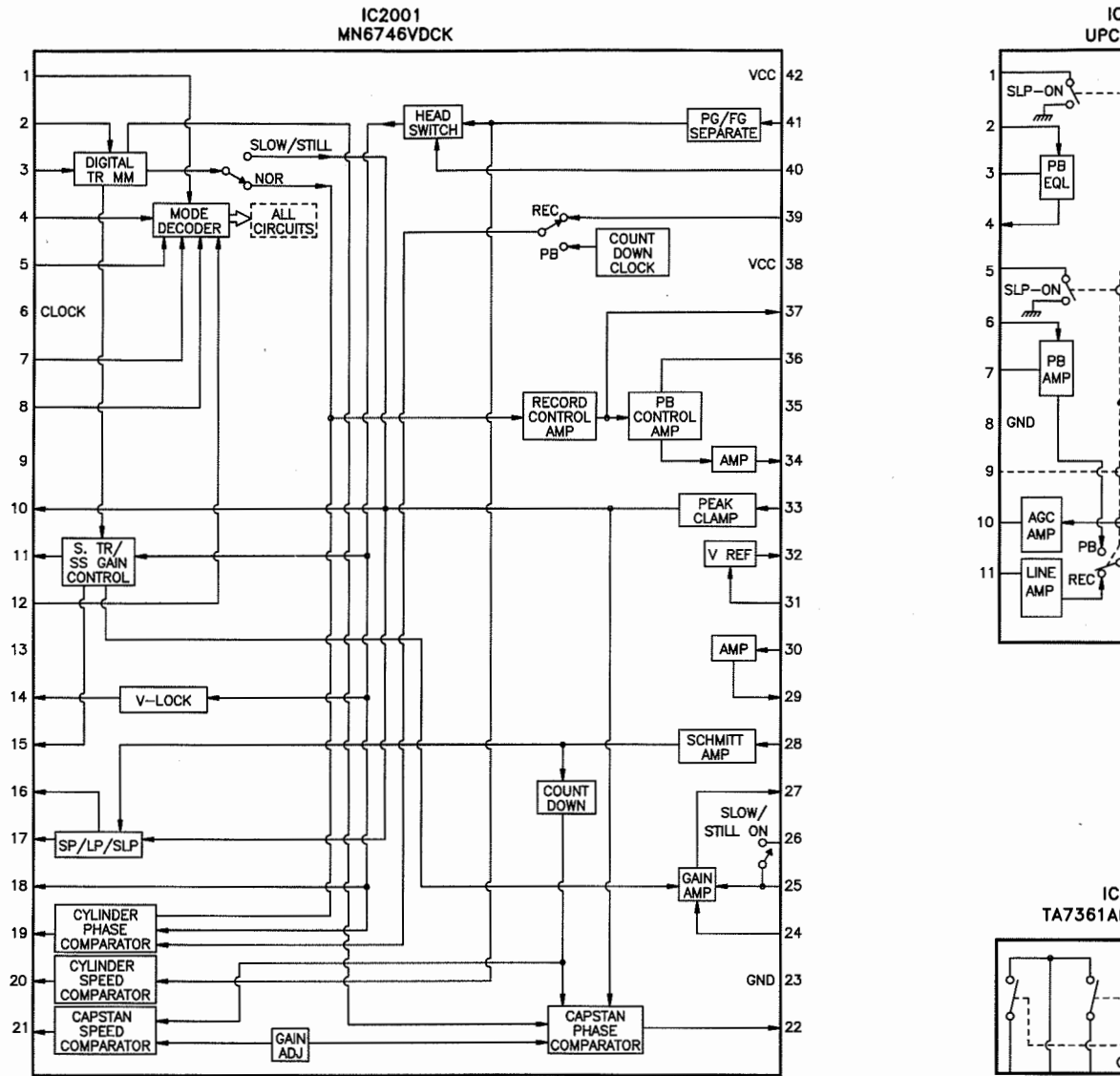
A  
HEAD AMP BOARD SCHEMATIC  
(Models VH5370 and VH5371)



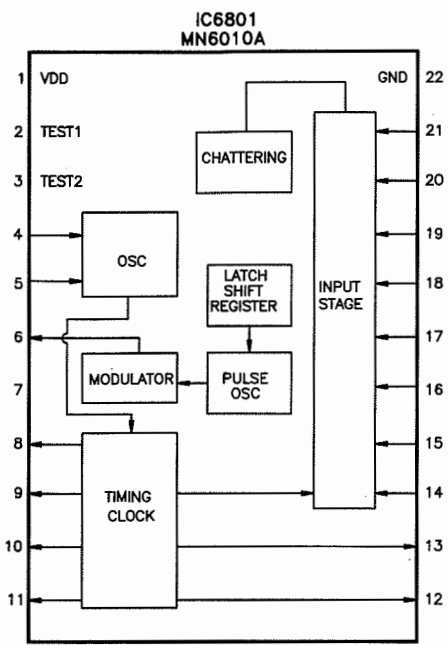
B  
HEAD AMP BOARD SCHEMATIC  
(Models VH5470, VH5470-K, and VH5471, VH5471-K)



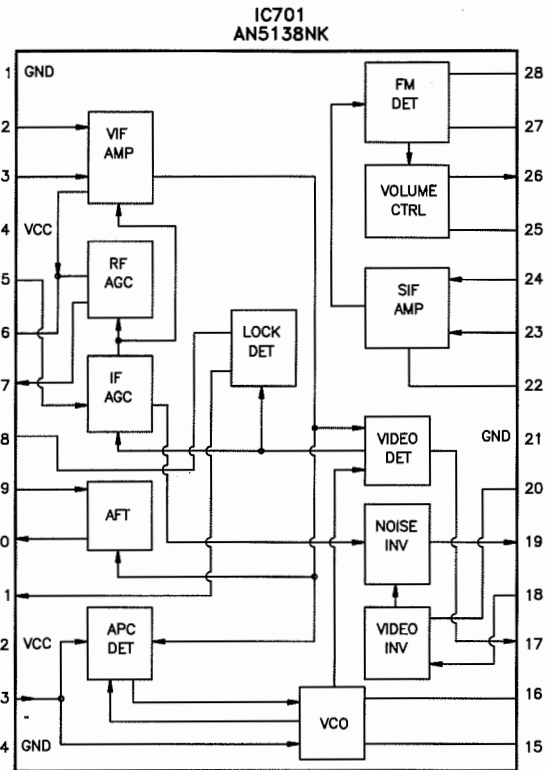
MAIN BOARD



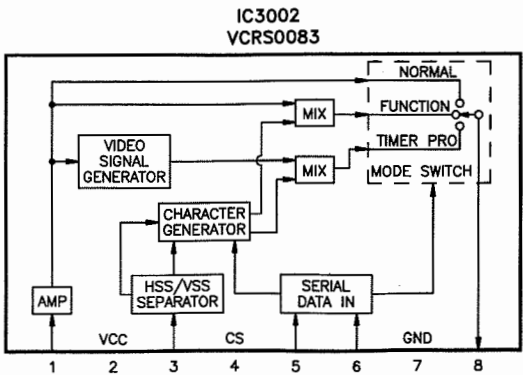
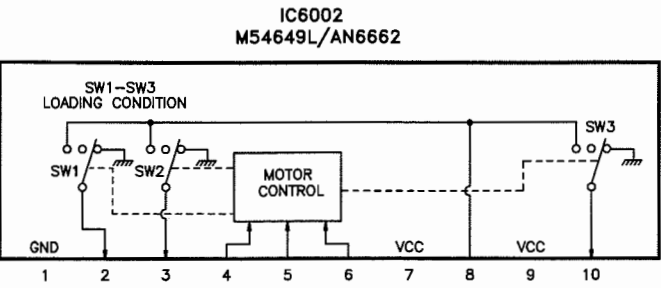
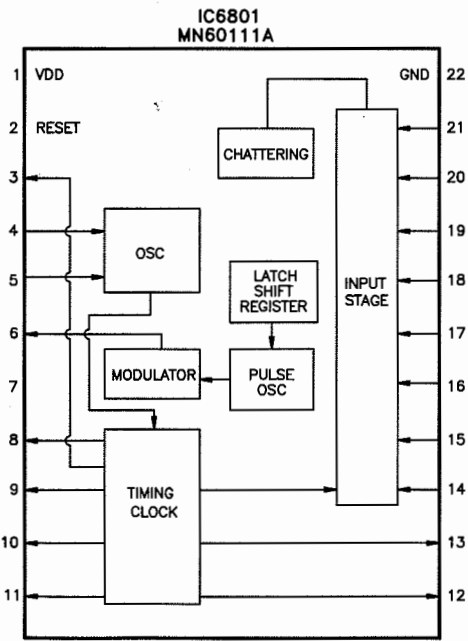
IR WIRELESS TRANSMITTER  
(27 FUNCTION)



UHF / VHF TUNER &  
DEMODULATOR BOARD



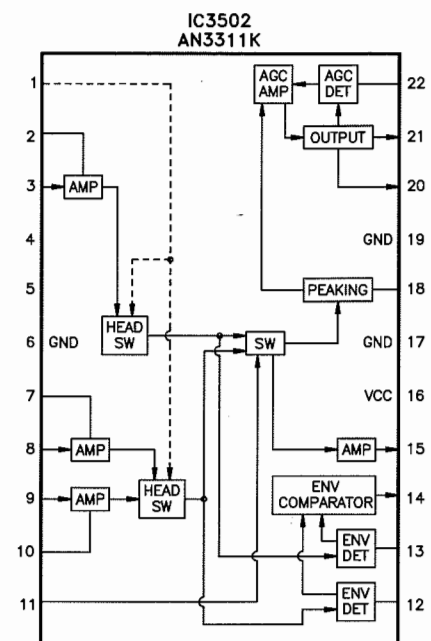
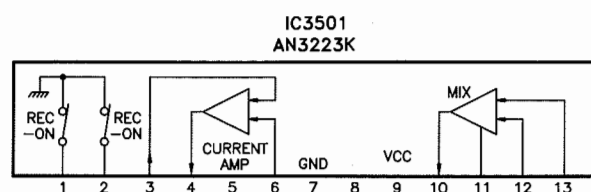
IR WIRELESS TRANSMITTER  
(53 FUNCTION)



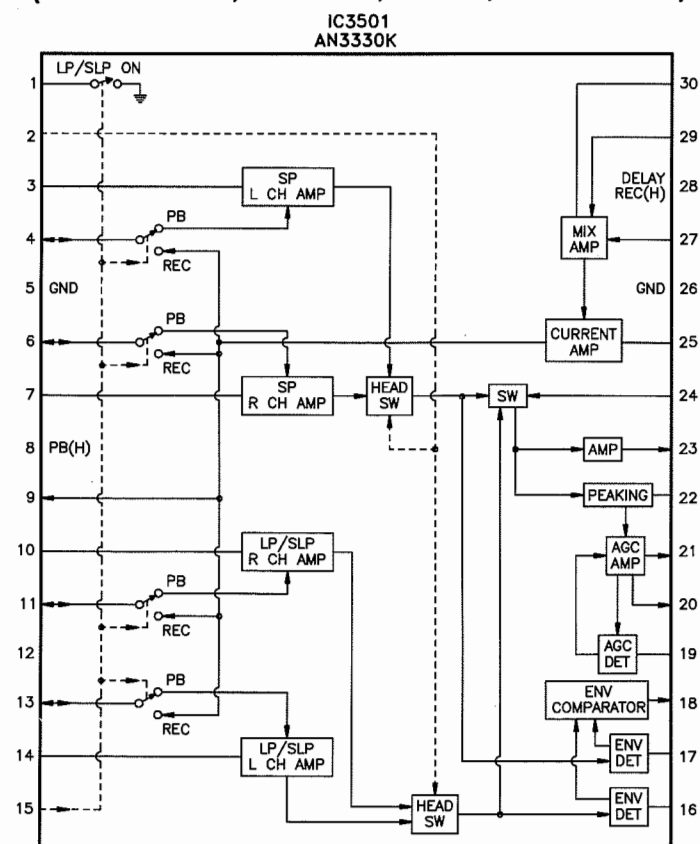


# IC FUNCTIONS

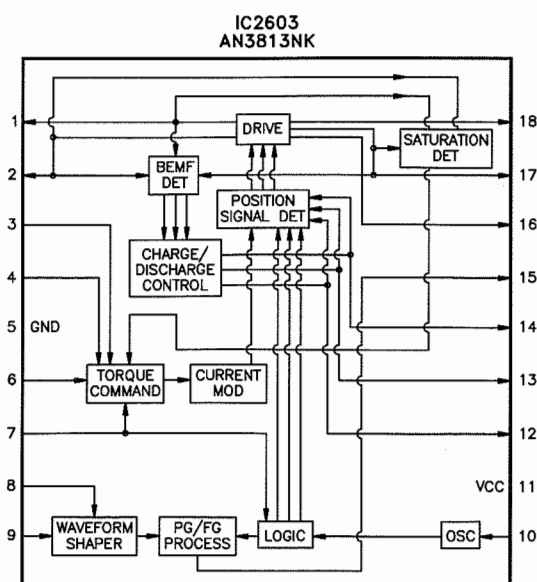
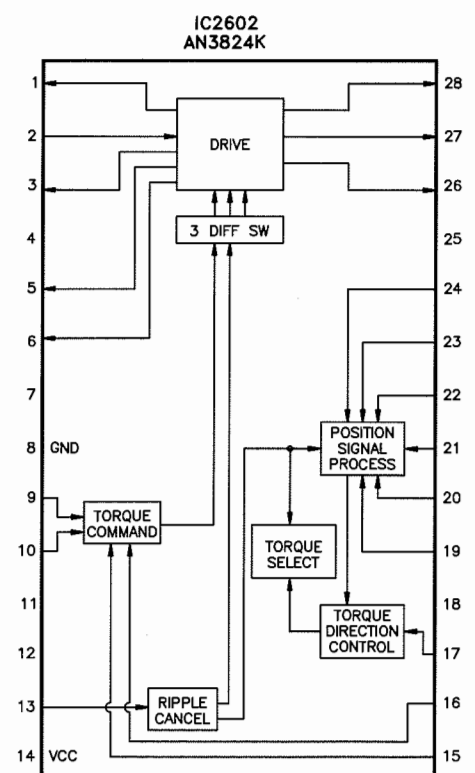
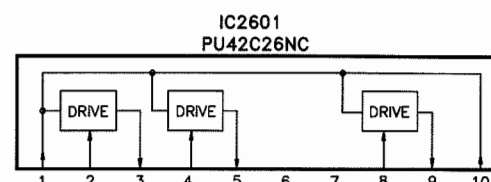
## HEAD AMP BOARD (Models VH5370 and VH5371)



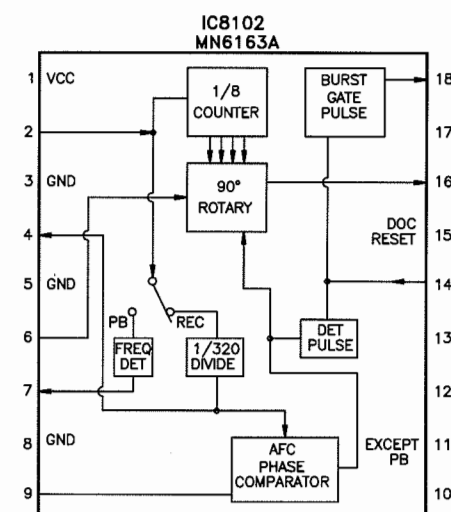
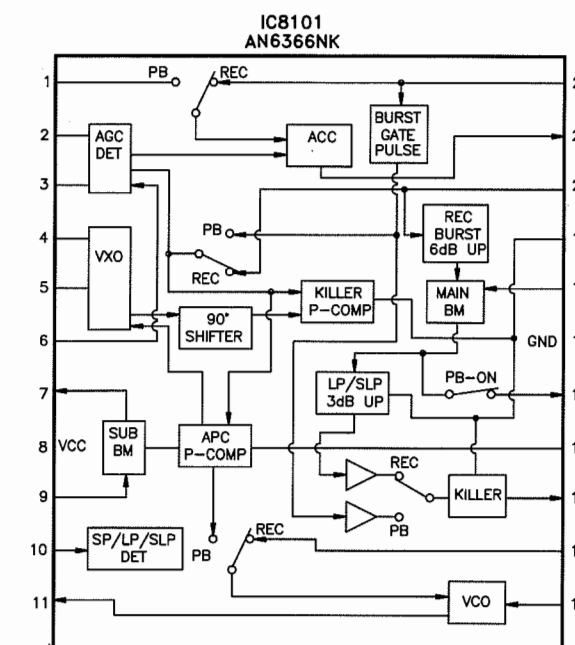
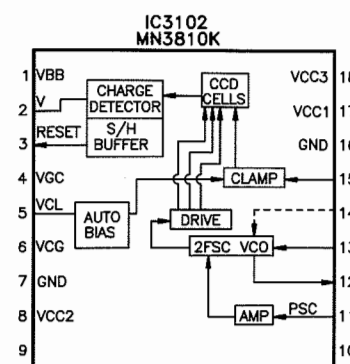
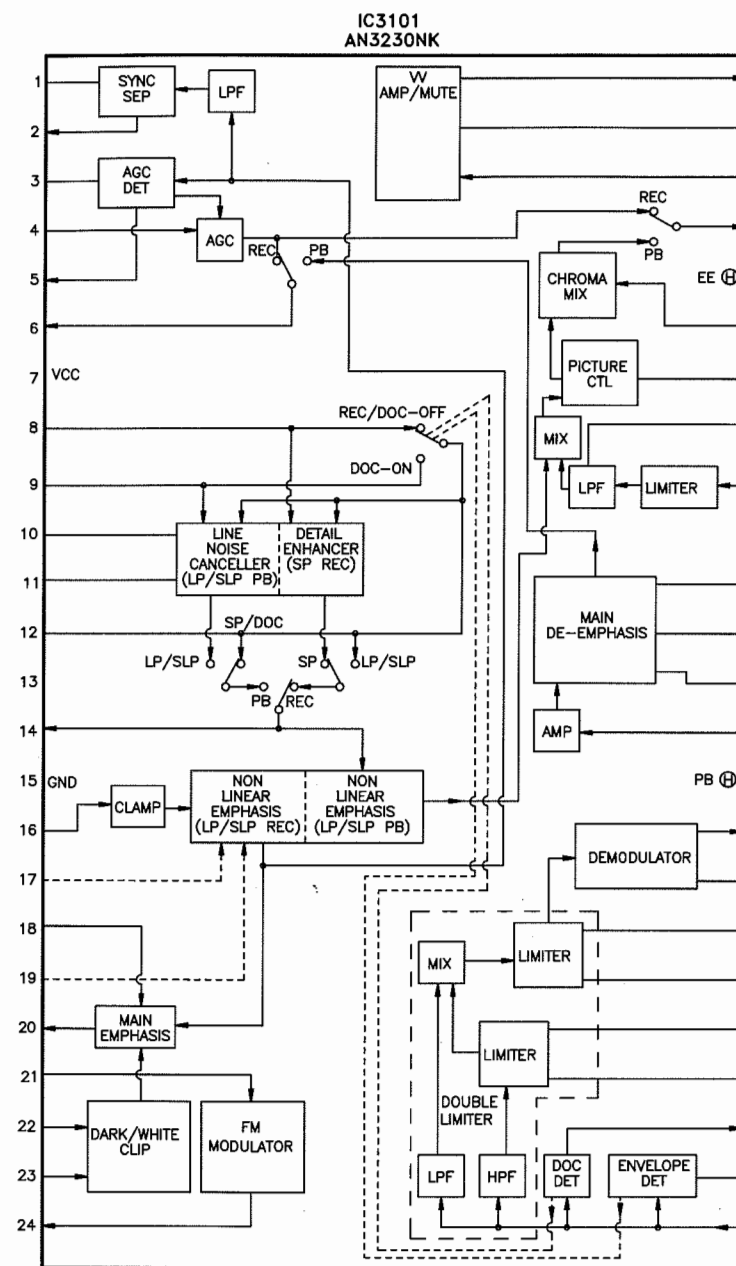
## HEAD AMP BOARD (Models VH5470, VH5470-K, VH5471, and VH5471-K)



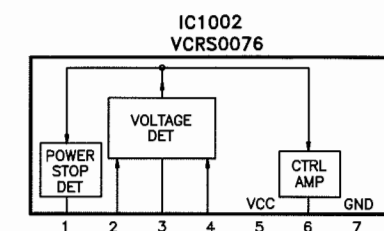
## CAPSTAN / CYLINDER MOTOR DRIVE BOARD



## LUMINANCE / CHROMINANCE BOARD



## POWER SUPPLY BOARD



ELECTRICAL PARTS LIST

CABINET PARTS

Item	Mfr. Part No.
<b>Model VH5370</b>	
Bottom Panel	VKUS0149
Front Panel	
Control Rack	
Lower (1)	VGUS1892
Middle (1)	VGUS1898
Upper (1)	VGUS1851
Front Panel Unit	VYPS3724
Rubber Foot	VKAS0014
Top Cover	VKMS0471
Tracking Button (1)	VGUS1895
IR Wireless Transmitter	
Battery Cover	VKFS0528
Case - Bottom	VKMS0289
Case - Top	VYPS3815
Rubber Plate	
for Contact	VMGS0081
<b>Model VH5371</b>	
Bottom Panel	VKUS0149
Front Panel	
Control Rack	
Lower (1)	VGUS1893
Middle (1)	VGUS1899
Upper (1)	VGUS1851
Front Panel Unit	VYPS3725
Rubber Foot	VKAS0014
Top Cover	VKMS0472
Tracking Button (1)	VGUS1896
IR Wireless Transmitter	
Battery Cover	VKFS0624
Case - Bottom	VKMS0467
Case - Top	VYPS3841
Filter Plate	
(IR Window)	VKWS0242
Rubber Plate	
for Contact	VMGS0118
Slide Button	VGUS1901
Slide Button Sheet	VGKS1230

(1) Included with Front Panel Unit.

CABINET PARTS continued

Item	Mfr. Part No.
<b>Models VH5470 and VH5470-K</b>	
Bottom Panel	VKUS0149
Front Panel	
Control Rack	
Lower (1)	VGUS1894
Middle (1)	VGUS1900
Upper (1)	VGUS1851
Front Panel Unit	VYPS3726
Rubber Foot	VKAS0014
Top Cover	VKMS0473
Tracking Button (1)	VGUS1897
IR Wireless Transmitter	
Battery Cover	VKFS0528
Case - Bottom	VKMS0469
Case - Top	VYPS3813
Rubber Plate	
for Contact	VMGS0111
<b>Models VH5471 and VH5471-K</b>	
Bottom Panel	VKUS0149
Front Panel	
Control Rack	
Lower (1)	VGUS1892
Middle (1)	VGUS1898
Upper (1)	VGUS1851
Front Panel Unit	VYPS3727
Rubber Foot	VKAS0014
Top Cover	VKMS0471
Tracking Button (1)	VGUS1895
IR Wireless Transmitter	
Battery Cover	VKFS0624
Case - Bottom	VKMS0467
Case - Top	VYPS3842
Filter Plate	
(IR Window)	VKWS0242
Rubber Plate	
for Contact	VMGS0118
Slide Button	VGUS1901
Slide Button Sheet	VGKS1230

(1) Included with Front Panel Unit.

CAPSTAN / CYLINDER MOTOR DRIVE BOARD

Item No.	Description	Mfr. Part No.	Notes
<b>SEMICONDUCTORS</b>			
IC2601	PU42C26NC	-	-
IC2602	AN3824K	-	-
IC2603	AN3813NK	-	-
<b>OTHER</b>			
# PR2601	Fuse	ICP-F38	1.5Amp IC Protector
	Fuse	UN10015	1.5Amp IC Protector
	PC Board	VEPS0291B1	Capstan / Cylinder Motor Drive

# For SAFETY use only equivalent replacement part.

CONNECTION BOARD

Item No.	Description	Mfr. Part No.	Notes
<b>SEMICONDUCTORS</b>			
Q1551	PN150NV	-	-
<b>OTHER</b>			
SW1551	Switch	VSMS0020	Cassette In
SW1552	Switch	VSMS0020	Cassette Up/Down
	PC Board	VJBS00511	Connection

FREQUENCY SYNTHESIZER BOARD

Item No.	Description	Mfr. Part No.	Notes
<b>SEMICONDUCTORS</b>			
D7603, 04	RD15JSB2	-	-
	RD15JSB3	-	-
	(1) MA4150N-H	-	-
	(1) MA4150N-M	-	-
IC7601	D1709ACT-746	-	-
Q7603 Thru			
Q7605	2SB642(QRS)	-	-
Q7606	2SK652(QR)	-	-
Q7607	2SD637(QRS)	-	-
Q7608 (2)	2SB642(QRS)	-	-

(1) Used in models VH5470, VH5470-K, VH5471, and VH5471-K only.

(2) Used in models VH5371, VH5471, and VH5471-K only.

FREQUENCY SYNTHESIZER BOARD continued

Item No.	Description	Mfr. Part No.	Notes
<b>OTHER</b>			
X7601	Crystal	VSXS0045	-
	Crystal	VSXS0047	-
	PC Board (3)	VEQS0348	Frequency Synthesizer, Assembly
	PC Board (2)	VEQS0356	Frequency Synthesizer, Assembly

(2) Used in models VH5371, VH5471, and VH5471-K only.

(3) Used in models VH5370, VH5470, and VH5470-K only.

HEAD AMP BOARD (Models VH5370 and VH5371)

Item No.	Description	Mfr. Part No.	Notes
<b>SEMICONDUCTORS</b>			
IC3501	AN3223K	-	-
IC3502	AN3311K	-	-
Q3501	2SD636(QRS)	-	-
	2SC2021M(RS)	-	-
Q3502	2SB641(QRS)	-	-
	2SA937M(RS)	-	-
<b>OTHER</b>			
R3505	2000	EVND1AA00B23	Record Chrominance
R3506	1000	EVND1AA00B13	Record Luminance
	PC Board	VEPS0521A1	Head Amp, Assembly

HEAD AMP BOARD  
(Models VH5470, VH5470-K, VH5471, and VH5471-K)

Item No.	Description	Mfr. Part No.	Notes
<b>SEMICONDUCTORS</b>			
IC3501	AN3330K	-	-
Q3501	2SB641(QRS)	-	-
	2SA937M(RS)	-	-
<b>OTHER</b>			
R3512	500	EVND1AA00B52	Record Luminance
R3513	2000	EVND1AA00B23	Record Chrominance
	PC Board	VEPS0517A1	Head Amp, Assembly

QUASAR

MODEL VH5370

ELECTRICAL PARTS LIST
 continued

IR WIRELESS TRANSMITTER (27 FUNCTION) (Models VH5370, VH5470, and VH5470-K)			
Item No.	Description	Mfr. Part No.	Notes
SEMICONDUCTORS			
D6801	SE303ACK	-	-
D6802	MA165	-	-
	1SS119	-	-
D6803, 04	MA154WK	-	-
IC6801	MN6010A	-	-
Q6801	2SD1458	-	-
OTHER			
SW801 (1)	Switch	ESD14529	Stop
(2)	Switch	-	Stop
X6801	Crystal	CSB455EB1	455kHz
	Transmitter (1)	VSQS0537	IR Wireless
	Transmitter (2)	VSQS0569	IR Wireless

(1) Used in model VH5370 only.  
(2) Used in models VH5470 and VH5470-K only.

IR WIRELESS TRANSMITTER (53 FUNCTION) (Models VH5371, VH5471, and VH5471-K)			
Item No.	Description	Mfr. Part No.	Notes
SEMICONDUCTORS			
D6801	SE303ACK	-	-
D6802	MA154WK	-	-
D6803, 04	MA154WK	-	-
D6805	MA165	-	-
	1SS119	-	-
D6806, 08	MA154WK	-	-
D6809, 10	MA165	-	-
	1SS119	-	-
IC6801	MN6011A	-	-
Q6801	2SD1458	-	-
OTHER			
SW6801 (1)	Switch	-	Program
SW6801 (2)	Switch	ESD14529	Program
X6801	Crystal	CSB455EB1	455kHz
	Transmitter (1)	VSQS0577	IR Wireless
	Transmitter (2)	VSQS0578	IR Wireless

(1) Used in model VH5371 only.  
(2) Used in models VH5471 and VH5471-K only.

LUMINANCE / CHROMINANCE BOARD			
Item No.	Description	Mfr. Part No.	Notes
SEMICONDUCTORS			
D3101	MA165	-	-
	1SS119	-	-
D8101 Thru			
D8104	MA165	-	-
	1SS119	-	-
IC3101	AN3230NK	-	-
IC3102	MN3810K	-	-
IC8101	AN6366NK	-	-
IC8102	MN6163A	-	-
Q8101 Thru			
Q8105	2SC2021M(RS)	-	-
	2SD636(QRS)	-	-
OTHER			
R3114	20K	EVNE4AA00B24	PB Level
R3117	20K	EVND3AA00B24	EE Level
R3124	5000	EVND3AA00B53	Deviation
(1)	10K	EVND3AA00B14	Deviation
R3125	5000	EVND3AA00B53	Sync Tip Frequency
R3128	20K	EVNE4AA00B24	White Clip
R3136	1000	EVNE4AA00B13	LNC
R8115	50K	EVNE4AA00B54	320fH VCO
X8101	Crystal	VSXS0038	3.58MHz
	Crystal	VSXS0039	3.58MHz
	Crystal	VSXS0040	3.58MHz
	Crystal	VSXS0041	3.58MHz
	PC Board	VEPS0358A1	Luminance / Chrominance, Assembly

(1) Used in models VH5470, VH5470-K, VH5471, and VH5471-K only.

MAIN BOARD			
Item No.	Description	Mfr. Part No.	Notes
SEMICONDUCTORS			
D1201	MA165	-	-
	1SS119	-	-
D1202	MA4068-MM	-	-
	RD6.8ESB3M3	-	-
D1203	MA165	-	-
	1SS119	-	-
D1205	MA4120-H	-	-
	RD13ESB1	-	-
	RD13ESB1M4	-	-
D2001 Thru			
D2007	MA165	-	-
	1SS119	-	-

MAIN BOARD continued			
Item No.	Description	Mfr. Part No.	Notes
SEMICONDUCTORS continued			
D2009 (1)	MA165	-	-
	1SS119	-	-
D6001, 04, 09	MA165	-	-
	1SS119	-	-
D7005	MA165	-	-
	1SS119	-	-
IC2001	MN6746VDCK	-	-
(1)	MN6746VDBK	-	-
IC2002	MN61753VCBK	-	-
(1)	MN61754VCCCK	-	-
IC3002 (2)	VCRS0083	-	-
IC4001	UPC2300CA	-	-
	UPC2300ACA	-	-
IC4002	TA7361AP	-	-
	UPC1513HA	-	-
IC6001	MN158461VAL	-	-
IC6002	M54649L	-	-
	AN6662	-	-
Q1201	2SC2021M(RS)	-	-
	2SD636(QRS)	-	-
Q1203	2SD1776(PO)	-	-
	2SC3852	-	-
Q3001	2SB643(QRS)	-	-
	2SB644(QRS)	-	-
Q3002	2SA937M(RS)	-	-
	2SB641(QRS)	-	-
Q3006	2SC2021M(RS)	-	-
	2SD636(QRS)	-	-
Q3007 (3)	UN1214	-	-
Q3009, 10 (3)	2SC2021M(RS)	-	-
	2SD636(QRS)	-	-
Q4002	2SA937M(RS)	-	-
	2SB641(QRS)	-	-
Q4003, 04	2SC2021M(RS)	-	-
	2SD636(QRS)	-	-
Q6001, 02	2SC2021M(RS)	-	-
	2SD636(QRS)	-	-
Q6003	2SA937M(RS)	-	-
	2SB641(QRS)	-	-
Q6004	2SC2021M(S)	-	-
	2SD636(RS)	-	-
Q6005	2SA937M(RS)	-	-
	2SB641(QRS)	-	-
Q6006	2SC2021M(RS)	-	-
	2SD636(QRS)	-	-
Q7001, 02	2SD637(QRS)	-	-
Q7003	2SC2021M(RS)	-	-
	2SD636(QRS)	-	-

(1) Used in models VH5470, VH5470-K, VH5471, and VH5471-K only.  
(2) Used in models VH5371, VH5471, and VH5471-K only.  
(3) Used in models VH5370 and VH5371 only.

ELECTRICAL PARTS LIST continued

POWER SUPPLY BOARD continued

Item No.	Description	Mfr. Part No.	Notes
OTHER continued			
#	Barrier (2)	VMZS0296	-
	Fuse Holder	VJSS0164	For F1001
	PC Board	VEPS0167A1	Power Supply, Assembly
# For SAFETY use only equivalent replacement part.			
(2) Located between power supply board and power supply assembly shield case - top.			

SENSOR LED BOARD

Item No.	Description	Mfr. Part No.	Notes
SEMICONDUCTORS			
D1553	LN59NV	-	-
OTHER			
	PC Board	VXKS0453	Sensor LED, Assembly

SUPPLY PHOTO TR ASSEMBLY

Item No.	Description	Mfr. Part No.	Notes
SEMICONDUCTORS			
Q1552	PN150NV	-	-
OTHER			
	PC Board	VEPS00432A2	Supply Photo TR, Assembly

TAKEUP REEL SENSOR ASSEMBLY

Item No.	Description	Mfr. Part No.	Notes
SEMICONDUCTORS			
IC1551	ON2170-R	-	-
OTHER			
	PC Board	VEKS3039	Takeup Reel Sensor, Assembly

TIMER / OPERATION BOARD

Item No.	Description	Mfr. Part No.	Notes
SEMICONDUCTORS			
D7501 Thru			
D7506	MA165	-	-
	1SS119	-	-
D7508, 09	MA165	-	-
	1SS119	-	-
D7511 Thru			
D7516	MA165	-	-
	1SS119	-	-
D7517	MA4091N-M	-	-
	RD9.1JSB2	-	-
IC7501	D75206CW-025	-	-
(1)	D75206CW-058	-	-
IC7502	MN1280-R	-	-
OTHER			
DP7501	Display Tube	VSZS0066	-
	Display Tube	VSZS0076	-
RX7501	22K X 12 Network	VCRS0084	-
	22K X 12 Network	VCRS0085	-
SW7501	Switch	EVQQSR05K	Stop
SW7502	Switch	EVQQSR05K	Eject
SW7503	Switch	EVQQSR05K	Rew/Review
SW7504	Switch	EVQQSR05K	FF/Cue
SW7505	Switch	EVQQSR05K	Speed Select
SW7506	Switch	EVQQSR05K	Tracking Up
SW7507	Switch	EVQQSR05K	Tracking Down
SW7508	Switch	EVQQSR05K	Power
SW7510	Switch	EVQQSR05K	VCR/TV
SW7511	Switch	EVQQSR05K	Play/X2
SW7513	Switch	EVQQSR05K	Add/Erase
SW7514	Switch	EVQQSR05K	TV System Select
SW7515	Switch	EVQQSR05K	CH Memory
SW7516	Switch	EVQQSR05K	Prog Reset
SW7517	Switch	EVQQSR05K	Select/Memory
SW7518	Switch	EVQQSR05K	Rec/OTR
SW7519	Switch	EVQQSR05K	Clock
SW7520	Switch	EVQQSR05K	CH/Set Up
SW7521	Switch	EVQQSR05K	CH/Set Down
SW7522	Switch	EVQQSR05K	Counter
X7501	Crystal	VSX0044	-
	Detector Unit	VEQS0354	IR Wireless
	Detector Unit	VEQS0357	IR Wireless
	Detector Unit	VEQS0358	IR Wireless
	PC Board (1)	VEPS07207A1	Timer/Operation
	PC Board (2)	VEPS07207B1	Timer/Operation
(1) Used in models VH5370, VH5470 and VH5470-K only.			
(2) Used in models VH5371, VH5471 and VH5471-K only.			

UHF / VHF TUNER & DEMODULATOR BOARD

Item No.	Description	Mfr. Part No.	Notes
SEMICONDUCTORS			
IC701	AN5138NK	-	-
Q701	2SC2188	-	-
Q702	2SD637(QR)	-	-
OTHER			
R712	56K 2% 1/8W SMT	ERD21TLG563	-
	56K 2% 1/16W SMT	ERJ6GMG563V	-
	56K 2% 1/16W SMT	ERJ6GMYG563V	-
R718	5000	EVNE4AA00B53	Burst Level
R726	3900 2% 1/16W SMT	ERJ6GMG392V	-
	3900 2% 1/16W SMT	ERJ6GMYG392V	-
(1)	3900 2% 1/8W SMT	ERD21TLG392	-
R727	43K 2% 1/8W SMT	ERJ8GCG433V	-
	43K 2% 1/8W SMT	ERJ8GCG433V	-
R728	27K 2% 1/8W SMT	ERD21TLG273	-
	27K 2% 1/16W SMT	ERJ6GMYG273V	-
	27K 2% 1/16W SMT	ERJ6GMG273V	-
R732	3300 2% 1/16W SMT	ERJ6GMG332V	-
	3300 2% 1/16W SMT	ERJ6GMYG332V	-
(2)	3300 2% 1/8W SMT	ERD21TLG332	-
(3)	2700 2% 1/16W SMT	ERJ6GMYG272V	-
(3)	2700 2% 1/16W SMT	ERJ6GMG272V	-
R739	5000	EVNE4AA00B53	RF AGC
	PC Board (4)	VEQS0351	UHF/VHF Tuner & Demodulator, Assembly
	PC Board (1)	VEQS0361	UHF/VHF Tuner & Demodulator Assembly
(1) Used in model VH5371, VH5471, and VH5471-K only.			
(2) Used in model VH5371 only.			
(3) Used in model VH5470, VH5470-K, VH5471, and VH5471-K only.			
(4) Used in model VH5370, VH5470, and VH5470-K only.			

Important Parts Information

- The parts listed here are those not usually available from a well-stocked supply cabinet or bin.
- 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.

ELECTRICAL PARTS LIST continued

MAIN BOARD continued			
Item No.	Description	Mfr. Part No.	Notes
OTHER			
# R1211	120 2% 1/4W	ERD2FCGP121S	-
	120 2% 1/4W	ERD2FCGP121P	-
R2021	100K	EVN39C00YB15	Shifter PG
R2048	100K	EVND1AA00B15	V-Lock
R4021	1000	EVNE4AA00B13	PB Level
R4027	100K	EVNE4AA00B15	Bias Level
# R7004, 05	2.7 1/2W	ERDS1FJ2R7P	-
# R7006	180 1/2W	ERDS1FJ181P	-
# R7020	1000 1W	ERG1SJ102P	-
X6001	Crystal	VSXS0012	-
	Crystal	VSXS0028	-
	PC Board (4)	VEPS0289D1	Main, Assembly
	PC Board (5)	VEPS0289F1	Main, Assembly
	PC Board (6)	VEPS0289G1	Main, Assembly
	PC Board (7)	VEPS0289H1	Main, Assembly
# For SAFETY use only equivalent replacement part.			
(4) Used in model VH5370 only.			
(5) Used in model VH5371 only.			
(6) Used in models VH5470 and VH5470-K only.			
(7) Used in models VH5471 and VH5471-K only.			

MISCELLANEOUS			
Item No.	Description	Mfr. Part No.	Notes
OTHER			
SW1553	Switch	EVQ-WUM001	Mode Select
SW1554	Switch	VSMS0021	Safety Tab
14 *	Motor (1)	VEGS0119	Direct Drive (Part of DD Cylinder Assembly)
	Motor (2)	VEGS0121	Direct Drive (Part of DD Cylinder Assembly)
15 *	Head (1)	VEHS0145	Left/Right Video (Part of Upper Cylinder Assembly)
	Head (2)	VEHS0146	Left/Right Video (Part of Upper Cylinder Assembly)
16 *	Head	VEHS0152	Audio/Erase/Control (Part of A/C Head Module)
* Indicates the item number used in Mechanical Parts List and Exploded Views.			
(1) Used in models VH5370 and VH5371 only.			
(2) Used in models VH5470, VH5470-K, VH5471, and VH5471-K only.			

MISCELLANEOUS continued			
Item No.	Description	Mfr. Part No.	Notes
OTHER continued			
17 *	Head	VEHS0153	Capstan FG (Part of Capstan FG Head Module)
18 *	Motor	VEMS0149	Cassette Loading (Part of Cassette Loading Motor Unit)
19 *	Coil	VEMS0157	Capstan Stator (Part of Capstan Stator Coil Assembly)
20 *	Motor	VEMS0153	Loading (Part of Loading Motor Unit)
104 *	Sensor	VXAS0890	Dew (Part of Dew Sensor Module)
138 *	Head	VXLS0456	Full Erase (Part of Full Erase Head Module)
	Head	VXLS0470	Full Erase (Part of Full Erase Head Module)
	Head	VXLS0471	Full Erase (Part of Full Erase Head Module)
	Head	VXLS0472	Full Erase (Part of Full Erase Head Module)
	Adaptor	VSQ0513	VHF Antenna
	Adaptor	VSQ0519	VHF Antenna
	Antenna Terminal (3)	VEKS3037	Assembly
	Antenna Terminal (3)	VEKS3038	Assembly
	Antenna Terminal (4)	VEKS3086	Assembly
	Coil	VLTS0002	Balun (Part of Antenna Terminal Assembly)
	Converter	VEQS0346	VHF Block/RF (Part of Antenna Terminal Assembly)
	Converter	VEQS0347	VHF Block/RF (Part of Antenna Terminal Assembly)
* Indicates the item number used in Mechanical Parts List and Exploded Views.			
(3) Used in models VH5370, VH5470, and VH5470-K only.			
(4) Used in models VH5371, VH5471, and VH5471-K only.			

POWER SUPPLY BOARD			
Item No.	Description	Mfr. Part No.	Notes
SEMICONDUCTORS			
# D1001	S1WBA40	-	-
D1002	EG01	-	-
D1003	MA180	-	-
D1004	MA178	-	-
D1005	MA165	-	-
	1SS119	-	-
D1006	MA178	-	-
D1007	MA4062-H	-	-
	MA4062N-H	-	-
D1008	MA185	-	-
# D1009	RU2YX	-	-
D1010	MA185	-	-
# D1011	EU2YX	-	-
D1012	MA4051N-M	-	-
	RD5.1JSB2X	-	-
D1014	MA165	-	-
	1SS119	-	-
# IC1001	ON3161-R	-	-
	TLP621-G	-	-
IC1002	VCRS0076	-	-
(1)	VCRS0093	-	-
# Q1001	2SC4026	-	-
	2SC4052	-	-
	2SC4073	-	-
Q1002	2SB643(S)	-	-
	2SB1062(S)	-	-
OTHER			
# AC CORD	Line Cord	VJAS0051	AC, Polarized
# C1001	.01	VCKS0004	-
	.01	VCKS0012	-
# C1002	.0033 20% 125V	ECKDNS332MEK	-
	.0033 20% 125V	TCKDNS332ME	-
# C1003	.0033 125V	VCKS0009	-
# C1004	82µF 200V	ECEA2DU820X	-
# CR1001	2.7M, 130pF	EXNG131P275D	Component Combination
# F1001	Fuse	XBA1C16NU100	1.6Amp, 125V
# L1001	29µH	ELF18D290A	Line Choke
	29µH	VLQS0035	Line Choke
	29µH	VLQS0039	Line Choke
# PR1001	Fuse	ICP-F38	1.5Amp IC Protector
	Fuse	UN10015	1.5Amp IC Protector
# R1003	33K 2W	ERG2SJ333H	-
	33K 2W	KRG2SJ333H	-
# R1005	82 1W	ERG1SJ820P	-
# R1009	4.7 1/4W	ERD25FJ4R7P	-
# R1010, 11	10 1/4W	ERD25FJ100P	-
# T1001	Power	ETE27K1AY	-
# For SAFETY use only equivalent replacement part.			
(1) Used in models VH5470, VH5470-K, VH5471, and VH5471-K only.			



## ELECTRICAL SERVICE TIPS

[illegible][illegible]

Write your service tips in the tables above and you will have a record of the defects and repairs you have made using this service information.

Have you ever wanted service tips to fix that VCR quickly? We would like to provide that service for you. As you and other servicemen send in your service tips, we will put the service tips in a database and make the service available.

We invite you to Fax or mail your service tips, together we can make servicing a VCR easier for all of us.

**Fax 1-317-298-5604**

or mail to:

**Howard W. Sams & Company**

**Attention: VCRfacts**

**2647 Waterfront Parkway, East Drive**

**Suite 300**

Indianapolis, IN 46214-2041

## QUASAR

**MODEL VH5370**