SAFETY PRECAUTIONS

SERVICE WARNING

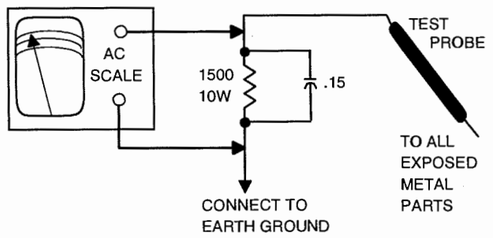
ONLY qualified service technicians who are familiar with safety checks and guidelines should perform service work. For continued SAFETY:

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.



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VCR-296

VCR-296

MODEL PV-2401

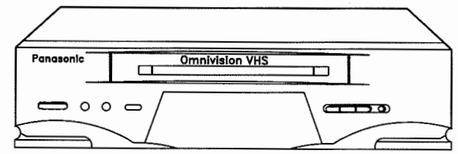
PANASONIC

VCRfacts® Technical Service Data

INDEX

For Supplier Address,
See PHOTOFACT Annual Index

PANASONIC
Model PV-2401



Coverage includes these additional models.

BRAND	MODELS
PANASONIC	PV-2401-K
PANASONIC	PV-4401
PANASONIC	PV-4401-K
PANASONIC	PV-4402
PANASONIC	PV-4403

Essential coverage for servicing a video cassette recorder...

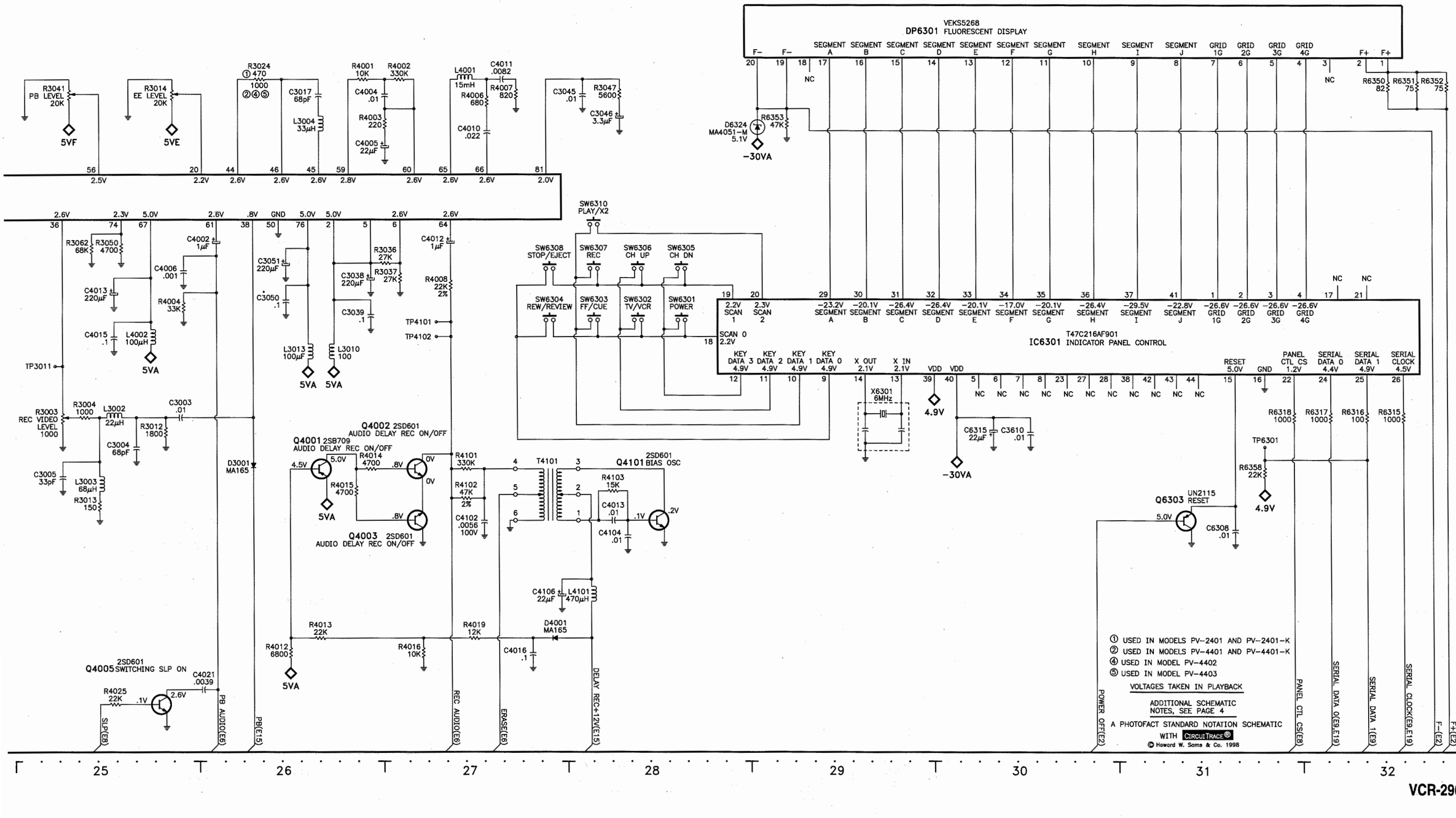
- Schematics
- Exploded Views
- Interconnect Diagram
- Mechanical Alignment
- Electrical Parts List
- Mechanical Parts List
- Waveforms
- Service Information

HOWARD W. SAMS & COMPANY

APRIL 1998 VCR-296

VCR-296

MAIN BOARD SCHEMATIC continued



MECHANICAL ALIGNMENT

Numbers in parenthesis indicate the number used in the Mechanical Parts List and Exploded Views. All alignments are made with the VCR in the eject mode.

GEAR ALIGNMENT

Takeup Loading Arm Unit / Supply Loading Arm Unit

Align the takeup loading arm unit (85) with the supply loading arm unit (86) as shown in figure 1.

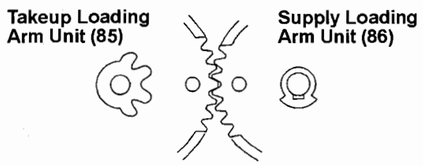


Figure 1

Takeup Loading Arm Unit / Main Rod

Align the shaft of the takeup loading arm unit (85) with the rib on the main rod (54) as shown in figure 2.

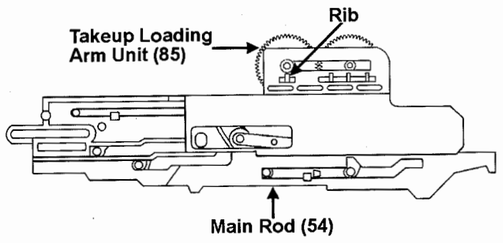


Figure 2

Cam Gear / Link Gear / Geneva Gear Unit

Align the geneva gear unit (94) and the mode select switch with the cam gear (3) as shown in figure 3. Align the holes on the link gear (4) with the holes on the geneva gear unit and the cam gear.

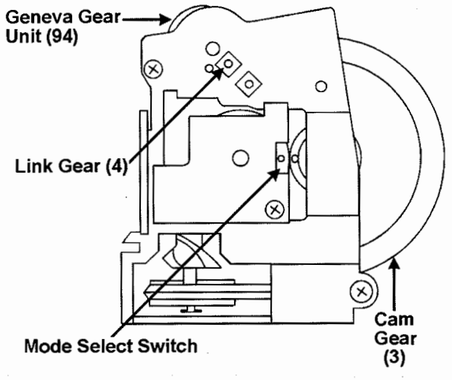


Figure 3

P5 Arm Unit / P5 Sector Gear / Pinch Lift Cam / Link Gear / Second Cam Gear

Align the P5 arm unit (87) with the P5 sector gear (7). Align the pinch lift cam (6) with the link gear (4). Align the second cam gear (84) with the pinch lift cam. See figure 4.

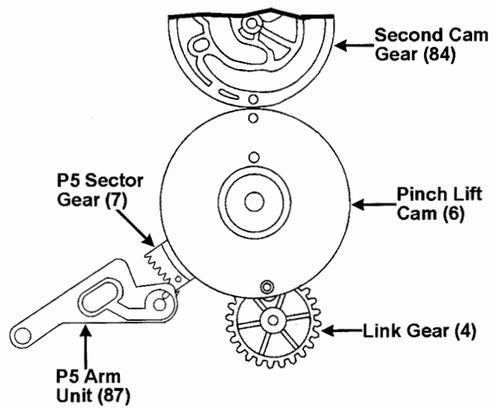


Figure 4

CASSETTE UP ASSEMBLY ALIGNMENT

Cassette Opener / Rack Assembly

Align the cassette opener (67) with the rack assembly, part of the right side plate unit (43). See figure 5.

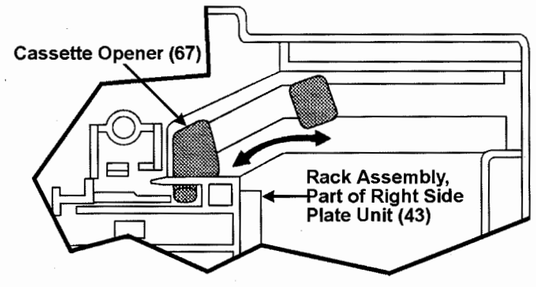


Figure 5

Main Shaft Unit / Rack Assembly / Right Wiper Arm Unit

Align the main shaft unit (77) with the rack assembly, part of the right side plate unit (43). Align the right wiper arm unit (88) with the main shaft unit. See figure 6.

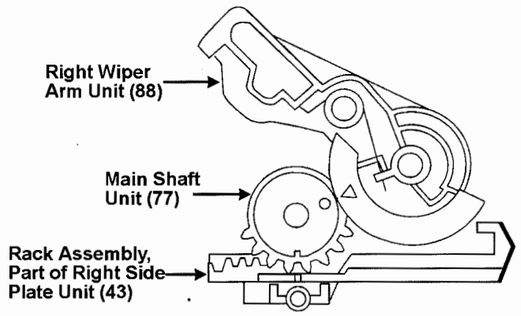


Figure 6

Left Main Shaft Gear / Left Wiper Arm Unit

Align the left main shaft gear (5) with the left wiper arm unit (50) as shown in figure 7.

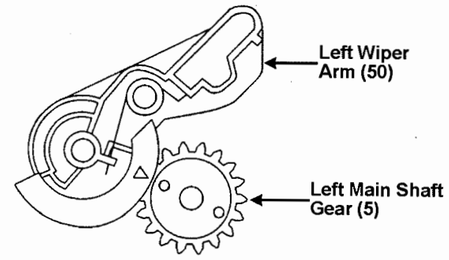


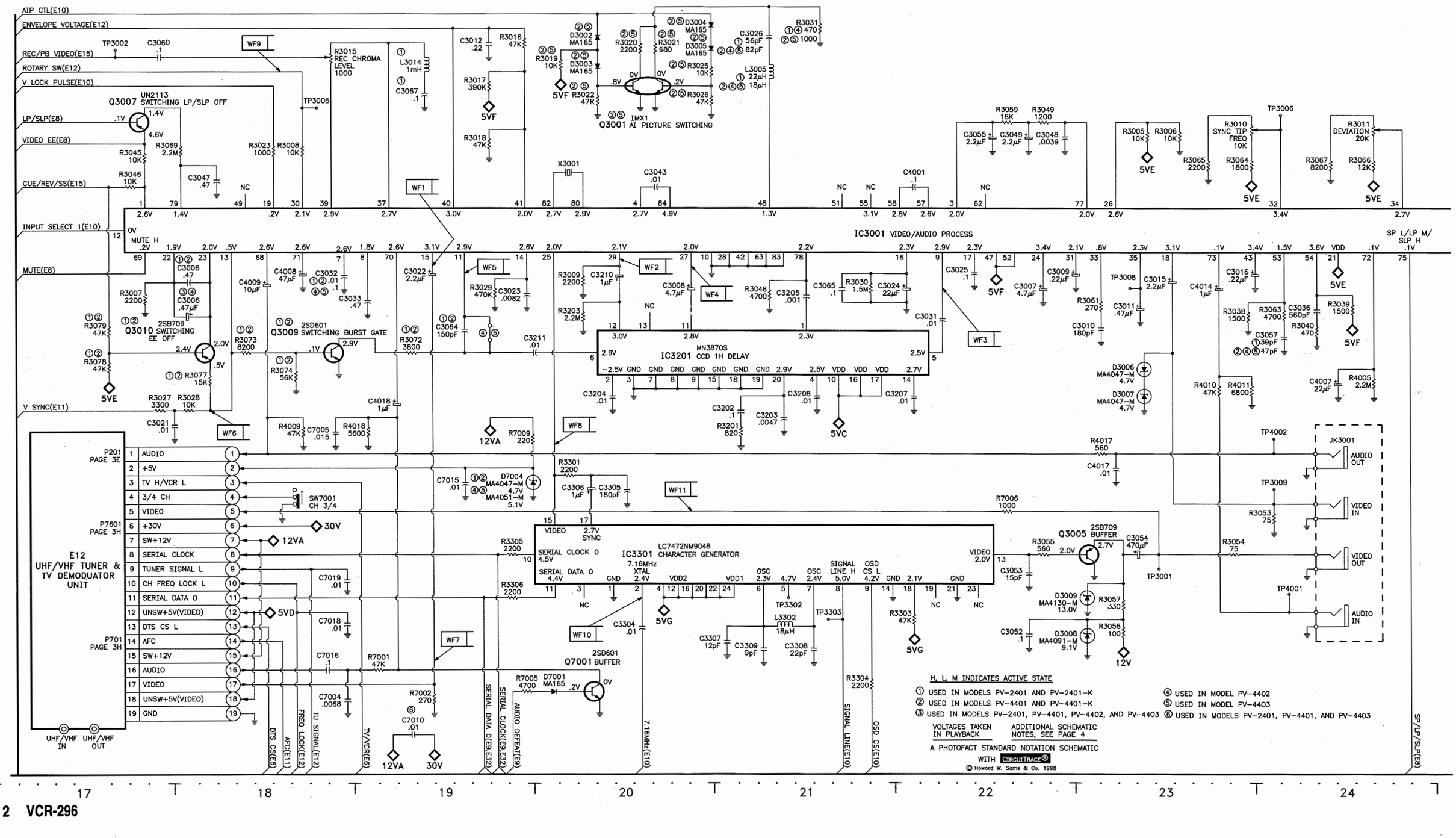
Figure 7

MECHANICAL PARTS LIST

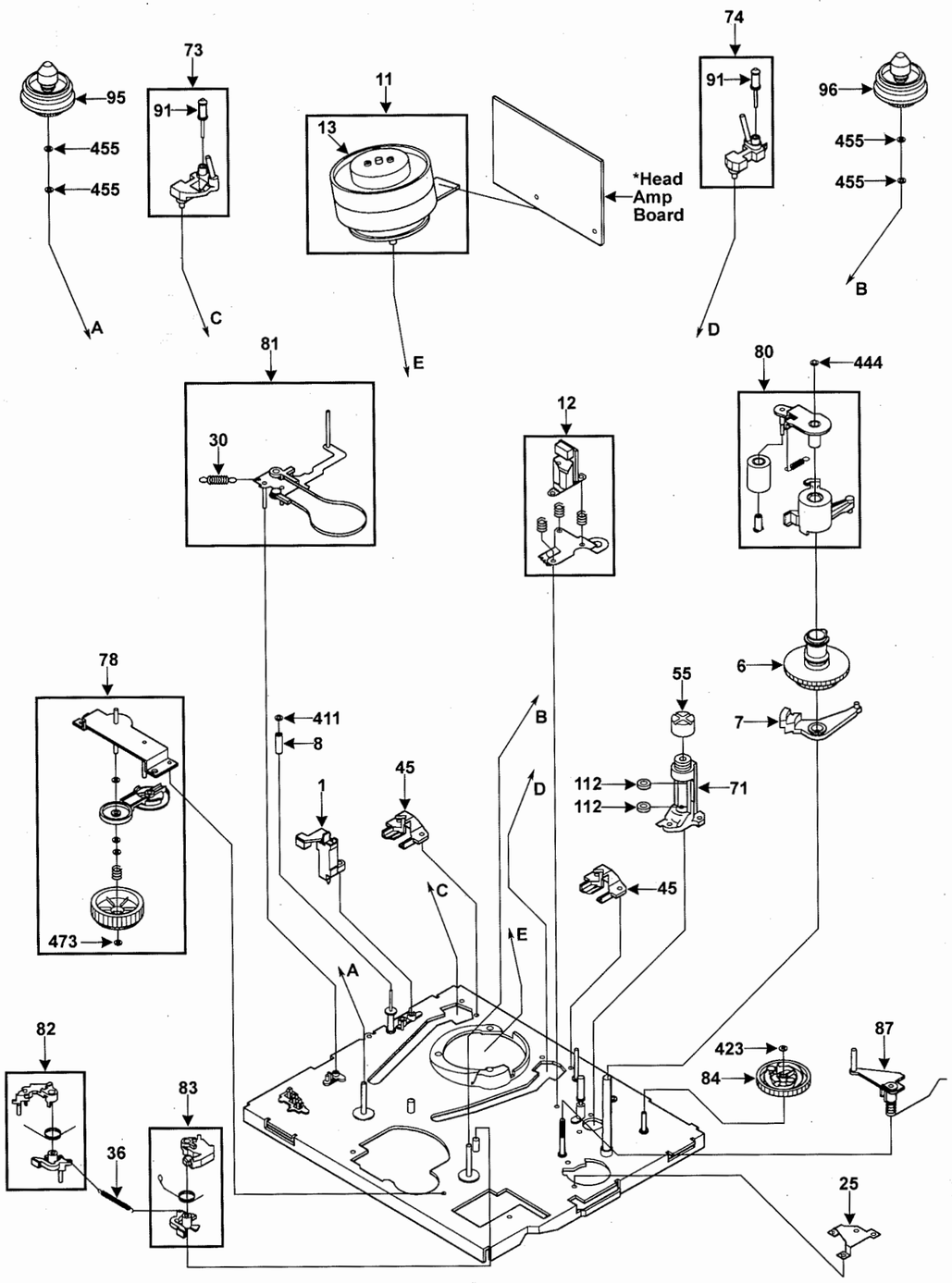
Item No.	Description	Mfr. Part No.	Item No.	Description	Mfr. Part No.
1	Full Erase Head Unit	VEPS0541	69	Cassette Holder Unit	VXAS1706
2	FG Head	VBKS0024	70	Earth Plate Unit	VXBS0042
3	Cam Gear	VDGS0416	71	Capstan Holder Unit	VXDS0180
4	Link Gear	VDGS0415	73	Supply Loading Post Base Unit	VXDS0186
5	Left Main Shaft Gear	VDGS0408	74	Takeup Loading Post Base Unit	VXDS0187
6	Pinch Lift Cam	VDGS0409	77	Main Shaft Unit	VXJS0080
7	P5 Sector Gear	VDGS0412	78	Center Block Unit	VXKS0776
8	P1 Roller	VDPS0210	79	Motor Block Assembly	VXKS0778
9	Loading Motor Belt	VDVS0069	80	Pressure Roller Arm Unit	VXLS1014
10	Capstan Belt	VDVS0070	81	Tension Arm Unit	VXLS1019
11	Upper & Lower Cylinder Unit (1)	VEGS0370	82	Supply Brake Unit	VXLS0843
	Upper & Lower Cylinder Unit (2)(4)(5)	VEGS0372	83	Takeup Brake Unit	VXLS1018
12	Audio/Control Head Unit (1)(2)(5)	VEHS0535	84	Second Cam Gear	VDGS0413
	Audio/Control Head Unit (4)	VEHS0546	85	Takeup Loading Arm Unit	VXLS0850
13	Upper Cylinder Unit (1)	VEHS0536	86	Supply Loading Arm Unit	VXLS0852
	Upper Cylinder Unit (2)	VEHS0537	87	P5 Arm Unit	VXLS1012
14	Capstan Stator Unit	VEMS0295	88	Right Wiper Arm Unit	VXLS1027
15	Loading Motor Unit	VEMS0296	89	Secondary Rod Unit	VXMS0129
23	PC Board Bracket	VMAS2094	90	Capstan Rotor Unit	VXPS0367
24	Top Plate	VMAS2099	91	Roller Post Unit	VXPS0302
25	Support Angle	VMAS2103	92	Clutch Unit	VXPS0368
28	Rod Return Spring	VMBS1099	93	Worm Unit	VXPS0369
29	Release Piece Spring	VMBS1098	94	Geneva Gear	VDGS0414
30	Tension Spring	VMBS1103	95	Supply Reel Table	VDRS0053
36	Main Brake Spring	VMBS0910	96	Takeup Reel Table Unit	VXRS0062
40	Geneva Piece	VMDS0954	97	Cassette Up Assembly	VXYS0885
41	Worm Shaft Support A	VDBS0246	99	Worm Shaft Support B	VDBS0341
42	Left Side Plate	VMDS0949	108	Earth Spring	VMBS1091
43	Right Side Plate Unit	VXAS1709	112	Dust Seal	VMXS0511
44	Cassette Guide	VMAS2100	411	Cut Washer (13)	VMXS0664
45	Post Stopper	VMDS0942	422	Poly Slider Washer 2	XWGV2D5G
50	Left Wiper Arm Unit	VXLS1026	423	Cut Washer (13)	VMXS0336
51	Cassette Door Opener	VMLS0951	426	Poly Slider Washer 3	XWGV3D54
54	Main Rod	VMMS0105	444	Cut Washer (13)	VMXS0857
55	Thrust Screw Unit	VXDS0181	455	Poly Slider Washer 3	XWGV3Z54G
67	Cassette Opener	VMLS0948	473	Washer	XWGV25D5

(1) Used in models PV-2401 and PV-2401-K.
(2) Used in models PV-4401 and PV-4401-K.
(4) Used in model PV-4402.
(5) Used in model PV-4403.
(13) Cut washer is not reusable. If removed, replace with a new one.

MAIN BOARD SCHEMATIC continued

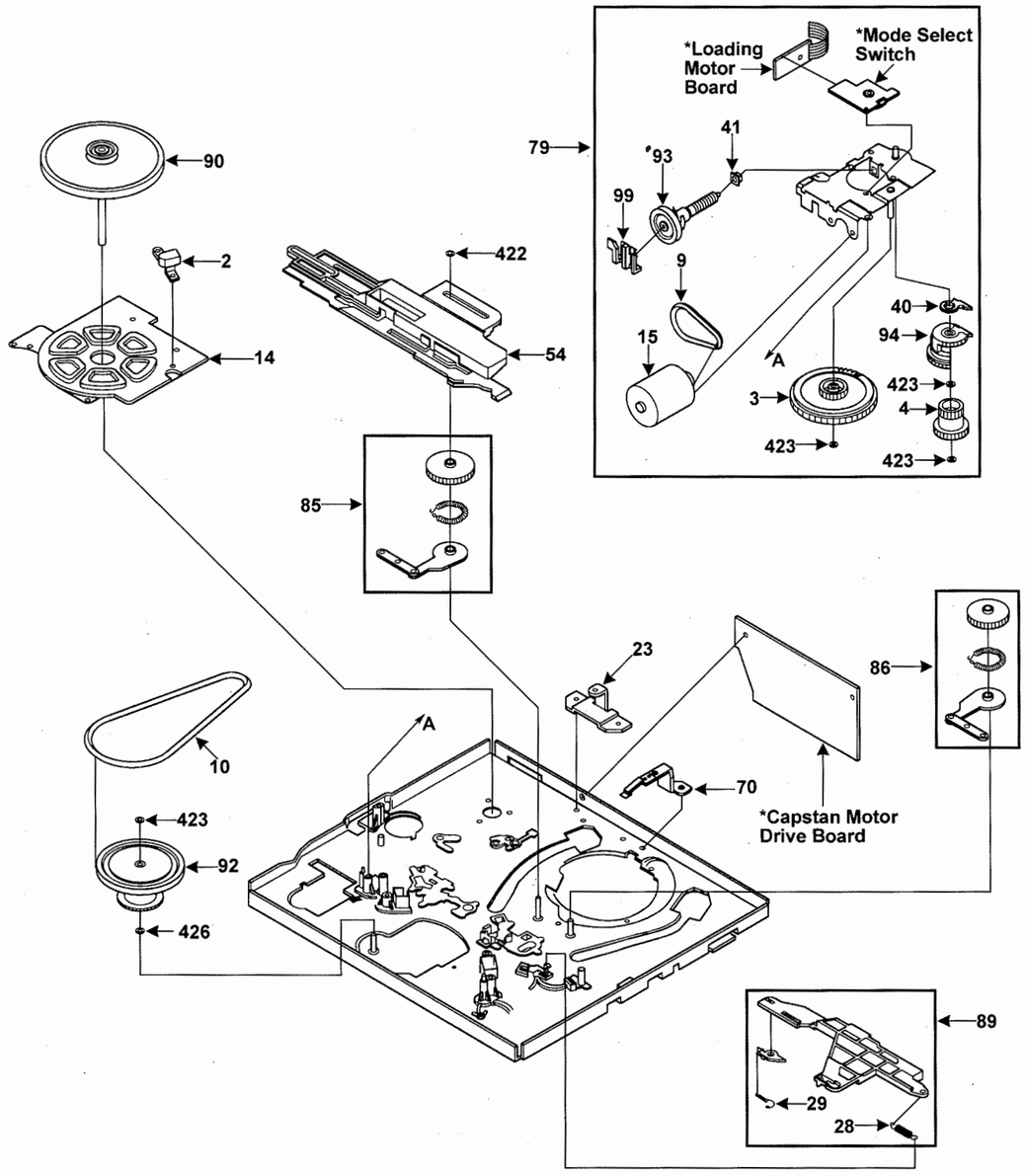


EXPLODED VIEW - TOP



*See Electrical Parts List.

EXPLODED VIEW - BOTTOM



*See Electrical Parts List.

MAIN BOARD SCHEMATIC continued

C

D

C6219 22µF
C6220 .001
TP6207
C6223 .01
C6215 2.2µF
C6216 2.2µF

71 2.5V PB CTL PULSE
70 0V PB CTL PULSE
74 2.6V PB CTL PULSE
65 3.0V PB CTL PULSE
66 2.4V PB CTL PULSE

AUDIO DEFEAT H 0V (46) — R6018 10K
SERIAL CLOCK 4.5V (16) — R6026 1000, R6024 56K, 5VB, C6010 100pF, R6023 56K, 5VB, C6009 100pF, ①④ R6017 22K, C6007 10pF
SERIAL DATA 0 4.4V (18) — R6025 1000
SERIAL DATA 1 5.0V (17) — R6220 4700
V LOCK PULSE .1V (22)
OSD CS L 4.1V (27) — R6009 1000
7.16MHz 2.6V (44)
SIGNAL LINE H 5.0V (51) — R6096 10K, ②⑤ R6016 1000
AIP 1.2V (45) — ②④⑤ TP6010
INPUT SELECT 1 0V (47) — R6019 1000
INPUT SELECT 2 0V (48) — R6020 470, NC

CYL PG/FG 1.2V (61) — R6209 68K, TP6208, C6214 .0027, R6208 82K
CYL SPEED ERROR 1.2V (26) — R6215 150K, C6203 .01
CYL PHASE ERROR 2.3V (25) — R6218 120K, R6207 39K, TP6202, C6206 .056, C6202 47µF, 5VB
CUE/REV/X2/SS L 5.0V (12)
CAP REV H/STOP M/FWD L .1V (42) — R6202 10K, R6204 1000, R6213 47K
AMP — 2.6V (54) — R6223 3900
AMP SW 2.6V (53) — D6201 MA165, C6209 4.7µF
AMP 2.4V (52) — TP6209, R6216 2200
FORCED ACCELERATION 2.4V (41) — R6211 220
HEAD SW 2.7V (21)
ENVELOPE DET .4V (99)
HEAD AMP SW .1V (98)
VIDEO DELAY REC H 0V (37) — R6050 22K, TP6007, R6075 2200
CASSETTE UP H/DOWN L .1V (86) — R6090 22K
SCAN 1 5.0V (100) — R6077 330, 5VB, SW6001 CASSETTE UP/DOWN, SAFETY TAB
CTL AMP 2.3V (72) — C6221 22µF
ROTARY SW 2.6V (97) — ②④⑤ R6064 15K, R6066 22K
PB L .2V (15)
SIGNAL L .2V (80) — R6056 22K, TP6003, R6051 22K
ENVELOPE VOLTAGE 3.0V (85)
SENSOR LED ON H 1.4V (28)
CH FREQ LOCK L .1V (81) — R6055 22K
TAKEUP REEL PULSE/SERVICE L (84)
AFC 2.3V (78) — R6057 22K

WF15 — C6227 .0047, C6225 .1
V SYNC 1.2V (76)

WF16
TP6204
TP6205
R6221 220
R6039 22K
R6065 22K
R6013 2700
R6007 5600
R6006 10K
R6076 5600
TP6008
12V
J6003

Q6003 UN2213 DELAY REC ON–ON
Q6002 2SB709 SWITCHING REC ON
Q6011 UN2213 SWITCHING DELAY REC ON–ON
Q6012 2SB709 SWITCHING DELAY REC ON–ON
R6062 220K, R6063 15K
R6105 18K, R6106 100K
C6030 ①②⑤ 1µF
R6010 2700
Q6001 2SD601 SENSOR LED DRIVE
TP6011
R6001 470, R6002 470, R6003 470
D6001 SENSOR LED VEKS5201, 14V

WF13
R6052 22K, TP6001
R6074 8200, R6073 47K, 5VB
IC6002 VEKS5202 TAKEUP REEL SENSOR
R6071 820, 12V
TP6006

P3001 — TO HEAD AMP BOARD P3501 PAGE 3, B&C

	1	GND	1
	2	CYL PG/FG	2
	3	CYL ERROR	3
14V	4	UNSW+14V	4
	5	V–REF	5
5VB	6	UNSW+5V(SYS CTL)	6
5VA	7	NC	7
NC	8	NC	8
NC	9	NC	9
NC	10	NC	10
NC	11	NC	11
	12	GND	12
	13	DELAY REC+12V	13
	14	CUE/REV/SS L	14
12V	15	SW+12V	15
	16	REC/PB VIDEO	16
	17	PB L	17
	18	HEAD AMP SW	18
	19	ENVELOPE DET	19
	20	HEAD SW	20
	21	GND	21
	22	FULL ERASE HEAD	22

AUDIO DEFEAT(E19) · SERIAL CLOCK(E19,E32) · SERIAL DATA 0(E19,E32) · SERIAL DATA 1(E32) · V LOCK PULSE(B17) · OSD CS(E21) · 7.16MHz(E20) · SIGNAL LINE(E21) · AIP CTL(A17) · INPUT SELECT 1(B17) · V SYNC(C17) · AFC(E18) · FREQ LOCK(E18) · ENVELOPE VOLTAGE(A17) · TU SIGNAL(E18) · ROTARY SW(B17) · CAP ERROR(E6) · REV/STOP/FWD(E6) · CYL ERROR(E3) · V REF(E6) · DELAY REC+12V(E28) · CUE/REV/SS(B17) · REC/PB VIDEO(A17) · PB(E26) · FULL ERASE(E6)

H, L, AND M INDICATE ACTIVE STATE

① USED IN MODELS PV–2401 AND PV–2401–K
② USED IN MODELS PV–4401 AND PV–4401–K
④ USED IN MODEL PV–4402
⑤ USED IN MODEL PV–4403

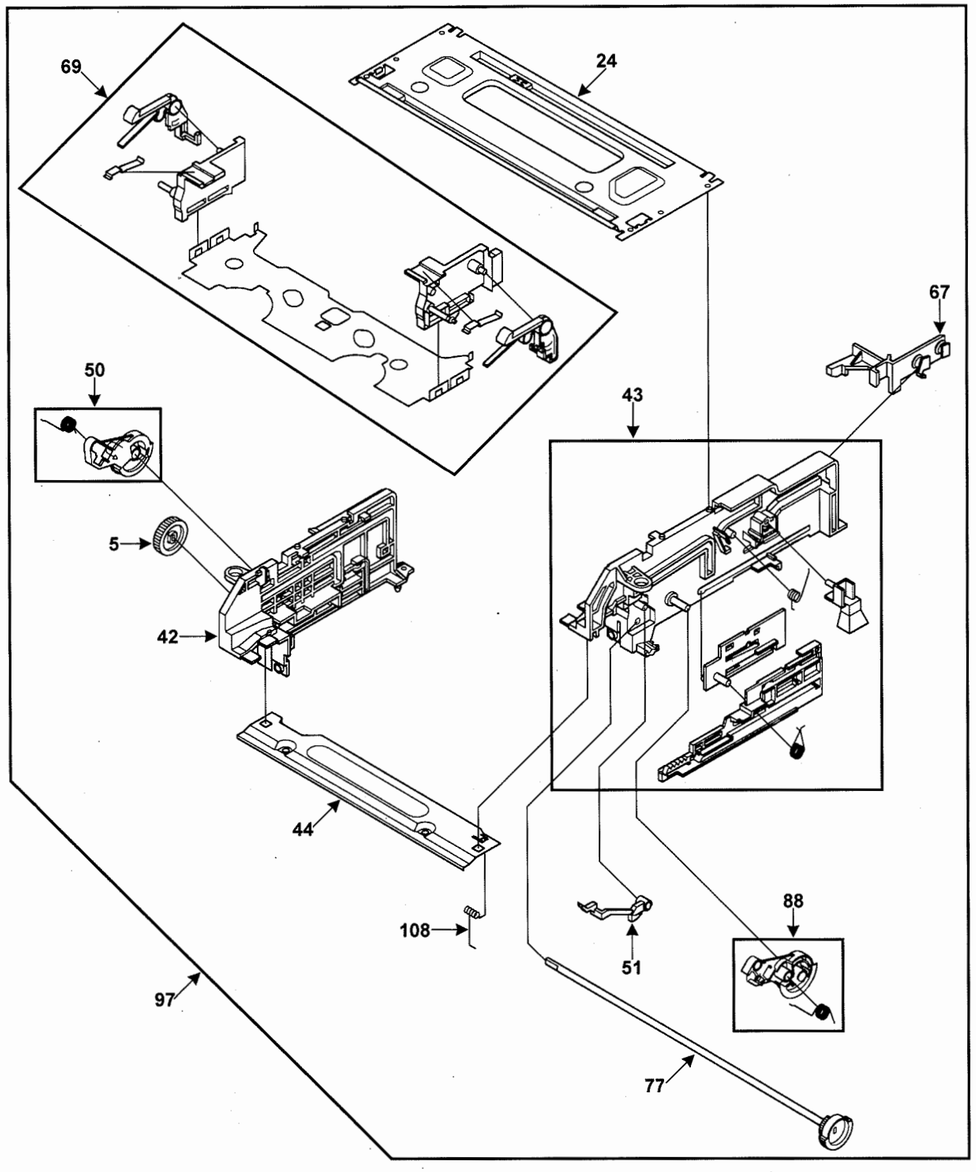
VOLTAGES TAKEN IN PLAYBACK

ADDITIONAL SCHEMATIC NOTES, SEE PAGE 4

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®

9 10 11 12 13 14 15 16

EXPLODED VIEW - CASSETTE UP ASSEMBLY



SERVICE TIPS

DEFECT	REPAIR

Write your service tips in the table 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

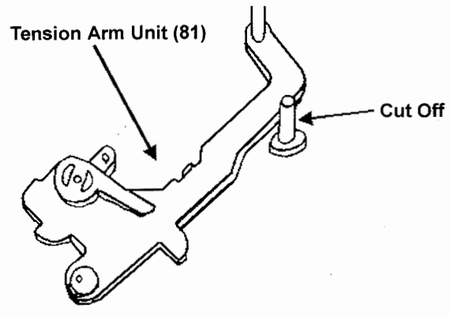
Suite 100

Indianapolis, IN 46214-2041

SERVICE INFORMATION

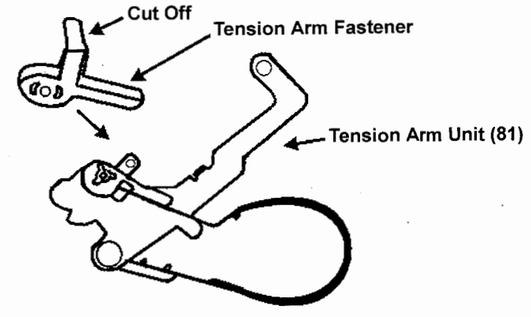
Numbers in parenthesis indicate the number used in the Mechanical Parts List and Exploded Views. All alignments are made with the VCR in the eject mode.

If unit has no tracking, poor picture, or unit will not operate then check the unit for the tension arm unit (81) out of position, due to vibration during shipment or handling.



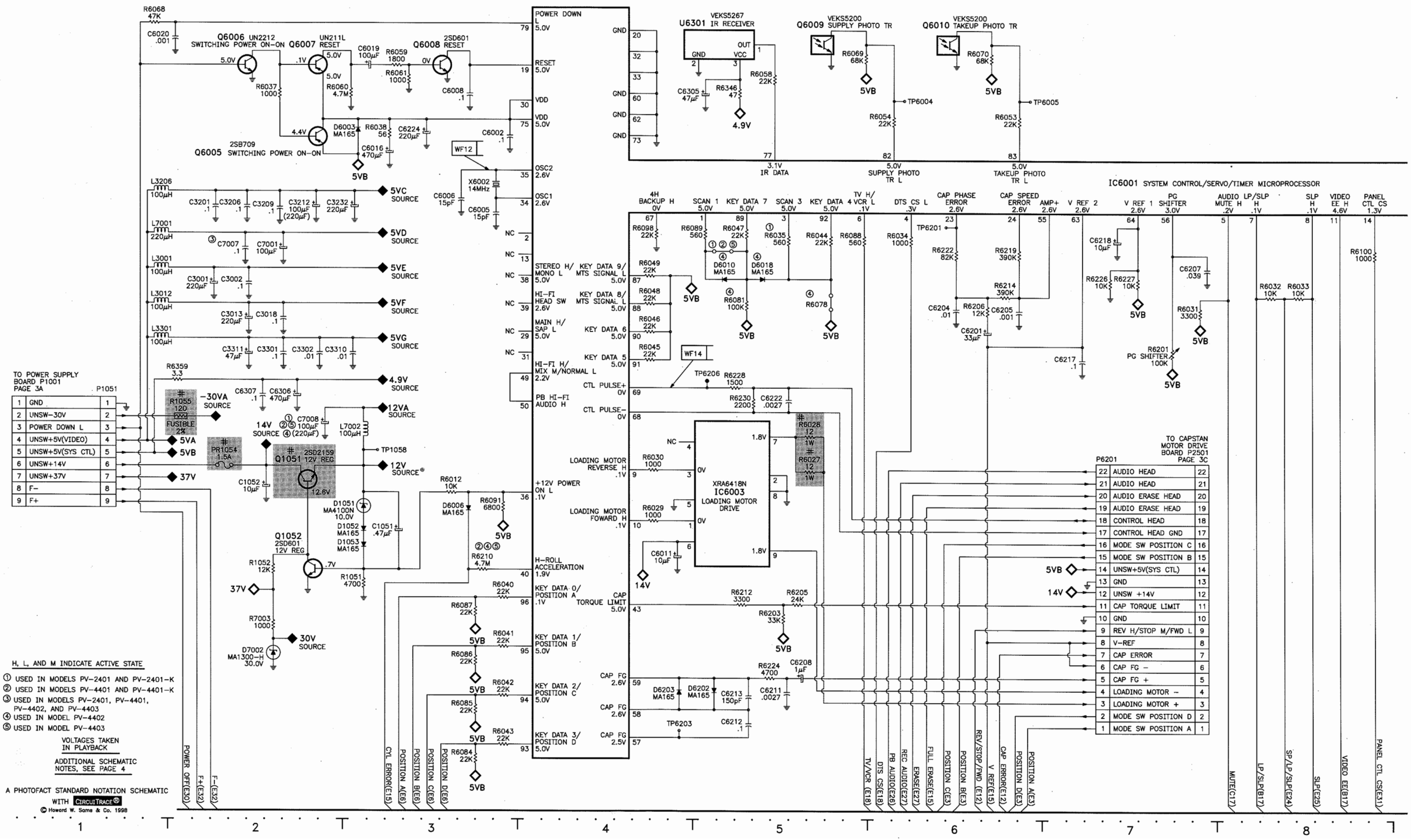
If serial number is D4SAXXXX then cut off the chassis mounted stopper.

If serial number is E4SAXXXX then cut off the tension arm stopper pin. DO NOT cut off the short arm completely.

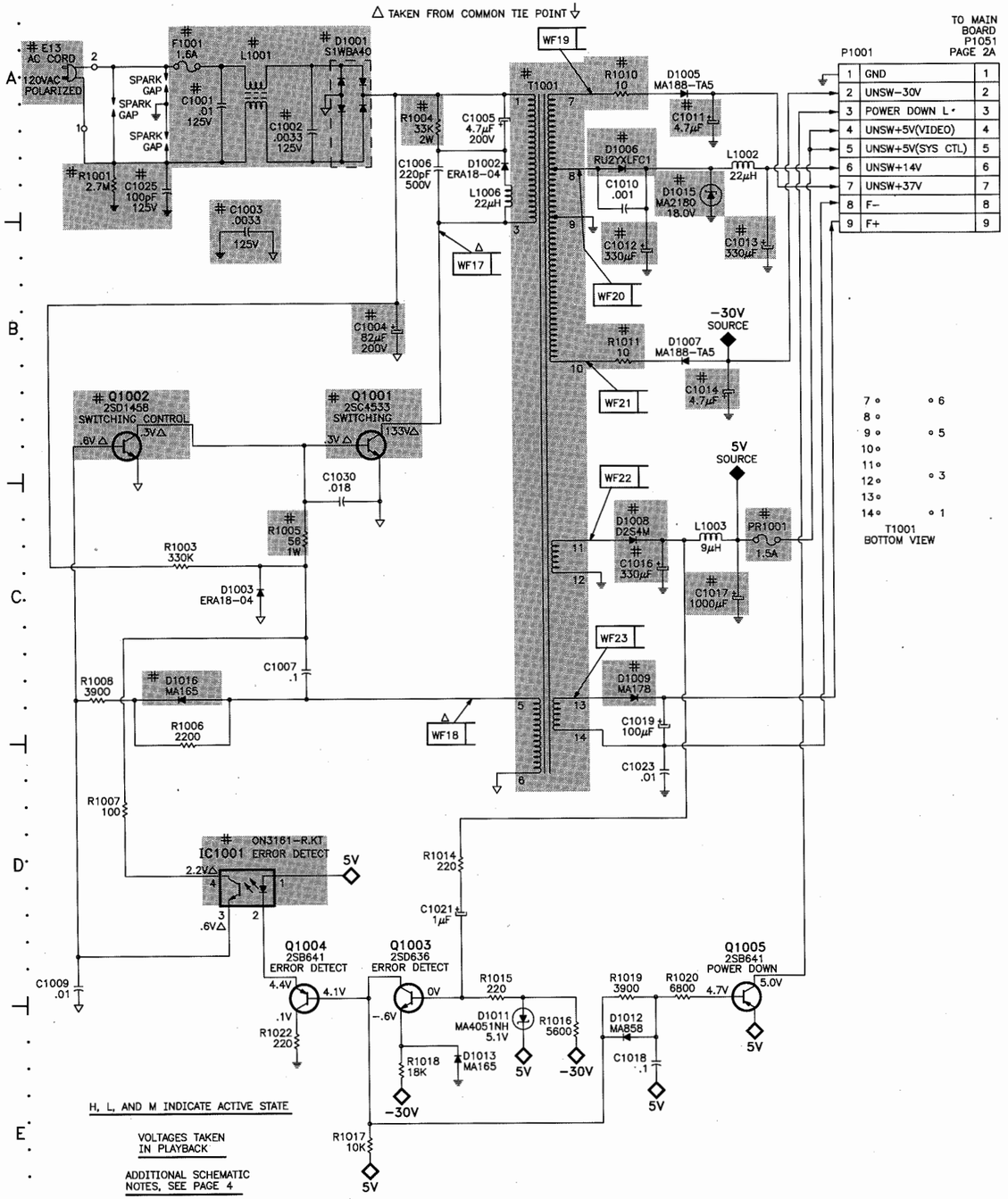


NOTE: It may be necessary to perform both procedures, depending on the serial number. Tension Arm Unit has been redesigned as of May 1994.

MAIN BOARD SCHEMATIC

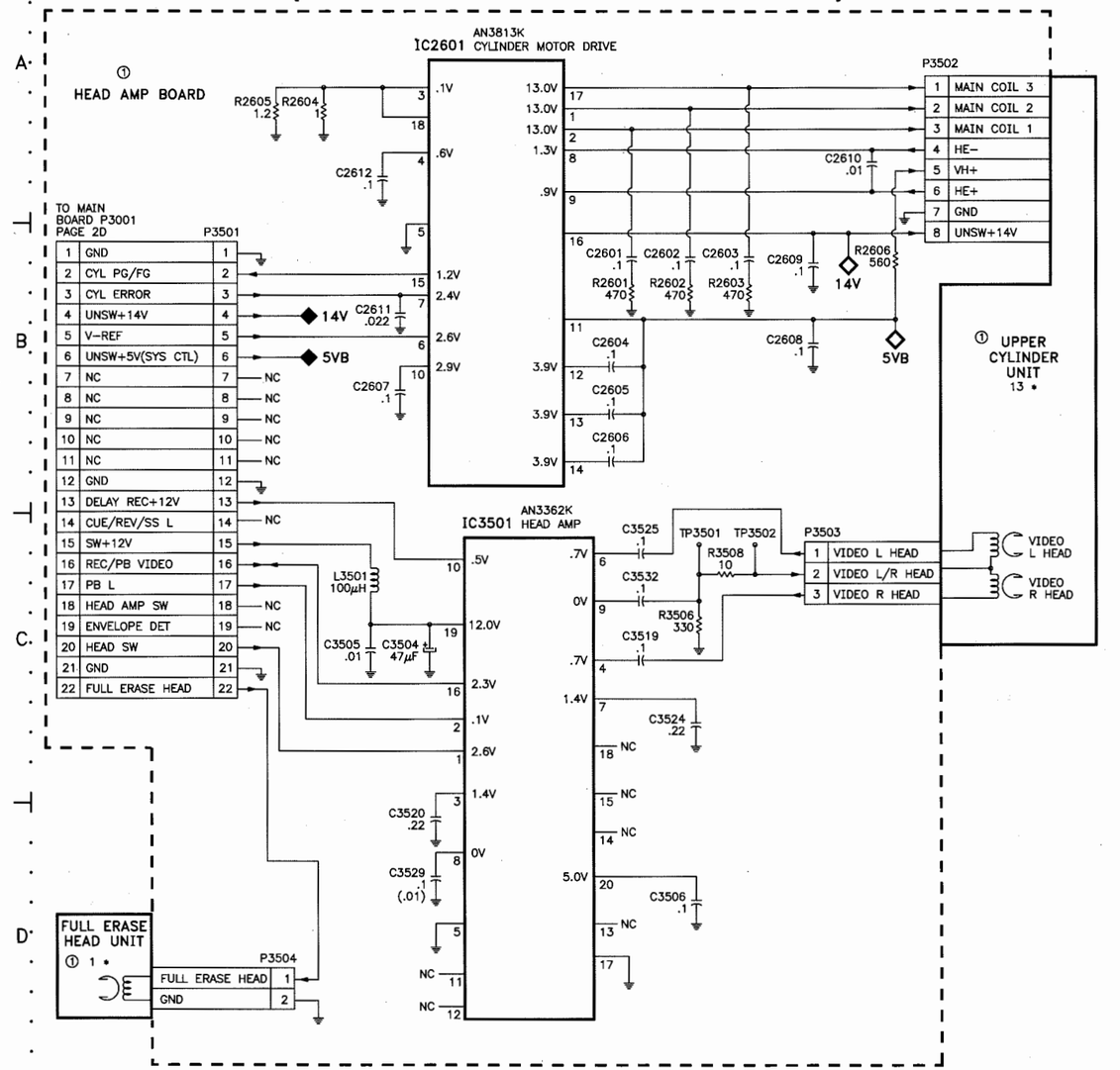


A
POWER SUPPLY BOARD SCHEMATIC



A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE®

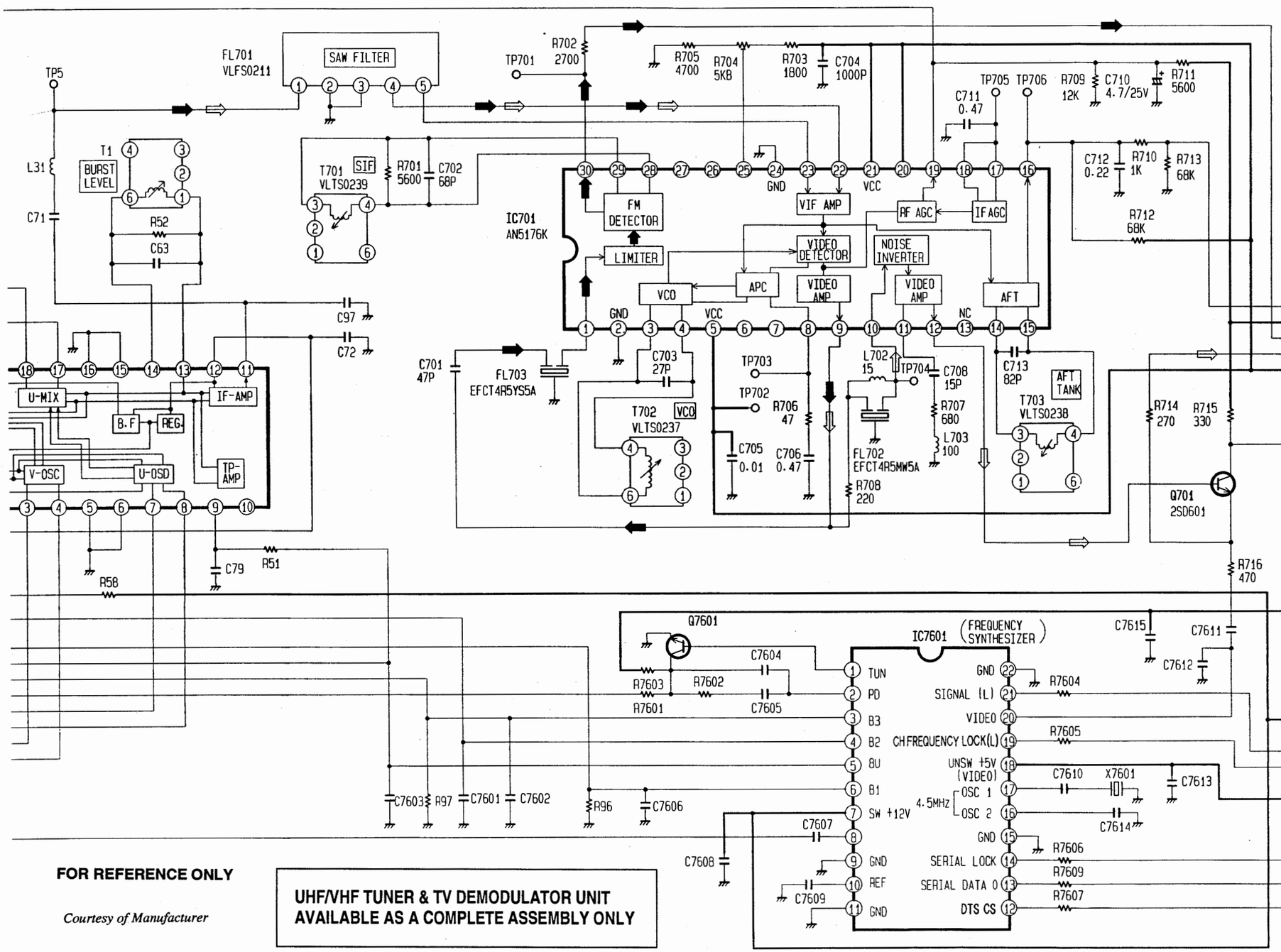
B
HEAD AMP BOARD SCHEMATIC
(MODELS PV-2401 AND PV-2401-K)



① USED IN MODELS PV−2401 AND PV−2401−K
H, L, AND M INDICATE ACTIVE STATE
* INDICATES THE ITEM NUMBER USED IN THE MECHANICAL PARTS LIST AND EXPLODED VIEWS.
VOLTAGES TAKEN IN PLAYBACK
ADDITIONAL SCHEMATIC NOTES, SEE PAGE 4

A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE®

UHF/VHF TUNER & TV DEMODULATOR UNIT continued



IMPORTANT NOTICE:

1 IF PARTS OF TUNER AND FS SECTION ARE REPLACED INDIVIDUALLY. THE FCC SPECIFICATIONS WILL NOT BE SATISFIED. DURING SERVICING. PLEASE REPLACE AS A UNIT.

2 SINCE THE UHF/VHF TUNER/TV DEMODULATOR UNIT HAS ALREADY BEEN PRE-ADJUSTED AT THE FACTORY. DO NOT TRY TO ADJUST THE UHF/VHF TUNER/TV DEMODULATOR UNIT. THE UHF/VHF TUNER/TV DEMODULATOR UNIT REPLACEMENT PART IS AVAILABLE ONLY AS A COMPLETE ASSEMBLY UNIT.

P701		TO MAIN
14	AFC	PIN-14
15	SW +12V	PIN-15
16	AUDIO	PIN-16
17	VIDEO	PIN-17
18	UNSW +5V (VIDEO)	PIN-18
19	GND	PIN-19

BAND SELECTION CHART

B1	B2	BU	CHANNEL
11V	0V	0V	2CH~6CH 5A, A-5~A-11, A, B
6V	11V	0V	7CH~13CH C~KK
0V	0V	11.5V	14CH~69CH 65CH~94CH (CATV) 100CH~125CH (CATV) LL~EEE

NOTE: THE VOLTAGES ARE APPROXIMATE.

P7601		TO MAIN
6	+30V	PIN-6
7	SW +12V	PIN-7
8	SERIAL CLOCK O	PIN-8
9	SIGNAL (L)	PIN-9
10	CH FREQUENCY LOCK(L)	PIN-10
11	SERIAL DATA O	PIN-11
12	UNSW +5V (VIDEO)	PIN-12
13	DTS CS	PIN-13

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS ARE 1/8W AND 1/16W.

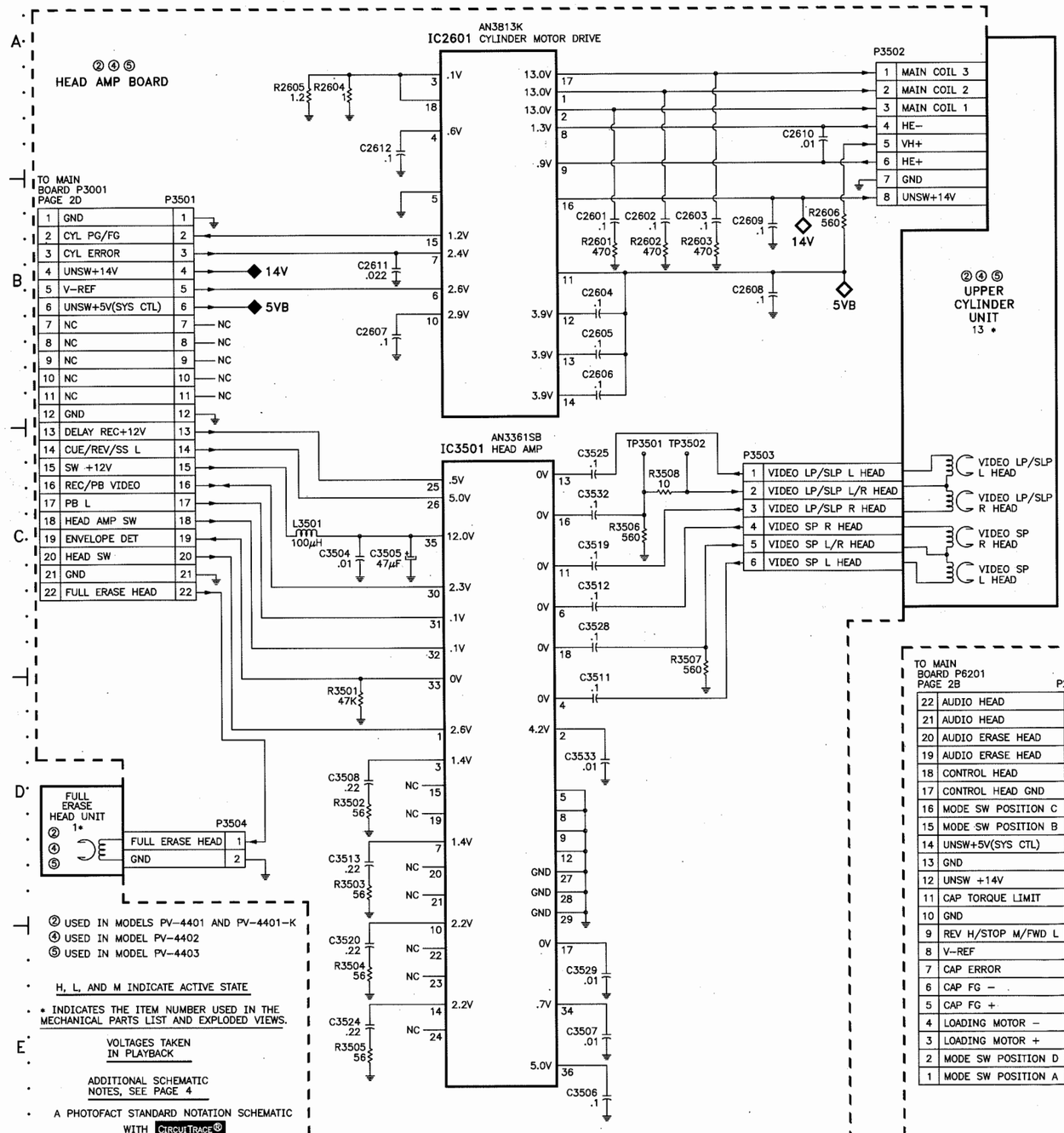
FOR REFERENCE ONLY

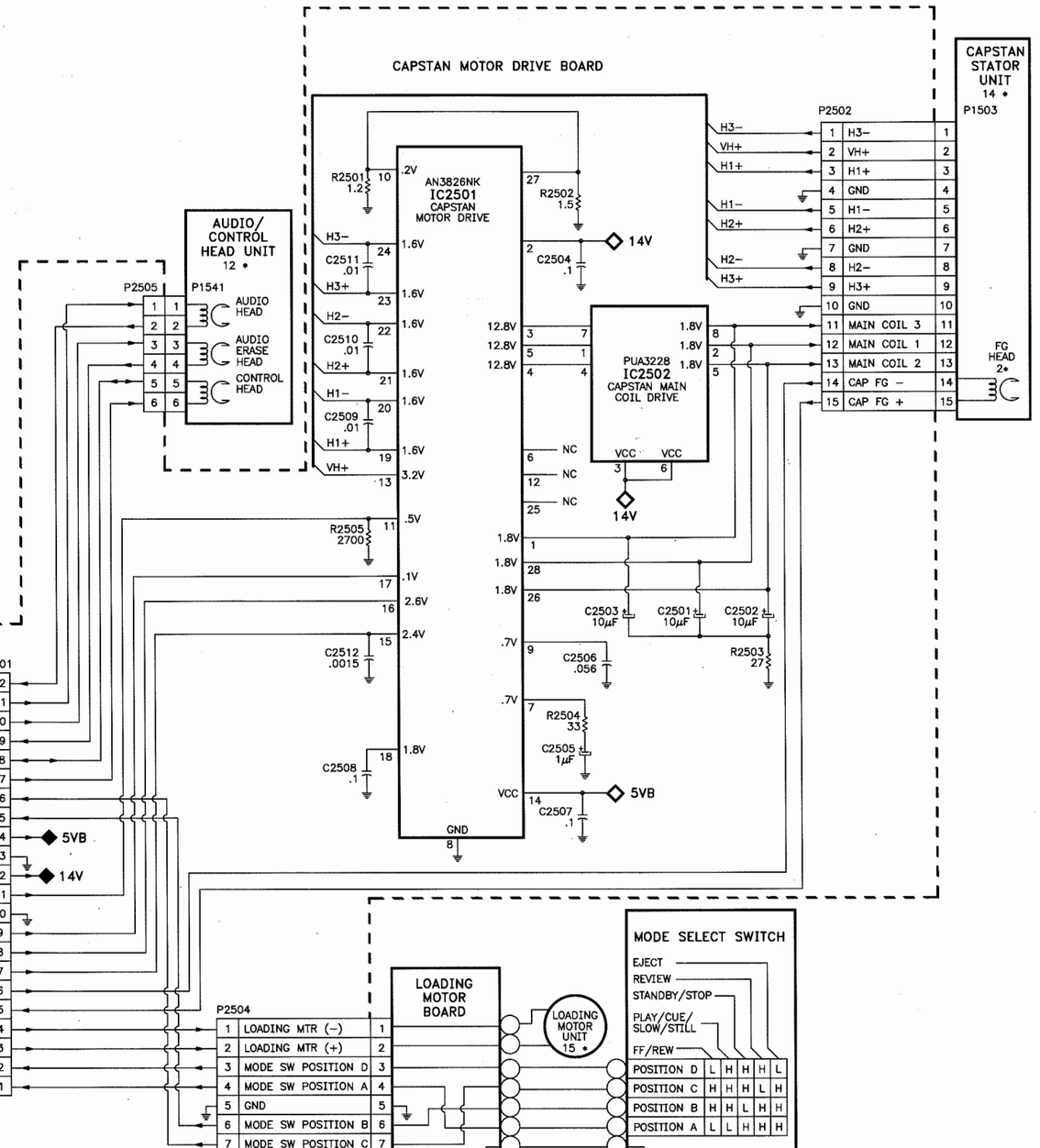
Courtesy of Manufacturer

UHF/VHF TUNER & TV DEMODULATOR UNIT
AVAILABLE AS A COMPLETE ASSEMBLY ONLY

C
HEAD AMP BOARD SCHEMATIC
(MODELS PV-4401,PV-4401-K, PV-4402, AND PV-4403)

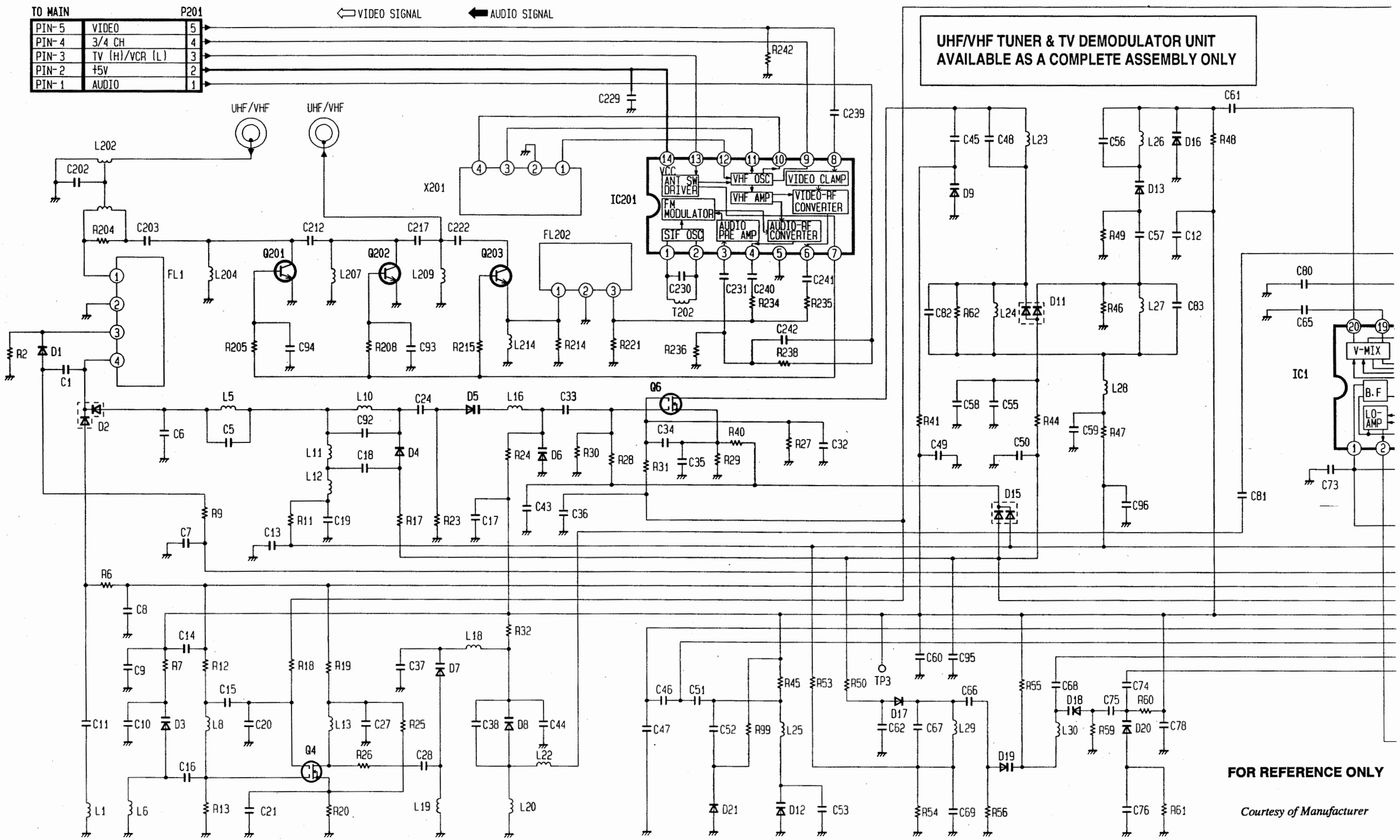
D
CAPSTAN MOTOR DRIVE BOARD



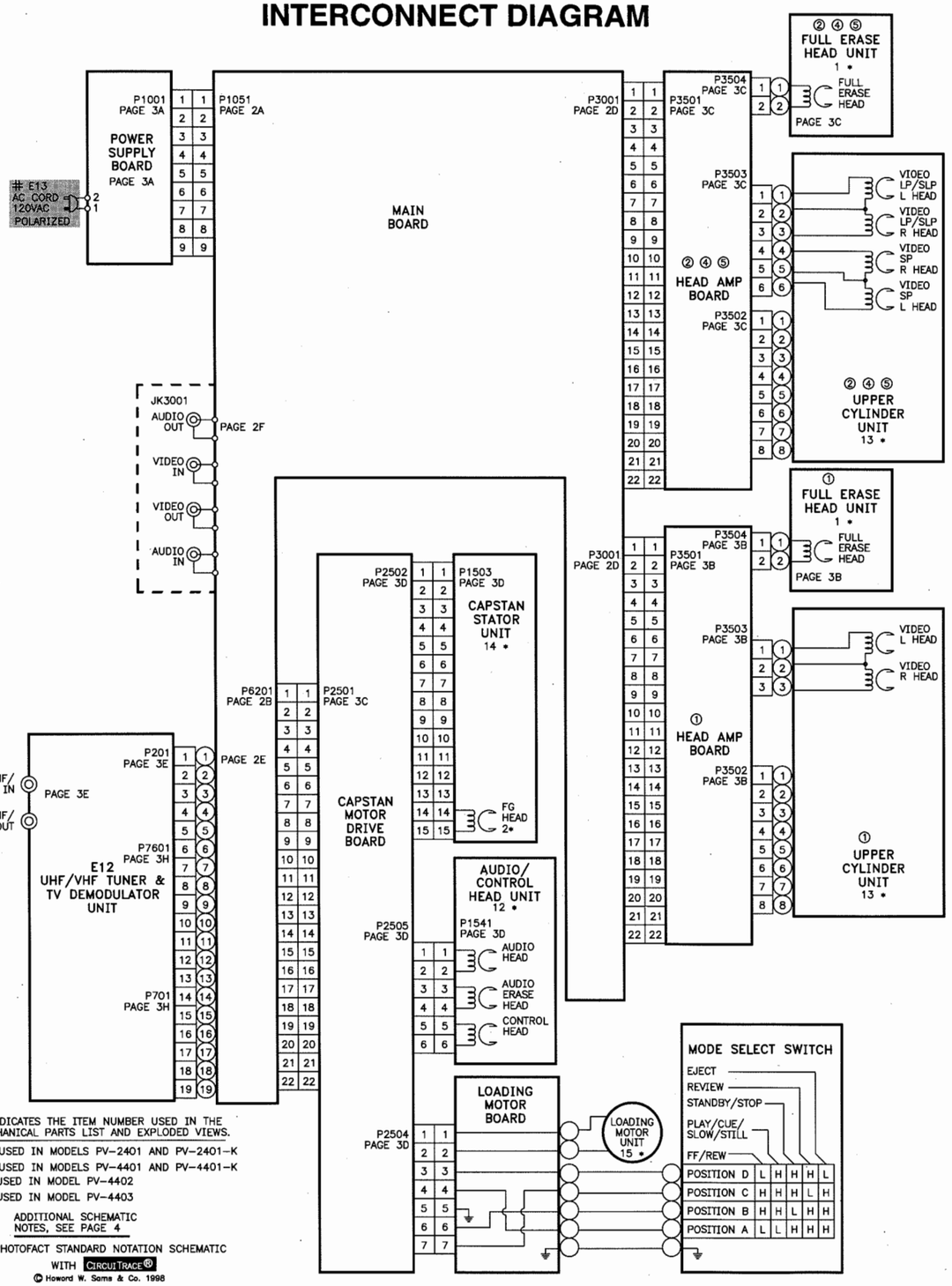


41 42 43 44 45 46 47 48

UHF/VHF TUNER & TV DEMODULATOR UNIT



INTERCONNECT DIAGRAM



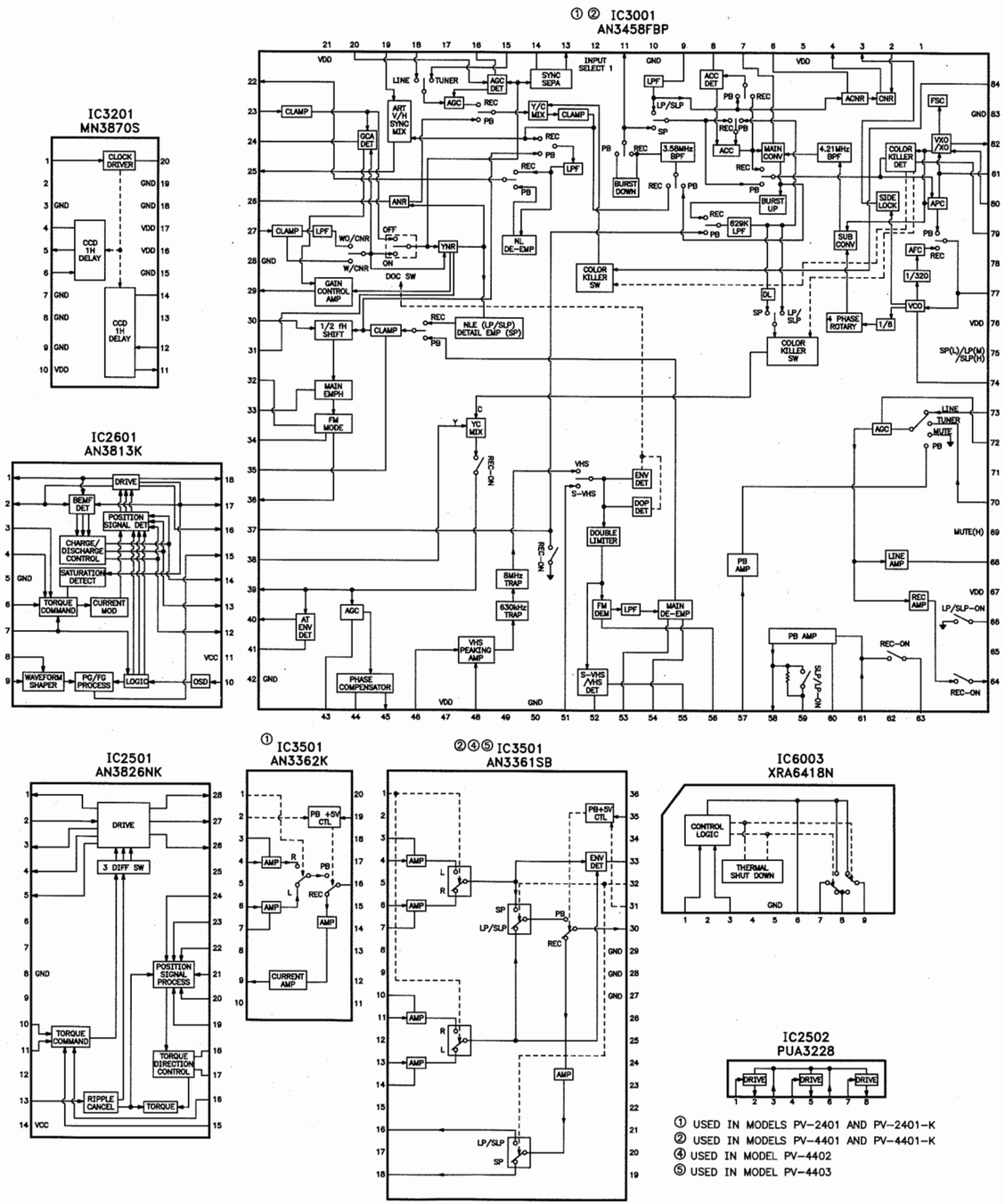
• INDICATES THE ITEM NUMBER USED IN THE MECHANICAL PARTS LIST AND EXPLODED VIEWS.

① USED IN MODELS PV-2401 AND PV-2401-K
② USED IN MODELS PV-4401 AND PV-4401-K
④ USED IN MODEL PV-4402
⑤ USED IN MODEL PV-4403

ADDITIONAL SCHEMATIC NOTES, SEE PAGE 4

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®

IC FUNCTIONS



① USED IN MODELS PV-2401 AND PV-2401-K
② USED IN MODELS PV-4401 AND PV-4401-K
④ USED IN MODEL PV-4402
⑤ USED IN MODEL PV-4403

ELECTRICAL PARTS LIST continued

Item No.	Description	Mfr. Part No.	Notes
# C1012, 13	330µF 18V	ECEA1PEE331B	-
	330µF 18V	VCESN1P331B	-
	330µF 18V	VCESU1P331B	-
# C1014	4.7µF 50V	ECEA1HGE4R7B	-
	4.7µF 50V	VCESS1H4R7B	-
	4.7µF 50V	VCESV1H4R7B	-
	4.7µF 50V	VCES11H4R7B	-
# C1016	330µF 6.3V	ECEA0JEE331B	-
	330µF 6.3V	ECEA0JEE331E	-
	330µF 6.3V	VCESU0J331B	-
	330µF 6.3V	VCESU0J331E	-
# C1017	1000µF 6.3V	ECA0JM102B	-
	1000µF 6.3V	ECEA0JU102	-
	1000µF 6.3V	VCESM0J102B	-
	1000µF 6.3V	VCESP0J102B	-
	1000µF 6.3V	VCESQ0J102B	-
	1000µF 6.3V	VCESR0JE102	-
# C1025	100pF 20% 125V	ECKDNS101MB	-
	100pF 20% 125V	ECKDRS101MB	-
	100pF 10% 125V	VCKSEJD101KW	-
	100pF 20% 125V	VCKSHJD101MW	-
# E13	AC Cord	VJAS0154-B	Polarized
	AC Cord	VJAS0154-F	Polarized
# F1001	Fuse	VSFS0003A16	1.6Amp, 125V
	Fuse	VSFS0012A16	1.6Amp, 125V
	Fuse	XBA1C16NU100	1.6Amp, 125V
# L1001	Line Filter	ELF18D290A	29µH
	Line Filter	ELF18D290A-P	29µH
	Line Filter	VLQS0157	29µH
# PR1001	IC Protector	ICP-F38	1.5Amp
	IC Protector	ICP-F38-1	1.5Amp
	IC Protector	UN10015	1.5Amp
# R1001	2.7M 10% 1/2W	VRESC2TK275	-
	2.7M 10% 1/2W	VRESC2TK275C	-
# R1004	33K 5% 2W	ERG2SJM333H	-
	33K 5% 2W	ERG2SJS333H	-
	33K 5% 2W	ERG2SJ333H	-
# R1005	56 5% 1W	ERG1SJM560P	-
	56 5% 1W	ERG1SJS560P	-
	56 5% 1W	ERG1SJ560P	-
# R1010, 11	10 5% 1/4W	ERD25FJ100P	-
	10 5% 1/4W	ERD25FPJ100P	-
	10 5% 1/4W	VRESF4FJ100P	-
# T1001	Power	ETS28AD1F5AC	-
	Power	VTPS0034	-
	Fuse Holder	VJSS0164	For F1001 (2 Used)
	PC Board	VEPS01040B2	Power Supply

ELECTRICAL PARTS LIST NOTES

 # For SAFETY use only equivalent replacement part.
* Indicates the item number used in Mechanical Parts List and Exploded Views.
(1) Used in models PV-2401 and PV-2401-K.
(2) Used in models PV-4401 and PV-4401-K.
(4) Used in model PV-4402.
(5) Used in model PV-4403.
(7) Used in models PV-2401 and PV-4401.
(8) Used in models PV-2401-K and PV-4401-K.
(9) Used in model PV-2401.
(10) Used in model PV-2401-K.
(11) Used in model PV-4401.
(12) Used in model PV-4401-K.

Description	Mfr. Part No.

CABINET PARTS

Bottom Panel	VKUS0266
Cassette Door Unit (1)(2)(4)	VYPS5773
Cassette Door Unit (5)	VYPS6088
Cassette Door Spring	VMBS1056
Front Panel Assembly (1)	VYPS5998
Front Panel Assembly (2)	VYPS6001
Front Panel Assembly (4)	VYPS6224
Front Panel Assembly (5)	VYPS6124
Rear Panel	VGPS2924
Top Cover (1)(2)(4)	VKMS2135
Top Cover (5)	VKMS2208

IR TRANSMITTER

Battery Cover (1)(2)	VKFS1101
Battery Cover (4)	VKFS0938
Battery Cover (5)	VKFS1073

(1) Used in models PV-2401 and PV-2401-K.
(2) Used in models PV-4401 and PV-4401-K.
(4) Used in model PV-4402.
(5) Used in model PV-4403.

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.

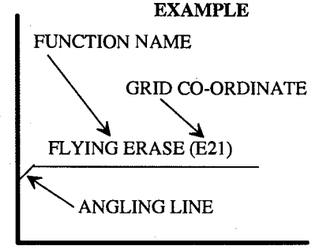
SCHEMATIC NOTES

 # 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.
- 12V — CIRCUITRACE® point where a component, or a board, connects to a voltage source supply.
- Cabling: Heavy lines reduce use of multiple lines.

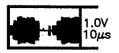
Voltages are taken from ground, unless noted otherwise.
Waveforms are taken from ground, unless noted otherwise.
Waveforms taken with triggered scope and NTSC color bar generator with window pattern. Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions. Supply voltages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



WAVEFORMS

WF1
SEE IC3001
PIN 15
PAGE 2E

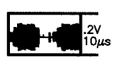


REC

WF2
SEE IC3001
PIN 29
PAGE 2E

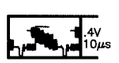
REC/PB

WF3
SEE IC3001
PIN 9
PAGE 2F



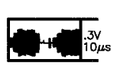
REC/PB

WF4
SEE IC3001
PIN 27
PAGE 2E



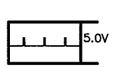
PB

WF5
SEE IC3001
PIN 11
PAGE 2E



REC/PB

WF6
SEE IC3001
PIN 13
PAGE 2E

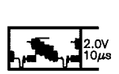


REC/PB

WF7
SEE E12
PIN 17
PAGE 2E

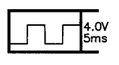
REC

WF8
SEE IC3001
PIN 25
PAGE 2E



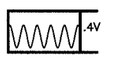
REC/PB

WF9
SEE IC3001
PIN 30
PAGE 2E



PB

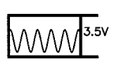
WF10
SEE IC3301
PIN 2
PAGE 2E



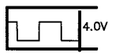
WF11
SEE E12
PIN 5
PAGE 2E

REC/PB

WF12
SEE IC6001
PIN 35
PAGE 2A

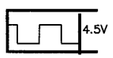


WF13
SEE IC6001
PIN 84
PAGE 2C



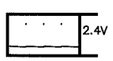
REC/PB

WF14
SEE IC6001
PIN 69
PAGE 2A

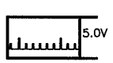


REC

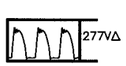
WF15
SEE IC6001
PIN 76
PAGE 2C



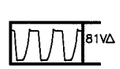
WF16
SEE IC6001
PIN 61
PAGE 2C



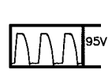
WF17
SEE T1001
PIN 3
PAGE 3A



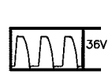
WF18
SEE T1001
PIN 5
PAGE 3A



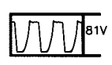
WF19
SEE T1001
PIN 7
PAGE 3A



WF20
SEE T1001
PIN 8
PAGE 3A



WF21
SEE T1001
PIN 10
PAGE 3A



WF22
SEE T1001
PIN 11
PAGE 3A

WF23
SEE T1001
PIN 13
PAGE 3A

△ TAKEN FROM COMMON TIE POINT ⏚

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M. Herkless, J. Kocha, F. Malek,
B. Medaris, R. Raus, B. Skinner

SCHEMATIC COMPONENT LOCATION GUIDE

C1001	A-33	C3007	C-22	C3505	C-42	C6211	E-5	D7001	E-20	Q6005	B-2	R3022	B-20	R4008	C-27	R6060	A-3	R6358	D-31
C1002	A-34	C3008	C-20	C3506	D-39	C6212	E-5	D7002	E-2	Q6006	A-2	R3023	B-18	R4009	D-18	R6061	A-3	R6359	C-1
C1003	B-33	C3009	C-22	C3506	E-43	C6213	E-5	D7004	D-19	Q6007	A-2	R3024	B-26	R4010	C-23	R6062	B-13	R7001	E-19
C1004	B-34	C3010	C-23	C3507	E-43	C6214	A-12	DP6301	B-30	Q6008	A-3	R3025	B-20	R4011	C-23	R6063	B-13	R7002	E-19
C1005	A-34	C3011	C-23	C3508	D-42	C6215	A-10	E13	A-33	Q6009	A-5	R3026	B-20	R4012	E-26	R6064	D-12	R7003	D-2
C1006	A-34	C3012	A-19	C3511	D-43	C6216	A-10	F1001	A-33	Q6010	A-6	R3027	C-17	R4013	E-26	R6065	C-13	R7005	E-19
C1007	C-34	C3013	C-2	C3512	C-43	C6217	C-7	IC1001	D-33	Q6011	D-13	R3028	C-18	R4014	D-26	R6066	D-12	R7006	D-22
C1009	D-33	C3015	C-23	C3513	D-42	C6218	B-7	IC2501	B-46	Q6012	D-13	R3029	C-19	R4015	D-26	R6068	A-1	R7009	D-19
C1010	B-35	C3016	C-23	C3519	C-38	C6219	A-9	IC2502	C-47	Q6303	D-31	R3030	C-21	R4016	E-27	R6069	A-5	SW6001	C-12
C1011	A-35	C3017	B-26	C3519	C-43	C6220	A-9	IC2601	A-38	Q7001	E-20	R3031	A-21	R4017	D-23	R6070	A-6	SW6301	C-28
C1012	B-35	C3018	C-2	C3520	D-38	C6221	D-12	IC2601	A-42	R1001	A-33	R3036	C-26	R4018	D-19	R6071	E-13	SW6302	C-28
C1013	B-35	C3021	D-17	C3520	E-42	C6222	C-5	IC3001	B-21	R1003	C-33	R3037	C-27	R4019	E-27	R6073	E-13	SW6303	C-28
C1014	B-35	C3022	C-19	C3524	C-39	C6223	A-9	IC3201	C-20	R1004	A-34	R3038	C-23	R4025	E-25	R6074	E-13	SW6304	C-27
C1016	C-35	C3023	C-19	C3524	E-42	C6224	B-3	IC3301	D-20	R1005	C-34	R3039	C-24	R4101	D-27	R6075	C-12	SW6305	C-28
C1017	C-35	C3024	C-22	C3525	C-38	C6225	E-11	IC3501	C-38	R1006	D-33	R3040	C-24	R4102	D-27	R6076	C-13	SW6306	C-28
C1018	E-35	C3025	C-22	C3525	C-43	C6227	E-11	IC3501	C-42	R1007	D-33	R3041	B-25	R4103	D-28	R6077	C-12	SW6307	C-28
C1019	C-35	C3026	A-21	C3528	D-43	C6305	A-5	IC6001	B-7	R1008	C-33	R3045	B-17	R6001	D-14	R6081	C-5	SW6308	C-27
C1021	D-34	C3031	C-22	C3529	D-38	C6306	C-2	IC6002	E-13	R1010	A-35	R3046	B-17	R6002	D-14	R6084	E-3	SW6310	C-28
C1023	D-35	C3032	C-18	C3529	E-43	C6307	C-2	IC6003	D-5	R1011	B-35	R3047	B-28	R6003	D-15	R6085	E-3	SW7001	D-18
C1025	A-33	C3033	C-19	C3532	C-38	C6308	D-31	IC6301	C-30	R1014	D-34	R3048	C-21	R6006	C-14	R6086	E-3	T1001	A-34
C1030	C-34	C3036	C-24	C3532	C-43	C6315	D-30	JK3001	D-24	R1015	E-34	R3049	B-22	R6007	C-14	R6087	D-3	T4101	D-27
C1051	D-3	C3038	C-26	C3533	D-43	C7001	B-2	L1001	A-33	R1016	E-35	R3050	C-25	R6009	B-10	R6088	B-5	TP6206	C-5
C1052	D-2	C3039	C-26	C3610	D-30	C7004	E-18	L1002	A-35	R1017	E-34	R3053	D-24	R6010	D-14	R6089	B-5	U6301	A-5
C2501	C-47	C3043	B-20	C4001	B-22	C7005	D-18	L1003	C-35	R1018	E-34	R3054	D-23	R6012	D-3	R6090	C-12	X3001	B-20
C2502	C-47	C3045	B-28	C4002	C-26	C7007	B-2	L1006	B-34	R1019	E-35	R3055	D-22	R6013	C-13	R6091	D-3	X6002	B-3
C2503	C-47	C3046	B-28	C4004	B-27	C7008	C-2	L3001	B-1	R1020	E-35	R3056	E-23	R6016	D-10	R6096	B-10	X6301	D-29
C2504	B-47	C3047	B-18	C4005	B-27	C7010	E-19	L3002	D-25	R1022	E-33	R3057	E-23	R6017	D-9	R6098	B-4		
C2505	D-47	C3048	B-22	C4006	C-25	C7015	D-19	L3003	D-25	R1051	D-3	R3059	B-22	R6018	B-9	R6100	B-8		
C2506	D-47	C3049	B-22	C4007	C-24	C7016	E-18	L3004	B-26	R1052	D-2	R3061	C-23	R6019	B-10	R6105	D-13		
C2507	D-47	C3050	C-26	C4008	C-18	C7018	E-18	L3005	B-21	R1055	C-2	R3062	C-25	R6020	B-11	R6106	D-13		
C2508	D-46	C3051	C-26	C4009	C-18	C7019	D-18	L3010	C-26	R2501	B-46	R3063	C-24	R6023	C-9	R6201	C-7		
C2509	C-46	C3052	E-22	C4010	B-27	D1001	A-34	L3012	C-1	R2502	B-47	R3064	B-23	R6024	B-9	R6202	B-13		
C2510	B-46	C3053	D-22	C4011	B-27	D1002	A-34	L3013	C-26	R2503	D-47	R3065	B-23	R6025	B-9	R6203	D-5		
C2511	B-46	C3054	D-23	C4012	C-27	D1003	C-33	L3014	B-19	R2504	D-47	R3066	B-24	R6026	B-9	R6204	B-12		
C2512	D-46	C3055	B-22	C4013	C-25	D1005	A-35	L3206	B-1	R2505	C-46	R3067	B-24	R6027	D-5	R6205	D-5		
C2601	B-38	C3057	C-24	C4013	D-28	D1006	A-35	L3301	C-1	R2601	B-38	R3069	B-18	R6028	C-5	R6206	C-6		
C2601	B-43	C3060	B-17	C4014	C-23	D1007	B-35	L3302	E-21	R2601	B-43	R3072	C-19	R6029	D-4	R6207	A-12		
C2602	B-39	C3064	C-19	C4015	C-25	D1008	C-35	L3501	C-38	R2602	B-39	R3073	C-18	R6030	D-4	R6208	A-12		
C2602	B-43	C3065	C-21	C4016	E-27	D1009	C-35	L3501	C-42	R2602	B-43	R3074	C-18	R6031	C-7	R6209	A-12		
C2603	B-39	C3067	B-19	C4017	D-23	D1011	E-34	L4001	B-27	R2603	B-39	R3077	C-18	R6032	C-8	R6210	D-3		
C2603	B-43	C3201	B-2	C4018	C-19	D1012	E-35	L4002	C-25	R2603	B-43	R3078	C-17	R6033	C-8	R6211	B-12		
C2604	B-38	C3202	C-21	C4021	E-25	D1013	E-34	L4101	E-28	R2604	A-37	R3079	C-17	R6034	B-6	R6212	D-5		
C2604	B-43	C3203	C-21	C4102	D-27	D1015	B-35	L7001	B-1	R2604	A-42	R3201	D-21	R6035	B-5	R6213	B-13		
C2605	B-38	C3204	C-20	C4104	D-28	D1016	C-33	L7002	C-3	R2605	A-37	R3203	C-20	R6037	A-2	R6214	C-6		
C2605	B-43	C3205	C-21	C4106	E-27	D1051	D-3	PR1001	C-35	R2605	A-42	R3301	D-20	R6038	B-3	R6215	A-12		
C2606	B-38	C3206	B-2	C6002	B-3	D1052	D-3	PR1054	D-2	R2606	B-39	R3303	E-22	R6039	C-13	R6216	B-12		
C2606	C-43	C3207	C-22	C6005	B-3	D1053	D-3	Q1001	B-34	R2606	B-44	R3304	E-21	R6040	D-3	R6218	A-12		
C2607	B-38	C3208	C-21	C6006	B-3	D3001	D-26	Q1002	B-33	R3003	D-25	R3305	D-19	R6041	E-3	R6219	B-6		
C2607	B-42	C3209	B-2	C6007	D-9	D3002	A-20	Q1003	E-34	R3004	D-25	R3306	E-19	R6042	E-3	R6220	B-10		
C2608	B-39	C3210	C-20	C6008	A-3	D3003	B-20	Q1004	E-34	R3005	B-23	R3501	D-42	R6043	E-3	R6221	B-13		
C2608	B-43	C3211	C-19	C6009	C-9	D3004	A-20	Q1005	E-35	R3006	B-23	R3502	D-42	R6044	B-5	R6222	B-6		
C2609	B-39	C3212	B-2	C6010	C-9	D3005	A-20	Q1051	D-2	R3007	C-17	R3503	D-42	R6045	C-4	R6223	B-12		
C2609	B-43	C3232	B-3	C6011	D-4	D3006	C-23	Q1052	D-2	R3008	B-18	R3504	E-42	R6046	C-4	R6224	E-5		
C2610	A-39	C3301	C-2	C6016	B-3	D3007	C-23	Q3001	B-20	R3009	C-20	R3505	E-42	R6047	B-5	R6226	B-7		
C2610	A-44	C3302	C-2	C6019	A-3	D3008	E-23	Q3005	D-22	R3010	B-23	R3506	C-39	R6048	C-4	R6227	B-7		
C2611	B-38	C3304	E-20	C6020	A-2	D3009	D-23	Q3007	B-17	R3011	B-24	R3506	C-43	R6049	B-4	R6228	C-5		
C2611	B-42	C3305	D-20	C6030	D-13	D4001	E-27	Q3009	C-18	R3012	D-25	R3507	D-43	R6050	C-12	R6230	C-5		
C2612	A-38	C3306	D-20	C6201	C-6	D6001	E-14	Q3010	C-18	R3013	D-25	R3508	C-39	R6051	D-12	R6315	D-32		
C2612	B-42	C3307	E-21	C6202	A-12	D6003	B-3	Q4001	D-26	R3014	B-25	R3508	C-43	R6052	E-13	R6316	D-32		
C3001	B-2	C3308	E-21	C6203	A-12	D6006	D-3	Q4002	D-27	R3015	A-18	R4001	B-26	R6053	B-6	R6317	D-32		
C3002	B-2	C3309	E-21	C6204	C-6	D6010	B-5	Q4003	D-27	R3016	A-19	R4002	B-27	R6054	B-6	R6318	D-31		
C3003	D-25	C3310	C-3	C6205	C-6	D6018	B-5	Q4005	E-25	R3017	B-19	R4003	B-27	R6055	E-12	R6346	A-5		
C3004	D-25	C3311	C-2	C6206	A-12	D6201	B-12	Q4101	D-28	R3018	B-19	R4004	C-25	R6056	D-12	R6350	B-32		
C3005	D-25	C3504	C-38	C6207	B-7	D6202	E-5	Q6001	D-14	R3019	B-20	R4005	C-24	R6057	E-11	R6351	B-32		
C3006	C-18	C3504	C-42	C6208	E-5	D6203	E-4	Q6002	C-14	R3020	A-20	R4006	B-27	R6058	A-5	R6352	B-32		
C3006	C-18	C3505	C-38	C6209	B-12	D6324	B-29	Q6003	C-13	R3021	A-20	R4007	B-27	R6059	A-3	R6353	B-29		

ELECTRICAL PARTS LIST

Item No.	Description	Mfr. Part No.	Notes
	CAPSTAN MOTOR DRIVE BOARD		
	SEMICONDUCTORS		
IC2501	-	AN3826NK	-
IC2502	-	PUA3228	-
	OTHER		
	PC Board	VEPS02221A1	Capstan Motor Drive
	HEAD AMP BOARD		
	SEMICONDUCTORS		
IC2601	-	AN3813K	-
IC3501 (1)	-	AN3362K	-
IC3501 (2)(4)(5)	-	AN3361SB	-
	OTHER		
	PC Board (1)	VEPS0563A1	Head Amp
	PC Board (2)(4)(5)	VEPS0564A1	Head Amp
	MAIN BOARD		
	SEMICONDUCTORS		
D1051	-	MA4100N	-
D1052, 53	-	MA165	-
D3001	-	MA165	-
D3002 Thru			
D3005 (2)(5)	-	MA165	-
D3006, 07	-	MA4047-M	-
D3008	-	MA4091-M	-
D3009	-	MA4130-M	-
D4001	-	MA165	-
D6001	-	VEKS5201	-
D6003, 06	-	MA165	-
D6010, 18 (4)	-	MA165	-
D6201, 02, 03	-	MA165	-
D6324	-	MA4051-M	-
D7001	-	MA165	-
D7002	-	MA1300-H	-
D7004 (1)(2)	-	MA4047-M	-
D7004 (4)(5)	-	MA4051-M	-
IC3001 (1)(2)	-	AN3458FBP	-
IC3001 (4)(5)	-	AN3458NFBP	-
IC3201	-	MN3870S	-
IC3301	-	LC7472NM9048	-
IC6001 (7)	-	MN6750487V7Z	-
IC6001 (8)	-	MN6750487V9H	-
IC6001 (4)(5)	-	MN6750487K2W	-
IC6002	-	VEKS5202	-
IC6003	-	XRA6418N	-
IC6301	-	T47C216AF901	-
# **Q1051**	-	2SD1581(T)	-
	-	2SD2159(T)	-
Q1052	-	2SD601(R)	-
Q3001 (2)(5)	-	IMX1	-
Q3005	-	2SB709A(R)	-
Q3007	-	UN2113	-
Q3009 (1)(2)	-	2SD601(S)	-
Q3010 (1)(2)	-	2SB709(R)	-
Q4001	-	2SB709(R)	-
Q4002, 03	-	2SD601A(R)	-
Q4005	-	2SD601(R)	-
Q4101	-	2SD601(R)	-
Q6001	-	2SD601(R)	-

 # For SAFETY use only equivalent replacement part.

Item No.	Description	Mfr. Part No.	Notes
Q6002	-	2SB709(R)	-
Q6003	-	UN2213	-
Q6005	-	2SB709(R)	-
Q6006	-	UN2212	-
Q6007	-	UN211L	-
Q6008	-	2SD601(R)	-
Q6009, 10	-	VEKS5200	-
Q6011 (1)(2)(5)	-	UN2213	-
Q6012 (1)(2)(5)	-	2SB709(R)	-
Q6303	-	UN2115	-
Q7001	-	2SD601(R)	-
	OTHER		
DP6301	Display	VEKS5268	Fluorescent
E12	Tuner & TV Demodulator	VEQS0570	UHF/VHF , Unit
JK3001	Jack	VJHS0328	Assembly
# **PR1054**	IC Protector	ICP-N38	1.5Amp
	IC Protector	ICP-N38-1	1.5Amp
	IC Protector	UNH00010FA	1.5Amp
# **R1055**	120 2% 1/4W Fusible	ERD2FCVG121T	-
R3003	1000	EVNDXAA03B13	Record Video Level
R3010	10K	EVNDXAA03B14	Sync TIP Frequency
R3011	20K	EVNDXAA03B24	Deviation
R3014	20K	EVNDXAA03B24	EE Level
R3015	1000	EVNDXAA03B13	Record Chroma Level
R3041	20K	EVNDXAA03B24	PB Level
# **R6027, 28**	12 1W	ERG1SJ120E	-
R6201	100K	EVNDXAA03B15	PG Shifter
SW6001	Switch	VSHS0054	Cassette Up/Down, Safety Tab
SW6301	Switch	EVQ21309K	Power
SW6302	Switch	EVQ21309K	TV/VCR
SW6303	Switch	EVQ21309K	FF/Cue
SW6304	Switch	EVQ21309K	Rewind/Review
SW6305	Switch	EVQ21309K	Channel Down
SW6306	Switch	EVQ21309K	Channel Up
SW6307	Switch	EVQ21309K	Record
SW6308	Switch	EVQ21309K	Stop/Eject
SW6310	Switch	EVQ21309K	PlayX2
SW7001	Switch	VSSS0142-1	Channel 3/4
U6301	Receiver	VEKS5267	IR
X3001	Crystal	VSXS0195-T	-
X6002	Crystal	VSXS0191-T	14MHz
X6301	Crystal	EF0EC6004T4	6MHz
	PC Board (4)	VEPS02222GL1	Main
	PC Board (5)	VEPS02222GD1	Main
	PC Board (9)	VEPS02222AA1	Main
	PC Board (10)	VEPS02222AB1	Main
	PC Board (11)	VEPS02222GA1	Main
	PC Board (12)	VEPS02222GB1	Main
	MISCELLANEOUS		
	OTHER		
1 *	Head	VEPS0541	Full Erase, Unit
2 *	Head	VBKS0024	FG
12 *	Head (1)(2)(5)	VEHS0535	Audio/Control, Unit
	Head (4)	VEHS0546	Audio/Control, Unit
13 *	Upper Cylinder (1)	VEHS0536	Unit
	Upper Cylinder (2)(4)(5)	VEHS0537	Unit
14 *	Capstan Stator	VEMS0295	Unit
15 *	Motor	VEMS0296	Loading, Unit
	PC Board	VJBS00C05	Loading Motor
	Switch	VSSS0150	Mode Select

 # For SAFETY use only equivalent replacement part.

Item No.	Description	Mfr. Part No.	Notes
	Transmitter (1)	VSQS1330	IR
	Transmitter (2)	VSQS1331	IR
	Transmitter (4)	VSQS1390	IR
	Transmitter (5)	VSQS1344	IR
	POWER SUPPLY BOARD		
	SEMICONDUCTORS		
# **D1001**	-	S1WBA40	-
D1002, 03	-	ERA18-04	-
D1005	-	MA188-TA5	-
# **D1006**	-	ERB32-01L3	-
	-	RU2YXLFC1	-
D1007	-	MA188-TA5	-
	-	1SS244T-77	-
# **D1008**	-	D2S4M	-
	-	EK13	-
	-	EK13F7	-
	-	ERB83-004	-
	-	ERB83-004G1	-
# **D1009**	-	MA178	-
	-	1SS137T-77	-
D1011	-	MA4051NH	-
D1012	-	MA858	-
D1013	-	MA165	-
# **D1015**	-	MA2180	-
	-	MA2180LF	-
	-	RD18FB	-
# **D1016**	-	MA165	-
# **IC1001**	-	PS2501-1-X	-
	-	0N3131-R.KT	-
# **Q1001**	-	2SC4533LP.KT	-
	-	2SC4662LF608	-
	-	2SC5130LF608	-
# **Q1002**	-	2SD1458	-
Q1003	-	2SD636(Q)	-
Q1004	-	2SB641(Q)	-
	-	2SB641(R)	-
Q1005	-	2SB641(R)	-
	OTHER		
# **C1001**	.01 +80% -20% 125V	ECKDRS103ZV	-
	.01 +80% -20% 125V	VCKSEKD103PZ	-
	.01 +80% -20% 125V	VCKSEMD103PZ	-
	.0I +80% -20% 125V	VCKSGKD103ZZ	-
	.01 +80% -20% 125V	VCKSGMD103ZZ	-
# **C1002**	.0033 20% 125V	ECKCN332ME	-
	.0033 20% 125V	ECKDNS332MED	-
	.0033 20% 125V	ECKDRS332MED	-
	.0033 20% 125V	VCKSEKD332MY	-
	.0033 20% 125V	VCKSEVD332MY	-
	.0033 20% 125V	VCKSHKD332MH	-
# **C1003**	.0033 20% 125V	ECKCNS332ME	-
	.0033 20% 125V	ECKDNS332MED	-
	.0033 20% 125V	ECKDRS332MED	-
	.0033 20% 125V	VCKSEKD332MY	-
	.0033 20% 125V	VCKSEVD332MY	-
	.0033 20% 125V	VCKSFKK332MY	-
	.0033 20% 125V	VCKSFMK332MY	-
	.0033 20% 125V	VCKSHKD332MH	-
# **C1004**	82µF 200V	ECEA2DU820YE	-
	82µF 200V	VCESR2D820XE	-
# **C1011**	4.7µF 50V	ECEA1HU4R7B	-
	4.7µF 50V	VCESP1H4R7B	-
	4.7µF 50V	VCESQ1H4R7B	-
	4.7µF 50V	VCESR1H4R7B	-

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