AIWA VX-T1420

Recommended Safety Parts

Item	Part No.	Description
R1083	S6-150-12R-7J0	RES.FUSE 2.7-1W
IC351	S0-1SP-526-500	IC, AN5265
IC1002	S0-7S0-247-V10	IC, BA6247-V1
IC1004	S0-QK9-780-500	IC, NJMT805FA
IC5001	S0-3D7-728-600	IC, LA7286
Q5003	89-313-172-010	TR, 2SC1317
T5001	S3-362-600-8R0	COIL, BIAS OSC 3626008
TU6001	S1-44T-070-190	TUNER, UHF/UE33-B5
R423	87-029-007-010	RES, FUSE 22 - 1/4W
R445	87-022-304-010	RES, M/O 1.5K - 3W
R446	87-022-304-010	RES, M/O 1.5K - 3W
R447	S6-158-268-0J0	RES, FUSE 68 - 1/2W
R448	S6-358-210-2J0	RES, FUSE 1K - 1/2W
R449	S5-K2C-E8R-2K0	RES, CEM 8.2 - 7W
	OR	
	S5-K2C-E8R-2K0	RES, CEM 8.2 - 7W
R450	87-029-160-010	RES, FUSE 2.2 - 1W
R451	87-029-164-010	RES, FUSE 4.7 - 1W
R452	S6-358-11R-8J0	RES, FUSE 1.8 - 1W
R501	S5-Y2C-E2R-2J0	RES, CEM 2.2 - 7W
R504	S3-X28-947-3J0	RES, M/O 47k - 3W
R505	87-025-072-010	RES, M/O 100 - 1W
R506	87-029-389-010	RES, FUSE 1K - 1/4W
R508	S3-K28-BR8-2J0	RES, M/O 0.82 - 3W
R511	S6-3480-A12-0J0	RES, FUSE 12 - 2W
R512	87-022-384-010	RES, M/O 8.2K - 2W
R513	53-U28-A15-0J0	RES, M/O 15 - 2W
C515	87-010-964-010	CAP, E 10 - 160V
C536	SA-303-091-3M0	CAP, CER 1000PF 400V
C542	SA-303-09H-3M0	CAP, CER 2200PF 400V
C546	SA-303-09H-2K0	CAP, CER 220PF-4KV
D501	S2-BTR-M11-C00	DIODE, RM11C
D502	S2-BTR-M11-C00	DIODE, RM11C
D503	S2-BTR-M11-C00	DIODE, RM11C
D504	S2-BTR-M11-C00	DIODE, RM11C
D509	S2-8T1-0EL-S60	DIODE, 10ELS2TA1
D510	S2-811-5DF-600	DIODE, 15DF6-FC
D511	S2-8T1-0EL-520	DIODE, 10ELS2TA1
D512	S2-811-000-400	DIODE, 21DQ04FE5R
D513	S2-80F-5KF-200	DIODE, F5KF20
IC402	87-002-524-010	IC, LA7837
IC403	S0-X39-8M0-900	IC, UPC78M09H
IC501	S2-359-006-000	IC, STK730-060
IC502	S0-3A9-780-5V0	IC, L7805V
IC503	S0-1K9-780-900	IC, AN7809F
Q402	SD-UG0-155-400	TR, 2SD1554
Q503	SC-300-416-000	TR, 2SC4160
Q504	SD-3T0-073-400	TR, 2SD734 (E, F, G) - AA
L501	S2-940-000-620	COIL, FILTER RB-20871
L502	S2-920-000-250	COIL, FILTER RB-20871
FB401	S4-321-300-9F0	TRANS, FLYBACK 3213009
T501	S4-813-501-5W0	TRANS, SW 8135015W
F501	S8-08T-2R5-020	FUSE, 4A - 250V T
RY501	S5-60Q-101-120	RELAY, OST-S-109DM
ICP501	S8-32H-1R6-010	IC, ICP - 1.6A
ICP502	S8-32H-020-010	IC, ICP - 2.0A
ICP503	S8-32H-050-010	IC, ICP - 5A
R802	S3-X18-A10-3J0	RES, M/O 10K - 2W
R805	S3-X18-A10-3J0	RES, M/O 10K - 2W
R810	S3-X18-A10-3J0	RES, M/O 10K - 2W
R916	S6-158-427-0J0	RES, FUSE 27 - 1/4W
J801	S6-661-200-110	SOCKET CRT, CVT3325-0603
L503	S2-8H1-400-180	COIL, DEGAUSS 8H140018
CD501	S2-066-358-020	CORD AC 1206635802
V801	S9-8Q1-404-250	CRT, 370KRB22-T
L1301	S2-BH0-000-060	ELECTRO MAGNET JTM1012-01
M101	SS-96P-580-080	MOTOR LOAD MXN-13FB
M2001	SS-10S-980-240	CAPSTAN UNIT F2QTBO2
M2003	SS-895-110-070	MOTOR, E20EL93
UN4001	S4-A05-8A5-000	CYLINDER ASS'Y A4A058A500

Disassembly Instuctions

2. REMOVAL OF DECK PARTS

2-1: ACTUATOR SUB BRAKE / IDLER ASS'Y
(Refer to Fig. 2-1)

1. Remove the polyslider washer (1)
2. Remove the Idler Ass'y.
3. Remove the TS Brake Spring.
4. Remove the Actuator Sub Brake

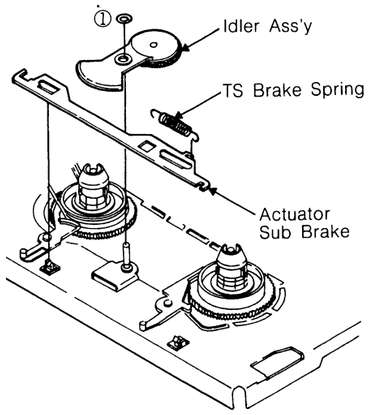


Fig. 2-1

2-2: TENSION BAND (Refer to Fig. 2-2)
1. Remove the Actuator Sub Brake.
2. Remove the SS Brake Spring, then remove the SS Brake Arm.
3. Remove the screw (1).
4. Move the SB Brake Arm for movable range. Remove the Tension Band Assy from the Tension Arm Ass'y.

NOTES
1. Install the Tension Band Ass'y without twisting it.
2. Adjust the placement of the Tension Post. (Refer to item 1-2 of MECHANICAL ADJUSTMENTS)
3. Adjust and confirm the back tension during playback. (Refer to item 1-3 of MECHANICAL ADJUSTMENTS)

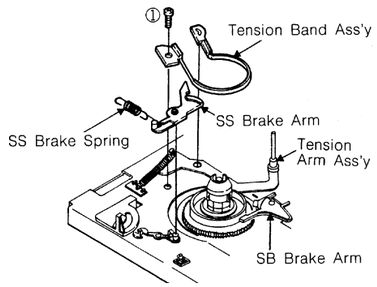


Fig. 2-2

2-3: REEL DISK (Refer to Fig. 2-3)
(Reel Disk S Assy)
1. Remove the Actuator Sub Brake.
2. Remove the washer (4), then remove the SB Brake Arm.
3. Remove the SS Brake Spring, then remove the SS Brake Arm.
4. Remove the Tension Band assy from the Tension Arm Ass'y.
5. Remove the polyslider washer (1).
6. Pull the Reel Disk S Ass'y upward and replace it.

NOTE
When you replace the SB Brake Arm, use the new washer (4) of the SB Brake Arm.

(Reel Disk T Ass'y)
1. Remove the TS Brake Spring.
2. Remove the Actuator Sub Brake.
3. Move the TS Brake Assy in the direction of arrow.
4. Remove the Brake TB 2 Ass'y.
5. Remove the polyslider washer (2).
6. Pull the Reel Disk T Ass'y upward and replace it.

NOTES
1. The height adjustment washers (3) are sometimes attached to the back of the Reel Disk.
2. Clean the Reel Disk Shaft and put in height adjusting washers (3).
3. Be careful not to damage the Tension Band Assy at the time of removal and installation.
4. Be careful not to scratch the Reel Disk Shaft with the polyslider washer or the tool at the time of removal and installation.
5. After oiling the Reel Disk Shaft, install the new Reel Disk S Ass'y and Reel Disk T Ass'y again.
6. After installation, adjust the height of the Reel Disk. (Refer to item 1-1 of MECHANICAL ADJUSTMENTS)
7. After installation, adiust and confirm the tension post position. (Refer to item 1-2 of MECHANICAL ADJUSTMENTS)

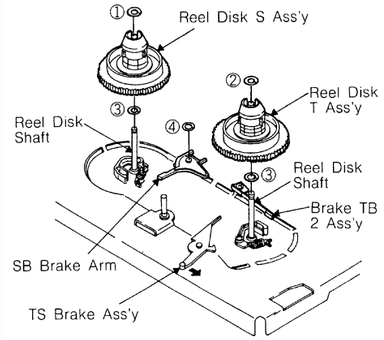


Fig. 2-3

2-4: A/C HEAD (Refer to Fig. 2-4)
1 Disconnect the 2 connectors (2 pins and 6 pins) on the A/C Head PCB.
2. Remove the screws (1), (2) and (3).

NOTES
1 Do not touch the heads by any means when replacing the A/C Head.
2. After replacement, confirm the following adjustments.
a. MECHANICAL ADJUSTMENTS: ITEM 2-2
b. MECHANICAL ADJUSTMENTS: ITEM 2-3

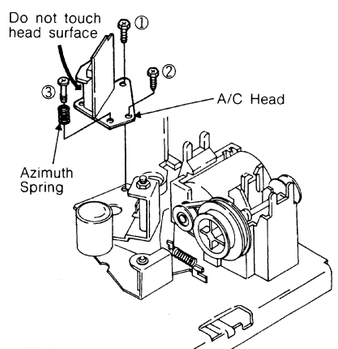


Fig. 2-4

2-5: LOADING MOTOR (Refer to Fig. 2-5)
1. Remove the lead wire in the hook of the Loading Motor Box.
2. Remove the Loading Motor Belt.
3. Remove the 2 screws (1), then remove the Loading Motor Box.
4. Remove the Front Loading Belt.
5. Remove the 2 screws (2), then lift the Loading Motor upward.
6. Remove the 2 wires soldered to the Loading Motor.

NOTES
1. Clean the pulley when replacing Front Loading Belt and Loading Motor Belt.
2. Avoid getting grease on the Loading Motor Belt and Front Loading Belt.

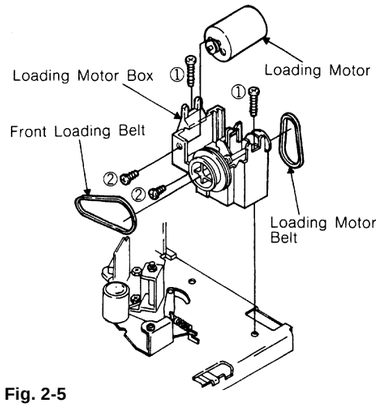


Fig. 2-5

2-6: PINCH ROLLER ARM (Refer to Fig. 2-6)

1. Remove the Pinch Roller Arm Spring.
2. Remove the polyslider washer (1).
3. Remove the Pinch Roller Arm.

NOTE
Do not touch the Pinch Roller. (Use gloves.)

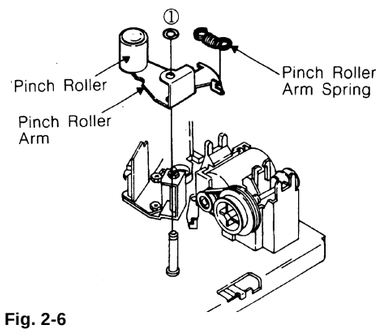


Fig. 2-6

2-7: CYLINDER UNIT (Refer to Fig. 2-7)

1. Disconnect the connector (1).
2. Disconnect the connector (2).
3. Remove the 3 screws (3), then remove the Head Amp PCB.
4. Remove the 3 screws (4), then remove the Cylinder Unit from the Main Chassis.

NOTES
1. Do not touch the surface of the Cylinder Head.
2. After replacement, confirm the following adjustment.

MECHANICAL ADJUSTMENTS: ITEM 2-1

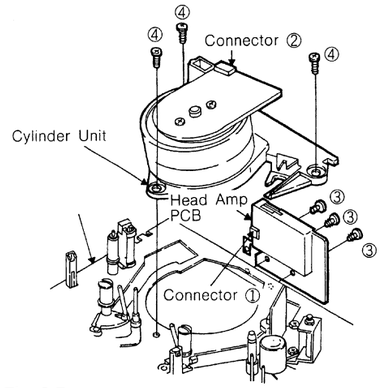


Fig. 2-7

2-8: DECK PCB (Refer to Fig. 2-8)
1. Remove the connector (9 pins) on the Capstan DD Unit.
2. Remove the 2 solder traces (A) and remove the 2 screws (1).
3. Remove the Deck PCB.

NOTES
1. When installing the Deck PCB, be sure to set the Rotary Switch to the EJECT position.
The EJECT position is the point where the (B) tooth is aligned to (C).
2. Avoid getting grease on the Reel Belt.
3. After installation, be sure to resolder traces (A).

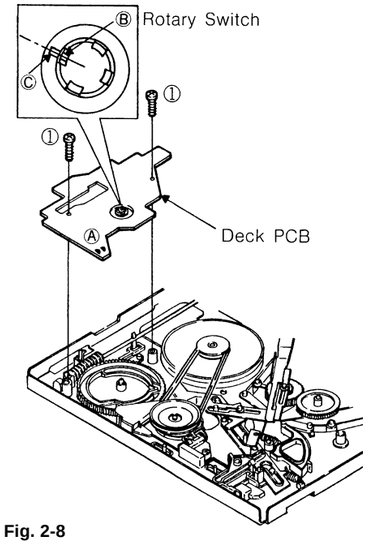


Fig. 2-8

2-9: CAPSTAN DD UNIT
(Refer to Fig. 2-9-A, B)

1. Remove the Loading Motor Belt.
2. Remove the screw (1), then remove the Bracket Worm 3.
3. Remove the Worm.
4. Remove the 3 screws (1). (Refer to Fig. 2-9-A)
5. Remove the Capstan DD Unit.

NOTES
1. Do not bend the Limiter Post.
2. Use the specified screw held to the Capstan DD Unit.
3. Install in the position where the Capstan DD Unit PCB gets up to the (A) position.

Disassembly Instructions Cont'd

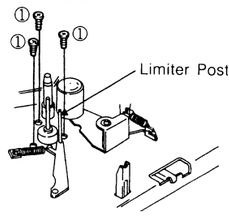


Fig. 2-9-A

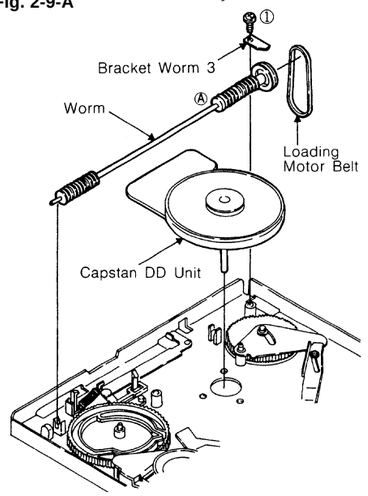


Fig. 2-9-B

2-10: CAM 1 / CAM 2
(Refer to Fig. 2-10-A, B, C)

1. Remove the E-ring (1), then remove the washer (2).
2. Remove the E-ring (3) then remove the washer (4).
3. Remove the Slide Loading 2.
4. Remove the E-ring (5), then remove the washer (6).
5. Remove the polyslider washer (7).
6. Remove the Loading Lever 2 Ass'y, then remove the Cam 1.
7. Remove the polyslider washer (8), then remove the Lever Clutch Actuator.
8. Remove the polyslider washer (9), then remove the Cam 2.

NOTE
Be sure to install in the EJECT position.
(Refer to Fig. 2-10-B, C)

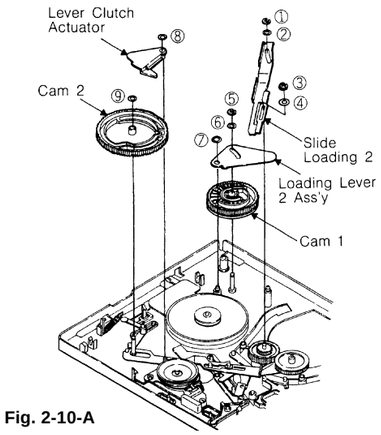


Fig. 2-10-A

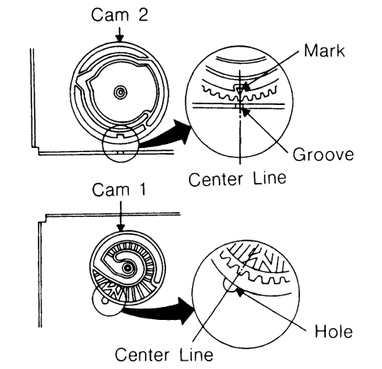


Fig. 2-10-B

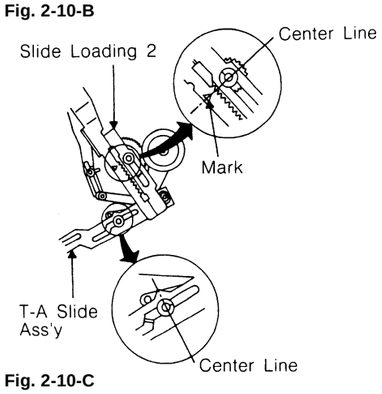


Fig. 2-10-C

2-11: LINK GEAR (R) / CLUTCH GEAR
(Refer to Fig. 2-11)

1. Remove the 2 screws on the Side Bracket R2 Ass'y and remove the Side Bracket, (Refer to FRONT LOADING EXPLODED VIEW)
2. Remove the Link Gear (R) and Clutch Gear.

NOTES
1. When installing the Link Gear Spring R2 on the Link Gear (R), proceed in order (1), (2), (3) as shown in Fig. 2-11.
2. When installing the Link Gear (R), match the position of the Link Gear (R) so that the line over the two ribs on the Synchro Gear goes through the marking hole on the Link Gear (R).

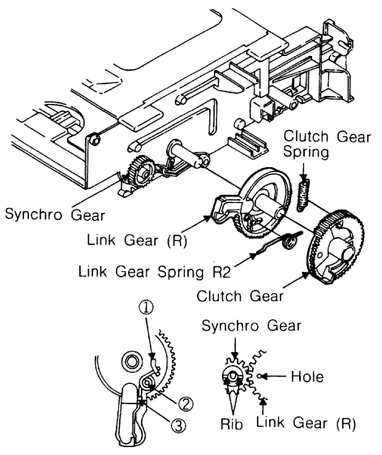


Fig. 2-11

2-12: LINK GEAR (L) (Refer to Fig. 2-12)
1. Remove the Synchro Gear.
2. Remove the Link Gear (L).

NOTES
1. When installing the Link Gear Spring (L) on the Link Gear (L), proceed in order (1), (2), (3) as shown in Fig. 2-12.
2. When installing the Synchro Gear, match the position of the Synchro Gear so that the line over the two ribs on the Synchro Gear goes between the marking bosses on the Link Gear (L).

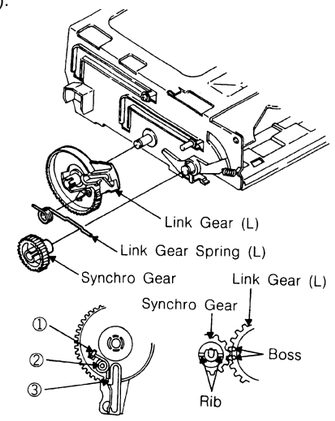


Fig. 2-12

Mechanical Adjustments

1. CONFIRMATION AND ADJUSTMENT
Read the following NOTED items before starting work.
* Place an object which weighs between 350g and 500g on the Cassette Tape to keep it steady when you want to make the tape run without the front loading unit. (Do not place an object which weighs over 500g.)
* When you activate the deck without the front loading unit, place a black sleeve over Q1002 (BOT) and Q1001 (ECT). EOT/BOT sensor will not function in this condition. Be sure to return the deck to its original condition after repairs are completed.

1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT
1. Turn on the power and set to the STOP mode.
2. Set the master plane (JG022) and reel disk height adjustment jig (JG024) on mechanism framework, taking care not to scratch the drum, as shown in Fig. 1-1-A.
3. Confirm that the reel disk is lower than 'A' of the reel disk height adjustment jig (JG024) on the master plane and higher than "B" as shown in Fig. 1-1-B. If it is not, adjust to less than 7.5mm ± 0.2mm with the height adjustment washer.
4. Perform the same adjustment for the other reel.

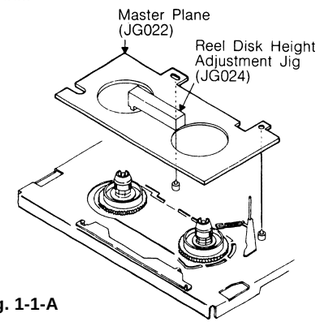


Fig. 1-1-A

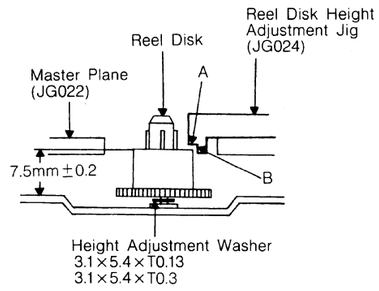


Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION
1. Turn on the power and set to the PLAY mode by using the tension post adjustment jig (JG036).
2. Move the tension band adjuster to the "A" or the "B" direction to set tension post adjustment jig red line to the round edge of the tension post. (Refer to Fig. 1-2). When you don't use the jig (JG036), adjust until the flange round of P1 post is fit to the tension post round.
3. Confirm that the video tape is not curling at the flange of P1 post or is not running on flanges.

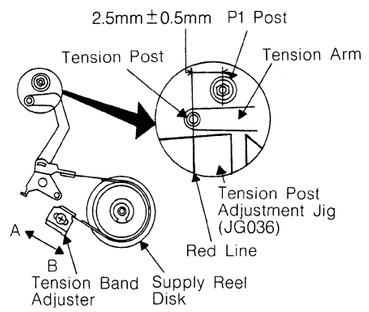


Fig. 1-2

1-3: CONFIRMATION AND ADJUSTMENT OF BACK TENSION ON PLAYBACK

1. Load a video tape recorded in standard speed mode. Set the unit to the PLAY mode.
2. Install the tenlelometer as shown in Fig. 1-3-A. Confirm the value is within 22~30gr/cm at this time.
3. Adjust when it does not satisfy the above items. Set the tension arm spring to "A" direction when the torque meter indicates more than 30gr/cm. (Refer to Fig. 1-3-B). Set the tension arm spring to "B" direction when the torque meter indicates less than 22gr/cm. (Refer to Fig. 1-3-B)

IN CASE OF USING A CASSETTE TYPE TORQUE TAPE.
1. After adjustment, confirm and adjust the tension post position (Refer to item 1-2) for the tension arm, install the cassette type torque tape (JG100) and set to the PLAY mode.
2. Confirm that the left hand side tension value of the torque tape is 40~60gr/cm for the standard mode tape.

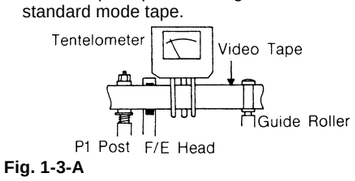


Fig. 1-3-A

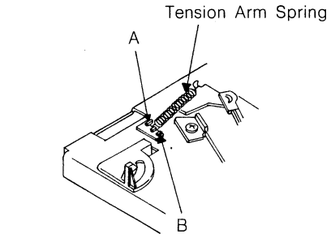


Fig. 1-3-B

1-4: CONFIRMATION OF FAST FORWARD TORQUE
1. Set torque gauge (JG002G) on take-up reel disk, and place unit in FAST FORWARD mode. (Refer to Fig. 1-4)
2. Confirm that torque is more than 800gr/cm.

NOTE
After setting the torque gauge on the reel disk, hold the gauge in place.
Push the FAST FORWARD button and the reel disk will begin to turn.

1-5: CONFIRMATION OF REWIND TORQUE
1. Operate within 4 or 5 seconds after the reel disk begins to turn.
2. Set torque gauge (JG002G) on supply reel disk, and place the unit in REWIND mode. (Refer to Fig. 1-4)
3. Confirm that torque is more than 800gr/cm.

NOTE
After setting the torque gauge on the reel disk, hold the gauge in place. Push the REWIND button and the reel disk will begin to turn.

1-6: CONFIRMATION OF PLAYBACK TAKE-UP TORQUE
1 Set the torque gauge (JG002F) on the rewind reel disk, then check PB mode. Or load the cassette type torque tape (JG100), then set it to PB mode.
2. Make sure that the torque covers the range, 60~150gr/cm.

1-7: CONFIRMATION OF REEL BRAKE TORQUE
(Take-Up Reel Brake) (Refer to Fig. 1-4)
1. Set to STOP mode.
2. Set the torque gauge (JG002G) to the take-up reel and turn it counterclockwise.
3. Confirm that it is more than 200gr/cm at that time.

(Supply Reel Brake) (Refer to Fig. 1-4)
1. Set to STOP mode.
2. Set the torque gauge (JG002G) to the supply reel and turn it clockwise.
3. Confirm that it is more than 200gr/cm at that time.

NOTE
Separate the idler from the reel and confirm the brake torque.

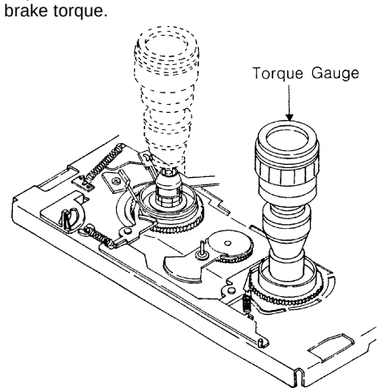


Fig. 1-4

NOTE
If the torque value checked is out of tolerance, replace the appropriate parts as follows.

Check Items	Replace Parts
1-4	Idler Ass'y or Reel Belt
1-5	Idler Ass'y or Reel Belt
1-6	Idler Ass'y or Reel Belt or Clutch Ass'y
1-7	Main Brake T Ass'y or Main Brake S Ass'y

2. TAPE RUNNING CONFIRMATION AND ADJUSTMENT
Tape running is adlusted precisely at the factory. Normally, it is not necessary to make adjustments. It is necessary to confirm and make adjustments when the parts of the tape running mechanism are replaced beacuse of extensive usage or failure.

2-1: GUIDE ROLLER
1. Connect CH-1 on the oscilloscope to TP4005 (PB Envelope) and CH-2 to TP2001 (SW Pulse).
2. Insert the VHS alignment tape (JG001J) into the unit.
3. Adjust the Tracking to center position in the below why.
1) Set the TV/VCR to the reset mode and sound to minimum.
2) Press the volume down key (V) on the set and the channel button (5) on the remote control simultaneously to adjust the Tracking to center position.
4. Trigger with SW pulse and observe the envelope. (Refer to Fig. 2-1-A)
5. Adjust the guide roller height while observing the envelope, and make the envelope flat. Adjust the envelope so that the flatness will not be affected even when the tracking control button is pressed.
(Use the adjustment screwdriver JG005).
6. Press and hold the tracking control button and (at the point that the envelope waveform starts to reduce) adjust the envelope so that its A:B ratio is better than 3:2. (Refer to Fig. 2-1-B)
7. Adjust the PG shifter (ELECTRICAL ADJUSTMENTS: ITEM 3-1) in the PLAY mode.

NOTE
After adjustment, confirm and adjust A/C head tilt. (Refer to item 2-2)

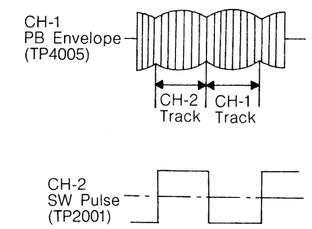


Fig. 2-1-A

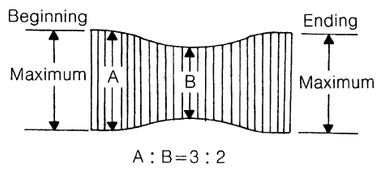


Fig. 2-1-B

2-2: CONFIRMATION AND ADJUSTMENT OF A/C HEAD TILT
When the tape is running abnormally, perform the following adjustments.
1. Insert a new tape and play back.
2. Confirm that there is no crease on the tape between the P4 post and guide roller (R) and the tape is running smoothly. (It is absolutely

Mechanical Adjustments Cont'd

impossible to get satisfactory sound if the tape is distorted between the A/C head and P4 post.)
3. If the tape still does not run smoothly, turn the screw (1) and adjust the tilt of the A/C head. (Refer to Fig. 2-2)

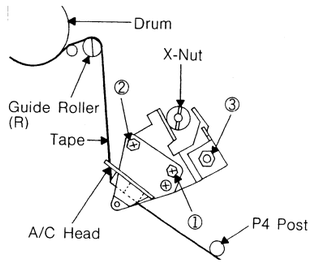


Fig. 2-2

2-3: ADJUSTMENT OF A/C HEAD HEIGHT AND AZIMUTH
1. Play back a VHS alignment tape (JG001E) and observe the waveform at the audio output terminal.
2. Turn the screw (2) slowly to change the azimuth of the A/C head. Adjust the azimuth so that the audio output becomes maximum. (Refer to Fig. 2-2)
3. Adjust the nut (3), (Refer to Fig. 2-2) until the height of the A/C head reaches the position against the tape as shown in Fig. 2-3.

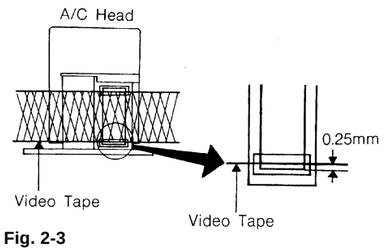


Fig. 2-3

2-4: TAPE RUNNING ADJUSTMENT
1. Adjust the height of reel disk. (Refer to item 1-1)
2. Confirm and adjust tension post position. (Refer to item 1-2)
3. Adjust the guide roller. (Refer to item 2-1)
4. Adjust the A/C head tilt. (Refer to item 2-2)
5. Adjust the A/C head height and azimuth. (Refer to item 2-3)
6. Connect CH-1 on the oscilloscope to TP4005 and CH-2 to TP2001. Insert the VHS alignment tape (J0001E) into the unit. Set the tracking control to the center position. (Refer to item 2-1, NO. 3). Turn the X-nut using the X-nut adjustment screwdriver 2 (JG021A) (Refer to Fig. 2-2). Adjust the X-nut for the envelope to be maximum. (Refer to Fig. 2-1-A)

(VCR SECTION)

3. ADJUSTMENT PROCEDURE

Read and perform these adlustments when repairing the circuits or replacing electrical parts or PCB assemblies.
CAUTION
Interior silicon grease can damage Cs and transistors. When replacing IC's or transistors, use only specified silicon grease. Remove all old silicon before applying new silicon.

3-1: PG SHIFTER

CONDITIONS
MODE-PLAY BACK
Input Signal-Alignment Tape (JG001E)

INSTRUCTIONS
1. Connect CH-1 to TP4004.
2. Connect CH-2 to TP4501.
3. Connect the oscilloscope to TP8001.
4. Set the TV/VCR to the reset mode and sound to minimum.
5. Set the tracking control to the center position. (Refer to item 2-1, NO. 3)
6. Press the VOL. DOWN key (V) on the set and the Channel button (3) on the remote control until the PG SHIFTER is AUTO

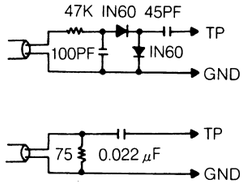
3-2: PLAYBACK AUDIO LEVEL (MONO)

CONDITIONS
MODE-Self (RECORD and PLAYBACK)
(SP MODE)
Input Signal-Audio Signal:
1KHz, 300mVrms
(AUDIO IN JACK)
Video Signal PAL Color Bar:
(VIDEO IN JACK)

NOTE
AUDIO OUT JACK of the unit should be terminated with 47K ohm load.
"AV" mode must be selected by the TV/AV button on the remote control.

INSTRUCTIONS
1. Connect the color bar generator to VIDEO IN JACK.
2. Connect the audio generator to AUDIO IN JACK
3. Connect the AC voltmeter to AUDIO OUT JACK
4. After the input of audio signal and video signal, proceed with the recording.
5. Play back the recorded section and adjust VR5001 so that the AC voltmeter value is 390±10mVrms.

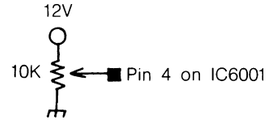
NOTE
For adjusting of VCO, connect input and output terminals of the sweepmarker generator to the circuit as shown below, then adjust it.



3-3: VCO

CONDITION
MODE-STOP

INSTRUCTIONS
1 Connect the output of sweepmarker generator to IC6001 side of R6009.
2. Connect the input of sweepmarker generator to pin 17 on IC6001.
3. Connect a 10K ohm variable resistor to IF AGC terminal (pin 4 on IC6001), 12V line and ground, then adjust to make the waveform of the oscilloscope readable.



4. Adjust L6011 until the waveform marker (38.9MHz) becomes as shown in Fig. 3-2.

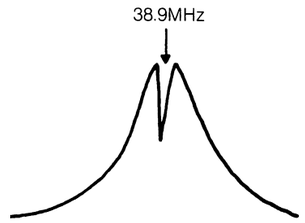


Fig. 3-2

(TV SECTION)

4. BASIC ADJUSTMENTS

4-1: CUT OFF

1. Receive the Color Bar Pattern.
2. Using the remote control, set bright and contrast to minimum position.
3. Connect the oscilloscope to TP802.
4. Adjust the screen control until voltage is 130VDC. (Refer to Fig. 4-1)

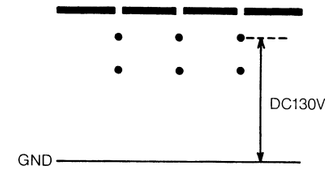


Fig. 4-1

4-2: FOCUS
1. Receive the broadcasting signal.
2. Adjust the focus control until picture is distinct.

4-3: VERTICAL SIZE
1. Receive the Crosshatch Pattern from the color bar generator.
2. Adjust the bright and contrast controls until the crosshatch pattern is distinct.
3. Adjust VR402 until the center of crosshatch is square.
4. Receive broadcasting signal, then confirm picture is normal

4-4: VERTICAL POSITION
1. Receive the Color Bar Pattern.
2. Adjust VR403 until horizontal line of the color bar comes to approximate center of the CRT.

4-5: HORIZONTAL SIZE
1. Receive the monochrome patterm.
2. Using the remote control, set the brightness and contrast to maximum position.
3. Adjust VR501 until the center of crosshatch is square.

4-6: HORIZONTAL POSITION
1. Receive the Color Bar Pattern.
2. Adjust VR404 until the color width of both of screen edges are equal.
3. Receive broadcasting signal, then confirm picture is normal.

4-7: AGC, BRIGHT AND COLOR
On-Screen Display Adjustment
1. Do not set the CLOCK and sound to minimum.
2. Press the VOL. DOWN Key (V) on the set and the Channel button (9) on the remote control simultaneously to appear the adjustment mode on the screen as shown in Fig. 4-2.

NOTE
Use the 1 - 7 keys on the remote control to select the options shown in Fig. 4-2.
Press the 7 key to end the adjustments.

ADJUSTMENT MODE (TV)
1. AGC/BRI/COL AUTO
2. SUB BRIGHT AUTO
3. AGC MANUAL
4. COLOR MANUAL
5. CONTRAST MANUAL
6. BRIGHT MANUAL
7. END

Fig. 4-2

4-7-A: BRIGHT
1. Receive the monochrome pattern.
2. Activate the adjustment mode display and press the 6 key.
3. Press the VOL. UP/DOWN key on the remote control until 0% of gray scale will begin to lighten.

4-7-B: COLOR
1. Receive the color bar pattern.
2. Connect the oscilloscope to TP801.
3. Activate the adjustment mode display and press the 4 key.
4. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
5. Press the VOL. UP/DOWN key on the remote control until the red color level is set to the 95% from white 0% (Refer to Fig. 4-3).

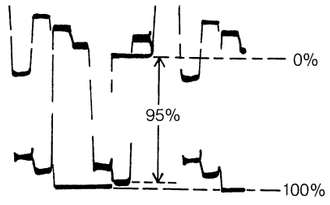


Fig. 4-3

5. PURITY AND CONVERGENCE ADJUSTMENT

NOTE
1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

5-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)
1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. (Refer to Fig. 5-1). If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color cross-hatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

5-2: PURITY

NOTE
Adjust after performing adjustments in section 5-1
1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen. Adjust the pair of purity magnets so the color at ends are equally wide.
3. Move the deflection yoke backward (To neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue colors.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

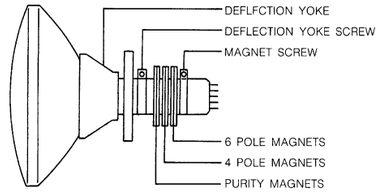


Fig. 5-1

5-3: STATIC CONVERGENCE

NOTE
Adjust after performing adjustments in section 5-2.
1. Receive the crosshatch pattern from color bar generator.
2. Combine red and blue of the 3 color cross-hatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

5-4: DYNAMIC CONVERGENCE

NOTE
Adjust after performing adjustments in section 5-3.
1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. (Refer to Fig. 5-2-A)
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. (Refer to Fig. 5-2-B)

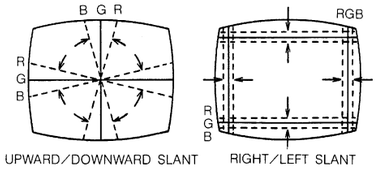


Fig. 5-2-A

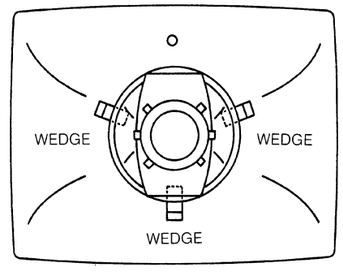


Fig. 5-2-B

The End.

AIWA VX-T1420

Mechanical Parts

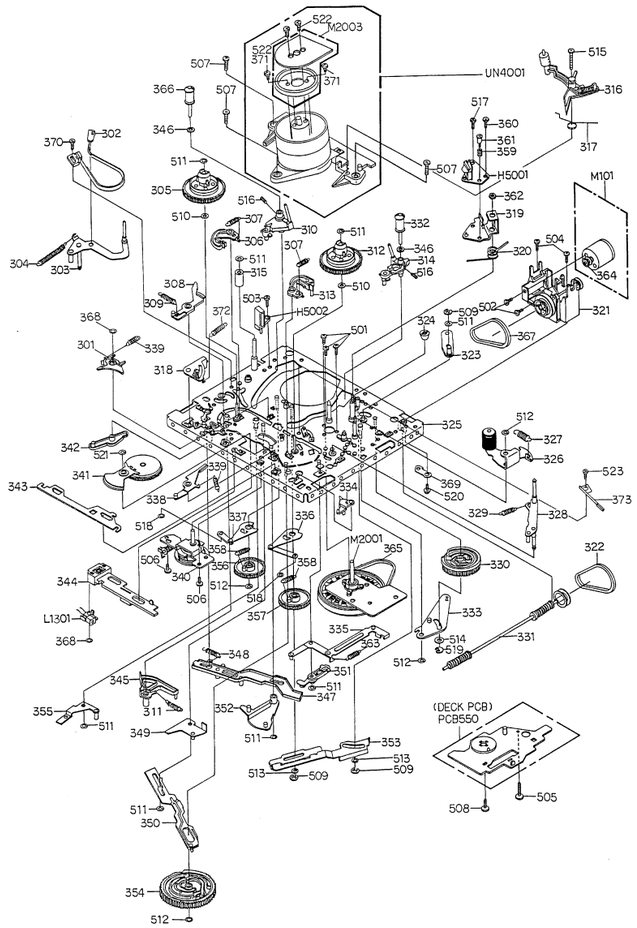
Item	Part No.	Description	
301	S5-OP6-004-570	ARM, S-B BRKT	1
302	S5-OA6-001-390	TENSION BAND ASS'Y	1
303	S5-OA4-000-770	TENSION ARM ASS'Y	1
304	S5-OP8-001-410	TENSION ARM SPR	1
305	S5-OA2-000-360	S REEL ASS'Y	1
306	S5-OA6-001-360	MAIN BRAKE S ASS'Y	1
307	S5-OP8-001-8T0	MAIN BRAKE SPR	2
308	S5-OP6-004-460	ARM, S-S BRKT 1	1
309	S5-OP8-001-640	SS BRAK SPR 1	
310	S5-OA4-001-080	BASE, S INCLINED ASS'Y	1
311	S5-OP8-001-900	MAIN BRAKE SPR 3	1
312	S5-OA2-000-350	T REEL ASS'Y	1
313	S5-OA6-001-350	MAIN BRAKE T ASS'Y	1
314	S5-OA4-001-090	BASE, T INCLINED ASSY	1
315	S5-OP6-004-320	ROLLER, IMPEDANCE	1
316	S5-OA4-001-120	ARM, AHC UNIT	1
317	S5-OP8-002-360	SPR, AHC 1	1
318	S5-OP6-003-060	LEVER, REC. SW	1
319	S5-OP5-000-420	AC HEAD BASE 2	1
320	S5-OP8-002-330	SPR, AC HEAD BASE 2	1
321	S5-OA6-001-480	LOAD MOTOR BOX A A'Y	1
322	S5-OP6-003-170	BELT, LOAD MOTOR	1
323	S5-OA5-000-080	PINCH ROLLER LEVER ASSY	1
324	S5-OPG-004-970	NUT, ADJUST X2 ZDC	1
326	S5-OA4-000-730	PINCH ROLLER ARM ASSY	1
327	S5-OP8-001-490	PINCH ROLLER ARM SPR	1
328	S5-OA4-001-050	LIMIT, POST ARM ASSY	1
329	S5-OP8-001-480	LIMIT, POST ARM SPR	1
330	S5-OP6-003-050	CAM, 1	1
331	S5-OA6-001-140	WORM, ASSY	1
332	S5-OA4-001-020	G-ROLLER ASSY	1
333	S5-OA3-000-310	LOUD LEVER 2 ASSY	1
334	S5-OP6-004-540	LEVER, SUB BRKT	1
335	S5-OA9-000-830	FRONT LOUD LEVER ASSY	1
336	S5-OA3-000-300	LOUD ARM ASS'Y (TU)	1
337	S5-OA3-000-290	LOUD ARM ASS'Y (SUP)	1
338	S5-OA6-001-370	TS BRAKE ASS'Y	1
339	S5-OP8-001-650	TS BRAKE SPR	1
340	S5-OA2-000-430	CLUTCH ASS'Y	1
341	S5-OA2-000-380	IDLER JS ASS'Y	1
342	S5-OP6-004-100	LEVER, MAIN BRKT 1	1
343	S5-OP6-003-100	ACTUATOR, SUB BRAKE	1
344	S5-OA6-001-290	CLUTCH ACTUATOR JS A'Y	1
345	S5-OP6-003-030	TENSION LEVER	1
346	S5-OP4-003-260	O-RING	1
347	S5-OP6-003-810	SLIDE, MAIN BRKT	1
348	S5-OP8-001-880	MB SLIDE SPR	1
349	S5-OA6-001-090	MB LEVER 2 ASS'Y	1
350	S5-OA6-001-080	TENSION ARM SLIDE ASSY	1
351	S5-OP6-004-160	LEVER, LIMITER POST	1
352	S5-OP6-004-090	LEVER, CLUTCH ACTUATOR	1
353	S5-OP3-001-120	SLIDE, LOUDING 2	1
354	S5-OP6-003-040	CAM, 2	1
355	S5-OA6-000-990	MAIN BRAK LEVER 3 ASSY	1
356	S5-OA3-000-430	GEAR LOADING S ASSY	1
357	S5-OA3-000-440	GEAR LOADING T ASSY	1
358	S5-OP8-001-910	LOUD GEAR SPR	2
359	S5-OP8-002-450	SPR, AZIMUTH 2	1
360	S1-074-306-020	SCREW, M3-6	1
361	S1-461-30A-310	SCREW, U+3-13	1
362	S5-0P5-000-100	ADJ NUT	1
363	S5-0P8-001-890	FRONT LOUD LEVER SPR	1
364	S5-0P6-003-190	PULLEY, LOADING MOTOR	1
365	S5-0P6-003-160	BELT, REEL	1
366	S5-0A4-000-860	GUIDE, ROLLER ASSY	1
367	S5-0P6-003-150	BELT, FRONT LOAD	1
368	S5-OP0-002-850	CS, RING 2.6-5.4-T0.1	1
369	S5-OP0-002-620	WORM, BRKT 3	1
370	87-841-095-410	SCREW, TAP(S)U3-8	1
371	87-261-093-410	SCREW, M3-5	1
372	S5-OP8-002-510	SPR, LEVER REC	1
3T3	S5-OA6-001-520	BRK, LTB 2 ASSY	1
401	S5-OP9-004-300	RING, GEAR (L)	1
402	S5-OP8-001-750	SPR, RING GEAR (L)	1
403	S5-OP9-005-380	GEAR, SYNCHRO	2
404	S5-OP9-004-510	FLAP LEVER 2	1
405	S5-OP9-005-370	COVER, SENS0R 2	1
406	S5-OA9-001-420	TOP, BRKT ASS'Y	1
407	S5-OP9-004-580	LOCKER	1
408	S5-OP8-001-540	LOCKER SPR	1
409	S5-OA9-001-380	CASS, SIDE L ASS'Y	1
410	S5-OP9-003-540	SPR, PACK	1
411	S5-OP9-005-360	CASS, SIDE (RA)	1
412	S5-OP9-004-740	REMOVING 2	1
413	S5-OP8-001-980	REMOVING 2 SPR	1
414	S5-OA9-001-220	CASS, HOLDER SUB ASSY	1
415	S5-OP9-002-670	SYNCHRO SHAFT	1
416	S5-OP9-005-290	TAPE GUIDE PIECE	1
417	S5-OP9-005-320	BRKT, SIDE RIA	1
418	S5-OP9-004-160	FRONT LOUD SW LEVER	1
419	S5-OP8-001-580	FRONT LOUD SW LEVER SPR	1
420	S5-OA9-001-290	SIDE BRKT R2 ASS'Y	1
421	S5-OP9-004-310	RING, GEAR(R)	1
422	S5-OP8-001-530	CLUTCH GEAR SPR	1
423	S5-OP8-001-810	RING GEAR SPR R2	1
424	S5-OP9-004-320	CLUTCH, GEAR	1
425	S5-OP9-004-170	LOCK LEVER	1
426	S5-OP8-001-590	LOCK LEVER SPR	1
427	S5-OP9-004-380	WHEEL	1
428	S5-OP9-004-350	CLUCH, LEVER	1
429	S5-OP9-004-340	SLIDE, LEVER	1

Mechanical Parts Cont'd

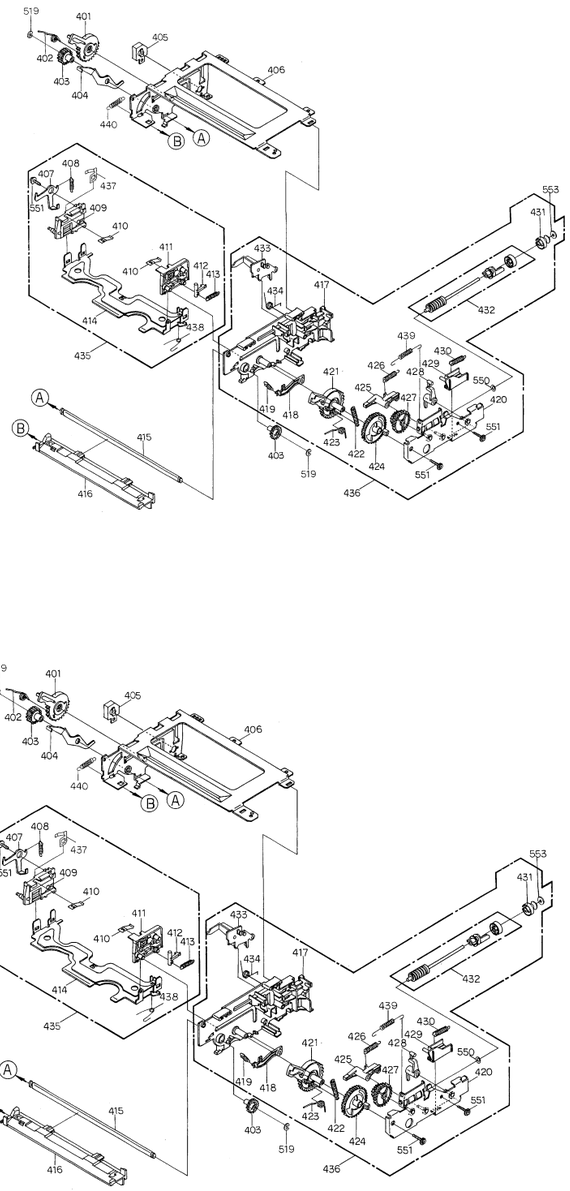
Item	Part No.	Description	
430	S5-OP8-001-800	SLIDE, LEVER SPR 2	1
431	S5-OP9-005-310	JOINT PULLEY 2	1
432	S5-OA9-000-890	WORM, ASS'Y	1
433	S5-OP9-004-500	OPENER A	1
434	S5-OP8-001-720	OPENER SPR A	1
435	S4-510-1A6-900	HLDR, CASS ASS'Y	1
436	S4-480-2A6-400	BRKTSIDE R ASS'Y	1
437	S5-OP9-005-230	FRONT LOUD EARTH SPR	1
438	S5-OP8-002-300	LOCKER (R) SPR	1
439	----	SPR, EARTH	1
440	S5-0P8-001-570	SPR, FLAP FRONT LOAD	1
501	87-743-073-410	UT2+2.6-6	3
502	87-571-092-410	V+3-4	2
503	87-743-074-410	VT2+2.6-8	1
504	87-845-098-410	UT2+3-14	2
505	87-078-157-010	UT2+3-16	2
506	87-743-094-410	UT2+3+6	3
507	87-741-095-410	UT2+3-8	3
508	87-741-095-410	UT2+3-8	1
509	S3-ETW-250-000	E, RING 2.5	3
510	S2-Q31-54B-3N0	PW, 3.1-5.4-T0.13	2
	S2-Q31-540-3N0	PW, 3.1-5.4-T0.3	2
511	S2-P25-550-4N0	PW, 2.5-5.5-T0.4	8
512	52-P30-600-5N0	PW, 3.1-6-T0.5	4
513	S2-A32-700-540	W, 3.1-7.0-T0.5	2
514	52-A40-800-540	W, 4.3-8.0-T0.5	1
515	S1-0B1-261-440	SCREW, WASHER 2.6-14	1
516	S9-952-000-000	SCREW, M2-3	2
517	S1-074-306-020	SCREW, M3*6	1
518	S3-CST-350-500	CS, RING 3.5	2
519	53-ETW-300-600	E, RING 3.0	3
520	51-178-268-040	SCREW, VT2+2.6-8	1
521	87-067-099-010	PW, 2.6-6-T0.25	1
522	S1-0A1-235-040	SEMS A M2.3-S	2
523	87-651-071-410	VIT+2.6-4	1
550	87-067-167-010	PW, 3.1-5.4-T0.5	1
551	87-261-075-210	SCREW, U+2.6*10	3
552	87-353-034-210	UIT+2-5	1
CD2002	----	CORD, JUMPER 2L09060	1
CD5003	----	CORD, C0NN 8123044	1
CY1001	----	CONN PCB SIDE 9117S-1	1
H5001	S5-23D-910-170	HEAD, AC HVMZA1183A	1
H5002	S5-43D-020-060	HEAD, FE HVFHF0029A	1
L1301	S2-BH0-000-060	ELECTRO MAGNET JTM1012-01	1
M101	S5-96P-580-080	MOTOR, LOAD MXN-13FB	1
M2001	S5-10S-980-240	CAPSTAN, UNIT F2QTB02	1
M2003	S5-895-110-070	MOTOR, E20EL93	1
PCB550	----	DECK PCB ASS'Y VE3597	1
Q1310	S0-023-001-400	PHOTO, SPI-315-04	1
SW102	S5-20U-440-020	SW, ROTARY SRZZ0B047A	1
SW103	S5-012-110-010	SW, PUSH SP	1
UN4001	S4-A05-8A5-000	CYLINDER ASS'Y A4A058A500	1
101	----	CABINET, FRONT ASS'Y	1
102	S0-1WP-J04-590	CAB, FRONT	1
103	S2-344-900-070	BADGE, BRAND	1
104	S1-1WP-J00-090	PANEL, DECK	1
105	----	PLATE, SHIELD AUDIO	1
106	S1-3WP-A00-380	GUIDE, REMOCON (VXT14G2)	1
107	SO-9WP-A00-060	CAB, HLDR	2
108	S1-2WP-J02-690	FLAP	1
109	54-3WK-A00-110	SPR, FLAP	1
110	53-SWP-D02-310	BUTTON, CAP(VXT14G2)	1
111	53-5WP-D02-300	BUTTON, FRAME(VXT14G2)	1
112	53-SWP-A02-140	BUTTON, BASE(VXT14G2)	1
113	----	SPR, EARTH	1
114	57-1WP-A01-830	PLATE, JACK	1
115	----	SHEET, CRT SUPPORT	2
116	----	WASHER 9.1*22-71	2
117	S1-41J-50D-040	GW22+5-40	4
118	----	HOLDER PCB	2
119	----	HOLDER,TV PCB	1
120	----	FILM, DECORATION	1
121	----	HEAT SINK	2
122	----	HEAT SINK	1
123	----	HEAT SINK	2
124	----	HEAT SINK	1
125	----	HEAT SINK, POWER	1
126	----	METAL SPACER	1
127	----	COATING CLIP TP1S-05	3
128	----	LABEL, FOOT	2
129	S0-2WP-A02-7&0	CAB, BACK	1
130	----	SHEET, RATING	1
131	----	SHEET, CRT SUPPORT(A)	2
132	----	PLATE, DECK SHIELD ASS'Y	1
133	53-5WP-A00-050	BUTTON, POWER	1
134	----	DECK, HOLDER	1
135	55-0P6-004-380	BELT, FRONT LOAD 2	1
136	54-890-1A6-500	FRONT LOAD UNIT(FL-6B)	1
137	----	LID, HI-FI AMP SHIELD	1
138	----	CASE, HI-FI AMP SHIELD	1
139	----	SHEET, SHIELD	1
140	58-8J5-E00-180	PULLEY SHAFT	1
141	S5-0P6-004-480	HOLDR, LED	1
142	55-0P6-004-510	HOLDR, START SENSOR	1
143	S5-0P6-004-490	HOLDR, END SENSOR	1
144	S1-3WP-A00-370	GLASS, LED(VXT14G2)	1
145	----	OPERATION PCB HOLDER	2
146	59-9PE-C03-400	CORD CLAMP NO.PEC-034-0	1
201	S1-1TS-40A-640	TAP(B0)4-16	4
202	87-751-102-410	UT2+3-20	1
203	87-067-958-010	TAP(BO)3-10	4
204	S1-161-40A-240	UT2+4-12	1

Mechanical Parts Cont'd

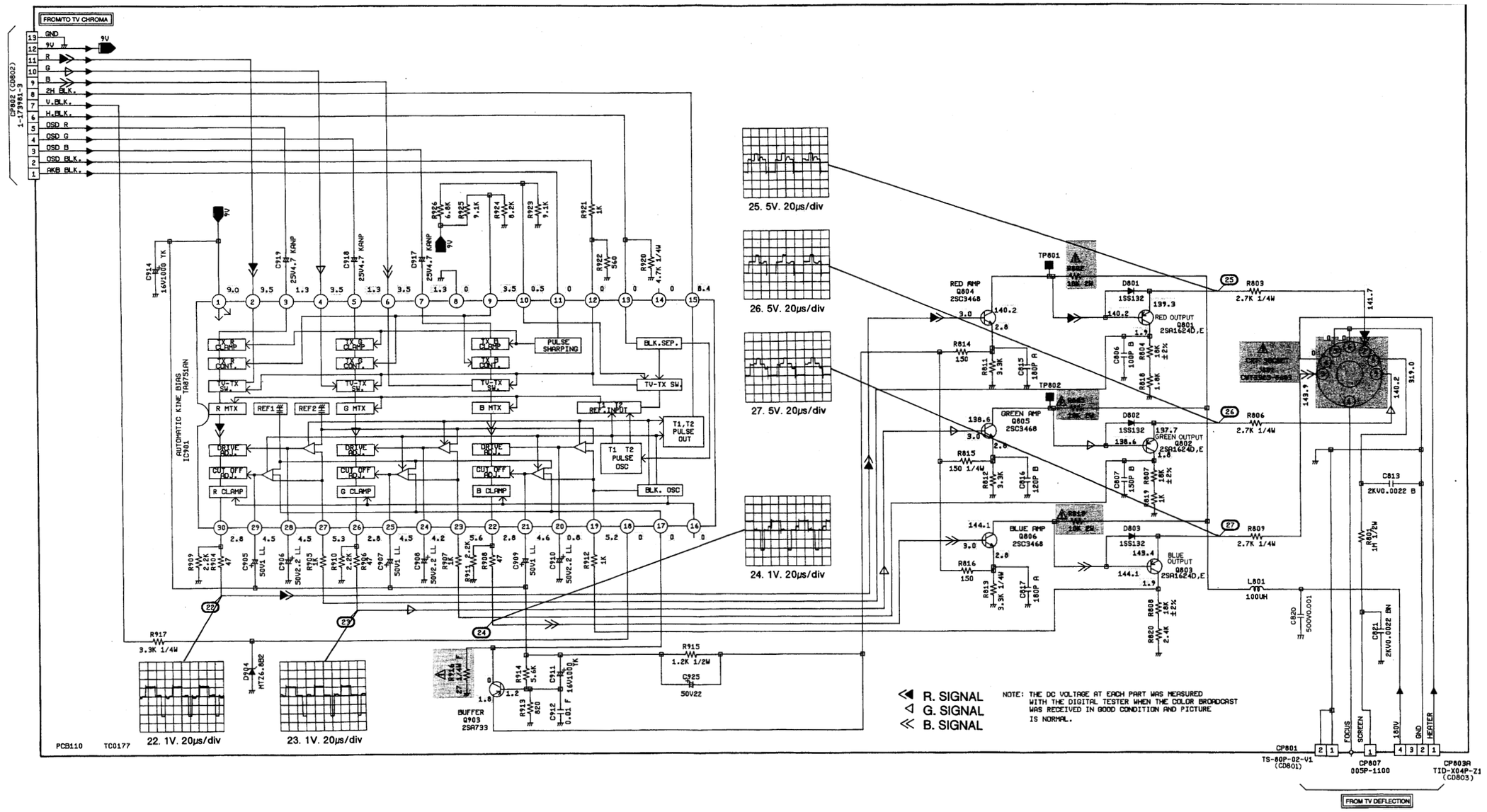
Item	Part No.	Description	
205	87-571-099-410	UITI-3-14	2
206	S1-106-30A-240	SCREW.TAP(P>3-12	2
207	87-751-094-410	TAP(P)3-8	10
208	87-583-094-410	UIT + 3-6	7
209	87-841-095-410	UT2 + 3-8	2
210	87-067-688-010	BVTT + 3-6	4
211	87-751-177-410	SCREW, TAP(BO)TRUSS 4-20	2
212	87-067-958-010	TAP(BO)3-10	2
213	87-751-077-410	SCREWTAP FLAT 4-20	2
---	S5-050-701-010	INSTRUCTION, BOOK	1
D101	CS6-82B-A40-020	RCA PIN COAD	1
M101	TS7-660-940-600	RC, RC-T1420K	1



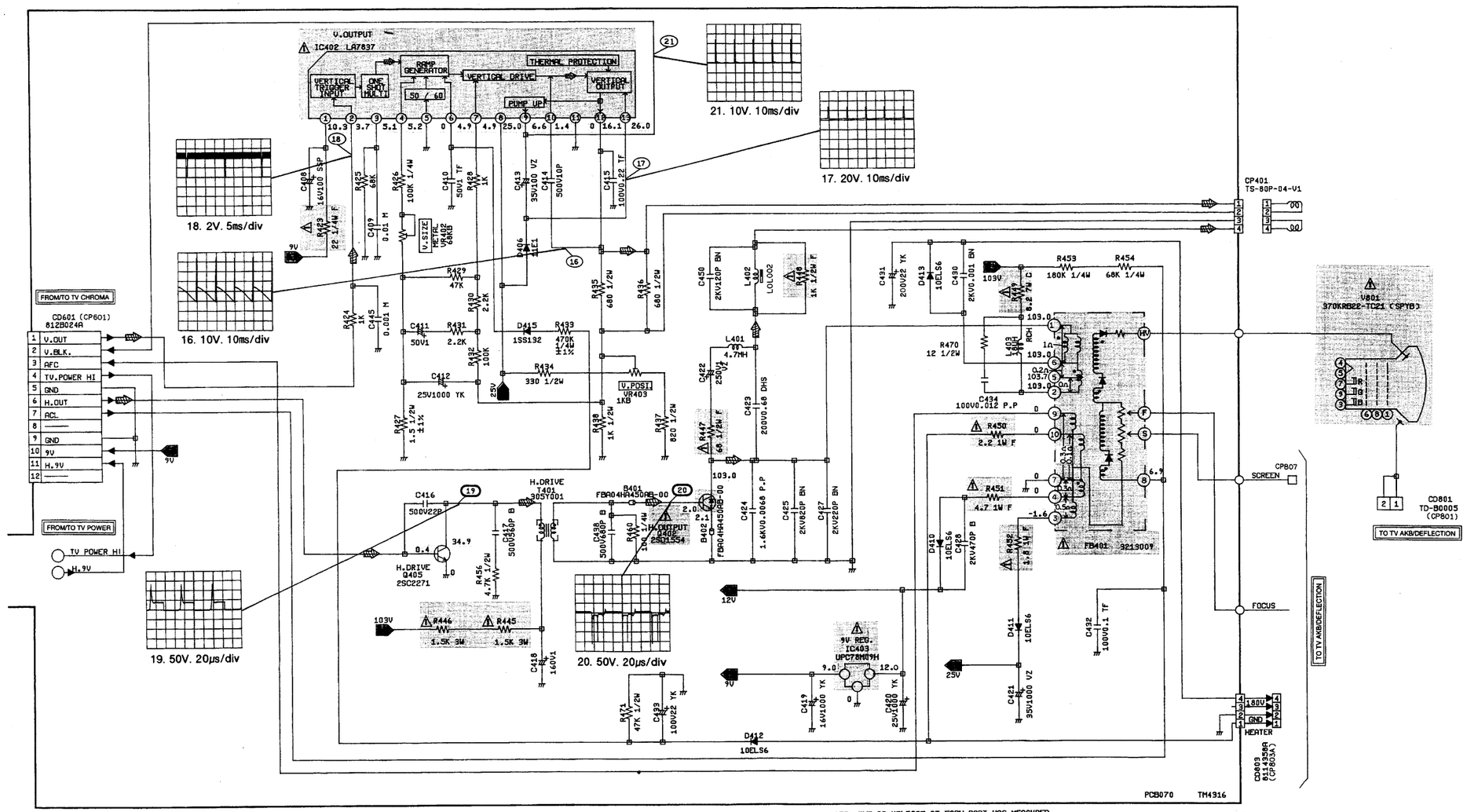
Exploded Parts Views



CRT Base Diagram



TV Deflection Diagram

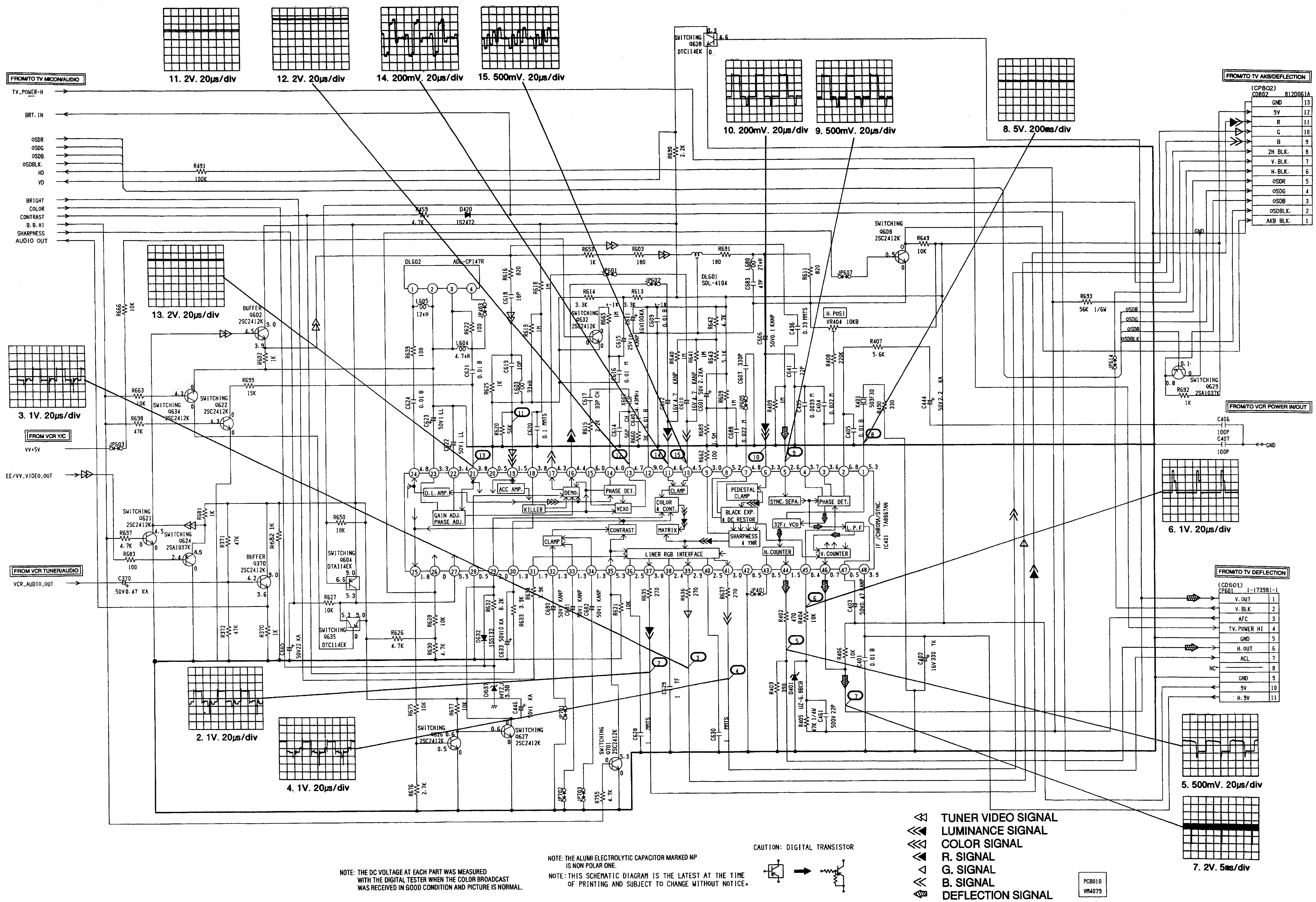


NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

DEFLECTION SIGNAL

AIWA VX-T1420

TV Chroma Diagram

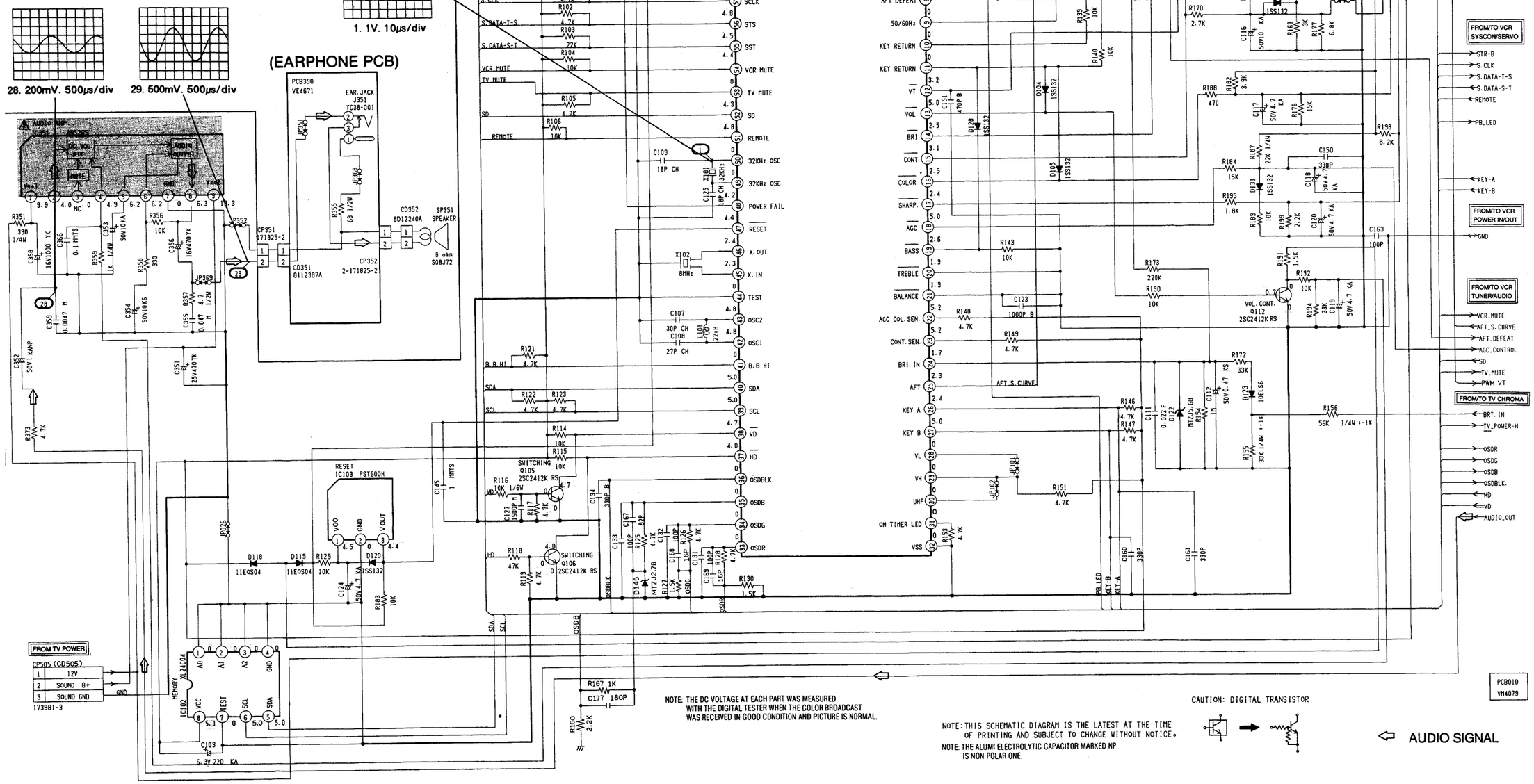


NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

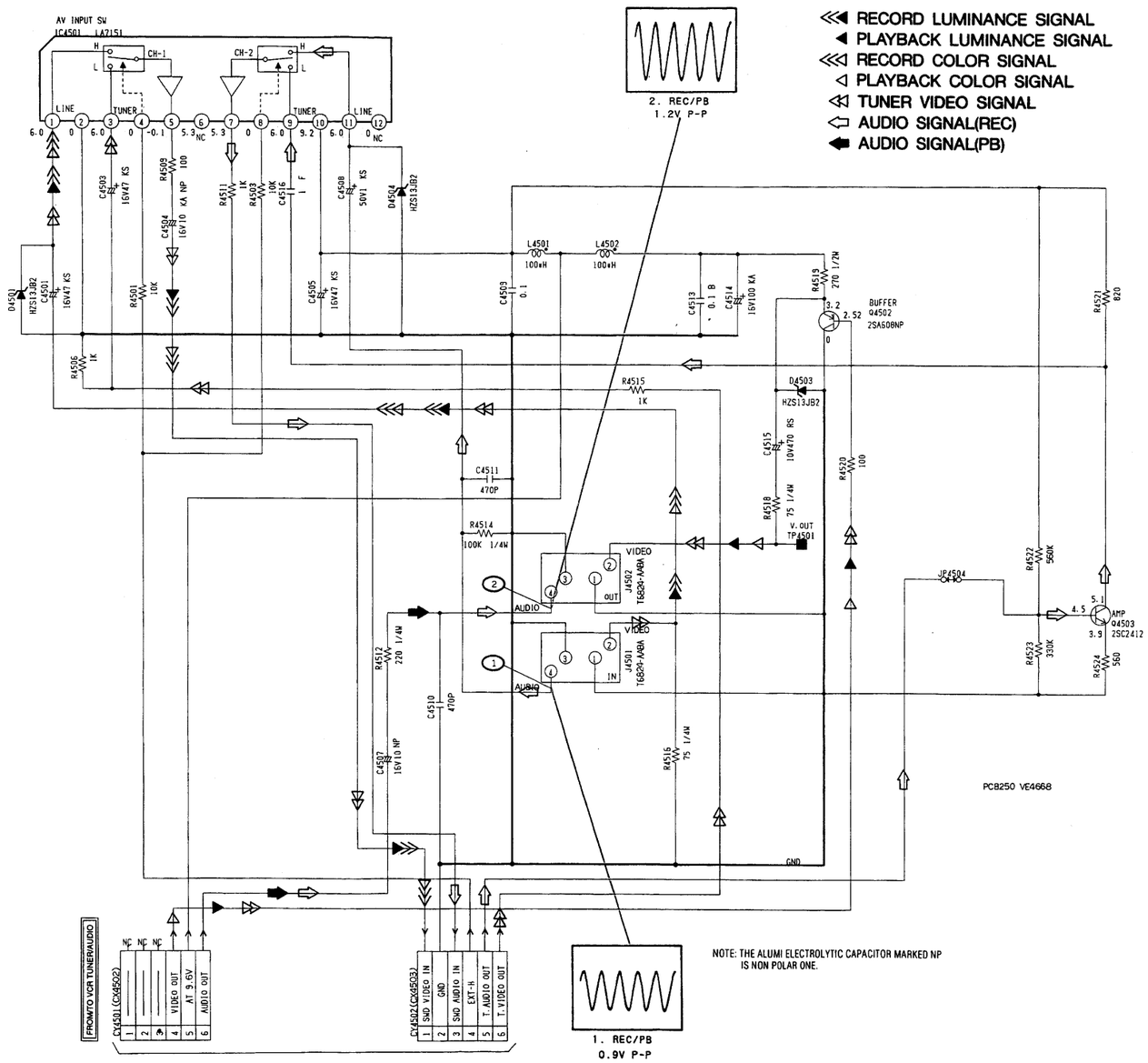
NOTE: THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

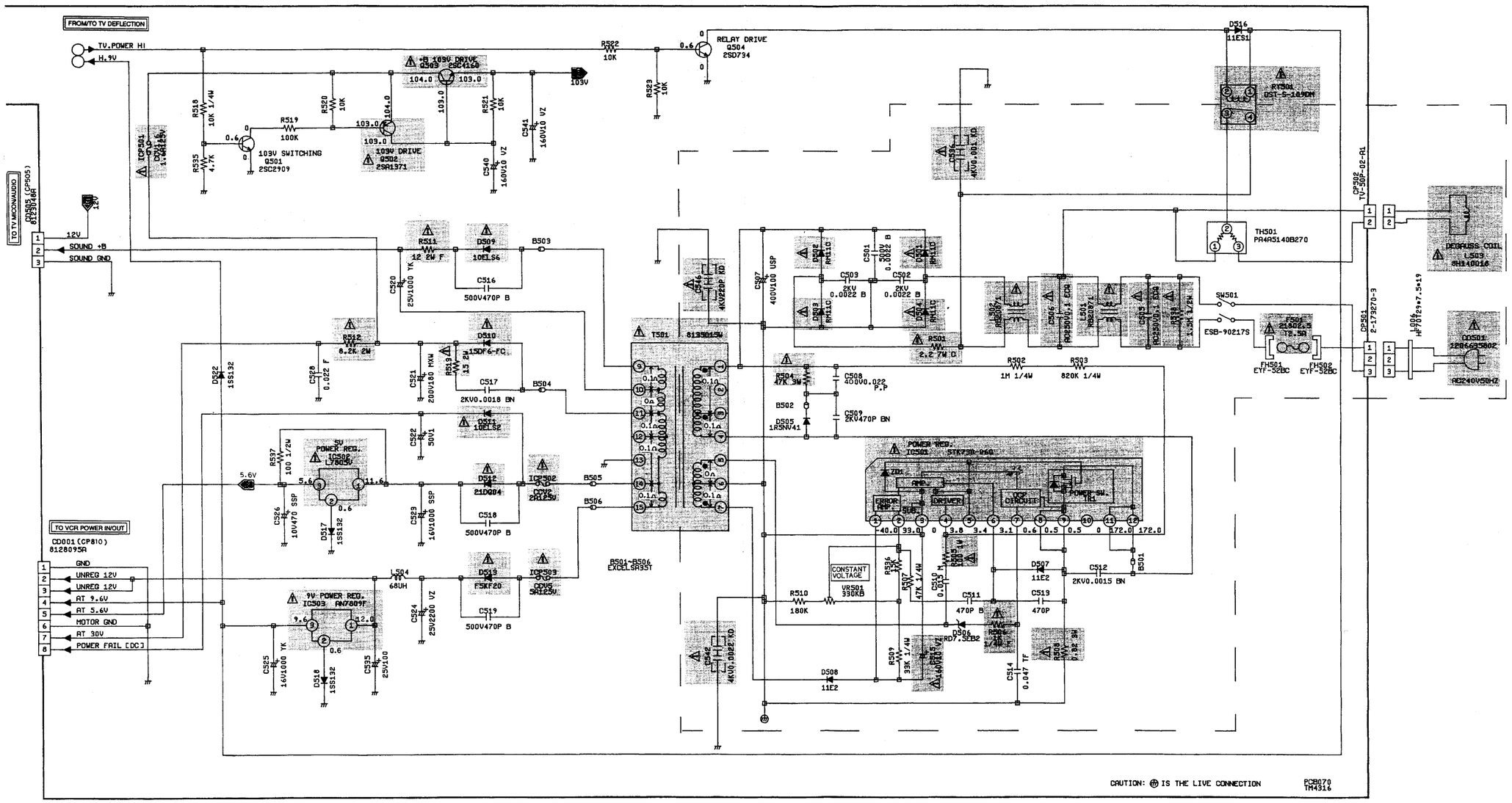
TV Microcontroller/Audio Amp Diagram



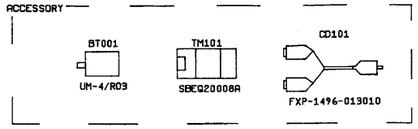
VCR AV Diagram



TV Power Supply Diagram



ACCESSORY



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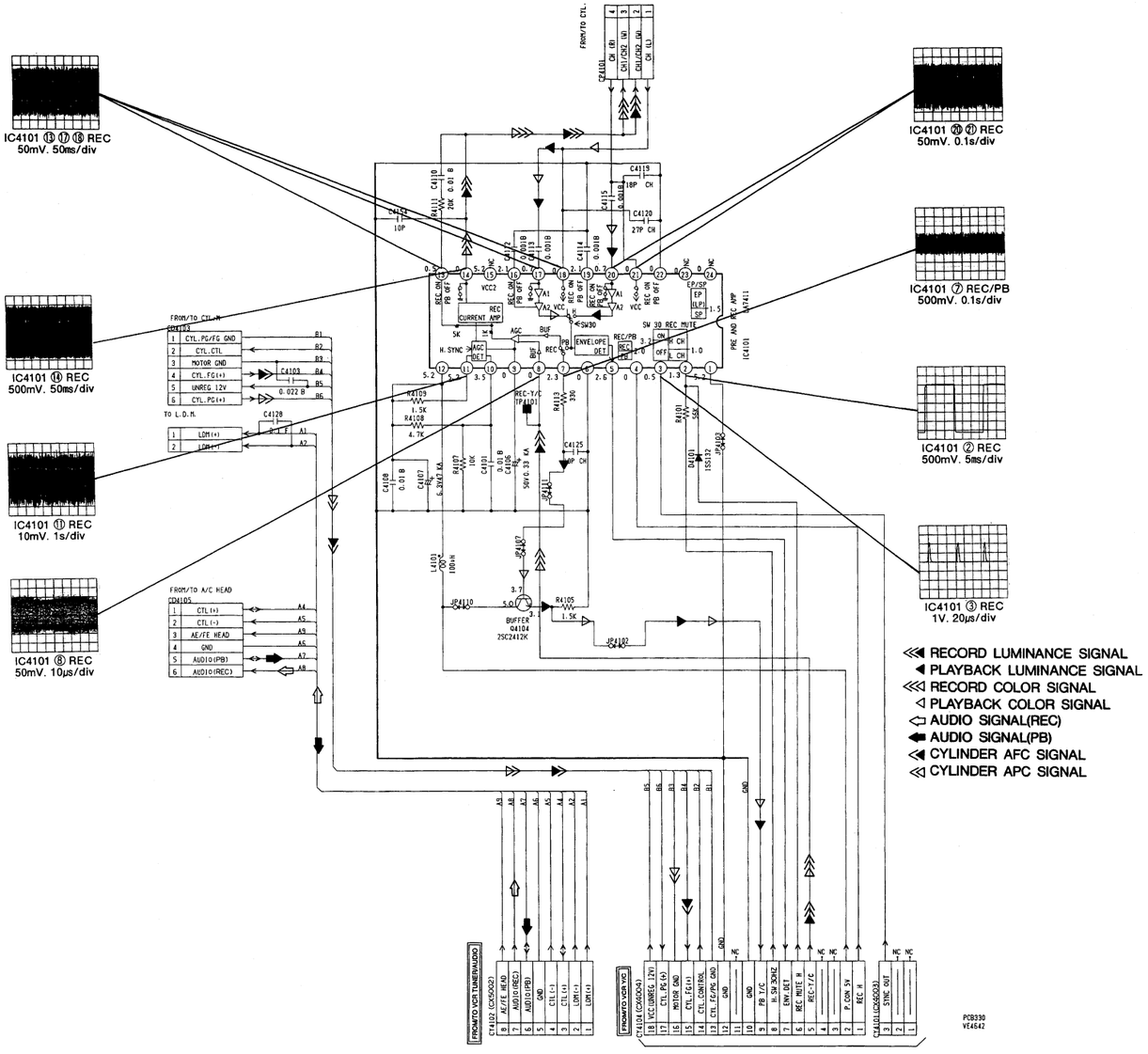
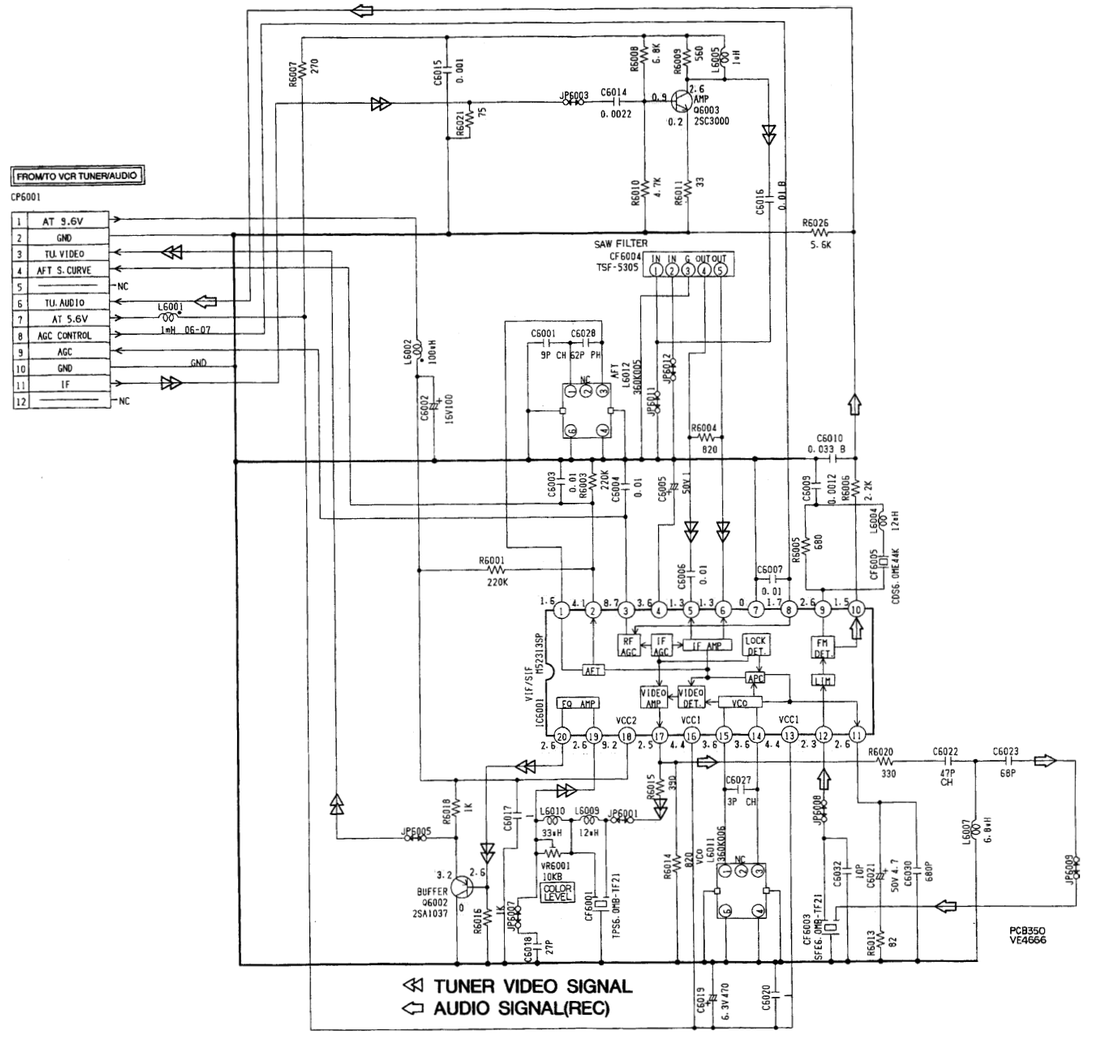
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE. THE RESISTOR MARKED F IS FUSE RESISTOR.

AIWA VX-T1420

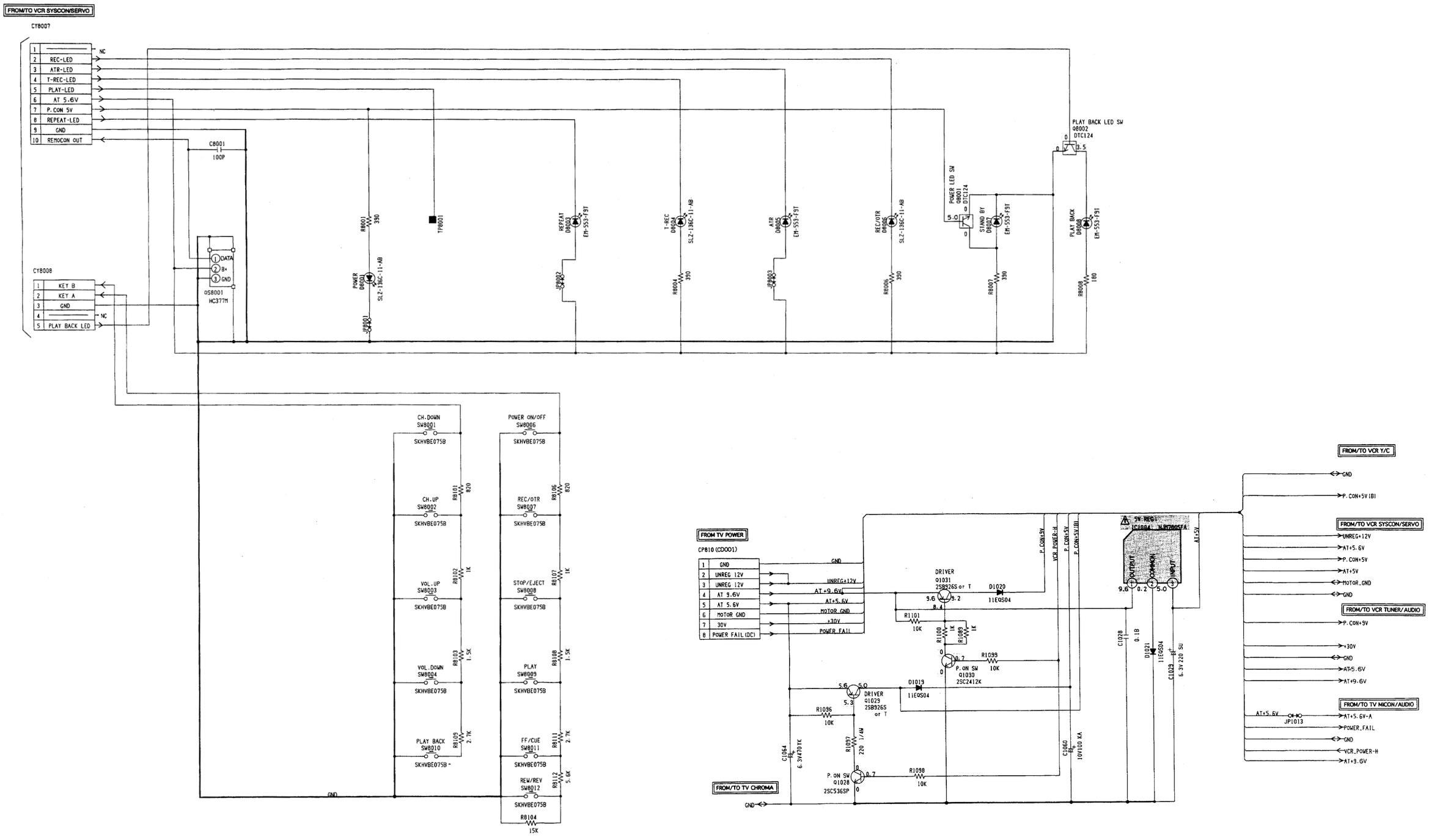
VCR Head Amp Diagram



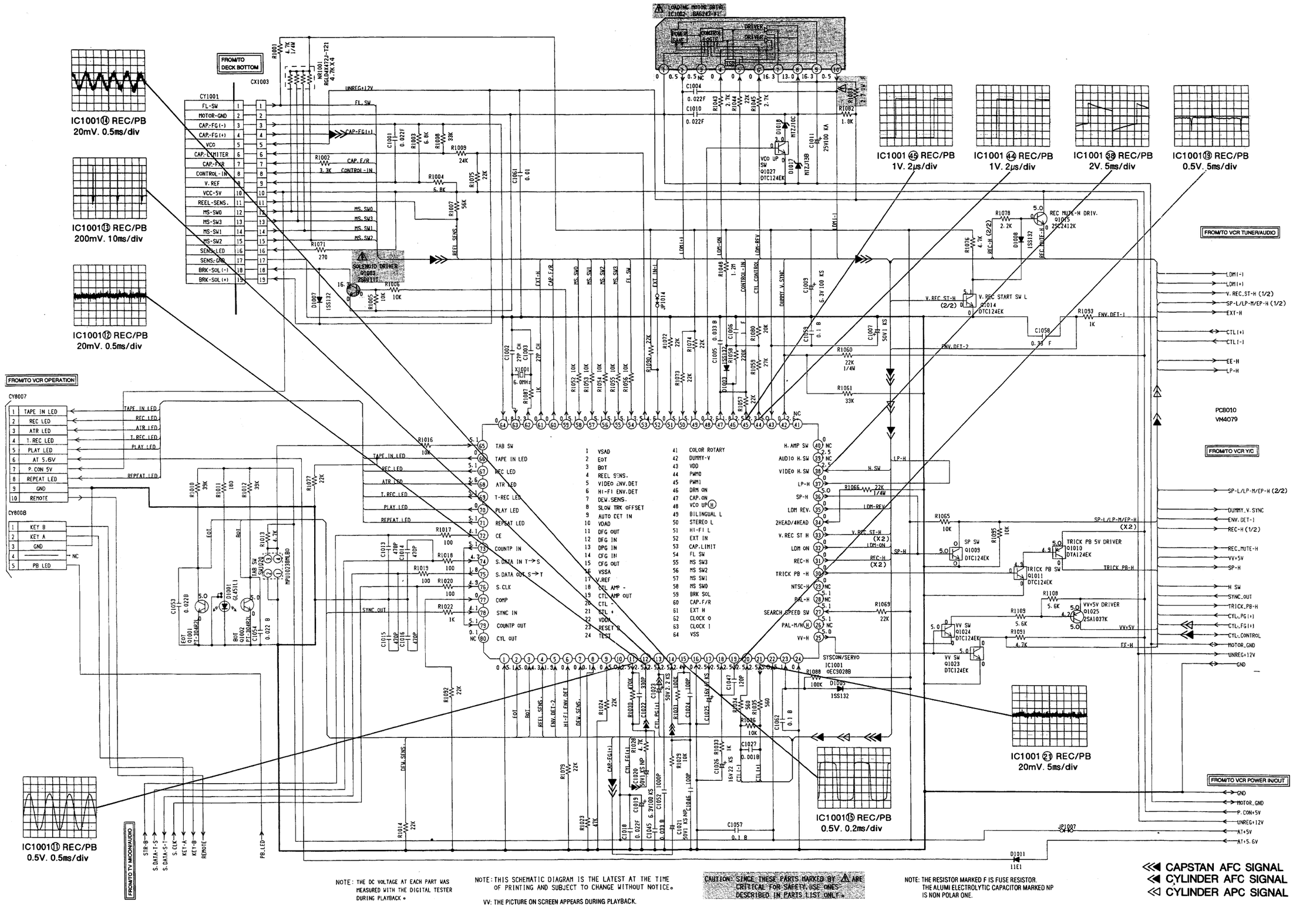
VCR IF Diagram



VCR Operation PCB Diagram



VCR System Control & Servo Diagram



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

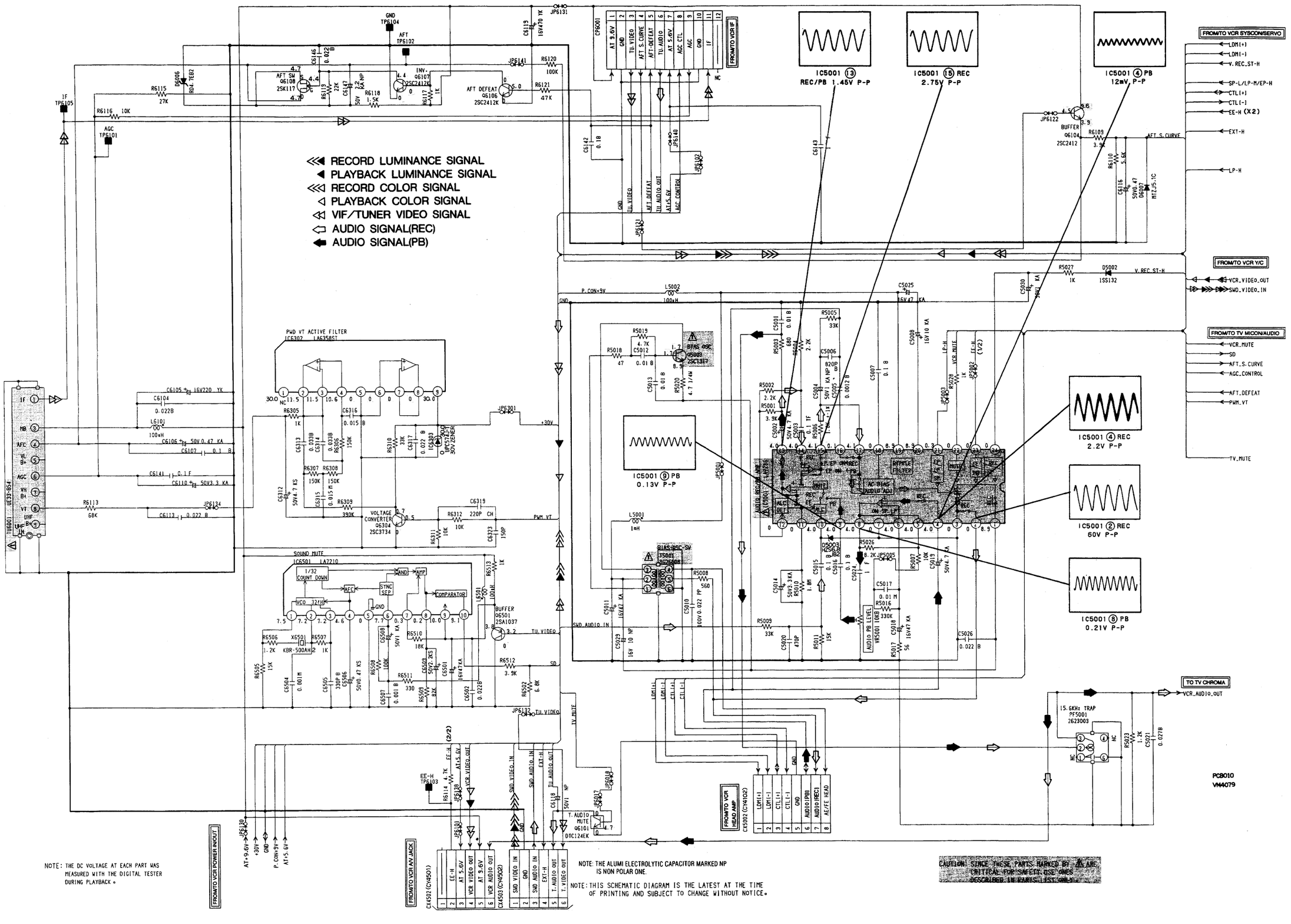
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

VV: THE PICTURE ON SCREEN APPEARS DURING PLAYBACK.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

VCR Tuner Audio Diagram



AIWA VX-T1420

VCR Y/C Diagram

FROM/TO VCR HEAD AMP

FROM/TO VCR SYSCON/SERVO

FROM/TO VCR POWER IN/OUT

FROM/TO VCR TUNER/AUDIO

TO TV CHROMA

IC4002 ① PB
50mV. 5ms/div

IC4002 ② REC
0.5V. 5ms/div

IC4002 ④ REC
100mV. 10µs/div

IC4002 ⑮ REC
2.0V. 20µs/div

IC4002 ㊹ PB
50mV. 10µs/div

IC4002 ㊹ REC
200mV. 10µs/div

IC4002 ㊸ REC
200mV. 2µs/div

PCB010 VM4079

≪◀ RECORD LUMINANCE SIGNAL
◀ PLAYBACK LUMINANCE SIGNAL
≪ RECORD COLOR SIGNAL
◁ PLAYBACK COLOR SIGNAL
≪ TUNER VIDEO SIGNAL
≪◀ CYLINDER AFC SIGNAL
≪ CYLINDER APC SIGNAL

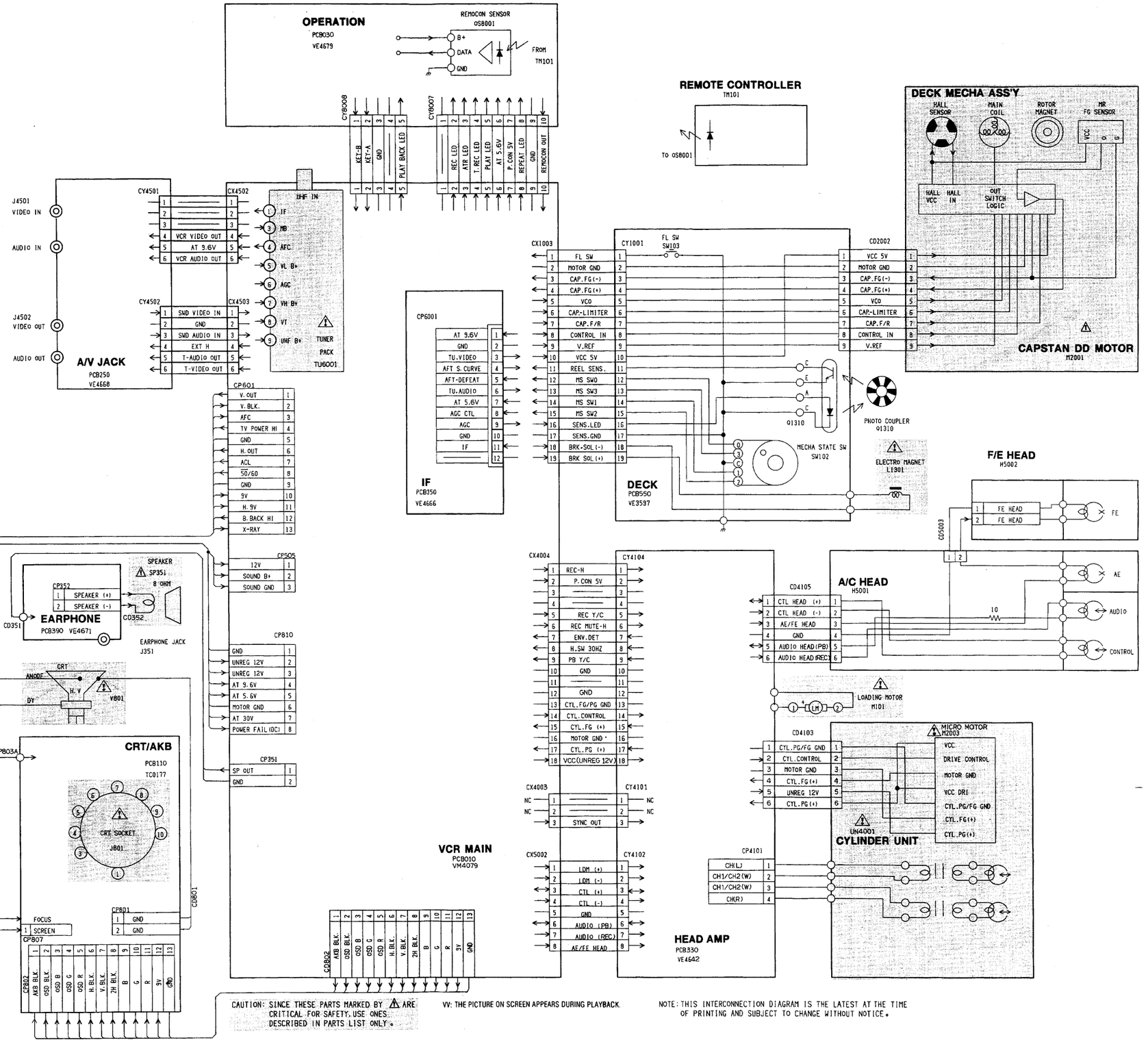
VV: THE PICTURE ON SCREEN APPEARS DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

Wiring Diagram



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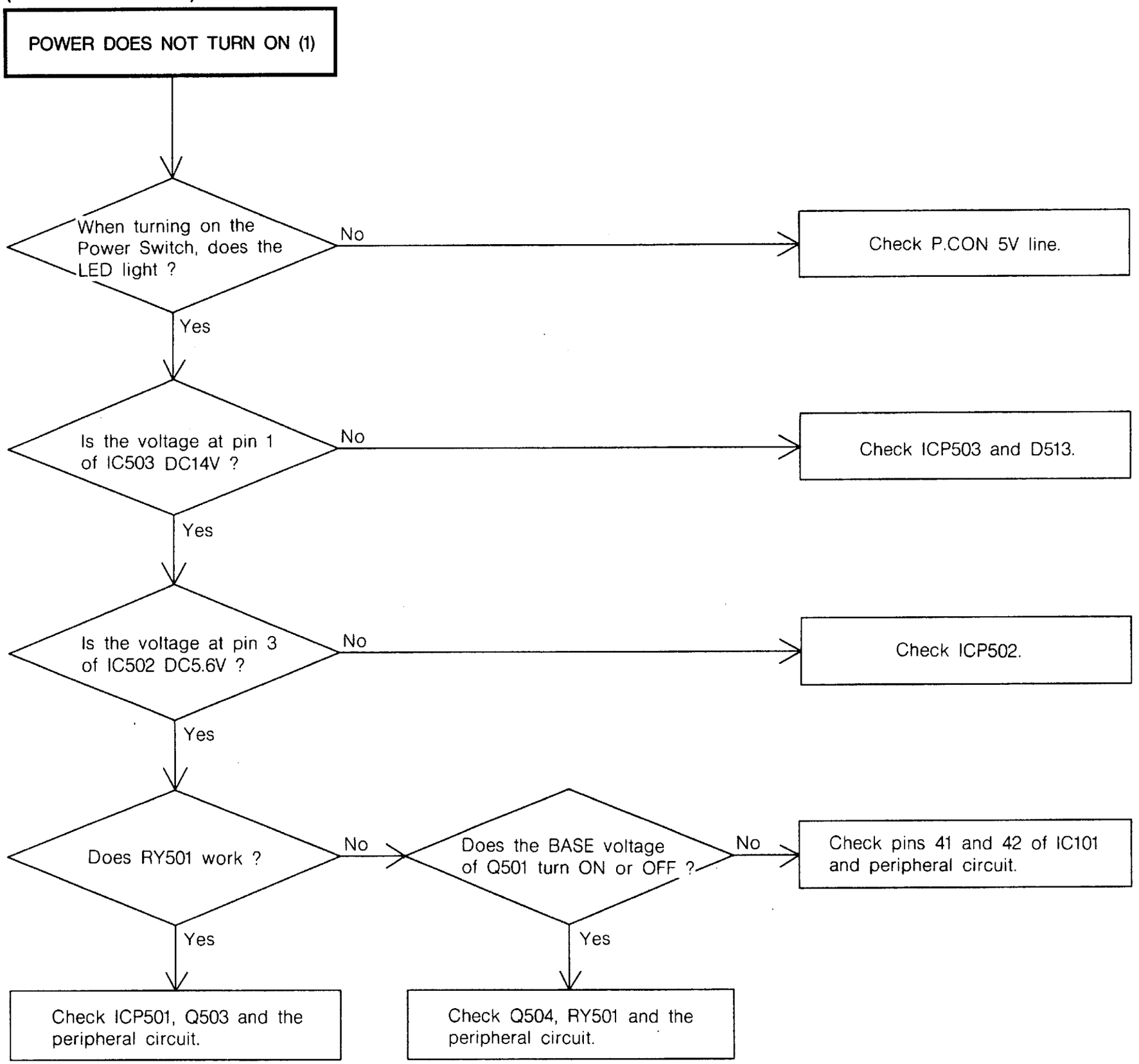
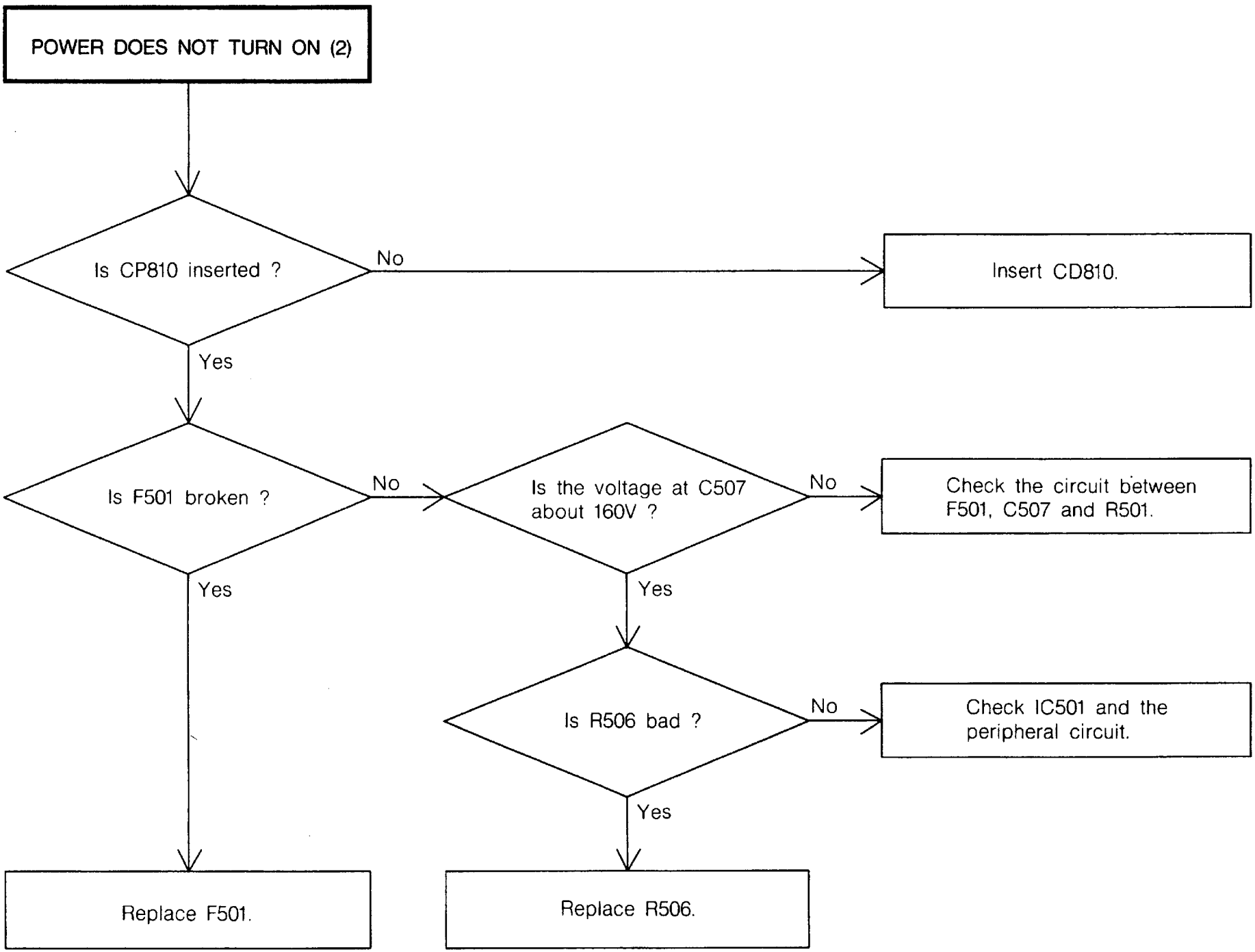
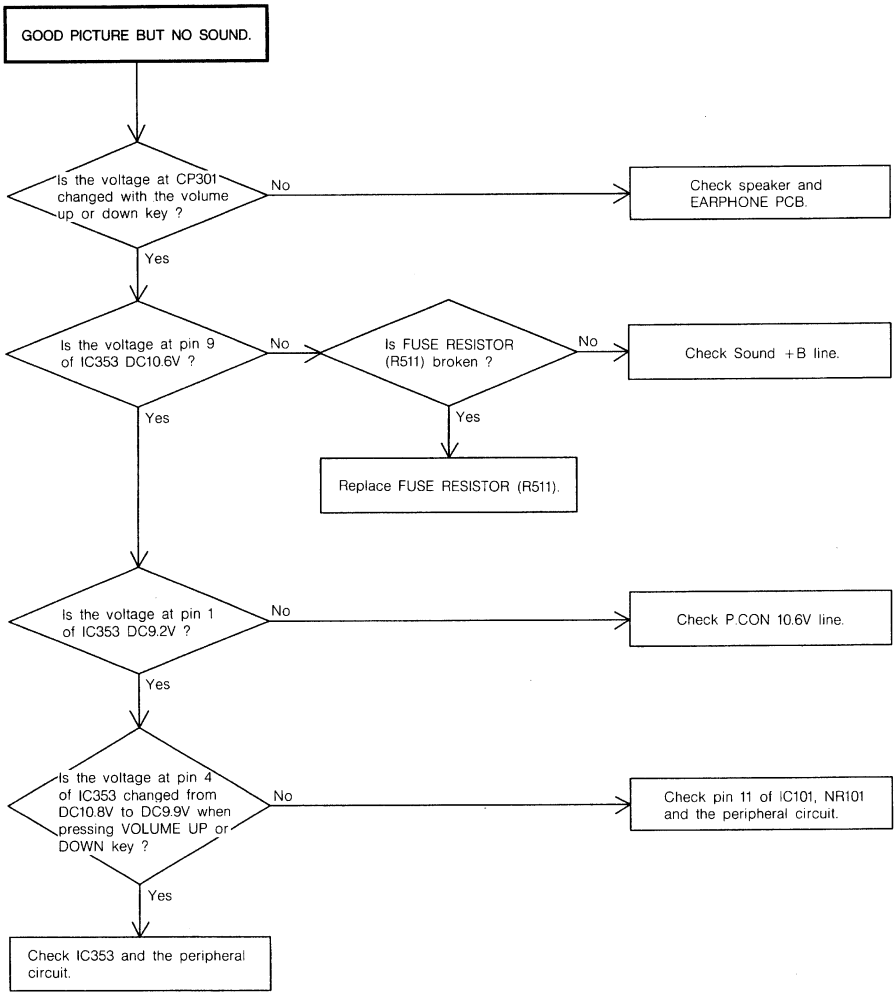
VV: THE PICTURE ON SCREEN APPEARS DURING PLAYBACK.

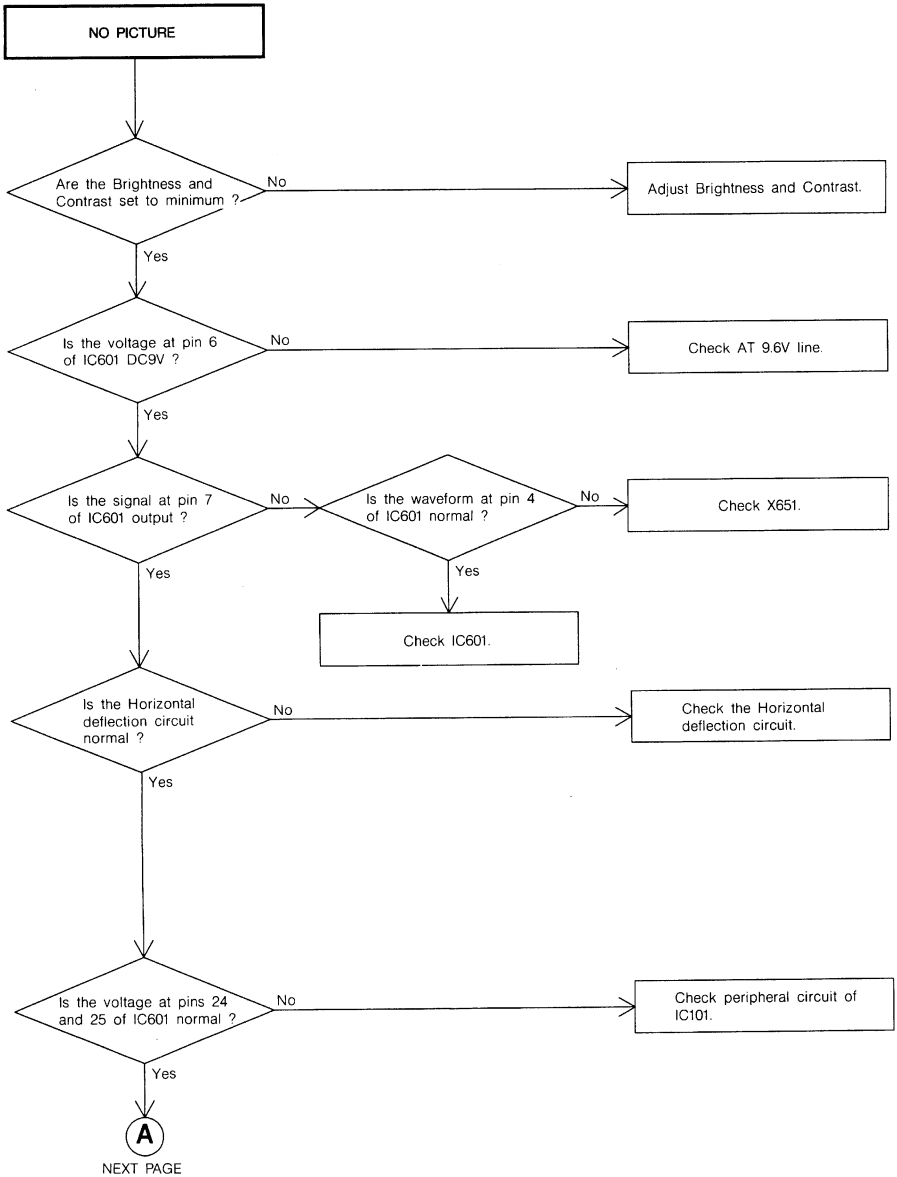
NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

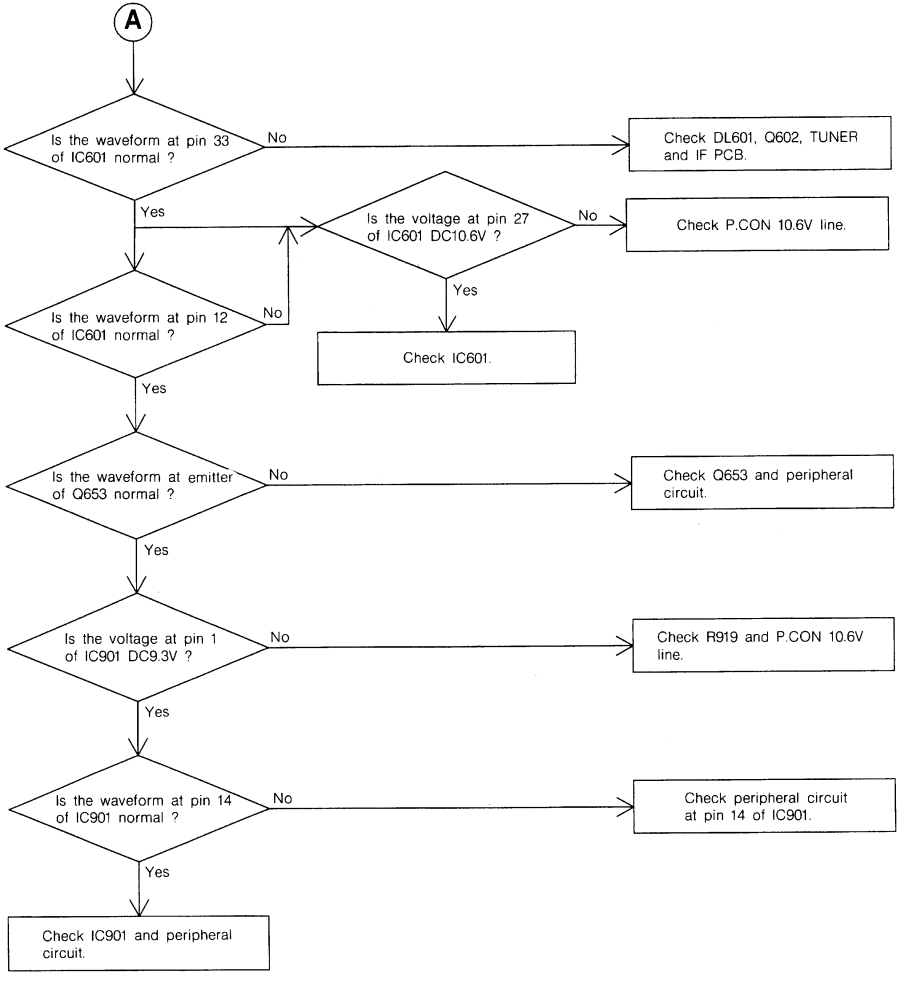
(TV SECTION)

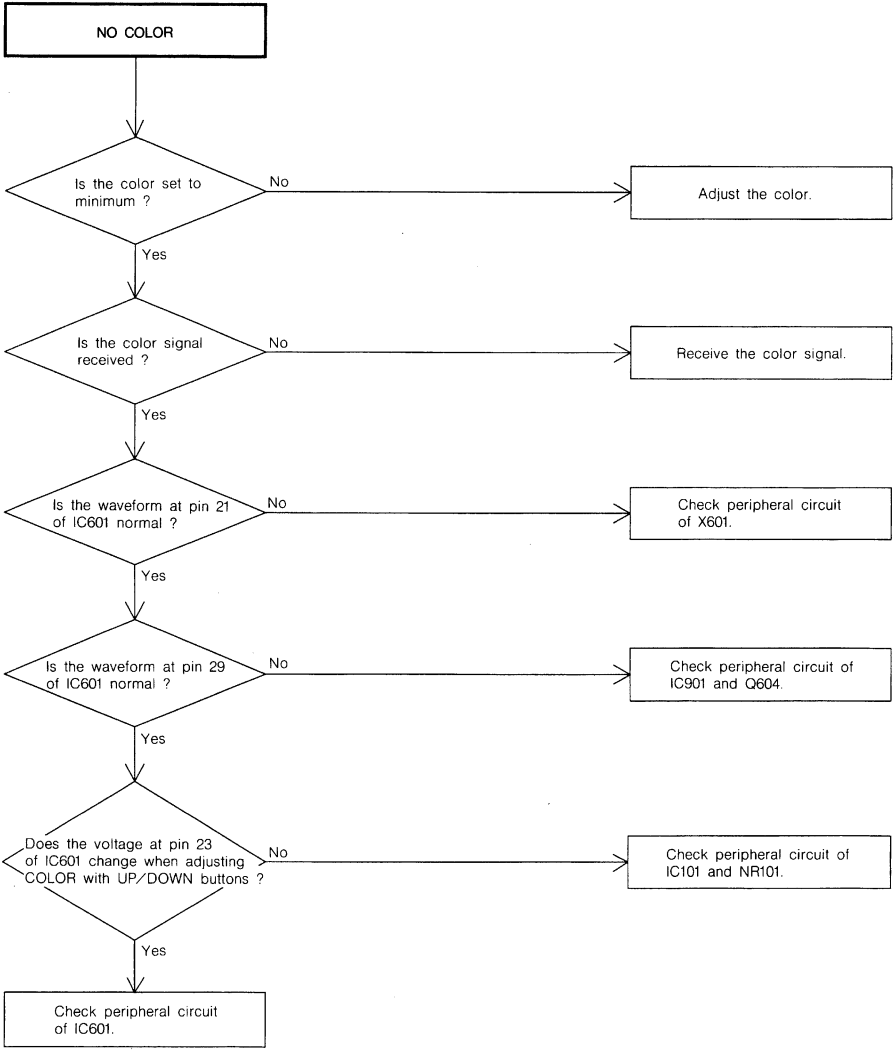

POWER DOES NOT TURN ON (1)
When turning on the Power Switch, does the LED light ?
No
Check P.CON 5V line.
Yes
Is the voltage at pin 1 of IC503 DC14V ?
No
Check ICP503 and D513.
Yes
Is the voltage at pin 3 of IC502 DC5.6V ?
No
Check ICP502.
Yes
Does RY501 work ?
No
Does the BASE voltage of Q501 turn ON or OFF ?
No
Check pins 41 and 42 of IC101 and peripheral circuit.
Yes
Yes
Check ICP501, Q503 and the peripheral circuit.
Check Q504, RY501 and the peripheral circuit.

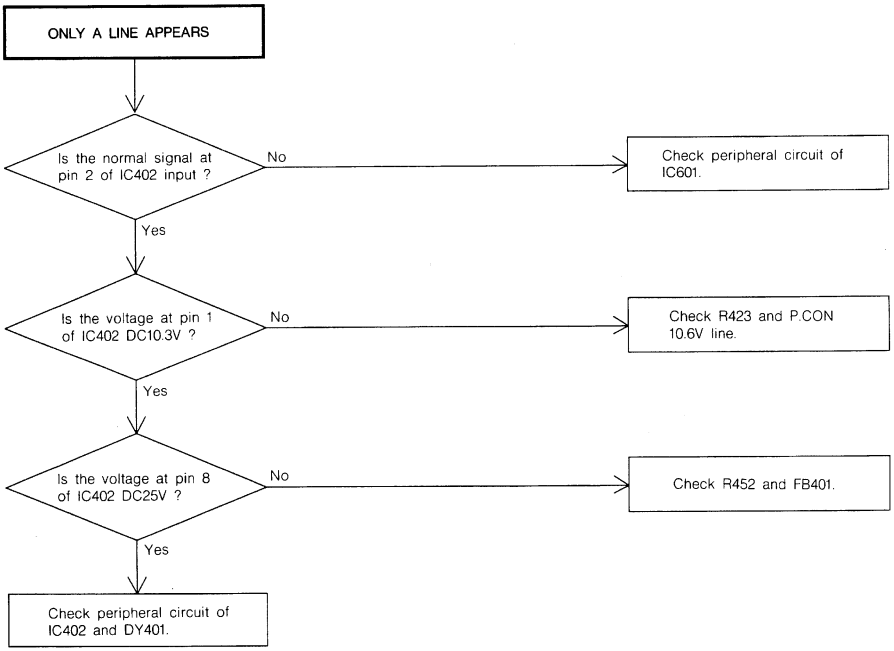

POWER DOES NOT TURN ON (2)
Is CP810 inserted ?
No
Insert CD810.
Yes
Is F501 broken ?
No
Is the voltage at C507 about 160V ?
No
Check the circuit between F501, C507 and R501.
Yes
Yes
Is R506 bad ?
No
Check IC501 and the peripheral circuit.
Yes
Replace F501.
Replace R506.

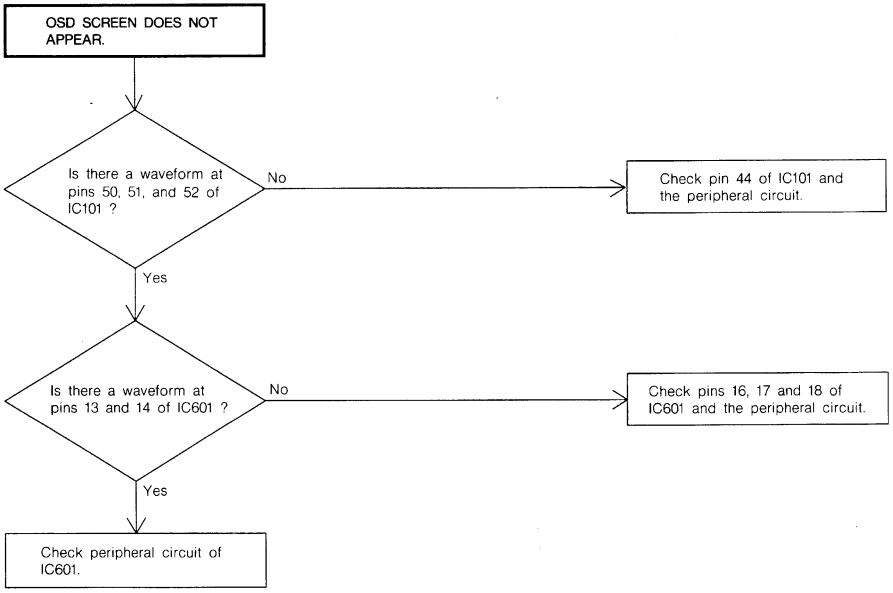

GOOD PICTURE BUT NO SOUND.
Is the voltage at CP301 changed with the volume up or down key ?
No
Check speaker and EARPHONE PCB.
Yes
Is the voltage at pin 9 of IC353 DC10.6V ?
No
Is FUSE RESISTOR (R511) broken ?
No
Check Sound +B line.
Yes
Yes
Replace FUSE RESISTOR (R511).
Is the voltage at pin 1 of IC353 DC9.2V ?
No
Check P.CON 10.6V line.
Yes
Is the voltage at pin 4 of IC353 changed from DC10.8V to DC9.9V when pressing VOLUME UP or DOWN key ?
No
Check pin 11 of IC101, NR101 and the peripheral circuit.
Yes
Check IC353 and the peripheral circuit.


NO PICTURE
Are the Brightness and Contrast set to minimum ?
No
Adjust Brightness and Contrast.
Yes
Is the voltage at pin 6 of IC601 DC9V ?
No
Check AT 9.6V line.
Yes
Is the signal at pin 7 of IC601 output ?
No
Is the waveform at pin 4 of IC601 normal ?
No
Check X651.
Yes
Yes
Check IC601.
Is the Horizontal deflection circuit normal ?
No
Check the Horizontal deflection circuit.
Yes
Is the voltage at pins 24 and 25 of IC601 normal ?
No
Check peripheral circuit of IC101.
Yes
A
NEXT PAGE

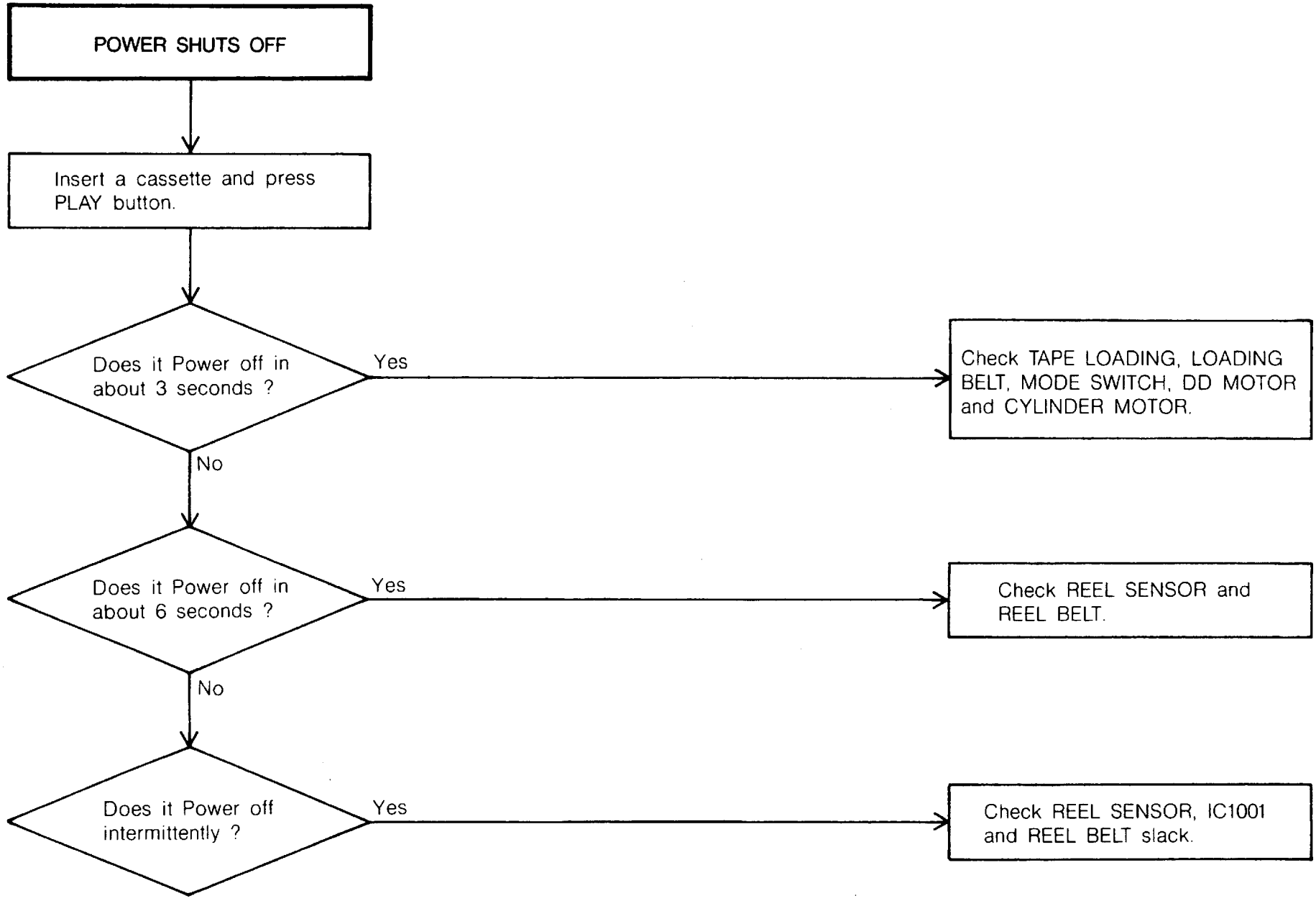

A
Is the waveform at pin 33 of IC601 normal ?
No
Check DL601, Q602, TUNER and IF PCB.
Yes
Is the voltage at pin 27 of IC601 DC10.6V ?
No
Check P.CON 10.6V line.
Yes
Is the waveform at pin 12 of IC601 normal ?
No
Check IC601.
Yes
Is the waveform at emitter of Q653 normal ?
No
Check Q653 and peripheral circuit.
Yes
Is the voltage at pin 1 of IC901 DC9.3V ?
No
Check R919 and P.CON 10.6V line.
Yes
Is the waveform at pin 14 of IC901 normal ?
No
Check peripheral circuit at pin 14 of IC901.
Yes
Check IC901 and peripheral circuit.

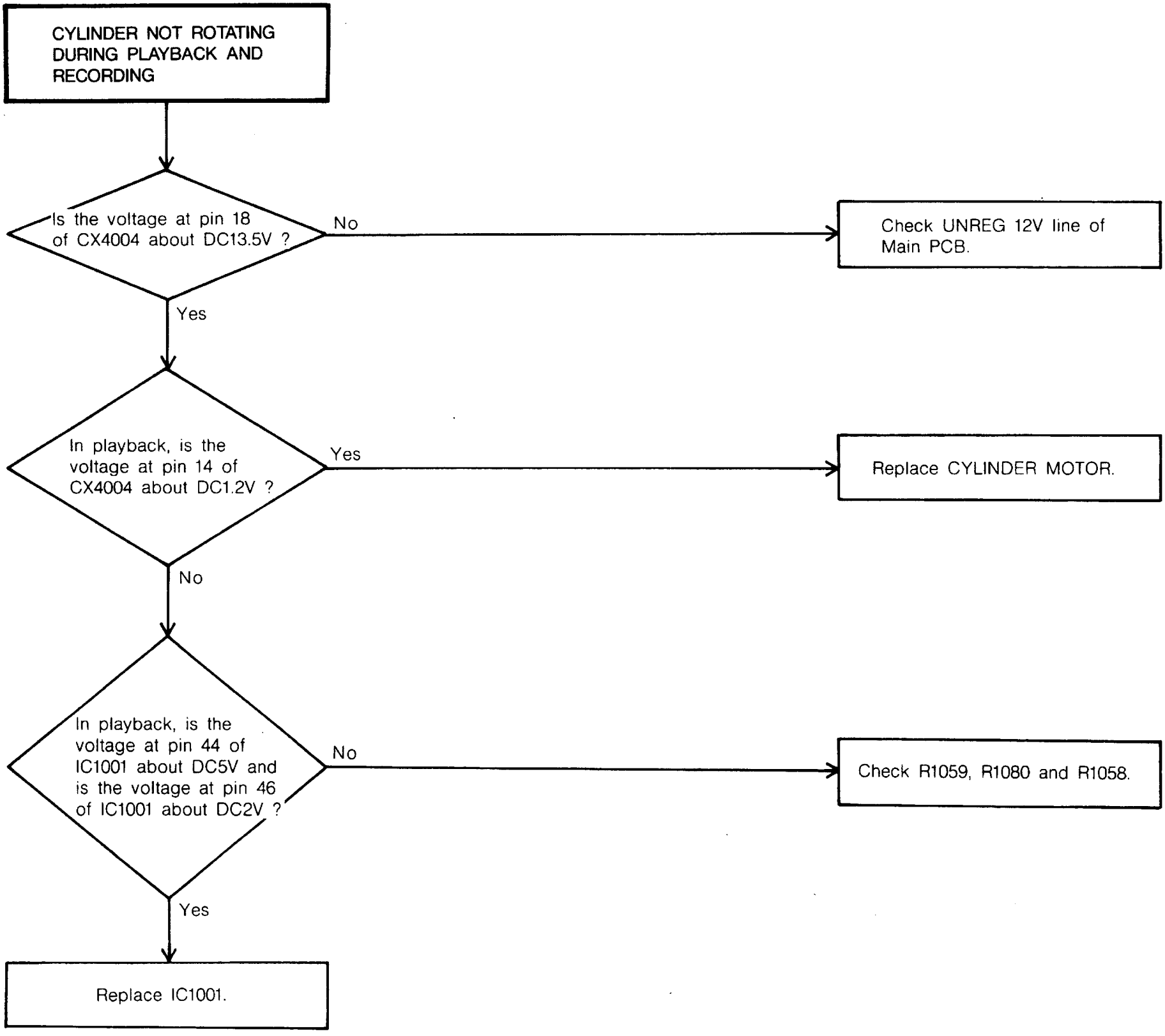

NO COLOR
Is the color set to minimum ?
No
Adjust the color.
Yes
Is the color signal received ?
No
Receive the color signal.
Yes
Is the waveform at pin 21 of IC601 normal ?
No
Check peripheral circuit of X601.
Yes
Is the waveform at pin 29 of IC601 normal ?
No
Check peripheral circuit of IC901 and Q604.
Yes
Does the voltage at pin 23 of IC601 change when adjusting COLOR with UP/DOWN buttons ?
No
Check peripheral circuit of IC101 and NR101.
Yes
Check peripheral circuit of IC601.

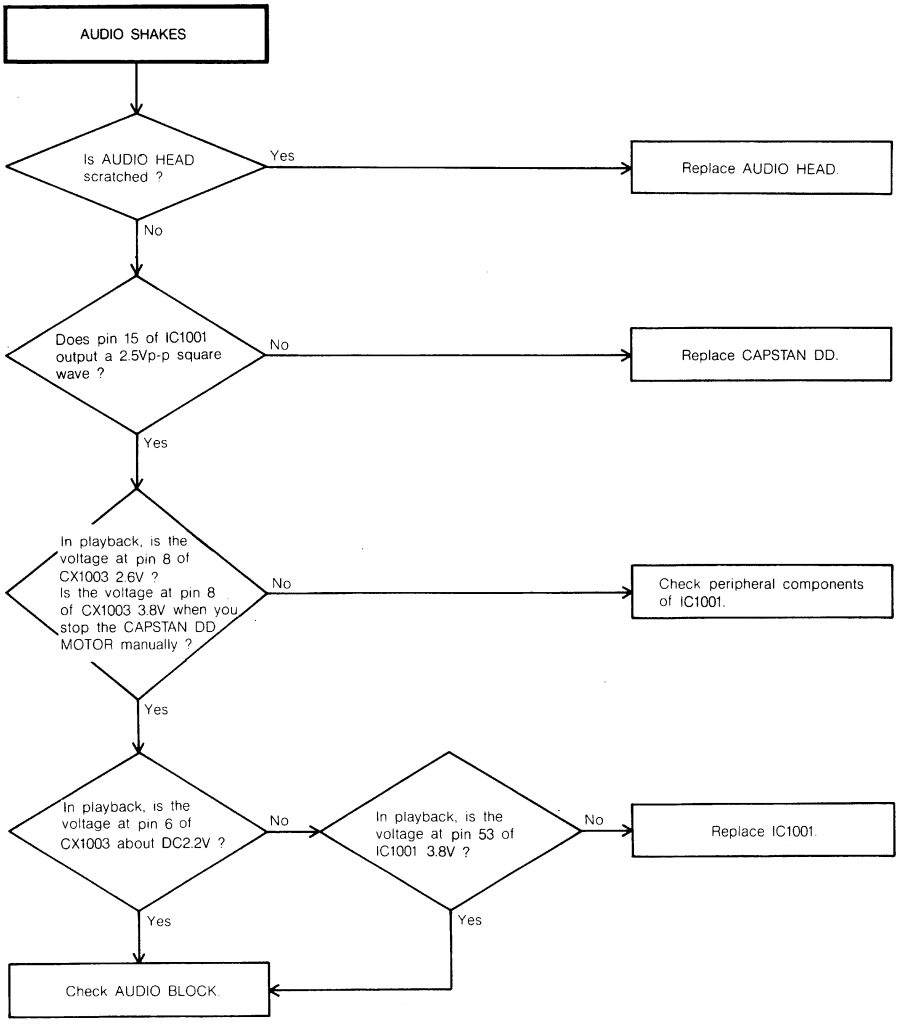

ONLY A LINE APPEARS
Is the normal signal at pin 2 of IC402 input ?
No
Check peripheral circuit of IC601.
Yes
Is the voltage at pin 1 of IC402 DC10.3V ?
No
Check R423 and P.CON 10.6V line.
Yes
Is the voltage at pin 8 of IC402 DC25V ?
No
Check R452 and FB401.
Yes
Check peripheral circuit of IC402 and DY401.

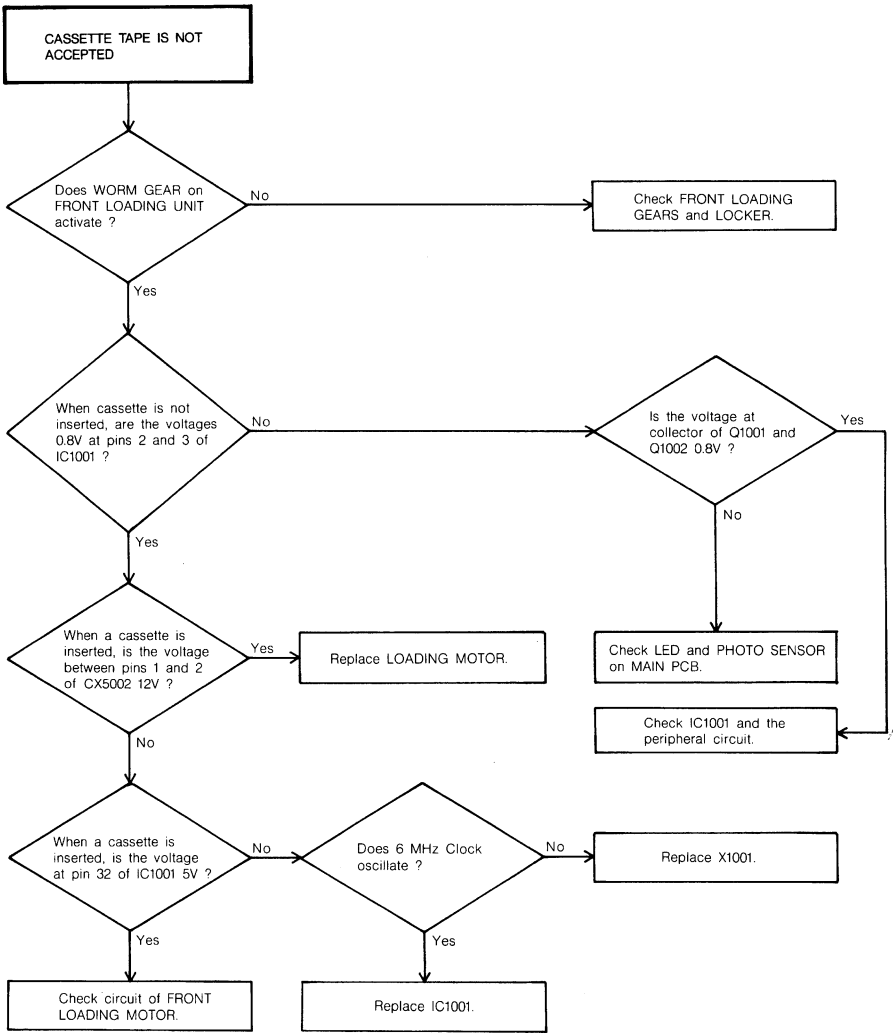

OSD SCREEN DOES NOT APPEAR.
Is there a waveform at pins 50, 51, and 52 of IC101 ?
No
Check pin 44 of IC101 and the peripheral circuit.
Yes
Is there a waveform at pins 13 and 14 of IC601 ?
No
Check pins 16, 17 and 18 of IC601 and the peripheral circuit.
Yes
Check peripheral circuit of IC601.

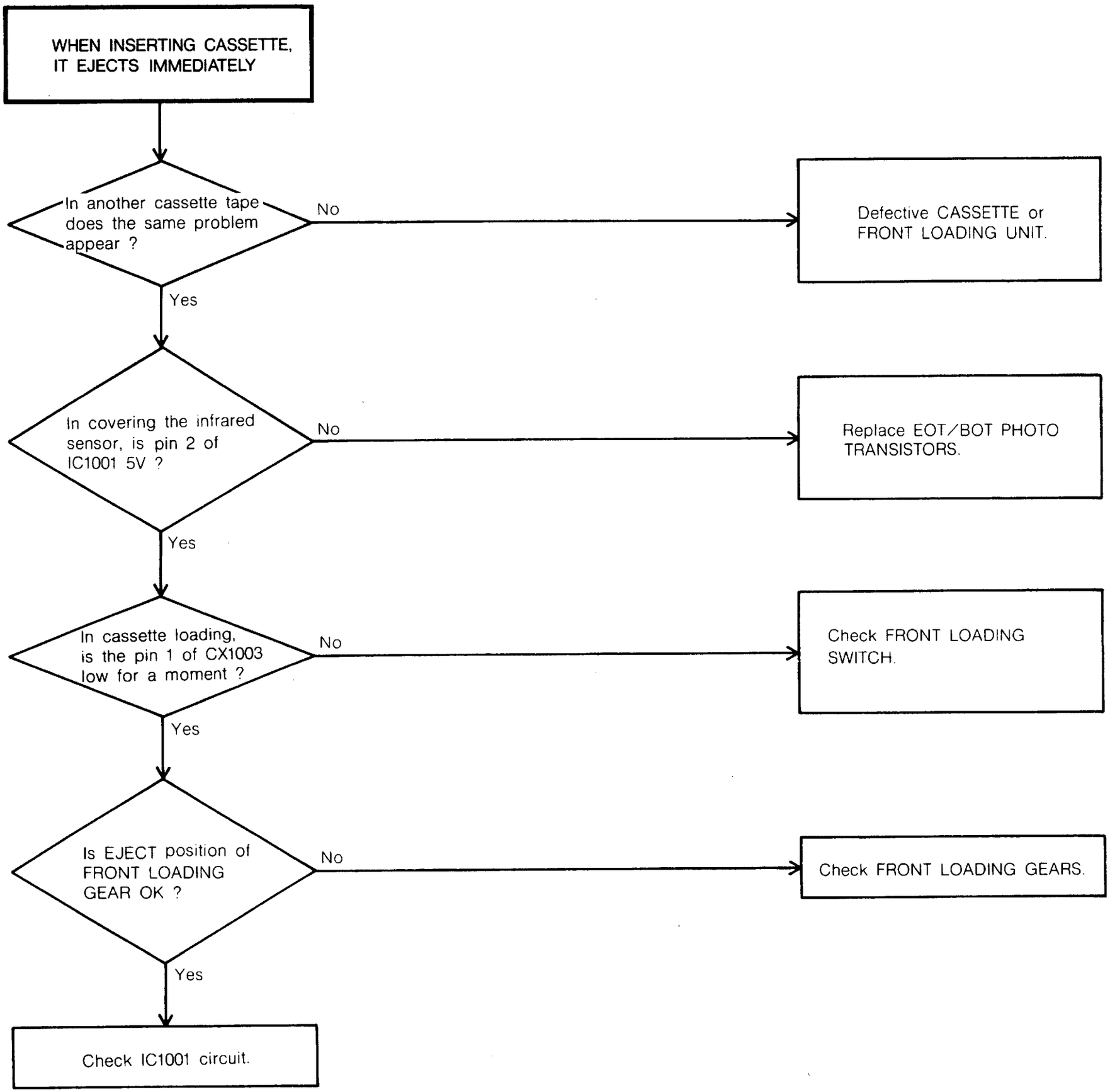
(VCR SECTION)

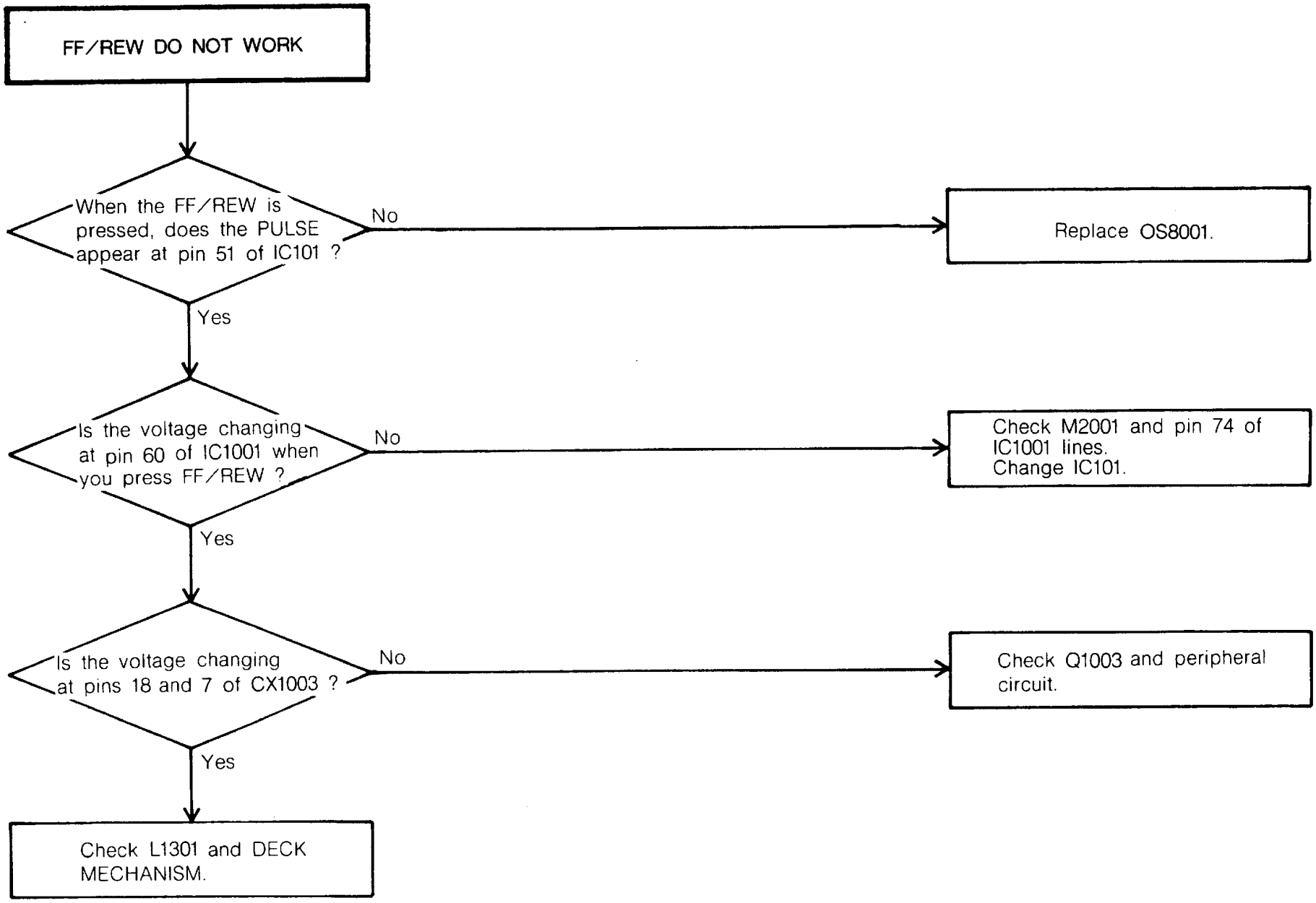

POWER SHUTS OFF
Insert a cassette and press PLAY button.
Does it Power off in about 3 seconds ?
Yes
Check TAPE LOADING, LOADING BELT, MODE SWITCH, DD MOTOR and CYLINDER MOTOR.
No
Does it Power off in about 6 seconds ?
Yes
Check REEL SENSOR and REEL BELT.
No
Does it Power off intermittently ?
Yes
Check REEL SENSOR, IC1001 and REEL BELT slack.

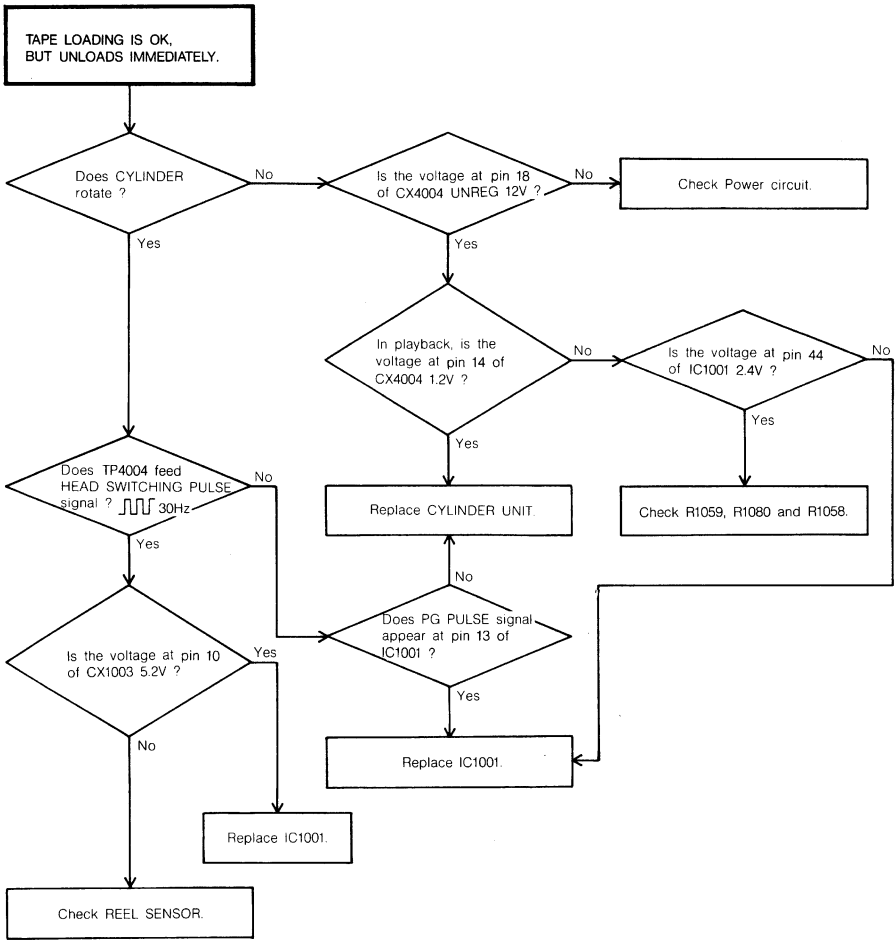

CYLINDER NOT ROTATING DURING PLAYBACK AND RECORDING
Is the voltage at pin 18 of CX4004 about DC13.5V ?
No
Check UNREG 12V line of Main PCB.
Yes
In playback, is the voltage at pin 14 of CX4004 about DC1.2V ?
Yes
Replace CYLINDER MOTOR.
No
In playback, is the voltage at pin 44 of IC1001 about DC5V and is the voltage at pin 46 of IC1001 about DC2V ?
No
Check R1059, R1080 and R1058.
Yes
Replace IC1001.

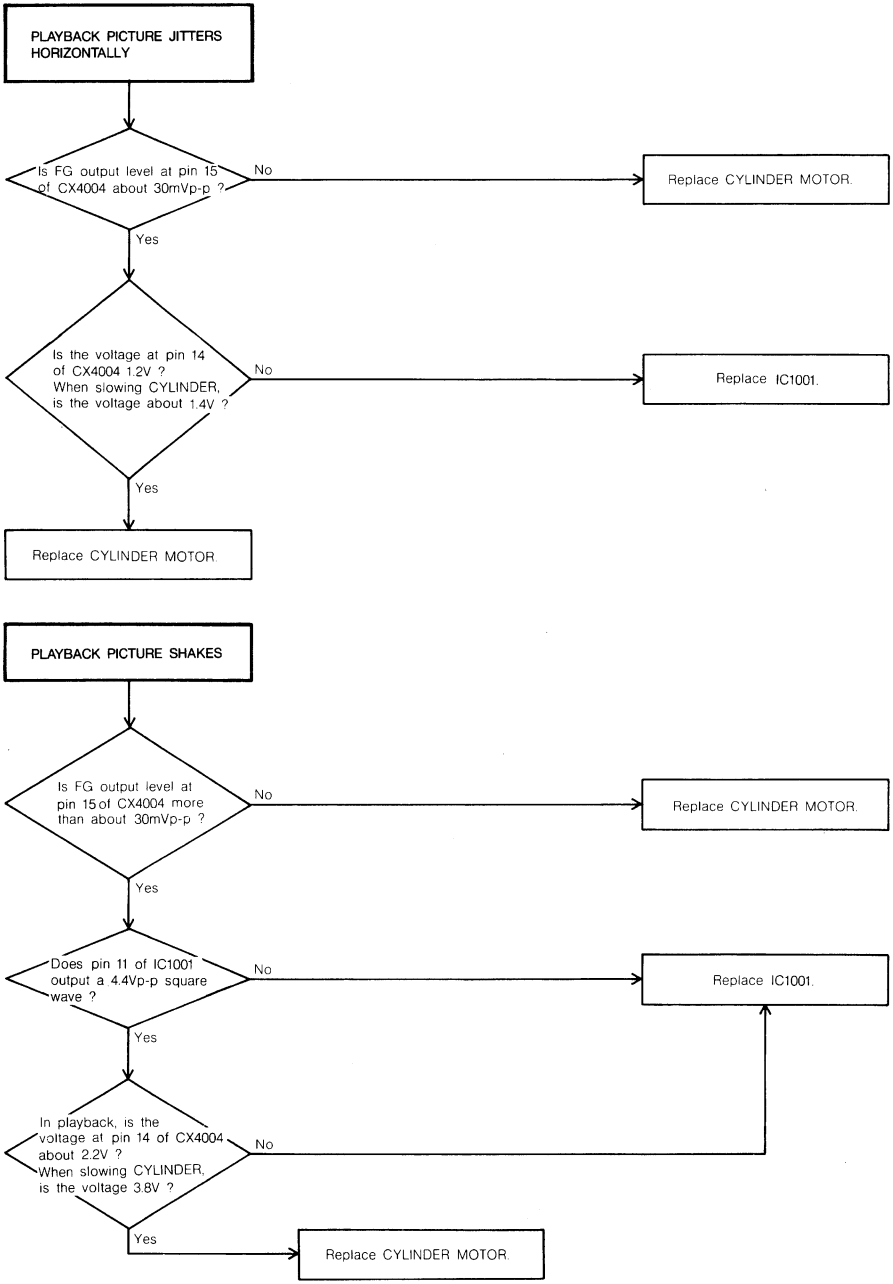

AUDIO SHAKES
Is AUDIO HEAD scratched ?
Yes
Replace AUDIO HEAD.
No
Does pin 15 of IC1001 output a 2.5Vp-p square wave ?
No
Replace CAPSTAN DD.
Yes
In playback, is the voltage at pin 8 of CX1003 2.6V ? Is the voltage at pin 8 of CX1003 3.8V when you stop the CAPSTAN DD MOTOR manually ?
No
Check peripheral components of IC1001.
Yes
In playback, is the voltage at pin 6 of CX1003 about DC2.2V ?
No
In playback, is the voltage at pin 53 of IC1001 3.8V ?
No
Replace IC1001.
Yes
Yes
Check AUDIO BLOCK.

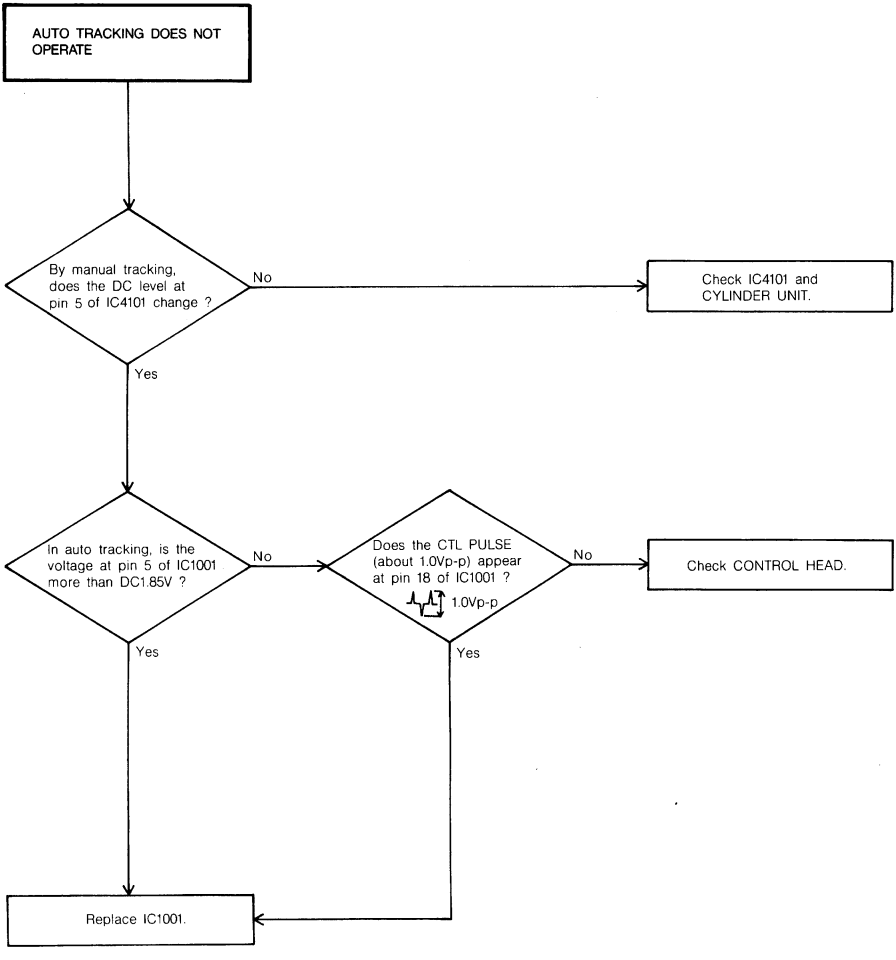

CASSETTE TAPE IS NOT ACCEPTED
Does WORM GEAR on FRONT LOADING UNIT activate ?
No
Check FRONT LOADING GEARS and LOCKER.
Yes
When cassette is not inserted, are the voltages 0.8V at pins 2 and 3 of IC1001 ?
No
Is the voltage at collector of Q1001 and Q1002 0.8V ?
Yes
No
Yes
When a cassette is inserted, is the voltage between pins 1 and 2 of CX5002 12V ?
Yes
Replace LOADING MOTOR.
Check LED and PHOTO SENSOR on MAIN PCB.
Check IC1001 and the peripheral circuit.
No
When a cassette is inserted, is the voltage at pin 32 of IC1001 5V ?
No
Does 6 MHz Clock oscillate ?
No
Replace X1001.
Yes
Yes
Check circuit of FRONT LOADING MOTOR.
Replace IC1001.

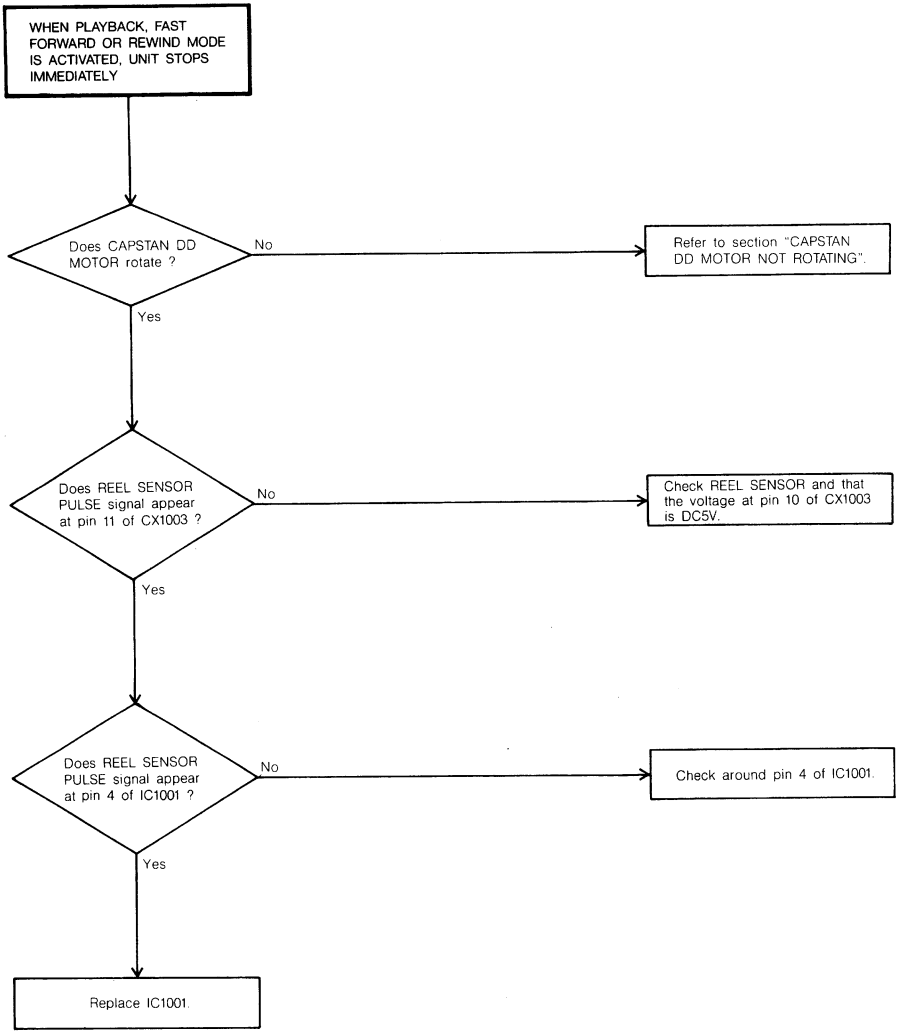

WHEN INSERTING CASSETTE, IT EJECTS IMMEDIATELY
In another cassette tape does the same problem appear ?
No
Defective CASSETTE or FRONT LOADING UNIT.
Yes
In covering the infrared sensor, is pin 2 of IC1001 5V ?
No
Replace EOT/BOT PHOTO TRANSISTORS.
Yes
In cassette loading, is the pin 1 of CX1003 low for a moment ?
No
Check FRONT LOADING SWITCH.
Yes
Is EJECT position of FRONT LOADING GEAR OK ?
No
Check FRONT LOADING GEARS.
Yes
Check IC1001 circuit.

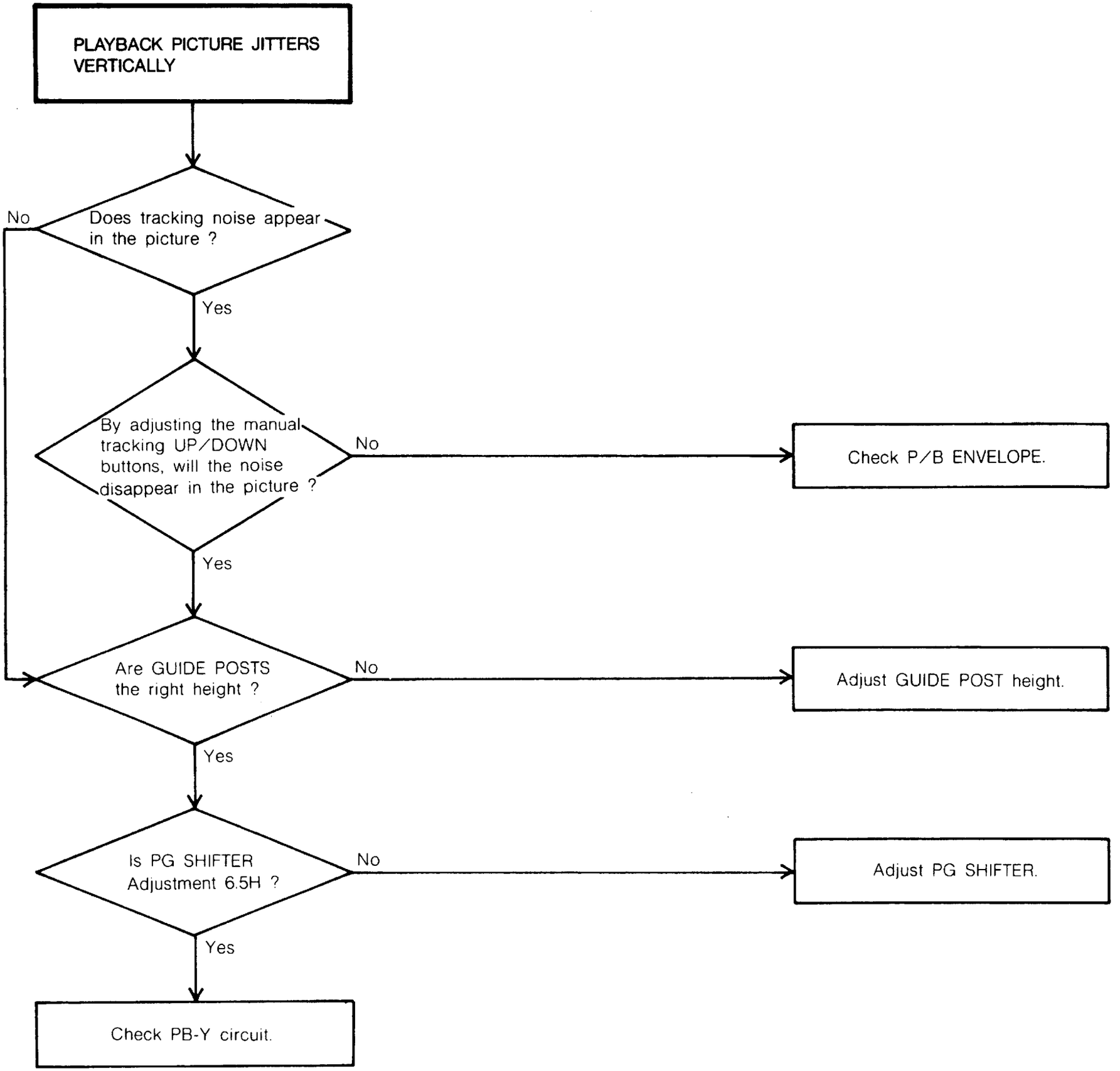

FF/REW DO NOT WORK
When the FF/REW is pressed, does the PULSE appear at pin 51 of IC101 ?
No
Replace OS8001.
Yes
Is the voltage changing at pin 60 of IC1001 when you press FF/REW ?
No
Check M2001 and pin 74 of IC1001 lines.
Change IC101.
Yes
Is the voltage changing at pins 18 and 7 of CX1003 ?
No
Check Q1003 and peripheral circuit.
Yes
Check L1301 and DECK MECHANISM.

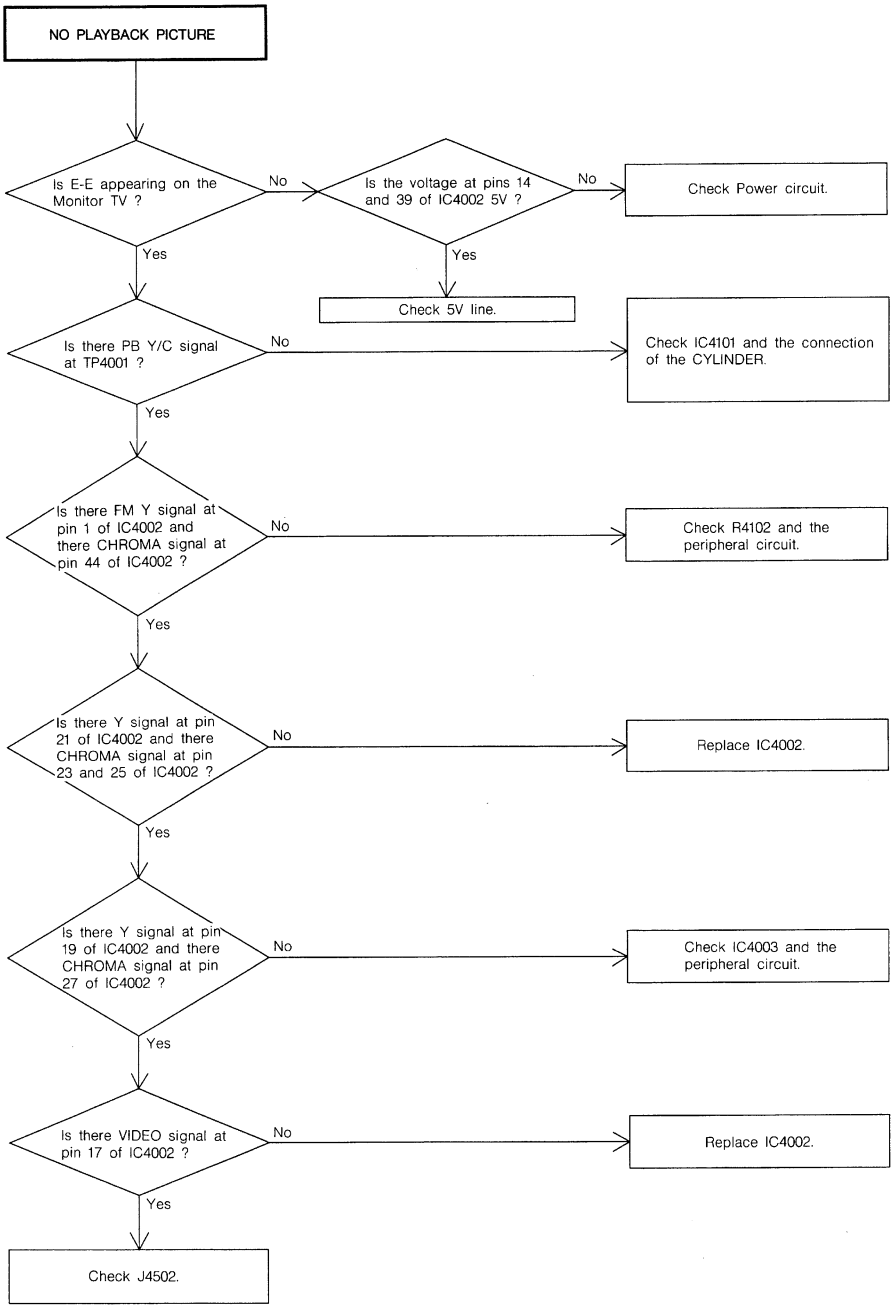

TAPE LOADING IS OK,
BUT UNLOADS IMMEDIATELY.
Does CYLINDER rotate ?
No
Yes
Is the voltage at pin 18 of CX4004 UNREG 12V ?
No
Check Power circuit.
Yes
In playback, is the voltage at pin 14 of CX4004 1.2V ?
No
Is the voltage at pin 44 of IC1001 2.4V ?
No
Yes
Yes
Does TP4004 feed HEAD SWITCHING PULSE signal ? 30Hz
No
Yes
Replace CYLINDER UNIT.
Check R1059, R1080 and R1058.
No
Is the voltage at pin 10 of CX1003 5.2V ?
Yes
No
Does PG PULSE signal appear at pin 13 of IC1001 ?
Yes
Replace IC1001.
Replace IC1001.
Check REEL SENSOR.

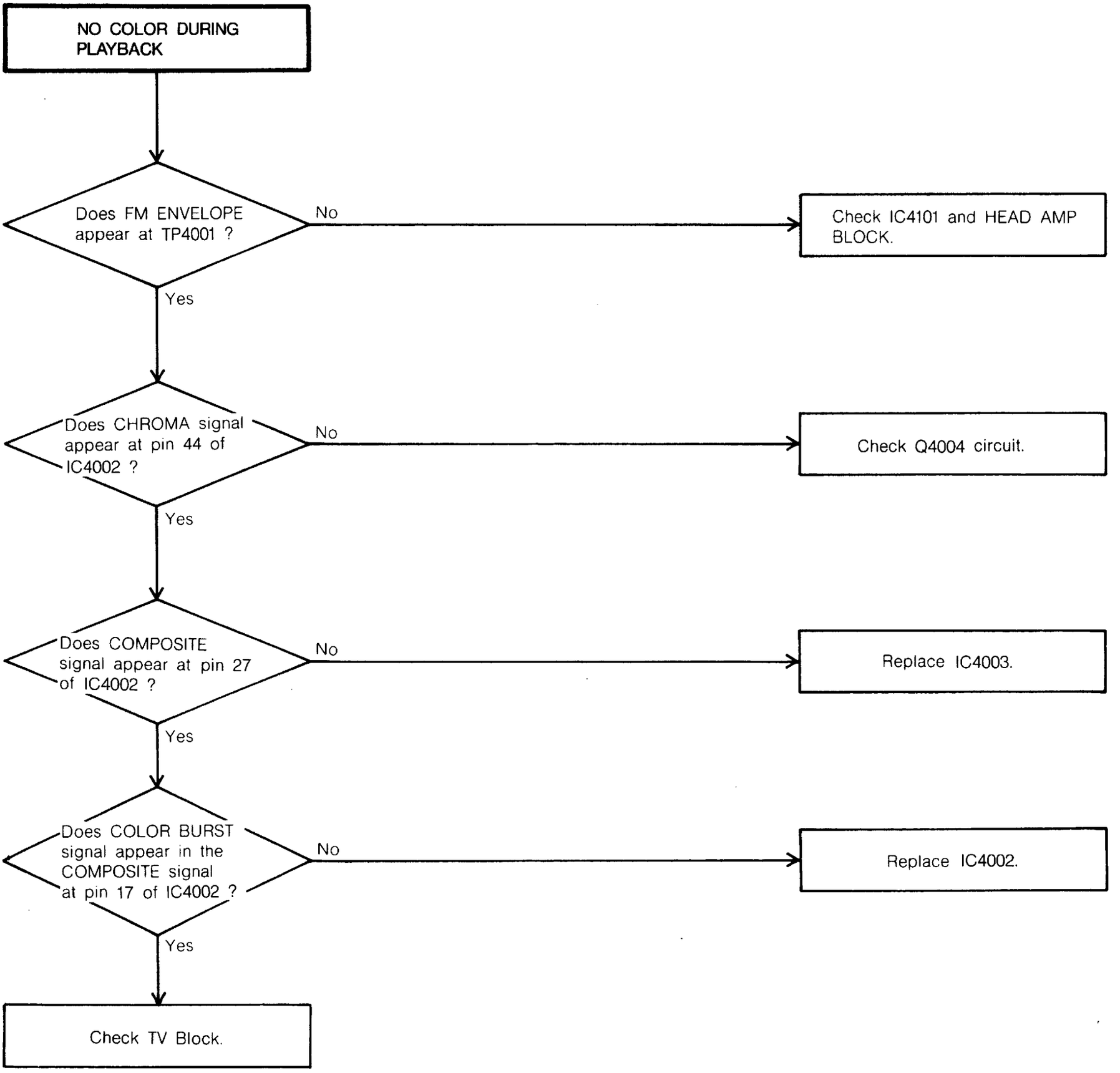

PLAYBACK PICTURE JITTERS HORIZONTALLY
Is FG output level at pin 15 of CX4004 about 30mVp-p ?
No
Replace CYLINDER MOTOR.
Yes
Is the voltage at pin 14 of CX4004 1.2V ? When slowing CYLINDER, is the voltage about 1.4V ?
No
Replace IC1001.
Yes
Replace CYLINDER MOTOR.
PLAYBACK PICTURE SHAKES
Is FG output level at pin 15 of CX4004 more than about 30mVp-p ?
No
Replace CYLINDER MOTOR.
Yes
Does pin 11 of IC1001 output a 4.4Vp-p square wave ?
No
Replace IC1001.
Yes
In playback, is the voltage at pin 14 of CX4004 about 2.2V ? When slowing CYLINDER, is the voltage 3.8V ?
No
Yes
Replace CYLINDER MOTOR.

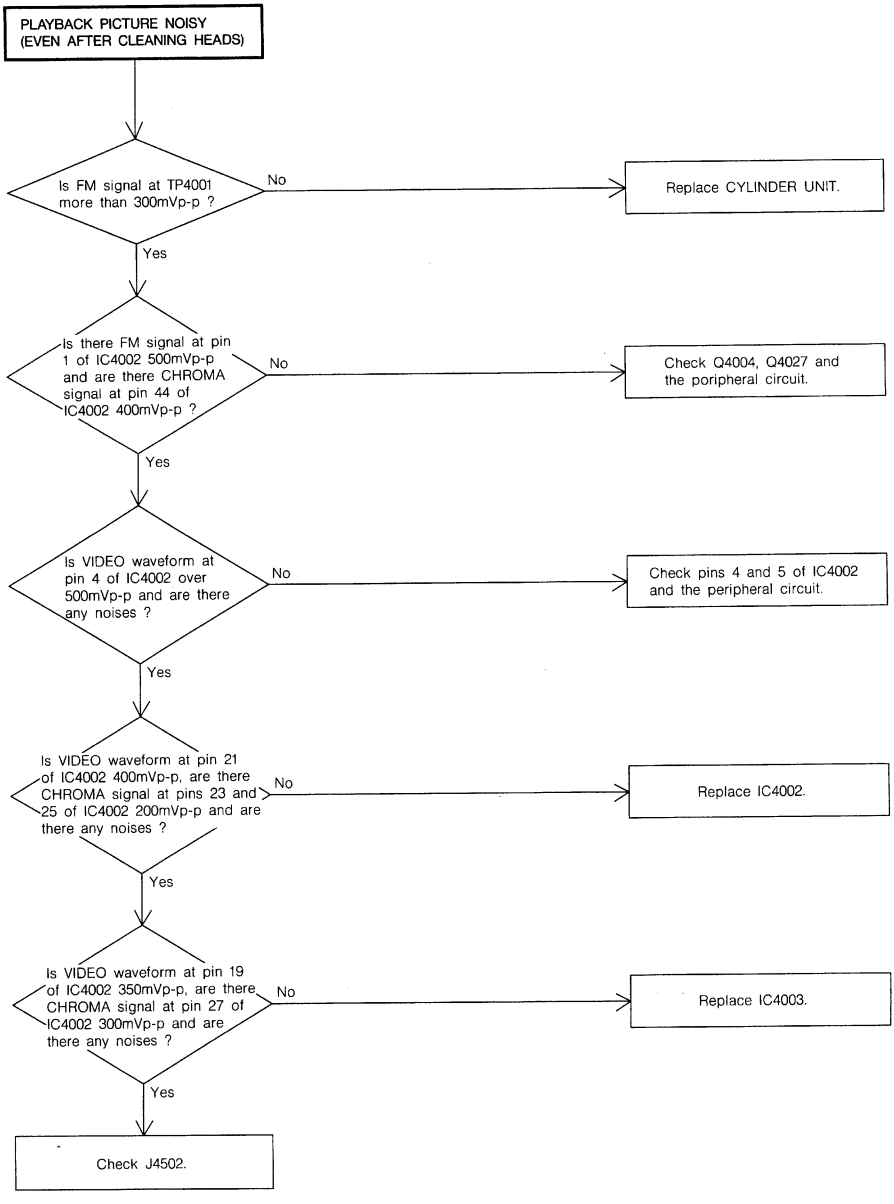

AUTO TRACKING DOES NOT OPERATE
By manual tracking, does the DC level at pin 5 of IC4101 change ?
No
Check IC4101 and CYLINDER UNIT.
Yes
In auto tracking, is the voltage at pin 5 of IC1001 more than DC1.85V ?
No
Does the CTL PULSE (about 1.0Vp-p) appear at pin 18 of IC1001 ?
1.0Vp-p
No
Check CONTROL HEAD.
Yes
Yes
Replace IC1001.

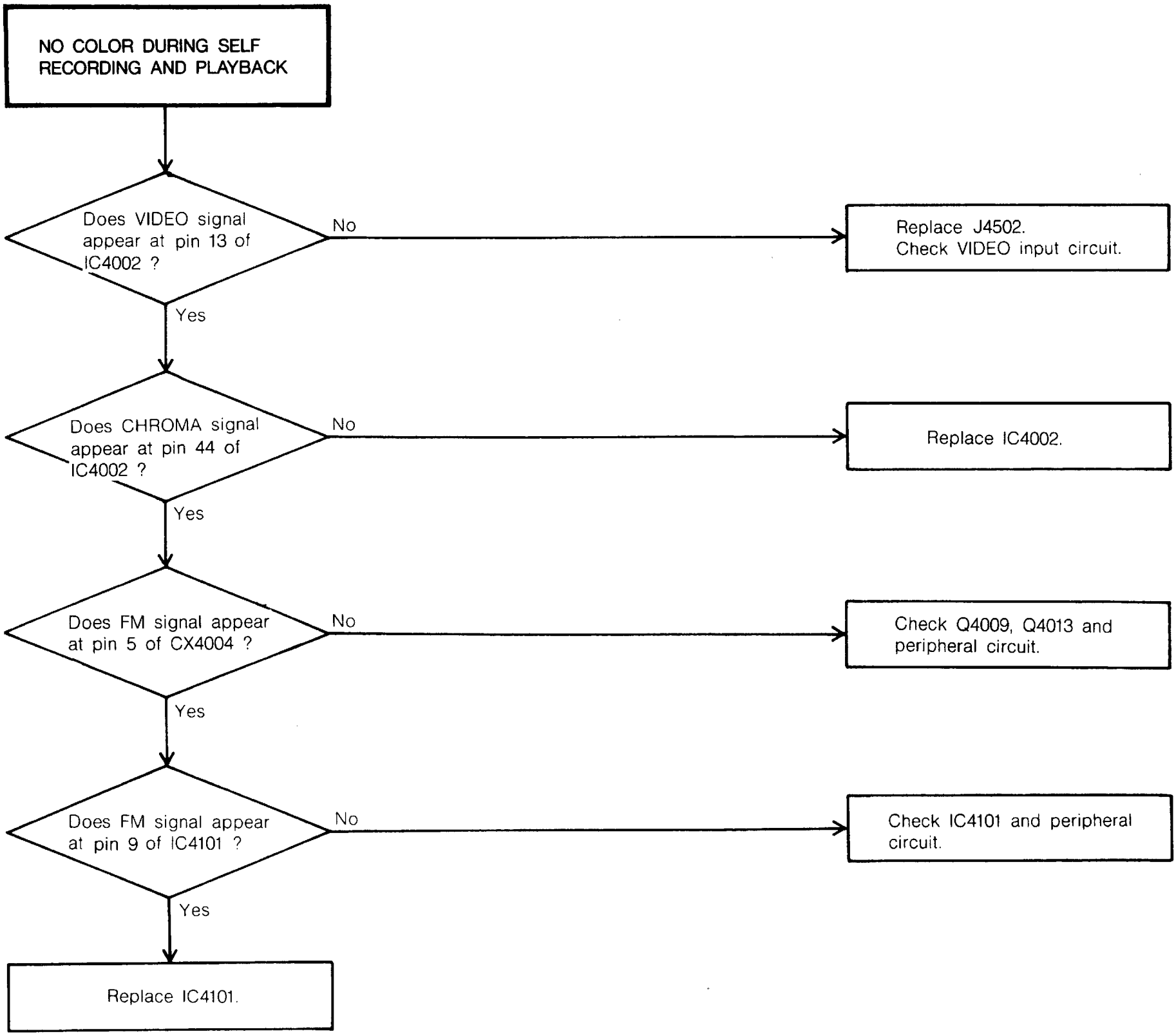

WHEN PLAYBACK, FAST FORWARD OR REWIND MODE IS ACTIVATED, UNIT STOPS IMMEDIATELY
Does CAPSTAN DD MOTOR rotate ?
No
Refer to section "CAPSTAN DD MOTOR NOT ROTATING".
Yes
Does REEL SENSOR PULSE signal appear at pin 11 of CX1003 ?
No
Check REEL SENSOR and that the voltage at pin 10 of CX1003 is DC5V.
Yes
Does REEL SENSOR PULSE signal appear at pin 4 of IC1001 ?
No
Check around pin 4 of IC1001.
Yes
Replace IC1001.

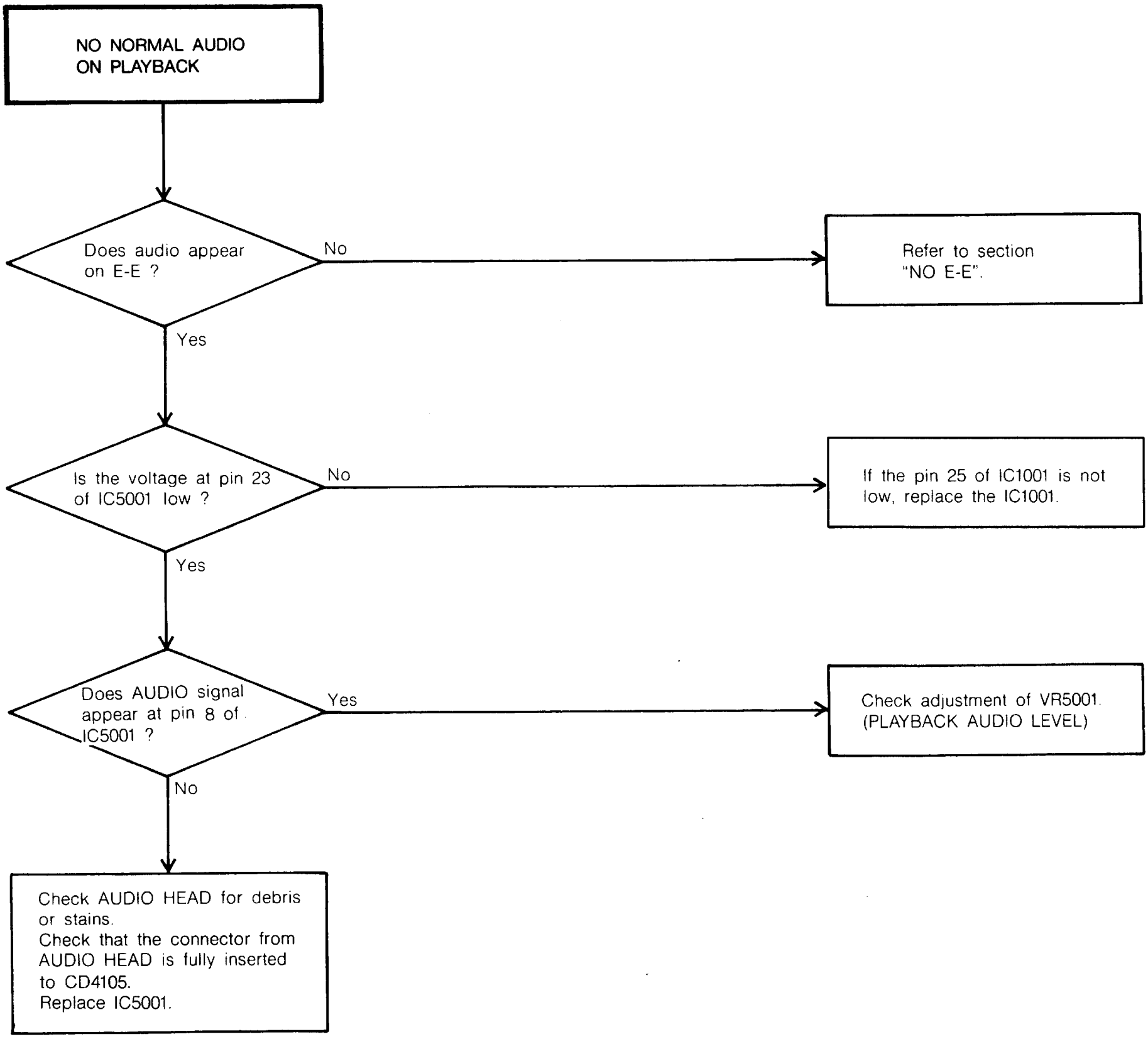

PLAYBACK PICTURE JITTERS VERTICALLY
Does tracking noise appear in the picture ?
No
Yes
By adjusting the manual tracking UP/DOWN buttons, will the noise disappear in the picture ?
No
Check P/B ENVELOPE.
Yes
Are GUIDE POSTS the right height ?
No
Adjust GUIDE POST height.
Yes
Is PG SHIFTER Adjustment 6.5H ?
No
Adjust PG SHIFTER.
Yes
Check PB-Y circuit.

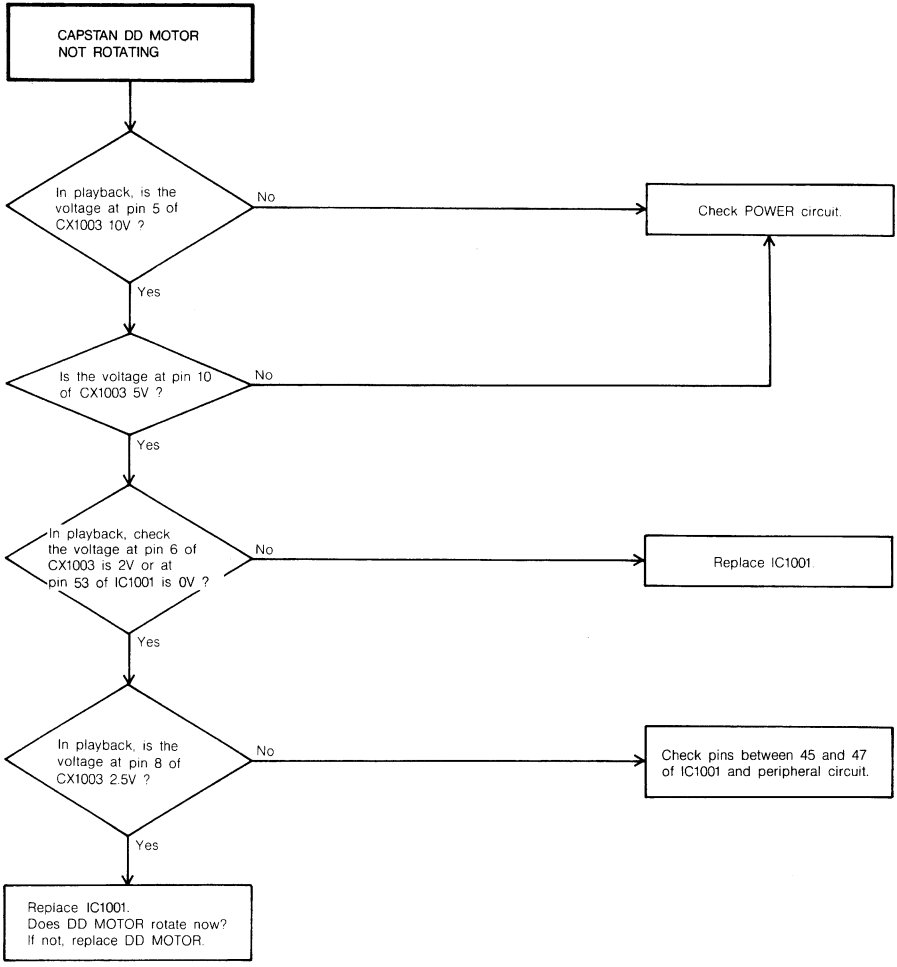

NO PLAYBACK PICTURE
Is E-E appearing on the Monitor TV ?
No
Is the voltage at pins 14 and 39 of IC4002 5V ?
No
Check Power circuit.
Yes
Yes
Check 5V line.
Is there PB Y/C signal at TP4001 ?
No
Check IC4101 and the connection of the CYLINDER.
Yes
Is there FM Y signal at pin 1 of IC4002 and there CHROMA signal at pin 44 of IC4002 ?
No
Check R4102 and the peripheral circuit.
Yes
Is there Y signal at pin 21 of IC4002 and there CHROMA signal at pin 23 and 25 of IC4002 ?
No
Replace IC4002.
Yes
Is there Y signal at pin 19 of IC4002 and there CHROMA signal at pin 27 of IC4002 ?
No
Check IC4003 and the peripheral circuit.
Yes
Is there VIDEO signal at pin 17 of IC4002 ?
No
Replace IC4002.
Yes
Check J4502.

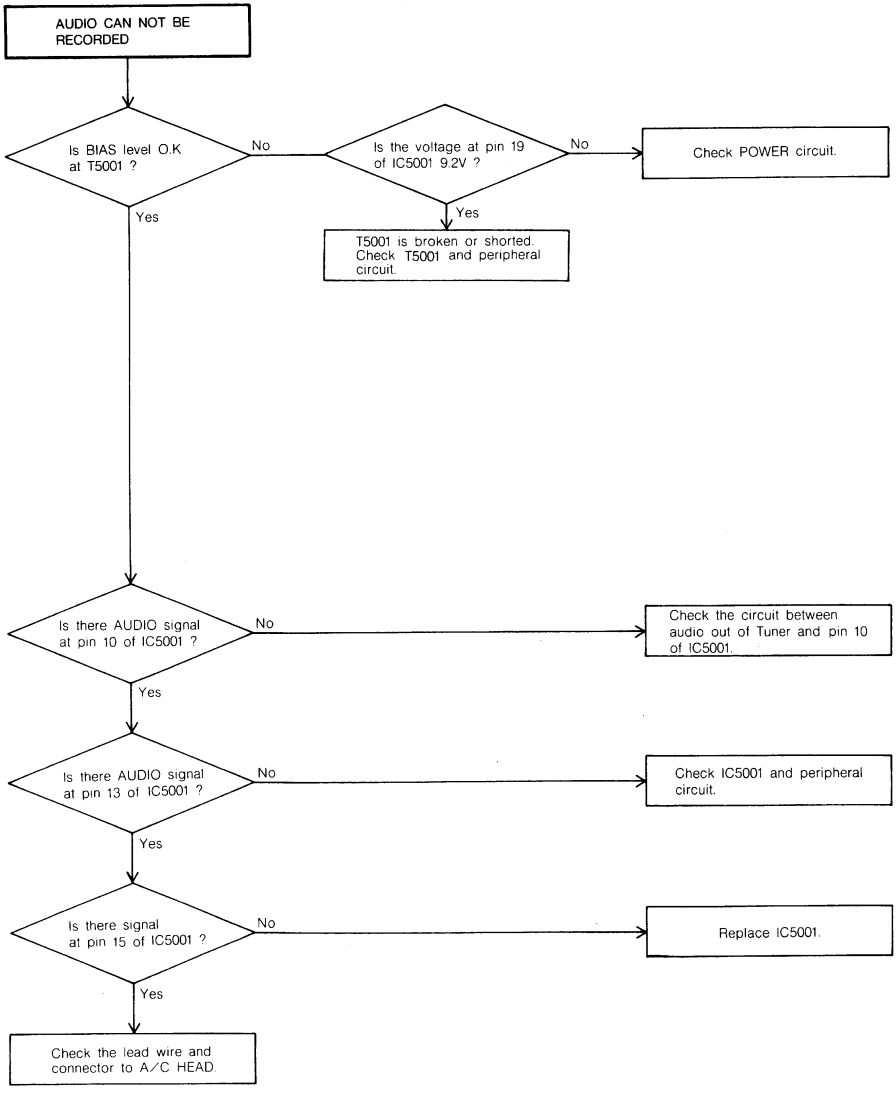

NO COLOR DURING PLAYBACK
Does FM ENVELOPE appear at TP4001 ?
No
Check IC4101 and HEAD AMP BLOCK.
Yes
Does CHROMA signal appear at pin 44 of IC4002 ?
No
Check Q4004 circuit.
Yes
Does COMPOSITE signal appear at pin 27 of IC4002 ?
No
Replace IC4003.
Yes
Does COLOR BURST signal appear in the COMPOSITE signal at pin 17 of IC4002 ?
No
Replace IC4002.
Yes
Check TV Block.

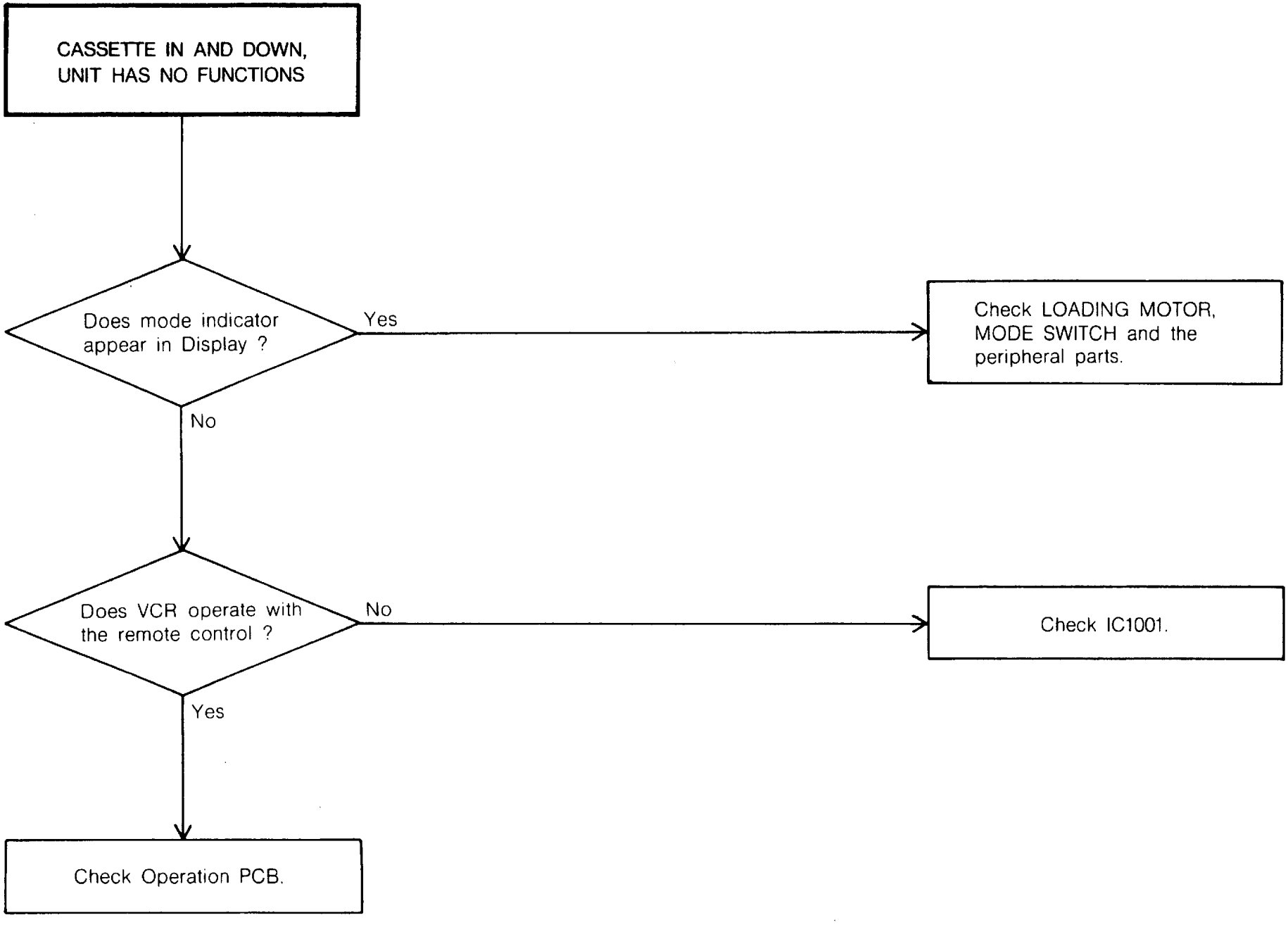

PLAYBACK PICTURE NOISY (EVEN AFTER CLEANING HEADS)
Is FM signal at TP4001 more than 300mVp-p ?
No
Replace CYLINDER UNIT.
Yes
Is there FM signal at pin 1 of IC4002 500mVp-p and are there CHROMA signal at pin 44 of IC4002 400mVp-p ?
No
Check Q4004, Q4027 and the poripheral circuit.
Yes
Is VIDEO waveform at pin 4 of IC4002 over 500mVp-p and are there any noises ?
No
Check pins 4 and 5 of IC4002 and the peripheral circuit.
Yes
Is VIDEO waveform at pin 21 of IC4002 400mVp-p, are there CHROMA signal at pins 23 and 25 of IC4002 200mVp-p and are there any noises ?
No
Replace IC4002.
Yes
Is VIDEO waveform at pin 19 of IC4002 350mVp-p, are there CHROMA signal at pin 27 of IC4002 300mVp-p and are there any noises ?
No
Replace IC4003.
Yes
Check J4502.

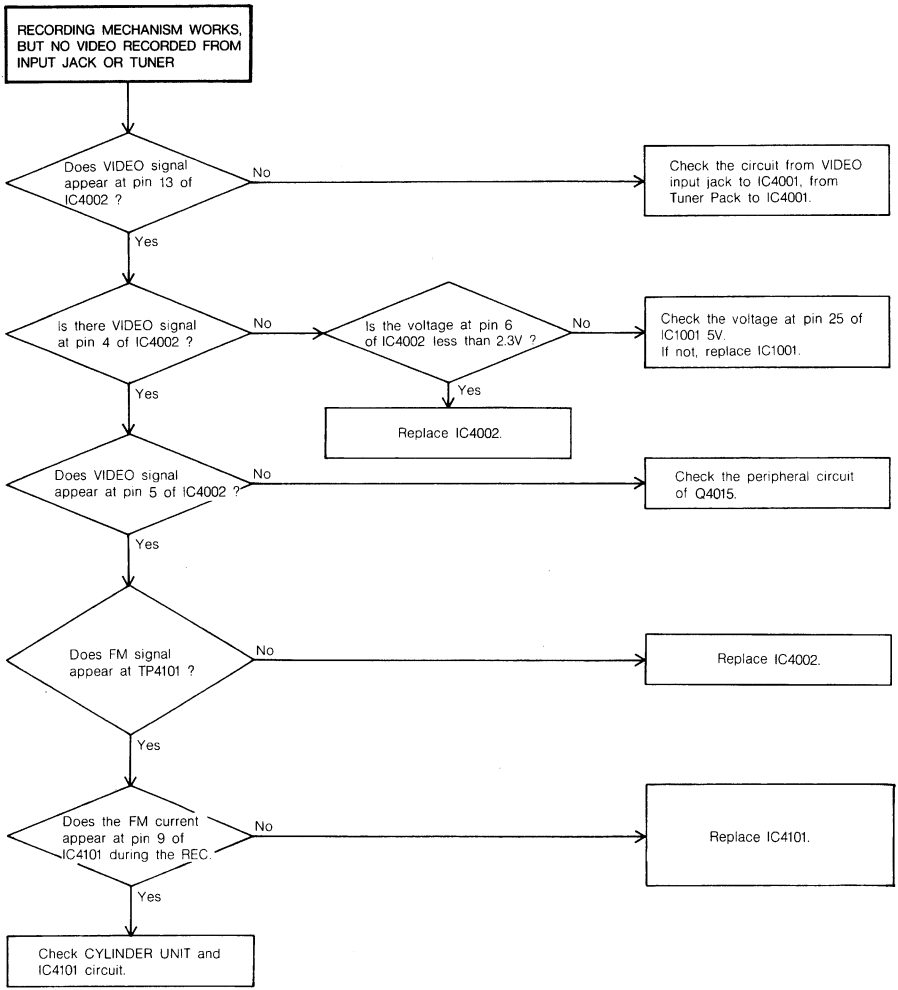

NO COLOR DURING SELF RECORDING AND PLAYBACK
Does VIDEO signal appear at pin 13 of IC4002 ?
No
Replace J4502.
Check VIDEO input circuit.
Yes
Does CHROMA signal appear at pin 44 of IC4002 ?
No
Replace IC4002.
Yes
Does FM signal appear at pin 5 of CX4004 ?
No
Check Q4009, Q4013 and peripheral circuit.
Yes
Does FM signal appear at pin 9 of IC4101 ?
No
Check IC4101 and peripheral circuit.
Yes
Replace IC4101.

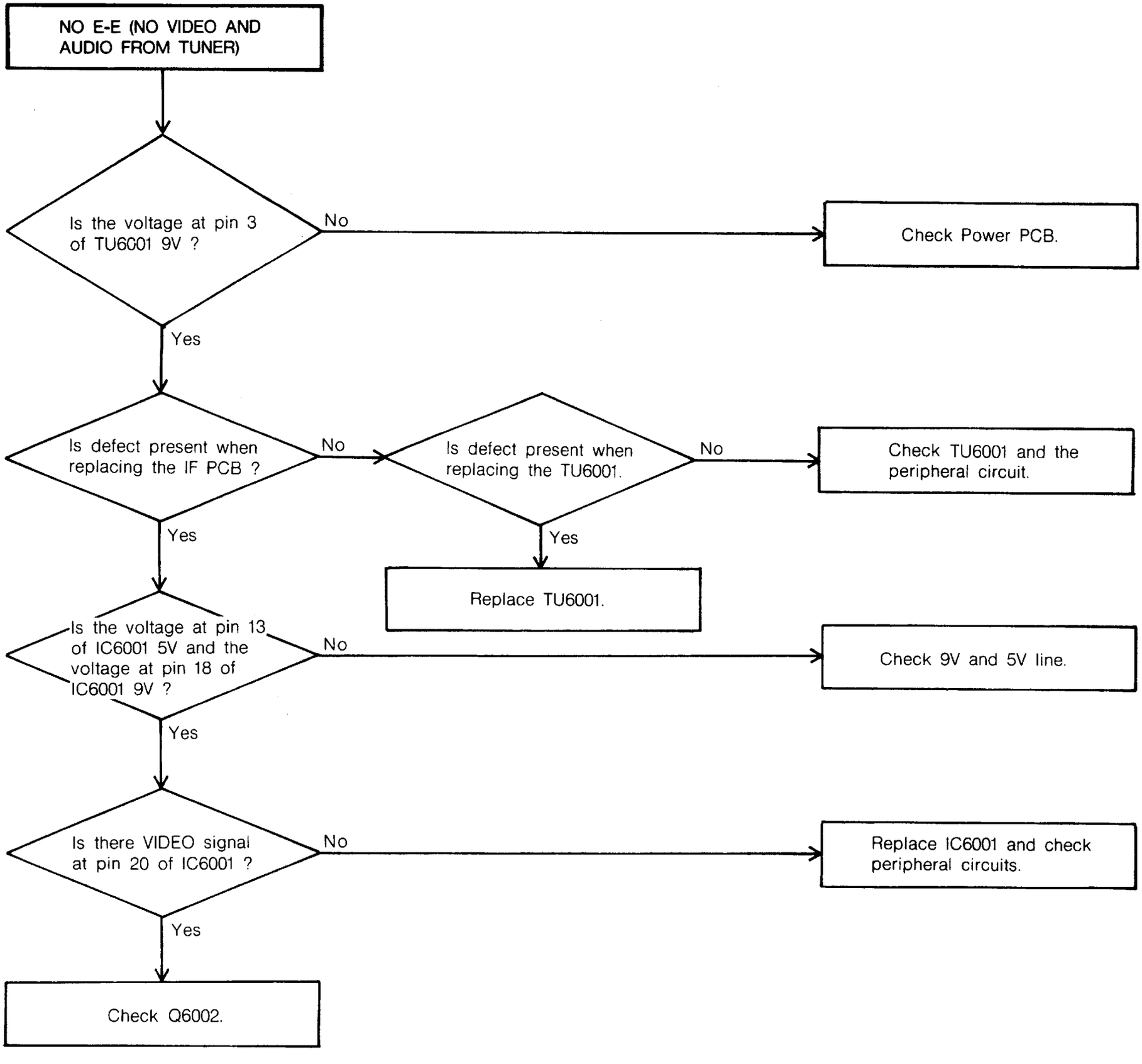

NO NORMAL AUDIO ON PLAYBACK
Does audio appear on E-E ?
No
Refer to section "NO E-E".
Yes
Is the voltage at pin 23 of IC5001 low ?
No
If the pin 25 of IC1001 is not low, replace the IC1001.
Yes
Does AUDIO signal appear at pin 8 of IC5001 ?
Yes
Check adjustment of VR5001. (PLAYBACK AUDIO LEVEL)
No
Check AUDIO HEAD for debris or stains.
Check that the connector from AUDIO HEAD is fully inserted to CD4105.
Replace IC5001.


CAPSTAN DD MOTOR NOT ROTATING
In playback, is the voltage at pin 5 of CX1003 10V ?
No
Check POWER circuit.
Yes
Is the voltage at pin 10 of CX1003 5V ?
No
Yes
In playback, check the voltage at pin 6 of CX1003 is 2V or at pin 53 of IC1001 is 0V ?
No
Replace IC1001.
Yes
In playback, is the voltage at pin 8 of CX1003 2.5V ?
No
Check pins between 45 and 47 of IC1001 and peripheral circuit.
Yes
Replace IC1001.
Does DD MOTOR rotate now?
If not, replace DD MOTOR.


AUDIO CAN NOT BE RECORDED
Is BIAS level O.K at T5001 ?
No
Is the voltage at pin 19 of IC5001 9.2V ?
No
Check POWER circuit.
Yes
Yes
T5001 is broken or shorted. Check T5001 and peripheral circuit.
Is there AUDIO signal at pin 10 of IC5001 ?
No
Check the circuit between audio out of Tuner and pin 10 of IC5001.
Yes
Is there AUDIO signal at pin 13 of IC5001 ?
No
Check IC5001 and peripheral circuit.
Yes
Is there signal at pin 15 of IC5001 ?
No
Replace IC5001.
Yes
Check the lead wire and connector to A/C HEAD.


CASSETTE IN AND DOWN,
UNIT HAS NO FUNCTIONS
Does mode indicator appear in Display ?
Yes
Check LOADING MOTOR, MODE SWITCH and the peripheral parts.
No
Does VCR operate with the remote control ?
No
Check IC1001.
Yes
Check Operation PCB.


RECORDING MECHANISM WORKS, BUT NO VIDEO RECORDED FROM INPUT JACK OR TUNER
Does VIDEO signal appear at pin 13 of IC4002 ?
No
Check the circuit from VIDEO input jack to IC4001, from Tuner Pack to IC4001.
Yes
Is there VIDEO signal at pin 4 of IC4002 ?
No
Is the voltage at pin 6 of IC4002 less than 2.3V ?
No
Check the voltage at pin 25 of IC1001 5V.
If not, replace IC1001.
Yes
Yes
Replace IC4002.
Does VIDEO signal appear at pin 5 of IC4002 ?
No
Check the peripheral circuit of Q4015.
Yes
Does FM signal appear at TP4101 ?
No
Replace IC4002.
Yes
Does the FM current appear at pin 9 of IC4101 during the REC.
No
Replace IC4101.
Yes
Check CYLINDER UNIT and IC4101 circuit.


NO E-E (NO VIDEO AND AUDIO FROM TUNER)
Is the voltage at pin 3 of TU6001 9V ?
No
Check Power PCB.
Yes
Is defect present when replacing the IF PCB ?
No
Is defect present when replacing the TU6001.
No
Check TU6001 and the peripheral circuit.
Yes
Yes
Replace TU6001.
Is the voltage at pin 13 of IC6001 5V and the voltage at pin 18 of IC6001 9V ?
No
Check 9V and 5V line.
Yes
Is there VIDEO signal at pin 20 of IC6001 ?
No
Replace IC6001 and check peripheral circuits.
Yes
Check Q6002.

VCR TEST TAPE INTERCHANGEABILITY TABLE

There are two types of the new alignment tape CH-1B (for NTSC) and CH-2 (for PAL). On each tape four signals (1) - (4) are recorded for the times and in the order shown below.

(1) : 8min. → (2) : 2min. → (3) : 5min. → (4) : 5min.

The TTV-MP1 (for M-PAL), TTV-MS1 (for MESECAM) and TTV-S1 (for SECAM) alignment tapes have the same contents as the previous tapes.

Method	Now in use TYPE		New TYPE		Application
	Model	Contents※1	Model	Contents※1	
NTSC	TTV-N1	NTSC, Color, 1kHz, SP	CH-1B(1)	NTSC, Stairsteps, 7kHz, SP	PB-Y Level/General electrical ADJ. Head Height/Tilt ADJ.
	TTV-M1E	NTSC, Color, 1kHz, EP	CH-1B(4) ※3	NTSC, Color, 1kHz, EP	Switching position ADJ.
	TTV-N2	NTSC, Stairsteps, 7kHz, SP	CH-1B(2)	NTSC, Stairsteps, 7kHz, SP	Head ACE azimuth ADJ.
	TTV-N12 (SCV-1998)	NTSC, Color, 1kHz, SP	CH-1B(4)	NTSC, Color, 1kHz, EP	FM envelope ADJ. X-value ADJ.
	TTV-N7A	NTSC, Statrsteps, 1kHz, SP, HiFi 400Hz	CH-1B(3)	NTSC, Color, No sound SP, HiFi 400Hz	HiFi audio PB level ADJ.
PAL	TTV-P1	PAL, Color, 1kHz, SP	CH-2(2) ※3	PAL, Stairsteps, 1kHz, SP	Switching position ADJ. PB-Y Level/General electrical ADJ. Head ACE Height/Tilt ADJ.
	TTV-P1L	PAL, Color, 1kHz, LP	CH-2(4)	PAL, Color, 1kHz, LP	Switching position. (LP Model) FM Envelope ADJ. (LP Model) X-Value ADJ. (LP Model)
	TTV-P2	PAL, Stairsteps, 6kHz, SP	CH-2(1)	PAL, Stairsteps, 6kHz, SP	Head ACE azimuth ADJ. FM Envelope ADJ. (SP Model) X-Value ADJ. (SP Model)
	TTV-P7	PAL, Stairsteps, 1kHZ, SP, HiFi, 1kHz	CH-2(3)	PAL, Color, No sound SP, HiFi 400Hz	HiFi Audio PB Level ADJ.
	TTV-P16	PAL, Color, 400Hz, SP, HiFi 1kHz	No Changed.		FM Filter ADJ.

※ 1. Described in the order of color format. Video signal. Linear audio. Tape speed and Hi-Fi audio.
※ 2. Use CH-1B (1) - (3) with models used exclusively in the SP mode.
※ 3. Use CH-2 (3) and (4) when it is necessary to observe the chroma signal.

IC DESCRIPTIONS

OEC9028B

Pin No.	Pin Name	I/O	Descriptions
1	VSAD	–	Ground.
2	EOT	I	Tape end sensor input signal.
3	BOT	I	Tape start sensor input signal.
4	REEL SENS	I	Input terminal of reel sensor.
5	VIDEO ENV DET	I	Input terminal of video RF envelope.
6	HI-FI ENV DET	I	Input terminal of HI-FI RF envelope.
7	DEW	I	Dew sensor input.
8	SLOW TRK OFFSET	I	Slow tracking offset adjustment.
9	CYL/CAP MOTOR SEL	I	CYL/CAP motor select input.
10	VDAD	–	5V
11	DFG OUT	O	Output terminal of DFG AMP.
12	DFG IN	I	Input terminal of DFG AMP.
13	DPG IN	I	Input terminal of DPG comparator.
14	CFG IN	I	Input terminal of CFG AMP.
15	CFG OUT	O	output terminal of CFG AMP.
16	VSSA	–	Ground.
17	VREF	–	Power on reset signal.
18	CTL AMP –	I	Input terminal of CTL AMP.
19	CTL AMP +	O	Output terminal of CTL AMP.
20	CTL –	I	Input terminal of CTL AMP negative.
21	CTL +	I/O	Input terminal of CTL AMP positive.
22	VDDA	–	5V
23	RESET B	–	Power reset.
24	TEST	–	Ground.
25	VV-H	O	Control output to select the output of PLAYBACK picture or EE picture.
26	V-PB-H	–	Open
27	SEARCH SPEED SW	I	Input for the speed selection of CUE/REV.
28	SYSTEM 1	–	Open
29	SYSTEM 2	–	Open
30	TRICK PB-H	O	During the special playback is performed, this pin will output the HIGH.
31	REC-H	O	After the tape loading, when the REC key is activated, HIGH is will be output.
32	LDM ON	O	During the actuating of the loading motor.

IC DESCRIPTIONS

OEC9028B

Pin No.	Pin Name	I/O	Descriptions
33	V.REC ST H	O	When the recording current flows through the head during the recording, this pin will output the HIGH.
34	2HEAD/4HEAD	I	Input terminal for heads selecting 2 head/4 head.
35	LDM REV.	O	During the motor actuating of tape unloading, this pin will output the HIGH.
36	SP-H	O	Output the HIGH at tape speed SP.
37	LP-H	O	Output the HIGH at tape speed LP.
38	VIDEO H. SW	O	Output terminal of VIDEO HEAD SW.
39	AUDIO H. SW	–	Open
40	H. AMP SW	–	Open
41	COLOR ROTARY	–	Open
42	DUMMY-V	O	Imitation vertical signal output.
43	VDD	–	5V
44	PWM0	O	PWM output for error signal of drum motor.
45	PWM1	O	PWM output for error signal of capstan motor.
46	DRM·ON	I/O	Control the drum motor rotation direction.
47	CAP ON	I/O	Control the capstan motor rotation direction.
48	LDM PD/CAP PU	O	Control the capstan motor and loading motor torque direction.
49	BILINGUAL L	I	Input selection of audio type.
50	STEREO L	I	
51	HI-FI L	I	
52	EXT IN	I	Input of external input signal.
53	CAP LIMI I	I/O	3 State C-MOS output.
54	FL SW	I	Input terminal of front loading SW.
55	MS SW3	I	Mecha state switch terminal.
56	MS SW2	I	
57	MS SW1	I	
58	MS SW0	I	
59	BRK SOL	O	Output the HIGH signal while the deck latch magnet is activating.
60	CAP F/R	O	Output the LOW signal while the capstan motor is rotating in the direction of PB.
61	EXT H	–	Open
62	CLOCK 0	–	Terminal to connect the oscillator.
63	CLOCK 1	–	

IC DESCRIPTIONS

OEC9028B

Pin No.	Pin Name	I/O	Descriptions
64	VSS	–	Ground
65	TAB SW	I	Input terminal of judging the signal from cassette REC tab.
66	TAPE IN LED	O	Light up at cassette insert.
67	REC LED	O	Light up at REC mode.
68	ATR LED	O	Light up at ATR mode.
69	T-REC LED	O	Light up at T-REC mode.
70	PLAY LED	O	Light up at PLAY mode.
71	REPEAT LED	O	Light up at REPEAT mode.
72	CE	I	Timer output signal.
73	COUNTP IN	I	1 second pulse input for tape counter.
74	S. DATA IN	I	Serial data input signal.
75	S. DATA OUT	O	Serial data output signal.
76	S. CLK	I	Serial clock input signal.
77	COMP	–	Open
78	SYNC IN	I	Vertical synchronization signal input.
79	COUNTP OUT	O	1 second pulse input for tape counter.
80	CTL OUT	–	Open

IC DESCRIPTIONS

OEC6025A

Pin No.	Pin Name	I/C	Descriptions
1	———	–	NC.
2	PAL/SEC Ⓐ	O	PAL/SECAM selection.
3	PAL/SEC Ⓑ	O	PAL/SECAM selection of VCR Y/C.
4	AUTO PRESET	–	NC.
5	ATS LEVEL	–	NC.
6	P.B. LED	I/O	Timer recording LED output.
7	READY/BUSY	–	NC.
8	AFT DEFEAT	I/O	This pin is used for control of AFT ON/OFF.
9	$\overline{50}$/60 Hz	I	50/60 Hz select input.
10	KEY RETURN	I	Inisializing key RETURN.
11	KEY RETURN	I	
12	VT	O	Selection channel output.
13	VOLUME	O	Volume output.
14	BRIGHT	O	Bright output.
15	CONTRAST	O	Contrast output.
16	COLOR	O	Color output.
17	SHARPNESS	O	Sharpness output.
18	AGC	O	Agc output.
19	BASS	O	NC.
20	TREBLE	I/O	NC.
21	BALANCE	O	NC.
22	AGC/COL SENSE	I	AGC/Color sensor output.
23	———	–	NC.
24	BRIGHT IN	I	Bright input.
25	AFT	I	AFT input.
26	KEYA	I	KEY A input.
27	KEYB	I	KEY B input.
28	VL	O	This terminal used for the selector switch of tuner V-LOW/V-High/S/U.
29	VH	I/O	
30	UHF	O	
31	ON TIMER LED	O	On timer LED control output.
32	GND	–	Ground.

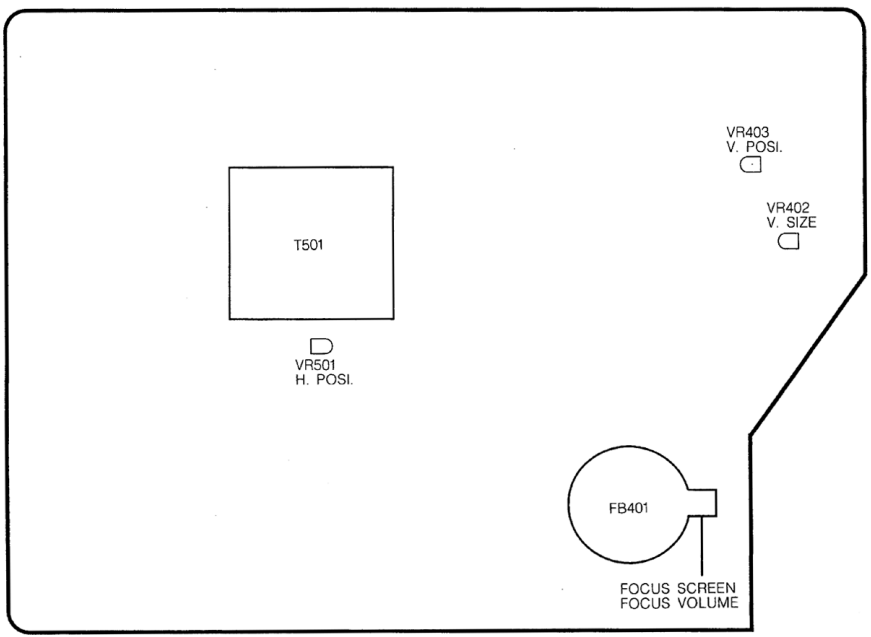
IC DESCRIPTIONS

OEC6025A

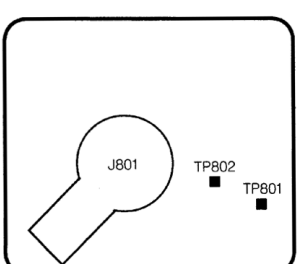
Pin No.	Pin Name	I/O	Descriptions
33	RED	O	Color signal red output.
34	GREEN	O	Color signal green output.
35	BLUE	O	Color signal blue output.
36	Y	O	Y-signal output.
37	HD	I	H. pulse input.
38	VD	I	V. pulse input.
39	SCL	O	I^2C bus interface.
40	SDA	I/O	
41	B.B HI	O	B.B hi signal output.
42	OSC 1	I	Terminal to connect the OSD circuit.
43	OSC 2	O	
44	TEST	–	Ground.
45	X IN	I	Terminal to connect the oscillator (8,000 MHz).
46	X OUT	O	
47	RESET	I	Reset signal input.
48	POWER FAIL	I	Input for the detection of power interruption.
49	XT IN	I	Terminal to connect the oscillator (32KHz).
50	XT OUT	O	
51	REMOCON	I	Remove control input signal.
52	SD	I	Distinguish of SD signal appearance.
53	TV MUTE	O	TV mute output.
54	VCR MUTE	O	VCR mute output.
55	S. ST	I	Serial data input.
56	S. TS	O	Serial data output.
57	S. CLK	O	Serial clock output.
58	S. TRB	O	Strob output.
59	S. IF	O	SIF selection.
60	AUDIO A	O	NC.
61	AUDIO B	O	NC.
62	TV POWER	O	TV power output.
63	VCR POWER	O	VCR power output.
64	VDD	–	+5V.

MAJOR COMPONENTS LOCATION GUIDE

(TV SECTION)



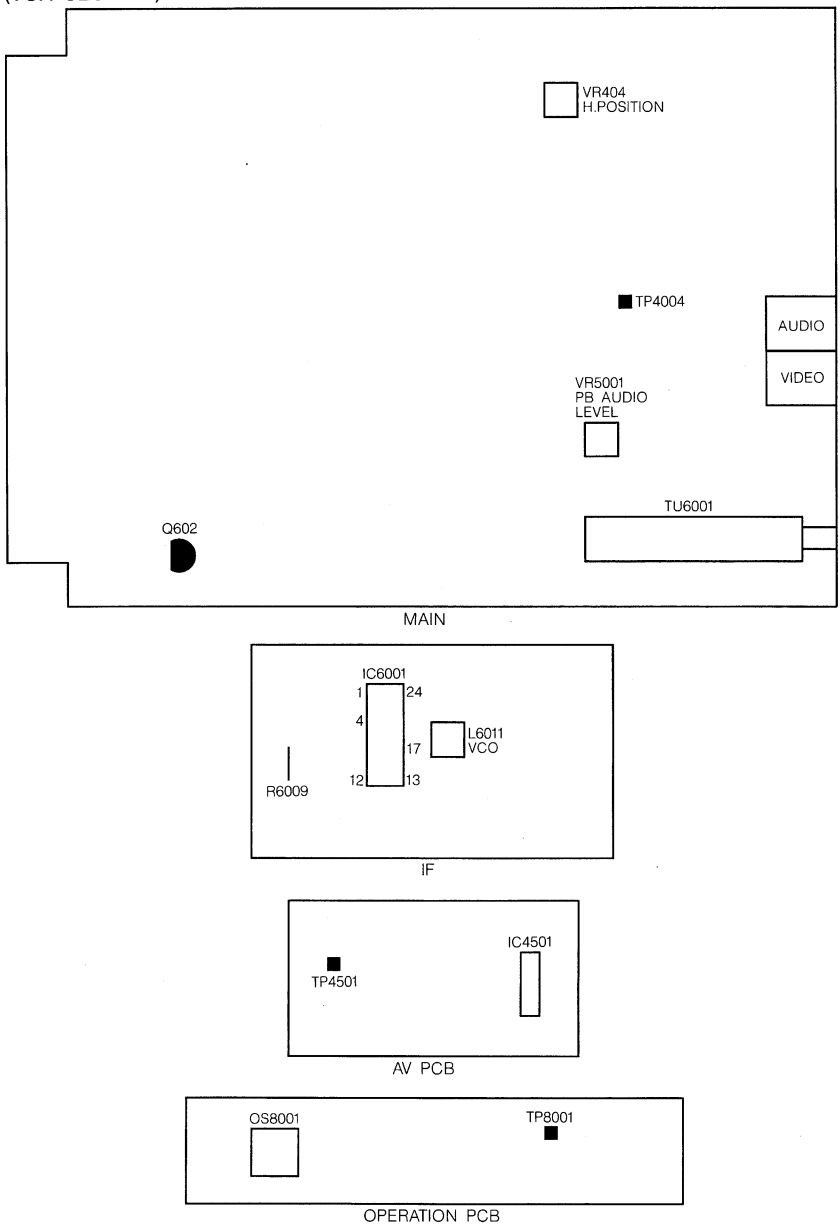
MAIN



CRT

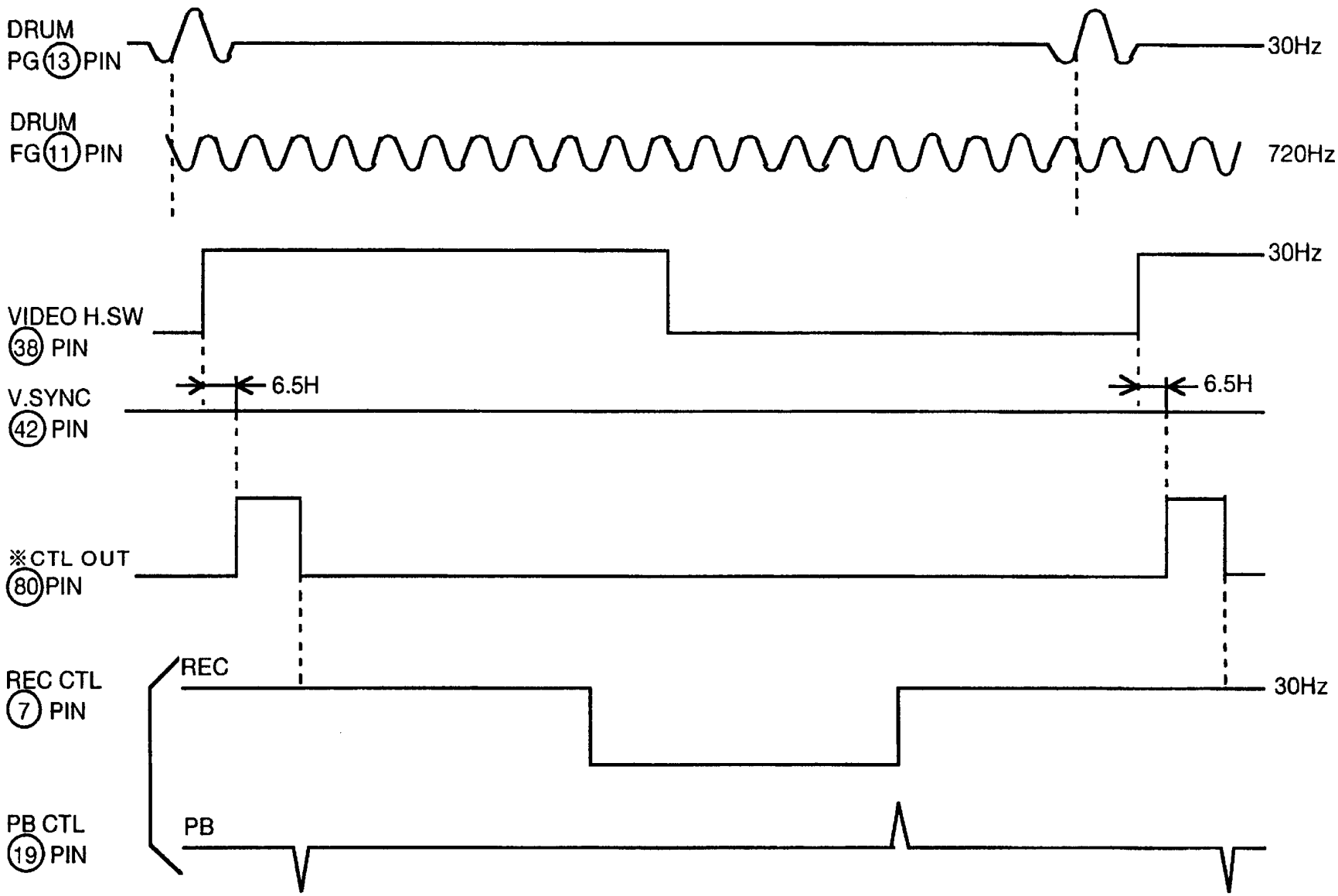
MAJOR COMPONENTS LOCATION GUIDE

(VCR SECTION)



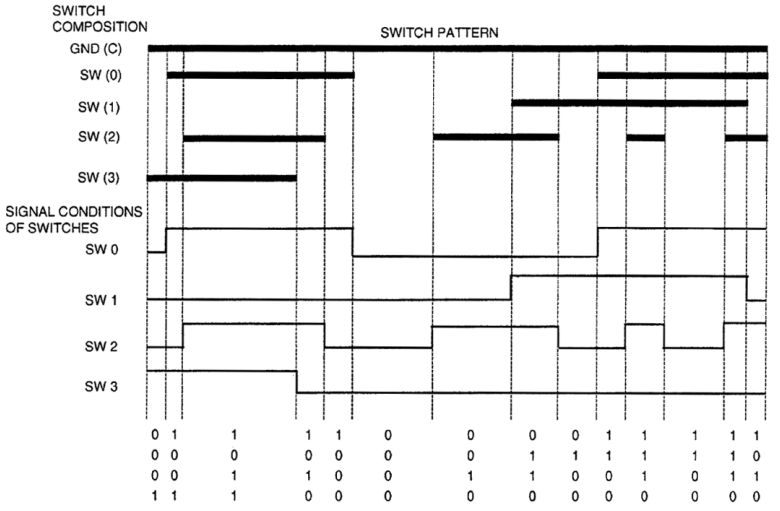
SERVO TIMING CHART

IC1001(OEC9028B)



※ WAVEFORM CHANGES DEPEND ON THE TAPE SPEED

SYSTEM SWITCH MODE



SW102				DECK MODE
SW 3	SW 2	SW 1	SW 0	
1	0	0	0	EJECT
1	0	0	1	CASSETTE UP
1	1	0	1	CASSETTE DOWN
0	1	0	1	RETURN 1
0	0	0	1	IDLE
0	0	0	0	RETURN 2
0	1	0	0	STAND BY
0	1	1	0	STILL
0	0	1	0	REC/PLAY
0	0	1	1	※
0	1	1	1	VSR
0	0	1	1	RETURN 3
0	1	1	1	

SW102				DECK MODE
SW 3	SW 2	SW 1	SW 0	
0	5	5	5	EJECT
5	0	5	5	STOP
5	5	0	5	PLAY
5	5	0	5	RECORDING
5	0	5	5	FAST FORWARD
5	0	5	5	REWIND
5	5	0	5	VSF
5	0	0	0	VSR
5	0	0	5	PAUSE/STILL (PLAY)
5	5	0	5	PAUSE/STILL (REC)
5	5	5	0	POWER OFF (TAPE IN)

VOLTAGE (V)

OUTPUT LIST OF THE MECHANICAL SWITCHES
(1 : SW ON)
※ : IT IS ONLY PASSED POINT. THERE IS NO DECK MODE.

MODE SEPARATION