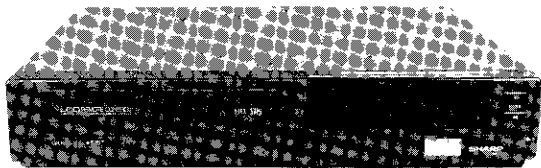


SHARP

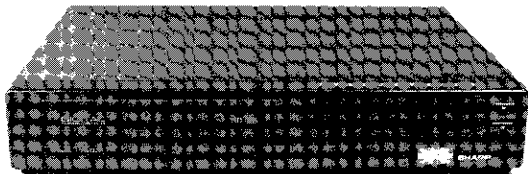
SERVICE MANUAL

S80K9VC-A30HM



VC-A30HM

VHS VIDEO CASSETTE RECORDER



VC-A40HM

**MODELS VC-A30HM
VC-A40HM**

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

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SPECIFICATIONS

Format:	VHS PAL standard
Video recording: system	Two rotary head helical scan system
Video signals:	PAL colour and B/W signals, 625 lines
Recording/playing: time	4 hours max. with SHARP E-240 tape
Tape width:	12.7 mm
Tape speed:	23.39 mm/sec.
Antenna:	75 ohm unbalanced
Receiving channel:	UHF channel E21 – E69
RF converter output: signal	UHF channel E30 – E39 (adjustable). Preset to CH 36
Power requirement:	AC 240 V, 50 Hz
Power consumption:	Approx. 25W
Operating temperature:	5°C to 40°C
Storage temperature:	– 20°C to 55°C
Weight:	6.0kg
Dimensions:	430 mm (W) x 347mm (D) x 82 mm (H)
Video	
Input:	1.0 Vp-p, 75 ohm
Output:	1.0 Vp-p, 75 ohm
Audio	0 dBs = 0.775 Vrms
Input:	Line: – 3.8 dBs, more than 47 k ohm
Output:	Line: – 3.8 dBs, less than 1 k ohm
Accessories included:	Antenna 75 ohm coaxial connector cable (plug provided) Operation manual Infrared remote control Battery

As part of our policy of continuous improvement, we reserve the right to alter design and specifications without notice.

Note: The antenna must correspond to the new standard DIN 45325 (IEC 169-2) for combined VHF/UHF antenna with 75 ohm connector.

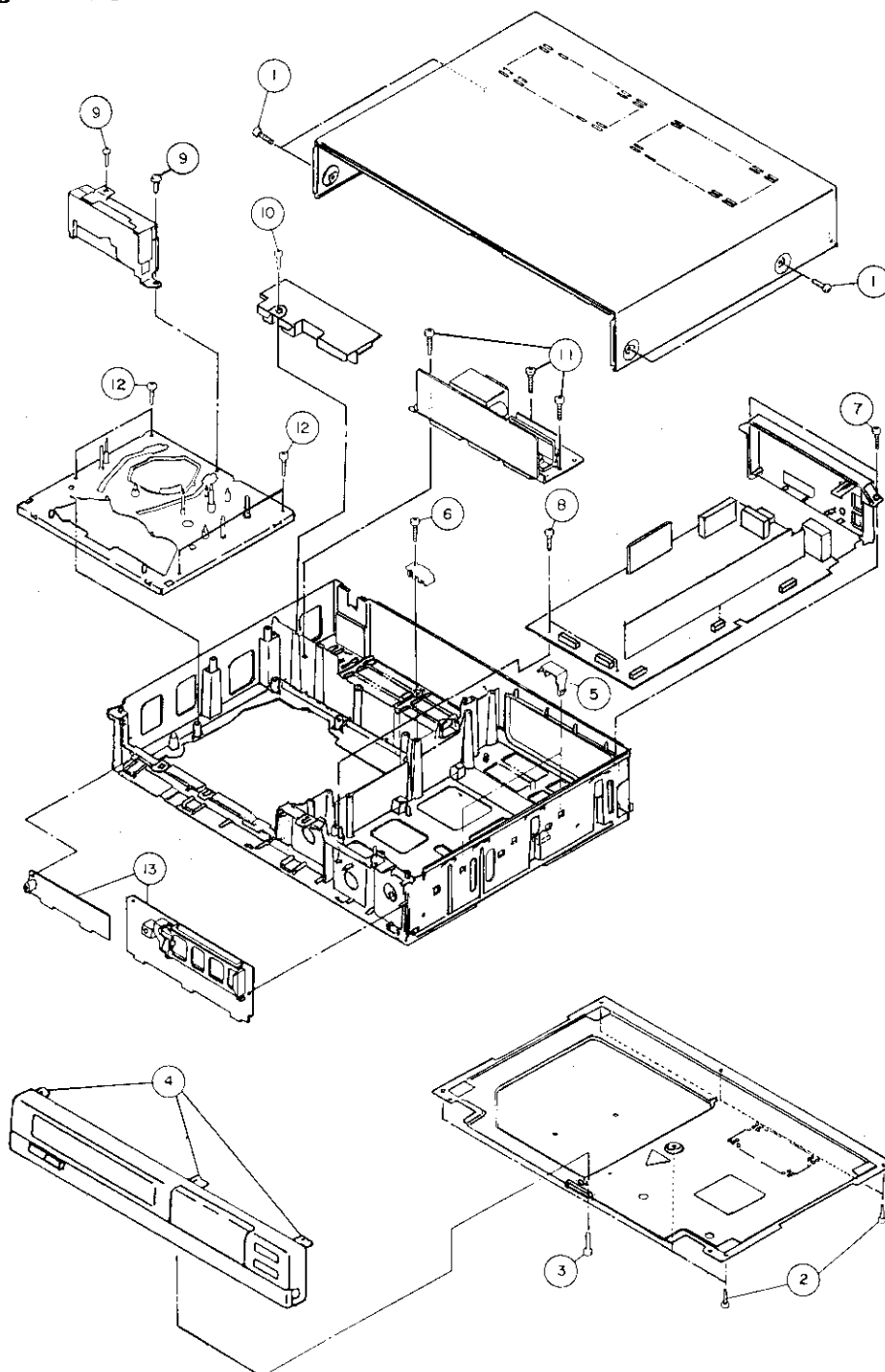
BEFORE RETURNING THE VIDEO CASSETTE RECORDER

In addition to the checks necessary as a result of a repair having been carried out, the following additional safety checks should also be made before returning the unit to the user.

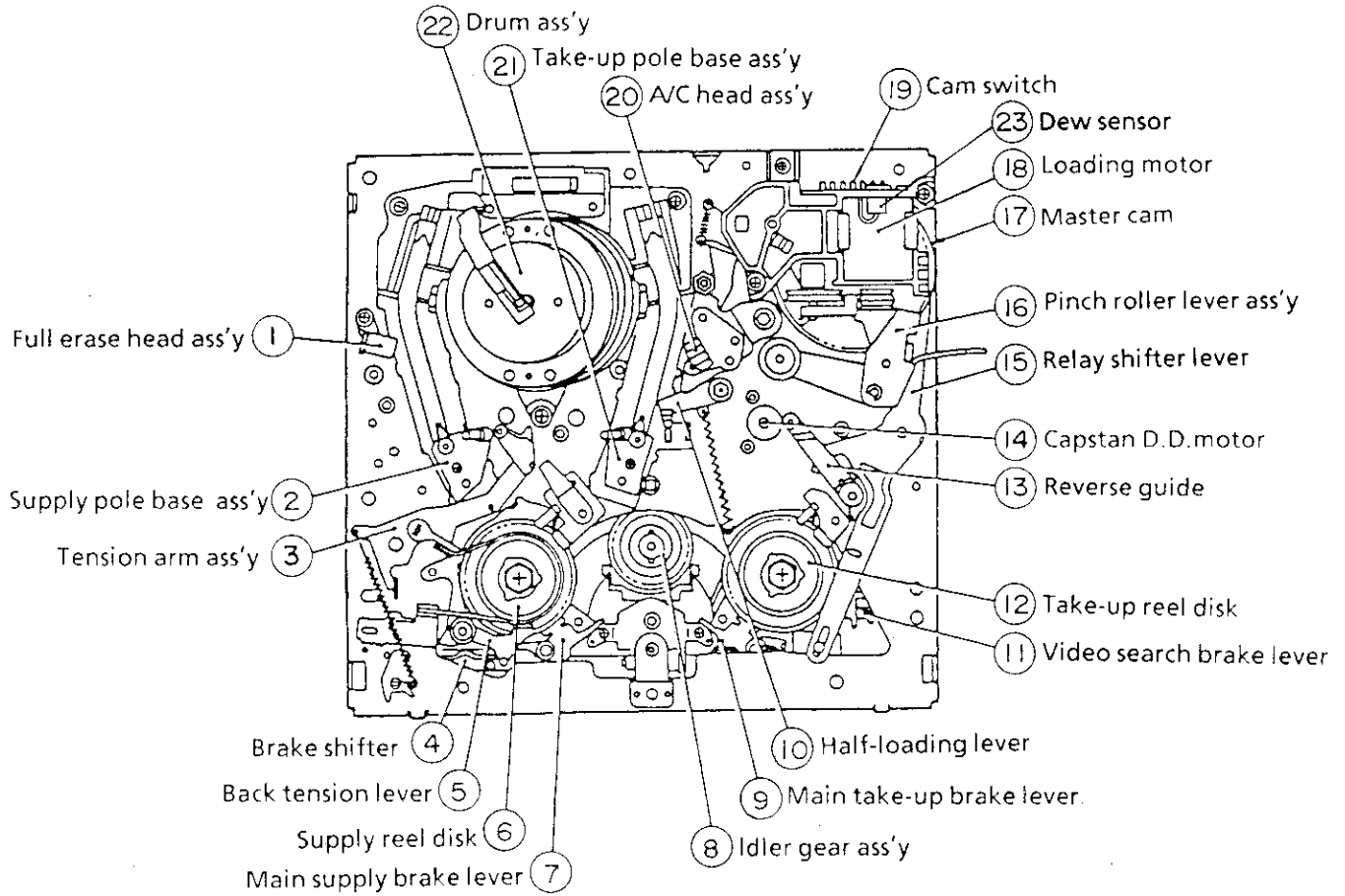
1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the Video cassette recorder.
2. Inspect all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor networks, mechanical insulators etc.
3. Apply test voltage of 3000 volts between live parts and accessible metal parts for 3 seconds.

DISASSEMBLY AND REASSEMBLY

1. Remove the four upper cabinet fastening screws ①.
2. Remove the six bottom panel fastening screws ②.
3. Remove the one front panel fastening screw ③.
4. Release the three clips ④ and remove the front panel.
5. Remove the two Y/C PWB holders ⑤.
6. Remove the three holder fastening screws ⑥.
7. Remove the two antenna terminal cover fastening screws ⑦.
8. Remove the two main PWB fastening screw ⑧.
9. Remove the two head amp PWB fastening screws ⑨.
10. Remove the power unit fastening screw ⑩.
11. Remove the three power unit fastening screw ⑪.
12. Remove the four mechanism chassis fastening screws ⑫.
13. Release the operation/timer PWB ⑬ fastening clips.

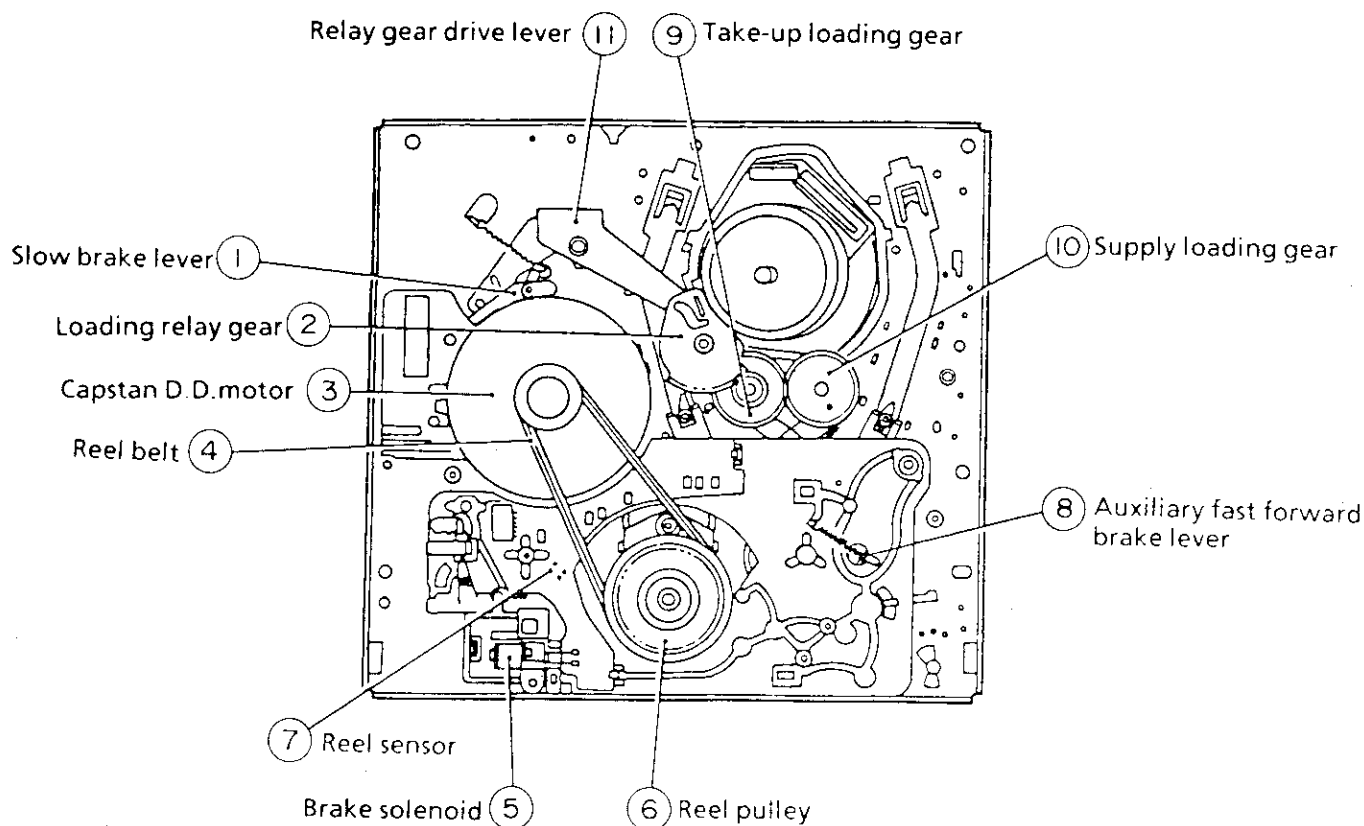


FUNCTION OF MAJOR MECHANICAL PARTS (TOP VIEW)



No.	Function	No.	Function
1.	Full erase head ass'y Erase the whole records on the tape in the recording mode.	13.	Reverse guide Pulls out the tape in the video search rewind mode, and controls the tape drive train height with the upper and lower guides.
3.	Tension arm ass'y Detects the tension of tape while running, and brakes the supply reel disk via the tension band.	15.	Relay shifter lever Transmits the operation of the master cam to the brake shifter, and operates the reverse guide.
4.	Brake shifter Set the position of brake or the like in accordance with the modes such as stop and playback.	16.	Pinch roller lever ass'y Press-fits the tape to the capstan during tape running. The right protrusion switches the clutch of the cassette housing control assembly in "tape eject", and makes the mechanism eject the tape.
5.	Back tension lever Bakes the supply reel disk to a certain degree to prevent tape slackening during "half-loading", "loading" and "shifting from playback to picture scan rewind".	17.	Master cam Turns clockwise during loading, and counterclockwise during unloading, and moves the shifter or the like in accordance with each mode.
7.	Main supply brake lever Brakes the supply reel disk to prevent tape slackening when the unit is stopped in fast forward or rewind mode.	18.	Loading motor A motive power which drives the mechanism. It transmits the power to the master cam and cassette housing control assembly via the belt.
9.	Main take-up brake lever Brakes the take-up reel disk to prevent tape slackening when the unit is stopped in fast forward or rewind mode.	19.	Cam switch Rotates synchronously with the master cam, and detects the position of each mode by means of the internal switch
10.	Half-loading lever Bring the tape in contact with the A/C head, putting it in half-loading state in the fast forward or rewind mode.	23.	Dew sensor An element which detects condensation inside the unit. This element is activated, when it senses condensation, to interrupt the mechanism.
11.	Video search brake lever It is in contact with the take-up reel disk normally, and brakes it to a certain degree. It applies larger brake in the video search rewind mode.		

FUNCTIONS OF MAJOR MECHANICAL PARTS (BOTTOM VIEW)



No.	Function	No.	Function
1.	Slow brake lever Gets in contact with the capstan D.D. motor linking to the master cam in the slow still mode, and brakes it to a certain degree.	7.	Reel sensor An element which sheds the light onto the reflection plate affixed to the bottom side of the reel disk, and detects the rotation of the reel disk through receiving the reflected light.
3.	Capstan D.D. motor A motive power which runs the tape. It transmits the power via the reel belt.	8.	Auxiliary fast forward brake lever Brakes the supply reel disk to a certain degree in the fast forward and rewind modes.
4.	Reel belt Transmits the power to run the tape to the reel pulley.	9.	Take-up loading gear Shifts the take-up pole base and guide roller via the loading relay gear, and applies the tape around the drum assembly, as well as transmits the power to the supply loading gear.
5.	Brake solenoid Adsorbs and holds the brake shifter in the fast forward and rewind modes, and releases it in the stop mode.	10.	Supply loading gear Shifts the supply pole base and guide roller via the take-up loading gear, and applies the tape around the drum assembly.
6.	Reel pulley Transmits the power of the capstan D.D. motor to the reel disk via the reel idler.	11.	Relay gear drive lever Transmits the movement of the master cam to the take-up loading gear via the loading relay gear.











ADJUSTMENT, REPLACEMENT AND ASSEMBLY OF MECHANICAL UNITS

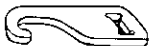



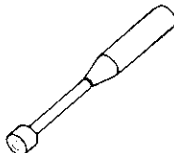


Here we will describe a relatively simple service work in the field, not referring to the more complicated repairs which would require the use of special equipment and tools (drum assembly replacement, for example).

We are sure that the easy-to-handle tools listed below would be more than handy for periodical maintenance to keep the machine in its original working condition.

TOOLS NECESSARY FOR ADJUSTING THE MECHANICAL UNITS

The following tools are required for proper service and satisfactory repair.

No.	Jig Item	Part No.	code	Configuration	Remarks
1	Reel Disk Height Adjusting Jig	JiGRH0002	BR		These jigs are used for checking and adjusting the reel disk height
2	Master Plane Jig	JiGMP0001	BY		
3	A/C Head Tilt Adjusting Jig	JiGACH-F18	BU		This Jig is used for setting the A/C head tilt.
4	Torque Gauge (90g)	JiGTG0090	CM		These jigs are used for checking and adjusting the torque of take-up and supply reel disks.
	Torque Gauge (1.2 kg)	JiGTG1200	CN		
5	Gauge Head	JiGTH0006	AW		
6	Cassette Torque Meter	JiGVHT-063	CZ		This cassette torque meter is used for checking and adjusting the torque of take-up for measuring tape back tension.
7	Tension Gauge (300g)	JiGSG0300	BF		There are two Gauges used for the tension measurements, 300 g and 2.0 kg.
	Tension Gauge (2.0kg)	JiGSG2000	BS		
8	Hex Wrench (0.9mm)	JiGHW0009	AE		These Jigs are used for loosening or tightening special hexagon type screws.
	Hex Wrench (1.2mm)	JiGHW0012	AE		
	Hex Wrench (1.5mm)	JiGHW0015	AE		
9	Alignment Tape (PAL)	VROCPSV	CK		This tape is especially used for electrical fine adjustment.
10	Drum Replacing Jig	JiGDT-0001	BG		This is used for replacement of the VCR's upper drum.

No.	Jig Item	Part No.	Code	Configuration	Remarks
11	Tension Gauge Adapter	JIGADP003	BK		This Jig is used with the tension gauge. Rotary Transformer Clearance Adjusting Jig.
12	Special Bladed Screwdriver	JIGDRIVERH-4	AP		This Screwdriver is used for adjusting the guide roller height and X-position.
13	Tension Band and Plate Adjusting Jig	JIGDRIVER-6	BM		This Jig is used for adjusting the tension band and tension plate.
14	Torque Driver	JIGTD1200	CB		This is used to screw down resin-made parts: the specified torque is 5 kg.
15	Box Driver	JiGDRIVER110-7	AS		This Jig is used for height adjustment of the A/C head.
		JiGDRIVER110-4	AV		This Jig is used for height adjustment of the retaining guide.
16	Retaining Guide Height Adjusting Jig	JIGGH-F18	BU		This jig is used for height adjustment of the retaining guide.
17	Reverse Guide Height Adjusting Jig	JIGRVGH-F18	BU		This Jig is used for height adjustment of the reverse guide.

NOTE:

Current JiGMA0001 contains Master Plane (JiGMP0001) and Disk Height Adjusting Jig (JiGRH0001).

Even though new Disk Height Adjusting Jig (JiGRH0002) covers greater height, this new Jig (JiGRH0002) can be used for current JiGRH0001, but current Jig (JiGRH0001) cannot be used as JiGRH0002.

Master Plane (JiGMP0001) can be used with JiGRH0001 and JiGRH0002 as well.

MECHANICAL PARTS REQUIRING PERIODICAL INSPECTION

Use the following table as a guide to maintain the mechanical parts in good operating condition.

Parts	Maintained	500 hrs.	1000 hrs.	1500 hrs.	2000 hrs.	3000 hrs.	Possible symptom encountered	Remarks
Guide roller ass'y		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lateral noises Head occasionally blocked	Abnormal rotation or significant vibration requires replacement.
Supply impedance roller		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Clean with pure high quality isopropyl alcohol.
Supply impedance roller (inner hole and shaft)			<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		Clean tape contact part with the specified cleaning liquid.
Supply impedance roller flange B		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Retaining guide		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Slant pole		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Video head		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Poor S/N ratio, no colour	Clean tape contact area with the specified cleaning liquid.
Full-erase head		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Poor colour, beating	
A/C head		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sound too small or distorted	
Capstan D.D. Motor		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No tape running, uneven colour	
Pinch roller		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No tape running, tape slack	Clean rubber and rubber contact area with the specified cleaning liquid.
Reel belt			<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	No tape running, tape slack, no fast forward/rewind motion	
Loading belt			<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	Cassette not loaded or unloaded	
Cassette loading belt			<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		
Tension band ass'y						<input type="checkbox"/>	Lateral image swing	
Loading Motor						<input type="checkbox"/>	Cassette not loaded or unloaded	
Reel block*							See the chart below.	
•See the table below for servicing the reel block parts.								
Supply/take-up reel disks			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No tape running, tape slack	Clean with pure high quality isopropyl alcohol.
Video search brake lever					<input type="checkbox"/>			
Idler gear ass'y					<input type="checkbox"/>		No tape running	
Reel Pulley			<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		
Main supply/take-up brake levers					<input type="checkbox"/>		Tape slack	

- NOTE:** ○: Part replacement.
: Cleaning (For cleaning, use a lint-free cloth dampened with pure isopropyl alcohol).
: Oil refilling (The indicated point should be lubricated with high quality spindle oil every 1000 hrs).

If the reading is out of the specified value, clean or replace the part.

REMOVAL AND REASSEMBLY OF CASSETTE HOUSING CONTROL ASSEMBLY

● Removal

1. Set the cassette ejected condition in the cassette eject mode.
2. Unplug the recorder from the main source.
3. Follow the procedures below in the specified order.
 - a) Remove the cassette loading belt ①.
 - b) Disconnect the FFC (Full Flat Cable) ②.
 - c) Remove the cassette housing installation screws ③.
 - d) Slide and pull out the cassette housing control assembly upward ④.

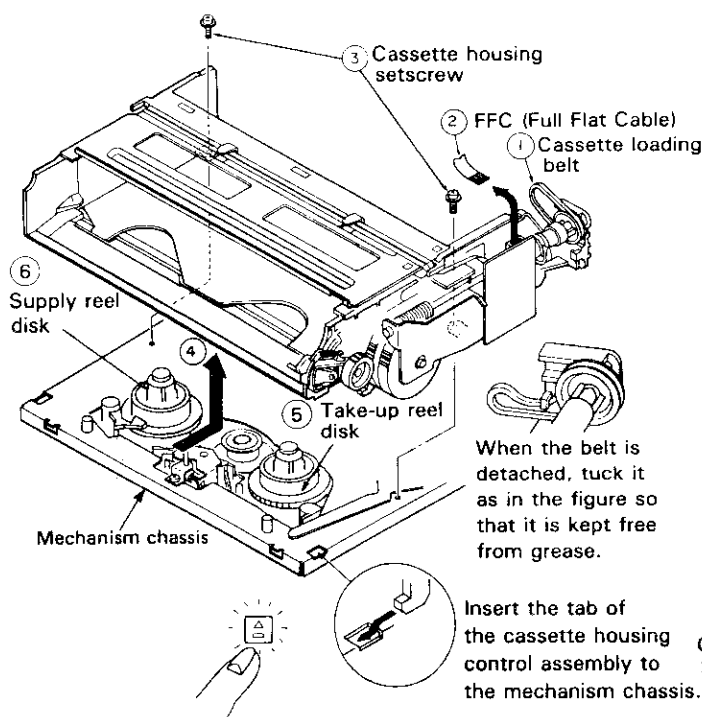


Figure 1-1.

● Reassembly

1. Before installation of the cassette housing control assembly, place the unit in the stop mode with the power on, then unplug the power cord. (The main body is placed in the eject mode.)
2. Follow the procedures for removal in the reverse order.

Notes:

1. Be sure to unplug the power cord in removal and reassembly.
2. Keep the cassette loading belt free from grease. In case of its adhesion, clean the belt.
3. In using a magnet screw driver, be sure to keep it away from the A/C head, FE (Full Erase) head, or the drum.
4. In removal and reassembly, take care not to hit the cassette housing control assembly or tools against the guide pin, drum, or the like thereabout.

5. Place the unit in the eject mode in removal or reassembly of the cassette housing control assembly.
6. Load the cassette once onto the cassette housing control assembly after reassembly. (If the cassette housing control assembly normally operates after this, the phases of mechanism and the cassette controller are accurately adjusted after ejection.)

MECHANICAL OPERATION CHECK WITHOUT CASSETTE

When power is on, the general operations of the mechanism can be checked without a cassette. Note the following points.

1. Check video search rewind and rewind, rotating the take-up reel disk ⑤ by hand (in either normal or reverse direction). If it is not rotated, the reel sensor works to shift the mechanism to the eject mode.
2. When the stop button is pressed, the mechanism does not stop at a normal stop position. It shifts to the eject mode and stops.
3. When the stop button is pressed in the playback, video search rewind, and video search forward modes, the supply reel disk ⑥ keeps on rotating for several seconds for elimination of tape slack in the course of shifting to the eject mode. In such a case, rotate the take-up reel disk ⑤ somewhat by hand, and the supply reel disk ⑥ stops, which can reduce the working time.

REPLACEMENT OF WORM WHEEL ASSEMBLY

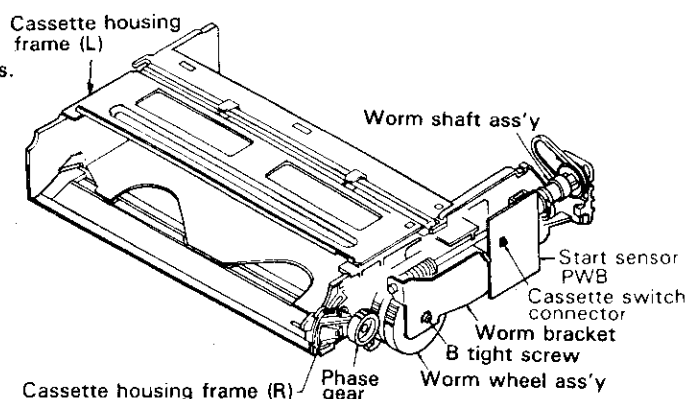


Figure 1-2.

● **Removal**

1. Unsolder the cassette switch connectors (No. 16, 17) from the start sensor PWB.

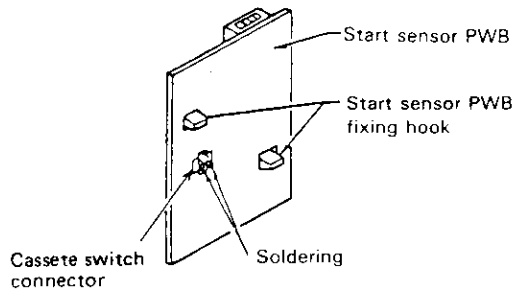


Figure 1-3.

2. Lift the start sensor PWB pressing the two start sensor PWB fixing hooks inward.

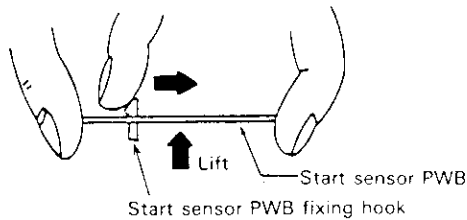


Figure 1-4.

3. Unscrew one B tight screw to detach the worm bracket.

Note: The worm shaft bearing can easily come out of position. So be careful not to lose it.

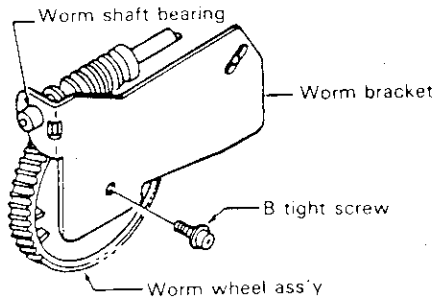


Figure 1-5.

4. Remove the worm shaft assembly, pulley, and cassette loading belt all from the cassette housing frame (R).

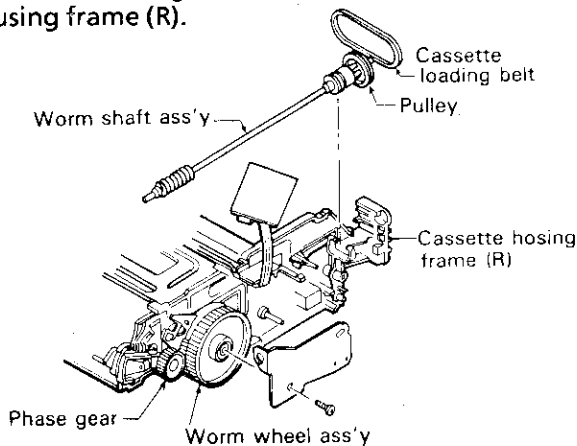


Figure 1-6.

5. Place the slider pin just above the worm wheel (Figure 1-7). (The retainer of the slider is locked at two positions hem. So unlock it as in the Figure 1-8.)
6. Pull out the worm wheel assembly toward you pressing the switch lever upward. (Figure 1-7)

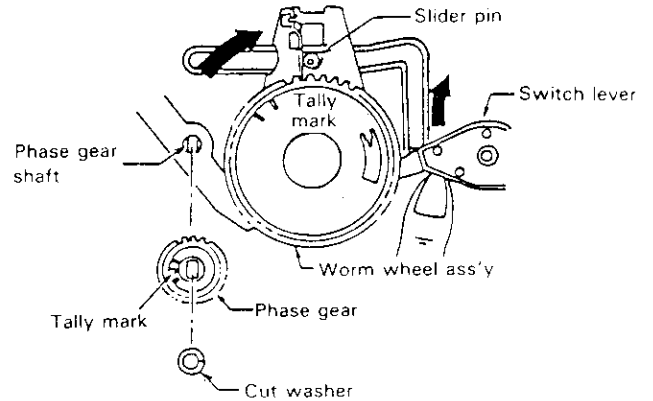


Figure 1-7.

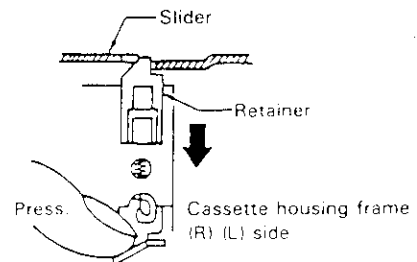
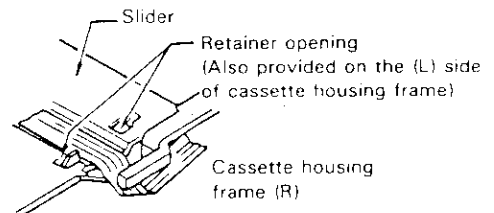


Figure 1-8.

● **Reassembly**

1. Turn the phase gear clockwise until the slider comes to a halt in the cassette insertion direction. (See the Figure 1-9.)
2. Insert the set up worm wheel gear assembly into the cassette housing frame (R), matching the mark on the phase gear with the mark on the worm wheel gear. Detach the cut washer on the phase gear assembly and the phase gear for easier installation of worm wheel assembly.
Note: Make sure that the slider pin is in the groove of the drive gear arm.

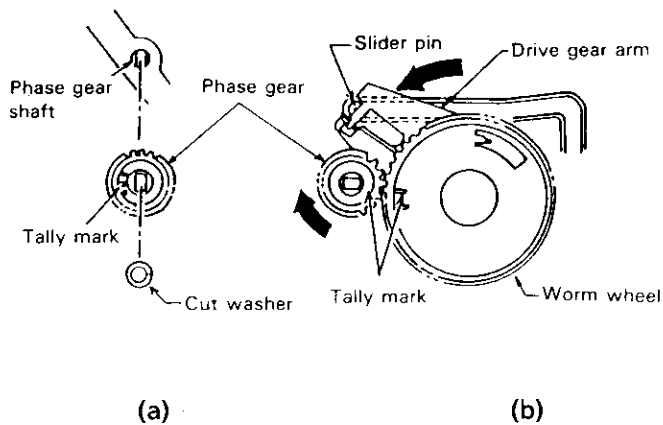


Figure 1-9.

3. Install the pulley and the cassette loading belt on the worm shaft assembly. Couple the clutch to the clutch lever. And mount them together in the cassette housing frame (R).

Note: Keep in mind that the clutch switching lever should be in the correct position. The mechanism might malfunction if the lever is slightly out of position. (See page 14.)

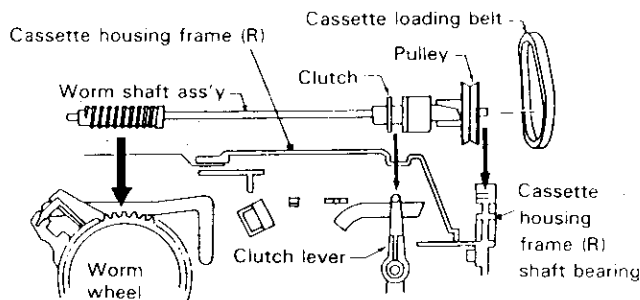


Figure 1-10.

4. Attach the worm bracket to the worm shaft assembly. Place them onto the boss on the cassette housing frame (R).

Note: Insert ① before screwing into ② and ③.

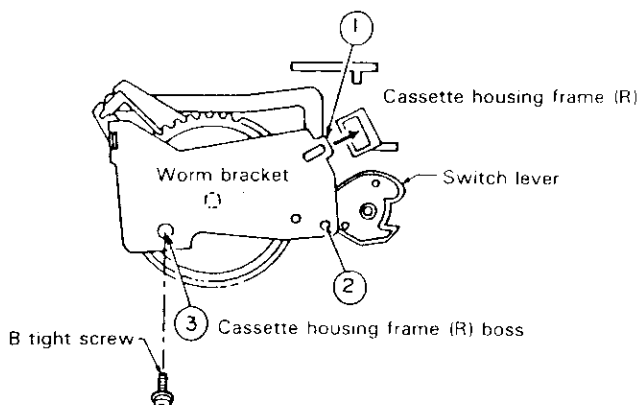


Figure 1-11.

5. Tighten one B tight screw.

Note: Do not overtighten the B tight screw (no more than 5.0 ± 0.5 kg.cm), because the lower threads of the screw hole at the resin-mode boss can be broken.

6. Place the start sensor PWB on the cassette housing frame (R).

Note: Check that the switch connectors (No. 16, 17) are in the cassette switch mounting hole.

7. Finally resolder the cassette switch connector to the start sensor PWB.

REASSEMBLY OF DRIVE GEAR

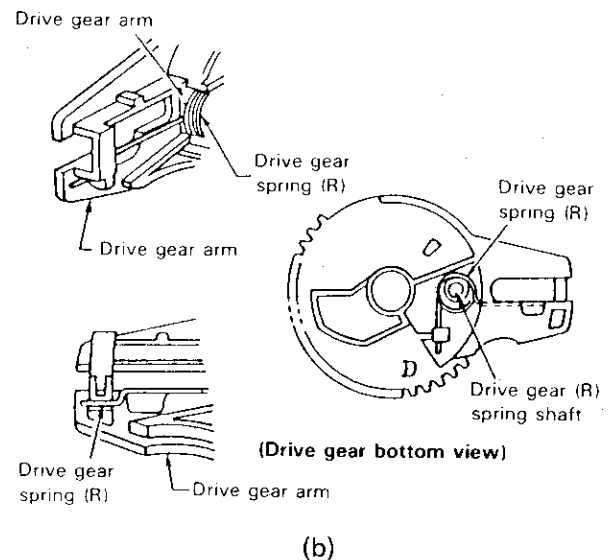
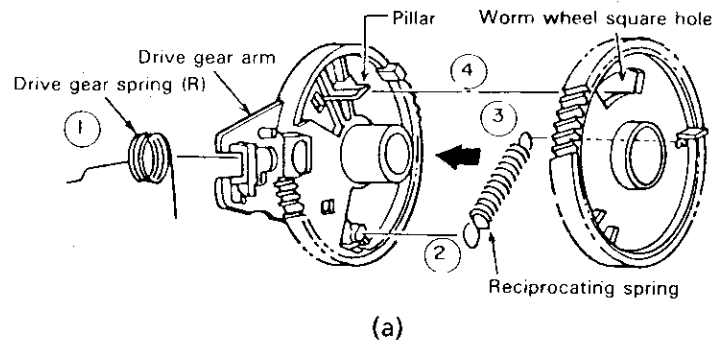


Figure 1-12.

1. Pass the tip of the drive gear spring (R) ① through the square hole of the drive gear (R) to hook the spring in position.
2. Hook one end ② of the reciprocating spring to the catch of the drive gear (R).
3. Hook the other end ③ of the reciprocating spring to the catch of the worm wheel.
4. Insert the pillar ④ of the drive gear (R) into the square hole of the worm wheel. Turn the worm wheel somewhat counterclockwise for insertion of the worm wheel to the drive gear (R), because the reciprocating spring is at work.

REPLACEMENT OF CASSETTE LOADING BELT

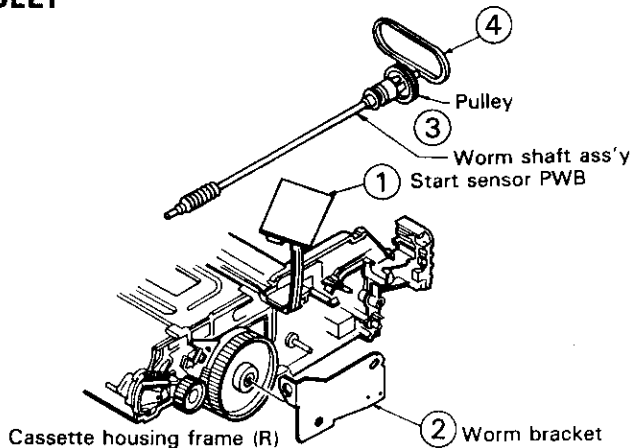


Figure 1-13.

1. Remove the start sensor PWB ① and worm bracket ② from the cassette housing frame (R).
2. Remove the worm shaft assembly ③.
3. Replace the cassette loading belt ④ with a new one.

Notes:

1. Do not overtighten the B tight screw which holds the worm bracket in position. The specified torque is 5.0 ± 0.5 kg.cm.
2. Make sure that the cassette loading belt is free from grease. If stained with grease, clean the belt with the cleaning liquid.
3. Perform checking of the clutch switch lever for proper action.

CHECKING THE CLUTCH SWITCH LEVER

● Checking

Place the mechanism in the cassette eject mode when removing and attaching the cassette housing from and to the mechanism chassis.

Make sure enough that each part in the cassette housing such as the clutch switch lever is in position. If not, it causes malfunction.

Note:

Figure 1-14 shows the position of each part in the cassette eject mode.

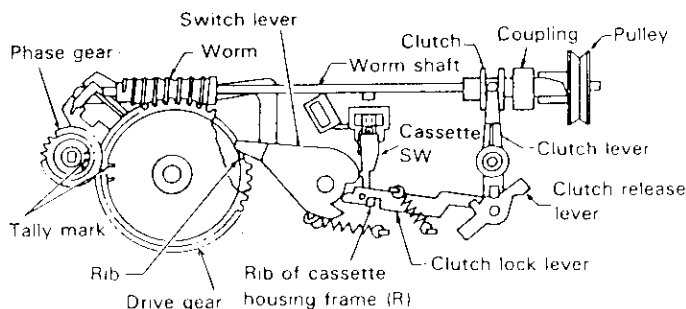
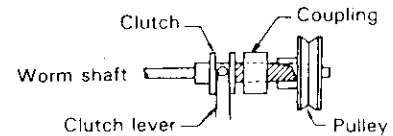


Figure 1-14.

1. First make sure that the tip of the switch lever is held at the rib of the drive gear (R).
2. Check that the rib of the cassette housing frame (R) and the concavity of the clutch lock lever are engaged.
3. Finally be sure that the relationship between the clutch lever and the clutch, as well as between the clutch and the pulley, are correct as in the Figure 1-15.



Check that the clutch is engaged with the pulley through the coupling.

Figure 1-15.

● Resetting

Take the following steps to reset the clutch if it is unlocked or if the switch lever and the clutch lock lever are unlocked.

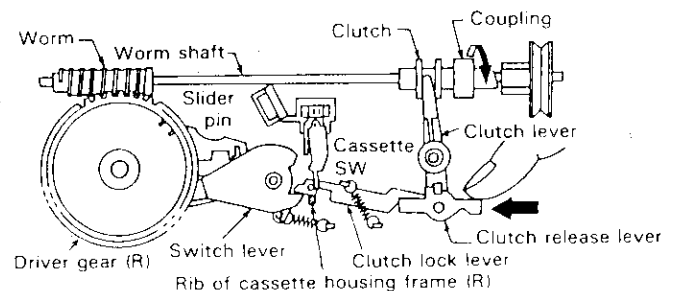


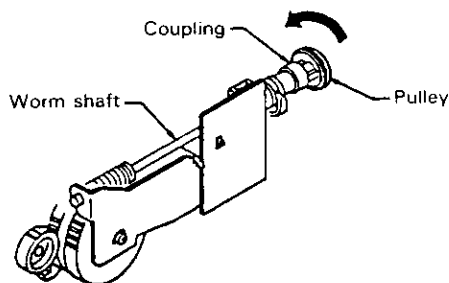
Figure 1-16.

1. Shift the slider by turning the coupling in the arrow direction (clockwise) until the slider pin is at the bottom of the slider groove as shown in the Figure 1-16. (The loading mode)
Note: Note that the slider is equipped with a lock mechanism. Unlock the locks on cassette housing frame (L) and (R) side before shifting the slider.
2. When the position is set as shown in the Figure 1-16, push the clutch release lever in the direction of the arrow by hand until the clutch lock lever becomes tightly locked by the rib of the cassette housing frame (R).
3. Then turn the coupling counterclockwise until the slider reaches the cassette insertion opening and the reciprocating spring is activated.
Note: There is no need to unlock the slider when shifting the slider to the cassette insertion opening. Just keep shifting the slider.

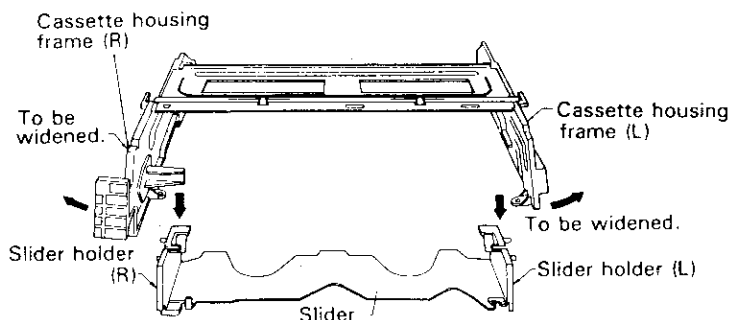
REPLACEMENT OF LOCK RELEASE LEVER

● Removal

1. Place the slider in the cassette down position. (Turn the coupling on the worm shaft clockwise until the slider is in the cassette down position.)
Note: Before shifting, unlock the slider.
2. Slightly widen the cassette housing frames (R) and (L) to unhook the slider holders (R) and (L) of the slider assembly off the grooves of the cassette housing frames.



(a)



(b)

Figure 1-17.

3. Lift the slider holder (R) upward about 2mm off the slider by pressing two catches with a thin tip screw driver. Take care not to damage the catches.

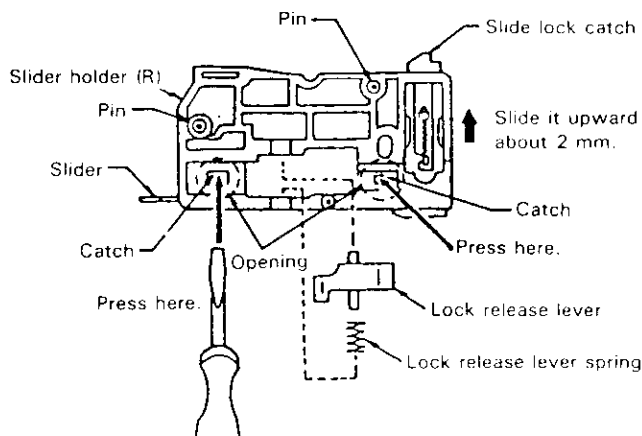


Figure 1-18.

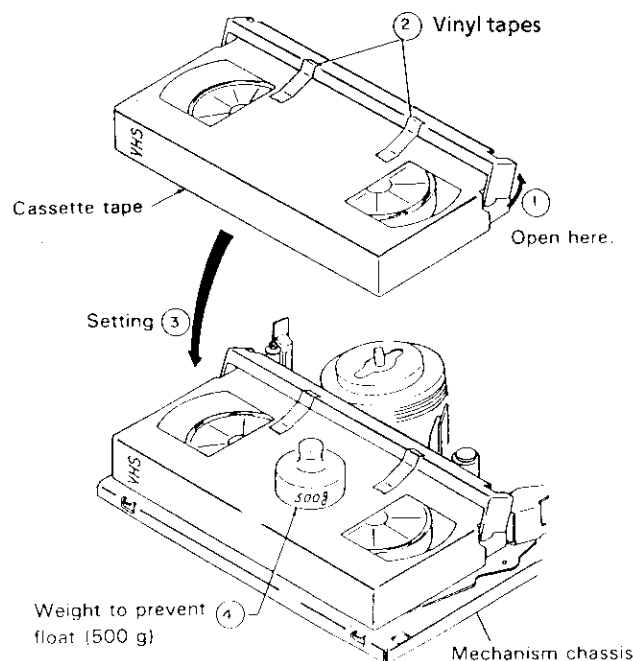
4. Remove the lock release lever from the slider holder (R)

● Reassembly

1. Follow the steps for removal in the reverse order. (See Figures 1-17 and 1-18.)
2. Attach the lock release lever to the slider holder (R).
3. Slide the slider holder (R) downward so that the two catches of the slider holder (R) fit the opening of the slider.
Note: Check if the pins of the slider holders (R) and (L) fit the grooves of the cassette housing frames, and if the drive gear arm is sufficiently engaged with the slider holders.
5. Turn the coupling counterclockwise until the slider is at the cassette insertion opening.

TO RUN A TAPE WITHOUT THE CASSETTE HOUSING CONTROL ASSEMBLY

1. Plug in the power cord.
2. Turn on the power switch.
3. Open the lid ① of a cassette tape by hand.
4. Hold the lid with a piece of vinyl tape ②.
5. Set the cassette tape in the mechanism chassis.
6. Weight the cassette tape with a weight ④ to prevent floating.
7. Perform running test.



Note: The weight should not be more than 500 g.

Figure 1-19.

REPLACEMENT AND HEIGHT CHECKING AND ADJUSTMENT OF REEL DISKS

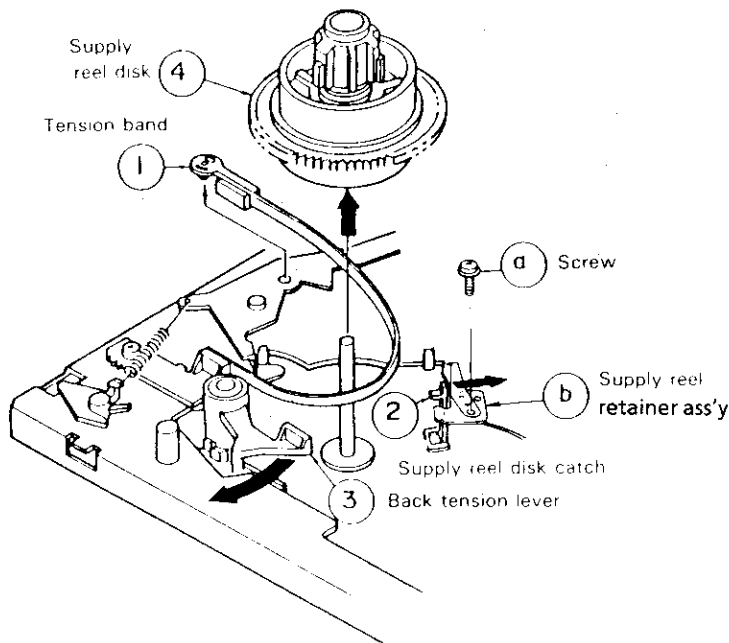
1. Remove the cassette housing control assembly.
2. Set the mechanism in the playback mode with no cassette tape in place. Unplug the power cord.
3. Set the idler gear in the center (neutral).

● Removal (Supply reel disk)

1. Remove the tension band ①. (Take care not to deform it.)
2. Unscrew the screw ② and remove the supply reel retainer assembly ③.
3. Release the supply reel disk catch and back tension lever ④.
4. Pull the supply reel disk upward.

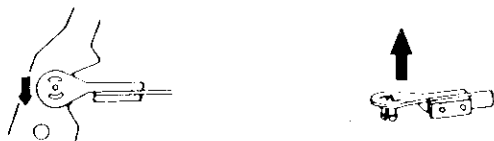
Notes :

1. Take care not to deform the tension band.
2. Check and adjust the tension pole position. (See page 19.)
3. Be careful not to damage the gear and the idler gear on the supply reel disk.
4. Press the tension band in the direction of the arrow for removal (See Figure 1-20(b)).



(a)

Note: When the tension band is pressed in the direction of the arrow for removal, the catch is hard to be deformed.



(b)

Figure 1-20.

● Removal (Take-up reel disk)

1. Unscrew the screw ① and remove the take-up reel retainer.
2. Release the take-up reel disk catch ②.
3. Pull the take-up reel disk ③ upward.

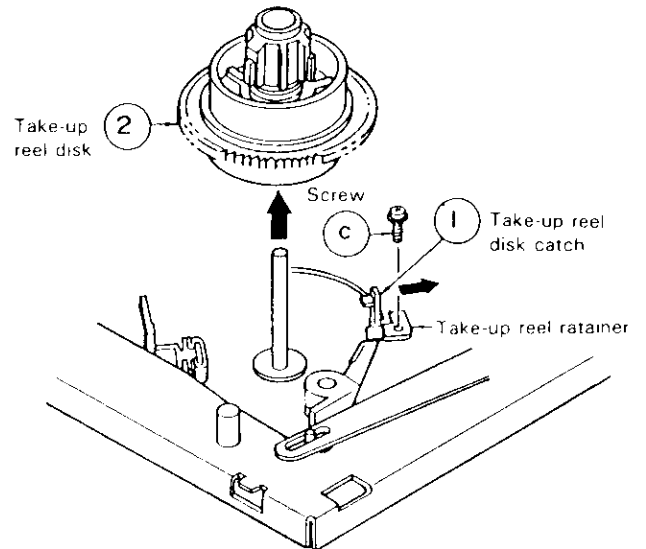


Figure 1-21.

● Reassembly (Supply reel disk)

1. Clean the reel disk shaft ① and apply oil to it.
2. Release the supply reel disk catch ② and back tension lever ③.
3. Install a new supply reel disk ④ onto the shaft.
4. Replace the tension band ⑤ around the supply reel disk, and insert it to the hole of the tension arm.
5. Replace the supply reel retainer assembly ⑥ in place, and tighten up the screw ②.

Notes :

1. Take enough care not to deform the tension band during installation of the supply reel disk.
2. Be careful not to damage the supply reel disk gear, back tension lever, catch, or the like with tools.

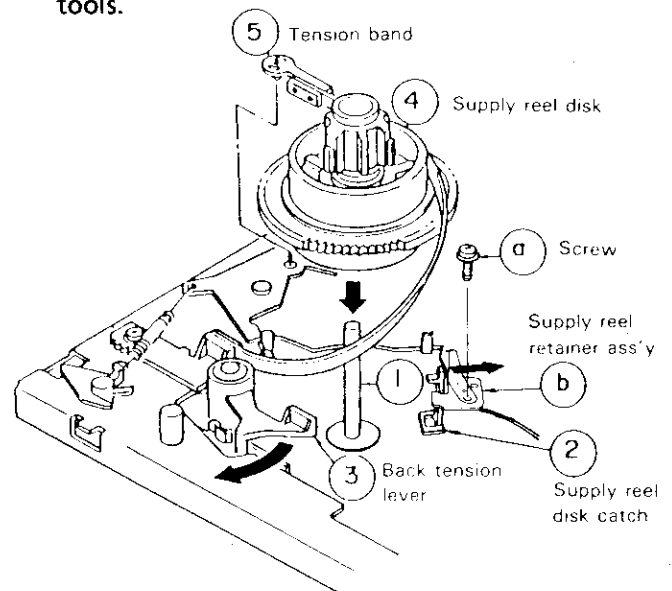


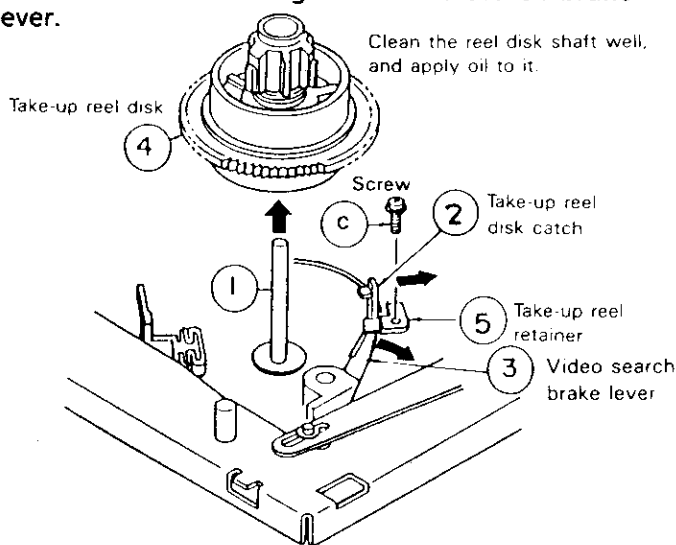
Figure 1-22.

● Reassembly (Take-up reel disk)

1. Clean the reel disk shaft ① and apply oil to it.
2. Release the take-up reel catch ② and video search brake lever ③.
3. Install a new take-up reel disk ④ onto the shaft.
4. Replace the take-up reel retainer ⑤ in position and tighten up the screw ⑥.

Note :

Take care not to damage the video search brake lever.



Apply a thin tip driver to the arrow position in releasing for easier setting of the take-up reel disk.

Figure 1-23.

- * After reassembly, check the video search rewind back tension (see page 18), and check the brake torque (see page 20).

● Height checking and adjustment

Note:

Place the master plane onto the mechanism unit, taking care not to hit the drum (see Figure 1-24)

1. For height adjustment, press the reel disk with a finger, and turn it right and left with a screwdriver (see Figure 1-26 (a)).

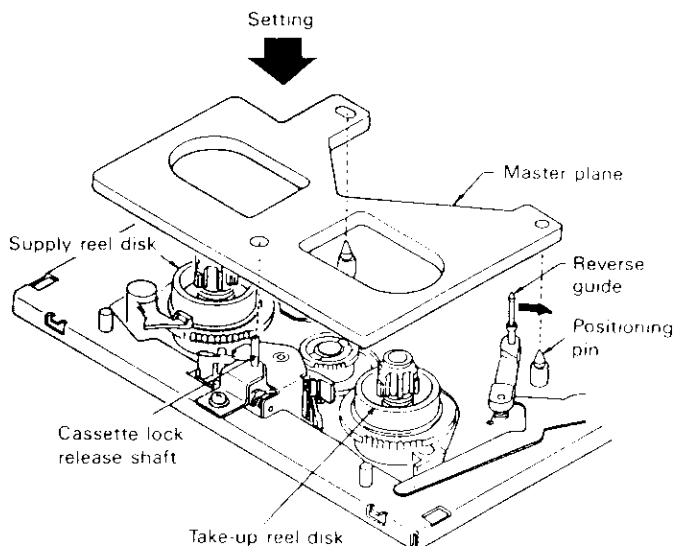


Figure 1-24.

Set the master plane releasing the reverse guide by a finger.

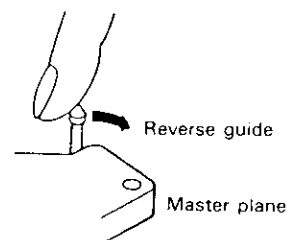
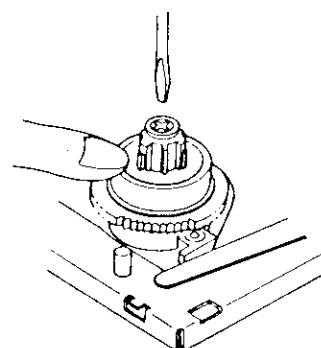


Figure 1-25.

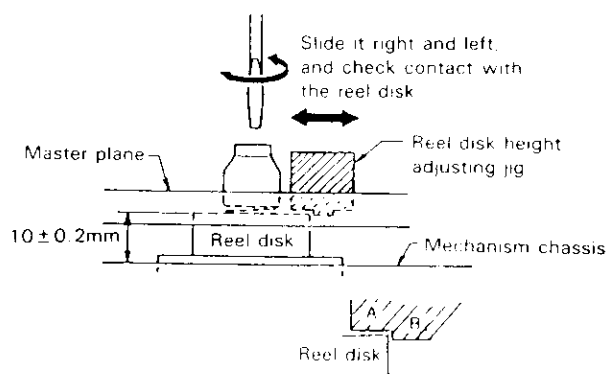
2. Check that the reel disk is lower than part A but higher than part B. If the height is not correct, adjust the height adjusting screw (see Figure 1-26 (b)).

Note :

Whenever replacing the reel disk, perform the height checking and adjustment.



(a)



(b)

Figure 1-26.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN FAST FORWARD MODE

- Remove the cassette housing control assembly.
- Setting

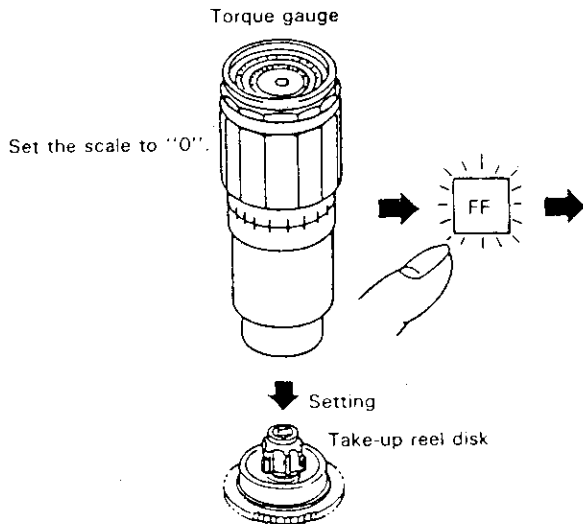


Figure 1-27.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN REWIND MODE

- Remove the cassette housing control assembly.
- Setting

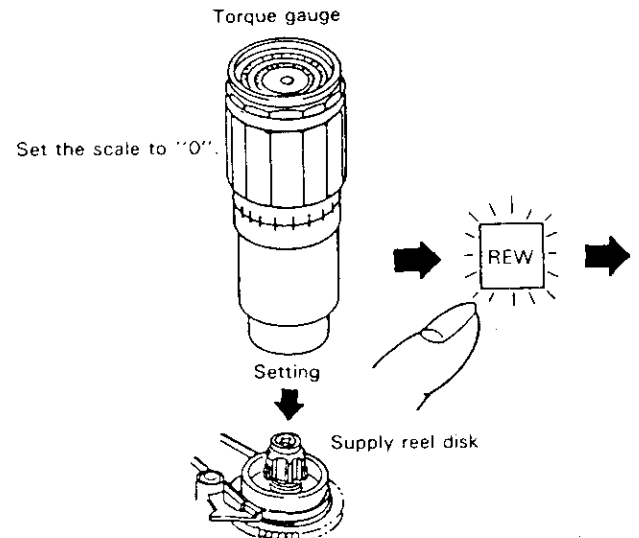


Figure 1-29.

● Checking

Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the take-up direction

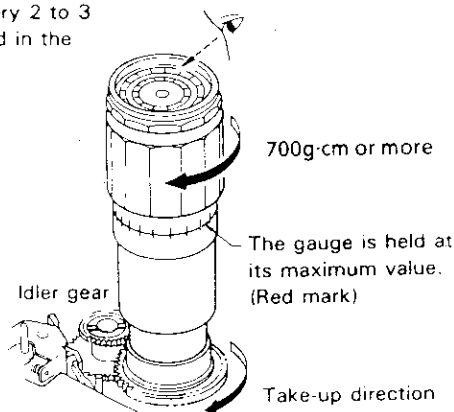


Figure 1-28.

● Adjustment

1. If the take-up torque is outside the range, clean the capstan D.D. motor pulley, reel belt and reel pulley with cleaning liquid, then recheck the torque.
2. If the take-up torque is still out of range, replace the reel belt.

Notes :

1. Hold down the torque gauge so that it may not fly off.
2. When checking the take-up torque, do not keep the reel disk locked for a longer time.

● Checking

Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the take-up direction

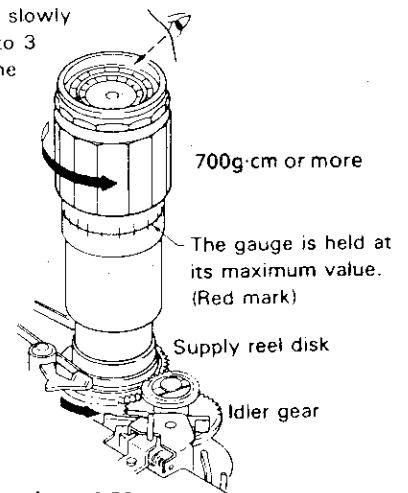


Figure 1-30.

● Adjustment

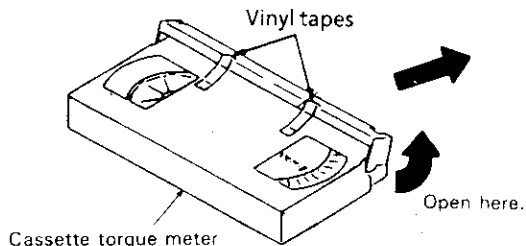
1. If the take-up torque is outside the range, clean the capstan D.D. motor pulley, reel belt and reel pulley with cleaning liquid, then recheck the torque.
2. If the take-up torque is still out of range, replace the reel belt.

Notes :

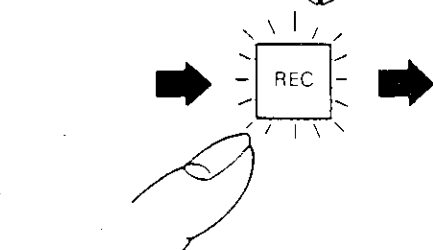
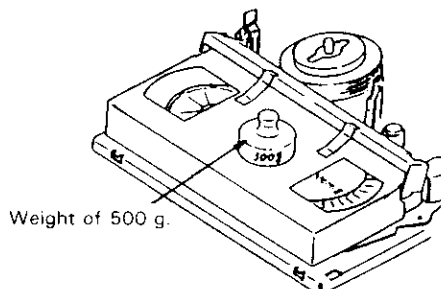
1. Hold down the torque gauge so that it may not fly off.
2. When checking the take-up torque, do not keep the reel disk locked for a longer time.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN PLAYBACK MODE

1. Remove the cassette housing control assembly.
2. Open the lid of the cassette torque meter, and hold it with a piece of vinyl tape.



Load a cassette torque meter into the unit.



Set value SP 95 ± 30 g.cm

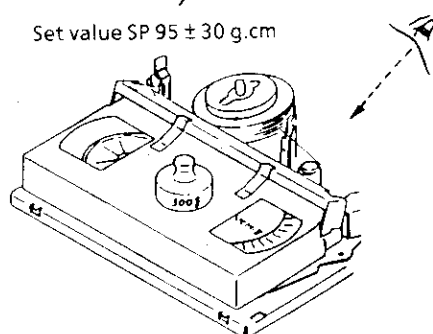


Figure 1-31.

● Checking

1. Check that the torque is in the range of 95 ± 30 g.cm.
2. The torque fluctuates due to the rotational deviation of the reel drive unit. Use the center of the fluctuation as the value.
3. Place the unit in the SP record mode, and check that the take-up torque is within the range.

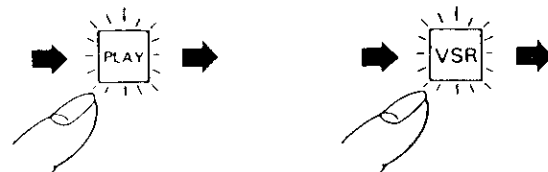
● Adjustment

If the take-up torque in the playback mode is outside the range, replace the take-up reel disk.

Note: Weight the cassette torque meter to prevent floating.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN VIDEO SEARCH REWIND MODE

- Remove the cassette housing control assembly.
- Checking



Push the play button to place the unit in the playback mode.

Push the video search rewind button to place the unit in the video search rewind mode.

Place the torque gauge on the supply reel disk, and turn it counterclockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is within the set value 170 ± 40 g.cm.

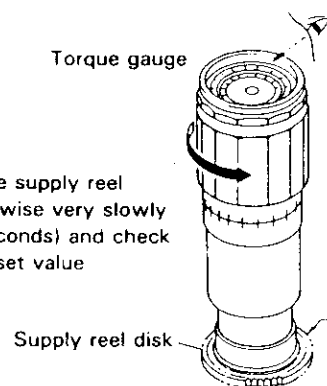


Figure 1-32.

Note:

Set the torque gauge securely on the supply reel disk. If it is not secure, the measurement will be incorrect.

● Adjustment

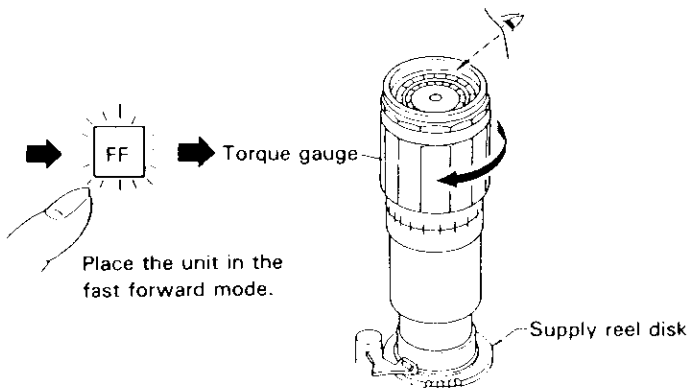
If the take-up torque in video search rewind mode is outside the range, replace the supply reel disk.

Note:

The torque fluctuates due to the rotational deviation of the supply reel disk. Use the center of the fluctuation at the value.

CHECKING THE FAST FORWARD BACK TENSION

- Remove the cassette housing control assembly.
- Checking



Place the torque gauge on the supply reel disk, and turn it clockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is within 15 ± 5 g·cm

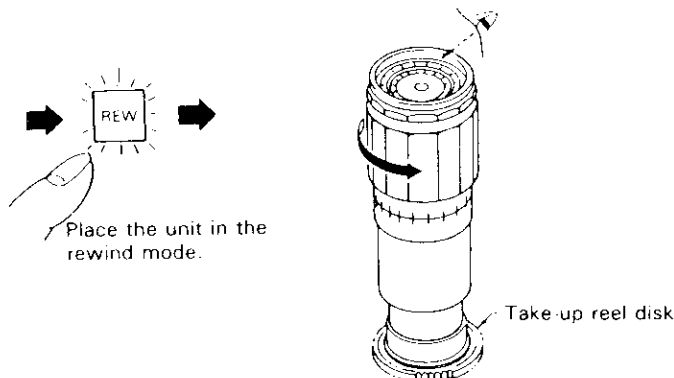
Figure 1-33.

Note :

Set the torque gauge securely on the supply reel disk. If the torque gauge is not securely set on the reel disk, measurement will be incorrect.

CHECKING THE REWIND BACK TENSION

- Remove the cassette housing control assembly.
- Checking



Place the torque gauge on the take-up reel disk, and turn it counterclockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is within 15 ± 5 g·cm.

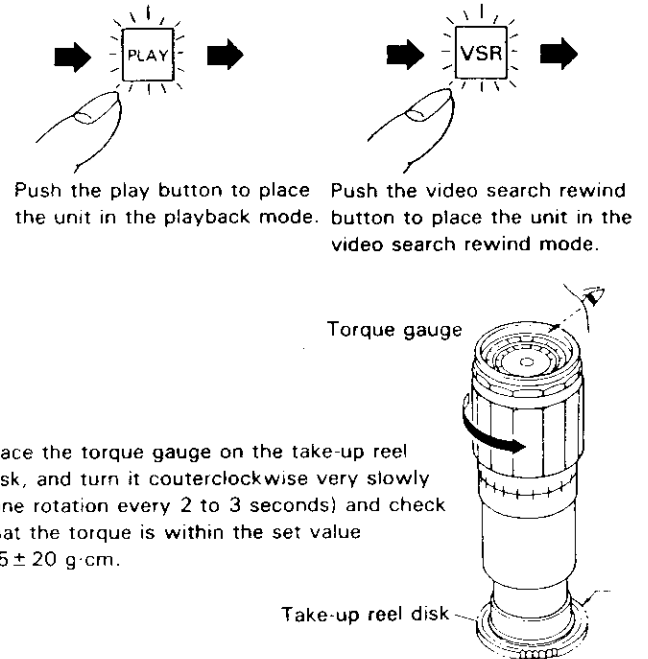
Figure 1-34.

Note :

Set the torque gauge securely on the take-up reel disk. If it is not secure, the measurement will be incorrect.

CHECKING THE VIDEO SEARCH REWIND BACK TENSION

- Remove the cassette housing control assembly.
- Checking



Place the torque gauge on the take-up reel disk, and turn it counterclockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is within the set value 45 ± 20 g·cm.

Figure 1-35.

Note :

Set the torque gauge securely on the take-up reel disk. If it is not secure, the measurement will be incorrect.

CHECKING THE PINCH ROLLER PRESSURE

- Remove the cassette housing control assembly.

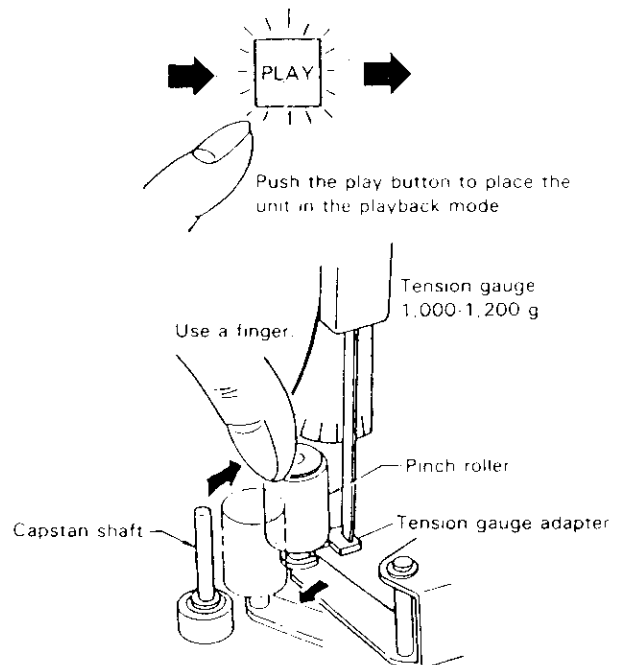


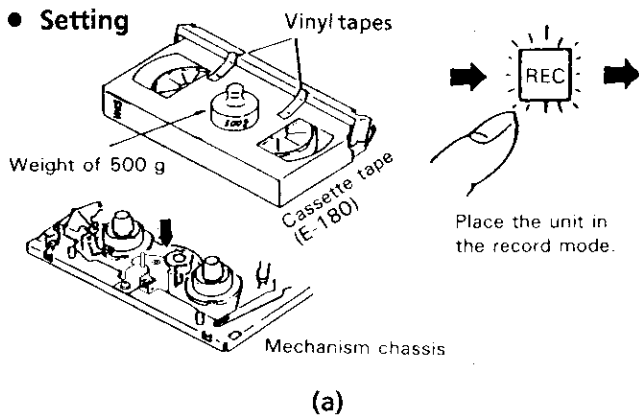
Figure 1-36.

1. Detach the pinch roller from the capstan shaft.
2. Set the tension gauge by hooking the tension gauge adapter onto the pinch roller shaft.
3. Gradually release the pressure to allow the pinch roller to touch the capstan shaft. When the pinch roller just touches the capstan shaft, read the indication on the gauge.
4. Check that the reading of the tension gauge is in the range of 1000 to 1200 g.

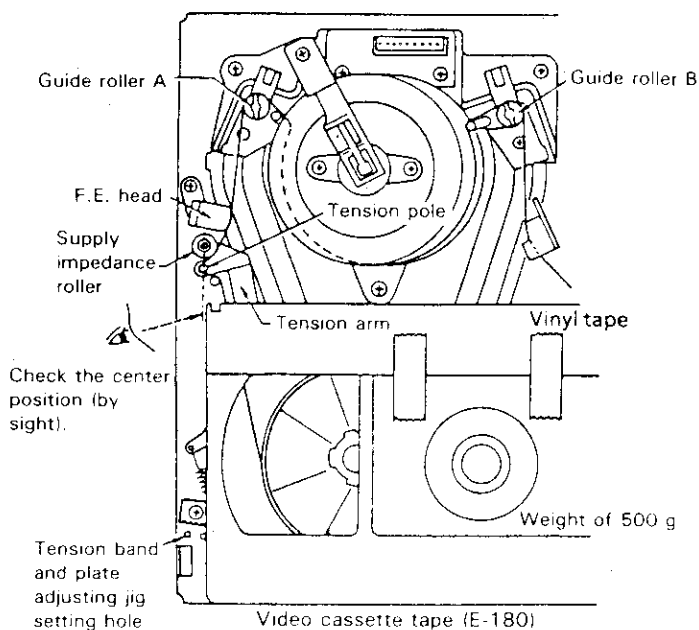
CHECKING AND ADJUSTMENT OF TENSION POLE POSITION

- Remove the cassette housing control assembly.

- **Setting**



(a)



(b)

Figure 1-37.

- **Checking**

1. The guide rollers (A, B) operate to bring the tape outside the cassette tape and simultaneously the tension pole moves to the left, loading the tape. At that time (loading completed), check the position of the tension pole.

2. At the beginning of the tape (E-180), check that the tension pole's center is aligned with the supply impedance roller's center by sight.
3. Check that the end of the tape is neither curled against the flange of the supply impedance roller nor over it.
4. During the video search rewind mode with no cassette tape in place, check that the supply reel disk is free from the tension band.

- **Position adjustment (record mode)**

When the tension pole is at the right of the supply impedance roller's center:

Untighten the tightening screw, and shift the tension band adjustment bracket in the direction of the arrow using a tension band and plate adjusting jig until it is in the set value range (center). Then secure it with the tightening screw.

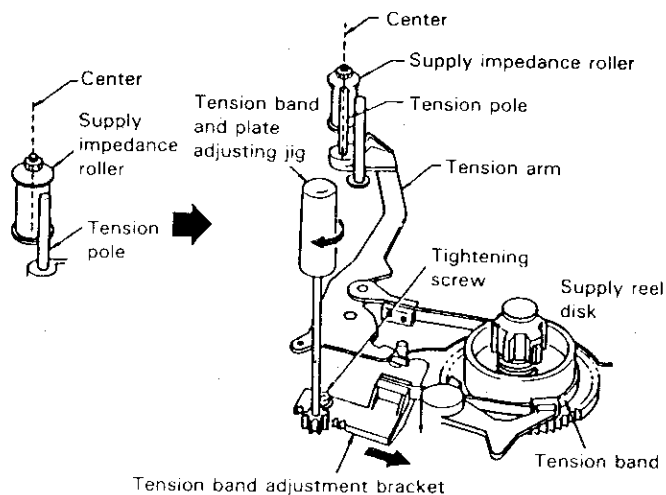


Figure 1-38.

- **Position adjustment (record mode)**

When the tension pole is at the left of the supply impedance roller's center:

Untighten the tightening screw, and shift the tension band adjustment bracket in the direction of the arrow using a tension band and plate adjusting jig until it is in the set value range (center). Then secure it with the tightening screw.

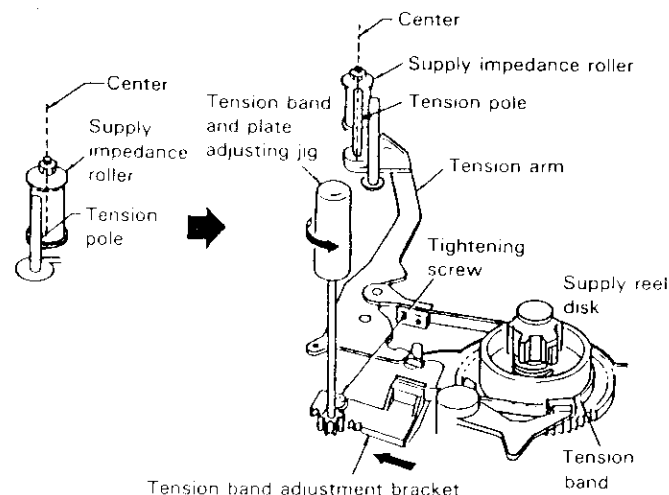


Figure 1-39.

CHECKING AND ADJUSTMENT OF RECORD / PLAYBACK BACK TENSION

- Remove the cassette housing control assembly.
- **Checking**

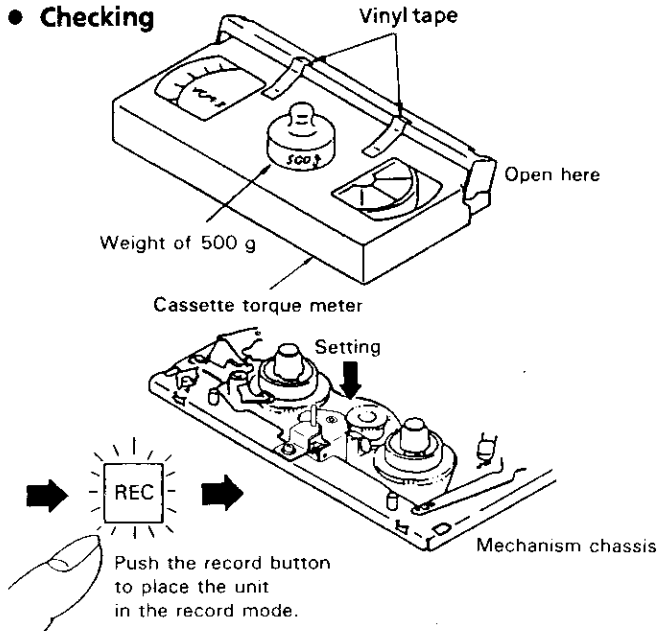


Figure 1-40.

1. Put a cassette torque meter into the unit.
2. Push the record button to place the unit in the record mode.
3. Check that the back tension indicated by the gauge is within the set range 23 to 28 g.cm.

Notes :

1. Make sure that the video cassette tape is over the retaining guide.
2. Make sure that the tape is not slack nor damaged at either end.

- **Adjustment**

1. If the reading of the cassette torque meter is less than specified, move the tip of the tension spring hook plate toward the hole A.
 2. If the reading of the cassette torque meter is more than specified, move the tip of the tension spring hook plate toward the hole B.
- * Put a thin screw driver (-) in the shaft hole, lean it toward you, and turn it for easier shift of the tension spring hook plate in the direction of A or B.

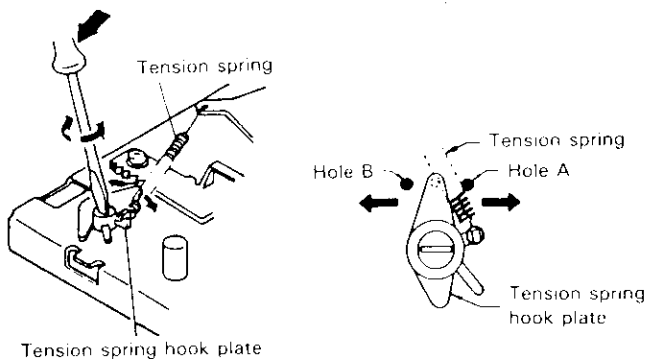


Figure 1-41.

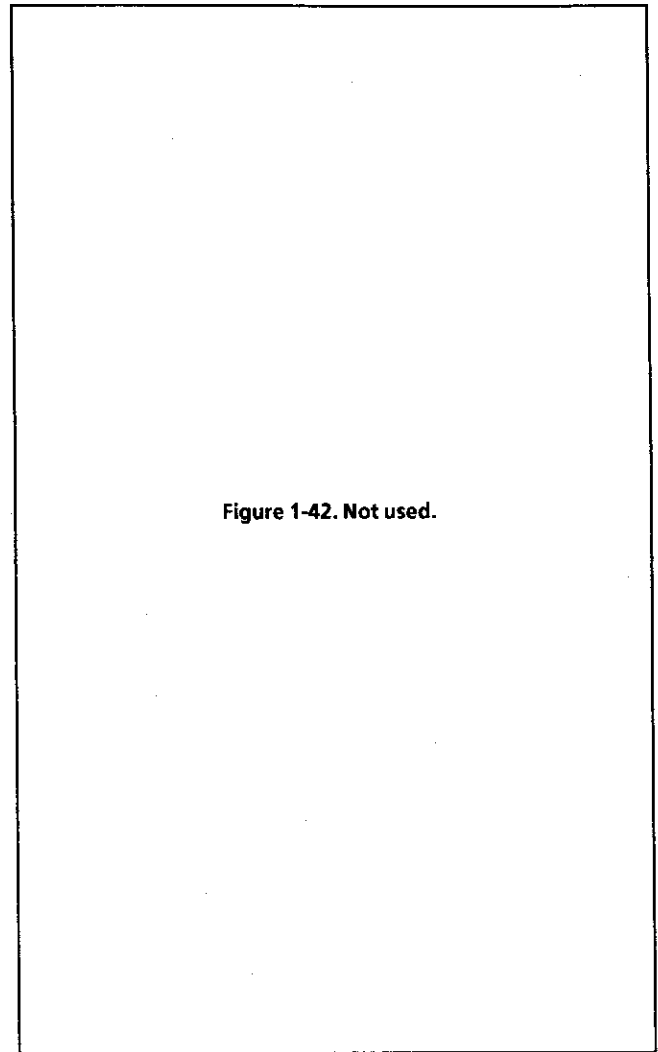


Figure 1-42. Not used.

CHECKING THE BRAKE TORQUE

- **Checking the brake torque at the supply side**

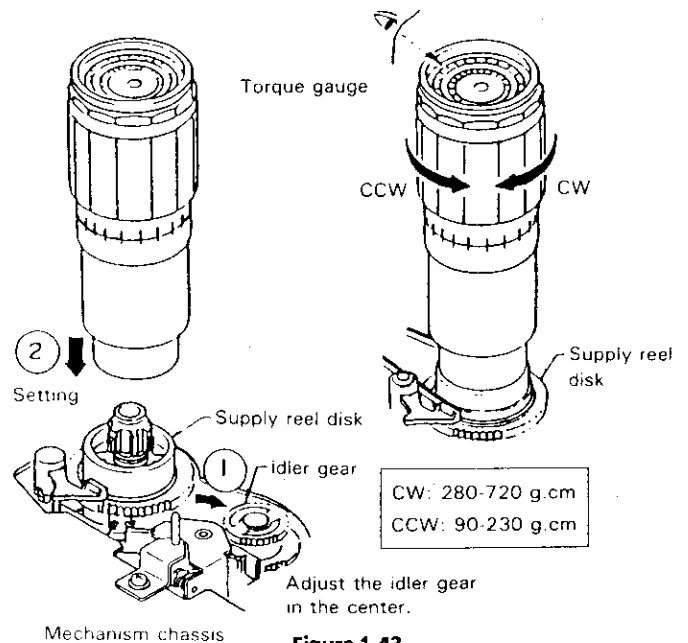


Figure 1-43.

1. Remove the cassette housing control assembly.
2. Place the mechanism in the stop mode by unplugging the power cord in the fast forward or rewind mode.
3. Slowly rotate the torque gauge in the clockwise (CW) direction and counterclockwise (CCW) direction of the supply brake so that the reel disk and the indicator of the torque gauge rotate at an equal rate. Check that the values are within the range of CW direction = 280 to 720 g. cm, CCW direction = 90 to 230 g.cm, and that the brake torque in the CW direction is at least twice as high as that in the CCW direction.

● **Checking the brake torque at the take-up side**

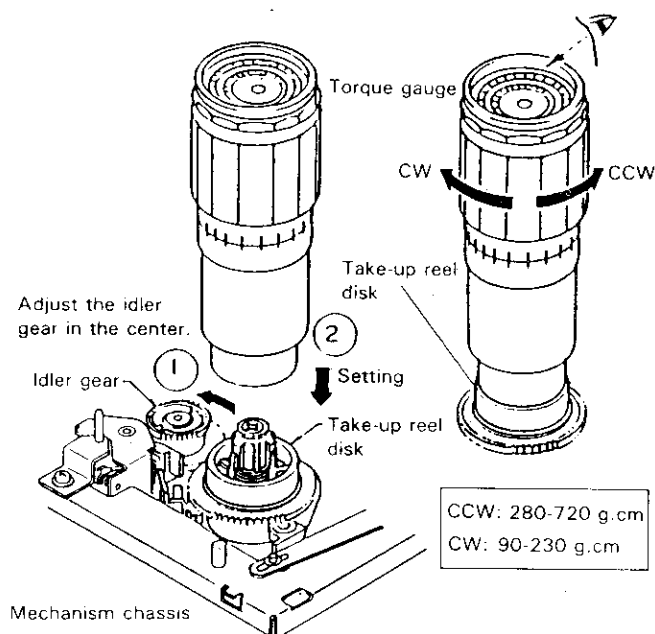


Figure 1-44.

1. Remove the cassette housing control assembly.
2. Slowly rotate the torque gauge in the clockwise (CW) direction and counterclockwise (CCW) direction of the take-up brake so that the reel disk and the indicator of the torque gauge rotate at an equal rate. Check that the values are within the range of CCW direction = 280 to 720 g. cm, CW direction = 90 to 230 g.cm, and that the brake torque in the CCW direction is at least twice as high as that in the CW direction.

● **Adjustment of the brake torque at the supply side and the take-up side**

1. If the supply or take-up brake torque is outside the range, clean the supply or take-up reel disk break lever felt, then recheck the torque.
2. If the supply or take-up brake torque is still outside the range, replace the main brake or the main brake spring.

REPLACEMENT OF MAIN BRAKE

1. Remove the reel belt and the reel block FFC.
2. Remove the cut washer ① off the brake shifter.
3. Unscrew the four screws ② and then the take-up reel retainer.
4. Remove the reel block assembly ④ downward.
5. Remove the cut washer ③ first and then the reel pulley.
6. Unscrew the two screws ④ and detach the idler assembly.
7. Unhook the back tension lever spring ⑤ and remove the back tension lever ⑥. (Undo the hook under the reel chassis.)
8. Open the shifter latch ⑦ and remove the brake shifter assembly ⑧.
9. Release the reel disk catches ⑨ and then remove the left and right reel disk assemblies ⑩ and ⑪.
10. Finally remove the main brake levers ⑫ and the main brake spring ⑬.

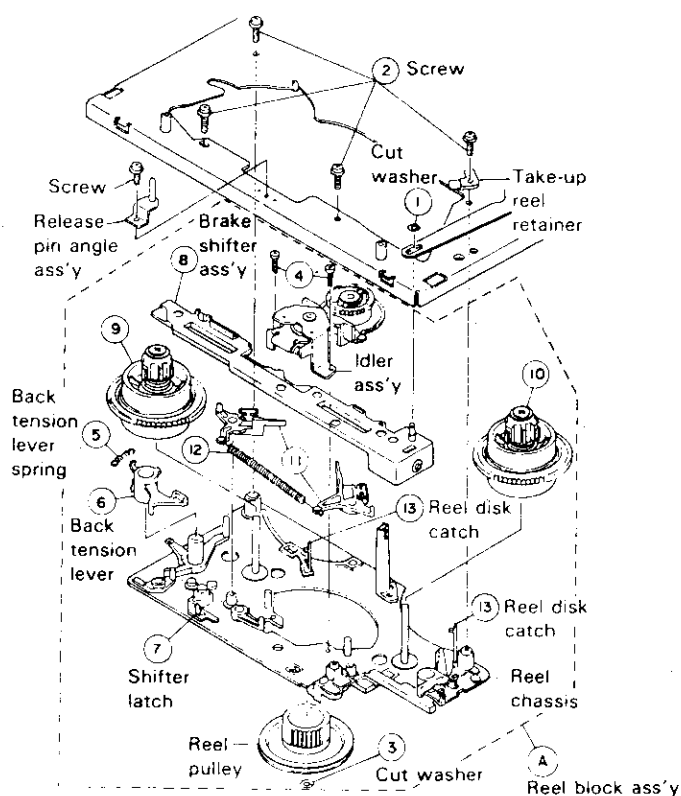


Figure 1-45.

Note :

When the main brake is replaced, perform the height checking and adjustment (see page 15), and the brake torque checking (see page 20).

REPLACEMENT OF A/C (Audio/Control) HEAD

1. Remove the cassette housing control assembly.
2. Place the unit in the unloading mode, and unplug the power cord.

● Removal

1. Loosen the tilt adjusting screw ①.
2. Remove the azimuth adjusting screw ②.
3. Remove the A/C head screw ③.
4. Unsolder the A/C head PWB soldered to the A/C head assembly.

Note :

1. After replacement, be sure to perform the adjustment of the tape drive train (see page 24). Under any circumstances, avoid touching the head. Clean the head, if touched with your finger, with alcohol.
2. Take care that the azimuth spring does not fly off when removing the A/C head screw.

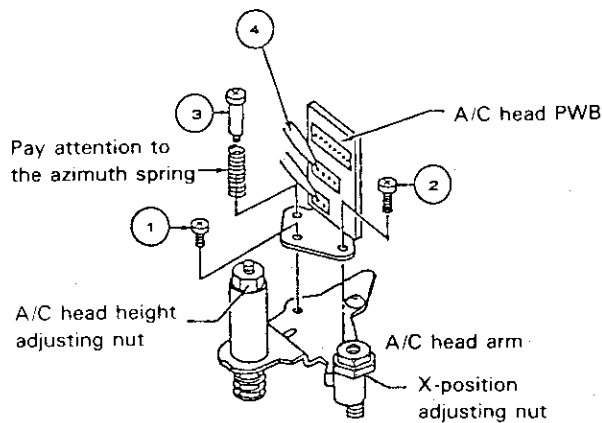


Figure 1-46.

● Replacement

1. Solder the removed A/C head PWB onto a new A/C head assembly.
2. The A/C head assembly is attached so that the A/C head arm and A/C head plate are roughly parallel to each other.

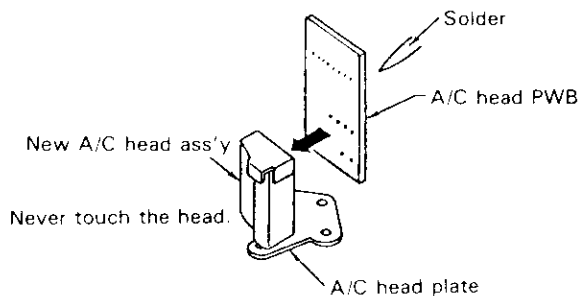


Figure 1-47.

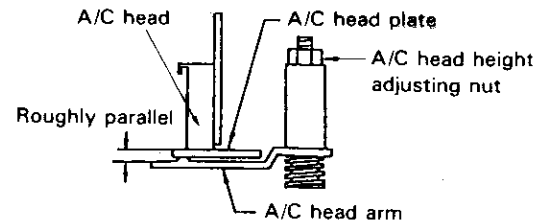
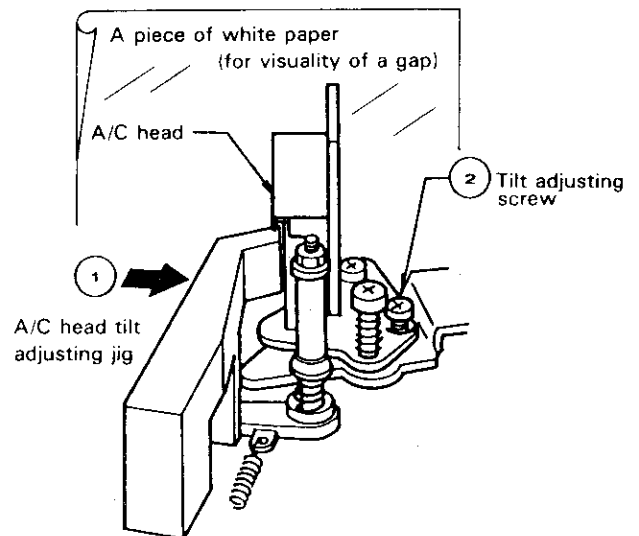


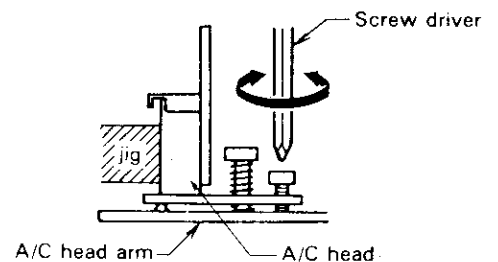
Figure 1-48.

● Adjustment [A/C head tilt angle]

1. Set the mechanism to the loading mode.
2. Place the A/C head tilt adjusting jig.
3. Slowly turn the tilt adjusting screw with a screw driver until there is no gap between the jig and the A/C head.



(a)



(b)

Figure 1-49.

[A/C head height rough adjustment]

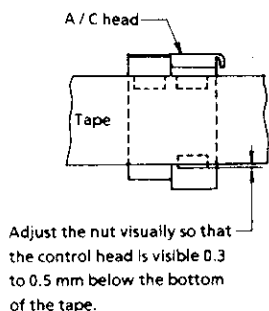
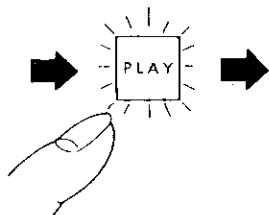
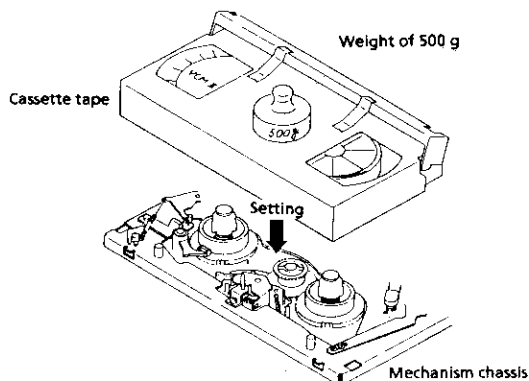
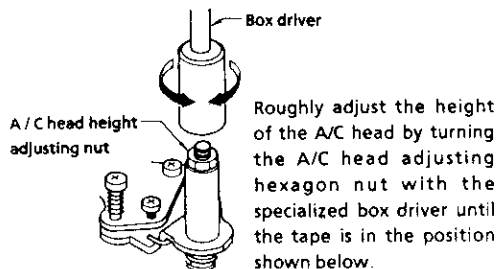


Figure 1-50.

HEIGHT ADJUSTMENT OF RETAINING GUIDE AND REVERSE GUIDE

Note :

Before the rough adjustment of the tape drive train, check that the retaining guide height is within the value in Figure 1-51 by using the special jigs.

[Height adjustment of retaining guide]

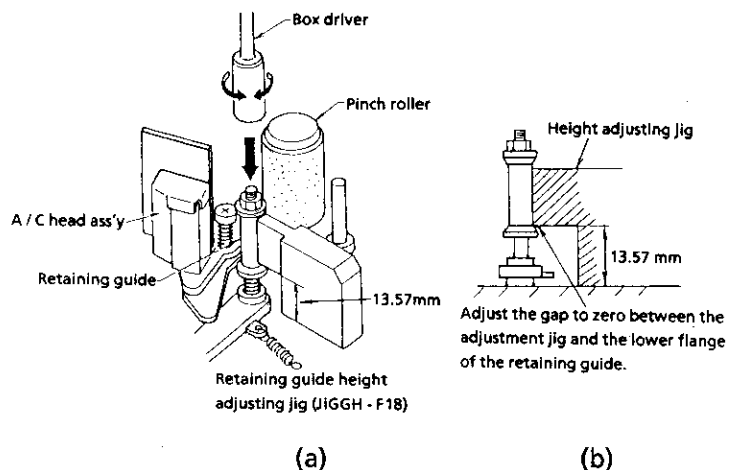
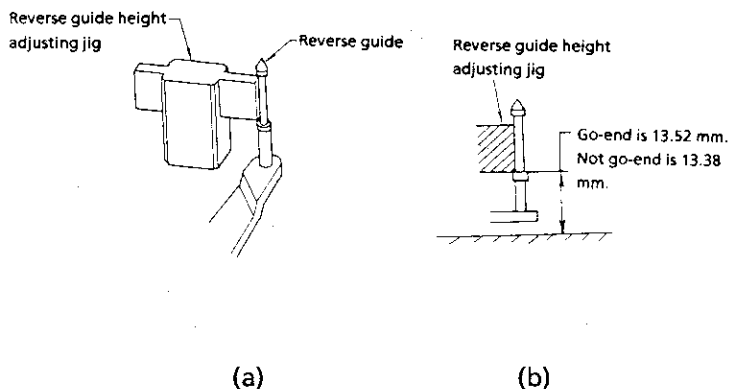
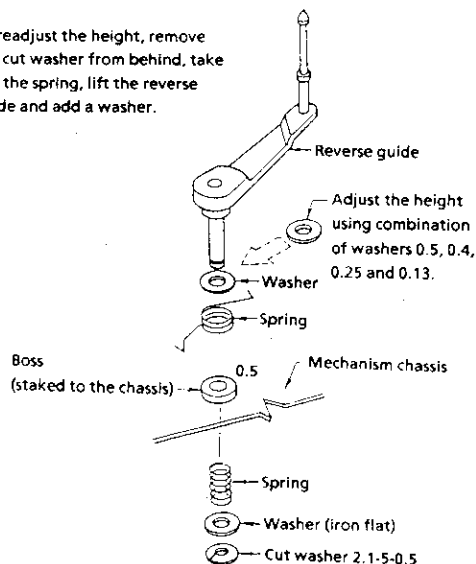


Figure 1-51.

[Height adjustment of reverse guide]



To readjust the height, remove the cut washer from behind, take out the spring, lift the reverse guide and add a washer.



(c)

Figure 1-52.

ADJUSTMENT OF TAPE DRIVE TRAIN

1. Remove the cassette housing control assembly.
2. Check and adjust the position of the tension pole. (See page 18.)
3. Check and adjust the video search rewind back tension. (See page 18.)
4. Set the tilt angle of the A/C head. (See page 22.)
5. Rough adjustment of tape drive train.
 - a) Connect the oscilloscope to the test point for PB CHROMA envelope output (TP501). Set the synchronism of the oscilloscope to EXT. The PB CHROMA signal is to be triggered by the head switching pulse (TP502).
 - b) Loosen the setscrew at the lower part of the guide roller, and adjust it with an adjusting screw driver (JIGDRIVERH-4) so that the guide roller turns smoothly. (Do not overloosen the setscrew, which causes insecurity of the guide roller.) (See Figure 1-53.)
 - c) Set the alignment tape (monoscope pattern) on the reel disk, and place the unit in the playback mode. (Place a 500 g. weight on the cassette tape to prevent floating of the cassette tape.)

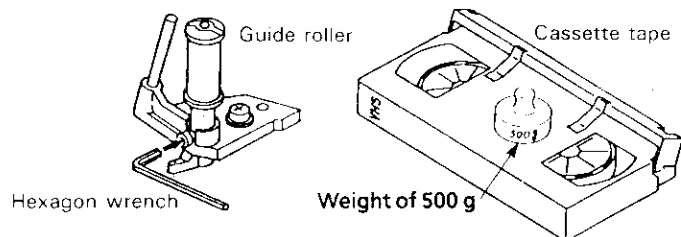
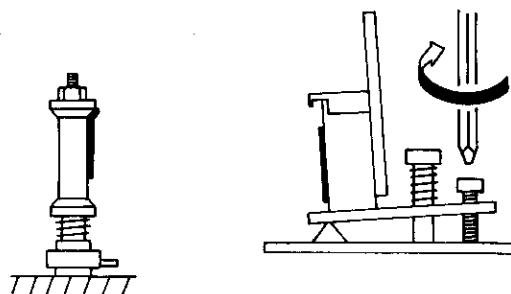


Figure 1-53.

Figure 1-54.

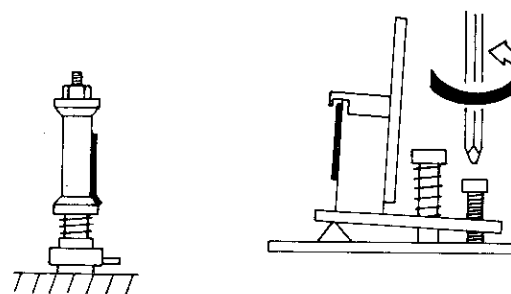
- d) Change the envelope waveform from MAX to MIN, and MIN to MAX by pushing the (+) or (-) tracking button, and check a flat response is obtained on the waveform.
- e) If a flat response cannot be obtained, roughly adjust the guide rollers on the supply side and take-up side using an adjusting screw driver until a flat response can be obtained.
- f) Turn the A/C head tilt adjusting screw with a screwdriver to prevent the tape from wrinkling at the upper and lower flanges of the fixed guide.
 - 1) Wrinkles at the upper flange : Turn the above adjusting screw clockwise, as shown in Fig. 1-55 (a)
 - 2) Wrinkles at the lower flange : Turn the above adjusting screw counterclockwise, as shown in Fig. 1-55 (b)



Wrinkles at upper flange

Clockwise

(a)



Wrinkles at lower flange

Counterclockwise

(b)

Figure 1-55.

Notes:

1. Place the tracking control in the center position, and adjust the X-position adjusting nut so that the PB CHROMA envelope becomes maximum for easier rough adjustment of the tape drive train.
2. In the rough adjustment, pay particular attention to the outlet side.

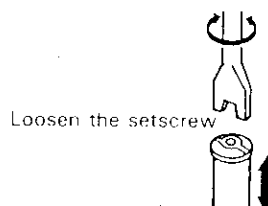


Figure 1-56.

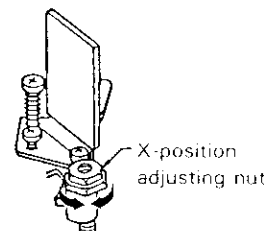


Figure 1-57.

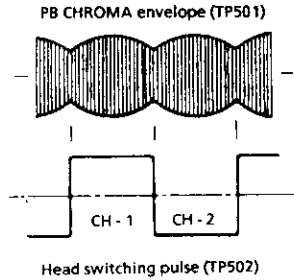


Figure 1-58.

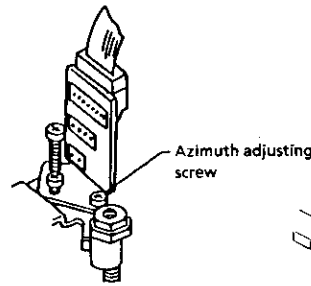


Figure 1-59.

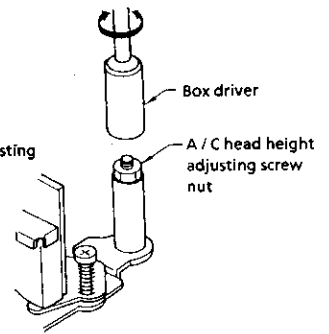


Figure 1-60.

6. Adjustment of A/C head height and azimuth
 - a) Connect an oscilloscope to the audio output terminal.
 - b) Use the alignment tape and play back its audio 6 kHz signal (monoscope pattern for video signal). Adjust the azimuth adjusting screw to obtain the maximum audio output on an oscilloscope. (See Figure 1-59.)
 - c) Use the alignment tape and play back its audio 1 kHz signal (colour bar for video signal) and slowly rotate the A/C head height adjusting nut with the special box driver to obtain the maximum audio output.
 - d) Perform the adjustment in b) again.
 - e) After this adjustment, apply glyptal to the screws and nuts to fix them.

7. Adjustment of tape drive train and X-Position.
 - a) Connect the oscilloscope to the test points (TP501) for PB CHROMA envelope output. Set the synchronism of the oscilloscope to EXT. The PB CHROMA signal is to be triggered by the head switching pulse (TP502).
 - b) Play back the tape drive train alignment tape.
 - c) Push the (+) or (-) button to change the envelope waveform from MAX to MIN, and MIN to MAX. Adjust the guide roller's height on the supply and take-up sides with an adjusting screw driver, to obtain an envelop waveform that is as flat as possible.
 - d) If the tape is above or below the helical lead, the PB CHROMA waveform will take the shape shown in Figure 1-61.
 - e) Adjust for maximum flatness of the envelope as the step 5, e) in page 24.

	When the tape is above the helical lead.		When the tape is below the helical lead.	
	Supply side	Take-up side	Supply side	Take-up side
Adjustment	Supply side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Take-up side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Supply side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The supply side guide roller is then rotated in the clockwise direction to flatten the envelope.	Take-up side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The take-up side guide roller is then rotated in the clockwise direction to flatten the envelope.

Figure 1-61.

VC-A30HM
VC-A40HM

- f) Push the (+) or (-) tracking button to check that a flat response is obtained on the envelope waveform.
 - g) Secure the guide roller by tightening the guide roller setscrew in the unloading mode.
 - h) Play back the tape drive train alignment tape to check that the envelope waveform does not change.
8. Adjustment of A/C head X-position.
- a) Push the (+) and (-) tracking buttons at the same time to the preset mode.
 - b) Rotate the X-position adjusting nut with an adjusting box driver, and adjust the A/C head position for maximum head switching pulse low side envelope.
 - c) Adjust the playback switching point.
 - d) Check the flatness of the envelope waveform and sound by playing back a recorded tape.

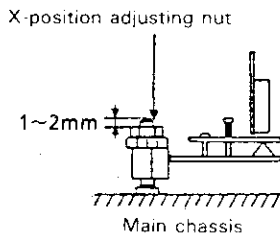


Figure 1-62.

REPLACEMENT OF THE CAPSTAN D.D. (DIRECT DRIVE) MOTOR

- Remove the cassette housing control assembly.
- Removal (Follow the order of indicated numbers.)

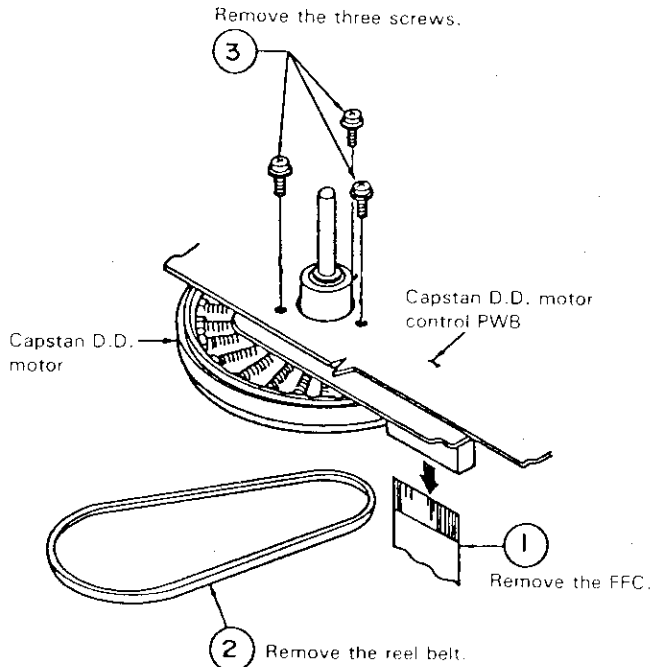


Figure 1-63.

● **Reassembly**

1. Mount the capstan motor on the mechanism chassis making sure not to allow the capstan shaft to hit the mechanism chassis, and attach it with the three screws.
2. Insert the FFC into the capstan D.D. motor control PWB.
3. Attach the reel belt.

Notes :

1. After installing the capstan D.D. motor, be sure to rotate the capstan D.D. motor and check the movement.
2. Check and adjust the servo circuit.

REMOVAL AND REASSEMBLY OF THE LOADING GEAR BLOCK

Notes : The following explanation is based on 4-head models. (The slow brake spring and slow brake lever are not provided on 2-head models.)

1. Remove the cassette housing control assembly.
2. Remove the reel belt.
3. Remove the reel block.

● **Removal**

Notes :

1. Use care not to deform the parts hooked to the slow brake shaft cap, take-up loading gear, and supply loading gear as shown in Figure 1-64.

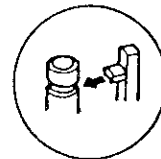


Figure 1-64.

2. In removing the loading-gear, secure the guide roller with a rubber band or the like beforehand for easier reassembly.

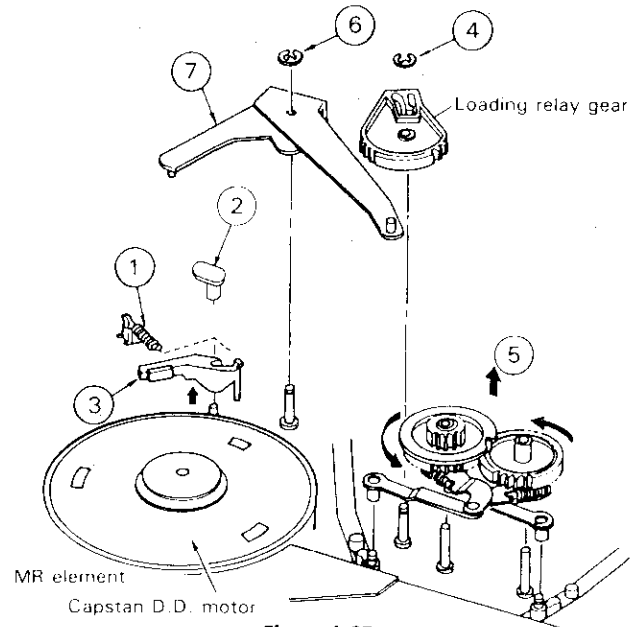


Figure 1-65.

1. Remove the slow brake spring ①.
2. Remove the slow brake shaft cap ②.
3. Remove the slow brake lever ③.
4. Remove the E ring ④.
5. Rotate the take-up loading gear, take-up loading arm assembly, supply loading gear and supply loading arm assembly slightly in the loading direction, and take them ⑤ all out.
6. Remove the E ring ⑥.
7. Remove the relay gear drive lever ⑦.

● **Reassembly**

Reverse the procedure. Be sure to match the tally marks on the gears.

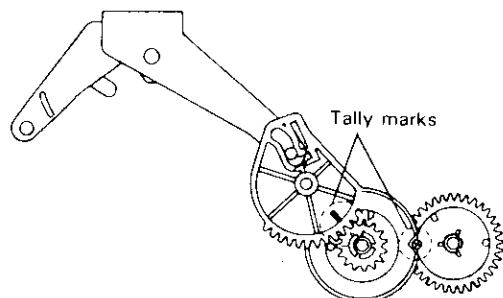


Figure 1-66.

Notes :

1. When reassembling, apply specified grease to the following points; all the gear teeth, all the gear shafts and the cam groove of loading relay gear.
2. Be careful not to deform the supply/take-up loading arms.
3. Be careful to keep clean the slow brake lever felt.
4. Be also careful to keep the outer surface of the capstan D.D. motor free from dust and dirt. (If stained, the MR (Magnet Resistor) element might be damaged.)
5. Take care not to deform the anti-fall hooks of the slow brake lever, slow brake shaft cap and supply/ take-up lading gears more than required.

REMOVAL AND REASSEMBLY OF LOADING BLOCK

● **Removal**

1. Remove the leads ①.
2. Remove the cassette loading belt ②.
3. Unscrew the three screws ③.
4. Pull the loading block upward.

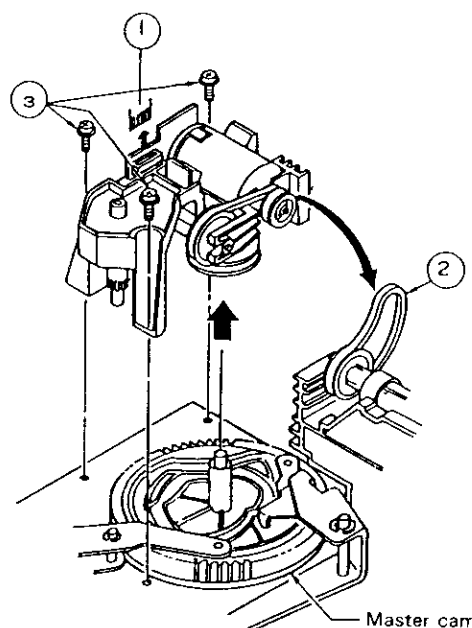


Figure 1-67.

Note :

When using a magnetic screw driver in removal of three screws, do not allow the magnetic driver to hit the A/C head or drums.

● **Reassembly**

1. Turn the master cam all the way counter-clockwise.
2. Match the tally mark on the cam switch with the mating mark. Fit the loading block and the master cam with each other. Tighten up the three screws.

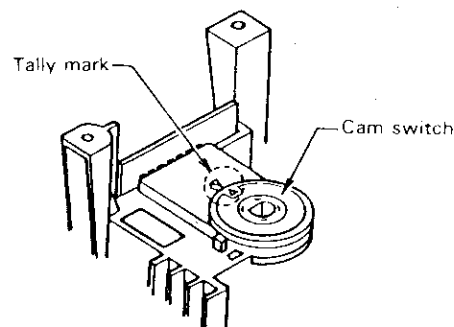


Figure 1-68.

3. Finally connect the leads and apply the cassette loading belt.

Notes:

1. Be careful not to scratch the gear.
2. Be careful not to stain the belt. If dirty, clean it up with the specified cleaning liquid.

REPLACEMENT OF LOADING MOTOR

1. Set the cassette ejected condition by placing the unit in the cassette eject mode.
2. Unplug the power cord.
3. Remove the loading block in accordance with the statements and drawings above.

● **Removal**

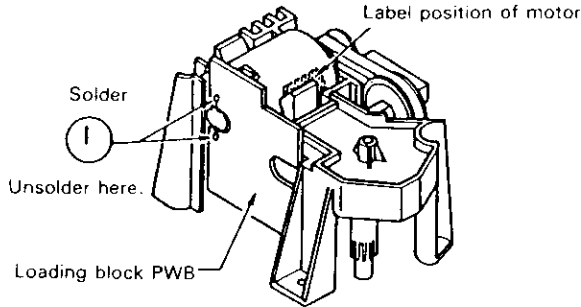
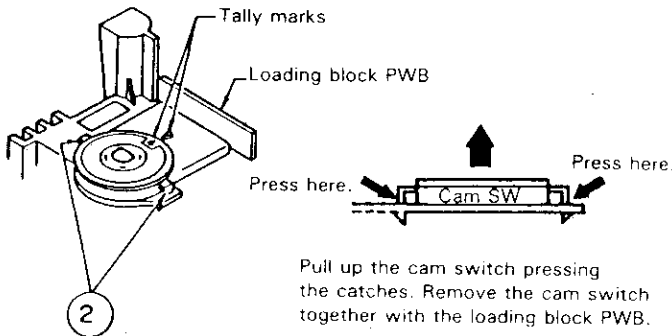


Figure 1-69.

1. Unsolder the leads ① from the loading motor.
2. Unlock the left and right catches ② of the cam switch off the loading block. Take out the cam switch and loading block PWB (See Figure 1-70).



Catches of cam switch

Pull up the cam switch pressing the catches. Remove the cam switch together with the loading block PWB.

Figure 1-70.

3. Take out the loading belt ③.
4. Pry up the back end of the loading motor with a screw driver or the like as in Figure 1-71 and take out the motor.

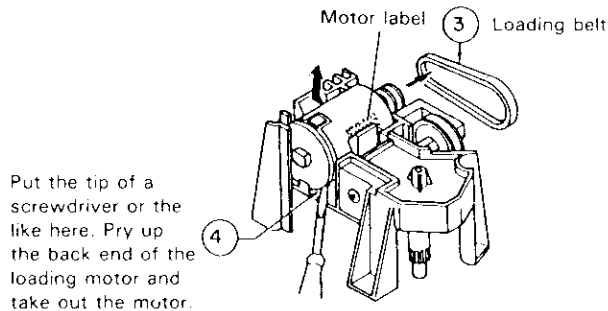


Figure 1-71.

● **Reassembly**

1. Remove the loading motor, and mount a new loading motor as in Figure 1-72.
2. Place the loading motor so that its label is visible as shown in Figure 1-72. Make sure that the screw hole at the motor shaft, protuberance on the loading block, and the motor's back end marked with the arrow are mated with each other.

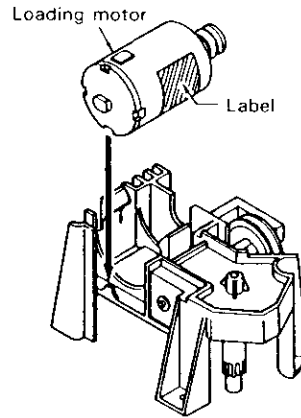
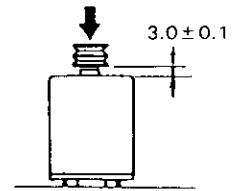


Figure 1-72.



Note:
When press-fitting the loading motor pulley, keep the pressure less than 5 kg, and the gap between the motor and pulley should be 3.0 ± 0.1 mm.

Figure 1-73.

3. Set the lading block PWB and the cam switch in position.
4. Resolder the leads to the loading motor.
5. Finally place the loading block (See page 27).
6. Attach the loading belt.

REPLACEMENT OF MASTER CAM

● **Removal**

1. Remove the E ring ①.
2. Remove the half-loading drive lever ②.
3. Remove the E ring ③.
4. Remove the pinch roller lever ④.
5. Pull out the master cam ⑤ upward.

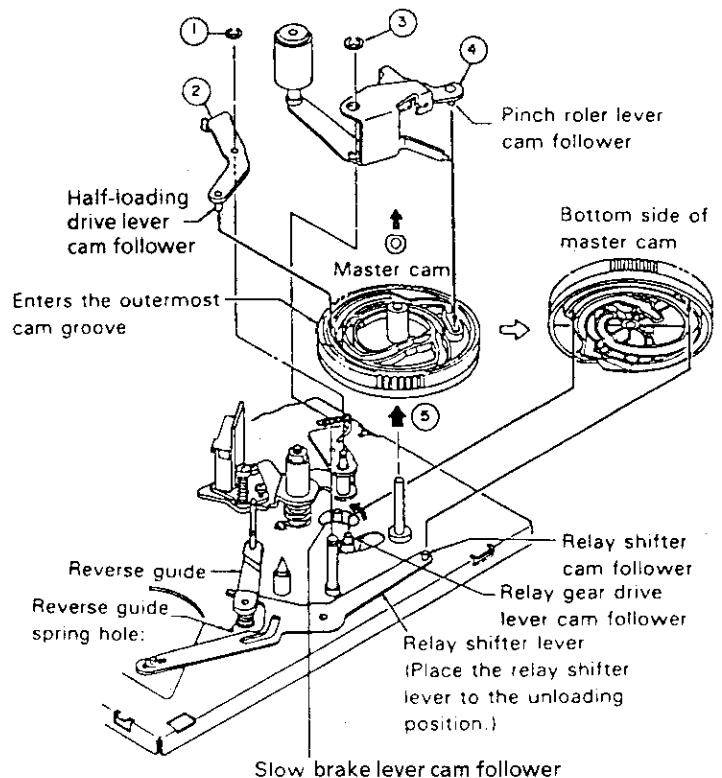


Figure 1-74.

● **Reassembly**

1. Place the relay gear drive lever in the unloading state.
2. Place the relay shifter so that it is in contact with the reverse guide spring hole in the mechanism chassis. Release the slow brake lever with a finger to bring it away from the capstan (in the direction of arrow). Then place the master cam so that the D cut-off part of the master cam faces the direction of arrow.
3. Place the half-loading reciprocating lever's cam follower so that it fits in the master cam's circumferential cam groove (marked with arrow), attach the E ring, then mount the half-loading reciprocating lever.
4. Turn the master cam somewhat clockwise until the pinch roller lever's cam follower goes into the master cam's groove (marked with arrow). Mount the pinch roller level and then attach the E ring.
5. Rotate the master cam by hand to make sure all the four levers (relay gear drive lever, half-loading reciprocating lever, pinch roller lever, and relay shifter lever) are in the cam grooves in place.
6. Mount the loading block (See page 27.)

Notes :

1. Be careful not to scratch the teeth and grooves of the master cam.
2. After installation of the master cam, be sure to rotate the master cam by hand before installing the loading block. If the levers are in wrong position, the master cam and the levers may get damaged when the motor starts.
3. Apply specified grease to the master cam's grooves and teeth.

REPLACEMENT OF UPPER DRUM

Note :

The gap between the lower drum and the upper drum is very accurate, in the order of microns, and care should be paid to their replacement. Even a slight amount of foreign material will affect the accuracy of their reassembly.

● **Replacement (Follow the order of the indicated numbers.)**

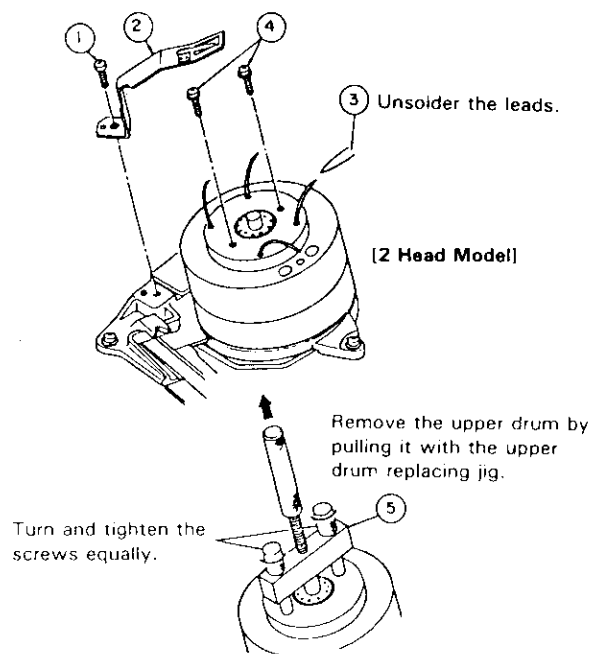


Figure 1-75.

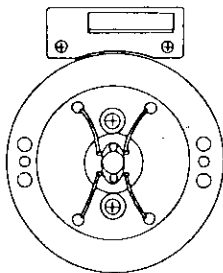
Notes :

1. Avoid touching the drum surface with bare hands.
2. Pull out the upper drum with care so that it may not be tilted, and replace it with the upper drum replacing jig using care not to damage the disk circumference.
3. Do not hit the screws when tightening them.

● Reassembly

Notes :

1. Before setting the drum, check that there are no scratches or dust on the edge of the surface and circumference of the disk.
2. Before setting the drum, check that there are no scratches or dust on the internal surface and edge of the surface of the upper drum.
3. On assembling these parts, insert the upper drum onto the disk with care, so that the upper drum is not tilted.
4. When assembling these parts, do not allow dust or dirt come between the disk and the upper drum.
5. Do not use excessive force when driving in the screws.



[2 Head Model]

Figure 1-76.

1. Set the new drum.
2. Fasten the upper drum in place with the two screws.
3. Solder the leads.
Note: Soldering should be performed quickly and carefully without touching adjacent patterns.
4. After replacement, be sure to check the tape drive train adjustment (see page 24.) and the following electric adjustments.
 - Adjustment of the playback switching point.
 - Checking and adjustment of the X-position
 - Adjustment of SP and LP slow tracking preset. (Only 4 Head model)

REPLACEMENT OF D.D. MOTOR

1. Put the unit in the cassette eject position.
2. Unplug the power cord.

● Removal (Reverse the order in reassembly.)

1. Remove the FFC ①.
2. Remove the two D.D. rotor assembly setscrews ②.
3. Pull out the D.D. rotor ③.
4. Remove the three D.D. stator setscrews ④.
5. Remove the D.D. stator assembly ⑤.

Notes :

1. When removing the D.D. rotor assembly or D.D. stator assembly, use care not to hit the loading relay gear.
2. Secure the D.D. rotor assembly so that the installation positioning holes in the D.D. rotor assembly and lower drum assembly match.
3. Be careful not to damage the upper drum or the video head.
4. Be sure that the hall device and the D.D. stator assembly are not damaged by the D.D. rotor assembly or other parts.
5. After installation, adjust the playback switching point.

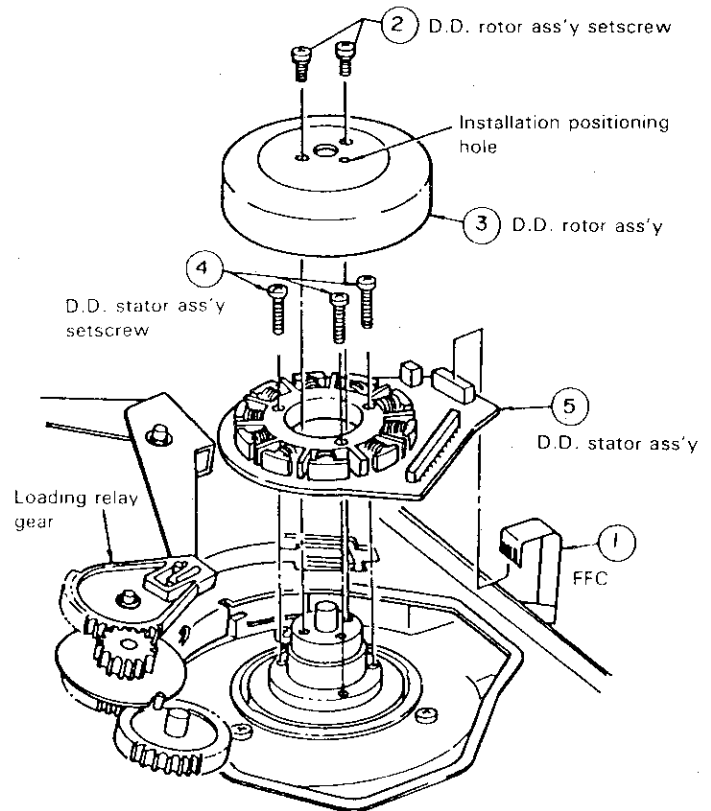


Figure 1-77.

ADJUSTMENT OF THE ELECTRICAL CIRCUITRY

Prior to the adjustment:

In most cases, necessity for electrical circuits will arise from replacement of mechanical parts including the video head. Before starting adjustment of electrical circuits, check that mechanical operation of the equipment is complete (the mechanism are adjusted completely).

If the equipment fails electrically, locate a defect or defects first of all using instruments. Then repair or replace parts and make adjustment by the procedures described below.

When required instruments are not available, do not move controls indiscriminately.

● Instruments

- Colour monitor TV
- Oscilloscope
- Colour bar generator
- Frequency counter
- DC regulated power supply
- Audio generator
- Alignment tape
- Blank video tape(VHS)
- VTVM
- Connector (QCNW-6443GEZZ)

ADJUSTMENT OF MAIN (SERVO, SYSTEM CONTROL, TUNER)/ OSD CIRCUITS

● Test points layout

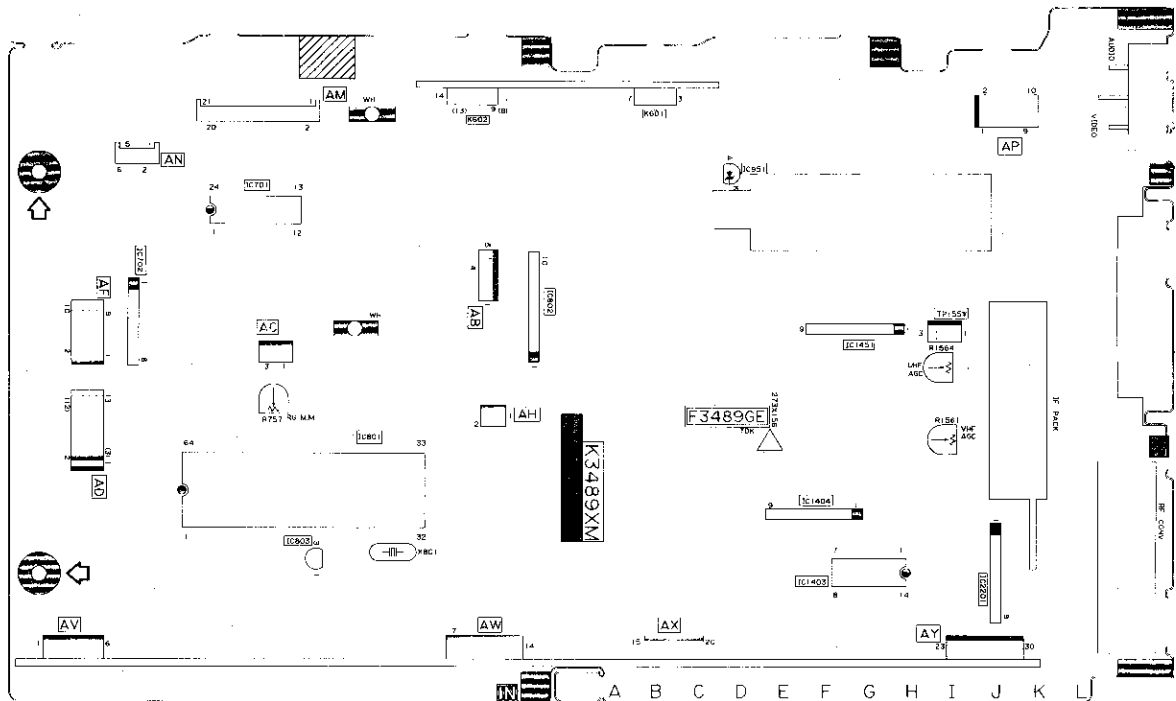


Figure 2-1(a). MAIN PWB

■ ADJUSTMENT OF SERVO CIRCUIT

Adjustment of playback switching point

Measuring instrument	Oscilloscope
Mode	Playback (Tracking button at center)
Tape used	Alignment tape (VROCPSV)
Test point	CH-1; TP502 CH-2; Video output terminal (CH-1 trigger slope switch at (+), Internal trigger at CH-1 side)
Adjusting point	R757 (phase generator MM control)
Specification	6.5 ± 0.5H

1. Insert the alignment tape (VROCPSV) and put the unit in playback mode.
2. Press both tracking control button at the same time to set the tracking in center.
3. Adjust R757 (phase generator MM control) so that the edge of the head switching pulse is 6.5H (Line) ahead of the vertical sync as shown in Figure 2-2.

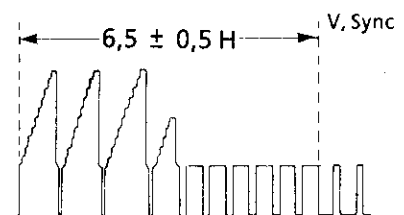


Figure 2-2.

Adjustment of slow tracking preset

Measuring instrument	Monitor TV
Mode	Recording and playback on self-recording tape.
Input signal	Commercial broadcast or video signal (external input selector switch)
Test Point	Monitor screen
Adjusting point	Tracking control button (+), (-)
Specification	No noise bar on the monitor TV screen

1. Receive a commercial broadcast signal, or feed the video signal to the video input terminal (with the external input selector switch).
2. Press the slow button and play back the recorded portion in the slow mode.
3. Make D5003 (cathode side) in Timer Unit and pin ② of IC5001 short-circuited and check that the fluorescent display tube light up.
4. Make D5003 and pin ② of IC5001 circuited and check that the fluorescent display tube indicates "CASS".
5. Observing the monitor screen, adjust the tracking control button until the noise bar disappears form the screen.

ADJUSTMENT OF Y/C CIRCUIT

● Test point layout

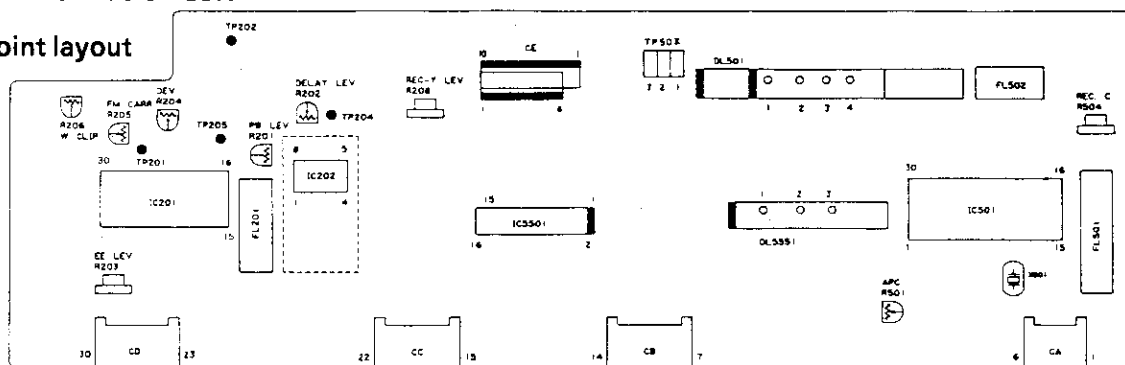


Figure 2-3. Y/C PWB

■ **ADJUSTMENT OF Y/C RECORDING CIRCUIT**

Adjustment of EE level

Measuring instrument	Oscilloscope
Mode	Recording
Input signal	Standard colour bar (stair-case waveform)
Test point	Pin ⑨ of IC201
Adjusting point	R203 (EE level control)
Specification	2.0 ± 0.1 Vp-p

6. Press the playback button to play back the tape. Then push the pause/still button to reproduce the recording in the still mode. Now make sure there is no noise on the screen. (Repeat this step three times or so.)

Adjustment of still picture vertical sync (FV)

Measuring instrument	Monitor TV
Mode	Still picture playback
Tape used	Self-recording tape
Test point	Monitor screen
Adjusting point	Tracking control button (+), (-)
Specification	No vertical jitter

1. Play back the tape self-recorded.
2. Press the pause/still button to reproduce the recording in the still mode.
3. Observing the monitor screen, adjust the tracking control button until the vertical jitter disappears form the screen.
4. Then play the tape self-recorded and make sure there is no vertical jitter on the monitor screen.

1. Set the unit in record mode.
2. Feed the colour bar signal to the video input terminal. Observe the voltage of the pin ⑨ of IC201 on the oscilloscope screen, adjust R203 (EE level control) to obtain the value indicated in Figure 2-4.

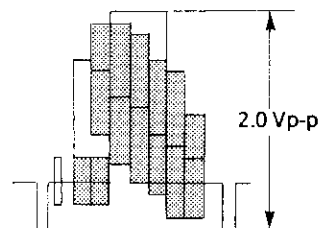


Figure 2-4.

Adjustment of FM 3.8 MHz and 4.8 MHz)

Measuring instrument	Frequency counter	Oscilloscope
Mode	Recording	Self-recording / playback
Input signal	External input (no signal)	Standard colour bar (stair-case waveform)
Test point	TP301 (Sig) TP302 (GND)	Video Output terminal
Adjusting point	R205 (FM carrier control)	R204 (deviation control)
Specification	3.8MHz \pm 50kHz	1.0 \pm 0.04 Vp-p

Note. 1:

Carry out this adjustment only when IC201 has been replaced or when the carrier setting (3.8 MHz) or the deviation (4.8 MHz) is found apparently out of specification.

Make this adjustment after the EE level has been completely adjusted.

Note. 2:

The video output terminal should be terminated with a 75-ohm impedance.

1. First make sure that the EE video signal level is at the specified level.
2. Place the unit in the record mode and get it ready for external input.

Note:

Do not connect anything to the external input terminal.

3. Hook up the frequency counter to TP301 and TP302. Adjust R205 (FM carrier control) so that the counter reading be 3.8 MHz.

Note:

Make sure the white clip control is not now applied to the waveform.

4. Feed the colour bar signal (stair-case waveform) and make self-recording and playback.
5. Observe the video output terminal voltage (across the terminal resistor) on the oscilloscope screen. If the playback video signal level is above 1.0 Vp-p, turn R204 (deviation control) clockwise. If below 1.0 Vp-p, turn the control counter-clockwise. Now make self-recording and playback again.
6. Repeat the above step 5 to finally get the playback video signal level at 1.0 \pm 0.04 Vp-p, as shown in Figure 2-5.

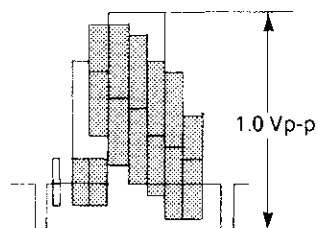


Figure 2-5.

Adjustment of white clip

Measuring instrument	Oscilloscope
Mode	Recording
Input signal	Standard colour bar (stair-case waveform)
Test point	TP201
Adjusting point	R206 (white clip control)
Specification	80 \pm 4%

1. Place the unit to the record mode.
2. Feed the colour bar signal to the video input terminal.
3. Turn R205 clockwise to maximum position.
4. Observing the output at TP201, adjust R206 (white clip control) so that the white peak overshoot be 80 \pm 4%.
5. Make sure that the dark peak overshoot is 50 \pm 10%.

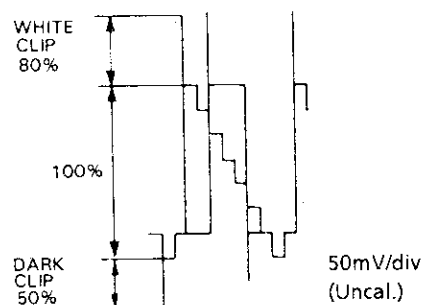


Figure 2-6.

Adjustment of recording current

Measuring instrument	Oscilloscope	
Mode	Recording	
Input signal	Standard colour bar (stair-case waveform)	
Test point	TP301 (GND at TP302) External trigger (video output terminal)	
Adjusting point	R208 (recording Y control)	R504 (recording chroma control)
Specification	Sync tip level 140 \pm 10mVp-p	Red level 24 \pm 2mVp-p

Note:

TP301 and TP302 are located on the head amp PWB.

**VC-A30HM
VC-A40HM**

1. Place the unit to the record mode.
2. Feed the colour bar (stair-case waveform) signal to the video input terminal.
3. Observing the waveform on the oscilloscope screen (external trigger at video output terminal), take the following steps.
 - a) Connect the oscilloscope's GND and SIG leads to TP302 and TP301, respectively.
(For convenient connection of the oscilloscope, use QCNW-6443GEZZ.)
 - b) Turn R208 (recording Y control) to minimum.
 - c) Adjust R504 (recording chroma control) so that the red level be $24 \pm 2\text{mVp-p}$ as shown in Figure 2-7.
4. Adjust R208 (recording Y control) so that the sync tip be $140 \pm 10\text{mVp-p}$ as shown in Figure 2-8.

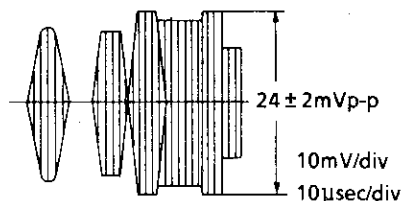


Figure 2-7.

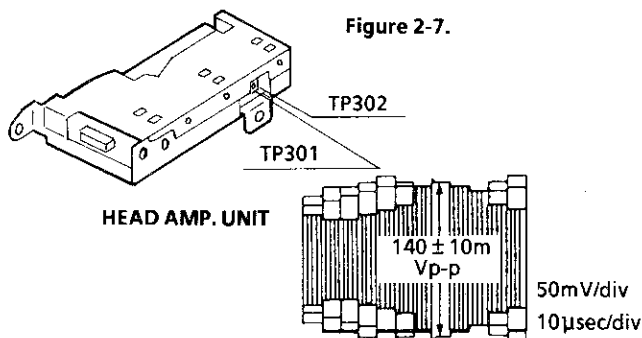


Figure.2-8.

■ ADJUSTMENT OF THE Y/C PLAYBACK CIRCUIT

Adjustment of playback video signal level

Measuring instrument	Oscilloscope
Mode	Playback
Tape used	Alignment tape (VROCPSV) (stair-case waveform)
Test point	Pin ⑨ of IC201
Adjusting point	R201 (playback level control)
Specification	$2.0 \pm 0.1\text{Vp-p}$

1. Insert the alignment tape (stair-case waveform) and place the unit to the playback mode.
2. Hook up the oscilloscope to pin ⑨ of IC201. Adjust R201 (playback level control) so that the on-screen waveform be $2.0 \pm 0.1\text{Vp-p}$ as shown in Figure 2-9.

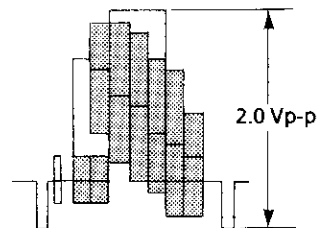


Figure 2-9.

Adjustment of delay level

Measuring instrument	Dual-beam oscilloscope
Mode	Playback
Tape used	Alignment tape (VROCPSV) (Stair-case waveform)
Test point	CH-1; TP204 CH-2; TP205
Adjusting point	R202 (delay level control)
Specification	CH-2 level = CH-1 level

1. Insert the alignment tape and play it.
2. Adjust R202 (delay level control) so that the levels for CH-1 and CH-2 are the same as shown in Figure 2-10.

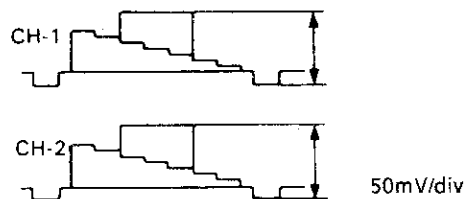


Figure 2-10.

Adjustment of the APC

Measuring instrument	Frequency counter
Mode	Playback
Tape used	Alignment tape (VROCPSV) (Stair-case waveform)
Test point	Pin ⑪ of connector CB
Adjusting point	R501 (APC control)
Specification	$4.433619\text{MHz} \pm 50\text{Hz}$

1. Insert the alignment tape and place the unit to the playback mode.
2. Connect the frequency counter to pin ⑪ of CB connector. Adjust R501 (APC control) so that the counter reading be $4.433619\text{MHz} \pm 50\text{Hz}$.

■ ADJUSTMENT OF AUDIO CIRCUIT

● Test point layout

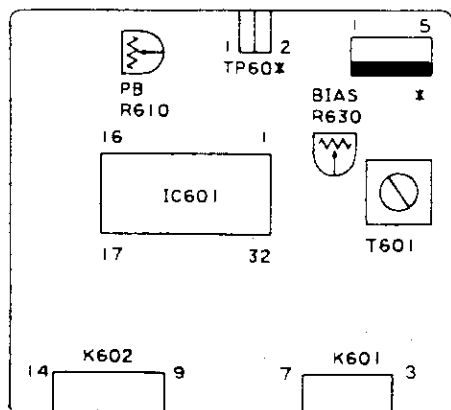


Figure 2-11. AUDIO PWB

1. Place the unit to the record mode.
2. Hook up the oscilloscope to both ends of the full-erase head.
3. Make sure the erase voltage is over 40 Vp-p.
4. Be sure that the oscillation frequency is $70 \pm 5\text{kHz}$.

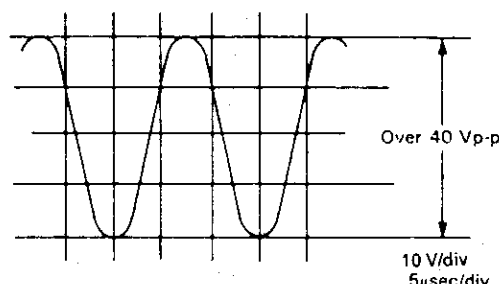


Figure 2-12.

Adjustment of playback level

Measuring instrument	VTVM
Mode	Playback
Input signal	Alignment tape (VROCP5V) (1-kHz level control signal)
Test point	Audio output signal
Adjusting point	R610 (playback level control)
Specification	$-9 \pm 1\text{ dBs}$

1. Play back the alignment tape (1-kHz level control signal).
2. Hook up the VTVM to the audio output terminal.
3. Adjust R610 (playback level control) so that the output level be $-9 \pm 1\text{ dBs}$.

Checking of erase voltage and oscillation frequency

Measuring instrument	Oscilloscope
Mode	Recording
Input signal	_____
Test point	Both ends of the full-erase head
Adjusting point	_____
Specification	Erase voltage; Over 40 Vp-p Oscillation frequency; $70 \pm 5\text{kHz}$

Adjustment of bias current

Measuring instrument	VTVM
Mode	Recording
Input signal	_____
Test point	TP601 (SIG), TP602 (GND)
Adjusting point	R630 (bias current control)
Specification	$260 \pm 10\mu\text{A}$

1. Place the unit to the record mode.
2. Connect the VTVM to TP601 (SIG) and TP602 (GND).
3. Adjust R630 (bias current control) so that the bias current be $260 \pm 10\mu\text{A}$ ($2.6 \pm 0.1\text{mV}$).

Checking of recording level

Measuring instrument	VTVM
Mode	Self-recording/playback
Input signal	1 kHz / -3.8 dBs
Test point	Audio output terminal
Adjusting point	_____
Specification	$-3.8 \pm 3\text{ dBs}$

1. Feed 1 kHz, -3.8 dBs signal to the audio input terminal. Make self-recording and playback of the signal.
2. Make sure the output at the audio output terminal is $-3.8 \pm 3\text{ dBs}$.
3. If out of spec, readjust the playback level and the bias current.

■ ADJUSTMENT OF THE IF CIRCUIT

Adjustment of the RF AGC

Measuring instrument	Oscilloscope
Mode	EE
Input signal	Colour bar signal
Test point	TP1551 (GND) TP1552 (Video Output)
Adjusting point	VR001 (AGC control)

1. Receive the colour bar signal (input field strength: 80 dB μ).
2. Observe the video output terminal waveform on the oscilloscope. Adjust VR001 (AGC control) in the IF pack until the noise disappears from the oscilloscope screen and the waveform nearly comes into sync.

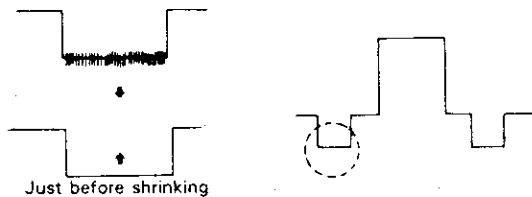


Figure 2-13.

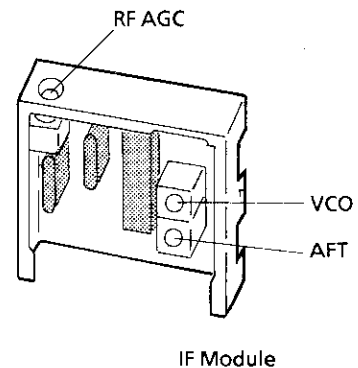
Adjustment of the AFT

Measuring instrument	Oscilloscope
Mode	EE
Input signal	PIF frequency uniwave Colour bar signal (70 dB μ)
Test point	TP1551 (GND) TP1552 (Video Output)
Adjusting point	T002 (AFT coil)
Specification	_____

1. Receive the colour bar signal (input field strength: 70 dB μ).
2. Using the signal generator, feed the PIF frequency (*) signal (sinewave) to the tuner IF output terminal.
3. Set the tuning switch to the VHF or UHF position. Keep the tuning button (+) or (-) depressed until the beating on the oscilloscope screen be minimum.
4. Set the tuning switch on the normal position. Adjust the T002 (AFT coil) so that beating on the oscilloscope screen be minimum.

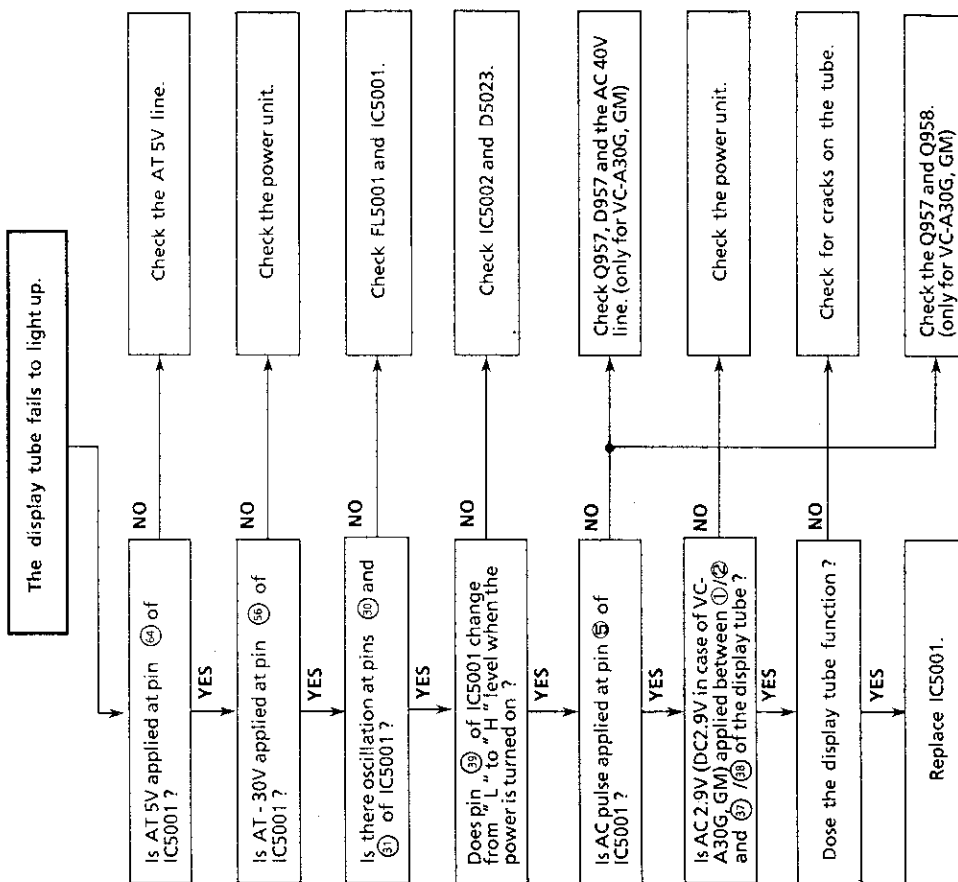
*PIF Frequency

Version	Frequency (MHz)
S, N, NZ, E, B, LM, SV, SM, QM	38.9MHz
X	36.875MHz
H, HM, W, K	39.5MHz
D	38.0MHz



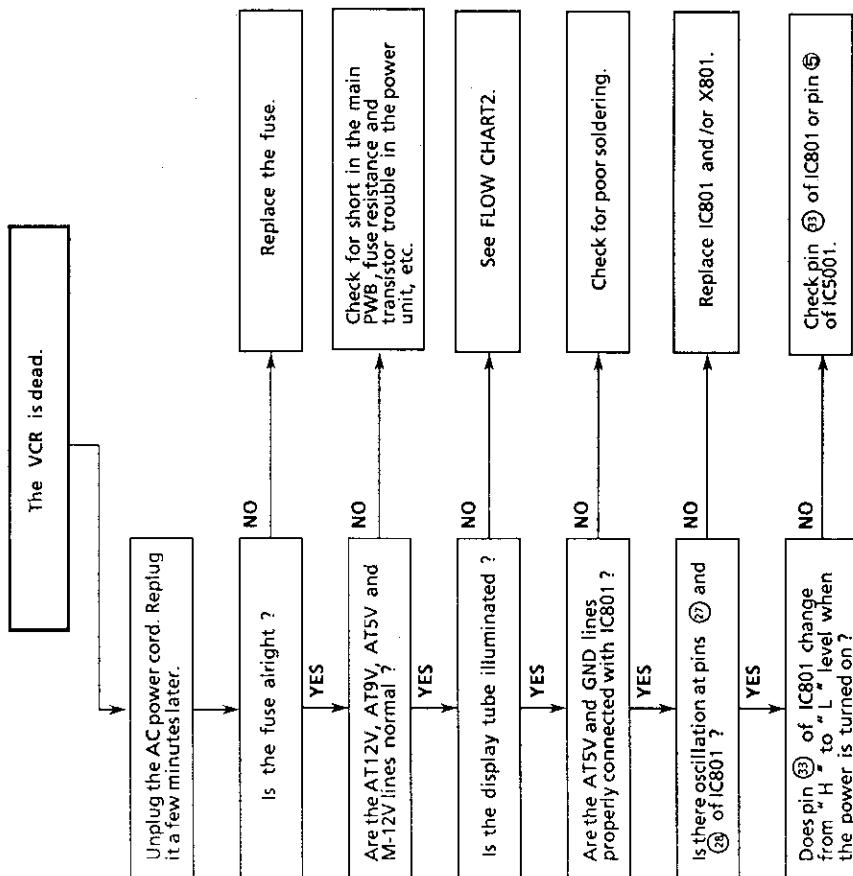
FLOW CHART NO. 2

TIMER (1) TROUBLESHOOTING

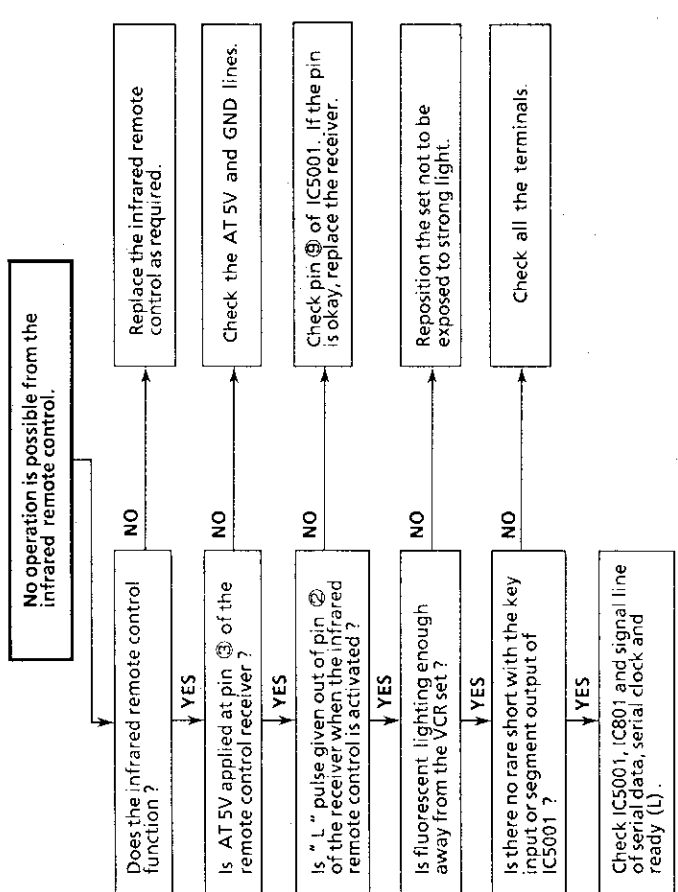
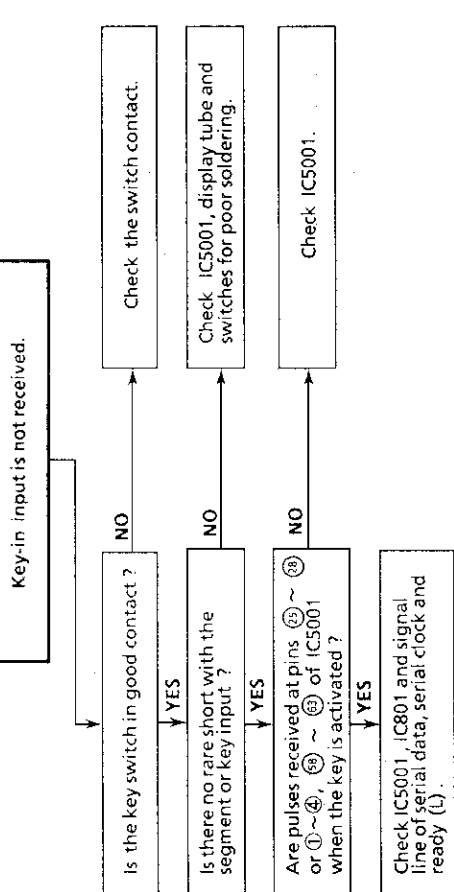
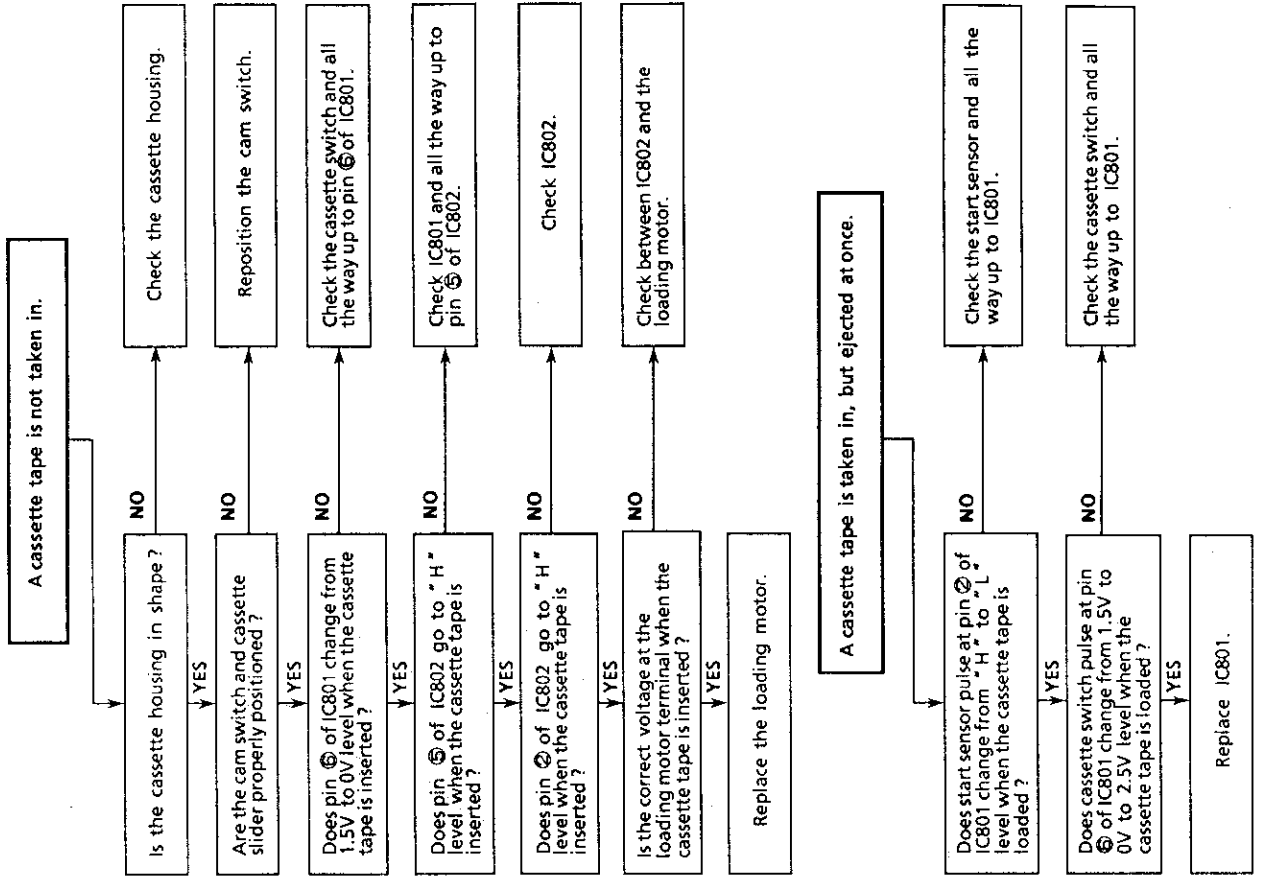


FLOW CHART NO. 1

POWER TROUBLESHOOTING

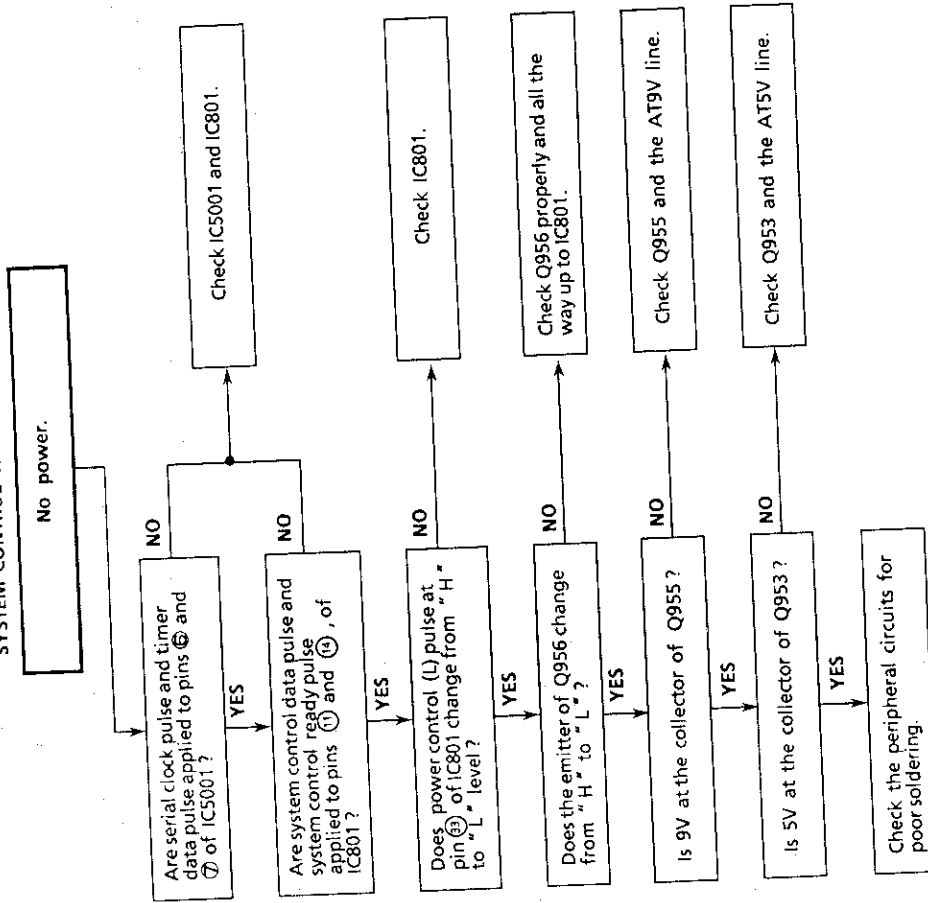


CASSETTE CONTROL TROUBLESHOOTING



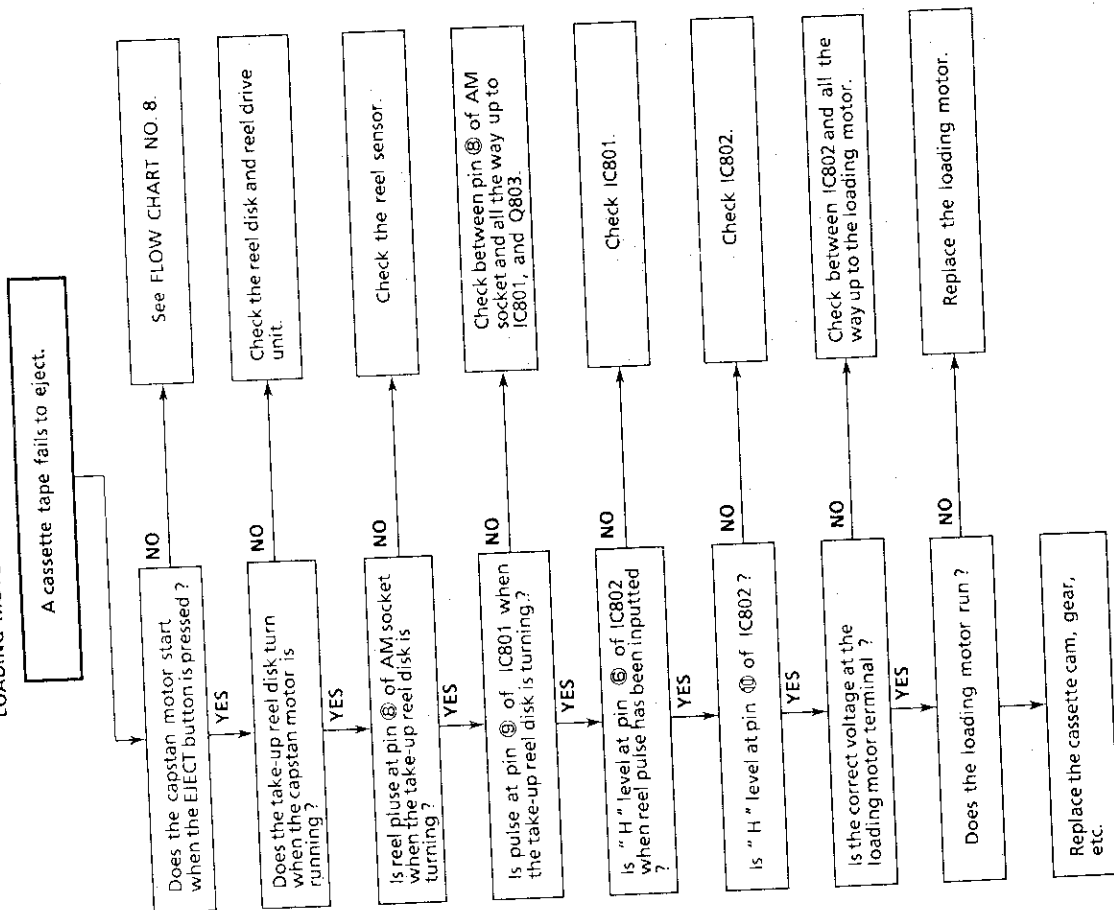
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SYSTEM CONTROL TROUBLESHOOTING



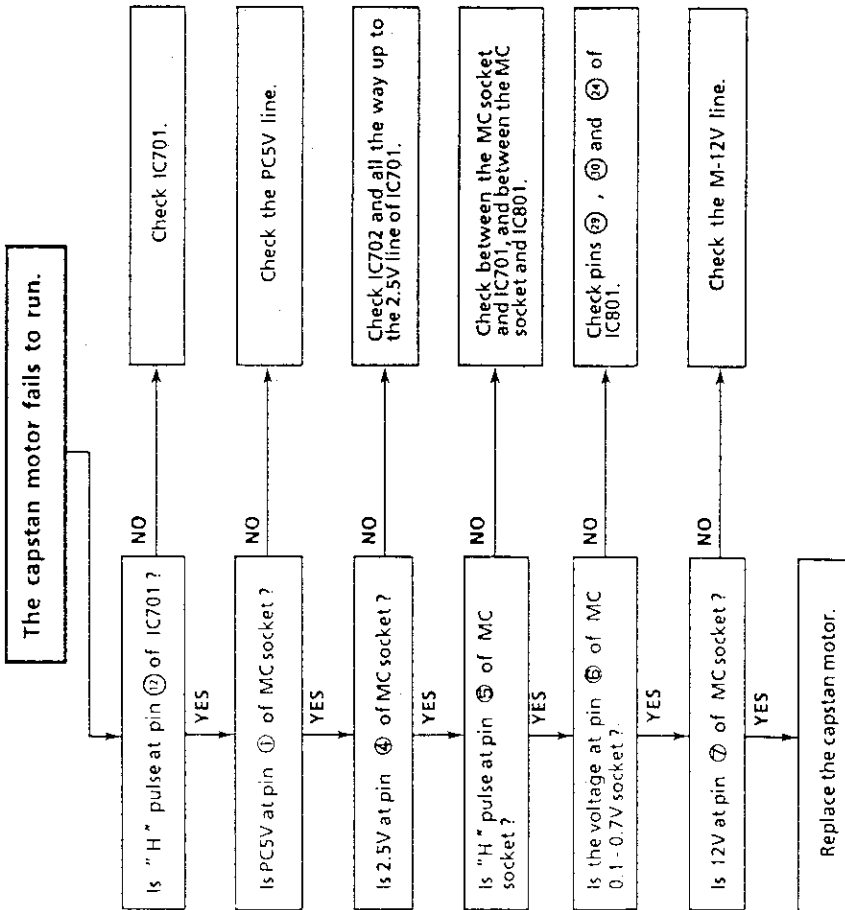
FLOW CHART NO. 6

LOADING MOTOR AND EJECT TROUBLESHOOTING



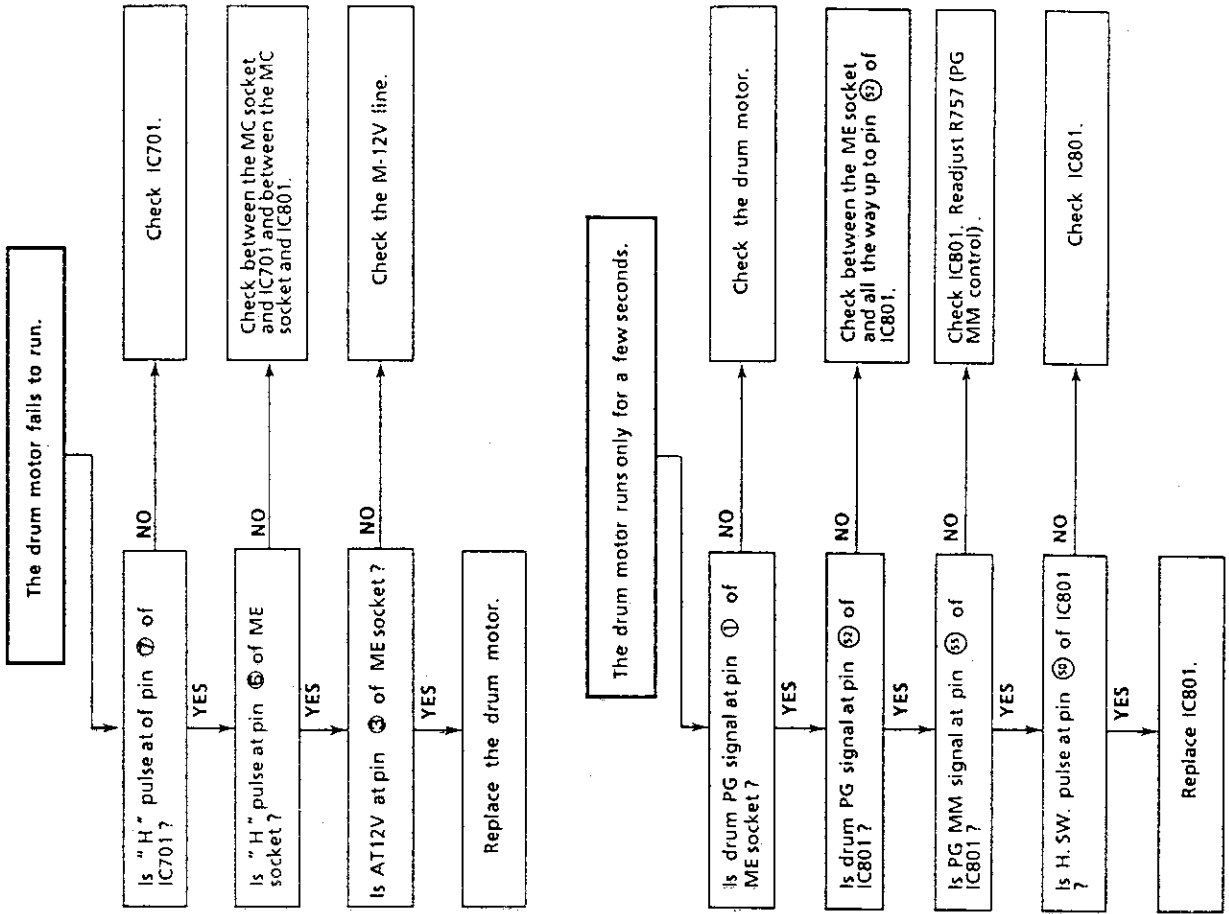
CAPSTAN MOTOR TROUBLESHOOTING

FLOW CHART NO. 8

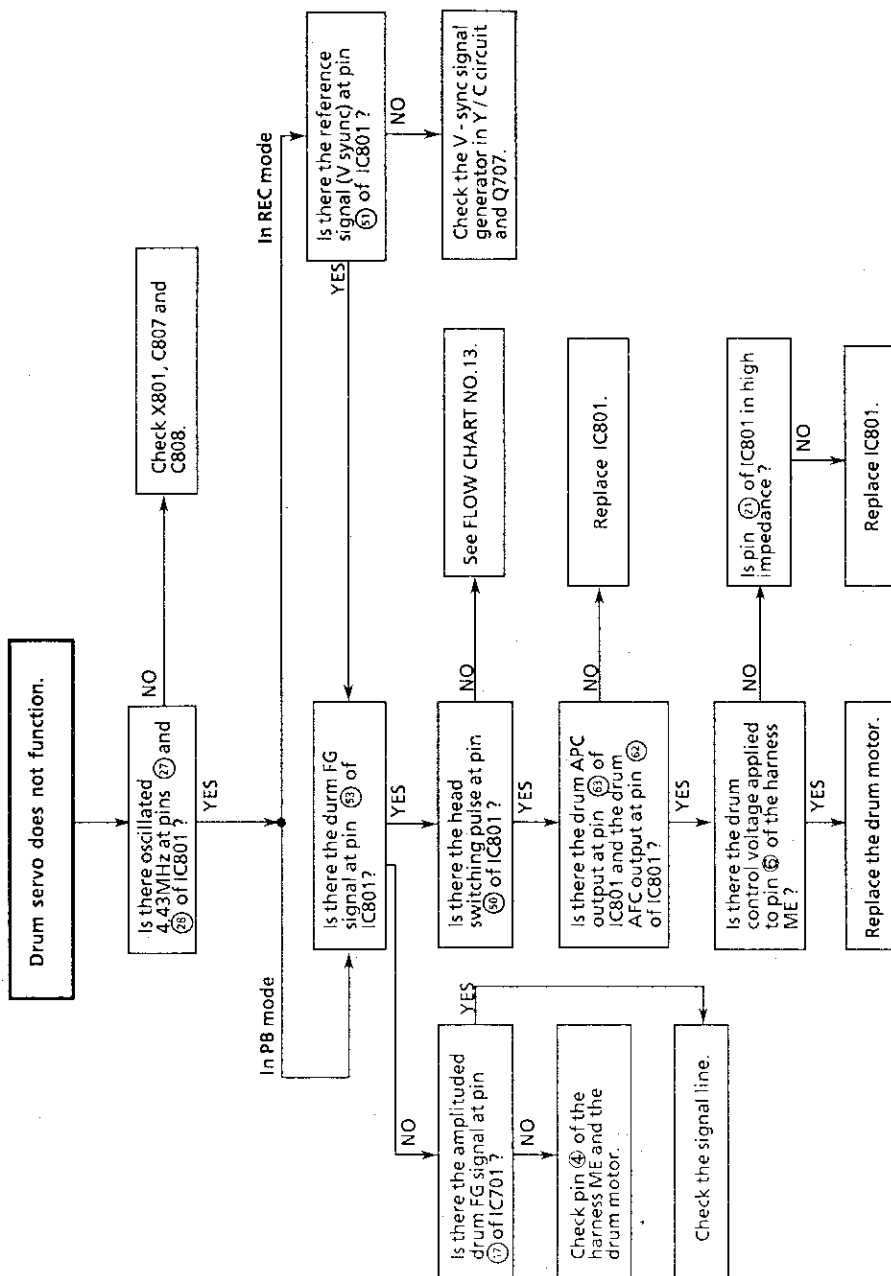


DRUM MOTOR TROUBLESHOOTING

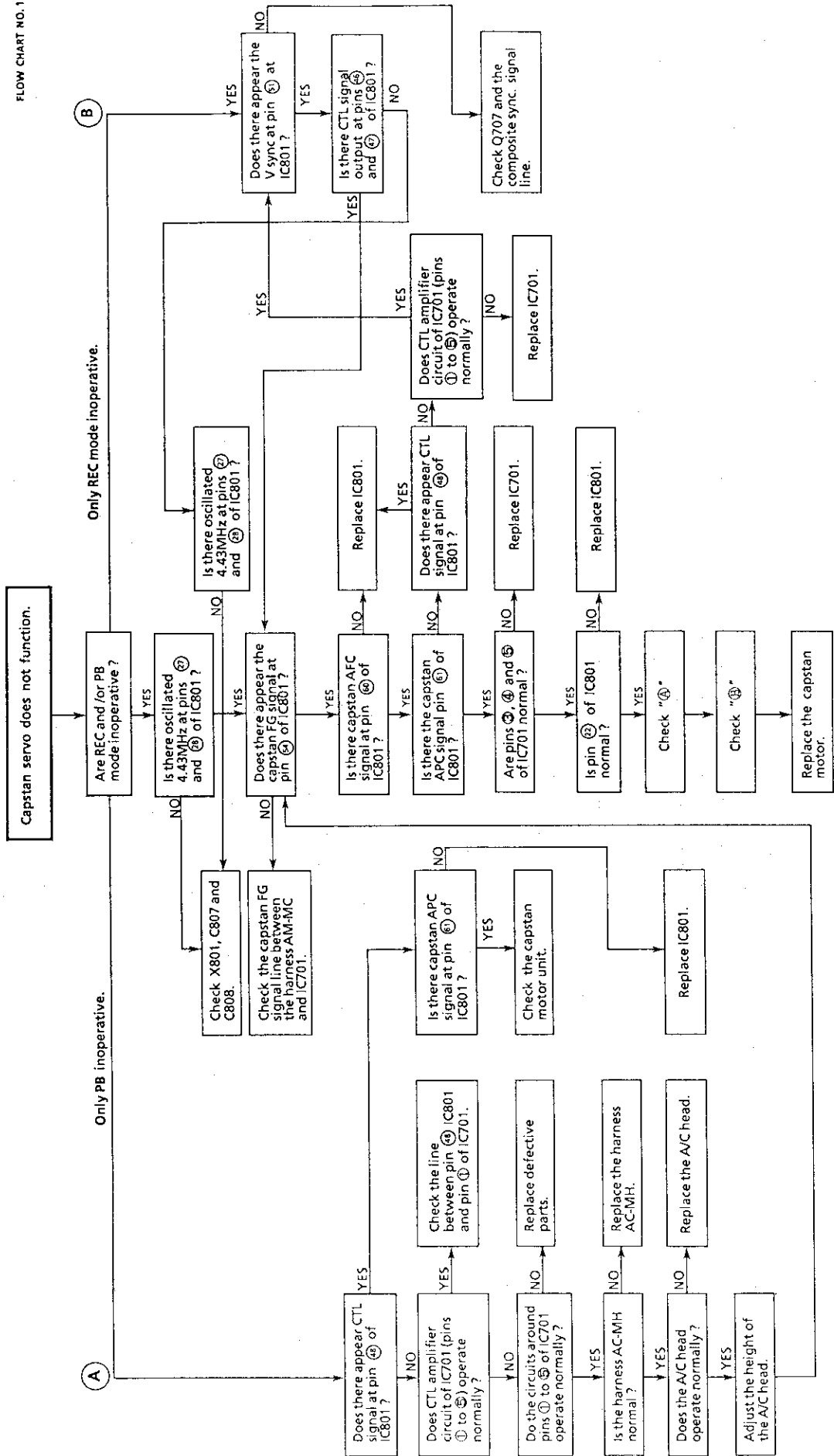
FLOW CHART NO. 9



DRUM SERVO TROUBLESHOOTING

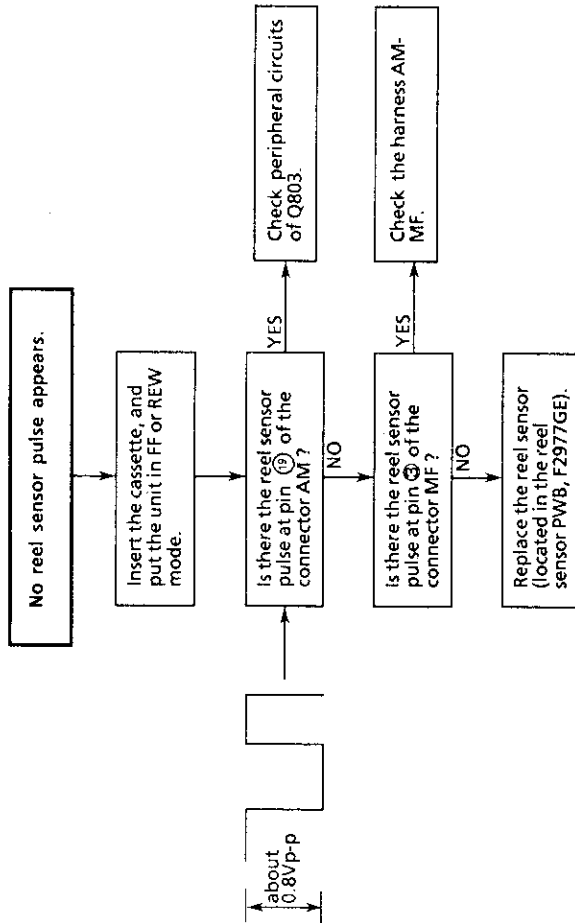


CAPSTAN SERVO TROUBLESHOOTING



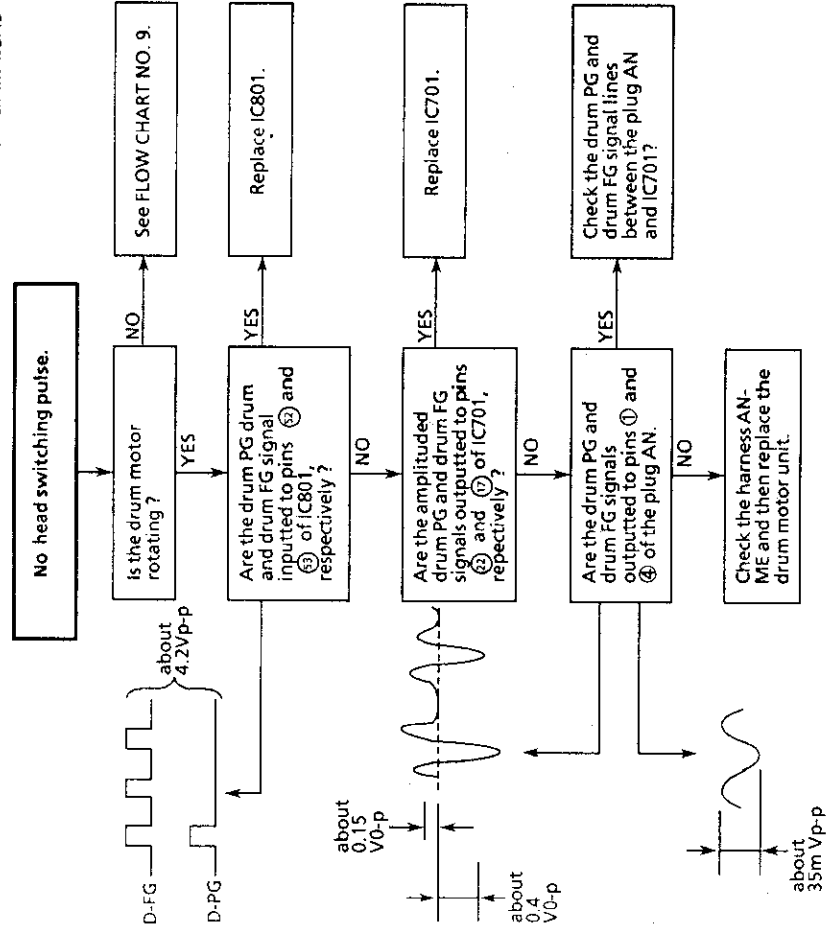
TAKE-UP REEL PULSE GENERATOR TROUBLESHOOTING

FLOW CHART NO. 12



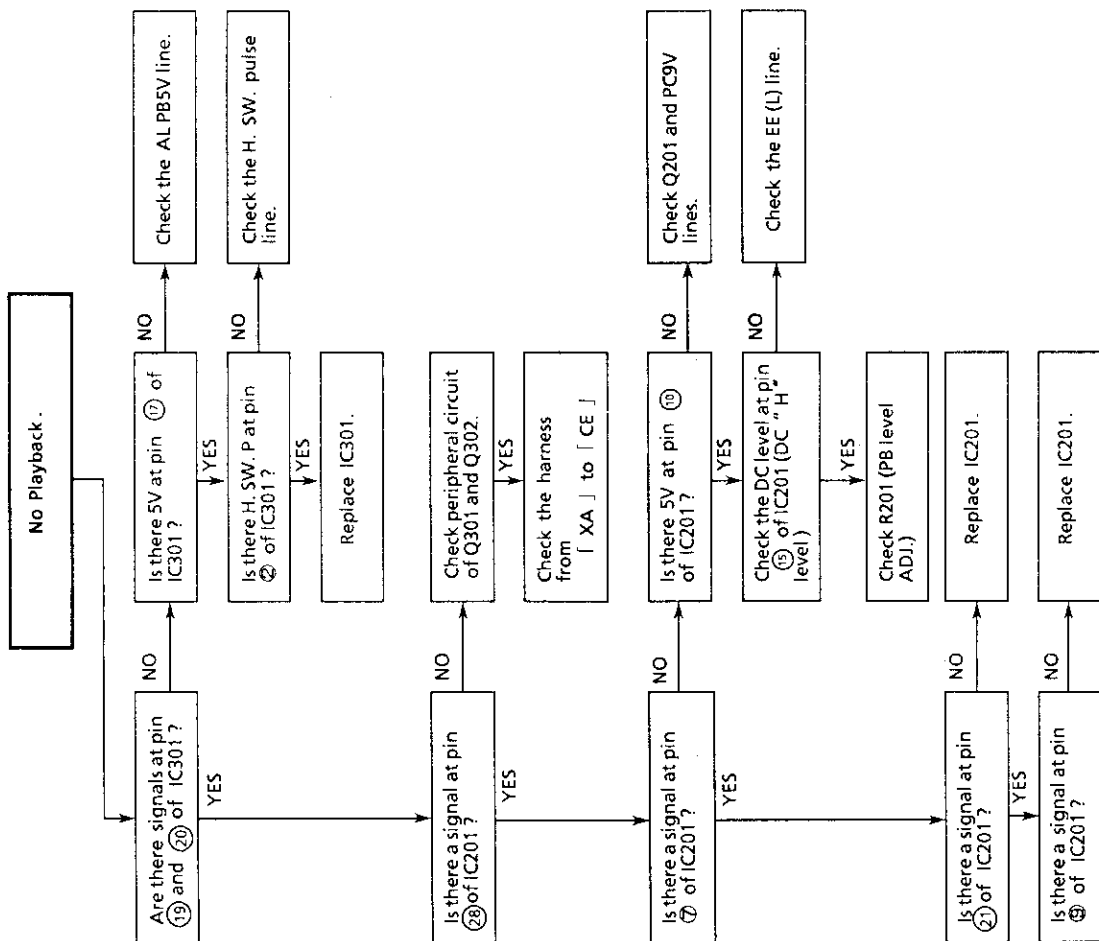
HEAD SWITCHING PULSE TROUBLESHOOTING

FLOW CHART NO. 13



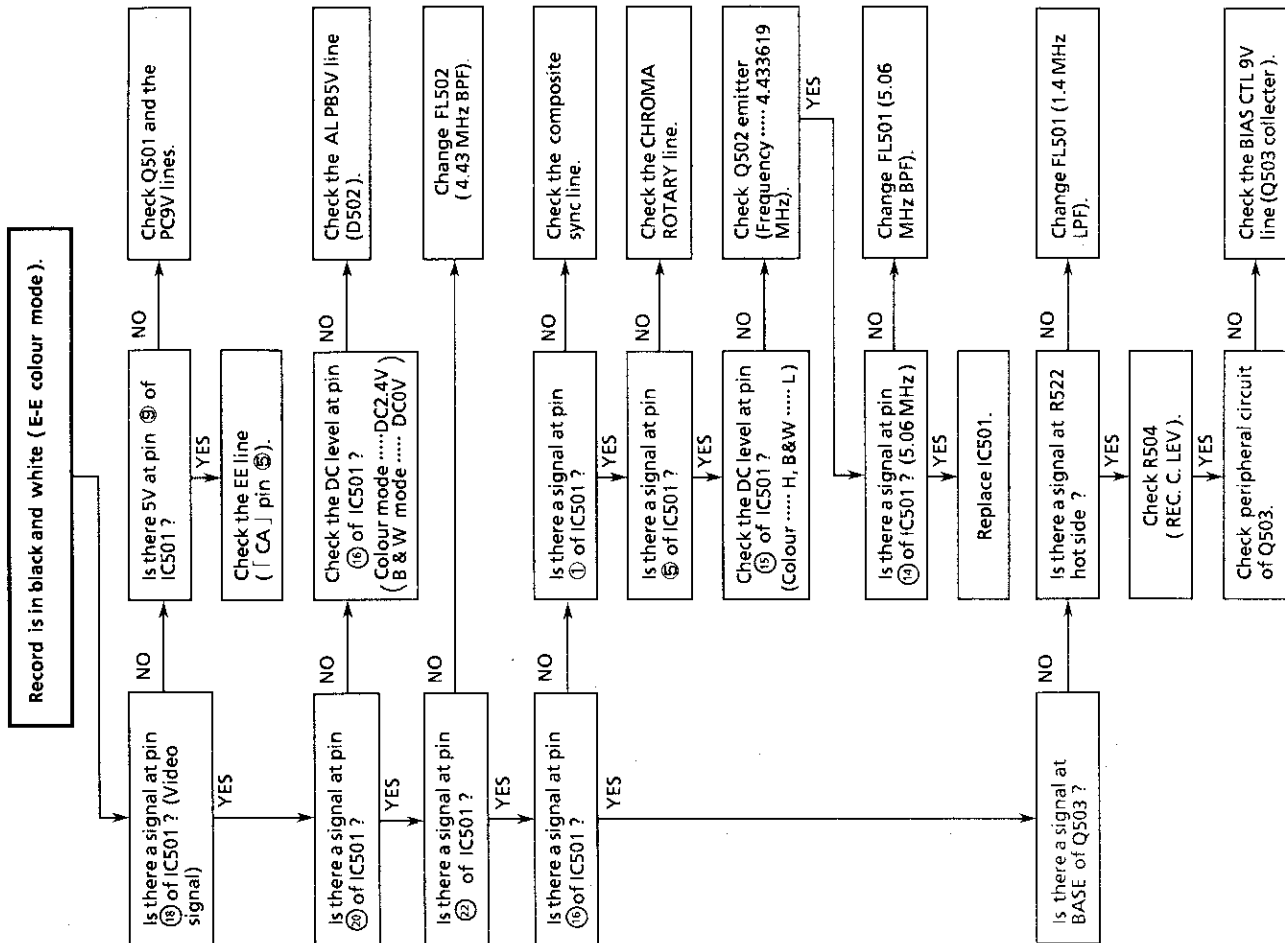
PLAYBACK MODE (LUMINANCE) TROUBLESHOOTING

FLOW CHART NO. 14



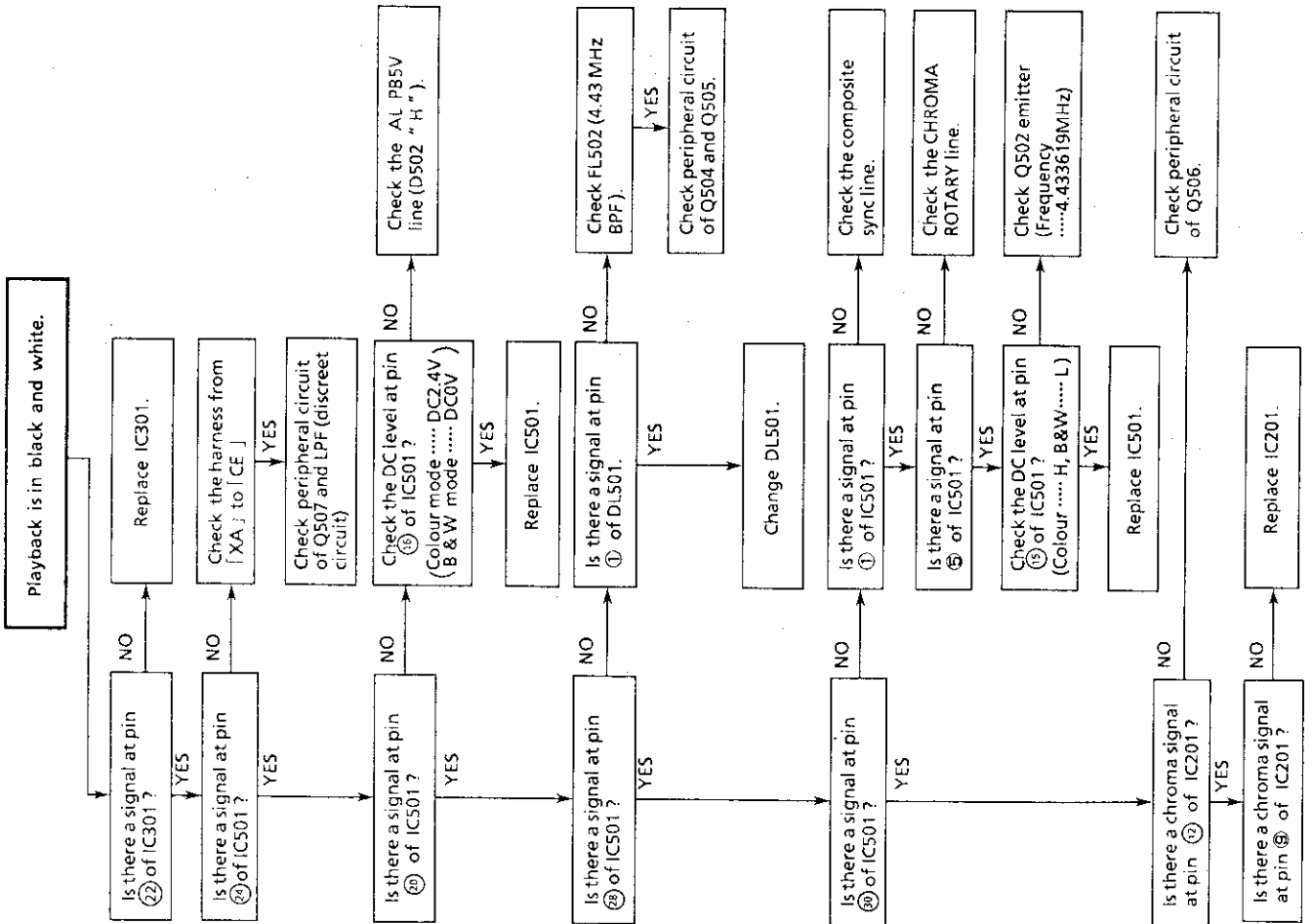
RECORDING MODE (CHROMA) TROUBLESHOOTING

FLOW CHART NO. 15



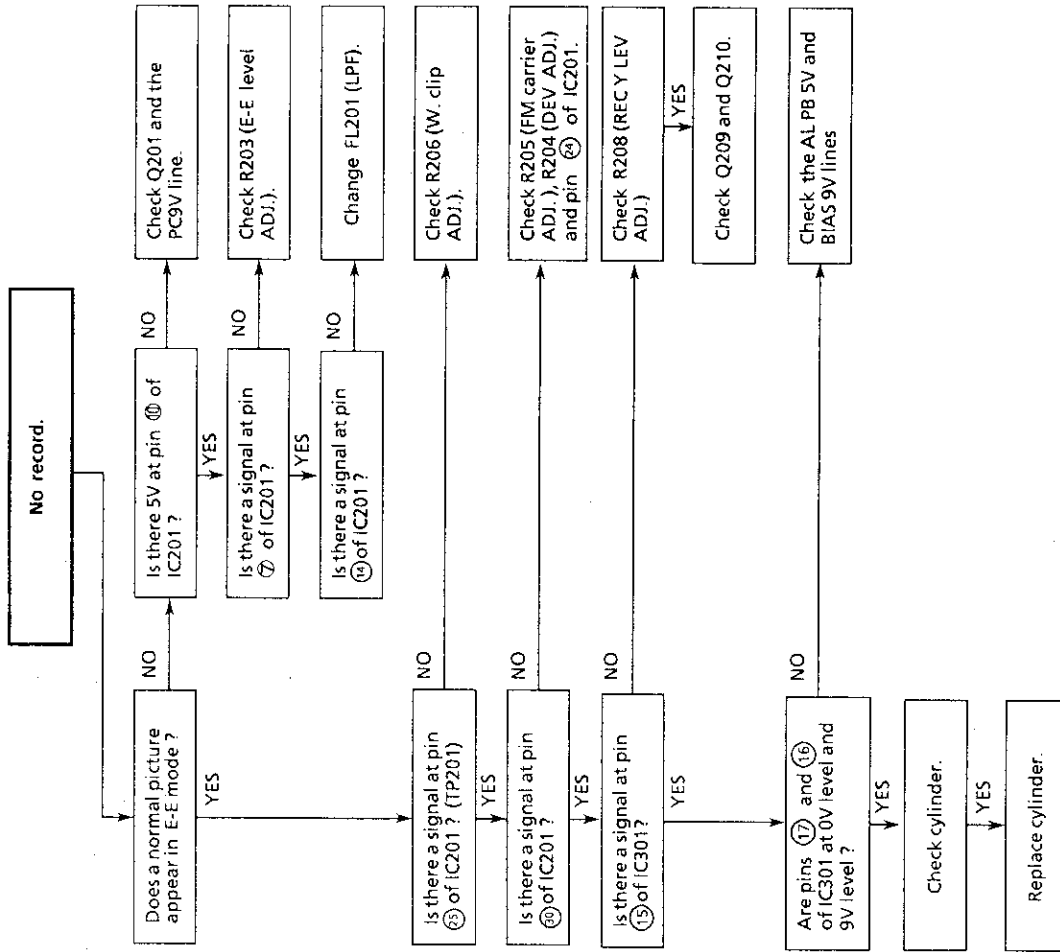
PLAYBACK MODE (CHROMA) TROUBLESHOOTING

FLOW CHART NO. 16



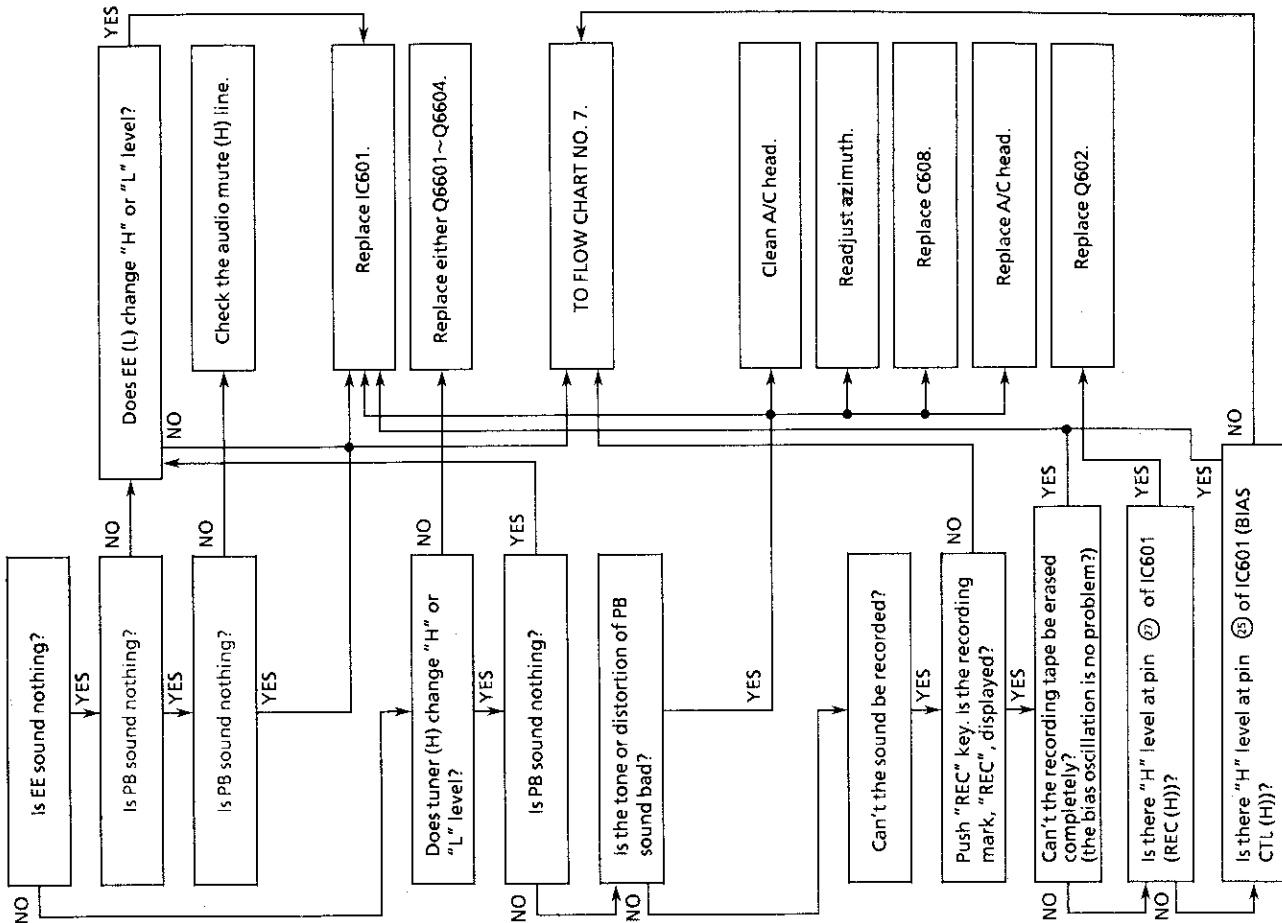
RECORDING MODE (LUMINANCE) TROUBLESHOOTING

FLOW CHART NO. 17



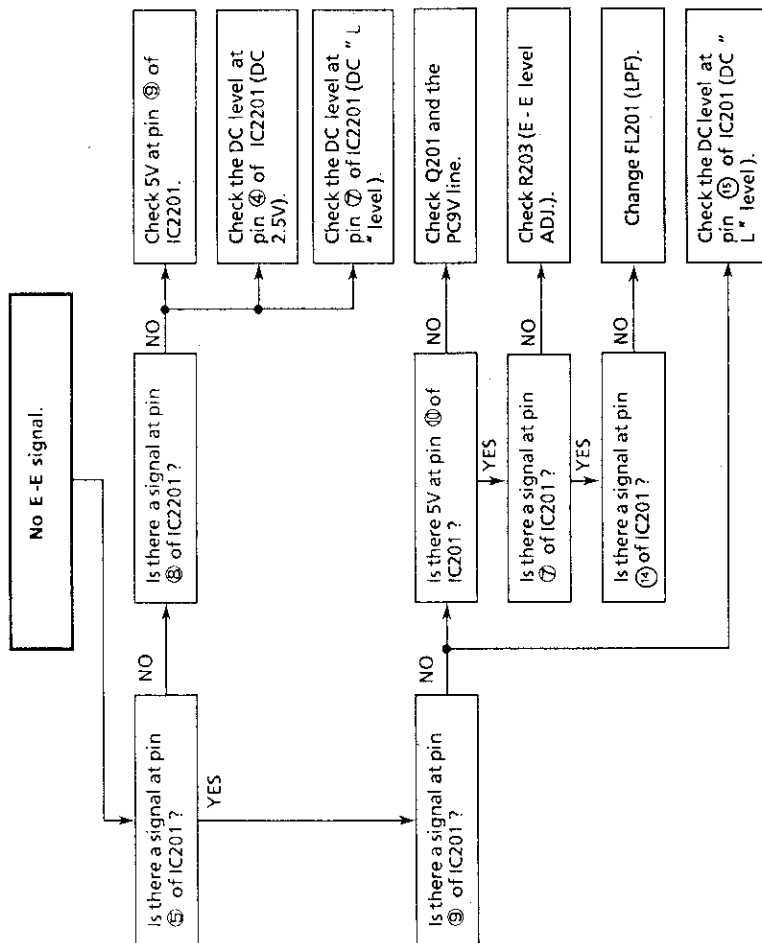
FLOW CHART NO. 19

SOUND TROUBLESHOOTING



FLOW CHART NO. 18

E - E MODE TROUBLESHOOTING



SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
BE SURE TO USE GENUINE PARTS FOR SECURING THE SAFETY AND RELIABILITY OF THE SET. PARTS MARKED WITH "Δ" AND PARTS SHADED (IN BLACK) ARE ESPECIALLY IMPORTANT FOR MAINTAINING THE SAFETY AND PROTECTING ABILITY OF THE SET.
BE SURE TO REPLACE THEM WITH PARTS OF SPECIFIED PART NUMBER.

SAFETY NOTES:

1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.
2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

NOTES:

1. The unit of resistance "ohm" is omitted (k = 1000 ohm, M = 1 Meg ohm).
2. All resistors are 1/8 watt, unless otherwise noted.
3. The unit of capacitance "F" is omitted ($\mu = \mu F$, p = $\mu\mu F$).
4. The values in parentheses are the ones in the PB mode; the values without parentheses are the ones in the REC mode.

VOLTAGE MEASUREMENT CONDITIONS:

1. DC voltages are measured between points indicated and chassis ground by VTVM, with AC240V/50Hz supplied to unit and all controls are set to normal viewing picture unless otherwise noted.
2. Voltages are measured with 10000 μV B & W or colour signal.

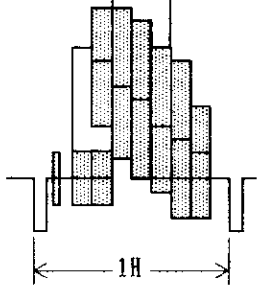
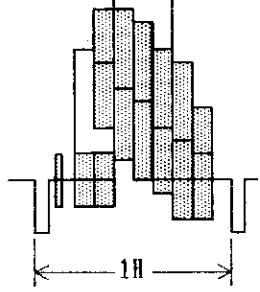
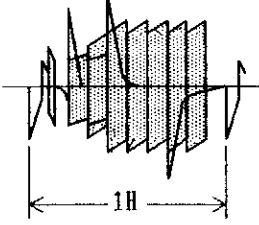
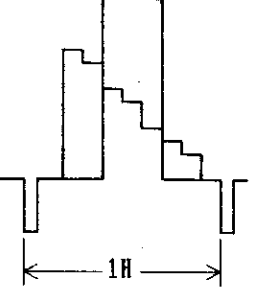
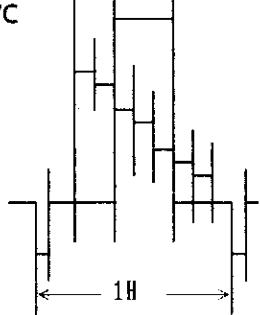
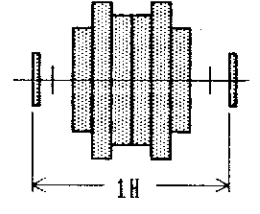
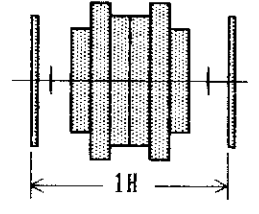
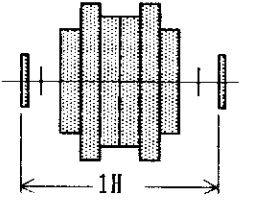
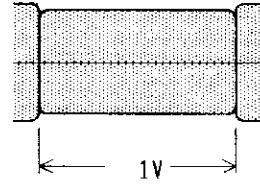
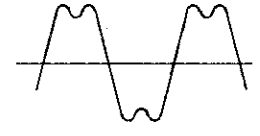
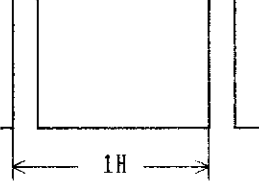
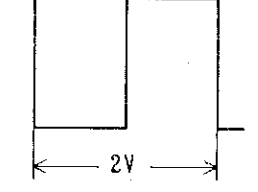
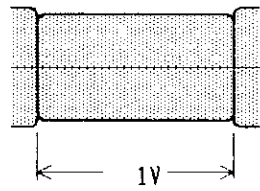
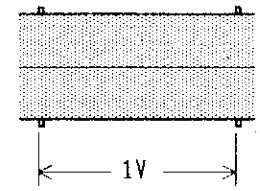
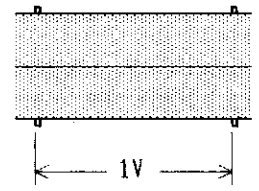
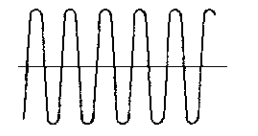
WAVEFORM MEASUREMENT CONDITIONS:

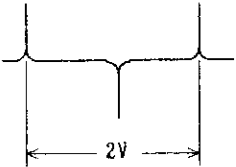
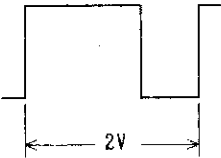
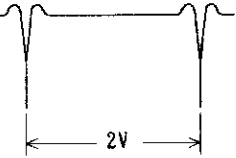
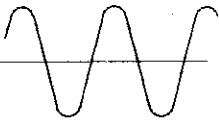
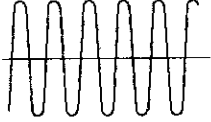
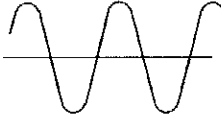
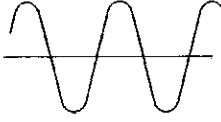
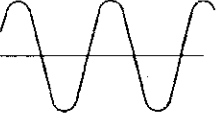
10000 μV 87.5 percent modulated colour bar signal is fed into tuner:

CAUTION:


























This circuit diagram is original one. Therefore there may be a slight difference from yours.

WAVE FORMS

<p>Y/C</p>  <p>V: 1.0Vp-p IC201 PIN5 REC/EE</p>	<p>Y/C</p>  <p>V: 2.0Vp-p IC201 PIN9 REC/PB</p>	<p>Y/C</p>  <p>V: 1.4Vp-p IC501 PIN18 REC/EE</p>	<p>Y/C</p>  <p>V: 1.0Vp-p IC201 PIN21 PB</p>
<p>Y/C</p>  <p>V: 300mVp-p TP201 REC/EE</p>	<p>Y/C</p>  <p>V: 180mVp-p IC501 PIN22 REC/EE</p>	<p>Y/C</p>  <p>V: 140mVp-p Q503 EMITTER REC</p>	<p>Y/C</p>  <p>V: 700mVp-p IC501 PIN30 PB</p>
<p>Y/C</p>  <p>V: 450mVp-p IC201 PIN28 PB</p>	<p>Y/C</p>  <p>H: 4.433619MHz V: 1.2Vp-p CB CONNECTOR PIN11</p>	<p>Y/C</p>  <p>V: 4.8Vp-p IC201 PIN1 COMPOSITE SYNC.</p>	<p>H/A</p>  <p>V: 4.8Vp-p HEAD SWITCHING PULSE IC301 PIN2</p>
<p>H/A</p>  <p>V: 200mVp-p IC301 PIN22 PB</p>	<p>H/A</p>  <p>V: 4.2Vp-p IC301 PIN8 REC</p>	<p>Y/C</p>  <p>V: 110mVp-p CE CONNECTOR PIN1 REC</p>	<p>SERVO</p>  <p>H: 750Hz (SP) V: 150mVp-p AM CONNECTOR PIN9 PB</p>

<p>SERVO</p>  <p>V: 2.6Vp-p (SP MODE) IC701 PIN3 PB</p>	<p>SERVO</p>  <p>V: 4.2Vp-p IC701 PIN1 PB</p>	<p>SERVO</p>  <p>V: 40mVp-p AN CONNECTOR PIN1 PB</p>	<p>SERVO</p>  <p>H: 600Hz V: 2.7Vp-p IC701 PIN17 PB</p>
<p>AUDIO</p>  <p>H: 70 ± 5 KHz V: 7.5mVp-p TP601(+), TP602(-) REC</p>	<p>AUDIO</p>  <p>H: 1KHz V: 33mVp-p K602 PIN13 REC/PB (RCA CONNECTOR)</p>	<p>AUDIO</p>  <p>H: 1KHz V: 54mVp-p K601 PIN14 REC/PB (21PIN CONNECTOR)</p>	<p>AUDIO</p>  <p>H: 1KHz V: 1.6mVp-p MH CONNECTOR PIN1 PB</p>

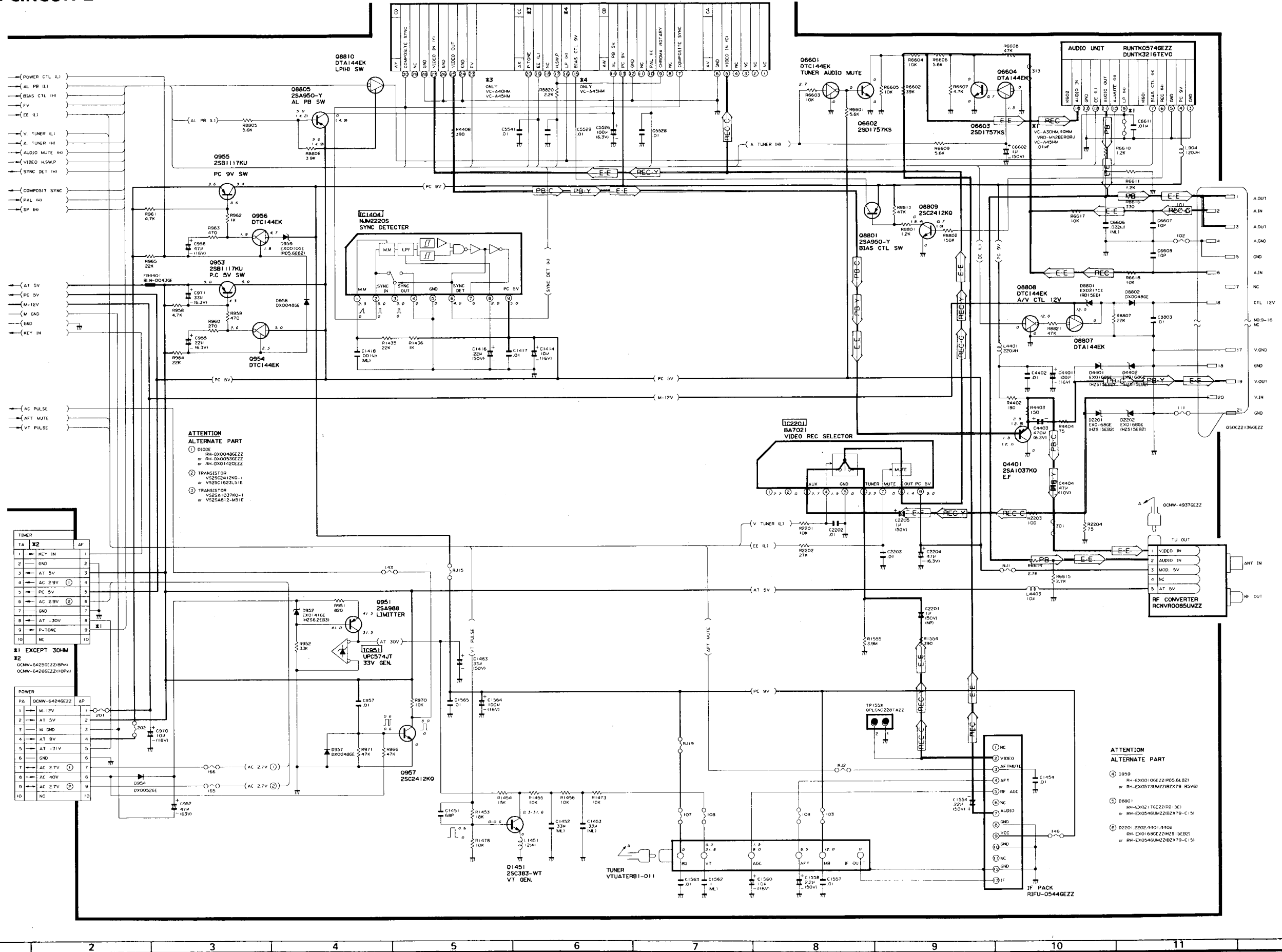
SIGNAL FLOW SYMBOLS AT A GLANCE

MAIN (1) CIRCUIT	
 Drum Error Voltage	 Capstan Error Voltage
 Drum Frequency Comparison Signal	 Capstan Frequency Comparison Signal
 Drum Phase Comparison Signal	 Playback Control Comparison Signal
MAIN (2) CIRCUIT	
 Recording Luminance Signal	 Audio Playback Signal
 Playback Luminance Signal	 Audio Recording Signal
 Recording Chrominance Signal	 E-E Signal (Video/Audio)
 Playback Chrominance Signal	
Y/C CIRCUIT	
 Playback Luminance Signal	 Recording Luminance Signal
 Playback Chrominance Signal	 Recording Chrominance Signal
 E-E Signal (Video/Audio)	
HEAD AMP CIRCUIT	
 Playback Luminance Signal	 Recording Luminance Signal
 Playback Chrominance Signal	 Recording Chrominance Signal
AUDIO CIRCUIT	
 Audio Playback Signal	 E-E Signal (Audio)
 Audio Recording Signal	

VC-A30HM
VC-A40HM

VC-A30HM
VC-A40HM

MAIN CIRCUIT 2



TUNER		
TA	TA #2	AF
1	KEY IN	1
2	GND	2
3	AT 5V	3
4	AC 2.9V	4
5	PC 5V	5
6	AC 2.9V	6
7	GND	7
8	AT -30V	8
9	P-TONE	9
10	NC	10

#1 EXCEPT 30HM
#2 OCNW-64255EZZ(8PW)
OCNW-6426EZZ(10PW)

POWER		
PA	OCNW-6426EZZ	AP
1	M-12V	1
2	AT 5V	2
3	M GND	3
4	AT 5V	4
5	AT -31V	5
6	GND	6
7	AC 2.7V	7
8	AC 40V	8
9	AC 2.7V	9
10	NC	10

ATTENTION
ALTERNATE PART
① DIODE
RH-DX0048EZZ
or RH-DX0053EZZ
or RH-DX0142CEZZ
② TRANSISTOR
VSS5C48 (DND-1)
or VSS5C62S151E
③ TRANSISTOR
VSS5A1037KO-1
or VSS5A812-M51E

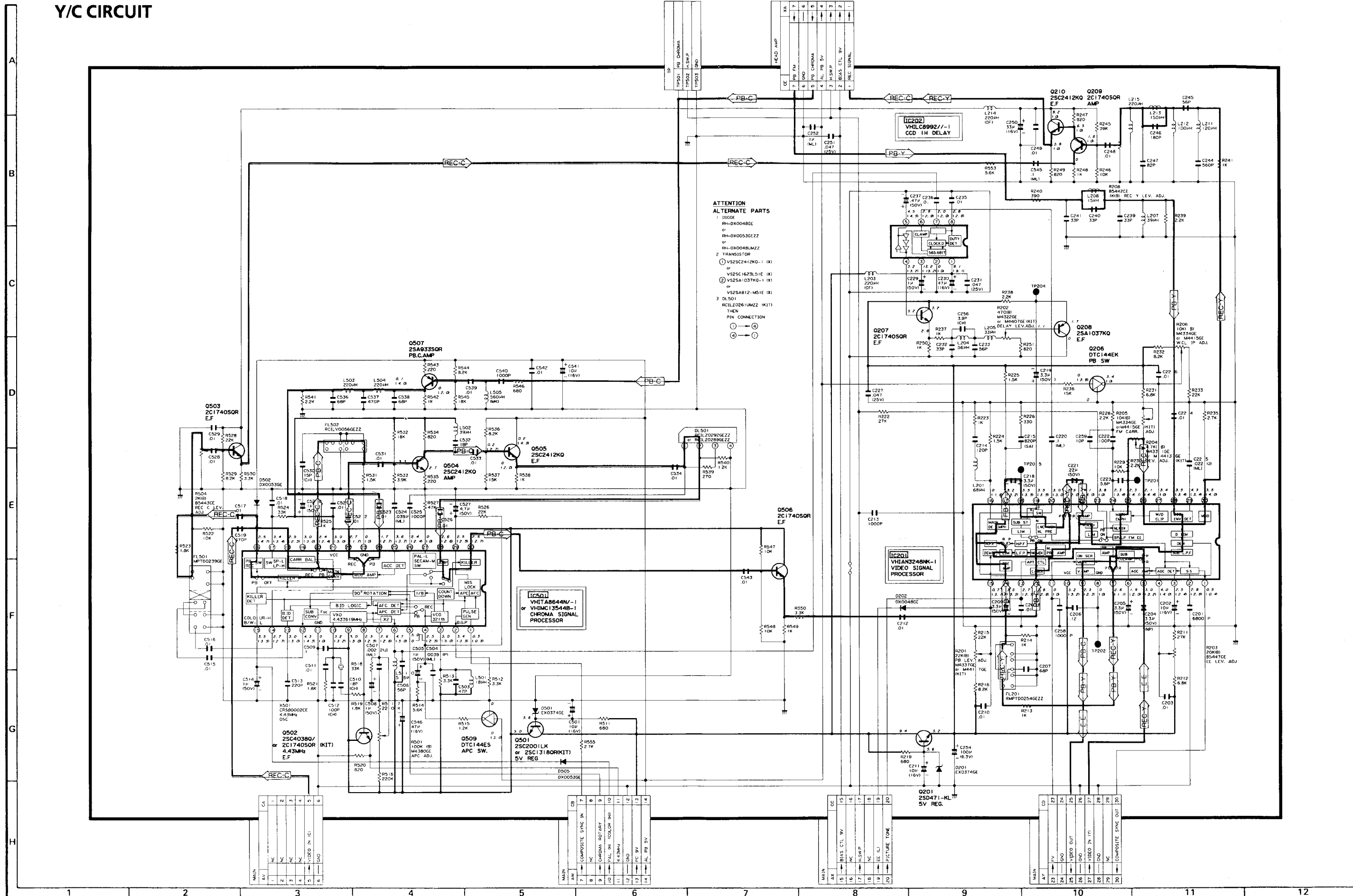
ATTENTION
ALTERNATE PART
① D959
RH-EX0110EZZ(10S 6LEZ)
or RH-EX0573MZZ(BX79-BSV8)
② D8801
RH-EX0117EZZ(10S 1M)
or RH-EX0546MZZ(BX79-C15)
③ D2201, D2202, D401, A402
RH-EX0169EZZ(2M5 5EB2)
or RH-EX0546MZZ(BX79-C15)

* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

Y/C CIRCUIT

VC-A30HM
VC-A40HM

VC-A30HM
VC-A40HM



**ATTENTION
ALTERNATE PARTS**

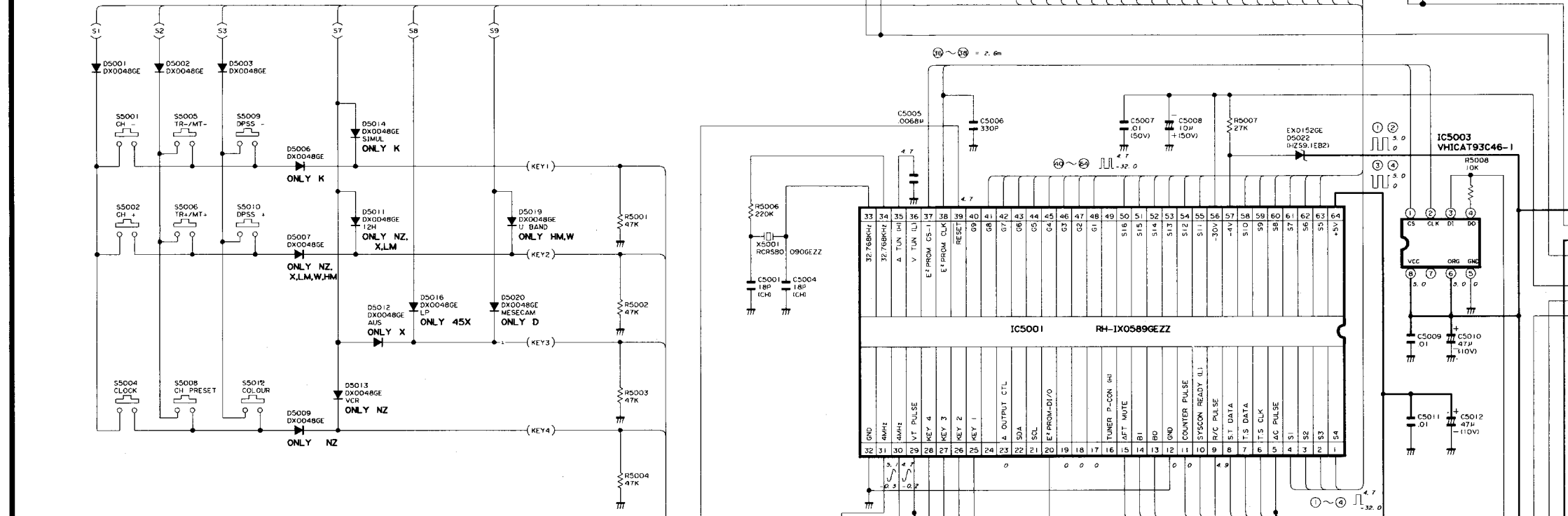
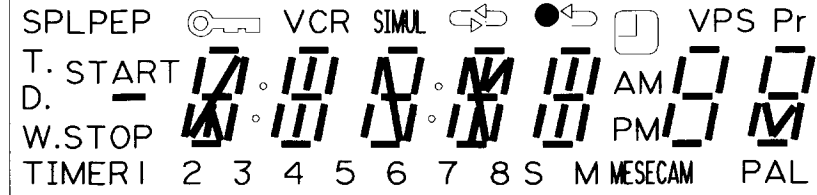
- DIODE
RH-DX0048E
or RH-DX0033GEZ2
or RH-DX0048LMZ2
- TRANSISTOR
① V525C2412K0-1 (R)
or V525C1623L51E (R)
② V525A1037K0-1 (R)
or V525A812-MS1E (R)
- DL501
RCLL20261UMZ2 (KIT)
THEN
PIN CONNECTION
① → ①
② → ②

OPERATION/TIMER CIRCUIT (VC-A40HM)

VC-A30HM
VC-A40HM

VC-A30HM
VC-A40HM

DIODE : RH-DX0048GEZZ
or RH-DX0053GEZZ (KIT)
KEY SW : OSW-K0079GEZZ+
or OSW-K0052GEZZ

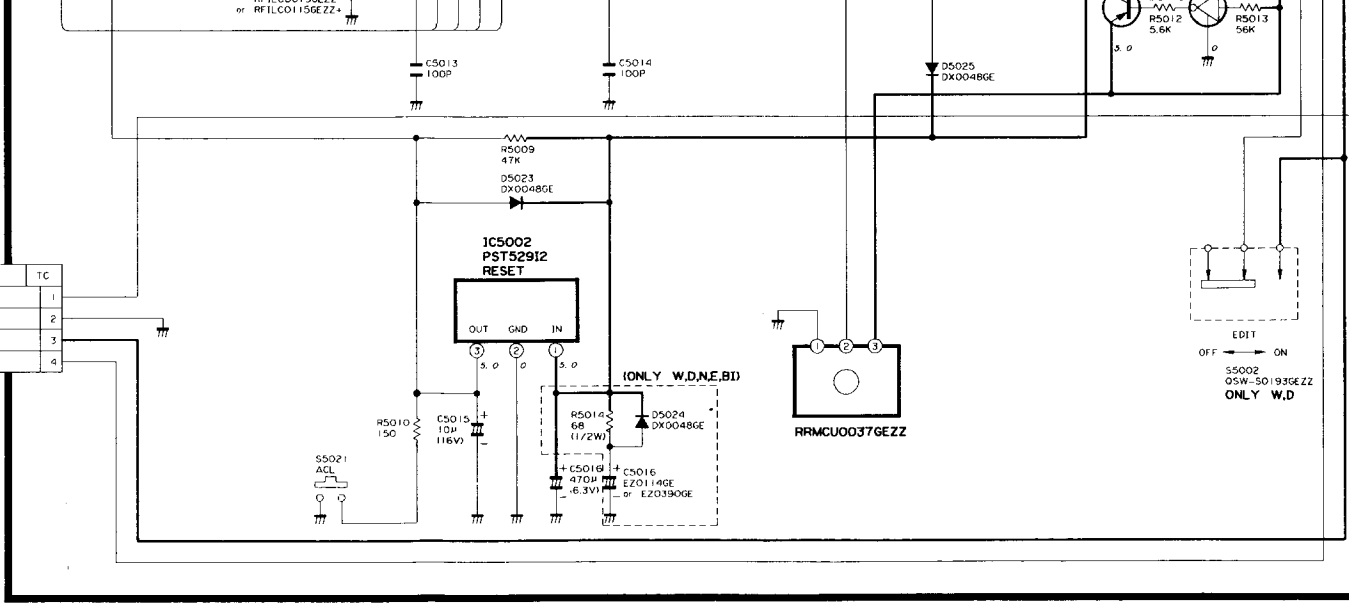
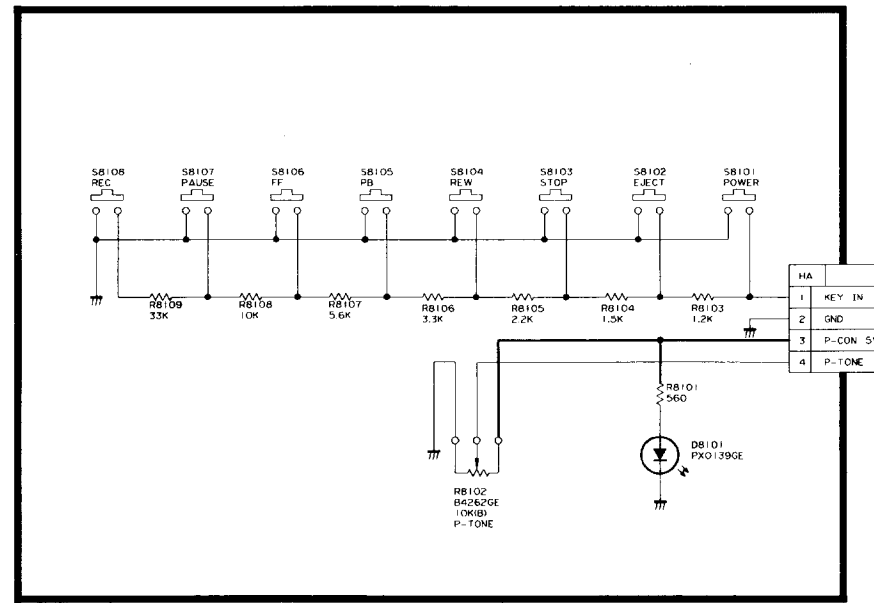


MAIN PWB

TA	OCNW-6425GEZZ	AF
1	KEY IN	1
2	GND	2
3	AT 5V	3
4	AC 2.9V	4
5	P-CON 5V	5
6	AC 2.9V	6
7	GND	7
8	AT -30V	8
9	P-TONE	9
10	NC / EDIT (H)	10

MAIN PWB

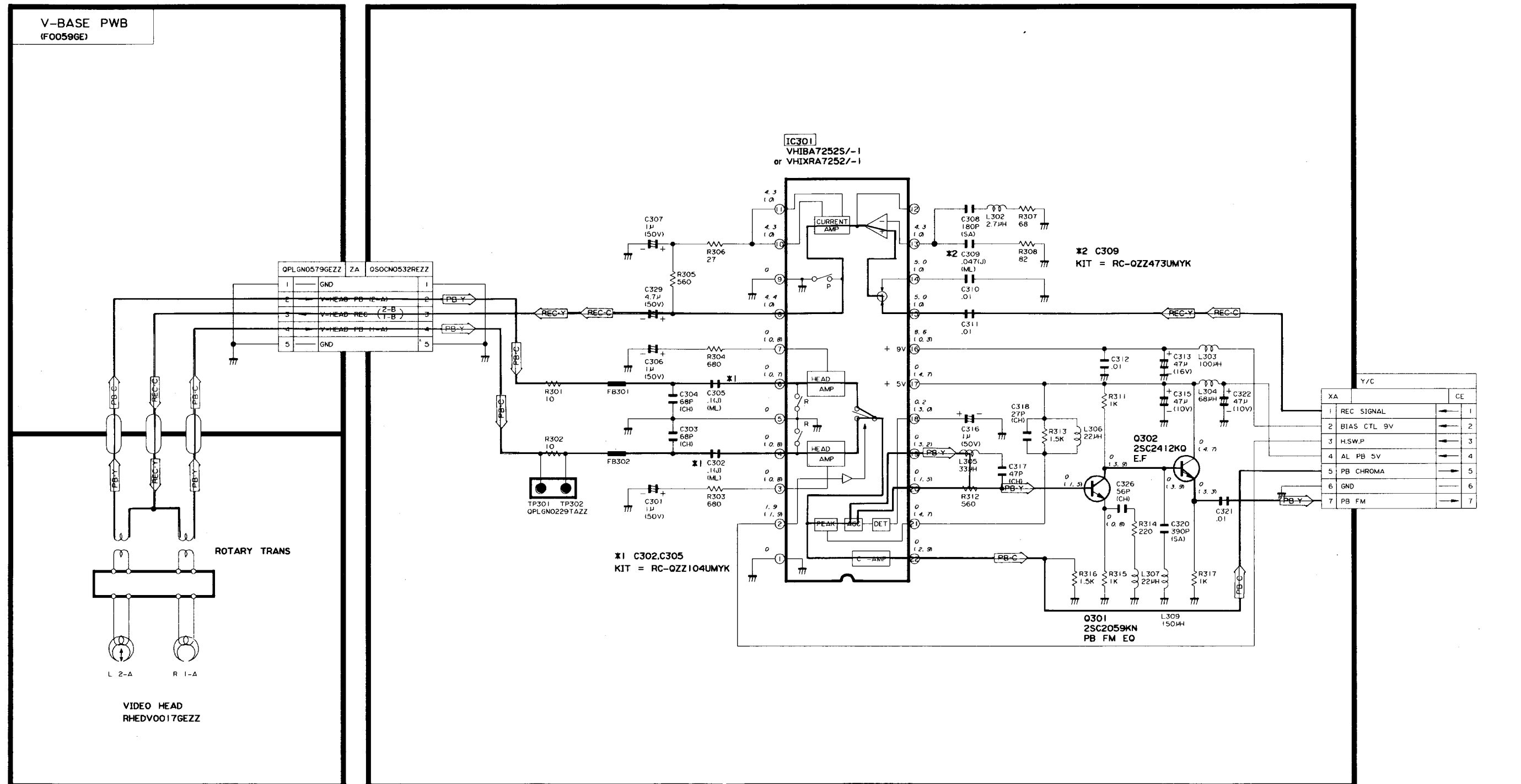
TB	OCNW-6426GEZZ	AD
(3)	AC PULSE	1
(6)	T.S. CLOCK	2
(7)	T.S. DATA	3
(8)	S.T. DATA	4
(10)	S.T. READY (L)	5
(11)	COUNTER PULSE	6
(13)	BO	7
(14)	BI	8
(15)	AFT MUTE	9
(29)	VT PULSE	10



VC-A30HM
VC-A40HM

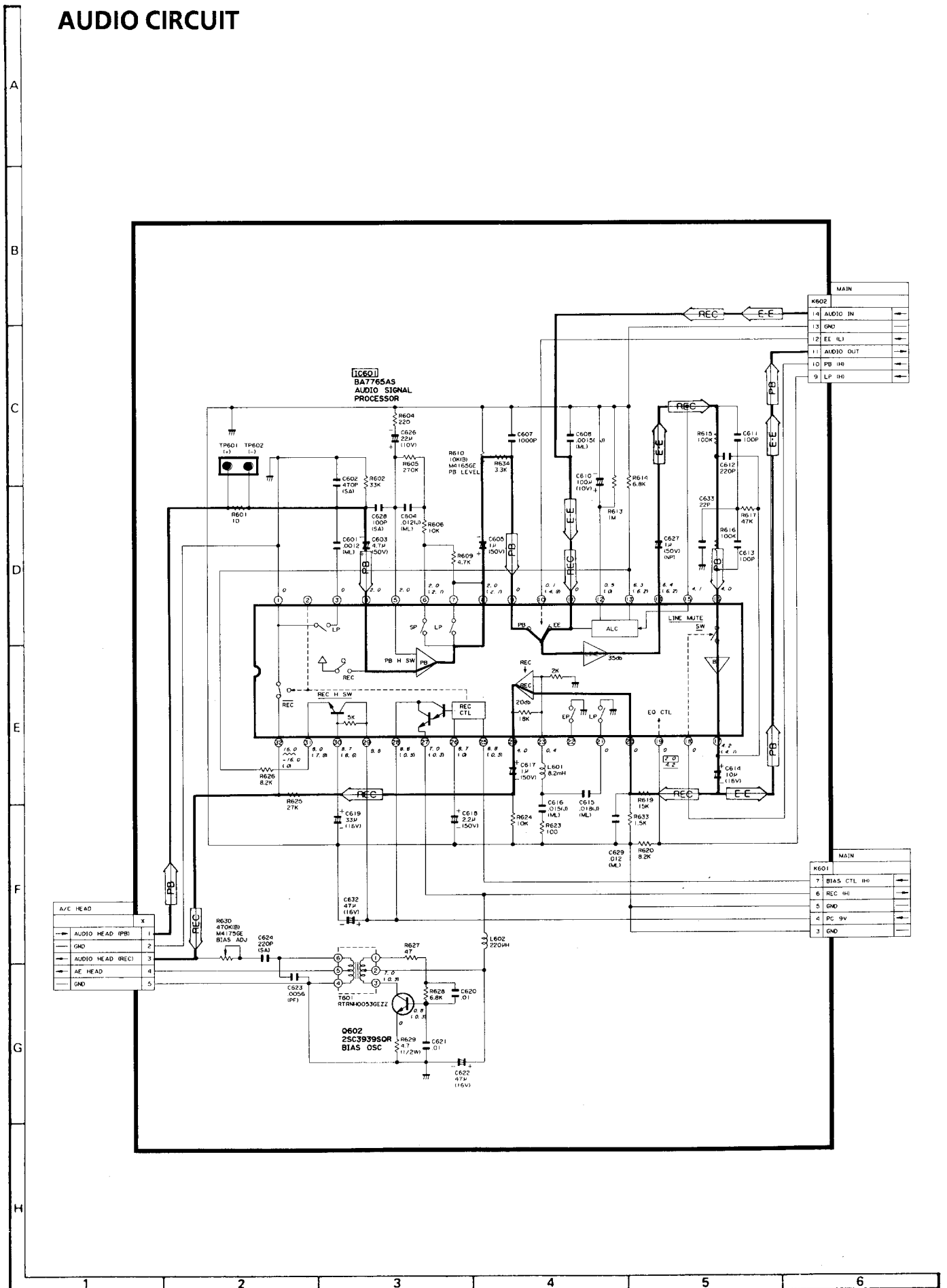
VC-A30HM
VC-A40HM

HEAD AMPLIFIER CIRCUIT



* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

AUDIO CIRCUIT

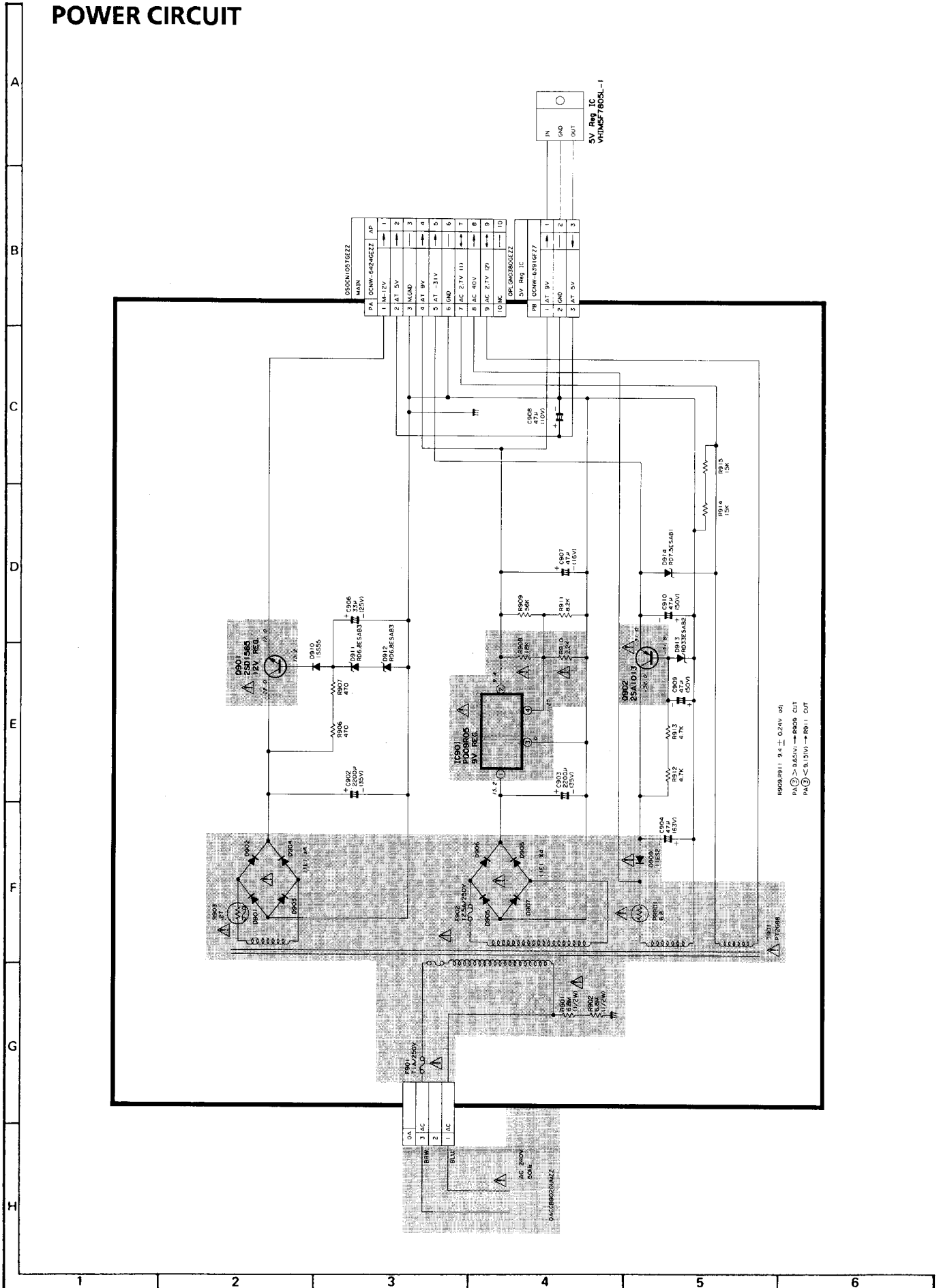


* VOLTAGE MEASUREMENT MODE

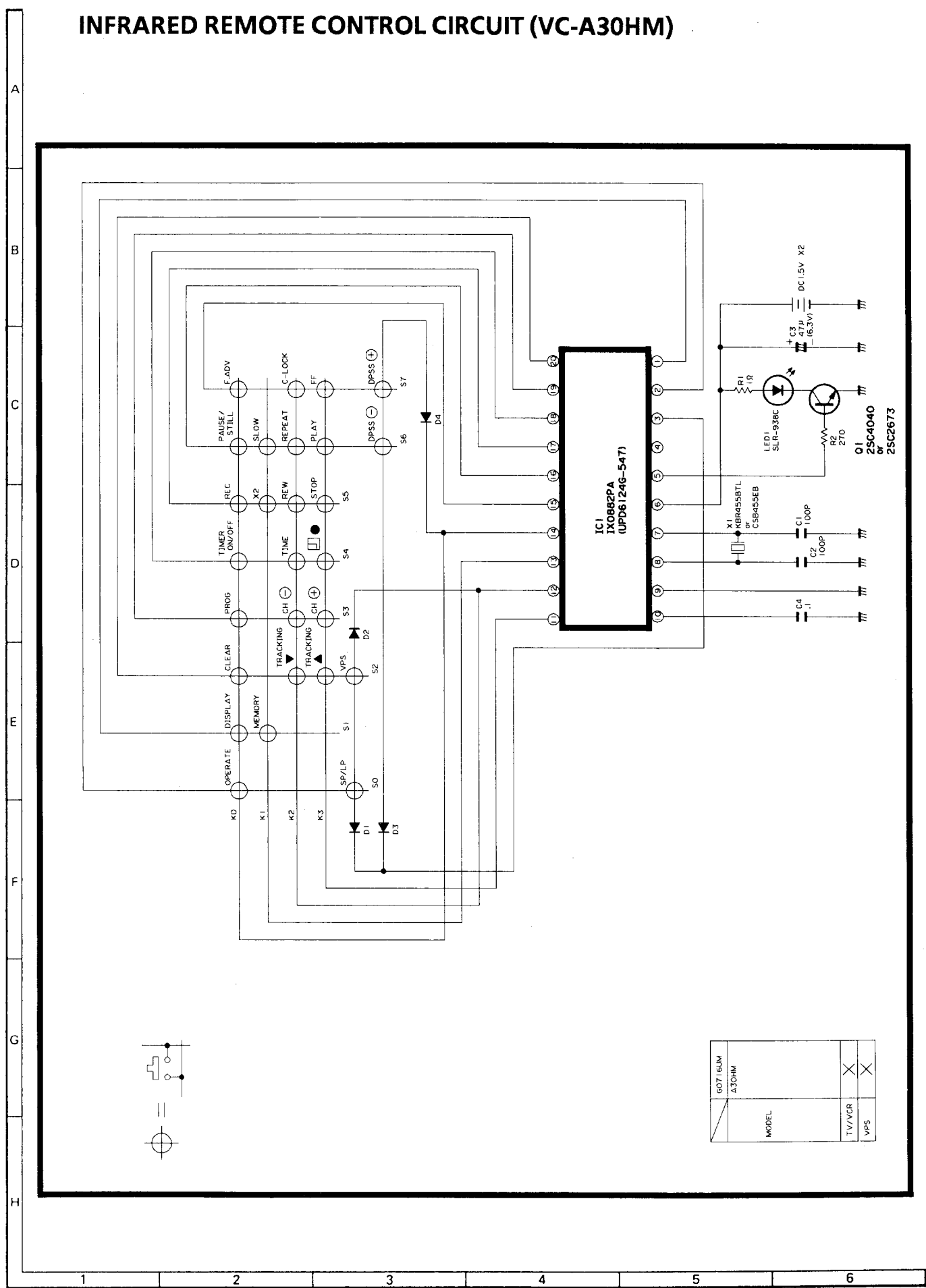
PB Parentheses ()

REC Without Parentheses

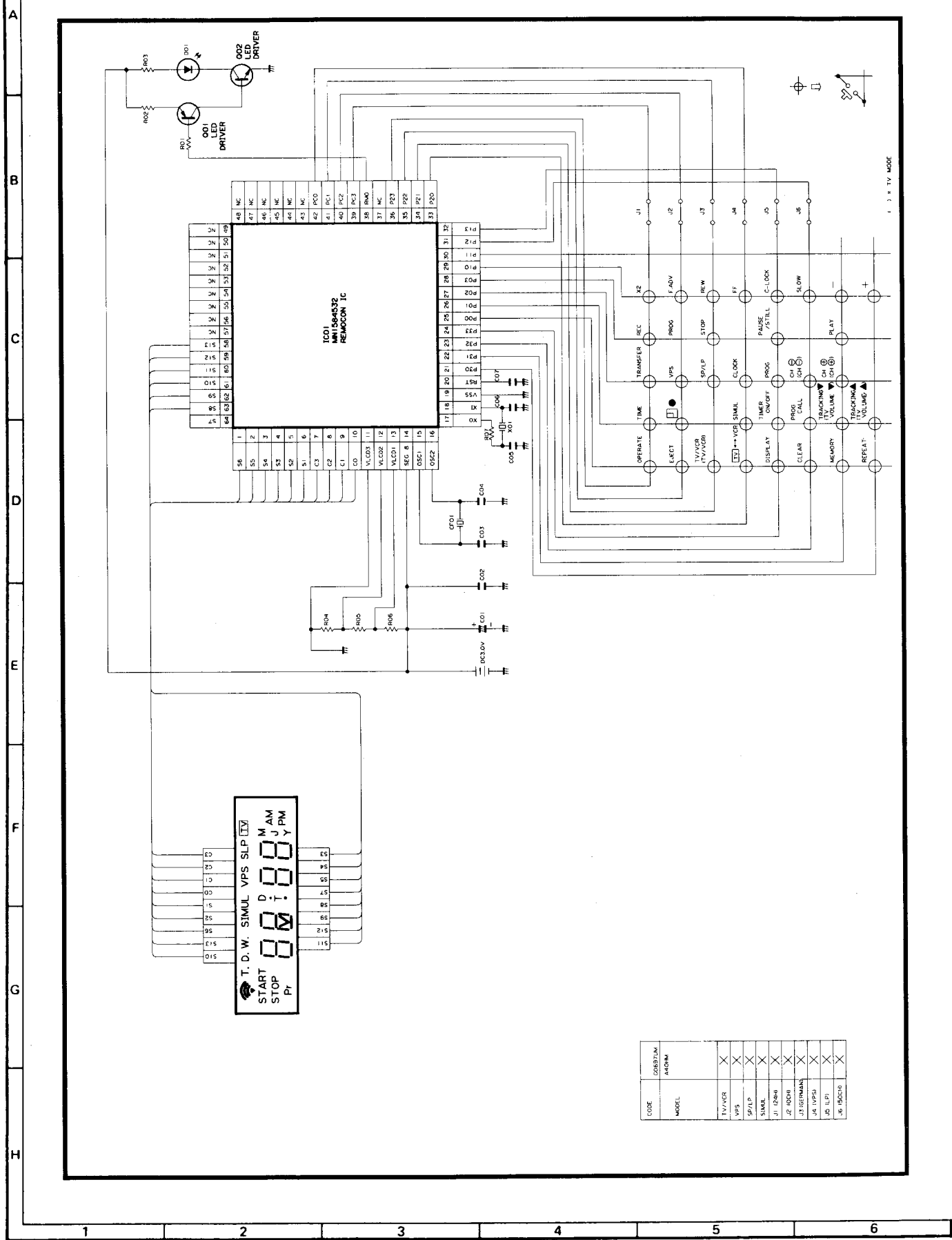
POWER CIRCUIT



INFRARED REMOTE CONTROL CIRCUIT (VC-A30HM)

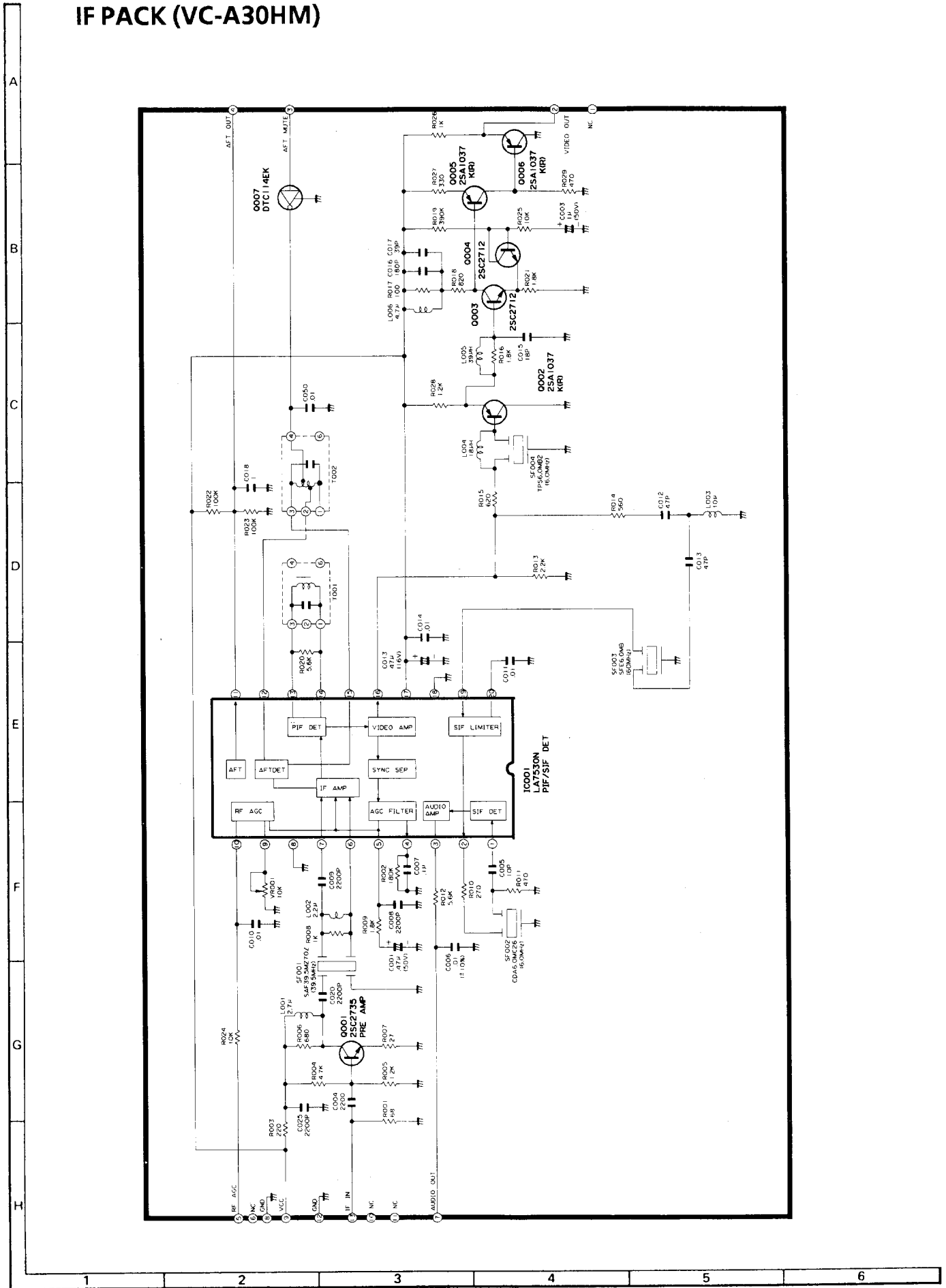


INFRARED REMOTE CONTROL CIRCUIT (VC-A40HM)

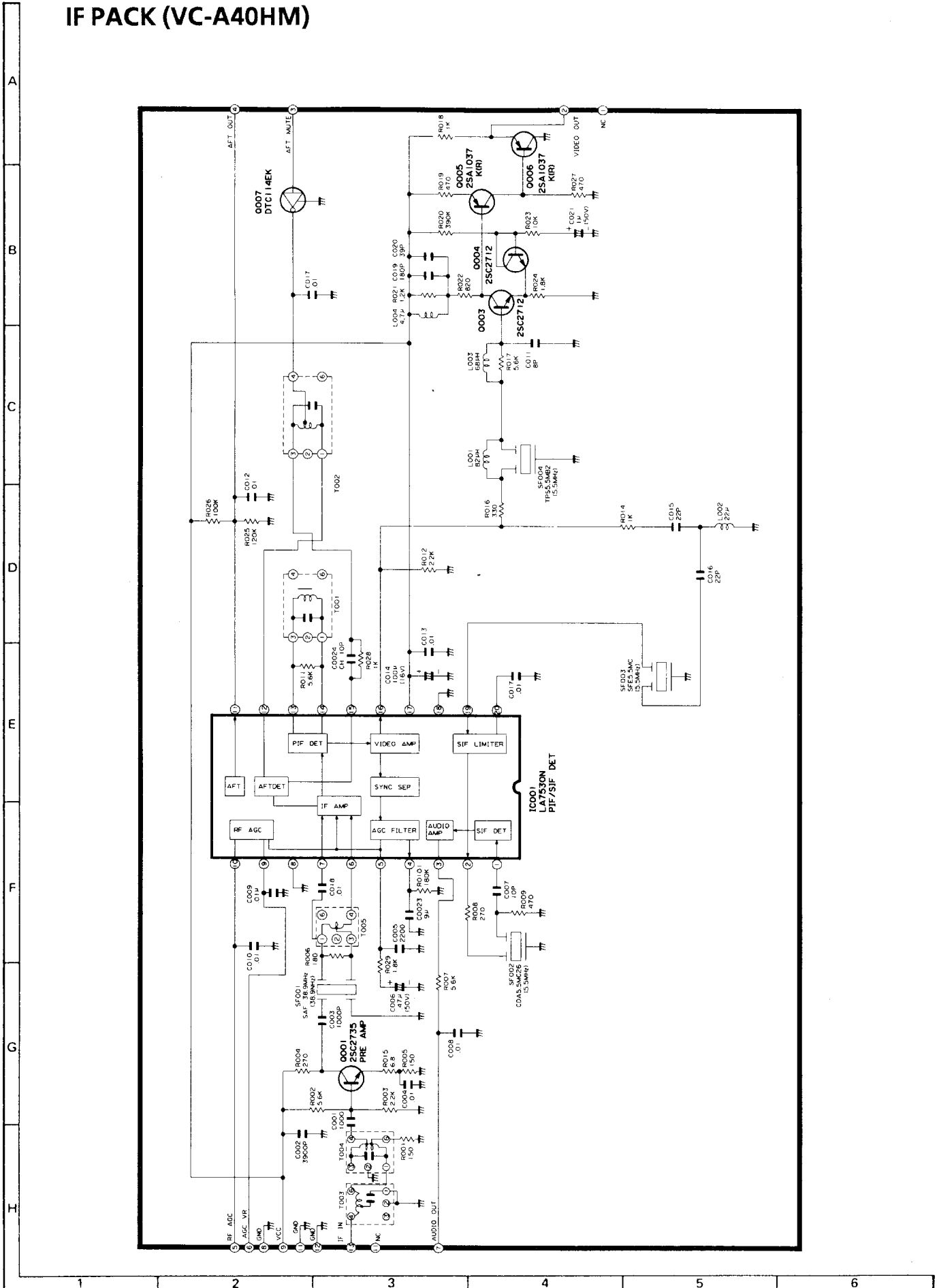


CODE	00873M	00873M	00873M	00873M	00873M	00873M	00873M	00873M	00873M	00873M
MODEL	A40HM	A40HM	A40HM	A40HM	A40HM	A40HM	A40HM	A40HM	A40HM	A40HM
TV/VR	X	X	X	X	X	X	X	X	X	X
VPS	X	X	X	X	X	X	X	X	X	X
SP/LP	X	X	X	X	X	X	X	X	X	X
SIMUL	X	X	X	X	X	X	X	X	X	X
J1 (ZRH)	X	X	X	X	X	X	X	X	X	X
J2 (OCH)	X	X	X	X	X	X	X	X	X	X
J3 (GERMAN)	X	X	X	X	X	X	X	X	X	X
J4 (VPS)	X	X	X	X	X	X	X	X	X	X
J5 (L.P.)	X	X	X	X	X	X	X	X	X	X
J6 (SLOCC)	X	X	X	X	X	X	X	X	X	X

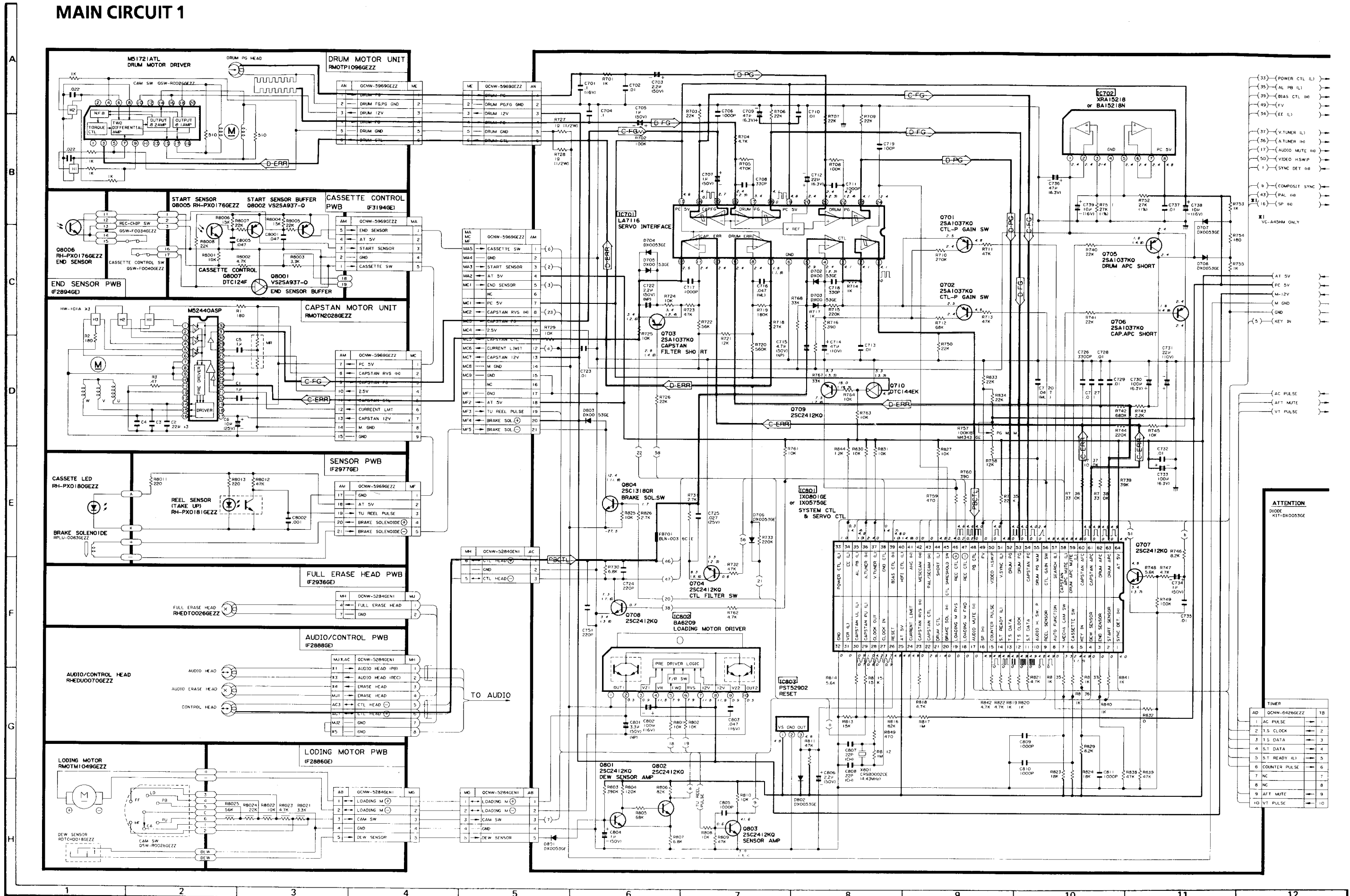
IF PACK (VC-A30HM)



IF PACK (VC-A40HM)



MAIN CIRCUIT 1



* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

REPLACEMENT PARTS LIST

PARTS REPLACEMENT

Many electrical and mechanical parts in video cassette recorder have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by Δ and shaded areas in the Replacement Parts Lists and Schematic Diagrams. The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. NO. |
| 3. PART NO. | 4. DESCRIPTION |
| 5. PRICE CODE | |

Δ MARK: SAFETY RELATED PARTS

★ MARK: SPARE PARTS-DELIVERY SECTION

PWB ASSEMBLY IS NOT REPLACEMENT ITEM

Ref. No.	Part No.	*	Description	Code
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MAIN (SERVO, SYSTEM-CONTROL, TUNER) CIRCUIT

DUNTK3489TEV6	Main (Servo, System-control, IF) Board Assembly (VC-A30HM)	—
DUNTK3489TEV5	Main (Servo, System-control, IF) Board Assembly (VC-A40HM)	---

TRANSISTORS

Q701, 702, 703, 705, 706, 4401	VS2SA1037KQ-1	2SA1037KQ	AA
Q704, 707, 708, 709, 801, 802, 803, 957, 1403, 8809	VS2SC2412KQ-1 or VS2SC1623L51E	2SC2412KQ 2SC1623L (VC-A30HM) (VC-A30HM)	AA AB

Ref. No.	Part No.	*	Description	Code
Q710, 954, 956, 6601, 8808	VSDTC144EK/-1		DTC144EK	AB
Q804	VS2SC1318QR-1		2SC1318QR	AB
Q951	VS2SA988///1E		2SA988	AB
Q953, 955	VS2SB1117KU1E		2SB1117KU	AE
Q1451	VS2SC383-WT-1		2SC383(WT)	AE
Q6602, 6603, 6605	VS2SD1757KS-1		2SD1757KS	AC
Q6604, 8807	VSDTA144EK/-1		DTA144EK	AC
Q8801, 8805	VS2SA950-Y/1E		2SA950(Y)	AD

INTEGRATED CIRCUITS

IC701	VHiLA7116//-1			AH
IC702	VHiXRA15218-1			AC
	or			
	VHiBA15218N-1			AD
IC801	RH-IX0801GEZZ			AX
	or			
	RH-IX0575GEZZ			AX
IC802	VHiBA6209//1E			AG
IC803	VHiPST529D2-1			AD
IC951	VHiUPC574JT-1			AC
IC1404	VHiNJM2220S-1			AG
IC2201	VHiBA7021//-1			AE

DIODES AND CRYSTAL

D702	RH-DX0053GEZZ			AA
708, 801, 802, 803, 956, 957, 6601, 8802				
D952	RH-EX0574UMZZ	U	(HZS6.2EB3)	
D954	RH-DX0052GEZZ		ERA15-02	AB
D959	RH-EX0010GEZZ		(RD5.6EB2)	AB
	or			
	RH-EX0573UMZZ	U	(BZX79-B5V6)	
D2201, 2202, 4401, 4402	RH-EX0168GEZZ		(HZS15EB2)	AA
	or			
	RH-EX0546UMZZ	U	(BZX79-C15)	AB

Ref. No.	Part No.	*	Description	Code	Ref. No.	Part No.	*	Description	Code
DIODES AND CRYSTAL					OPERATION CIRCUIT				
D5001, 5002, 5003, 5007, 5011, 5019, 5023, 5025	RH-DX0053GEZZ			AA	DUNTK3491TEV0			Operation Circuit Assembly (VC-A30HM)	—
D5022	RH-EX0152GEZZ			AA	DUNTK3491TEV1			Operation Circuit Assembly (VC-A40HM)	—
X5001	RCRSB0090GEZZ		Crystal	AE	DIODE				
FILTER					D8101	RH-PX0139GEZZ		LED	AB
FL5001	RFILC0115GEZZ		4.5MHz	AC	CONTROL				
CAPACITOR					R8102	RVR-B4262GEZZ		10k (B) P-TONE (VC-A40HM)	AD
C5016	VCEADA0JW477M		470µF, 6.3V, 20%, Electrolytic	AB	MISCELLANEOUS				
MISCELLANEOUS					S8101, 8102, 8103, 8104, 8105, 8106, 8107, 8108	QSOCZ0430GEZZ QSW-K0079GEZZ		Socket, 4 pin (HA) Switch, Power Switch, Eject Switch, Stop Switch, Rewind Switch, Playback Switch, Fast Forward Switch, Pause Switch, Record	AB AB
DG5001	VVK8BT95GK/-1		Fluorescent Display Tube	AV	HEAD AMP CIRCUIT				
	RRMCU0037GEZZ		Remote Control Receiver	AL	DUNTK3483TEV0			Head Amp Board Assembly	—
	RRMCU0041GEZZ	or	(VC-A30HM)	AM	TRANSISTORS				
	QPLGZ0430GEZZ		Plug, 4 pin (TC) (VC-A30HM)	AB	Q301	VS25C2059KN1E		25C2059KN	AC
	QSOCN0857REZZ		Socket, 8 pin (TA) (VC-A30HM)	AC	Q302	VS25C2412KQ-1		25C2412KQ	AA
	QSOCN1057REZZ		Socket, 10 pin (TB) (VC-A30HM) Socket, 10 pin (TA, TB) (VC-A40HM)	AC	INTEGRATED CIRCUIT				
S5001, 5002, 5004, 5005, 5006, 5008, 5009, 5010, 5012, 5021	QSW-K0079GEZZ		Switch, Channel (-) Switch, Channel (+) Switch, Clock Switch, Tracking (-)/ Mute (-) Switch, Tracking (+)/ Mute (+) Switch, Channel Preset Switch, Dpss (-) Switch, Dpss (+) Switch, Colour Switch, ACL	AB	IC301	VHiXRA7252/-1 or VHiBA7252S/-1			AF AF
COILS					L302	VP-XF2R7J0000		2.7µH	AC
MISCELLANEOUS					L303	VP-DF101K0000		100µH	AB
MISCELLANEOUS					L304	VP-XF680K0000		68µH	AB
MISCELLANEOUS					L305	VP-XF330K0000		33µH	AB
MISCELLANEOUS					L306, 307	VP-XF220K0000		22µH	AB
MISCELLANEOUS					L309	VP-XF151K0000		150µH	AB

VC-A30HM
VC-A40HM

Ref. No.	Part No.	*	Description	Code
D8801	RH-EX0217CEZZ		RD15E	AB
	or			
	RH-EX0546UMZZ	U	(BZX79-C15)	AB
X801	RCRSB0002CEZZ		Crystal	AM

COILS

L904	VP-CF121K0000		120 μ H	AB
L1451	VP-XF120K0000		12 μ H	AB
L4401	VP-MK221K0000		220 μ H	AB
L4403	VP-DF100K0000		10 μ H	AB

CONTROL

R757	RVR-M4343GEZZ		100k(B) SP Slow/Still Tracking Adj.	AB
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CAPACITORS

C701, 704	RC-KZ0019GEZZ		0.1 μ F, 16V, Ceramic	AA
C714	RC-EZ0123GEZZ		47 μ F, 10V, Electrolytic	AB
C715	VCE9EA1HW475M		4.7 μ F, 50V, 20%, Electrolytic (N.P)	AD
C716, 720	RC-QZZ473UMYK	U	0.047 μ F, Mylar	
C722	VCE9EA1HW225M		2.2 μ F, 50V, 20%, Electrolytic (N.P)	AB
C730, 733	VCEAEA0JW107M		100 μ F, 6.3V, 20%, Electrolytic	AB
C801	VCE9EA1HW335M		3.3 μ F, 50V, 20%, Electrolytic (N.P)	AB
C802	VCEAGA1CW107M		100 μ F, 16V, 20%, Electrolytic	AB
C803	RC-KZ0017GEZZ		0.047 μ F, 16V, Ceramic	AA
C1418	RC-QZA102TAYJ		0.001 μ F, Mylar	AB
C1452, 1453	RC-QZZ334UMYK	U	0.33 μ F, Mylar	
C1562	VCQYTA1HM104K	U	0.1 μ F, 50V, 20%, Mylar	
C1564, 4401	VCEAEA1CW107M		100 μ F, 16V, 20%, Electrolytic	AC
C2201	VCE9EA1HW105M		1 μ F, 50V, 20%, Electrolytic (N.P)	AC
C4403	VCEA2A0JW477M		470 μ F, 6.3V, 20%, Electrolytic	AB
C5526	VCEAGA0JW107M		100 μ F, 6.3V, 20%, Electrolytic	AB
C6606	RC-QZY223UMYK	U	0.022 μ F, Mylar	

Ref. No.	Part No.	*	Description	Code
MISCELLANEOUS				
	VTUATERB1-011		Tuner	AY
	RCNVR0085UMZZ	U	RF Converter	
	RiFU-0544GEZZ		IF Pack	AX
	QPLGN0228TAZZ		Plug, 2 pin (TP1551)	AB
	QPLGN0328TAZZ		Plug, 3 pin (AC)	AD
	QPLGN0528TAZZ		Plug, 4 pin (AB)	AB
	QPLGN0679GEZZ		Plug, 6 pin (AV, AX)	AB
	QPLGN0879GEZZ		Plug, 8 pin (AW, AY)	AB
	QSOCN0694UMZZ	U	Socket, 6 pin (AN)	
	QSOCN0859REZZ		Socket, 8 pin (VC-A30HM(AF))	AC
	QSOCN1059REZZ		Socket, 10 pin (VC-A30HM(AD, AP)) (VC-A40HM (AF, AD, AP))	AC
	QSOCN2194UMZZ	U	Socket, 21 pin (AM)	
	QSOCN2136GEZZ		Socket, 21 pin	AE
FB701	RBLN-0036CEZZ		Ferrite Bead	AB
FB4402	RBLN-0043CEZZ			AB

Y/C CIRCUIT

DUNTK3214TEV7	Y/C Board Assembly	—
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TRANSISTORS

Q201	VS2SD471-KL1E	2SD471(KL)	AC
Q206	VSDTC144EK/-1	DTC144EK	AB
Q207, 209, 502, 503, 506	VS2C1740SQR1E	2C1740SQR	AC
Q208	VS2SA1037KQ-1	2SA1037KQ	AA
Q210, 504, 505	VS2SC2412KQ-1	2SC2412KQ	AA
Q501	VS2SC1318QR-1	2SC1318QR	
Q507	VS2SA933SQR1E	2SA933SQR	AB
Q509	VSDTC144ES/-1	DTC144ES	AB

INTEGRATED CIRCUITS

IC201	VHiAN3248NK-1		AP
IC202	VHiLC8992// -1		AK
IC501	VHiTA8644N/-1		AP

Ref. No.	Part No.	*	Description	Code
DIODES AND CRYSTAL				
D201, 501	RH-EX0374GEZZ		HZ56	AA
D202, 502, 505	RH-DX0053GEZZ			AA
X501	RCRSB0002CEZZ		Crystal	AM

CONTROLS				
R201	RVR-M4417GEZZ		22k(B) PB Level Adj.	AB
	or			
	RVR-M4337GEZZ			AB
R202	RVR-M4407GEZZ		470(B) Deley Level Adj.	AB
	or			
	RVR-M4322GEZZ			AB
R203	RVR-B5447CEZZ		20k(B) EE Level Adj.	AB
R204	RVR-M4331GEZZ		4.7k(B) Deviation Adj.	AC
	or			
	RVR-M4413GEZZ			AB
R205, 206	RVR-M4415GEZZ		10k(B) White Clip Adj.	AB
	or			
	RVR-M4334GEZZ			AB
R208	RVR-B5442CEZZ		1k(B) Record Y Level Adj.	AB
R501	RVR-M4380GEZZ		100k(B) APC Adj	AC
R504	RVR-B5443CEZZ		2k(B) Record C Level Adj.	AB

COILS AND FILTERS				
L201	VP-XF680K0000		68 μ H	AB
L203, 214	VP-DF221K0000		220 μ H	AB
L204	VP-XF560K0000		56 μ H	AB
L205	VP-XF330K0000		33 μ H	AB
L207	VP-XF390K0000		39 μ H	AB
L208	VP-XF150K0000		15 μ H	AB
L211	VP-XF121K0000		120 μ H	AB
L212	VP-XF101K0000		100 μ H	AB
L213	VP-XF151K0000		150 μ H	AB
L215, 503	VP-XF221K0000		220 μ H	AB
L501	VP-XF180K0000		18 μ H	AB
L502	VP-XF390K0000		39 μ H	AB
L504	VP-MK221K0000		220 μ H	AB
L505	VP-MK561K0000		560 μ H	AB
L510	VP-XF5R6K0000		5.6 μ H	AB
FL201	RMPTD0254GEZZ		Filter	AG
FL501	RMPTD0239GEZZ		Filter	AG
FL502	RCiLV0056GEZZ			AF
DL501	RCiLZ0261UMZZ	U	Delay Line	

Ref. No.	Part No.	*	Description	Code
CAPACITORS				
C204	VCE9EA1HW335M		3.3 μ F, 50V, 20%, Electrolytic (N.P.)	AB
C220, 252, 545	VCQYTA1HM104K	U	0.1 μ F, 50V, Mylar	
C225	RC-QZA223TAYJ		0.022 μ F, 50V, 5%, Mylar	AB
C254	VCEAEA0JW107M		100 μ F, 6.3V, 20%, Electrolytic	AB
C504	RC-QZA392UMYK	U	3900pF, 50V, 5%, Mylar	
C507	RC-QZA222TAYJ		2200pF, 50V, 5%, Mylar	AB
C509	RC-KZ0011GEZZ		0.1 μ F, Ceramic	AA
C524	RC-QZY393UMYK	U	0.039 μ F, 50V, Mylar	

MISCELLANEOUS				
	QPLGN0329TAZZ		Plug, 3 pin (TP501—503)	AB
	QPLGN0778GEZZ		Plug, 7 pin (CE)	AC
	QSOCN0679GEEZZ		Socket, 6 pin (CA, CC)	AC
	QSOCN0879GEZZ		Socket, 8 pin (CB, CD)	AC

TIMER CIRCUIT				
	DUNTK3490TEV5		Timer Board Assembly (VC-A30HM)	—
	DUNTK3490TEV4		Timer Board Assembly (VC-A40HM)	—

TRANSISTORS				
Q5001	VS2SA1561Q/1E		2SA1561Q	AC
Q5002	VSDTC124ELT-1		DTC124ELT	AA

INTEGRATED CIRCUITS				
IC5001	RH-iX0589GEZZ			AW
IC5002	VHiPST529i2-1			AD
IC5003	VHiCAT93C46-1			AN

Ref. No.	Part No.	*	Description	Code	Ref. No.	Part No.	*	Description	Code
CAPACITORS					C608	RC-QZA152TAYJ		1500pF, 50V, 5%, Mylar	AB
C302,	VCQYTA1HM104K	U	0.1μF, 50V, 20%, Mylar		C610	VCEAEA1AW107M		100μF, 10V, 20%, Electrolytic	AB
305					C615	RC-QZA183TAYJ		0.018μF, 50V, 5%, Mylar	AB
C309	RC-QZZ473UMYK	U	0.047μF, Mylar		C616	RC-QZA153TAYJ		0.015μF, 50V, 5%, Mylar	AB
MISCELLANEOUS					C623	VCQPSA2AA562J		5600pF, 100V, 5%, Polypro Film	AC
	QPLGN0229TAZZ		Plug, 2 pin (TP301, 302)	AB	C627	VCE9AA1HW105M		1μF, 50V, 20%, Electrolytic (N.P.)	AB
	QPLGN0780GEZZ		Plug, 7 pin (XA)	AC	C629	RC-QZY123UMYK	U	0.012μF, Mylar	
	QSOCN0532REZZ		Socket, 5 pin (ZA)	AB	MISCELLANEOUS				
FB301,	RBLN-0013GEZZ		Ferrite Bead	AB		QPLGN0229TAZZ		Plug, 2 pin (TP601, 602)	AB
302						QPLGN0528TAZZ		Plug, 5 pin (*)	AB
AUDIO CIRCUIT						QPLGZ0525GEZZ		Plug, 5 pin (K601)	AB
	DUNTK3216TEV0		Audio Board Assembly	—		QPLGZ0625GEZZ		Plug, 6 pin (K602)	AC
TRANSISTOR					POWER CIRCUIT				
	Q602	VS2C3939SQR-1	2SC3939SQR	AC		RDENT0437UMZZ		Power Board Assembly	—
INTEGRATED CIRCUIT					TRANSISTORS				
	IC601	VHIBA7765AS-1		AL	△Q901	95KUAD0088AC		2SD1565	AF
CONTROLS					△Q902	95KUA0069AK		2SA1013	AE
	R610	RVR-M4165GEZZ	10k(B) Playback Level Adj.	AB	INTEGRATED CIRCUITS				
	R630	RVR-M4175GEZZ	470k(B) Bias Level Adj.	AB	△IC901	95KUCB0029AZ			AK
COILS AND TRANSFORMER					DIODES				
	L601	VP-YF822J0000	8.2mH	AC	△D901,	95KUBC0112AL		11E1-TA2	AB
	L602	VP-CF221K0000	220μH	AB	△ 902,				
	T601	RTRNH0053GEZZ	Oscillator	AE	△ 903,				
CAPACITORS					△ 904,				
	C601	RC-QZA122TAYJ	1200pF, 50V, 5%, Mylar	AB	△ 905,				
	C604	RC-QZA123TAYJ	0.012μF, 50V, 5%, Mylar	AB	△ 906,				
					△ 907,				
					△ 908				
					△D909	95KUBC0150BK		11E52-TA2	AB
					△D910	95KUBA0004KZ		15S53-T4	AB
					D911,	95KUBDAK6R8D		RD6.8ESAB3-T4	AB
					912				
					D913	95KUBDAK330C		RD33ESAB2-T4	AB
					D914	95KUBDAK7R5B		RD7.5ESAB1-T4	AB

VC-A30HM
VC-A40HM

Ref. No.	Part No.	*	Description	Code
COILS AND TRANSFORMER				
L901	95KUZ0604ZZ		Line Filter	AA
△T901	95K116035149		Convertor Transformer	AZ

CAPACITORS				
C902, 903	95KUGZ0671ZZ		2200μ, 35V, Electrolytic	AG
C904	95KUGAG470JS		47μ, 63V, Electrolytic	AC
C906	95KUGAD330EK		33μ, 25V, Electrolytic	AB
C907	95KUGAC470EK		47μ, 16V, Electrolytic	AB
C908	95KUGAB470JS		47μ, 10V, Electrolytic	AB
C909	95KUGAF470JS		47μ, 50V, Electrolytic	AC
C910	95KUGAF470EK		47μ, 50V, Electrolytic	AC

RESISTORS				
△R901, 902	95KUECC685AE		6.8M ohm, 1/2W, Solid	AB
△R903	95KUEBBR27AM		0.27ohm, Fuse Resistor	AC
R906, 907	95KUEEB471BF		470 ohm, Carbon	AA
△R908	95KUES1802AL		18k ohm, Carbon	AA
R909	95KUEEB563BF		56k ohm, Carbon	AA
△R910	95KUES2201AL		2.2k ohm, Carbon	AC
R911	95KUEEB822BF		8.2k ohm, Carbon	AA
R912, 913	95KUEEB472BF		4.7k ohm, Carbon	AA
R914, 915	95KUEEB153BF		15k ohm, Carbon	AA
△PR901	95KUEZ0403ZK		6.8 ohm, Thermistor	AF

MISCELLANEOUS				
△F901	95KPJCTB1001		Fuse T1A	AD
△F902	95KPJCTB2501		Fuse T2.5A	AD
△	QACCB9020UMZZ	U	AC Cord	
	95KPCZ0095ZZ		Plug, 10 pin (PA)	AD
	95KPKZ0443ZZ		Plug, 3 pin (PB)	AB
	95KPKZ0194ZZ		Plug, 3 pin (OA)	AC

INFRARED REMOTE CONTROL CIRCUIT				
	RRMCG0716UMSA	U	Infrared Remote Control Unit (VC-A30HM)	AX

TRANSISTOR				
Q1	92P3SN00059T		2SC4040	AC
	or			
	92P3SN00028		2SC2673	—

Ref. No.	Part No.	*	Description	Code
INTEGRATED CIRCUIT				
IC1	92P3SQ00136		UPD6124G-547	AL
	or			
	RH-iX0882PAZZ			AH

DIODE AND FILTER				
D1	92P3SD00058T		GMA01-BT	AD
4				
LED1	92P3QH00005E		SLR-938C	AE
X1	92P3EF000066		Ceramic Filter- CSB455EB20	AD
	or			
	92P3EF000063		Ceramic Filter- KBR455BTL3A	AD

CABINET PARTS				
1	92PFA11D6589		Cabinet-A	AF
2	92PFA11B8713		Cabinet-B	AC
3	92PFA11B8801		Cabinet-C	AB
4	92PFA58A3403		Infrared Filter	AC
5	92PFA62C9706		Indication Plate	AH
6	92PFA42B3177		Rubber Key	AK
7	—		PWB	—
8	92P3ETFA1001		Terminal C	AB
9	92P2A502120		Screw	AA
10	92P3ETFA0801		Battery Terminal A	AB

INFRARED REMOTE CONTROL CIRCUIT				
	RRMCG0696GESA		Infrared Remote Control Unit (VC-A40HM)	BB

TRANSISTORS				
Q01	VS2SA812M5/-1		2SA812M5	AA
Q02	VS2SD602S//-1		2SD602S	AB
	or			
	VS2SC2411KQ-1		2SC2411KQ	AC
	or			
	VS2SD596DV3-1		2SD596DV3	AC

INTEGRATED CIRCUIT				
IC01	RH-iX1256PAZZ		MN1584532	AR

Ref. No.	Part No.	*	Description	Code
DIODE AND CRYSTAL				
D01	RH-PX0142PAZZ		SLR-938C	AC
X01	RCRSA0058PAZZ		DT-38	AD

CERAMIC FILTER				
CF01	RFiLA0093CEZZ		EFO-455	AC

RESISTORS				
R01	VRS-TT2AD392J		3.9k ohm, 1/10W, Metal Oxide	AA
R02	VRS-TV2AD101J		100 ohm, 1/10W, Metal Oxide	AA
R03	VRS-TV2BD2R2J		2.2 ohm, 1/8W, Metal Oxide	AA
R04, 05, 06	VRS-TV2AD104J		100k ohm, 1/10W, Metal Oxide	AA
R07	VRS-TV2AD182J		1.8k ohm, 1/10W, Metal Oxide	AA

CABINET PARTS				
1	GCABA0271AASA		Cabinet (A)	AE
2	GCABB0238AASA		Cabinet (B)	AE
3	GCOVH0105PASA		Battery Cover	AB
4	MSPRP0732PASA		Rubber Key	AG
5	HPNLH0885PASA		Indication Plate	AF
6	QTANZ0216PAZZ		Battery Terminal (+, -)	AB
7	QTANZ0275PAZZ		Battery Terminal (+)	AB
8	QTANZ0276PAZZ		Battery Terminal (-)	AB
9	QCNC-0035PAZZ		Rubber Connector	AB
10	LX-BZ0183PAZZ		Screw (M2 + 6S)	AB
11	XYBSF20P08000		Screw (M2 + 8S)	AA
12	DUNTLO053PAZZ		LCD (LF5337G)	AL
13			PWB	—

THE OTHER PARTS				
	QCNW-2702GEZZ		Antenna Cord	AK
	TiNS-1588UMZZ	U	Operation Manual (VC-A30HM)	
	TiNS-1609UMZZ	U	Operation Manual (VC-A40HM)	
	TGAN-A037WRRO	U	Guarantee Card	

Ref. No.	Part No.	*	Description	Code
MECHANISM CHASSIS PARTS				
1	PGiDS0023GEFW		Retaining Guide	AE
2	MSPRC0142GEFJ		Retaining Guide Spring	AA
3	MLEVC0022GEZZ		Half-Loading Lever	AF
4	MSPRT0270GEFJ		Half-Loading Lever Spring	AA
5	MLEVF0284GEFW		Half-Loading Drive Lever	AC
6	MSPRT0269GEFJ		Half-Loading Reciprocating Spring	AA
7	MLEVF0283GEZZ		Half-Loading Reciprocating Lever	AB
8	MSPRC0144GEFJ		Azimuth Spring	AA
9	RHEDU0070UMZZ	U	Audio/Control Head Ass'y	AA
10	PCAPS1015GEZZ		Retaining Guide Cap	AA
11	QPWBF2888GEZZ		Audio/Control Head PWB	AB
12	MLEVF0292GEZZ		Audio/Control Head Arm	AD
13	MSPRD0087GEFJ		Audio/Control Head Arm Spring	AA
14	LHLDZ1606GEZZ		Loading Block Holder Ass'y	AC
15	QPRBF2886GEZZ		Loading Block PWB	AD
16	RMOTM1049GEZZ		Loading Motor	AM
17	QPLGN0529TAZZ		Plug, 5 pin (MG)	AB
18	QSW-R0026GEZZ		Cam Switch	AE
19	NGERW1032GEZZ		Worm Wheel	AC
20	NPLYV0133GEZZ		Loading Motor Pulley	AC
21	NBLTK0058GE00		Loading Belt	AA
22	NGERW1031GEZZ		Worm Ass'y	AC
23	NSFTG0045GEFJ		Worm Shaft	AB
24	NGERH1129GEZZ		Master Cam	AC
25	MLEVF0281GEZZ		Pinch Roller Lever Ass'y	AN
26	MLEVF0290GEZZ		Relay Shifter Lever	AE
27	MLEVC0023GEZZ		Reverse Guide	AG
28	MSPRD0086GEFJ		Reverse Guide Spring	AA
29	RMOTN2028UMZZ	U	Capstan D.D. Motor	
30	MLEVP0136GEZZ		Slow Brake Lever	AA
31	MSPRT0276GEFJ		Slow Brake Spring	AA
32	MSPRC0151GEFJ		Reverse Guide Spring	AA
33	MLEVF0289GEZZ		Relay Gear Drive Lever	AE
34	MSLiF0043GEZZ		Brake Shifter	AK
35	NSFTZ0068GEFD		Brake Lock Shaft	AC
36	MSPRC0143GEFJ		Absorber Plate Spring	AB
37	MSPRT0274GEFJ		Video Search Spring	AB
38	MLEVP0181GEZZ		Video Search Brake Lever	AA
39	MLEVP0131GEZZ		Video Search Reciprocating Lever	AC
40	RPLU-0083GEZZ		Brake Solenoid Ass'y	AF
41	NDAiV1046GEZZ		Take-Up Reel Disk Ass'y	AG

VC-A30HM
VC-A40HM

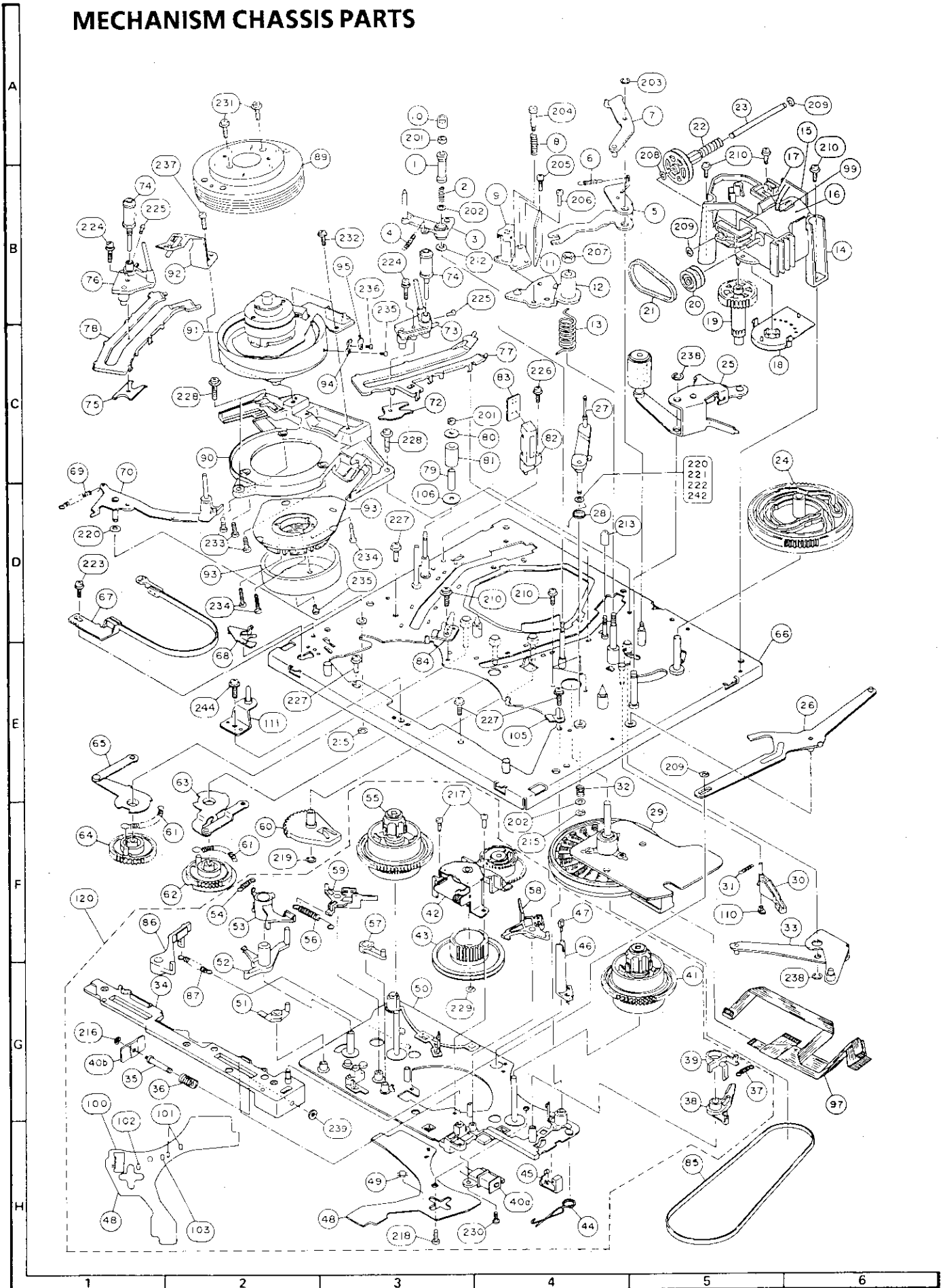
Ref. No.	Part No.	*	Description	Code	Ref. No.	Part No.	*	Description	Code
42	NGERH1128GEZZ		Idler Gear Ass'y	AN	86	MLEVP0146GEZZ		Auxiliary Fast-Forward Brake Lever	AE
43	NPLYV0134GEZZ		Reel Pulley	AC	87	MSPRT0282GEFJ		Auxiliary Fast-Forward Brake Spring	AB
44	MSPRD0085GEFJ		Shifter Spring	AB	89	DDRMU0002HE17		Upper Drum Ass'y	BE
45	PCOVP1018GEZZ		Shifter Spring Cover	AC	90	PGiDC0039GEFW		Drum Base	AL
46	LHLDP1092GEZZ		Cassette LED Holder	AE	91	DDRML0012HMV0	U	Lower Drum Ass'y	
47	RH-PX0180GEZZ		Cassette LED	AD	92	QBRSK0021GEZZ		Earth Brush Ass'y	AC
48	QPWBF2977GEZZ		Reel Sensor PWB	AK	93	RMOTP1102UMZZ	U	Drum D.D. Motor Ass'y	
49	RH-PX0181GEZZ		Reel Sensor	AE	94	LANGT9105GEFW		Heater Angle	AC
50	LCHSS0016GEZZ		Reel Block Chassis	AL	95	VHiM5F7805L-1		3-Terminal Regulator	AE
51	MLEVP0134GEZZ		Tension Adjusting Lever	AC	97	QCNW-5969GEZZ		Full Flat Cable (Capstan D.D. Motor and Drum D.D. Motor)	AM
52	MLEVP0195GEZZ		Tension Release Lever	AC	99	RDTCH0018GEZZ		DEW SENSOR	AG
53	MLEVP0132GEZZ		Back Tension Lever	AC	100	QSOCN0534REZZ		Socket, 5 pin (MF)	AC
54	MSPRT0273GEFJ		Spring, Fast-Forward	AB	101	VRS-TW2ED221J		220 ohm, 1/4W, 5%, Oxide Film	AA
55	NDAiV1047GEZZ		Supply Reel Disk Ass'y	AH	102	VCKYTV1HB102K		0.001µF, 50V, 10%, Ceramic	AA
56	MSPRT0272GEFJ		Main Brake Spring	AC	103	VRS-TV1JD473J		47k ohm, 1/16W, 5%, Oxide Film	AA
57	MLEVP0135GEZZ		Intermediate Lever	AC	105	LANGA0051GEFW		Take-up Reel Disk Catch Holder	AB
58	MLEVP0129GEZZ		Main Take-Up Brake Lever	AE	106	PGiDS0027GEZZ		Supply Impedance Roller Flange L	AA
59	MLEVP0128GEZZ		Main Supply Brake Lever	AE	110	PCAPS1018GEZZ		Slow Brake Shaft Cap	AA
60	NGERH1121GEZZ		Loading Relay Gear	AA	111	LANGF7061GEZZ		Release Pin Angle Ass'y	AC
61	MSPRT0271GEFJ		Loading Reciprocating Spring	AA	120	CCHSS0018GE02		Reel Block Ass'y	AZ
62	NGERH1120GEZZ		Take-up Loading Gear	AA	CASSETTE HOUSING				
63	MLEVF0304GEZZ		Take-up Loading Arm Ass'y	AC		CHLDX3052GE51		Cassette Housing Control Assembly	AY
64	NGERH1119GEZZ		Supply Loading Gear	AA	301	PGiDM0069GE00		Down Guide	AC
65	MLEVF0303GEZZ		Supply Loading Arm Ass'y	AC	302	QSW-F0034GEZZ		Cassette Erase Protection Switch	AC
66	LCHSM0108GEZZ		Main Chassis Ass'y	AR	303	LHLDX1014GE00		Cassette Housing Frame (Right)	AC
67	LBNDK1002GEZZ		Tension Band Ass'y	AD	304	MARMP0043GE00		Cassette Cover Arm (A)	AA
68	LHLDZ1607GEZZ		Tension Spring Hook Plate	AA	305	MARMP0044GE00		Cassette Cover Arm (B)	AA
69	MSPRT0275GEFJ		Tension Spring	AA	306	NGERW1036GEZZ		Phase Gear	AA
70	MLEVF0291GEZZ		Tension Arm Ass'y	AF	307	MSPRT0290GEFJ		Cassette Cover Arm Reciprocating Spring	AA
72	MSLiF0049GEFW		Take-up Pole Base Slider	AB	308	MSPRD0088GEFJ		Drive Gear Spring (Right)	AA
73	LPOLM0037GEZZ		Take-up Pole Base Ass'y	AG	309	NGERW1034GEZZ		Drive Gear (Right)	AB
74	NROLP0062GEZZ		Guide Roller Ass'y	AE	310	MSPRT0277GEFJ		Reciprocating Spring	AA
75	MSLiF0048GEFW		Supply Pole Base Slider	AB	311	NGERW1033GEZZ		Worm Wheel Gear	AB
76	LPOLM0036GEZZ		Supply Pole Base Ass'y	AG	312	LANGF9355GEFW		Worm Bracket	AB
77	PGiDM0066GEZZ		Take-up Loading Rail	AB	313	NBRGP0013GEZZ		Bearing	AA
78	PGiDM0067GEZZ		Supply Loading Rail	AB	314	MLEVP0142GE00		Open Lever	AA
79	NSFTL0563GEFW		Supply Impedance Roller	AC	315	MSPRD0091GEFJ		Open Lever Spring	AA
80	PGiDH0031GEFW		Supply Impedance Roller Flange	AA	316	MLEVP0141GEZZ		Switching Lever	AA
81	NROLP0084GEZZ		Supply Impedance Roller	AD					
82	RHEDT0026GEZZ		Full Erase Head Ass'y	AK					
83	QPWBF2936GEZZ		Full Erase Head PWB	AA					
84	LANGA0054GEZZ		Supply Reel Retainer Ass'y	AD					
85	NBLTK0059GE00		Reel Belt	AB					

Ref. No.	Part No.	*	Description	Code	Ref. No.	Part No.	*	Description	Code
317	MSPRT0280GEFJ		Switching Lever Spring	AA	SCREWS, NUTS, AND WASHERS				
318	NSFTD0016GEZZ		Worm Shaft Ass'y	AE					
319	MLEVP0140GEZZ		Clutch Lock Lever	AA	201	XNFSD20-16000		Adjusting Nut	AA
320	MSPRT0279GEFJ		Clutch Lock Lever Spring	AA	202	XWHS26-05060		Washer W2.6S-6-0.5	AA
321	MLEVP0139GEZZ		Clutch Release Lever	AA	203	XRESJ20-04000		E Ring-2	AA
322	MSPRD0092GEFJ		Clutch Release Lever Spring	AA	204	LX-BZ3095GEFD		AC Head Screw	AA
323	MLEVP0138GEZZ		Clutch Lever	AA	205	XBPSD26P06000		Azimuth Adjusting Screw	AA
324	NPLYV0135GEZZ		Pulley	AA	206	LX-BZ3096GEFD		Tilt Adjusting Screw	AA
325	NBLTK0060GE00		Cassette Loading Belt	AB	207	XNFSD40-31000		Adjusting Nut (A/C Head)	AB
326	LANGF9354GEFW		Upper Plate	AD	208	LX-WZ1048GEZZ		Washer W3.1-5.4-0.5	AA
327	LHLDX1011GE00		Slider Holder (Left)	AB	209	LX-WZ1041GE00		Washer W2.6-6-0.5 (LM)	AA
328	MSPRP0097GEFJ		Cassette Spring	AA	210	XHPSD26P06WS0		Screw C2.6P + 6S	AA
329	LANGF9357GEFW		Slider Lock (Left)	AA	211	XRESJ30-06000		E Ring-3	AA
330	MSPRT0281GEFJ		Slider Lock Spring	AA	212	XWHJZ45-02060		Washer PSW4.6-6-0.25	AA
331	MSLIF0044GEFW		Slider	AF	213	LX-NZ3046GEFW		Adjusting Nut	AB
332	MLEVP0137GE00		Lock Release Lever	AA	215	LX-WZ1003GE00		Washer CW2.1-5-0.5	AA
333	MSPRD0093GEFJ		Lock Release Lever Spring	AA	216	XRESJ12-03000		E Ring-1.2	AA
334	MLEVP0143GE00		Slider Lock Cover	AA	217	XHPSD26P03000		Screw S2.6P + 3S	AA
335	LANGF9356GEFW		Slider Lock (Right)	AA	218	XHPSD20P03000		Screw S2P + 3S	AA
336	LHLDX1010GE00		Slider Holder (Right)	AB	219	XRESJ25-04000		E Ring-2.5	AA
337	NGERW1035GEZZ		Drive Gear (Left)	AB	220	XWHJZ25-05050		Washer W2.6-5-0.5	AA
338	MSPRD0089GEFJ		Drive Gear Spring (Left)	AA	221	XWHJZ25-01050		Washer W2.6-5-0.13	AA
339	LHLDX1015GE00		Cassette Housing Frame (Left)	AF	222	XWHJZ25-02050		Washer W2.6-5-0.25	AA
340	NSFTD0015GEFD		Main Shaft	AD	223	LX-HZ3043GEZZ		Screw W2.6 + 6S	AA
341	QPWBF2894GEZZ		End Sensor PWB	AB	224	LX-BZ3099GEZZ		Screw WSW2P + 11S (W5)	AB
342	RH-PX0176GEZZ		Phototransistor	AE	225	LX-XZ3030GEFD		Screw M2x4	AC
343	QPWBF3194GEZZ		Start Sensor PWB	AC	226	XHPSD26P08WS0		Screw C2.6P + 8S	AA
344	QSW-F0040GEZZ		Cassette Switch	AD	227	XJPSD26P08WS0		B Tight Screw C2.6P + 8S	AA
345	ZTAPEZ790008E		Rubber Mat	AA	228	XHPSD30P08WS0		Screw C3P + 8S	AA
347	QSOCN0595GEZZ		Socket, 5 pin	AB	229	LX-WZ1040GE00		Washer CW2.5-6-0.5	AA
348	VSDTC124F/-1		Transistor, DTC124F	AC	230	XJBSD20P06000		B Tight Screw 2P + 6S	AA
349	VS2SA937-Q/-1		Transistor	AC	231	LX-BZ3039GEFN		Screw W3P + 9S-Ni	AA
350	VRD-RA2BE153J		15k ohm, 1/8W, 5%, Carbon	AA	232	LX-HZ3056GEFD		Screw WSW3P + 10S-6W	AA
351	VRD-RA2BE223J		22k ohm, 1/8W, 5%, Carbon	AA	233	XBPSD30P08J00		Screw SW3P + 8S	AA
352	VRD-RA2BE103J		10k ohm, 1/8W, 5%, Carbon	AA	234	XBPSD26P12J00		Screw SW2.6P + 12S	AA
353	VRD-RA2BE472J		4.7k ohm, 1/8W, 5%, Carbon	AA	235	XBPSD30P05J00		Screw SW3P + 5S	AA
354	VRD-RA2BE332J		3.3k ohm, 1/8W, 5%, Carbon	AA	236	XBPSD30P06J00		Screw SW3P + 6S	AA
355	RC-KZ0028GEZZ		.047µF, 16V, 20%, Ceramic	AA	237	XHPSD30P06000		Screw S3P + 6S	AA
356	QCNW-4789GEZZ		Connecting Cord	AF	238	LX-RZ3001AEZZ		E Ring (Curl)	AA
401	LX-WZ1020GE00		Cut Washer (4.2W-6.0-0.5)	AA	239	LX-WZ1042GE00		Washer CW2.7-7-0.5	AA
402	LX-HZ3046GEFD		Screw (B Tight BTN3P + 6S)	AA	242	XWHJZ25-04050		Washer W2.6-5-0.4	AA
					244	XHPSD30P04WS0		Screw C3P + 4S	AA
MECHANICAL PARTS									
					601	CCABB1081TEV0 U		Main Frame Ass'y (VC-A30HM)	AT

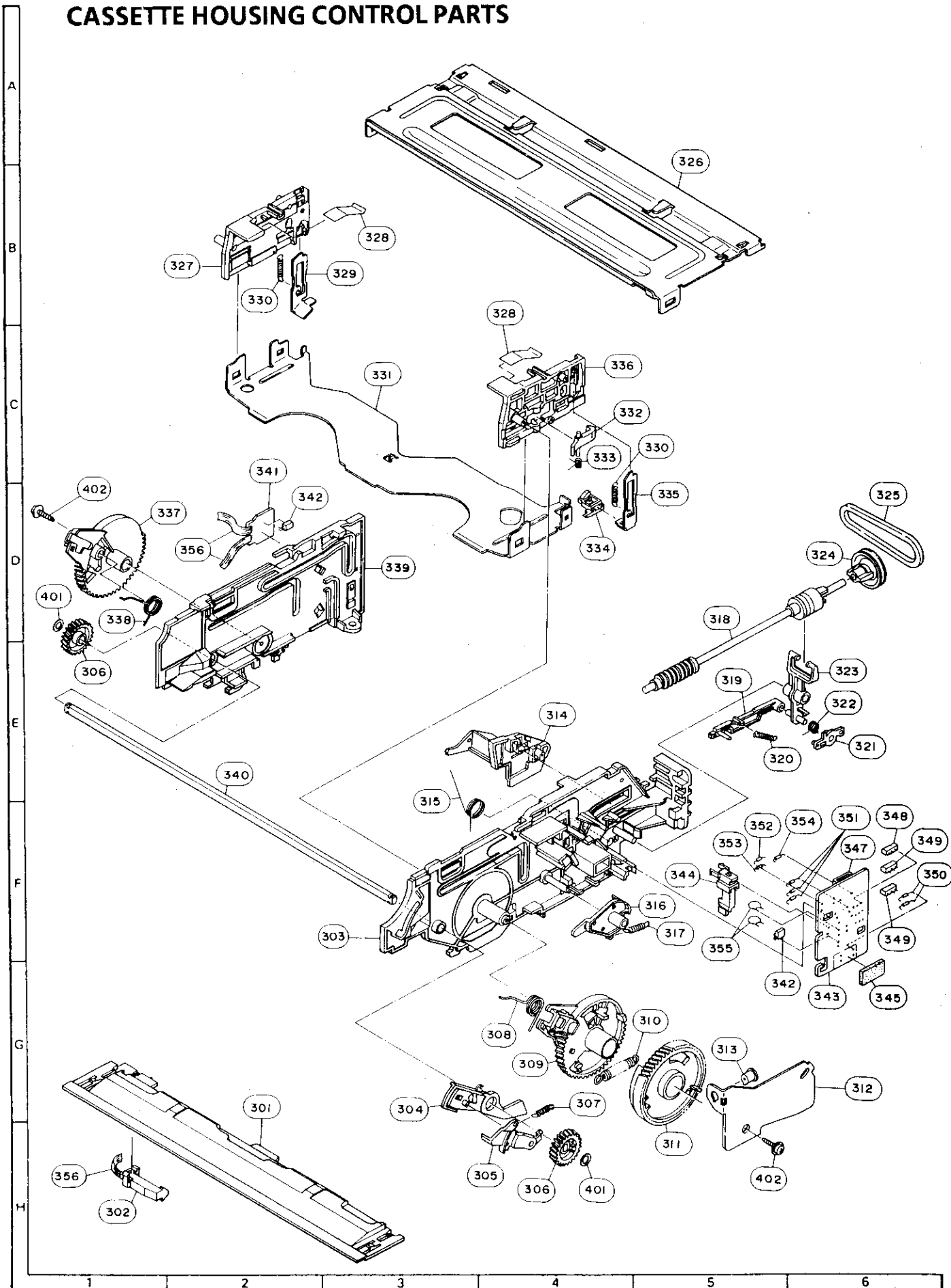
VC-A30HM
VC-A40HM

Ref. No.	Part No.	*	Description	Code	Ref. No.	Part No.	*	Description	Code
	GCABB1081UMZZ	U	Main Frame (VC-A40HM)		501-4	HDECQ0709UMSA	U	Cassette Compartment Cover (VC-A30HM)	
601-1	PFLT-0069GEZZ		Felt, Pad	AA		HDECQ0703UMSA	U	Cassette Compartment Cover (VC-A40HM)	
602	GCABA3046UMSO	U	Top Cabinet	AV	501-5	LHLDZ1661UMZZ	U	Holder	
603	GBDYU3052UMZZ	U	Bottom Plate	AK	501-6	QEARP0272UMFW	U	Earth Plate	
604	GCOVA1511UMZZ	U	Antenna Terminal Cover	AF	501-7	PCOVU9171GESC		Fluorescent Display Filter	AE
607	LHLDZ1609UMZZ	U	Y/C Holder	AA	501-10	CBTN-2469TEV0	U	Operate/Eject Button Ass'y	
608	QEARP0276UMFW	U	Earth Plate, Upper	AA	501-10-1	JBTN-2469UMSA	U	Button, Power/Eject	
609	PSPAS0015UMZZ	U	Spacer		501-10-2	GCOVA1622UMSA	U	LED Cover	
610	XEBSD30P12000		Screw	AA	501-11	LHLDS1010UMZZ	U	Door Holder	
611	XHPSD30P06WS0		Screw	AA	501-12	GCOVA1425UMZZ	U	R/C Cover	
612	XEBSD40P12000		Screw	AA	501-13	HDECQ0685UMSA	U	Decoration Plate (VC-A30HM)	
614	LX-HZ3040GEFF		Screw, Top Cabinet	AA		HDECQ0697UMSA	U	Decoration Plate (VC-A40HM)	
615	LHLDP1105GE00		LED Holder	AB	501-14	HiNDP1751UMSA	U	Indication Plate (Inside the door) (VC-A30HM)	
617	LHLDZ1716GEZZ		Holder, Fluorescent Display Tube	AC		HiNDP1755UMSA	U	Indication Plate (Inside the door) (VC-A40HM)	
619	TLABM0074UMZZ	U	Model Label		501-15	TLABH0472UMZZ	U	Door Label	
620	PSPAZ0202GEZZ		Spacer	AC	501-16	LANGF9404UM00	U	Angle	
622	LHLDZ1624UMZZ	U	Holder	AD	501-17	GDORF1837UMSA	U	Door (VC-A30HM)	
623	LX-HZ3047GEFF		Screw, Bottom Plate	AA		GDORF1840UMSA	U	Door (VC-A40HM)	
624	LHLDZ1616GEZZ		Holder	AA	501-19	JBTN-2461UMSA	U	Button, DPSS (VC-A30HM)	
631	XJBSD30P16000		Screw	AA		JBTN-2472UMSA	U	Button, DPSS (VC-A40HM)	
FRONT PANEL PARTS					501-20	JBTN-2227UMSA	U	Bottom, REC	
501	CPNLC1627TEV2	U	Front Panel Ass'y (VC-A30HM)		501-21	HBDGB1005UMSA	U	Badge, "SHARP"	
	CPNLC1634TEV2	U	Front Panel Ass'y (VC-A40HM)		501-22	TLABZ0729UMZZ	U	Mode in UK Label	
501-1	MSPRD0103GEFJ		Spring	AB					
501-2	LHLDZ1662UMZZ	U	Holder						
501-3	LHLDZ1663UMZZ	U	Holder						

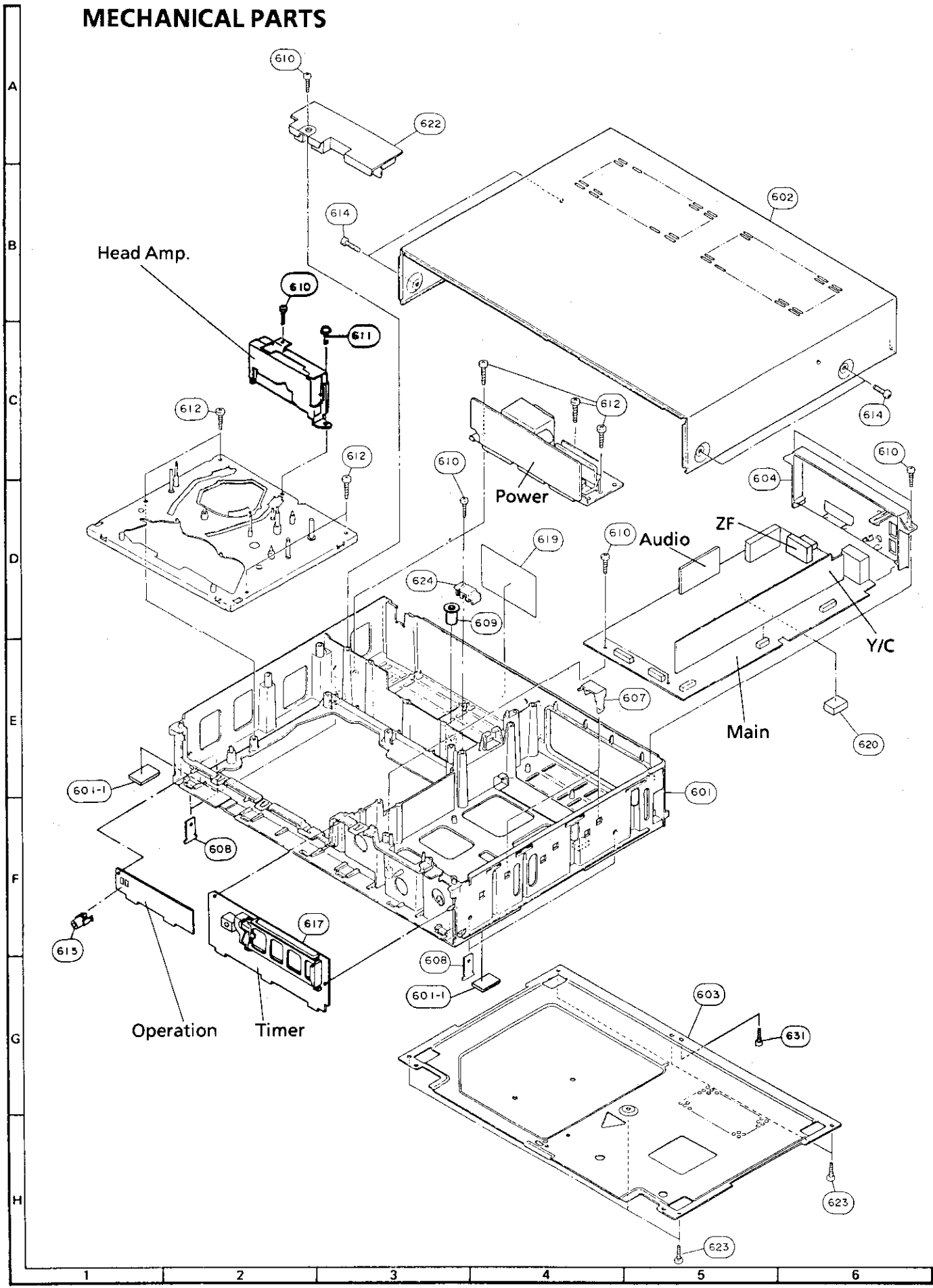
MECHANISM CHASSIS PARTS



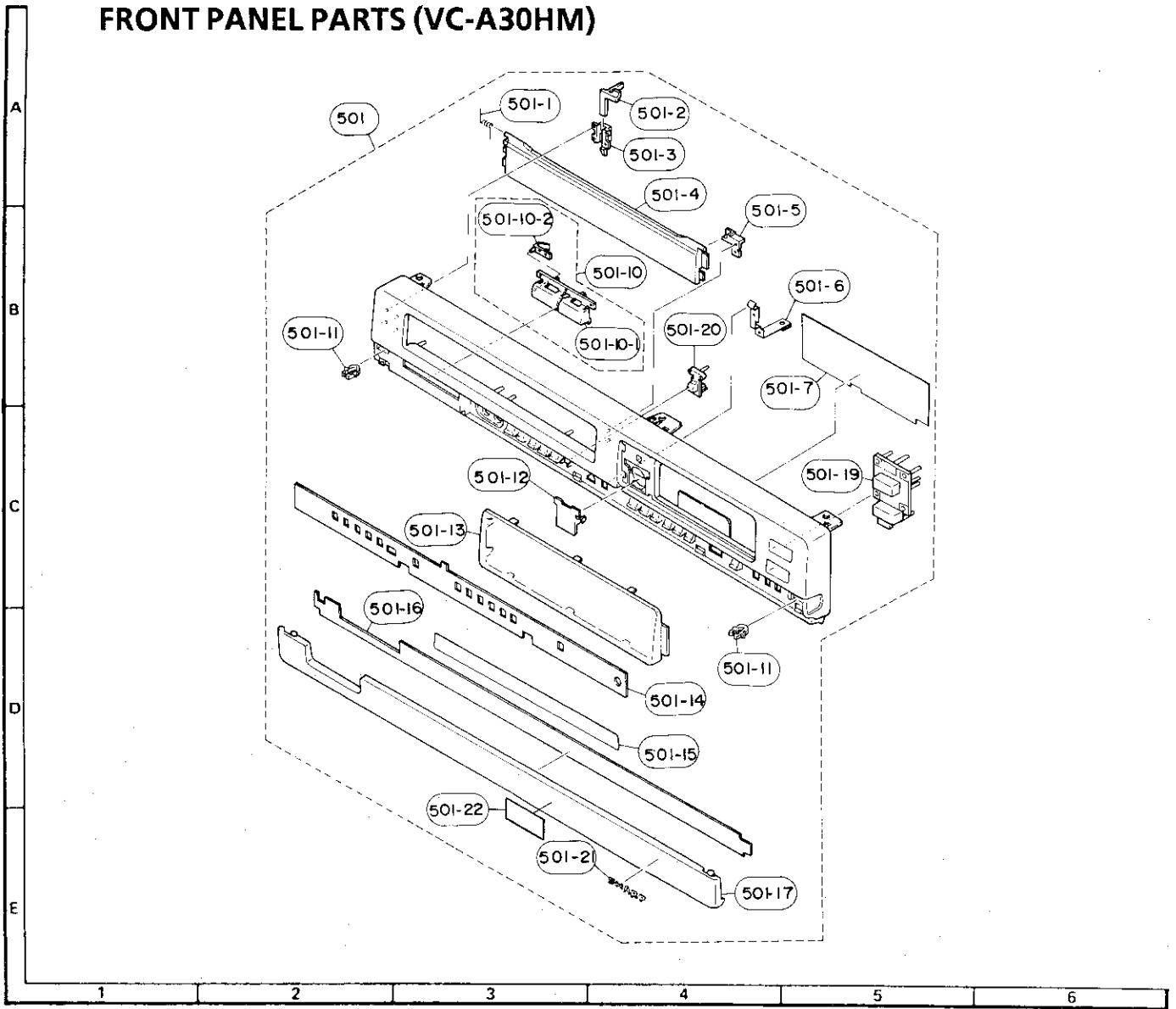
CASSETTE HOUSING CONTROL PARTS



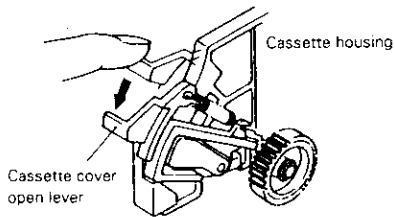
MECHANICAL PARTS



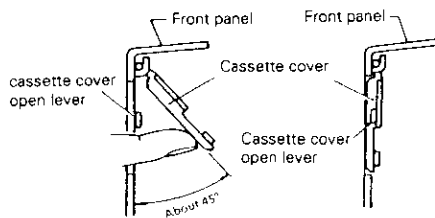
FRONT PANEL PARTS (VC-A30HM)



PRECAUTIONS ON FRONT PANEL SET-UP

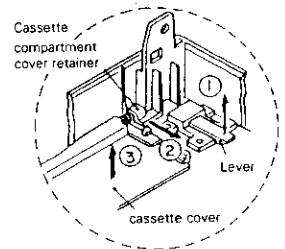


Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lowermost). If it is out of position, push it down with a finger.



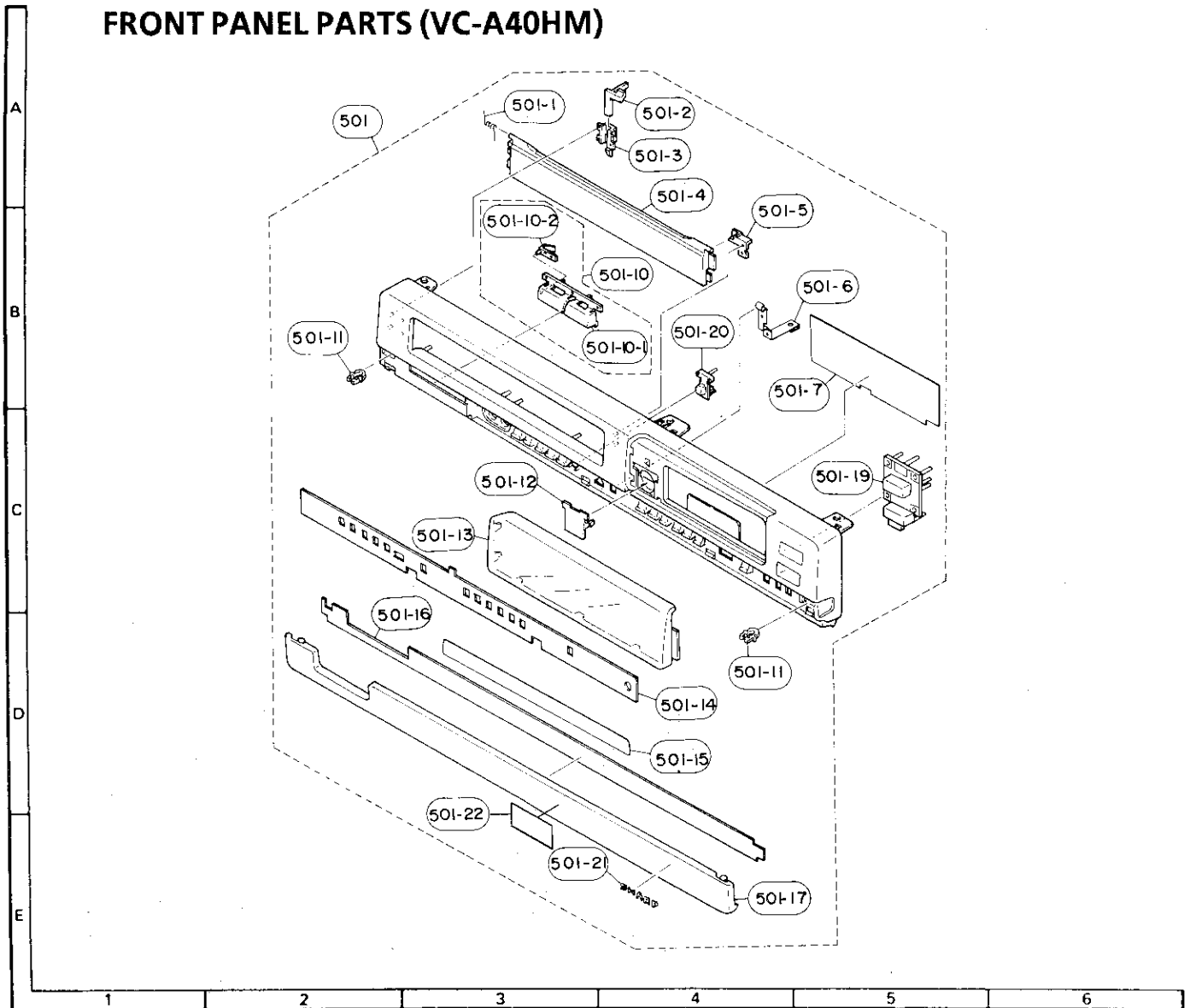
keep the cassette cover about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.

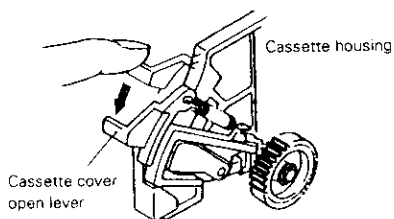


- Removing the cassette compartment cover.
1. Lift up the lever in the direction of arrow ① to shift the cassette compartment cover retainer in the direction of arrow ②.
 2. Lift up the cassette compartment cover in the direction of arrow ③ and remove it from the front panel.

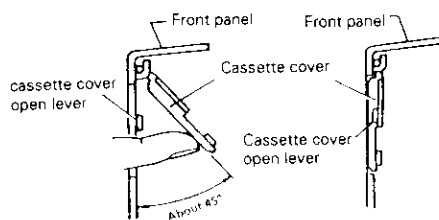
FRONT PANEL PARTS (VC-A40HM)



PRECAUTIONS ON FRONT PANEL SET-UP

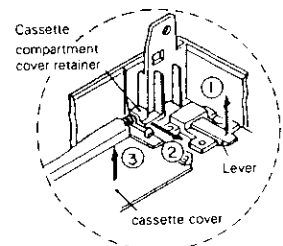


Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lowermost). If it is out of position, push it down with a finger.



keep the cassette cover about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

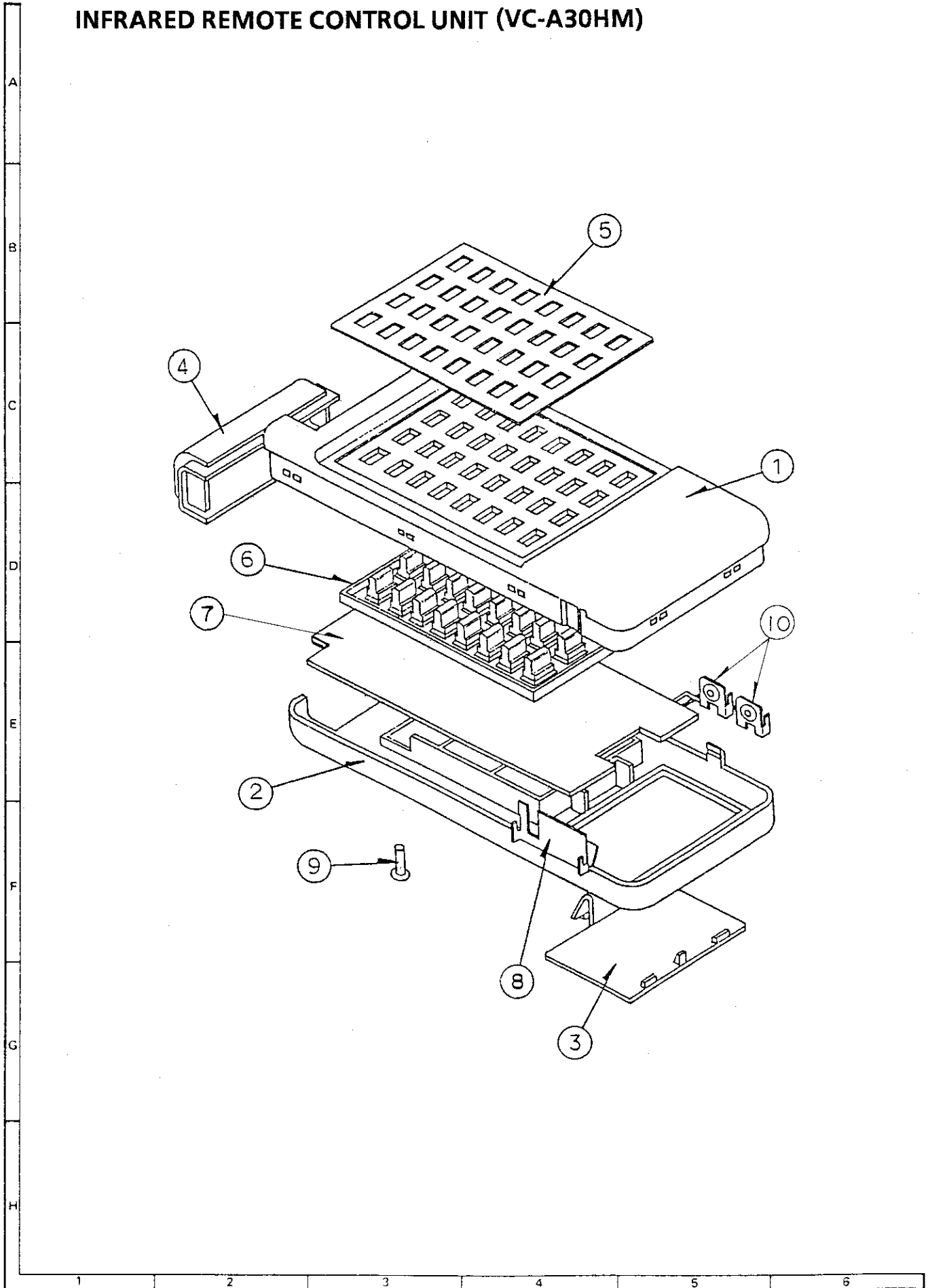
Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.



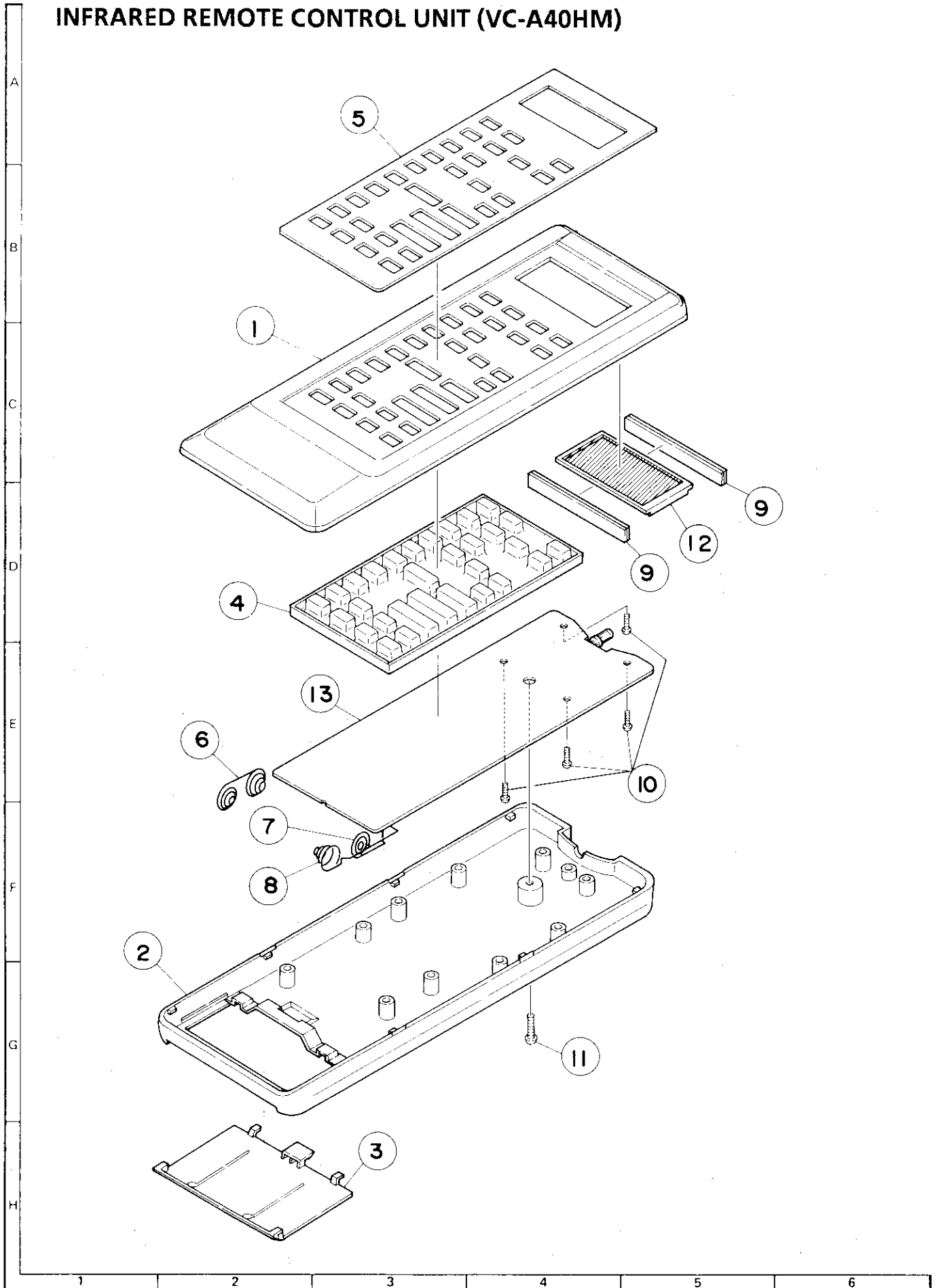
Removing the cassette compartment cover.

1. Lift up the lever in the direction of arrow ① to shift the cassette compartment cover retainer in the direction of arrow ②.
2. Lift up the cassette compartment cover in the direction of arrow ③ and remove it from the front panel.

INFRARED REMOTE CONTROL UNIT (VC-A30HM)



INFRARED REMOTE CONTROL UNIT (VC-A40HM)



PACKING OF THE SET

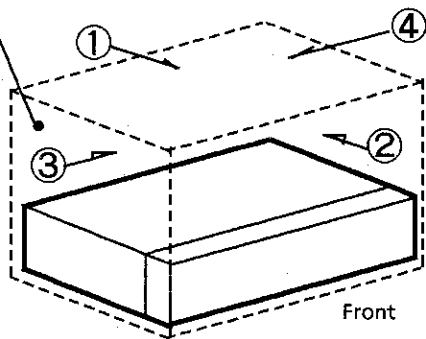
● Setting position of the Knobs

Test signal	at "OFF" position	RF converter output	at "E36" channel
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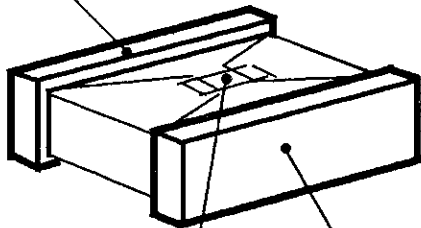
★ Accessories

- ★ QCNW-2702GEZZ Antenna Cord
- ★ TiNS-1588UMZZ Operation Manual (VC-A30HM)
- ★ TiNS-1609UMZZ Operation Manual (VC-A40HM)
- ★ TGAN-A037WRRO Guarantee card

★ SSAKA0003UMZZ
Polystyrene sack



★ SPAKX0477UMZZ
Buffer material (Rear)



★ SPAKX0476UMZZ
Buffer material (Front)

Fix with craft tape

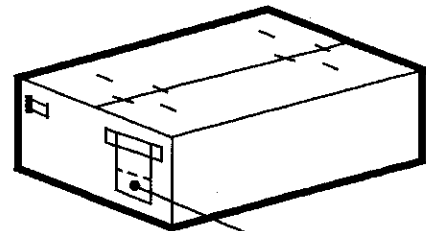
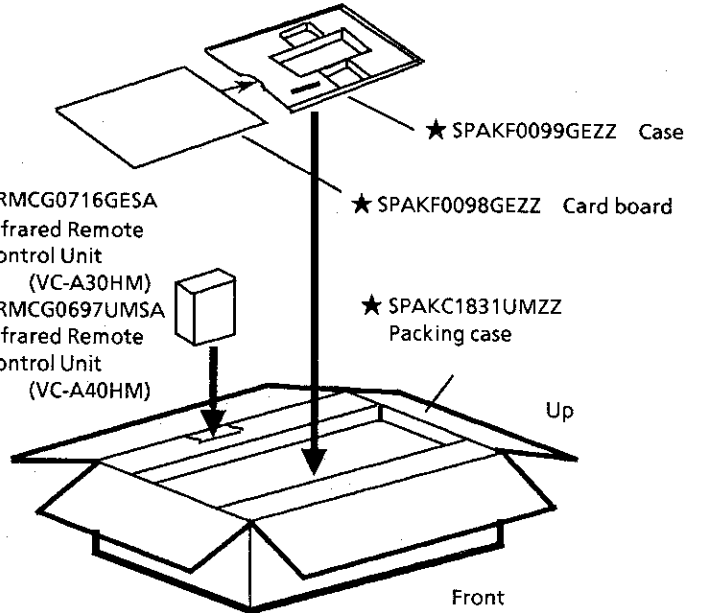
RRMCG0716GE5A
Infrared Remote
Control Unit
(VC-A30HM)

RRMCG0697UMSA
Infrared Remote
Control Unit
(VC-A40HM)

★ SPAKF0099GEZZ Case

★ SPAKF0098GEZZ Card board

★ SPAKC1831UMZZ
Packing case



★ TLABK0001UMZZ
No. Card

MARK ★ Not Replacement Items

VIDEO TECHNICAL BULLETIN

<u>MODELS</u>	VCT310HM	VCT510HM	VCA30HM	VCA40HM	VCA50HM	VCA615HM
	VCA81HM	VCA215HM	VCA55HM	VCA63HM	VCH84HM	VCH86HM

SYMPTOM Unit laces up in play or record mode then unlaces after a few seconds.

CAUSE Loss of the drum FG pulse resulting in no head-switching signal.

ACTION Replace the drum motor assembly using the part number given in the respective Service Manual.

VIDEO TECHNICAL BULLETIN

<u>MODELS</u>	VCT310HM	VCT510HM	VCT72HM	VCH81HM
	VCH84HM	VCH86HM	VCH89HM	VCA30HM
	VCA40HM	VCA215HM	VCA45HM	VCA60HM
	VCA615HM	VCBS97HM		

SYMPTOM Poor rewind - normal too slow at the start of rewinding.

CAUSE Slow brake becomes contaminated with dirt.

ACTION Replace the slow brake using the part number given below.

<u>REF NO</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>	<u>PRICE CODE</u>
30	Slow brake	MLEVP0136GEZZ	AA