SHARP SERVICE MANUAL

S60047VC303HM

VC-M303HM

VHS VIDEO CASSETTE RECORDER

VC-M303HM/LM

MODELS VC-M313HM/LM

VC-M313HM

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 be used.

CONTENTS

SHARP CORPORATION

PRECAUTIONS IN PART REPLACEMENT

When servicing the unit with power on, be careful of the section outlined in white.
This is the primary power circuit which is live.
When checking the solder side in the tape travel mode, make sure that the tape has been loaded and then turn over the PWB with due care to the primary power circuit.
Make readjustment, if needed after replacement of part, with the mechanism and its PWB in position in the main frame.

(1) Start and end sensors: Q701 and Q702

Insert the sensor's projection deep into the upper hole of the holder. Referring to the PWB, fix the sensors tight enough.
When replacing the mechanism on the PWB care should be taken that the sensors locate into the mechanism holder.

(2) Photocoupler: IC901

Refer to the symbol on the PWB and the anode marking of the part.

(3) Cam switches A and B: D708 and D705.

Adjust the notch of the part to the white marker of the symbol on the PWB. The part must be flat to the PWB.

(4) Take-up and supply sensors: D711 and D712.

Be careful not to confuse the setting direction of parts in reference to the symbols on the PWB. The part must be flat to the PWB.

1. SPECIFICATIONS

Format:	VHS PAL standard
Video recording system:	Two rotary heads, helical scan system
Video signal:	PAL colour and I signals, 625 lines
Recording/playing time:	240 min max. with SHARP E-240 tape (PAL/SP) 480 min max. with SHARP E-240 tape (PAL/LP)
Tape width:	12.7mm
Tape speed:	23.39 mm/s (PAL/SP) 11.70 mm/s (PAL/LP) 33.35 mm/s (NTSC SP)
Antenna:	75 ohm unbalanced
Receiving channel:	UHF Channel E21-E69
RF converter output signal:	UHF Channel E21-E69 (Preset to CH E36)
Power requirement:	AC230V-240V, 50Hz
Power consumption:	Approx. 14 W (AC230V/50Hz) and 3.5W max. at stand-by mode
Operating temperature:	5°C to 40°C
Storage temperature:	–20°C to 55°C
Weight:	Approx. 3.2 kg
Dimensions:	360 mm (W) x 284 mm (D) x 93 mm (H)
VIDEO	
Input:	1.0 Vp-p, 75 ohm
Output:	1.0 Vp-p, 75 ohm
S/N ratio:	45 dB (SP mode)
Horizontal resolution:	Approx. 260 lines (SP mode with Supper Picture)
AUDIO	0 dBs = 0.775 Vrms
Input:	Line1: –3.8 dBs, 10k ohm
Output:	Line1: –3.8 dBs, 1k ohm
F. AV	: -3.8dBs, 47k ohm(VC-M313HM ONLY)
S/N ratio:	46 dB min. (SP mode)
Frequency responce:	80 Hz ~ 10 kHz (SP mode) 80 Hz ~ 5 kHz (LP mode)
Accessories included:	75 ohm coaxial cable Operation manual Infrared remote control Battery

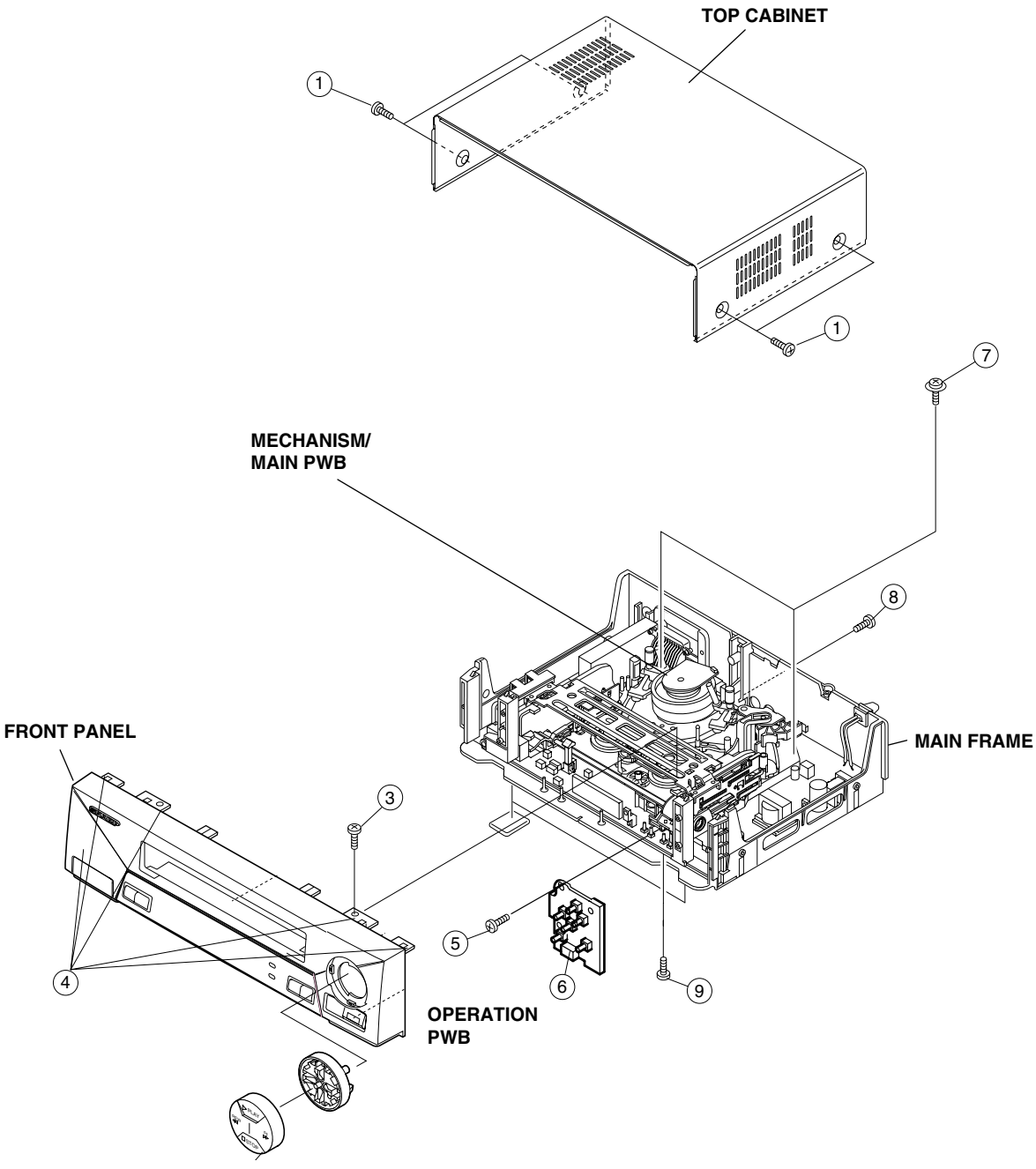
As part of our policy of continuous improvement, we reserve the right to alter design and specifications without notice.

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

2. DISASSEMBLY AND REASSEMBLY

2-1 DISASSEMBLY OF MAJOR BLOCKS

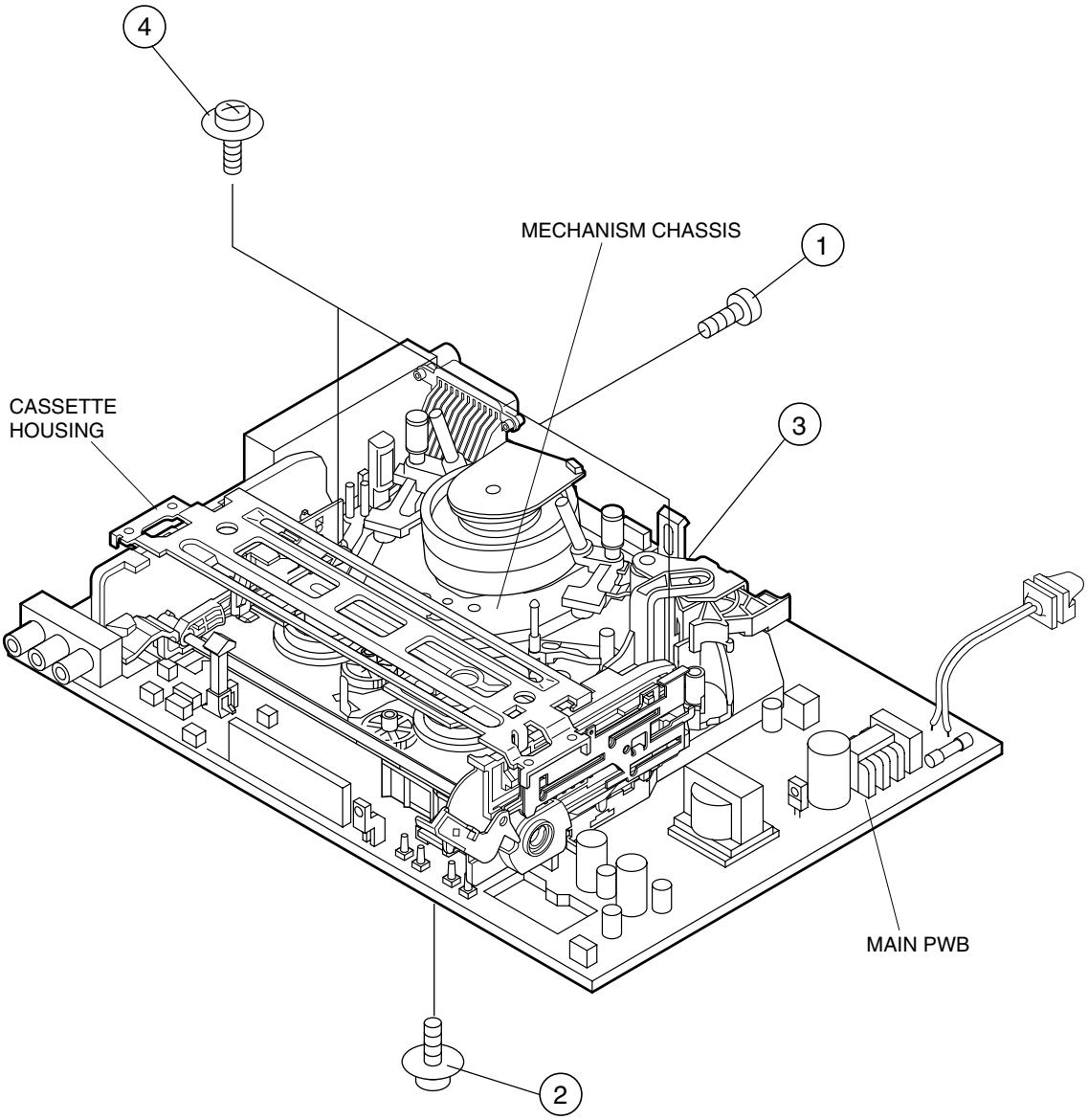
TOP CABINET : Remove 4 screws ①.
FRONT PANEL : Remove shuttle switch knob ②. Remove 1 screw ③ and 7 clips ④.
OPERATION (SHUTTLE JOG) PWB : Remove 1 screw ⑤. Take it out of connector ⑥.
MECHANISM/ MAIN PWB : Remove 2 screws ⑦, 1 screw ⑧, 1 screw ⑨.



2-2 DISASSEMBLING THE MECHANISM/MAIN PWB ASSEMBLY

1. When removing the mechanism from the main PWB, remove the antenna cover 1 screw ①, and remove the antenna cover.
   Remove the PWB bottom plate 1 screw ②.
   Remove the FFC cable (AA, AD, AH) ③ which connects the PWB and the mechanism.
   Take out vertically the mechanism so that it does not damage the adjacent parts.

2. Removing the mechanism and cassette controller
   Remove 2 screws ④ fixing the cassette controller to the mechanism, and remove the cassette controller.



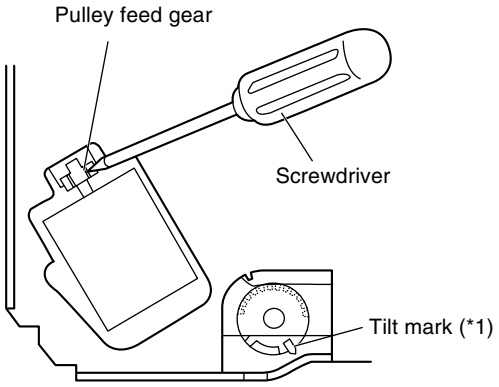
2-3 CARES WHEN REASSEMBLING

INSTALLING THE CASSETTE CONTROLLER

When the cassette controller is installed on the mechanism, the initial setting is essential condition.
There are two initial setting methods, namely electrical and mechanical.

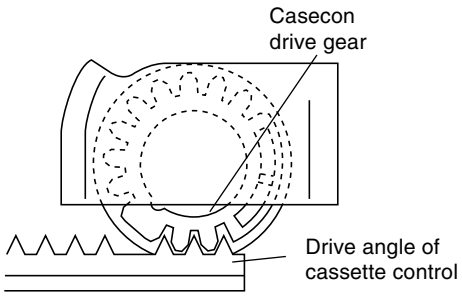
1. Electrical initial setting

So as to perform initial setting of mechanism execute the Step 1 of Installation of cassette housing. After ascertaining the return to the initial setting position (*1) install the cassette controller. (Conditions: When mechanism and PWB have been installed)



2. Mechanical initial setting

Feed the pulley feed gear of loading motor with screw driver. After ascertaining the return to the initial set position (*1) install the cassette controller in the specified position. (This method is applied only for the mechanism.)

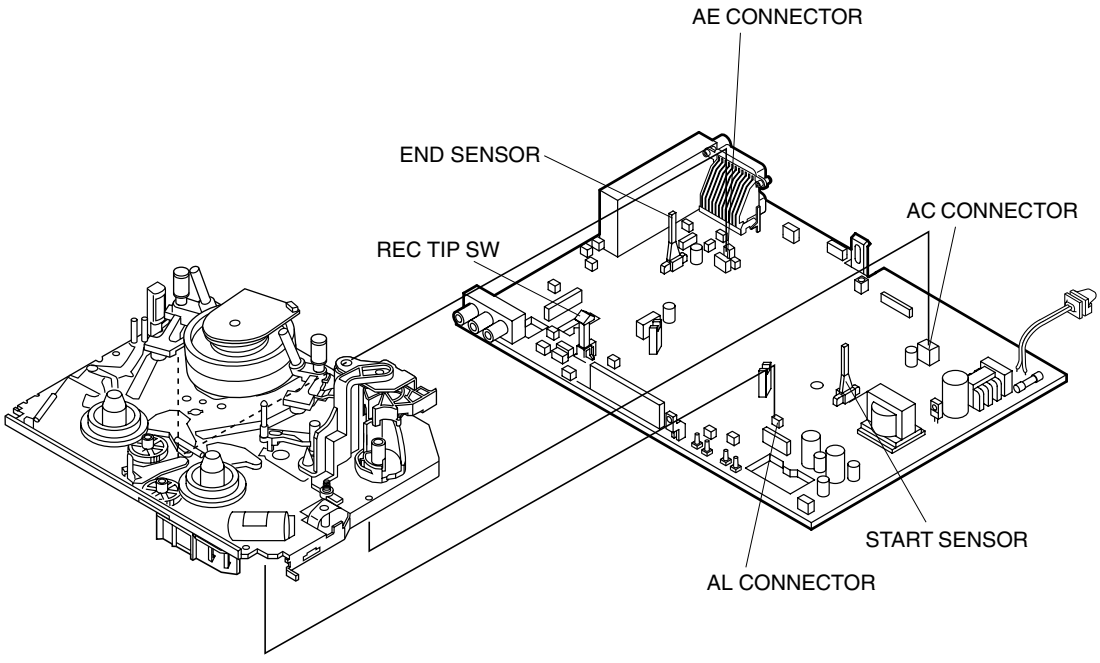


INSTALLING THE MECHANISM ON PWB

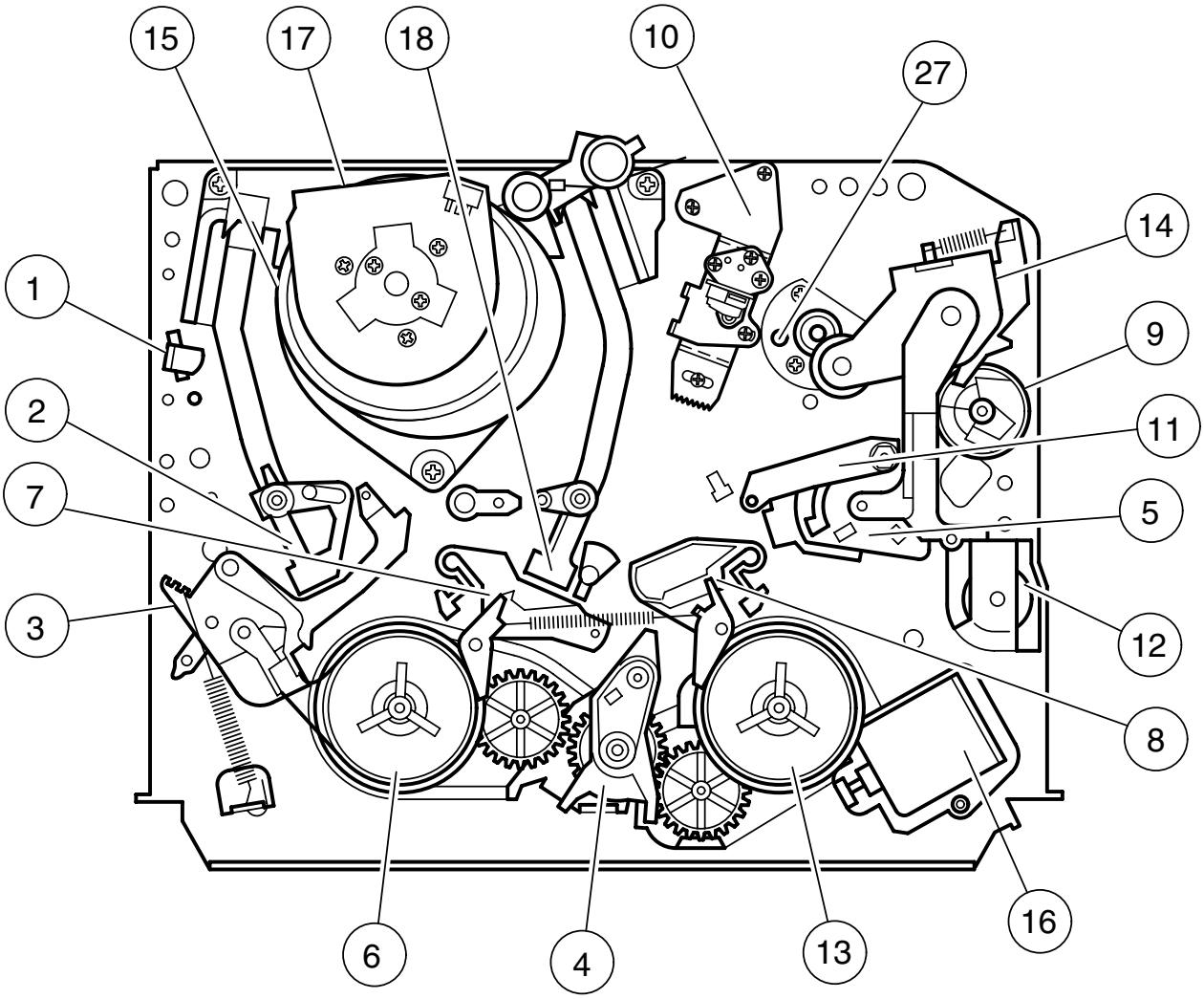
Lower vertically the mechanism, paying attention to the mechanism edge, and install the mechanism with due care so that the parts are not damaged. So as to fix the mechanism to the main PWB install two housings. (Fit the antenna cover to one of them. For other, fix the vicinity of loading motor and solder joint side of main PWB.) Connect again the FFC cable (AA-MH, AD-ME, AH-MH) between the mechanism and the main PWB.

PARTS WHICH NEED PARTICULAR CARE

When installing the mechanism chassis on the PWB unit, take care so as to prevent deformation due to contact of mechanism chassis with REC TIP SW.

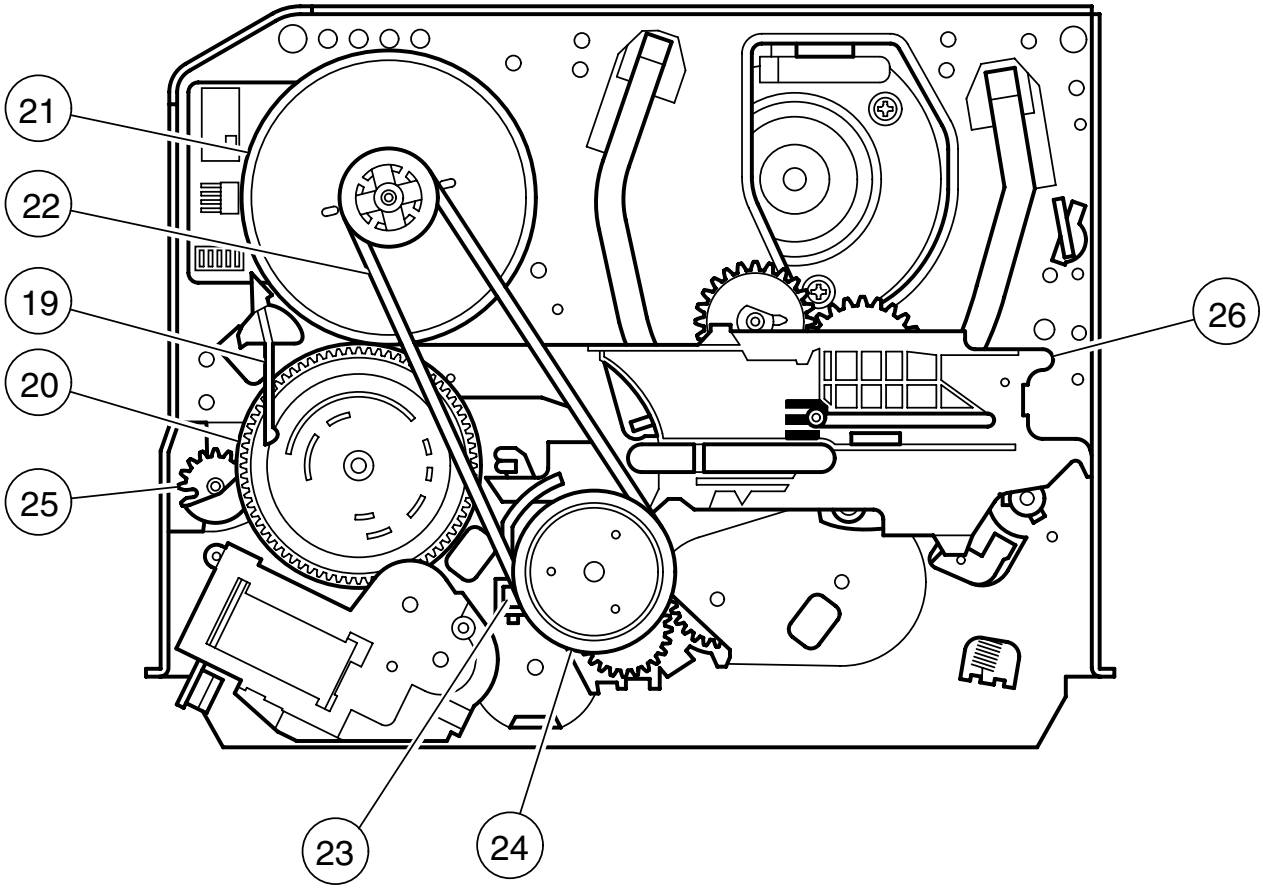


3. FUNCTION OF MAJOR MECHANICAL PARTS (TOP VIEW)



No.	Function	No.	Function
1	Full erase head	11	Reverse guide lever ass'y
2	Supply pole base ass'y	12	Casecon drive gear
3	Tension arm ass'y	13	Take-up reel disk
4	Idler wheel ass'y	14	Pinch roller lever ass'y
5	Pinch drive lever ass'y	15	Drum ass'y
6	Supply reel disk	16	Loading motor
7	Supply main brake ass'y	17	Drum motor
8	Take-up main brake ass'y	18	Take-up pole base ass'y
9	Pinch drive cam	27	Fixing guide
10	A/C Head ass'y		

FUNCTION OF MAJOR MECHANICAL PARTS (BOTTOM VIEW)



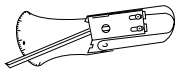
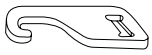
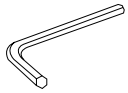
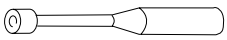
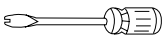
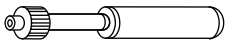
No.	Function	No.	Function
19	Slow brake	23	Clutch lever
20	Master cam	24	Limiter pulley ass'y
21	Capstan D.D. motor	25	Casecon drive gear
22	Reel belt	26	Shifter

4. ADJUSTMENT, REPLACEMENT AND ASSEMBLY OF MECHANICAL UNITS

The explanation given below relates to the on-site general service (field service) but it does not relates to the adjustment and replacement which need high-grade equipment, jigs and skill. For example, the drum assembling, replacement and adjustment service must be performed by the person who have finished the technical courses.

4-1 MECHANISM CONFIRMATION ADJUSTMENT JIG

So as to perform completely the mechanism adjustment prepare the following special jigs. So as to maintain the initial performance of the machine the maintenance and check are necessary. Utmost care must be taken so that the tape is not damaged. If adjustment needs any jig, be sure to sue the required jig.

No.	Jig Item	Part No.	Code	Configuration	Remarks
1.	Torque Cassette Meter	JiGVHT-063	CZ		This cassette torque meter is used for checking and adjusting the torque of take-up for measuring tape back tension.
2.	Torque Gauge	JiGTG0090	CM		These Jigs are used for checking and adjusting the torque of take-up and supply reel disks.
		JiGTG1200	CN		
3.	Torque Gauge Head	JiGTH0006	AW		
4.	Torque Driver	JiGTD1200	CB		When fixing any part to the threaded hole using resin with screw, use the jig. (Specified torque 5 kg)
5.	Master Plane Jig and Reel Disk Height Adjusting Jig	JiGRH0002	BR		These Jigs are used for checking and adjusting the reel disk height.
		JiGMP0001	BY		
6.	Tension Gauge	JiGSG2000	BS		There are two gauges used for the tension measurements, 300 g and 2.0kg.
		JiGSG0300	BF		
7.	Pinch pressing force measuring jig	JiGADP003	BK		This Jig is used with the tension gauge. Rotary transformer clearance adjusting jig.
8.	Hex Wrench (1.2 mm)	JiGHW0012	AE		These Jigs are used for loosening or tightening special hexagon type screws.
	Hex Wrench (1.5 mm)	JiGHW0015	AE		
9.	Reverse guide height adjusting box driver	JiGDRiVER11055	AR		This Jig is used for height adjustment of the reverse guide (for reverse guide height adjustment).
10.	Alignment Tape	VROCPSV			
		VROUBZGS			
11.	Guide roller height adjustment drive	JiGDRiVERH-4	AP		This screwdriver is used for adjusting the guide roller height.
12.	X value adjustment gear type screw driver	JiGDRiVER-6	BM		For X value adjustment
13.	Reverse Guide Height Adjusting Jig	JiGRVGH-F18	BU		This Jig is used for height adjustment of the reverse guide.

MAINTENANCE CHECK ITEMS AND EXECUTION TIME

Perform the maintenance with the regular intervals as follows so as to maintain the quality of machine.

Parts \ Maintained	500 hrs.	1000 hrs.	1500 hrs.	2000 hrs.	Possible symptom encountered	Remarks
Guide roller ass'y	□	□	□	□	Lateral noises Head occasionally blocked	Abnormal rotation or significant vibration requires replacement.
Sup Guide Shaft	□	□	□	□		Clean tape contact part with the specified cleaning liquid.
Retaining guide	□	□	□	□		
Slant pole	□	□	□	□		
Full-erase head	□	□	□	□	Colour and beating	Clean tape contact area with the specified cleaning liquid.
A/C head	□	□	□	□	Small sound or sound distortion	
Upper and lower drum ass'y	□	○□	○□	○□	Poor S/N ratio, no colour Poor flatness of the envelope with alignment tape	
Capstan D.D. Motor	□	□	□	□	No tape running, uneven colour	
Pinch roller	□	□	□	□	No tape running, tape slack	Clean rubber and rubber contact area with the specified cleaning liquid.
Reel belt		□		○	No tape running, tape slack, no fast forward/ rewind motion	
Tension band ass'y					Screen swaying	
Loading Motor					Cassette not loaded or unloaded	
Idler ass'y				○	No tape running, tape slack	
Limiter pulley		□△		□○		
Supply/take-up Main brake levers				○	Tape slack	
AHC (Automatic Head Cleaner)		○		○		Replace the roller of the cleaner when it wears down. Just change the AHC roller assembly for new one.

NOTE ○: Part replacement. □: Cleaning △: Oil refilling
<Specified> Cleaning liquid Industrial ethyl alcohol

* This mechanism does not need electric adjustment with variable resistor. Check parts. If any deviation is found, clean or replace parts.

REMOVING AND INSTALLING THE CASSETTE HOUSING

• Removal

1. In the cassette removing mode remove the cassette.
2. Unplug the power cord.
3. Remove in the following numerical order.
   a) Remove two screws ①.
   b) Slide and pull up the cassette housing control.

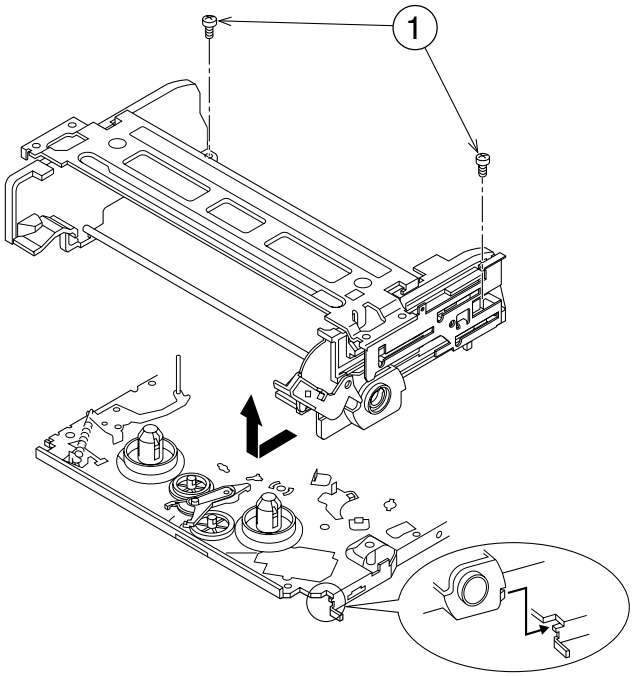


Figure 4-1.

• Reassembly

1. Before installing the cassette housing control, short-circuit TP801 provided at the center (when facing to the main PWB), press the eject button. The casecon drive gear turns and stops when the positioning mark appears. Engage two teeth of casecon drive gear with the three teeth of casecon drive angle gear, and set on the mechanism chassis as shown below.

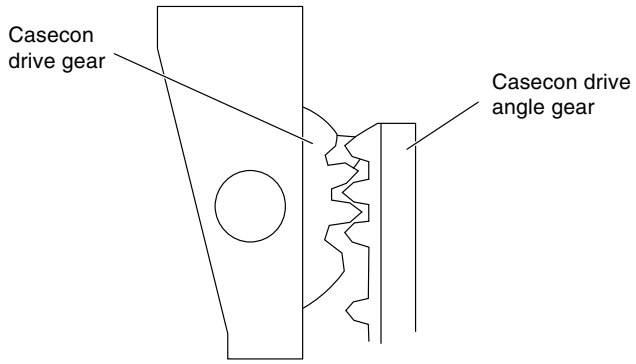


Figure 4-2.

2. Install in the reverse order of removal.

Notes:

1. When fitting the S/E sensor holder to the cassette controller frame L/R, take care.
2. Misengagement of teeth of casecon drive gear and drive angle gear causes malfunction. (The cassette cannot be set, load and ejection are repeated).
3. In the case when you use the magnet screw driver, never approach the magnet driver to the A/C head, FE head, and drum.
4. When installing or removing, take care so that the cassette housing control and tool do not contact the guide pin or drum.
5. After installing the cassette housing control once perform cassette loading operation.

TO RUN A TAPE WITHOUT THE CASSETTE HOUSING CONTROL ASSEMBLY

1. Remove the full-surface panel.
2. Short-circuit TP801.
3. Plug in the power cord.
4. Turn off the power switch.
   (The pole bases move into U.L.position.)
5. Open the lid of a cassette tape by hand.
6. Hold the lid with two pieces of vinyl tape.
7. Set the cassette tape in the mechanism chassis.
8. Stabilize the cassette tape with a weight (500g) to prevent floating.
9. Turn on the power switch.
10. Perform running test.

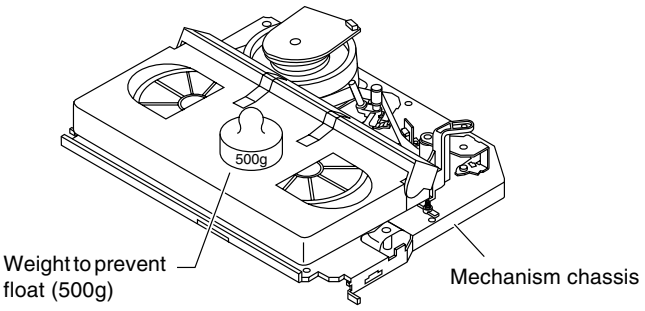


Figure 4-3.

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

To take out the cassette tape.

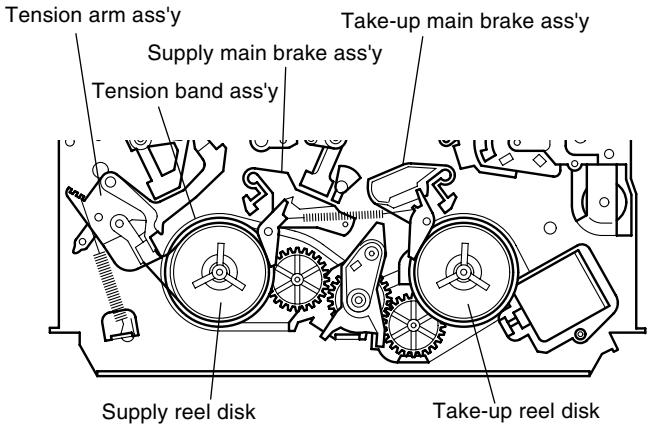
1. Turn off the power switch.
2. Take out the cassette tape.

REEL DISK REPLACEMENT AND HEIGHT CHECK

- **Removal**

1. Remove the cassette housing control assembly.
2. Pull the tension band out of the tension arm ass'y.
3. Remove the Supply/Take-up main brake ass'y.
4. Open the hook at the top of the reel disk, and remove the reel disk.

Note:
Take care so that the tension band ass'y and main brake ass'y (especially soft brake) are not deformed.



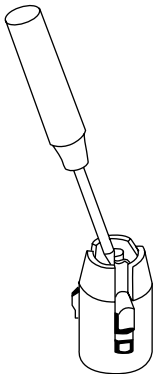


Figure 4-4.

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

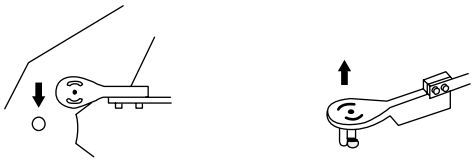


Figure 4-5.

- **Reassembly (Supply reel disk)**

1. Clean the reel disk shaft and apply grease (SC-141) to it.
2. Match the phases of reel disk and reel relay gear, and set the new reel disk.
3. After checking the reel disk height, wind the tension band ass'y around the reel disk, and insert into the hole of tension arm ass'y.
4. Assemble the Supply main brake ass'y.

Notes:
1. When installing the reel disk, take due care so that the tension band ass'y is not deformed and grease does no adhere.
2. Do not damage the Supply main brake ass'y. Be careful so that grease does not adhere to the brake surface.

- **Reassembly (Take-up reel disk)**

1. Clean the reel disk shaft and apply grease (SC-141) to it.
2. Align the phase of the reel disk to that of the reel relay gear and to install a new take-up reel disk onto the shaft.
3. Check the reel disk height and reassemble the take-up main brake ass'y.

Note:
1. Take care so that the Take-up main brake ass'y is not damaged. Take care so that grease does not adhere the brake surface.
2. After reassembly, check the video search rewind back tension (see page 15), and check the brake torque (see page 17).

- **Height checking and adjustment**

Note:
1. Set the master plane with due care so that it does not contact the drum.
2. When putting the master plane, shift the reverse guide a little in the loading direction. Care must be taken since excessive shift results in damage.

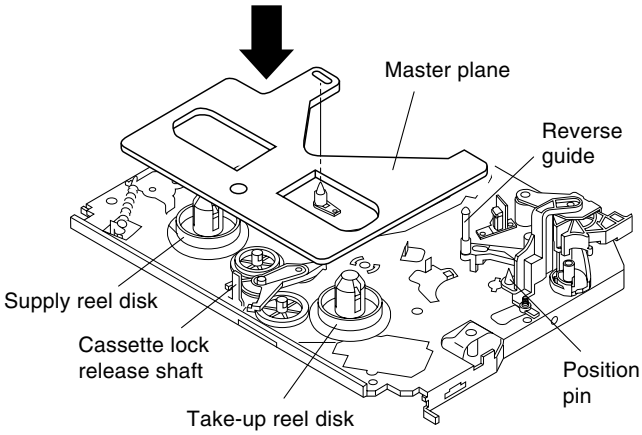


Figure 4-6.

Note:
Check that the reel disk is lower than part A but higher than part B. If the height is not correct, readjust the reel disk height by changing the poly-slider washer under the reel disk.

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

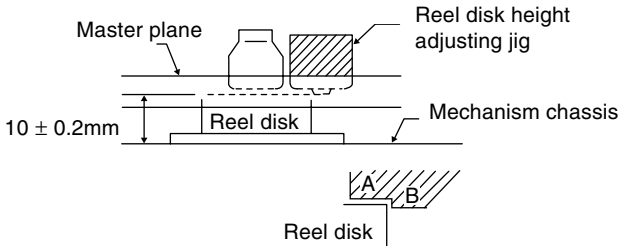


Figure 4-7.

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

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

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.
2. Press the FF button.
3. To calculate the remaining capacity of the play back mode, slowly rotate the supply reel disk, and then shift it into the forward mode.

- **Checking**

1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the CW direction.
2. Make sure that the indication of torque gauge is not less than 30mN·m (306gf·cm).

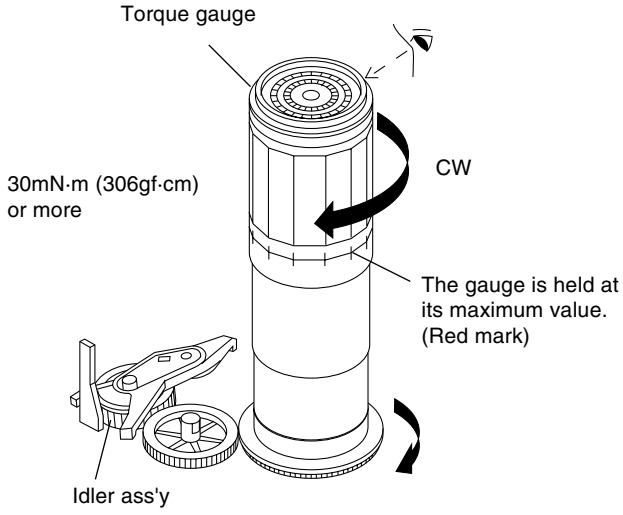


Figure 4-8.

- **Adjustment**

1. If the FF winding-up torque is less than the specified value, clean the capstan D.D. motor pulley, reel belt, and limiter pulley with cleaning liquid, and check again.
2. If the torque is less that the set value, replace the reel belt.

Notes:
1. Hold the torque gauge by hand so that it is not moved.
2. Do not keep the reel disk in lock state. Do not allow long-time measurement.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN REWIND MODE

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

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
2. Press the rewind button.
3. To calculate the remaining capacity, slowly rotate the take-up reel disk, and then shift it into the rewind mode.

- **Checking**

1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the CCW direction.
2. Make sure that the indication of torque gauge is not less than 30mN·m (306gf·cm).

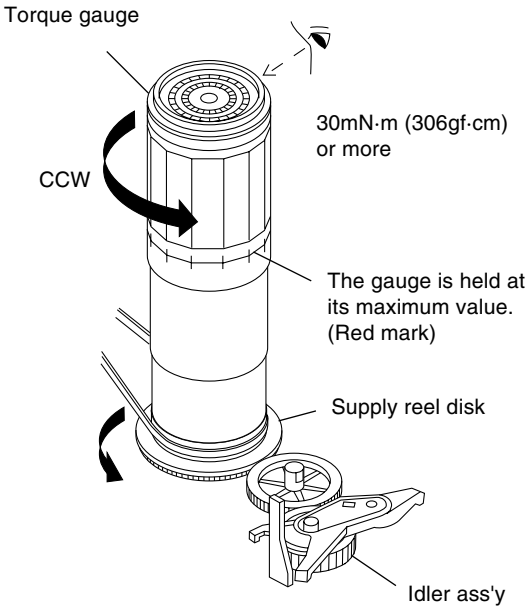


Figure 4-9.

- **Adjustment**

1. If the rewind winding-up torque is less than the specified value, clean the capstan D.D. motor pulley, drive belt, and limiter pulley with cleaning liquid, rewind again, and check the winding-up torque.
2. If the winding-up torque is still out of range, replace the drive belt.

Notes:
1. Hold the torque gauge by hand so that it is not moved.
2. Do not keep the reel disk in lock state. Do not allow long-time measurement.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN RECORD/PLAYBACK MODE

- **Remove the cassette housing control assembly.**
- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**
- **Turn off the power switch.**
- **Open the cassette torque meter lid, and fix it with tape.**
- **Load the cassette torque meter into the unit.**
- **Put the weight (500g) on the cassette torque meter.**
- **Turn on the power switch.**
- **Press the REC button, and set LP picture record mode.**

Set value LP6.9 ± 2.5mN·m (70 ± 25gf·cm)

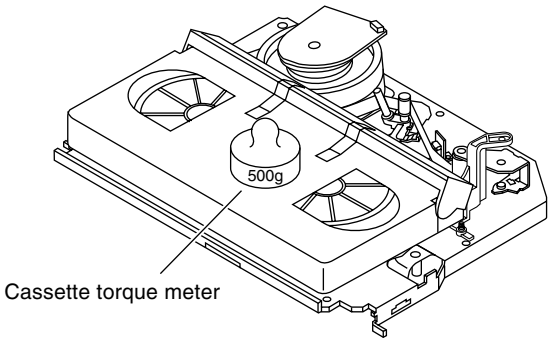


Figure 4-10.

- **Checking**

1. Make sure that value is within the setting 6.9±2.5mN·m (70±25gf·cm).
2. The winding-up torque fluctuates due to variation of rotation torque of limiter pulley ass'y. Read the center value of fluctuation as setting.
3. Set the LP record mode and make sure that the winding-up torque is within setting.

- **Adjustment**

If the playback winding-up torque is not within the setting, replace the limiter pulley assembly.

Note:

When the torque cassette is set, put a weight (500g) to prevent rise.
When the cassette torque meter is taken out.
Turn off the power switch.

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

- **Remove the cassette housing control assembly.**
- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**
- **Setting**

Press the playback button and rewind button to set the video search rewinding mode.

- **Checking**

Place the torque gauge on the supply reel disk, and turn it counterclockwise very slowly (one rotation every 1 to 2 seconds) and check that the torque is within the set value 14.0 ± 3.9mN·m. (144 ± 40gf·cm)

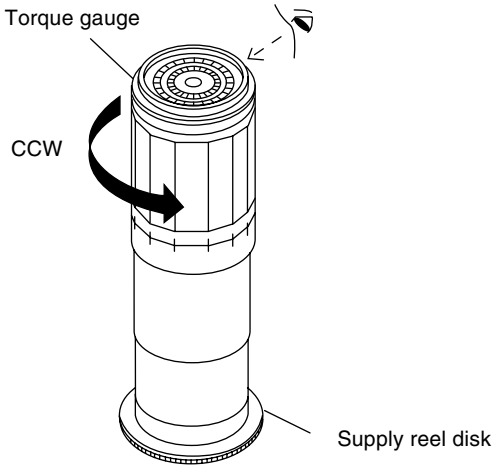


Figure 4-11.

Note:

Surely put the torque gauge on the reel disk to measure. If the torque gauge is raised, accurate measurement is impossible.

- **Adjustment**

If the rewinding playback winding-up torque is not within the setting, replace the limiter pulley assembly.

Note:

The winding-up torque fluctuates due to variation of rotation torque of supply reel disk. Read the center value of fluctuation as setting.

CHECKING THE VIDEO SEARCH REWIND BACK TENSION

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

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

- **Checking**

1. After pressing the play button, press the rewind button, and set the video search rewind mode.
2. 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 3.4±1.5mN·m (35±15gf·cm).

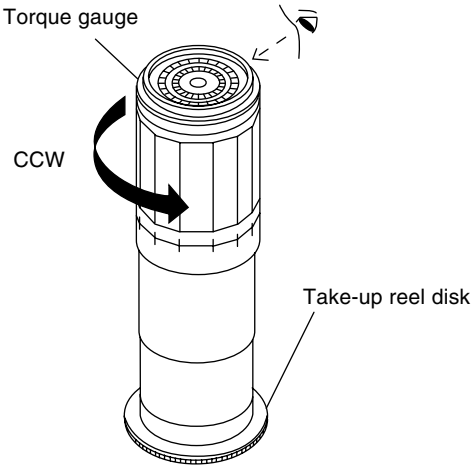


Figure 4-12.

Notes:

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.**

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

- **Checking**

Press the play button to set the playback mode.

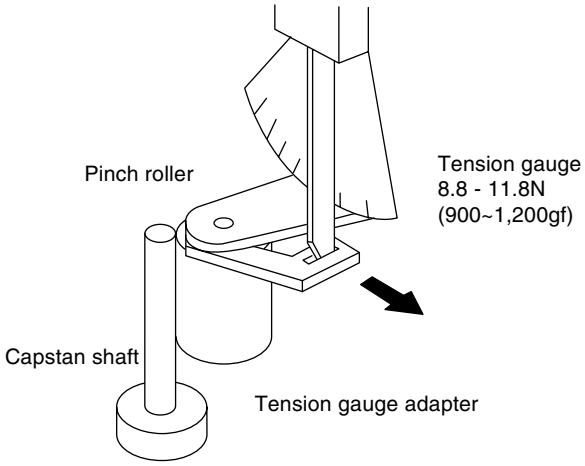


Figure 4-13.

1. Detach the pinch roller from the capstan shaft. Do not separate excessively. Or the pinch lever and pinch double action lever may disengage.
2. Engage the tension gauge adapter with the pinch roller shaft, and pull in the arrow direction.
3. Gradually return the pinch roller, and measure the pulling force when the pinch roller contacts the capstan shaft.
4. Make sure that the measured value is within setting 8.8 to 11.8 N (900 to 1,200gf).

CHECKING AND ADJUSTMENT OF TENSION POLE POSITION

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

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

- **Setting**

1. Turn off the power switch.
2. Open the cassette tape (E-180), and fix with tape.
3. Set the cassette tape in loading state.
4. Put the weight (500g) on the cassette tape.
5. Turn on the power switch.
6. Make the adjustment with the beginning of a E-180 tape.

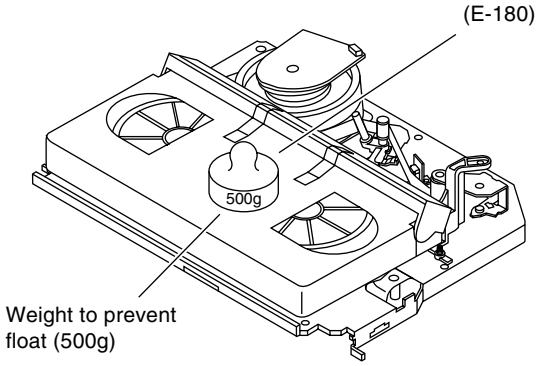
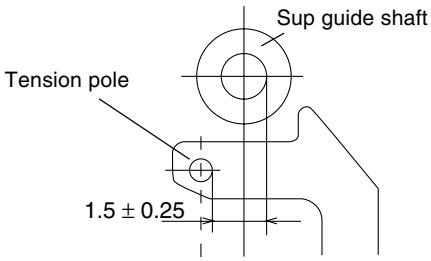


Figure 4-14.

- **Checking**

1. Set a cassette tape, push the REC button to place the unite in the SP record mode. Now check the tension pole position.

2. Visually check to see if the right edge of the tension pole is within the 1.5 ± 0.25 from the right edge of the Sup guide shaft.



Make the adjustment with the beginning of a E-180 tape.

Figure 4-15.

At left side from the center line

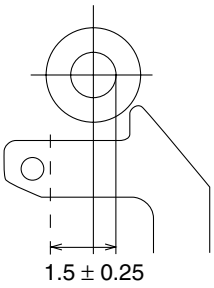


Figure 4-16.

Insert the slotted screwdriver in the tension pole adjuster, and rotate counterclockwise.

At right side from the center line

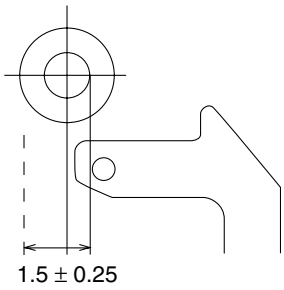


Figure 4-17.

Insert the slotted screwdriver in the tension pole adjuster, and rotate clockwise.

Tension pole adjuster adjusting range

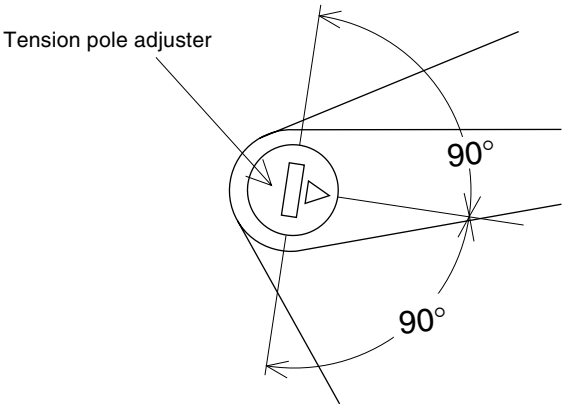


Figure 4-18.

Adjust so that the delta mark of tension pole adjuster is within 90° range (left, right).

CHECKING AND ADJUSTMENT OF RECORD/ PLAYBACK BACK TENSION

- **Remove the cassette housing control assembly.**
- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**
- **Setting**

1. Turn off the power switch.
2. Open the torque cassette meter and fix with tape.
3. Set the cassette tape in loading state.
4. Put the weight (500g) on the cassette torque meter.
5. Turn on the power switch.

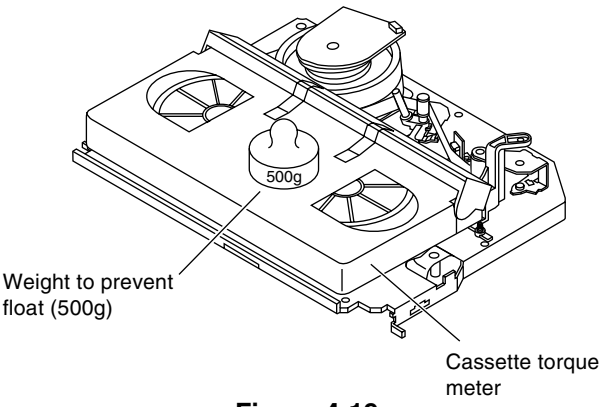


Figure 4-19.

- **Checking**

1. Push the REC button to place the unit in the SP record mode.
2. At this time ascertain that the back tension is within the setting (36.5 to 52g·cm) by seeing the indication of torque cassette meter.

- **Adjustment**

1. If the indication of torque cassette meter is lower than the setting, shift the tension spring engagement to the part A.
2. If the indication of torque cassette meter is higher than the setting, shift the tension spring engagement to the part B.

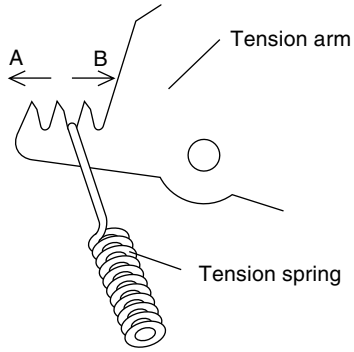
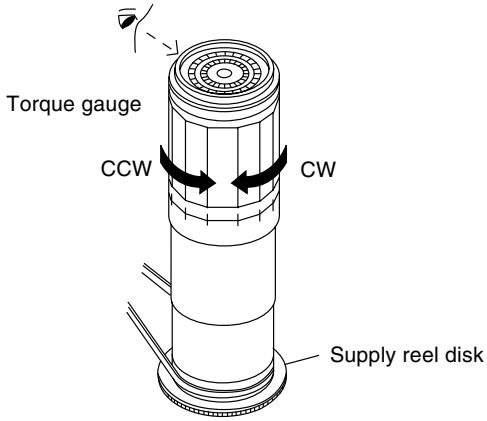


Figure 4-20.

CHECKING THE BRAKE TORQUE

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



CCW:	3.9~9.8mN·m (40~100gf·cm)
CW:	8.8~23.5mN·m (90~240gf·cm)

Figure 4-21.

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

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

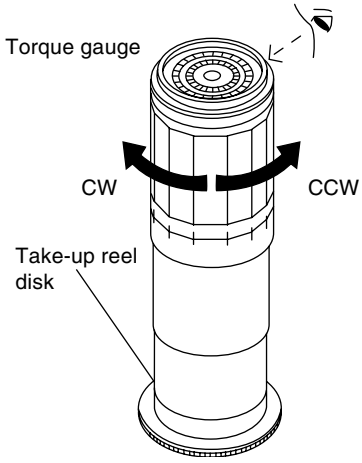
- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
2. Switch from the FF mode to the STOP mode.
3. Disconnect the power cord.

- **Checking**

Turn the torque gauge at a rate of about one turn/2 sec in the CW direction/CCW direction with respect to the supply reel disk so that the reel disk and torque gauge pointer rotate at equal speed, and make sure that the value is within the setting (CW direction: 8.8 to 23.5mN·m (90 to 240gf·cm); CCW direction: 3.9 to 9.8mN·m (40 to 100gf·cm).

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



CCW:	8.8~23.5mN·m (90~240gf·cm)
CW:	4.9~11.8mN·m (50~120gf·cm)

Figure 4-22.

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

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

- **Setting**

1. Switch from the FF mode to the STOP mode.
2. Disconnect the power cord.
3. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.

- **Checking**

1. Turn the torque gauge at a rate of about one turn/2 sec in the CCW direction/CW direction so that the reel disk and torque gauge pointer rotates at equal speed and make sure that the value is within the setting (CCW direction: 8.8 to 23.5mN·m (90 to 240gf·cm), CW direction: 4.9 to 11.8 mN·m (50 to 120gf·cm).

2. Adjustment of the brake torque at the supply side and the take-up side

- Unless the supply side brake torque or take-up side brake torque is within the setting, clean the felt surface of reel disk (supply, take-up) brake lever, check again the brake torque.
- If value cannot be set within the setting yet, replace the main brake ass'y or main brake spring.

REPLACEMENT OF A/C (Audio/Control) HEAD

1. Remove the cassette housing control assembly.
2. In unloading state unplug the power cord.

- **Removal**

1. Remove the screws ①②③, Azimuth screw, Tilt screw.
2. Unsolder the PWB fitted to the A/C head.

Notes:

1. When replacing, never touch the head. If you touched, clean with the cleaning liquid.
2. When removing the screw ③, take care so that the spring may spring out.

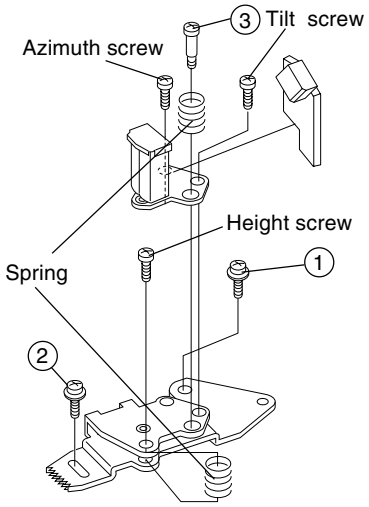


Figure 4-23.

- **Replacement**

1. Solder the removed PWB to the new head assembly.
2. Adjust the height from the A/C head plate (lower surface) to the A/C head base to 10.8mm with slide calipers. (3 places of azimuth screw section, tilt screw section and height screw section) (See the figure below.)

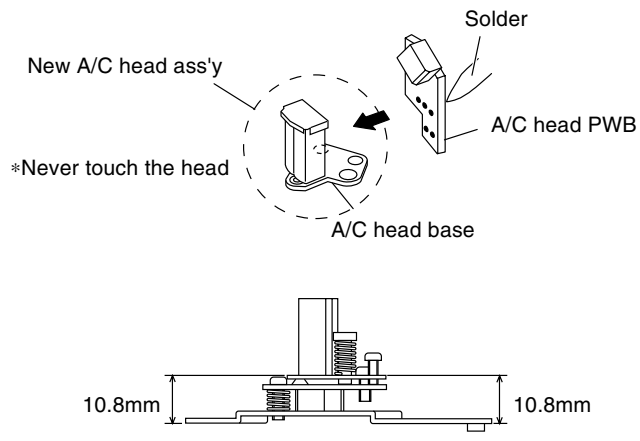


Figure 4-24.

3. Align the left end of gear of A/C head plate with the punched mark of chassis, tentatively tighten the screws plate ① and ② so as to ensure smooth motion of A/C head plate. Tentative tightening torque must be 0.15 to 0.20 N·m (1.5 to 2.0kgf·cm).

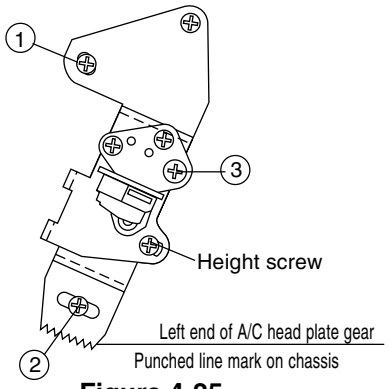


Figure 4-25.

Note:

1. If the screws ① and ② are tighten tentatively too loose, the azimuth and height of A/C head may change when they are finally tightened. Therefore care must be taken.
2. After completion of A/C head be sure to adjust tape running. (Execute the running adjustment by the method described in Page 20, 21.)

A/C HEAD HEIGHT ROUGH ADJUSTMENT

- **Setting**

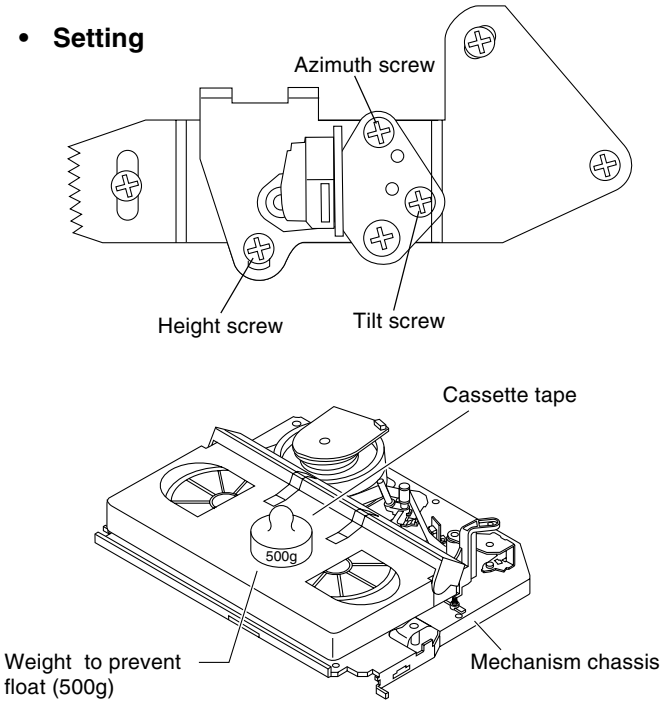


Figure 4-26.

1. Set the cassette tape in the unit.
2. Press the PLAY button to put the unit in the playback mode.
3. Roughly adjust the height of the A/C head by turning the height screw until the tape is in the position shown below.

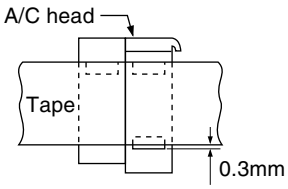


Figure 4-27.

- **Adjustment**

Adjust the height screw visually so that the control head is visible 0.3mm below the bottom of the tape.

HEIGHT ADJUSTMENT OF REVERSE GUIDE

1. Adjust the height from the mechanism chassis to the reverse guide lower flange to 13.38 mm, using the reverse guide height adjustment jig, in tape loading state. (Refer to Figure 4-28 (a) (b).)

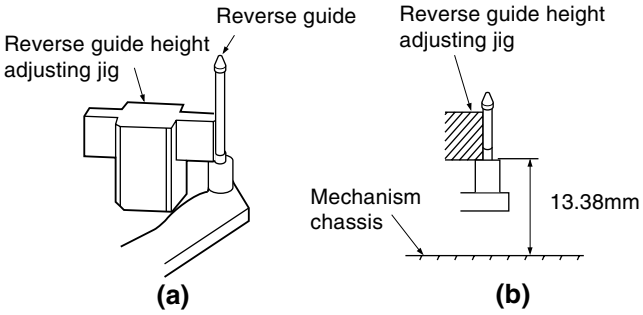


Figure 4-28.

2. Rotate counterclockwise the reverse guide height adjustment nut 1/10 turn. (For height adjustment use the reverse guide height adjustment box driver (JiGDRiVER 11055)).

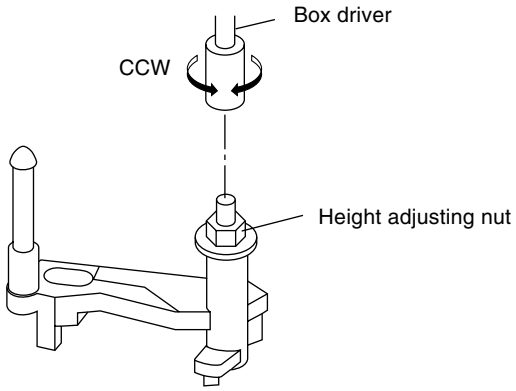
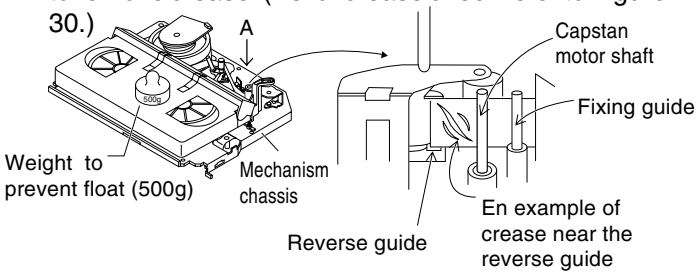


Figure 4-29.

3. Set the tape, and check for tape crease near the reverse guide in the playback mode.
   If crease is found, turn the reverse guide adjustment nut to remove crease. (As for crease check refer to Figure 4-30.)



* Check for crease from the A direction.

Figure 4-30.

ADJUSTMENT OF TAPE DRIVE TRAIN

1. Tape run rough adjustment
   ① Remove the cassette housing control assembly.
   ② After shortcircuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.
   ③ Check and adjust the position of the tension pole. (See page 16.)
   ④ Check and adjust the video search rewind back tension. (See page 15.)
   ⑤ Connect the oscilloscope to the test point for PB CHROMA envelope output (TP201). Set the synchronism of the oscilloscope to EXT. The PB CHROMA signal is to be triggered by the head switching pulse (TP202).
   ⑥ Set the alignment tape (VROCPSV) to play. (Put a 500g weight on the cassette tape to prevent lift of cassette tape.)

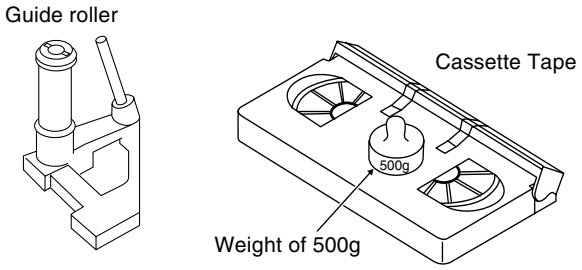


Figure 4-31.

   ⑦ Press the tracking button (+), (–) and change the envelope waveform from max to min and from min to max. At this time make sure that the envelope waveform changes nearly parallel.
   ⑧ Unless the envelope waveform changes nearly parallel, adjust the height of supply side and take-up side guide roller so that the envelope waveform changes nearly parallel. (For envelop adjustment procedure refer to Figure 4-35.)
   ⑨ Turn the tilt screw to remove the tape crease at the fixing guide flange.
   Playback the tape and check for tape crease at the fixing guide flange.
   (1) If there is no tape crease
   Turn the tilt screw clockwise so that tape crease appears once at the flange, and then return the tilt screw so that the crease disappears.
   (2) If there is tape crease
   Turn counterclockwise the tilt screw so that the tape crease disappears.
   (Reference) If the tilt screw is turned clockwise crease appears at the lower flange.

Notes:

1. Previously set the tracking control in the center position, and adjust the envelop waveform to maximum with X value adjustment nut. Thereby the tape run rough adjustment is facilitated.
2. Especially the outlet side envelope waveform must have higher flatness.

Figure 4-32.

2. Adjustment of A/C head height and azimuth
   ① Perform the initial setting of A/C head position by the method stated in "Page 18 Replacement 3".
   ② Connect the oscilloscope to the audio output terminal.
   ③ Using the alignment tape in which 1 kHz linear audio signal has been recorded, adjust the height screw so as to get max audio output.
   ④ Using the alignment tape in which 7 kHz linear audio signal has been recorded, adjust the azimuth screw so as to get max audio output.

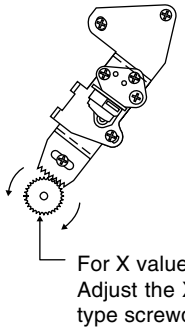
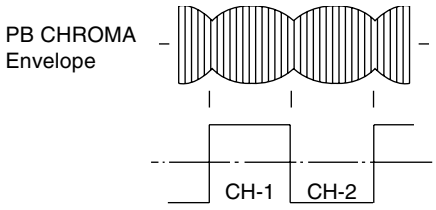


Figure 4-33.

3. Tape run adjustment
   ① Connect the oscilloscope to PB CHROMA envelope output test point, set oscilloscope sync to EXT, trigger-input the PB CHROMA signal (head switching pulse).
   ② Rough adjustment of X value
   Tentatively fix A/C head arm screws ① and ② by the method described in Page 18 "Replacement 3".
   Playback the alignment tape, and shortcircuit TP802. As a result the auto-tracking is automatically cancelled, so that the X value adjustment mode is set.
   Move the A/C head with the X value adjustment gear driver (JiGDRiVER-6) by the method shown in Figure 4-33, and adjust the A/C head so as to get the maximum envelope waveform. (Note: When the A/C head is adjusted, adjust so that the maximum envelop waveform is obtained nearest the position of initial setting made in Page 18.)
   ③ Next, change the alignment tape to (VROUBZGS) to playback. Press the tracking button (+), (–) and change the envelope waveform from max to min and from min to max. At this time adjust the height of supply and take-up side guide roller with the adjustment driver (JiGDRiVERH-4) so that the envelope waveform changes nearly parallel.
   ④ If the tape is lifted or sunk from the helical lead surface, the PB CHROMA envelope waveform appears as shown in Figure 4-35.
   ⑤ Press the tracking button (+), (–) and make sure that the envelope waveform changes nearly parallel.
   ⑥ Finally check tape crease near the reverse guide. If tape crease is found, remove it as stated in Page 19 "HEIGHT ADJUSTMENT OF REVERSE GUIDE" item 3.



Head switching pulse
Figure 4-34.

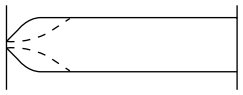
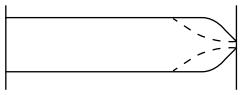
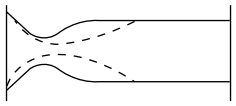
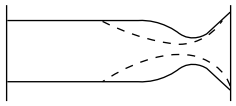
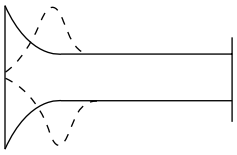
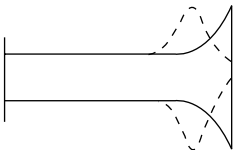
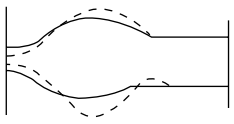
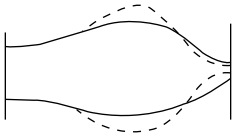
	When the tape is above the helical lead.		When the tape is below the helical lead.	
	Supply side	Take-up side	Supply side	Take-up side
				
				
Adjustment	Supply side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Take-up side guide roller rotated in clockwise 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 4-35.

4. A/C head X value adjustment
   ① Tentatively fix A/C head arm screws ① and ② by the method described in Page 18 "Replacement 3".
   ② Playback the alignment tape (VROUBZGS), and shortcircuit TP802. As a result the auto-tracking is automatically cancelled, so that the X value adjustment mode is set.
   ③ Move the A/C head with the X value adjustment gear driver by the method shown in Figure 4-33, and adjust the A/C head so as to get the maximum envelope waveform. (Note: At this time adjust so as to get the maximum envelope waveform nearest the A/C head position which has been set in case of X value rough adjustment as stated in Page 21, 3- ②.)
   ④ Tighten finally the screws ① and ②. Be sure to tighten at first the screw ① and then the screw ②. Final tightening torque is 0.6N·m (If the screw ② is tightened first, the X value may deviate.)
   ⑤ Adjust the playback switching point (Refer to the electric adjustment method.)
   ⑥ Playback the self-picture-recorded tape, and check the flatness of envelope waveform and sound.

Note:
When the A/C head X value adjustment is performed, be sure to perform at first X value rough adjustment (refer to Page 21, 3-②).

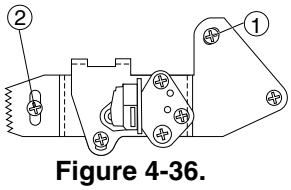


Figure 4-36.

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

- Remove the mechanism from the main PWB (refer to Page 5 "1. When removing the mechanism from the main PWB").

- **Removal (Follow the order of indicated numbers.)**

1. Remove the reel belt ①.
2. Remove the three screws ②.

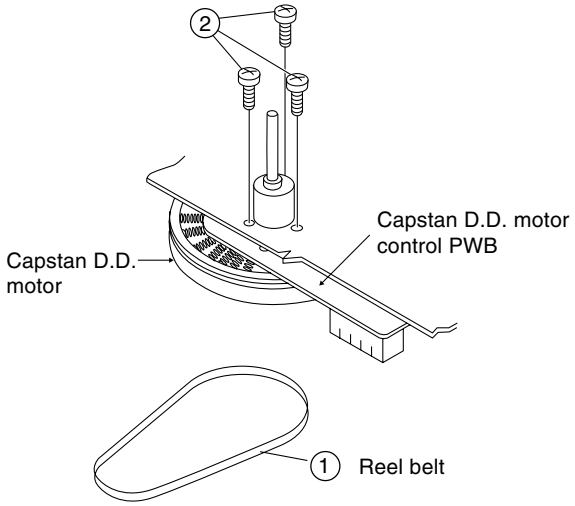


Figure 4-37.

- **Reassembly**

1. Taking care so that the capstan shaft does not contact the mechanism chassis, set its position on the mechanism chassis, and then install with the three screws.
2. Install 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. Set the tape, and check for the tape crease near the reverse guide in the playback mode. Adjust the A/C head and azimuth as stated in Page 20 item 2. If crease is found, adjust as stated in Page 19 "HEIGHT ADJUSTMENT OF REVERSE GUIDE".

REPLACEMENT OF DRUM D.D. MOTOR

1. Set the ejection mode.
2. Withdraw the main power plug from the socket.

- **Removal (Perform in numerical order.)**

1. Disconnect the FFC cable ①.
2. Unscrew the D.D. stator assembly fixing screws ②.
3. Take out the D.D. stator assembly ③.
4. Unscrew the D.D. rotor assembly fixing screws ④.
5. Take out the D.D. rotor assembly ⑤.

Notes:

1. In removing the D.D. stator assembly, part of the drum earth spring pops out of the pre-load collar. Be careful not to lose it.
2. Install, so that the D.D. rotor ass'y and upper drum ass'y mounting direction check holes align. (Align the upper drum dent with the rotor hole.)
3. Be careful not to damage the upper drum or the video head.
4. Protect the hole elements from shock due to contact with D.D. stator or D.D. rotor ass'y.
5. After installation adjust the playback switching point for adjustment of servo circuit.

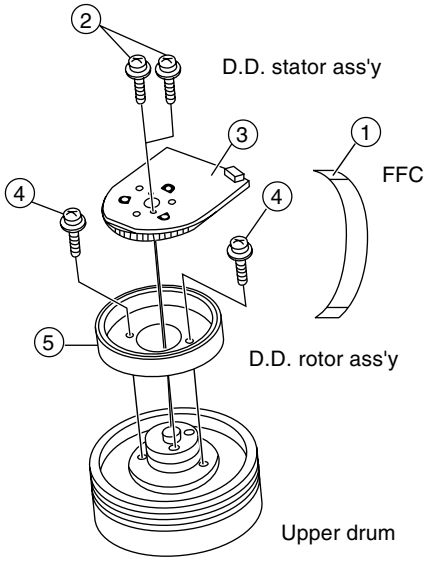


Figure 4-38.

REPLACING THE UPPER AND LOWER DRUM ASSEMBLY

• Replacement (Perform in the numerical order)
① Remove the motor as stated in Page 22 D.D. motor replacement.
② Remove the drum earth brush ②.
③ Remove the drum base ③ from the upper and lower drum assembly ①.

[Cares when replacing the drum]
1. Be careful so that the drum earth brush is not lost.
2. Do not touch directly the drum surface.
3. Fit gently the screwdriver to the screws.
4. Since the drum assembly is an extremely precise assembly, it must be handled with utmost care.
5. Make sure that the drum surface is free from dust, dirt and foreign substances.
6. After replacing the drum be sure to perform the tape running adjustment.
   After that, perform also the electrical adjustment.
   • Playback switching point adjustment
   • X-position adjustment and check
   • Standard and x-3 slow tracking adjustment
7. After replacing the drum clean the drum.

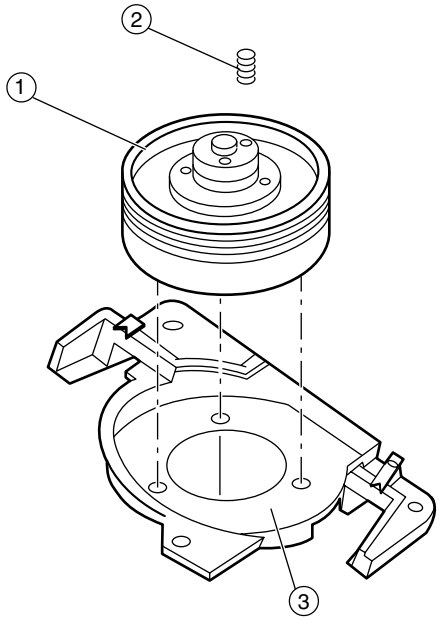


Figure 4-39.

ASSEMBLING OF PHASE MATCHING MECHANISM COMPONENTS

- **Assemble the phase matching mechanism components in the following order.**

1. Assemble the pinch roller assembly and pinch drive cam.
2. Mounting the shifter (on the back of the mechanism chassis).
3. Mounting the master cam (on the back of the mechanism chassis).
4. Assemble the connection gear, slow brake and loading motor parts.

• Pinch drive cam and pinch roller assembling method.

(Place the following parts in position in numerical order.)
(1) Reverse drive lever ①
(2) Reverse guide spring ②
(3) Reverse guide lever ass'y ③
(4) Reverse guide height adjusting nut ④
(5) Pinch drive cam ⑤
(6) Pinch roller ass'y ⑥
(7) Open lever ⑦

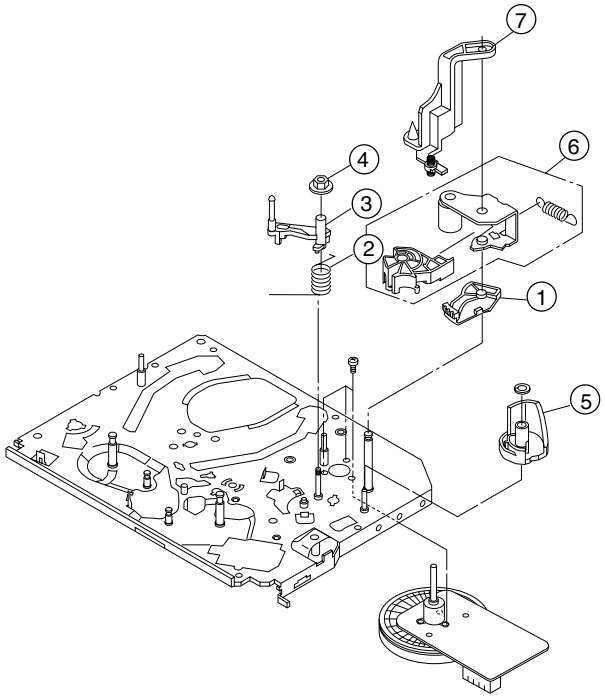


Figure 4-40.

①Insert Reverse Guide Lever Ass'y

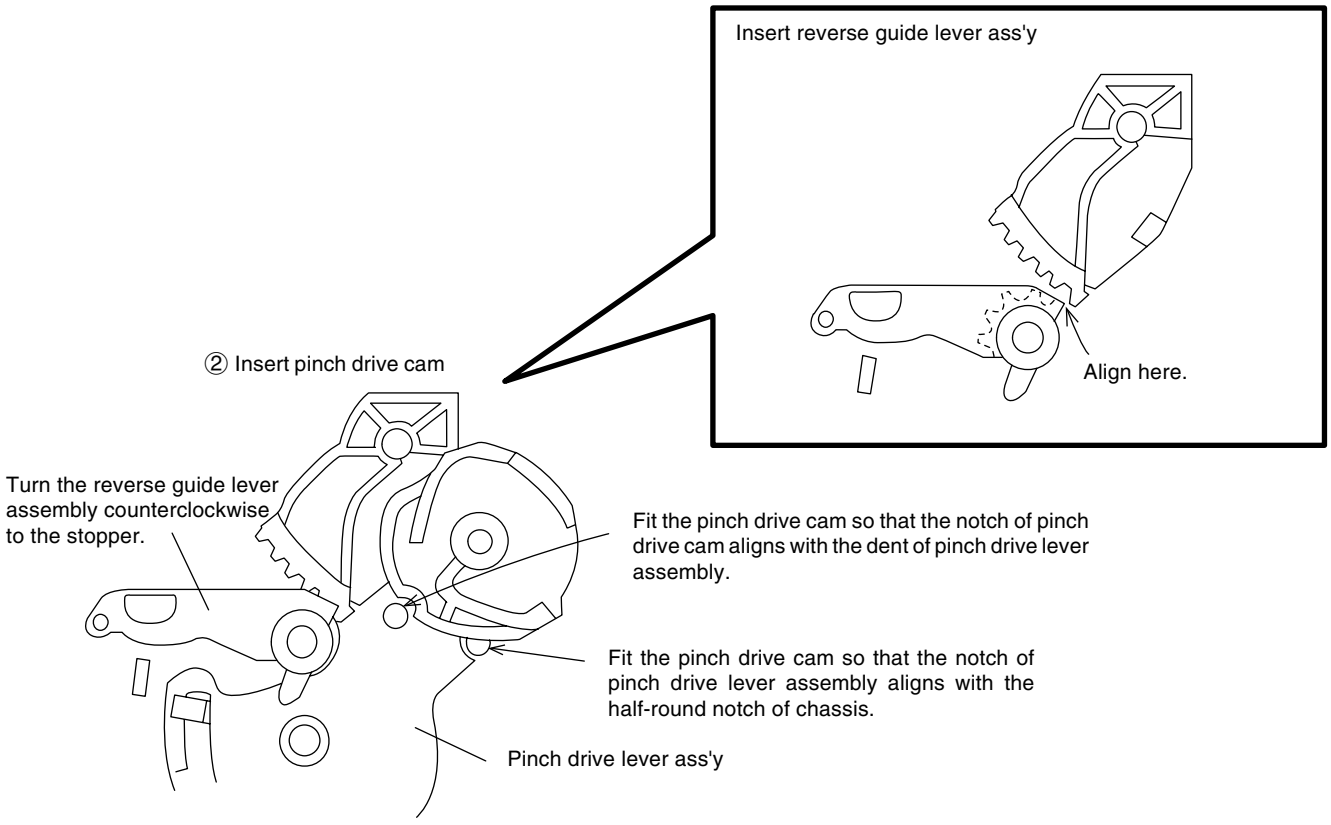


Figure 4-41-1.

②Insert Pinch Roller/Pinch Double Action Lever Ass'y.

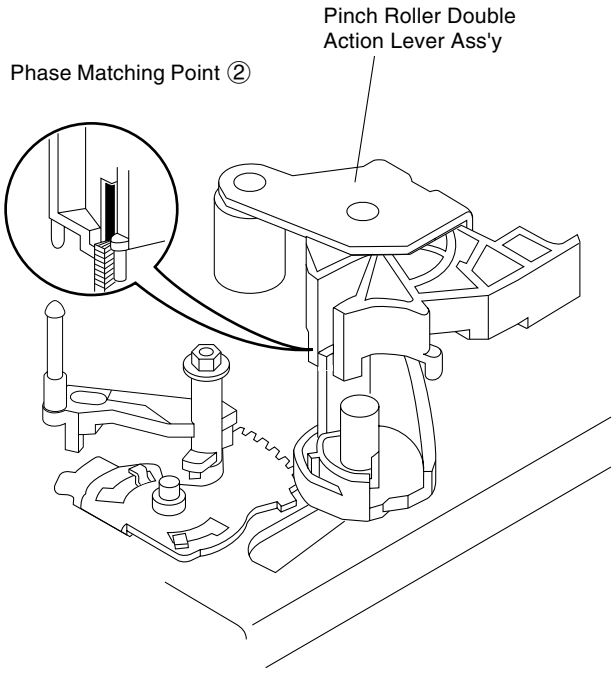


Figure 4-41-2.

③Insert Open Lever.

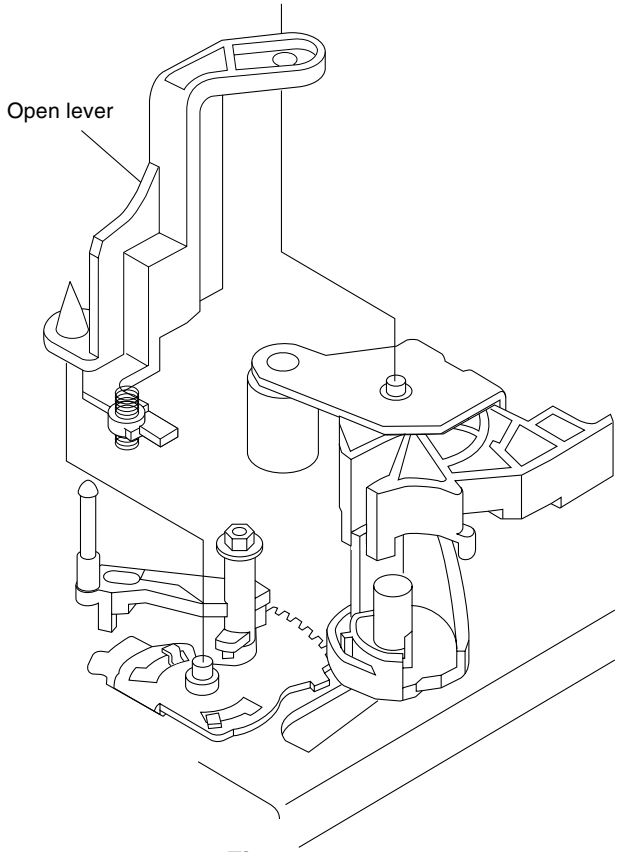
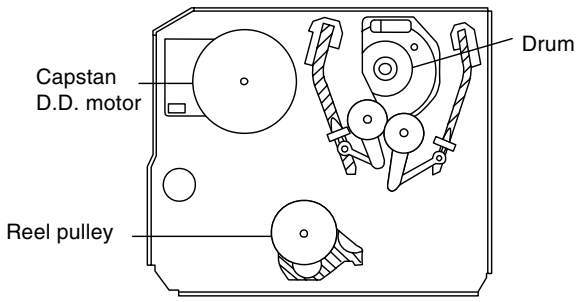


Figure 4-41-3.

INSTALLING THE SHIFTER



(Bottom side of mechanism chassis)

Figure 4-42.

1. Make sure that the loading gear is at the Phase-Matching point ① as shown below.
2. Install, paying attention to ⑥ insertion points and ③ release points.
3. For the phase matching at the insertion point ①, see the Phase-Matching point ② as shown below.
4. Finally fix the inserts ① and ④.

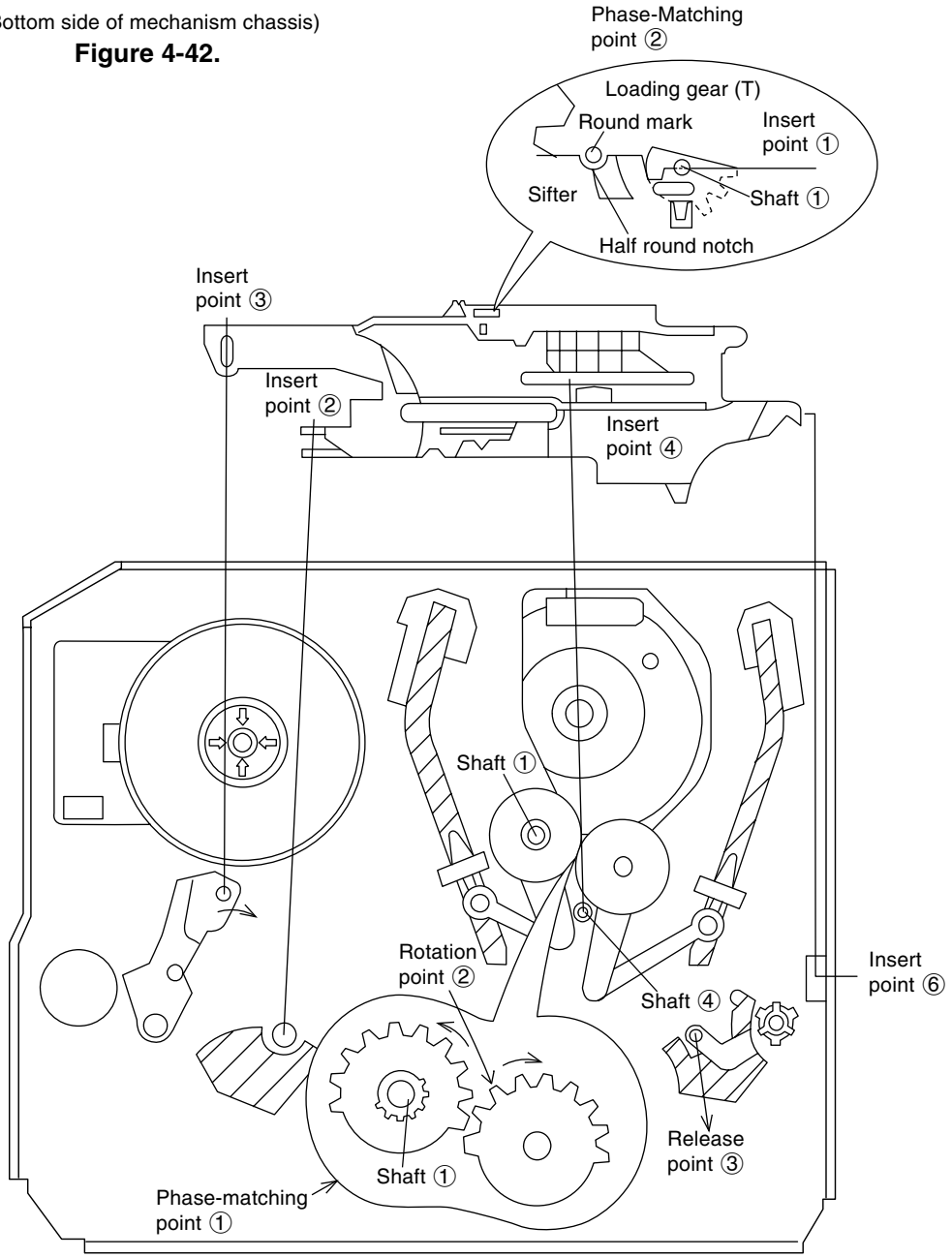


Figure 4-43.

INSTALLING THE MASTER CAM (AT REAR SIDE OF MECHANISM CHASSIS)

1. Make sure beforehand that the shifter is at the point as shown below.
2. Place the master cam in the position as shown below.

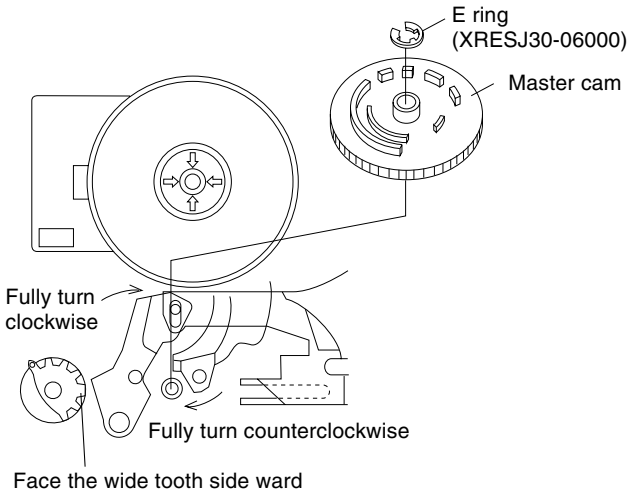


Figure 4-44-1.

Note:
See the figure below for the phase matching between the master cam and the casecon drive gear.

3. Finally fix with the E ring.

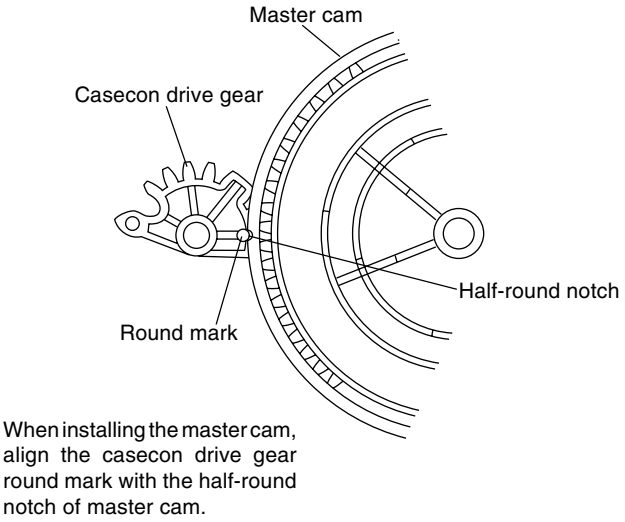


Figure 4-44-2.

REPLACEMENT OF LOADING MOTOR

- **Removal**

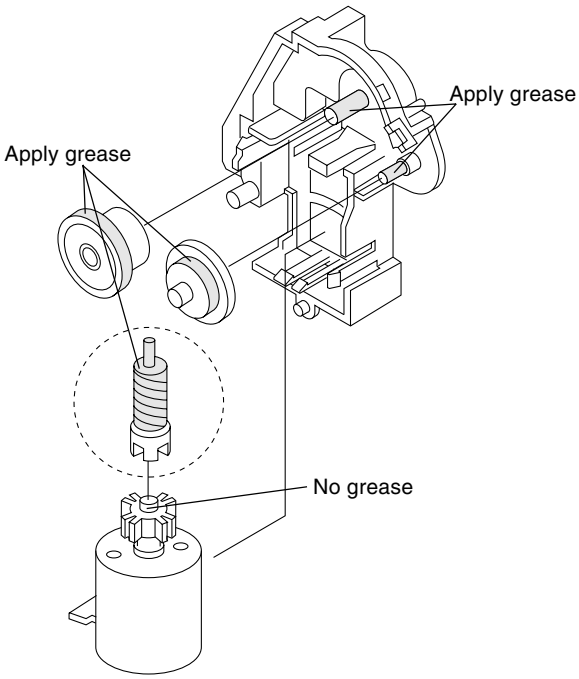


Figure 4-45.

- **Replacement**

Remove the loading motor, and install the replacement loading motor as shown below.

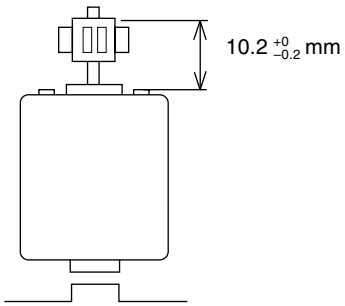


Figure 4-46.

The loading motor pressing-in must be less than 14.7 N (15 gf).

Adjust the distance between motor and pulley to 10.2 $^{+0}_{-0.2}$ mm).

ASSEMBLY OF CASSETTE HOUSING

1. Drive Gear and R Drive angle ass'y

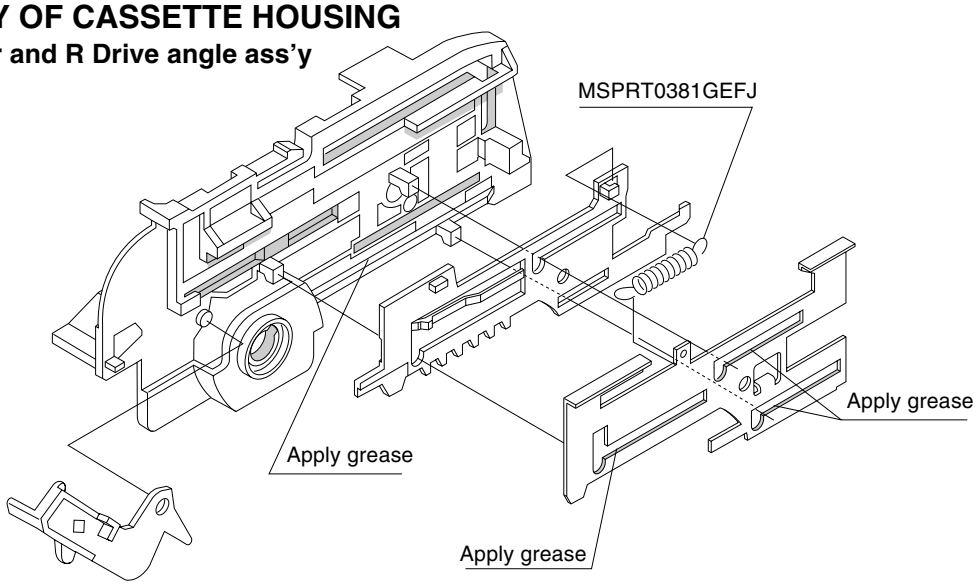
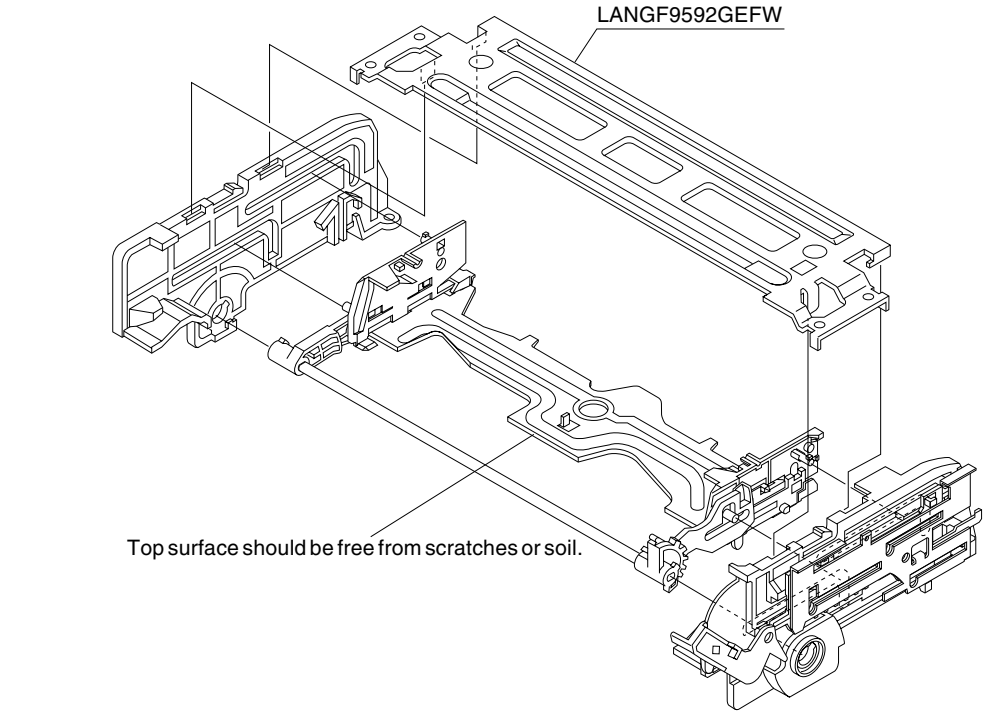


Figure 4-47.

2. Synchro Gear, Drive Gear L and Drive Gear R



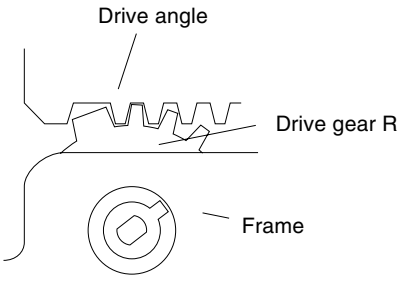


Figure 4-48.

5. ELECTRICAL ADJUSTMENT

Notes:

- Before the adjustment:
  Electrical adjustments discussed here are often required after replacement of electronic components and mechanical parts such as video heads.
  Check that the mechanism and all electric components are in good working condition prior to the adjustments, otherwise adjustments can not be completed.

- Instruments required:
  ◎Colour TV monitor
  ◎Dual-trace oscilloscope
  ◎ Alignment tape (VROCPSV)
  ◎Alignment tape (VROATSV)
  ◎Blank video cassette tape
  ◎DC voltmeter
  ◎Screwdriver for adjustment

※Servicing precations
When the IC705 (E^2PROM) has been replaced, make the following reprogramming. Depending on models, the IC705 (E^2PROM) has been factry-adjusted for it's memory function.
It's therefore necessary to reprogram the memory function for the model in question.
Note that the servo circuit requires readjustments for the head switching point, slow and still modes.

- **Location of controls and test points**

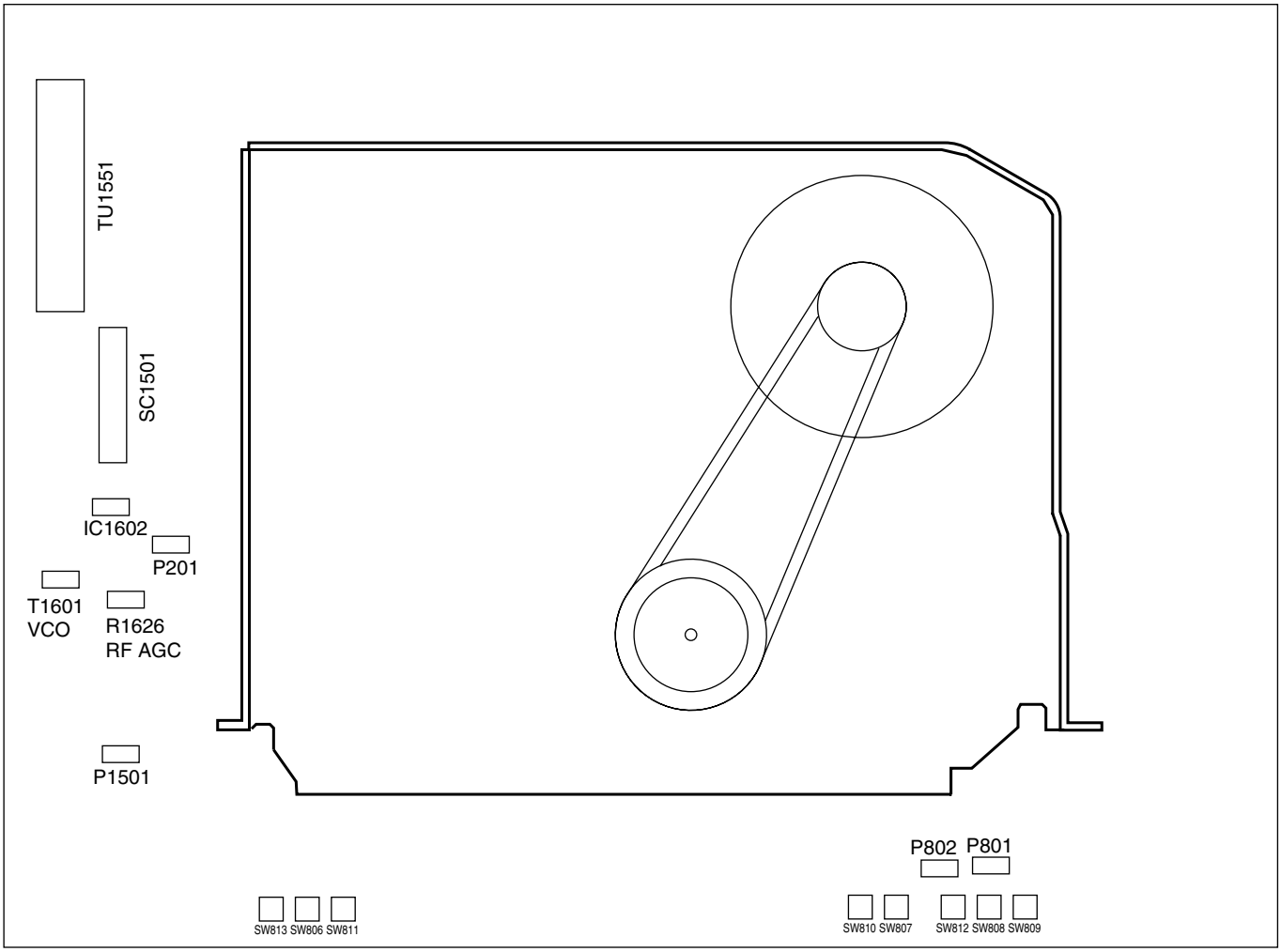


Figure 5-1.

SERVO CIRCUIT ADJUSTMENT

ADJUSTMENT OF HEAD SWITCHING POINT

Measuring instrument	Dual-trace oscilloscope Colour TV monitor
Mode	Playback
Cassette	Alignment tape (VROCPSV)
Test point	Pin(2) of P201 (H.SW.P.) to CH-1, VIDEO OUT jack to CH-2 (CH-1 trigger slope switch at (+), Internal trigger at CH-1 side.)
Specification	6.5 ± 0.5H (lines)

1. Remove the front panel and play the alignment tape. (VROCPSV)
   (Playback picture on the monitor screen.)
2. Press the PLAY button.
3. Make for a moment short-circuit P802, located at the front side on the main PWB.
   Be sure that all the fluorescent display tubes light up into the TEST mode.(See Note below)
   Be sure the "PLAY" appears in the fluorescent display tubes flashing (about 1Hz) into the auto PG adjustment operating.
   Note:
   When the manual PG adjustment, obseve the waveform with an oscilloscope and make adjustment FF or REW button so that the specification.
4. Stop the "PLAY" appears in the flashing of fluorescent display tubes at adjusted.
5. Press the STOP button in the return to normal mode.
6. Make this checking of waveform on the oscilloscope screen be as shown in Figure 5-2. just after the head switching point have been adjusted.

Note:

① Set-up of TEST mode.
When the adjustment of HEAD SWITCHING POINT, AUTO TRACKING function is invalid.

② When the cassette housing control ass'y is removed, set-up of mechanism operating mode.

1) Replug the AC power cord it a few minutes later.
2) Make a short-circuit P801 located at the front side on the main PWB, and press both tracking control button at the same time to set the tracking in center.
3) AC power cord is plugged in.
4) You can mechanism operatig mode, Replug the AC power cord a few minutes later.

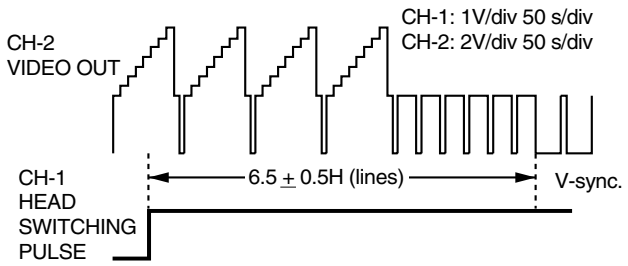


Figure 5-2.

ADJUSTMENT OF PAL SYSTEM SP/LP SLOW TRACKING PRESET

Measuring instrument	Colour TV monitor
Mode	Playback
Cassette	Self-recorded tape (SP/LP mode)(See Note below)
Control	Tracking control buttons (+) or (–)
Specification	Minimized noise on monitor screen

1. Have the unit to receive a good TV broadcast or feed a video signal to the VIDEO IN jack. (See note ② below)
2. Set the tape speed in SP mode by using the remote control and record the signal on tape.
3. Rewind and play the tape where signal was recorded in above step.
4. Press the SLOW button on the remote control, and playback the recorded portion in the slow mode.
5. Make for a moment short-ciucuit P802, located at the front side on the main PWB.
   Be sure that all the fluorescent display tubes light up into the TEST mode.
6. Look at the monitor screen and adjust the (+) or (–) TRACKING buttons so that the there is noise disappears from the screen.
7. Press the STOP button to return to normal mode.
8. Play the tape a few seconds then press the SLOW button again and make sure there is on noise in the screen.(For the LP mode put adjustment at the same adjustmet way as SP mode.)

Notes:

① Self-recorded tape means a cassette whose program was recorded by the unit being adjusted.

② The TV program will not be recorded if RCA or 21pin plugs are pluged in to the AUDIO/VIDEO input terminals.

ADJUSTMENT OF PAL SYSTEM FV(False Vertical Sync) OF STILL PICTURE

Measuring instrument	Colour TV monitor
Mode	Playback still
Cassette	Self-recorded tape (SP mode) (See Note below ②)
Control	Tracking control buttons (+) or (–)
Specification	No vertical jitter of picture

1. Play a cassette which was recorded by the unit in SP mode.
2. Press the PAUSE/STILL button to freeze the picture.
3. Look at the monitor screen and adjust (+) or (–) TRACKING buttons so that the vertical jitter of the picture to be minimized.
4. Play and freeze the self-recorded tape in SP mode and make sure vertical jitter of the picture is not noticeable.(For the LP mode put adjustment at the same adjustment way as SP mode.)

Note:

① The FV goes back to the it's initial state when the unit is put into the system controller reset mode due to power failure, etc.
In this case, preset the FV once again.

② Self-recorded tape is a cassette whose program was recorded by the unit being adjusted.

ADJUSTMENT OF NTSC SYSTEM SP/EP SLOW TRACKING PRESET

Measuring instrument	Colour TV monitor
Mode	Playback
Cassette	Alignment tape(VROCPSV)
Control	Tracking control buttons (+) or (–)
Specification	Minimized noise on monitor screen

1. Insert the NTSC system alignment tape(VROCPSV) and put the unit in the SP portion playback mode.
2. Press the SLOW button on the remote control, and playback the alignment tape in the slow mode.
3. Make for a moment short-ciucuit P802, located at the front side on the main PWB.
   Be sure that all the fluorescent display tubes light up into the TEST mode.
4. Look at the monitor screen and adjust the (+) or (–) TRACKING buttons so that the there is noise disappears from the screen.
5. Press the STOP button to return to normal mode.
6. Play the tape a few seconds then press the SLOW button again and make sure there is on noise in the screen.(For the EP mode put adjustment at the same adjustmet way as SP mode.)

ADJUSTMENT OF NTSC SYSTEM FV (False Vertical Sync) OF STILL PICTURE

Measuring instrument	Colour TV monitor
Mode	Playback still
Cassette	Alignment tape(VROCPSV)
Control	Tracking control buttons (+) or (–)
Specification	No vertical jitter of picture

1. Insert the NTSC system alignment tape(VROCPSV) and put the unit in the SP portion playback mode.
2. Press the PAUSE/STILL button to freeze the picture.
3. Look at the monitor screen and adjust (+) or (–) TRACKING buttons so that the vertical jitter of the picture to be minimized.
4. Play and freeze the self-recorded tape in SP mode and make sure vertical jitter of the picture is not noticeable.(For the EP mode put adjustment at the same adjustment way as SP mode.)

Note:

The FV goes back to the it's initial state when the unit is put into the system controller reset mode due to power failure, etc.
In this case, preset the FV once again.

ADJUSTMENT OF RF AGC ADJUSTMENT

Measuring instrument	Colour TV monitor DV voltmeter
Mode	RF signal at E12-CH(by VHF signal generator)
Test point	Pin(2)(Sig.) of P1501. Pin(4)(GND.) of P1501.
Control	R1626 RF AGC control
Specification	4.3±0.2V(G/S Hi-Fi models)

1.Receive the E12 channel signal(colour bar signal at 87.5% modulated.) at input field strength: 56dBV of antenna terminal.
2.Connect a DC voltmeter to test point shown in table.
3.Look the voltmerter and adjust R1626 so that the voltage be specified.

ADJUSTMENT OF VCO CIRCUIT

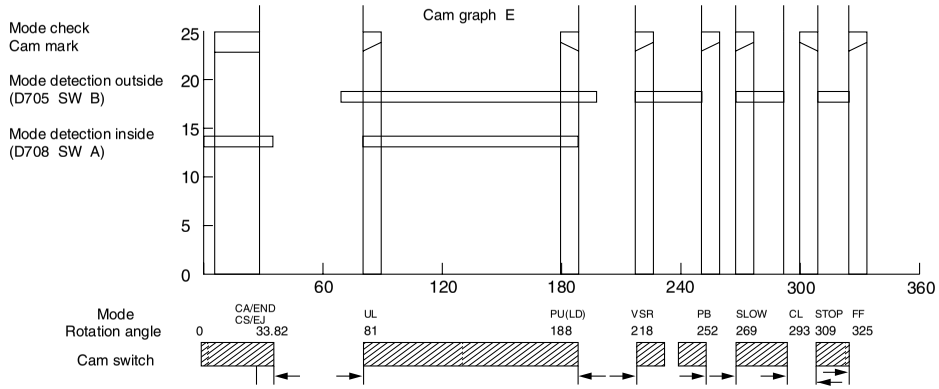
Measuring instrument	Colour TV monitor DV voltmeter
Mode	RF signal at E12-CH(by VHF signal generator)
Test point	Pin(1)(Sig.) of P1501. Pin(4)(GND.) of P1501.
Control	T1601 VCO control
Specification	2.5±0.2V

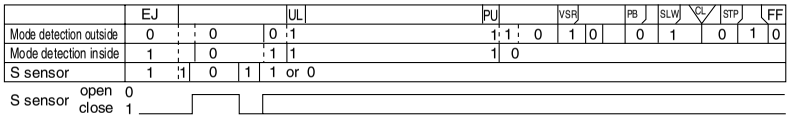
1.Receive the E12 channel signal(colour bar signal at 87.5% modulated.) at input field strength: 56dBV of antenna terminal.
2.Connect a DC voltmeter to test point shown in table.
3.Look the voltmerter and adjust T1601 so that the voltage be specified.

6. MECHANISM OPERATION FLOWCHART AND TROUBLESHOOTING GUIDE

MECHANISM OPERATION FLOWCHART

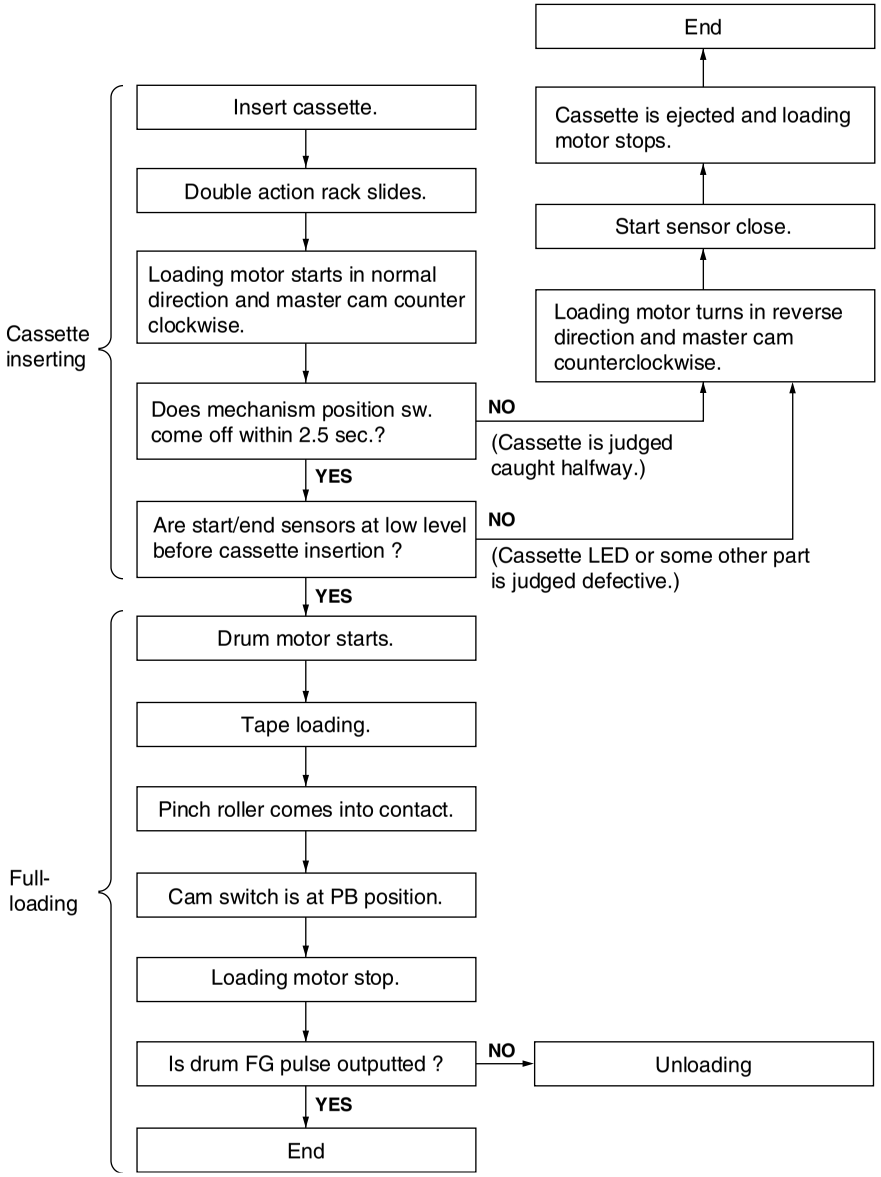
F mechanical timing



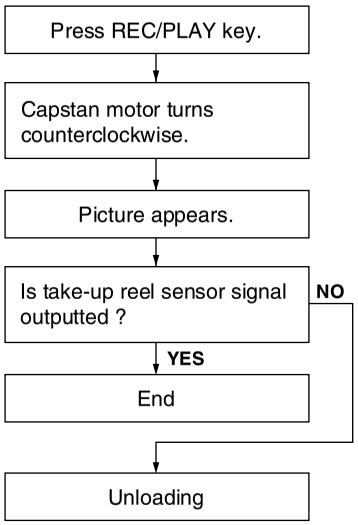


	Mode detection inside Sensor A	Mode detection outside Sensor B
CS/EJ	1	0
ULD	1	1
PU LD	1	1
VSR	0	1
PB	0	0
STILL	0	1
CL	0	0
STOP	0	0
FF	0	0

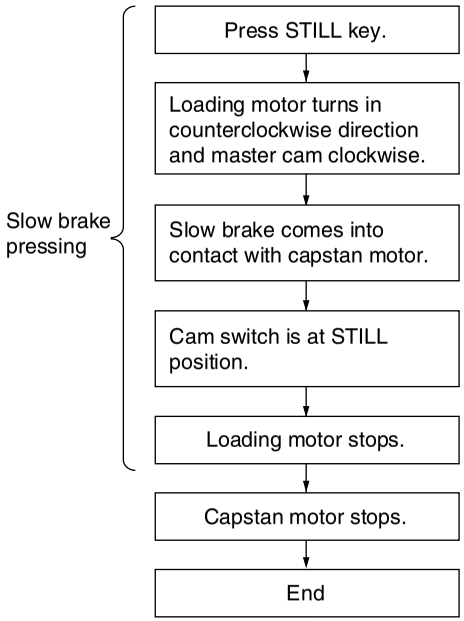
CASSETTE INSERTION → STOP



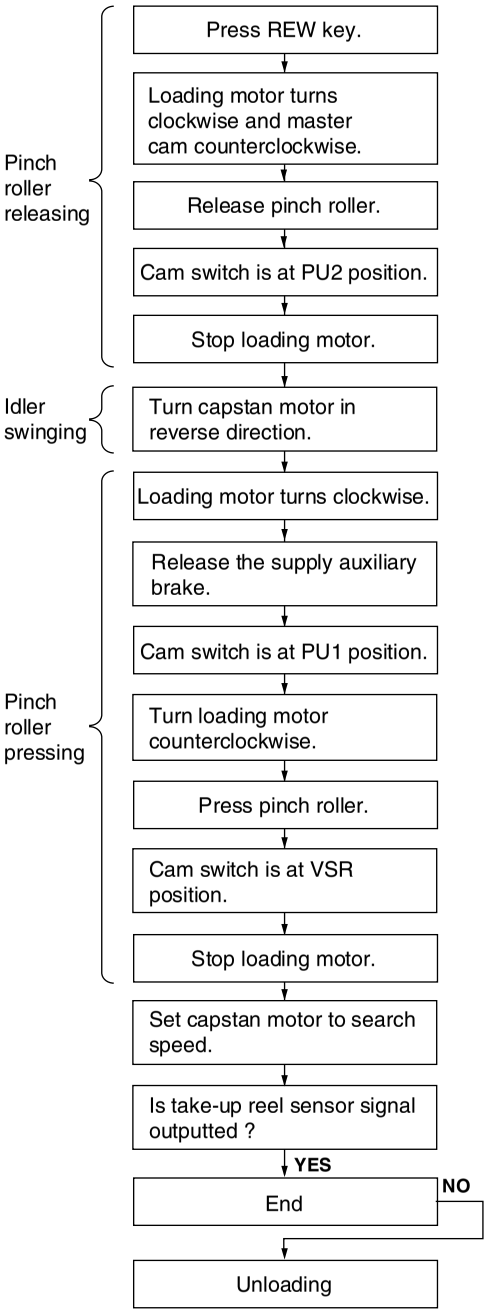
STOP → REC/PLAY



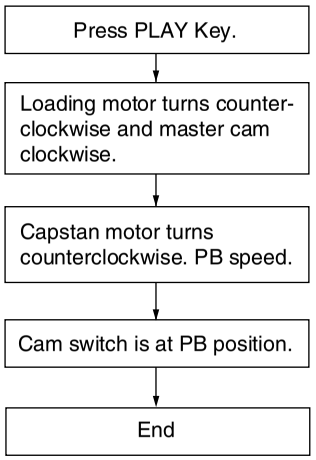
PLAY → STILL



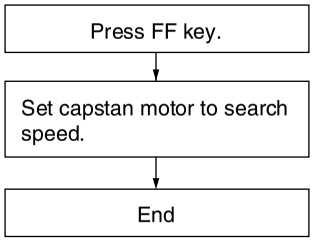
PLAY → VSR



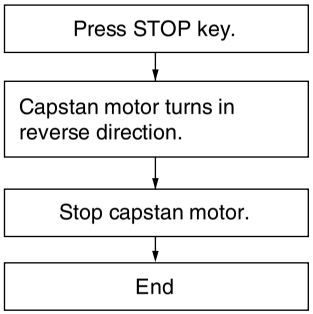
VSR → PLAY



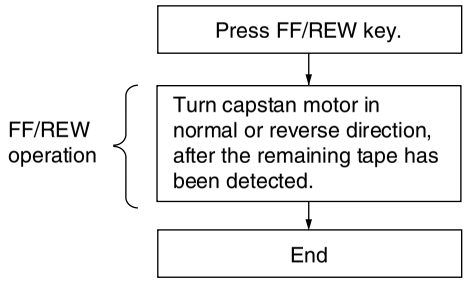
PLAY → VSF



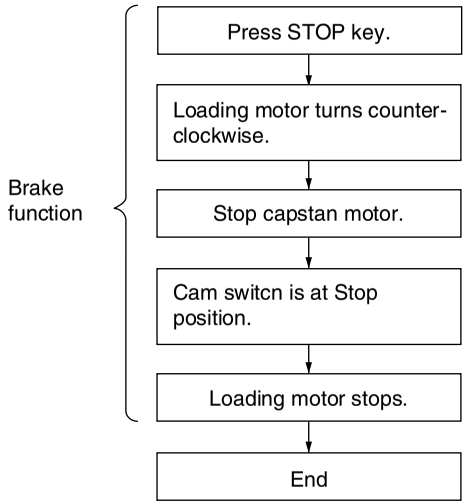
REC/PLAY → STOP



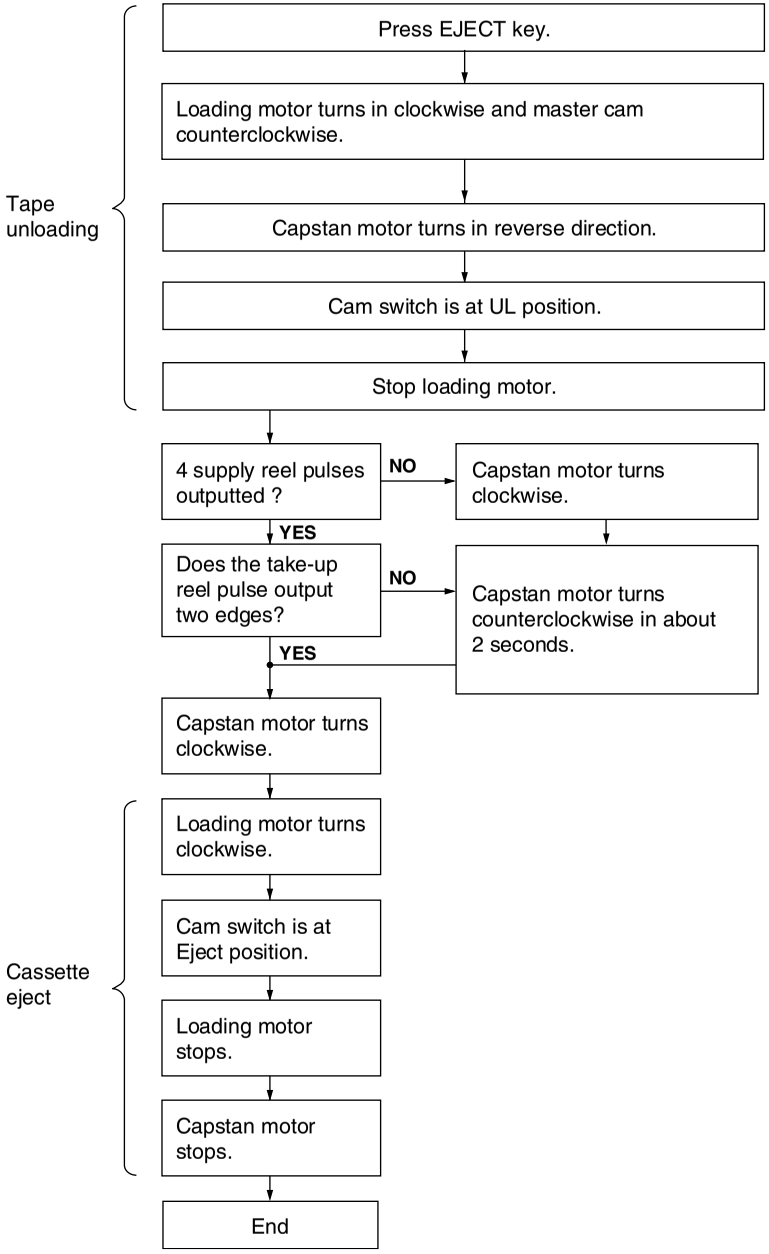
STOP → FF/REW



FF/REW → STOP

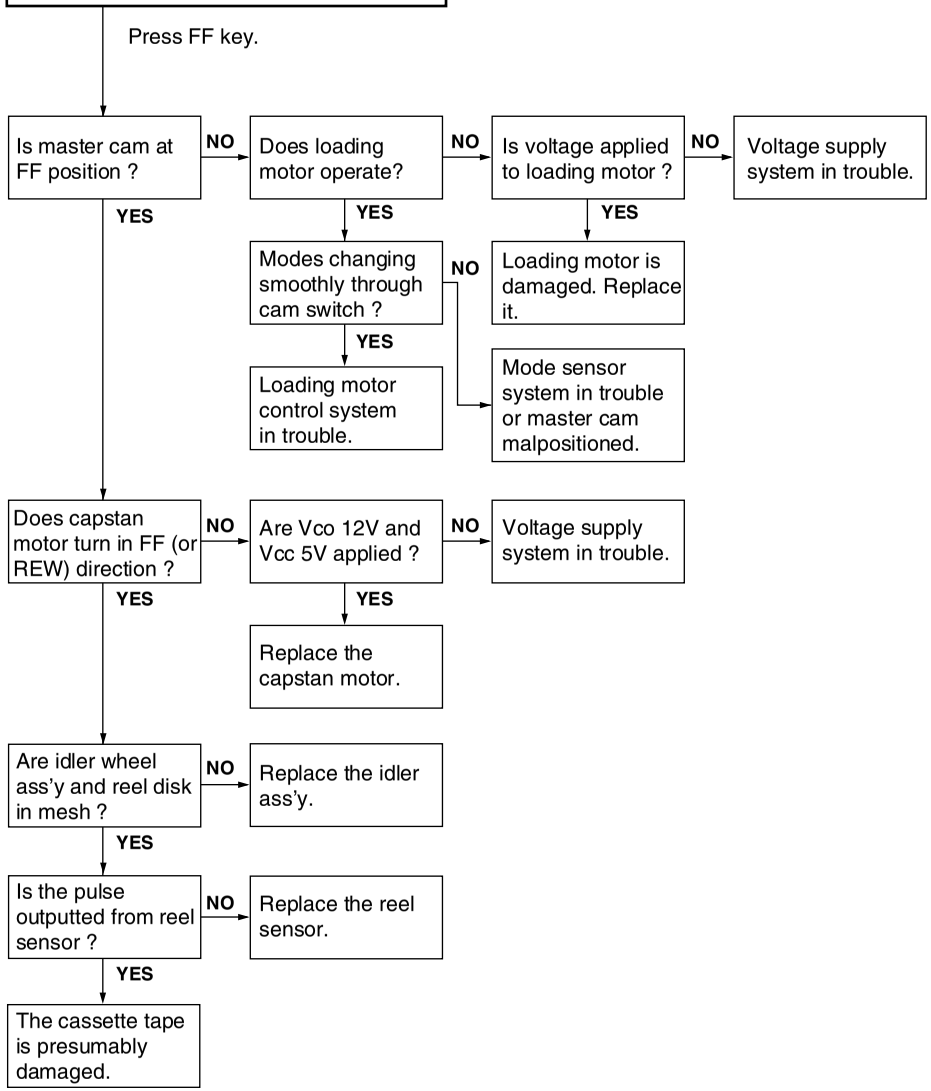


STOP → CASSETTE EJECT

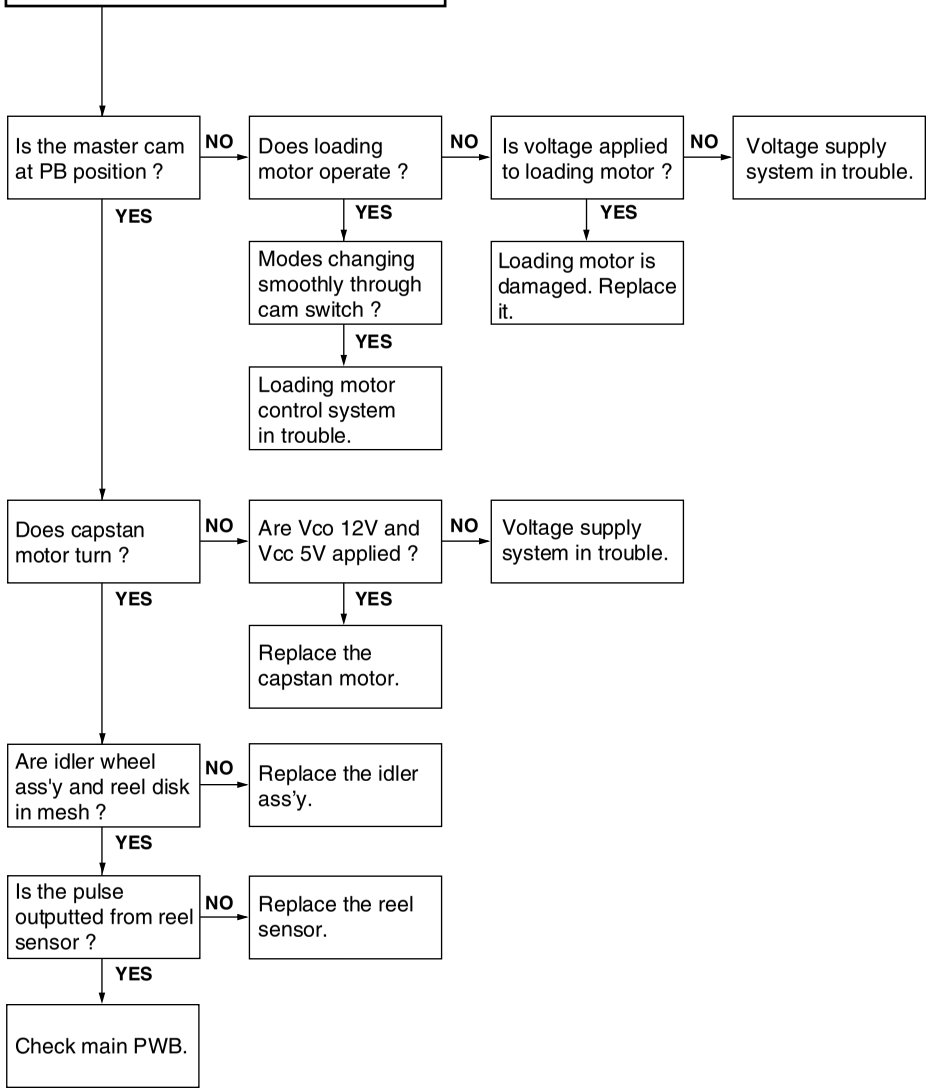


MECHANISM TROUBLESHOOTING

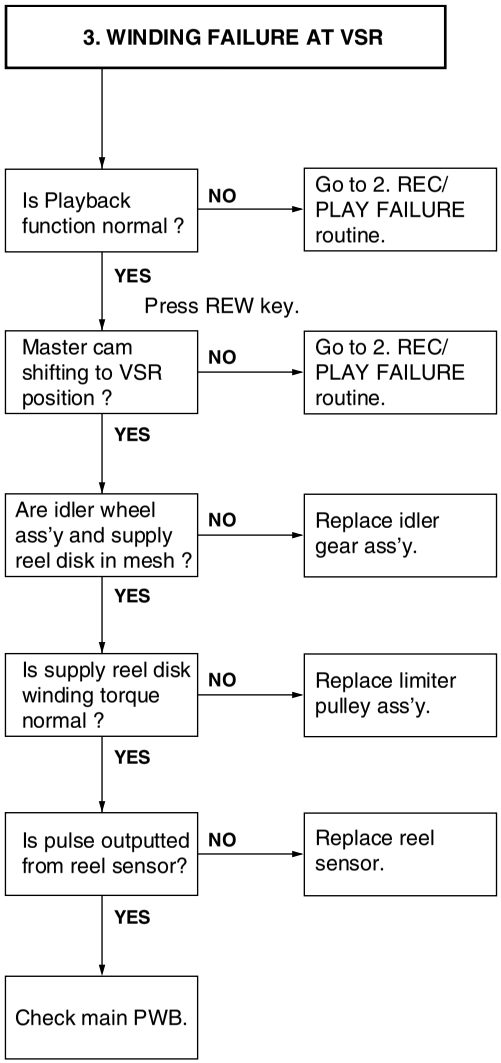
1. FF/REW FAILURE (NO TAPE WINDING)



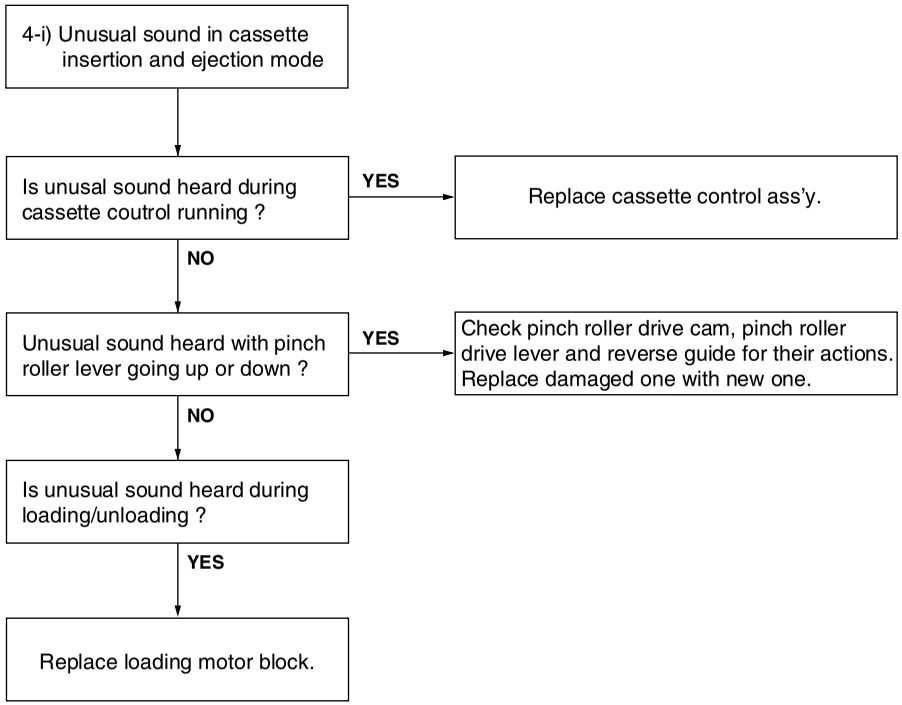
2. REC/PLAY FAILURE (MODE RELEASE)

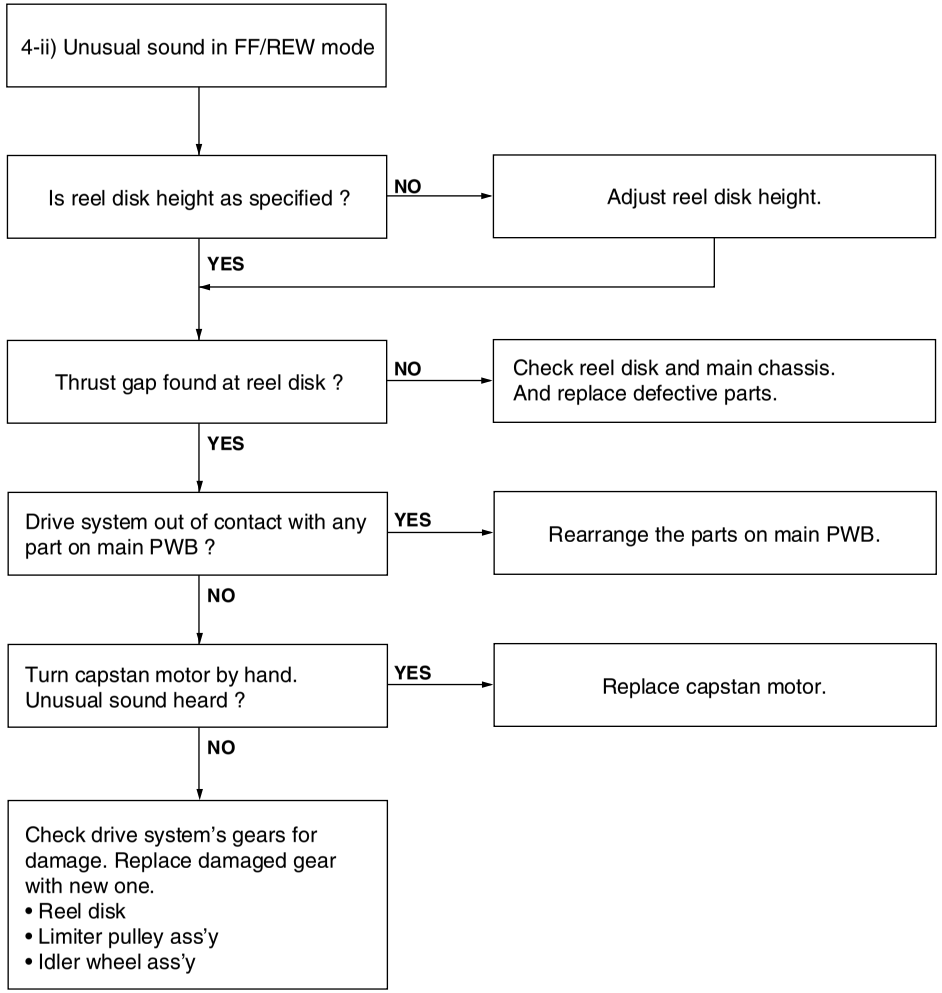


3. WINDING FAILURE AT VSR



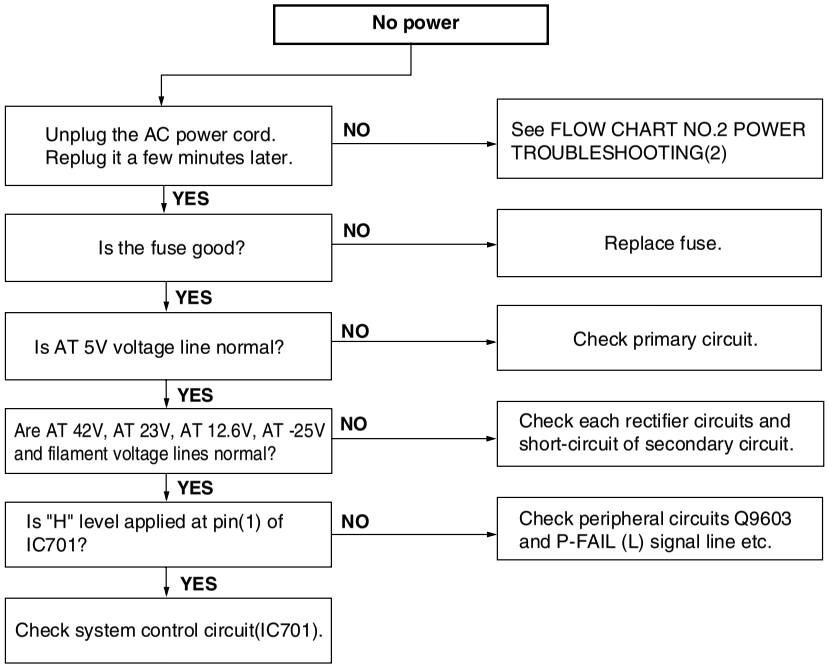
4. UNUSUAL SOUND IN EACH MODE



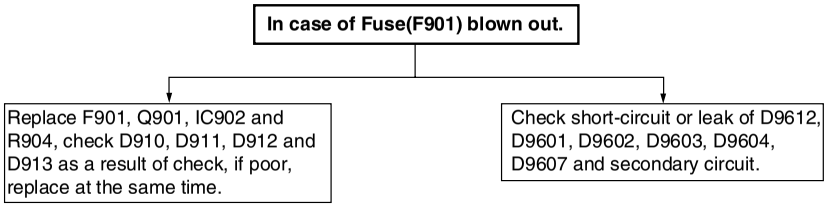

4-ii) Unusual sound in FF/REW mode
Is reel disk height as specified ?
NO
Adjust reel disk height.
YES
Thrust gap found at reel disk ?
NO
Check reel disk and main chassis.
And replace defective parts.
YES
Drive system out of contact with any part on main PWB ?
YES
Rearrange the parts on main PWB.
NO
Turn capstan motor by hand.
Unusual sound heard ?
YES
Replace capstan motor.
NO
Check drive system's gears for damage. Replace damaged gear with new one.
• Reel disk
• Limiter pulley ass'y
• Idler wheel ass'y

7. ELECTRICAL TROUBLESHOOTING

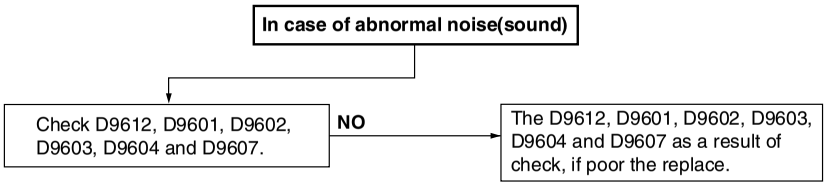
FLOW CHART NO.1 POWER TROUBLESHOOTING(1)



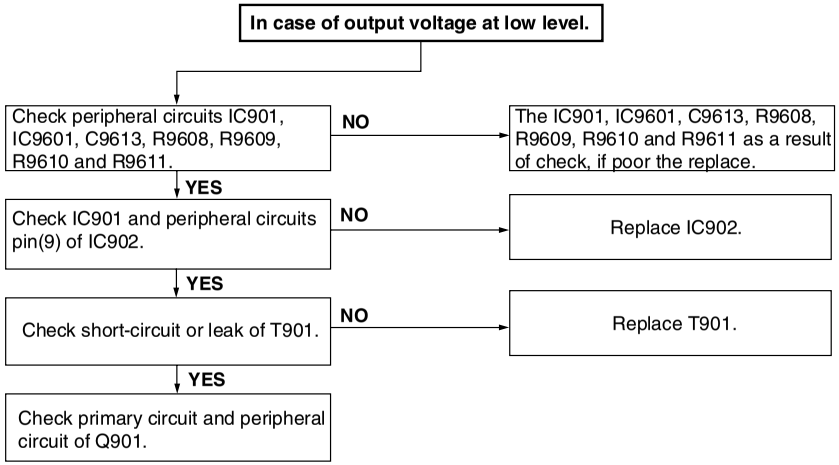
FLOW CHART NO.2 POWER TROUBLESHOOTING(2)



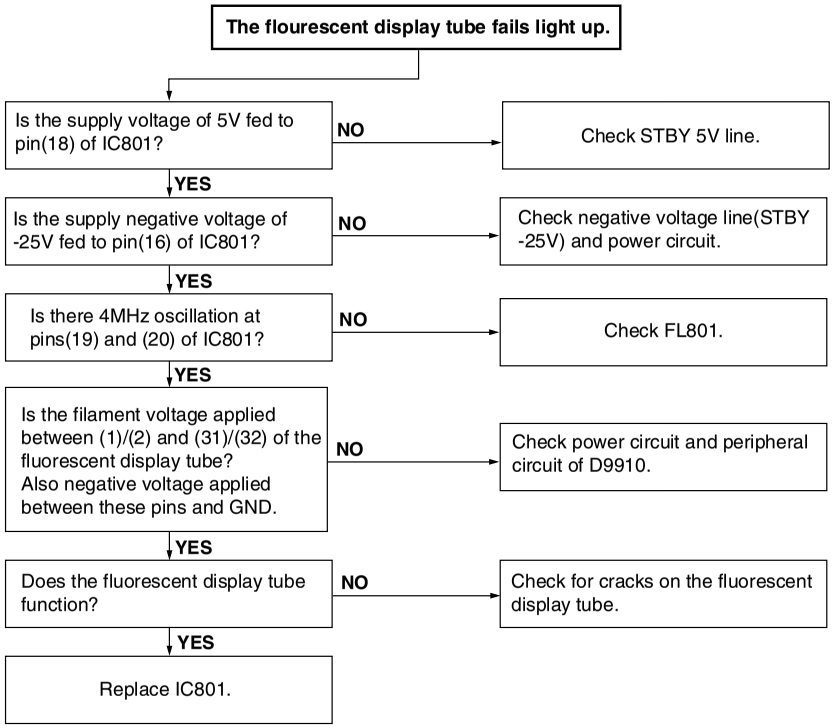
FLOW CHART NO.3 POWER TROUBLESHOOTING(3)



FLOW CHART NO.4 POWER TROUBLESHOOTING(4)



FLOW CHART NO.5 TIMER TROUBLESHOOTING (1)



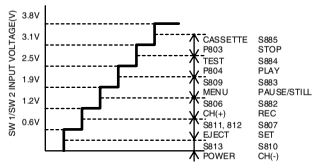
FLOW CHART NO.6 TIMER TROUBLESHOOTING (2)

Key-in input is not received <For jog shuttle mode.>

- Does the key switch make good contact, when the cassette tape is inserted?
  - NO → Check switch contact.
  - YES ↓
- Is there a short in the scan outs or key inputs?
  - NO → Check all the terminals of IC801 and switches for poor soldering.
  - YES ↓
- Are pulses received at pins(26) thru (29) of IC801 when the keys are activated?
  - NO → Check lines of key in and scan out.
  - YES ↓
- Check IC801, IC701 and FIP data, FIP clock, FIP CS and key data.

Key-in input is not received <Except for jog shuttle mode.>

- Does the key switch make good contact, when the cassette tape is inserted?
  - NO → Check switch contact.
  - YES ↓
- Is there the function control voltage inputted at the pins(87) and (88) of IC701, when the keys are activated?
  - NO → Check peripheral circuit of pins(87) and (88) of IC701, and the function keys.
  - YES ↓
- Replace IC701.



FLOW CHART NO.7 INFRARED R/C TROUBLESHOOTING

No operation is possible from the infrared remote control.

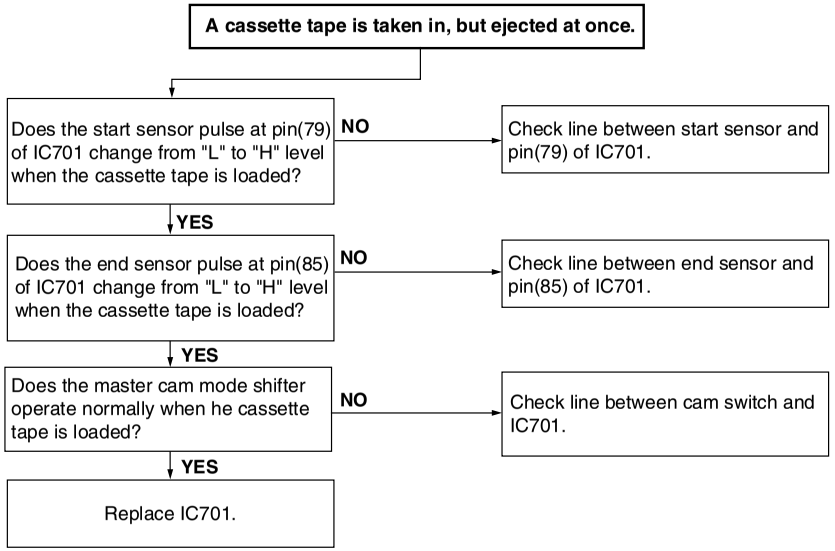
- Dose the infrared remote control function?
  - NO → Replace infrared remote control as required.
  - YES ↓
- Is the supply voltage of 5V fed to C813 of (+) side?
  - NO → Check AT 5V and GND lines.
  - YES ↓
- Is "L" pulse sent out from pin(1) of the receiver when the infrared remote control is activated?
  - NO → Replace receiver.
  - YES ↓
- Check between at pin(1) of receiver and all the way up thru to pin(5) of IC701.
  - NO → Replace IC701.

FLOW CHART NO.8 CASSETTE CONTROL TROUBLESHOOTING(1)

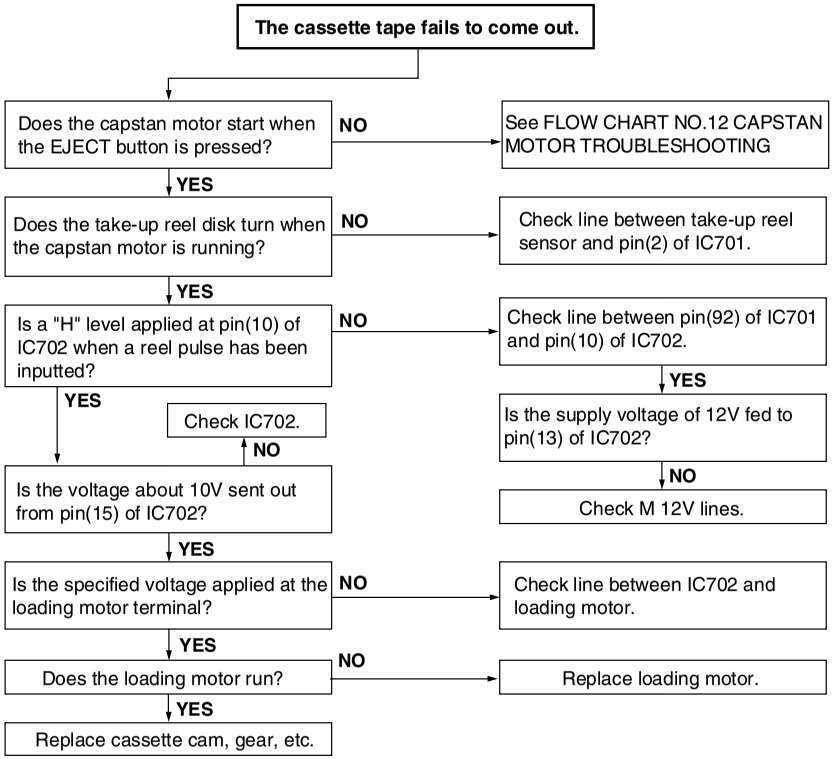
A cassette tape is not take in.

- Is the cassette housing distorted?
  - NO → Fix or replace the cassette housing.
  - YES ↓
- Does the start sensor cover go to open when the cassette tape is inserted?
  - NO → Check start sensor cover.
  - YES ↓
- Does pin(79) of IC701 change from "H" to "L" level when the cassette tape is inserted?
  - NO → Check line between start sensor and pin(79) of IC701
  - YES ↓
- Does pin(11) of IC702 go to a "H" level when the cassette tape is inserted?
  - NO → Check line between pin(93) of IC701 and pin(11) of IC702.
    - YES ↓
    - Is the supply voltage of 12V fed to pin(13) of IC702?
      - NO → Check M 12V lines.
  - YES ↓
- Does pin(12) of IC702 change to about 10V when the cassette tape in inserted?
  - NO → Check IC702.
  - YES ↓
- Is the specified voltage applied at the loading motor terminal when the cassette tape is inserted?
  - NO → Check line between IC702 and loading motor.
  - YES ↓
- Replace loading motor.

FLOW CHART NO.9 CASSETTE CONTROL TROUBLESHOOTING(2)

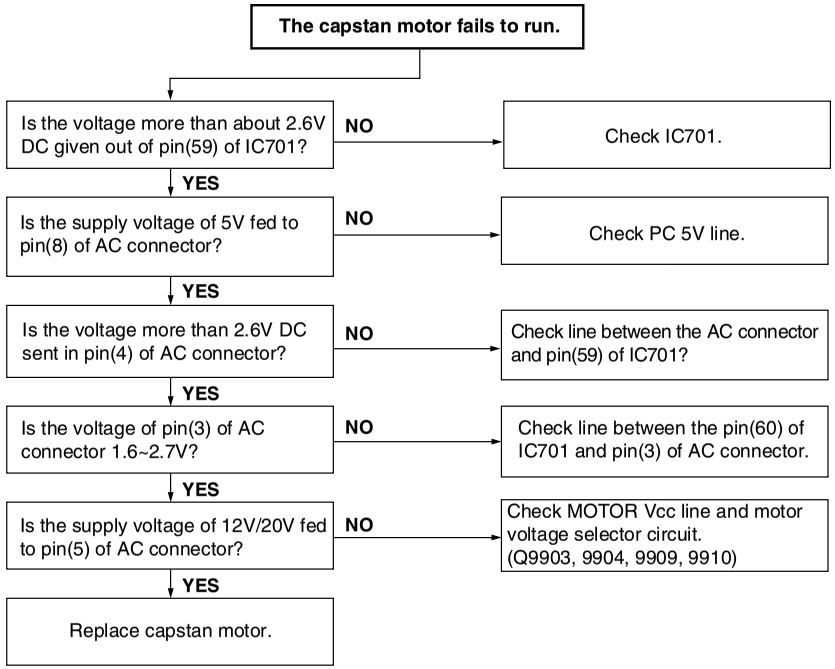


FLOW CHART NO.10 LOADING MOTOR AND EJECT TROUBLESHOOTING

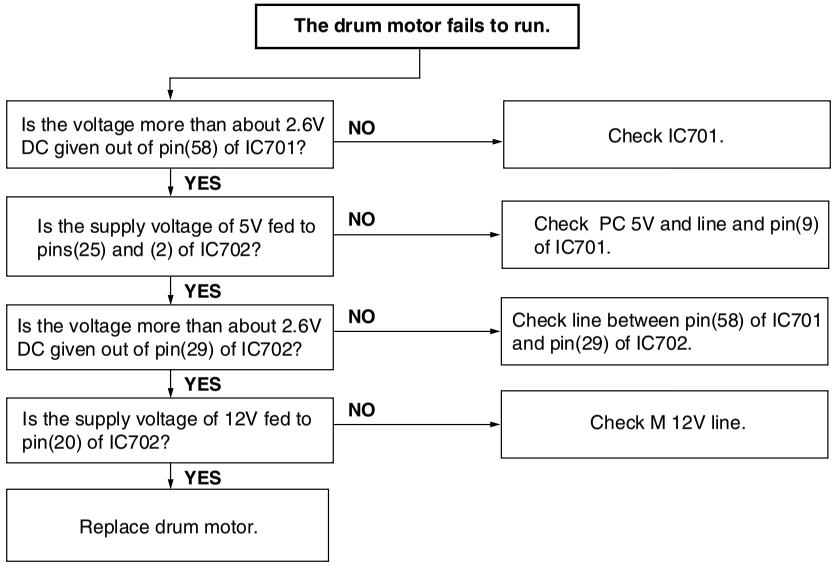


FLOW CHART NO.11 SYSTEM CONTROL TROUBLESHOOTING

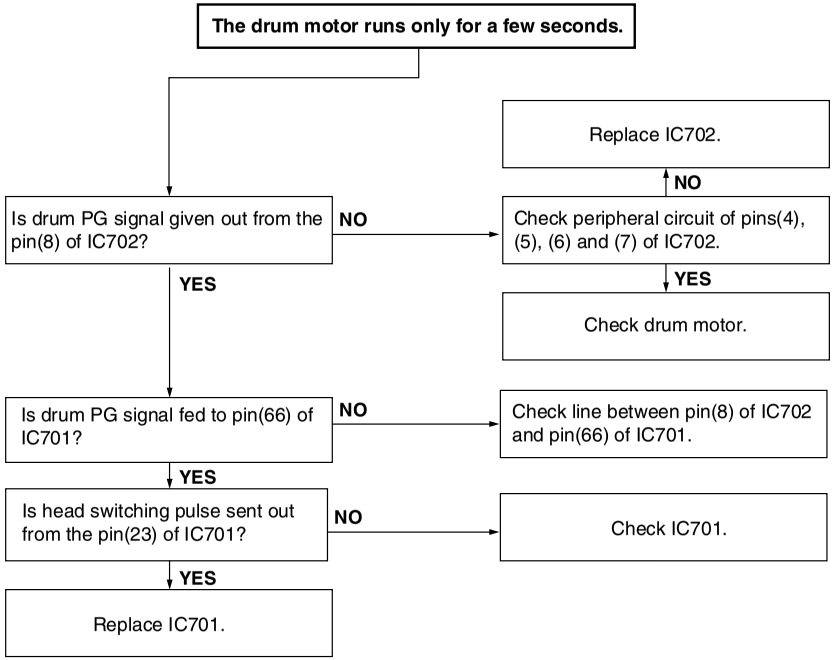
FLOW CHART NO.12 CAPSTAN MOTOR TROUBLESHOOTING



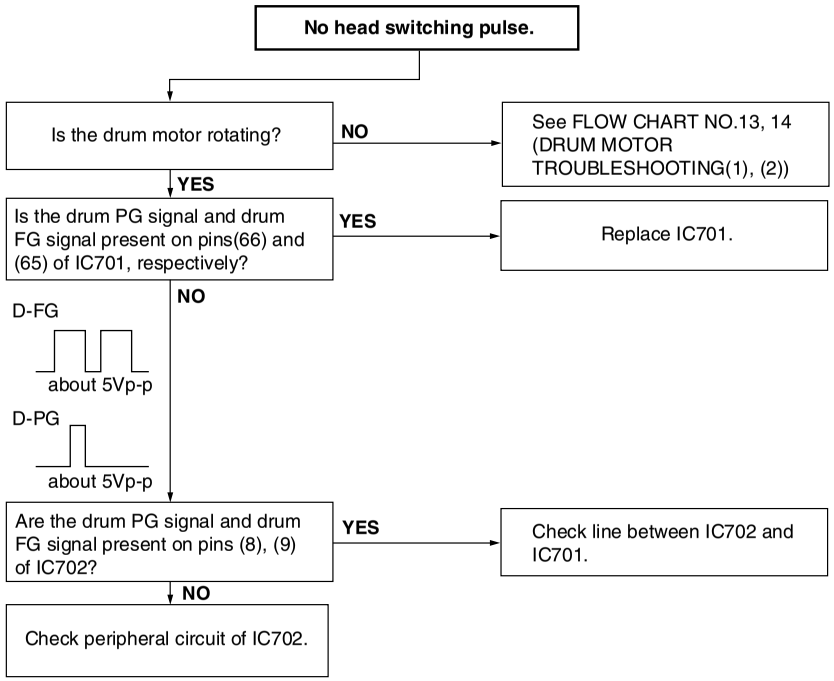
FLOW CHART NO.13 DRUM MOTOR TROUBLESHOOTING(1)



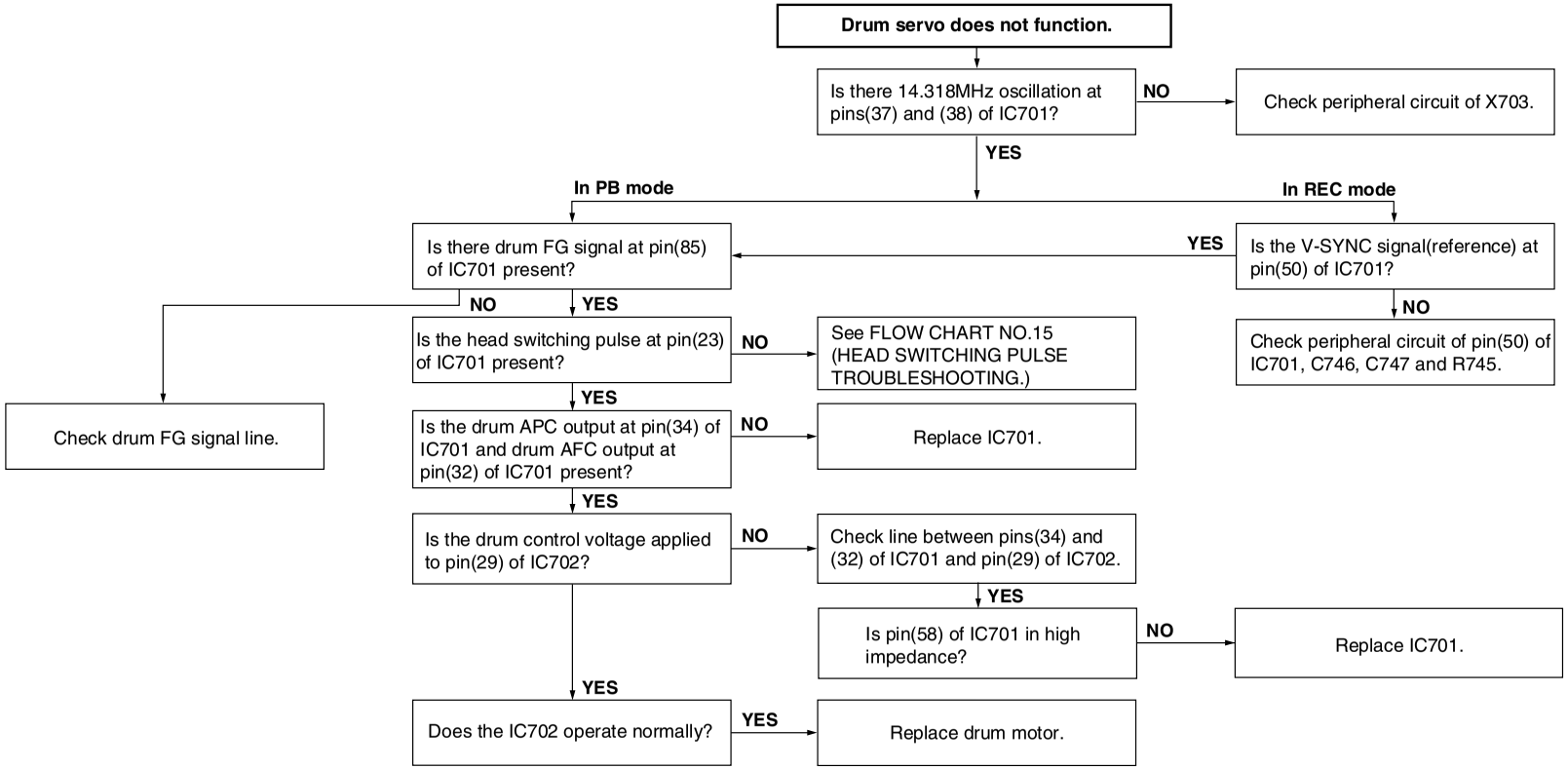
FLOW CHART NO.14 DRUM MOTOR TROUBLESHOOTING(2)



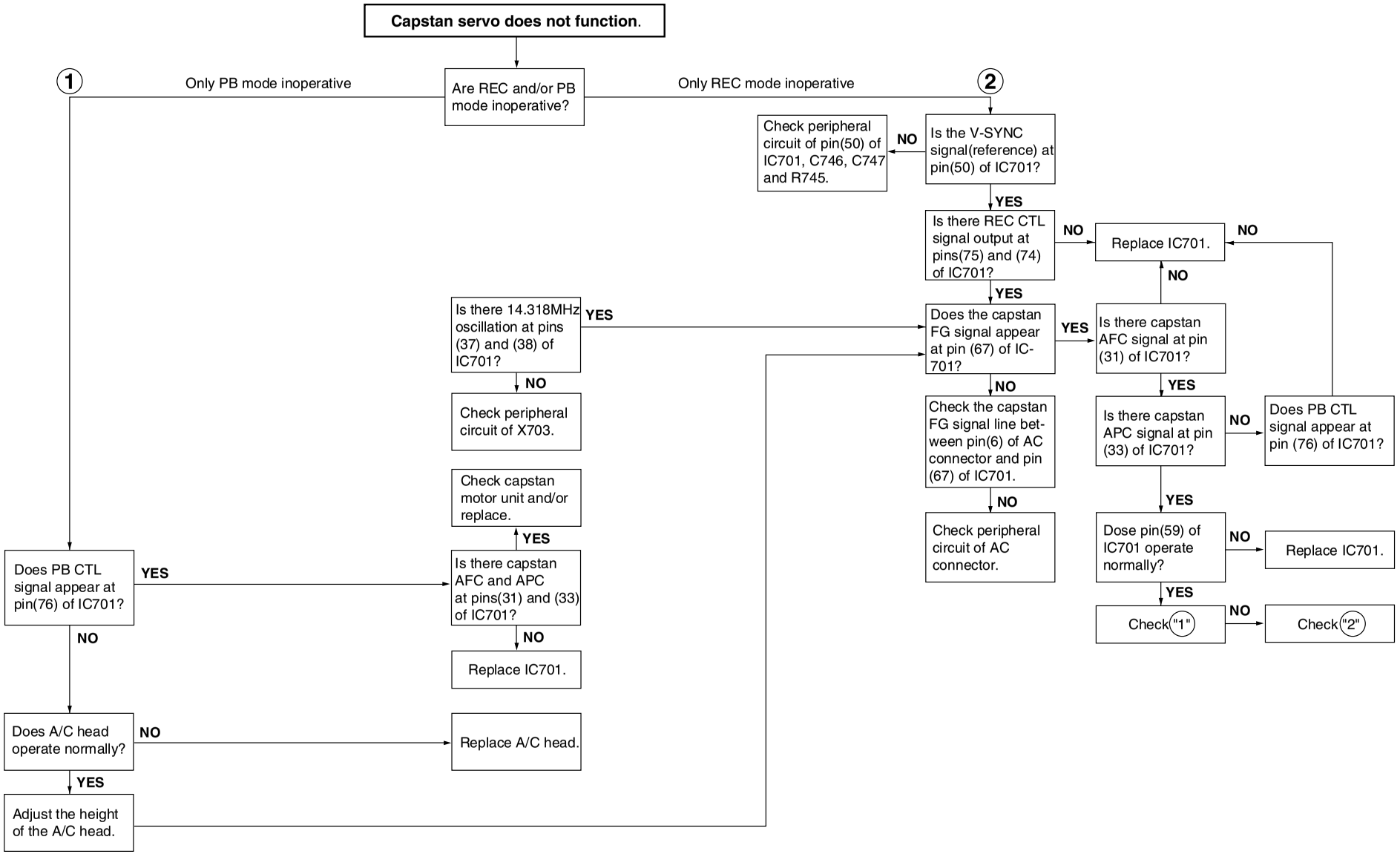
FLOW CHART NO.15 HEAD SWITCHING PULSE TROUBLESHOOTING.



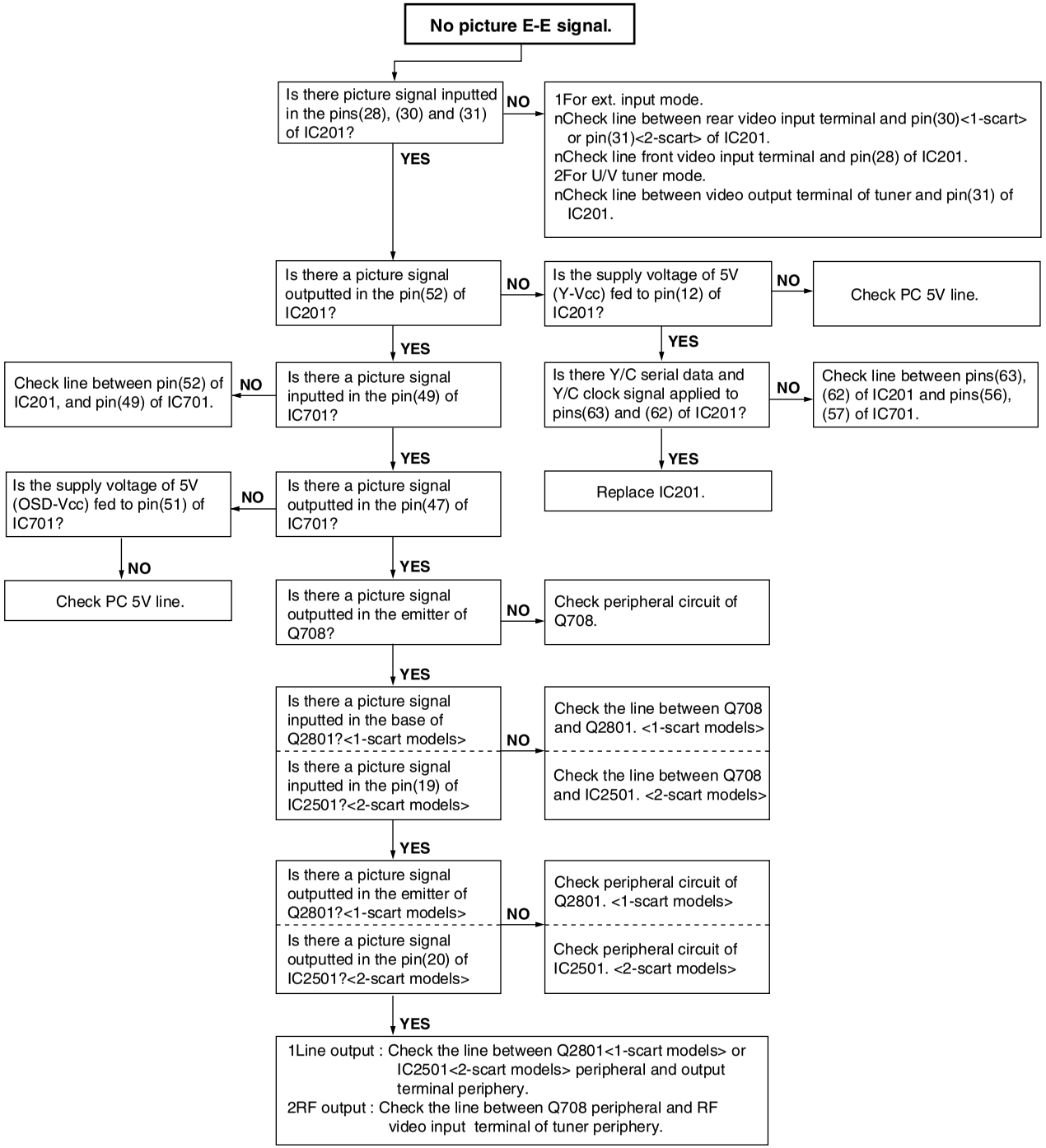
FLOW CHART NO.16 DRUM SERVO TROUBLESHOOTING



FLOW CHART NO.17 CAPSTAN SERVO TROUBLESHOOTING



FLOW CHART NO.18 E-E MODE TROUBLESHOOTING



FLOW CHART NO.19 LINEAR SOUND MODE TROUBLESHOOTING(1)

No linear sound recording(Hi-Fi E-E mode is possible)

- Is there "L" level at pin(99) of IC201?
  - NO → Check the AUDIO MUTE (H) line between pin(99) of IC6301 and pin(21) of IC701.
  - YES ↓
- Is there a signal at pin(4) of IC201?
  - NO → Replace IC201.
  - YES ↓
- Is the supply voltage of 12V fed to pin(2) of T651?
  - NO → Check AT 12V line.
  - YES ↓
- Is there a signal(Bias) at pin(5) of T651?
  - NO → Check the bias oscillation circuit (T651,Q651,Q652) and A-ERASE BIAS CTL line.
  - YES ↓
- Is there a signal(Bias+Audio sig.) at pin(6) of T651?
  - NO → Check peripheral circuit of T651.
  - YES ↓
- Check the MH-AA harness and A/C head.

FLOW CHART NO.20 LINEAR SOUND MODE TROUBLESHOOTING(2)

No linear sound playback(Hi-Fi E-E mode is possible)

- Is there a signal at pin(100) of IC201?
  - NO → Are the MH-AA harness and the PB AMP peripheral parts normal?
    - YES ↓ Clean A/C head.
    - YES ↓ Is azimuth height of A/C head properly adjusted?
      - NO → Readjust azimuth hight.
      - YES ↓ Replace A/C head.
  - YES ↓
- Is there "L" level at pin(99) of IC201?
  - NO → Check the AUDIO MUTE (H) line between pin(99) of IC6301 and pin(21) of IC701.
  - YES ↓
- Is there a signal at pin(11) of IC201?
  - NO → Replace IC201.
  - YES ↓
- For Hi-Fi models : Is there audio signal inputted at pin(54) of IC6301?
  - NO → Check line between pin(11) of IC201 and pin(54) of IC6301.
- Except Hi-Fi models : Check line ranging from ext. audio output terminal.

FLOW CHART NO.21 DECODER TROUBLESHOOTING

Not output from 21pin connector in video and audio signal.

- Is voltage 5V applied to the video section power terminal at pins(15), (17) of IC2501?
  - NO → Check STBY 5V line.
  - YES ↓
- Is voltage 10.5V applied to the audio section power terminal at pins(8), (10) of IC2501?
  - NO → Check STBY 10.5V line.
  - YES ↓
- Is there SDA and SCL signal applied to pins(25) and (26) of IC2501?
  - NO → Check line between pins(25), (26) of IC2501 and pins(17), (18) of IC701.
  - YES ↓
- Check signal line from video and audio function logic table as shown below.

<Normal Audio Double scart>

MODE SELECT	INPUT SIGNAL	SIG. FLOW	DECODER CIRCUIT INPUT	(switch)	OUTPUT	SIG. FLOW	OUTPUT SIGNAL
(A)	Pin47 of IC701(Y/C video output)	→	pin19		pin20	→	E1(L1) video output
(B)	E2(L2) video input	→	pin18				21PIN CONNECTOR
(A)	Pin11 of IC201(Audio output)	→	pin36		pin35	→	E1(L1) audio output
(B)	E2 audio input	→	pin1				21PIN CONNECTOR
(A)	Tuner video output	→	pin16		pin23	→	E2(L2) video output
(B)	E1(L1) video input	→	pin14				21PIN CONNECTOR
(C)	Pin47 of IC701(Y/C video output)	→	pin19				
(A)	Tuner audio output	→	pin9		pin29	→	E2(L2) audio output
(B)	E1 audio input	→	pin5				21PIN CONNECTOR
(C)	Pin11 of IC201(Audio output)	→	pin36				
(A)	E2(L2) video input	→	pin18		pin21	→	Pin31 of IC201
(B)	E1(L1) video input	→	pin14				Y/C video input
(C)	Tuner video output	→	pin16				(Tuner/Aux. input)
(A)	E2 audio input	→	pin1		pin31	→	Pin9 of IC201
(B)	E1 audio input	→	pin5				(Audio input)
(C)	Tuner audio output	→	pin9				

REPLACEMENT OF IC705(E²PROM)

《Servicing precautions》
When the IC705(E²PROM) has been replaced, make the following reprogramming.
Depending on models, the IC705(E²PROM) has been factory adjusted for it's memory function.
It's therefor necessary to reprogram the memory function for the model in question.
Note that the servo circuit requires readjustments for the slow and still modes.

1. Memory function reprogramming.
   1. Check the power off.(Power is standby mode)
   2. Make for moment short-circuit test point(P802), located at the front side on the main PWB.
      Be sure that all the fluorescent display tube light up into the TEST mode.
   3. Using the CHANNEL(+) AND (–) buttons, select the right function numbers from JP0 to J39, which appear in the fluorescent display tube, referring to the E²PROM map.
      Press the DISPLAY button to pickup the functions(ON) and the CLEAR button to discard the functions(OFF).
      DISPLAY and CLEAR buttons, are located on the remote control unit.
      - ＊ when the DISPLAY button has been pressed (ON), the memory function number starts flashing.
      - ＊ when the CLEAR button has been pressed (OFF), the memory function number lights up.
   4. Press the FF button on the remote control unit.
      By doing, lower 7 of the 10 digits are displayed in hexadecimal notation.
   5. Similarly to the above step 4, press the STOP button on the remote control unit.
      By doing, upper 3 of the 10 digits are displayed in hexadecimal notation.
   6. Example : "ON" and "OFF" are taken as "1" and "0" respectively.
      The numbers JP0 to JP39 are divided into four groups and each group's setting is displayed in hexadecimal notation.
      ① When the press the FF button on the remote control unit.
      By doing, lower 7 of the 10 digits are displayed in hexadecimal notation.

JP27	JP26	JP25	JP24	JP23	JP22	JP21	JP20	JP19	JP18	JP17	JP16	JP15	JP14	JP13	JP12	JP11	JP10	JP9	JP8	JP7	JP6	JP5	JP4	JP3	JP2	JP1	JP0
1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
	↓				↓				↓				↓				↓				↓				↓		
	C				0				0				4				3				0				0		

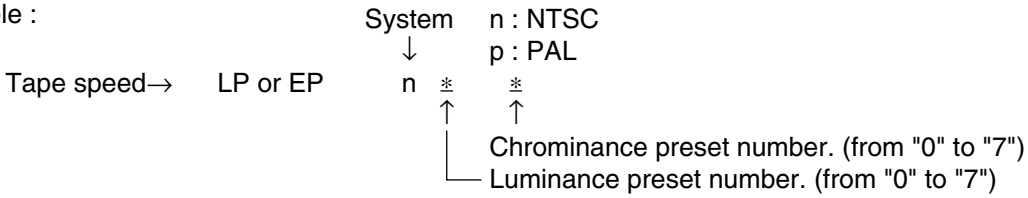
② When the press the STOP button on the remote control unit.
By doing, upper 3 in the 10 digits are displayed in hexadecimal notation from the feature function.
Also recording level preset number selected from the ten keys on the remote control unit which appear in the fluorescent display tube, referring to the E²PROM map.

Out lights	SP p ＊/＊ ↑	SP p ＊/＊ ↑	"0" fixed displayed	JP39	JP38	JP37	JP36	JP35	JP34	JP33	JP32	JP31	JP30	JP29	JP28
				0	0	0	0	0	0	0	0	0	0	0	0
					↓				↓				↓		
blank	selection from the ten keys. (from "0" to "7")	selection from the ten keys. (from "0" to "7")			0				1				0		

③ When the press the REW button on the remote control unit.
By doing, recording level preset number selected from the ten keys on the remote control unit which appear in the fluorescent display tube, referring to the E²PROM map.

Out lights	LP n ＊/＊ ↑	LP n ＊/＊ ↑	SP n ＊/＊ ↑	SP n ＊/＊ ↑	LP p ＊/＊ ↑	LP p ＊/＊ ↑
blank	selection from the ten keys. (from "0" to "7")	selection from the ten keys. (from "0" to "7")	selection from the ten keys. (from "0" to "7")	selection from the ten keys. (from "0" to "7")	selection from the ten keys. (from "0" to "7")	selection from the ten keys. (from "0" to "7")

2. Memory recording preset level reprogramming.
   1. Similarly to the above step 1-1 and 2 the same operate.
   2. Using the CHANNEL (+) AND (-) buttons, select the right function numbers continued from recording preset number as has been JP0~J39, which appear in the fluorescent display tube, referring to the E^2PROM map.
   3. Press the STOP or REW button on the remote control unit.
      By doing, recording level preset number selected by turn from the ten keys on the remote control unit, which appear in the fluorescent display tube referring to the E^2PROM map.
   4. Example :



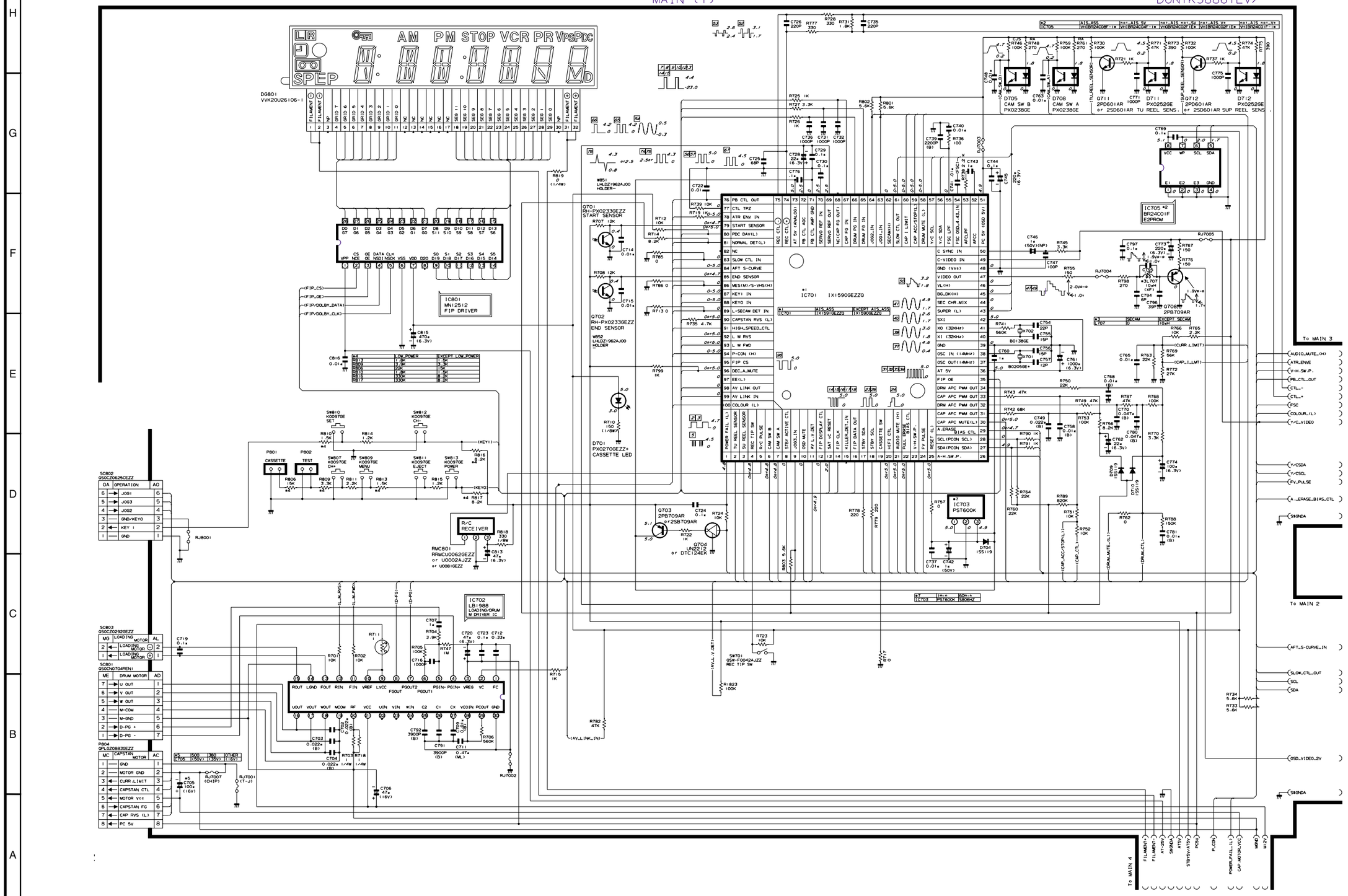
3. Finally make for a moment short-circuit test point(P802), both located at the front side on the main PWB to clear the TEST mode.

ROM MAP

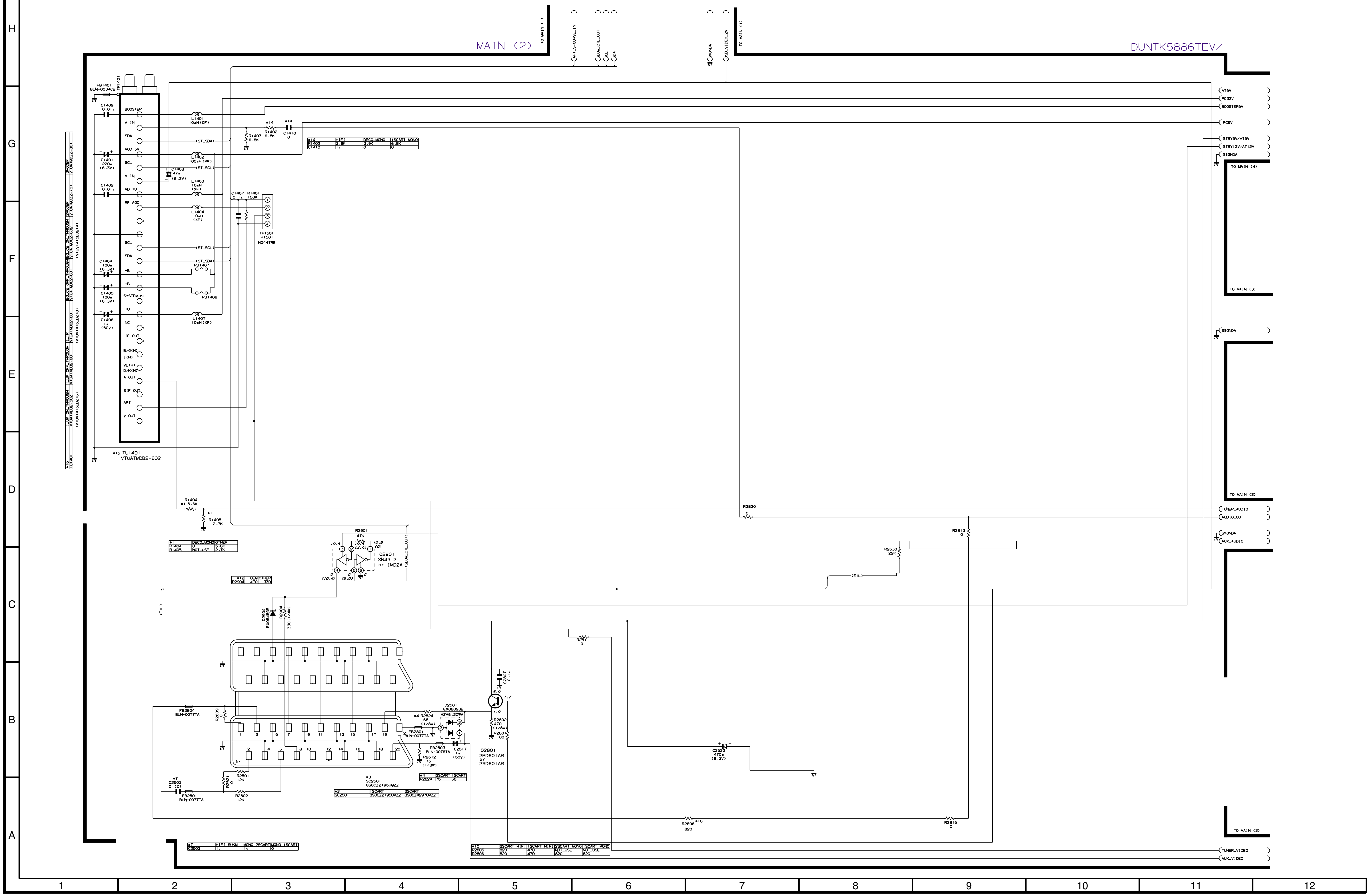
	MODEL	VC-M303HM	VC-M313HM
blank	blank	---	---
EP n * *	NTSC Luminance level	0	0
EP n * *	NTSC Chrominance level	7	7
SP n * *	NTSC Luminance level	0	0
SP n * *	NTSC Chrominance level	7	7
LP p * *	PAL Luminance level	3	3
LP p * *	PAL Chrominance level	4	4
blank	blank	---	---
SP p * *	PAL Luminance level	3	3
SP p * *	PAL Chrominance level	4	4
"0"	fixed	---	---
JP39	A.DUB	0	0
JP38	NOT SLOW ATR	0	0
JP37	SQ PB	0	0
JP36	NTSC PB	0	0
JP35	NTSC SKEW	0	0
JP34	HEAD2	0	0
JP33	HEAD1	0	0
JP32	HEAD0	1	1
JP31	GAMMA correction	0	0
JP30	L/P - 5 min	0	0
JP29	84 CHANNEL	0	0
JP28	R/C CODE 1	0	0
JP27	DNR	0	0
JP26	POST CODE	0	0
JP25	SAT CTL	0	0
JP24	AV LINK / 16 X 9	0	0
JP23	Hi-Fi	0	0
JP22	SORT/CLOCK	0	0
JP21	DECODER	0	0
JP20	SURROUND	0	0
JP19	IGR	0	0
JP18	NICAM	0	0
JP17	G-CODE1	0	1
JP16	G-CODE0	0	1
JP15	OEM	0	0
JP14	LP mode	1	1
JP13	F-AV	0	1
JP12	2 SCART	0	0
JP11	RF OUT	0	0
JP10	TUNER2	0	0
JP 9	TUNER1	1	1
JP 8	TUNER0	1	1
JP 7	SYSTEM1	0	0
JP 6	SYSTEM0	0	0
JP 5	SAT CH VPS OFF X380 FF/REW	0	0
JP 4	LOW POWER	0	0
JP 3	SPATIALIZER	0	0
JP 2	VPS/PDC	0	0
JP 1	COLOUR 1	0	0
JP 0	COLOUR 0	0	0
	DISPLAY IN HEXADECIMAL NOTATION	070734 34010 0004300	070734 34010 0036300

0:LIGHT UP 1:FLASHING

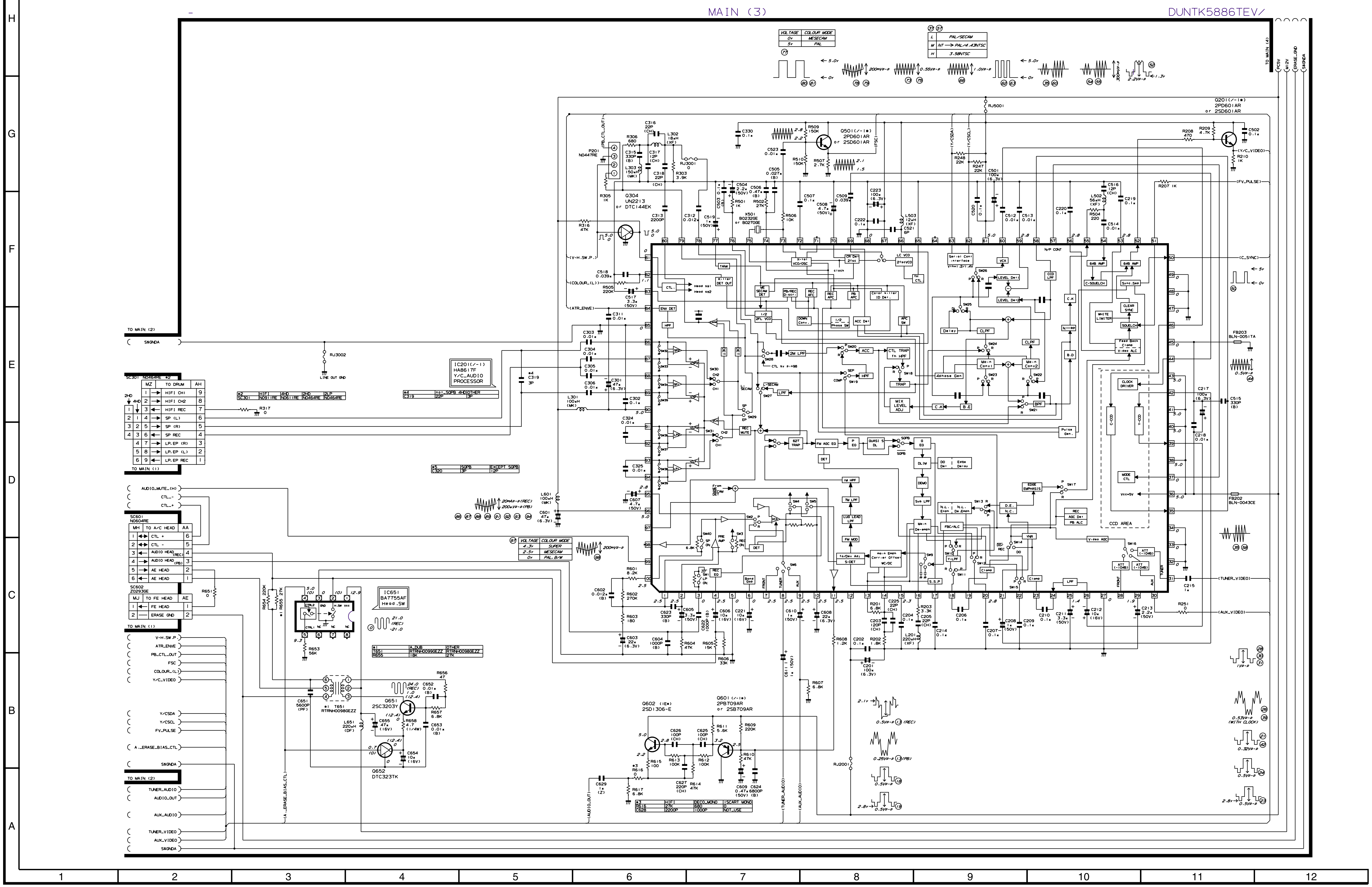
303 MAIN (1)


MAIN (1)
DUNTK5886TEV/
IC801 MN12512 FIP DRIVER
IC701 IX1590GEZZQ
IC702 LB1988 LOADING/DRUM M DRIVER IC
IC705 #2 BR24C01F E2PROM
IC703 PST600K
To MAIN 2
To MAIN 3
To MAIN 4

303 MAIN(2)


MAIN (2)
DUNTK5886TEV/
TO MAIN (1)
TO MAIN (4)
TO MAIN (3)
AT5V
PC32V
BOOSTER5V
PC5V
STBY5V/AT5V
STBY12V/AT12V
S&GNDA
TUNER_AUDIO
AUDIO_OUT
AUX_AUDIO
TUNER_VIDEO
AUX_VIDEO
*15 TU1401
VTUATMDB2-602
TP1501
P1501
N0447RE
Q2901
XN4312
or IMD2A
Q2801
2PD601AR
or
2SD601AR
*3
SC2501
050CZ2195UMZZ
FB2504
BLN-0077TA
FB2501
BLN-0077TA
D2501
EX0809GE

303 MAIN (3)



MAIN (3)
DUNTK5886TEV/
IC201(/-1)
HA8611F
Y/C_AUDIO
PROCESSOR
IC651
BA7755AF
Head.SW
Q501(/-1*)
2PD601AR
or 2SD601AR
Q201(/-1*)
2PD601AR
or 2SD601AR
Q304
UN2213
or DTC144EK
Q651
2SC3203Y
Q652
DTC323TK
Q602 (1E*)
2SD1306-E
Q601 (/-1*)
2PB709AR
or 2SB709AR
T651
RTRNH0098GEZZ
X501
B0232GE
or B0270GE
SC301 N0464RE
SC601 N0604RE
SC602 Z0293GE
P201 N0447RE
TO MAIN (1)
TO MAIN (2)
TO MAIN (4)
CCD AREA

SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
BE SURE TO USE GENUINE PARTS FOR SECURING THE SAFETY AND RELIABILITY OF THE SET.

PARTS MARKED WITH"⚠" AND PARTS SHADED (IN GREY) 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.

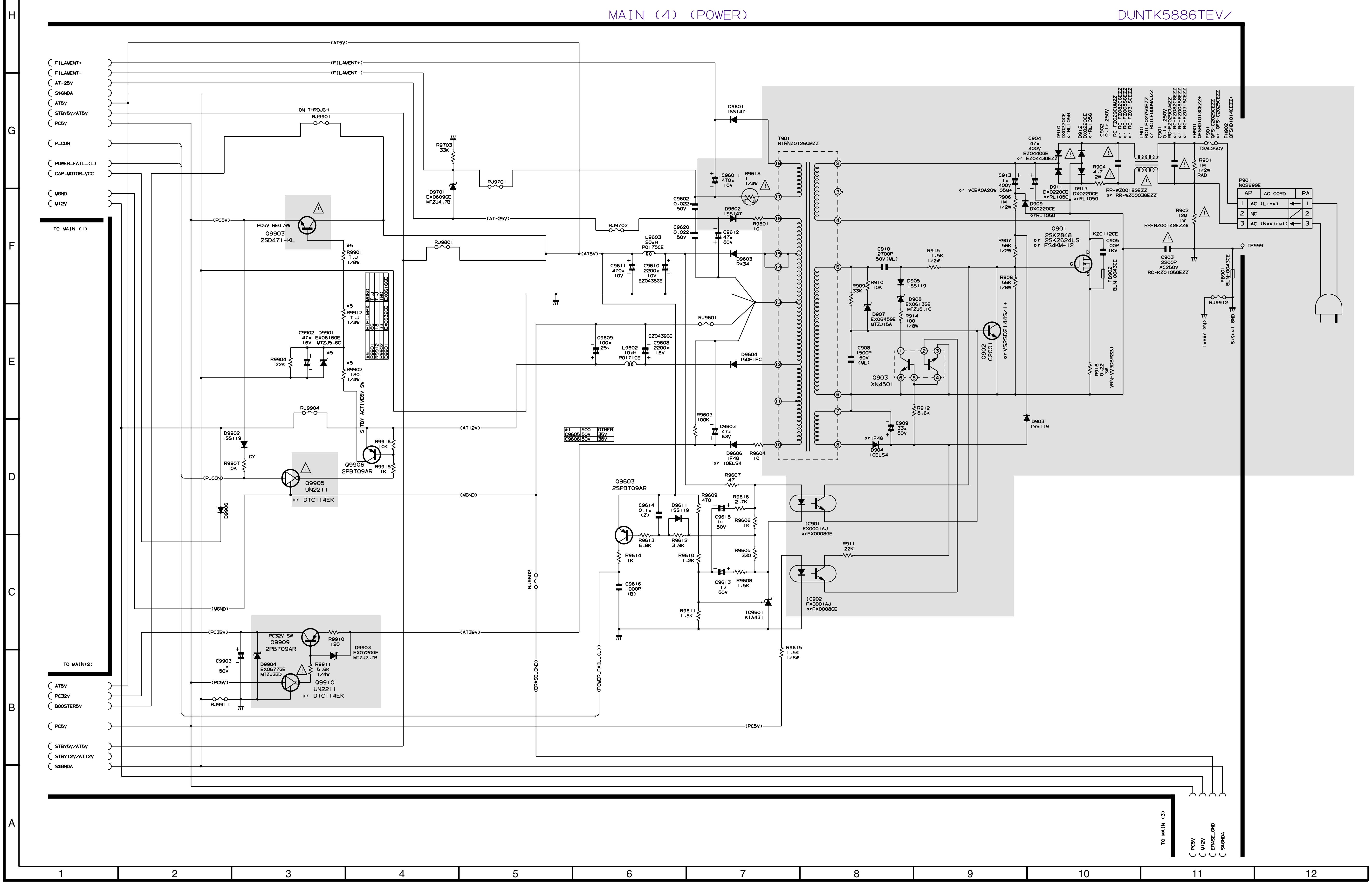
NOTE:
1. The unit of resistance "ohm" is omitted (K: 1000 ohms M: 1 Meg ohm).
2. All resistors are 1/8 watt, unless otherwise noted.
3. The unit capacitance "F" is omitted (μ= μF, p= μ μF).
4. The values in parentheses are the ones in the PB mode: the values without parentheses are the ones in the REC mode.

VOLTAGE MEASUREMENT CONDITIONS:
1. DC voltages are measured between points indicated and chassis ground by VTVM, with AC230V/50Hz supplied to unit and all controls are set to normal viewing picture unless otherwise noted.
2. Voltages are meausred with 10000μVB & W or colour noted.

WAVEFORM MEASUREMENT CONDITIONS:
10000μV 87.5 percent modulated colour bar signal id fed into tuner.

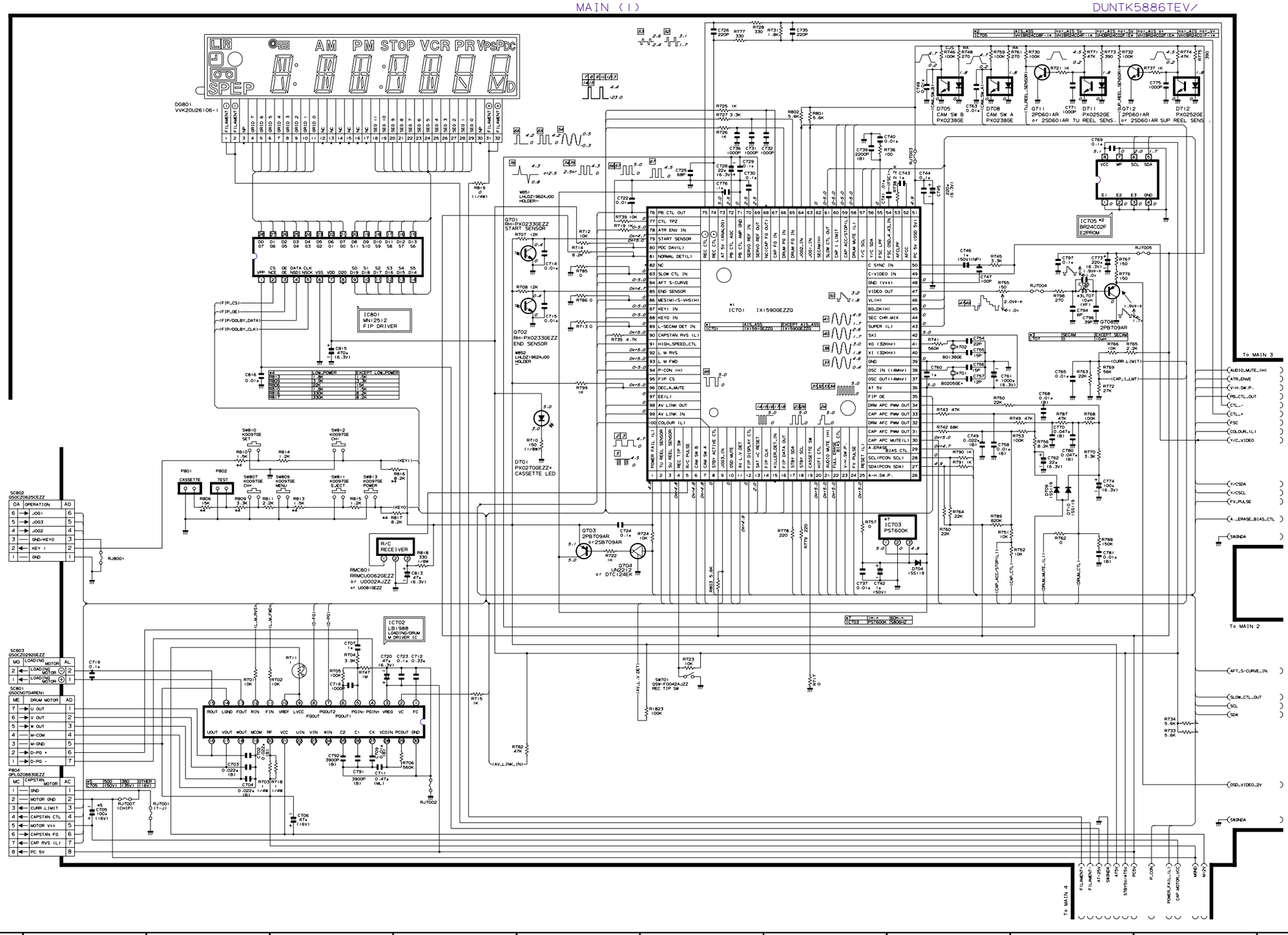
CAUTION:
This circuit diagram is original one. Therefore there may be a slight difference from yours

303 MAIN (4)

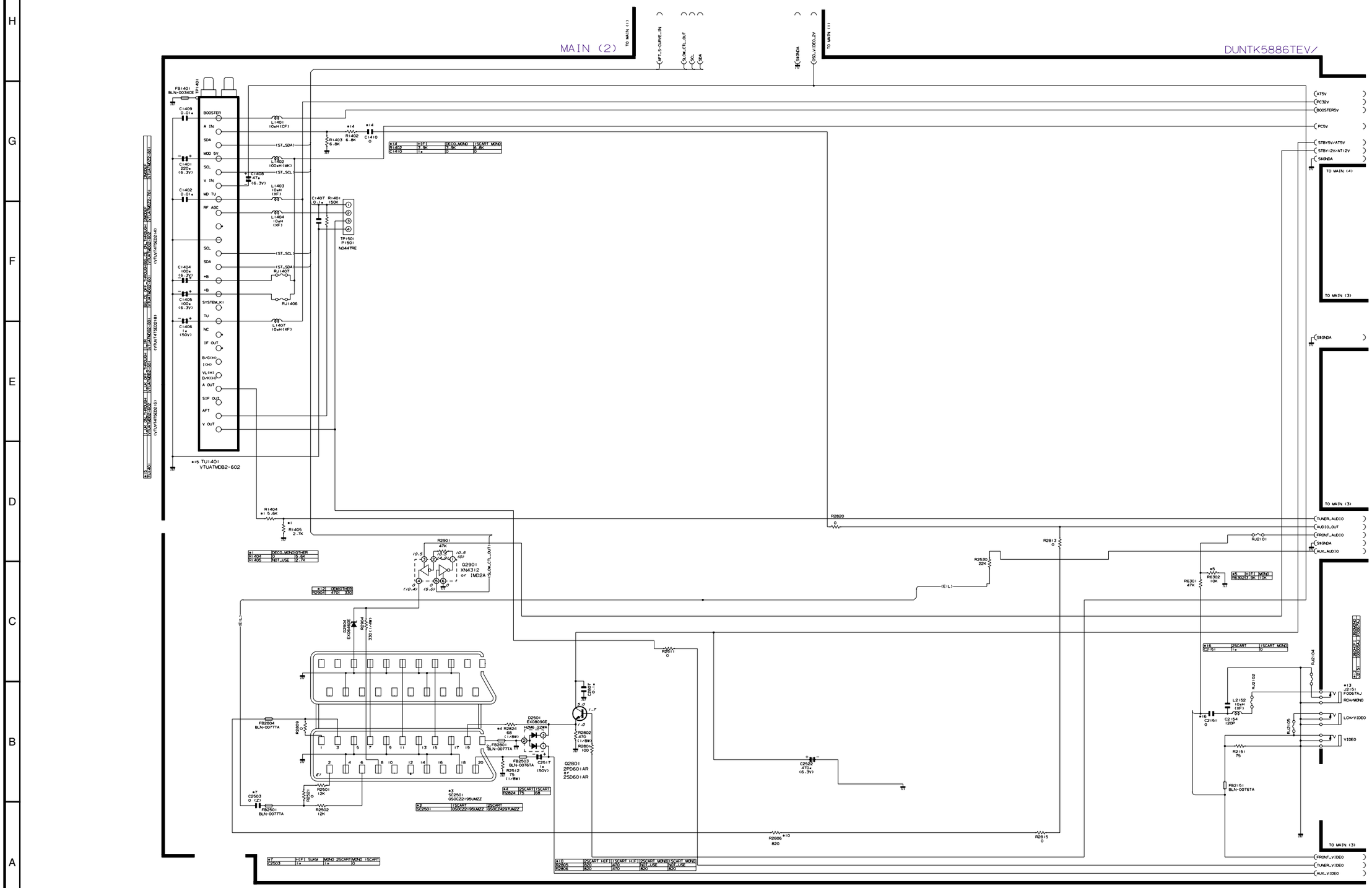


MAIN (4) (POWER)
DUNTK5886TEV/
FILAMENT+
FILAMENT-
AT-25V
S$GNDA
AT5V
STBY5V/AT5V
PC5V
P_CON
POWER_FAIL_(L)
CAP.MOTOR_VCC
MGND
M12V
TO MAIN (1)
TO MAIN(2)
PC32V
BOOSTER5V
STBY12V/AT12V
TO MAIN (3)
ERASE_GND
ON THROUGH
RJ9901
PC5V REG.SW
Q9903
2SD471-KL
Q9905
UN2211
or DTC114EK
Q9906
2PB709AR
PC32V SW
Q9909
2PB709AR
Q9910
UN2211
or DTC114EK
Q9603
2SPB709AR
T901
RTRNZ0126UMZZ
Q901
2SK2848
or 2SK2624LS
or FS4KM-12
Q902
C2001
or VS2SD2144S/1+
Q903
XN4501
IC901
FX0001AJ
orFX0008GE
IC902
FX0001AJ
orFX0008GE
IC9601
KIA431
P901
N0269GE
AP
AC CORD
PA
AC (Live)
NC
AC (Neutral)
TP999
Tuner GND
Signal GND
1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H

313 MAIN (1)


MAIN (1)
DUNTK5886TEV/
IC701 IX1590GEZZ0
IC801 MN12512 FIP DRIVER
IC702 LB1988 LOADING/CRUM M DRIVER IC
IC705 #2 BR24C02F E2PROM
IC703 PST600K
Q701 RH-PX0233GEZZ START SENSOR
Q702 RH-PX0233GEZZ END SENSOR
Q703 2PB709AR or 2SB709AR
Q704 UN2212 or DTC124EK
Q705 2PB709AR
Q706 2PB709AR
Q707 2PB709AR
Q708 2PB709AR
D701 PX0270EZZ+ CASSETTE LED
D705 CAM SW B PX0238GE
D708 CAM SW A PX0238GE
Q711 2SD601AR or 2SD601AR TU REEL SENS.
D711 PX0252GE
Q712 2SD601AR or 2SD601AR SUP REEL SENS.
D712 PX0252GE
SW701 QSW-F0042AJZZ REC TIP SW
SW801 VVK20U26106-1
SW802 050CZ0625CEZZ
SW803 050CZ0292GEZZ
SW804 QPLQZ0883GEZZ
RMC801 RMCUO062GEZZ or U0002AJZZ or U0018EZZ
R/C RECEIVER
To MAIN 2
To MAIN 3
To MAIN 4

313 MAIN(2)



*1	DECO_MONO	OTHER
R1404	10	2.4K
R1405	NOT_USE	2.7K

*12	DEMOTHER
R2904	470 330

*14	NTF1	DECO_MONO	SCART MONO
R1402	6.8K	15.8K	6.8K
R1410	1*	10	0

*2	SCART	SCART
R2824	470	68

*3	SCART	SCART
SC2501	Q50CZ2195UMZZ	Q50CZ4297UMZZ

*5	NTF1	MONO
R6302	10K	110K

*7	NTF1	SUM	MONO	SCART	MONO	SCART
C2503	1*		1*		10	

*10	SCART	NTF1	SCART	NTF1	SCART	MONO	SCART	MONO
R2805	820		470		NOT_USE		NOT_USE	
R2806	820		470		820		820	

*12	DEMOTHER
R2904	470 330

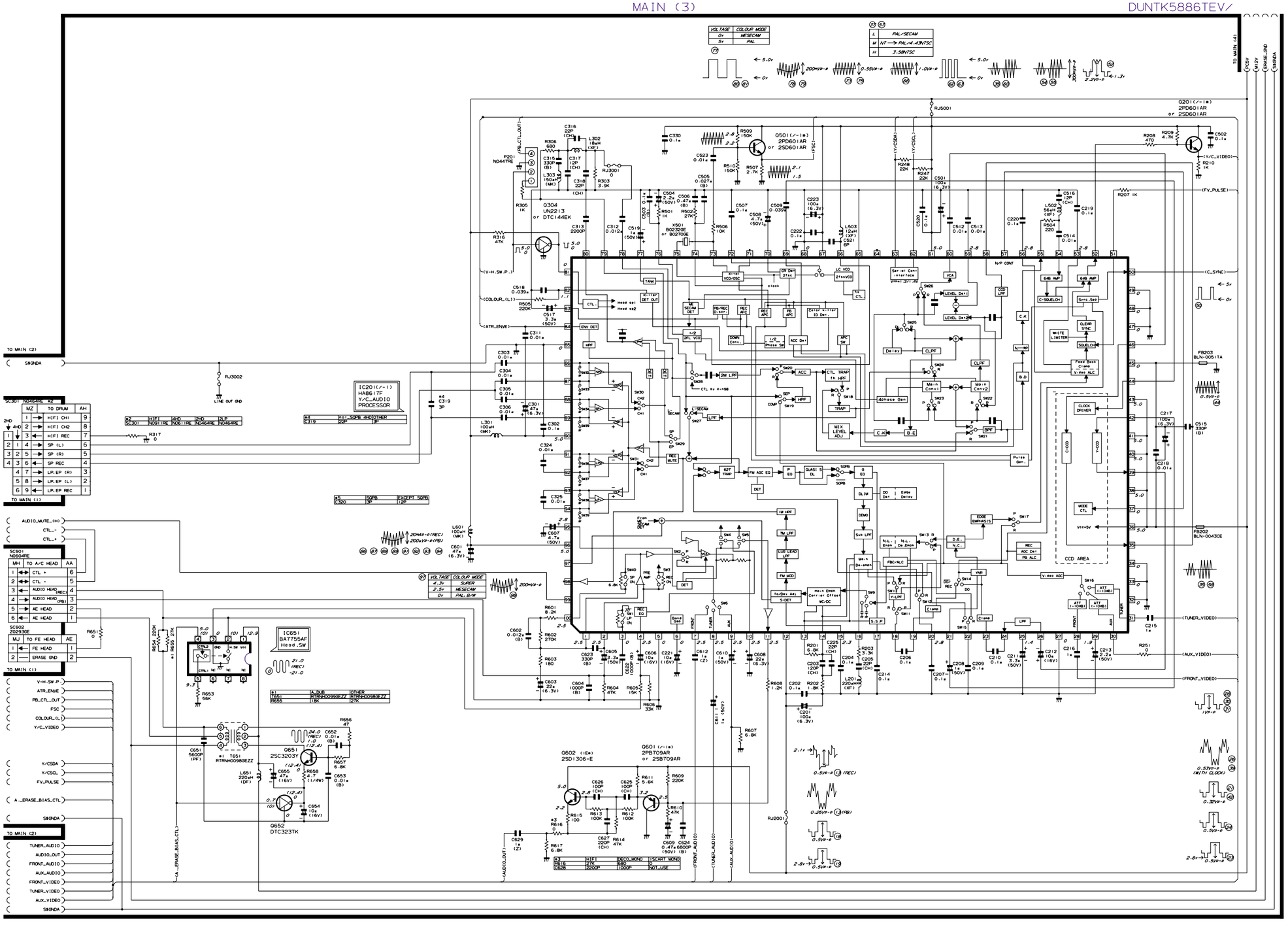
*13	SCART	MONO
Z2151	1*	10

*16	SCART	SCART MONO
C2151	1*	10

1	2	3	4	5	6	7	8	9	10	11	12

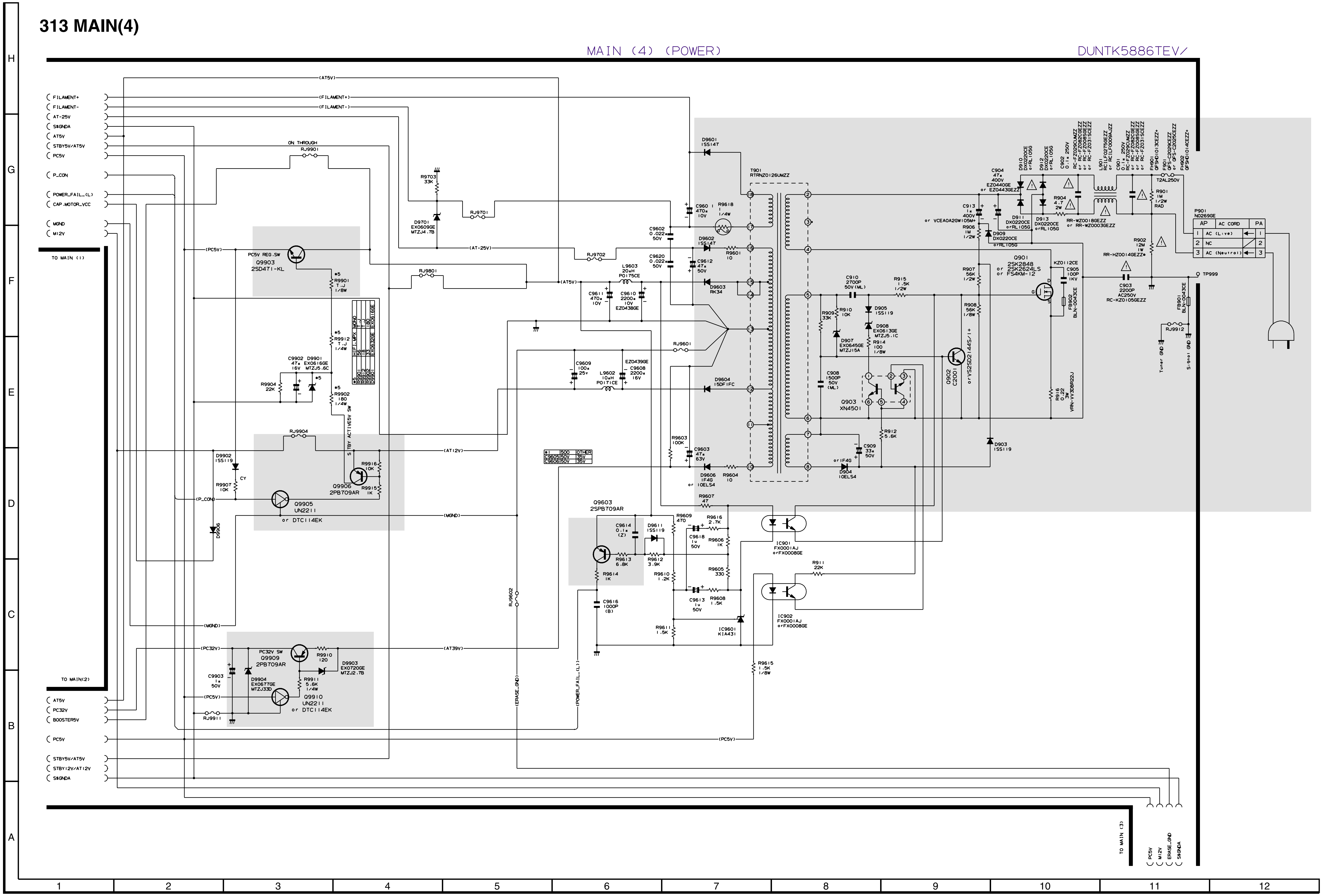
*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses

313 MAIN(3)



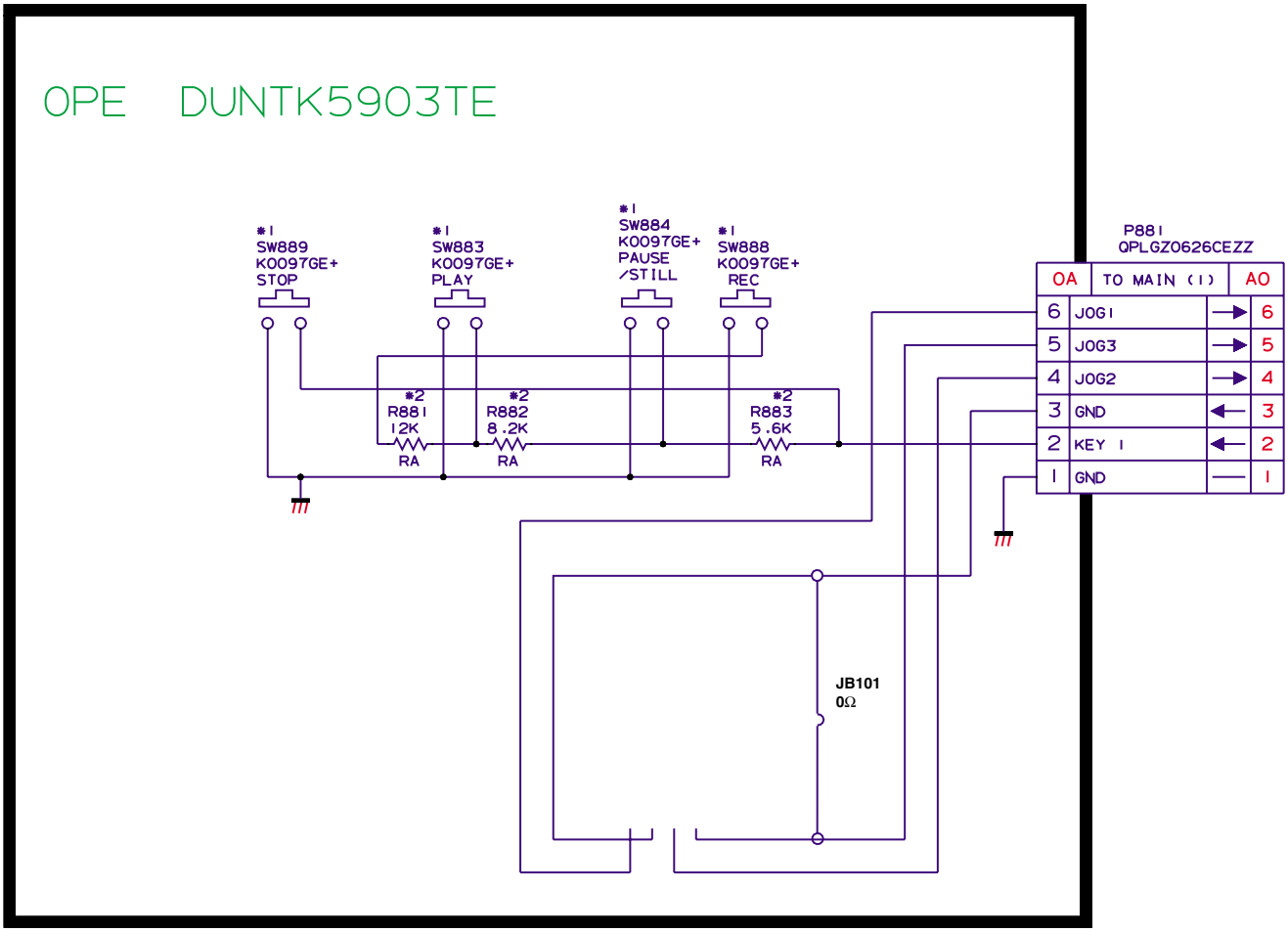
*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses

313 MAIN(4)

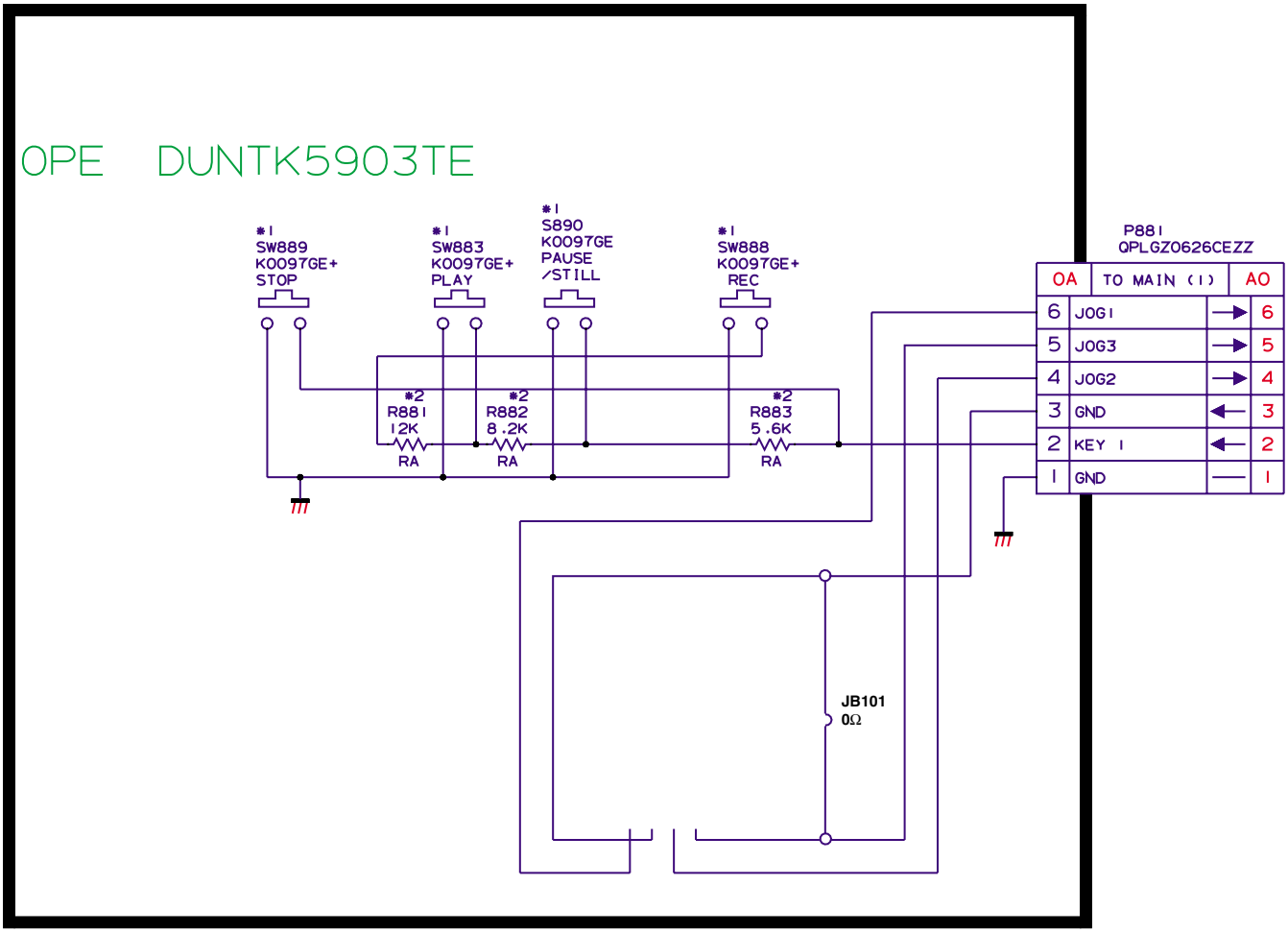


* VOLTAGE MEASUREMENT MODE
PB .... Parentheses (   )
REC .... Without Parentheses

OPERATION CIRCUIT



OPERATION CIRCUIT



10. REPLACEMENT PARTS LIST
PARTS REPLACEMENT

Parts marked with " ⚠ " are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

"HOW TO ORDER REPLACEMENT PARTS"

Contact your nearest SHARP Parts Distributor.

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

HOW TO IDENTIFY CHIP TRANSISTORS AND DIODES BY ITS MARKING

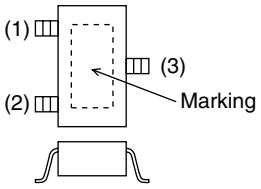


Fig. 1

(1) Base/Input
(2) Emitter/Ground
(3) Collector/Output

Package	Marking	Parts No.
Fig. 1	FQ	VS2SA1037KQ-1
Fig. 1	BQ	VS2SC2412KQ-1
Fig. 1	16	VSDTA144EK/-1
Fig. 1	15	VSDTA124EK/-1
Fig. 1	25	VSDTC124EK/-1

MARK ★: SPARE PARTS-DELIVERY SECTION

Ref. No.	Part No.	★	Description	Code

PRINTED WIRING BOARD ASSEMBLIES
(NOT REPLACEMENT ITEM)

DUNTK5886TEVJ	-	Main Unit(VC-M313LM)	—
DUNTK5886TEVK	-	Main Unit(VC-M303LM)	—
DUNTK5886TEV8	-	Main Unit(VC-M303HM)	—
DUNTK5886TEV7	-	Main Unit(VC-M313HM)	—
DUNTK5903TEV4	-	Operation Unit	—

Ref. No.	Part No.	★	Description	Code

DUNTK5886TEV8(VC-M303HM)
DUNTK5886TEV7(VC-M313HM)
DUNTK5886TEVJ(VC-M313LM)
DUNTK5886TEVK(VC-M303LM)
MAIN UNIT

TUNER

	TU1401	VTUATMDB2-602	U	VHF Tuner(VC-M303/313HM)	BC
	TU1401	VTUATMDG2-801	U	Tuner(VC-M303/313LM)	BC

INTEGRATED CIRCUITS

	IC201	VHiHA8617F/-1	V	I.C.	AW
	IC651	VHiBA7755AF1E	V	I.C.BA7755AF	AE
	IC701	RH-iX1590GEN2	J	I.C.	BA
	IC705	VHiBR24C02F1E	V	I.C..BR24C02F	AF
	IC703	VHiPST600K/-1	V	IC-PST600K-2	AE
	IC801	VHiMN12512+-1	V	FL Driver IC	AM
⚠	IC901	RH-FX0001AJZZ	V	Photo Coupler	AC
	IC902	RH-FX0001AJZZ	V	Photo Coupler	AC
	IC702	VHiLB1988//-1	V	I.C.	AQ
	IC9601	VHiKiA431//-1	V	KIA431	AE

TRANSISTORS

	Q910	VS2PD601AR/-1	V	Transistor	AB
	Q201	VS2PD601AR/-1	V	Transistor	AB
	Q501	VS2PD601AR/-1	V	Transistor	AB
	Q711	VS2PD601AR/-1	V	Transistor	AB
	Q712	VS2PD601AR/-1	V	Transistor	AB
	Q2801	VS2PD601AR/-1	V	Transistor	AB
	Q651	VS2SC3203Y/-1	V	Transistor	AB
	Q652	VSDTC323TK/-1	V	Transistor	AB
	Q701	RH-PX0233GEZZ	J	Start Sensor	AD
	Q702	RH-PX0233GEZZ	J	End Sensor	AD
	Q601	VS2PB709AR/-1	V	Transistor	AB
	Q703	VS2PB709AR/-1	V	Transistor	AB
	Q708	VS2PB709AR/-1	V	Transistor	AB
	Q9603	VS2PB709AR/-1	V	Transistor	AB
	Q9606	VS2PB709AR/-1	V	Transistor(except 303HM/LM)	AB
	Q9909	VS2PB709AR/-1	V	Transistor	AB
	Q9905	VSUN2211///-1	V	Transistor	AA
	Q9910	VSUN2211///-1	V	Transistor	AA
	Q704	VSUN2212///-1	V	Transistor	AA
	Q2901	VSXN4312///-1	V	Transistor	AA
	Q304	VSUN2213///-1	V	Transistor	AA
	Q903	VSXN4501///-1	V	Transistor	AA
⚠	Q901	VS2SK2848//-1	V	Transistor	AA
⚠	Q902	VS2SC2001LK-1	V	Transistor	AA
⚠	Q602	VS2SD1306-EE	V	Transistor	AE
⚠	Q9903	VS2SD471-KL1E	V	Transistor	AC

CRYSTALS

	X702	RCRSB0138GEZZ	V	Crystal	AD
	X701	RCRSB0205GEZZ	V	Crystal	AM
	X501	RCRSB0232GEZZ	V	Crystal	AG

—— End of Crystals——

Ref. No.	Part No.	★	Description	Code

DIODES AND LED'S

	DG801	VVK20U26106-1	V	Display	AX
	D701	RH-PX0270GEZZ	J	PhotoDiode	AC
	D705	RH-PX0238GEZZ	J	RPI-352S	AF
	D708	RH-PX0238GEZZ	J	RPI-352S	AF
	D711	RH-PX0252GEZZ	J	GP1S563	AF
	D712	RH-PX0252GEZZ	J	GP1S563	AF
⚠	D909	RH-DX0220CEZZ	V	Diode	AB
⚠	D910	RH-DX0220CEZZ	V	Diode	AB
⚠	D911	RH-DX0220CEZZ	V	Diode	AB
⚠	D912	RH-DX0220CEZZ	V	Diode	AB
	D913	RH-DX0220CEZZ	V	Diode	AB
	D9701	RH-EX0609GEZZ	J	Zener Diode	AA
	D2501	RH-EX0627GEZZ	V	Diode	AB
	D2503	RH-EX0627GEZZ	V	Diode	AB
	D907	RH-EX0645GEZZ	J	Zener Diode	AA
	D2904	RH-EX0646GEZZ	J	Zener Diode	AA
	D908	RH-EX0613GEZZ	J	Diode	AA
	D9904	RH-EX0677GEZZ	J	Zener Diode	AA
	D9903	RH-EX0720CEZZ	V	Zener Diode	AB
	D9901	RH-EX0616GEZZ	J	Zener Diode	AA
	D9701	RH-EX0609GEZZ	J	Zener Diode	AA
	D9901	RH-EX0475CEZZ	V	Zener Diode	AB
	D704	VHD1SS119//-1	V	Diode	AB
	D903	VHD1SS119//-1	V	Diode	AB
	D905	VHD1SS119//-1	V	Diode	AB
	D9611	VHD1SS119//-1	V	Diode	AB
	D9902	VHD1SS119//-1	V	Diode	AB
	D904	VHD10ELS4//-1	V	Diode	AE
	D9601	VHD1SS147//-1	V	Diode	AA
	D9602	VHD1SS147//-1	V	Diode	AA
	D9603	VHDRK34////-1	V	Diode	AE
	D9606	VHD1F4G//////-1	V	Diode (except 303HM/LM)	AA
	D9604	VHD15DF1FC/1E	V	Diode	AD
	D710	VHD1SS119/-1	V	Diode	AB
	D801	VHDRB441Q40-1	V	Diode	AB
	D802	VHDRB441Q40-1	V	Diode	AB
	D709	VHD1SS119//-1	V	Diode	AB

—— End of Diodes and LED's ——

Ref. No.	Part No.	★	Description	Code

COILS AND TRANSFORMERS

		RCILF0275GEZZ	V	Line filter	
	L707	VP-XF100J0000	V	Peaking 10µH 5%	AB
	L1403	VP-XF100J0000	V	Peaking 10µH 5%	AB
	L1407	VP-XF100J0000	V	Peaking 10µH 5%	AB
	L2152	VP-CF100K0000	V	Peaking 100µH 10% (except 303HM/LM)	AB
	L1401	VP-CF100K0000	V	Peaking 100µH 10%	AB
	L503	VP-XF120J0000	V	Peaking 12µH 5%	AB
	L302	VP-XF180J0000	V	Peaking 18µH 5%	AB
	L201	VP-XF181J0000	V	Peaking 180µH 5%	AB
	L502	VP-XF560J0000	V	Peaking 56µH 5%	AB
	L301	VP-MK101K0000	V	Peaking 100µH 10%	AB
	L601	VP-MK101K0000	V	Peaking 100µH 10%	AB
	L1402	VP-MK101K0000	V	Peaking 100µH 10%	AB
	L303	VP-MK151J0000	V	Peaking 100µH 10%	AB
	L651	VP-DF221K0000	V	Peaking 220µH 10%	AB
⚠	L901	RCiLF0275GEZZ	V	Coil	AK
	L9602	RCiLP0171CEZZ	V	Coil	AD
	L9603	RCiLP0175CEZZ	V	Coil	AD
	T0651	RTRNH0098GEZZ	J	OSC. Transformer	AD
⚠	T0901	RTRNZ0126UMZZ	V	Transformer	AN

—— End of Coils and Transformers——

Ref. No.	Part No.	★	Description	Code
	CAPACITORS			
C625	VCCCCY1HH101J	V	100p 50V Ceramic	AA
C626	VCCCCY1HH101J	V	100p 50V Ceramic	AA
C747	VCCCCY1HH101J	V	100p 50V Ceramic	AA
C2531	VCCCCY1HH101J	V	100p 50V Ceramic	AA
C2532	VCCCCY1HH101J	V	100p 50V Ceramic	AA
C317	VCCCCY1HH120J	V	12p 50V Ceramic	AA
C516	VCCCCY1HH120J	V	12p 50V Ceramic	AA
C757	VCCCCY1HH120J	V	12p 50V Ceramic	AA
C795	VCCCCY1HH120J	V	12p 50V Ceramic	AA
C2154	VCCCCY1HH121J	V	120p 50V Ceramic	AA
			(except 303HM/LM)	
C203	VCCCCY1HH121J	V	120p 50V Ceramic	AA
C755	VCCCCY1HH150J	V	15p 50V Ceramic	AA
C756	VCCCCY1HH150J	V	15p 50V Ceramic	AA
C205	VCCCCY1HH220J	V	22p 50V Ceramic	AA
C225	VCCCCY1HH220J	V	22p 50V Ceramic	AA
C316	VCCCCY1HH220J	V	22p 50V Ceramic	AA
C318	VCCCCY1HH220J	V	22p 50V Ceramic	AA
C754	VCCCCY1HH220J	V	22p 50V Ceramic	AA
C627	VCCCCY1HH221J	V	220p 50V Ceramic	AA
C726	VCCCCY1HH221J	V	220p 50V Ceramic	AA
C735	VCCCCY1HH221J	V	220p 50V Ceramic	AA
C796	VCCCCY1HH390J	V	39p 50V Ceramic	AA
C725	VCCCCY1HH680J	V	68p 50V Ceramic	AA
C2901	VCCCCY1HH820J	V	82P 50V Ceramic	AA
C319	VCCCCY1HH3R0C	V	3.0p 50V Ceramic	AA
C521	VCCCCY1HH6R0D	V	6p 50V Ceramic	AA
C794	VCCCCY1HH6R0D	V	6p 50V Ceramic	AA
C604	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C716	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C731	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C732	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C736	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C771	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C775	VCKYD41HB102K	V	1000p 50V Ceramic	AC
C9616	VCKYD41HB102K	V	1000p 50V Ceramic	AC
C218	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C303	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C304	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C305	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C306	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C324	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C325	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C513	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C514	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C523	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C740	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C816	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C1402	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C652	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C653	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C709	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C722	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C749	VCKYCY1EB223K	V	0.01 25V Ceramic	AA
C758	VCKYCY1EB103K	V	0.01 25V Ceramic	AA

Ref. No.	Part No.	★	Description	Code
	CAPACITORS (Continued)			
C768	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C781	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C512	VCKYD41CY103N	V	0.01 16V Ceramic	AC
C714	VCKYD41CY103N	V	0.01 16V Ceramic	AC
C715	VCKYD41CY103N	V	0.01 16V Ceramic	AC
C737	VCKYD41CY103N	V	0.01 16V Ceramic	AC
C741	VCKYD41CY103N	V	0.01 16V Ceramic	AC
C748	VCKYD41CY103N	V	0.01 16V Ceramic	AC
C763	VCKYD41CY103N	V	0.01 16V Ceramic	AC
C765	VCKYD41CY103N	V	0.01 16V Ceramic	AC
C1409	VCKYD41CY103N	V	0.01 16V Ceramic	AC
C719	VCKYD41HF104Z	V	0.1 50V Ceramic	AC
C724	VCKYD41HF104Z	V	0.1 50V Ceramic	AC
C1407	VCKYD41HF104Z	V	0.1 50V Ceramic	AC
C202	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C204	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C206	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C207	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C209	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C210	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C214	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C219	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C220	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C222	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C302	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C330	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C502	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C507	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C520	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C723	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C724	VCKYCY1HF104Z	V	0.1 25V Ceramic	AA
C729	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C730	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C744	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C769	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C776	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C797	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C2807	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C9614	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C503	VCKYCY1CB104K	V	0.1 16V Ceramic	AB
C743	VCKYCY1AF105Z	V	1.0 10V Ceramic	AC
C760	VCKYCY1AF105Z	V	1.0 10V Ceramic	AC
C215	VCKYD41CF105Z	V	1 16V Ceramic	AC
C216	VCKYD41CF105Z	V	1 16V Ceramic	AC
			(except 303HM/LM)	
C612	VCKYD41CF105Z	V	1 16V Ceramic	AC
			(except 303HM/LM)	
C2503	VCKYD41CF105Z	V	1 16V Ceramic	AC
C629	VCKYD41CF105Z	V	1 16V Ceramic	AC
C707	VCKYD41CF105Z	V	1 16V Ceramic	AC
C312	VCKYCY1EB123K	V	0.12 25V Ceramic	AA
C602	VCKYCY1EB123K	V	0.12 25V Ceramic	AA
C313	VCKYCY1HB222K	V	2200p 50V Ceramic	AA
C739	VCKYCY1HB222K	V	2200p 50V Ceramic	AA
C702	VCKYCY1EB223K	V	0.022 25V Ceramic	AB

Ref. No.	Part No.	★	Description			Code
	CAPACITORS (Continued)					
C703	VCKYCY1EB223K	V	0.022	25V	Ceramic	AB
C704	VCKYCY1EB223K	V	0.022	25V	Ceramic	AB
C505	VCKYCY1CB273K	V	0.027	16V	Ceramic	AB
C9620	VCKYCY1CB273K	V	0.027	16V	Ceramic	AB
C9621	VCKYCY1CB273K	V	0.027	16V	Ceramic	AB
C315	VCKYCY1HB331K	V	330p	50V	Ceramic	AA
C515	VCKYCY1HB331K	V	330p	50V	Ceramic	AA
C623	VCKYCY1HB331K	V	330p	50V	Ceramic	AA
C712	VCKYCY1CF334Z	V	0.034	50V	Ceramic	AA
C791	VCKYCY1HB392K	V	3900p	50V	Ceramic	AA
C792	VCKYCY1HB392K	V	3900p	50V	Ceramic	AA
C509	VCKYCY1CB393K	V	0.039	16V	Ceramic	AA
C518	VCKYCY1CB393K	V	0.039	16V	Ceramic	AA
C311	VCKYCY1CB393K	V	0.039	16V	Ceramic	AA
C770	VCKYCY1CB473Z	V	0.047	16V	Ceramic	AB
C780	VCKYCY1CB473Z	V	0.047	16V	Ceramic	AB
C506	VCKYCY1AB474K	V	0.47	10V	Ceramic	AC
C624	VCKYCY1HB682K	V	6800p	50V	Ceramic	AA
C746	VCEA9M1HW105M	V	1.0	50V	Electrolytic	AB
C208	VCEA9M1HW105M	V	1.0	50V	Electrolytic	AB
C519	VCEA9M1HW105M	V	1.0	50V	Electrolytic	AB
C610	VCEA9M1HW105M	V	1.0	50V	Electrolytic	AB
C611	VCEA9M1HW105M	V	1.0	50V	Electrolytic	AB
C742	VCEA9M1HW105M	V	1.0	50V	Electrolytic	AB
C2517	VCEA9M1HW105M	V	1.0	50V	Electrolytic	AB
C9613	VCEA9M1HW105M	V	1.0	50V	Electrolytic	AB
C9618	VCEA9M1HW105M	V	1.0	50V	Electrolytic	AB
C9609	VCEA0M1EW107M	V	100	25V	Electrolytic	AB
C9903	VCEA9M1HW105M	V	1.0	50V	Electrolytic	AB
C212	VCEA9M1CW106M	V	10	16V	Electrolytic	AB
C221	VCEA9M1CW106M	V	10	16V	Electrolytic	AB
C606	VCEA9M1CW106M	V	10	16V	Electrolytic	AB
C654	VCEA9M1CW106M	V	10	16V	Electrolytic	AB
C761	VCEA0MJW108M	V	1000	6.3V	Electrolytic	AC
C705	VCEAGA1CW107M	V	10	16V	Electrolytic	AB
C1404	VCEA9M0JW107M	V	100	16V	Electrolytic	AB
C1405	VCEA9M0JW107M	V	100	16V	Electrolytic	AB
C1406	VCEA9M1HW105M	V	100	16V	Electrolytic	AB
C201	VCEA9M0JW107M	V	100	16V	Electrolytic	AB
C217	VCEA9M0JW107M	V	100	16V	Electrolytic	AB
C223	VCEA9M0JW107M	V	100	16V	Electrolytic	AB
C501	VCEA9M0JW107M	V	100	16V	Electrolytic	AB
C774	VCEA9M0JW107M	V	100	16V	Electrolytic	AB
C213	VCEA9M1HW225M	V	2.2	50V	Electrolytic	AB
C504	VCEA9M1HW225M	V	2.2	50V	Electrolytic	AB
C603	VCEA9M0JW226M	V	22	6.3V	Electrolytic	AB
C608	VCEA9M0JW226M	V	22	6.3V	Electrolytic	AB
C728	VCEA9M0JW226M	V	22	6.3V	Electrolytic	AB
C762	VCEA9M0JW226M	V	22	6.3V	Electrolytic	AB
C1401	VCEA9M0JW227M	V	220	6.3V	Electrolytic	AB
C745	VCEA9M0JW227M	V	220	6.3V	Electrolytic	AB
C773	VCEA9M0JW227M		220	6.3V	Electrolytic	AB
C211	VCEA9M1HW335M	V	3.3	50V	Electrolytic	AB
C517	VCEA9M1HW335M	V	3.3	50V	Electrolytic	AB
C605	VCEA9M1HW335M	V	3.3	50V	Electrolytic	AB

Ref. No.	Part No.	★	Description			Code
	CAPACITORS (Continued)					
C909	VCEA0M1HW336M	V	33	16V	Electrolytic	AB
C609	VCEA9M1HW474M	V	0.47	50V	Electrolytic	AB
C508	VCEA9M1HW475M	V	4.7	50V	Electrolytic	AB
C607	VCEA9M1HW475M	V	4.7	50V	Electrolytic	AB
C720	VCEA0M0JW476M	V	47	6.3V	Electrolytic	AB
C813	VCEA0M0JW476M	V	47	6.3V	Electrolytic	AB
C9603	VCEA0M1JW476M	V	47	6.3V	Electrolytic	AB
C9612	VCEA0M1HW476M	V	47	16V	Electrolytic	AB
C1408	VCEA9M0JW476M	V	47	6.3V	Electrolytic	AB
C301	VCEA9M0JW476M	V	47	6.3V	Electrolytic	AB
C601	VCEA9M0JW476M	V	47	6.3V	Electrolytic	AB
C655	VCEA9M1CW476M	V	47	6.3V	Electrolytic	AB
C706	VCEA9M1CW476M	V	47	6.3V	Electrolytic	AB
C9902	VCEA9M1CW476M	V	47	6.3V	Electrolytic	AB
C2522	VCEA0M0JW477M	V	470	10V	Electrolytic	AB
C815	VCEA0M0JW477M	V	470	10V	Electrolytic	AB
C9601	VCEA0M0AW477M	V	470	10V	Electrolytic	AB
C9611	VCEA0M0AW477M	V	470	10V	Electrolytic	AB
C9613	VCEA0M1AW477M	V	470	10V	Electrolytic	AB
C9611	VCEA0M1AW477M	V	470	10V	Electrolytic	AB
C9901	VCEA9M1CW476M	V	47	6.3v	Eectrolytic	AB
C908	VCQYTA1HM152J	V	0.015	50V	Mylar	AA
C910	VCQYTA1HM272J	V	0.027	50V	Mylar	AA
C711	VCFYSA1HB474J	V	0.47	50V	M.Polypro	AB
C651	VCQPSA2AA562J	V	5600p	100V	M.Polypro	AC
⚠ C901	RC-FZ029CUMZZ	V	Capacitor			AD
⚠ C902	RC-FZ029CUMZZ	V	Capacitor			AD
⚠ C903	RC-KZ0105GEZZ	J	Capacitor			AD
⚠ C904	RC-EZ0440GEZZ	J	Capacitor			AH
⚠ C9608	RC-EZ0439GEZZ	V	Capacitor			AB
⚠ C9610	RC-EZ0438GEZZ	V	Capacitor			AA
C913	RC-EZ0661GEZZ	V	Capacitor			AA
C905	RC-KZ0112GEZZ	V	Capacitor			AA

—— End of Capacitors——

RESISTORS

Ref. No.	Part No.	★			Description	Code
R9601	VRS-CY1JF100J	V	10	1/16W	Metal Oxide	AA
R9604	VRS-CY1JF100J	V	10	1/16W	Metal Oxide	AA
R615	VRS-CY1JF101J	V	100	1/16W	Metal Oxide	AA
R736	VRS-CY1JF101J	V	100	1/16W	Metal Oxide	AA
R2801	VRS-CY1JF101J	V	100	1/16W	Metal Oxide	AA
R207	VRS-CY1JF102J	V	1.0k	1/16W	Metal Oxide	AA
R210	VRS-CY1JF102J	V	1.0k	1/16W	Metal Oxide	AA
R305	VRS-CY1JF102J	V	1.0k	1/16W	Metal Oxide	AA
R501	VRS-CY1JF102J	V	1.0k	1/16W	Metal Oxide	AA
R715	VRS-CY1JF102J	V	1.0k	1/16W	Metal Oxide	AA
R719	VRS-CY1JF102J	V	1.0k	1/16W	Metal Oxide	AA
R721	VRS-CY1JF102J	V	1.0k	1/16W	Metal Oxide	AA
R722	VRS-CY1JF102J	V	1.0k	1/16W	Metal Oxide	AA
R726	VRS-CY1JF102J	V	1.0k	1/16W	Metal Oxide	AA
R737	VRS-CY1JF102J	V	1.0k	1/16W	Metal Oxide	AA
R799	VRS-CY1JF102J	V	1.0k	1/16W	Metal Oxide	AA
R9606	VRS-CY1JF102J	V	1.0k	1/16W	Metal Oxide	AA
R9614	VRS-CY1JF102J	V	1.0k	1/16W	Metal Oxide	AA
R506	VRS-CY1JF103J	V	10k	1/16W	Metal Oxide	AA
R701	VRS-CY1JF103J	V	10k	1/16W	Metal Oxide	AA
R702	VRS-CY1JF103J	V	10k	1/16W	Metal Oxide	AA
R723	VRS-CY1JF103J	V	10K	1/16W	Metal Oxide	AA
R724	VRS-CY1JF103J	V	10K	1/16W	Metal Oxide	AA
R739	VRS-CY1JF103J	V	10K	1/16W	Metal Oxide	AA
R751	VRS-CY1JF103J	V	10K	1/16W	Metal Oxide	AA
R752	VRS-CY1JF103J	V	10K	1/16W	Metal Oxide	AA
R766	VRS-CY1JF103J	V	10K	1/16W	Metal Oxide	AA
R910	VRS-CY1JF103J	V	10K	1/16W	Metal Oxide	AA
R922	VRS-CY1JF103J	V	10K	1/16W	Metal Oxide	AA
R9907	VRS-CY1JF103J	V	10K	1/16W	Metal Oxide	AA
R9916	VRS-CY1JF103J	V	10K	1/16W	Metal Oxide	AA
R612	VRS-CY1JF104J	V	100k	1/16W	Metal Oxide	AA
R613	VRS-CY1JF104J	V	100k	1/16W	Metal Oxide	AA
R705	VRS-CY1JF104J	V	100k	1/16W	Metal Oxide	AA
R730	VRS-CY1JF104J	V	100k	1/16W	Metal Oxide	AA
R732	VRS-CY1JF104J	V	100k	1/16W	Metal Oxide	AA
R746	VRS-CY1JF104J	V	100k	1/16W	Metal Oxide	AA
R759	VRS-CY1JF104J	V	100k	1/16W	Metal Oxide	AA
R768	VRS-CY1JF104J	V	100k	1/16W	Metal Oxide	AA
R1823	VRS-CY1JF104J	V	100k	1/16W	Metal Oxide	AA
R9603	VRS-CY1JF104J	V	100k	1/16W	Metal Oxide	AA
R747	VRS-CY1JF105J	V	1.0M	1/16W	Metal Oxide	AA
R9910	VRS-CY1JF221J	V	120	1/16W	Metal Oxide	AA
R608	VRS-CY1JF122J	V	1.2k	1/16W	Metal Oxide	AA
R6906	VRS-CY1JF122J	V	1.2k	1/16W	Metal Oxide	AA
R814	VRS-CY1JF272J	V	1.2k	1/16W	Metal Oxide	AA
R815	VRS-CY1JF272J	V	1.2k	1/16W	Metal Oxide	AA
R9610	VRS-CY1JF152J	V	1.2k	1/16W	Metal Oxide	AA
R707	VRS-CY1JF123J	V	12k	1/16W	Metal Oxide	AA
R2501	VRS-CY1JF123J	V	12k	1/16W	Metal Oxide	AA
R2502	VRS-CY1JF123J	V	12k	1/16W	Metal Oxide	AA
R767	VRS-CY1JF151J	V	150	1/16W	Metal Oxide	AA
R776	VRS-CY1JF151J	V	150	1/16W	Metal Oxide	AA
R813	VRS-CY1JF332J	V	1.5k	1/16W	Metal Oxide	AA
R9608	VRS-CY1JF152J	V	1.5k	1/16W	Metal Oxide	AA

RESISTORS (Continued)

Ref. No.	Part No.	★			Description	Code
R9611	VRS-CY1JF152J	V	1.5k	1/16W	Metal Oxide	AA
R605	VRS-CY1JF153J	V	15k	1/16W	Metal Oxide	AA
R806	VRS-CY1JF154J	V	15k	1/16W	Metal Oxide	AA
R509	VRS-CY1JF154J	V	150k	1/16W	Metal Oxide	AA
R510	VRS-CY1JF154J	V	150k	1/16W	Metal Oxide	AA
R742	VRS-CY1JF154J	V	150k	1/16W	Metal Oxide	AA
R753	VRS-CY1JF154J	V	150k	1/16W	Metal Oxide	AA
R788	VRS-CY1JF154J	V	150k	1/16W	Metal Oxide	AA
R1401	VRS-CY1JF154J	V	150k	1/16W	Metal Oxide	AA
R789	VRS-CY1JF155J	V	150k	1/16W	Metal Oxide	AA
R603	VRS-CY1JF181J	V	180k	1/16W	Metal Oxide	AA
R202	VRS-CY1JF182J	V	1.8k	1/16W	Metal Oxide	AA
R731	VRS-CY1JF182J	V	1.8k	1/16W	Metal Oxide	AA
R820	VRS-CY1JF183J	V	1.8k	1/16W	Metal Oxide	AA
R821	VRS-CY1JF183J	V	1.8k	1/16W	Metal Oxide	AA
R504	VRS-CY1JF221J	V	220	1/16W	Metal Oxide	AA
R778	VRS-CY1JF221J	V	220	1/16W	Metal Oxide	AA
R779	VRS-CY1JF221J	V	220	1/16W	Metal Oxide	AA
R203	VRS-CY1JF222J	V	2.2k	1/16W	Metal Oxide	AA
R738	VRS-CY1JF222J	V	2.2k	1/16W	Metal Oxide	AA
R765	VRS-CY1JF222J	V	2.2k	1/16W	Metal Oxide	AA
R811	VRS-CY1JF472J	V	4.7k	1/16W	Metal Oxide	AA
R247	VRS-CY1JF223J	V	22k	1/16W	Metal Oxide	AA
R248	VRS-CY1JF223J	V	22k	1/16W	Metal Oxide	AA
R750	VRS-CY1JF223J	V	22k	1/16W	Metal Oxide	AA
R760	VRS-CY1JF223J	V	22k	1/16W	Metal Oxide	AA
R763	VRS-CY1JF223J	V	22k	1/16W	Metal Oxide	AA
R764	VRS-CY1JF223J	V	22k	1/16W	Metal Oxide	AA
R911	VRS-CY1JF223J	V	22k	1/16W	Metal Oxide	AA
R2530	VRS-CY1JF223J	V	22k	1/16W	Metal Oxide	AA
R9904	VRS-CY1JF223J	V	22k	1/16W	Metal Oxide	AA
R505	VRS-CY1JF224J	V	220k	1/16W	Metal Oxide	AA
R609	VRS-CY1JF224J	V	220k	1/16W	Metal Oxide	AA
R654	VRS-CY1JF224J	V	220k	1/16W	Metal Oxide	AA
R798	VRS-CY1JF271J	V	270k	1/16W	Metal Oxide	AA
R507	VRS-CY1JF272J	V	2.7k	1/16W	Metal Oxide	AA
R1405	VRS-CY1JF272J	V	2.7k	1/16W	Metal Oxide	AA
R9616	VRS-CY1JF272J	V	2.7k	1/16W	Metal Oxide	AA
R920	VRS-CY1JF272J	V	2.7k	1/16W	Metal Oxide	AA
R502	VRS-CY1JF273J	V	27k	1/16W	Metal Oxide	AA
R655	VRS-CY1JF273J	V	27k	1/16W	Metal Oxide	AA
R772	VRS-CY1JF273J	V	27k	1/16W	Metal Oxide	AA
R602	VRS-CY1JF274J	V	270k	1/16W	Metal Oxide	AA
R728	VRS-CY1JF331J	V	330	1/16W	Metal Oxide	AA
R777	VRS-CY1JF331J	V	330	1/16W	Metal Oxide	AA
R9605	VRS-CY1JF121J	V	120	1/16W	Metal Oxide	AA
R203	VRS-CY1JF222J	V	2.2k	1/16W	Metal Oxide	AA
R745	VRS-CY1JF332J	V	3.3k	1/16W	Metal Oxide	AA
R770	VRS-CY1JF332J	V	3.3k	1/16W	Metal Oxide	AA
R809	VRS-CY1JF882J	V	3.3k	1/16W	Metal Oxide	AA
R606	VRS-CY1JF333J	V	33k	1/16W	Metal Oxide	AA
R909	VRS-CY1JF333J	V	33k	1/16W	Metal Oxide	AA
R9703	VRS-CY1JF333J	V	33k	1/16W	Metal Oxide	AA
R773	VRS-CY1JF391J	V	390k	1/16W	Metal Oxide	AA
R775	VRS-CY1JF391J	V	390k	1/16W	Metal Oxide	AA

Ref. No.	Part No.	★	Description			Code
			RESISTORS (Continued)			
R303	VRS-CY1JF392J	V	3.9k	1/16W	Metal Oxide	AA
R9612	VRS-CY1JF392J	V	3.9k	1/16W	Metal Oxide	AA
R704	VRS-CY1JF392J	V	3.9k	1/16W	Metal Oxide	AA
R656	VRS-CY1JF470J	V	47k	1/16W	Metal Oxide	AA
R9607	VRS-CY1JF470J	V	47k	1/16W	Metal Oxide	AA
R9609	VRS-CY1JF121J	V	120	1/16W	Metal Oxide	AA
R209	VRS-CY1JF472J	V	4.7k	1/16W	Metal Oxide	AA
R2901	VRS-CY1JF473J	V	47k	1/16W	Metal Oxide	AA
R316	VRS-CY1JF473J	V	47k	1/16W	Metal Oxide	AA
R604	VRS-CY1JF473J	V	47k	1/16W	Metal Oxide	AA
R610	VRS-CY1JF473J	V	47k	1/16W	Metal Oxide	AA
R614	VRS-CY1JF473J	V	47k	1/16W	Metal Oxide	AA
R743	VRS-CY1JF473J	V	47k	1/16W	Metal Oxide	AA
R749	VRS-CY1JF473J	V	47k	1/16W	Metal Oxide	AA
R771	VRS-CY1JF473J	V	47k	1/16W	Metal Oxide	AA
R774	VRS-CY1JF473J	V	47k	1/16W	Metal Oxide	AA
R782	VRS-CY1JF473J	V	47k	1/16W	Metal Oxide	AA
R2901	VRS-CY1JF473J	V	47k	1/16W	Metal Oxide	AA
R611	VRS-CY1JF562J	V	5.6k	1/16W	Metal Oxide	AA
R733	VRS-CY1JF562J	V	5.6k	1/16W	Metal Oxide	AA
R734	VRS-CY1JF562J	V	47k	1/16W	Metal Oxide	AA
R801	VRS-CY1JF562J	V	47k	1/16W	Metal Oxide	AA
R802	VRS-CY1JF562J	V	47k	1/16W	Metal Oxide	AA
R803	VRS-CY1JF562J	V	47k	1/16W	Metal Oxide	AA
R912	VRS-CY1JF562J	V	47k	1/16W	Metal Oxide	AA
R1404	VRS-CY1JF562J	V	5.6k	1/16W	Metal Oxide	AA
R653	VRS-CY1JF563J	V	56k	1/16W	Metal Oxide	AA
R769	VRS-CY1JF563J	V	56k	1/16W	Metal Oxide	AA
R706	VRS-CY1JF564J	V	560k	1/16W	Metal Oxide	AA
R741	VRS-CY1JF564J	V	560k	1/16W	Metal Oxide	AA
R306	VRS-CY1JF681J	V	680	1/16W	Metal Oxide	AA
R201	VRS-CY1JF682J	V	6.8k	1/16W	Metal Oxide	AA
R607	VRS-CY1JF682J	V	6.8k	1/16W	Metal Oxide	AA
R617	VRS-CY1JF682J	V	6.8k	1/16W	Metal Oxide	AA
R657	VRS-CY1JF682J	V	6.8k	1/16W	Metal Oxide	AA
R1402	VRS-CY1JF682J	V	6.8k	1/16W	Metal Oxide	AA
R1403	VRS-CY1JF152J	V	1.5k	1/16W	Metal Oxide	AA
R9613	VRS-CY1JF682J	V	6.8k	1/16W	Metal Oxide	AA
R2151	VRS-CY1JF750J	V	75k	1/16W	Metal Oxide	AA
R601	VRS-CY1JF822J	V	8.2k	1/16W	Metal Oxide	AA
R756	VRS-CY1JF822J	V	8.2k	1/16W	Metal Oxide	AA
R1405	VRS-CY1JF682J	V	6.8k	1/16W	Metal Oxide	AA
R914	VRD-RA2BE101J	V	100k	1/8W	Carbon	AA
R725	VRD-RA2BE102J	V	1.0k	1/8W	Carbon	AA
R790	VRD-RA2BE102J	V	1.0k	1/8W	Carbon	AA
R791	VRD-RA2BE102J	V	1.0k	1/8W	Carbon	AA
R9915	VRD-RA2BE102J	V	1.0k	1/8W	Carbon	AA
R712	VRD-RA2BE103J	V	10k	1/8W	Carbon	AA
R884	VRD-RA2BE103J	V	10k	1/8W	Carbon	AA
R881	VRD-RA2BE103J	V	10k	1/8W	Carbon	AA
R708	VRD-RA2BE123J	V	12k	1/8W	Carbon	AA
R710	VRD-RA2BE151J	V	150	1/8W	Carbon	AA
R755	VRD-RA2BE151J	V	150	1/8W	Carbon	AA
R810	VRD-RA2BE332J	V	1.5k	1/8W	Carbon	AA
R9615	VRD-RA2BE152J	V	1.5k	1/8W	Carbon	AA

Ref. No.	Part No.	★	Description			Code
			RESISTORS (Continued)			
R748	VRD-RA2BE152J	V	1.5k	1/8W	Carbon	AA
R761	VRD-RA2BE271J	V	270	1/8W	Carbon	AA
R818	VRD-RA2BE121J	V	121	1/8W	Carbon	AA
R727	VRD-RA2BE332J	V	3.3k	1/8W	Carbon	AA
R885	VRD-RA2BE333J	V	3.3k	1/8W	Carbon	AA
R208	VRD-RA2BE471J	V	470	1/8W	Carbon	AA
R2802	VRD-RA2BE471J	V	470	1/8W	Carbon	AA
R735	VRD-RA2BE472J	V	4.7k	1/8W	Carbon	AA
R883	VRD-RA2BE472J	V	4.7k	1/8W	Carbon	AA
R787	VRD-RA2BE473J	V	47k	1/8W	Carbon	AA
R908	VRD-RA2BE563J	V	56k	1/8W	Carbon	AA
R2824	VRD-RA2BE680J	V	68	1/8W	Carbon	AA
R2512	VRD-RA2BE750J	V	75	1/8W	Carbon	AA
R2806	VRD-RA2BE821J	V	820	1/8W	Carbon	AA
R714	VRD-RA2BE822J	V	8.2k	1/8W	Carbon	AA
R816	VRD-RA2BE183J	V	8.2k	1/8W	Carbon	AA
R817	VRD-RA2BE183J	V	8.2k	1/8W	Carbon	AA
R882	VRD-RA2BE822J	V	8.2k	1/8W	Carbon	AA
R9902	VRD-RA2EE181J	V	180	1/4W	Carbon	AA
R718	VRD-RA2EE1R0J	V	1.0	1/4W	Carbon	AA
R703	VRD-RA2EE1R0J	V	1.0	1/4W	Carbon	AA
R2904	VRD-RA2EE331J	V	330	1/4W	Carbon	AA
R658	VRD-RA2EE4R7J	V	4.7	1/4W	Carbon	AA
R819	WIRE LINK					AA
R9911	VRD-RA2EE562J	V	5.6	1/4W	Carbon	AA
R915	VRD-RA2HD152J	V	15M	1/2W	Carbon	AA
R818	VRD-RA2HD563J	V	56M	1/2W	Carbon	AA
R907	VRD-RA2HD473J	V	56M	1/2W	Carbon	AA
R901	VRD-RA2HD105J	V	1.0M	1/2W	Carbon	AA
R906	VRD-RA2HD105J	V	1.0M	1/2W	Carbon	AA
R810	VRD-RA2HD105J	V	1.0M	1/2W	Carbon	AA
R904	RR-WZ0018GEZZ	V	Resistor			AD
R902	RR-HZ0014GEZZ	V	Resistor			AD
⚠ R916	VRN-VV3DBR22J	V	0.22	2W	Metal Film	AB
⚠ R711	VRG-SC2EB1R0J	V	1.0	1/4W	Fuse resistor	AB
R9618	VRG-SC2EB1R0J	V	1.0	1/4W	Fuse resistor	AB

—— End of Resistors ——

SOCKETS

J2151	QJAKF0067AJZZ	V	FAV 2 pin socket (except 303HM/LM)	AB

MECHANISM CHASSIS

Ref. No.	Part No.	★	Description	Code
1	LBNDK1011GEZZ	J	Tension Band Ass'y	AH
2	LBOSZ1007GEZZ	J	Tension Arm boss	AD
3	LBOSZ1006GEZZ	J	Cassette Stay L	AD
4	LCHSM0174GEZZ	J	Main Chassis Ass'y	BA
5	LHLDZ2016GEZZ	J	Loading Motor Block	AG
6	LPOLM0070GEZZ	J	OR M0069G	AK
7	LPOLM0064GEZZ	J	Take-Up Pole Base Ass'y	AM
8	LX-WZ1041GE00	J	CW2.6-60.5 CAM	AK
	MLEVF0518GEZZ	J	Take-Up Loading Arm Ass'y	AF
9	MLEVF0519GEZZ	J	Supply Loading Arm Ass'y	AF
10	MLEVF0499GEZZ	J	Pinch Drive Lever Ass'y	AG
11	MLEVF0500GEZZ	J	Pinch Roller Lever Ass'y	AW
12	MLEVF0523GEZZ	J	Tension Arm	AK
13	MLEVP0271GEZZ	J	Sifter Drive Lever	AE
14	MLEVP0272GEZZ	J	Pinch Double Action Lever	AD
15	MLEVP0301GEZZ	J	Reverse Guide Lever Ass'y	AL
16	MLEVP0275GEZZ	J	Reverse Drive Lever	AB
17	MLEVP0292GEZZ	J	Slow Brake Lever	AE
18	MLEVP0290GEZZ	J	Open Lever	AD
19	MLEVP0293GEZZ	J	Clutch Lever	AE
20	MLEVP0324GEZZ	J	Sup Main Brake Ass'y	AF
21	MLEVP0325GEZZ	J	Take-Up Main Brake	AF
22	MSLiP0010GEZZ	J	Sifter	AH
23	MSPRC0217GEFJ	J	Gid roller spring	AF
24	MSPRD0175GEFJ	J	Reverse Guide Spring	AE
25	MSPRT0402GEFJ	J	Loading Double Action Spring	AE
26	MSPRT0403GEFJ	J	Pinch Double Action Spring	AD
27	MSPRC0213GEFJ	J	Earth Spring	AC
28	MSPRT0416GEFJ	J	Tension Spring	AD
29	NDAiV1078GE00	J	Reel Disk	AE
30	NGERH1293GEZZ	J	Loading Connect Gear	AD
31	NGERH1295GE00	J	Master Cam	AE
32	NGERH1294GEZZ	J	Casecon Drive Gear	AD
33	NGERH1270GEZZ	J	Take-Up Loading Gear	AF
34	NGERH1271GEZZ	J	Supply Loading Gear	AD
35	NGERH1272GEZZ	J	Pinch Drive Cam	AE
36	NGERH1299GEZZ	J	Reel Relay Gear	AE
37	NGERW1070GEZZ	J	Worm Gear	AD
38	NGERW1066GEZZ	J	Worm Wheel Gear	AD
39	NiDR-0018GEZZ	J	Idler Wheel Ass'y	AK
40	NPLYV0162GEZZ	J	Motor Pulley	AD
41	NPLYV0163GEZZ	J	Limitter Pulley Ass'y	AM
42	NROLP0131GEZZ	J	Guide Roller	AL
43	NSFTP0032GEZZ	J	Tension Pole Adjuster	AB
44	PSPAP0009GEZZ	J	R/G adj nut	AB
45	PREFL1011GEZZ	J	Light Guide	AE
46	RMOTM1078GEZZ	J	Loading Motor	AK
47	RMOTN2067GEZZ	J	Capstan Motor	BA
48	RMOTP1139GEZZ	J	Drum Drive Motor	AT
49	DDRMW0028TEV2	J	Upper and lower drum Ass'y	BP
49	QBRSK0041GEZZ	J	Drum Earth Brush	AD
50	XBPSD26P05J00	V	Drum Drive Motor Mounting Screw (SW2.6P+5S)	AA
51	PGiDC0056GEFW	J	Drum Base	AL
52	QPWBF5468GEZZ	J	PWB(LDG Motor)	AE
53	QPWBF5243AJZZ	J	A/C head PWB	AE
53	QPLGZ0292GEZZ	J	Socket(LDG Motor)	AE
54	MSPRC0223AJFJ	V	Azimuth Spring	AC
55	MSPRC0224AJFJ	V	Height Adjusting Spring	AC
56	QCNW-8021AJZZ	V	FFC (A/C) Head)	AD
57	QCNW-8345AJZZ	V	Drum FFC-shield	AC
58	RHEDT0036AJZZ	V	Full erase head	AM
59	RHEDU0088GEZZ	V	A/C head ass'y	AV

—— End of Mechanism chassis ——

SCREW, NUTS AND WASHERS

Ref. No.	Part No.	★	Description	Code
201	XBPSD26P08000	V	Screw 2.6P+8S A/C Head	AA
202	LX-HZ3082GEZZ	J	A/C Head Screw	AD
207	XHPSD30P08WS0	V	Screw, C3.0P+8S (For Drum Base)	AA
208	XRESJ30-06000	V	E-Ring, E-3	AA
209	XWHJZ31-05052	V	Washer, W3.1-5.2-0.5	AC
210	XWHJZ31-03052	V	Washer, W3.1-5.2-0.3	AC
211	XWHJZ31-04052	V	Washer, W3.1-5.2-0.4	AC
212	XWHJZ31-06052	V	Washer, W3.1-5.2-0.6	AC
213	XWHJZ31-07052	V	Washer, W3.1-5.2-0.7	AC
214	XWHJZ31-08052	V	Washer, W3.1-5.2-0.8	AC
214	PSPAP0009GEZZ	J	Reverse Guide Adjusting Nut	AA
215	PSPAQ0008GEZZ	J	VH-SHIM-DM	AA
216	LX-XZ3032GEFP	J	SET-SCR M4-5 WP	AA
217	XBPSD26P05J00	J	SW.6P + 5S	AA
218	XBPSD30P06J00	J	SW3P + 6S	AA
219	LX-BZ3415GEFD	J	W3P + 6S-N-	AD
220	XBPSD30P08WS0	V	Drum Base Mounting Screw (C3S+8S)	AA
221	LX-XZ3017GEFP	J	Set-screw-M26-5	AD
222	LX-BZ3096GEFD	J	Tilt Adjusting Screw	AA
223	XBPSD26P06000	V	Azimuth Adjusting Screw 2.6+6S	AA
224	LX-BZ3197GEFD	J	Screw (A/C Head)	AD
225	XJPSD26P06000	J	2.6P + 6S(B TITE)	AA

—— End of Screw, Nuts and Washers ——

CASSETTE HOUSING CONTROL

Ref. No.	Part No.	★	Description	Code
226	CHLDX3081GE02	J	G-Casecon ass'y	AX
227	LANGF9592GEFW	J	Upper Plate	AL
228	LANGF9620GEFW	J	A/C plate G	AG
229	LHLDX1028GE00	J	Frame (L)	AH
300	LHLDX1032GE00	J	Frame (R)	AH
301	LHLDX1030GEZZ	J	Holder (L)	AE
302	LHLDX1031GEZZ	J	Holder (R)	AE
303	MLEVF0469GEFW	J	Proof Lever (R)	AE
304	MLEVP0281GE00	J	Door Open Lever	AD
305	MLEVP0292GEZZ	J	Slow brake lever	AF
306	MSLiF0076GEFW	J	Slider	AH
307	MSPRD0151GEFJ	J	Proof Lever (R) Spring	AB
308	MSPRD0166GEFJ	J	Drive Gear (R) Spring	AE
309	MSPRP0159GEFJ	J	Cassette Spring	AD
310	MSPRT0381GEFJ	J	Double Action Spring	AB
311	NGERH1278GEZZ	J	Drive Gear L	AE
312	NGERH1309GEZZ	J	Drive Gear R	AE
313	NGERR1008GE00	J	Double Action Rack Gear	AE
314	NGERR3005GEFW	J	Drive Angle Gear	AG
315	NSFTD0041GEFD	J	Main Shaft	AF
316	NBLTK0067AJ00	J	Drive belt 2	AE

—— End of Cassette Housing Control ——

Ref. No.	Part No.	★	Description	Code

MECHANICAL PARTS

600	CCABA3116TEV2	U	Top Cabinet	AT
602	GCBB1228UMZZ	U	Main Frame (VC-M303HM)	AM
602	GCABB1229UMZZ	U	Main frame (VC-M313HM)	AM
603	GBDYU3108UMFW	U	Bottom plate	AH
605	XHPSD30P06WS0	V	Screw	AA
609	XEBSD30P12000	V	Screw (Antenna Terminal Cover)	AA
610	LX-HZ3098GEFF	J	Screw	AB
612	LX-HZ3097GEFF	J	Screw top cab	AA
613	PGUMS0026AJZZ	V	Foot cushion	AB
615	XJPSD30P10WS0	V	Screw	AA
616	PSLDM4551UMFW	V	Head Amp Shield PWB Holder	AB
617	LHLDZ2033UMZZ	V	Mecha Holder	AG
618	QSOCZ4297UMZZ	V	21pin Jack	AB

—— End of Machanical Parts ——

Ref. No.	Part No.	★	Description	Code

FRONT PANEL PARTS

501	CPNLC2751TEY1	U	Front Panel Ass'y (VC-M303HM/LM)	AX
501	CPNLC2762TEV1	V	Front Panel Ass'y (VC-M313HM/LM)	AU
501-1	HPNLC2751UMSA	U	Front Panel (VC-M303HM)	AN
501-1	HPNLC2759AJSA	V	Front Panel (VC-M313HM)	AU
501-1	HPNLC2762AJSB	V	Front Panel (VC-M313LM)	AU
501-2	HBDGB1010AJSA	V	SHARP Badge	AE
501-3	HDECQ2031UMSA	U	Cassette Flap (VC-M303HM)	AE
501-3	HDECQ2199AJSA	V	Cassette Flap (VC-M313HM)	AH
501-3	HDECQ2205AJSB	V	Cassette Flap (VC-M313LM)	AH
501-4	HDECQ2188UMSA	U	Window Dec. (VC-M303HM/LM)	AG
501-4	HDECQ2198AJSA	V	Window Dec. (VC-M313HM)	AH
501-4	HDECQ2204AJSB	V	Window Dec. (VC-M313LM)	AH
501-5	JBTN-3051UMSA	U	Button, CH/REC (VC-M303HM)	AC
501-5	JBTN-3054AJSA	V	Button, CH (VC-M313HM)	AM
501-5	JBTN-3059AJSA	V	Button, REC (VC-M313HM)	AC
501-6	JBTN-2940AJSF	V	Button, REC (VC-M313LM)	AC
501-6	JBTN-3049UMSA	U	Button, MENU/SET (VC-M303HM)	AM
501-6	JBTN-3038AJSA	V	Button, MENU/SET (VC-M313HM)	AC
501-7	MSPRD0103AJFJ	V	Cassette Spring	AB
501-8	JBTN-3050UMSA	U	Button, Standby (VC-M303HM)	AC
501-8	JBTN-3053AJSA	V	Button, Stand by (VC-M313HM)	AM
501-8	JBTN-2941AJSA	V	Button, Stand by (VC-M313LM)	AM
502	LHLDZ2066AJZZ	V	Button Holder (VC-M303HM)	AH
502	LHLDZ2066AJZZ	V	Button Holder (VC-M313LM)	AH
503	JBTN-2961AJSC	V	Button, Play (VC-M303HM)	AH
503	JBTN-2961AJSF	V	Button,Play/STOP (VC-M313LM/HM)	AH

—— End of Front Panel Parts ——

Ref. No.	Part No.	★	Description	Code

SUPPLIED ACCESSORIES

ACCESSORIES

	QCNW-7870UMZZ	V	75ohm Coaxial Cable	AH
	RRMCG0247AJSA	V	Infrared Remote Control Unit(VC-M303HM)	AQ
	RRMCG1256AJSA	V	Infrared Remote Control Unit(VC-M313HM)	BC
	TiNS-3807UMZZ	U	Operation Manual (VC-M303HM)	AS
	TiNS-3812UMZZ	U	Operation Manual	AS

ACCESSORY(*NOT REPLACEMENT ITEM*)

	CPAKC4326UMZZ	-	Packing Case (VC-M303HM)	—
	CPAKC4322UMZZ	-	Packing Case (VC-MH313HM)	—
	SPAKX1043UMZZ	-	Packing Pulp	—
	SPAKP0051UMZZ	-	Form bag	_
	TLABK0016UMZZ	-	Label	_
	TLABZ1658UMZZ	-	Feature label	_

DUNTK5903TEV4

SW883	QSW-K0097GEZZ	J	Switch, PLUS	AG
SW884	QSW-K0097GEZZ	J	Switch, PAUSE	AG
S886	QSW-K0097GEZZ	J	Switch, FF	AG
S887	QSW-K0097GEZZ	J	Switch,REW	AG
SW888	QSW-K0097GEZZ	J	Switch,REC	AG
SW889	QSW-K0097GEZZ	J	Switch,STOP	AG
P0881	QPLGZ0626CEZZ	V	Plug	AG

—— End of Supplied Accessories ——

Ref. No.	Part No.	★	Description	Code

MISCELLANEOUS PARTS

	QACCB5014UMZZ	U	AC Cord	AQ
FB0202	RBLN-0043CEZZ	V	Ferrite bead(VC-M313HM)	AB
FB203	RBLN-0051TAZZ	V	Ferrite bead(VC-M313HM)	AC
FB0901	RBLN-0043CEZZ	V	Ferrite bead(VC-M313HM)	AB
FB202	RBLN-0043CEZZ	V	Balun	AB
FB1401	RBLN-0043CEZZ	V	Ferrite bead(VC-M313HM)	AB
FB2151	RBLN-0076TAZZ	V	Ferrite bead BLM11B102SP	AC
FB2503	RBLN-0076TAZZ	V	Ferrite bead(VC-M313HM)	AB
FB2501	RBLN-0077TAZZ	V	Ferrite bead(VC-M313HM)	AB
FB2801	RBLN-0077TAZZ	V	Ferrite bead(VC-M313HM)	AB
FB2804	RBLN-0077TAZZ	V	Ferrite bead(VC-M313HM)	AB
FH901	QFSHD1013CEZZ	V	Fuse Holder	AC
FH902	QFSHD1014CEZZ	V	Fuse Holder	AC
F0901	QFS-C2029CEZZ	V	Low break fuse 2A bussman	AB
P881	QPLZ0626CEZZ	V	Plug	AA
RMC801	RRMCU0062GEZZ	J	Remote Receiver	AG
SC301	QSOCN0464REZZ	V	Socket 4 pin (AH)	AB
SC601	QSOCN0604REN1	V	Socket 6 pin (AA)	AB
SC602	QSOCZ0293GEZZ	J	Socket 2 pin (AE)	AC
SC801	QSOCN0704REN1	V	Socket 7 pin (AD)	AB
SC802	QSOCZ0625CEZZ	V	Socket 6 pin (AO)	AC
SC803	QSOCZ0292GEZZ	J	Socket 2 pin (AL)	AC
SC2501	QSOCZ2195UMZZ	V	Socket 21 pin jack	AG
SW701	QSW-F0042AJZZ	V	Switch, REC TIP	AG
SW807	QSW-K0097GEZZ	J	Switch, CH+	AG
SW809	QSW-K0097GEZZ	J	Switch, MENU	AG
SW810	QSW-K0097GEZZ	J	Switch, SET	AG
SW811	QSW-K0097GEZZ	J	Switch, EJECT	AG
SW812	QSW-K0097GEZZ	J	Switch, CH-	AG
SW813	QSW-K0097GEZZ	J	Switch, POWER	AG
P901	QPLGZ0269CEZZ	V	Plug, 3pin(AP)	AF
P1501	QPLGN0447REZZ	V	Plug 4 pin (TP1501-4)	AA
P201	QPLGN0447REZZ	V	Plug	AA
P804	QPLGZ0883GEZZ	V	Plug, 8pin (AC)	AB
W851	LHLDZ1962AJ00	V	Sensor LED holder	AB
W852	LHLDZ1962AJ00	V	Sensor LED holder	AB
	PSLDM4540AJFW	V	H/A shield	AD
J2151	QJAKF0067AJZZ	V	Jack	AB

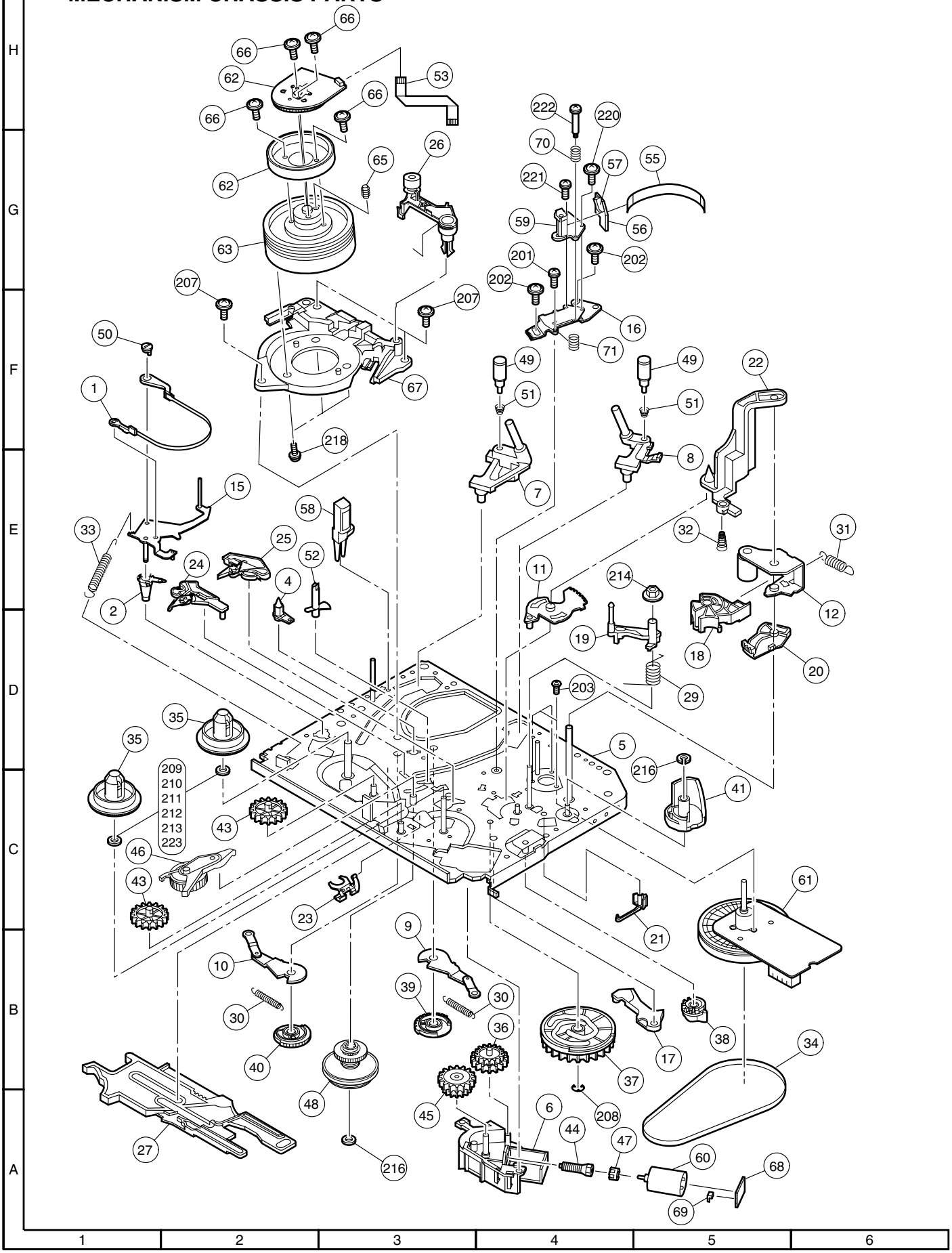
LED'S

D701	RH-PX0270GEZZ	J	PhotoDiode	AC
D9903	RH-PX0270GEZZ	J	PhotoDiode	AC

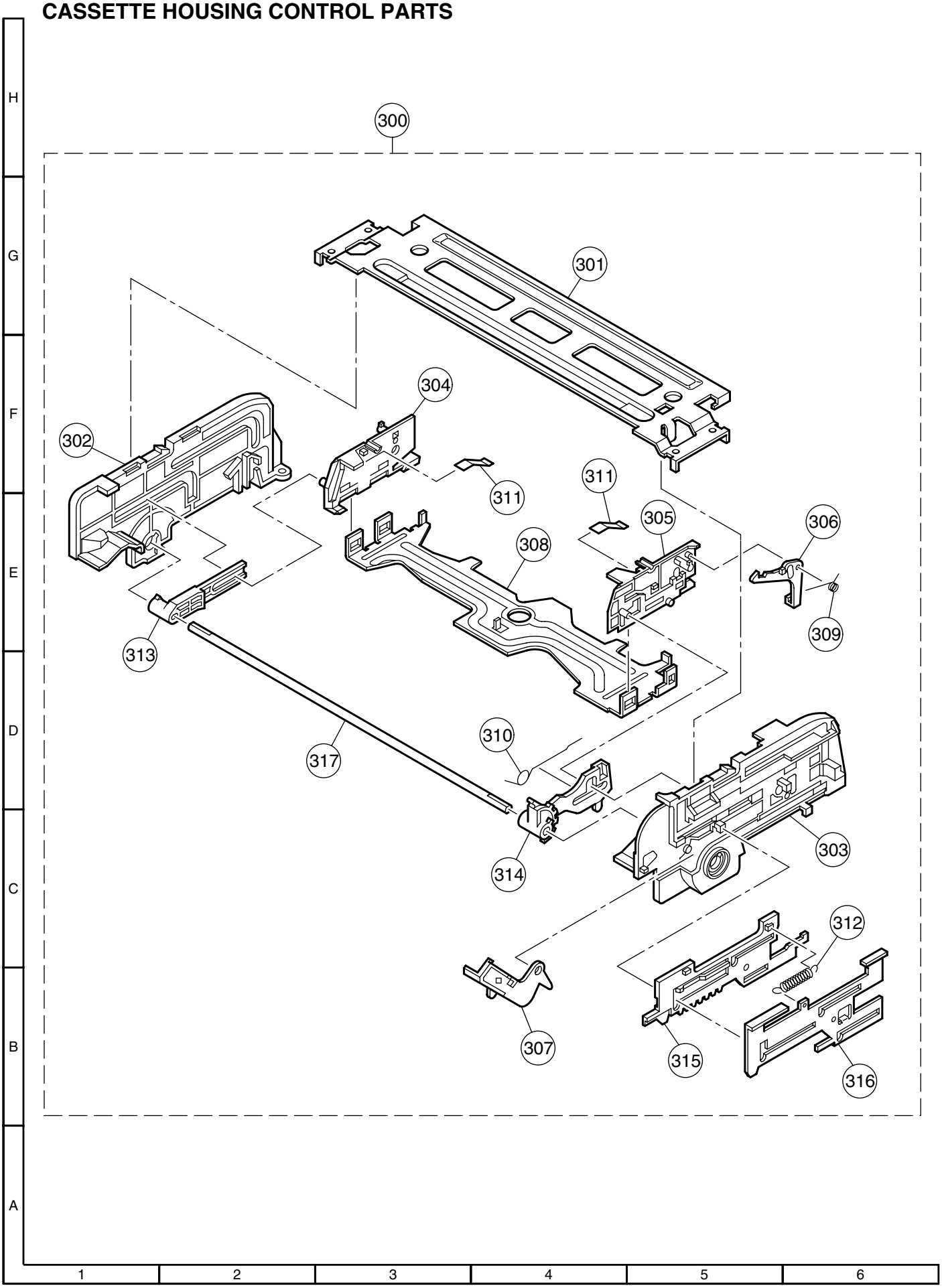
—— End of Miscellaneous parts ——

11. EXPLODED VIEW OF MECHANICAL PARTS

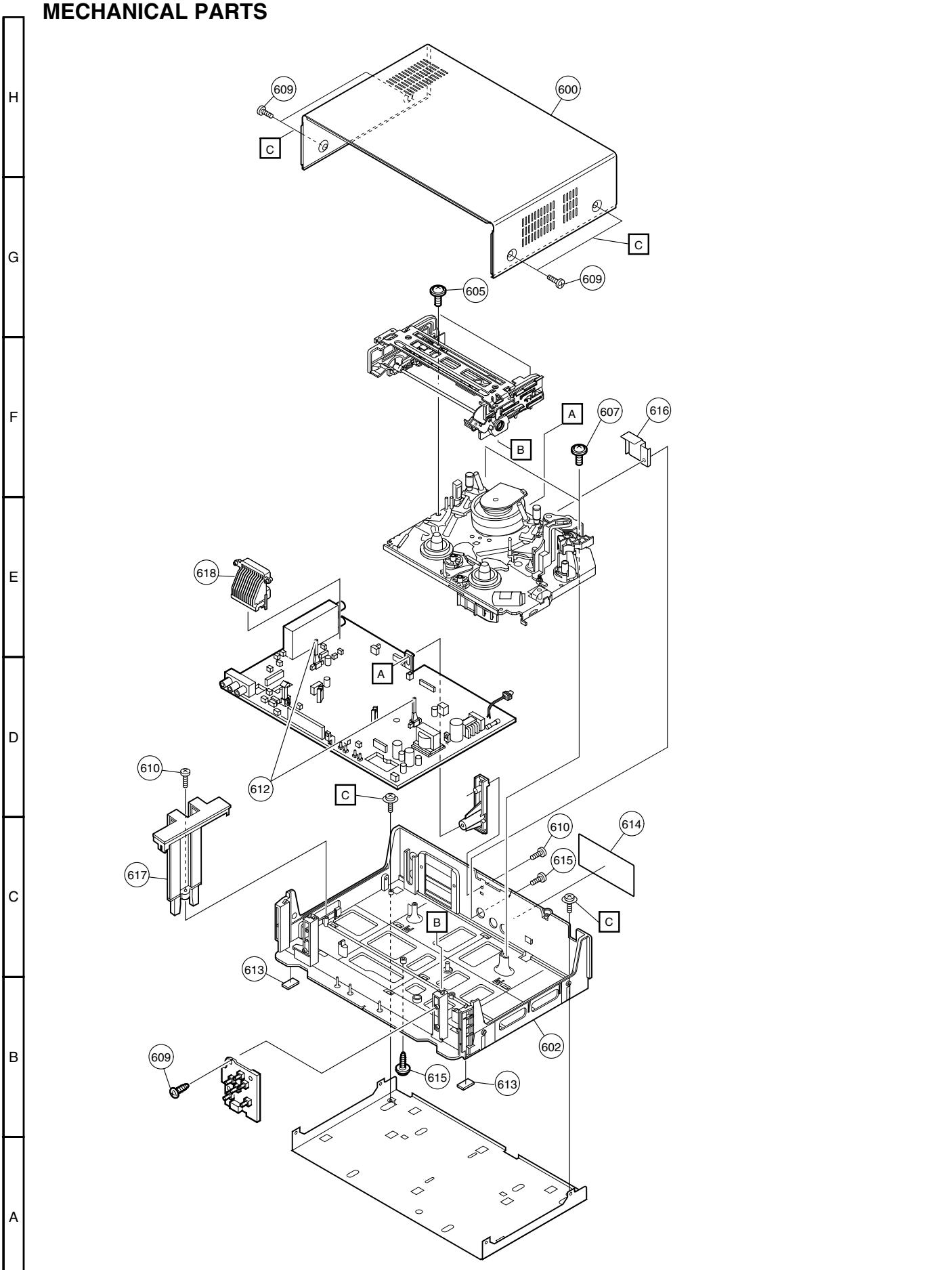
MECHANISM CHASSIS PARTS



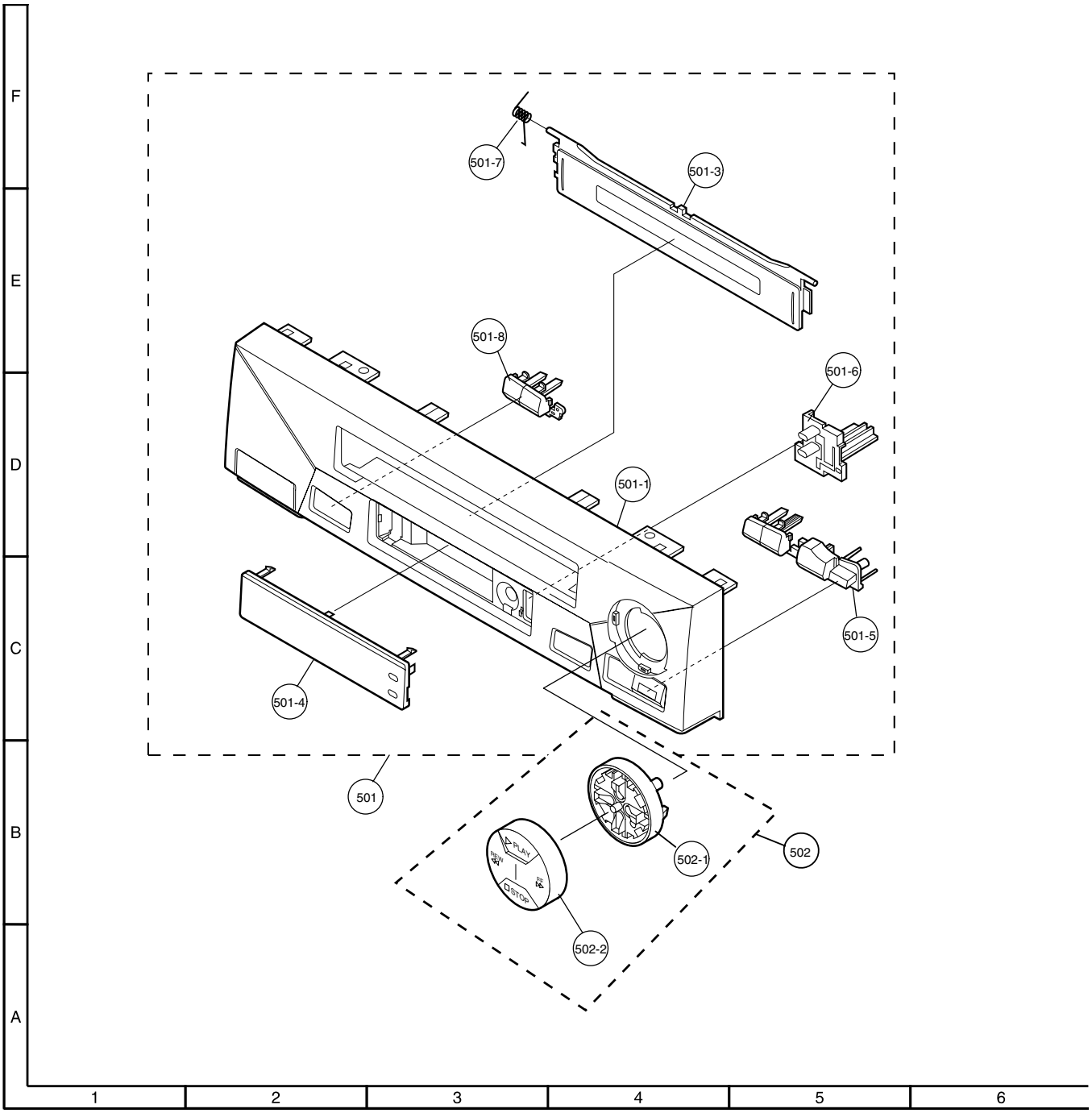
CASSETTE HOUSING CONTROL PARTS



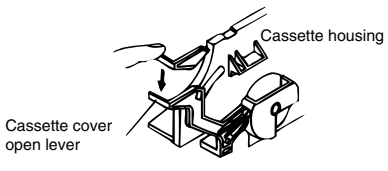
MECHANICAL PARTS



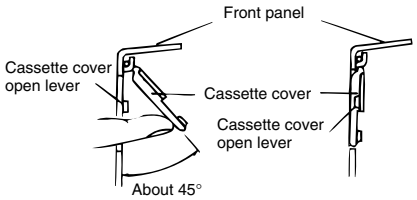
FRONT PANEL PARTS (VC-M303HM/LM)



PRECAUTION ON FRONT PANEL SET-UP

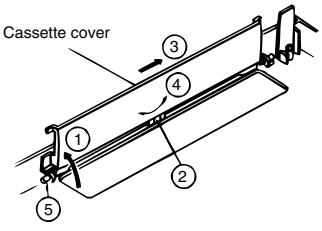


Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lower-most). If it is out of position, push it down with a finger.



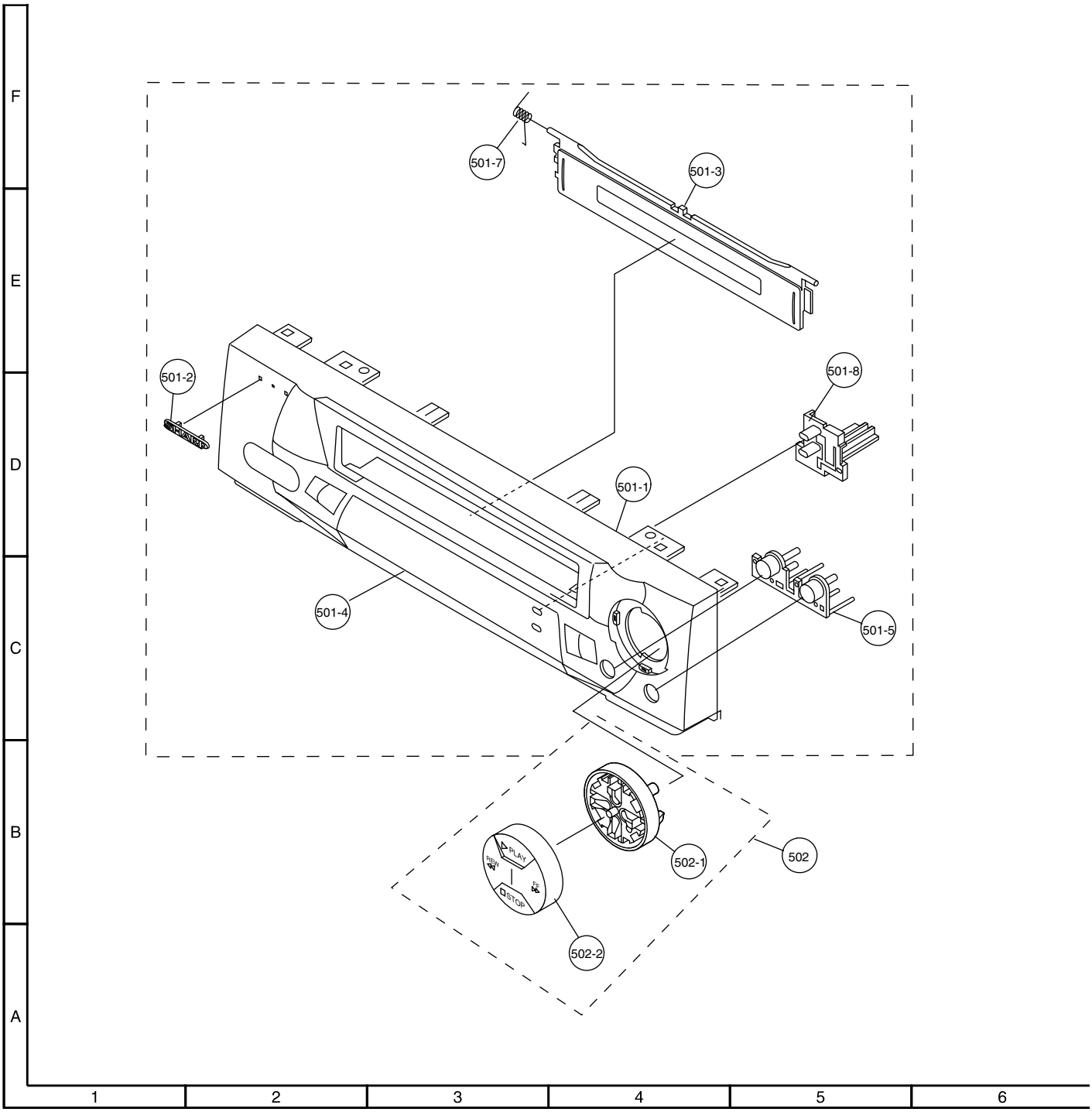
Keep the cassette over about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

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

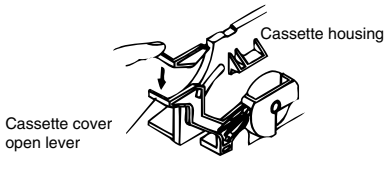


Removing the cassette compartment cover.
① Open the cassette compartment cover fully.
② Remove the center positioner.
③ Slide the cover to the right.
④ Slightly bend the cover.
⑤ Draw out the left-side rod.

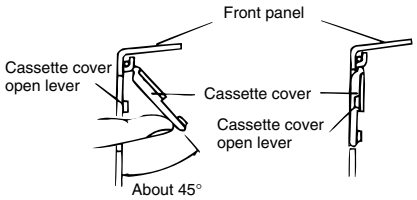
FRONT PANEL PARTS (VC-M313HM/LM)



PRECAUTION ON FRONT PANEL SET-UP

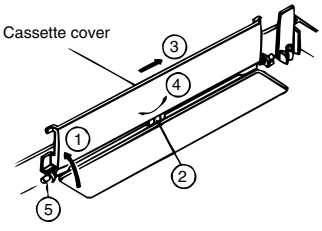


Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lower-most). If it is out of position, push it down with a finger.



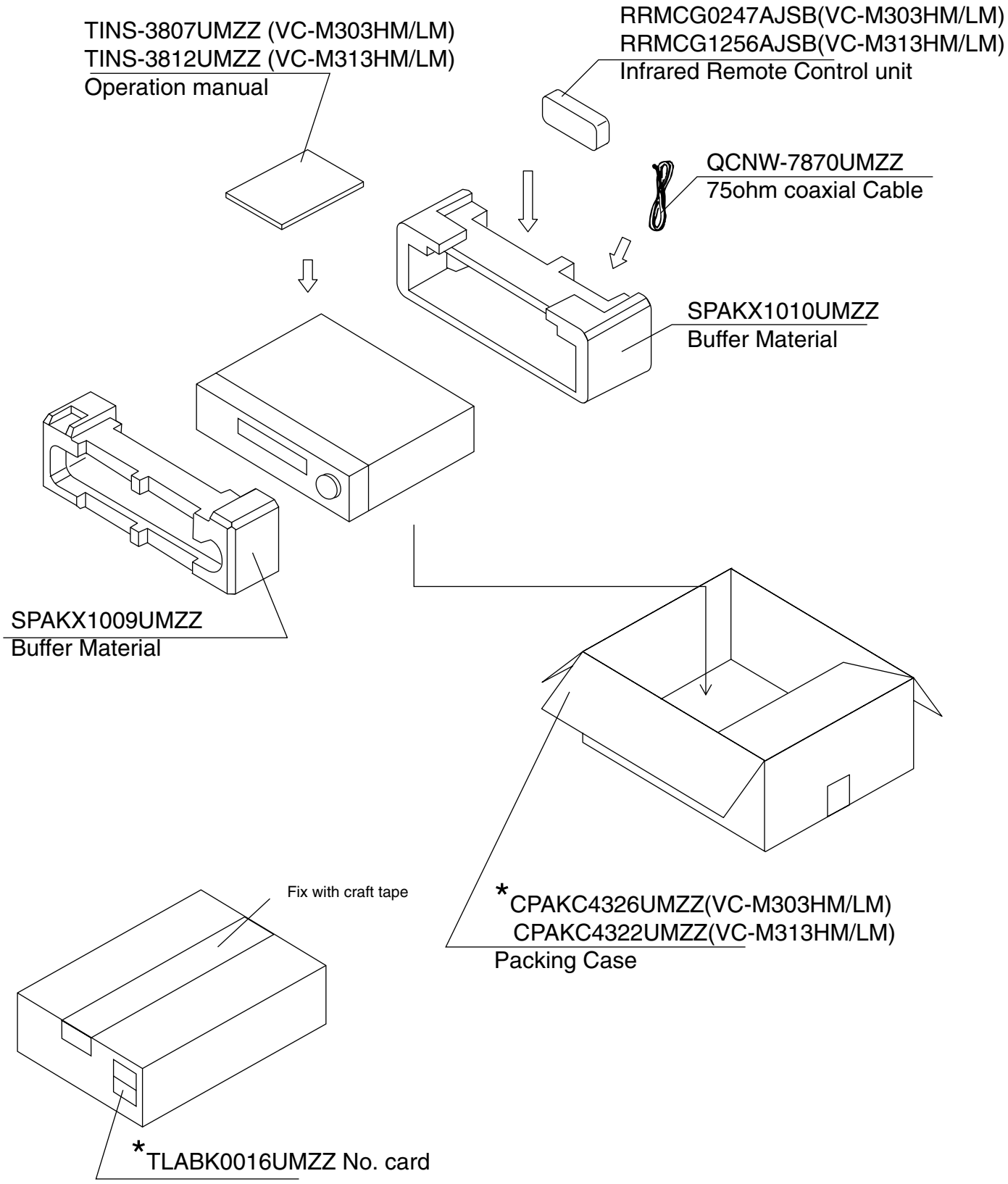
Keep the cassette over about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

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 Open the cassette compartment cover fully.
② Remove the center positioner.
③ Slide the cover to the right.
④ Slightly bend the cover.
⑤ Draw out the left-side rod.

12. PACKING OF THE SET



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