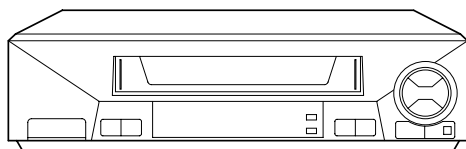
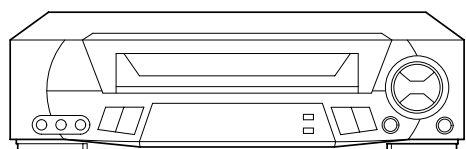


SHARP SERVICE MANUAL

S80E5XA-905//



XA-905



XA-920

VHS PROFESSIONAL SERIES
VIDEO CASSETTE RECORDER

MODELS

XA-905 XA-920

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.

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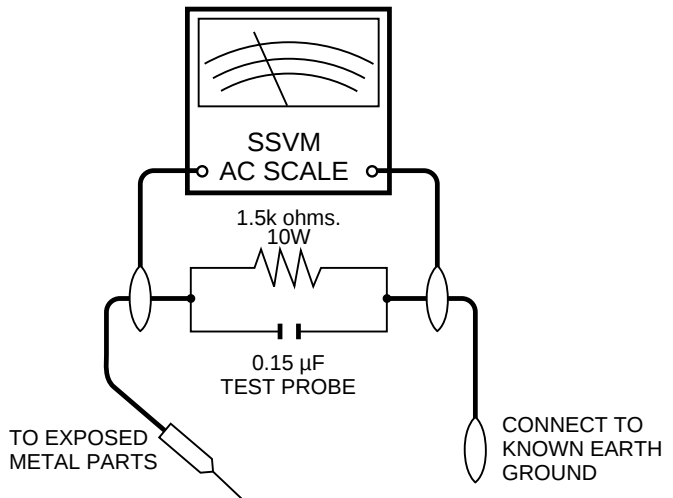
IMPORTANT SERVICE NOTES

BEFORE RETURNING THE VIDEO CASSETTE RECORDER

Before returning the video cassette recorder to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the video cassette recorder.
2. Inspect all protective devices such as non-metallic control knobs, insulation materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor/capacitor networks, mechanical insulators etc.
3. To be sure that no shock hazard exists, check for current in the following manner.
 - Plug the AC line cord directly into a 120 volt AC outlet (Do not use an isolation transformer for this test).
 - Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15 μ F capacitor in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit.
 - Use an SSVM or VOM with 1000 ohm per volt, or higher, sensitivity or measure the AC voltage drop across the resistor (See Diagram).
 - Move the resistor connection to earth exposed metal part having a return path to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts,

etc.) and measure the AC voltage drop across the resistor. Reverse the AC plug on the set and repeat AC voltage measurements for each exposed part. Any reading of 0.45V rms (this corresponds to 0.3mA rms AC.) or more is excessive and indicates a potential shock hazard which must be corrected before returning the video cassette recorder to the owner.



WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

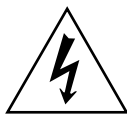


CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

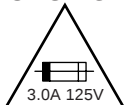


This symbol warns the user of uninsulated voltage within the unit that can cause dangerous electric shocks.



This symbol alerts the user that there are important operating and maintenance instructions in the literature accompanying this unit.

CAUTION:



This symbol mark means fast operating fuse. For continued protection against risk of fire, replace only with same type fuse F901 (3.0A, 125V).

PRECAUTIONS IN PART REPLACEMENT

When servicing the unit with power on, be careful to the section marked white all over.

This is the primary power circuit which is live.

When checking the soldering side in the tape travel mode, make sure first 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.

(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 D709.

Adjust the notch of the part to the white marker of the symbol on the PWB. Do not allow any looseness.

(4) Take-up and supply sensors: D707 and D706.

Be careful not to confuse the setting direction of the parts in reference to the symbols on the PWB. Do not allow any looseness.

1. GENERAL INFORMATION

1-1. FEATURES

Only for XA-905

- Universal Remote Control

Only for XA-920

-  Hi-Fi Stereo Sound
- Built-in MTS (Multi-channel TV Sound) Decoder
- * The VCR Plus+ Programming System
- Automatic Head Cleaning System
- Built in Front AV Jacks
- Universal Remote Control with light up buttons

Common Features

- 400 Times Rewind Speed to Fast Forward and Rewind.
- EZ Set Up
- S-VHS Quasi Playback
- Double-Azimuth 4-Heads
- 19 μ Clear Picture System (in EP mode)
- HQ System for Better Resolution and Color Reproduction
- Multi-Language (English/Spanish/French) OSD (On Screen Display) with Menu Screen Guidance
- 181-channel PLL Quartz Synthesized Random Access Tuner with Automatic Channel Setting
- Quick Start with Full Loading Mechanism
- 1-Year, 8-Event Programmable Timer

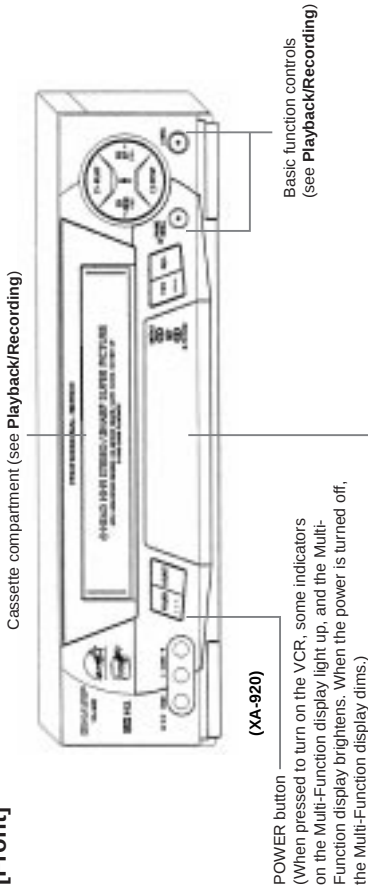
- Simple Recording Timer
- Sharp Super Picture
- Rec Tab Override
- Remote Pause IN/OUT Jacks
- BNC Video Connectors
- 3-Wire (Grounded) AC Power Cord
- 1 hour Timer Backup
- Field-Still/Variable Slow/Frame Advance
- Real-Time Counter
- Automatic Daylight Saving-Time (D.S.T.) Adjustment
- Blue Screen Noise Elimination
- Auto Tracking Control System
- Digital Program Search System (DPSS)
- Skip Search
- Instant Replay
- Exact Rec
- Tape Remaining
- One-Step Rewind
- Auto Zero Back
- Recorded Section Auto Repeat
- Full Automatic Playback
- Tamper Proof
- Up to 8 Hours of Recording and Playback (with T-160 cassette)

1-2. SPECIFICATIONS

Format:	VHS NTSC Standard
Video Recording System:	Rotary, Two-Head Helical Scanning
Number of Video Heads:	4
Video Signal Standard:	NTSC Color System
Audio Recording System:	1 Stationary Head for Linear Audio 2 Rotary Heads for Hi-Fi stereo (Only Hi-Fi model)
Tape Width:	12.7 mm (1/2 inch)
Tape Speed:	(SP) 33.35 mm/sec (1.31 i.p.s.) (LP) 16.67 mm/sec (0.66 i.p.s.) (playback only) (EP) 11.12 mm/sec (0.44 i.p.s.)
Maximum Recording Time:	(SP) 160 min (T-160) (EP) 480 min (T-160)
Channel Coverage:	VHF 2-13 UHF 14-69 CATV 1-125
Antenna Input:	75 Ohm
Video Input:	0.5 to 2.0 Vp-p, 75 Ohm unbalanced
Video Output:	1.0 Vp-p, 75 Ohm unbalanced
Audio Input:	-8 dBs, 47 kOhm unbalanced (0 dBs = 0.775 Vrms)
Audio Output:	-8 dBs, 1 kOhm unbalanced (0 dBs = 0.775 Vrms)
Hi-Fi Audio (Only for Hi-Fi model):	<i>Dynamic Range:</i> 90 dB <i>Frequency Response:</i> 20 Hz-20 kHz
Memory Backup:	1 hour
Operating Temperature:	5°C to 40°C (41°F to 104°F)
Storage Temperature:	-20°C to 60°C (-4°F to 140°F)
Power Source:	120 V AC, 60 Hz
Power Consumption:	18 W
Dimensions (approx.):	360 (W) x 92.5 (H) x 262.5 (D) mm (14-3/16" x 3-41/64" x 10-21/64") (XA-905) 360 (W) x 92.5 (H) x 263.5 (D) mm (14-3/16" x 3-41/64" x 10-3/8") (XA-920)
Weight (approx.):	2.8 kg (6.2 lbs)
Accessories included:	75 ohm coaxial cable, Operation manual, Infrared remote control, Battery (2 pcs.), Warranty Card
Note:	Specifications are subject to change without notice.

Major Components of Your VCR

[Front]



Multi-Function Display (explained throughout the operation instructions)

When the power is on, each time **DISPLAY** is pressed, the Multi-Function display changes as follows:

- ① Channel setting → ② Tape counter → ③ Clock



NOTE

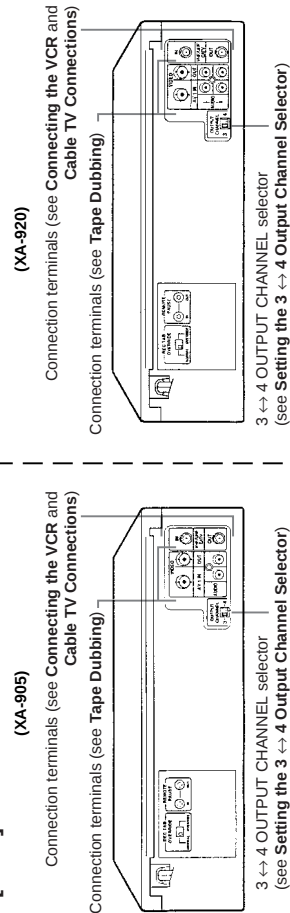
- Tape counter is displayed during playback, fast forward or rewind operation.
- When the power is turned off, the clock is displayed and the Multi-Function display becomes darker.

Display	Symbol	Function Status	Display	Symbol	Function Status
STOP	—	Stop	FF	—	Fast forward
PLAY	▶	Play	REW	—	Rewind
PAUSE	⏸	Video Search, Slow, Still, Frame Advance	PAUSE	REC	Rec Pause
REC	REC	Record	—	⏻	Cassette-in
—	⏻	Tamper Proof Active	—	VCR	Unit in VCR mode

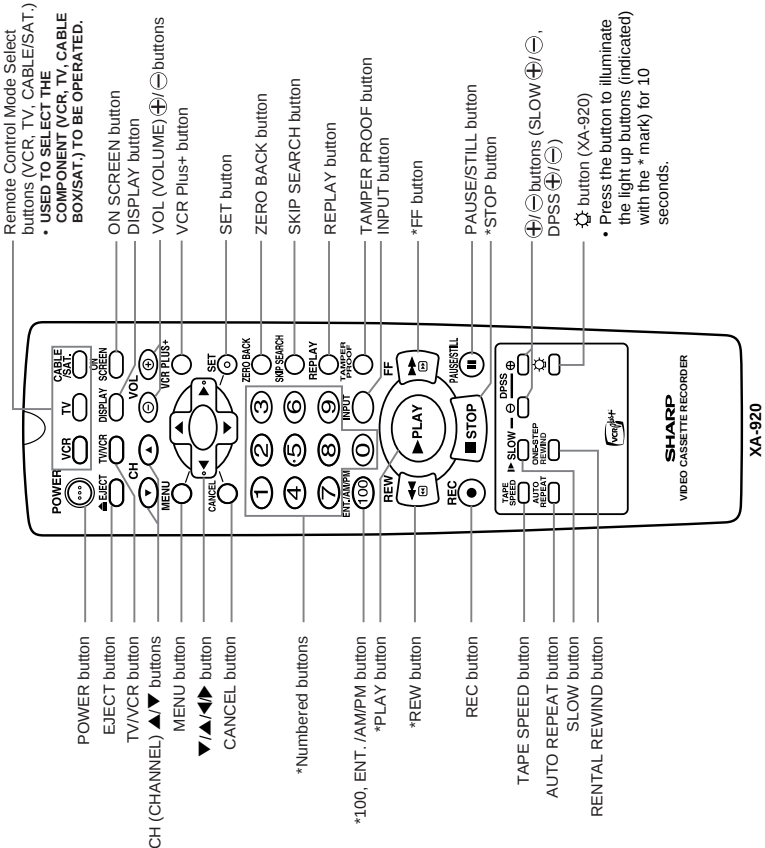
NOTE

- The display will return to the original mode (counter or clock display) 3 seconds after the VCR enters the operation mode.

[Rear]



Remote Control



NOTE

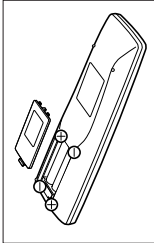
- If the ⊙ button is pressed while the light up buttons are illuminated, they will remain illuminated for an additional seconds.

Inserting the Batteries

Make sure that the batteries have been properly installed first. Fit two batteries type "AA". If the remote control stops working, fit new batteries. Ensure the batteries are fitted correctly, matching the polarities (⊕/⊖) indicated in the remote control.

NOTE

- After changing the batteries in the remote control, the code settings for the TV, cable box and Digital Satellite Receiver must be re-entered.
- The operating life of the batteries will shorten if the Light Up function is frequently used.
- The operating life of the batteries will shorten if the Remote Pager function is frequently used.
- Do not subject the remote control to shock, water or excessive humidity.
- The remote control may not function if the VCR sensor is in direct sunlight or any other strong light.
- Incorrect use of batteries may cause them to leak or burst. Read the battery warnings and use the batteries properly.
- Do not mix old and new batteries, or mix brands in use.
- Remove the batteries if the remote control will not be operated for an extended period of time.
- If the remote control does not function properly when new batteries are installed, remove the batteries and keep pressing any button for 10 seconds before re-installing them.

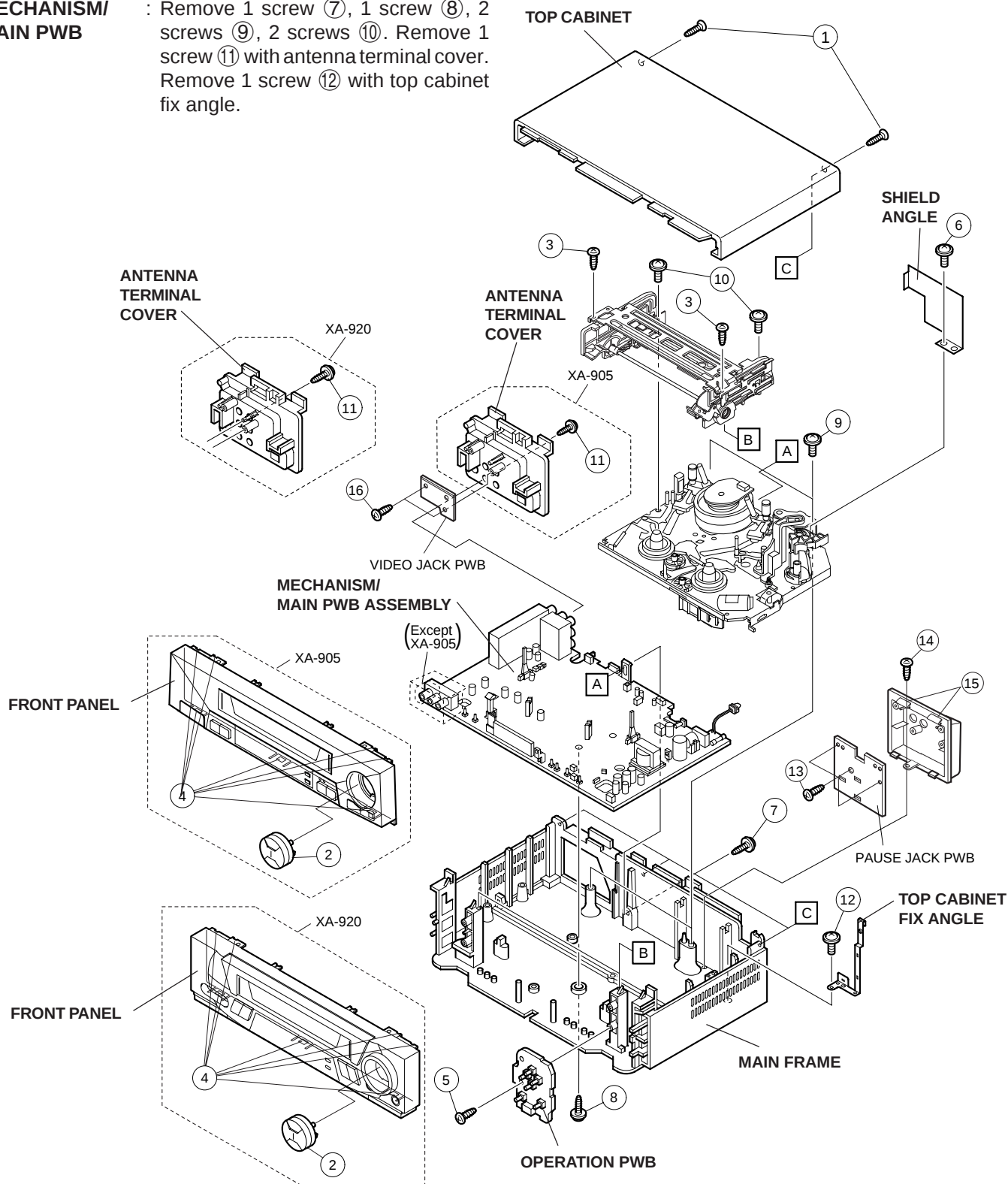


2. DISASSEMBLY AND REASSEMBLY

2-1. DISASSEMBLY OF MAJOR BLOCKS

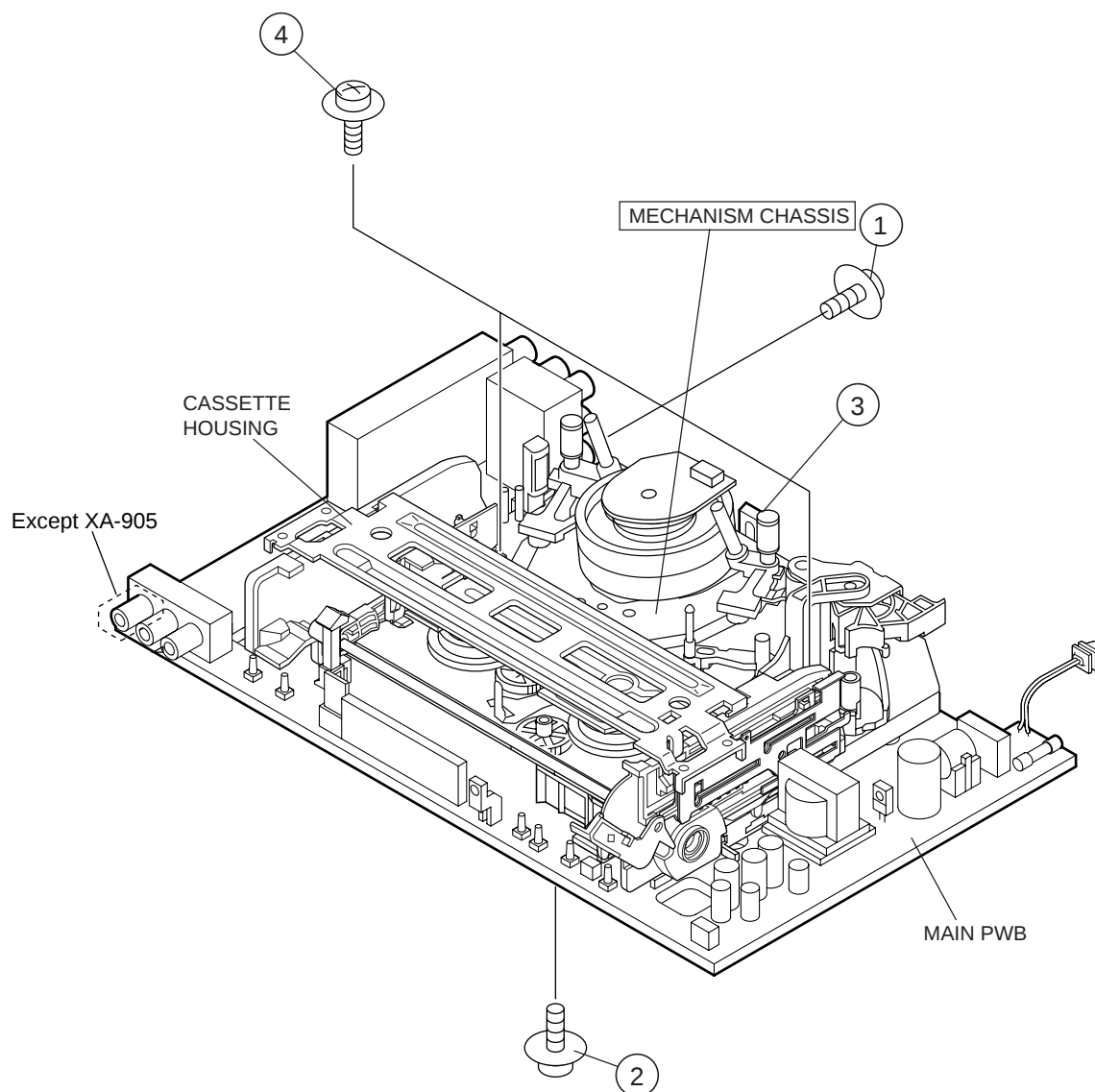
- TOP CABINET** : Remove 2 screws ①.
- FRONT PANEL** : Remove button ②.
Remove 2 screws ③ and 7 clips ④.
- OPERATION PWB** : Remove 1 screw ⑤.
- SHIELD ANGLE** : Remove 1 screw ⑥ with shield angle.
- MECHANISM/MAIN PWB** : Remove 1 screw ⑦, 1 screw ⑧, 2 screws ⑨, 2 screws ⑩. Remove 1 screw ⑪ with antenna terminal cover. Remove 1 screw ⑫ with top cabinet fix angle.

- PAUSE JACK PWB** : Remove 3 screws ⑬, 1 screw ⑭, 2 clips ⑮ with Pause Jack PWB and Pause Jack cover. Disconnect earth lead and wire lead.
- VIDEO JACK PWB** : Remove 2 screws ⑯ and disconnect wire lead.



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 connecting 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 housing.
Remove 2 screws ④ fixing the cassette housing to the mechanism, and remove the cassette housing.



2-3. CARES WHEN REASSEMBLING

INSTALLING THE CASSETTE HOUSING

When the cassette housing is installed on the mechanism, the initial setting is essential condition.

There are two initial setting methods, namely electrical and mechanical.

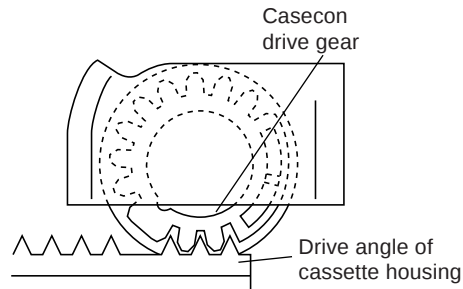
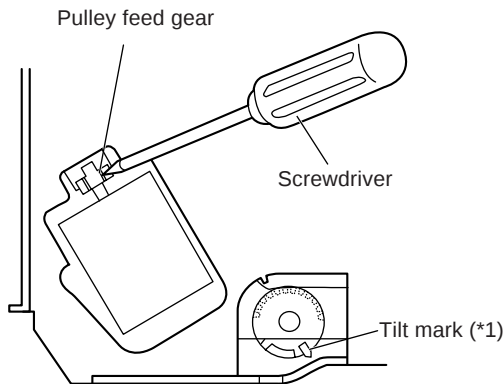
1. Electrical initial setting

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 housing. (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 housing in the specified position. (This method is applied only for the mechanism.)

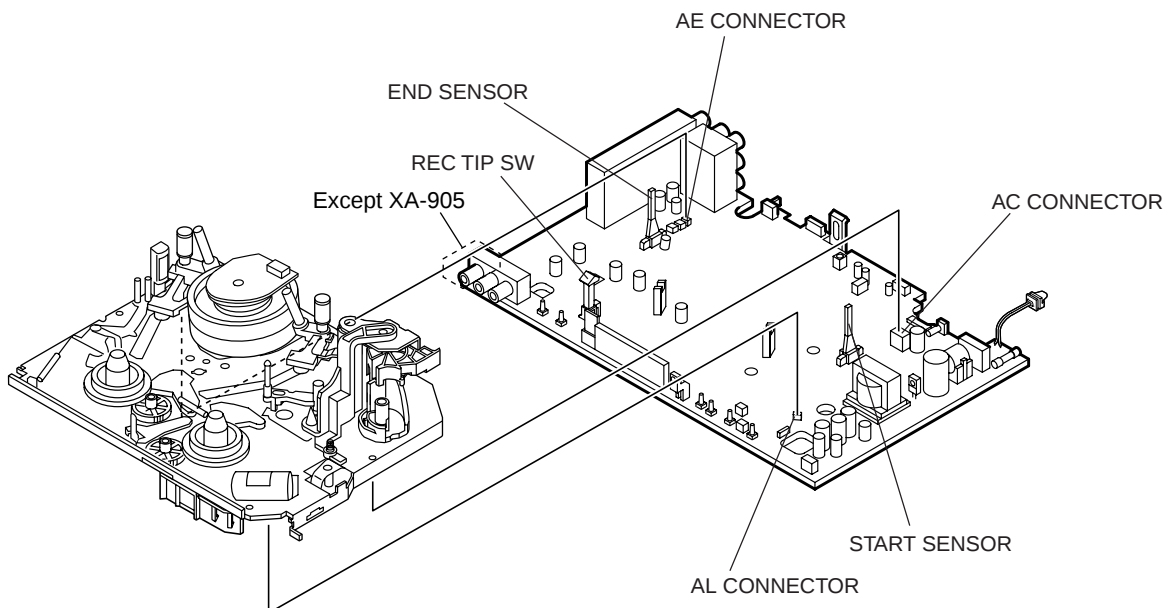


INSTALLING THE MECHANISM ON PWB

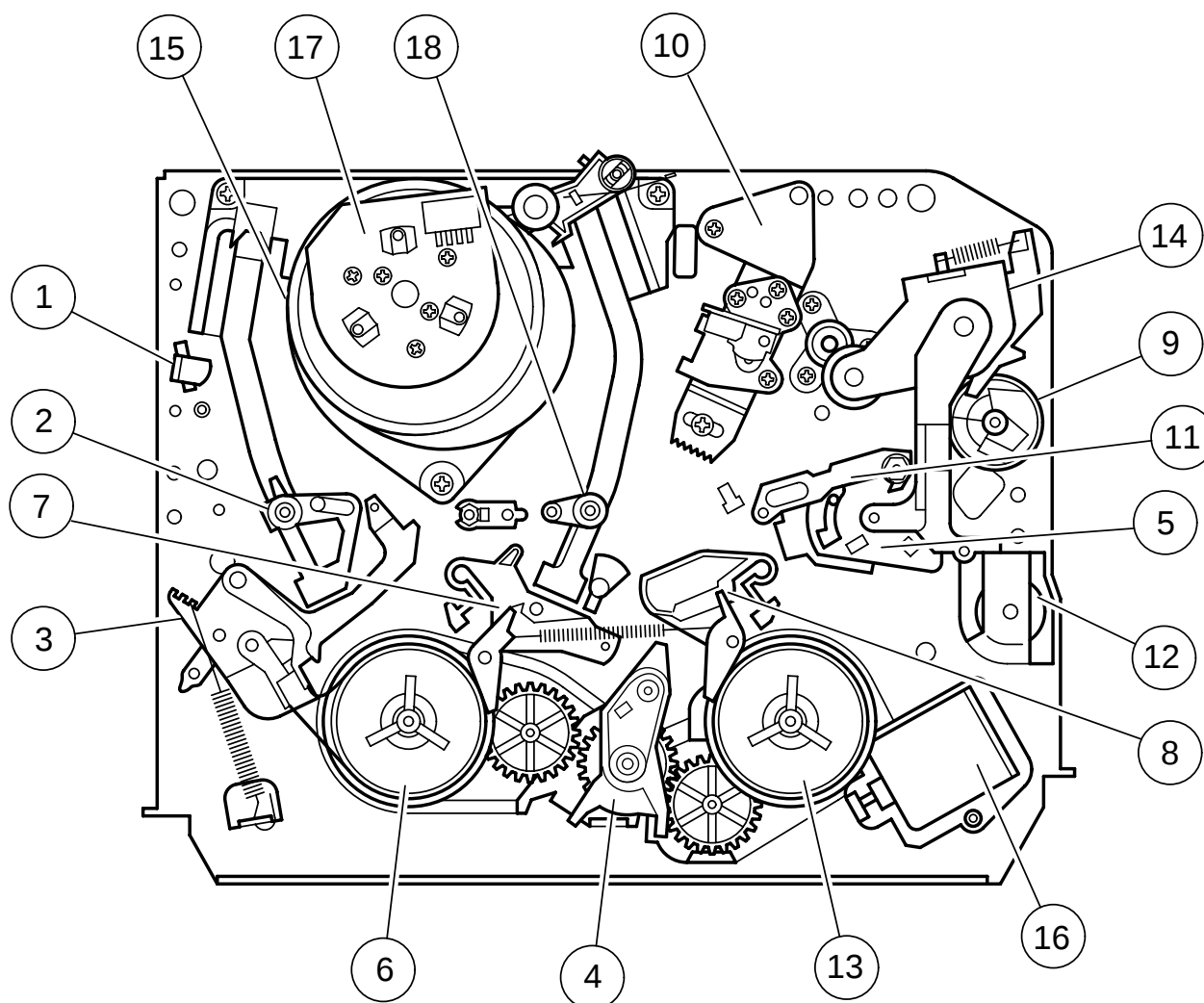
Lower vertically the mechanism, paying attention to the mechanism edge, and install the mechanism with due care so that the parts are not damaged. So as to fix the mechanism to the main PWB install two housings. (Fit the antenna cover to one of them. For other, fix the vicinity of loading motor and solder 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.

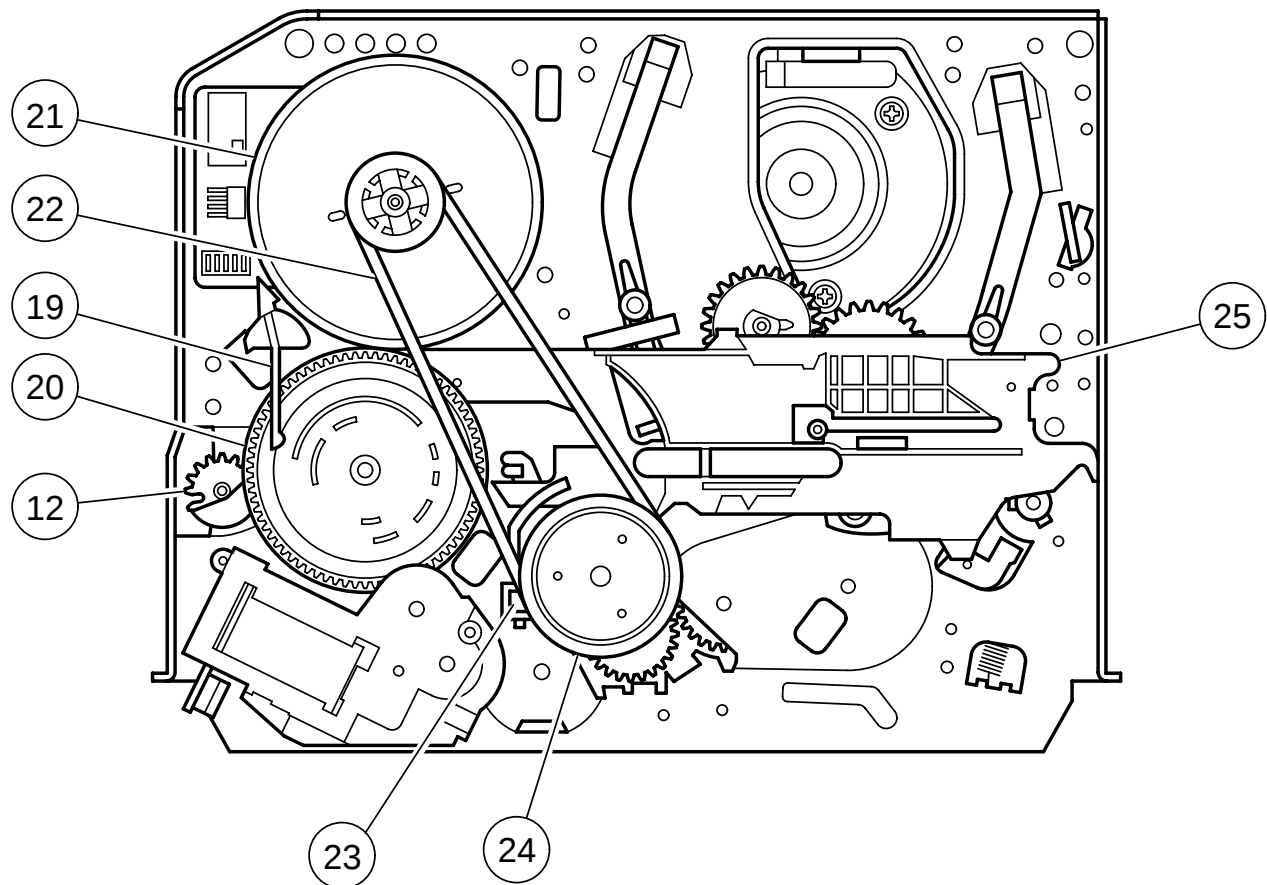


3. FUNCTION OF MAJOR MECHANICAL PARTS (TOP VIEW)



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

FUNCTION OF MAJOR MECHANICAL PARTS (BOTTOM VIEW)



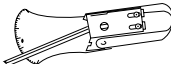
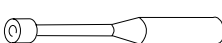
No.	Function	No.	Function
15	Drum ass'y	22	Reel belt
16	Loading motor	23	Clutch lever
17	Drum drive motor	24	Limiter pulley ass'y
18	Take-up pole base ass'y	25	Shifter
19	Slow brake lever		
20	Master cam		
21	Capstan D.D. motor		

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 relate 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 use 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 2.0 kg.			
		JiGSG0300	BF					
7.	Pinch pressing force measuring jig	JiGADP003	BK		This Jig is used with the tension gauge. Rotary transformer clearance adjusting jig.			
8.	Reverse guide height adjustment box driver	JiGDRIVER11055	AR		This Jig is used for height adjustment of the reverse guide (for reverse guide height adjustment).			
9.	Alignment Tape				These tapes are especially used for electrical fine adjustment.			
		VROATSV	CD		Video	Audio	HiFi Audio	Track
					525 Monoscope	7k	—	58μm
		VROEFZCS or VROEFZHS	BG		NTSC Color Bar	1k	—	58μm
					Black Level (only SYNC) signal	1k	—	19μm
BH		2.3k						
10.	Guide roller height adjustment driver	JiGDRIVERH-4	AP		This screwdriver is used for adjusting the guide roller height.			
11.	X value adjustment gear driver	JiGDRIVER-6	BM		For X value adjustment			
12.	Reverse Guide Height Adjusting Jig	JiGRVGH-F18	BU		This Jig is used for height adjustment of the reverse guide.			

4-2. 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.
Reverse guide		☐	☐	☐	☐		
Slant pole on pole base		☐	☐	☐	☐		
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) (XA-920)			☐		☐		Replace the roller of the cleaner when it wears down. Just change the AHC roller assembly for new one.

NOTE ☐ : Part replacement. ☐ : Cleaning : Apply grease
<Specified> Cleaning liquid Industrial ethyl alcohol

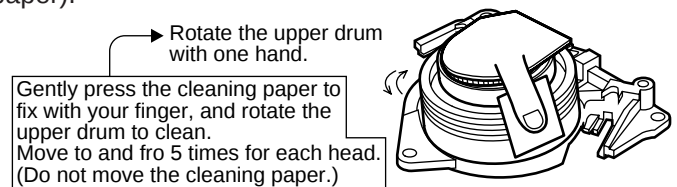
* This mechanism does not need electric adjustment with variable resistor. Check parts. If any deviation is found, clean or replace parts.

Video head cleaning procedure

1. Apply one drop of cleaning liquid to the cleaning paper with the baby oiler.
2. Gently press the cleaning paper against the video head to fix your finger, and move the upper drum so that each head is passed to and fro 5 times (do not move the cleaning paper).
3. Wipe with the dry cleaning paper.

Notes :

- Use the commercially available ethanol of Class 1 as cleaning liquid.
- Since the video head may be damaged, do not move up and down the cleaning paper.
- Whenever the video head is cleaned, replace the cleaning paper.
- Do not apply this procedure for the parts other than the video head.



Parts Code	Description	Code
ZPAPRA56-001E	Cleaning Paper	AW
ZOILR-02-24TE	Babe Oiler (Spoit)	AH

4-3. 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.

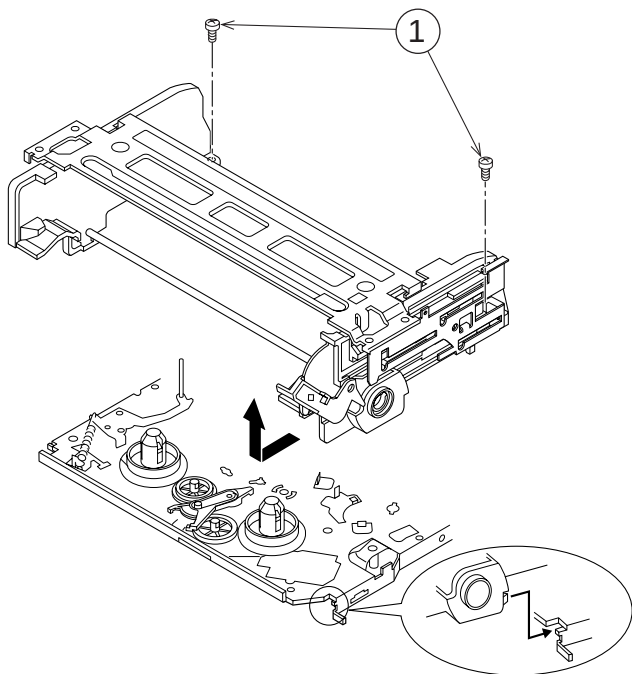


Figure 4-1.

• Reassembly

1. Before installing the cassette housing control, short-circuit TP803 and TP802 provided at operation 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.

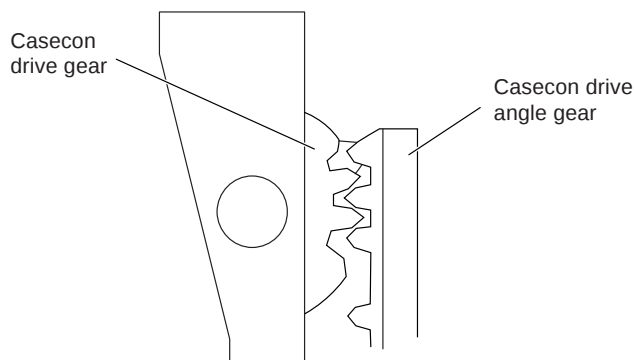


Figure 4-2.

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.

4-4. TO RUN A TAPE WITHOUT THE CASSETTE HOUSING CONTROL ASSEMBLY

1. Remove the full-surface panel.
2. Short-circuit TP803 and TP802.
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.

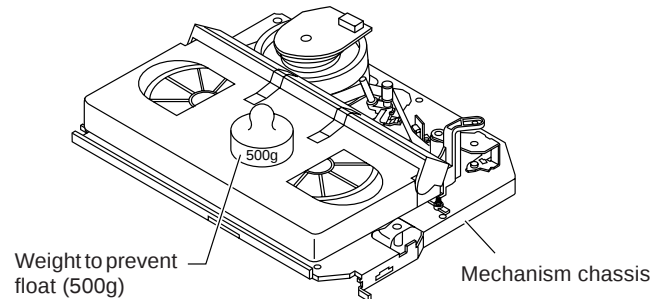


Figure 4-3.

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.

4-5. 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.

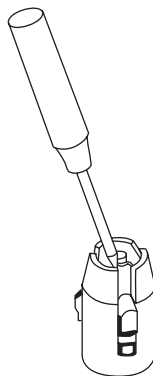
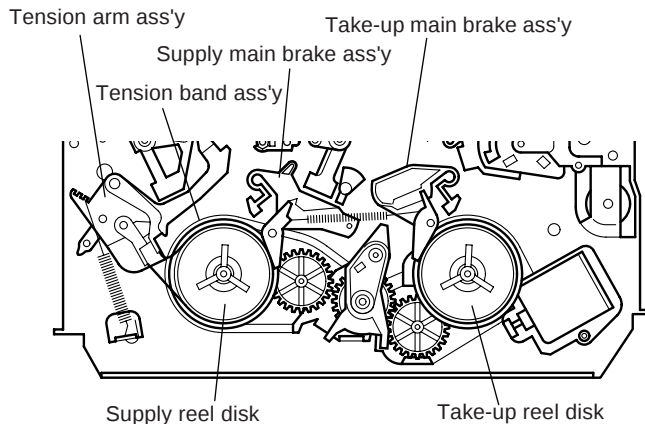


Figure 4-4.

Note:

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

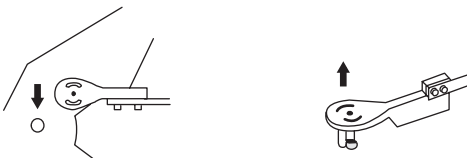


Figure 4-5.

• 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 not 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 4-10), and check the brake torque (see 4-14).

• 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.

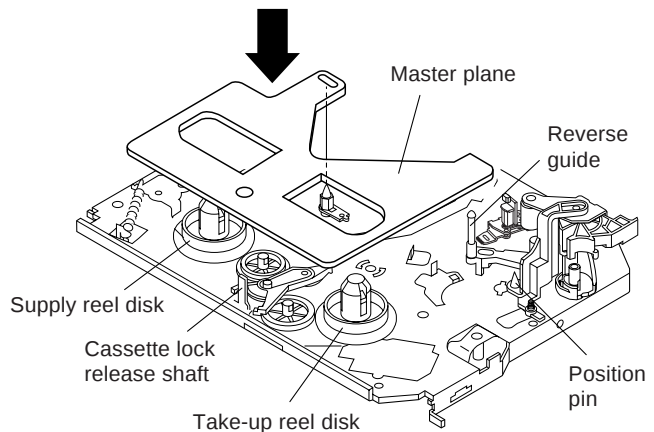


Figure 4-6.

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.

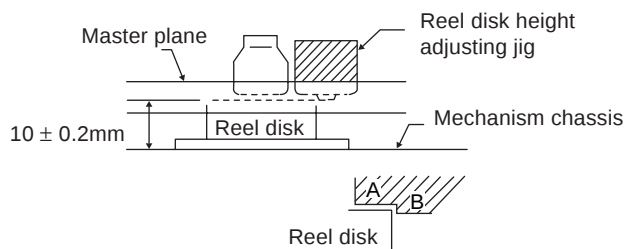


Figure 4-7.

4-6. CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN FAST FORWARD MODE

- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation 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.

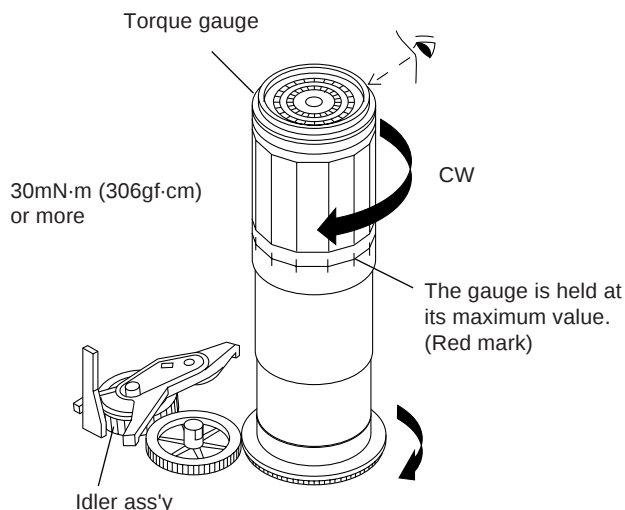


Figure 4-8.

2. Make sure that the indication of torque gauge is not less than 30mN·m (306gf·cm).

- **Adjustment**

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

4-7. CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN REWIND MODE

- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation 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).

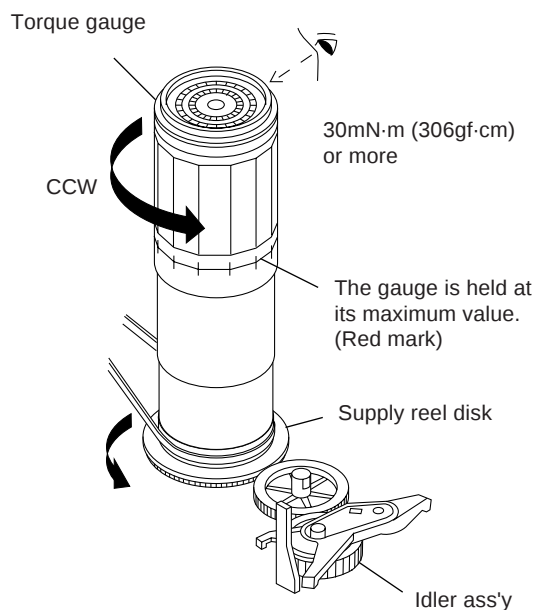


Figure 4-9.

- **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.

4-8. CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN RECORD/PLAYBACK MODE

- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation 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.

Set value $EP6.9 \pm 2.5\text{mN}\cdot\text{m}$ ($70 \pm 25\text{gf}\cdot\text{cm}$)

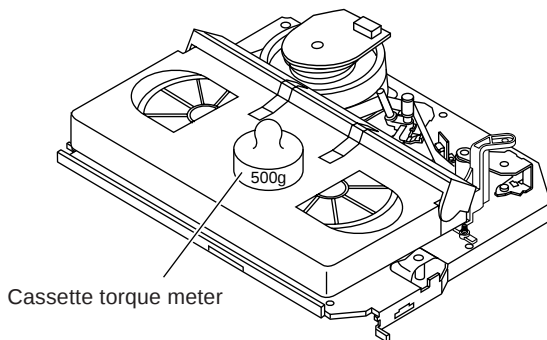


Figure 4-10.

- Press the picture record button, and set EP picture record mode (x3).
- **Checking**
 1. Make sure that value is within the setting $6.9 \pm 2.5\text{mN}\cdot\text{m}$ ($70 \pm 25\text{gf}\cdot\text{cm}$).
 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 EP record mode (x3) 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.

4-9. CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN VIDEO SEARCH REWIND MODE

- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation 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 $14.0 \pm 3.9\text{mN}\cdot\text{m}$. ($144 \pm 40\text{gf}\cdot\text{cm}$)

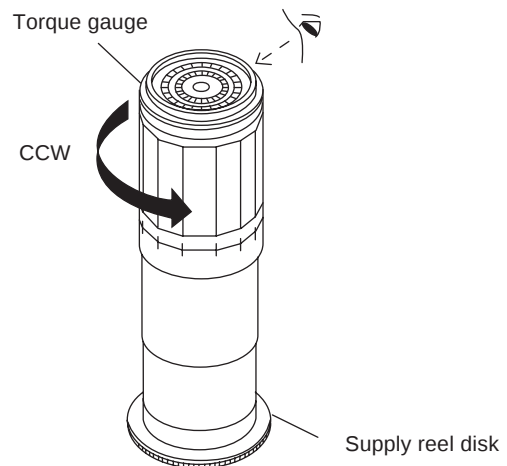


Figure 4-11.

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.

4-10. CHECKING THE VIDEO SEARCH REWIND BACK TENSION

- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation 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 $3.4 \pm 1.5\text{mN}\cdot\text{m}$ ($35 \pm 15\text{gf}\cdot\text{cm}$).

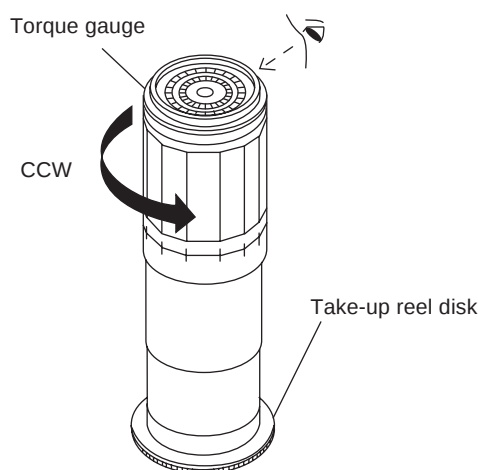


Figure 4-12.

Notes:

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

4-11. CHECKING THE PINCH ROLLER PRESSURE

- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation PWB, plug in the power cord.

• Checking

Press the play button to set the playback mode.

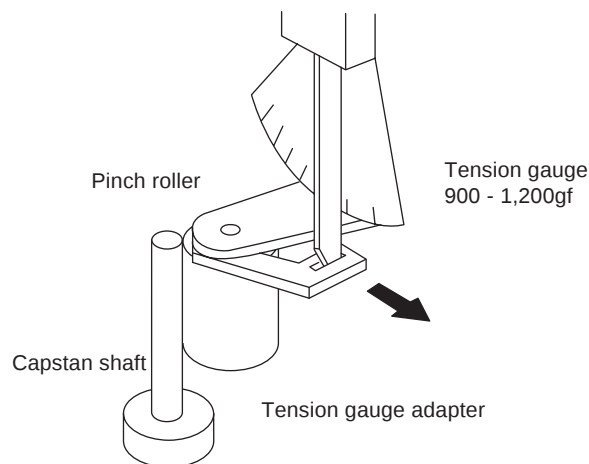


Figure 4-13.

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 9.0 N to 11.8 N (900 to 1,200gf).

4-12. CHECKING AND ADJUSTMENT OF TENSION POLE POSITION

- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation PWB, plug in the power cord.

• Setting

1. Turn off the power switch.
2. Open the cassette tape (T-120), 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 T-120 tape.

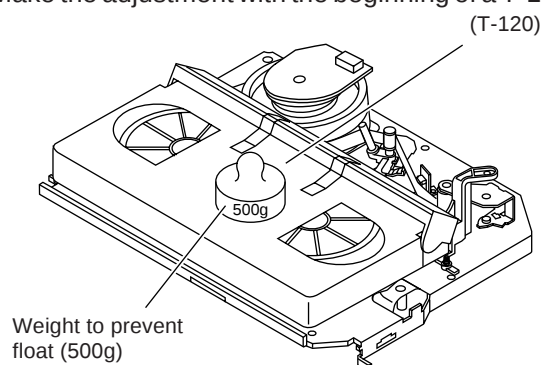
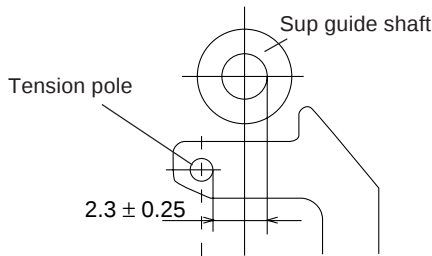


Figure 4-14.

• Checking

1. Set a cassette tape, push the REC button to place the unit 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 2.3 ± 0.25 from the right edge of the Sup guide shaft.



Make the adjustment with the beginning of a T-120 tape.

Figure 4-15.

At left side from the center line

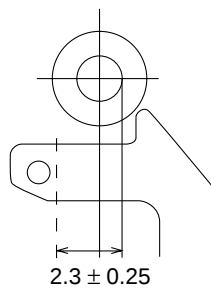


Figure 4-16.

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

At right side from the center line

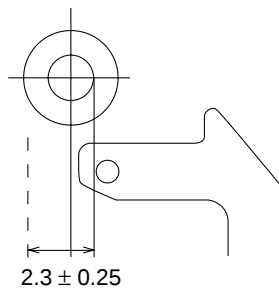


Figure 4-17.

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

Tension pole adjuster adjusting range

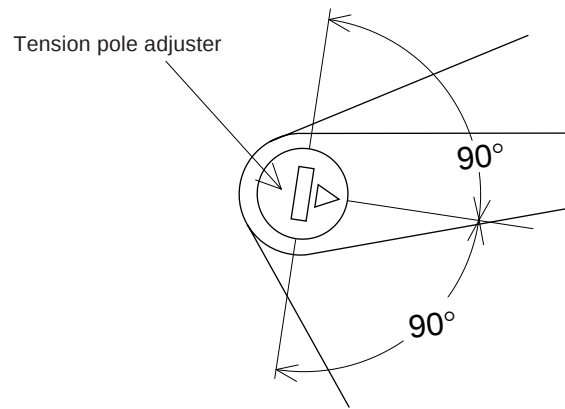


Figure 4-18.

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

4-13. CHECKING AND ADJUSTMENT OF RECORD/PLAYBACK BACK TENSION

- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation 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.

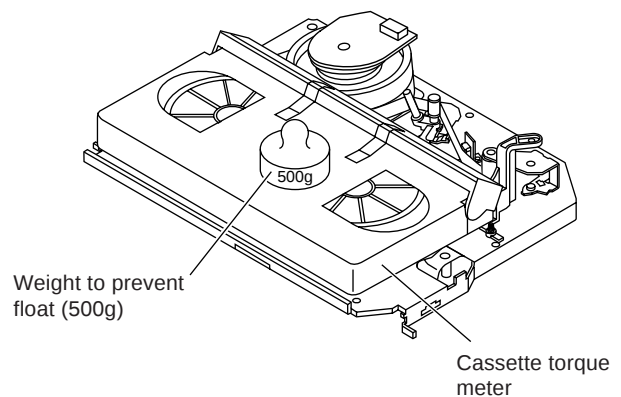


Figure 4-19.

- **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.

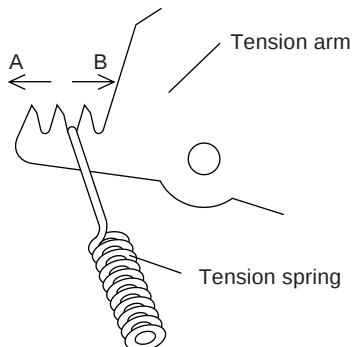


Figure 4-20.

4-14. CHECKING THE BRAKE TORQUE

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

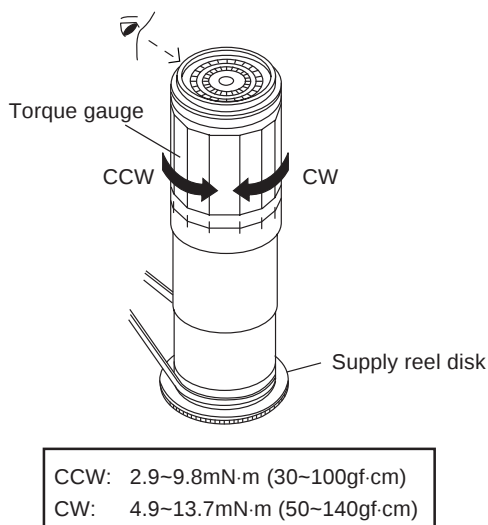


Figure 4-21.

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

- **After short-circuiting TP803 and TP802 provided at operation PWB, plug in the power cord.**

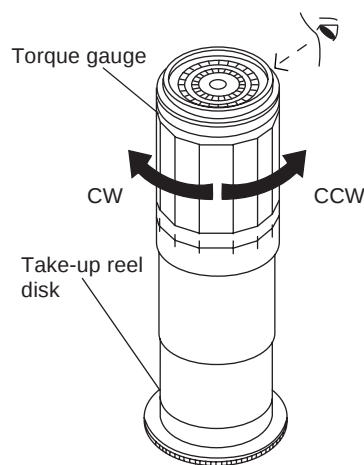
- **Setting**

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: 4.9 to 13.7mN·m (50 to 140gf·cm); CCW direction: 2.9 to 9.8mN·m (30 to 100gf·cm)).

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



CCW:	4.9~13.7mN·m (50~140gf·cm)
CW:	3.9~10.8mN·m (40~110gf·cm)

Figure 4-22.

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

- **After short-circuiting TP803 and TP802 provided at operation 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: 4.9 to 13.7mN·m (50 to 140gf·cm), CW direction: 3.9 to 10.8 mN·m (40 to 110gf·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.

4-15. 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 ① ② ③, 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 out.

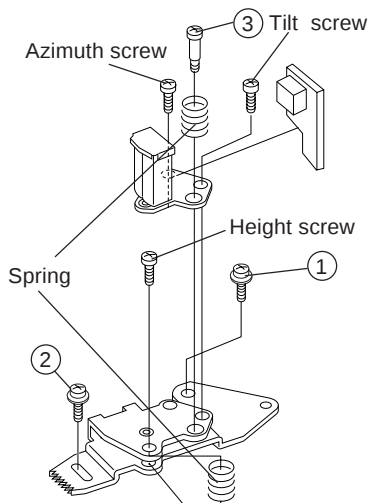


Figure 4-23.

• Replacement

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

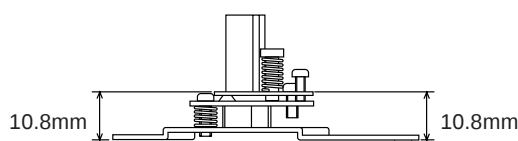
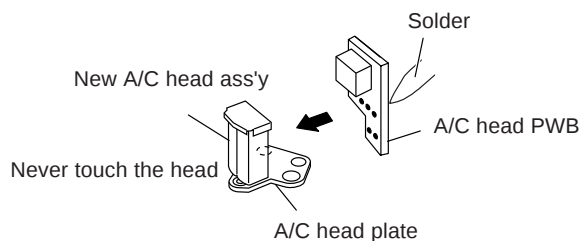


Figure 4-24.

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

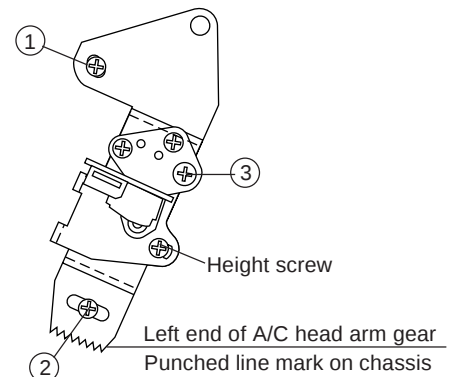


Figure 4-25.

Note:

1. If the screws ① and ② are tightened 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 4-18.)

4-16. A/C HEAD HEIGHT ROUGH ADJUSTMENT

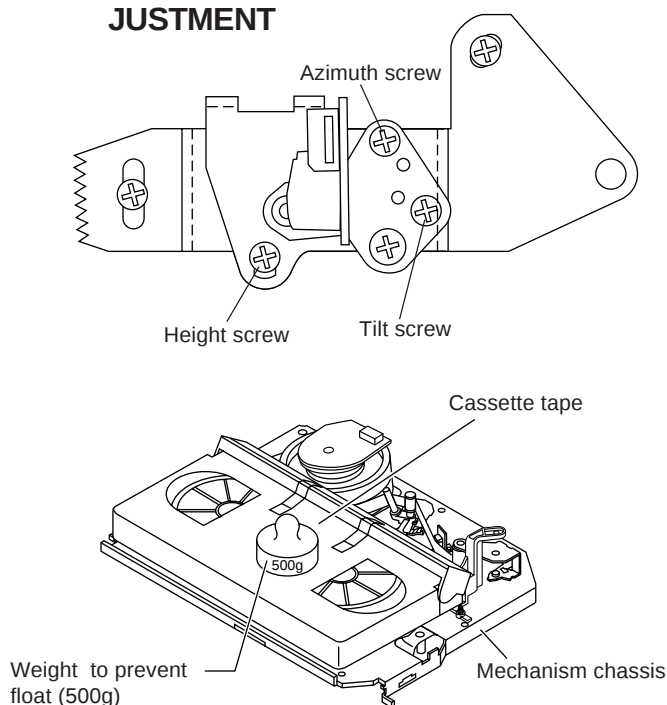


Figure 4-26.

• Setting

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.

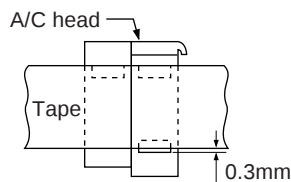


Figure 4-27.

• Adjustment

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

4-17. 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).)

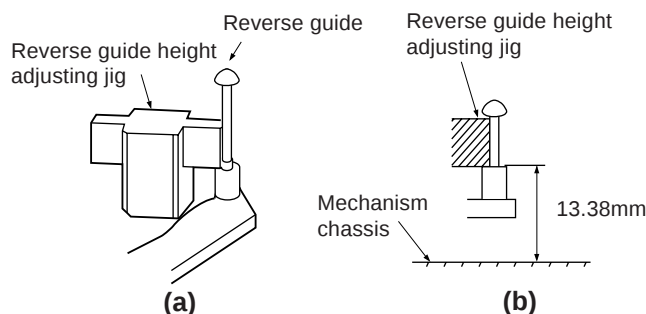


Figure 4-28.

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)).

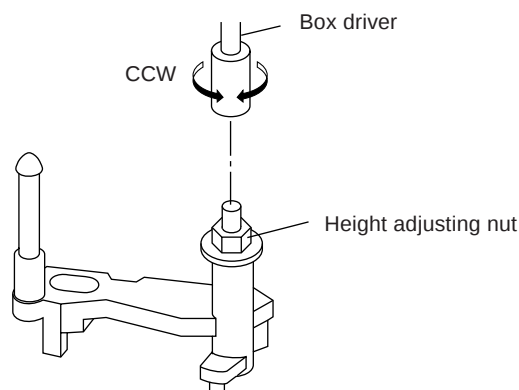
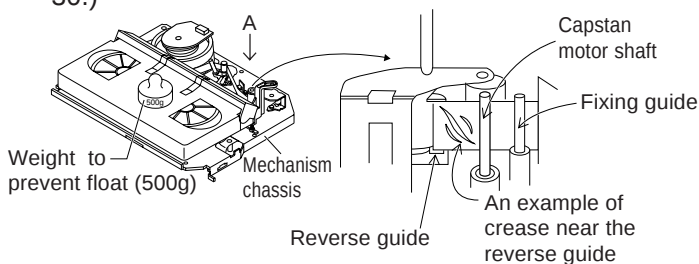


Figure 4-29.

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.

4-18. ADJUSTMENT OF TAPE DRIVE TRAIN

1. Tape run rough adjustment

- ① Remove the cassette housing control assembly.
- ② After shortcircuiting TP803 and TP802 provided at operation PWB, plug in the power cord.
- ③ Check and adjust the position of the tension pole. (See 4-12.)
- ④ Check and adjust the video search rewind back tension. (See 4-10.)
- 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 (VROATSV) to play. (Put a 500g weight on the cassette tape to prevent lift of cassette tape.)

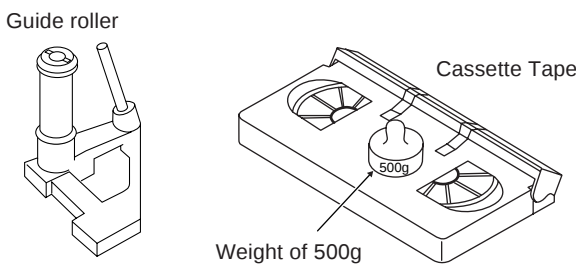


Figure 4-31.

- 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.

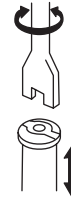
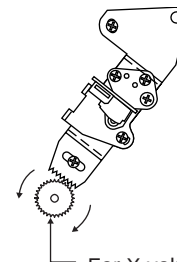


Figure 4-32.

2. Adjustment of A/C head height and azimuth

- ① Perform the initial setting of A/C head position by the method stated in "4-15 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.
- ⑤ The adjustment of ③ and ④ twice or three times repeat, and finally adjust ④.



For X value adjustment
Adjust the X value, turning the gear-type screwdriver.

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 4-15 "Replacement 3".
Playback the alignment tape (VROATSV) and shortcircuit TP801 and 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 4-15.)

- ③ Next, 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 **4-17** "HEIGHT ADJUSTMENT OF REVERSE GUIDE" item 3.

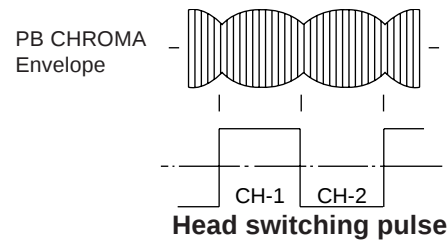


Figure 4-34.

4. A/C head X value adjustment

- ① Tentatively fix A/C head arm screws ① and ② by the method described in **4-15** "Replacement 3".
- ② Playback the alignment tape (VROATSV), and shortcircuit TP801 and TP802. As a result the auto-tracking is automatically cancelled, so that the X value adjustment mode is set.

	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.

- 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 **4-18**, 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.

Notes:

When the A/C head X value adjustment is performed, be sure to perform at first X value rough adjustment (refer to **4-18**, 3-②).

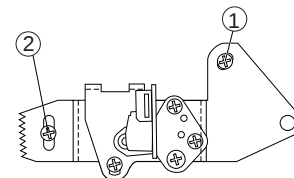


Figure 4-36.

4-19. REPLACEMENT OF THE CAPSTAN D.D. (DIRECT DRIVE) MOTOR

- Remove the mechanism from the main PWB (refer to 2-2 "item 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 slow brake lever ②.
3. Remove the three screws ③.

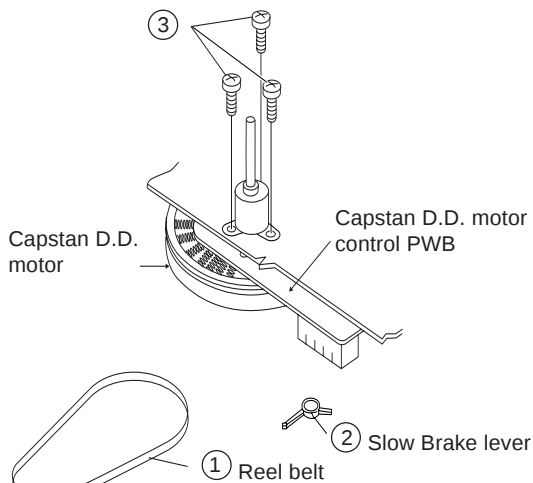


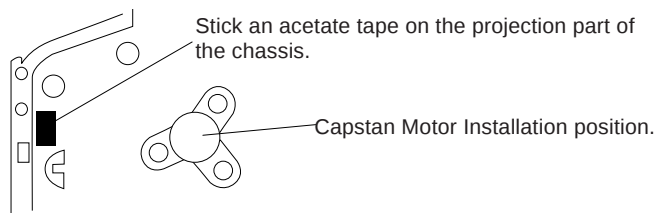
Figure 4-37-1.

• 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 slow brake lever.
3. Install the reel belt.

Notes:

1. Before installing the capstan D.D. motor, confirm whether an acetate tape ZTAPEN120020E is drawn on the back of mechanism chassis.



Mechanism Chassis from the back.

Figure 4-37-2.

2. After installing the capstan D.D. motor, be sure to rotate the capstan D.D. motor and check the movement.
3. 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 4-18 item 2. If crease is found, adjust as stated in 4-17 "HEIGHT ADJUSTMENT OF REVERSE GUIDE".

4-20. 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.

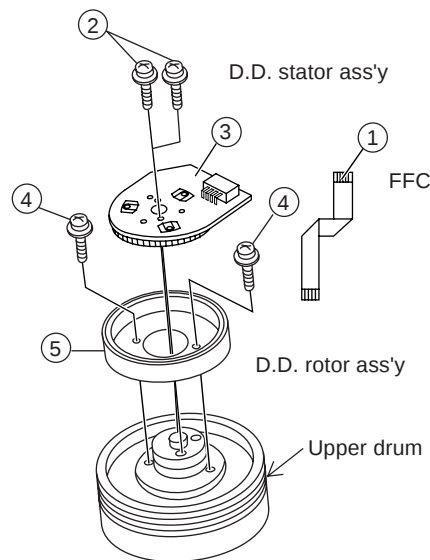


Figure 4-38.

4-21. REPLACING THE UPPER AND LOWER DRUM ASSEMBLY

- Replacement (Perform in the numerical order)
- ① Remove the motor as stated in 4-20 D.D. motor replacement.
- ② Remove the drum earth brush ass'y 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.

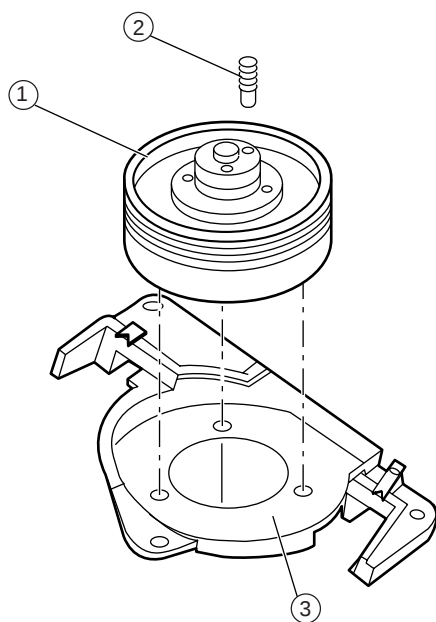


Figure 4-39.

4-22. 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

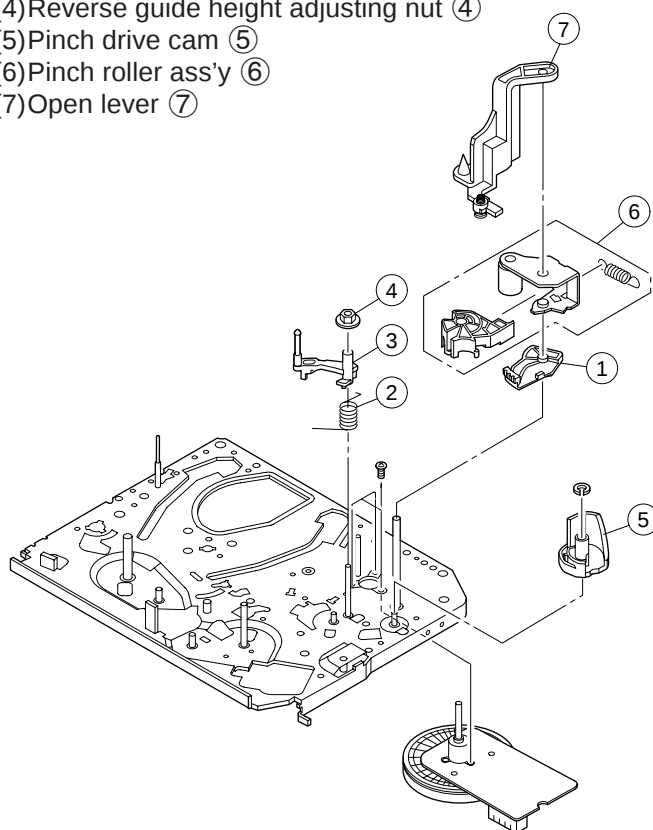
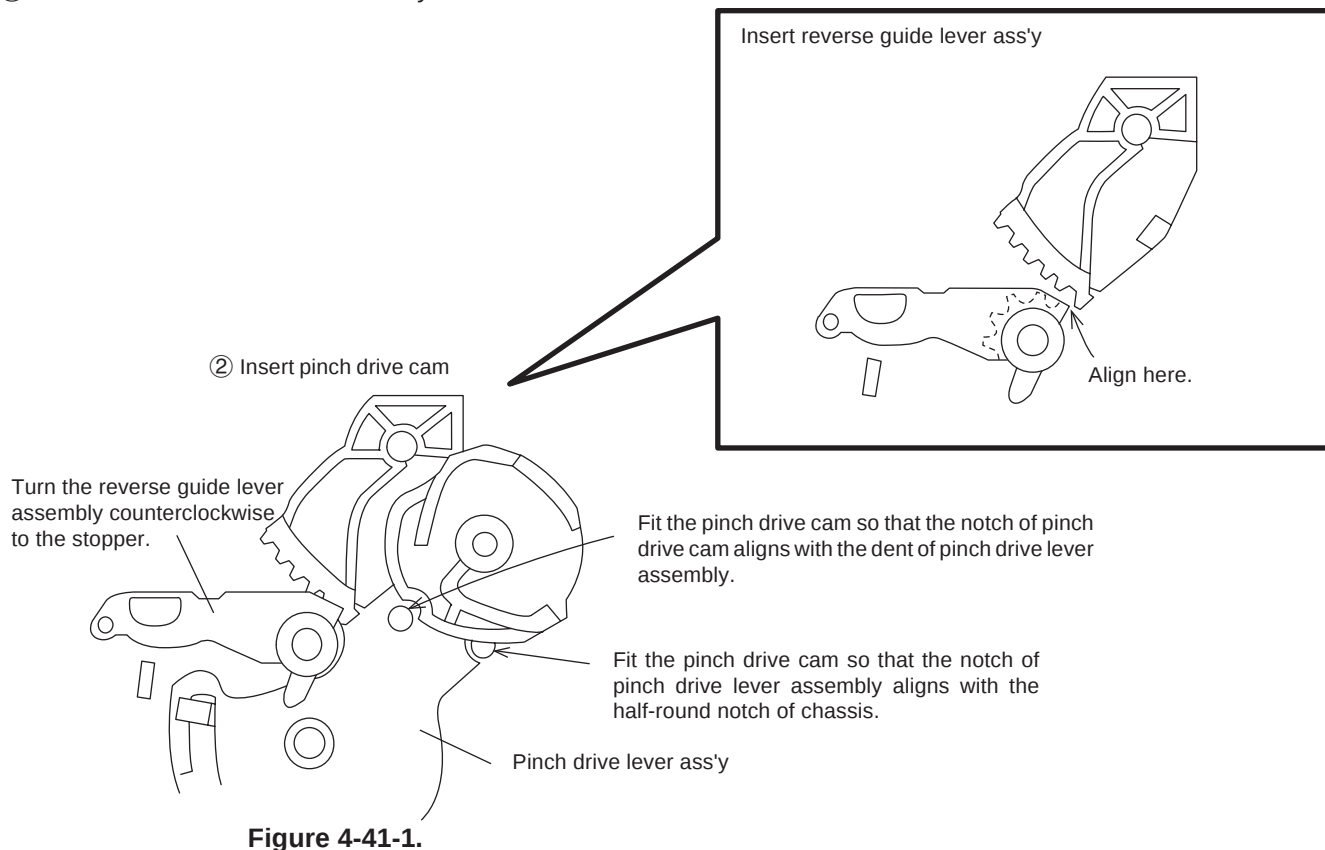


Figure 4-40.

① Insert Reverse Guide Lever Ass'y



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

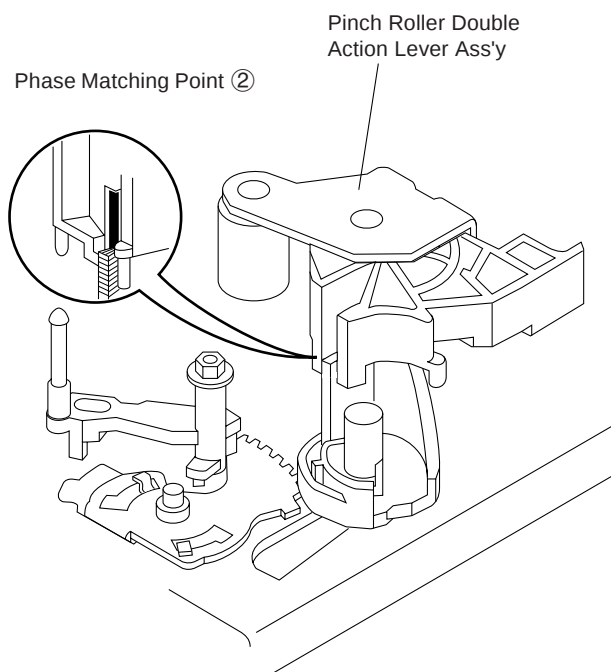


Figure 4-41-2.

③ Insert Open Lever.

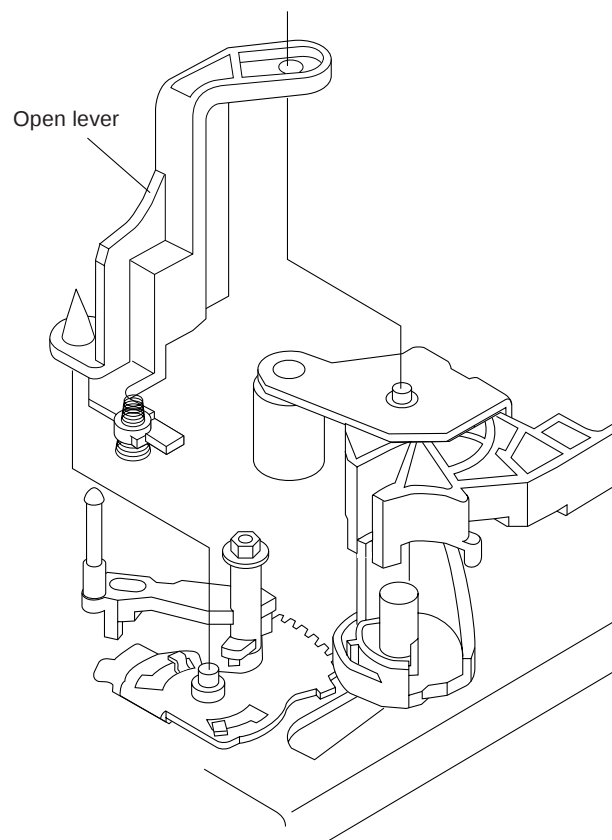
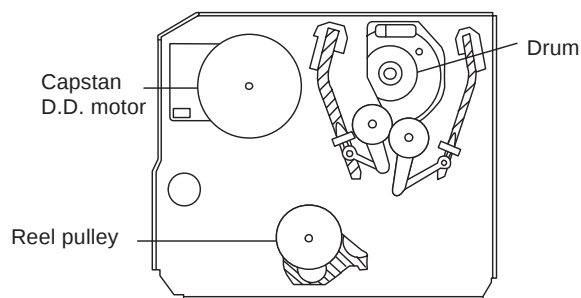


Figure 4-41-3.

4-23. 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 insert point ⑤ and release point ③.
3. For the phase matching at the insert point ①, see the Phase-Matching point ② as shown below.
4. Finally fix the inserts ① and ④.

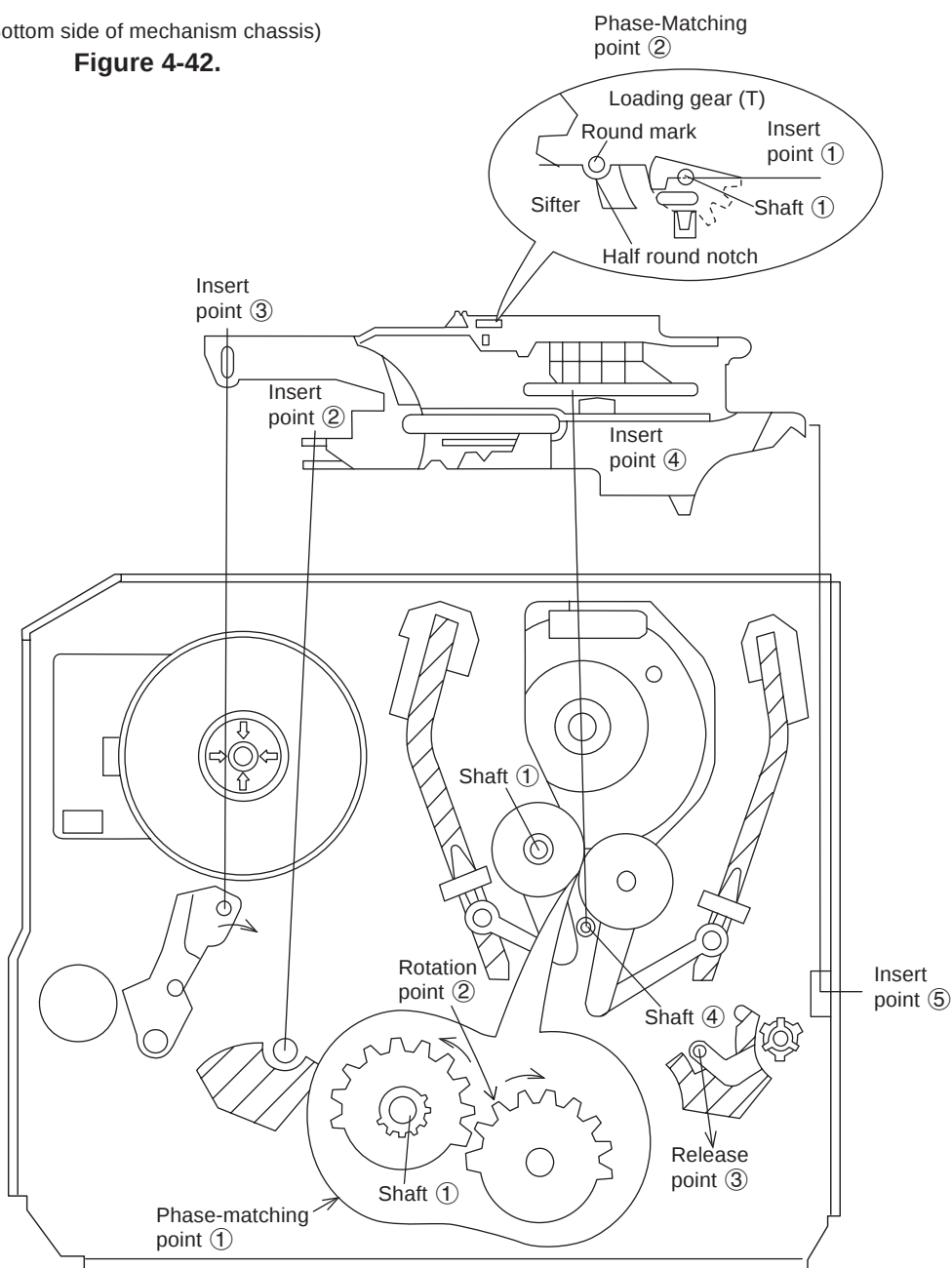


Figure 4-43.

4-24. 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.

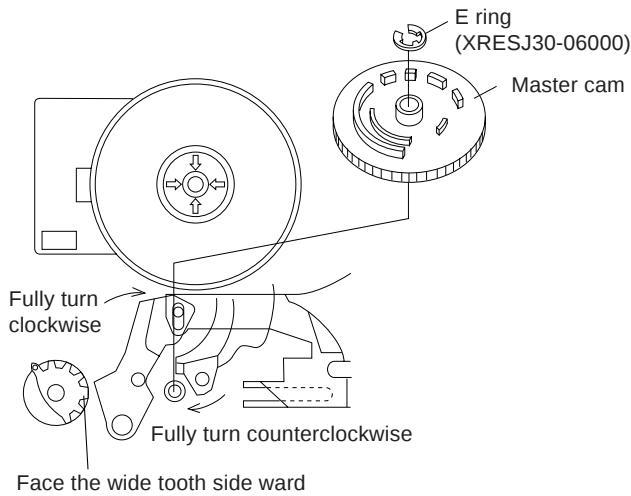
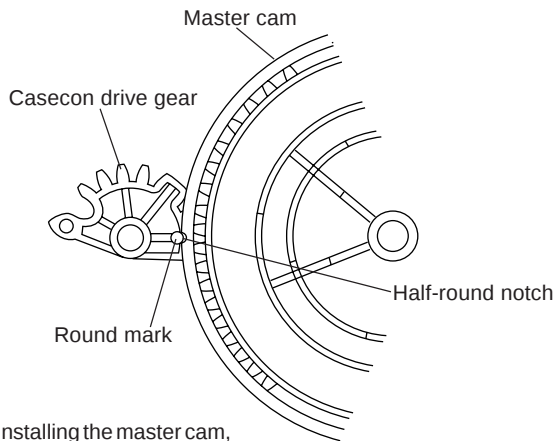


Figure 4-44-1.

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.



When installing the master cam, align the casecon drive gear round mark with the half-round notch of master cam.

Figure 4-44-2.

4-25. REPLACEMENT OF LOADING MOTOR

• Removal

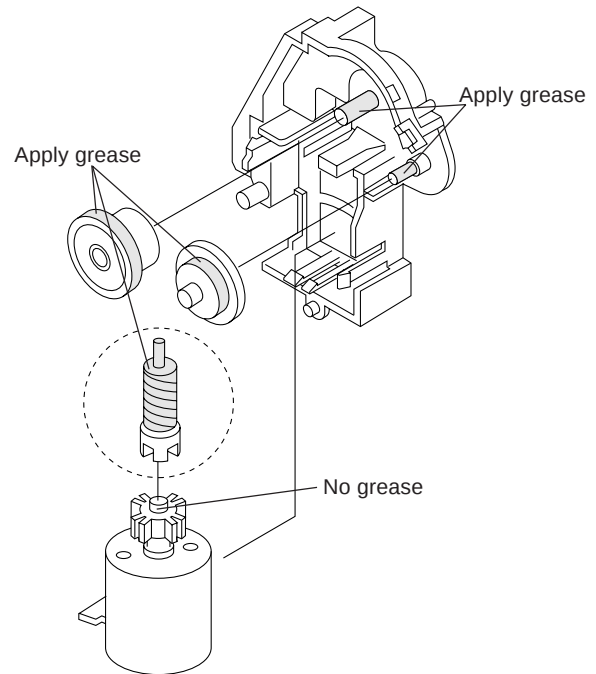


Figure 4-45.

• Replacement

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

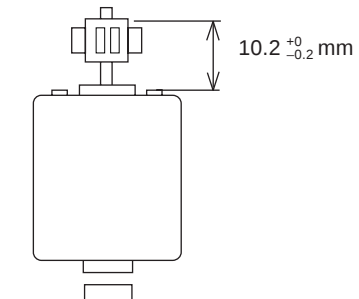


Figure 4-46.

The loading motor pressing-in must be less than 14.7 N (1,500 gf).

Adjust the distance between motor and pulley to 10.2 ± 0.2 mm).

4-26. ASSEMBLY OF CASSETTE HOUSING

1. Drive Gear and R Drive angle ass'y

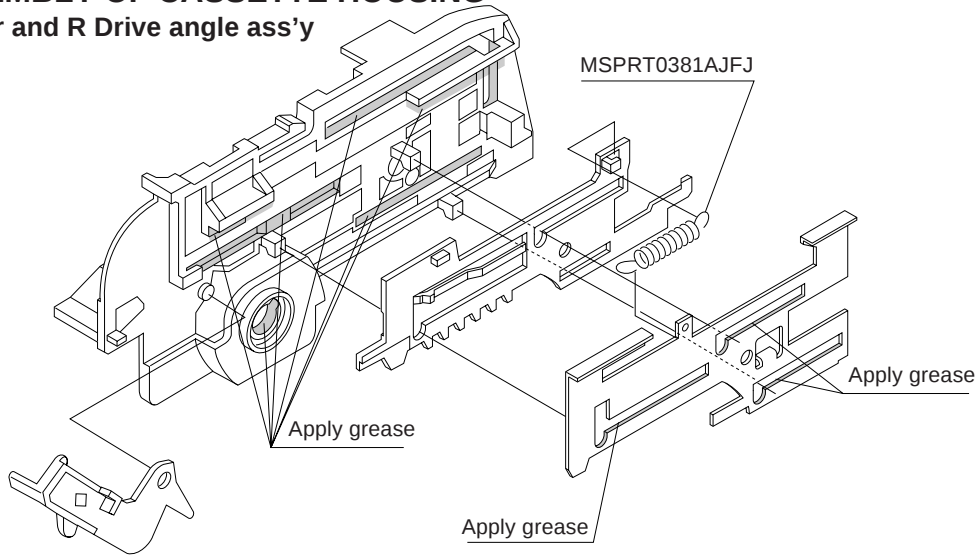


Figure 4-47.

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

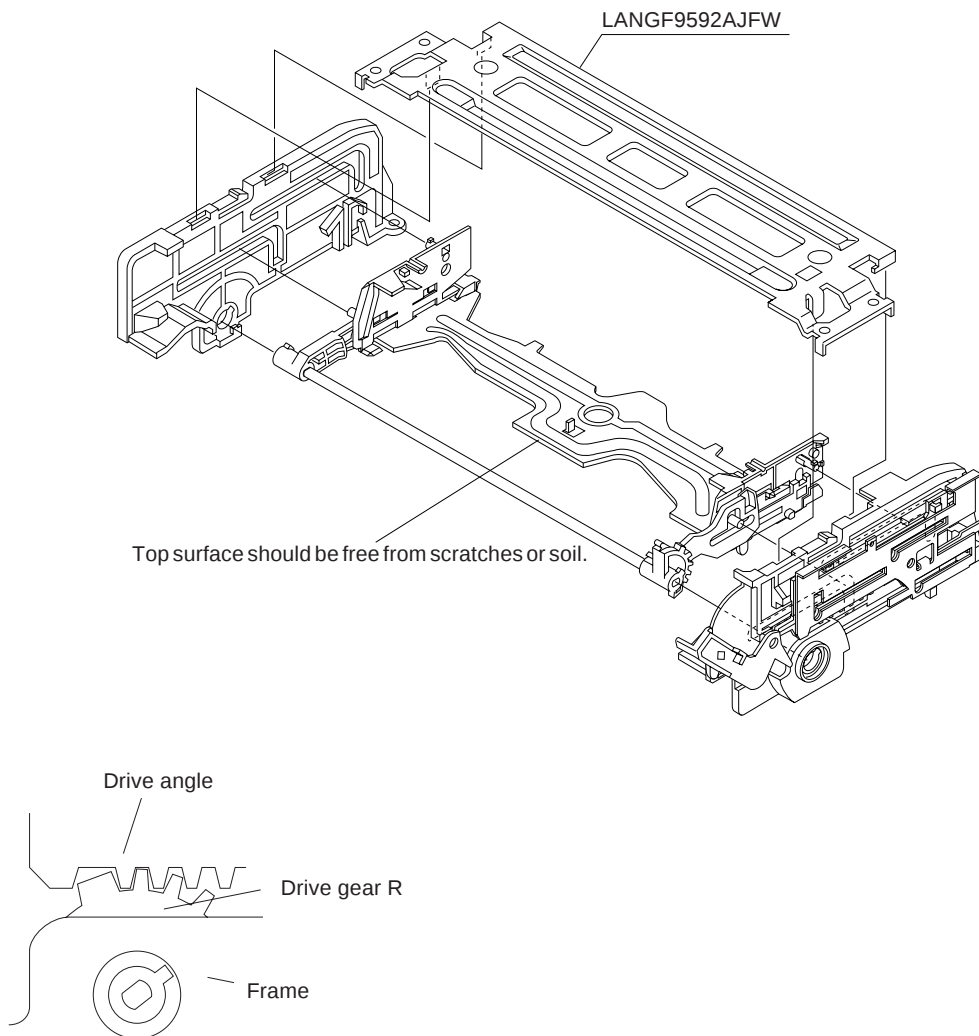


Figure 4-48.

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:

- Color TV monitor
- Audio signal generator
- Blank video cassette tape
- Screwdriver for adjustment
- RF signal generator
- Dual-trace oscilloscope
- AC milli-voltmeter
- Alignment tape (VROEFZHS)
- Color bar generator

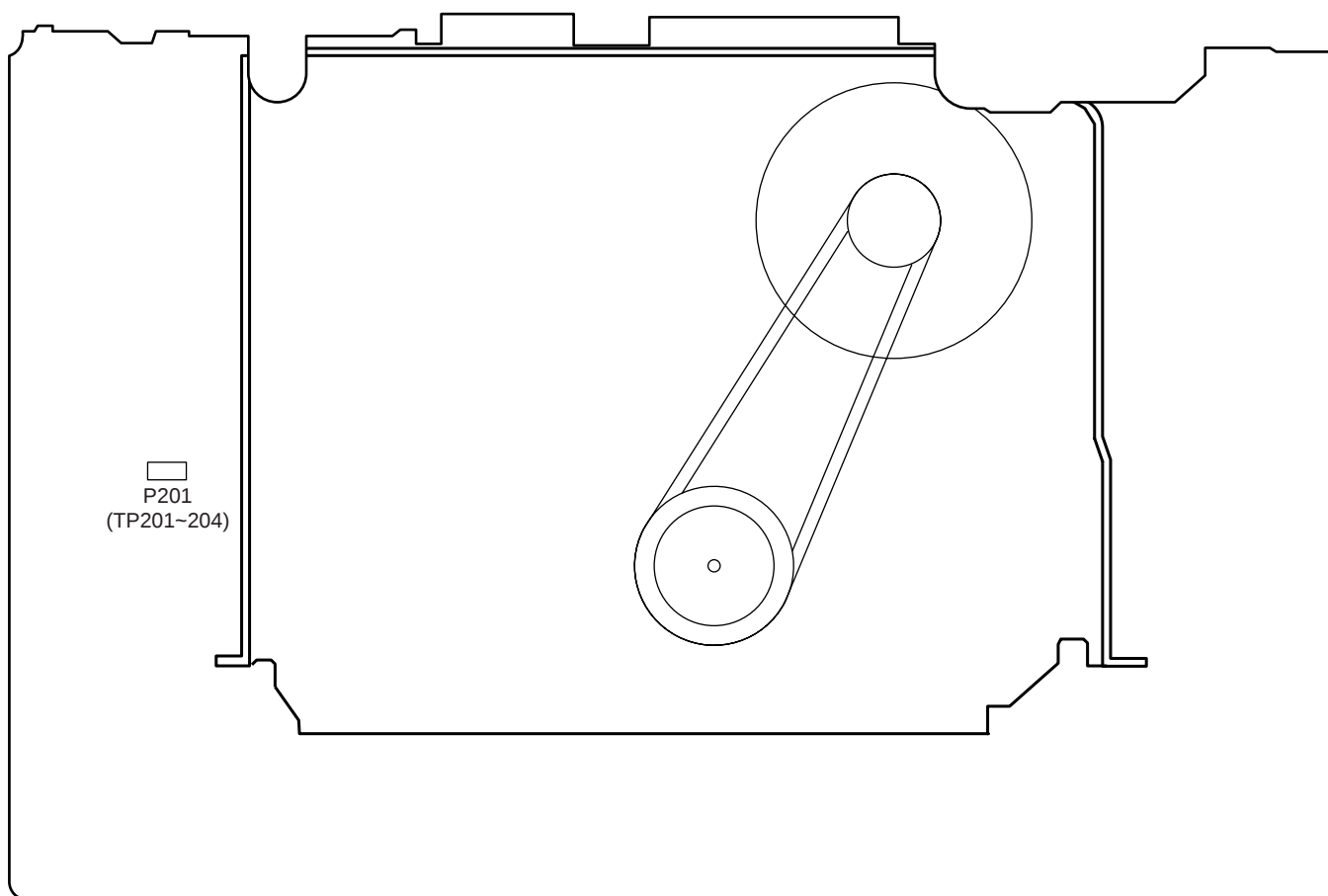


Figure 5-1.

SERVO CIRCUIT ADJUSTMENT

5-1. ADJUSTMENT OF HEAD SWITCHING POINT

Measuring instrument	Dual-trace oscilloscope
Mode	Playback
Cassette	Alignment tape (VROEFZHS)
Test point	VIDEO OUT jack to CH2 TP202 (Sig.)~TP203 (GND) to CH1
Control	Call up the test mode (short circuit between TP801 and TP802 on the operation PWB). Use the tracking/channel select (▲) and (▼) buttons of the set.
Specification	$6.0 \pm 0.5\text{H}$ (lines)

1. Connect a dual-trace oscilloscope to the VIDEO OUT jack and TP202 (Sig.) and TP203 (GND). (Trigger the oscilloscope with the head switching pulse on TP202.)
2. Playback the alignment tape, and then short circuit between TP801 and TP802 on the operation PWB to call the test mode.
3. Press the PLAY button, and the play icon starts flashing in the display and the automatic adjustment function gets started.
4. Wait until the play icon in the display stays on to indicate that the adjustment is complete.
5. Watch the oscilloscope screen and make sure that the leading edge of the head switching pulse is 6.0H (lines) ahead of the vertical sync as shown in Figure 5-2.
6. If the setting is out of this range, readjust the data using the channel select (▲) and (▼) buttons of the set or the remote controller.
7. Finally press the STOP button to quit the test mode.

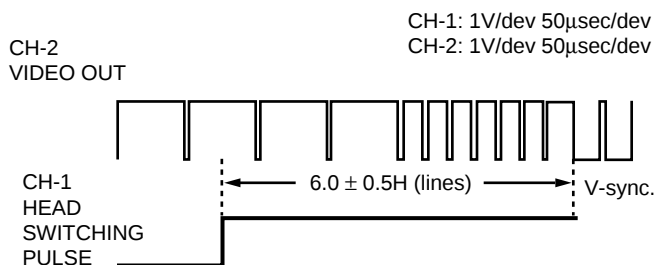


Figure 5-2.

5-2. ADJUSTMENT OF FV (False Vertical Sync) OF STILL PICTURE

Measuring instrument	Color 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 is minimized.
4. Play and freeze the self-recorded tape in EP mode and make sure vertical jitter of the picture is not noticeable.

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.

5-3. CHECKING OF OFF TRACK

Measuring instrument	Color TV monitor
Mode	Playback
Cassette	Self-recorded tape (EP mode) (See Note below)
Control	Tracking control buttons(+) or (–)
Specification	No Poor picture and Hi-Fi sound

1. Play a cassette which was recorded by the unit in EP mode.
2. Short circuit between TP801 and TP802 on the operation PWB to center tracking.
3. Press the tracking buttons (+) or (–) 20 times each to bring the tracking off center. Make sure that:
 - 1) There is nothing unusual on the playback screen.
 - 2) There is nothing unusual in the Hi-Fi sound (for the Hi-Fi models only).
4. Press the STOP button to quit test mode.

Note:

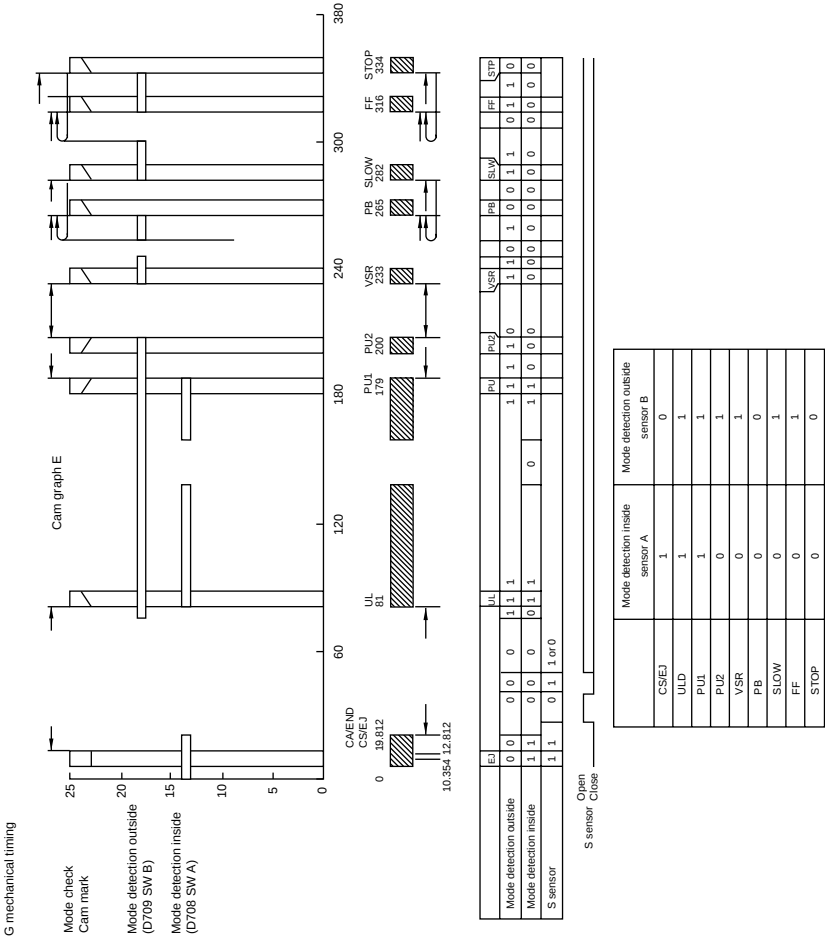
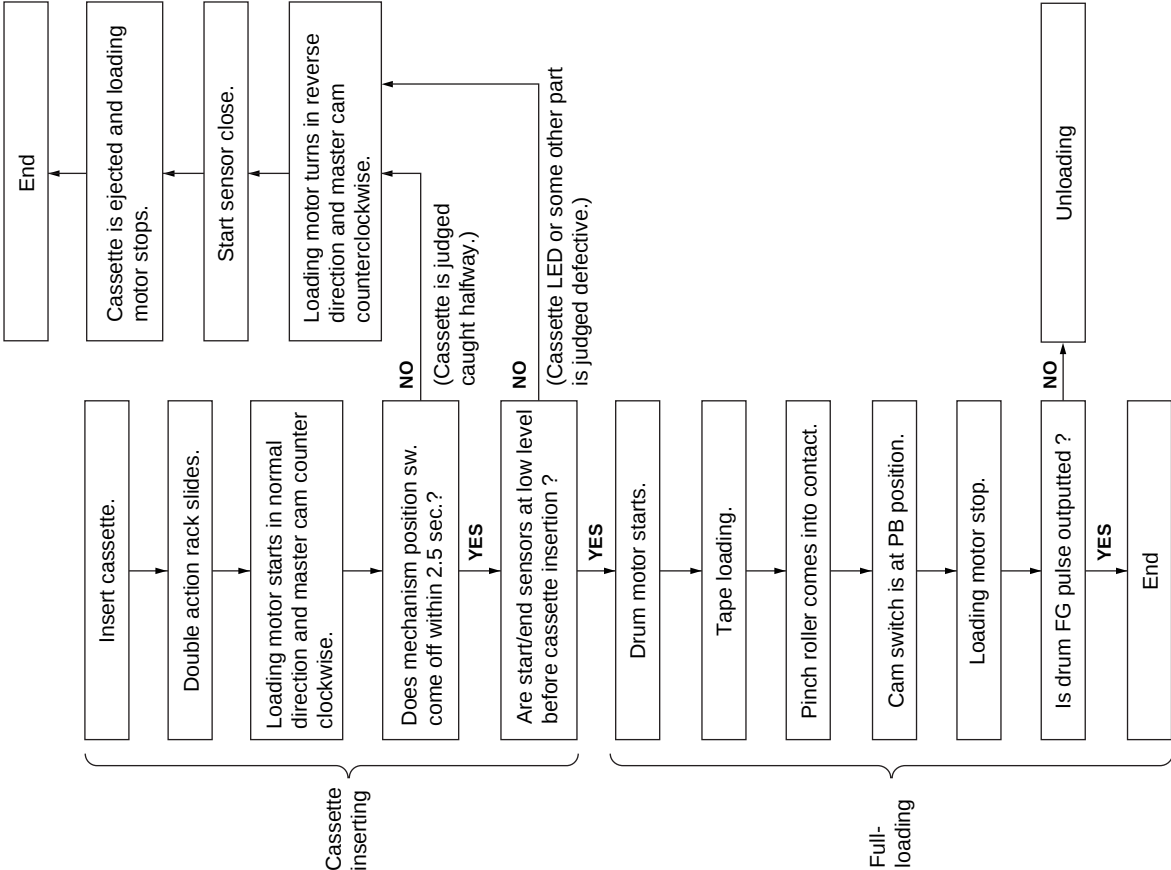
Self-recorded tape is a cassette whose program was recorded by the unit being adjusted.

6. MECHANISM OPERATION FLOWCHART AND TROUBLESHOOTING GUIDE

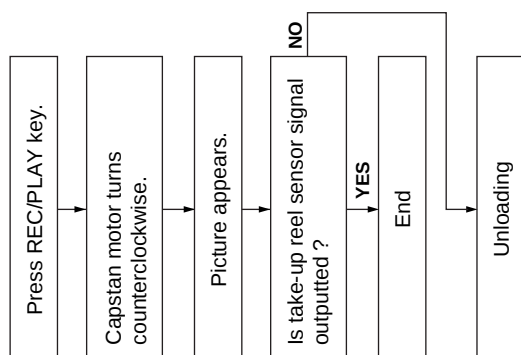
MECHANISM OPERATION FLOWCHART

* This flowchart describes the outline of the mechanism's operation, but does not give its details.

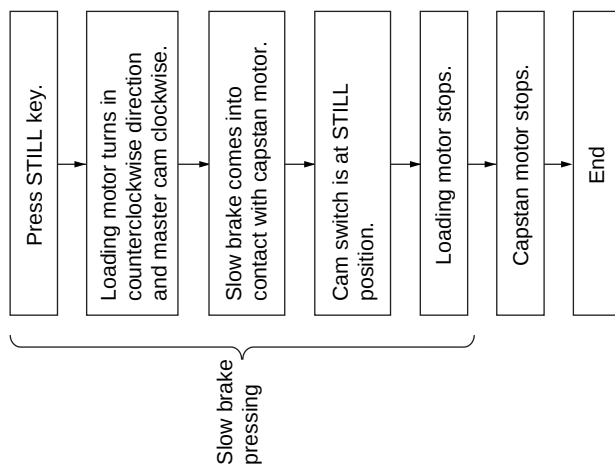
CASSETTE INSERTION → STOP



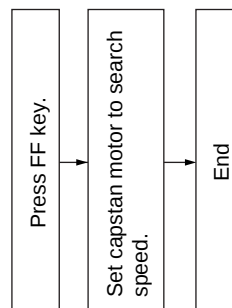
STOP → REC/PLAY



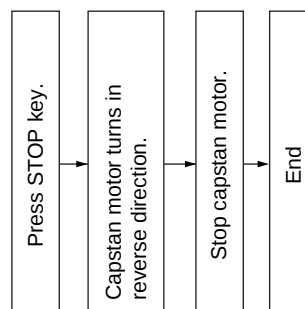
PLAY → STILL



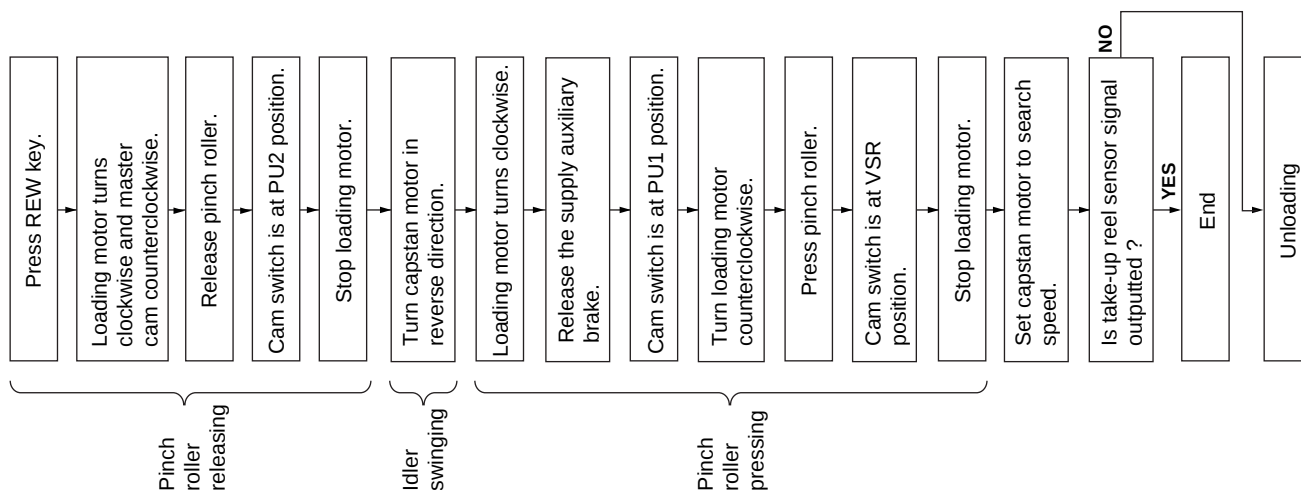
PLAY → VSF



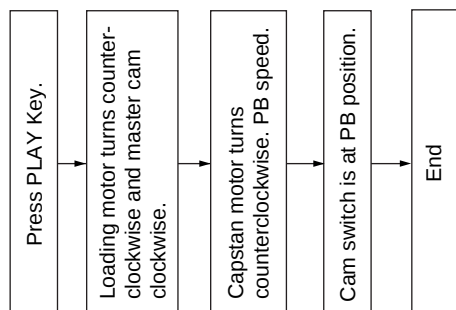
REC/PLAY → STOP



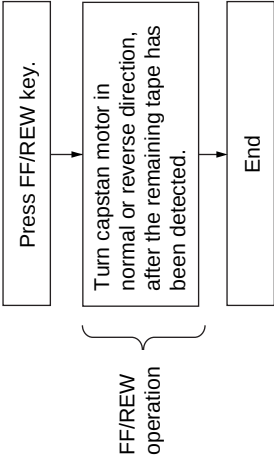
PLAY → VSR



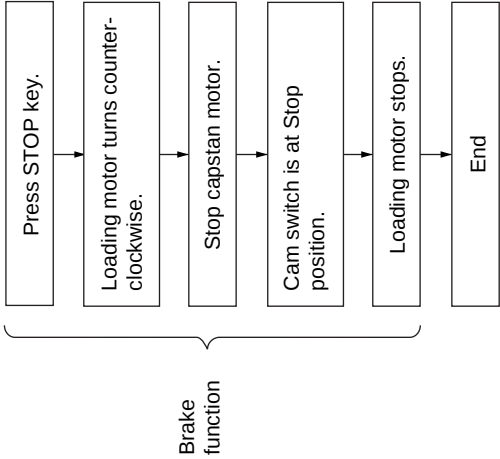
VSR → PLAY



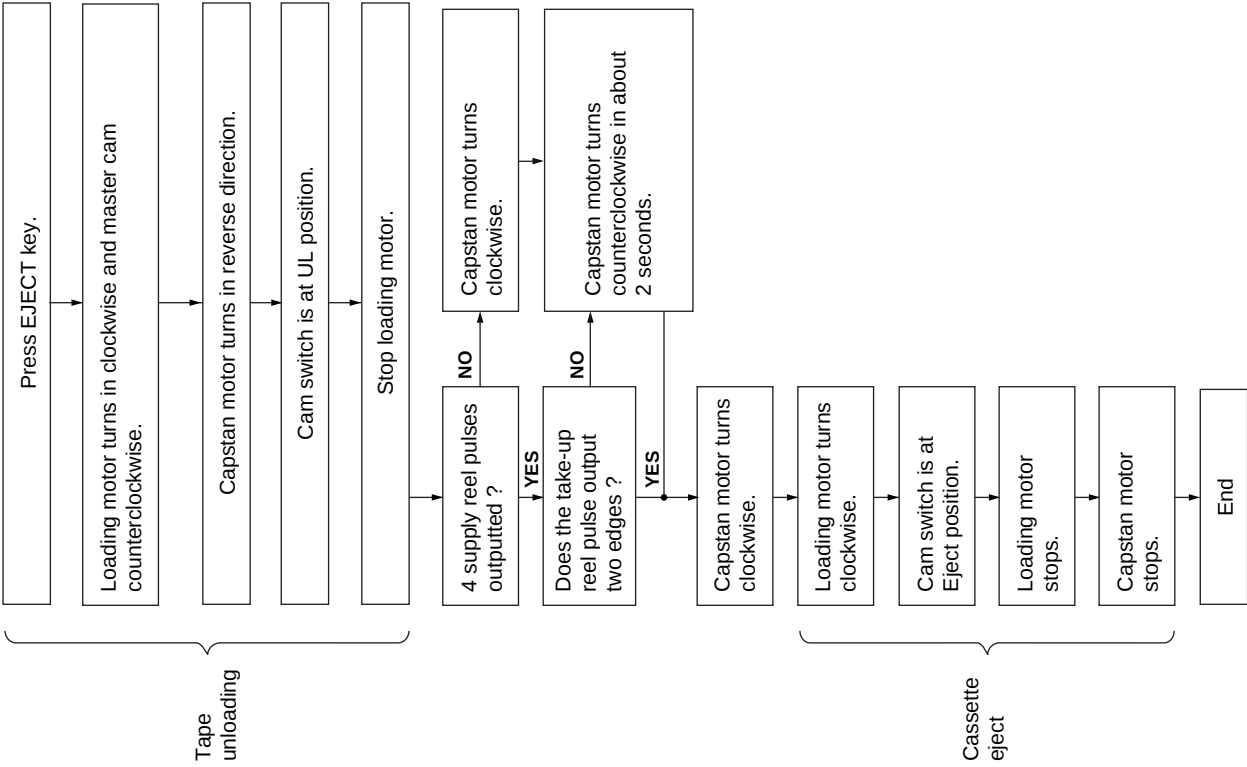
STOP → FF/REW



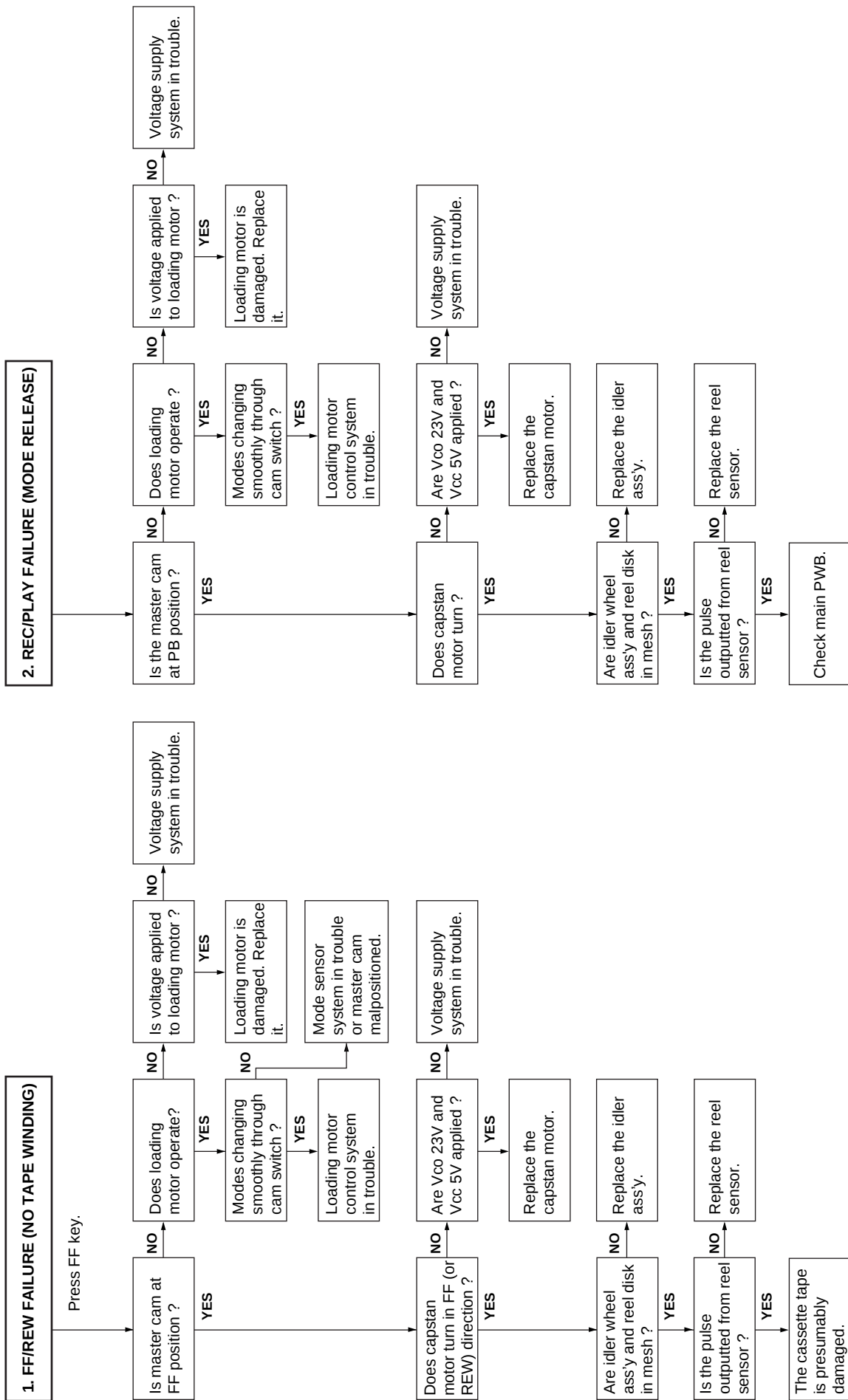
FF/REW → STOP

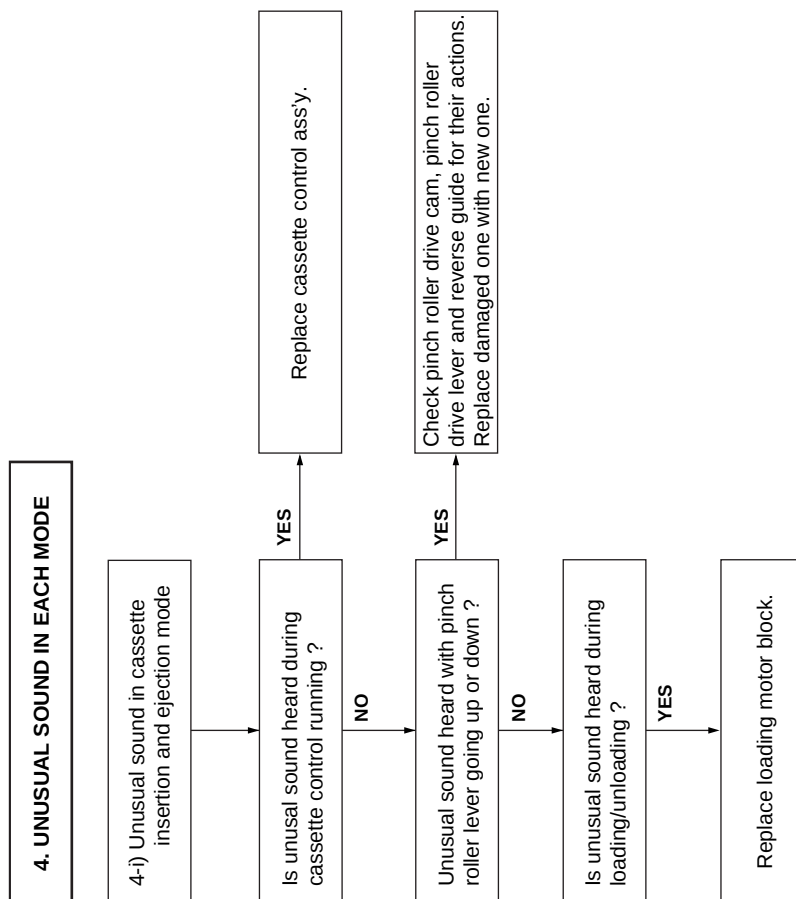
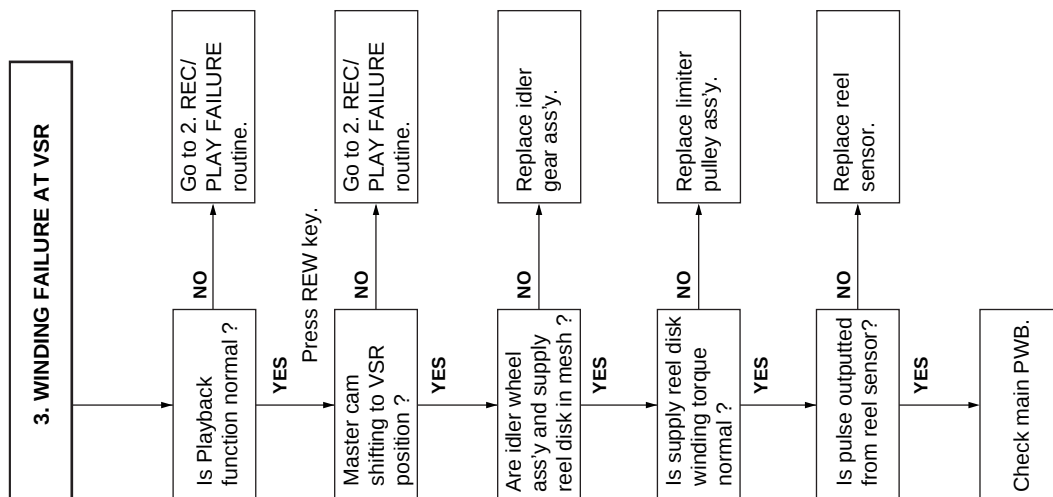


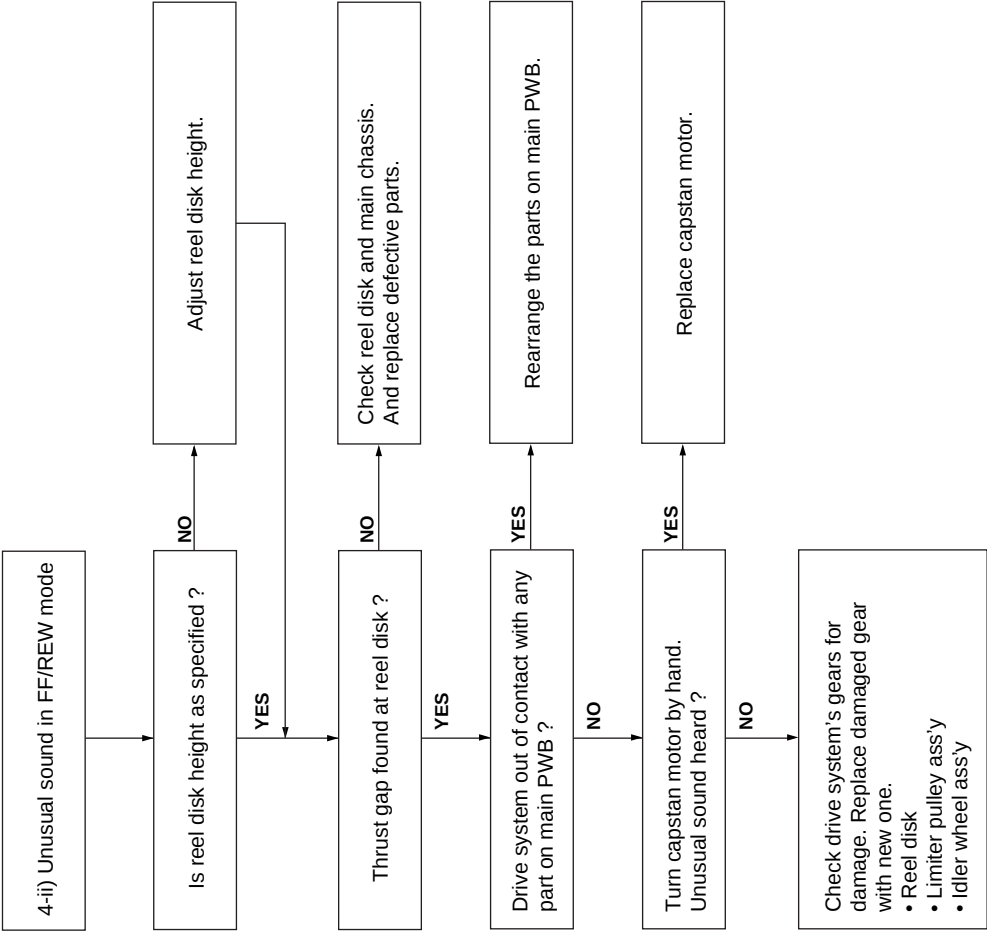
STOP → CASSETTE EJECT



MECHANISM TROUBLESHOOTING

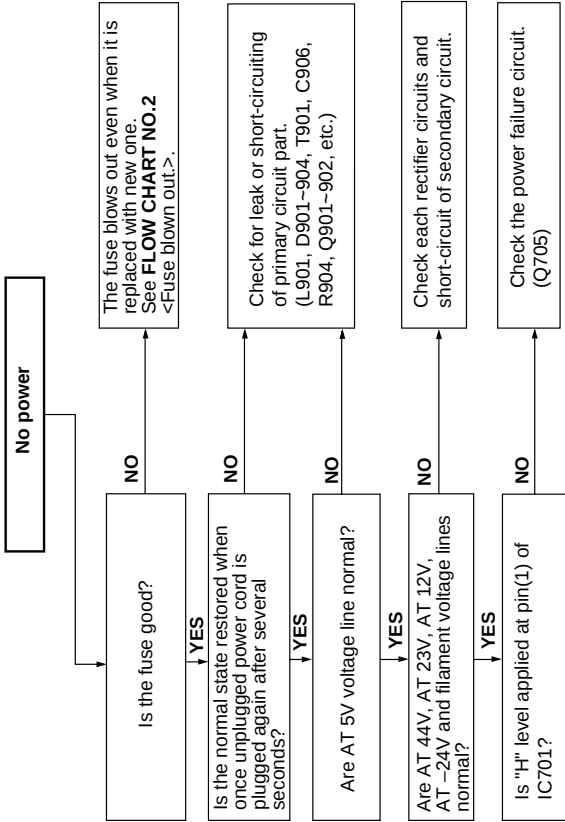




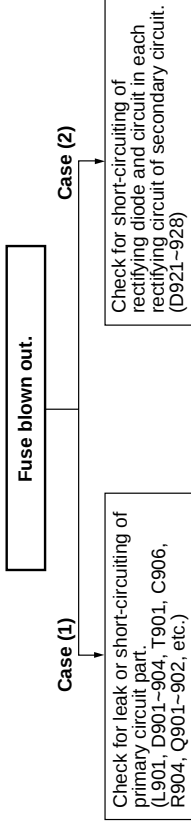


7. TROUBLESHOOTING

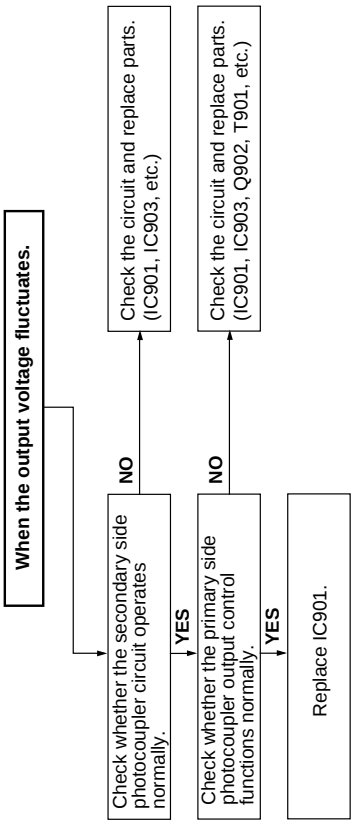
FLOW CHART NO.1



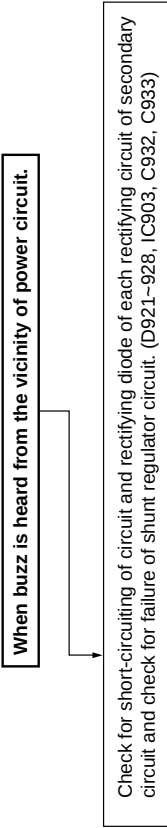
FLOW CHART NO.2



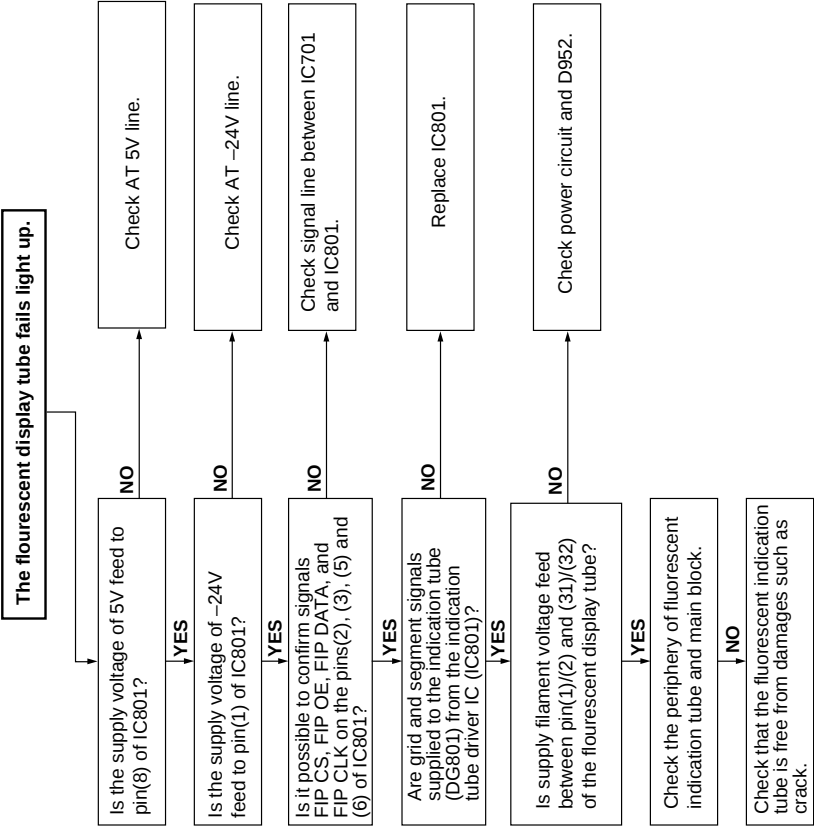
FLOW CHART NO.3



FLOW CHART NO.4

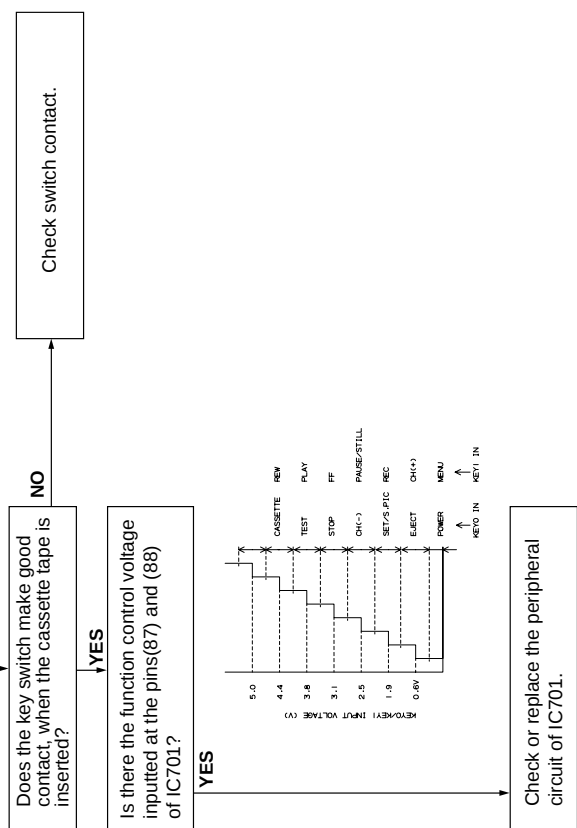


FLOW CHART NO.5



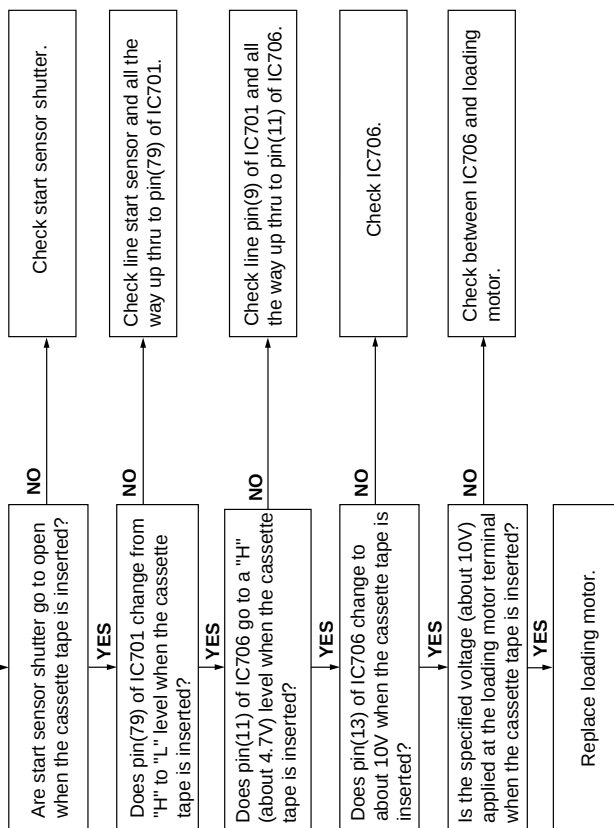
FLOW CHART NO.6

Key-in input is not received.



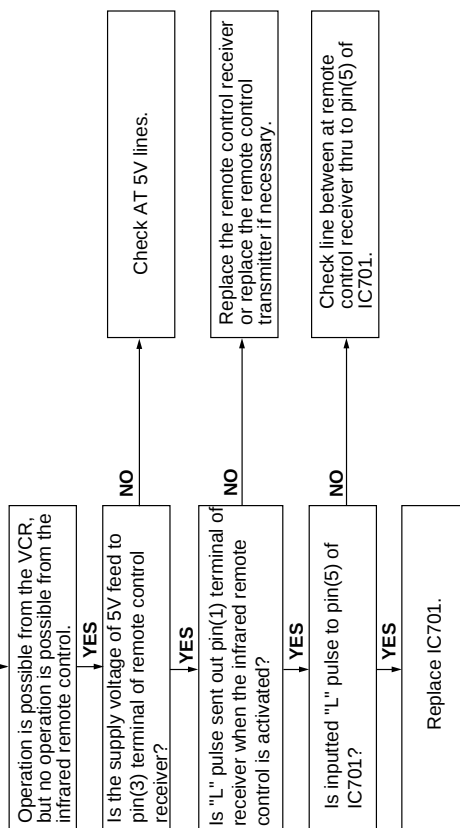
FLOW CHART NO.8

A cassette tape is not take in.



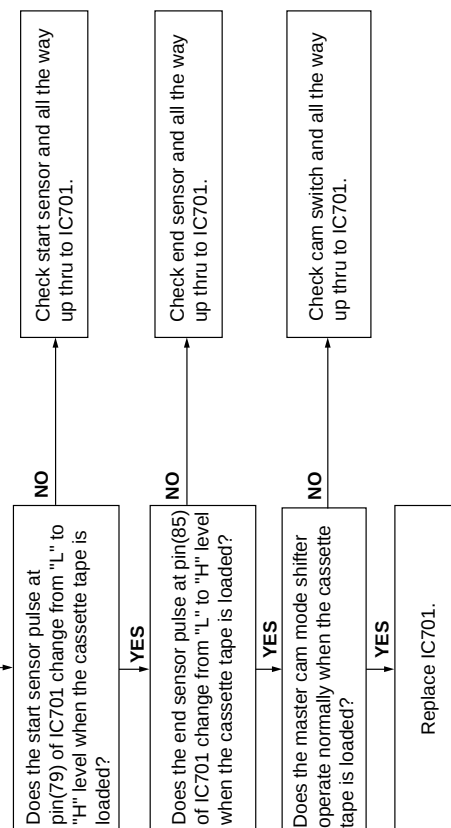
FLOW CHART NO.7

No operation is possible from the infrared remote control.



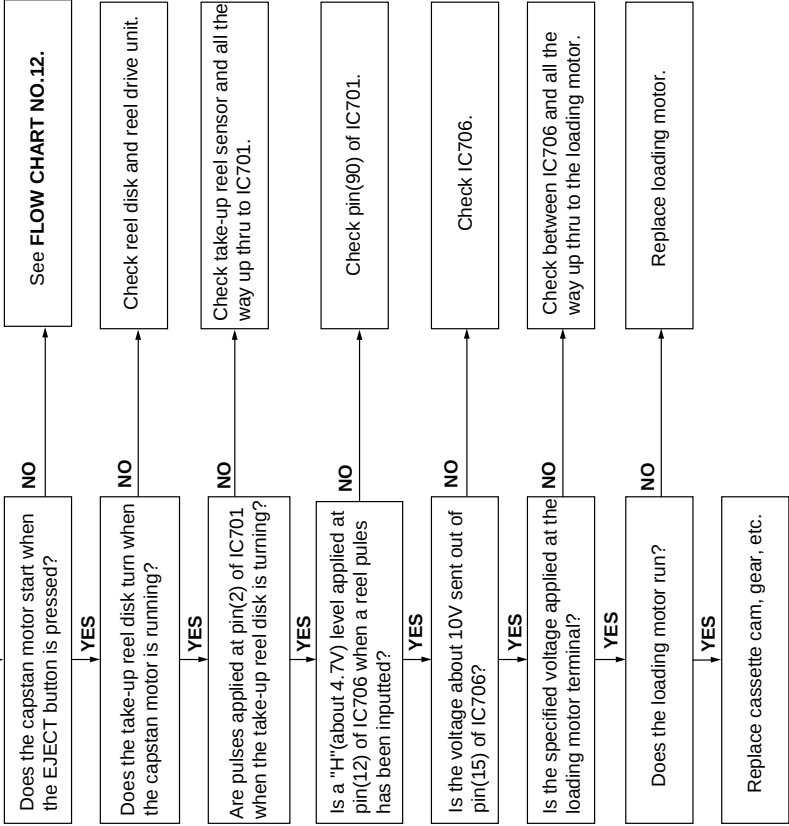
FLOW CHART NO.9

A cassette tape is taken in, but ejected at once.



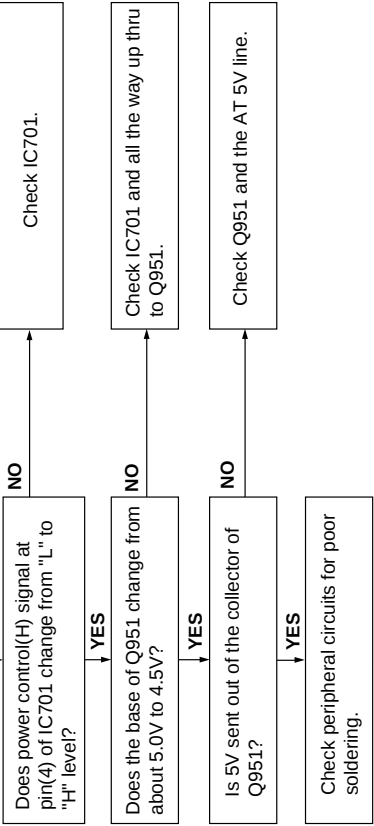
FLOW CHART NO.10

The cassette tape fails to eject.



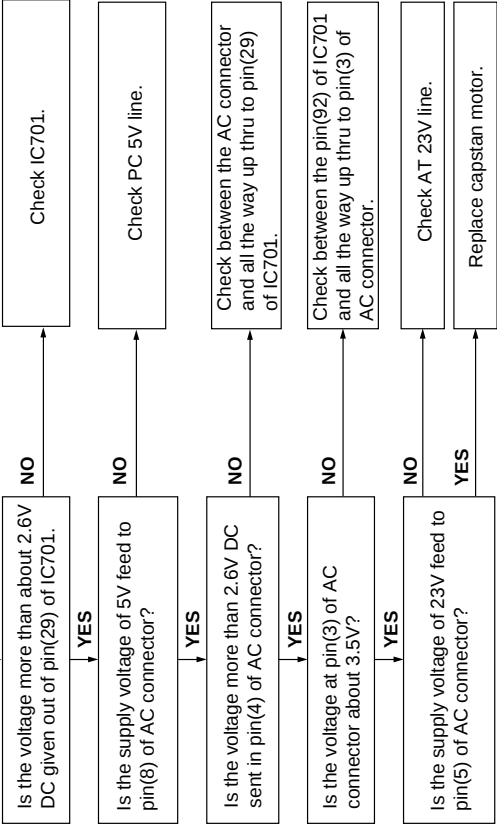
FLOW CHART NO.11

No power is turned on.

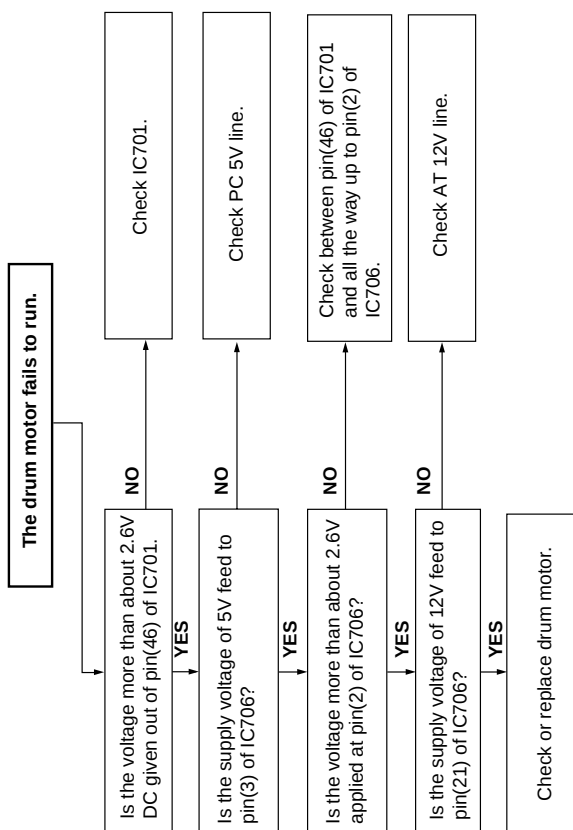


FLOW CHART NO.12

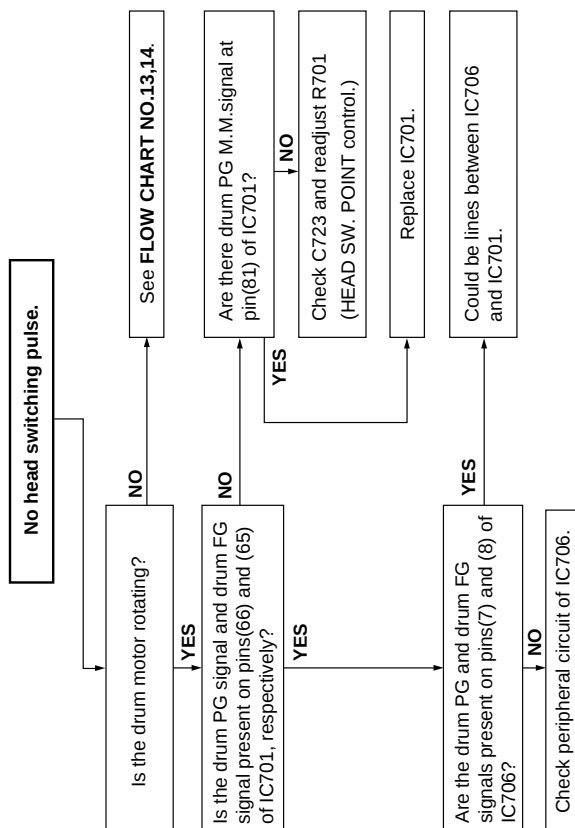
The capstan motor fails to run.



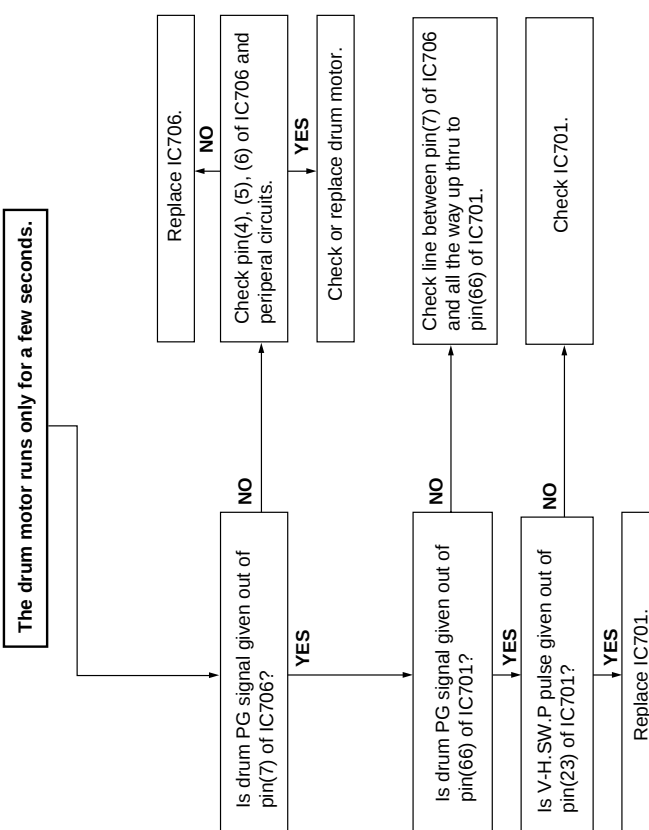
FLOW CHART NO.13



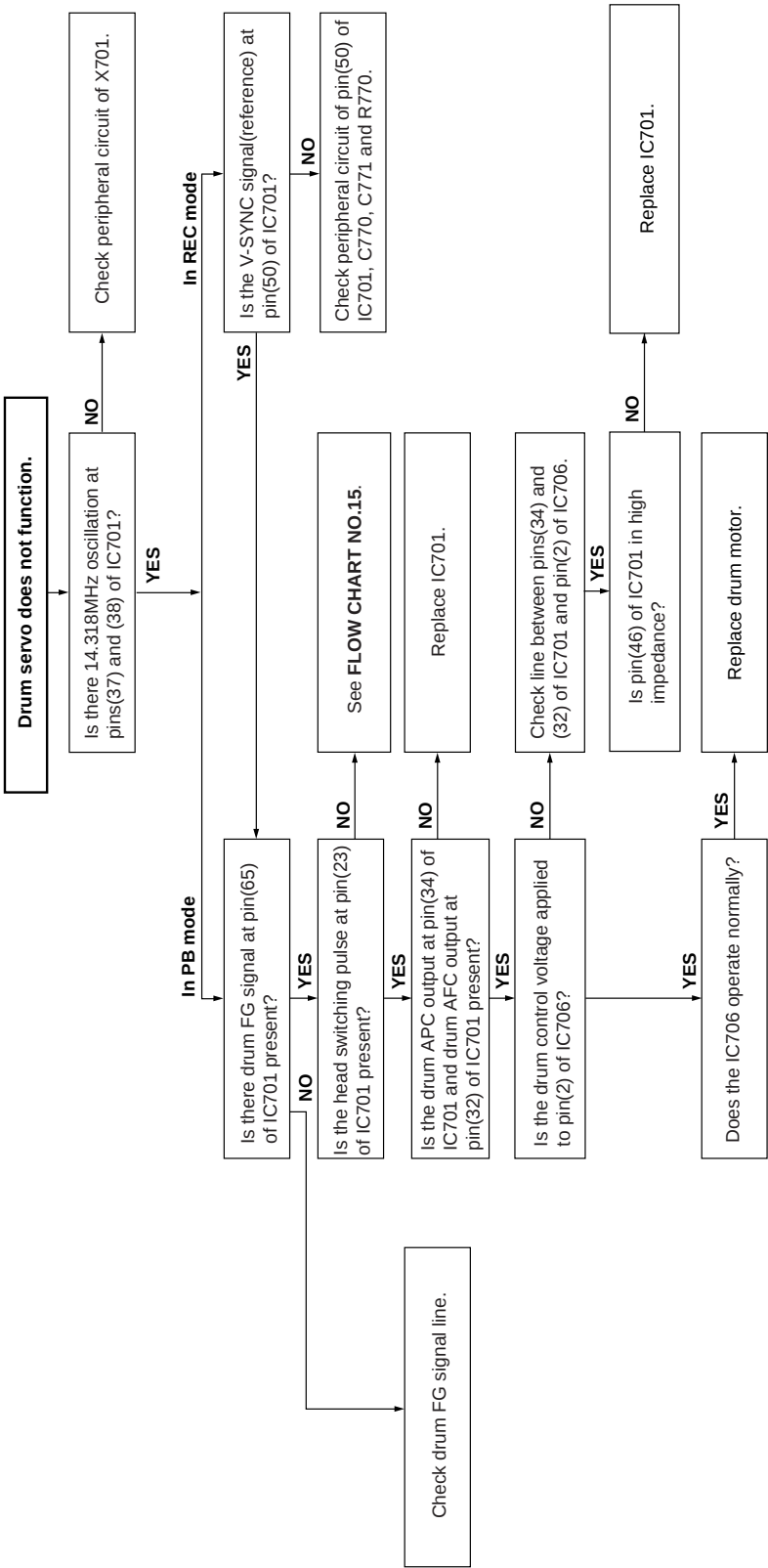
FLOW CHART NO.15



FLOW CHART NO.14

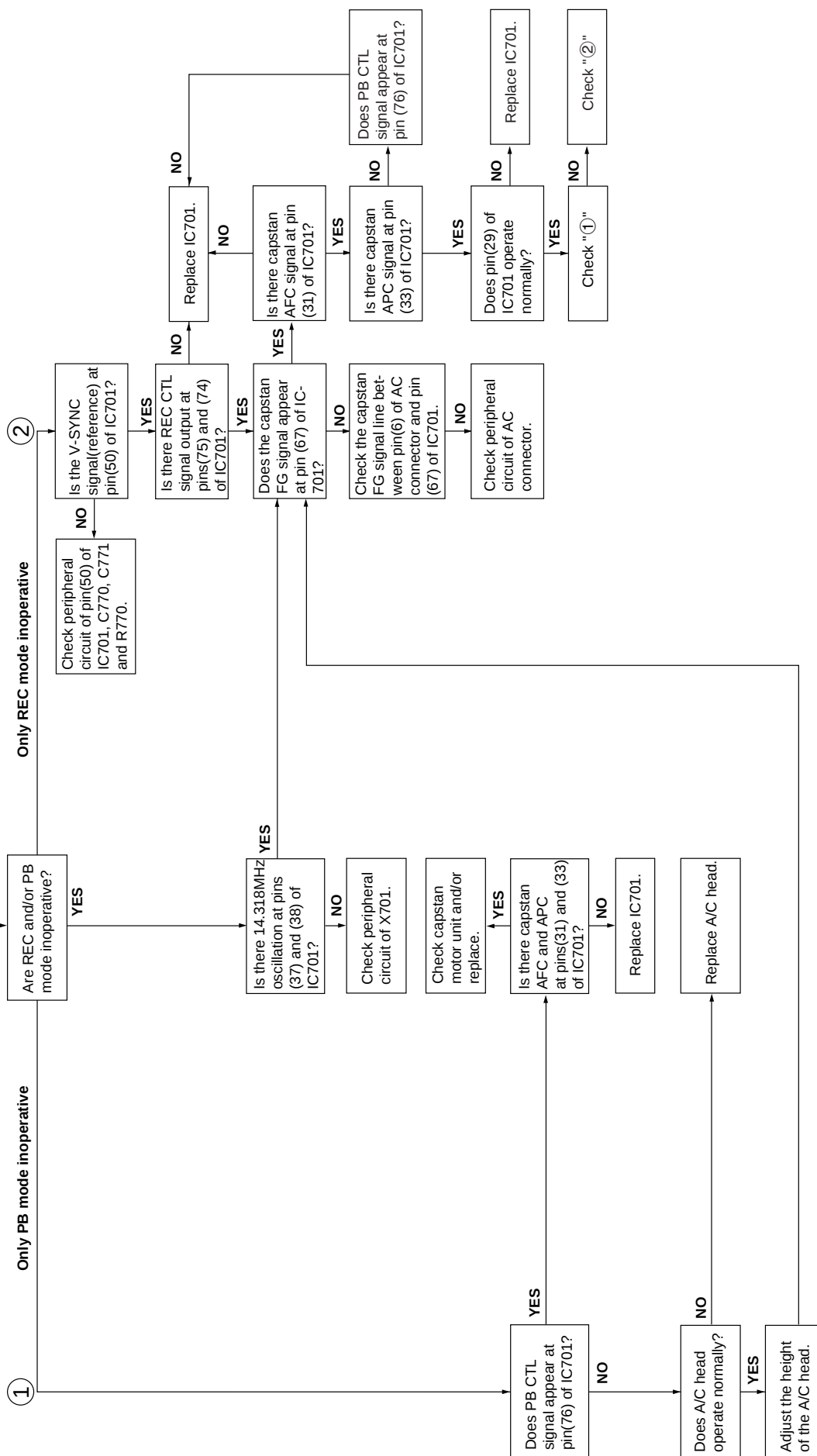


FLOW CHART NO.16

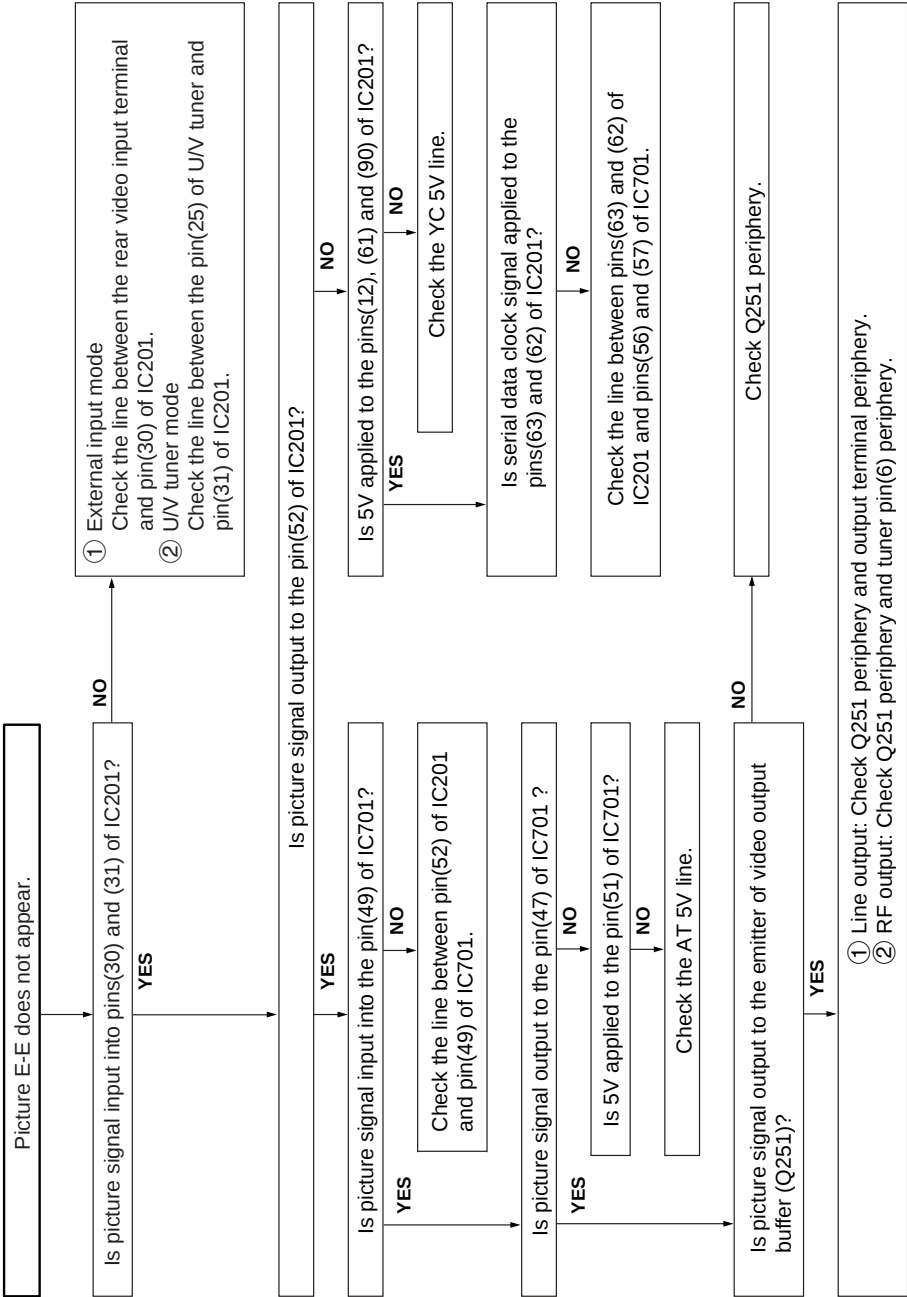


FLOW CHART NO.17

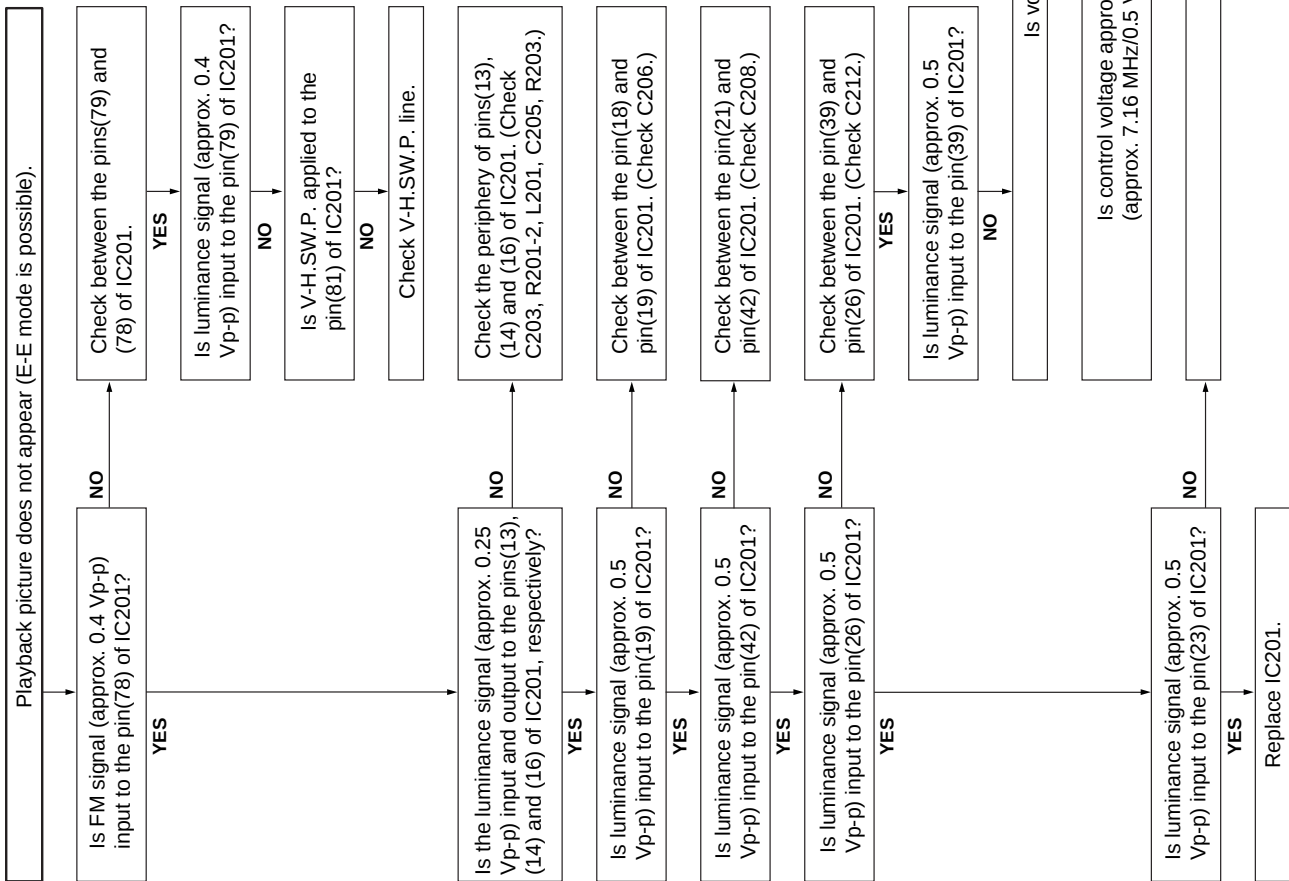
Capstan servo does not function.



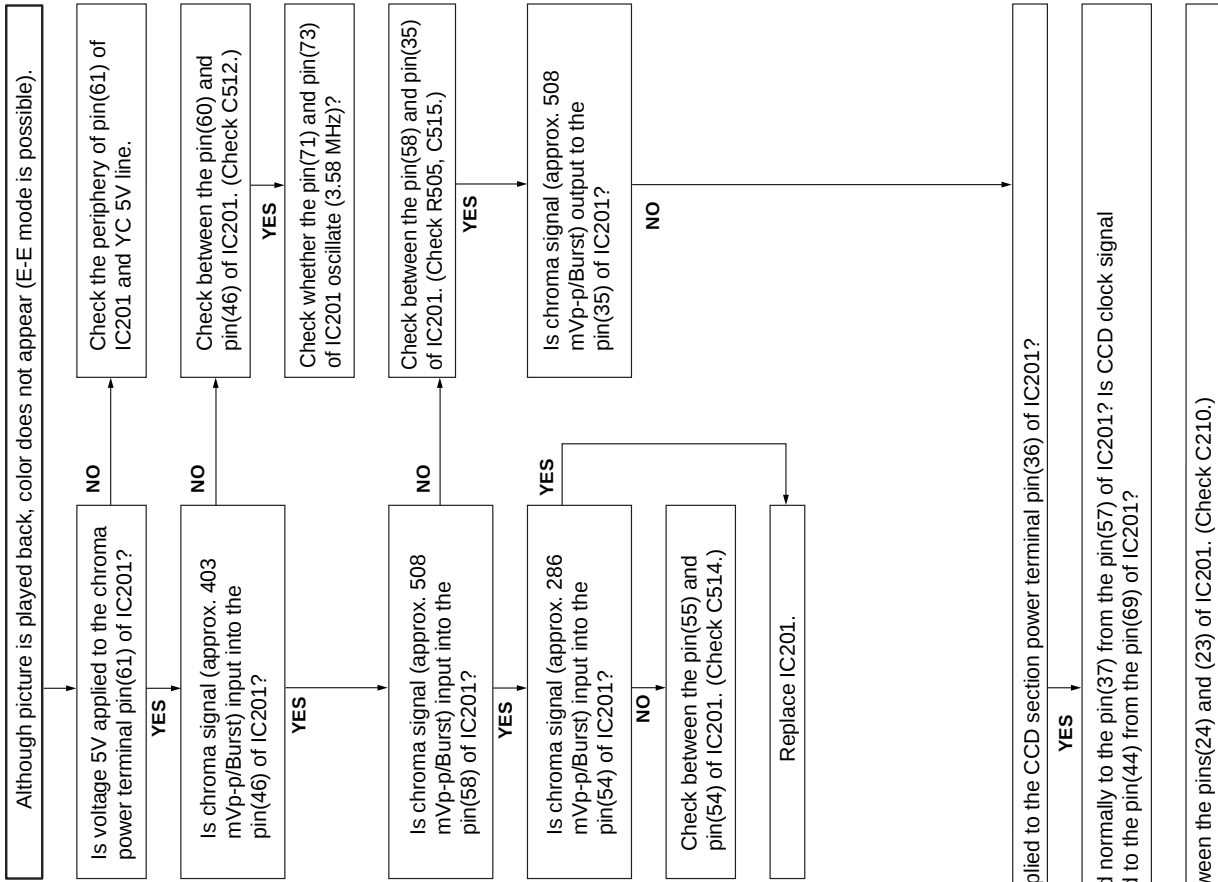
FLOW CHART NO.18



FLOW CHART NO.21

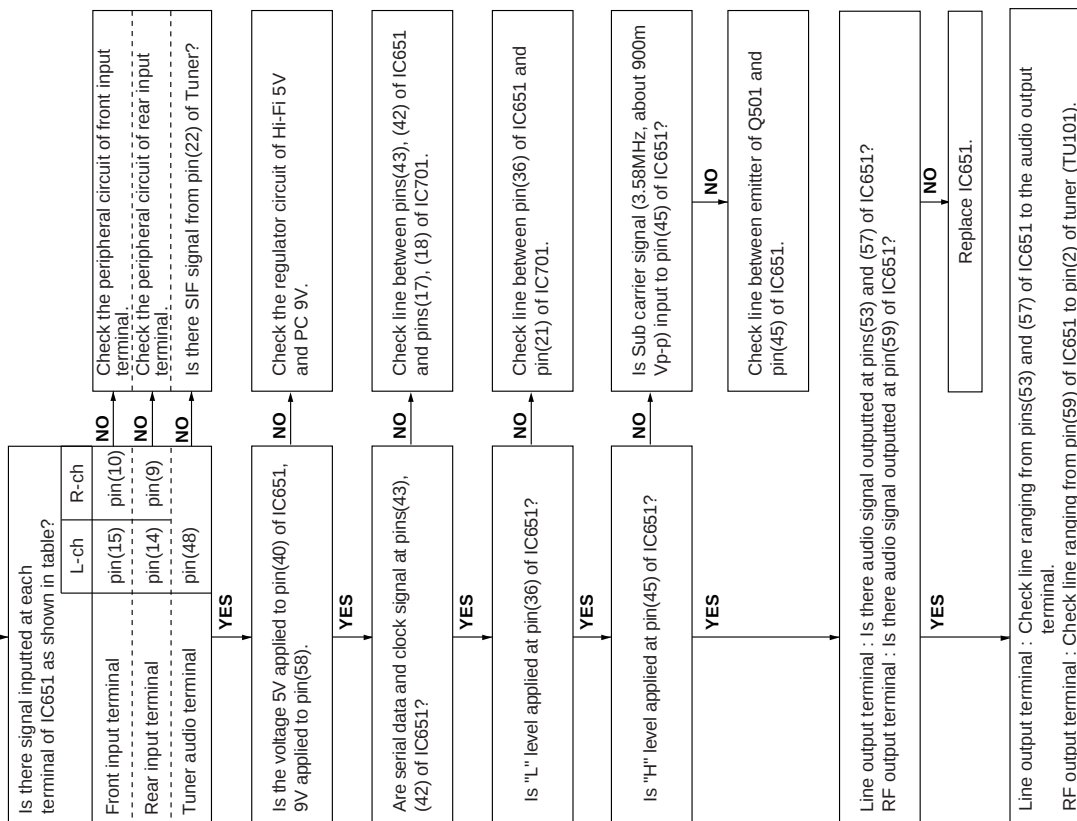


FLOW CHART NO.22

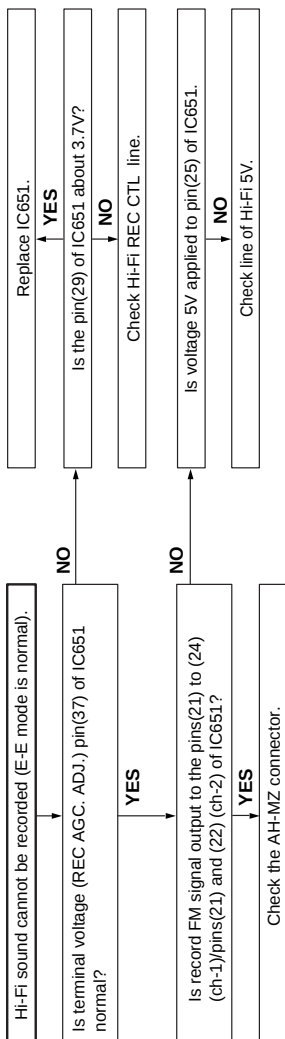


FLOW CHART NO.23

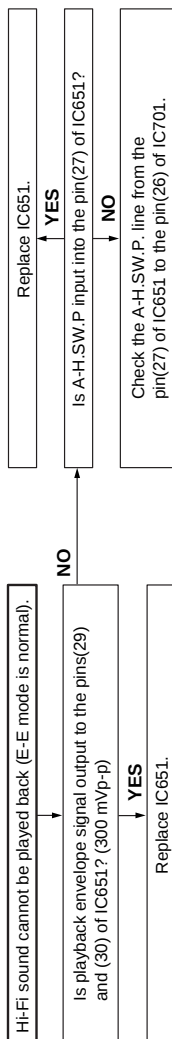
No Hi-Fi E-E sound heard.



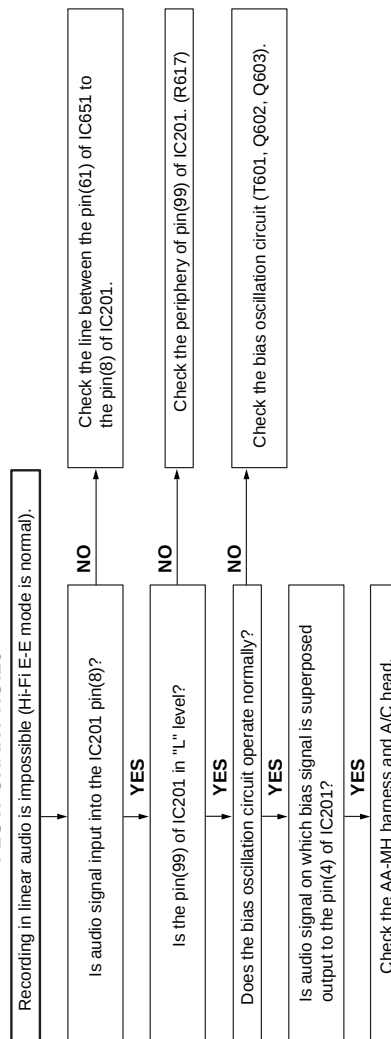
FLOW CHART NO.24



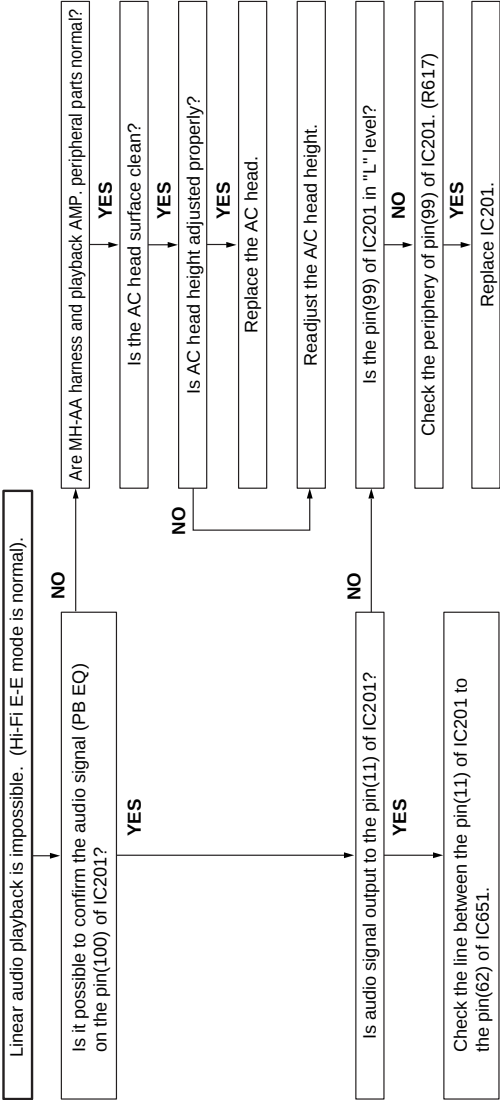
FLOW CHART NO.25



FLOW CHART NO.26



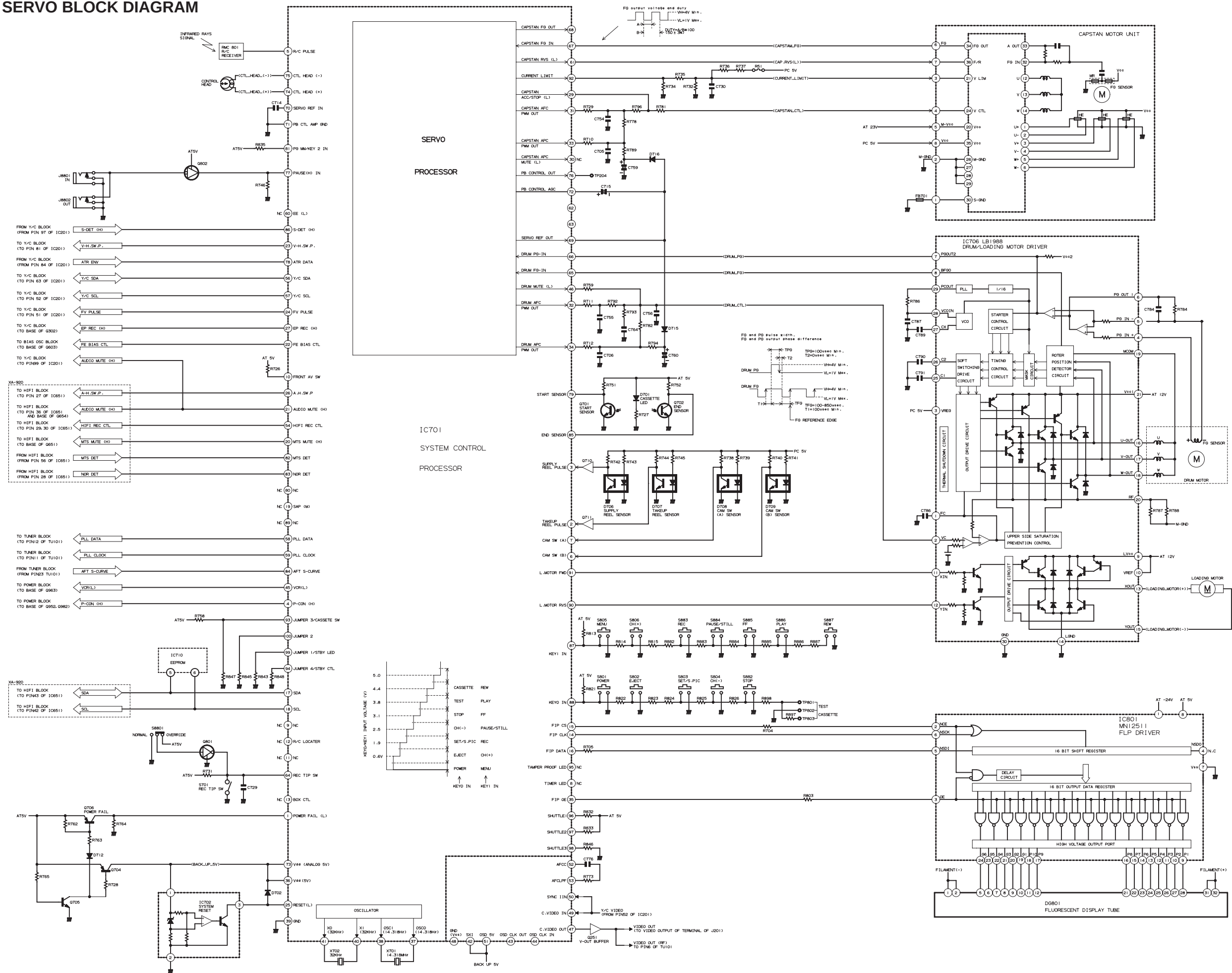
FLOW CHART NO.27



49

8. BLOCK DIAGRAM

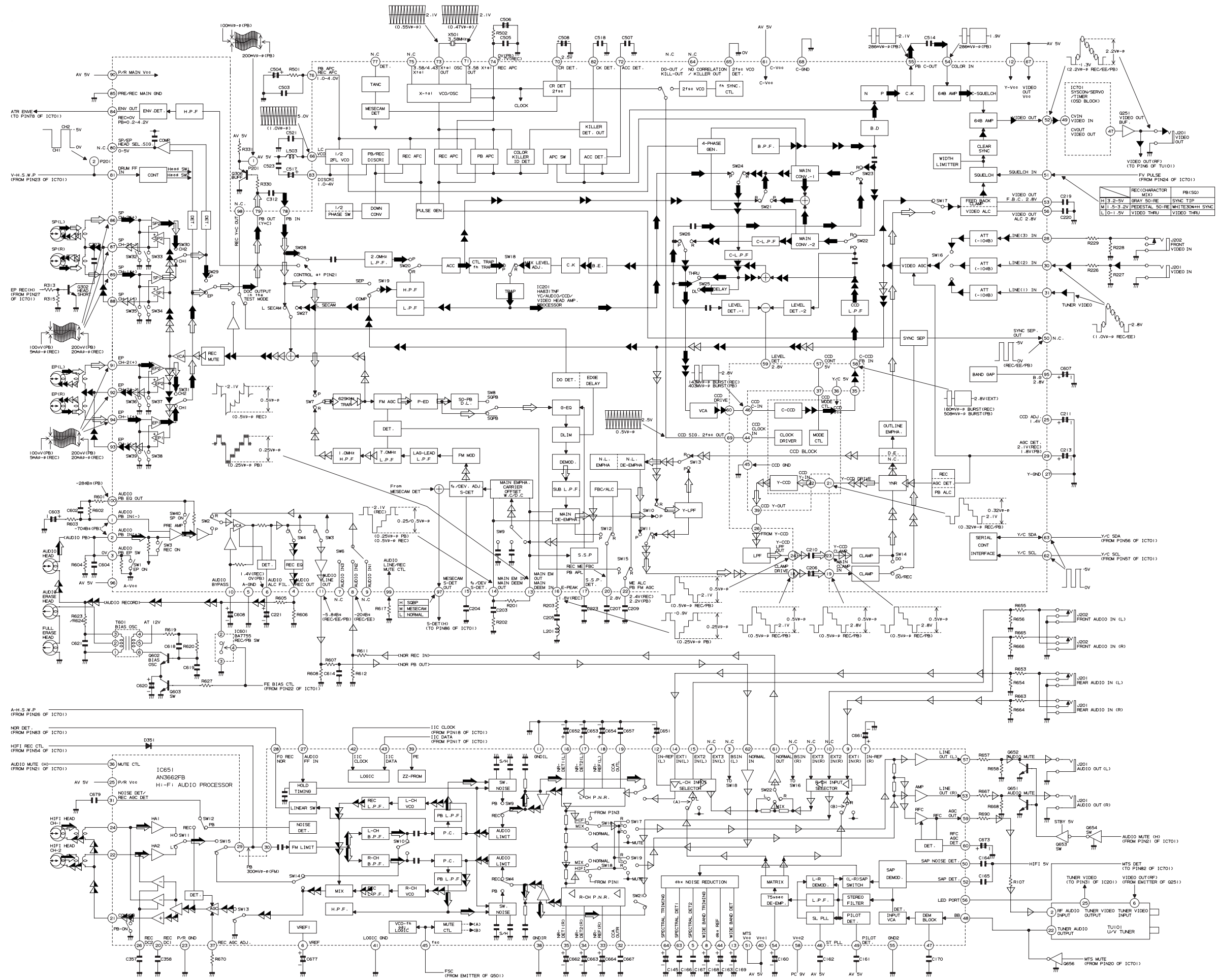
SYSTEM SERVO BLOCK DIAGRAM



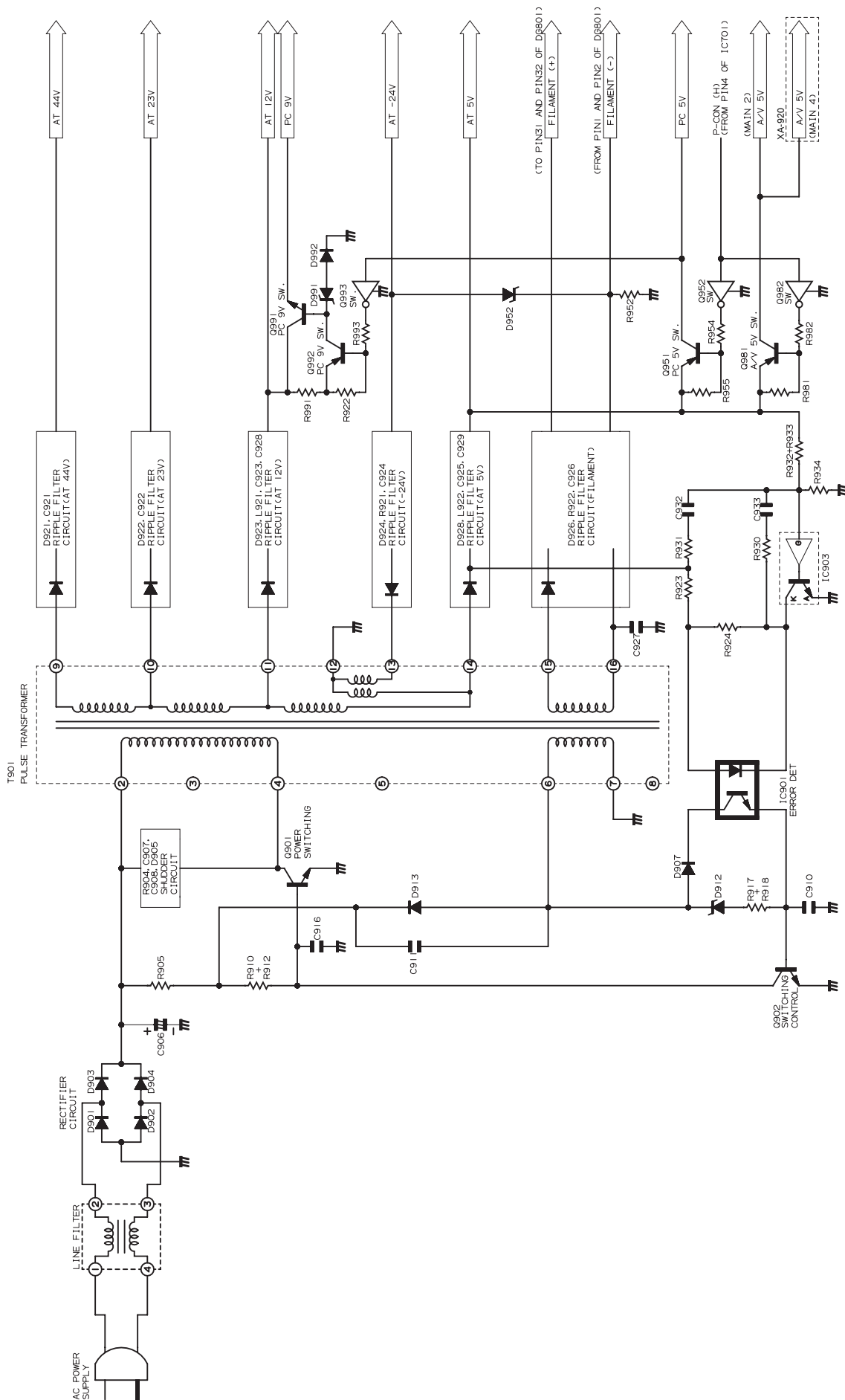
⇒ Playback luminance signal	➡ Playback chroma signal	⇒ Audio playback signal	▶ E-E signal
⇒ Recording luminance signal	➡ Recording chroma signal	⇒ Audio recording signal	▷ E-E signal(Audio)



SIGNAL FLOW BLOCK DIAGRAM(XA-920)



POWER CIRCUIT BLOCK DIAGRAM



SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:

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.

- The indicated voltages in the following diagram are measured with an SSVM, upon receiving color bars (400 Hz sound signal) in either the record mode or the play mode voltage is indicated as follows.

4.0 Record mode (SP)

(4.0) PB mode (SP)

4.0 LP mode

4.0 EP mode

NOTE:

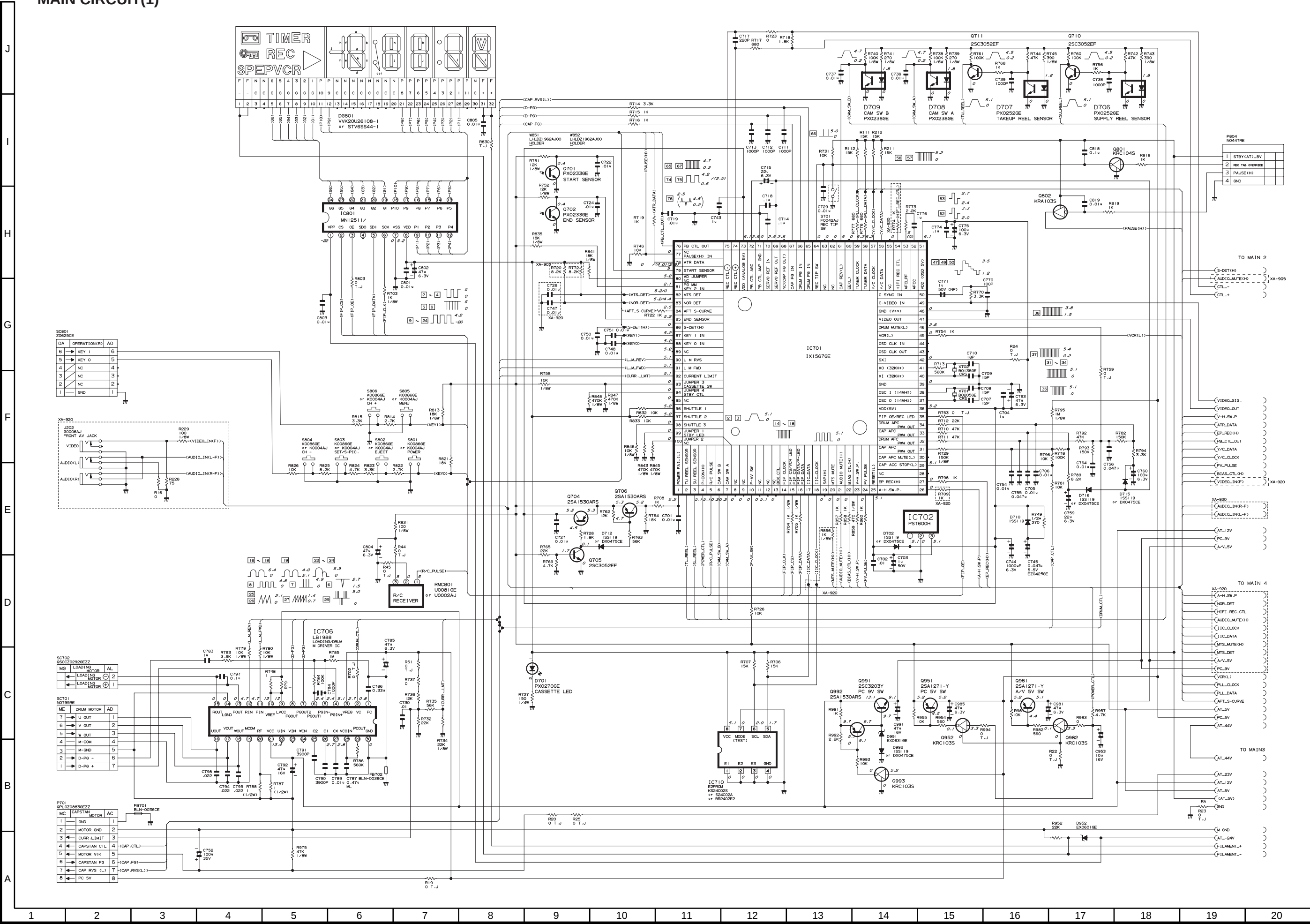
1. The unit of resistance "ohm" is omitted (K: 1000 ohms M: 1 Meg ohm).
2. All resistors are 1/8 watt, unless otherwise noted.
3. All capacitors μF , unless otherwise noted P: $\mu\mu F$.

Voltages and waveform are measured as follows:

- DC voltages are measured with an SSVM placed between points indicated and chassis ground, with the supply voltage of 120V AC and all controls for normal positions.

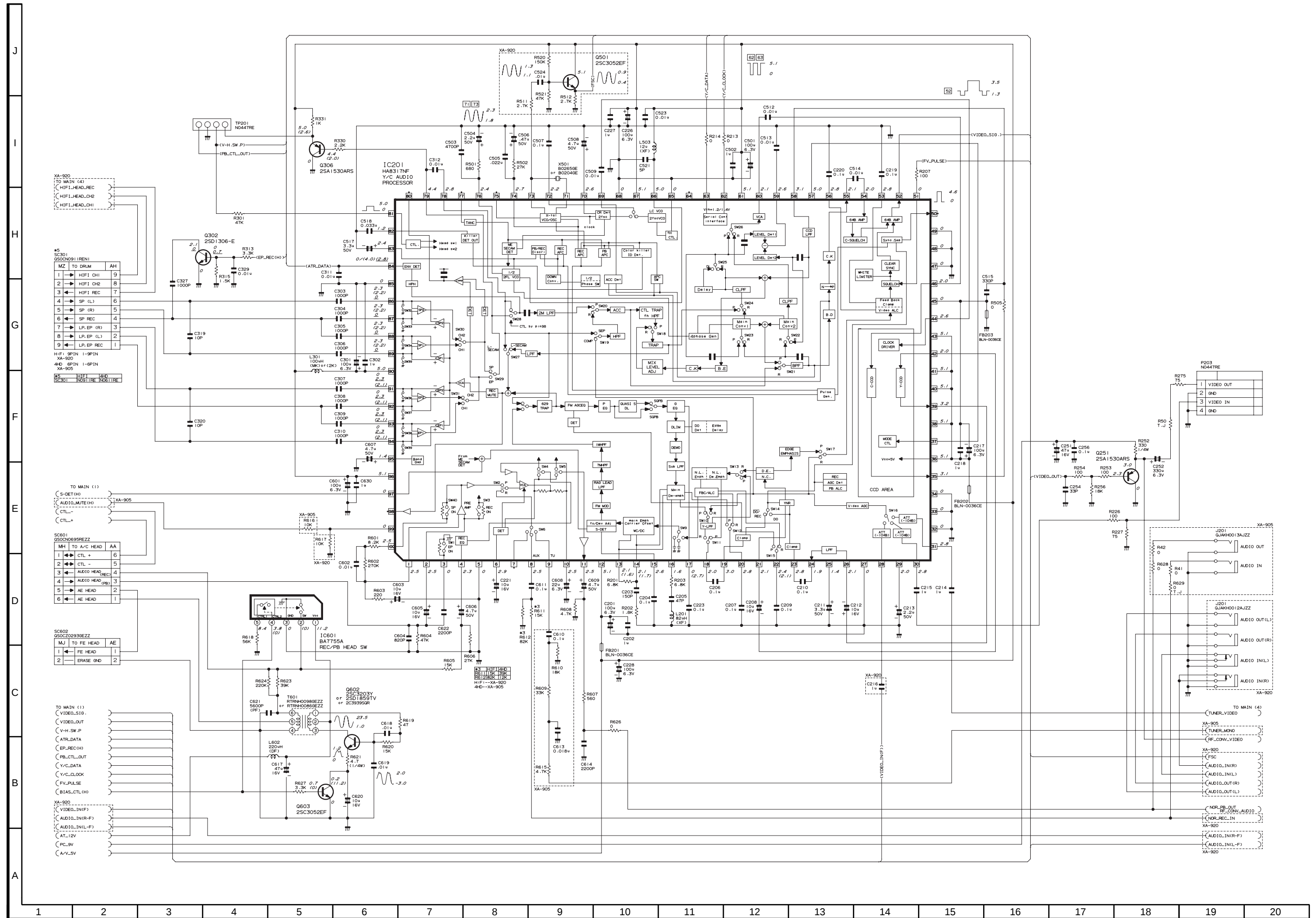
This circuit diagram is a standard one, actual circuits printed may be subject to change for product improvement without prior notice.

9. SCHEMATIC DIAGRAM AND PWB FOIL PATTERN
MAIN CIRCUIT(1)



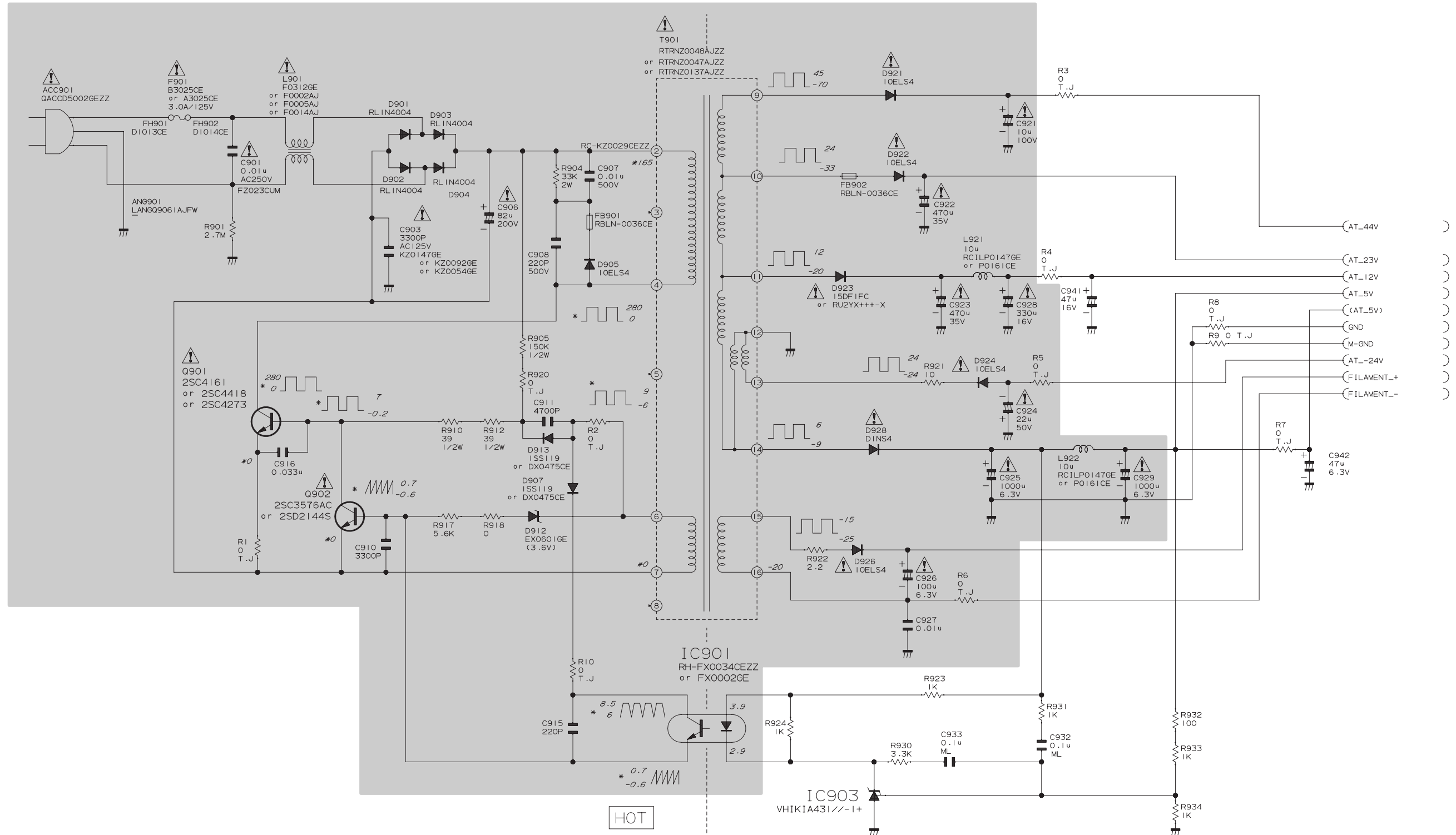
* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

MAIN CIRCUIT(2)



* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

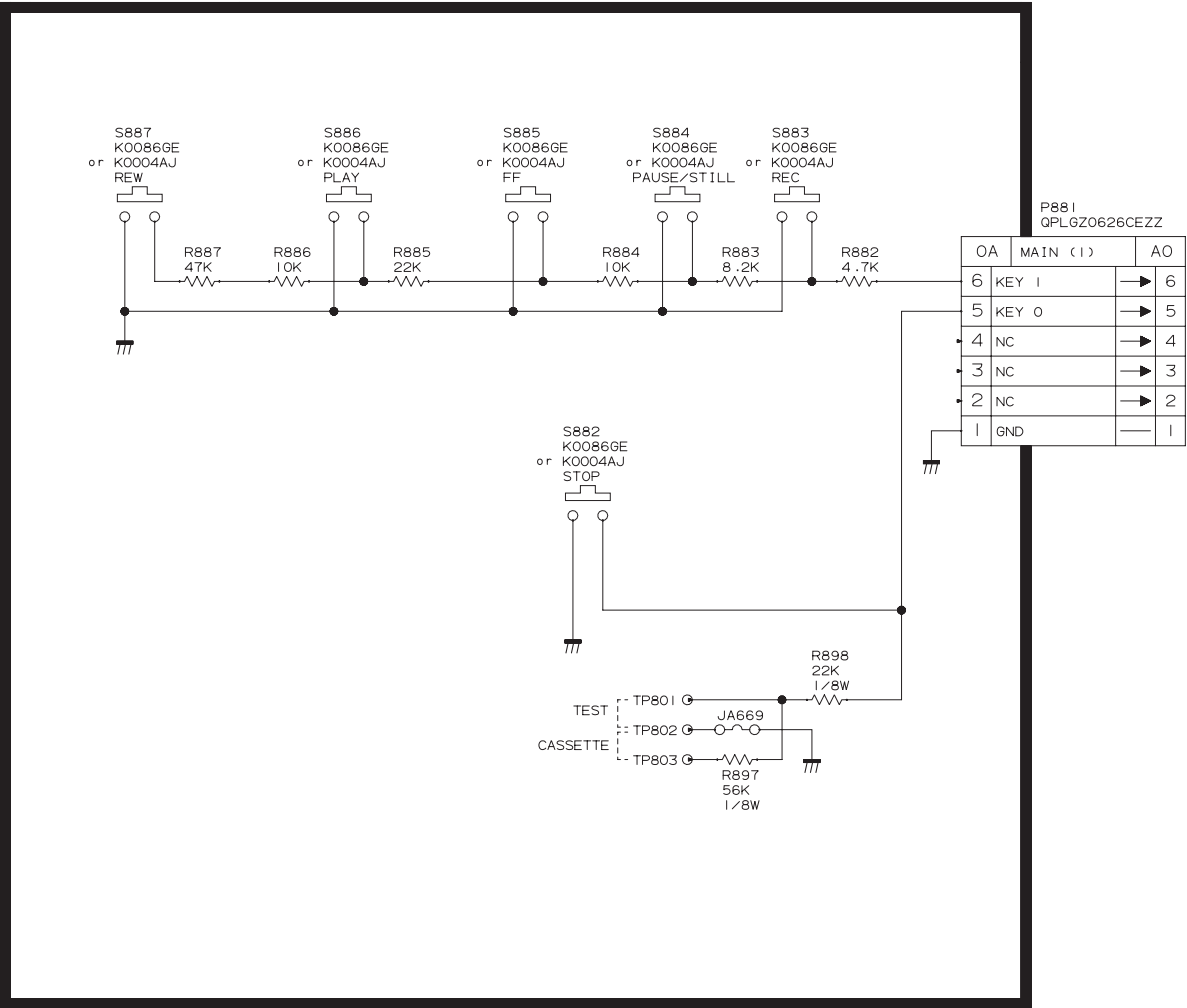
MAIN CIRCUIT(3)



* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

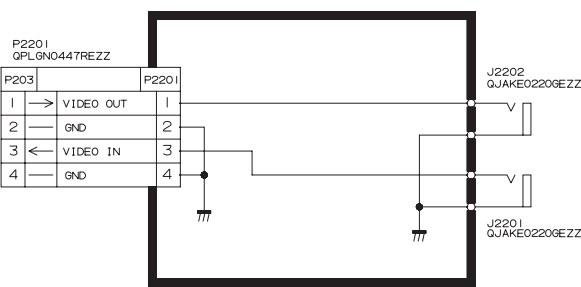
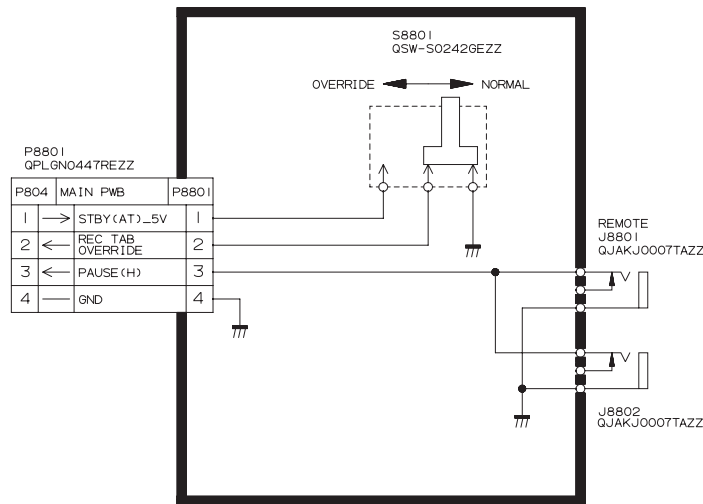
64~65

OPERATION CIRCUIT

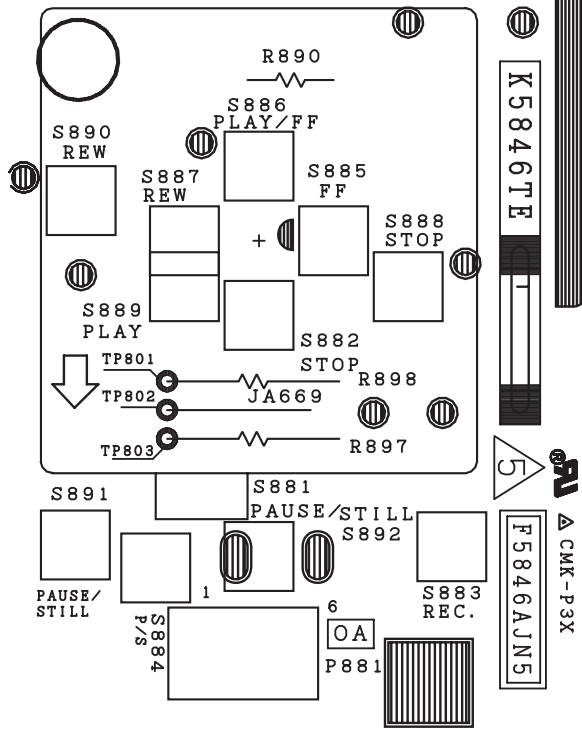


PAUSE JACK CIRCUIT

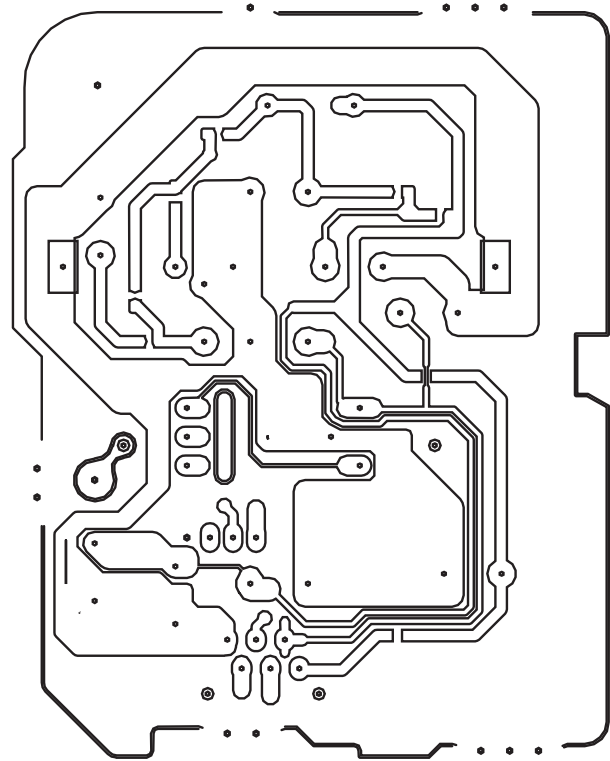
VIDEO JACK CIRCUIT



PWB FOIL PATTERN OPERATION PWB

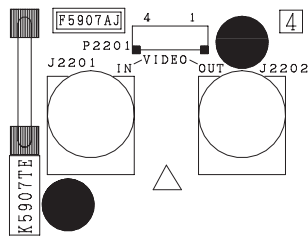


Component Side

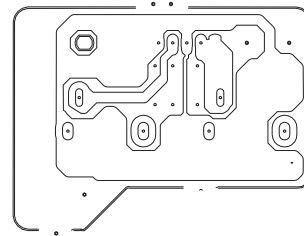


Wiring Side

VIDEO JACK PWB

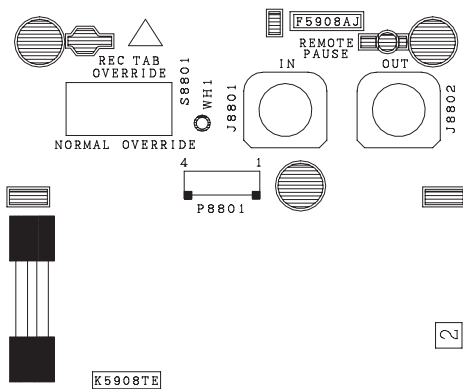


Component Side

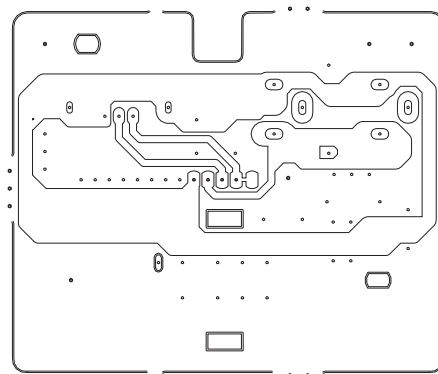


Wiring Side

PAUSE JACK PWB



Component Side



Wiring Side

This diagram is a detailed electronic component layout for a circuit board. It shows the physical placement of various components, including resistors (R), capacitors (C), diodes (D), transistors (Q), integrated circuits (IC), and other specialized components like relays (K), solenoids (S), and sensors (P). Each component is labeled with a reference designator (e.g., R1, C1, D1, Q1, IC1) and a part number or value (e.g., 10K, 100nF, 1N4148, 74LS00). The layout includes a grid system for reference, with letters A through J along the top and numbers 1 through 20 along the bottom. A large circular feature, possibly a mounting hole or a specific component footprint, is prominent in the center. The diagram also shows various connectors, switches, and other mechanical features. A legend at the bottom right indicates the component types: R (Resistor), C (Capacitor), D (Diode), Q (Transistor), IC (Integrated Circuit), K (Relay), S (Solenoid), P (Sensor), and J (Jack).

MAIN PWB
Wiring Side



- M E M O -

[illegible]

10. PARTS LIST

PARTS REPLACEMENT

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

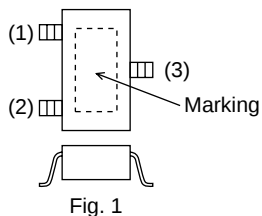
"HOW TO ORDER REPLACEMENT PARTS"

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

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

In **USA**: Contact your nearest SHARP Parts Distributor to order.
For location of SHARP Parts Distributor,
Please Call Toll-free;
1-800-BE-SHARP

HOW TO IDENTIFY CHIP TRANSISTORS AND DIODES BY ITS MARKING



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

Package	Marking	Parts No.
Fig. 1	TR/TS	VS2SA1530ARS1
Fig. 1	LE/LF	VS2SC3052EF-1
Fig. 1	PD	VSKRA104S//-1
Fig. 1	NC	VSKRA103S//-1

MARK★: SPARE PARTS-DELIVERY SECTION

Ref. No.	Part No.	★	Description	Code
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PRINTED WIRING BOARD ASSEMBLIES (NOT REPLACEMENT ITEM)

DUNTK5845TEVY	-	Main Unit(XA-905)	—
DUNTK5845TEVZ	-	Main Unit(XA-920)	—
DUNTK5846TEV1	-	Operation Unit	—
DUNTK5907TEV1	-	Video Jack Unit	—
DUNTK5908TEV1	-	Pause Jack Unit	—

Ref. No.	Part No.	★	Description	Code
----------	----------	---	-------------	------

DUNTK5845TEVY(XA-905) DUNTK5845TEVZ(XA-920) MAIN UNIT

TUNER

TU101	VTUATMDH2-A03	V	Tuner	BE
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INTEGRATED CIRCUITS

IC201	VHiHA8317NF-1	V	HA8317NF, Y/C Audio Processor	AZ
IC601	VHiBA7755A/-1	V	BA7755A, Rec/PB Head SW	AE
IC651	VHiAN3662FB-1	V	AN3662FB, HiFi Audio Processor(XA-920)	AZ
IC701	RH-iX1567GEN2Q	J	IX1567GE	AZ
IC702	VHiPST600H/-1	V	PST600H	AE
IC706	VHiLB1988//-1	V	LB1988, Loading/Drum M Driver	AQ
IC710	VHiKS24C02S1E or	V	KS24C02S, E ² PROM	AG
IC710	VHiS24C02A/-1 or	V	S24C02A, E ² PROM	AK
IC710	VHiBR2402E2-1	V	BR2402E2, E ² PROM	AG
IC801	VHiMN12511/-1	V	MN12511	AQ
IC903	VHiKiA431//-1	V	KiA431	AE

TRANSISTORS

Q251	VS2SA1530ARS1	V	2SA1530ARS1	AC
Q302	VS2SD1306-E-1	V	VS2SD1306-E	AC
Q306	VS2SA1530ARS1	V	2SA1530ARS1	AC
Q501	VS2SC3052EF-1	V	2SC3052EF-1(XA-920)	AC
Q602	VS2SC3203Y/-1 or	V	2SC3203Y	AB
Q602	VS2SD1859TV-1 or	V	2SD1859TV	AD
Q602	VS2C3939SQR-1	V	2C3939SQR	AC
Q603	VS2SC3052EF-1	V	2SC3052EF-1	AC
Q651	VS2SD1306-E-1	V	VS2SD1306-E(XA-920)	AC
Q652	VS2SD1306-E-1	V	VS2SD1306-E(XA-920)	AC
Q653	VSKRA104S//-1	V	KRA104S(XA-920)	AA
Q654	VSKRC103S//-1	V	KRC103S(XA-920)	AA
Q656	VSKRC103S//-1	V	KRC103S(XA-920)	AA
Q704	VS2SA1530ARS1	V	2SA1530ARS1	AC
Q705	VS2SC3052EF-1	V	2SC3052EF-1	AC
Q706	VS2SA1530ARS1	V	2SA1530ARS1	AC
Q710	VS2SC3052EF-1	V	2SC3052EF-1	AC
Q711	VS2SC3052EF-1	V	2SC3052EF-1	AC
Q801	VSKRC104S//-1	V	KRC104S	AA
Q802	VSKRA103S//-1	V	KRA103S	AA
⚠ Q901	VS2SC4161//1E or	V	2SC4161(XA-920)	AL
⚠ Q901	VS2SC4418//-1 or	V	2SC4418(XA-905)	AH
⚠ Q901	VS2SC4273//-1		2SC4273	AF
⚠ Q902	VS2SC3576AC-1 or	V	2SC3576AC	AC
⚠ Q902	VS2SD2144S/-1		2SD2144S	AC
Q951	VS2SA1271-Y-1	V	2SA1271-Y	AB
Q952	VSKRC103S//-1	V	KRC103S	AA
Q963	VS2SA1530ARS1	V	2SA1530ARS1	AC
Q981	VS2SA1271-Y-1	V	2SA1271-Y	AB
Q982	VSKRC103S//-1	V	KRC103S	AA
Q991	VS2SC3203Y/-1	V	2SC3203Y	AB
Q992	VS2SA1530ARS1	V	2SA1530ARS1	AC
Q993	VSKRC103S//-1	V	KRC103S	AA

DISPLAY

DG801	VVK20U26108-1 or	V	Display	AW
DG801	VVKSTV6SS44-1		Display	AW

DIODES AND LED'S

D351	VHD1SS119//-1 or	V	1SS119(XA-920)	AB
D351	RH-DX0475CEZZ	V	DX0475CE	AB

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
C226	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	C651	VCEA9M1HW475M	V 4.7 50V	Electrolytic	AB
C227	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	C652	VCEA9M0JW336M	V 33 6.3V	Electrolytic	AB
C228	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB			(XA-920)		
C251	VCEA9M1CW476M	V 47	16V Electrolytic	AB	C653	VCEA9M1CW106M	V 10 16V	Electrolytic	AB
C252	VCEA0A0JW337M	V 330	6.3V Electrolytic	AC			(XA-920)		
C254	VCCCCY1HH330J	V 33p	50V Ceramic	AA	C654	VCEA9M1CW106M	V 10 16V	Electrolytic	AB
C256	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA			(XA-920)		
C301	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	C655	VCEA9M1CW106M	V 10 16V	Electrolytic	AB
C302	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB			(XA-920)		
C303	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C657	VCKYCY1EB153K	V 0.015 25V	Ceramic	AA
C304	VCKYCY1HB102K	V 1000p	50V Ceramic	AA			(XA-920)		
C305	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C661	VCEA9M1HW475M	V 4.7 50V	Electrolytic	AB
C306	VCKYCY1HB102K	V 1000p	50V Ceramic	AA			(XA-920)		
C307	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C662	VCEA9M0JW336M	V 33 6.3V	Electrolytic	AB
C308	VCKYCY1HB102K	V 1000p	50V Ceramic	AA			(XA-920)		
C309	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C663	VCEA9M1CW106M	V 10 16V	Electrolytic	AB
C310	VCKYCY1HB102K	V 1000p	50V Ceramic	AA			(XA-920)		
C311	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	C664	VCEA9M1CW106M	V 10 16V	Electrolytic	AB
C312	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA			(XA-920)		
C319	VCCCCY1HH100D	V 10p	50V Ceramic	AA	C665	VCEA9M1CW106M	V 10 16V	Electrolytic	AB
C320	VCCCCY1HH100D	V 10p	50V Ceramic	AA			(XA-920)		
C327	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C667	VCKYCY1EB153K	V 0.015 25V	Ceramic	AA
C329	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA			(XA-920)		
C351	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	C670	VCEA9M0JW107M	V 100 6.3V	Electrolytic	AB
		(XA-920)					(XA-920)		
C352	VCKYCY0JF105Z	V 1 6.3V	Ceramic	AB	C671	VCEA9M1CW107M	V 100 16V	Electrolytic	AB
		(XA-920)					(XA-920)		
C353	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA	C672	VCKYCY1CF224Z	V 0.22 16V	Ceramic	AA
		(XA-920)					(XA-920)		
C354	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA	C673	VCEA9M0JW226M	V 22 6.3V	Electrolytic	AB
		(XA-920)					(XA-920)		
C356	VCCCCY1HH101J	V 100p	50V Ceramic	AA	C674	VCKYCY1CF224Z	V 0.22 16V	Ceramic	AA
		(XA-920)					(XA-920)		
C357	VCKYCY1CB104K	V 0.1 16V	Ceramic	AB	C675	VCKYCY1CF104Z	V 0.1 16V	Ceramic	AA
		(XA-920)					(XA-920)		
C358	VCKYCY1CB104K	V 0.1 16V	Ceramic	AB	C677	VCEA9M1CW106M	V 10 16V	Electrolytic	AB
		(XA-920)					(XA-920)		
C501	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	C678	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA
C502	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB			(XA-920)		
C503	VCKYCY1HB472K	V 4700p	50V Ceramic	AA	C679	VCKYCY1CF224Z	V 0.22 16V	Ceramic	AA
C504	VCEA9M1HW225M	V 2.2	50V Electrolytic	AB			(XA-920)		
C505	VCKYCY1EB223K	V 0.022	25V Ceramic	AA	C680	VCKYCY0JF105Z	V 1 6.3V	Ceramic	AB
C506	VCEA9M1HW474M	V 0.47	50V Electrolytic	AB			(XA-920)		
C507	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	C681	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA
C508	VCEA9M1HW475M	V 4.7	50V Electrolytic	AB			(XA-920)		
C509	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	C682	VCKYCY0JF105Z	V 1 6.3V	Ceramic	AB
C512	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA			(XA-920)		
C513	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	C684	VCCCCY1HH560J	V 56p 50V	Ceramic	AA
C514	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA			(XA-920)		
C515	VCKYCY1HB331K	V 330p	50V Ceramic	AA	C685	VCCCCY1HH560J	V 56p 50V	Ceramic	AA
C517	VCEA9M1HW335M	V 3.3	50V Electrolytic	AB			(XA-920)		
C518	VCKYCY1HF333Z	V 0.033	50V Ceramic	AA	C701	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA
C521	VCCCCY1HH5R0C	V 5p	50V Ceramic	AA	C702	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA
C523	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	C703	VCEA9M1HW105M	V 1 50V	Electrolytic	AB
C524	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	C704	VCKYCY0JF105Z	V 1 6.3V	Ceramic	AB
		(XA-920)			C705	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA
C601	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	C706	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA
C602	VCKYCY1EB103K	V 0.01	25V Ceramic	AA	C707	VCCCCY1HH120J	V 12p 50V	Ceramic	AA
C603	VCEA9M1CW106M	V 10	16V Electrolytic	AB	C708	VCCCCY1HH150J	V 15p 50V	Ceramic	AA
C604	VCKYCY1HB821K	V 820p	50V Ceramic	AA	C709	VCCCCY1HH150J	V 15p 50V	Ceramic	AA
C605	VCEA9M1CW106M	V 10	16V Electrolytic	AB	C710	VCCCCY1HH180J	V 18p 50V	Ceramic	AA
C606	VCEA9M1HW475M	V 4.7	50V Electrolytic	AB	C711	VCKYCY1HB102K	V 1000p	50V Ceramic	AA
C607	VCEA9M1HW475M	V 4.7	50V Electrolytic	AB	C712	VCKYCY1HB102K	V 1000p	50V Ceramic	AA
C608	VCEA9M0JW226M	V 22	6.3V Electrolytic	AB	C713	VCKYCY1HB102K	V 1000p	50V Ceramic	AA
C609	VCEA9M1HW475M	V 4.7	50V Electrolytic	AB	C714	VCKYCY1CF104Z	V 0.1 16V	Ceramic	AA
C610	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA			(XA-905)		
		(XA-905)			C715	VCEA9M0JW226M	V 22 6.3V	Electrolytic	AB
C611	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	C717	VCKYCY1HB221K	V 220p	50V Ceramic	AA
C613	VCKYCY1EB183K	V 0.018	25V Ceramic	AA			(XA-905)		
		(XA-905)			C718	VCKYCY1CF104Z	V 0.1 16V	Ceramic	AA
C614	VCKYCY1HB222K	V 2200p	50V Ceramic	AA	C719	VCKYCY1EB103K	V 0.01 25V	Ceramic	AA
C617	VCEA9M1CW476M	V 47	16V Electrolytic	AB	C722	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA
C618	VCKYCY1EB103K	V 0.01	25V Ceramic	AA	C724	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA
C619	VCKYCY1EB103K	V 0.01	25V Ceramic	AA	C726	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA
C620	VCEA9M1CW106M	V 10	16V Electrolytic	AB			(XA-920)		
C621	VCQPYA2AA562J	V 5600p	100V	AC	C727	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA
C622	VCKYCY1HB222K	V 2200p	50V Ceramic	AA	C729	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA
C630	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	C730	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA
					C736	VCKYCY1HF103Z	V 0.01 50V	Ceramic	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
C737	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	RESISTORS				
C738	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	JA566	QJUM-1001GEFW	V	Jumper	—
C739	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	RJ102	VRS-CY1JF000J	V 0	1/16W Metal Oxide (XA-920)	AA
C743	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	RJ103	VRS-CY1JF000J	V 0	1/16W Metal Oxide (XA-905)	AA
C744	VCEA2A0JW108M	V 1000	6.3V Electrolytic	AB	RJ104	VRS-CY1JF000J	V 0	1/16W Metal Oxide	AA
C745	RC-EZ0425GEZZ	J 0.047	5.5V Electrolytic	AE	RJ301	VRS-CY1JF000J	V 0	1/16W Metal Oxide	AA
C747	VCKYCY1HF103Z	V 0.01	50V Ceramic (XA-920)	AA	RJ302	VRS-CY1JF000J	V 0	1/16W Metal Oxide	AA
C748	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	RJ303	VRS-CY1JF000J	V 0	1/16W Metal Oxide	AA
C750	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	RJ304	VRS-CY1JF000J	V 0	1/16W Metal Oxide	AA
C751	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	RJ305	VRS-CY1JF000J	V 0	1/16W Metal Oxide	AA
C752	VCEA2A1VW107M	V 100	35V Electrolytic	AC	RJ501	VRS-CY1JF000J	V 0	1/16W Metal Oxide	AA
C754	VCKYCY1EB103K	V 0.01	25V Ceramic	AA	RJ502	VRS-CY1JF000J	V 0	1/16W Metal Oxide	AA
C755	VCKYCY1HF473Z	V 0.047	50V Ceramic	AA	R16	VRS-CY1JF000J	V 0	1/16W Metal Oxide (XA-920)	AA
C756	VCKYCY1HF473Z	V 0.047	50V Ceramic	AA	R36	VRS-CY1JF000J	V 0	1/16W Metal Oxide (XA-920)	AA
C759	VCEA9M0JW226M	V 22	6.3V Electrolytic	AB	R41	VRS-CY1JF000J	V 0	1/16W Metal Oxide (XA-905)	AA
C760	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	R42	VRS-CY1JF000J	V 0	1/16W Metal Oxide (XA-905)	AA
C763	VCEA9M0JW476M	V 47	6.3V Electrolytic	AB	R101	VRS-CY1JF470J	V 47	1/16W Metal Oxide	AA
C764	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	R103	VRS-CY1JF473J	V 47k	1/16W Metal Oxide	AA
C770	VCCCCY1HH101J	V 100p	50V Ceramic	AA	R104	VRS-CY1JF000J	V 0	1/16W Metal Oxide	AA
C771	VCE9EM1HW105M	V 1	50V Electrolytic	AB	R105	VRS-CY1JF000J	V 0	1/16W Metal Oxide	AA
C774	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	R107	VRS-CY1JF822J	V 8.2k	1/16W Metal Oxide (XA-920)	AA
C775	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	R108	VRS-CY1JF822J	V 8.2k	1/16W Metal Oxide (XA-905)	AA
C776	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	R111	VRS-CY1JF153J	V 15k	1/16W Metal Oxide	AA
C783	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	R112	VRS-CY1JF153J	V 15k	1/16W Metal Oxide	AA
C784	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	R145	VRS-CY1JF000J	V 0	1/16W Metal Oxide (XA-920)	AA
C785	VCEA9M0JW476M	V 47	6.3V Electrolytic	AB	R201	VRS-CY1JF682J	V 6.8k	1/16W Metal Oxide	AA
C786	VCKYCY1CF334Z	V 0.33	16V Ceramic	AA	R202	VRS-CY1JF182J	V 1.8k	1/16W Metal Oxide	AA
C787	VCFVSA1HB474J	V 0.47	50V	AC	R203	VRS-CY1JF682J	V 6.8k	1/16W Metal Oxide	AA
C789	VCKYCY1EB103K	V 0.01	25V Ceramic	AA	R207	VRS-CY1JF101J	V 100	1/16W Metal Oxide	AA
C790	VCKYCY1HB392K	V 3900p	50V Ceramic	AA	R211	VRS-CY1JF153J	V 15k	1/16W Metal Oxide	AA
C791	VCKYCY1HB392K	V 3900p	50V Ceramic	AA	R212	VRS-CY1JF153J	V 15k	1/16W Metal Oxide	AA
C792	VCEA9M1CW476M	V 47	16V Electrolytic	AB	R226	VRS-CY1JF101J	V 100	1/16W Metal Oxide	AA
C794	VCKYCY1EB223K	V 0.022	25V Ceramic	AA	R227	VRS-CY1JF750J	V 75	1/16W Metal Oxide	AA
C795	VCKYCY1EB223K	V 0.022	25V Ceramic	AA	R228	VRS-CY1JF750J	V 75	1/16W Metal Oxide	AA
C797	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	R229	VRD-RA2BE101J	V 100	1/8W Carbon	AB
C798	VCKYCY1EB223K	V 0.022	25V Ceramic	AA	R252	VRD-RA2EE331J	V 330	1/4W Carbon	AA
C801	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	R253	VRS-CY1JF101J	V 100	1/16W Metal Oxide	AA
C802	VCEA9M0JW476M	V 47	6.3V Electrolytic	AB	R254	VRS-CY1JF101J	V 100	1/16W Metal Oxide	AA
C803	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	R256	VRS-CY1JF183J	V 18k	1/16W Metal Oxide	AA
C804	VCEA9M0JW476M	V 47	6.3V Electrolytic	AB	R275	VRS-CY1JF750J	V 75	1/16W Metal Oxide	AA
C805	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	R301	VRS-CY1JF473J	V 47k	1/16W Metal Oxide	AA
C818	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	R313	VRS-CY1JF332J	V 3.3k	1/16W Metal Oxide	AA
C819	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	R315	VRS-CY1JF152J	V 1.5k	1/16W Metal Oxide	AA
⚠ C901	RC-FZ023CUMZZ	V 0.01	AC250V M.Polypro	AF	R330	VRS-CY1JF222J	V 2.2k	1/16W Metal Oxide	AA
⚠ C903	RC-KZ0092GEZZ	J 3300p	AC125V Ceramic	AC	R331	VRS-CY1JF102J	V 1k	1/16W Metal Oxide	AA
⚠ C903	RC-KZ0147GEZZ	J 3300p	AC125V Ceramic	AC	R351	VRS-CY1JF102J	V 1k	1/16W Metal Oxide (XA-920)	AA
⚠ C903	RC-KZ0054GEZZ	3300p	AC125V Ceramic	AC	R501	VRS-CY1JF681J	V 680	1/16W Metal Oxide	AA
⚠ C906	RC-EZ0238CEZZ	V 82	200V Electrolytic	AE	R502	VRS-CY1JF273J	V 27k	1/16W Metal Oxide	AA
⚠ C907	RC-KZ0029CEZZ	V 0.01	500V Ceramic	AC	R505	VRS-CY1JF000J	V 0	1/16W Metal Oxide	AA
⚠ C908	VCKYPA2HB221K	V 220p	500V Ceramic	AA	R511	VRS-CY1JF272J	V 2.7k	1/16W Metal Oxide (XA-920)	AA
⚠ C910	VCKYCY1HB332K	V 3300p	50V Ceramic	AA	R512	VRS-CY1JF272J	V 2.7k	1/16W Metal Oxide (XA-920)	AA
⚠ C911	VCQYTA1HM472K	V 4700p	50V Mylar	AB	R520	VRS-CY1JF154J	V 150k	1/16W Metal Oxide (XA-920)	AA
⚠ C915	VCKYCY1HB221K	V 220p	50V Ceramic	AA	R521	VRS-CY1JF473J	V 47k	1/16W Metal Oxide (XA-920)	AA
⚠ C916	VCKYCY1HF333Z	V 0.033	50V Ceramic	AA	R601	VRS-CY1JF822J	V 8.2k	1/16W Metal Oxide	AA
⚠ C921	VCEA0A2AW106M	V 10	100V Electrolytic	AC	R602	VRS-CY1JF274J	V 270k	1/16W Metal Oxide	AA
⚠ C922	VCEA0A1VW477M	V 470	35V Electrolytic	AB	R603	VRS-CY1JF221J	V 220	1/16W Metal Oxide	AA
⚠ C923	VCEA0A1VW477M	V 470	35V Electrolytic	AB	R604	VRS-CY1JF473J	V 47k	1/16W Metal Oxide	AA
⚠ C924	VCEA0A1HW226M	V 22	50V Electrolytic	AB	R605	VRS-CY1JF153J	V 15k	1/16W Metal Oxide	AA
⚠ C925	VCEA0A0JW108M	V 1000	6.3V Electrolytic	AC	R606	VRS-CY1JF273J	V 27k	1/16W Metal Oxide	AA
⚠ C926	VCEA0A0JW107M	V 100	6.3V Electrolytic	AB	R607	VRS-CY1JF561J	V 560	1/16W Metal Oxide	AA
⚠ C927	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	R608	VRS-CY1JF472J	V 4.7k	1/16W Metal Oxide	AA
⚠ C928	VCEA0A1CW337M	V 330	16V Electrolytic	AC	R609	VRS-CY1JF333J	V 33k	1/16W Metal Oxide (XA-905)	AA
⚠ C929	VCEA0A0JW108M	V 1000	6.3V Electrolytic	AC					
C932	VCQYTA1HM104J	V 0.1	50V Mylar	AA					
C933	VCQYTA1HM104J	V 0.1	50V Mylar	AA					
C941	VCEA9A1CW476M	V 47	16V Electrolytic	AB					
C942	VCEA9M0JW476M	V 47	6.3V Electrolytic	AB					
C951	VCKYCY1HF333Z	V 0.033	50V Ceramic	AA					
C953	VCEA9M1CW106M	V 10	16V Electrolytic	AB					
C954	VCEA9M1HW105M	V 1	50V Electrolytic	AB					
C971	VCEA9M0JW226M	V 22	6.3V Electrolytic	AB					
C981	VCEA9M0JW476M	V 47	6.3V Electrolytic	AB					
C985	VCEA9M0JW476M	V 47	6.3V Electrolytic	AB					
C991	VCEA9M1CW476M	V 47	16V Electrolytic	AB					

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
R610	VRS-CY1JF183J	V	18k 1/16W Metal Oxide (XA-905)	AA	R686	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (XA-920)	AA
R611	VRS-CY1JF153J	V	15k 1/16W Metal Oxide (XA-920)	AA	R690	VRS-CY1JF000J	V	0 1/16W Metal Oxide (XA-920)	AA
R611	VRS-CY1JF393J	V	39k 1/16W Metal Oxide (XA-905)	AA	R703	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R612	VRS-CY1JF123J	V	12k 1/16W Metal Oxide (XA-905)	AA	R704	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R612	VRS-CY1JF823J	V	82k 1/16W Metal Oxide (XA-920)	AA	R705	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R613	VRS-CY1JF393J	V	39k 1/16W Metal Oxide (XA-905)	AA	R706	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R614	VRS-CY1JF123J	V	12k 1/16W Metal Oxide (XA-905)	AA	R707	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R615	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide (XA-905)	AA	R708	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R616	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (XA-905)	AA	R709	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (XA-920)	AA
R617	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (XA-920)	AA	R710	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R618	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA	R711	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R619	VRS-CY1JF470J	V	47 1/16W Metal Oxide	AA	R712	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R620	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA	R713	VRS-CY1JF564J	V	560k 1/16W Metal Oxide	AA
R621	VRD-RA2EE4R7J	V	4.7 1/4W Carbon	AA	R714	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R623	VRS-CY1JF393J	V	39k 1/16W Metal Oxide	AA	R715	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R624	VRS-CY1JF224J	V	220k 1/16W Metal Oxide	AA	R716	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R626	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA	R717	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R627	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA	R718	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA
R628	VRS-CY1JF000J	V	0 1/16W Metal Oxide (XA-905)	AA	R719	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R653	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (XA-920)	AA	R720	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide (XA-905)	AA
R654	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (XA-920)	AA	R722	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R655	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (XA-920)	AA	R723	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
R656	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (XA-920)	AA	R726	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R657	VRS-CY1JF101J	V	100 1/16W Metal Oxide (XA-920)	AA	R727	VRD-RA2EE151J	V	150 1/4W Carbon	AA
R658	VRS-CY1JF223J	V	22k 1/16W Metal Oxide (XA-920)	AA	R728	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA
R659	VRD-RA2BE681J	V	680 1/8W Carbon (XA-920)	AA	R729	VRD-RA2BE154J	V	150k 1/8W Carbon	AA
R663	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (XA-920)	AA	R731	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R664	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (XA-920)	AA	R732	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R665	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (XA-920)	AA	R734	VRD-RA2BE223J	V	22k 1/8W Carbon	AA
R666	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (XA-920)	AA	R735	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
R667	VRD-RA2BE101J	V	100 1/8W Carbon (XA-920)	AB	R736	VRS-CY1JF123J	V	12k 1/16W Metal Oxide	AA
R668	VRS-CY1JF223J	V	22k 1/16W Metal Oxide (XA-920)	AA	R737	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
R669	VRD-RA2BE681J	V	680 1/8W Carbon (XA-920)	AA	R738	VRD-RA2BE104J	V	100k 1/8W Carbon	AA
R670	VRS-CY1JF273J	V	27k 1/16W Metal Oxide (XA-920)	AA	R739	VRD-RA2BE271J	V	270 1/8W Carbon	AA
R671	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (XA-920)	AA	R740	VRD-RA2BE104J	V	100k 1/8W Carbon	AA
R672	VRS-CY1JF151J	V	150 1/16W Metal Oxide (XA-920)	AA	R741	VRD-RA2BE271J	V	270 1/8W Carbon	AA
R673	VRS-CY1JF151J	V	150 1/16W Metal Oxide (XA-920)	AA	R742	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R674	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (XA-920)	AA	R743	VRD-RA2BE391J	V	390 1/8W Carbon	AA
R675	VRS-CY1JF183J	V	18k 1/16W Metal Oxide (XA-920)	AA	R744	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R676	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (XA-920)	AA	R745	VRD-RA2BE391J	V	390 1/8W Carbon	AA
R677	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (XA-920)	AA	R746	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R685	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (XA-920)	AA	R748	VRS-CY1JF1R0J	V	1 1/16W Metal Oxide	AA
					R749	VRD-RM2HD271J	V	270 1/2W Carbon	AA
					R751	VRD-RA2BE123J	V	12k 1/8W Carbon	AA
					R752	VRD-RA2BE123J	V	12k 1/8W Carbon	AA
					R754	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
					R756	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
					R758	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
					R760	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
					R761	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
					R762	VRS-CY1JF123J	V	12k 1/16W Metal Oxide	AA
					R763	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
					R764	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
					R765	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
					R768	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
					R769	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
					R770	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
					R772	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide (XA-905)	AA
					R773	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA
					R774	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (XA-920)	AA
					R776	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
					R777	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
					R778	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
					R779	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
					R780	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
					R781	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
					R782	VRS-CY1JF154J	V	150k 1/16W Metal Oxide	AA
					R783	VRS-CY1JF392J	V	3.9k 1/16W Metal Oxide	AA
					R784	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
					R785	VRS-CY1JF105J	V	1M 1/16W Metal Oxide	AA
					R786	VRS-CY1JF564J	V	560k 1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
R787	VRD-RM2HD1R0J	V	1 1/2W Carbon	AA	S801	QSW-K0086GEZZ	J	Switch, Power	AC
R788	VRD-RM2HD1R0J	V	1 1/2W Carbon	AA		or			
R789	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA	S801	QSW-K0004AJZZ	V	Switch, Power	AB
R791	VRS-CY1JF1R0J	V	1 1/16W Metal Oxide	AA	S802	QSW-K0086GEZZ	J	Switch, Eject	AC
R792	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA		or			
R793	VRS-CY1JF154J	V	150k 1/16W Metal Oxide	AA	S802	QSW-K0004AJZZ	V	Switch, Eject	AB
R794	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA	S803	QSW-K0086GEZZ	J	Switch, Set/S-Pic.	AC
R795	VRD-RA2BE105J	V	1M 1/8W Carbon	AA		or			
R796	VRD-RA2BE103J	V	10k 1/8W Carbon	AA	S803	QSW-K0004AJZZ	V	Switch, Set/S-Pic.	AB
R798	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA	S804	QSW-K0086GEZZ	J	Switch, CH –	AC
R813	VRD-RA2BE183J	V	18k 1/8W Carbon	AA		or			
R814	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide	AA	S804	QSW-K0004AJZZ	V	Switch, CH –	AB
R815	VRD-RA2BE332J	V	3.3k 1/8W Carbon	AA	S805	QSW-K0086GEZZ	J	Switch, Menu	AC
R818	VRD-RA2BE102J	V	1k 1/8W Carbon	AA		or			
R819	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA	S805	QSW-K0004AJZZ	V	Switch, Menu	AB
R821	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA	S806	QSW-K0086GEZZ	J	Switch, CH +	AC
R822	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide	AA		or			
R823	VRD-RA2BE332J	V	3.3k 1/8W Carbon	AA	S806	QSW-K0004AJZZ	V	Switch, CH +	AB
R824	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA					
R825	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA					
R826	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA		MISCELLANEOUS PARTS			
R831	VRD-RA2BE101J	V	100 1/8W Carbon	AB		PSLDM4575AJFW	V	Shield	AD
R832	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA	⚠ ACC901	QCNW-8378AJZZ	V	Connecting Cord	AC
R833	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA	⚠ ANG901	QACCD5002GEZZ	J	AC Cord	AT
R835	VRD-RA2BE183J	V	18k 1/8W Carbon	AA	⚠ FH901	LANGQ9061AJFW	V	Fixing Metal	AC
R841	VRD-RA2BE183J	V	18k 1/8W Carbon	AA	⚠ FH902	QFSHD1013CEZZ	V	Fuse Holder	AC
R843	VRD-RA2BE474J	V	470k 1/8W Carbon	AA	⚠ FH902	QFSHD1014CEZZ	V	Fuse Holder	AC
R845	VRD-RA2BE474J	V	470k 1/8W Carbon	AA	⚠ F901	QFS-B3025CEZZ	V	Fuse, 3.0A 125V	AD
R846	VRD-RA2BE103J	V	10k 1/8W Carbon	AA		or			
R847	VRD-RA2BE474J	V	470k 1/8W Carbon	AA	⚠ F901	QFS-A3025CEZZ	V	Fuse, 3.0A 125V	AD
R848	VRD-RA2BE474J	V	470k 1/8W Carbon	AA	J201	QJAKF0013AJZZ	V	Jack(XA-905)	AG
R856	VRD-RA2BE102J	V	1k 1/8W Carbon	AA	J201	QJAKH0012AJZZ	V	Jack(XA-920)	AK
			(XA-920)		J202	QJAKG0006AJZZ	V	Jack, Front AV Jack(XA-920)	AH
					P203	QPLGN0447REZZ	V	Plug, 4 Pin	AA
R857	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA	P804	QPLGN0447REZZ	V	Plug, 4 Pin	AA
R858	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA	P701	QPLGZ0883GEZZ	J	Plug, 8 Pin	AD
R859	VRD-RA2BE471J	V	470 1/8W Carbon	AA	RMC801	RRMCU0081GEZZ	J	Remote Receiver	AG
R860	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA		or			
⚠ R901	RR-DZ0047CEZZ	V	2.7M Resistor	AD	RMC801	RRMCU0002AJZZ	V	Remote Receiver	AH
⚠ R904	VRS-VV3DB333J	V	33k 2W Metal Oxide	AA	SC301	QSOCN0611REN1	V	Socket, 6 Pin(XA-905)	AC
⚠ R905	VRD-RM2HD154J	V	150k 1/2W Carbon	AA	SC301	QSOCN0911REN1	V	Socket, 9 Pin(XA-920)	AD
⚠ R910	VRD-RM2HD390J	V	39 1/2W Carbon	AA	SC601	QSOCN0695REZZ	V	Socket, 6 Pin	AB
⚠ R912	VRD-RM2HD390J	V	39 1/2W Carbon	AA	SC602	QSOCZ0293GEZZ	J	Socket, 2 Pin	AC
⚠ R917	VRS-CY1JF562J	V	5.6k 1/16W Metal Oxide	AA	SC701	QSOCN0795REZZ	V	Socket, 7 Pin	AC
⚠ R918	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA	SC702	QSOCZ0292GEZZ	J	Socket, 2 Pin	AC
⚠ R921	VRS-CY1JF100J	V	10 1/16W Metal Oxide	AA	SC801	QSOCZ0625CEZZ	V	Socket, 6 Pin	AC
⚠ R922	VRS-CY1JF2R2J	V	2.2 1/16W Metal Oxide	AA	TP201	QPLGN0447REZZ	V	Plug, 4 Pin(P201)	AA
R923	VRD-RA2BE102J	V	1k 1/8W Carbon	AA	W851	LHLDZ1962AJ00	V	Holder	AD
R924	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA	W852	LHLDZ1962AJ00	V	Holder	AD
R930	VRD-RA2BE332J	V	3.3k 1/8W Carbon	AA					
R931	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA					
R932	VRD-RA2BE101J	V	100 1/8W Carbon	AB					
R933	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA					
R934	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA					
R951	VRD-RM2HD152J	V	1.5k 1/2W Carbon	AA					
R952	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA					
R954	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA					
R955	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA	R882	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R957	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA	R883	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R973	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA	R884	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R974	VRD-RA2BE222J	V	2.2k 1/8W Carbon	AA	R885	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R975	VRD-RA2BE473J	V	47k 1/8W Carbon	AA	R886	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R981	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA	R887	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R982	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA	R888	VRS-CY1JF123J	V	12k 1/16W Metal Oxide	AA
R983	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA	R889	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
R991	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA	R897	VRD-RA2BE563J	V	56k 1/8W Carbon	AA
R992	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA	R898	VRD-RA2BE223J	V	22k 1/8W Carbon	AA
R993	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA					
								</	

Ref. No.	Part No.	★	Description	Code
S885	QSW-K0086GEZZ	J	Switch, FF	AC
	or			
S885	QSW-K0004AJZZ	V	Switch, FF	AB
S886	QSW-K0086GEZZ	J	Switch, Play	AC
	or			
S886	QSW-K0004AJZZ	V	Switch, Play	AB
S887	QSW-K0086GEZZ	J	Switch, REW	AC
	or			
S887	QSW-K0004AJZZ	V	Switch, REW	AB
MISCELLANEOUS PART				
P881	QPLGZ0626CEZZ	V	Plug, 6 Pin	AF

DUNTK5907TEV1 VIDEO JACK UNIT

MISCELLANEOUS PARTS

J2201	QJAKE0220GEZZ	J	Jack	AL
J2202	QJAKE0220GEZZ	J	Jack	AL
P2201	QPLGN0447REZZ	V	Plug, 4 Pin	AA

DUNTK5908TEV1 PAUSE JACK UNIT

SWITCH

S8801	QSW-S0242GEZZ	J	Switch, Override	AD
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MISCELLANEOUS PARTS

J8801	QJAKJ0007TAZZ	V	Jack	AC
J8802	QJAKJ0007TAZZ	V	Jack	AC
P8801	QPLGN0447REZZ	V	Plug, 4 Pin	AA

MECHANISM CHASSIS PARTS

1	LBNDK1011AJZZ	V	Tension Band Ass'y	AH
2	LBOSZ1007AJZZ	V	Tension Arm boss	AD
4	LBOSZ1006AJZZ	V	Cassette Stay L	AD
5	LCHSM0174AJZZ	V	Main Chassis Ass'y	AV
6	LHLDZ2016AJZZ	V	Loading Motor Block	AG
7	LPOLM0070GEZZ	J	Supply Pole Base Ass'y	AK
8	LPOLM0064GEZZ	J	Take-up Pole Base Ass'y	AM
9	MLEVF0518AJZZ	V	Take-up Loading Arm Ass'y	AF
10	MLEVF0519AJZZ	V	Supply Loading Arm Ass'y	AF
11	MLEVF0499AJZZ	V	Pinch Drive Lever Ass'y	AG
12	MLEVF0500GEZZ	J	Pinch Roller Lever Ass'y	AW
15	MLEVF0523AJZZ	V	Tension Arm Ass'y	AH
16	LANGF9620AJFW	V	A/C Head Plate	AG
17	MLEVP0271AJZZ	V	Shifter Drive Lever	AE
18	MLEVP0272AJZZ	V	Pinch Double Action Lever	AD
19	MLEVP0301AJZZ	V	Reverse Guide Lever Ass'y	AL
20	MLEVP0275AJZZ	V	Reverse Drive Lever	AD
21	MLEVP0292AJZZ	V	Slow Brake Lever	AE
22	MLEVP0336AJZZ	V	Open Lever	AD
23	MLEVP0293AJZZ	V	Clutch Lever	AE
24	MLEVP0324AJZZ	V	Supply Main Brake Ass'y	AF
25	MLEVP0325AJZZ	V	Take-up Main Brake Ass'y	AF
26	CLEVP0287AJZZ	V	Automatic Head Cleaner Ass'y(XA-920)	AG
27	MSLiP0010AJZZ	V	Shifter	AH
29	MSPRD0175AJFJ	V	Reverse Guide Spring 2	AE
30	MSPRT0402AJFJ	V	Loading Double Action Spring	AE
31	MSPRT0403AJFJ	V	Pinch Double Action Spring	AD
32	MSPRC0213AJFJ	V	Earth Spring	AC
33	MSPRT0416AJFJ	V	Tension Spring	AD
34	NBLTK0067AJ00	V	Reel Belt	AE
35	NDaiV1078AJ00	V	Reel Disk	AE
36	NGERH1293AJZZ	V	Loading Connect Gear	AD

Ref. No.	Part No.	★	Description	Code
37	NGERH1295AJ00	V	Master Cam	AE
38	NGERH1294AJZZ	V	Casecon Drive Gear	AD
39	NGERH1270AJZZ	V	Take-up Loading Gear	AF
40	NGERH1271AJZZ	V	Supply Loading Gear	AD
41	NGERH1272AJZZ	V	Pinch Drive Cam	AE
43	NGERH1299AJZZ	V	Reel Relay Gear	AE
44	NGERW1070AJZZ	V	Worm Gear	AD
45	NGERW1066AJZZ	V	Worm Wheel Gear	AD
46	NiDR-0018AJZZ	V	Idle Wheel Ass'y	AK
47	NPLYV0162AJZZ	V	Motor Pulley	AD
48	NPLYV0163AJZZ	V	Limiter Pulley Ass'y	AM
49	NROLP0131GEZZ	J	Guide Roller	AL
50	NSFTP0032AJZZ	V	Tension Pole Adjuster	AB
51	MSPRC0217AJFJ	V	Guide Roller Spring	AC
52	PREFL1011AJZZ	V	Light Guide	AE
53	QCNW-8022AJZZ	V	FFC for Drum Motor	AD
55	QCNW-8021AJZZ	V	FFC for A/C Head	AD
56	QPWBF5243AJZZ	V	A/C Head PWB	AE
57	QSOCN0696REZZ	V	Socket, 6 pin	AB
58	RHEDT0036AJZZ	V	Full Erase Head	AM
59	RHEDU0088GEZZ	J	A/C Head Ass'y	AV
60	RMOTM1078GEZZ	J	Loading Motor	AP
61	RMOTN2067GEZZ	J	Capstan D.D. Motor PWM	AY
62	RMOTP1139GEZZ	J	Drum Drive Motor (XA-920)	AT
62	RMOTP1151GEZZ	J	Drum Drive Motor (XA-905)	AT
63	DDRMW0029TEX1	V	Upper and Lower Drum Ass'y(XA-905)	BU
63	DDRMW0030TEX1	V	Upper and Lower Drum Ass'y(XA-920)	BU
65	QBRSK0041GEZZ	J	Drum Earth Brush	AD
66	XBPSD26P05J00	V	Drum Drive Motor Mounting Screw (SW2.6P+5S)	AA
67	PGIDC0056GEFW	J	Drum Base	AL
68	QPWBF5468AJZZ	V	PWB(LDG Motor)	AE
69	QPLGZ0292GEZZ	J	Socket(LDG Motor)	AE
70	MSPRC0223AJFJ	V	Azimuth Spring	AC
71	MSPRC0224AJFJ	V	Height Adjusting Spring	AC

SCREW, NUTS AND WASHERS

201	XBPSD26P08000	V	Screw 2.6P+8S A/C Head	AA
202	LX-HZ3082GEZZ	J	WSW 2.6+6 (AC)	AD
203	XJPSD26P06000	V	Screw, 2.6P+6 (For Capstan Motor)	AA
207	XHPSD30P08WS0	V	Screw, C3.0P+8S (For Drum Base)	AA
208	XRESJ30-06000	V	E-Ring, E-3	AA
209	XWHJZ31-03052	V	Washer, W3.1-5.2-0.3	AC
210	XWHJZ31-04052	V	Washer, W3.1-5.2-0.4	AC
211	XWHJZ31-05052	V	Washer, W3.1-5.2-0.5	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	PSPAP0009AJZZ	V	Reverse Guide Adjusting Nut	AB
216	LX-WZ1041GE00	J	CW 2.6-6-0.5 CAM	AA
218	XBPSD30P06J00	V	Drum Base Mounting Screw (SW 3P+6S)	AA
219	LX-WZ1098GE00	J	CW 2.6-4.7-0.5 RED	AB
220	LX-BZ3096GEFD	J	Tilt Adjusting Screw	AA
221	XBPSD26P06000	V	Azimuth Adjusting Screw 2.6+6S	AA
222	LX-BZ3197GEFD	J	Screw (A/C Head)	AD
223	XWHJZ31-08052	V	Washer, W3.1-5.2-0.8	AC

CASSETTE HOUSING CONTROL PARTS

300	CHLDX3081TEV2	V	Cassette Housing Control Ass'y	AX
301	LANGF9592AJFW	V	Upper Plate	AL

XA-905 XA-920

Ref. No.	Part No.	★	Description	Code
302	LHLDX1028AJ00	V	Frame (L)	AH
303	LHLDX1032AJ00	V	Frame (R)	AH
304	LHLDX1030AJZZ	V	Holder (L)	AE
305	LHLDX1031AJZZ	V	Holder (R)	AE
306	MLEVF0469AJFW	V	Proof Lever (R)	AE
307	MLEVP0281AJ00	V	Door Open Lever	AD
308	MSLiF0076AJFW	V	Slider	AK
309	MSPRD0151AJFJ	V	Proof Lever (R) Spring	AB
310	MSPRD0166AJFJ	V	Drive Gear (R) Spring	AE
311	MSPRP0175AJFJ	V	Cassette Spring	AE
312	MSPRT0381AJFJ	V	Double Action Spring	AC
313	NGERH1278AJZZ	V	Drive Gear L	AE
314	NGERH1309AJZZ	V	Drive Gear R	AE
315	NGERR1008AJ00	V	Double Action Rack Gear	AE
316	NGERR3005AJFW	V	Drive Angle Gear	AG
317	NSFTD0041AJFD	V	Main Shaft	AH

CABINET PARTS

600	GCABA3136AJSM	V	Top Cabinet	AT
601	GCABB1224AJKB	V	Main Frame	AP
602	GCOVA2076AJKZ	V	Antenna Terminal Cover	AG
602-1	HiNDP2071AJZZ	V	BNC IND-P(XA-920)	AK
602-1	HiNDP2072AJZZ	V	BNC IND-P(XA-905)	AK
603	PSLDM4566AJFW	V	Shield Angle	AD
604	XHPSD26P06WS0	V	Screw	AA
605	XHPSD30P06WS0	V	Screw	AA
606	LANGK0197AJFW	V	Top Cabinet Fix Angle	AG
607	XEPSD30P14XS0	V	Screw	AB
608	LX-HZ3047GEFF	J	Screw	AA
609	XEBSD30P12000	V	Screw	AA
610	LX-HZ3087GEFN	J	Screw	AB
612	LHLDZ1962AJ00	V	Sensor LED Cover	AD
613	PGUMS0026AJZZ	V	Foot Cushion	AB
614	TLABM4308AJZZ	V	Model Label(XA-920)	AC
614	TLABM4309AJZZ	V	Model Label(XA-905)	AC
615	XJPSD30P10WS0	V	Screw	AA
616	GCOVA2097AJKZ	V	Pause Jack Cover	AH

FRONT PANEL PARTS

500	CPNLC2813TEV1	V	Front Panel Ass'y (XA-920)	AT
500	CPNLC2814TEV1	V	Front Panel Ass'y (XA-905)	AS
500-1	—————	-	Front Panel (Not Replacement Item)	—
500-3	HDECQ2255AJSA	V	Cassite Flap(XA-920)	AF
500-3	HDECQ2245AJSA	V	Cassite Flap(XA-905)	AF
500-4	HDECQ1976AJSC	V	Window Dec.(XA-905)	AG
500-4	HDECQ2157AJSB	V	Window Dec.(XA-920)	AG
500-5	JBTN-2940AJSB	V	REC Button(XA-920)	AE
500-5	JBTN-2943AJSE	V	REC Button(XA-905)	AD
500-6	JBTN-2941AJSA	V	SET-UP Button(XA-920)	AF
500-6	JBTN-2939AJSA	V	SET-UP Button(XA-905)	AF
500-7	MSPRD0103AJFJ	V	Cassette Spring	AB
502-1	JBTN-2942AJSC	V	PLAY Button	AF
502-2	LHLDZ2066AJZZ	V	Button Holder	AC

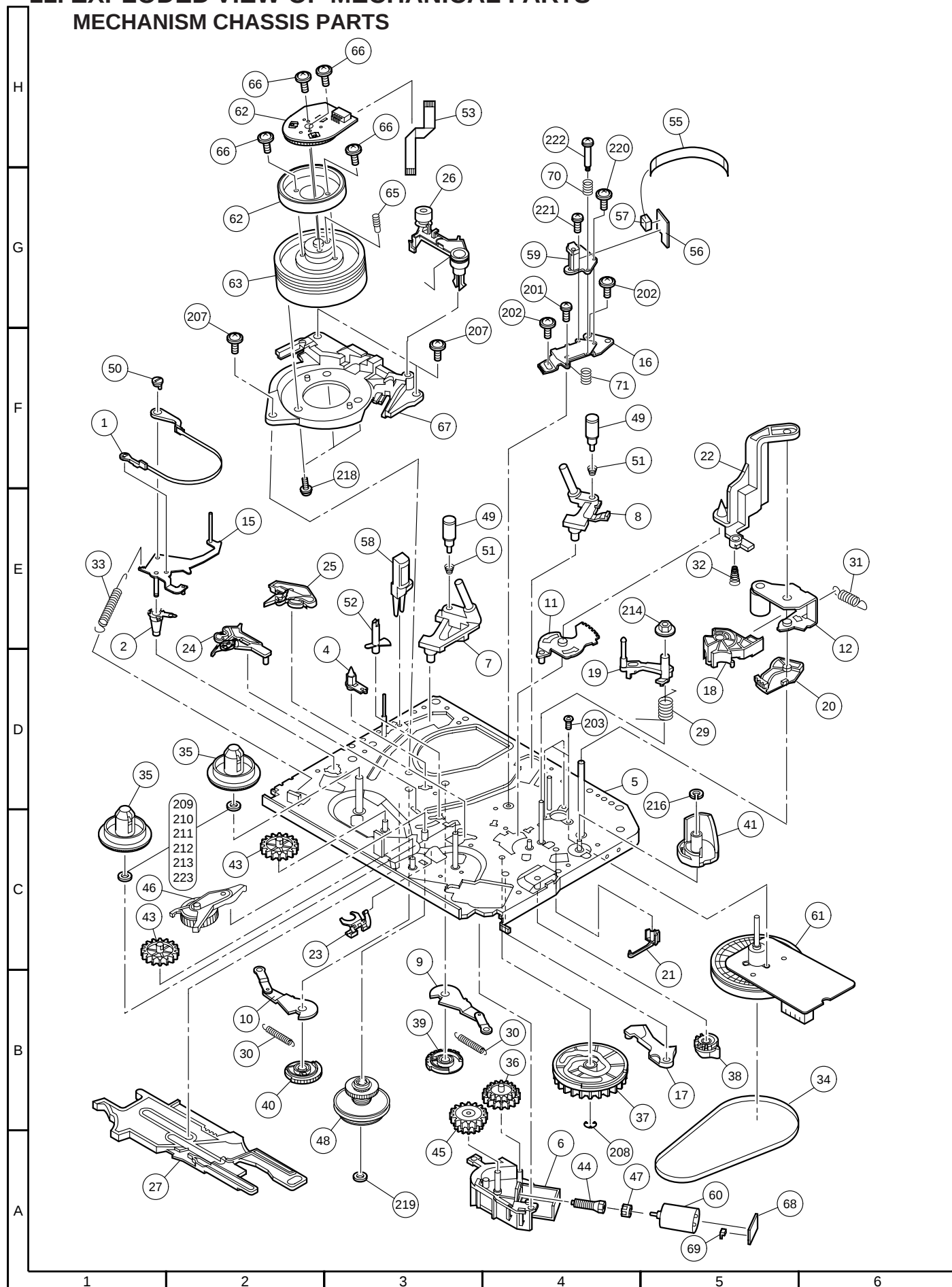
SUPPLIED ACCESSORIES

ACCESSORIES

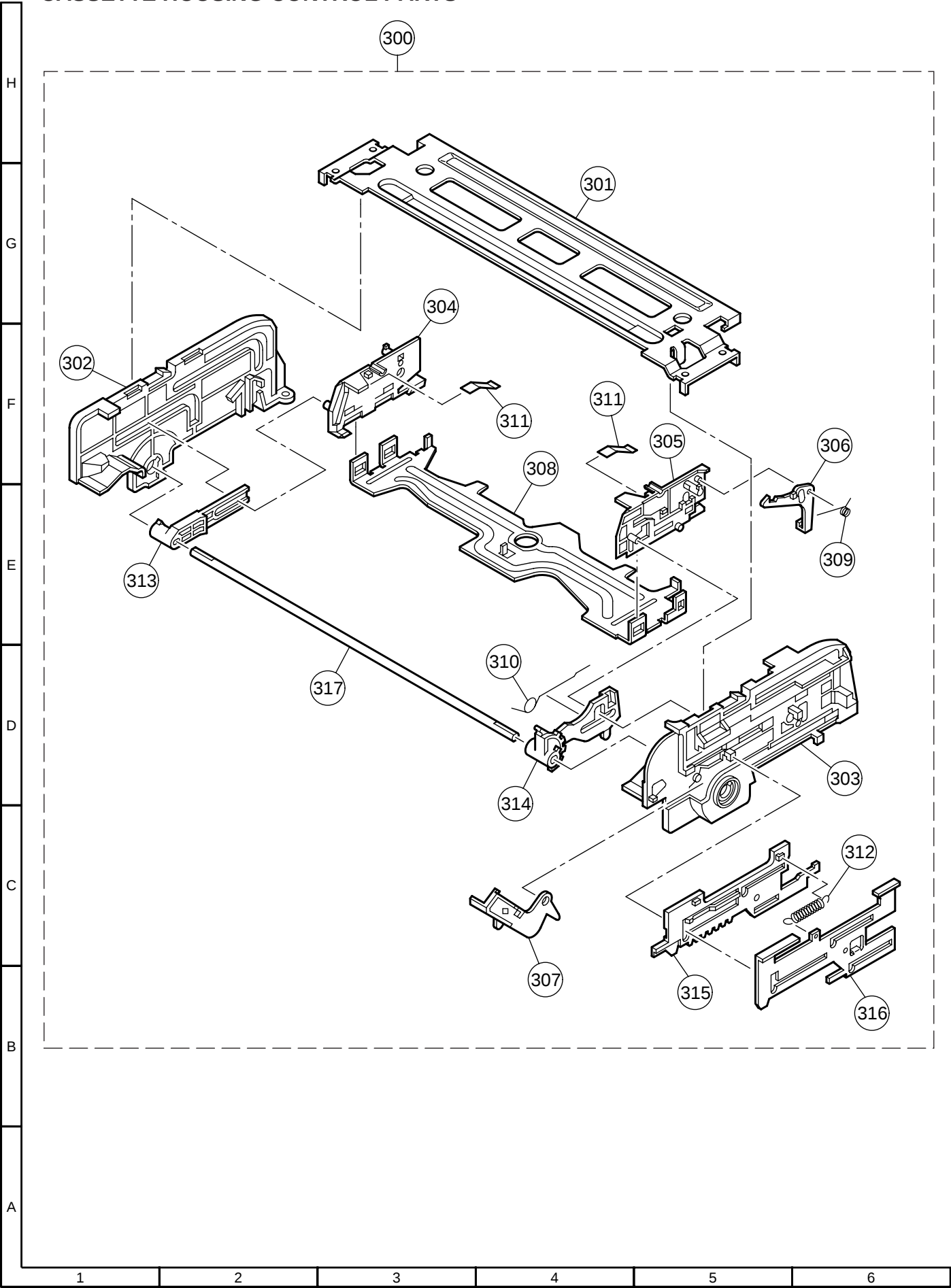
TiNS-3786AJZZ	V	Operation Manual(XA-920)	AK
TiNS-3785AJZZ	V	Operation Manual(XA-905)	AG
RRMCG1264AJSA	V	Infrared Remote Control Unit(XA-920)	AZ
RRMCG1263AJSA	V	Infrared Remote Control Unit(XA-905)	AW
QCNW-8115AJZZ	V	75 Ohm Coaxial Cable	AG

Ref. No.	Part No.	★	Description	Code
PACKING PARTS (NOT REPLACEMENT ITEM)				
	SPAKC4382AJZZ	-	Packing Case(XA-920)	—
	SPAKC4383AJZZ	-	Packing Case(XA-905)	—
	SPAKX1091AJZZ	-	Packing Add.	—
	TLABK0013AJZZ	-	No. Label	—
	TLABV0182AJZZ	-	Bar Code Label	—

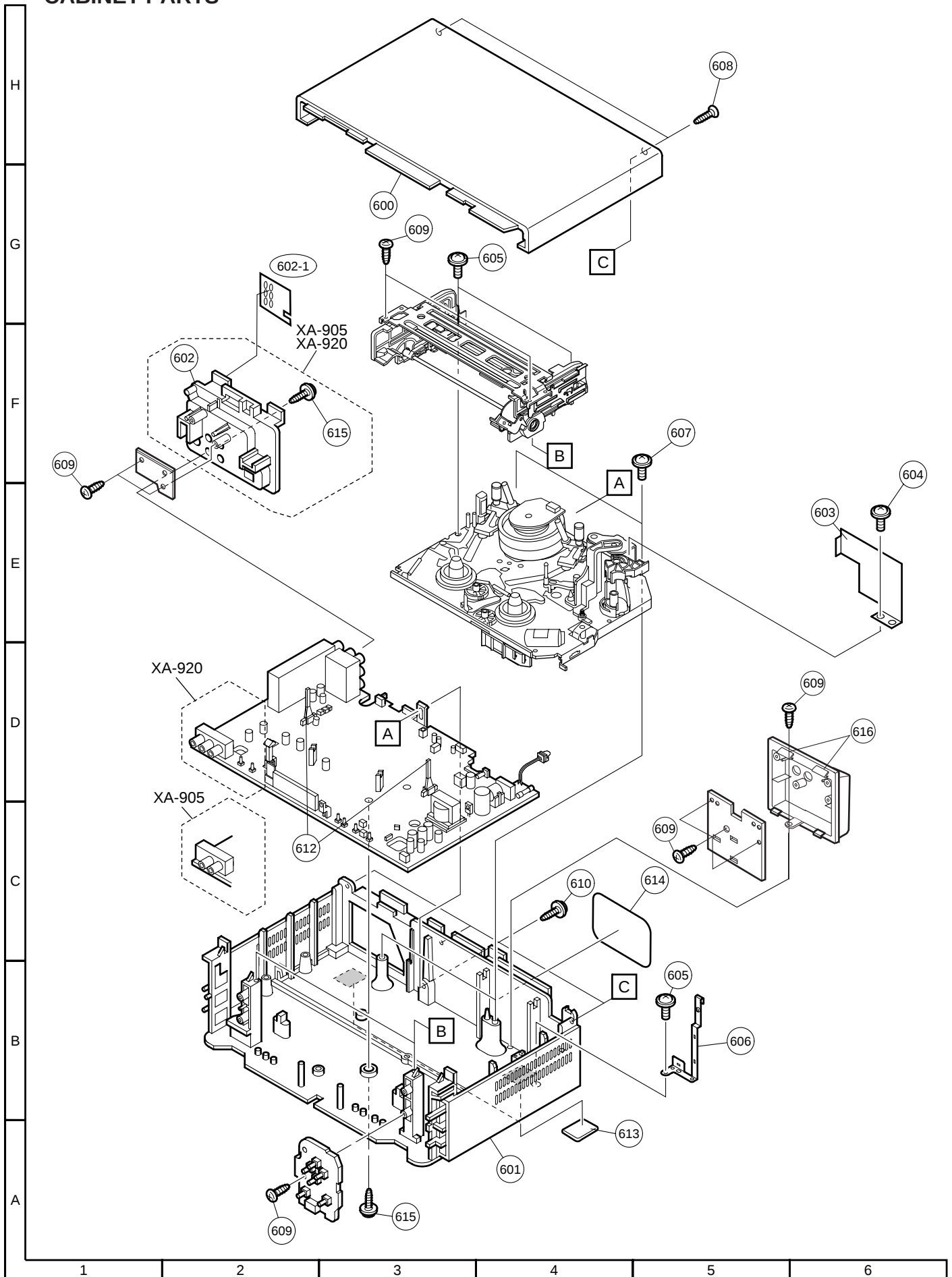
11. EXPLODED VIEW OF MECHANICAL PARTS MECHANISM CHASSIS PARTS



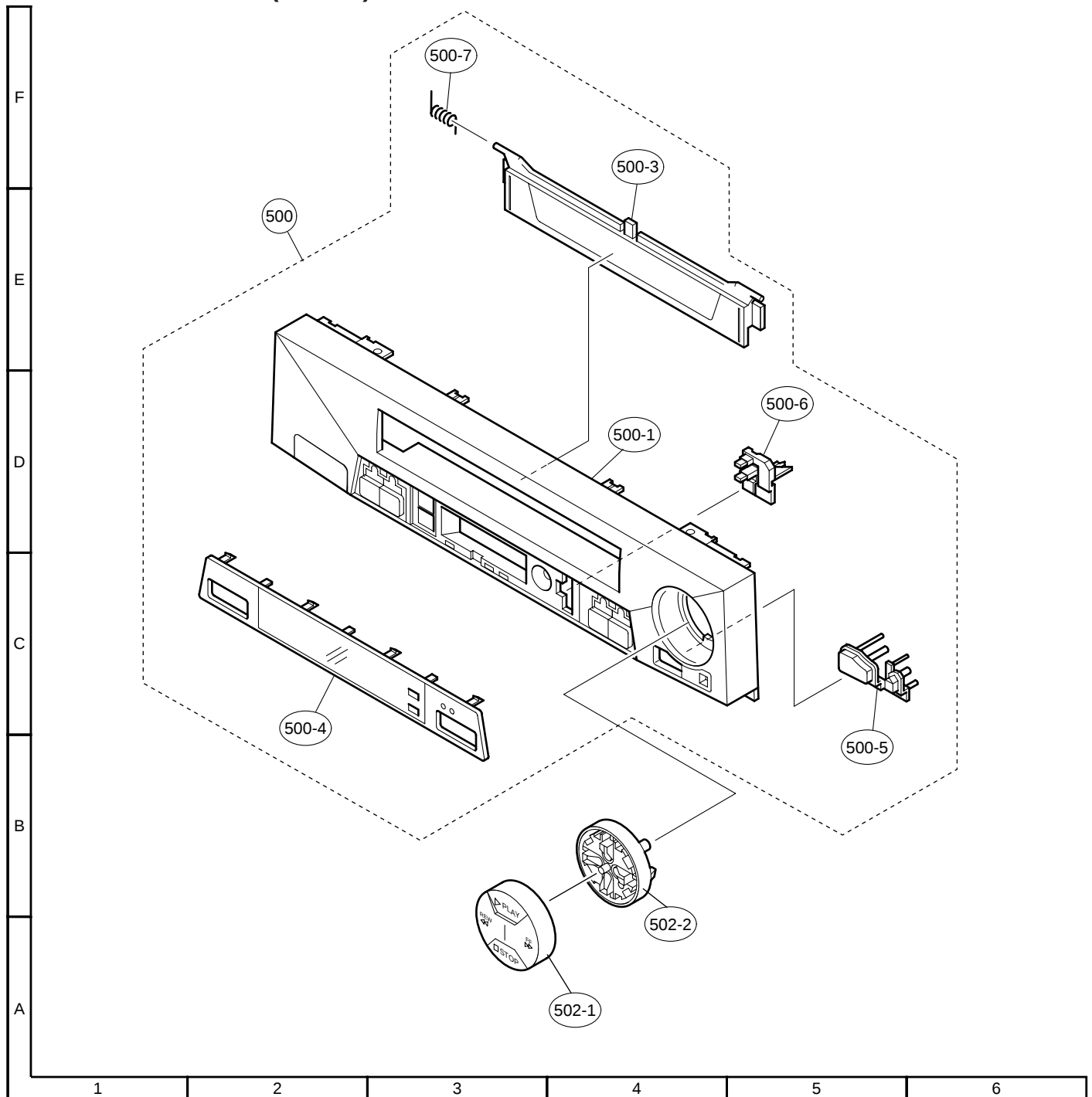
CASSETTE HOUSING CONTROL PARTS



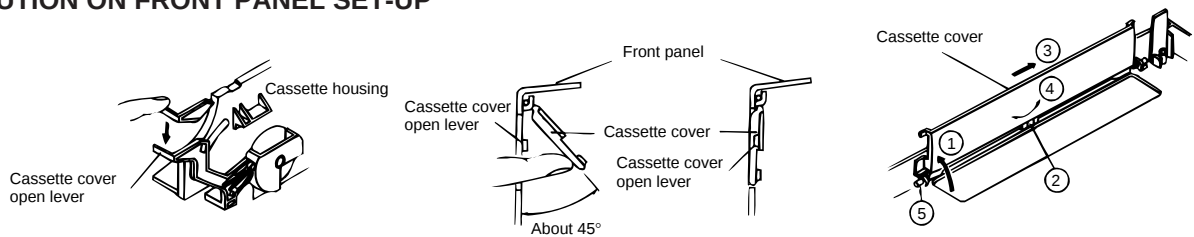
CABINET PARTS



FRONT PANEL PARTS(XA-905)



PRECAUTION ON FRONT PANEL SET-UP



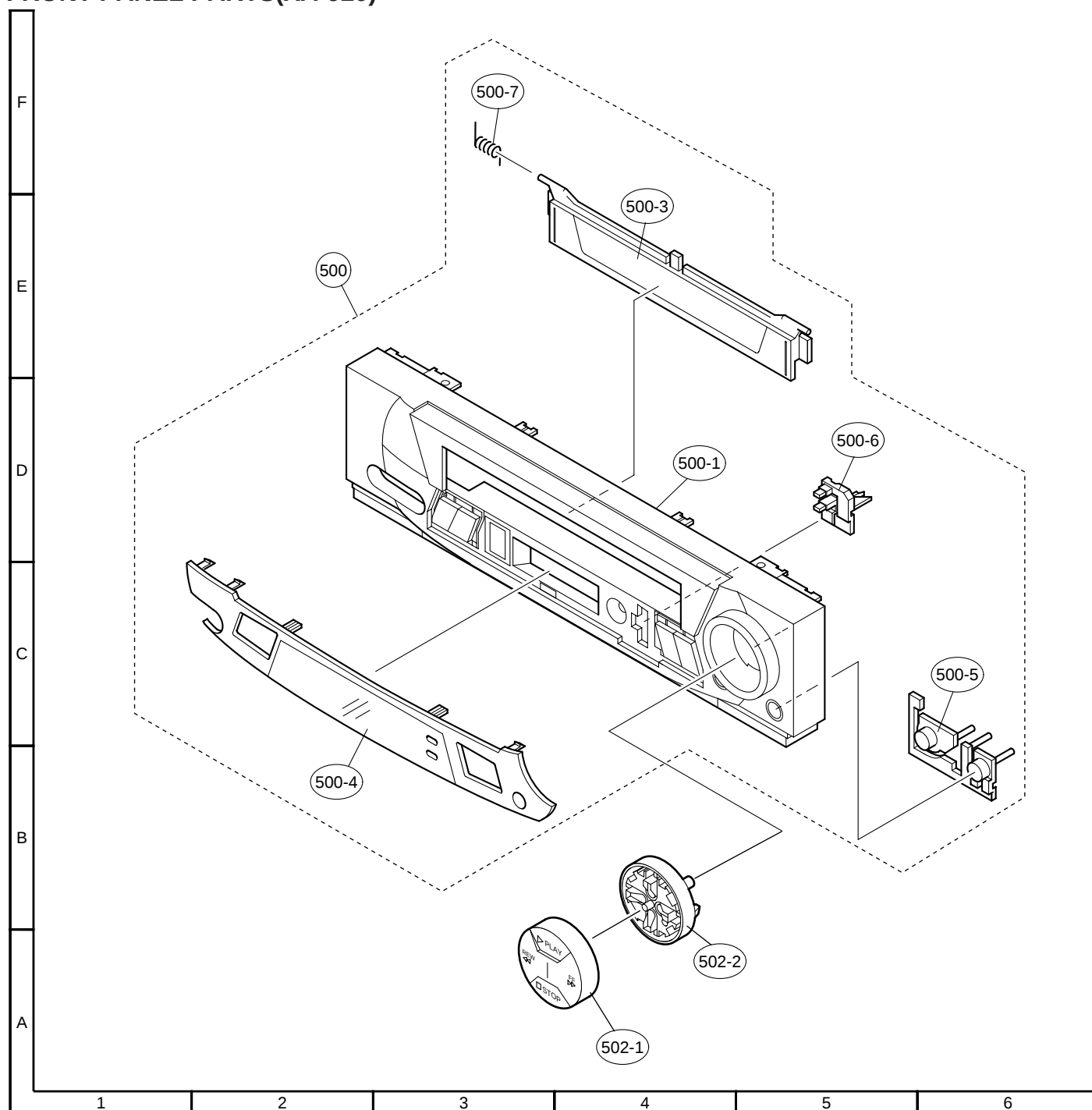
Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lower-most). If it is out of position, push it down with a finger.

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

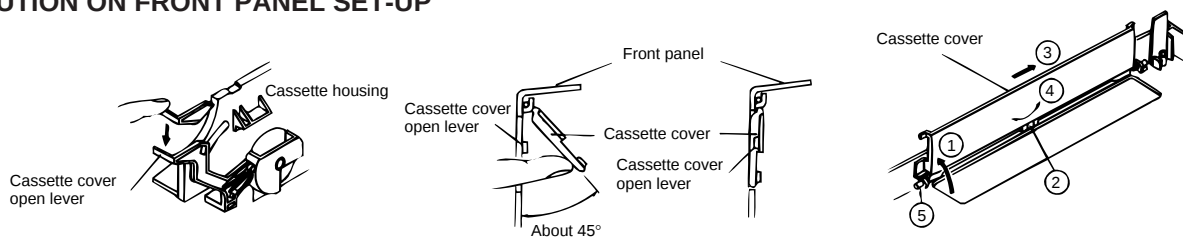
Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.

Removing the cassette compartment cover.
① 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(XA-920)



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.

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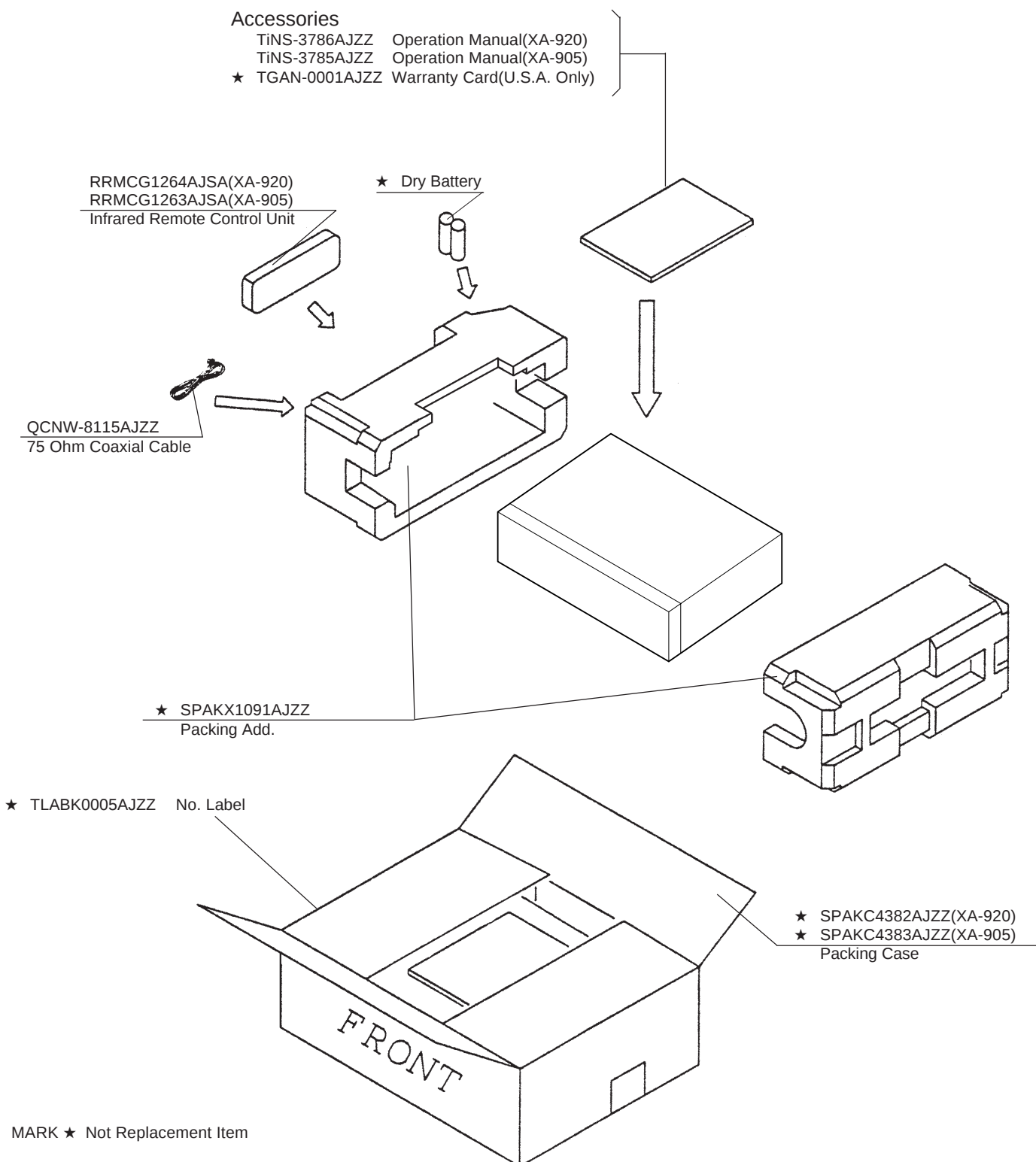
Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.

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 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

■ Setting position of the Knobs

RF conv. CH. preset	at "3" channel
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