T5 - DECK MECHANISM

(For EUROPE)

CONTENTS

1. DESCRIPTION OF THE MECHANISM

1-1 Characteristic of T5-DECK MECHANISM

1) T5-MECHA follows the VHS and the NTSC standard.

2) T5-MECHA uses 3 MOTORS (DRUM MOTOR, CAPSTAN MOTOR, L/C MOTOR).

3) T5-MECHA uses L/C Motor to drive FRONT LOADING.

4) T5-MECHA uses 4-BIT MODE signal to recognize each MODE.

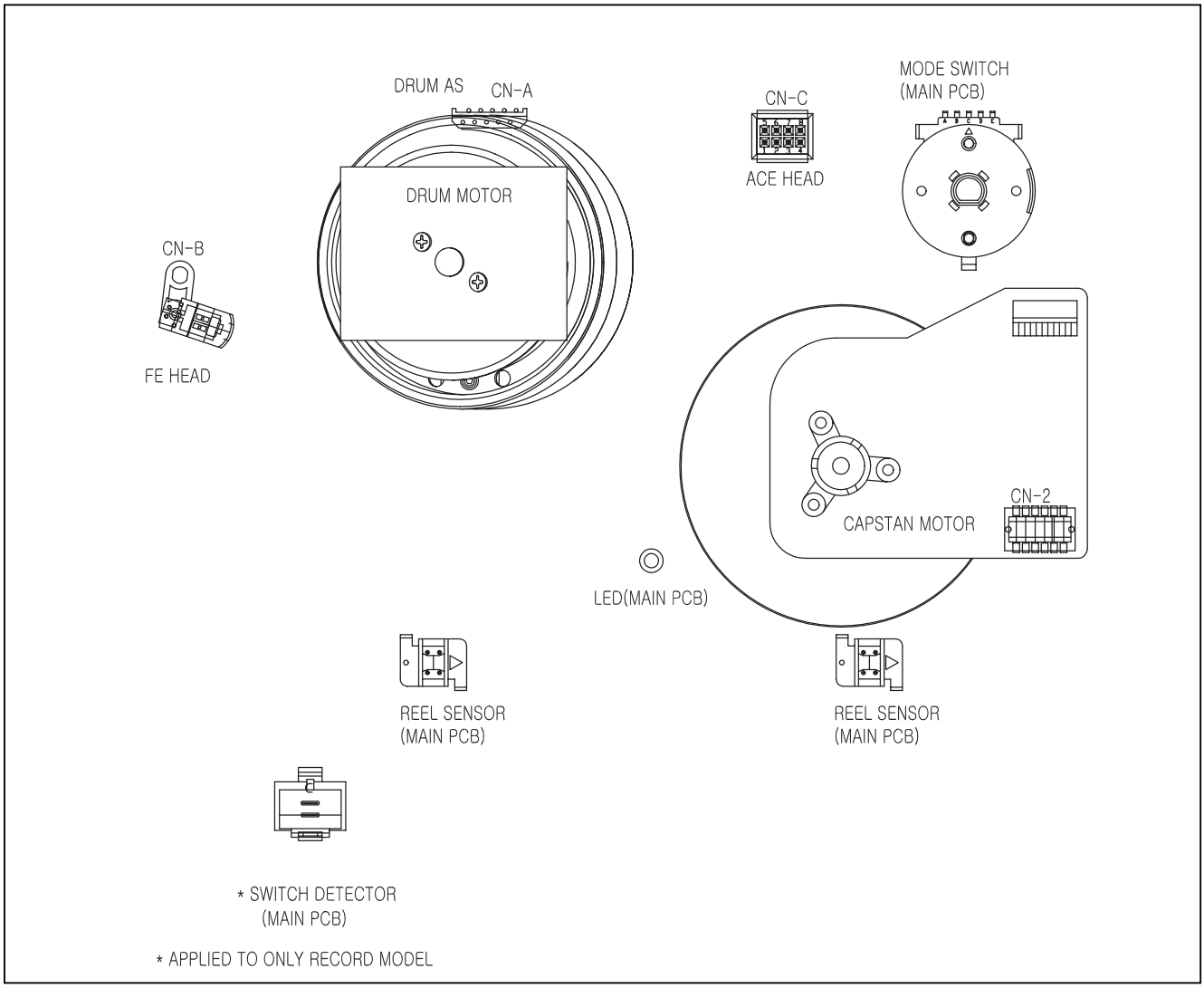
This 4-BIT MODE signal is generated from the cam switch driven by the L/C MOTOR.

5) T5-MECHA has 7MODES (EJECT/INITIAL/REV/IDLE/PLAY,STOP,SLOW/BRAKE/FF&REW) operation.

6) T5-MECHA deduce the MODE changing time by adopting the full loading system which maintains the tape winding the drum circumference.

7) T5-MECHA can be separated from the main pcb, and be assembled with B-B type connector. This B-B type connectioning means that CAPSTAN MOTOR, LC MOTOR, AC HEAD, FE HEAD, DRUM are connected directly without using connector cable.

1-2 Wire Diagram



1-3 Connector Pin Arrangement

CN-A

4HEAD Hi-Fi	1	AFM-L
	2	AFM COMM
	3	AFM-R
2HEAD MONO	4	SL-L
	5	SP COMM
	6	SP-R
	7	GND
4HEAD MONO	8	EP-R
	9	EP COMM
	10	EP-L

CN-B

1	FE HEAD
2	FE HEAD

CN-C

1	AE HEAD
2	CTL(-)
3	GND
4	CTL(+)
5	A.HEAD(PB)
6	LM(+)
7	A.HEAD(REC)
8	LM(-)

CN-2

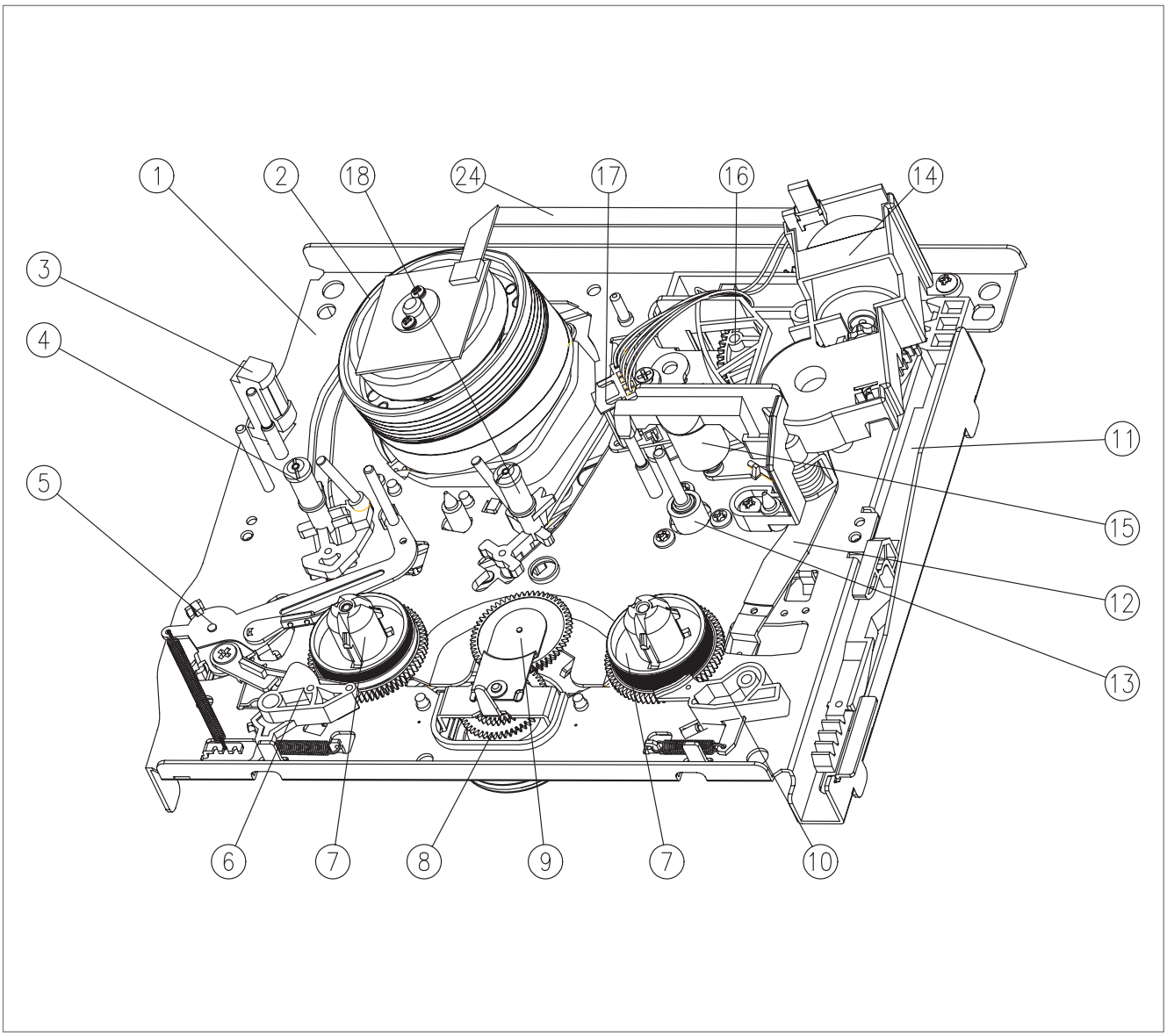
1	C-FG
2	Vcc1(CAP)
3	Vcc(5V)
4	F/R
5	V LIM
6	M-GND
7	S-GND
8	Vco2(D&L)
9	C-Vctl
10	L-in
11	D-PG.FG
12	D-Vctl

2. ASSEMBLY DIAGRAM AND MAJOR PARTS CHECK

2-1 Assembly Diagram

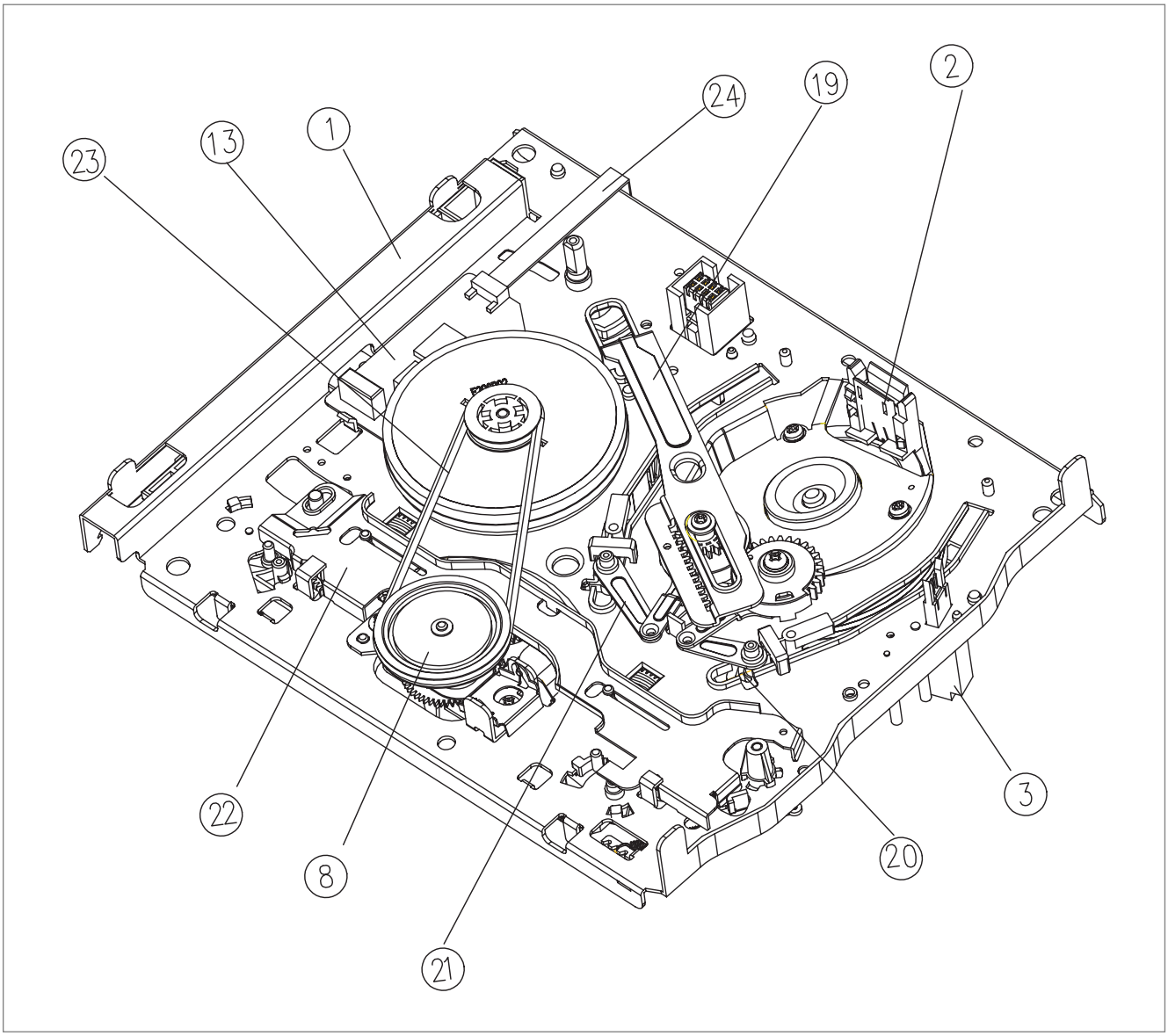
2-1-1) DECK Assembly Diagram

A. UPPER VIEW



1 MAINBASE ASS'Y	9 IDLER PLATE TOTAL ASS'Y	17 AC HEAD ASS'Y
2 DRUM ASS'Y	10 T BRAKE ASS'Y	18 T SLANT POLE ASS'Y
3 FE HEAD	11 FL RACK	24 CABLE FFC
4 S SLANT POLE ASS'Y	12 RELAY LEVER	
5 TENSION BAND ASS'Y	13 CAPSTAN MOTOR	
6 S BRAKE ASS'Y	14 LC BRKT ASS'Y	
7 REEL TABLE	15 PINCH LEVER TOTAL ASS'Y	
8 REEL BRKT TOTAL ASS'Y	16 CAM GEAR	

B. BOTTOM VIEW



19 LOADING RACK

20 L LOADING ASS'Y

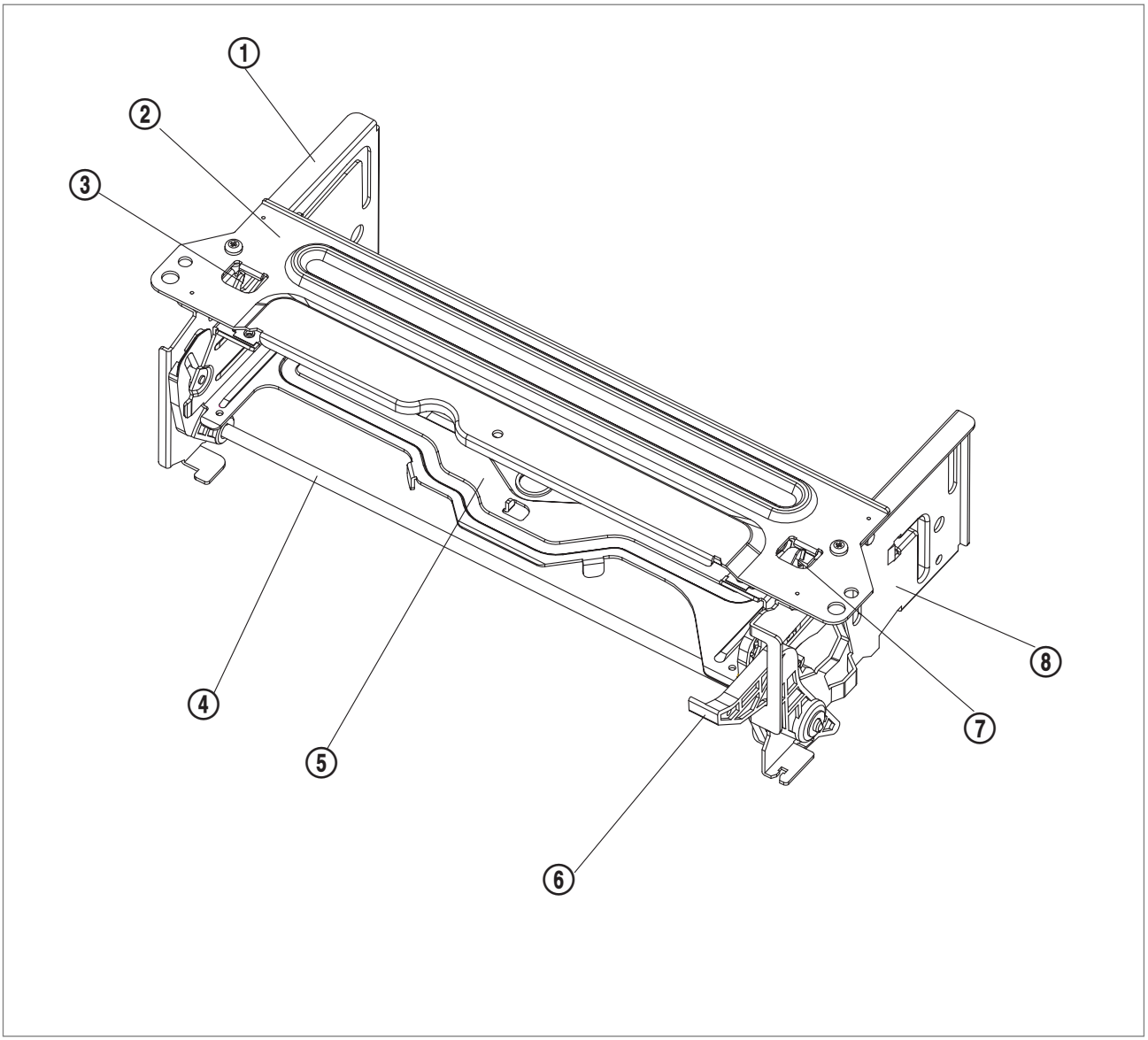
21 R LOADING ASS'Y

22 CONNECT PLATE

23 REEL BELT

24 CABLE FFC

2-1-2) FRONT LOADING Assembly Diagram



1 FL BRKT L
2 TOP PLATE
3 SAFETY LEVER L
4 LOADING LEVER AS
5 CST HOLDER AS
6 DOOR OPENER
7 SAFETY LEVER R
8 FL BRKT R

2-2 Periodic Maintenance and Service Schedule

2-2-1) Periodic Maintenance and Service Schedule

A. In order to effectively maintain the excellent performance and fully utilize the features of this apperatus and to lengthen the life of mechanism and tapes, we strongly urge you to perform the periodic maintenance and inspection as described below.

• Following should be done after the substition of parts of deck or correction of deck failure.

B. Cleaning of the DRUM TOTAL ASS`Y

- Slowly turnning DRUM TOTAL ASS`Y, wipe the drum surface with clean cloth soaked in alchol. (Don't connect the power when turnning the UPPER DRUM)
- Don't wipe the Head-Tip vertically with cleaning cloths.

C. Tape transporting section cleaning

- Clean the tape transporting section with clean cloth soaked in alchol.

D. Driving section cleaning

- Clean the driving section with clean cloth soaked in alchol.

E. Everyday inspection

- Perform the maintenance and inspection periodically according to the number of use.
- Refer to the table 2.2.3.

2-2-2) Cleaning and Lubrication

A. Cleaning of Tape Transporting section and driving section

a. Cleaning of Tape Transporting section

- The following parts shoule be cleaned after every 500 hours of use.

• TENSION POLE	• S SLANT POLE
• AC HEAD/AE HEAD	• GUIDE POST
• VIDEOHEAD / DRUM	• T GUIDE POST
• FE HEAD	• T SLANT POLE
• CAPSTASN SHAFT	• S GUIDE ROLLER
• T GUIDE ROLLER	• PINCH ROLLER

- Because the above part contact with video tape, they tend to be stained with dusts and foreign substances which make the bad effect on the picture and sometimes lead to the tape damage.
- Be sure to check the remained alchol during cleaning evaporated thoroughly before using a tape.

b. Cleaning of the driving section

- REEL TABLE
- CAPSTAN FLYWHEEL/PULLEY
- REEL PULLEY

B. Lubrication

• REEL GEAR POST : After the cleaning the parts with alchol, lubricate them with one or twol drops of ool

• S/T REEL TABLE POST : After the cleaning the parts with alchol, lubricate them with grease.

2-2-3) Service Sechedule for each parts

Following parts should be checked according to the recommanded intervals

	Period Service (Hours)				
PART Name	1000	2000	3000	4000	5000
DRUM TOTAL ASS'Y	★	○	★	○	★
CAPSTAN MOTOR		○		○	
L/C BRKT TOTAL ASS'Y		○		○	
REEL BELT		○		○	
IDLER PLATE TOTAL ASS'Y		○		○	
REEL TABLE			○		
T BRAKE ASS'Y		○		○	
TENSION BAND ASS'Y		○		○	
PINCH ROLLER ASS'Y		★	○	★	
AC HEAD ASS'Y			○		
FE HEAD					○
REEL BRKT TOTAL ASS'Y		○		○	

★ : Check and replace if necessary. ○ : Replace

NOTE:

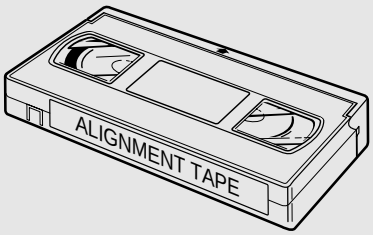
Independant of the above service shedule, Cleaning and lubrication and replacement of the belt sould be undertaken every 2 years.

2-3 Jig and Tools

2-3-1) List of Jigs and Tools

NO	ITEMS	MODEL	FIG. N O	REMARKS
1	ALIGNMENT TAPE	NTSC: SP MONOSCOPE 7KHz SP COLOR BAR 1KHz (EP MONOSCOPE)	①	CHECKING OF THE TAPE TRANSPORTING SECTION
2	CLEANING TAPE (DAEWOO)	DHC-602V	②	CHECKING OF THE TAPE TRANSPORTING SECTION
3	CASSETTE TAPE TORQUE METER(KOKUSAI)	KT-300NV KT-300RV	③	MEASUREMENT OF THE REEL TORQUE
4	VHS SPINDLE HEIGHT GAUGE	TSH-V4	④	MEASUREMENT OF REEL TABLE HEIGHT
5	TENTELO METER (TENTELO)	T2-H7-UM	⑤	MEASUREMENT OF THE BACK TENSION
6	FAN TYPE TENSION METER	< 3KG	⑥	MEASUREMENT OF THE PRESSING FORCE FOR THE PINCH ROLLER
7	DENTAL MIRROR		⑦	CHECKING OF THE TAPE TRANSPORTING SECTION
8	+DRIVER		⑧-1	ASSEMBLY, DISASSEMBLY AND ADJUSTMENT
	ADJUSTMENT DR IVER		⑧-2	

2-3-2) A Skectch of Jigs and Tools

① 

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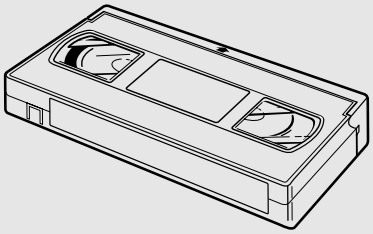
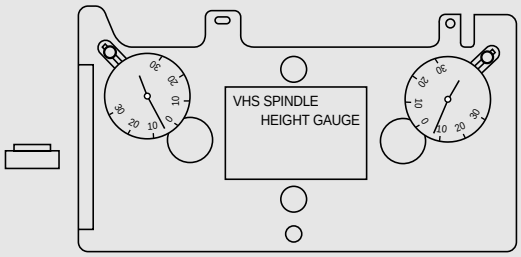
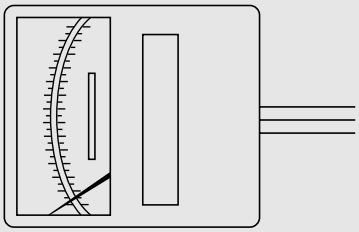
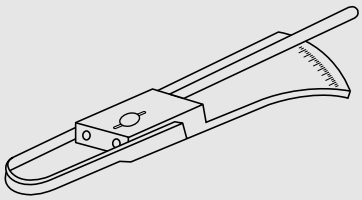
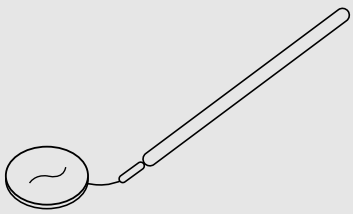
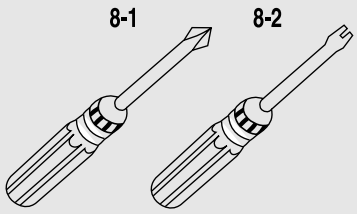
③ 

④ 

⑤ 

⑥ 

⑦ 

⑧ 

3. DISASSEMBLY AND REPLACEMENT

3-1 Removal of the FRONT LOADING ASS'Y (Fig. 3.1)

NOTE:
REMOVE THE FRONT LOADING ASS`Y IN EJECT MODE

a. Unscrew the 2 screw holding the F/L.

b. Separate the F/L ASS`Y from the MAIN BASE settling down point by lifting the rear part of F/L(Screw hole).

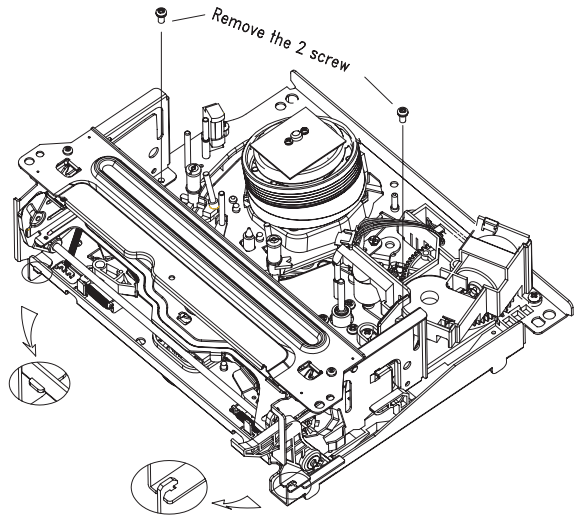


Fig. 3.1 Diassembly of the FRONT LOADING ASS`Y

3-2 Disassembly of FRONT LOADING ASS'Y (FIg. 3.2~3.5)

a. Remove the one WASHER for holding the door opener and separtate F/L Assembly by moving the DOOR OPENER in the direction of arrow.

b. Remove the 2 screw holding the TOP PLATE and separate the CASSETT HOLDER ASS`Y by moving the FL BRKT L and FL BRKT R in the direction of arrow (Fig. 3.2)

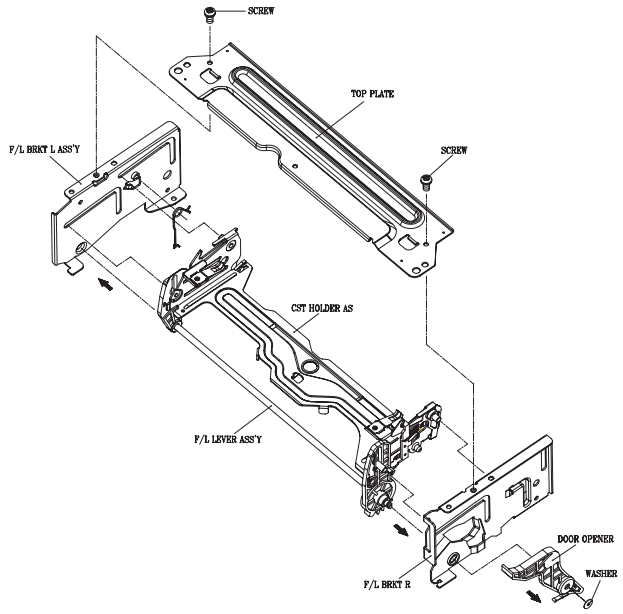


Fig. 3.2 Diassembly of the FRONT LOADING ASS`Y

c. Separate the LOADING LEVER ASS`Y by pressing the connection point from the CASSETTE HOLDER ASS`Y.(Fig. 3.3)

d. Remove the SAFETY SPRING connecting the SAFETY LEVER and CASSETTE HOLDER PLATE.(Fig. 3.3)

e. Remove the RELEASE SPRING connecting the RELEASE LEVER and SAFETY LEVER.(Fig3.3)

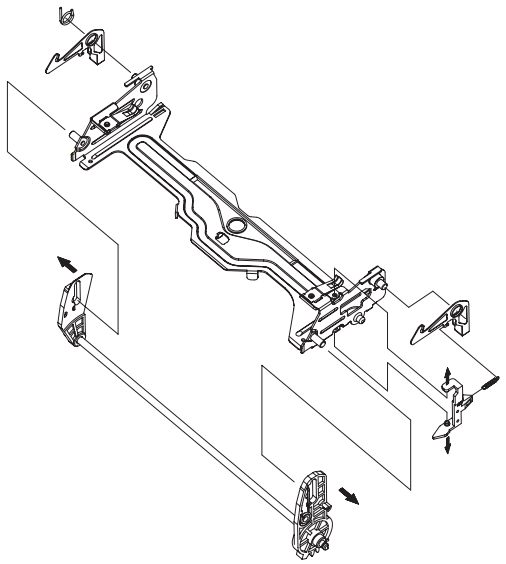


FIg. 3.3 Disassembly of the CASSETTE HOLDER Ass'y

CAUTION:

Assemble the FRONT LOADING ASS`Y in the reverse step of diassembly. Confirm that two bosses on the left side of the CASSETTE HOLDER ASS`Y are inserted in the groove on the left side of the top plate. Insert two bosses on the right side of the CASSETTE HOLDER ASS`Y into the groove of the F/L BRACKET R.(Fig. 3.4)

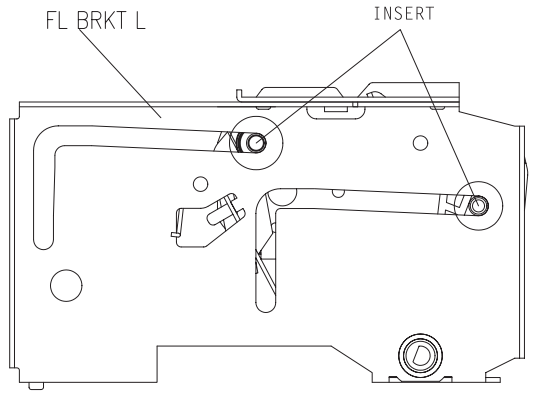


FIg. 3.4 Assembly of the FL Ass'y

3-3 Disassembly of DRUM ASS'Y (Fig. 3.5)

a. Turn over the DECK MECHANISM and holding the DRUM TOTAL ASS`Y ② with hands , remove the 3 screw holding the drum total assembly with main base.

b. Separatet the DRUM TOTAL ASS`Y from the deck paying attention there is no damage on the surface of VIDEO HEAD and DRUM.

c. Assembly step is the reverse way of diassembly.

CAUTION:

• After the assembly of the DRUM TOTAL ASS`Y, check out if DECK mecahnism operate smoothly and adjustment of tape transmission section is OK.

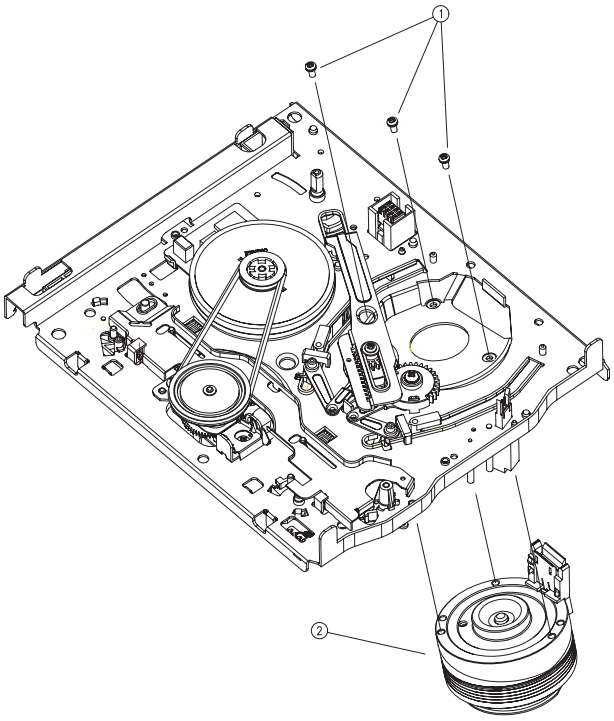


FIg. 3.5 Diassembly of DRUM ASS`Y

3-4 Disassembly of LOADING RACK, LOADING ASS'Y, S/T SLANT POLE ASS'Y (Fig. 3.6, 3.7)

a. Turn out the DECK MECHANISM and remove the LOADING RACK ② after unscrewing the SCREW .

b. Disintegrate the R LOADING AS ③ and L LOADING AS ④ .

c. Disintegrate the S SLANT POLE AS ⑤ and T SLANT POLE AS ⑥ by moving those part in arrow dircetion.

CAUTION:

- Take care GUIDE ROLLER of S/T SLANT POLE AS and SLANT POLE not to be stained with grease during assembly.
- Refer to Fig. 3.7 in assembly.

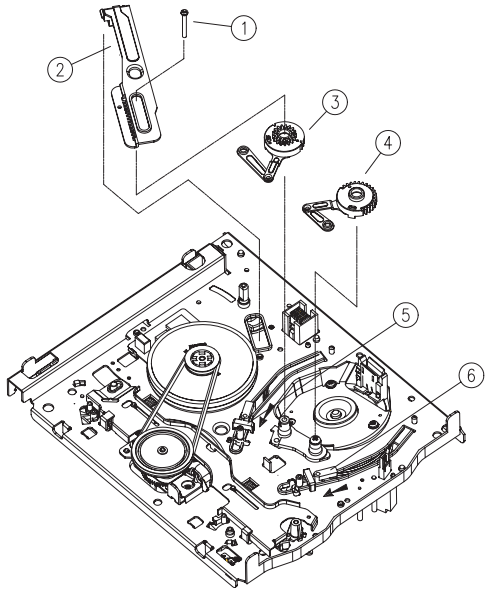


FIg. 3.6 Disassembly of the LOADING RACK, LOADING ASS'Y and the SLANT POLE ASS'Y

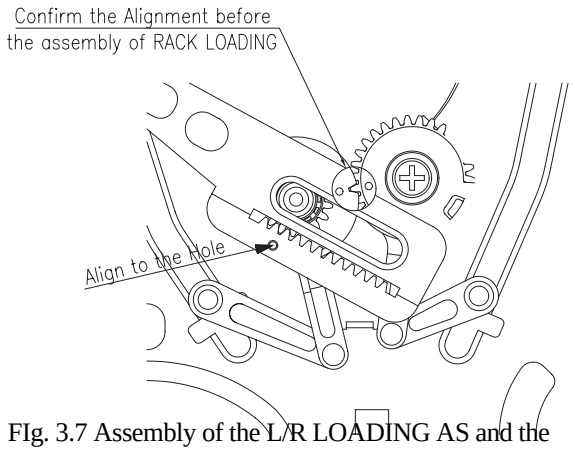


FIg. 3.7 Assembly of the L/R LOADING AS and the LOADING RACK

3-5 Disassembly of the A/C HEAD ASS'Y (Fig. 3.8)

a. Remove the CONNECTOR ② from the AC HEAD ASS`Y, Watch out that there is no damage in the HEAD connecting PIN.

b. Separate the AC HEAD ASS`Y ① after unscrewing the-screw ③

CAUTION:

- After the assembly, adjust the tape transmissionsection by refering to the chapter 5.
- After the adjustment of the tape transmission section, paint the 3 adjustment screw with locking paint.

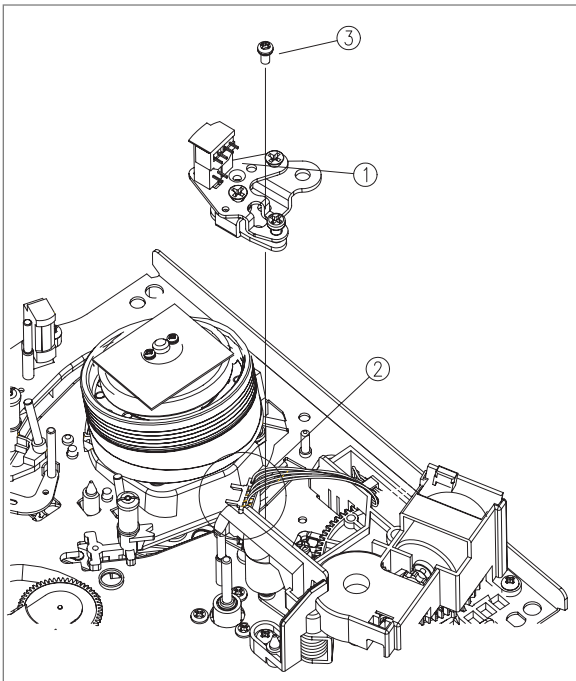


FIg. 3.8 Disassembly of the AC HEAD ASS'Y

3-6 Disassembly of the LC BRKT ASS'Y, PINCH LEVER TOTAL ASS'Y (Fig. 3.9)

a. Separate the LC BRKT Ass'y ② after removing the 3 screws ①.

b. Separate the LC BRKT Ass'y ② from the DECK MECHANISM.

c. Disintegrate the PINCH LEVER TOTAL Ass'y ③.

CAUTION:

- After the assembly of the PINCH LEVER TOTAL Ass'y, adjust the tape transmission section by refering to the chapter 5.
- There should be no pollution on the surface of PINCH ROLLER ④ with grease or other foreign material.
- Make sure if the end of the PINCH SPRINGPINCH "A" is located at the end of trajectory of CAM GEAR "B" in assembly (Refer to Fig. 4.3)

3-7 Disassembly of the CAM GEAR, RELAY LEVER, FL RACK (Fig. 3.9)

a. Separate the CAM GEAR ⑤ from the MAINBASE.

b. Separate the RELAY LEVER ⑥ from the MAINBASE.

c. Separate the FL RACK ⑦ from MAINBASE by moving to the arrow direction.

CAUTION:

- When reassembling, refer to Fig. 3.10, Fig. 3.11 and chapter 4.

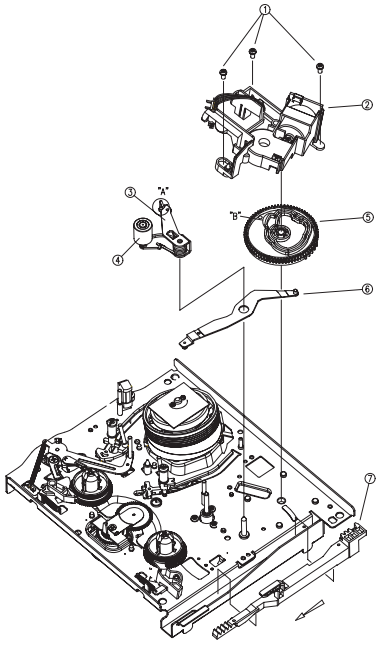


FIg. 3.9 Disassembly of the LC BRACKET ASS'Y from the PINCH LEVER TOTAL ASS'Y

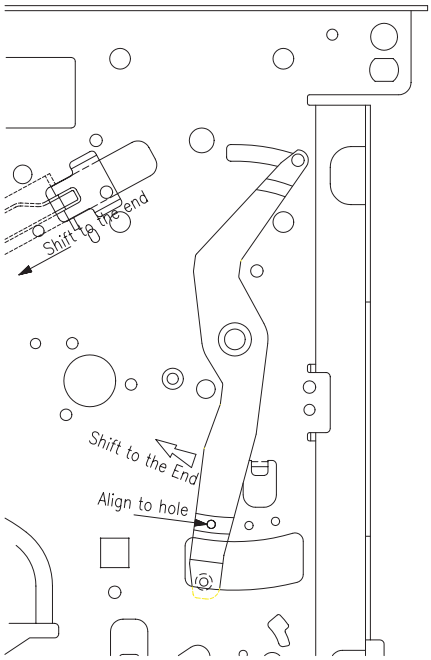


FIg. 3.10 Assembly of the CAM GEAR, RELAY LEVER

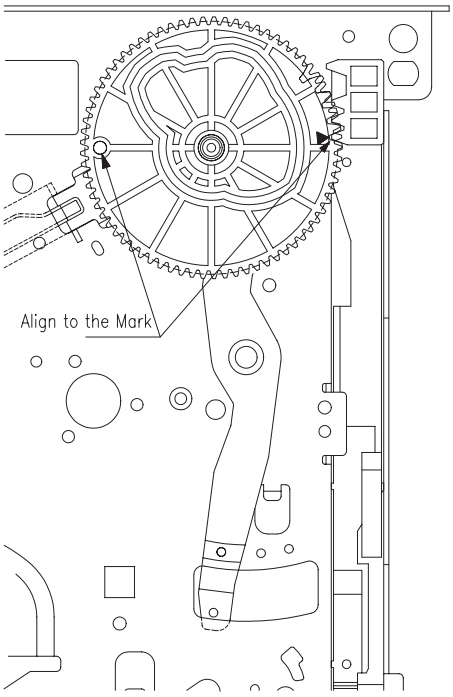


FIg. 3.11 Assembly of the CAM GEAR, FL RACK

3-8 Disassembly of the S/T BRAKE ASS'Y (Fig. 3.12)

a. Unhook the S BRAKE SPRING ③ from the MAIN-BASE HOOK ①.
b. Remove the S BRAKE Ass'y ② from the mainbase.
c. Remove the T BRAKE SPRING ⑥ from the MAIN-BASE HOOK ④.
d. Remove the T BRAKE Ass'y ⑤.

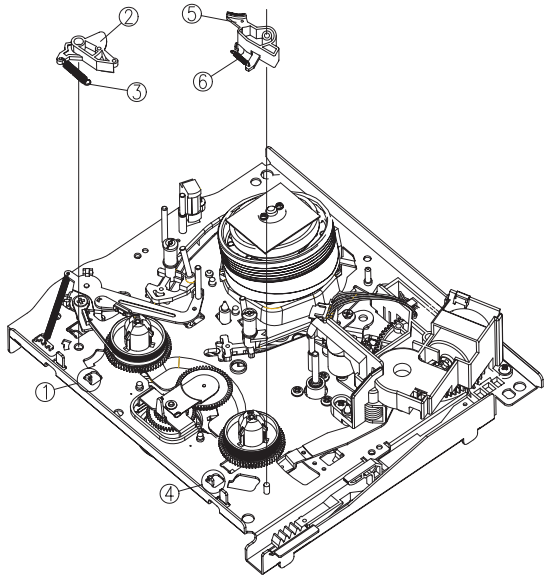


FIg. 3.12 Disassembly of the S/T BRAKE ASS'Y

3-9 Disassembly of the TENSION BAND ASS'Y (Fig. 3.13)

a. Unhook the TENSION SPRING ② from the MAIN-BASE HOOK ①.
b. Unhook the MAINBASE HOOK "A" and remove the TENSION BAND Ass'y ③ from the mainbase.

CAUTION:

- After the assembly of TENSION BAND Ass'y on the mainbase, adjust the TENSION POLE location as shown in Fig. 3.14.
- Avoid getting Grease, Oil or Foreign substance on the FELT of the BAND BRAKE.
- Take care not to deform the MAINBASE HOOK "A" when separating the TENSION BAND Ass'y ③.

3-10 Disassembly of the Capstan Motor (Fig. 3.13)

a. Separate the CAPSTAN MOTOR ⑤ after the removal of 3 screws ④ holding the capstan motor.

3-11 Disassembly of the FE HEAD (Fig. 3.13)

a. Remove the screw ⑥ and separate the FE HEAD ⑦ from the MAINBASE.

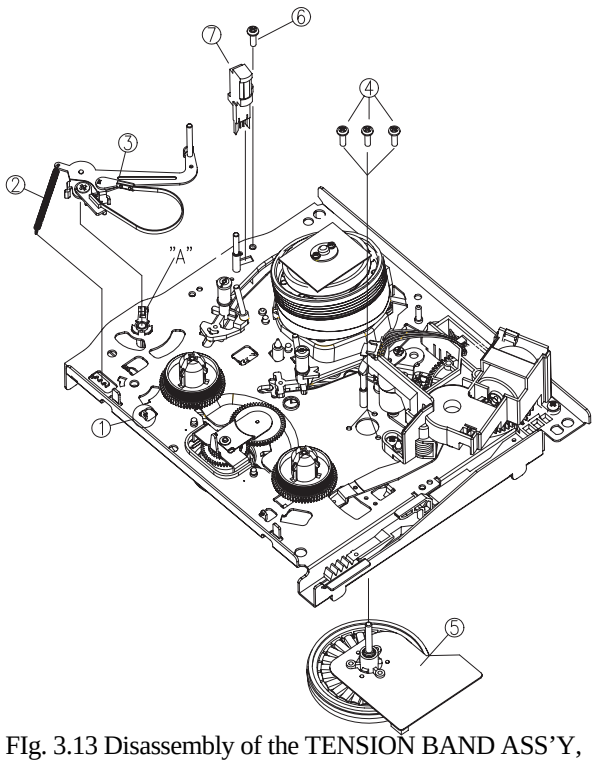


FIg. 3.13 Disassembly of the TENSION BAND ASS'Y, CAPSTAN MOTOR and the FE HEAD

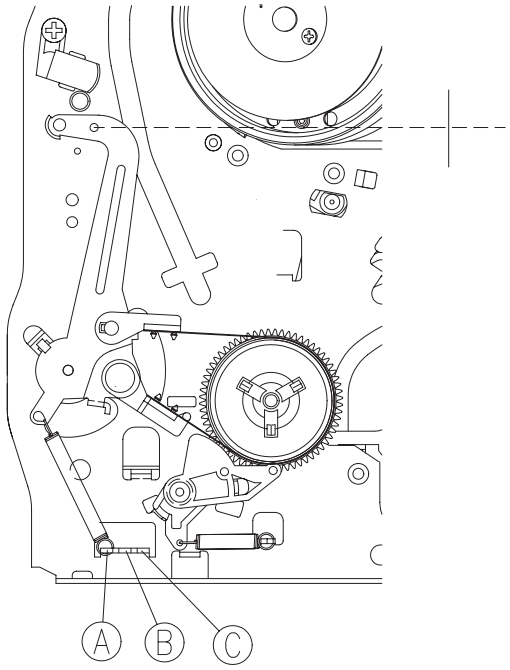


FIg. 3.14 Adjustment of the TENSION POLE POSITION

3-12 Disassembly of the REEL TABLE, IDLER PLATE TOTAL ASS'Y (Fig. 3.15)

a. Remove the POLY WASHER ① and separate the IDLER PLATE TOTAL Ass'y ② from the mainbase.

b. Remove the REEL TABLE ④ from the REEL TABLE POST ③ of the MAINBASE.

CAUTION:

• Take care not to deform the IDLER PLATE TOTAL Ass'y ② when assembling and disassembling.

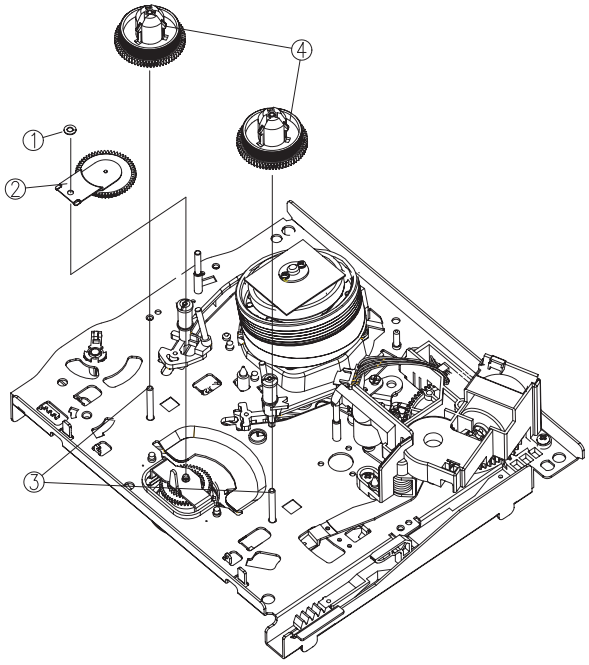


FIg. 3.15 Disassembly of the REEL TABLE and the IDLER PLATE TOTAL ASS'Y

3-13 Disassembly of the REEL BRKT TOTAL ASS'Y, CONNECT PLATE (Fig. 3.16)

a. Turn over the DECK MECHANISM and remove 2 screws ①.

b. Remove the REEL BRKT TOTAL Ass'y ② from the MAINBASE.

c. Separate the CONNECT PLATE ③ from the MAIN-BASE by pushing to the direction of the arrow.

CAUTION:

• In diassembly of the REEL BRKT TOTAL ASS`Y, take care REEL BELT and REEL FELT not to be stained with GREASE, OIL, or foreign substance.

• diassembly of the IDLER ASS`Y should be precede the diassembly of the REEL BRKT TOTAL ASSY.

• Check the operation of the REEL BRKT TOTAL ASSY before assembly.

• Check the operation of FF/REW, PLAY, CUE, and REVIEW work well and existence of noise during the mode operation..

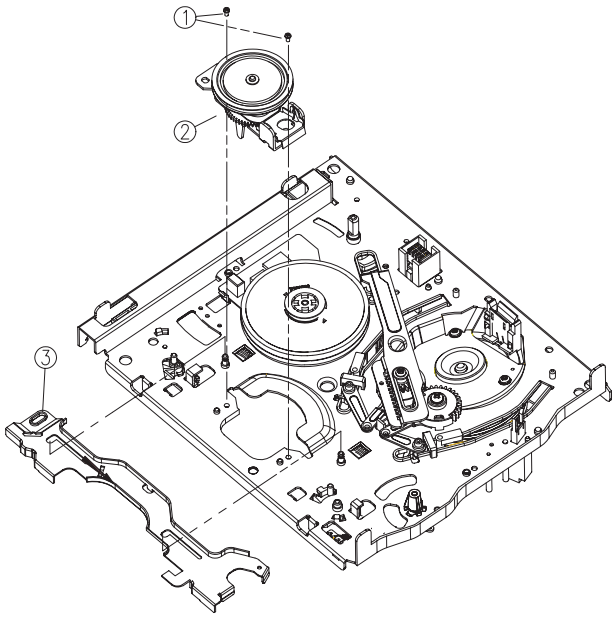


FIg. 3.16 Disassembly of the REEL BRKT TOTAL ASS'Y and the CONNECT PLATE

4. MECHANICAL ADJUSTMENT

4-1 Mechanical Adjustment (Fig. 4.1~4.4)

In case of diassembly and reassembly for fixng the mecanical problem, check the following check point.

a. Make sure that the DATUM HOLE of the CAM GEAR is aligned wth the DATUM HOLE in the MAINBASE in the EJECT modew as shown in Fig. 4-1.

b. Make sure that the ending part “A” of the RELAY LEVER assembled on the CONNECT PLATE is aligned with the reference hole “B” of the MAINBASE as shown in Fig. 4.2.

c. The end point “A” of PINCH SPRINGPING of the LEVER TOTAL ASS`Y should be located within the trajectory “B” of the CAM GEAR. (Fig. 4.3)

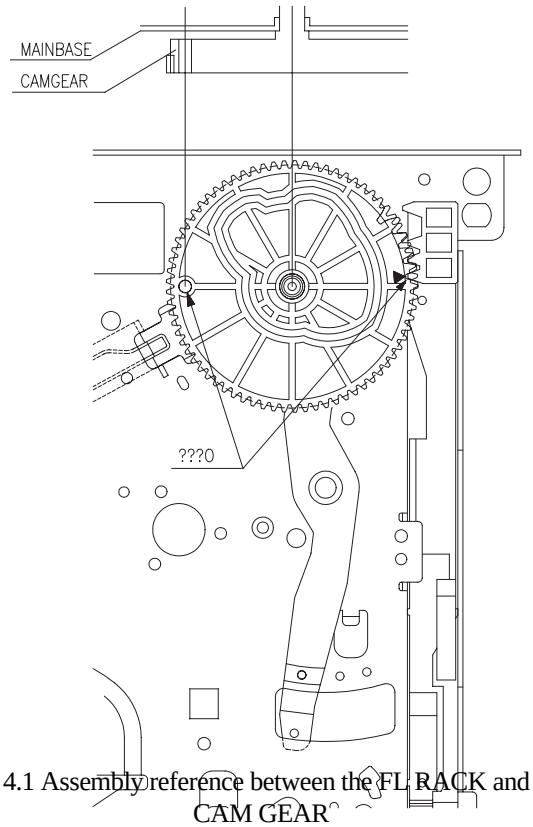


FIg. 4.1 Assembly reference between the FL RACK and the CAM GEAR

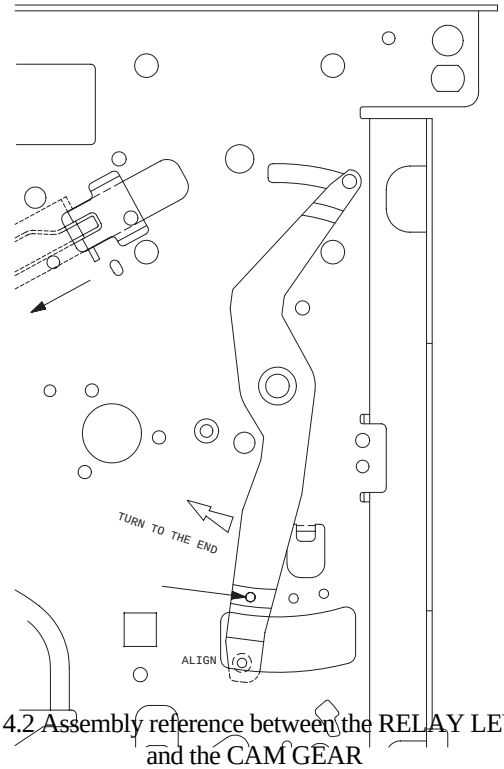


FIg. 4.2 Assembly reference between the RELAY LEVER and the CAM GEAR

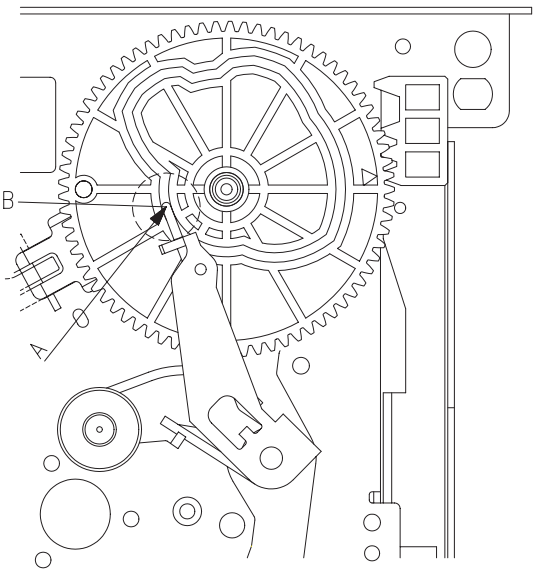


FIg. 4.3 Assembly reference of the PINCH LEVER TOTAL ASS’Ywith the CAM GEAR

d. Make sure that the triangular mark “A” of the L LOADING Ass’y is aligned with the mark “b” of the R LOADING Ass’y. (Fig. 4.4)

e. Reference hole “C” of the LOADING RACK should be aligned with the reference hole of the R LOADING Ass’y to make the teeth of the LOADING RACK is aligned as shown in Fig. 4.4.

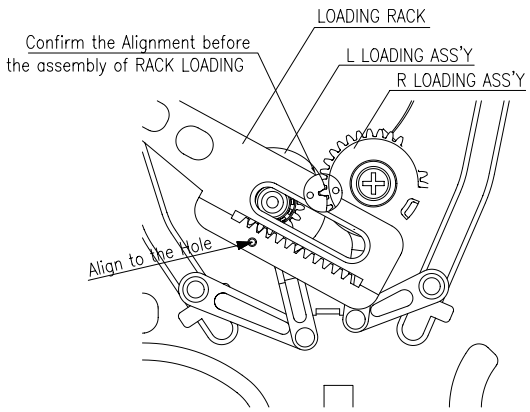


FIg. 4.4 Assembly reference between the LOADING RACK and the LOADING LEVER ASS’Y

4-2 Adjustment and Measurement of the BACK TENSION (Fig. 4.5, 4.6)

a. Check that the location of the TENSION POLE is in the right position. if not, adjust that by refering to the “4.4 Adjustment of the TENSION POLE position”.

b. Play back the T-120 TAPE in S-MAX for 20 seconds.(Generally tape transporting section is settled down in 20 seconds)

c. Measure the BACK TENSION by using the TENTELO METER (Refer Fig 4.5) The result should be within the range of 20g ~ 30g.

d. If the BACK TENSION is out of the range, change the position of the TENSION SPRING of repeat the process of “4.4 Adjustment of the TENSION POLE position”.(Fig. 4.6)

CAUTION:

- If the measurement result greater than the upper limit, change the hook point of the spring to position “A”
- Confirm that all of the three probes of TENTELO METER are in contect with the tape.
- During measuring, don`t touch any other parts of the MECHANISM(i.e. MAINBASE). It is recommendedthat this measurment be repeated at least three times for an accurate reading.

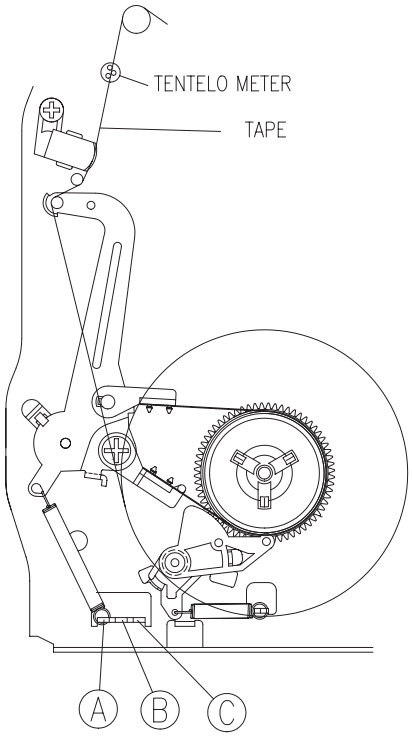


FIg. 4.5 Measurement of the BACK TENSION

4-3 Mechanical Mode (Operate without a Cassette Tape)

a. Remove the FRONT LOADING MECHANISM from the DECK MECHANISM

b. Cap the IR LED and pull the FL RACK. This has the same effect with cassette loading to the deck.

c. If the S,T POLE BASE is loaded, PLAY MODE starts automatically. If you want other function, press the corresponding button.

d. Turn off the poser when the Mechanism is in the desired position.

4-4 Adjustment of the position of the TENSION POLE (Fig. 4.6)

a. Place the MECHANICAL MODE in the PLAY MODE. Refer to the above section "4.3 MECHANICAL MODE"

b. Confirm that the TENSION LEVER is aligned with the datum hole of the MAINBASE.

c. If the requirement "b" is not satisfied. turn the BAND BRAKE ADJUST CAP clockwise or counterclockwise until the two datum holes aligns with each other.

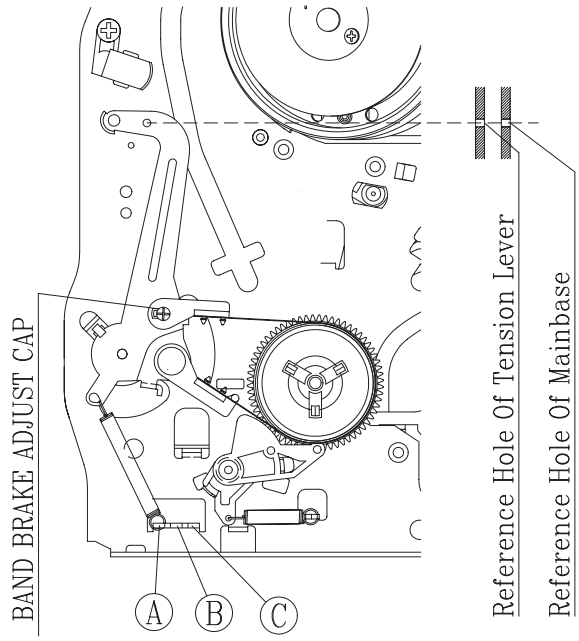
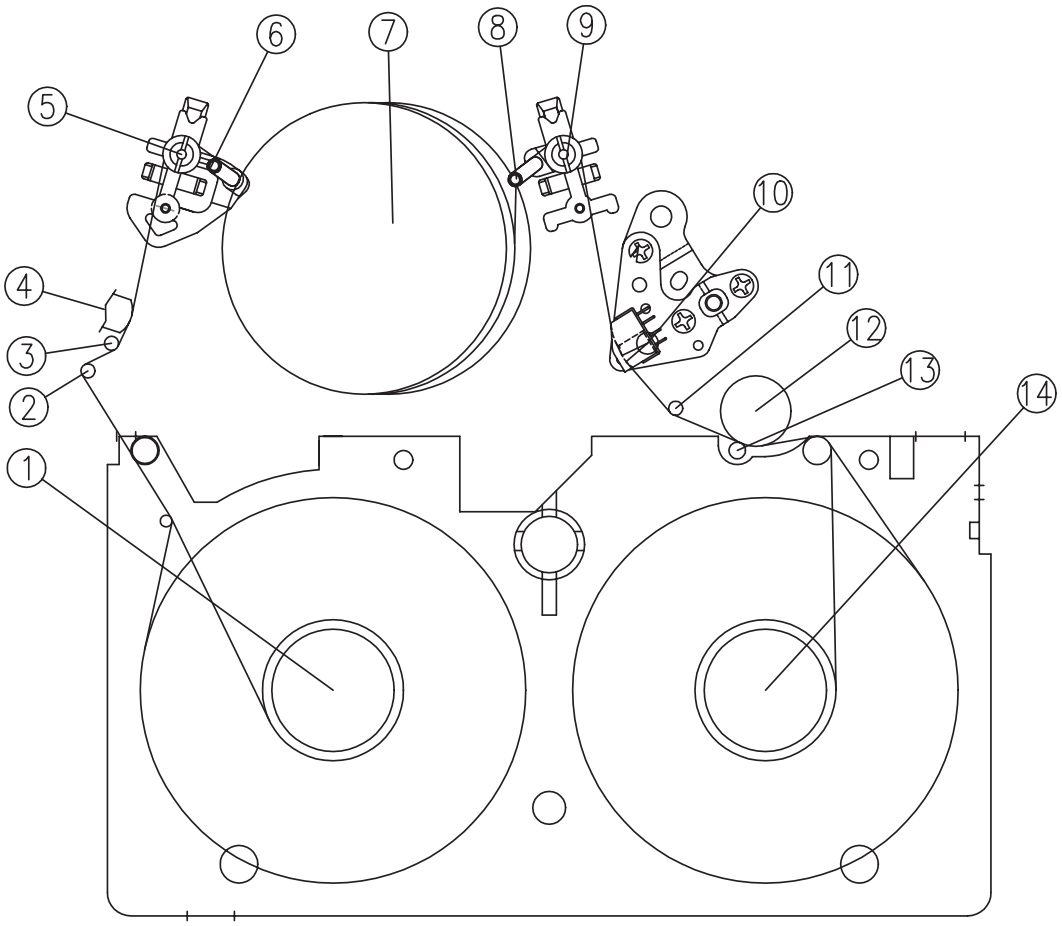


FIg. 4.6 Adjustment of the TENSION POLE POSITION

5. ADJUSTMENT OF THE TAPE TRANSPORT SECTION.

Generally, tape transporting section has been precisely adjusted in the factory and does not require the ordinary readjustment. But there is the case that tape noise or impact on the deck mechanism, tape transporting section readjustment is required. In adjustment of the tape transmission section refer to the following flow chart.



NO.	NAME	NO.	NAME
1	S REEL	8	T SLANT POLE
2	TENSION POLE	9	T GUIDE ROLLER
3	S GUIDE POST	10	ACE HEAD
4	FE HEAD	11	T GUIDE POST
5	S GUIDE ROLLER	12	PINCH ROLLER
6	S SLANT POLE	13	CAPSTAN SHAFT
7	DRUM	14	T REEL

FIg.5.1 A schematic diagram of the tape transport ing section.

If any components shown in Fig. 5.1 are changed, readjustment of the tape transporting section is needed.

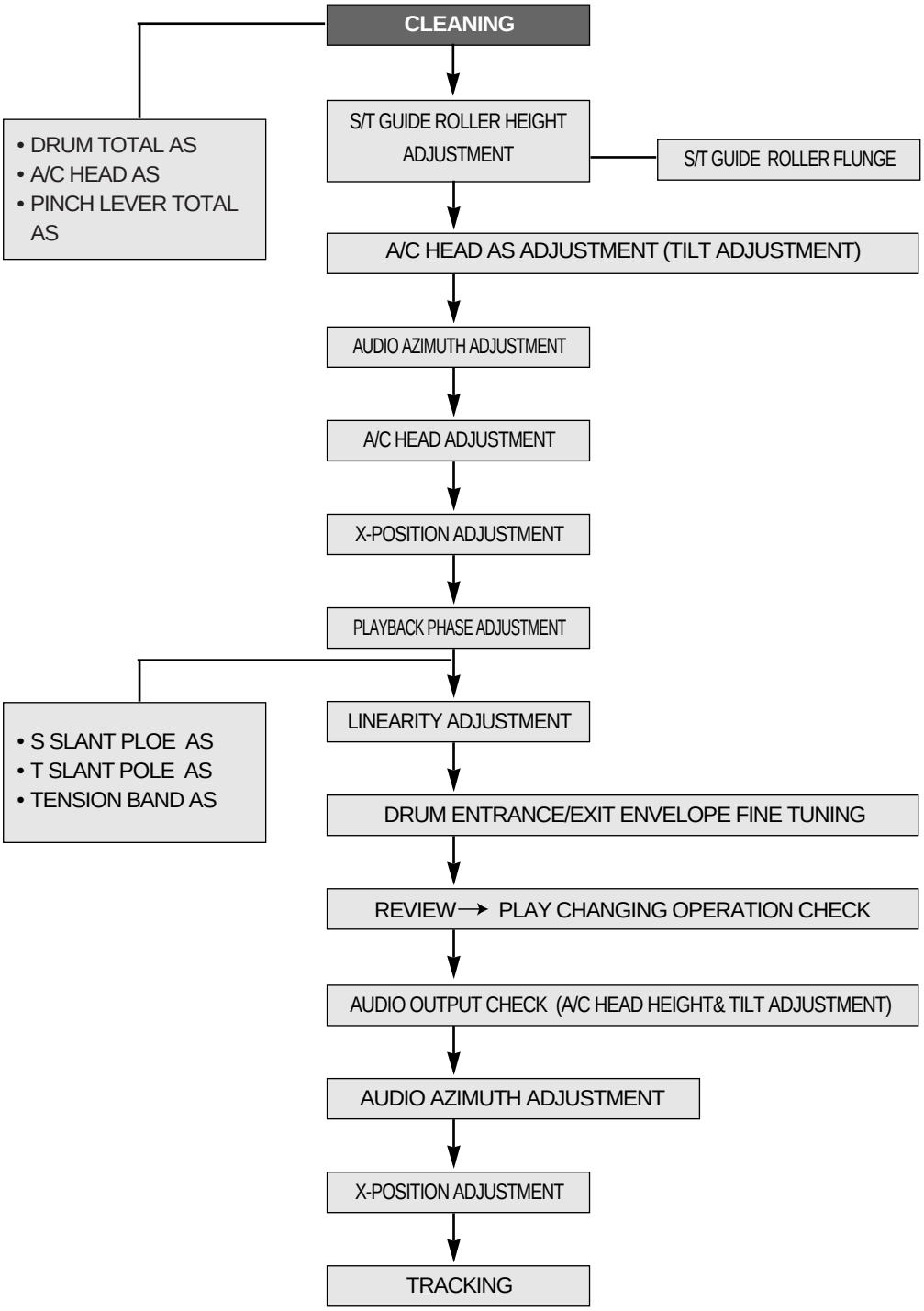


Table.1 Adjustment Flow Chart of the Tape Transporting System

A. Adjustment of the S/T GUIDE ROLLER

A. Adjustment of the S/T GUIDE ROLLER

a. Check the Playing back with a T-120 TAPE.

b. Make sure that excessive tape wrinkle does not occure ateatch S, T GUIDE ROLLER.

c. If tape wrinkle is observed at the S/T GUIDE ROLLER, turn the guide roller screw until there is not tape wrinkle.

B. Adjustment of the AC HEAD ASS'Y(TILT)

a. Play back a T-120 TAPE and check the running status of lower side of GUIDE POST.

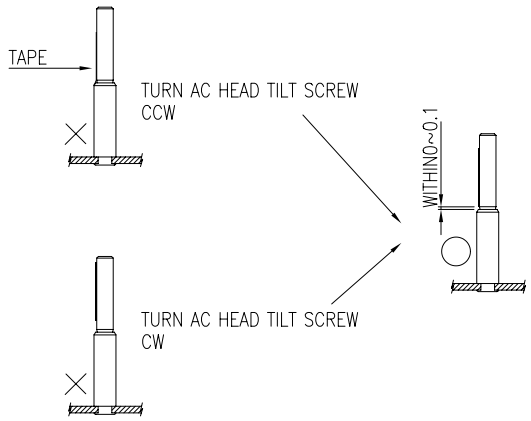


FIg.5.2 Adjustment of the AC HEAD ASS'Y

b. If there is any problem, Turn the AC HEAD TILT SCREW until the running status improved. (Fig. 5.2)

C. Adjustment of the AC HEAD Height(Fig. 5.3)

a. Paly back a T-120 TAPE..

b. Make sure that the gap between the lower end of TAPE and the AC head is 0.25m.

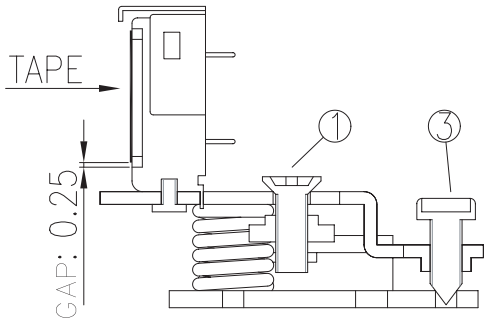


FIg.5.3 Adjustment of AC HEAD Height

c. If the measurement of the gap is different from the reference value 0.25mm, turn the screw ① , ③ until the desired gap is obtained.

D. Adjustment of the AUDIO AZIMUTH(Fig. 5.4)

a. Play back the ALIGNMENT TAPE
(DN2 : SP, NTSC,7KHz)

b. Check the AUDIO output with a AUDIO LEVEL METER.

c. Turn the AC HEAD AZIMUTH SCREW ② until the maximum AUDIO output(-9dBm ~ -3dBm)is obtained.

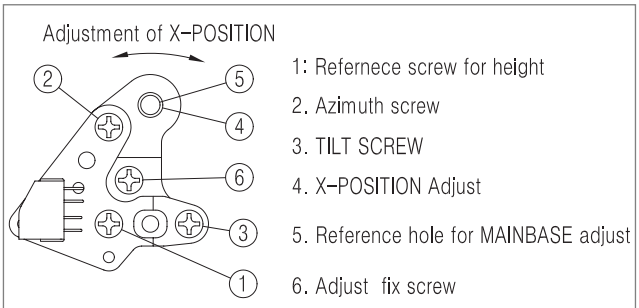


FIg.5.4 Adjustment of AUDIO AZIMUTH, X-POSITION

E. Adjustment of the X-POSITION(Fig. 5.4 5.5)

a. Connect the PATH ADJ. FIXTURE to the PT01 on the MAIN CIRCUIT BOARD.

b. Play back the ALIGNMENT TAPE (DN2 : SP MONO-SCOPE).

c. Connect the S/W pin and ENVE pin of the PATH ADJ. FIXTURE with the SCOPE PROBE.

d. Insert the adjustment bar in the AC HEAD ADJUST hole ④ and adjust the X-POSITION of the AC HEAD ASS`Y until the ENVE is maximum when the VR is on the CENTER.

• Three is the possibility that an another TRACKING CENTER can be occur when the AC HEAD ASS`Y turned completely in the counterclockwise direction, Hence adjust the X-position with AC HEAD ASS'Y adhering closely to the right side until the maximum ENVE is obtained.

e. The adjustment of the X-POSITION finished, check if the AUDIO LEVEL is degraded, then readjustment of the AUDIO AZIMUTH is required.

Test Point	S/W PULSE TEST PIN	PATH ADJ. FIXTURE
	ENVELOPE TEST PIN	PATH ADJ.FIXTURE
Measurement Equipment	OSILLOSCOPE	
Adjustment	VR CONTROL	PATH ADJ.FIXTURE
	AC HEAD ADJUST HOLE	ADJUSTMENT BAR

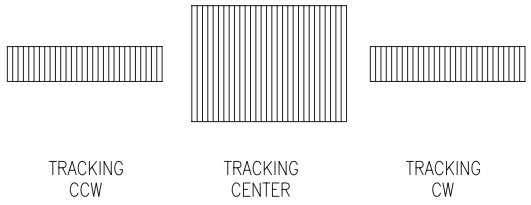


FIg.5.5 Adjustment of the X-POSITION

F. PLAYBACK PHASE Adjustment(Fig. 5.6)

Test Point	S/W PULSE TEST PIN	MAIN CIRCUTE BOARD
	ENVELOPE TEST PIN	MAIN CIRCUTE BOARD
Measurement Equipment	OSILLOSCOPE	
Adjustment	VR 595(PG SHIFTER)	MAIN CIRCUTE BOARD

PHASE GENERATOR(PG) SHIFTER determine the VIDEO HEAD SWITCHING POINT when the TAPE is played back. If an adjustment of the PHASE GENERATOR(PG) SHIFTER is not done precisely, There can be a HEAD SWITCHING NOISE or a VERTICAL JITTER problem, vibration of the picture on the screen, not good quality of picture in special play back.

a. Connect the PT01 on the MAIN CIRCUIT BOARD with a PATH ADJ. FIXTURE.

b. Play back an ALIGNMENT TAPE(DN-2 : MON-SCOPE signal)

c. Connect the S/W PULSE TEST PIN on the PATH ADJ. FIXTURE with a CHANNEL-1 SCOPE PROBE.

d. Connect the VIDEO OUT on the MAIN CIRCUIT BOARD with a CHANNEL-2 SCOPE PROBE (1V/div).

e. Control the PG VOLUME until the time interval between the SWITCHING PULSE and the V-SYNC SIGNAL is within the 6.5H±0.5H as shown in Fig. 5.6.

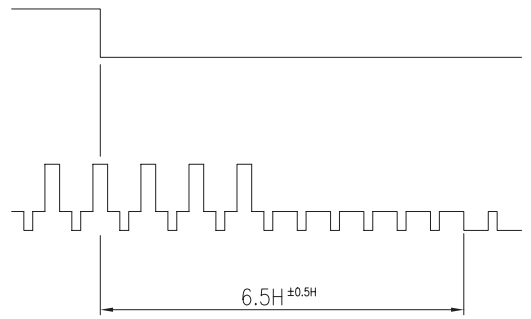


Fig.5.6 Playback Phase Adjustment

G.Adjustment of the LINEARITY(Fig. 5.7)

Test Point	S/W PULSE TEST PIN	PATH ADJ. FIXTURE
	ENVELOPE TEST PIN	PATH ADJ.FIXTURE
Measurement Equipment	OSILLOSCOPE	
Adjustment	VR CONTROL	PATH ADJ.FIXTURE
	S/T GUIDE ROLLER	TAPE TRANSPORT SECTION

a. Connect the PT01 on the MAIN CIRCUIT BOARD with a PATH ADJ. FIXTURE.

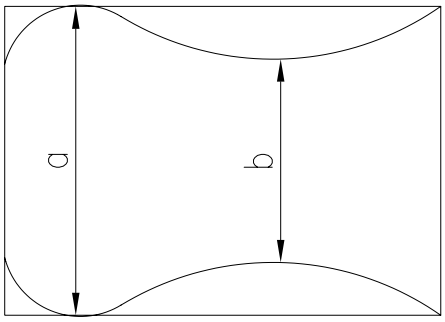
b. Play back an ALIGNMENT TAPE(DN-2 : MONO-SCOPE Signal).

c. Connect the FIXTURE S/W PULSE TEST PIN on the PATH ADJ. CHANNEL-1 SCOPE PROBE.

d. Connect the VIDEO OUT on the MAIN CIRCUIT BOARD with a CHANNEL-2 SCOPE PROBE (1V/div).

e. Adjust the VR CONTROL on the ADJ. FIXTURE until the ENVELOPE signal is maximum while play back the ALIGNMENET TAPE.

f. Adjust the S/T GUIDE ROLLER until the envelope signal waveforms of the entrance and exit sides are as shown in Fig. 5-7.



a: Max Output of Envelope

b: Min Output of Envelope

FIg.5.7 Adjustment of Linearity

H. Adjustment of the Wave Form of DRUM Entrance / Exit (Fig. 5.8)

Test Point	S/W PULSE TEST PIN	PATH ADJ. FIXTURE
	ENVELOPE TEST PIN	PATH ADJ.FIXTURE
Measurement Equipment	OSILLOSCOPE	
Adjustment	VR CONTROL	PATH ADJ.FIXTURE
	S/T GUIDE ROLLER	TAPE TRANSPORT SECTION

a. Connect the PT01 on the MAIN CIRCUIT BOARD with a PATH ADJ.FIXTURE.

b. Play back an ALIGNMENT TAPE(DN-2 : MONO-SCOPE signal)

c. Connect the S/W PULSE TEST PIN on the PATH ADJ. FIXTURE with a CHANNEL-1 SCOPE PROBE.

d. Connect the VIDEO OUT on the MAIN CIRCUIT BOARD with a CHANNEL-2 SCOPE PROBE(1V/div).

e. Turn the VR CONTROL on the PATH ADJ.FIXTURE clockwise or counterclockwise until the signal shape of ENVELOPE has the constant thickness.(Fig.5.8)

f. Adjust the S/T GUIDE ROLLER if the thickness of the ENVELOPE signal is not uniform.

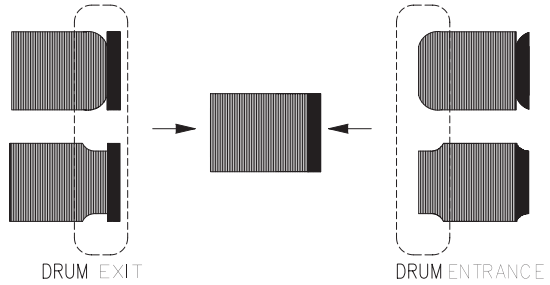


FIg.5.8 Fine adjustment of the ENVELOPE at the DRUM ENTRANCE/EXIT

I. REVIEW ⇔ PLAY(Fig. 5.9)

Test Point	S/W PULSE TEST PIN	PATH ADJ. FIXTURE
	ENVELOPE TEST PIN	PATH ADJ.FIXTURE
Measurement Equipment	OSILLOSCOPE	
Adjustment	VR CONTROL	PATH ADJ.FIXTURE
	S/T GUIDE ROLLER	TAPE TRANSPORT SECTION

a. Connect the PT01 on the MAIN CIRCUIT BOARD with a PATH ADJ.FIXTURE.

b. Play back an ALIGNMENT TAPE(DN-2 : MONO-SCOPE signal)

c. Connect the S/W PULSE TEST PIN on the PATH ADJ. FIXTURE with a CHANNEL-1 SCOPE PROBE.

d. Connect the VIDEO OUT on the MAIN CIRCUIT-BOARD with a CHANNEL-2 SCOPE PROBE (1V/div).

e. Make the VR CONTROL on the PATH ADJ. FIXTURE to the center to maximize the ENVELOPE signal.

f. Play back the REVIEW mode about 15 second and alter the mode to PLAY MODE.

g. Check whether the ENVELOPE waveform restore to its original form within 3 second when the REVIEW mode is changed to PLAY mode.

h. If the requirement of “g” is not satisfied, Check the running status of tape on the lower part of TGUIDE POST and adjust the S/T GUIDE ROLLER precisely

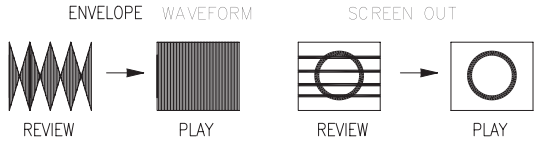


FIg.5.9 Waveform change when the modealtered (REVIEW ↔PLAY)

.J. Checking AUDIO Output Waveform (Adjustment of AC HEAD TILT & Height)

Test Point	AUDIO OUTPUT	AUDIO OUTPUT JACK
Measurement Equipment	AUDIO LEVEL METER	

a. Connect the AUDIO output jack with an AUDIO LEVEL METER.

b. Playback an Alignment Tape (DN-1:Color Bar 1KHz Signal)

c. Check if the AUDIO output signal level is over -9~-3dBm.

d. If the requirement of “c” is not satisfied, readjust the AC HEAD TILT and the HEIGHT until the AUDIO output is maximized. (Fig. 5.2, 5.3)

K. Adjustment of the AUDIO AZIMUTH

Test Point	AUDIO OUTPUT	AUDIO OUTPUT JACK
Measurement Equipment	AUDIO LEVEL METER	

a. Connect the AUDIO output JACK with an AUDIO LEVEL METER.

b. Play back the ALIGNMENT TAPE(DN-2:MONO-SCOPE 7KHz Signal).

c. Check if the AUDIO output signal level is over : -9 ~-3dBm.

d. If the requirement of "c" is not satisfied, readjust the AZIMUTH SCREW of the AC HEAD until the AUDIO output is maximum.(Fig. 5.4)

e. Repeat the process of "**Adjustment of the Wave Form of DRUM Entrance/Exit"**

L. X-POSITION

Test Point	S/W PULSE TEST PIN	PATH ADJ. FIXTURE
	ENVELOPE TEST PIN	PATH ADJ.FIXTURE
Measurement Equipment	OSILLOSCOPE	
Adjustment	VR CONTROL	PATH ADJ.FIXTURE
	S/T GUIDE ROLLER	TAPE TRANSMISSION T SECTION

a. Connect the PT01 on the MAIN CIRCUIT BOARD with a PATH ADJ. FIXTURE.

b. Play back an ALIGNMENT TAPE(DN-2 : MONO-SCOPE Signal).

c. Connect the S/W PULSE TEST PIN on the PATH ADJ. FIXTURE with a CHANNEL-1 SCOPE PROBE.

d. Connect the VIDEO OUT on the MAIN CIRCUIT BOARD with a CHANNEL-2 SCOPE PROBE (1V/div).

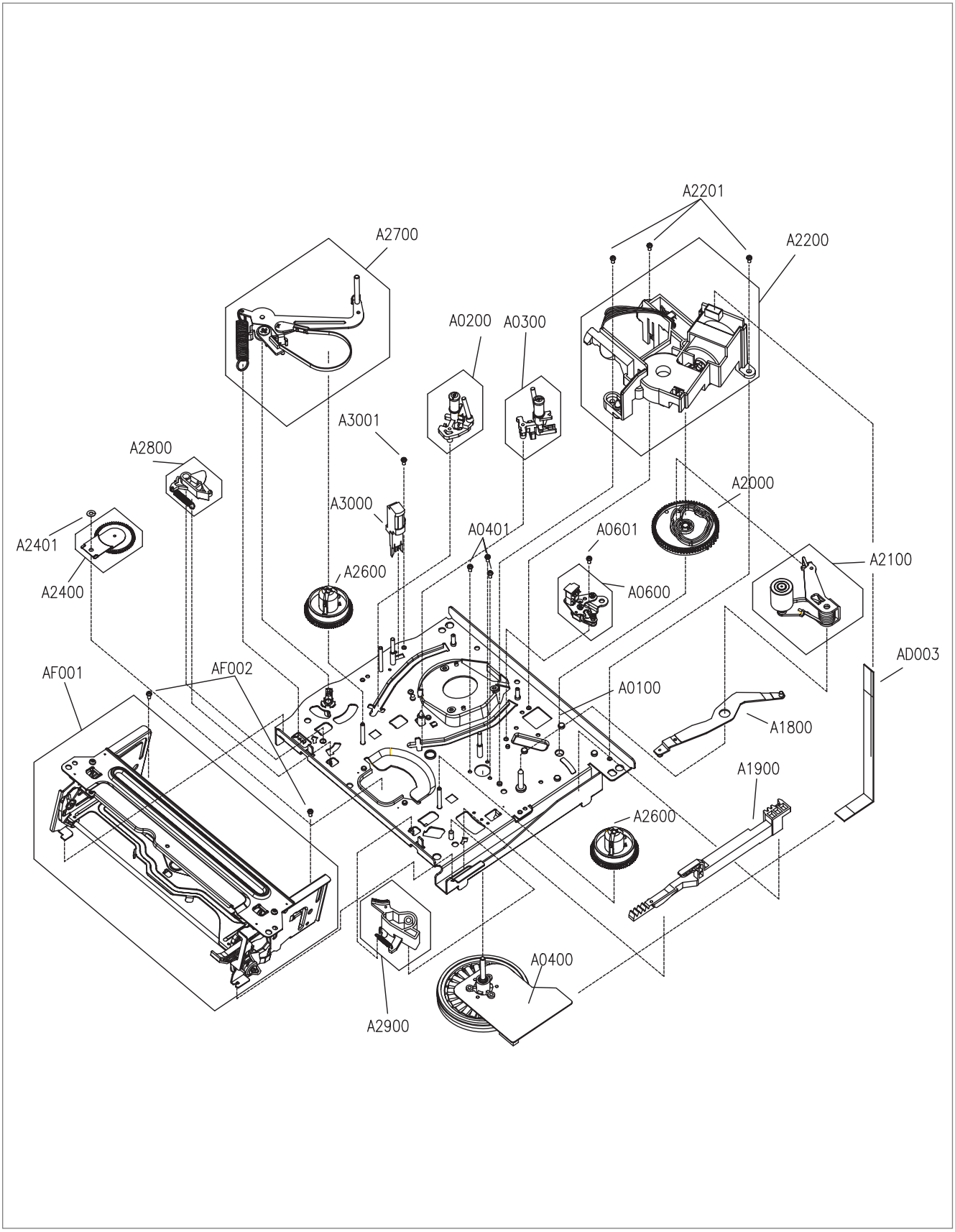
e. Check if the ENVELOPE is maximum when the VR CONTROL on the PATH ADJ. FIXTURE is in CENTER

f. If the requirement "e" is not satisfied, readjust the X-POSITION by referring to subitem "E"(Adjustment of the X-POSITION).

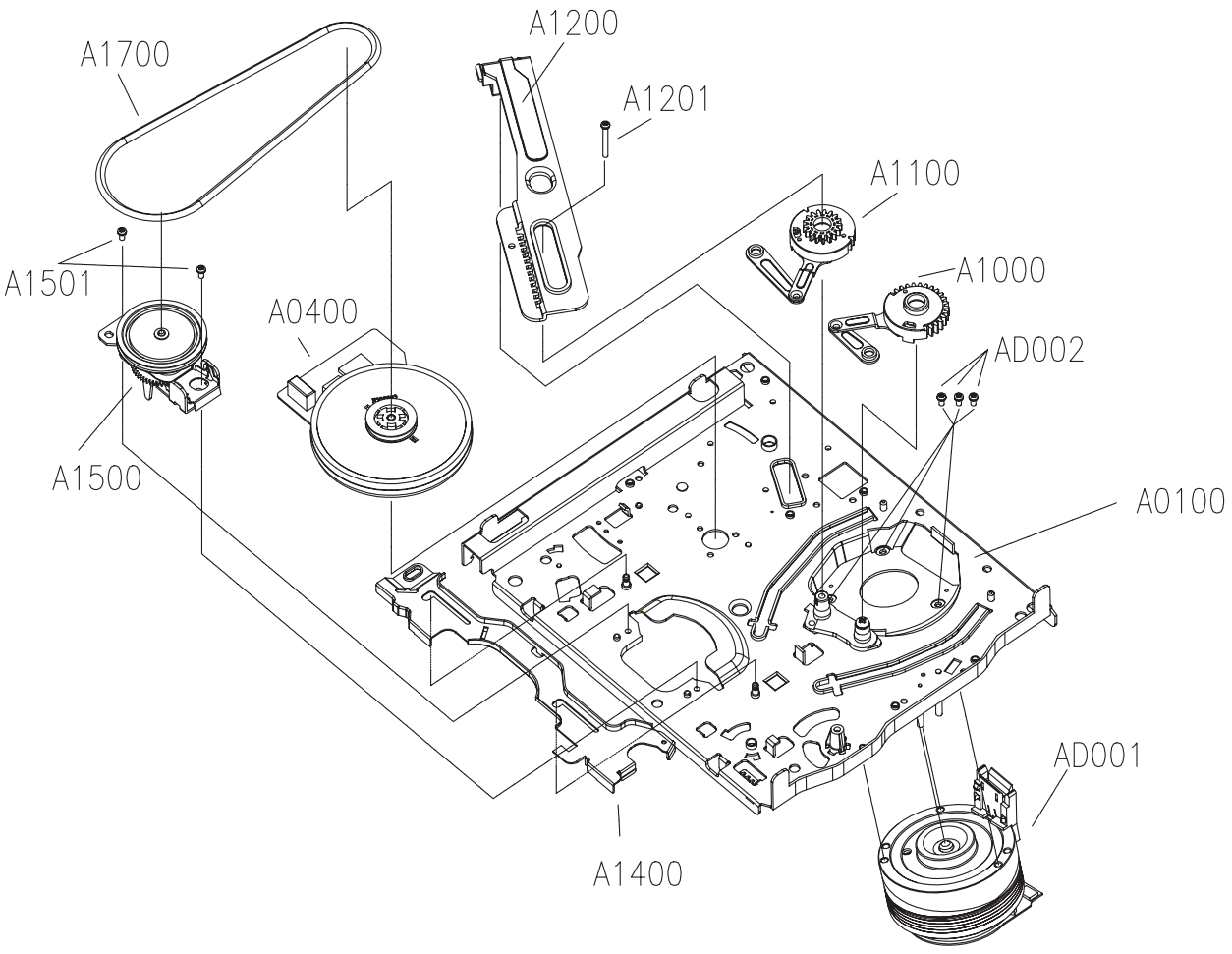
g. Repeat the process of subitem "F"(PLAYBACK PHASE ADJUSTMENT).

6. EXPLODED VIEW

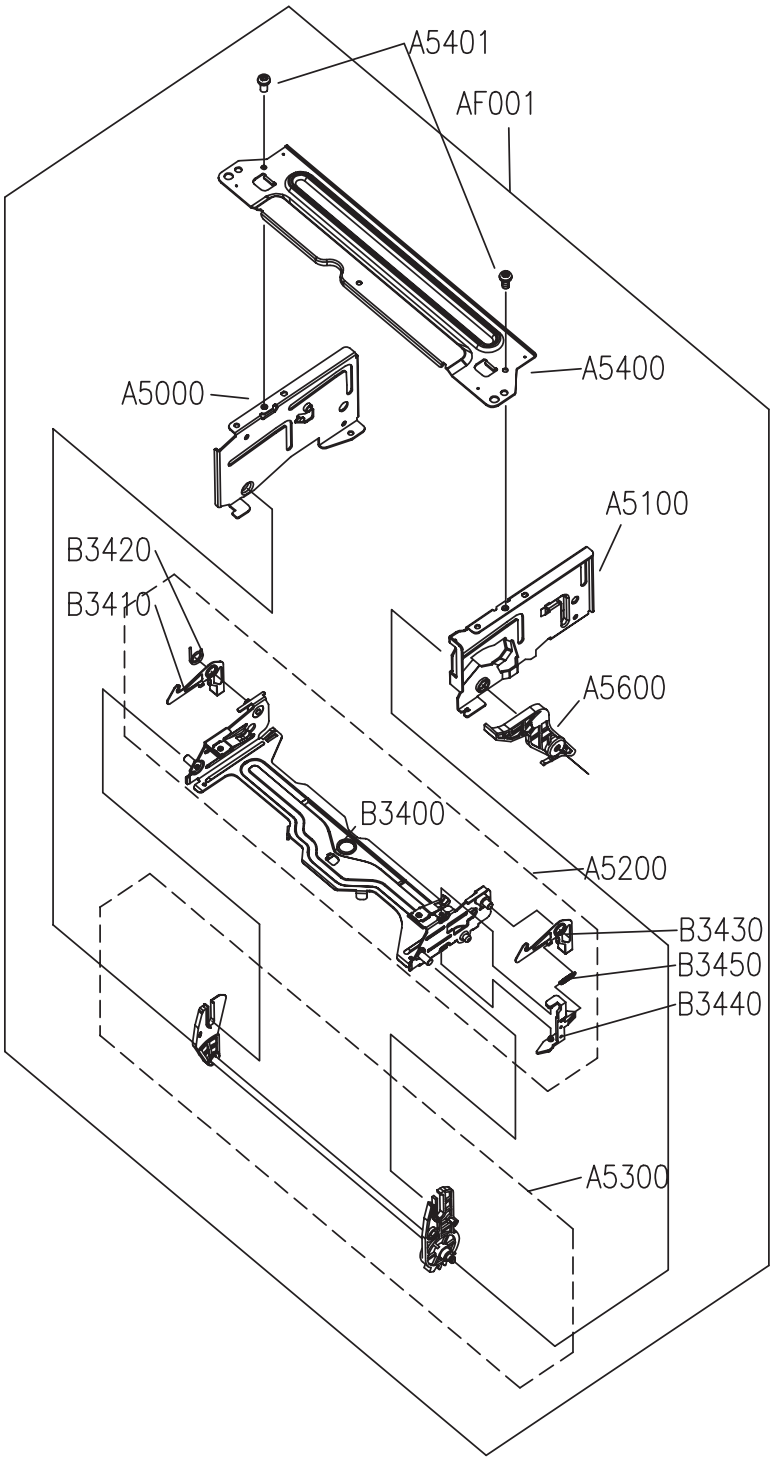
6-1 Exploded View of DECK Ass'y (Top View)



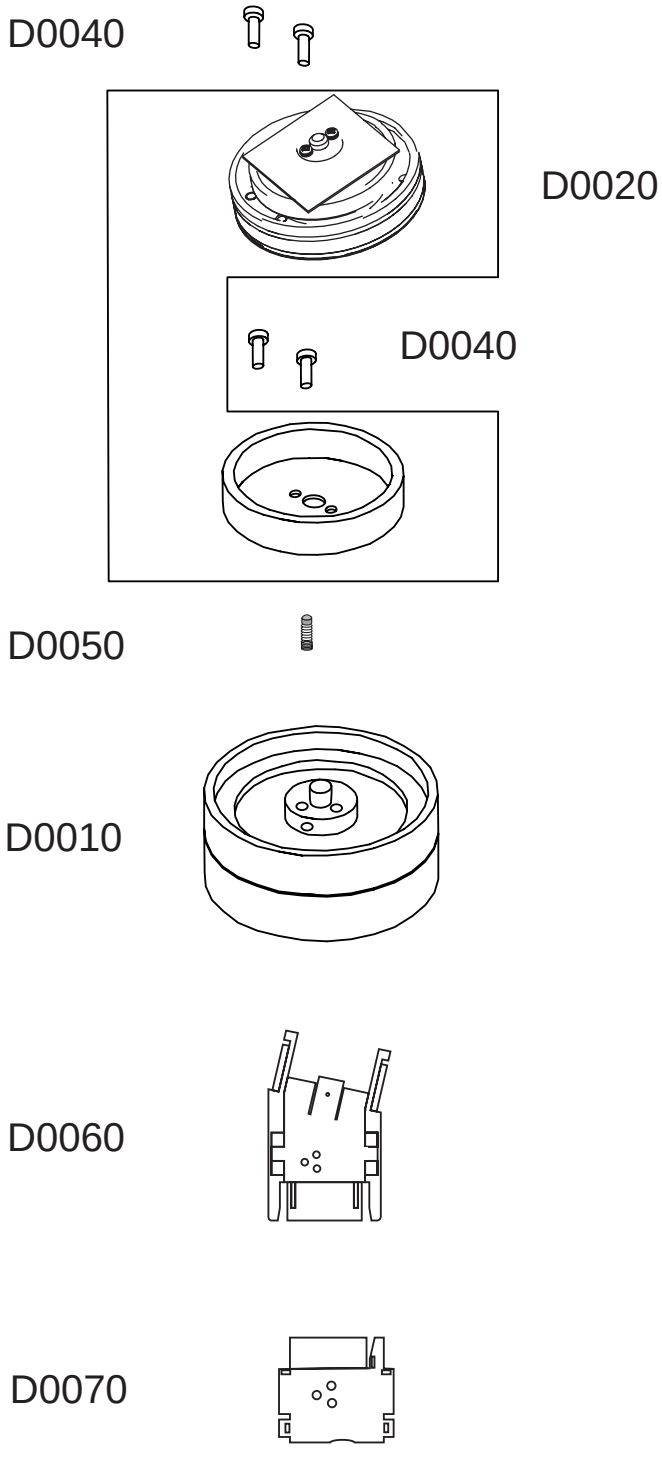
6-2 Exploded View of DECK Ass'y (Bottom View)



6-3 Exploded View of FL Ass'y



6-4 Exploded View of DRUM Ass'y



7. PARTS LIST

7-1 Parts List of DECK TOTAL ASS'Y

LOC.	PARTS CODE	PARTS NAME	PARTS DESCRIPTION
NTSC			
M1000	PVDKARNB41	VCR DECK AS(T50)	DRN-B401 (4HD, SP/LP, NON-DLC, AHC)
	PVDKARNB60	VCR DECK AS(T50)	DRN-B600 (6HD, HI-FI, NON-DLC)
PAL			
M1000	PVDKARPB20	VCR DECK AS(T50)	DRP-B200 (2HD, SP/LP, NON-DLC)
	PVDKARPB60	VCR DECK AS(T50)	DRP-B600 (6HD, HI-FI, NON-DLC)
SECAM			
M1000	PVDKARPB20	VCR DECK AS(T50)	DRP-B200 (2HD, SP/LP, NON-DLC)
	PVDKARSB60	VCR DECK AS(T50)	DRS-B600 (6HD, HI-FI, NON-DLC)

7-2 Parts List of DRUM PRICE ASS'Y

LOC.	PARTS CODE	PARTS NAME	PARTS DESCRIPTION
NTSC			
AD001	97PA284901	DRUM PRICE AS	CYN-T410C(4HD SP/LP NON-DLC)
	97PA285201	DRUM PRICE AS	CYN-T610C(6HD HI-FI NON-DLC)
PAL			
AD001	97PA285901	DRUM PRICE AS	CYP-T210C(2HD SP/LP NON-DLC)
	97PA285601	DRUM PRICE AS	CYP-T610C(6HD HI-FI NON-DLC)
SECAM			
AD001	97PA285901	DRUM PRICE AS	CYP-T210C(2HD SP/LP NON-DLC)
	97PA285801	DRUM PRICE AS	CYS-T610C(6HD HI-FI NON-DLC)

7-3 Parts List of VCR DECK ASS'Y

LOC.	PARTS CODE	PARTS NAME	PARTS DESCRIPTION
DRUM ASS'Y			
D0010		DRUM AS	(REFERRING TO LIST OF DRUM PRICE)
D0020	97SA329500	DRUM M/T AS	DMVDMT07F
	97SA329800	DRUM M/T AS	I20AL-05G2
D0040	7001260711	SCREW MACHINE	PAN 2.6X7 MFZN
D0050	97SA320400	EARTH GROUND AS	T-DRUM
D0060	97S2303600	HOLDER MAIN	POM(KEPITAL F20)
D0070	97S2303800	HOLDER CAP(B)	POM(4CH)
D0070	97S2303900	HOLDER CAP(C)	POM(6CH) DECK ASS'Y
DECK ASS'Y			
AM001		DECK AS	(REFERRING TO LIST OF DECK TOTAL ASS'Y)
A0100	97SA332200	MAIN BASE AS	T4.5-MECHA
A0200	97SA316500	S SLANT POLE AS	T-MECHA
A0300	97SA316600	T SLANT POLE AS	T-MECHA
A0400	97S8103100	MOTOR CAPSTAN	F2QVB-05
A0401	97S3102020	SCREW TAPPTITE	TT2 BIN-B 2.6X7 MFZN

LOC.	PARTS CODE	PARTS NAME	PARTS DESCRIPTION
A0600	97SA320500	AC HEAD AS	T-MECHA
A0601	7051300611	SCREW MACHINE	PAN 3X6 SW MFZN
A1000	97SA316800	L LOADING AS	T-MECHA
A1100	97SA316900	R LOADING AS	T-MECHA
A1200	97S2709500	RACK LOADING	SECC T1.2
A1201	7008301911	SCREW MACHINE	WAS M3*19 MFZN
A1400	97S0904310	PLATE CONNECT-H	SECC T1.0
A1500	97SA319410	REEL BRKT TOTAL AS	T2-MECHA
A1501	7274300511	SCREW TAPPTITE	TT3 RND 3X5 MFZN
A1700	97S5500400	BELT REEL	CR68
A1800	97S2623200	LEVER RELAY	SECC T1.2
A1900	97S2709600	RACK FL	PBT(DY4410GF) NATURAL
A2000	97S2708200	GEAR CAM	DERLIN 100
A2100	97SA317100	PINCH LEVER TOT AS	T-MECHA
A2200	97SA318050	LC BRKT AS	T5-MECHA
A2201	7274300511	SCREW TAPPTITE	TT3 RND 3X5 MFZN
A2400	97SA317310	IDLER PLATE TOT AS	T2-MECHA
A2401	97S3108200	POLYWASHER	D2.6XD6.0XT0.5
A2600	97S2909400	TABLE REEL	POM(F20-03) BLACK
A2700	97SA317200	TENSION LVR TOT AS	T-MECHA
A2800	97SA317400	S BRAKE AS	T-MECHA
A2900	97SA317510	T BRAKE AS	T2-MECHA
A3000	97S8015000	HEAD FE	HVFHU0030AK
A3001	7274300811	SCREW TAPPTITE	TT3 RND 3X8 MFZN
AC001	97SA326900	HEAD CLEANER AS	T-MECHA
AF002	7274300511	SCREW TAPPTITE	TT3 RND 3X5 MFZN
AD002	7001300611	SCREW MACHINE	PAN 3X6 MFZN
AD003	97P88F0B20	CABLE FFC	1.25K 11P 200MM
AN002	2291131304	GREASE	DELUXE 5221G(NAM-YOUNG)
FL ASS'Y			
AF001	97SA261040	F/LOADING AS	T5-MECHA
AF002	7274300511	SCREW TAPPTITE	TT3 RND 3X5 MFZN
A5000	97S2401400	BRKT FL L	SECC T1.0
A5100	97S2401500	BRKT FL R	SCEE T1.0
A5200	97SA317700	CST HOLDER AS	T-MECHA
B3400	97SA415400	CST HOLDER SUB AS	T-MECHA
B3410	97S2621600	LEVER SAFETY L	SCTT T1.0
B3420	97S3008900	SPRING SAFETY LEVER	SUS304 WPB D0.5
B3430	97S2621700	LEVER SAFETY R	SUS304 T0.5
B3440	97S2621800	LEVER RELEASE	POM(F20-03) NATURAL
B3450	97S3009000	SPRING RELEASE LEVER	SUS304 WPB D0.25
A5300	97SA317810	F/L LEVER AS	T4.5-MECHA
A5400	97S0903910	PLATE TOP	SECC T1.0
A5401	7274300611	SCREW TAPPTITE	TT3 RND 3X6 MFZN
A5600	97S2622700	LEVER DOOR OPENER	POM(F20-03) BLACK