

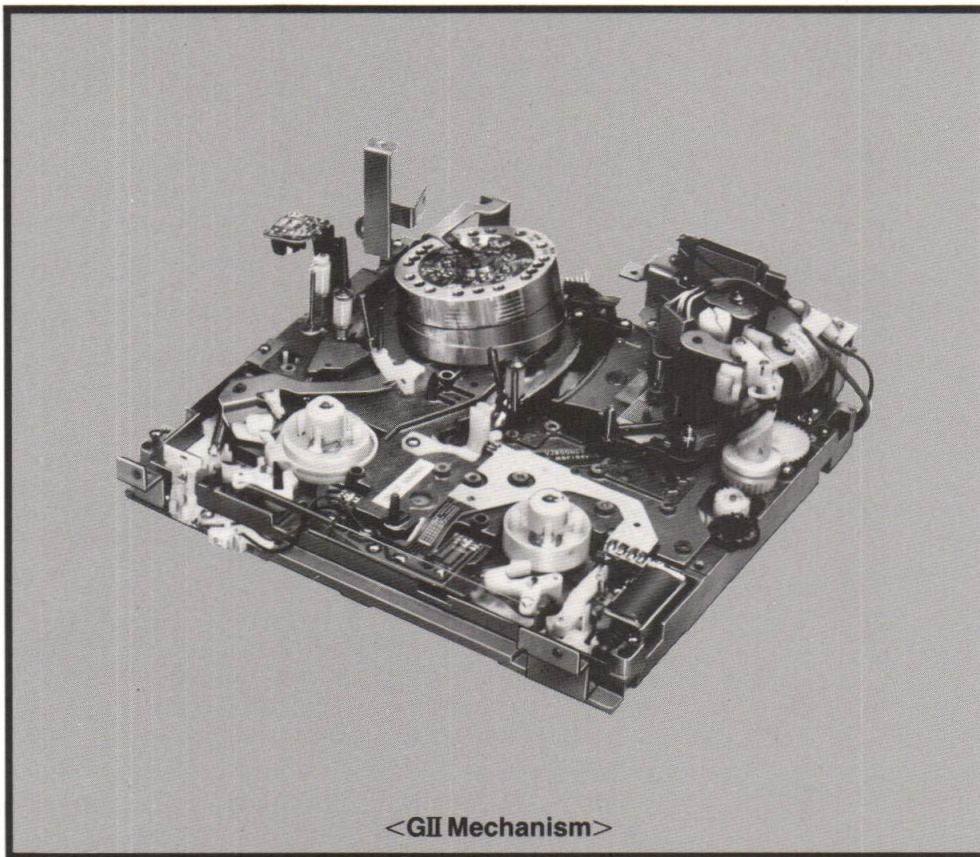
Service Manual

VHS Video Cassette Recorder

Mechanical chassis

No. GII/G-REV.

Mechanical Adjustment
Procedures



IMPORTANT

The GII and G-REV. mechanical chassis are built in the several Panasonic/National VHS Video Cassette Recorders.

Thus, properly file this service manual with the service manuals of the relative video cassette recorders.

INTRODUCTION

This Service Manual describes the mechanical adjustment procedures needed for properly adjusting the G-REV. (G-Revised) and GII Mechanical Chassis used for the National/Panasonic VHS Video Tape Recorders.

Mechanical adjustment procedures needed for these VHS VTRs incorporating the G-REV. and GII Mechanical Chassis are described in the Mechanical Adjustment Section of the Service Manuals related to respective VTR models.

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1. FEATURES

1-1. G-REV. (G-revised) Mechanism.

G-REV. mechanism is slightly changed from G-Mechanism to standardize with new GII mechanism (which will explain later). However, basic performance, adjustment and gear installation's order are the same as the G mechanism. Some part numbers of G-REV. mechanism are slightly different from G mechanism.

* Note.1
G-REV, mechanism is equipped with a New Capstan Unit which is the same as GII mechanism. Therefore search speed can be increased the same speed as GII mechanism by Microprocessor programming. (Max. X9 Speed)

* Note.2
The mechanical movement is shown in following flow chart from the drive source of capstan motor to all other main mechanical components.

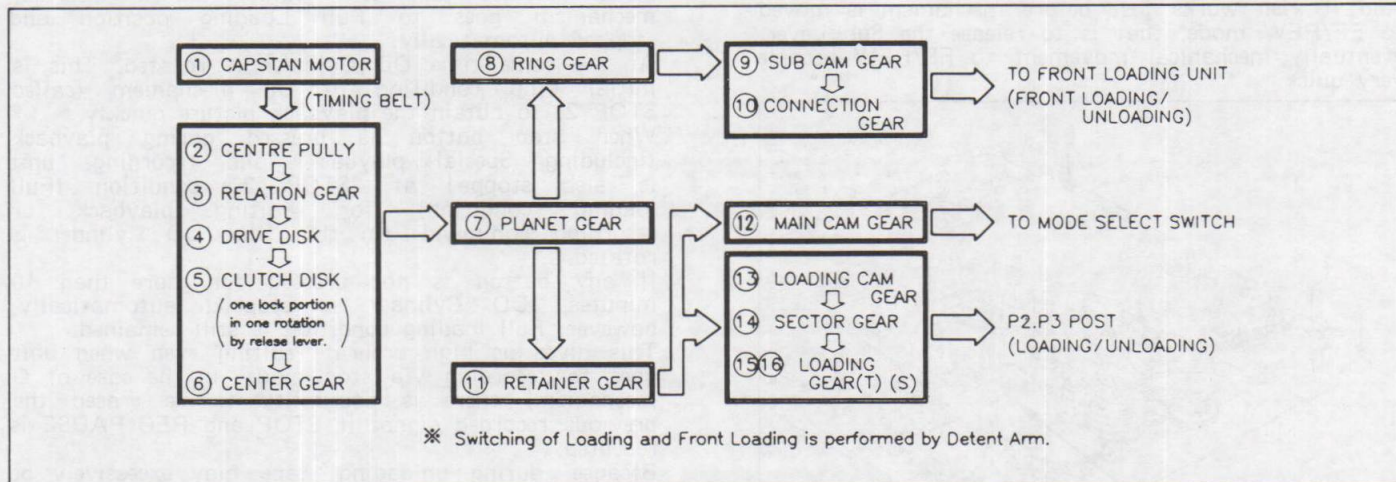


Fig. F1 Flow Chart for Mechanism Movement (G-REV./GII)

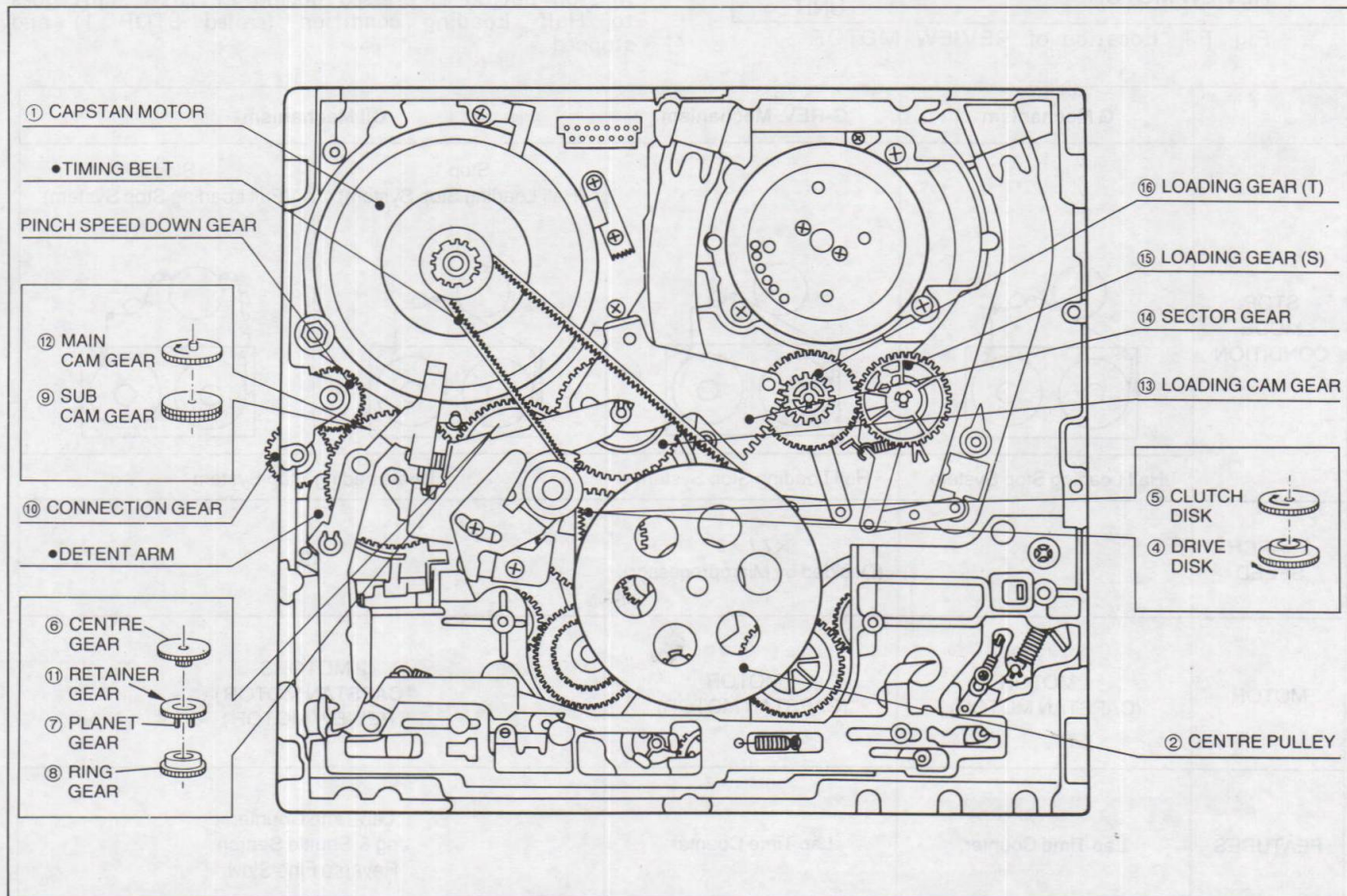


Fig. F2 Bottom View of Mechanism (This figure is the G-REV. mechanism.)

1-2. G-II Mechanism

GII mechanism has been developed to improve its performance based on conventional G mechanism, which is featuring JOG & SHUTTLE Search, High accurate editing and Reverse fine slow.

[Quick Operation]

In order to achieve above features quickly, GII mechanism employs an additional REVIEW MOTOR which helps reverse tape transference during Reverse Playback, Review, Unloading, Reverse slow and Reverse frame advance. (Also loading)

The REVIEW MOTOR releases the Tension post and rotates the Supply reel table quickly despite that the G mechanism can not do so fast.

And it also works just before mechanism is moved to FF/REW mode, that is to release the Sub-Lever, eventually mechanical movement to FF/REW become very quick.

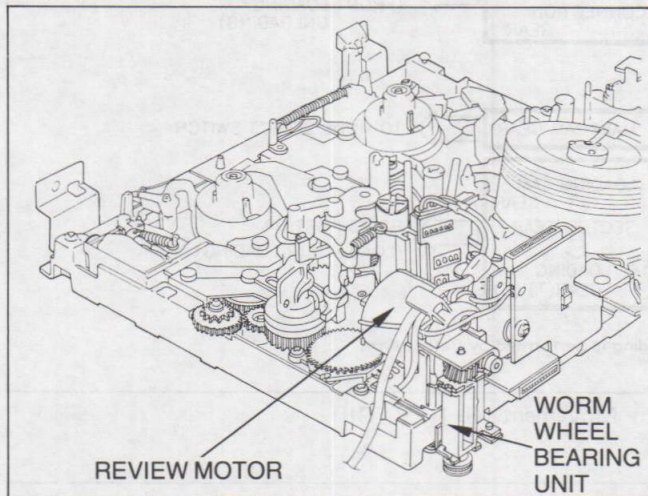


Fig. F3 Location of REVIEW MOTOR

Because in the case of conventional G mechanism, Capstan motor have to release Sub-Lever first, then rotate the Supply or Take-up reel table, however, in the case of GII mechanism, REVIEW MOTOR release Sub-Lever and Capstan motor rotate Supply or Take-up reel table respectively that gives us quick mechanical movement (operation).

[Faster response time with the Dual-mode Loading Stop]

To improve mechanical response time, GII mechanism employs the Dual-mode Loading Stop system which stops mechanism at either half loading or full loading condition depends on function before unit did.

After cassette tape with safety tab is inserted, mechanism goes to Full Loading position and stopped automatically.

At the same time DD Cylinder is rotated. This is initial stop condition of GII mechanism (called STOP 2) to obtain the playback picture quickly.

When stop button is pressed during playback (including Special playback) and recording, unit is also stopped at "STOP 2" condition (Full loading condition) for waiting playback or recording command. (In this time DD Cylinder is rotated.)

If any button is not pressed for more than 10 minutes, DD Cylinder is stopped automatically, however, Full loading condition is still remained.

This gives us high accurate editing even when unit goes to recording via stop mode. In the case of G mechanism, there is possibility to be erased the previous recorded signal if STOP and REC PAUSE is repeated.

Because, during unloading, tape may excessively be wound by Supply reel table depend on tape diameter. GII mechanism solve this problem by adopting "STOP 2" position.

If stop button is pressed during FF/REW, unit goes to Half Loading condition (called STOP 1) and stopped.

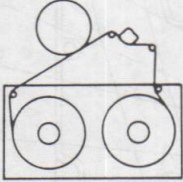
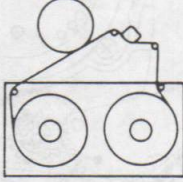
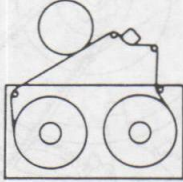
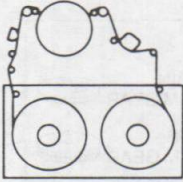
	G Mechanism	G-REV. Mechanism	GII Mechanism	
			Stop 1 (Half Loading Stop System)	Stop 2 (Full Loading Stop System)
STOP MODE CONDITION				
	Half Loading Stop System	Half Loading Stop System	Dual Loading Stop System	
SEARCH SPEED	×7	×7 / ×9 (Decided by Microprocessor)	×9	
MOTOR	1 MOTOR (CAPSTAN MOTOR)	1 MOTOR (CAPSTAN MOTOR)	2 MOTORS (CAPSTAN MOTOR) (REVIEW MOTOR)	
FEATURES	Lap Time Counter	Lap Time Counter	Lap Time Counter Jog & Shuttle Search Reverse Fine Slow	

Fig. F4 Comparison Chart of G/G-REV./GII

As described, GII mechanism is employed REVIEW MOTOR and new Capstan motor. Figure F5 shows response time of G mechanism and GII mechanism. New Capstan stator makes high speed mechanism. 6 coils on the Capstan stator are changed for obtain the higher speed rotation even the same drive

voltage supplied than conventional one. Review Motor improve the response of mode switch time. Moreover GII mechanism employs Dual-mode loading system.(Already described) Therefore response of GII mechanism is improved.

Scenes Access Time	
CASSETTE IN→	10.0 sec (G)→5.7 sec (GII)
STOP 2 (full loading)→	5.7 sec (G)→2.0 sec (GII)
STOP 1 (half loading)→	5.7 sec (G)→3.6 sec (GII)
Mode Switch Time	
STOP 1→FF/REW	2.7 sec (G)→0.6 sec (GII)
PLAY→CUE/REV.	0.5/2.5 sec (G)→0.6 sec (GII)
High Speed Tape Time	
FF/REW	4 min, 50 sec (G)→2 min, 30 sec (GII) (TAPE: NV-E180)

Fig. F5 Response Time of G and GII Mechanism

[Additional mechanism sequence]

GII mechanism is added on some new parts are driven by REVIEW MOTOR.

Additional sequence of GII mechanism as mentioned below.

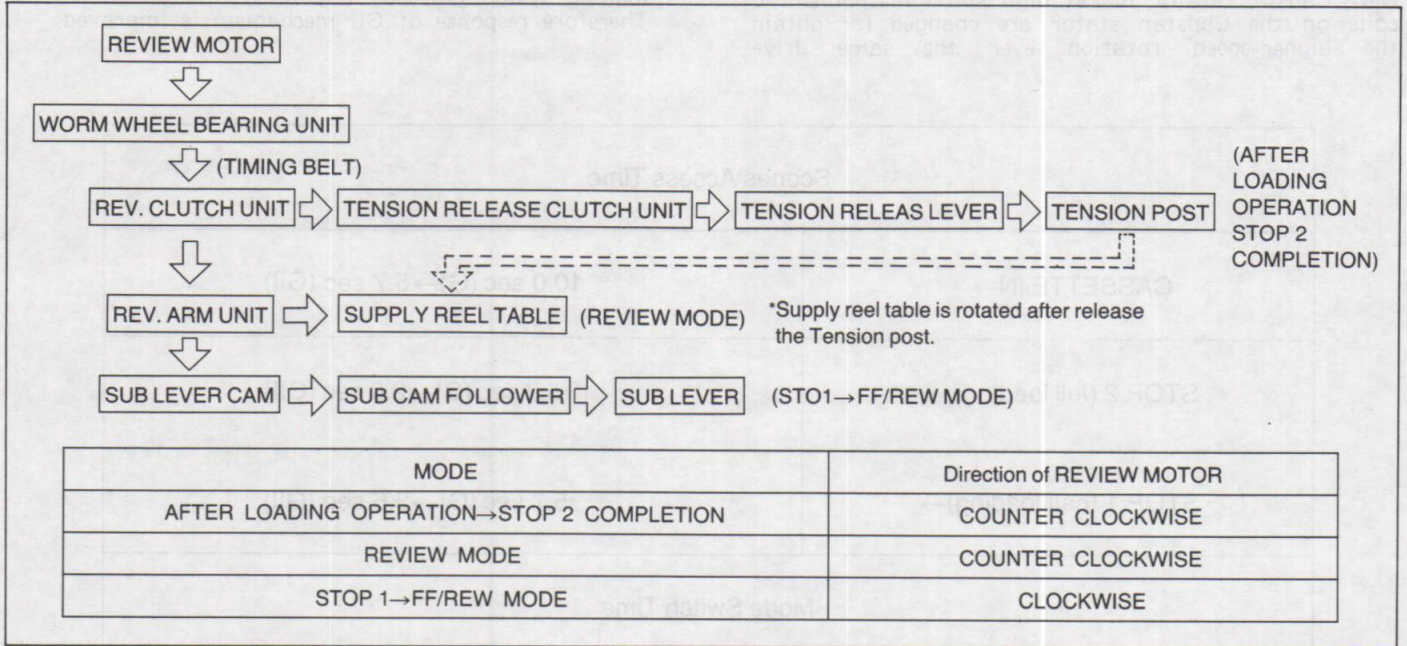


Fig. F6 Flow Chart of GII Mechanism Additional Sequence

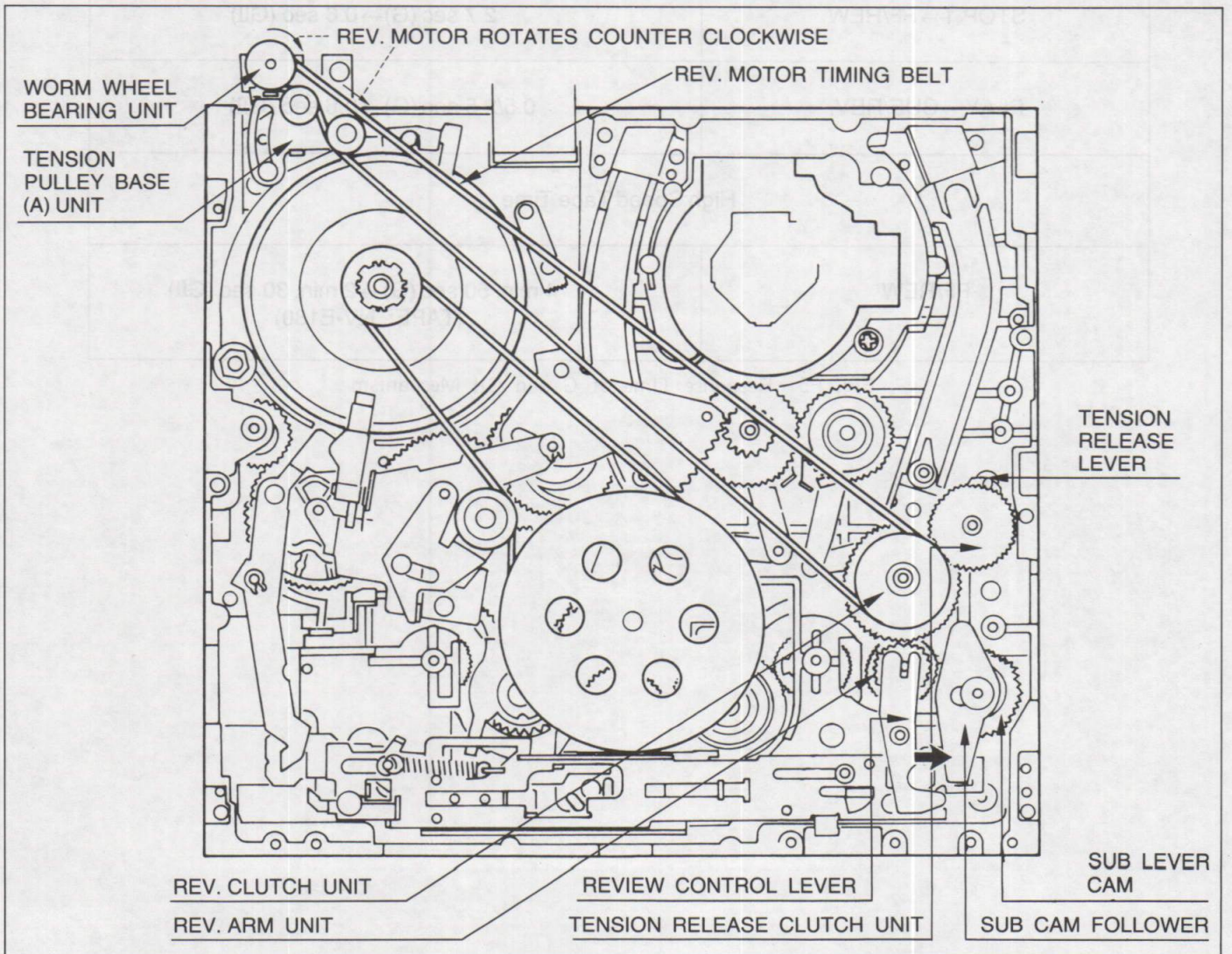


Fig. F7 Bottom View of GII Mechanism

2. ADJUSTMENT AND ASSEMBLY

2-1. SERVICE INFORMATION

2-1-1. HOW TO EJECT MANUALLY

If the electrical circuit is defective and the action of unloading and front unloading do not work properly, it is possible to eject manually as follows.

1. Take out the main AC.

2. Release the Change Lever by pushing it to arrow mark direction as shown in Fig. S1.
3. Turn the Capstan Motor to counter clockwise slowly until the Clutch Disk is locked. (Clutch Disk is locked once in one rotation.)
4. Release the Change Lever again when the Clutch Disk is locked.
5. Repeat the item 2 and the item 3 until cassette is ejected.

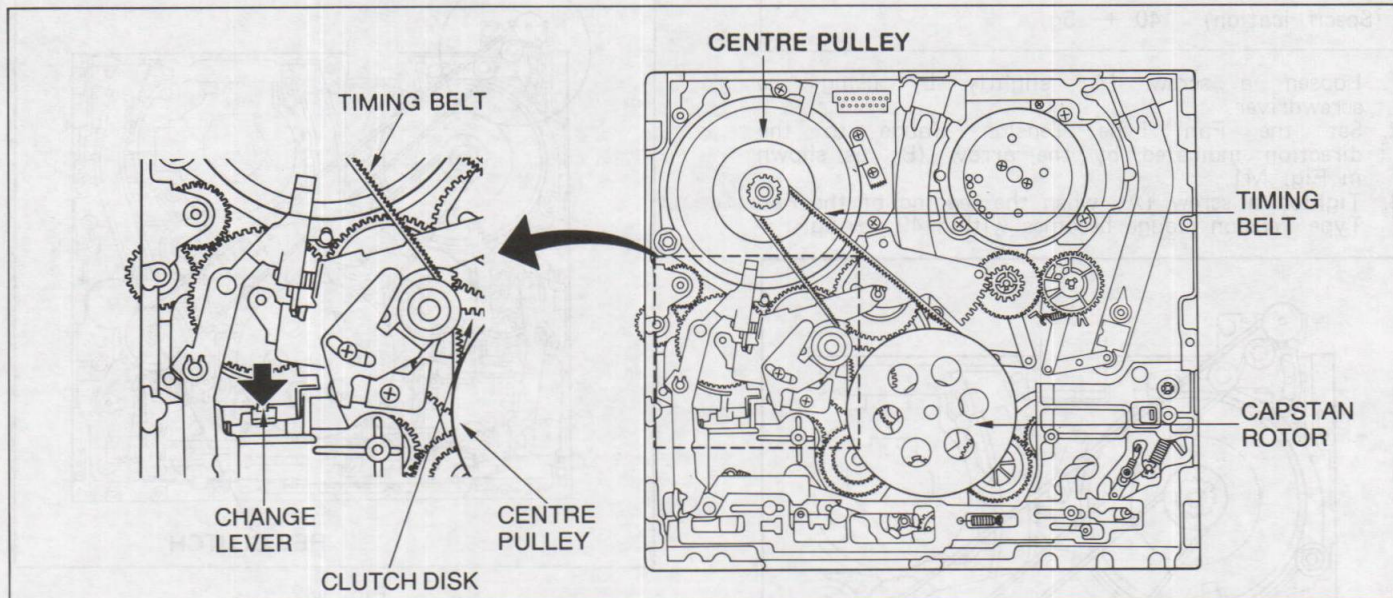


Fig. S1 How to Eject Manually

2-1-2. HOW TO SEE THE MOVEMENT OF MECHANISM WITHOUT CASSETTE COMPARTMENT

Since capstan motor works as loading motor and front loading motor, phase relationship between cassette compartment and mechanism is important, so playback and FF/REW can not be performed even just only taking out the cassette compartment, however if you want to see the mechanical movement without cassette compartment, it is possible as follows.

1. Take out the main AC.
2. Take out the flexible (or flat) cable from connector on the cassette compartment and remove the cassette compartment from chassis. Set the mechanism to STOP (GII:STOP 1) mode as following items 3,4,5,6.
3. Release the Change Lever by pushing it to arrow mark direction as shown in Fig. S1.
4. Turn the Capstan Motor to clockwise until the Clutch Disk is locked. (Clutch Disk is locked once in one rotation.)
5. Release the Change Lever again when Clutch Disk is locked.
6. Repeat item 4 and 5 until mechanism come to STOP (GII:STOP 1) position as shown in Fig. S2.
* To confirm the STOP1 mode (GII mechanism) Press the Sub Cam Follower to arrow mark direction as indicated in Fig.F7 and turn the capstan motor to both of forward and reverse direction. If takeup reel table is rotated when capstan is rotated forward and if supply reel table is rotated when capstan is rotated reverse, that is STOP 1 position.
7. Turn the power on.
8. Now, any operation can be performed without cassette compartment.

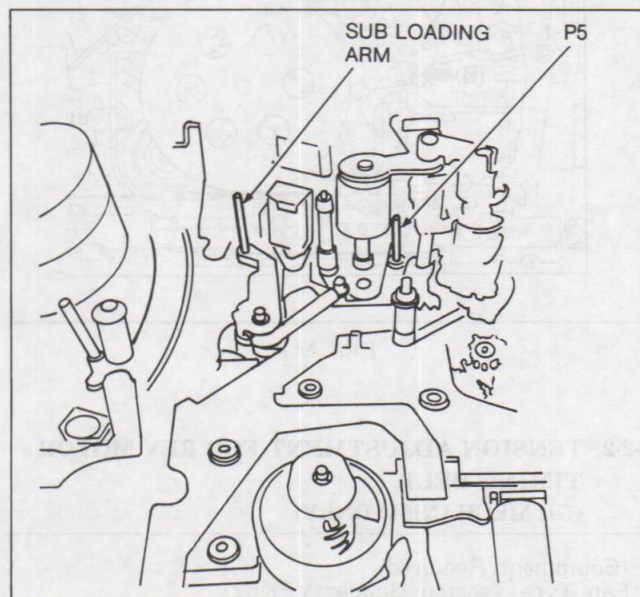


Fig. S2 STOP (STOP 1) Condition

- * Note.1
Do not add the large torque to any gears not break it.
- * Note.2
When reinstalling the cassette compartment, refer to page 18 item 2-3-13 Reinstallation of Cassette Compartment.
- * Note.3
Even though cassette switch is not connected to microprocessor, unit can work correctly.

2-2. MECHANICAL ADJUSTMENT PROCEDURES

2-2-1. TENSION ADJUSTMENT OF TIMING BELT FOR CAPSTAN MOTOR

(Equipment Required)
Fan Type Tension Gauge (VFK62)
(Specification) 40 \pm 5g

1. Loosen a screw (A) slightly by using the screwdriver.
2. Set the Fan Type Tension Gauge to the direction indicated by the arrow (B) as shown in Fig. M1.
3. Tighten a screw (A) when the reading of the Fan Type Tension Gauge becomes within 40 \pm 5g.

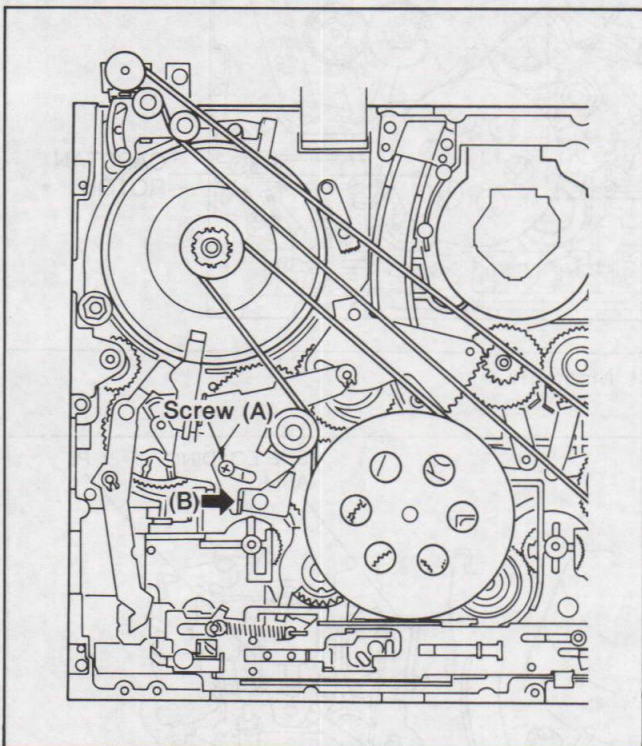


Fig. M1

2-2-2. TENSION ADJUSTMENT FOR REV MOTOR TIMING BELT (GII MECHANISM ONLY)

(Equipment Required)
Fan Type Tension Gauge (VFK62)
(Specification) 225 \pm 25g

1. Loosen a screw (C) by using the screwdriver.
2. Set the Fan Type Tension Gauge to the direction indicated by arrow (D) as shown in Fig. M2.
3. Tighten a screw (C) when the reading of the Fan Type Tension Gauge becomes within 225 \pm 25g.

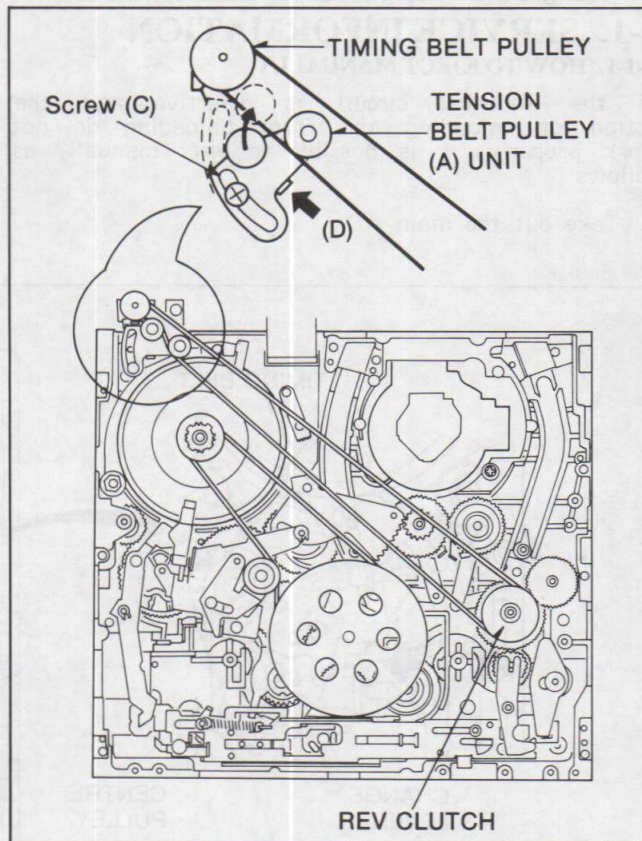


Fig. M2

2-2-3. POSITION ADJUSTMENT OF TENSION POST

(Equipment Required)
Tension Post Adjustment Plate (VFK0387)
Hex. Wrench : 2mm (Hex Wrench Set : VFK0326)

1. Disconnect the AC plug.
2. Remove the cassette compartment and disconnect the flexible (flat) cable from P1508.
3. Turn the Capstan Motor to the clockwise while the change lever is being pushed until the loading is completed as shown in Fig. M3.

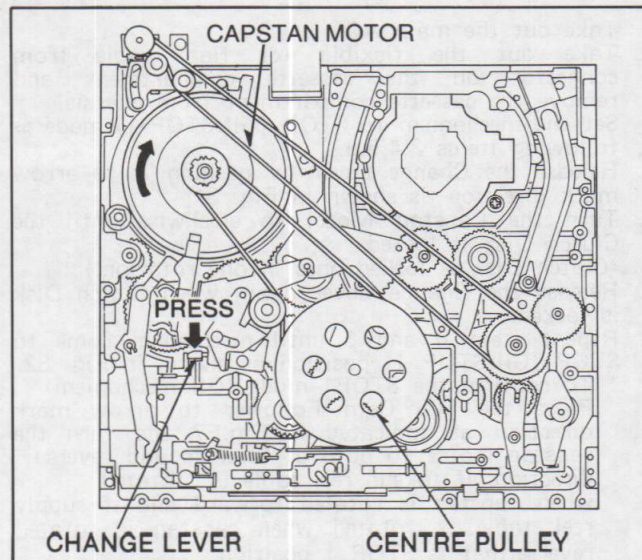


Fig. M3

4. Place the Adjustment Plate and insert the hex wrench into the hole of Tension Band Fastener as shown in Fig. M4.
5. Adjust the hole of Tension Band Fastener by using the hex wrench so that the Tension Post just touches the fixture of Adjustment Plate.
6. After the Adjustment, turn the Capstan Motor until the unloading is completed.

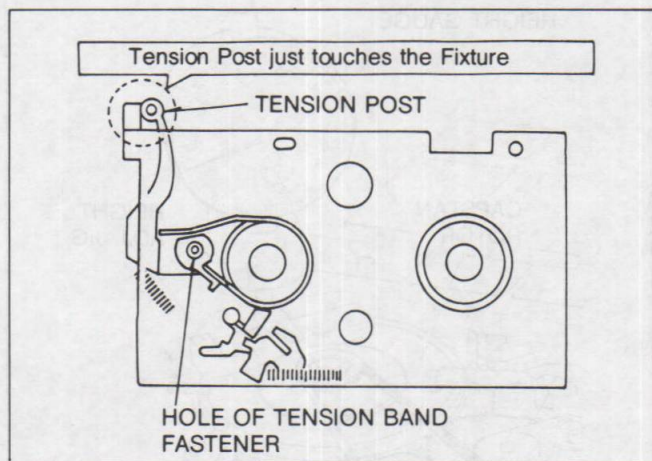


Fig. M4

Note:
When you assemble cassette compartment, refer to item 2-3-13 Reinstallation of Cassette Compartment.

2-2-4. MEASUREMENT AND ADJUSTMENT OF BACK TENSION

(Equipment Required)
Back Tension Meter (Tentelometer or VFK0132)
VHS Cassette Tape (180 minutes tape: PAL/SECAM)
(120 minutes tape : NTSC)
(Specification) 22.5-27.5g

1. Playback the cassette tape from the beginning and wait until the tape movement get the stabilization. (for approx. 10~20 seconds)
2. Insert the Back Tension Meter into the path of a tape, and measure the back tension to be within specification as shown in Fig. M5.

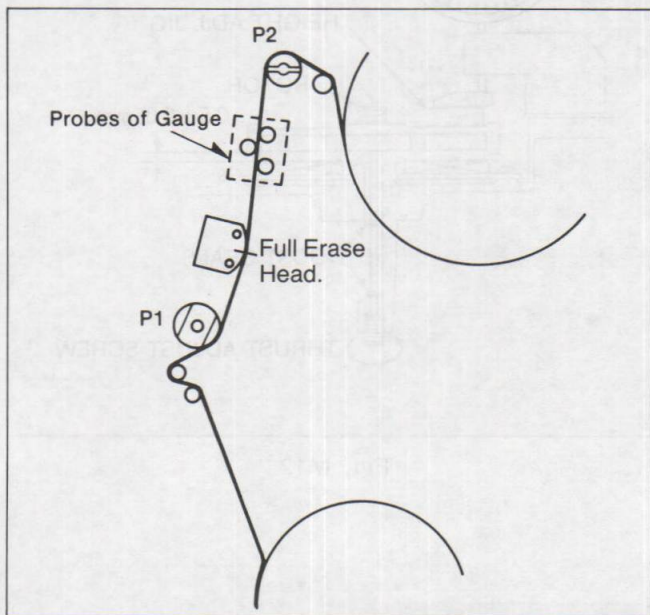


Fig. M5 Measurement of Back Tension

Note:

1. While measuring, make sure that the three probes of the meter are all in good contact with the tape.
2. As the tension meter is very sensitive, we recommend taking 3 separate readings.
3. If it is out of specification, change the spring notch as shown in Fig. M6.

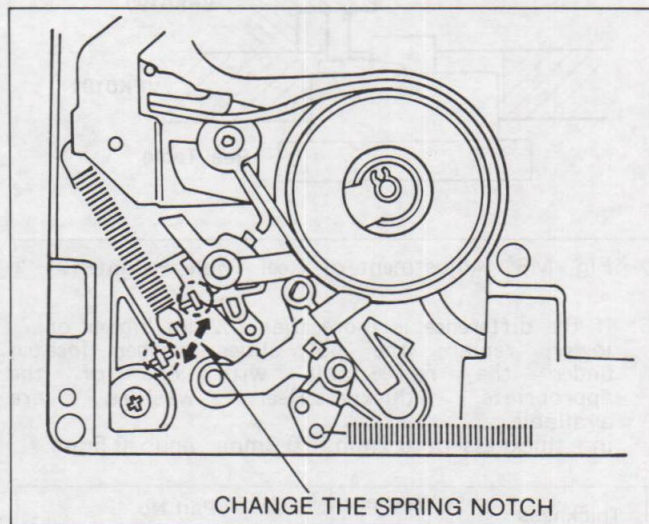


Fig. M6

2-2-5. HEIGHT ADJUSTMENT OF THE REEL TABLES

(Equipment Required)
Post Adjustment Plate (VFK0191)
Reel Table Height Gauge (VFK0190)
(Specification) 0~0.2mm

1. Remove the cassette compartment.
2. Place the Post Adjustment Plate on the reel tables.
3. Place the Reel Table Height Gauge on the plate so that the scraper of the gauge touches the cut-out portion of the plate, then set the gauge to zero "0" as shown in Fig. M7.

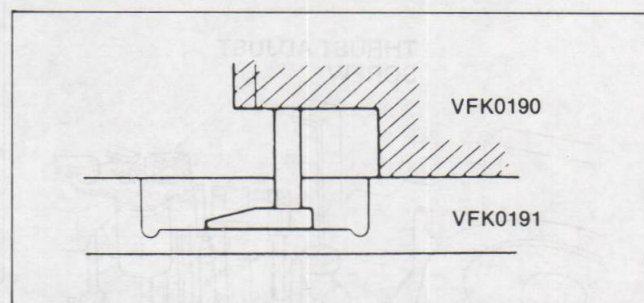


Fig. M7 Adjustment of Reel Table Height-(1)

4. Measure the meter indication of top surface of reel table as shown in Fig. M8. And then perform the same measurement and confirmation for the other reel table.

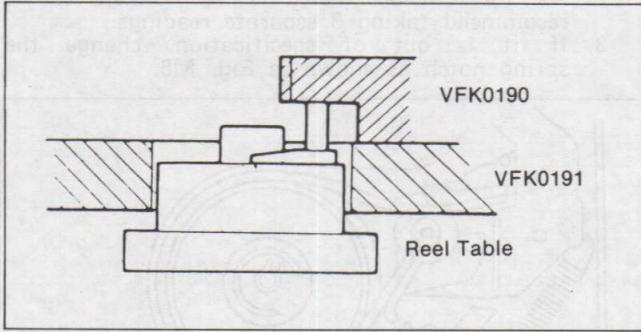


Fig. M8 Adjustment of Reel Table Height-(2)

5. If the difference is more than 0.2mm higher or lower, replace the poly-slider washer located under the reel table with one of the appropriate thickness. Reel washers are available in thickness of 0.2mm, 0.3mm and 0.5mm.

Thickness	Washer	Part No.
0.2 mm		VMX1238
0.3 mm		VMX1239
0.5 mm		VMX1171

Fig. M9

2-2-6. ADJUSTMENT OF THE CAPSTAN THRUST GAP

(Equipment Required)
 Reel Table Height Gauge (VFK0190)
 Height Adjustment Jig (VFK0344)

(Specification) 0.5 ~ 0.55mm

1. Turn a Thrust Adjust Screw slightly until the capstan rotor unit just touches the coil of the capstan stator unit.

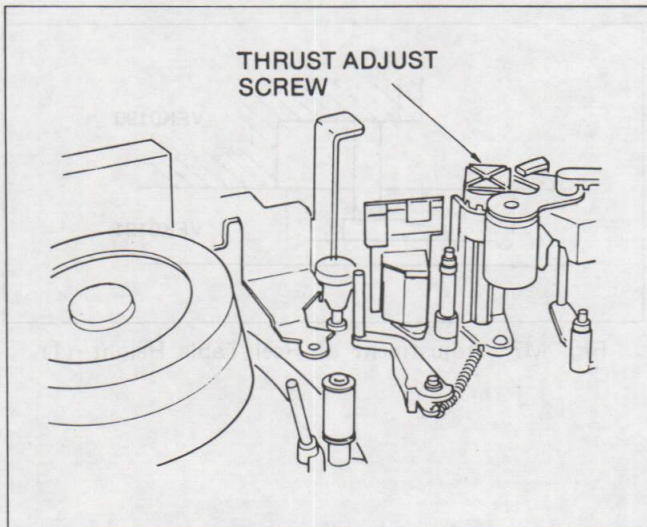


Fig. M10

2. Set the height adjustment Jig on the capstan Rotor unit.
3. Place the height gauge on the bottom case unit and set the height gauge to zero "0".

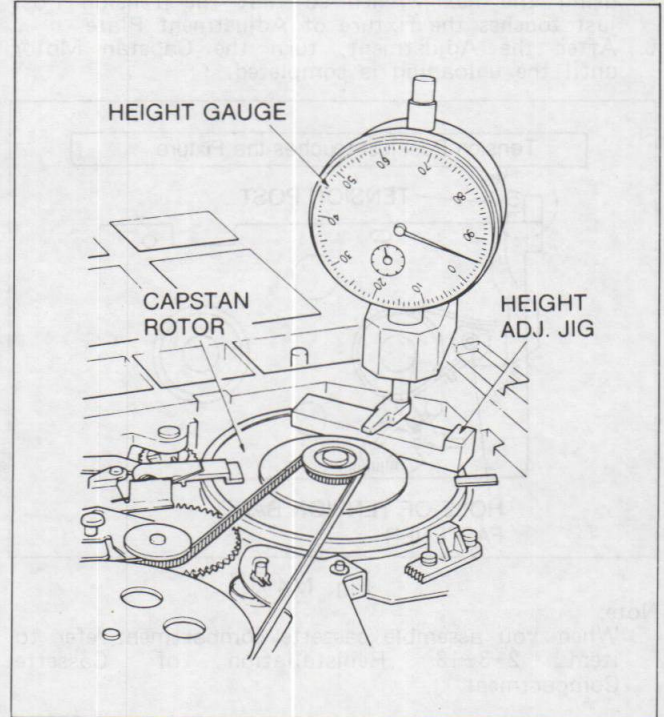


Fig. M11

4. Adjust a Thrust Adjust Screw so that the thrust gap becomes 0.5 ~ 0.55mm.

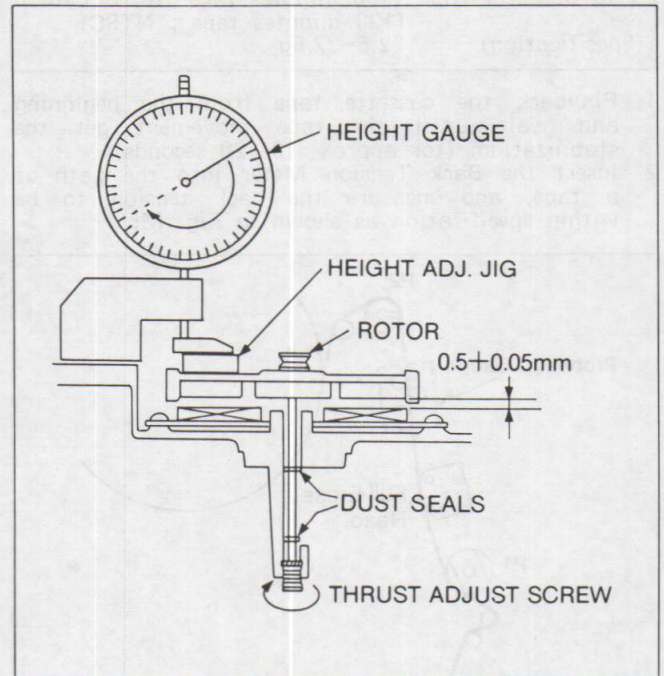


Fig. M12

2-2-7. HEIGHT ADJUSTMENT OF TAPE GUIDE POST (P2 AND P3)

(Equipment Required)
 Post Adjustment Plate
 (VFK0191)
 Reel Table Height Gauge (VFK0190)
 Post Adjustment Screwdriver
 (VFK0329)

1. Remove the cassette compartment.
2. Place the Post Adjustment Plate over the reel tables.
 Confirm that the Post Adjustment Plate is firmly seated as shown in Fig. M13.

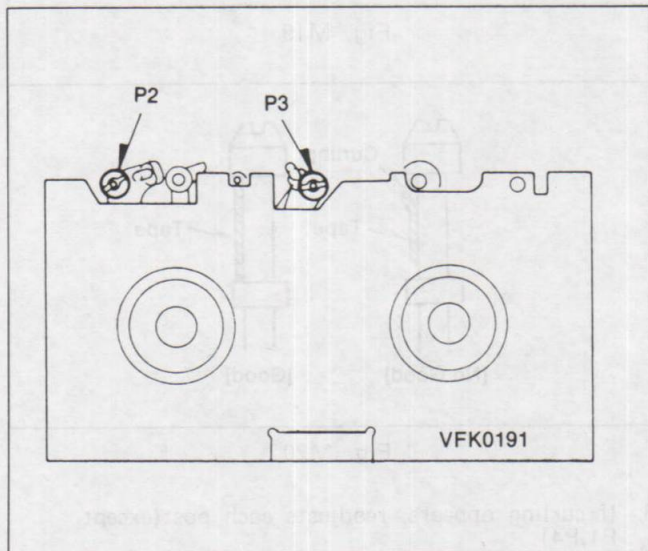
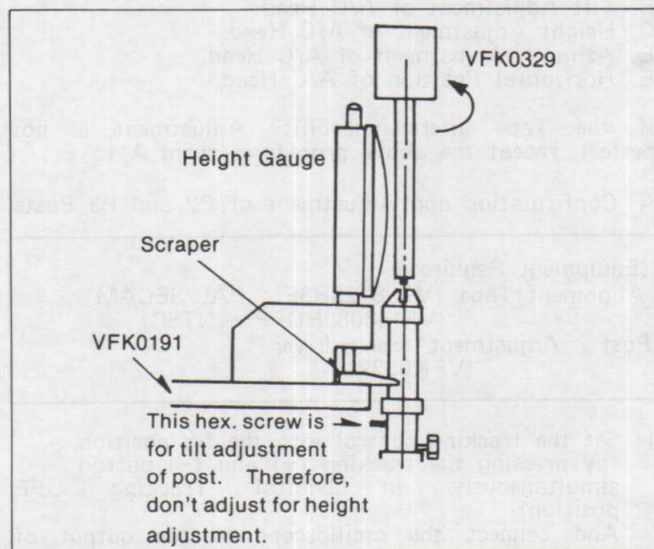


Fig. M13

3. Lower 2 tape guide posts (P2 and P3) by turning the Post Adjustment screwdriver so that the condition of height becomes as shown in Fig. M14. That is, the lower edge of Tape guide should be lower than surface of Adjustment Plate.



4. Place the scraper of Reel Table Height Gauge as shown in Fig. M15.
 Set the gauge to zero, then raise the post slowly until the lower tape guide just touches the bottom of the scraper. Use the gauge to determine the exact point at which the lower tape guide touches the scraper.

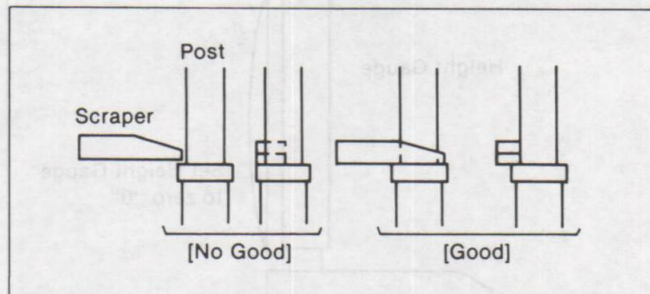


Fig. M15

Note:
 After the adjustment, install the cassette compartment referring the item 2-3-13 Reinstallation of cassette compartment.

2-2-8. HEIGHT ADJUSTMENT OF THE PULL-OUT POST (P5 POST)

(Equipment Required)
 Post Adjustment Plate
 (VFK0191)
 Reel Table Height Gauge (VFK0190)
 Nut Driver (Purchase locally)

(Specification) $-0.06 \pm 0.01\text{mm}$

Note:
 Unless the replacement or adjustment of this post is required, the adjustment nut should not be turned.

1. Remove the cassette compartment.
2. Place the Post Adjustment Plate over the reel tables.
3. Turn the Capstan Motor to counterclockwise (loading direction) until the mechanical condition becomes as shown in Fig. M16.

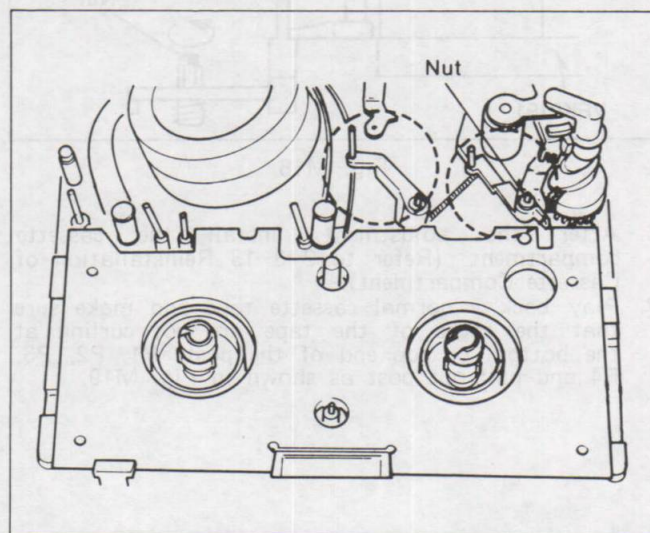


Fig. M16

- Place the Reel Table Height Gauge on the Post Adjustment Plate and set the gauge to zero "0" as shown in Fig. M17.

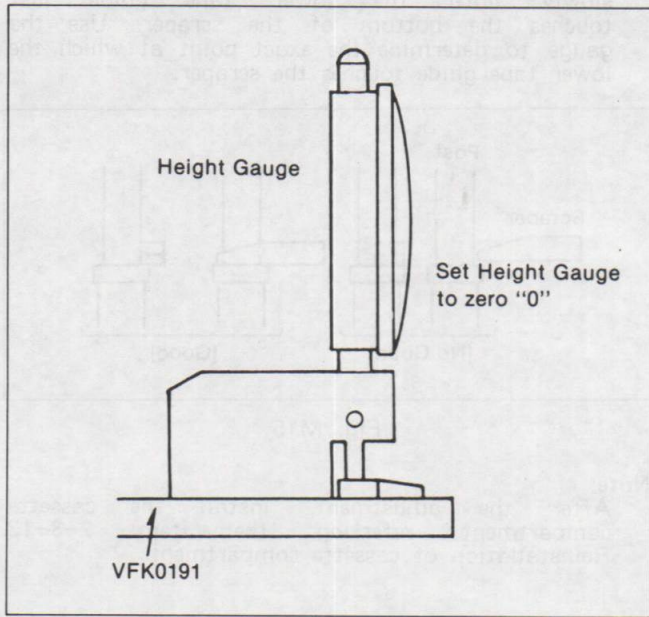


Fig. M17

- Place the Reel Table Height Gauge as shown in Fig. M18 and turn the nut slowly until the gauge reads $-0.06 \pm 0.01\text{mm}$.

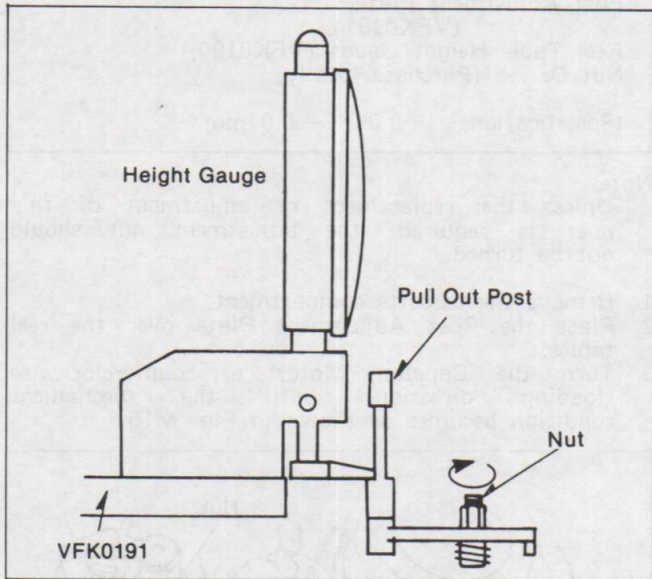


Fig. M18

- After the adjustment, install the cassette compartment. (Refer to 2-3-13 Reinstallation of Cassette Compartment).
- Play back a normal cassette tape and make sure that the edges of the tape are not curling at the bottom or top end of the posts P1, P2, P3, P4 and pull out post as shown in Fig. M19.

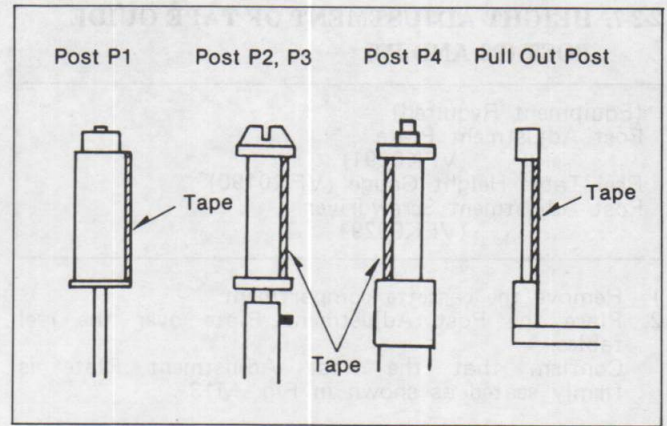


Fig. M19

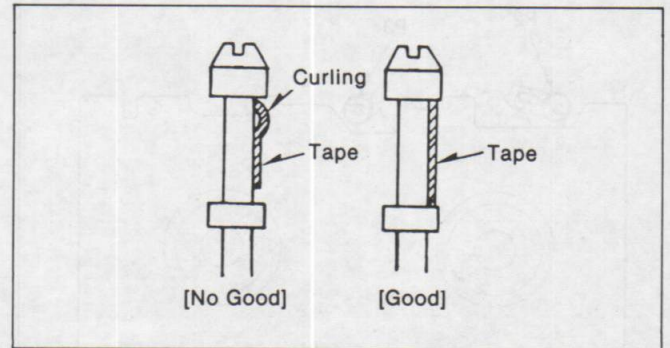


Fig. M20

- If curling appears, readjusts each post(except P1,P4).

2-2-9. TAPE INTERCHANGEABILITY ADJUSTMENT

Note:

Proceed the following procedures for Tape Interchangeability Adjustment to do it Correctly and Smoothly.

- Confirmation and Adjustment of P2 and P3 Posts.
- Tilt Adjustment of A/C Head.
- Height Adjustment of A/C Head.
- Azimuth Adjustment of A/C Head.
- Horizontal Position of A/C Head.

If the Tape Interchangeability Adjustment is not perfect, repeat the above procedures from A to E.

- Confirmation and Adjustment of P2 and P3 Posts

(Equipment Required)

Alignment Tape (VFJ8125H3F : PAL/SECAM)
(VFM8080HQFP : NTSC)
Post Adjustment Screwdriver
(VFK0329)

- Set the tracking control into the fix position. (by pressing the tracking (+) and (-) button simultaneously in Digital Tracking OFF position)
And connect the oscilloscope to the output of the Head Amp as shown in Fig. M21.

Note:

To get a stable waveform of the Head Amp output on the oscilloscope, use the head switching pulse as a triggering signal as shown in Fig. M21.

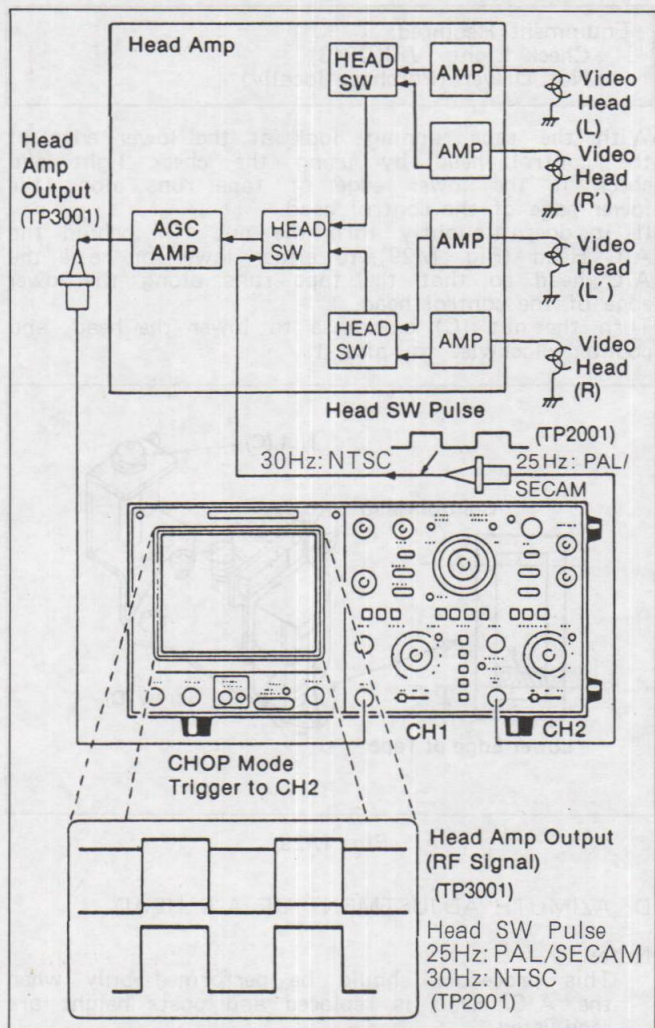


Fig. M21 Connection of Oscilloscope

2. Play back the alignment tape (PAL: VFJ8125H3F).
3. If the RF envelope appears like example "A" or "B" in Fig. M22 then adjustment of the tape guide post (P2 : Entrance) is necessary.
4. Adjust the tape guide post (P2) with the post adjustment screwdriver so that the RF envelope waveform at the entrance portion becomes flat as shown in Fig. M22-"C".

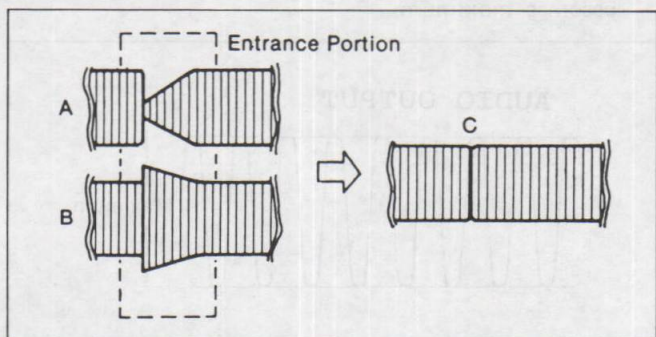


Fig. M22

5. If the RF envelope appears like example "D" or "E" in Fig. M23, then adjustment of the tape guide post (P3:Exit) is necessary.
6. Adjust the tape guide post (P3) in the same manner as the P2 post so that the exit portion becomes flat as shown in Fig. M23-"F".

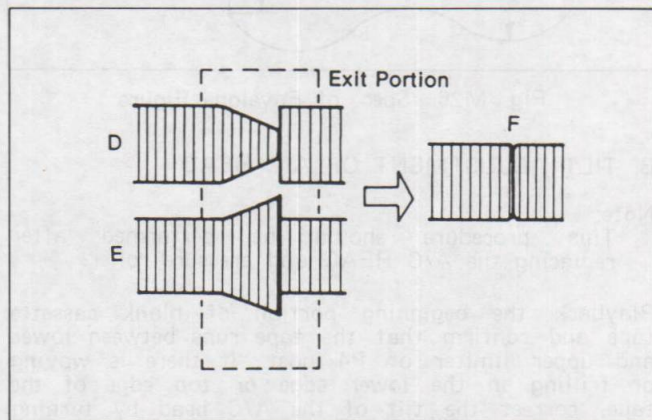


Fig. M23

7. Turn the Tracking VR fully clockwise and counter clockwise. (Keep pressing + button or - button) The output envelope should vary nearly parallel with other condition as shown in Fig. M24.
8. Set the tracking control into centre fix position and adjust for maximum RF envelope. If the RF envelope does not meet these specifications, $V1/V \geq 0.7$, $V2/V \geq 0.8$ (Refer to Fig. M26) then repeat steps 1-8 again.

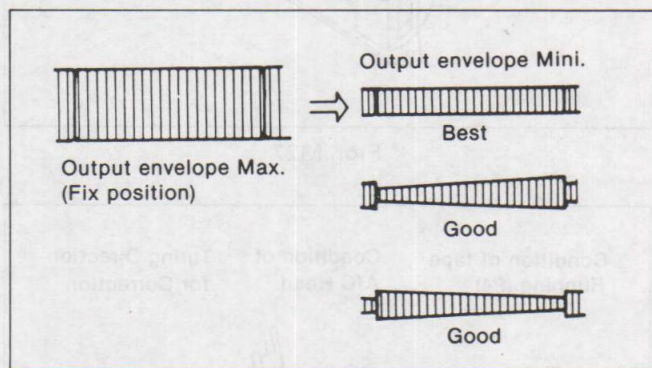


Fig. M24

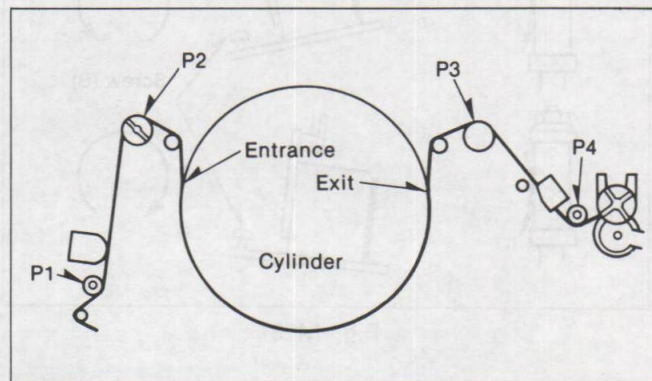


Fig. M25 Loading of Posts

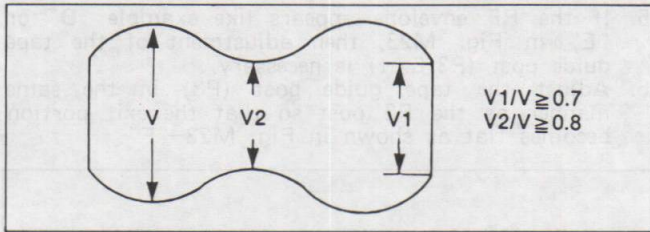


Fig. M26 Spec. of Envelope Figure

B. TILT ADJUSTMENT OF A/C HEAD

Note:
This procedure should be performed after replacing the A/C HEAD and pressure roller.

Playback the beginning portion of blank cassette tape and confirm that the tape runs between lower and upper limiter of P4 post. If there is waving or frilling in the lower edge or top edge of the tape, correct the tilt of the A/C head by turning the screw (B) located behind the A/C head.

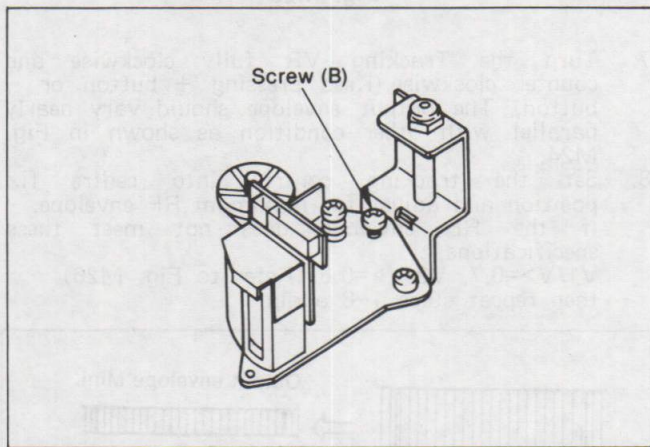


Fig. M27

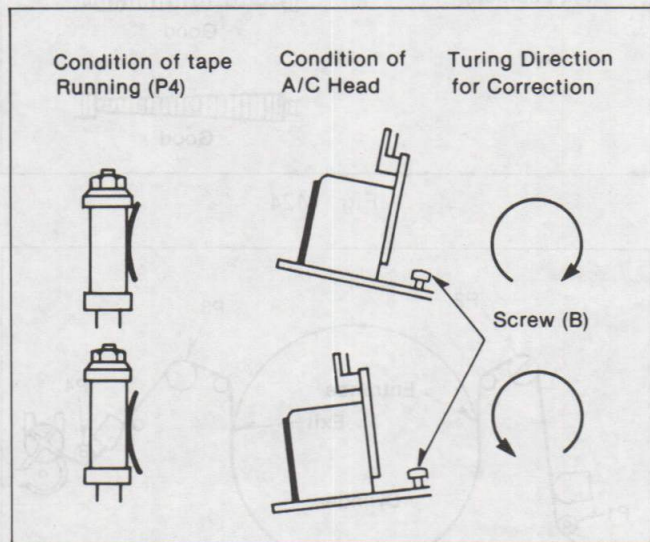


Fig. M28

Note:
After Tilt adjustment of A/C head, height adjustment of A/C head is required.

C. HEIGHT ADJUSTMENT OF A/C HEAD

Note:
This procedure should be performed only when the A/C Head is replaced.

Equipment Required:
Check Light (VFK0343)
Nut Driver (Purchase locally)

With the tape running, look at the lower edge of the control head by using the check light and check if the lower edge of tape runs along the lower edge of the control head. If it doesn't, slightly turn the nut (C) behind the A/C Head (Fig. M29) to either lower or raise the A/C head so that the tape runs along the lower edge of the control head. Turn the nut (C) clockwise to lower the head, and counter-clockwise to raise it.

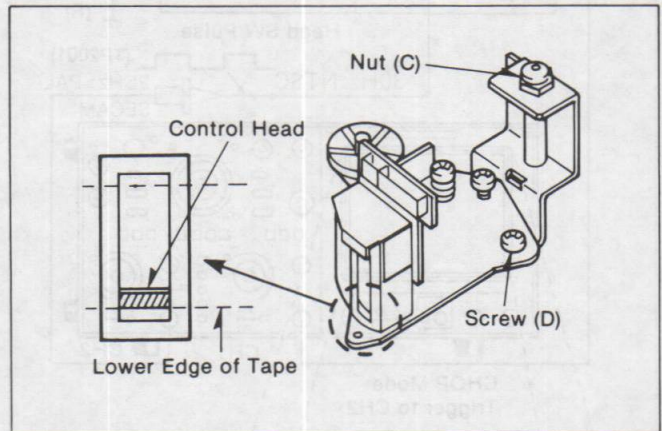


Fig. M29

D. AZIMUTH ADJUSTMENT OF A/C HEAD

Note:
This procedure should be performed only when the A/C Head is replaced and posts height are readjusted.

Equipment Required:
Alignment Tape (VFJ8125H3F : PAL/SECAM)
(VFM8080HQFP : NTSC)

1. Connect the oscilloscope to the audio output on the rear panel.
2. Play back the 2nd portion (Normal Audio 6KHz) of the alignment tape (PAL:VFJ8125H3F).
3. Adjust the screw (D) so that the output level becomes maximum.

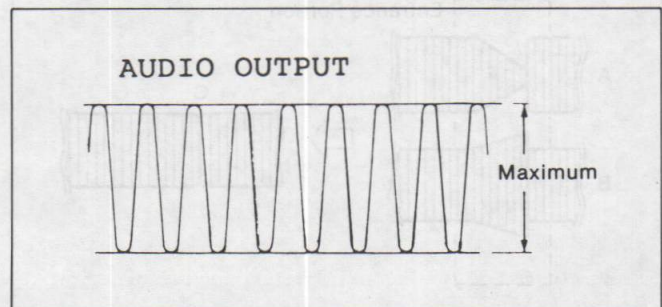


Fig. M30

E. HORIZONTAL POSITION ADJUSTMENT OF A/C HEAD

Note:
This procedure should be performed only when the A/C head is replaced, and after performing the tape interchangeability adjustment.

Equipment Required:
H-Position Adjustment Screwdriver (VFK0328)
Alignment Tape (VFJ8125H3F : PAL/SECAM)
(VFM8080HQFP : NTSC)

1. Set the tracking control to the centre fix position.
2. Connect the oscilloscope to the output of Head Amp.(Refer to Fig. M21)

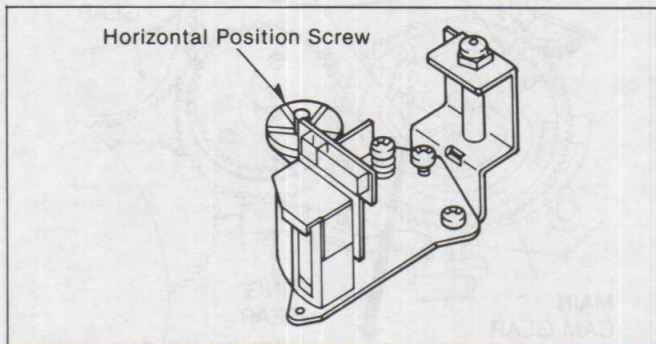


Fig. M31

3. Play back the alignment tape (PAL:VFJ8125H3F).
4. Adjust the Horizontal Position Screw of A/C head so that the RF signal becomes maximum level.

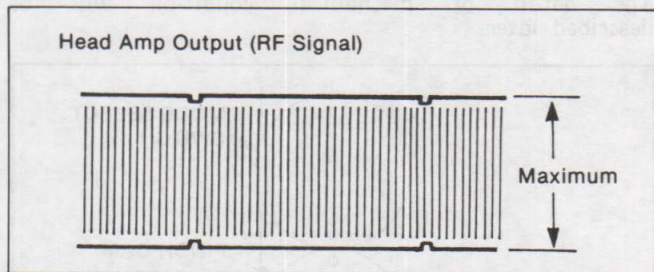


Fig. M32

2-3. ASSEMBLY AND ADJUSTMENT PROCEDES OF MECHANISM

The mechanism is mostly engaged to the Systemcontrol Circuit, through the mode select switch.

Therefore the relation between the mode select switch and the cam gear decides all further mechanical movement of the mechanical parts such as levers, gears, rollers and so on.

If these parts are not fixed properly, the unit will be unloaded or compulsorily stopped.

And it will result being damaged at any mechanical or electrical parts.

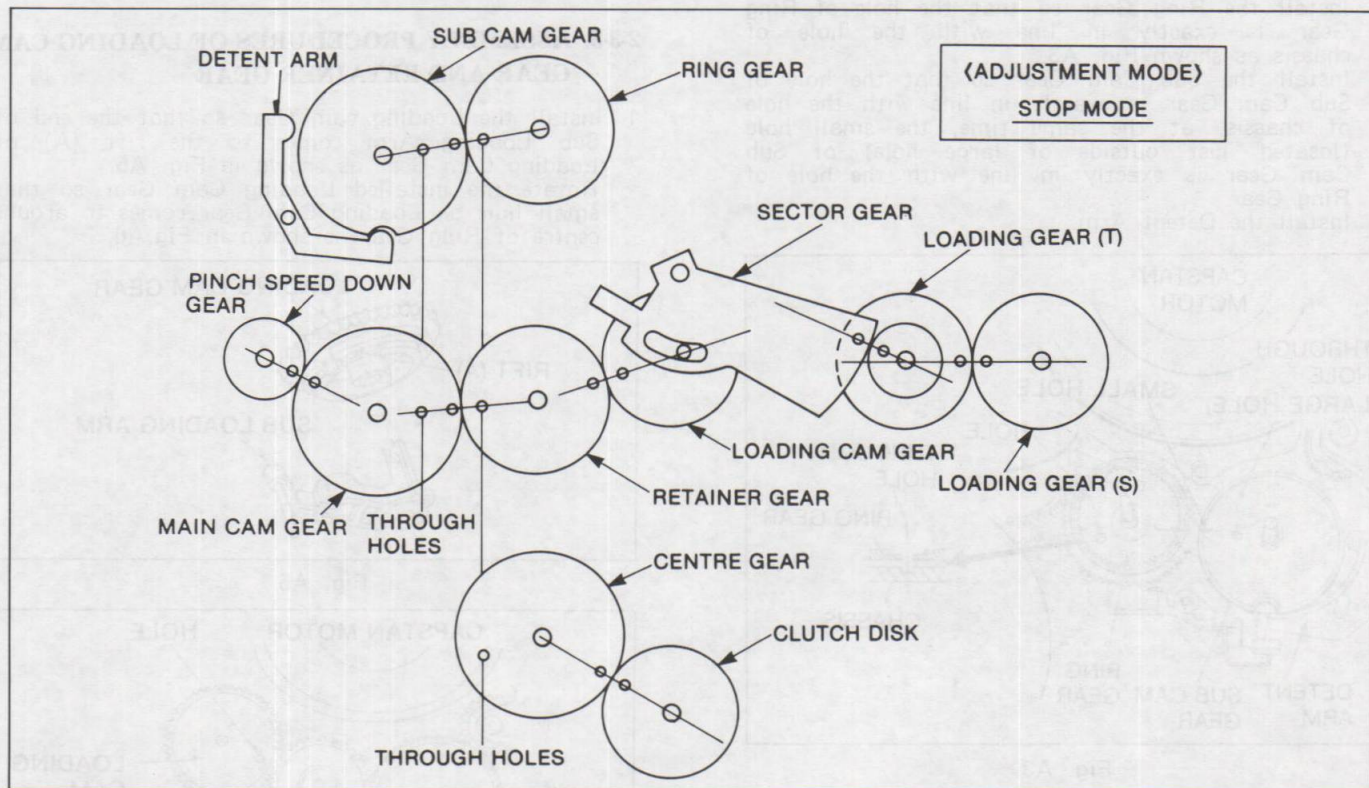


Fig. A1 Bottom View of Overall Mechanical Condition

The overall mechanical condition (alignment) of bottom and top view are shown in Fig. A1 and Fig. A2. This mechanical adjustment is performed in STOP mode. The detail of mechanical condition will be described later.

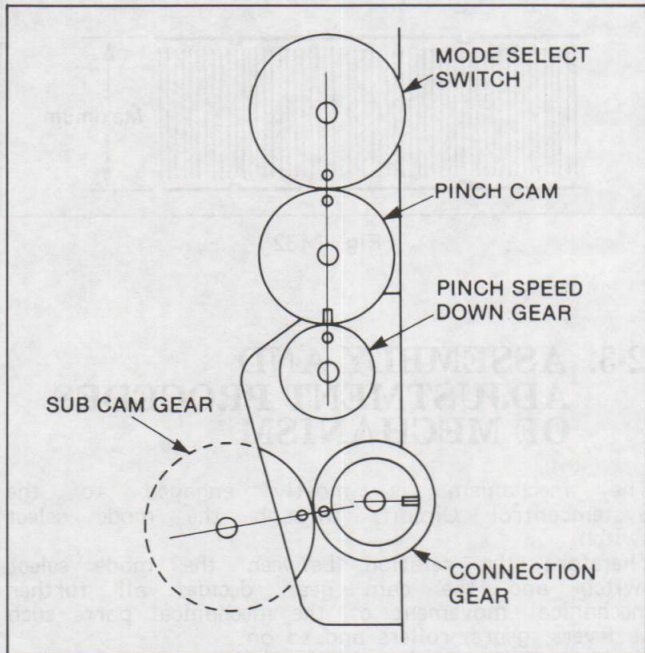


Fig. A2 Top View of Overall Mechanical Condition

2-3-1. ASSEMBLY PROCEDURES OF RING GEAR, SUB CAM GEAR AND DETENT ARM

1. Install the Ring Gear so that the hole of Ring Gear is exactly in line with the hole of chassis as shown Fig. A3.
2. Install the Sub Cam Gear so that the hole of Sub Cam Gear is exactly in line with the hole of chassis, at the same time, the small hole (located just outside of large hole) of Sub Cam Gear is exactly in line with the hole of Ring Gear.
3. Install the Detent Arm.

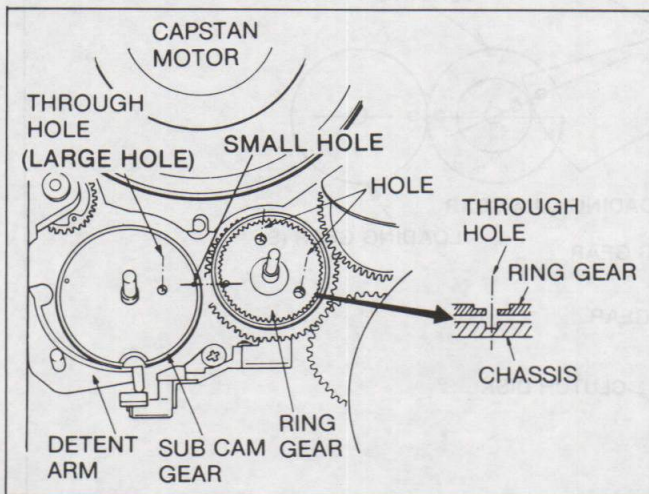


Fig. A3

2-3-2. ASSEMBLY PROCEDURES OF MAIN CAM GEAR AND PINCH SPEED DOWN GEAR

1. Install the Pinch Speed Down Gear from top side of chassis.
2. Install the Main Cam Gear on to the Sub Cam Gear so that the small hole of Main Cam Gear is exactly in line with the small hole of Pinch Speed Down Gear. And the large hole of Main Cam Gear is exactly in line with the large hole of Sub Cam Gear as shown in Fig. A4.

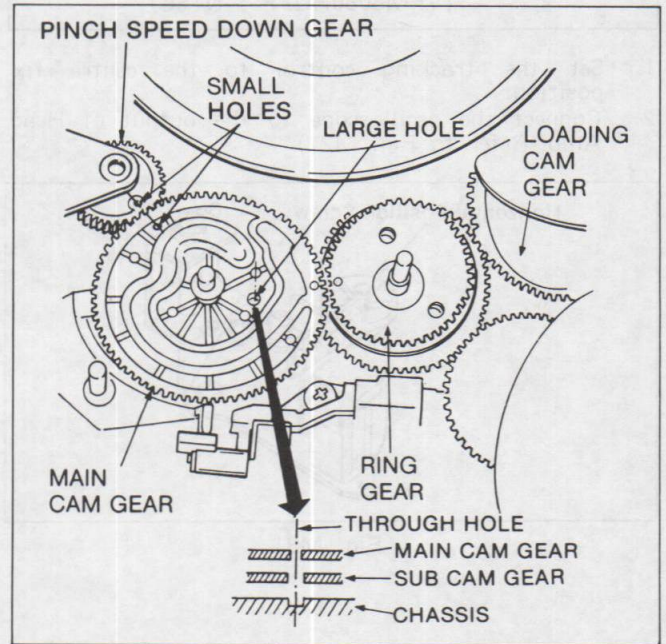


Fig. A4

2-3-3. ASSEMBLY PROCEDURES OF LOADING CAM GEAR AND RETAINER GEAR

1. Install the Loading cam Gear so that the end of Sub Loading Arm comes to the rift (A) of Loading Cam Gear as shown in Fig. A5. Rotate the installed Loading Cam Gear so that small hole on Loading Cam Gear comes to around centre of Ring Gear as shown in Fig. A6.

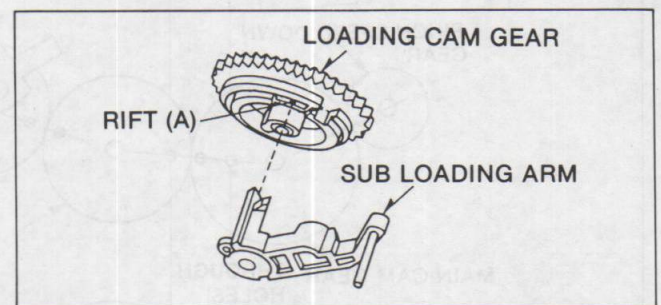


Fig. A5

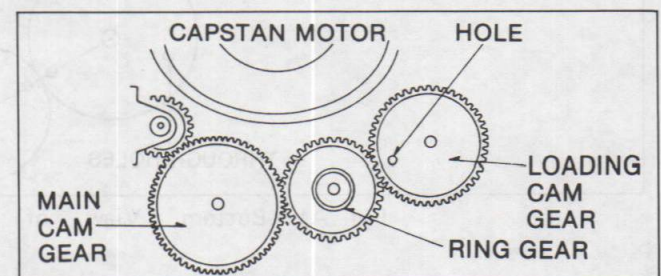


Fig. A6

2. Install the Retainer Gear on to the Ring Gear so that the hole of Retainer Gear is exactly in line with the hole of Main Cam Gear, at this time, this hole of Retainer Gear also is exactly in line with the hole of Ring Gear (underneath). At the same time, another hole of Retainer Gear is exactly in line with the hole of Loading Cam Gear as shown in Fig. A7.

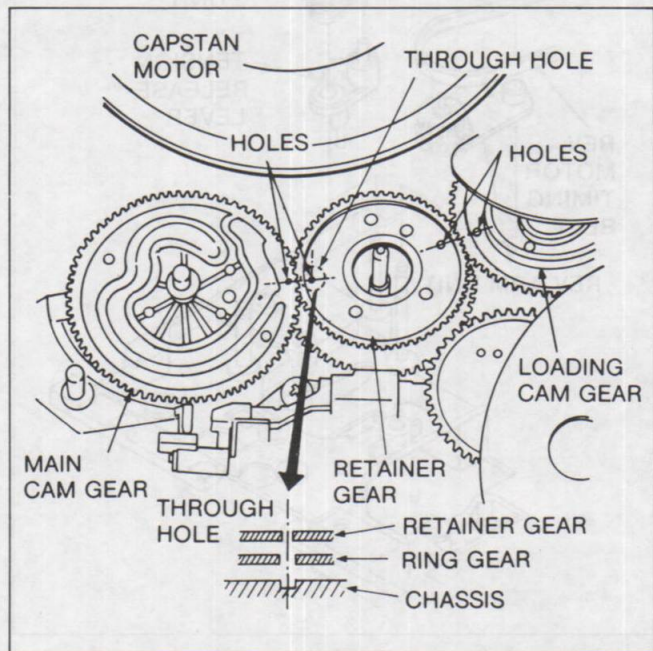


Fig. A7

2-3-4. ASSEMBLY PROCEDURES OF CENTRE GEAR

1. Install the Centre Gear on to the Retainer Gear so that the hole of Center Gear is exactly in line with the hole of Retainer Gear, at this time, another hole of Center Gear is exactly in line with the small hole of Clutch Disk, then insert the cut washer.

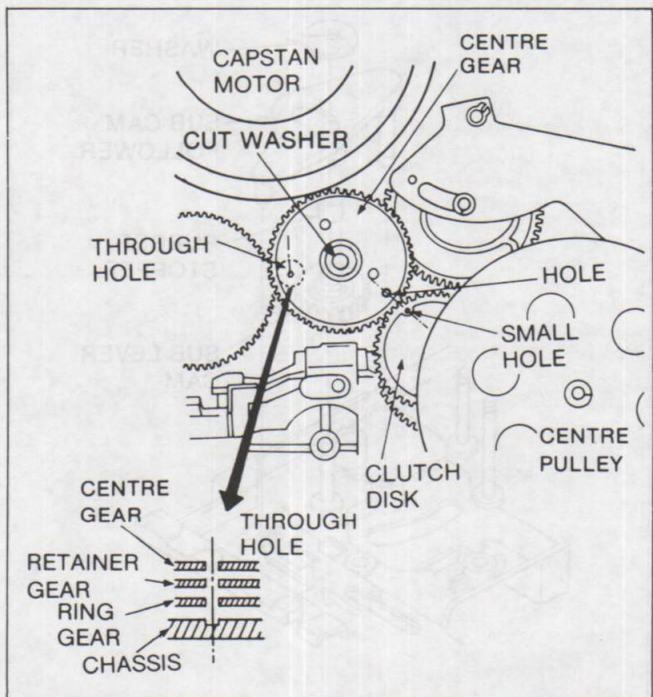


Fig. A8

2-3-5. ASSEMBLY PROCEDURES OF MAIN LEVER (1) UNIT AND CAM FOLLOWER ARM UNIT

1. Install the Main Lever (1) Unit and then insert the cut washers and hitch the spring as shown in Fig. A9.

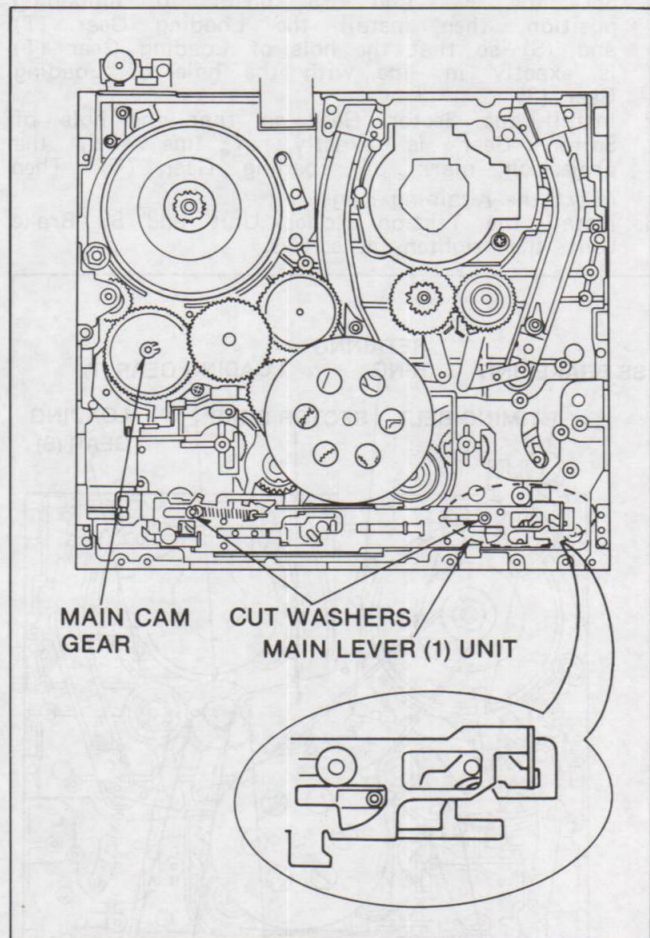


Fig. A9

2. Install the Cam Follower Arm Unit so that the pin of Cam Follower Arm insert to the groove of Main Cam Gear then insert a retaining ring.

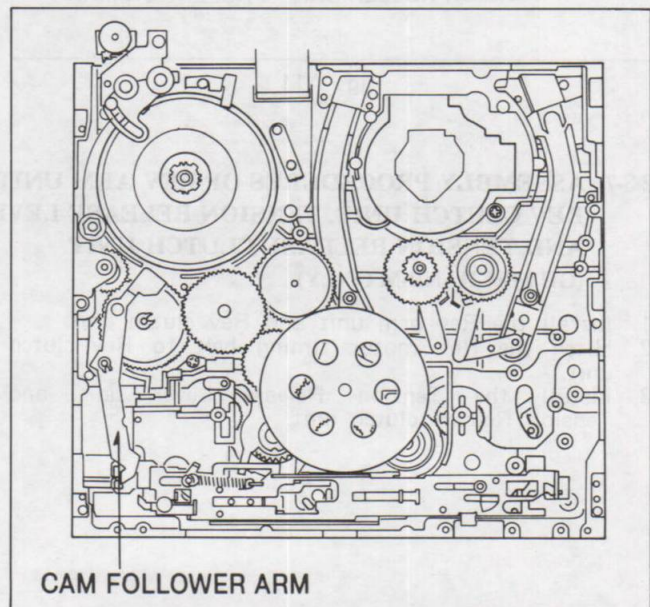


Fig. A10

2-3-6. ASSEMBLY PROCEDURES OF LOADING GEAR (T), LOADING GEAR (S), SECTOR GEAR, TENSION ROLLER UNIT AND SS BRAKE ARM UNIT

1. Set the P2 and P3 posts to unloading position, then install the Loading Gear (T) and (S) so that the hole of Loading Gear (T) is exactly in line with the hole of Loading Gear (S).
2. Install the Sector Gear so that the hole of Sector Gear is exactly in line with the projection mark of Loading Gear (T). Then insert the retaining rings.
3. Install the Tension Roller Unit and SS Brake Unit, then tighten the screws.

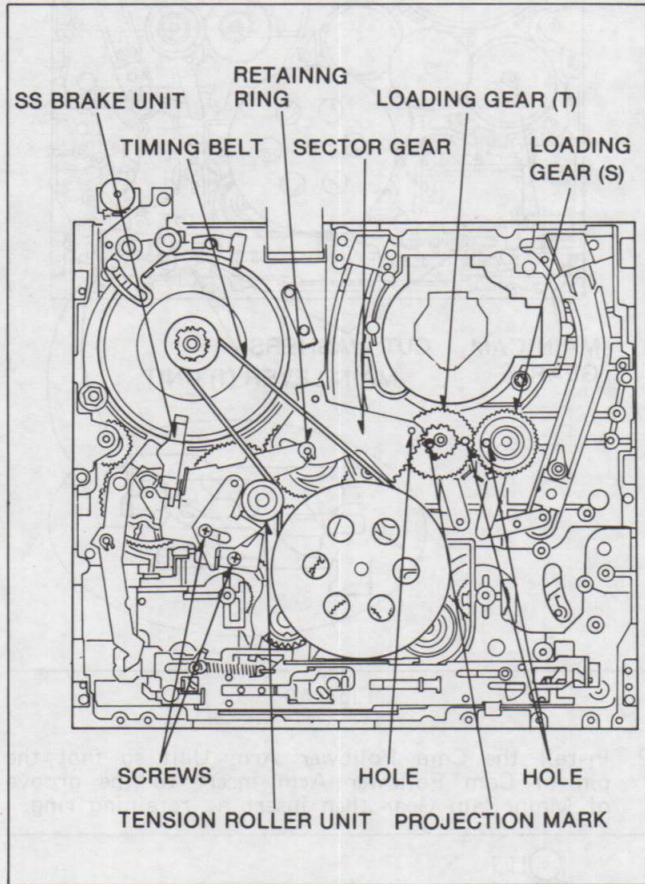


Fig. A11

2-3-7. ASSEMBLY PROCEDURES OF REV ARM UNIT, REV CLUTCH UNIT, TENSION RELEASE LEVER AND TENSION RELEASE CLUTCH UNIT (GII MECHANISM ONLY)

1. Install the Rev arm unit and Rev clutch unit.
2. Hitch the Rev motor timing belt to Rev clutch unit.
3. Install the Tension Release Lever unit and Tension Release clutch unit.

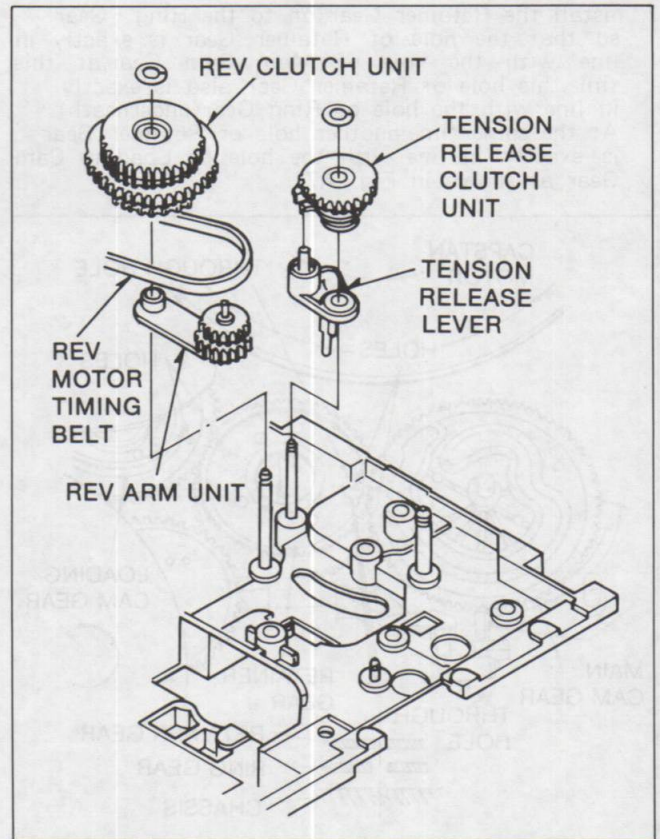


Fig. A12

2-3-8. ASSEMBLY PROCEDURES OF SUB LEVER CAM, SUB CAM FOLLOWER AND REV CONTROL LEVER (GII MECHANISM ONLY)

1. Install the SUB LEVER CAM RUBBER STOPPER, SUB CAM FOLLOWER and washer as shown below.

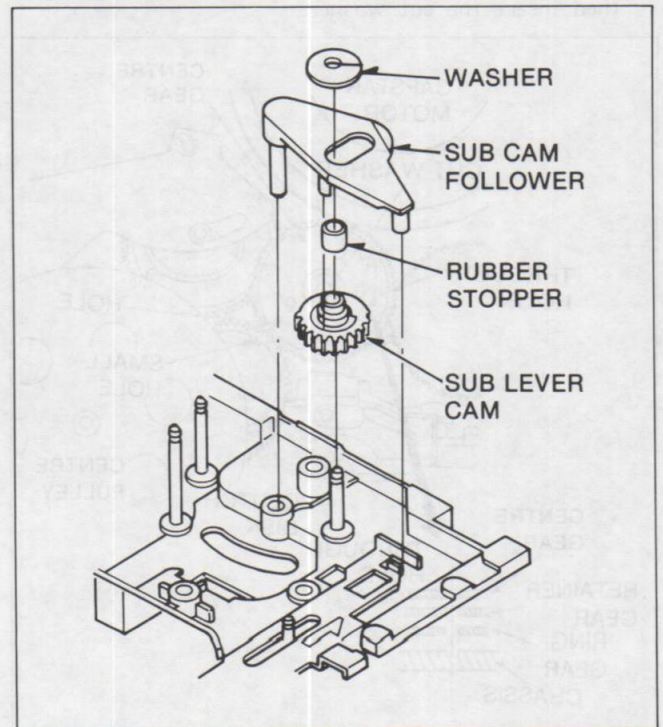


Fig. A13

2. Install the Review Control Lever as shown below.

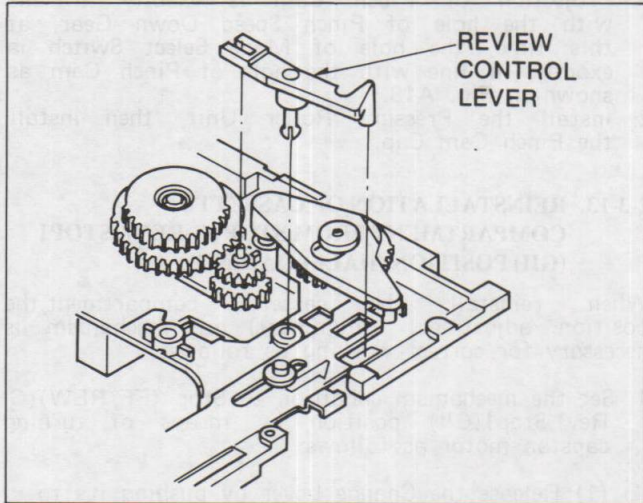


Fig. A14

2-3-9. ASSEMBLY PROCEDURES OF TENSION PULLEY BASE (A) UNIT (GII MECHANISM ONLY)

1. Install the Tension Pulley Base (A) unit as shown below.
2. Hitch the Rev Motor Timing belt. (Refer to 2-3-2. Tension Adjustment For Rev Motor Timing Belt)

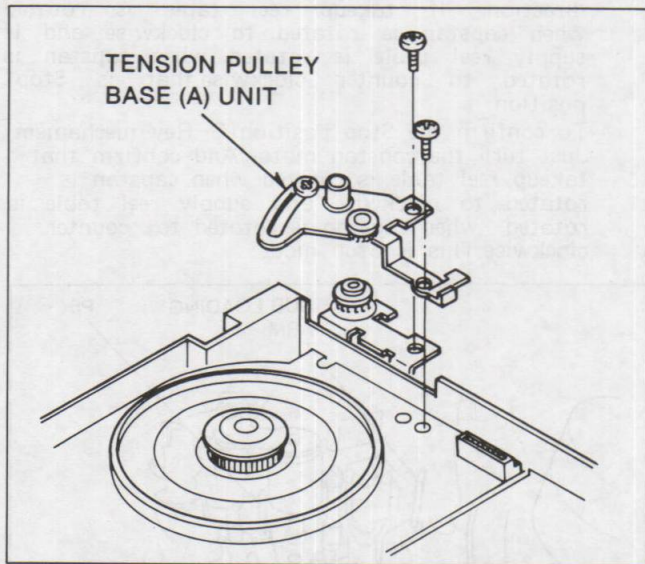


Fig. A15

2-3-10. ASSEMBLY PROCEDURES OF CONNECTION GEAR

Note:

Before this assembling, Sub Cam Gear position (and positions of bottom side gears) must be in correct positions as described before. Install the connection gear so that the small hole of connection gear is exactly in line with the small hole of Sub Cam Gear as shown in Fig. A16.

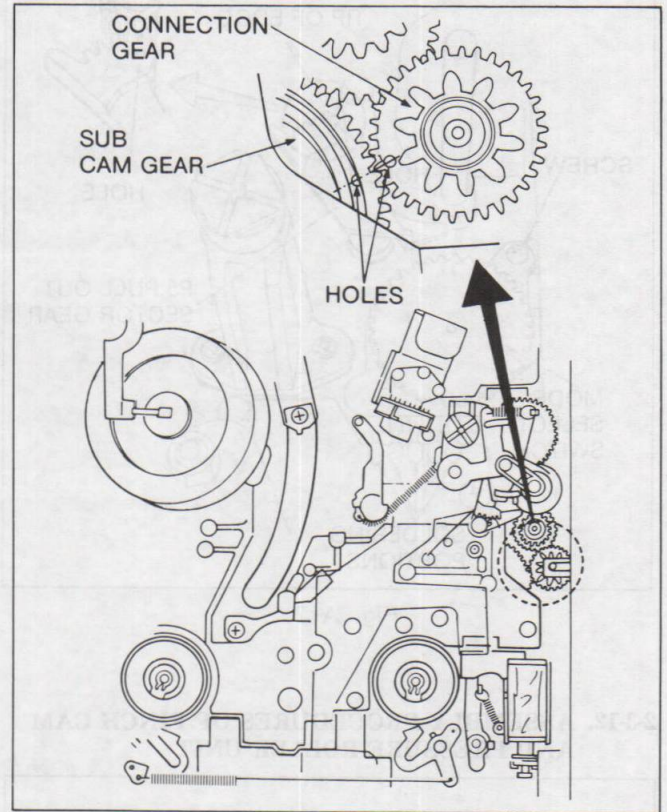


Fig. A16

2-3-11. ASSEMBLY PROCEDURES OF MODE SELECT SWITCH AND P5 PULL OUT SECTOR GEAR

1. Install the Mode Select Switch and tighten a screw, then solder the 5 soldering portions.
2. Install the P5 Pull Out Sector Gear so that the hole of P5 Pull Out Sector Gear is exactly in line with the tip of edge at P5 gear as shown in Fig. A17.

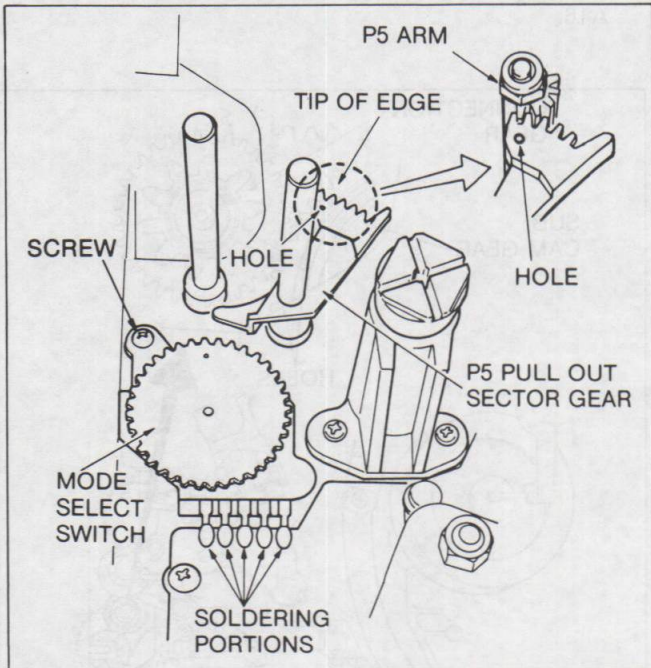


Fig. A17

2-3-12. ASSEMBLY PROCEDURES OF PINCH CAM AND PRESSURE ROLLER UNIT

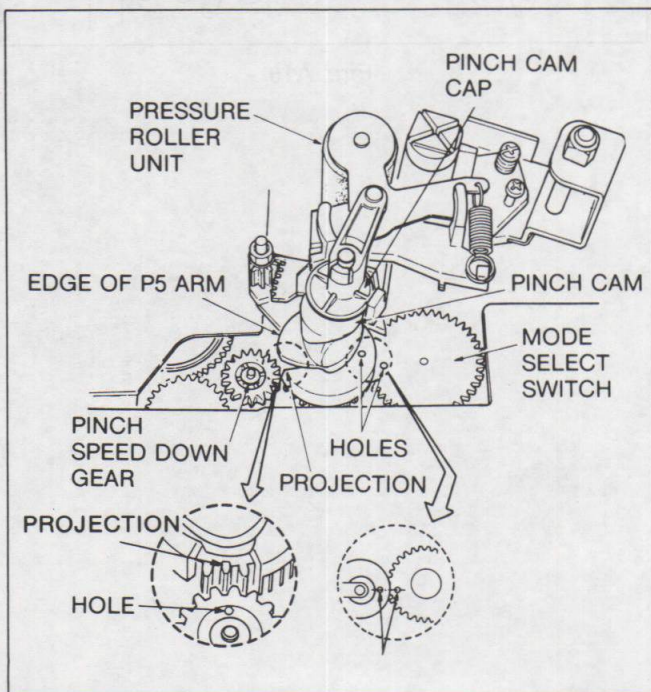


Fig. A18

1. Install the Pinch Cam so that the edge of P5 Arm comes into the Rift of Pinch Cam and Projection of Pinch Cam is exactly in line with the hole of Pinch Speed Down Gear, at this time, the hole of Mode Select Switch is exactly in line with the hole of Pinch Cam as shown in Fig. A18.
2. Install the Pressure Roller Unit, then install the Pinch Cam Cap.

2-3-13. REINSTALLATION OF CASSETTE COMPARTMENT FROM STOP (G-REV), STOP1 (GII) POSITION (HALFLOADING)

When reinstall the cassette compartment, the position adjustment (alignment) of mechanism is necessary for correct working as follows:

1. Set the mechanism condition to Stop (FF/REW)(G-Rev), Stop1(GII) position by means of turning capstan motor as follows:
 - (1) Release the Change Lever by pushing it to arrow mark direction as shown in Fig.A20.
 - (2) Turn the capstan motor to clockwise until the Clutch Disk is locked. (Clutch Disk is locked once in its one rotation)
 - (3) Release the Change Lever again when Clutch Disk has been locked.
 - (4) Repeat item (1) to (3) until mechanism comes to Stop(G-Rev), Stop1(GII) position as shown in Fig. A19.

* To confirm the Stop1 position(GII mechanism) Press the Sub Cam Follower to arrow mark direction as shown in Fig.A20 and turn the capstan motor to both of forward and reverse direction. If takeup reel table is rotated when capstan is rotated to clockwise and if supply reel table is rotated when capstan is rotated to counter clockwise, that is Stop1 position.

* To confirm the Stop position(G-Rev mechanism) Just turn the capstan motor. And confirm that takeup reel table is rotated when capstan is rotated to clockwise and supply reel table is rotated when capstan is rotated to counter clockwise. This is Stop mode.

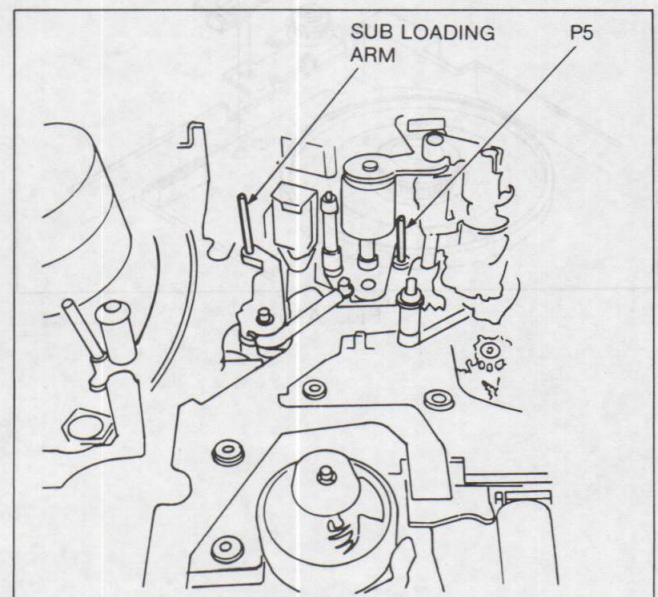


Fig. A19 STOP (STOP 1) Condition

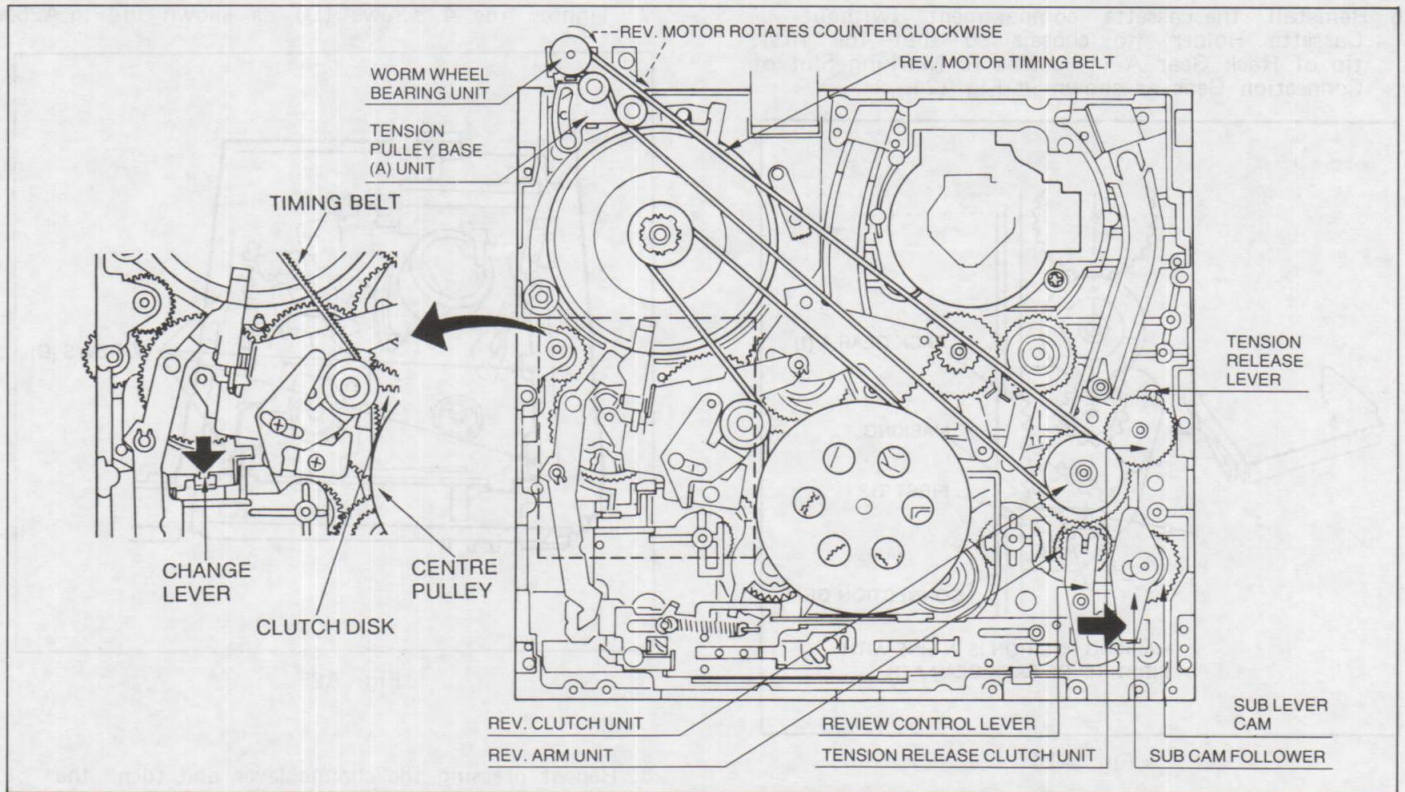


Fig. A20 Bottom View of GII Mechanism

2. Remove the 2 screws (A) as shown in Fig.A21.
3. Take the top plate out.

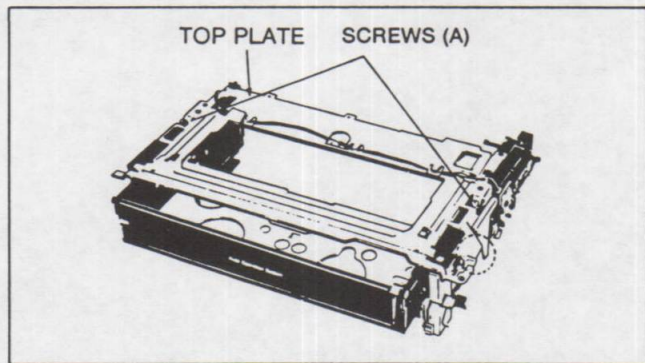


Fig. A21

4. Take the cassette Holder unit out as shown in Fig.A22.

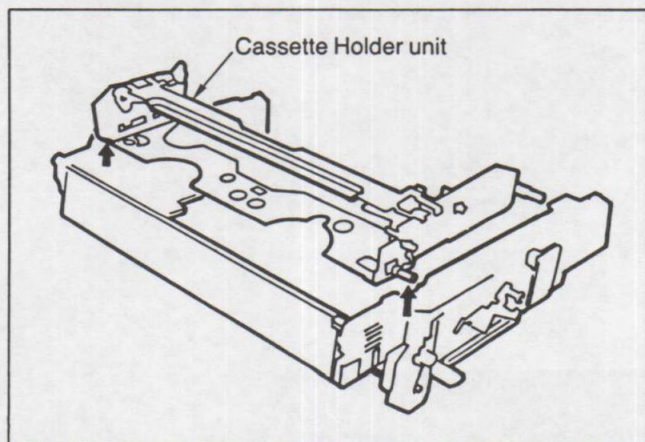


Fig. A22 Removal of Cassette Holder Unit

5. Press the sub wiper arm (R) to direction indicated by arrow so that the sub wiper arm comes to cassette down position completely as shown in Fig.A23 and keep it.

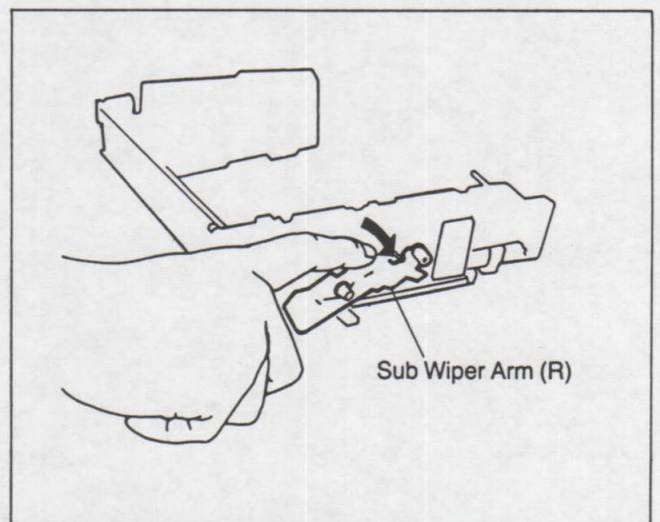


Fig. A23

6. Reinstall the cassette compartment (without Cassette Holder) to chassis so that the first tip of Rack Gear A (1) comes to Marking Slot of Connection Gear as shown in Fig.A24.

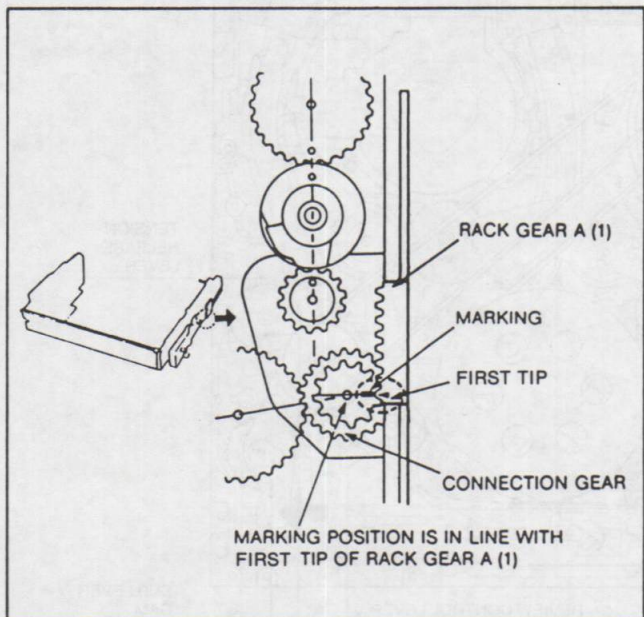


Fig. A24

7. Tighten the 4 screws (D) as shown in Fig.A25.

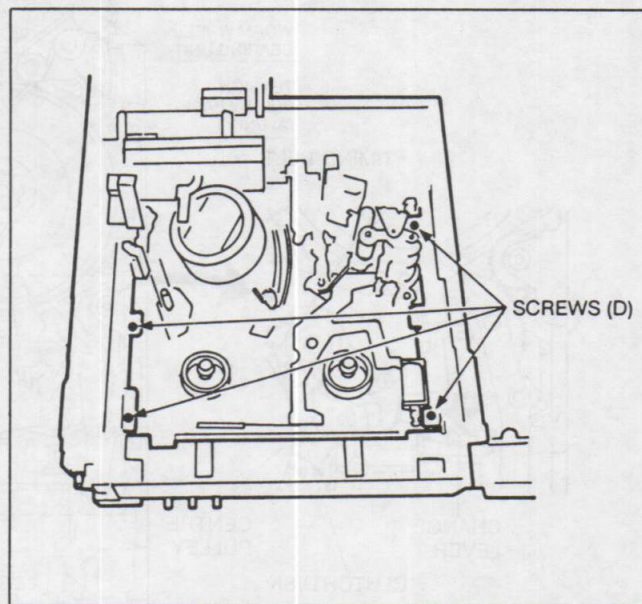
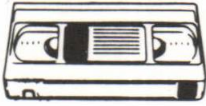
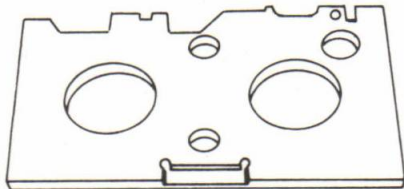
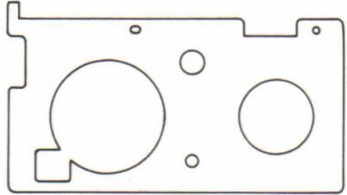
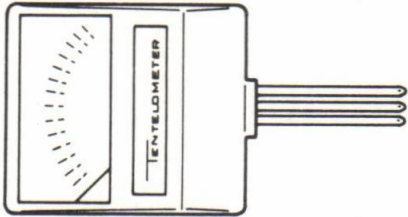


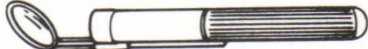
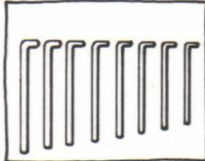
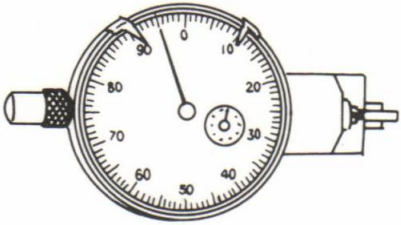
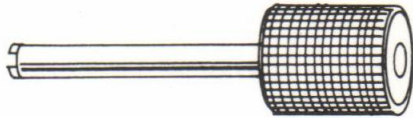


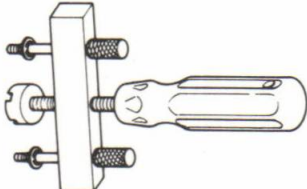
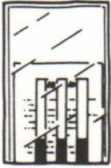



Fig. A25

8. Repeat pressing the change lever and turn the capstan motor to counter clockwise until mechanism is placed to Eject position.
9. Reinstall the cassette holder unit as just the reverse way of item 4, Fig.A22.
10. Reinstall the top plate as just the reverse way of item 3, Fig.A21.

Servicing Fixtures & Tools

<p>VFJ8125H3F PAL VHS Alignment Tape VFM8080HQFP NTSC VHS Alignment Tape.</p> 	<p>VFK0191 Post Adjustment Plate</p> 	<p>VFK0387 Tension Post Adj. Plate</p> 
<p>VFK0132 Back Tension Meter (Tentelometer, Made in U.S.A.)</p> 	<p>VFK0335 Retaining Ring Remover (3mm/4mm)</p> 	<p>VFK0328 H-Position Adj. Screwdriver</p> 
<p>VFK0343 Check Light</p> 	<p>VFK0326 Hex. Wrench Set (0.7, 0.9, 1.2, 1.5, 1.6, 2, 2.4, 3 mm)</p> 	<p>VFK0190 Reel Table Height Gauge</p> 
<p>VFK0329 Post Adjustment Screwdriver</p> 	<p>VFK0344 Height Adjustment Jig</p> 	<p>VFK62 Fan Type Tension Gauge</p> 
<p>VFK0341 Upper Cylinder Remover Jig</p> 	<p>VFK27 Head Cleaning Stick</p> 	<p>MOR265 Morlytone Grease</p> 

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