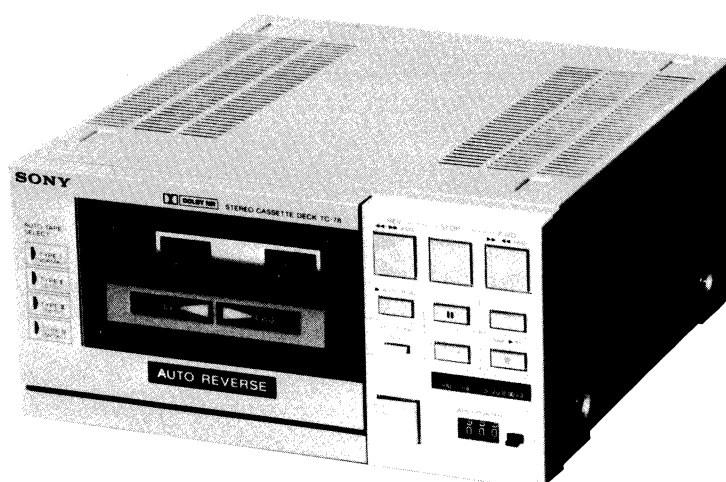


CASSETTE DECK

[TC-78]



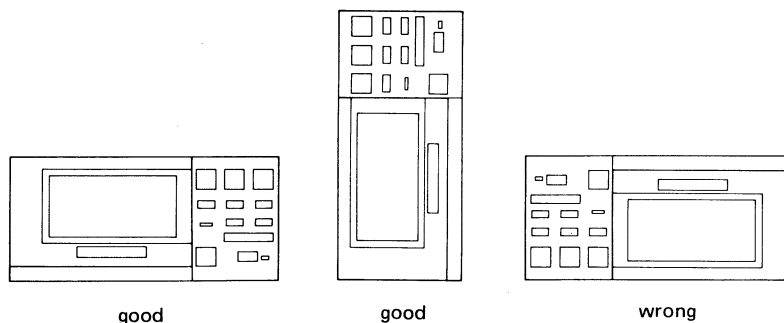
Note: TC-78 is a stereo cassette deck unit in FH-7.

Tape Transport Mechanism Type	TCM-130R2
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SERVICING NOTE

NOTES ON REPAIR

When the mech deck is operated with the set in an upside-down position, misoperation may result. For repair while operating the mech deck, perform with the set in its normal position or standing on its side.

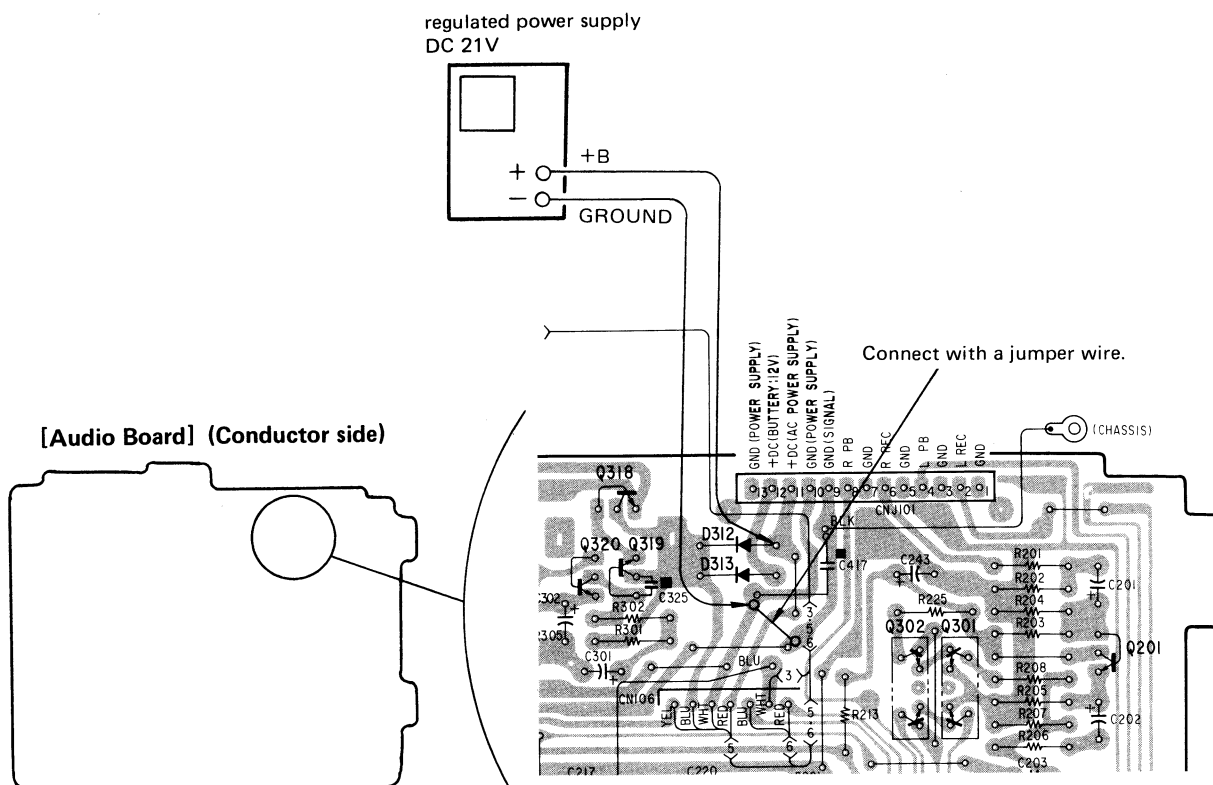


[To apply B+ voltage in repair]

The power supply voltage of this unit is fed from AC-78 via TA-78.

There are two ground lines for signal and power supply circuits, which are not connected in this unit. When this unit alone operates, connect the two ground lines with a jumper wire and a regulated power supply as illustrated.

After repairing, remove the jumper wire connected.



SECTION 1

CIRCUIT DESCRIPTION

1-1. C-MOS MECHANISM CONTROLLER TC9310N-001 (IC401)

* See page 3, 4 for MOS IC

(1) OUTLINE

This IC electrically controls the mechanism of this set. This IC puts out the required output signals in accordance with the switched-in commanding input signals with predetermined processing timings. This IC consists mainly of the following six blocks.

1. Input Circuits:

The input circuits eliminate chattering of the input signals, determine the priority of input switches and then latch the operational or desired mode.

2. Control Circuits:

The control circuits generate signals to control the timer operation, automatic music-selection (AMS) operation, automatic operation, reset operation, etc.

3. LED-Drive Circuits:

This circuits put out the drive signals to LED indicate the mode specified by items 1, 2.

4. Timing Circuits:

This circuit makes the switching periods of the output signals in good timings everytime a mode is changed to another one specified by items 1, 2.

5. Solenoid and Motor-Drive Output Circuits:

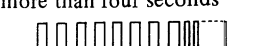
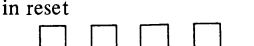
These circuits put out signals to operate the mechanism of the deck. The circuits connect to the solenoid-and motor-drive circuits.

6. Muting Signal Output Circuits:

These circuits connect to the amplifier circuits for the elimination of noise and selection of audio-signal system.

(2) FUNCTION OF EACH TERMINAL

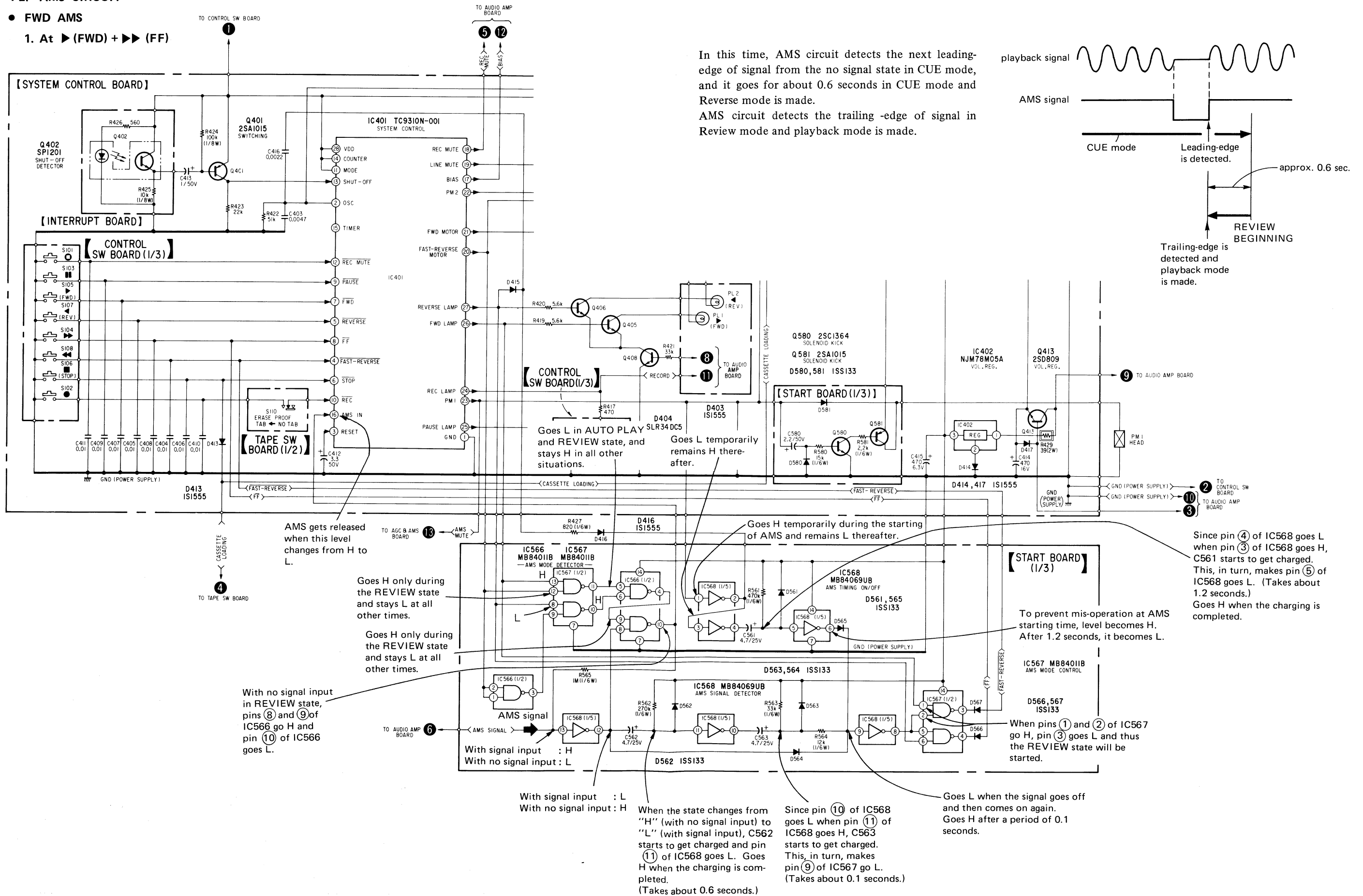
Terminal No.	Name	Function	Terminal No.	Name	Function
1.	GND	Grounding terminal of power supply.			
2.	OSC	Clock OSC terminal. (approx. 9kHz in this set.)			
3.	RESET (INPUT)	Signal input to put all of the operation of the set into the initial state.			
4.	FAST REVERSE (INPUT)	Signal input to command the mechanism to Fast-Foward mode of REVERSE direction.			
5.	REV (INPUT)	Signal input to command the mechanism to playback the tape of REVERSE direction. This terminal becomes in AMS operation when this terminal is put into "L" together with FF or FAST-REVERSE input simultaneously.	8.	FF (INPUT)	Signal input to command the mechanism to set in fast-forward mode.
6.	STOP (INPUT)	Signal input to release a mode designated by other input switches.	9.	PAUSE (INPUT)	Command-signal input to make the set in stop operation temporarily, i.e., pause, or restart operation during playback and record mode. This is of a self-set and self-reset type. This terminal is reset when the mode is in fast-forward or fast-reverse and STOP and REC MUTE signals are in "L". In other conditions, this terminal can be reset or set. In auto-space operation, this terminal is command-signal input to release record-muting mode in case REC MUTE is in "H".
7.	FWD (INPUT)	Signal input to command the mechanism to playback the tape. This terminal becomes in record-mode command signal when this terminal is put into "L" together with REC-signal input at the same time.			

Terminal No.	Name	Function	Terminal No.	Name	Function
10.	REC (INPUT)	Signal input to command the set to become in record-monitor mode. This input is disabled when the set is in fast-forward or fast-reverse and STOP input is in "L".	18.	REC MUTE (OUTPUT)	Record mode: L Otherwise: H
11.	REC MUTE (INPUT)	Command-signal input to mute record signal and effective only in record and record pause modes. When this signal is in "L", pause operation is reset. Muting operation is maintained for four seconds after disappearance of this signal (auto-space operation). Auto-space operation is released on receipt of PAUSE input in "L" when this input is in "H".	19.	LINE MUTE (OUTPUT)	Puts out "H" signal in playback (▶, ◀ direction), record, record-monitor, record-pause and record-muting modes. Line muting is off with this signal in "H", Otherwise; L.
12.	MODE (INPUT)	MODE select input Open: Relay style FWD direction L: Slide switch style FWD direction H: FWD/REV directions	20.	FAST-REVERSE MOTOR (OUTPUT)	Puts out "H" signal in fast-reverse (◀◀), auto-play AMS (▶+◀◀, ◀+◀◀) and rewind mode in AMS (▶+▶▶). Otherwise; L
13.	SHUT OFF (INPUT)	Input of tape-travel detection. Pulse signal is put into this terminal during forward, fast forward, rewind and record modes. In forward and record modes, the mechanism shuts off and becomes in stop mode in two seconds after the stoppage of tape travel, i.e., stop of pulse. In fast-forward and fast-reverse modes, the mechanism shuts off and becomes in stop mode one second after the stoppage of tape travel likewise.	21.	FWD MOTOR (OUTPUT)	Puts out "H" signal in playback (▶, ◀ direction), record, record-muting, FF, AMS (▶+▶▶, ◀+◀◀) modes and rewind mode in AMS (◀+◀◀). Otherwise; L
14.	COUNTER (INPUT)	Commanding-signal input to stop the mechanism or to put the set into forward mode during rewind mode. Forward mode is made when FAST-REVERSE and FORWARD switches are pressed at the same time. In other modes than rewind, this signal is not accepted. Also this signal is not accepted even in rewind mode when FAST-REVERSE switch is kept pressed. This terminal is not used on TC-78.	22.	PM2 (OUTPUT)	Puts out "H" signal in pause at FF (▶▶) and AMS modes. Momentarily puts out "H" signal in REV (◀) mode. Otherwise; L.
15.	TIMER (OUTPUT)	Puts out "L" signal for only 0.5 second after four-second resetting.	23.	PM1 (OUTPUT)	Puts out "H" signal in playback (▶, ◀ direction), record, record-muting modes. Momentarily puts out "H" signal in AMS mode. Otherwise; L.
16.	AMS (INPUT)	Signal input to put the set into AMS operation. AMS mode is made when this signal is in "L".	24.	REC LAMP (OUTPUT)	Puts out "H" signal in record, record-monitor, record-pause and record-muting modes. Otherwise; L.
17.	BIAS (OUTPUT)	Puts out "H" signal in record and record-muting modes. Otherwise; L	25.	PAUSE LAMP (OUTPUT)	Puts out "H" signal in pause mode. Puts out "H" and "L" signals alternately during record muting and during reset mode. in record-muting (Auto space)  more than four seconds  in reset 
			26.	FWD LAMP (OUTPUT)	Puts out "H" signal in FWD (▶ direction), forward pause, record, record-pause, auto play and AMS (▶+▶▶, ▶+◀◀ direction) modes. Otherwise; L
			27.	REVERSE LAMP (OUTPUT)	Puts out "H" signal in reverse playback (◀ direction), playback-pause and reverse AMS (◀+▶▶, ◀+◀◀ direction) modes. Otherwise; L
			28.	VDD	5V power source terminal

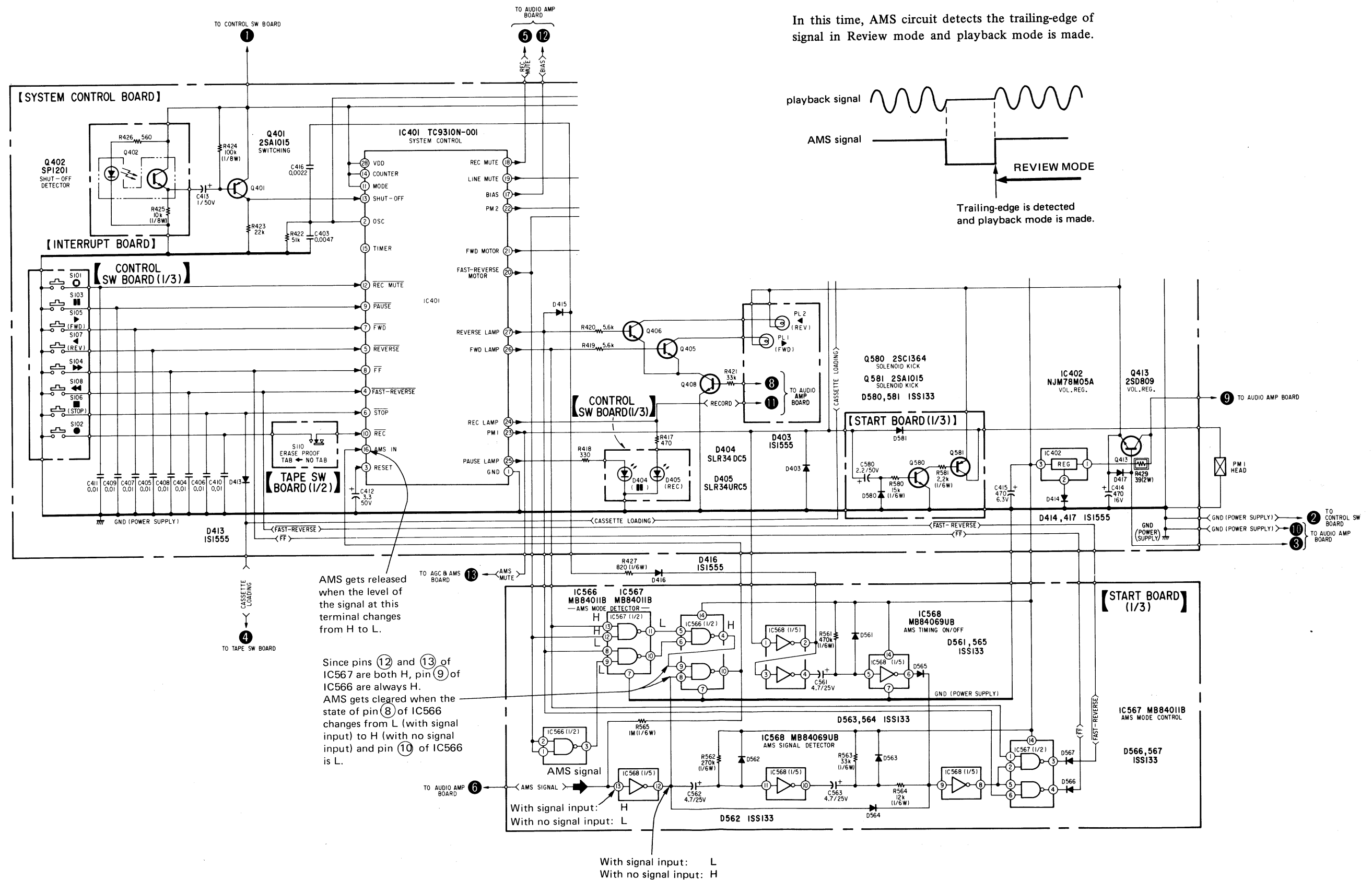
1-2. AMS CIRCUIT

• FWD AMS

1. At ► (FWD) + ►► (FF)



2. At ► (FWD) + ◀◀ (FAST-REVERSE)



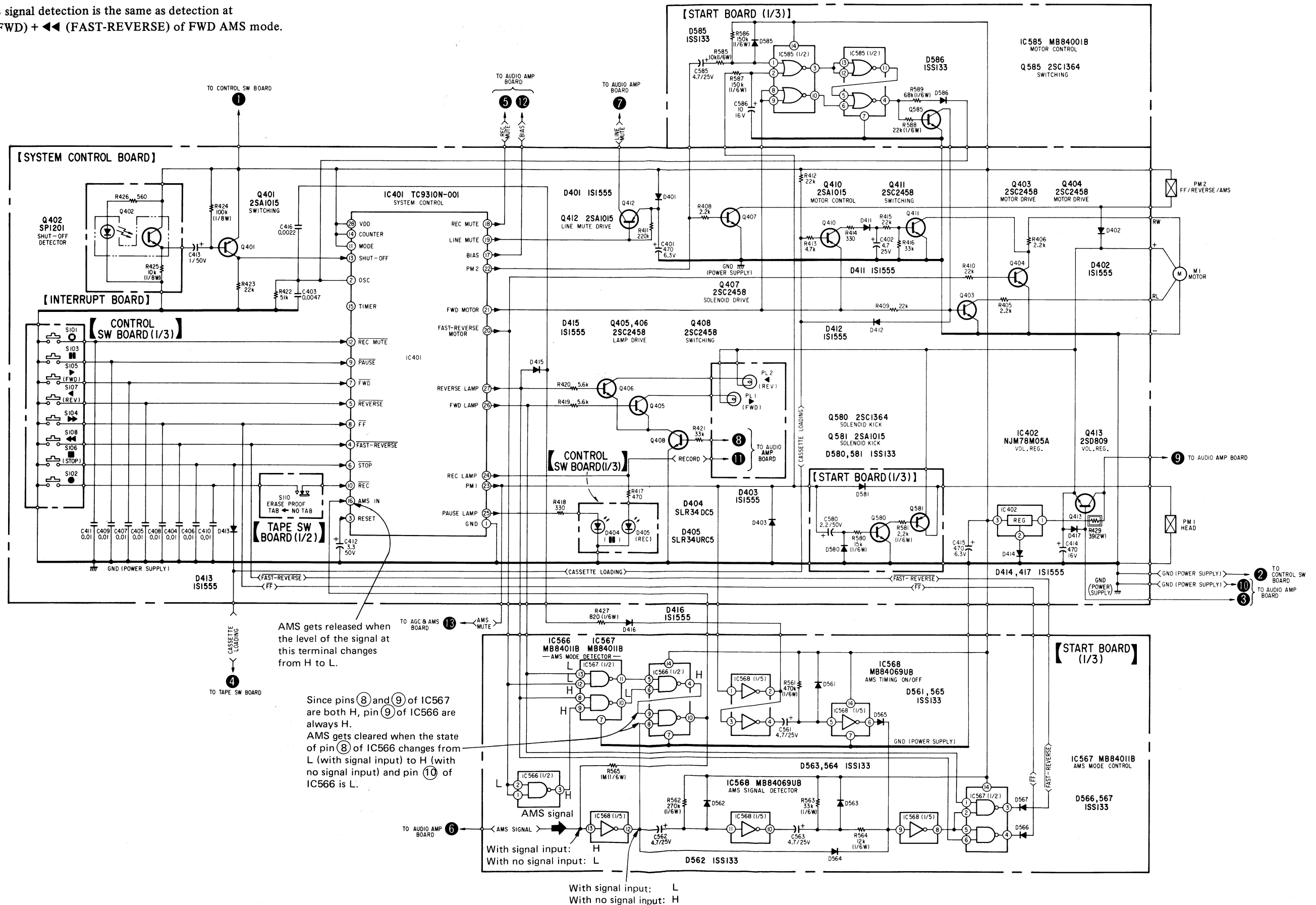
**FH-7
TC-78**

**FH-7
TC-78**

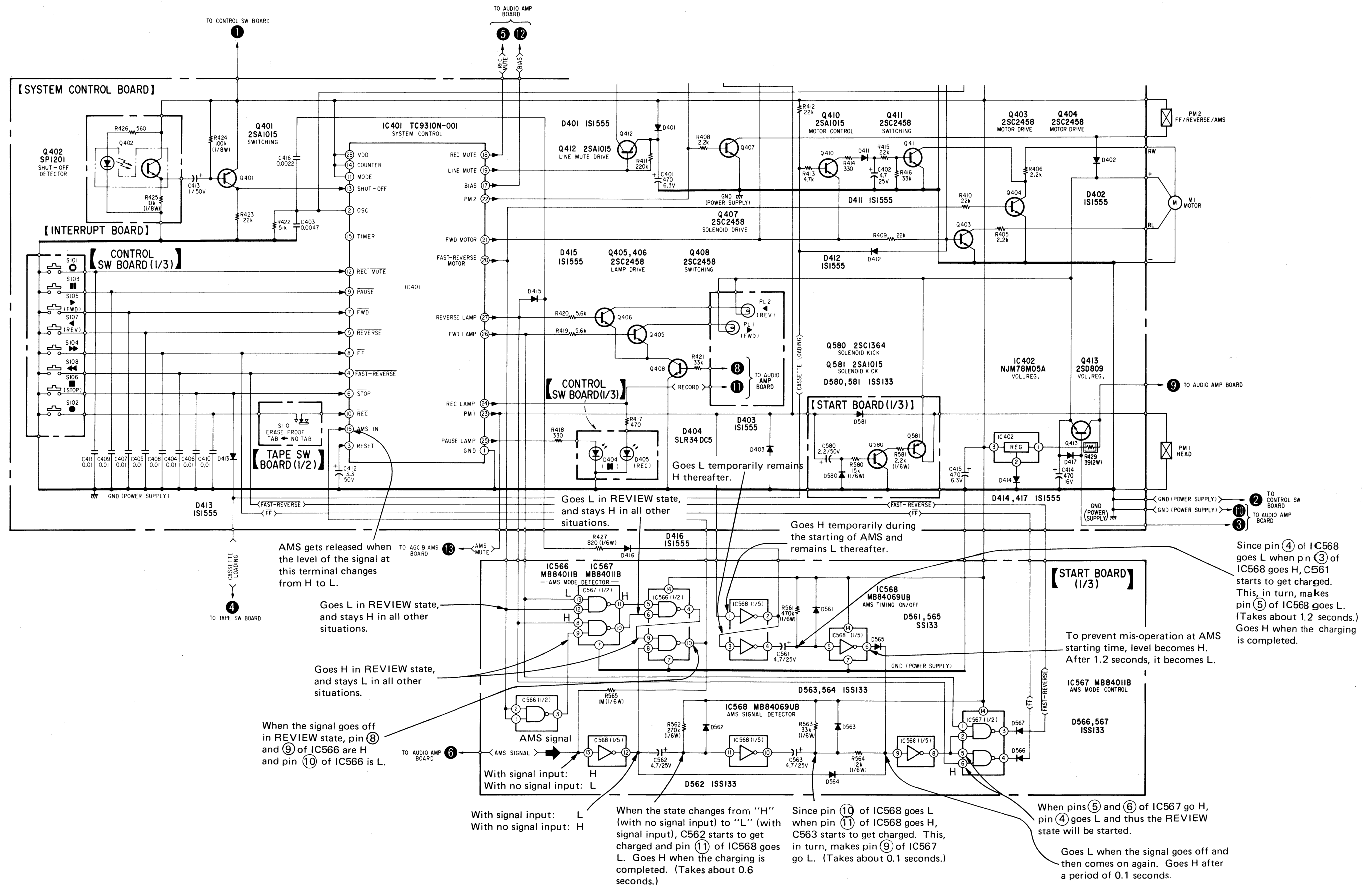
• **REVERSE AMS**

1. At ◀ (REVERSE) + ▶▶ (FF)

AMS signal detection is the same as detection at
▶ (FWD) + ◀◀ (FAST-REVERSE) of FWD AMS mode.



AMS signal detection is the same as detection at
 ► (FWD) + ►► (FF) of FWD AMS mode.



1-3. IC585 and Q585

• Purpose

This circuitry is provided to stop the motor momentarily when the REVERSE (◀) button is depressed with the deck in the FF (▶▶) mode, and at the same time, also extend the cycle of the clock signal while the motor is stationary, in order to provide the correct timing for IC401.

• Function

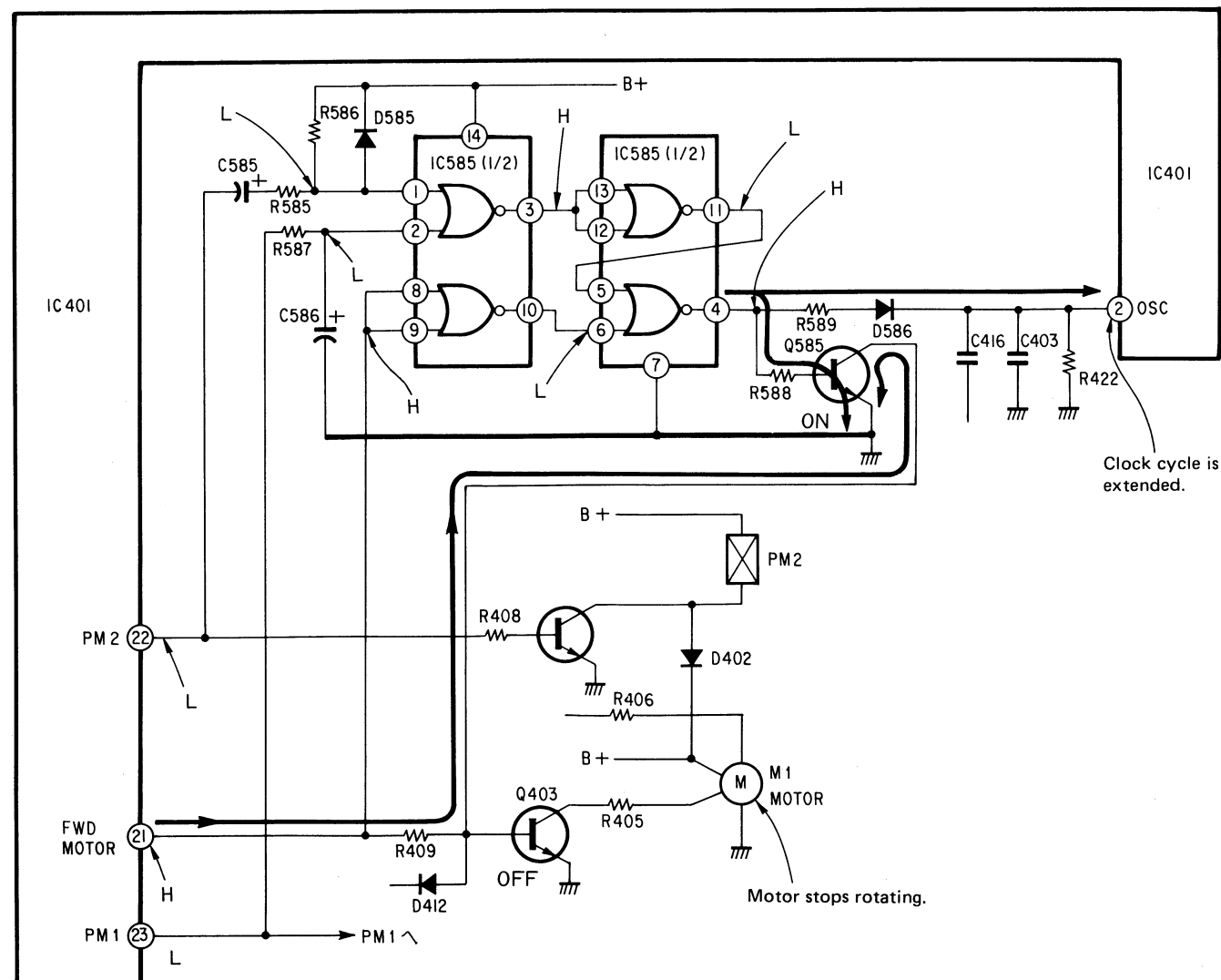
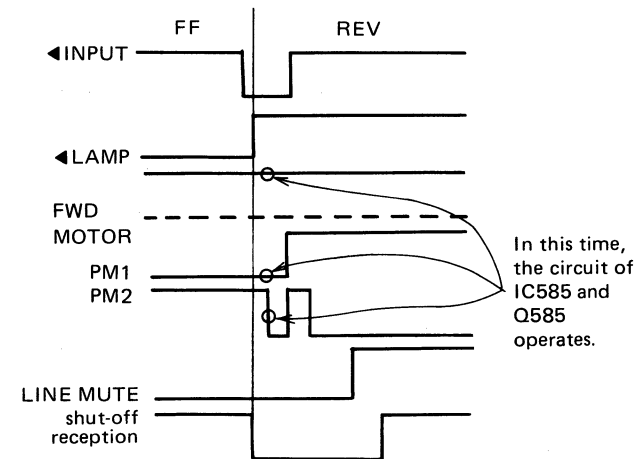
When the REVERSE (◀) button is depressed with the deck in the FF (▶▶) mode and the deck goes into the REV mode, terminal (21) of IC401 stays at 'H' and so the motor continues to turn.

When in the FF (▶▶) mode, there is a period of approximately two seconds from the time that the deck reaches the end of the tape to the time that it shuts off.

If the REVERSE (◀) button is depressed during this shutting off period, PM2 momentarily goes to 'L', however, the motor continues to turn and so the FR gear and the reel gear (take-up side)

stay engaged. In order to prevent this, Q585 goes ON when the REVERSE (◀) button is depressed to forcibly stop the motor and disengage the gears. In order to provide the proper timing for IC401, the clock cycle is extended by the time that the motor is stationary.

• IC401 timing when going from FF to REVERSE



1-4. Q410 and Q411

• Purpose

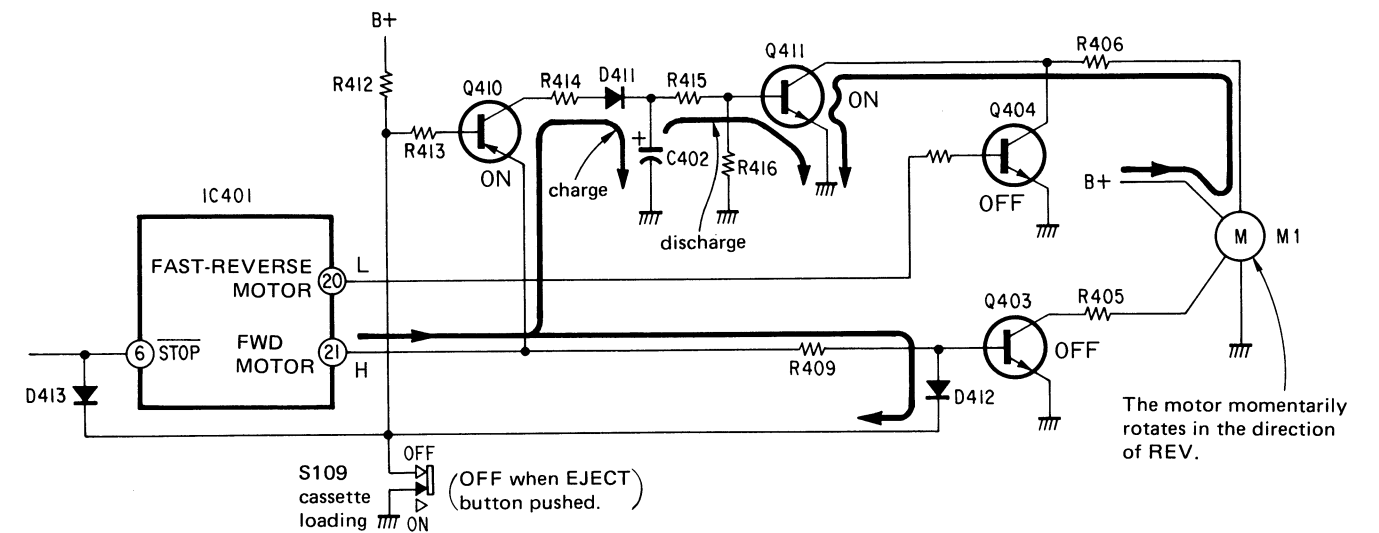
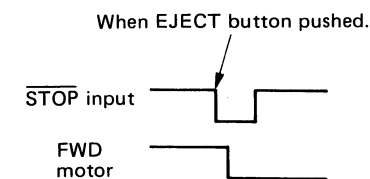
Q410 and Q411 are used to prevent the head from striking the cassette half when it opens and sustaining damage.

• Function

It requires approximately 0.8 seconds for the FWD cam gear to make one revolution when the FWD or REV buttons are depressed. If during this time the EJECT button is depressed, the head will rise up into the cassette housing cover as it opens and could sustain damage by striking the edge of the cassette half. Therefore, in order to prevent this, the moment that the EJECT button is depressed, the cathode of D412 is grounded to prevent the motor from turning

in the FWD direction; Q410 and Q411 go ON, to turn the motor in the REVERSE direction and turn the FWD cam gear in the reverse direction, and lower the head mounting base (R).

- Timing of IC401 when eject button is depressed
 - When EJECT button is depressed



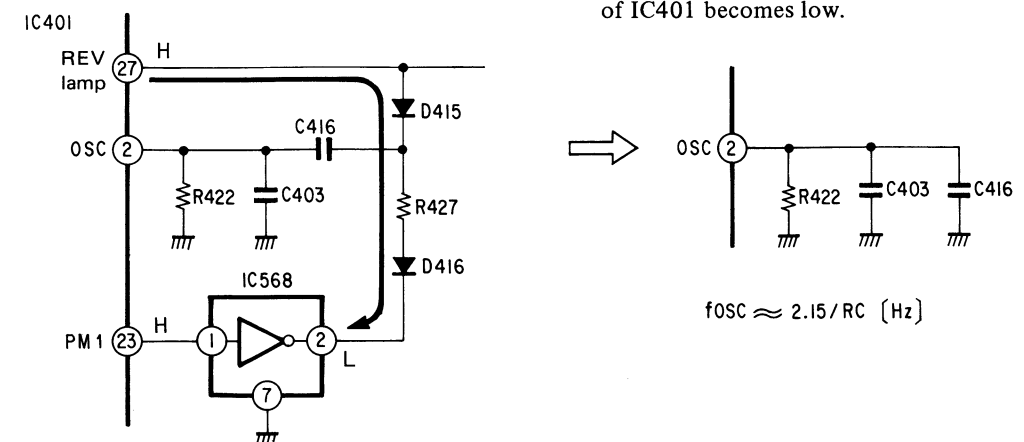
1-5. C416

• Purpose

C416 is provided in order to lower the clock oscillation frequency of IC401 when the deck is in the REVERSE (◀) mode, to make the ON time of PM2 0.8 seconds (time required for the FF cam gear to turn one revolution).

• Function

When in the REVERSE (◀) mode, terminals (27) and (23) of IC401 go 'H' and current flows as shown in the illustration below; and this causes the resistance of D415 and D416 to come down. This then causes C416 to be connected in parallel with C403, and the clock oscillation frequency of IC401 becomes low.



$$f_{OSC} \approx 2.15 / RC \text{ (Hz)}$$

SECTION 2

OPERATION DESCRIPTION

The mechanism of this deck provides selection of different modes by kicking the FWD cam gear and FF cam gear by the solenoid coils (PM1, PM2) to engage them with the drive gear (T) and turn.

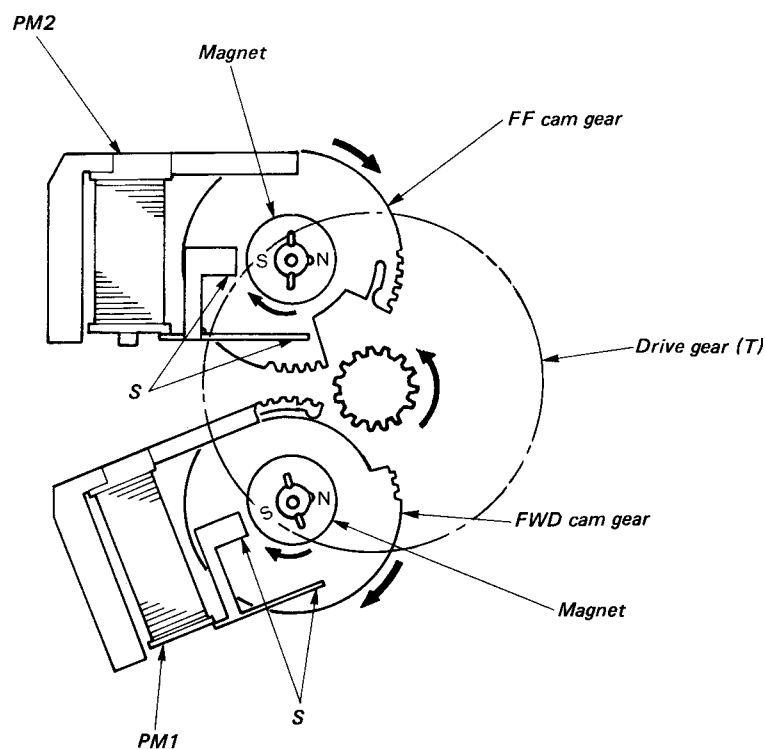
The drive gear (T) is driven by the flywheel that is engaged with the pinion secured to the flywheel. The various different modes are described below.

2-1. Kicking function for FWD cam gear, FF cam gear when current is flowing through solenoid

The magnet is turned in a clockwise direction by the magnetic force generated by the solenoid coil. Since the magnet turns, the FWD cam gear and FF cam gear that are integrated with the magnet are kicked in the direction indicated by the arrow, to engage the drive gear (T).

When the drive gear (T) turns, the FWD cam gear and the FF cam gear turn one time, and the cutaway sections of these gear cause them to disengage from the drive gear (T).

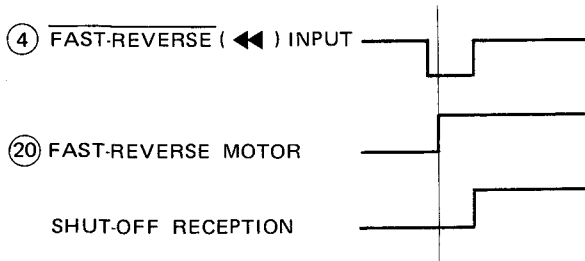
KICK OPERATION OF CAM GEAR



2-2. FAST-REVERSE MODE

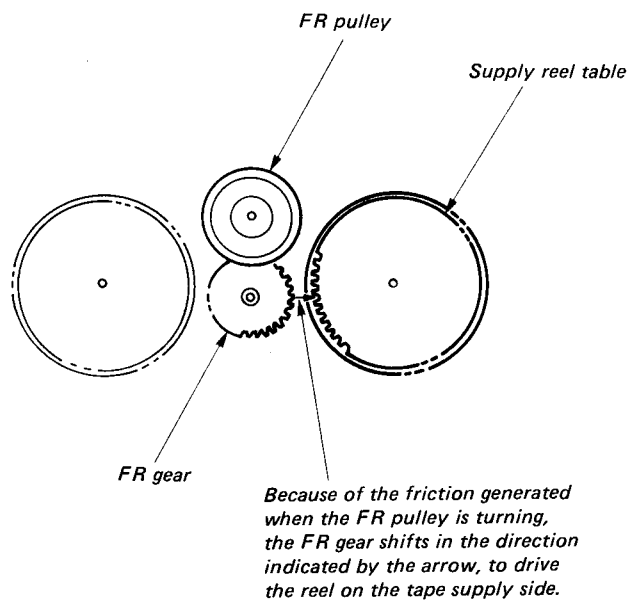
- TIMING OF IC401

STOP → FAST-REVERSE



- MECHANISM OPERATION

FAST-REVERSE OPERATION

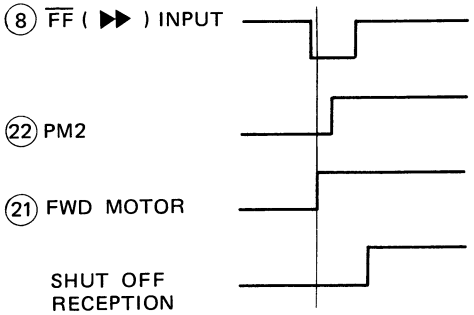


FAST-REVERSE MODE



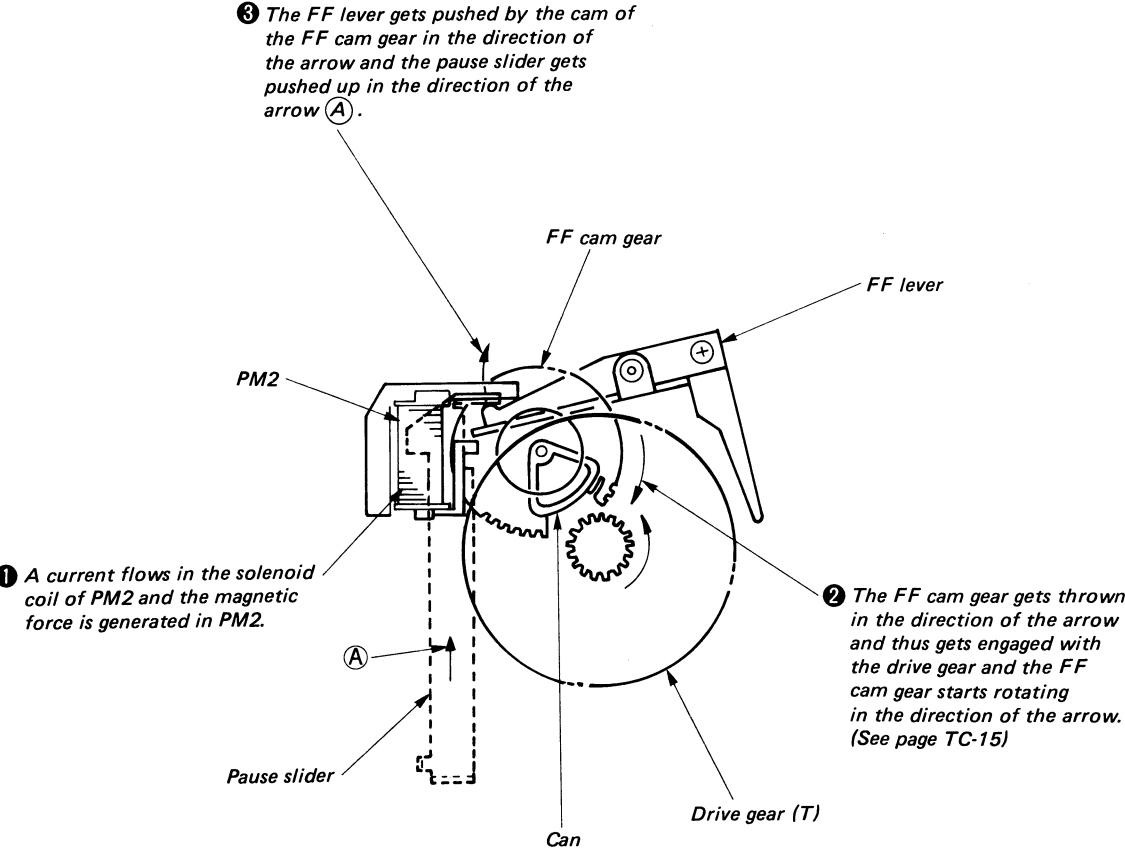
2-3. FF MODE

- TIMING OF IC401
- STOP → FF

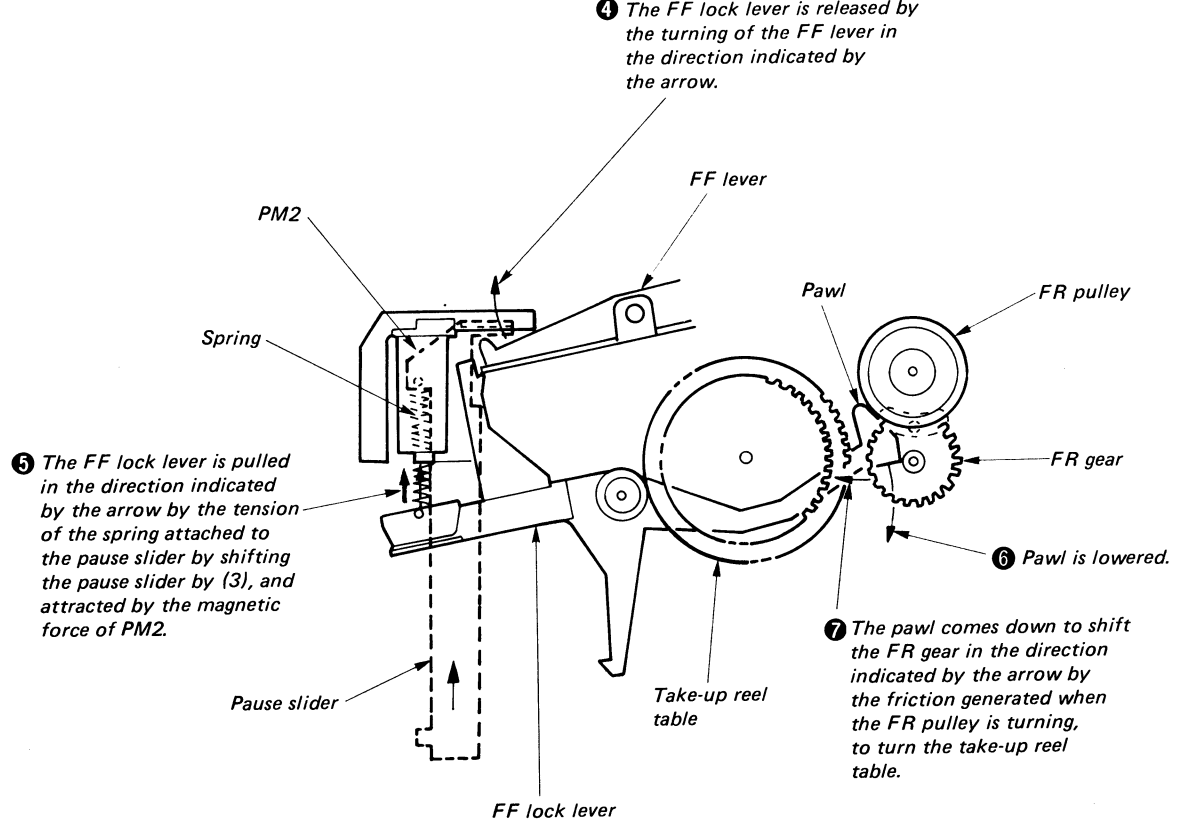


• MECHANISM OPERATION

FF OPERATION (1)



FF OPERATION (2)

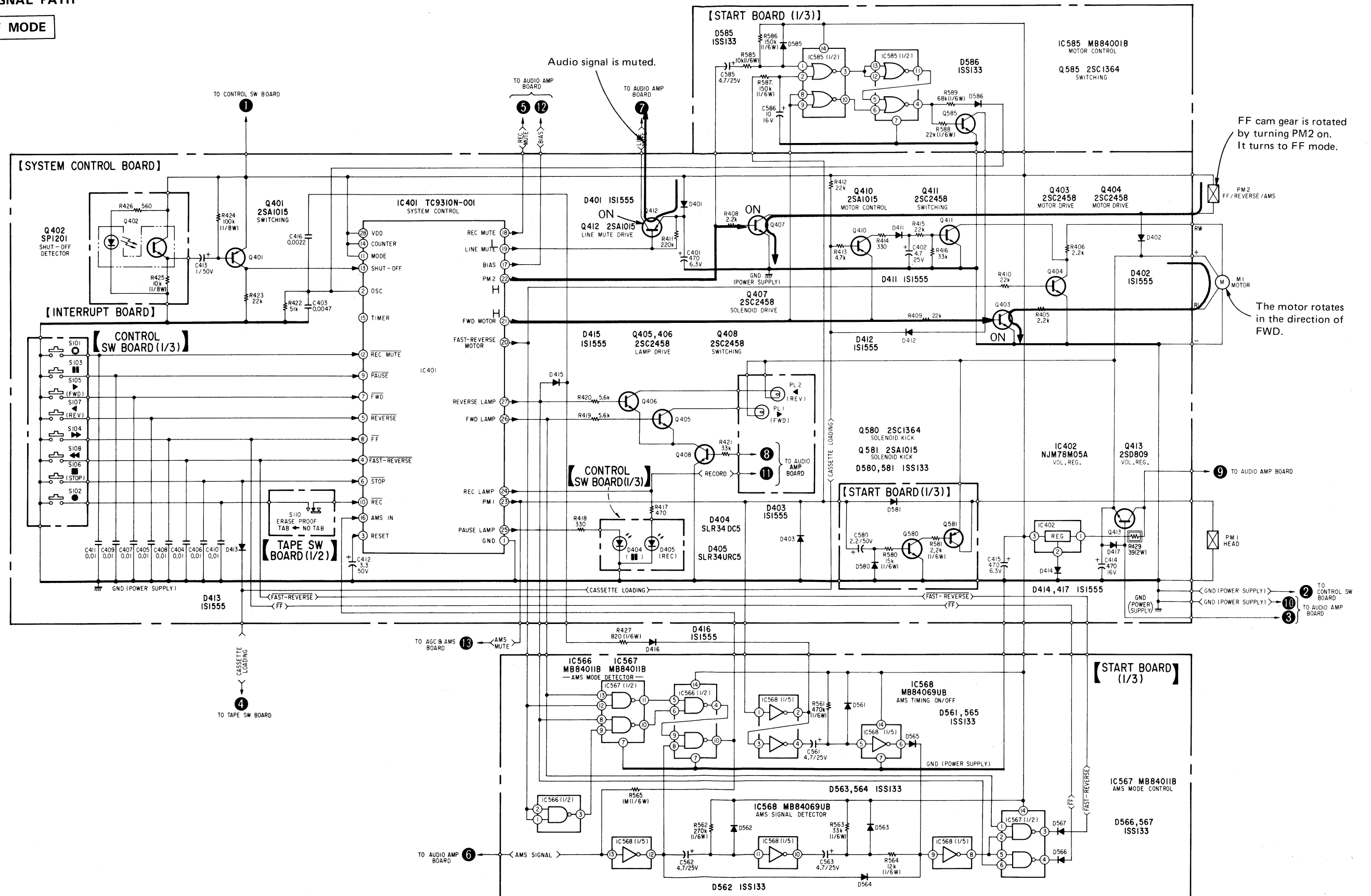


FH-7
TC-78

FH-7
TC-78

• SIGNAL PATH

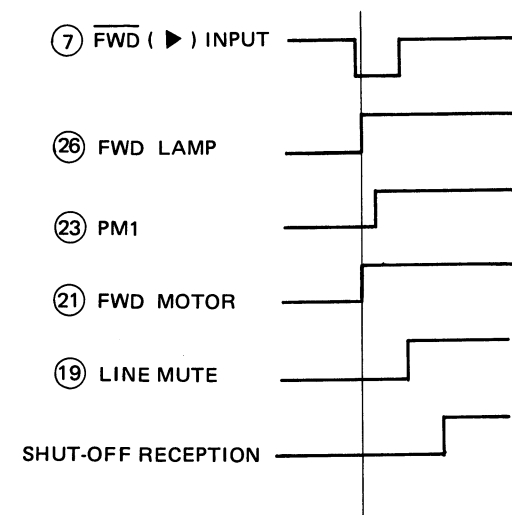
FF MODE



2-4. FWD MODE

• TIMING OF IC401

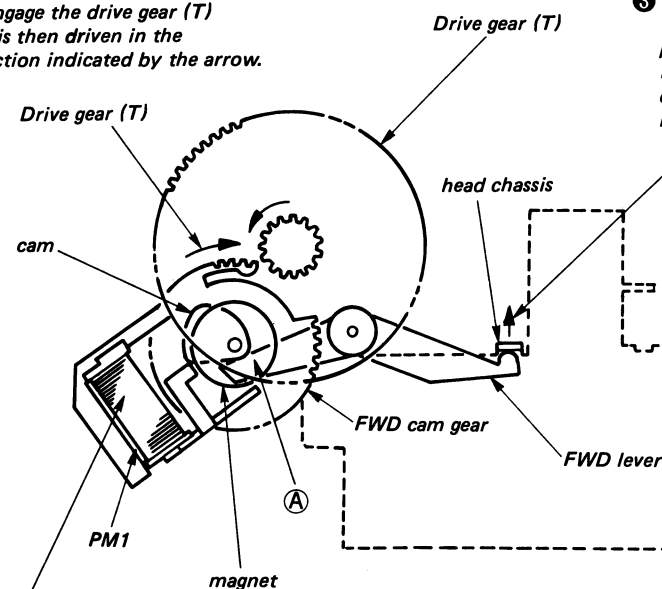
STOP → FWD



• MECHANISM OPERATION

FWD OPERATION (1)

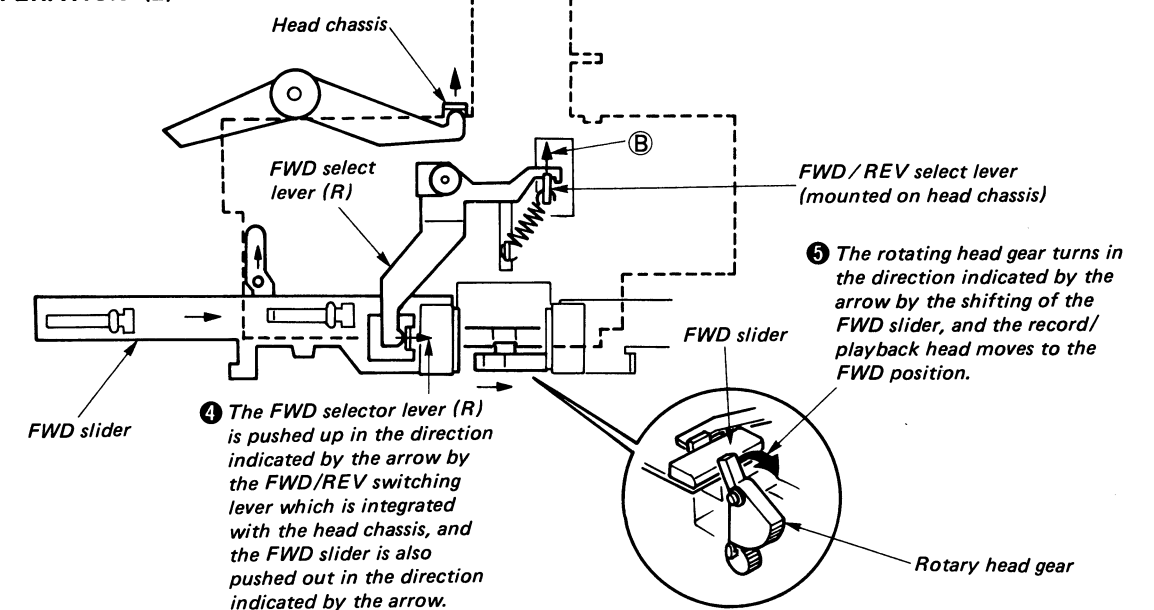
② The FWD cam gear is shifted in the direction indicated by the arrow (refer to page TC-15) to engage the drive gear (T) and is then driven in the direction indicated by the arrow.



① Current flows through the solenoid coil, to generate magnetic force.

③ The FWD cam gear is driven by the drive gear (T), and the cam pushes down section (A) of the FWD lever to push the head chassis up in the direction indicated by the arrow.

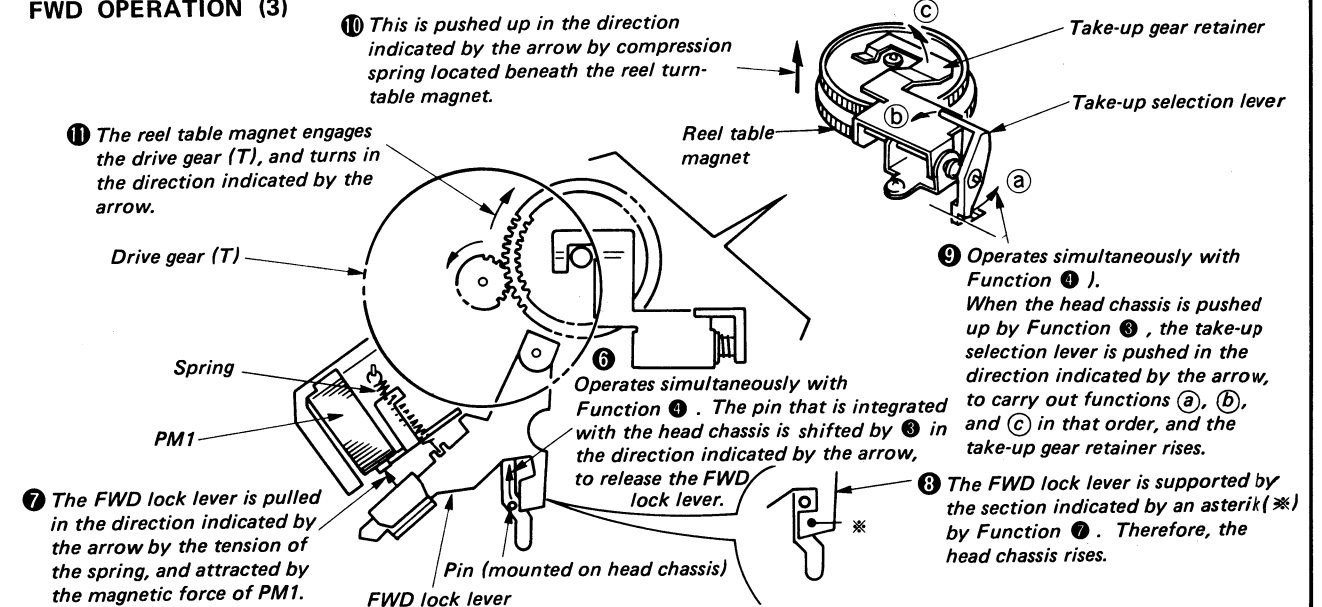
FWD OPERATION (2)



④ The FWD selector lever (R) is pushed up in the direction indicated by the arrow by the FWD/REV switching lever which is integrated with the head chassis, and the FWD slider is also pushed out in the direction indicated by the arrow.

⑤ The rotating head gear turns in the direction indicated by the arrow by the shifting of the FWD slider, and the record/playback head moves to the FWD position.

FWD OPERATION (3)



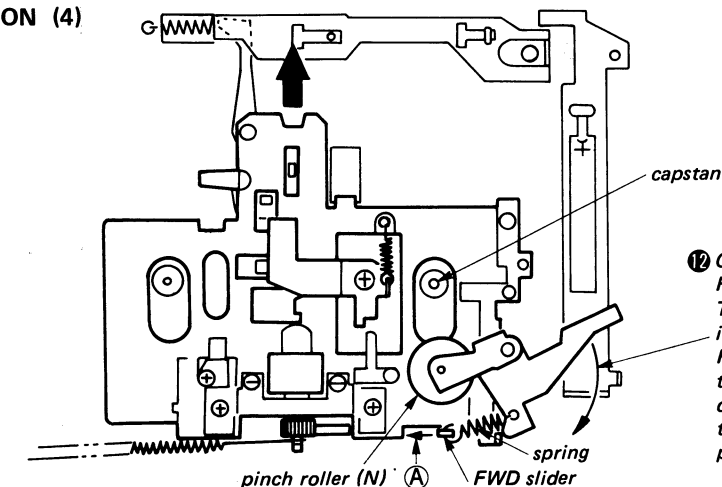
⑩ This is pushed up in the direction indicated by the arrow by compression spring located beneath the reel turn-table magnet.

⑪ The reel table magnet engages the drive gear (T), and turns in the direction indicated by the arrow.

⑨ Operates simultaneously with Function ⑩. When the head chassis is pushed up by Function ⑩, the take-up selection lever is pushed in the direction indicated by the arrow, to carry out functions (a), (b), and (c) in that order, and the take-up gear retainer rises.

⑧ The FWD lock lever is supported by the section indicated by an asterisk (*) by Function ⑦. Therefore, the head chassis rises.

FWD OPERATION (4)

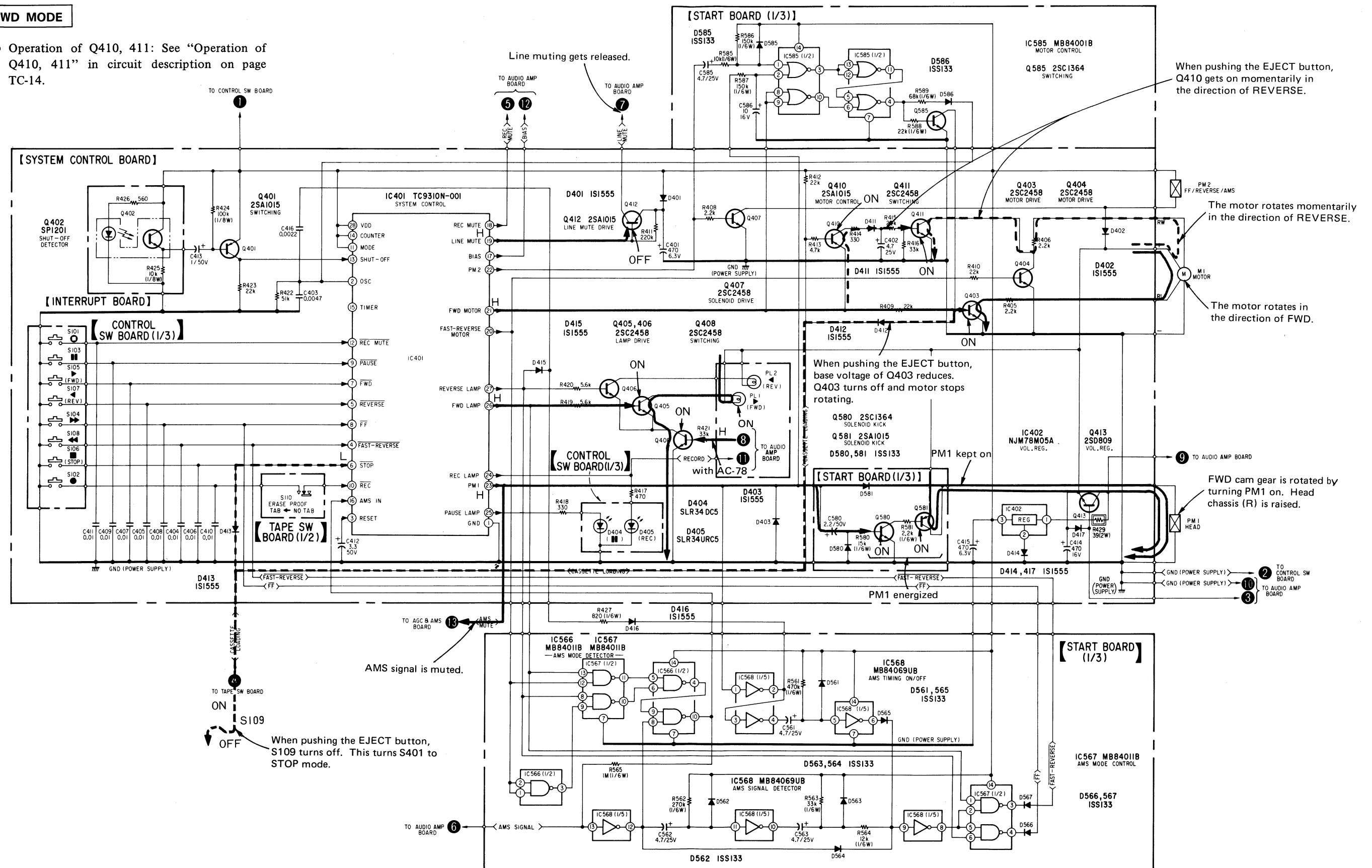


⑫ Operates simultaneously with Function ⑩. The shifting of the FWD slider in the direction of the arrow by Function ⑩ serves to make the pinch roller (N) turn in the direction of the arrow by the tension of the spring, and be pressed against the capstan.

• SIGNAL PATH

FWD MODE

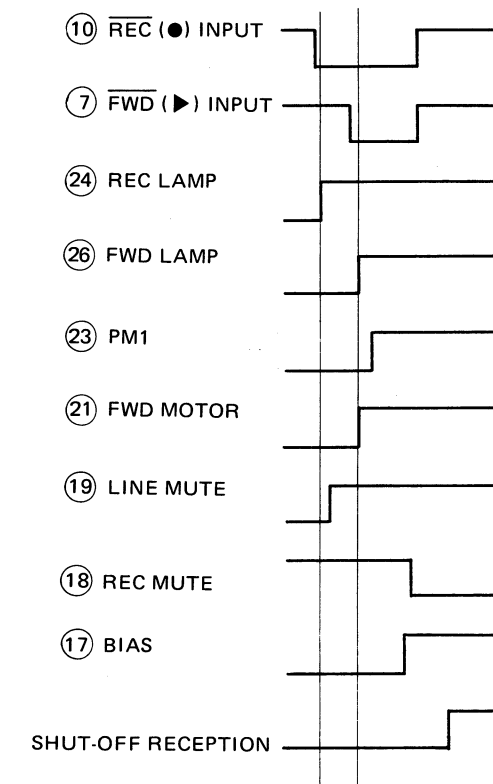
- Operation of Q410, 411: See "Operation of Q410, 411" in circuit description on page TC-14.



2-5. REC/FWD MODE

• **TIMING OF IC401**

STOP → REC FWD

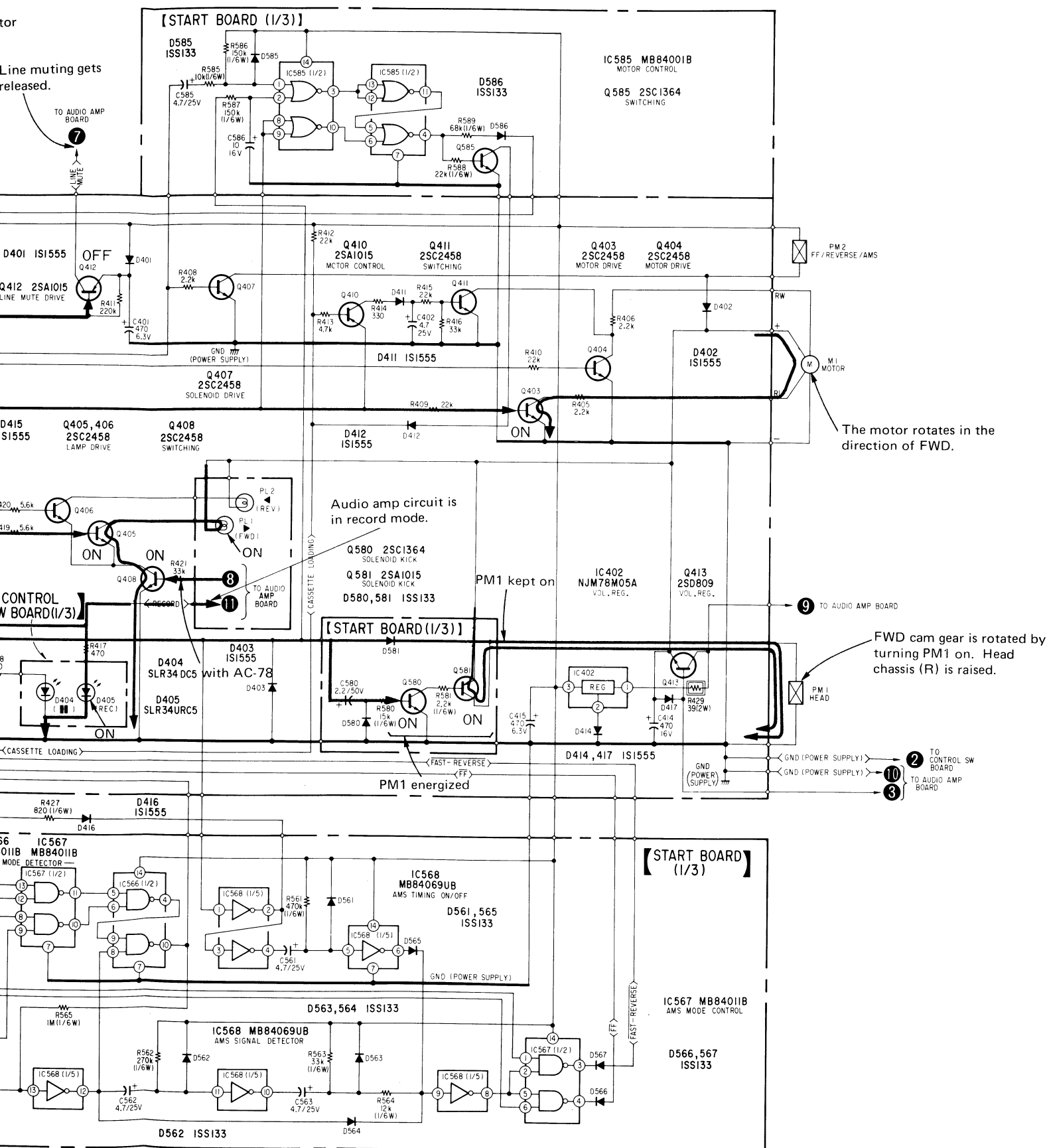


• **MECHANISM OPERATION**

The mechanism operation at this mode is the same as that at FWD mode.

REC/FWD MODE

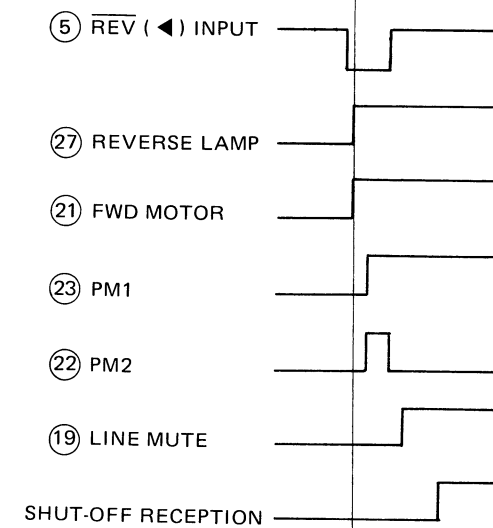
- TC-29-



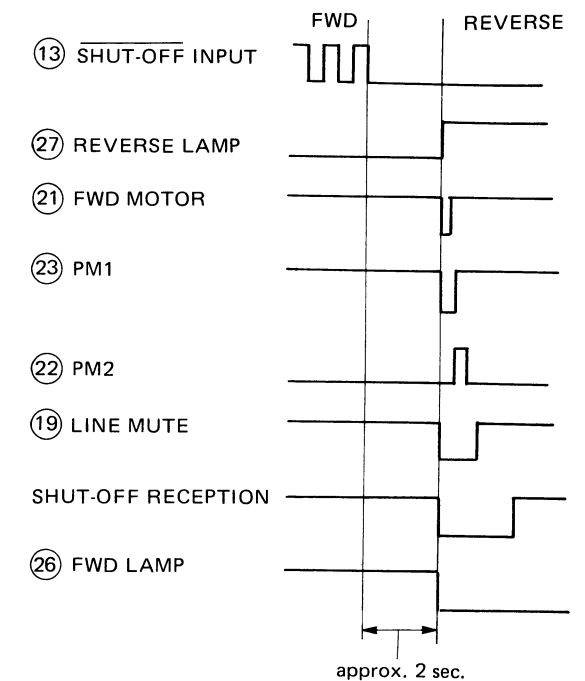
2-6. REV MODE

- **TIMING OF IC401**

STOP $\rightarrow$ REVERSE

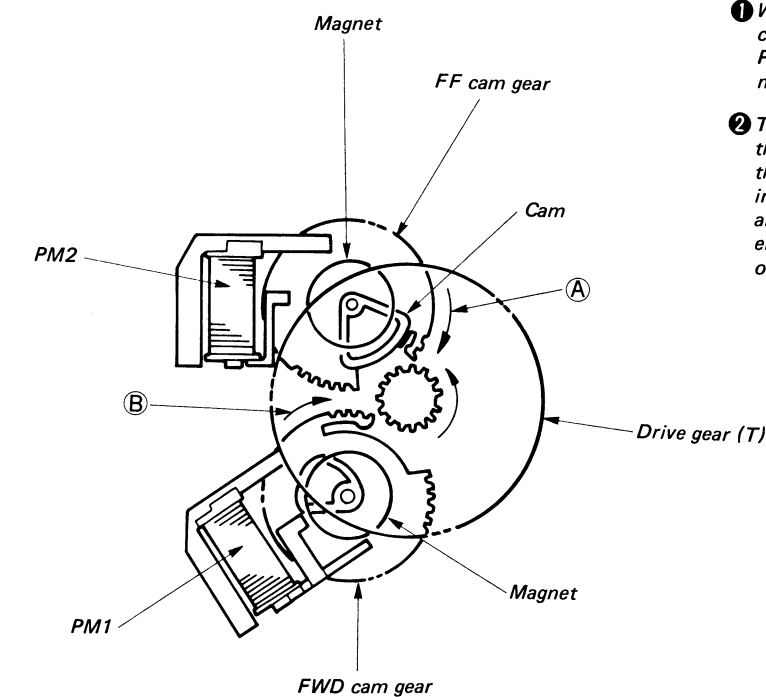


SHUT-OFF
FWD—→ REVERSE



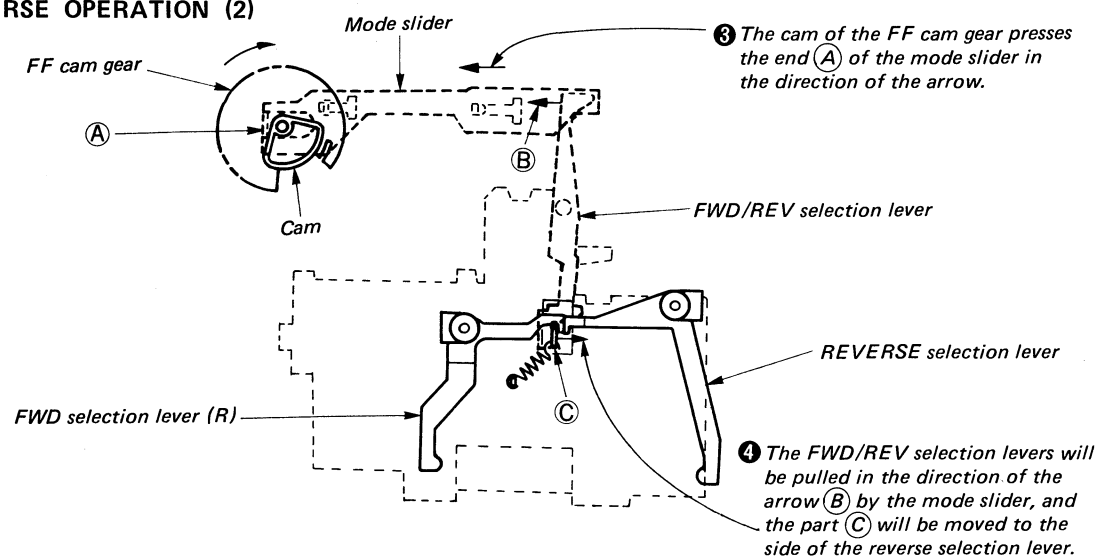
- MECHANISM OPERATION

REVERSE OPERATION (1)

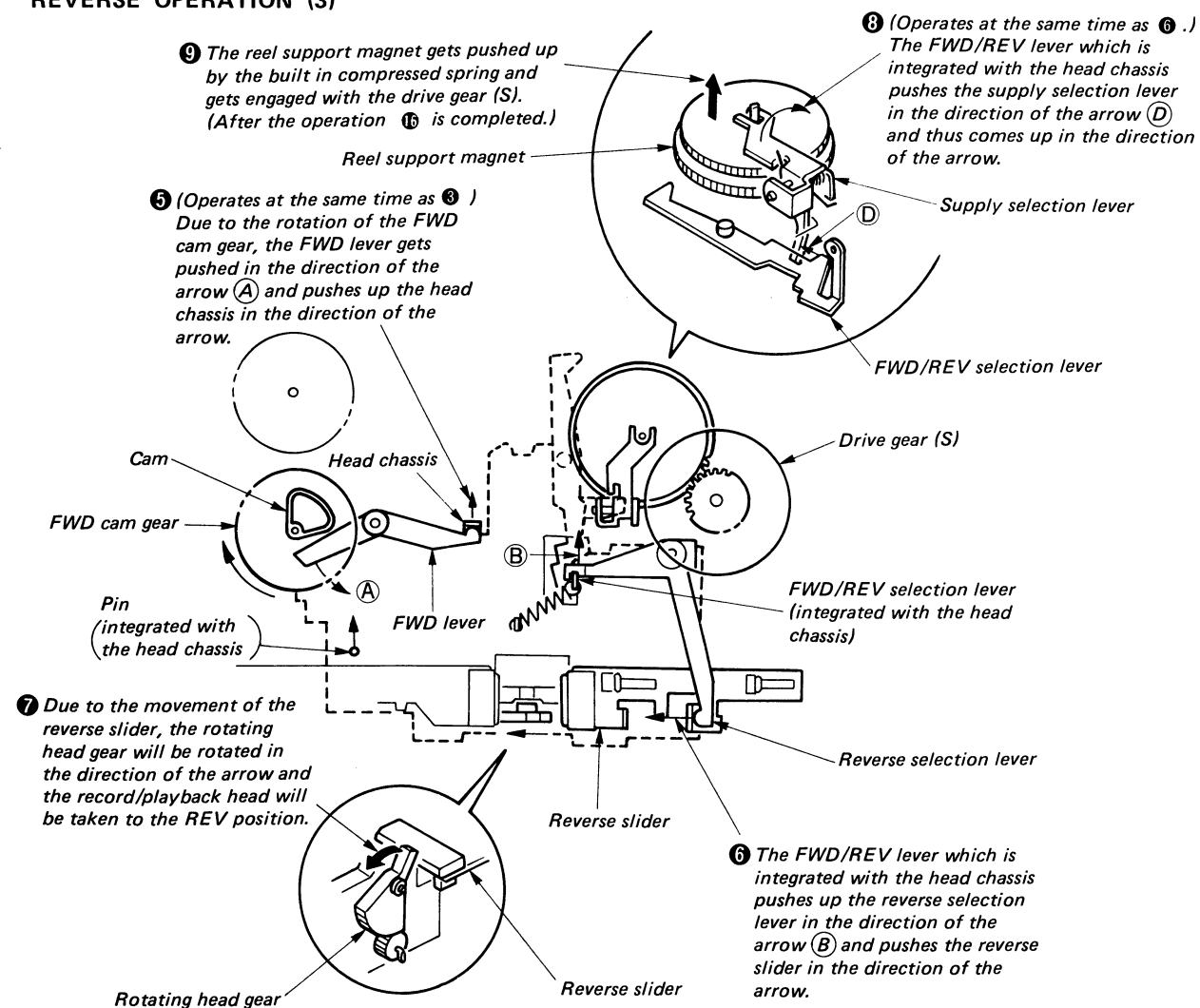


- ① When the REV button is pressed, current flows in the coils PM1 and PM2 thus generating the respective magnetic fields.
- ② The FF cam gear will be thrown in the direction of the arrow (A) and the FWD cam gear will be thrown in the direction of the arrow (B), and hence the drive gear will be engaged for the corresponding operation.

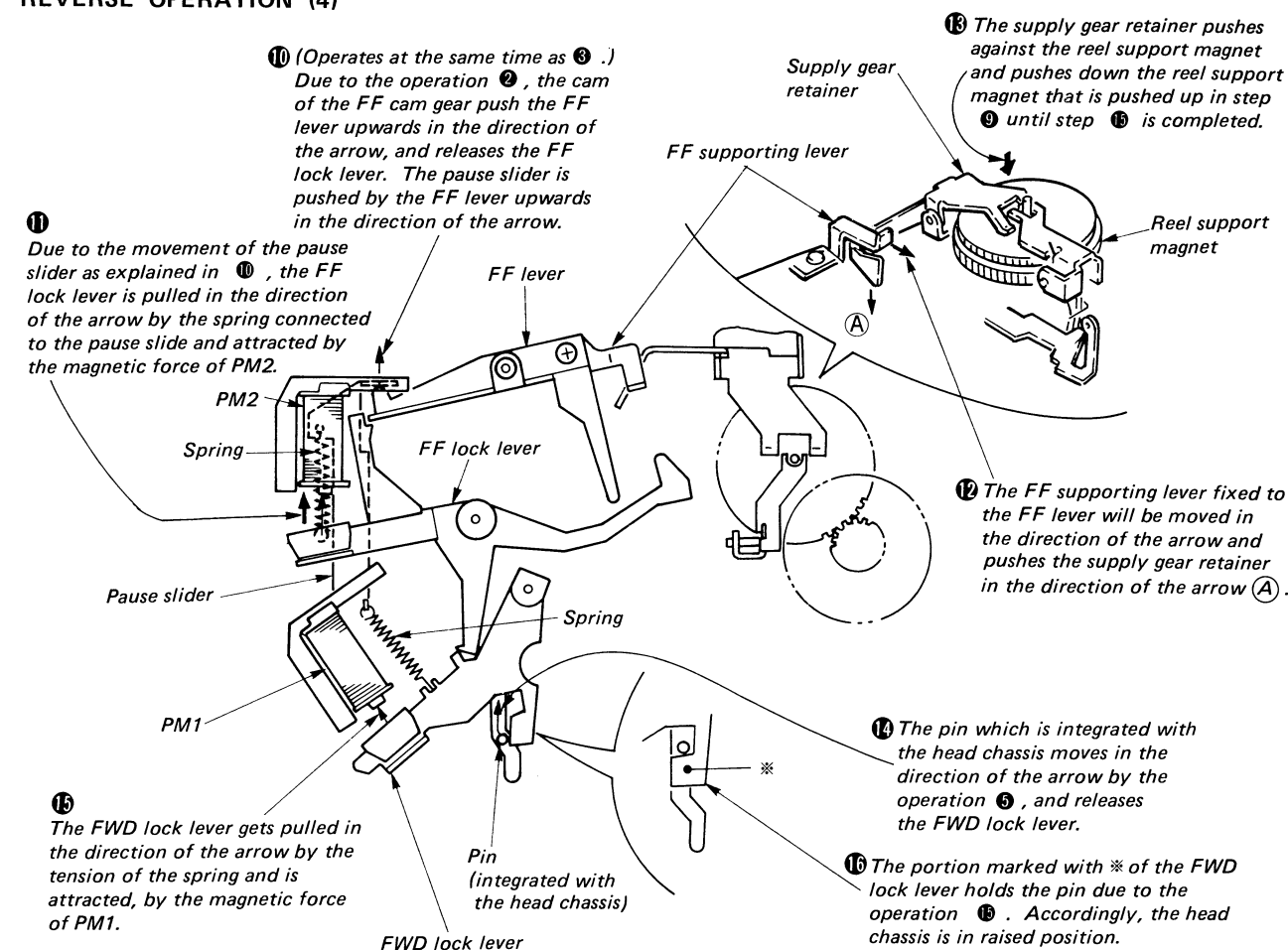
REVERSE OPERATION (2)



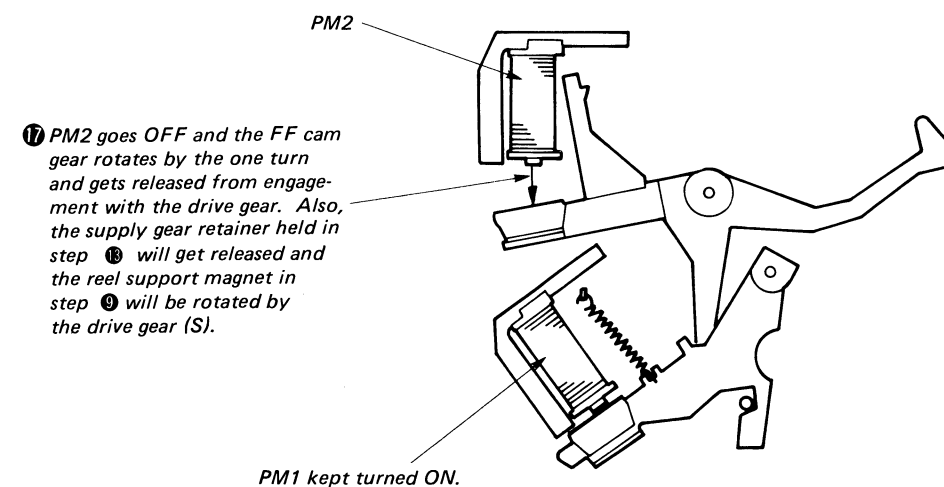
REVERSE OPERATION (3)



REVERSE OPERATION (4)



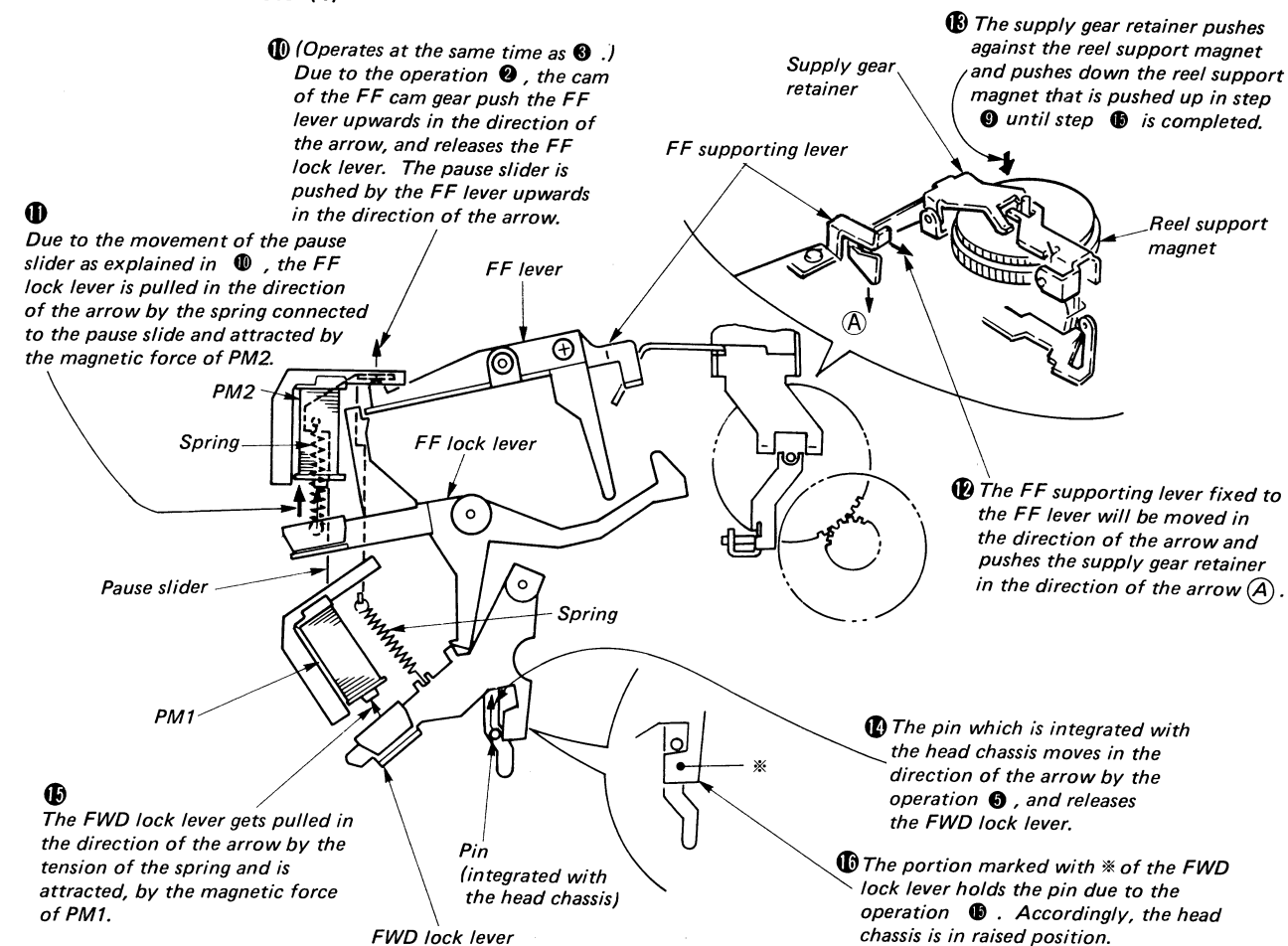
REVERSE OPERATION (5)



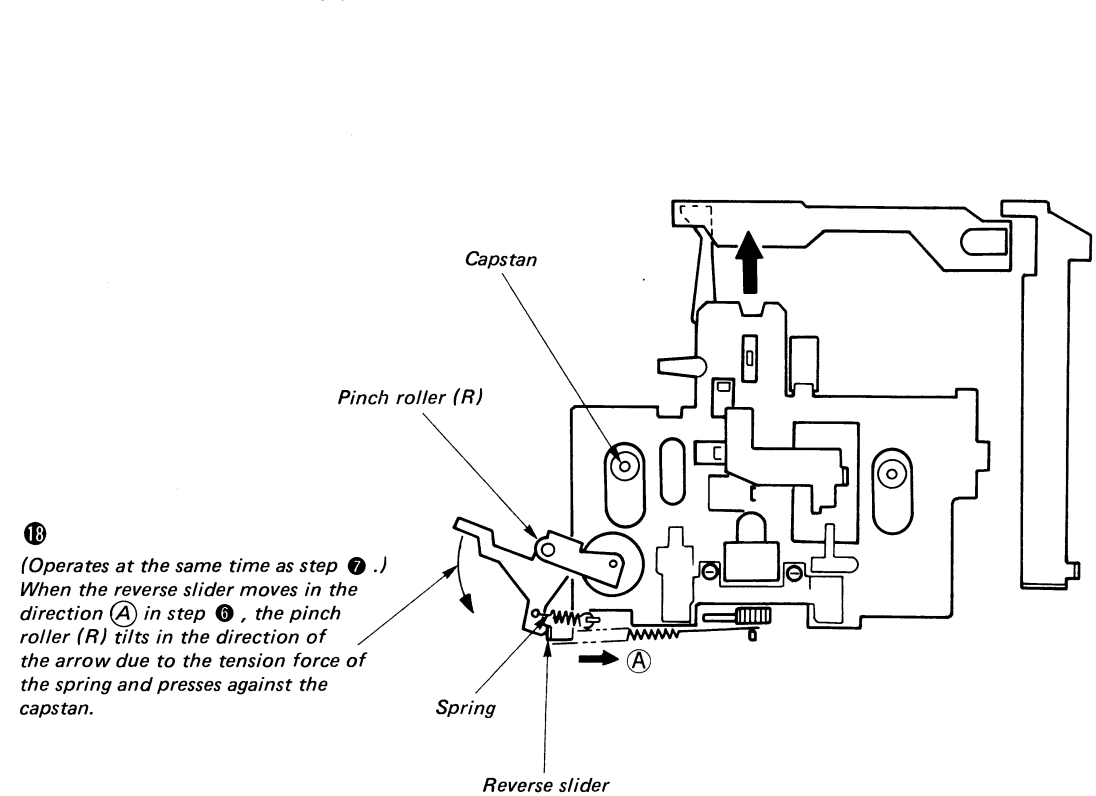
REVERS

⑮ (Operates When the direction of the roller (R) the arrow the spring capstan.

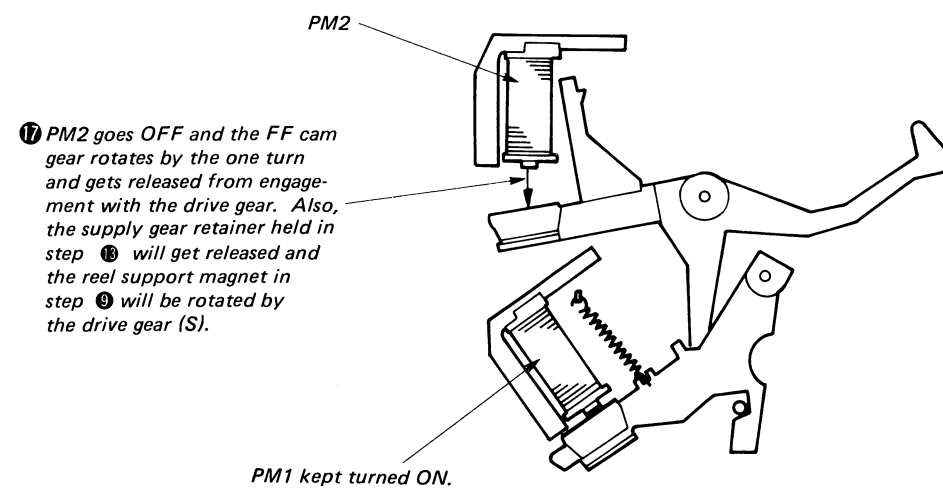
REVERSE OPERATION (4)



REVERSE OPERATION (6)

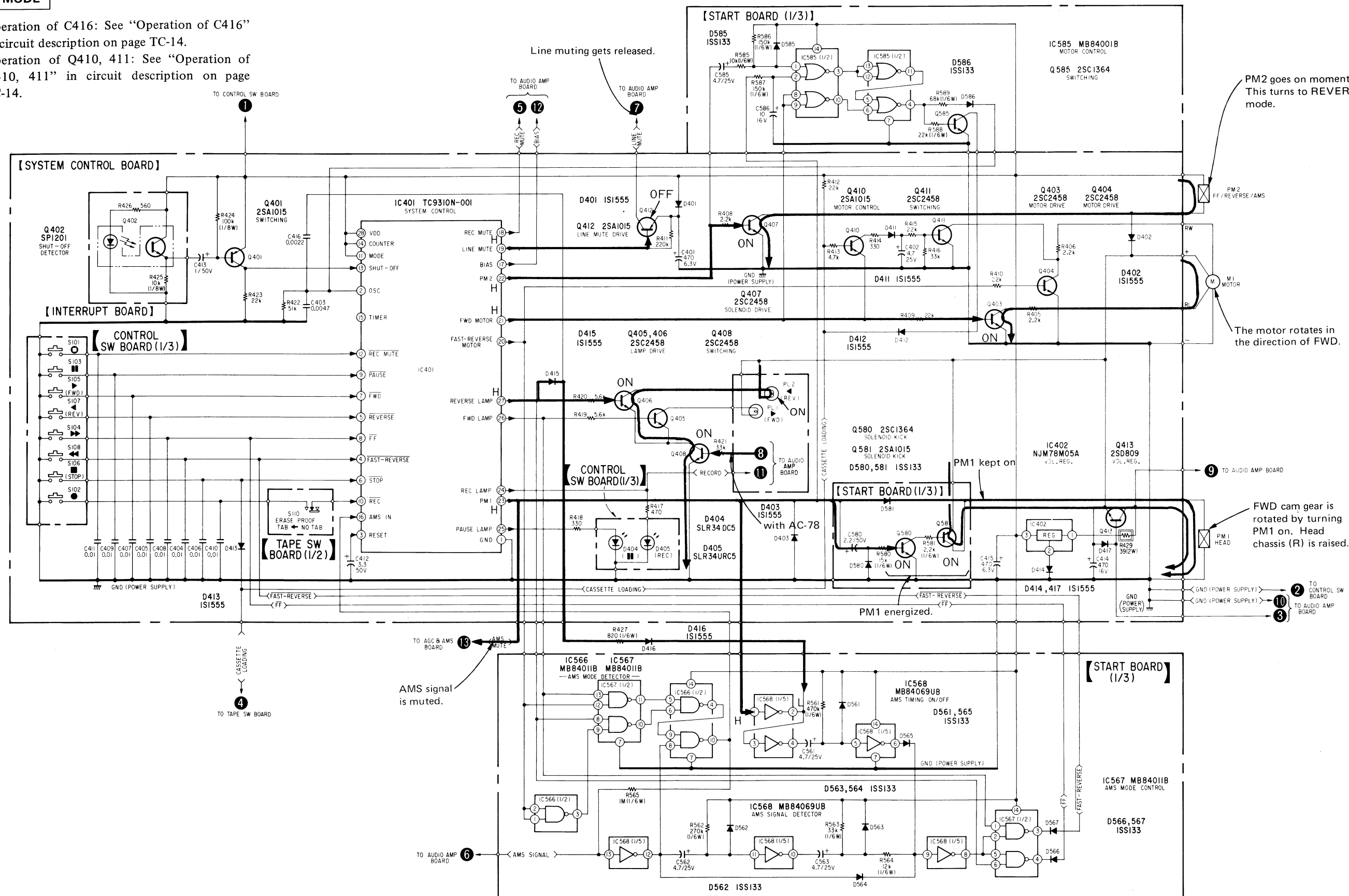


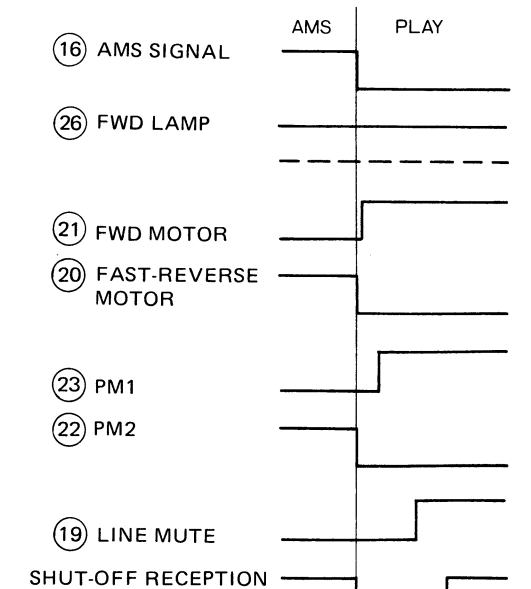
REVERSE OPERATION (5)



REV MODE

- AMS signal
is muted.

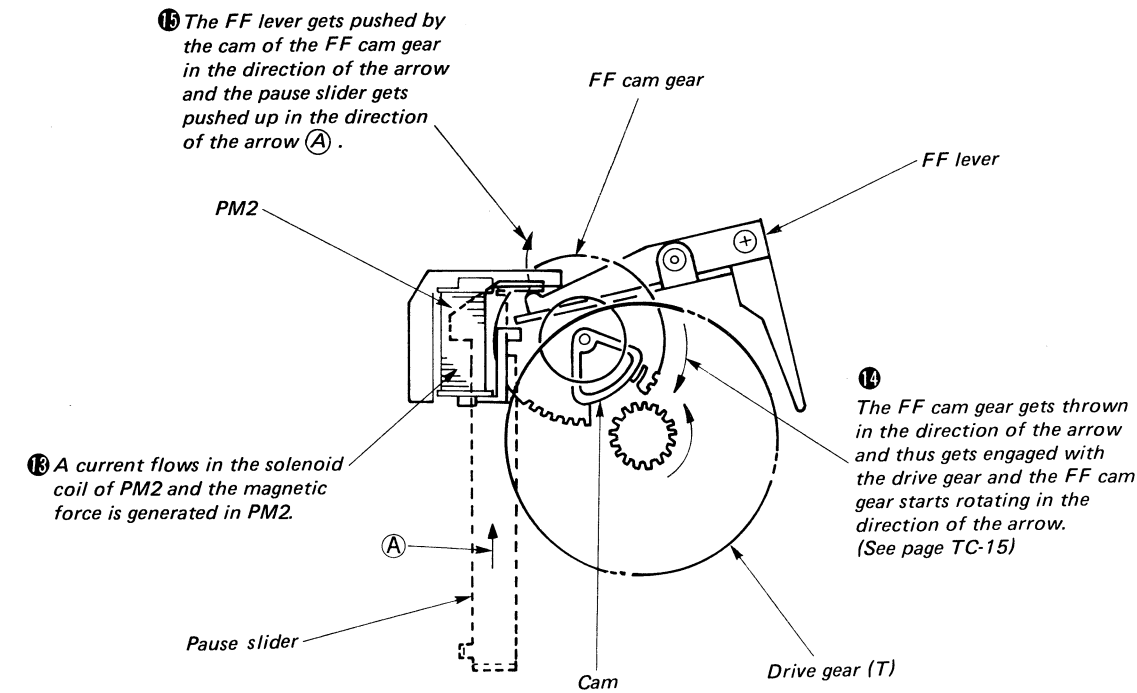




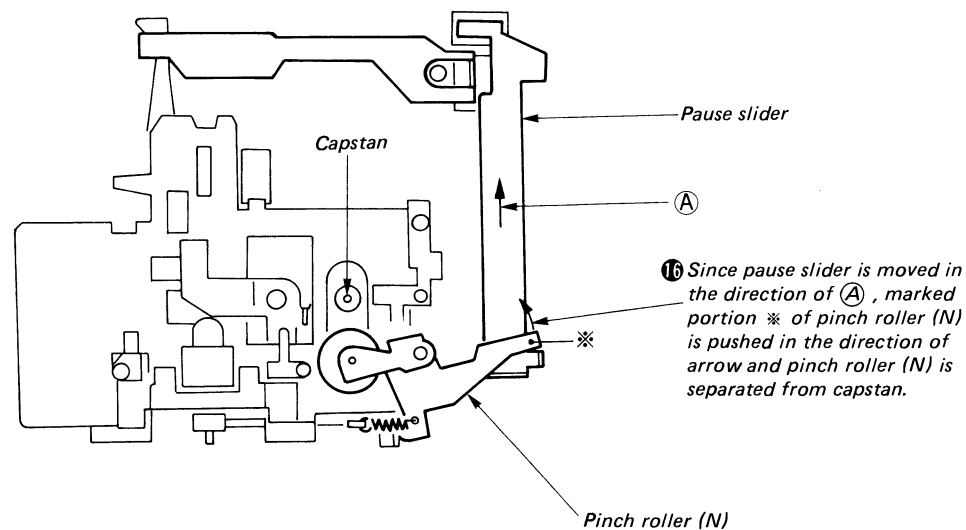
MECHANISM OPERATION

Operation of ① - ⑫ : See "Operation of FWD mode" on page TC23 - 24.

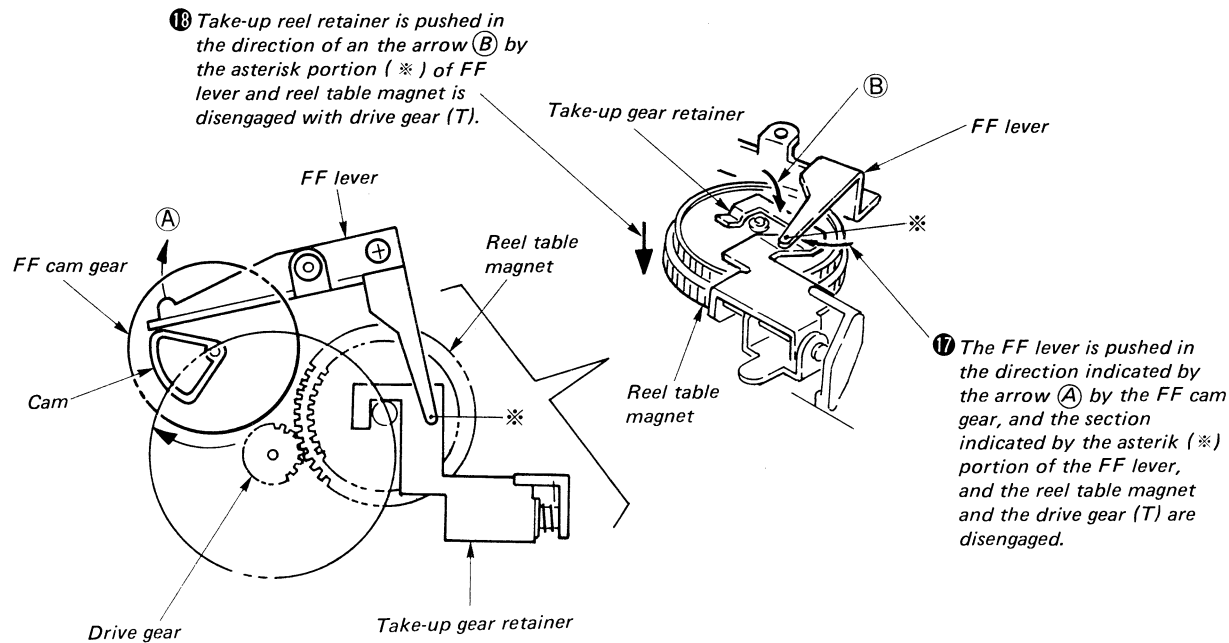
FWD AMS OPERATION (5)



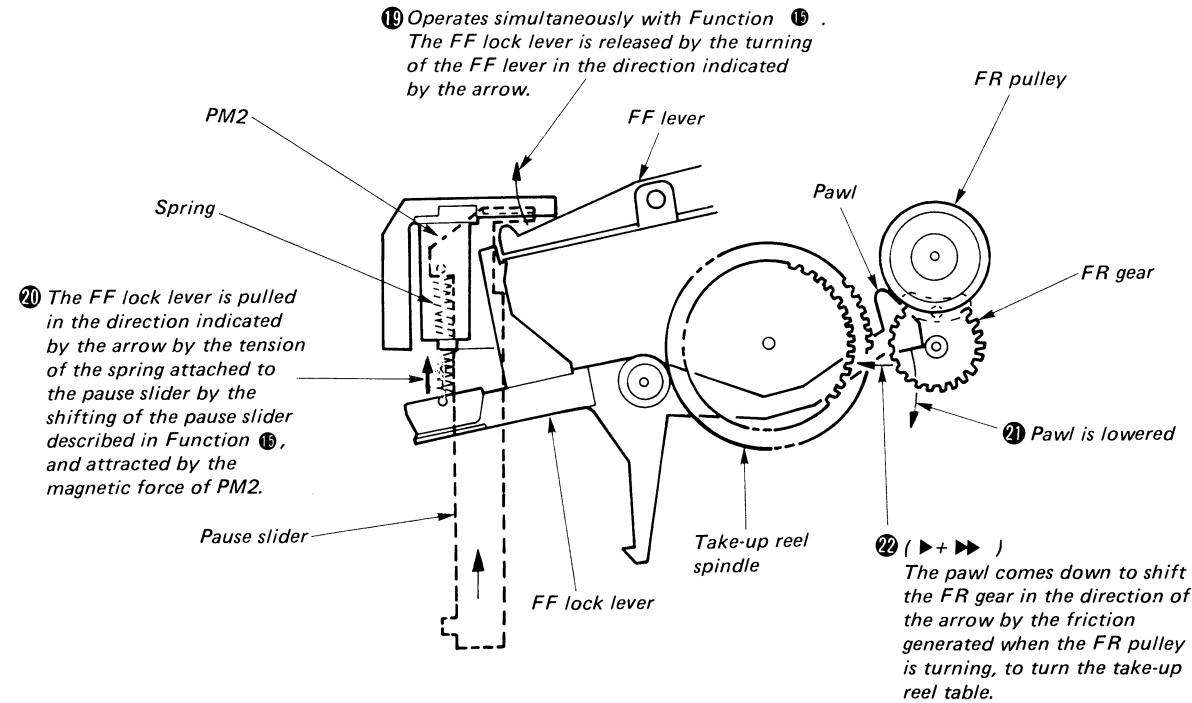
FWD AMS OPERATION (6)



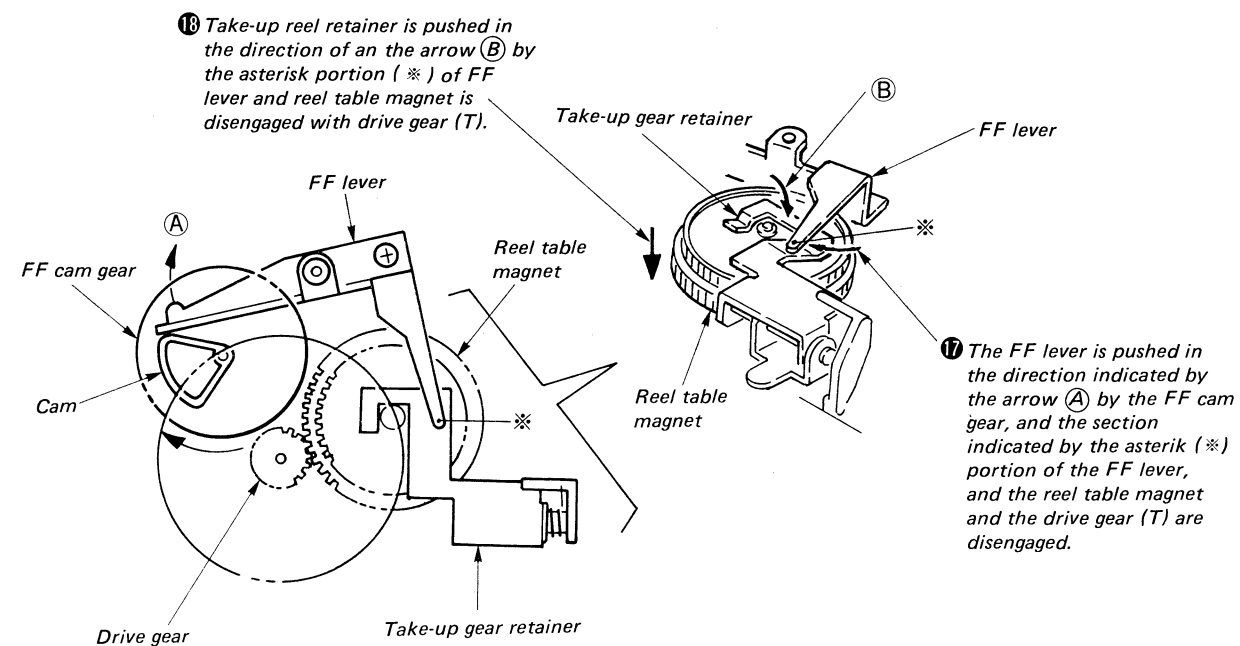
FWD AMS OPERATION (7)



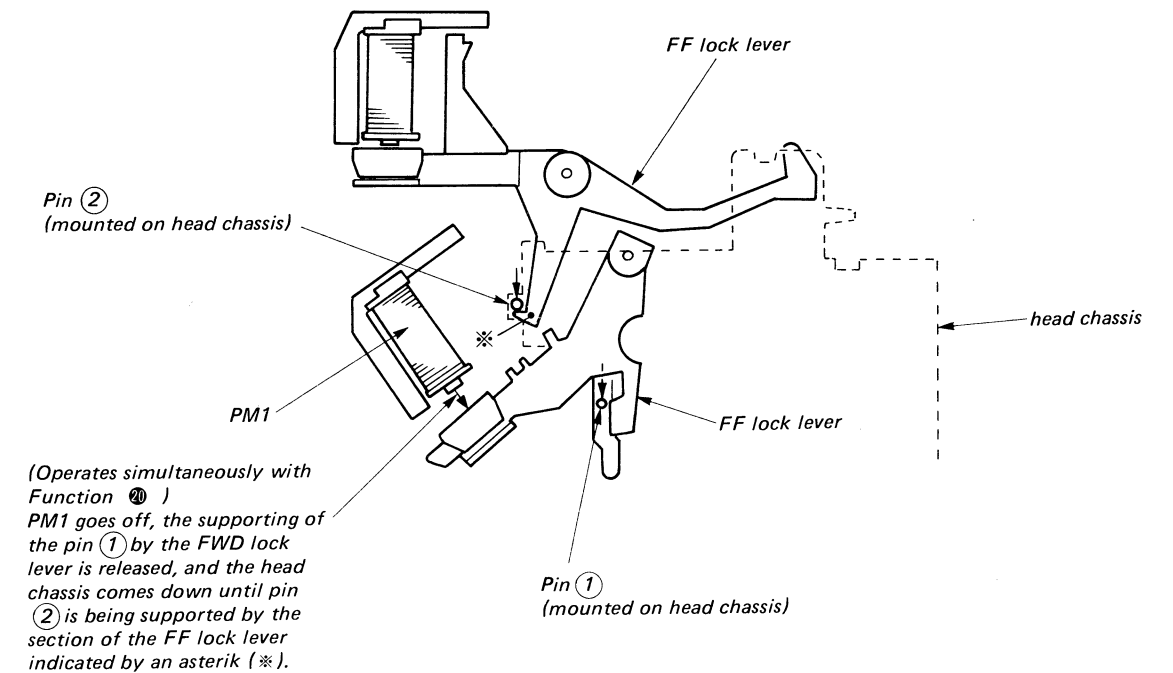
FWD AMS OPERATION (8)



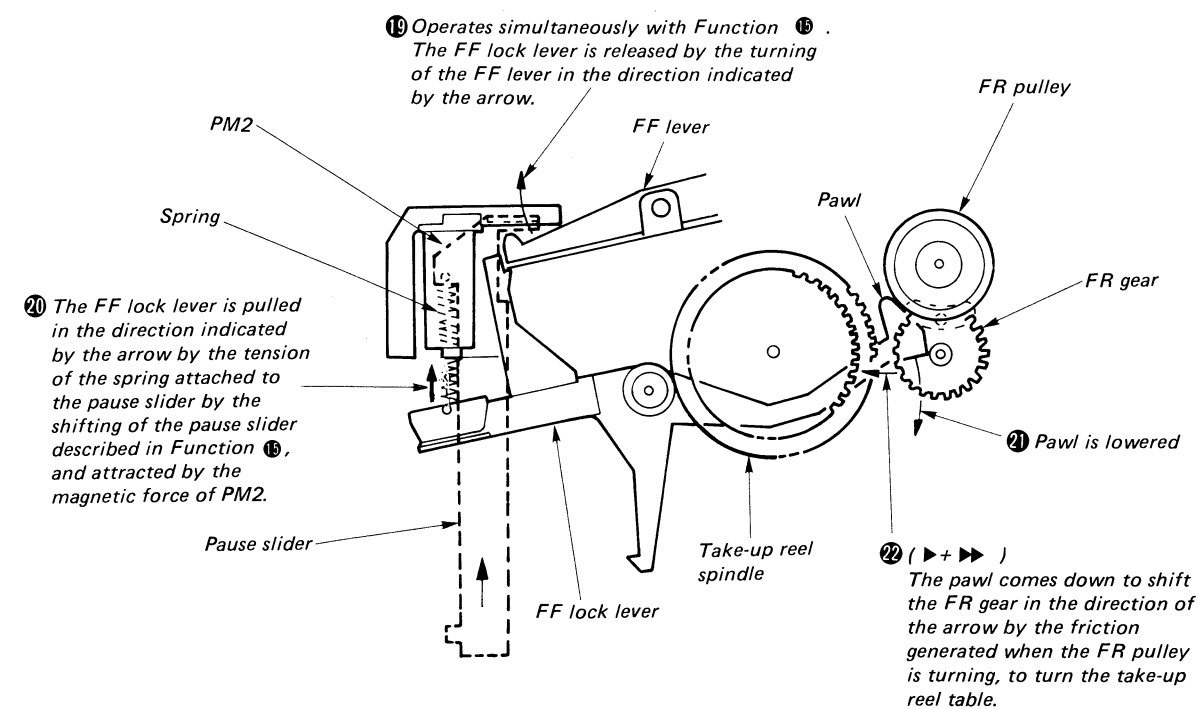
FWD AMS OPERATION (7)



FWD AMS OPERATION (9)



FWD AMS OPERATION (8)



FWD AMS MODE
(▶+▶▶) (▶+◀◀)

- TC-41-

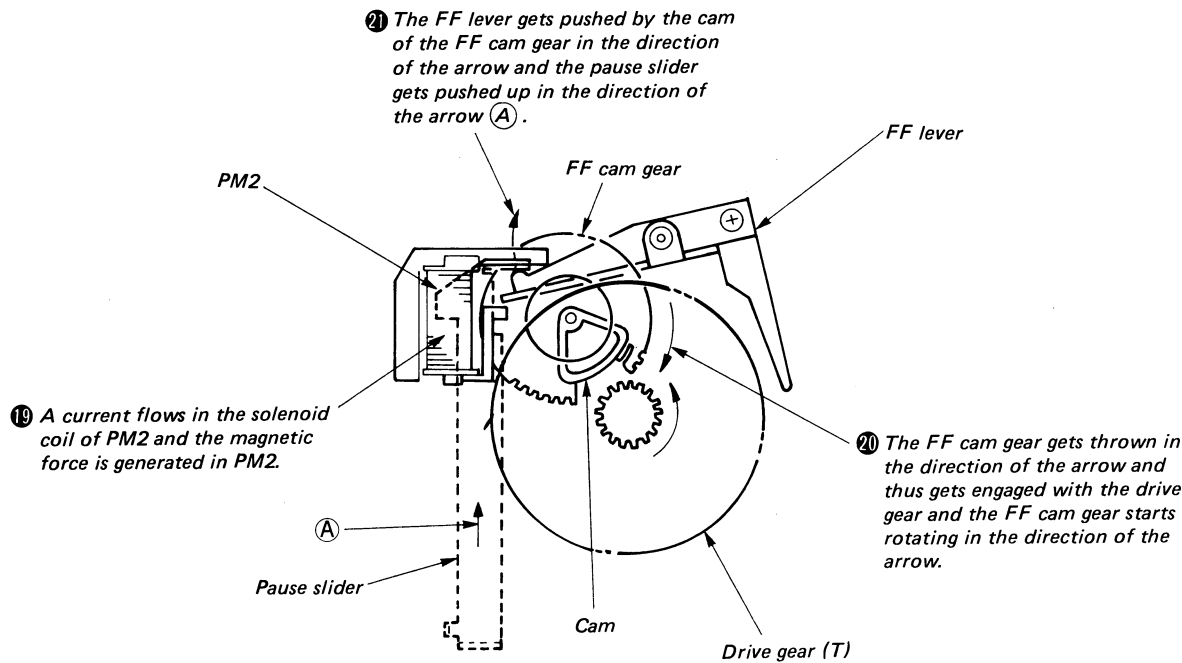




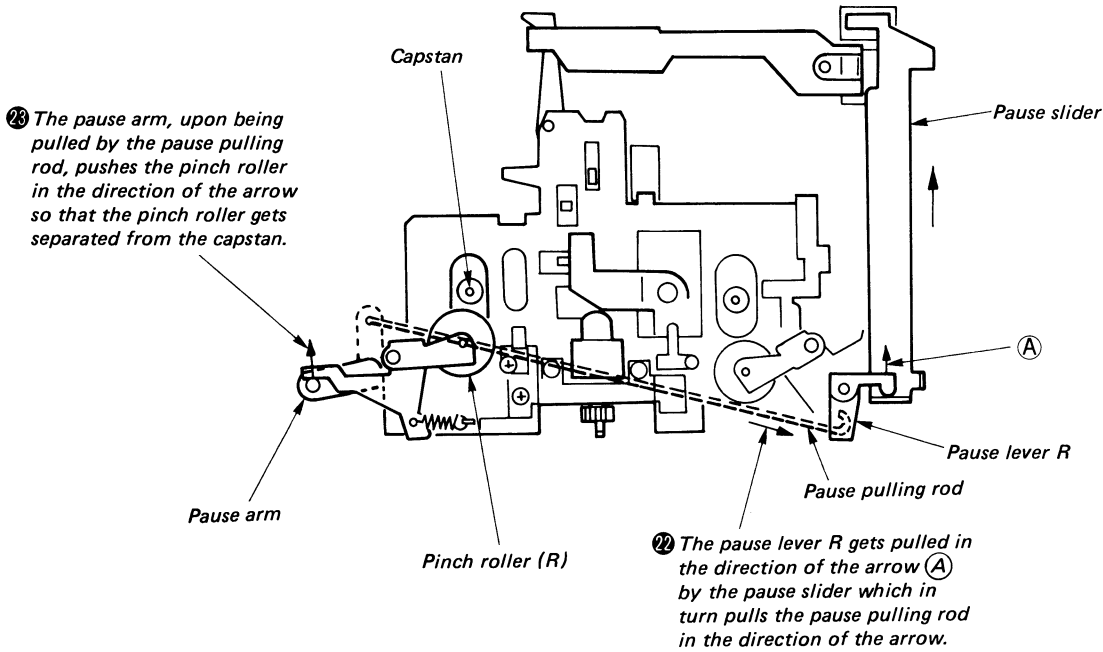
● MECHANICAL OPERATION

Operation of ① — ⑮ : See "Operation of REV mode" on page TC31 — 34.

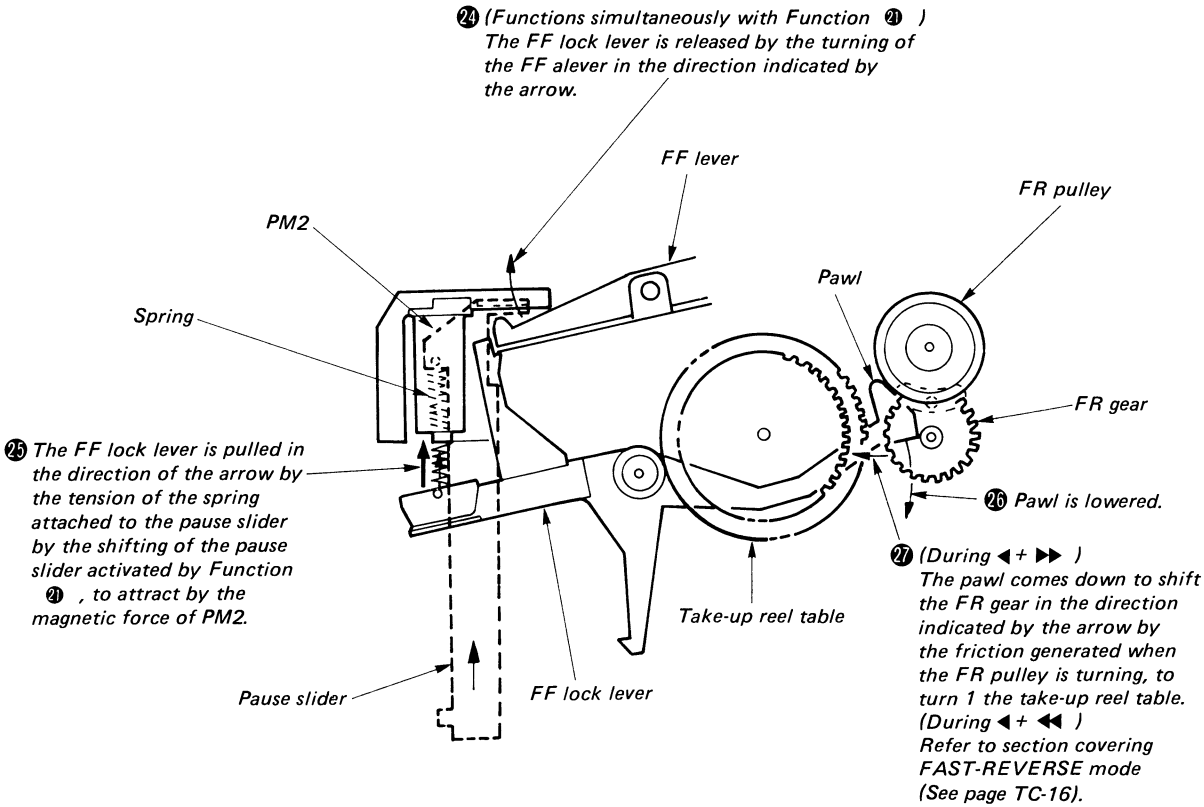
REVERSE AMS OPERATION (7)



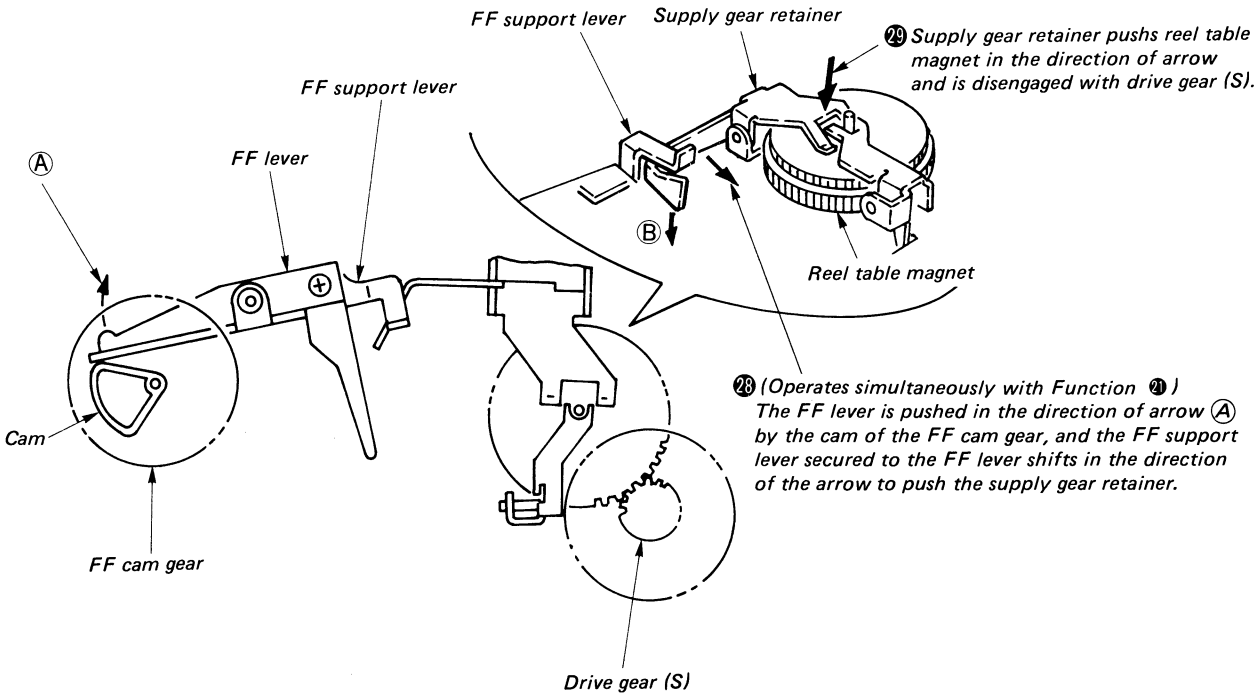
REVERSE AMS OPERATION (8)



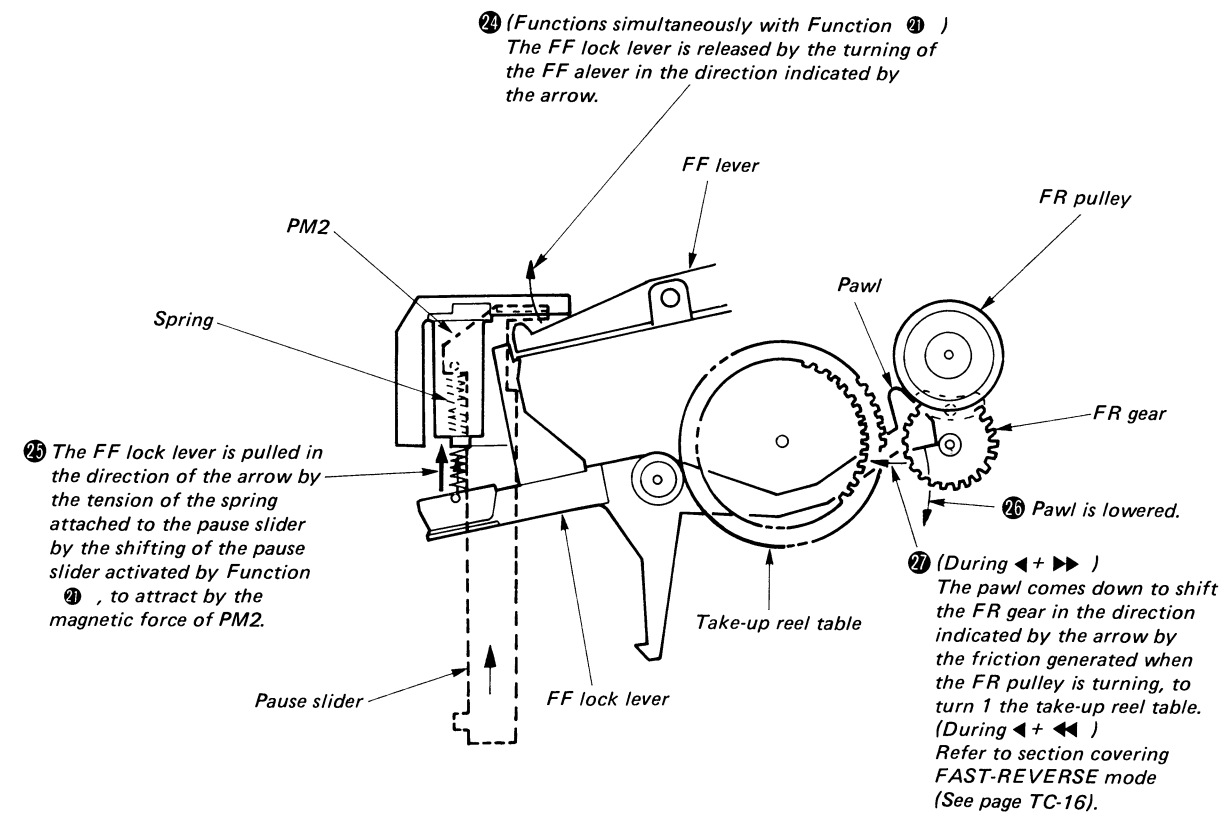
REVERSE AMS OPERATION (9)



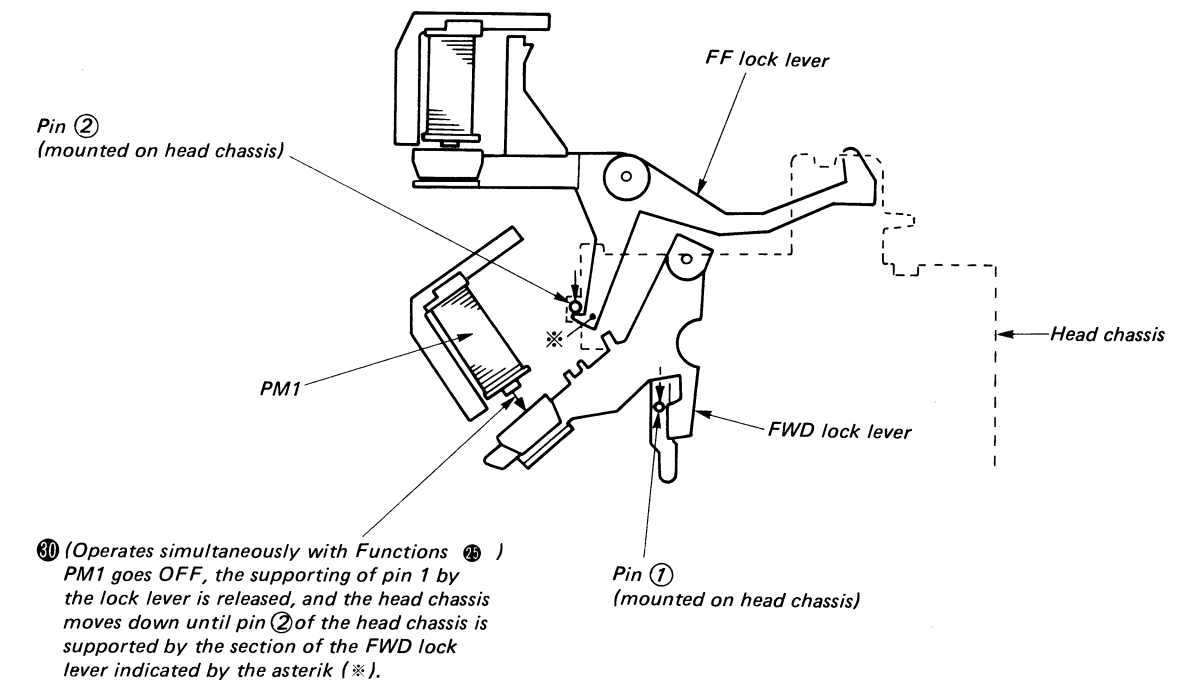
REVERSE AMS OPERATION (10)



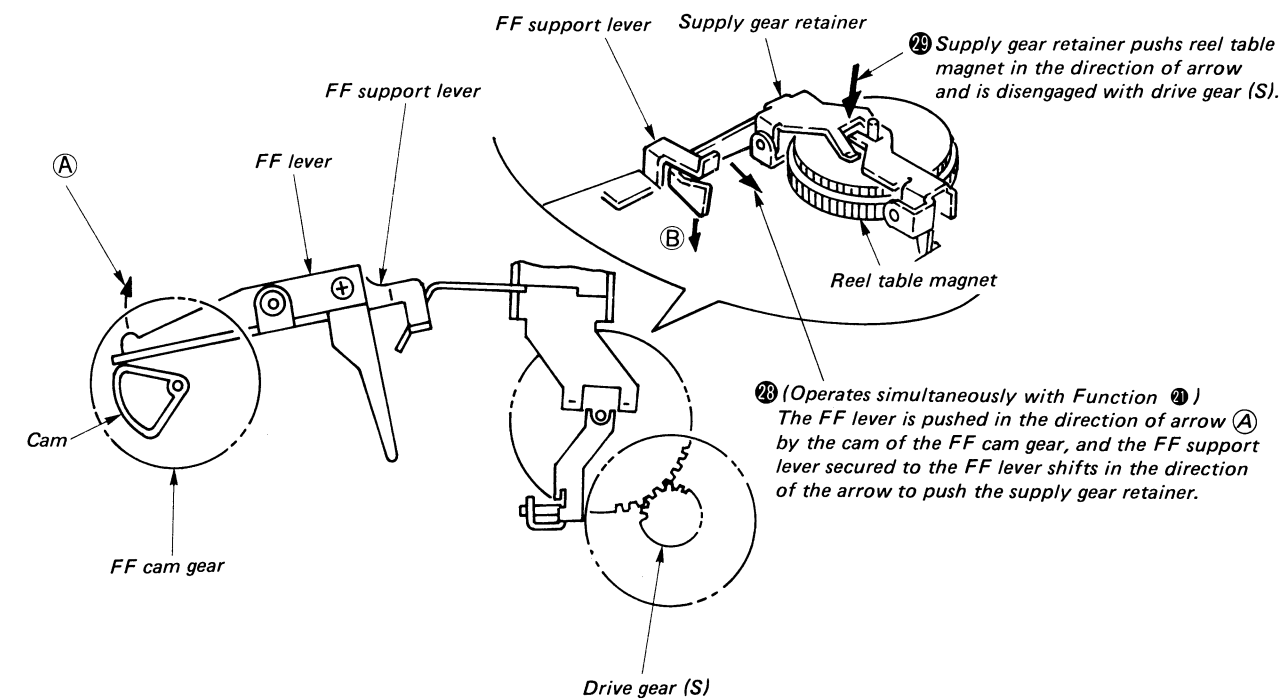
REVERSE AMS OPERATION (9)



REVERSE AMS OPERATION (11)



REVERSE AMS OPERATION (10)



REV AMS MODE
(◀ + ▶▶) (◀ + ◀◀)

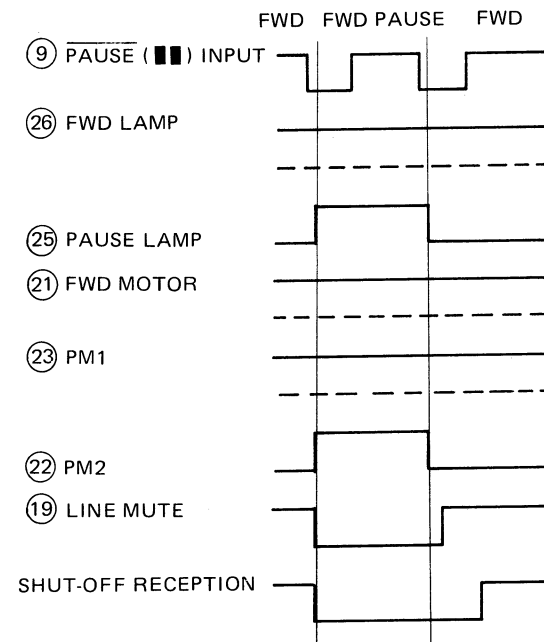
- [illegible]

2-9. FWD PAUSE MODE

(When pushing pause switch at FWD mode)

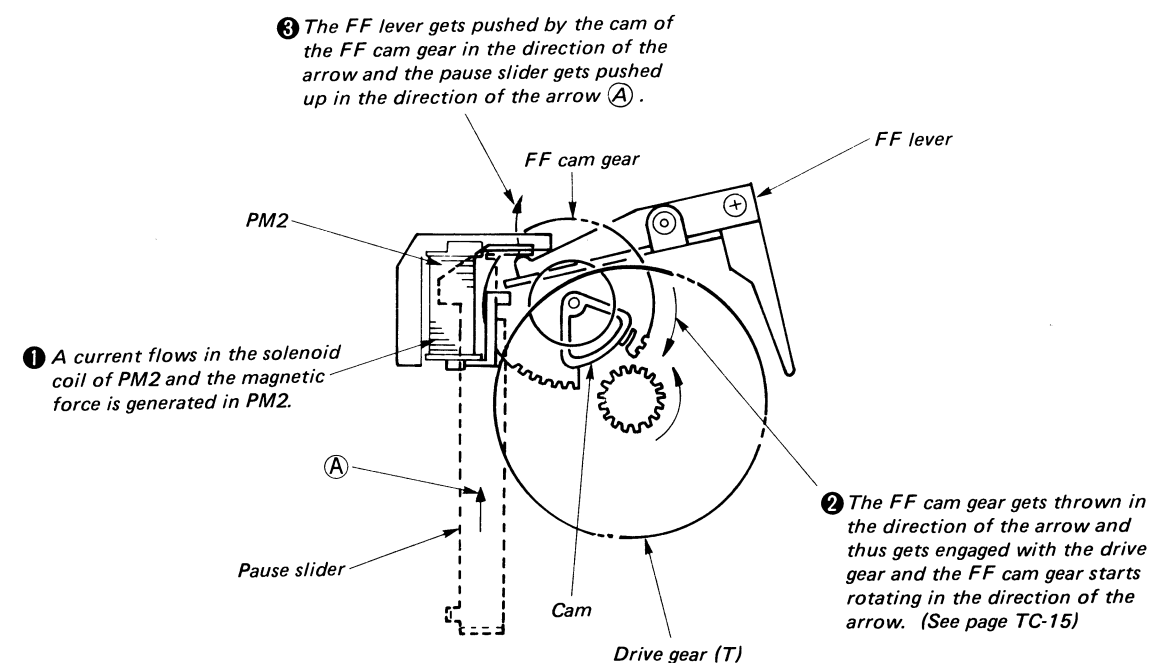
• TIMING OF IC401

FWD ← FWD PAUSE

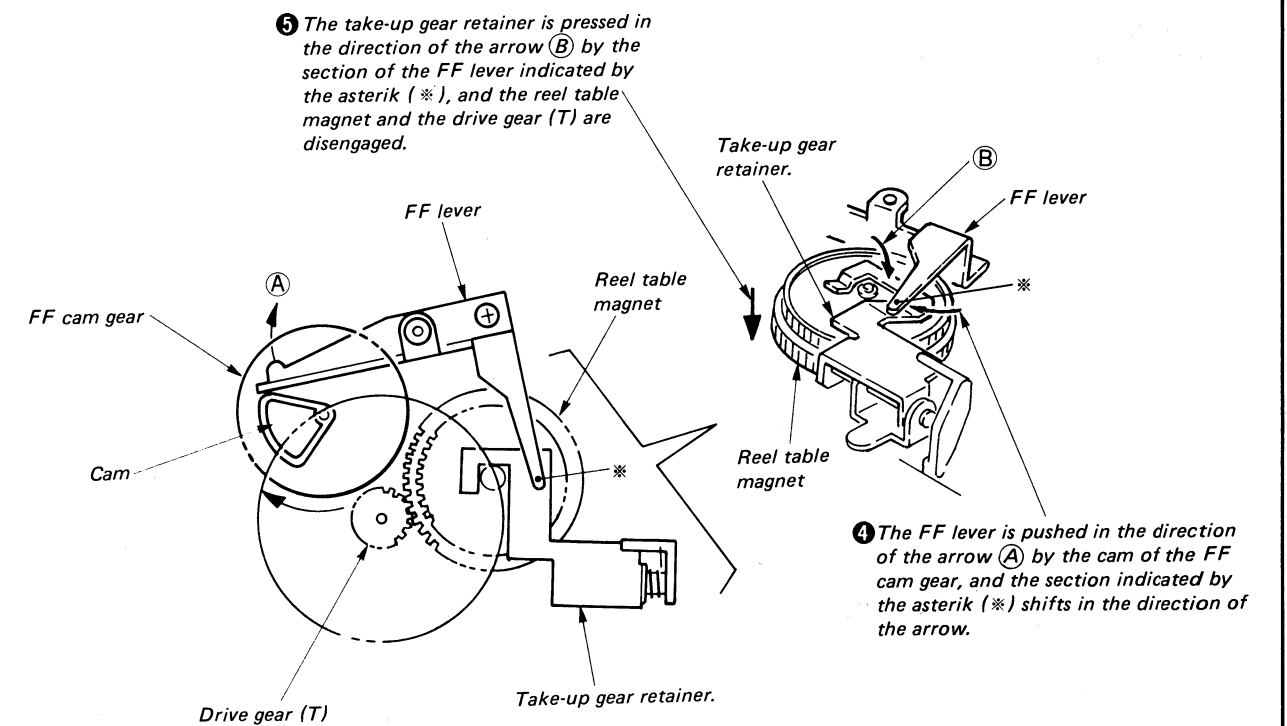


• MECHANISM OPERATION

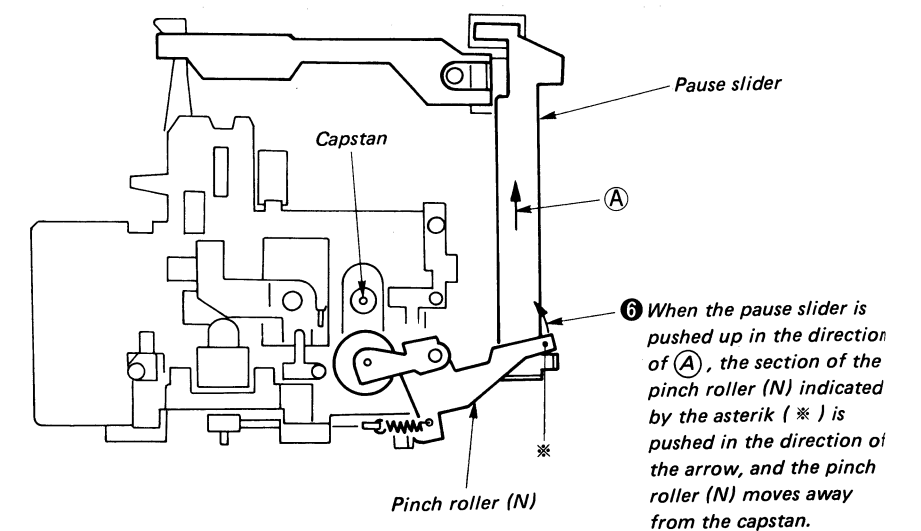
FWD PAUSE OPERATION (1)



FWD PAUSE OPERATION (2)

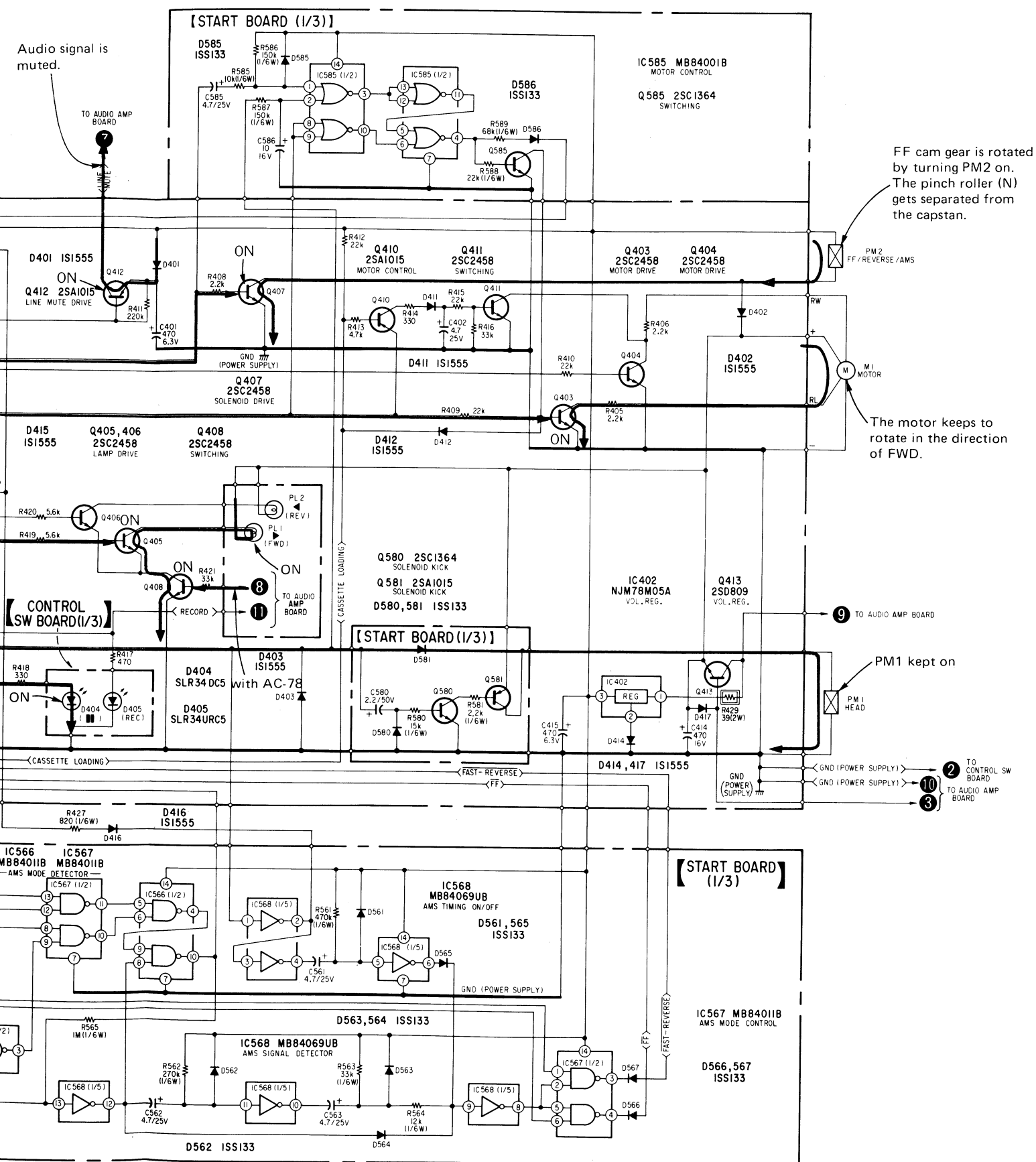


FWD PAUSE OPERATION (3)

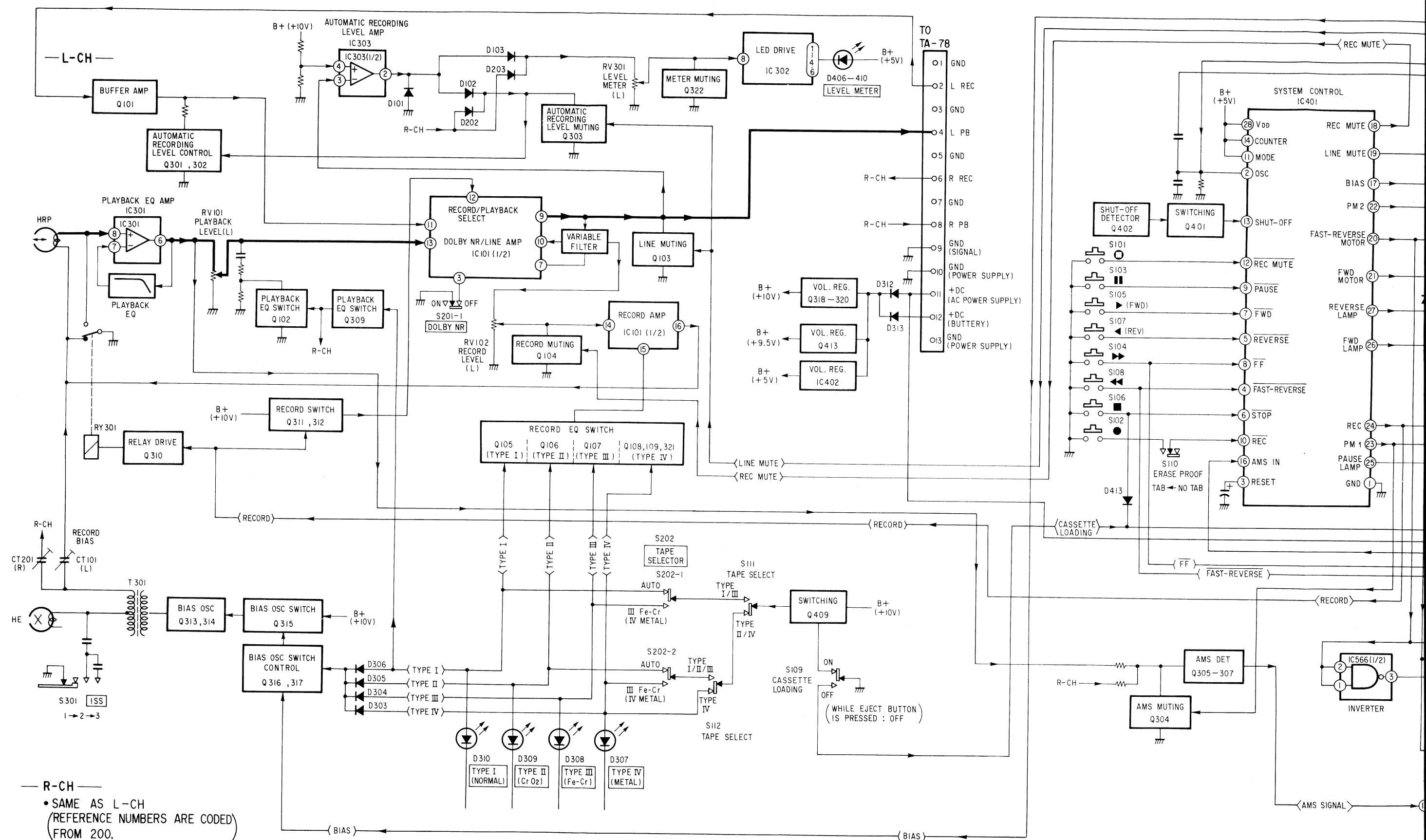


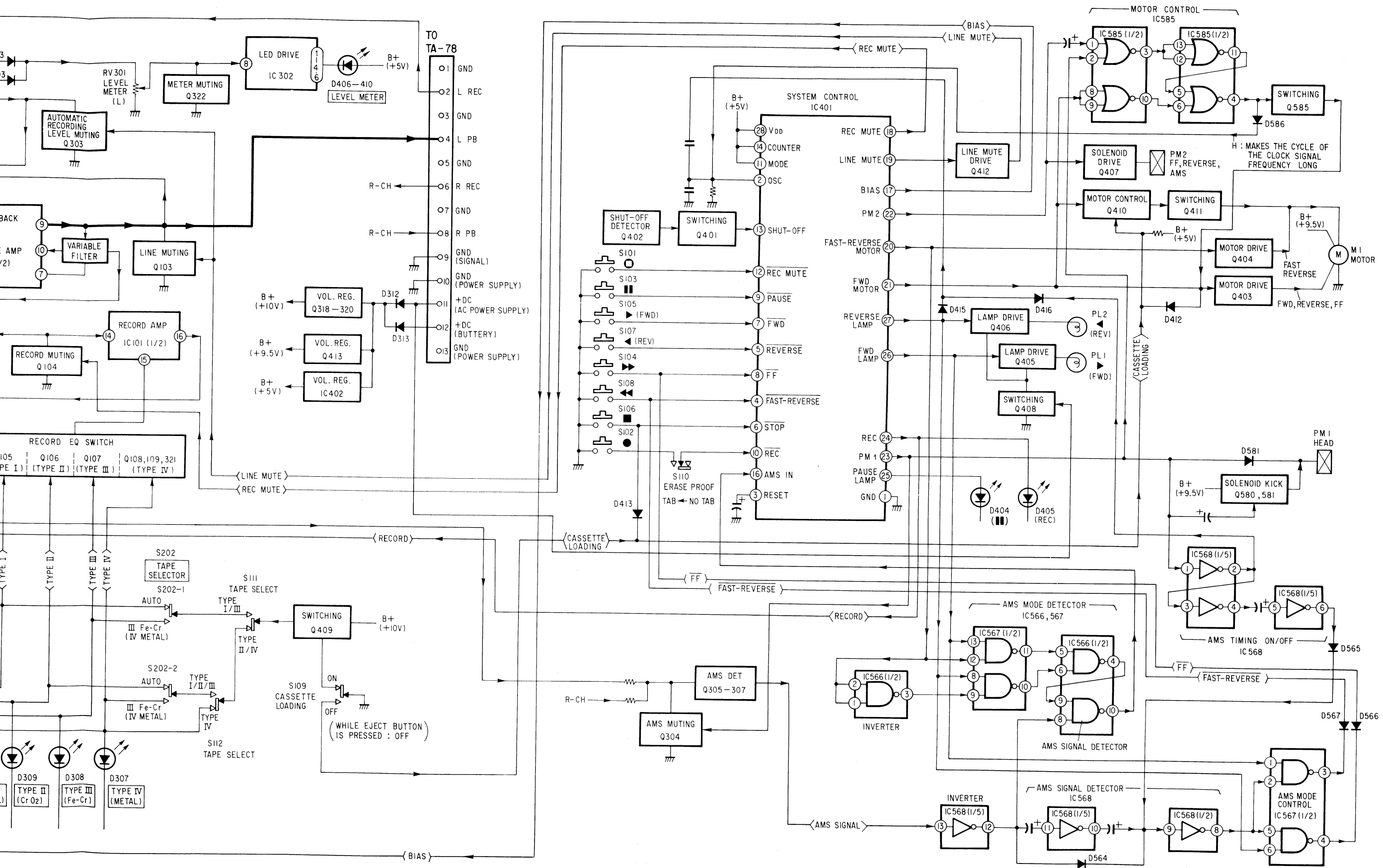
FWD PAUSE MODE
(FWD→ PAUSE)





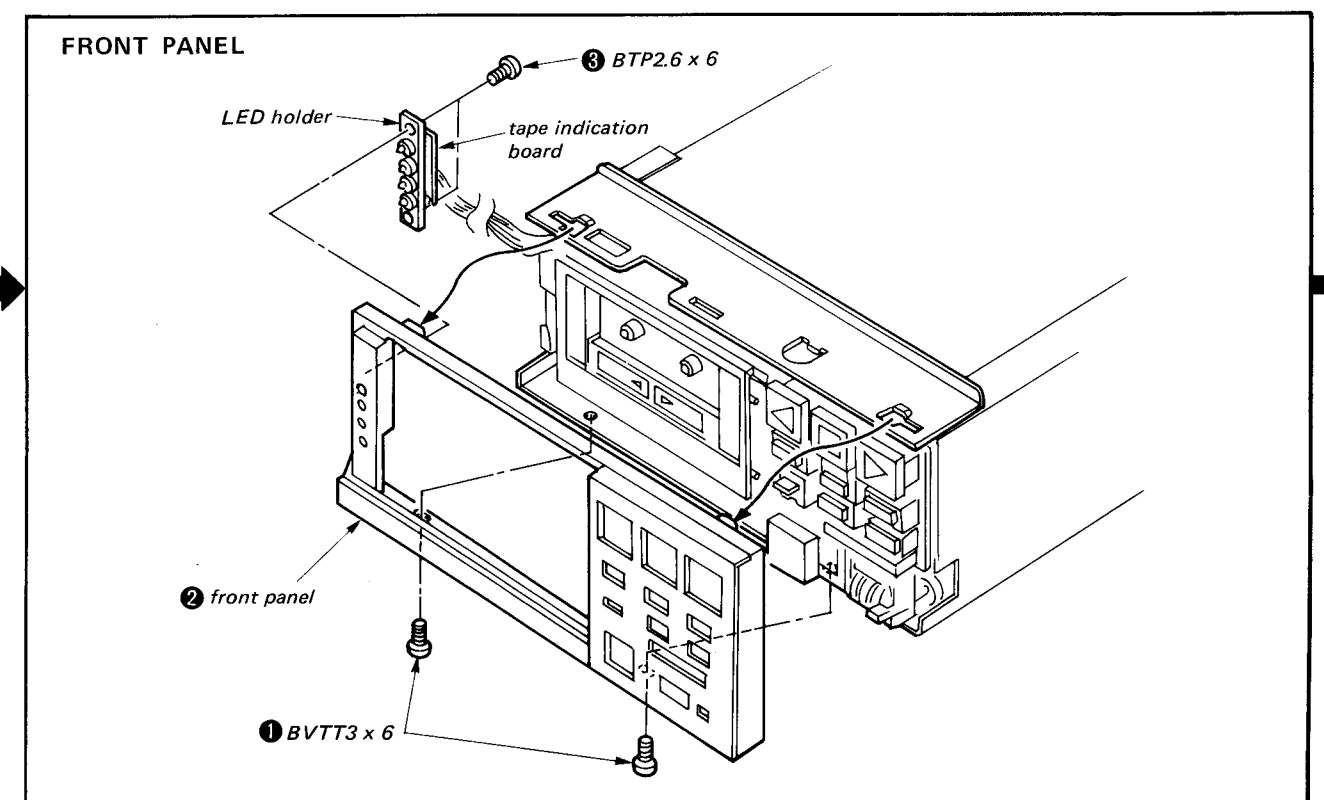
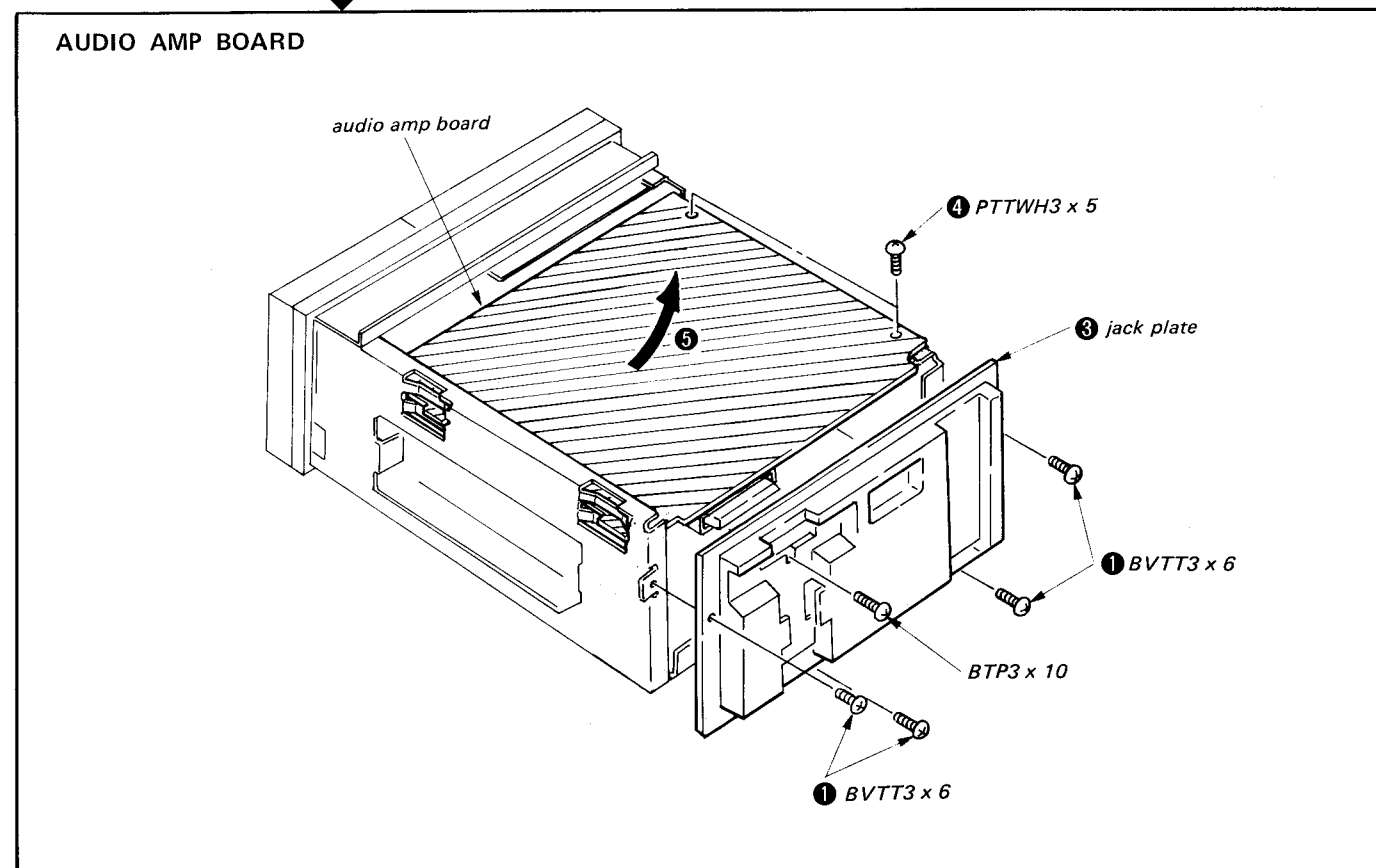
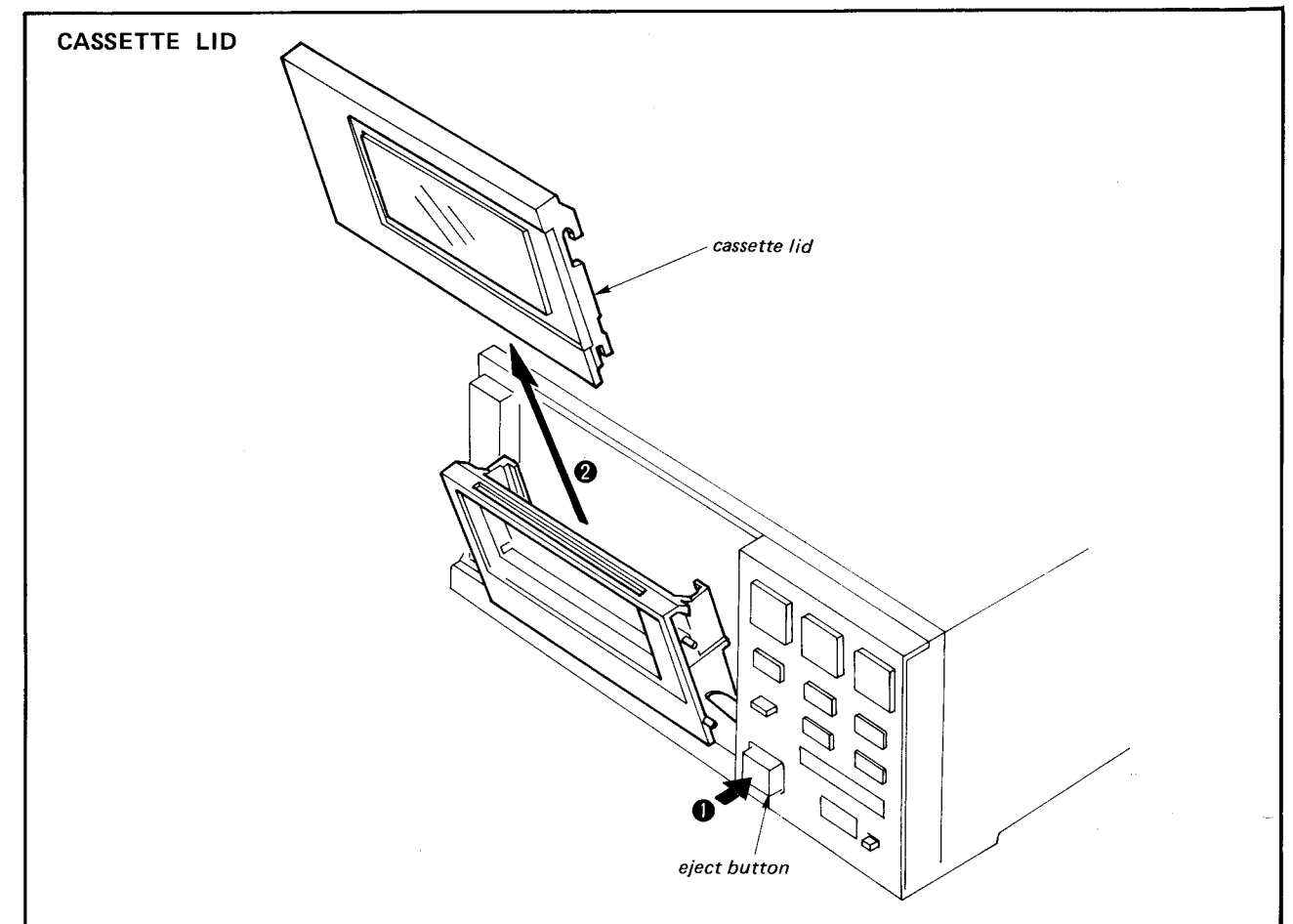
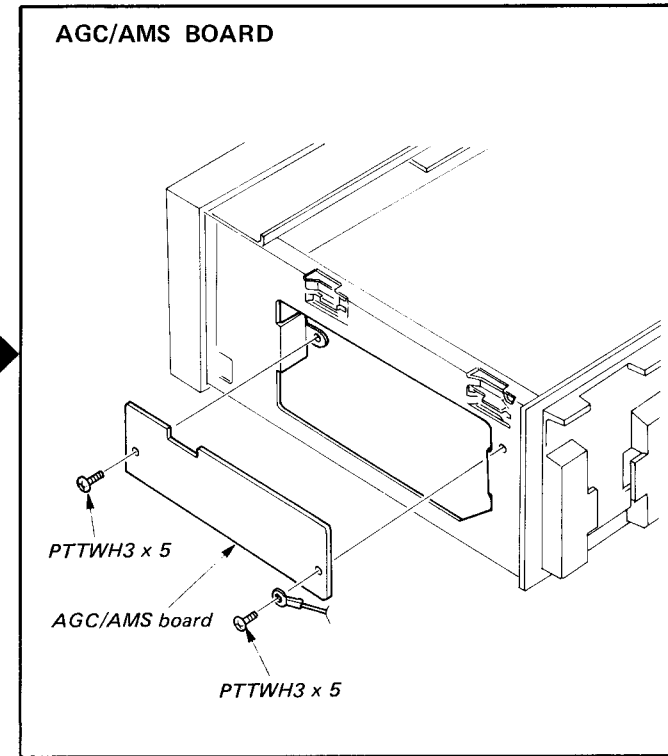
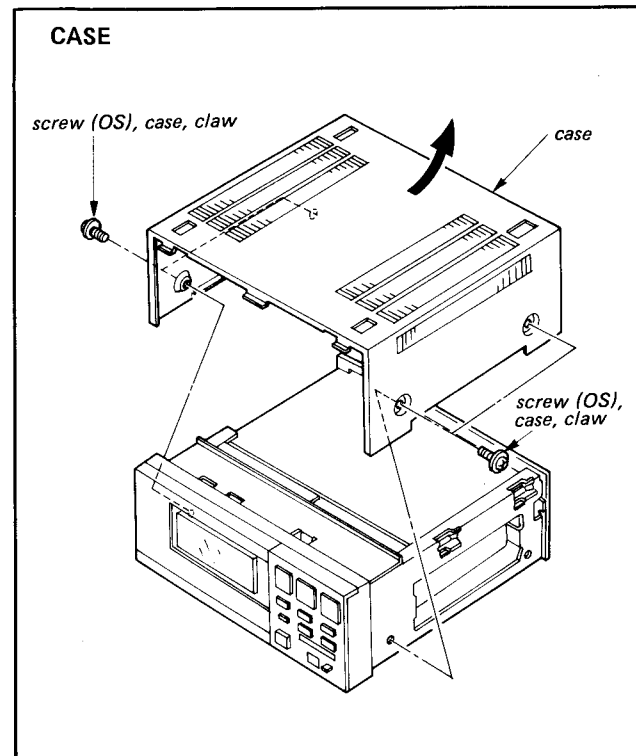
3-1. BLOCK DIAGRAM



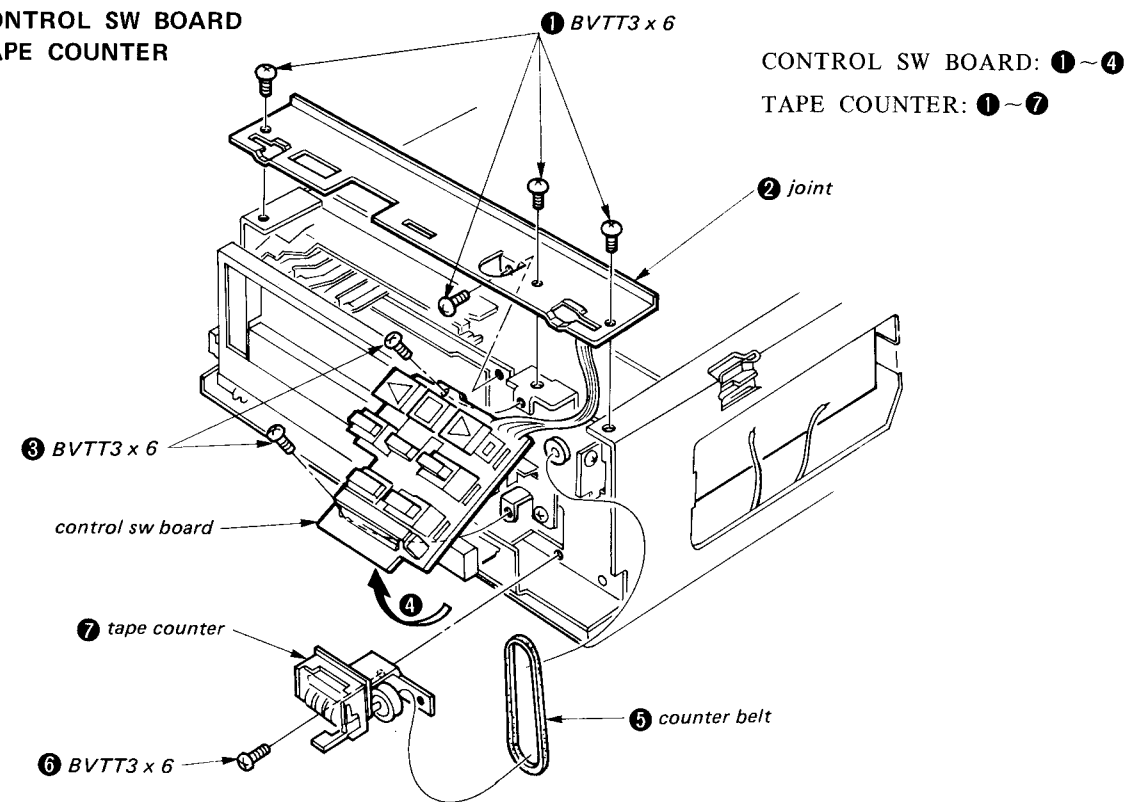


SECTION 4 DISASSEMBLY

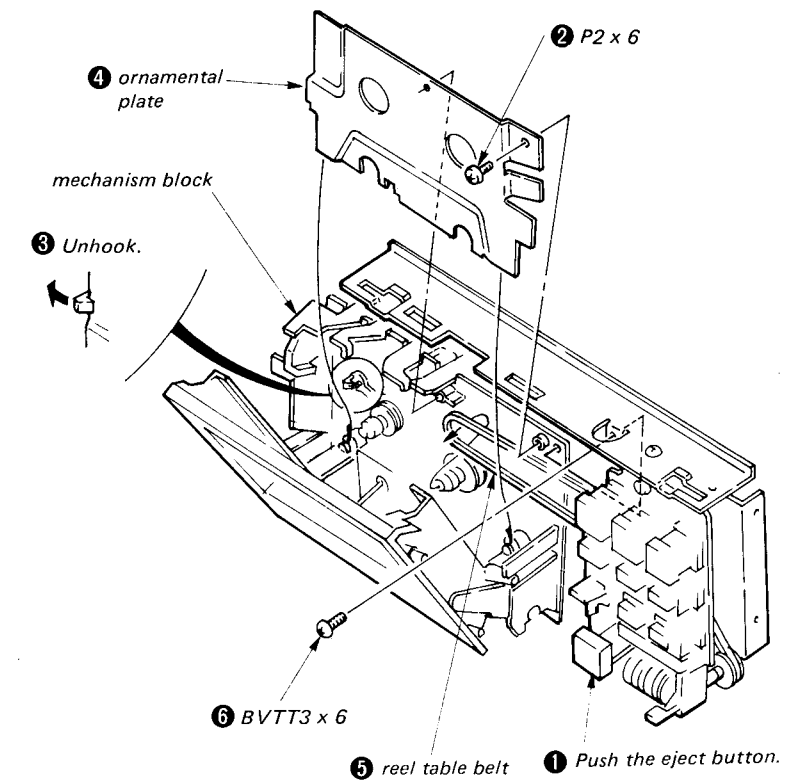
Note: Follow the disassembly procedure in the numerical order given.



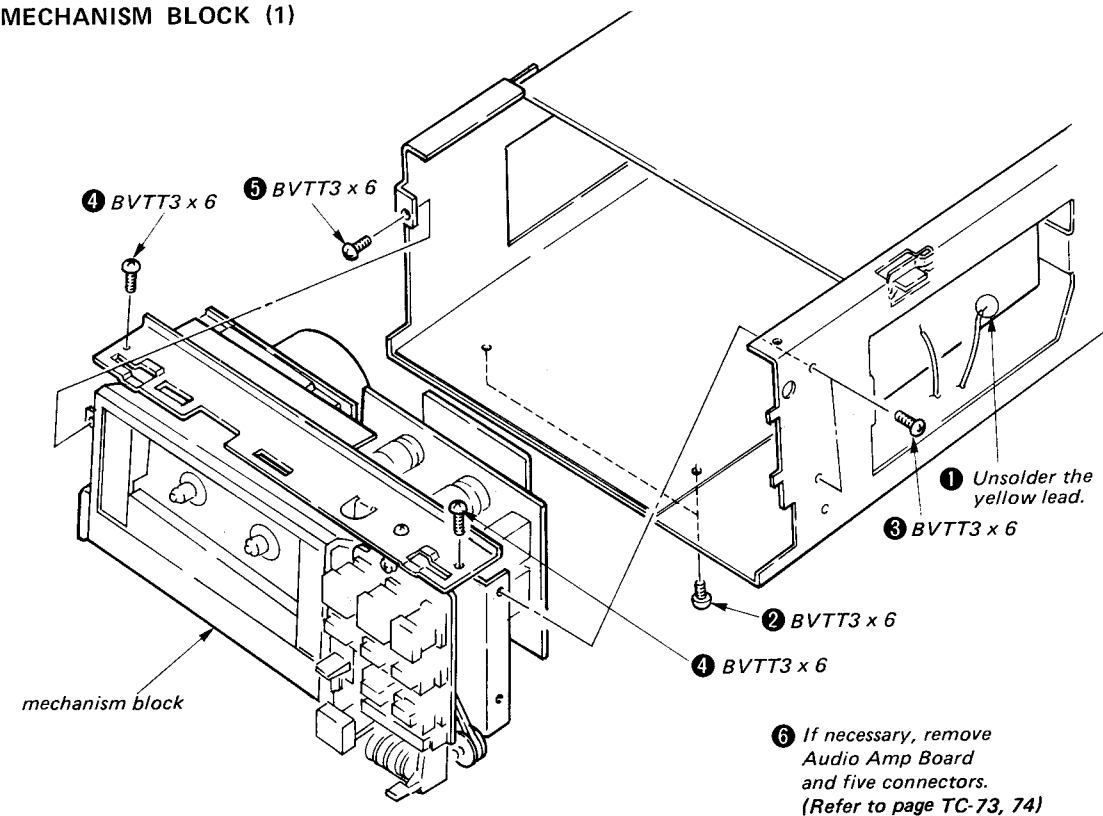
CONTROL SW BOARD
TAPE COUNTER



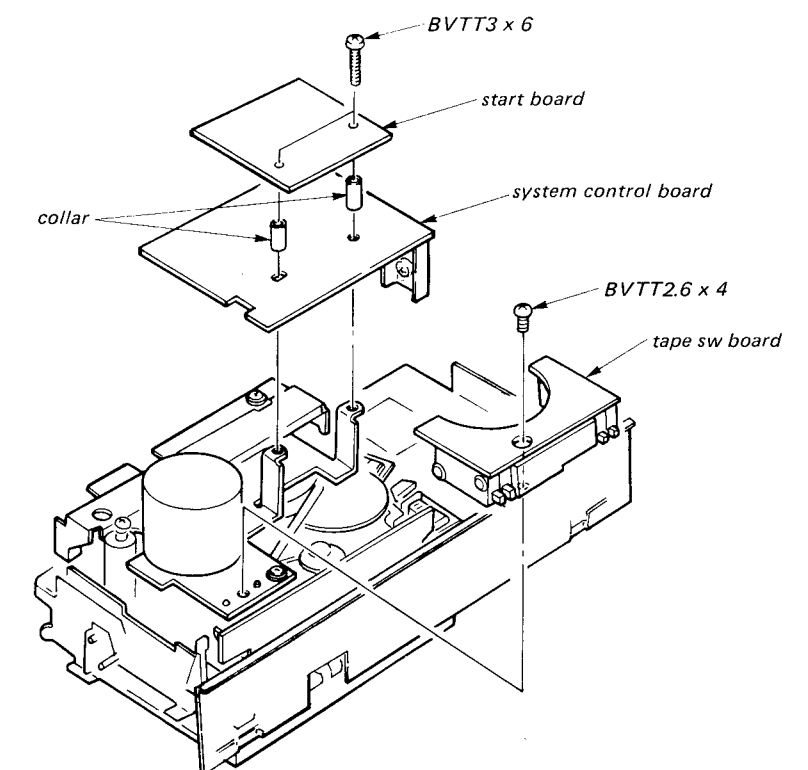
MECHANISM BLOCK (2)



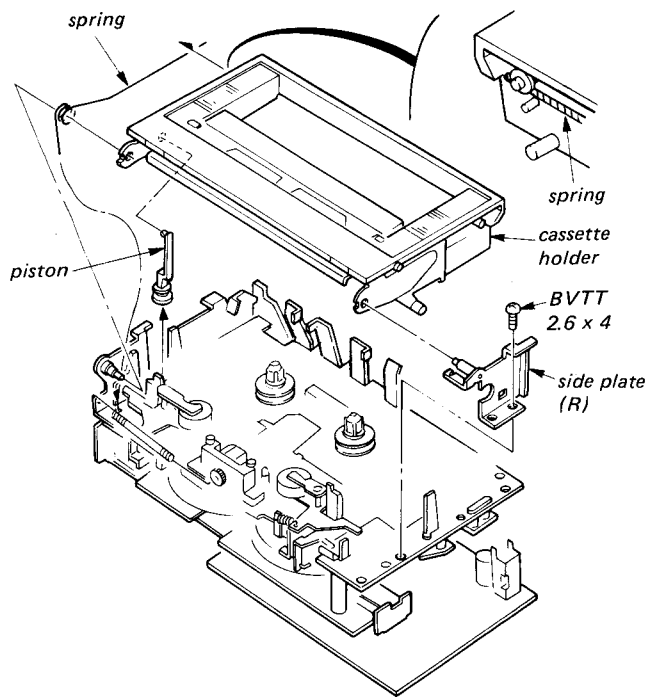
MECHANISM BLOCK (1)



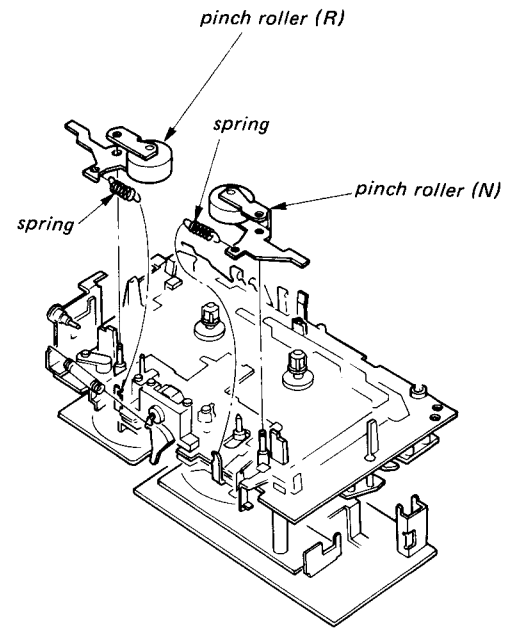
TAPE SW BOARD, START BOARD, SYSTEM CONTROL BOARD



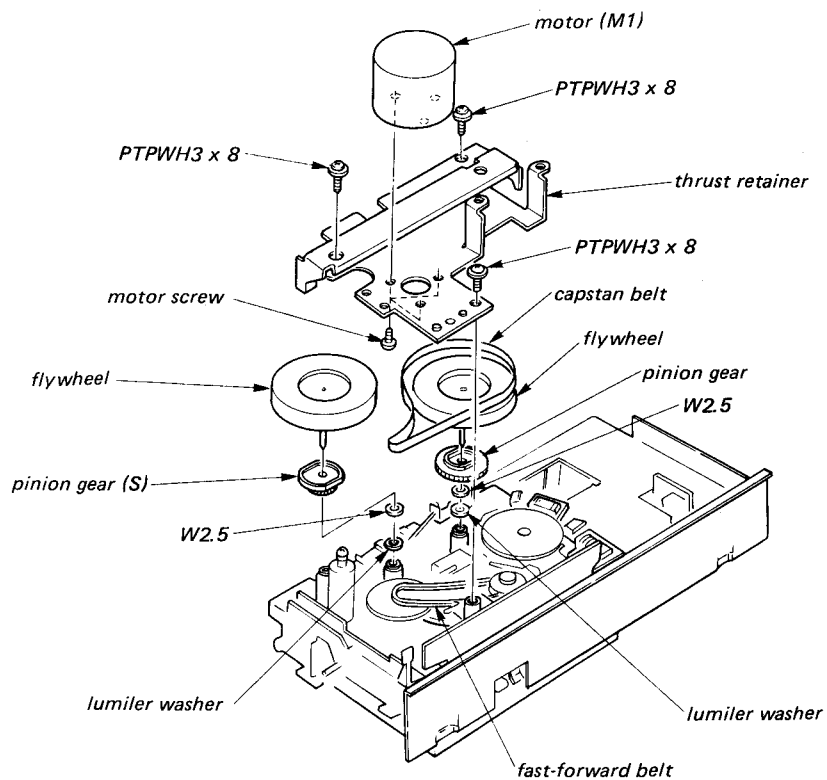
CASSETTE HOLDER



PINCH ROLLER



MOTOR, FLYWHEEL



SECTION 5 ADJUSTMENTS

5-1. MECHANICAL ADJUSTMENTS

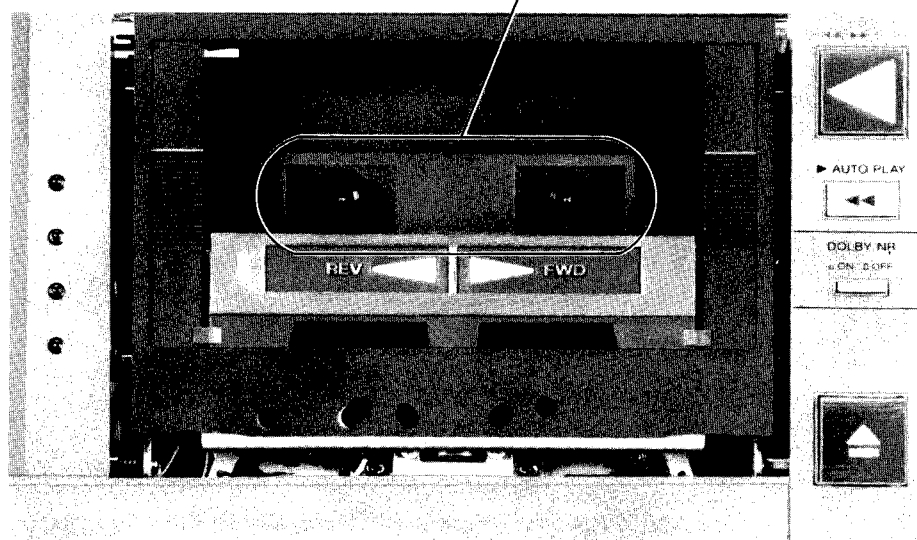
PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage (dc 2.5V) unless otherwise noted.

Torque Measurement

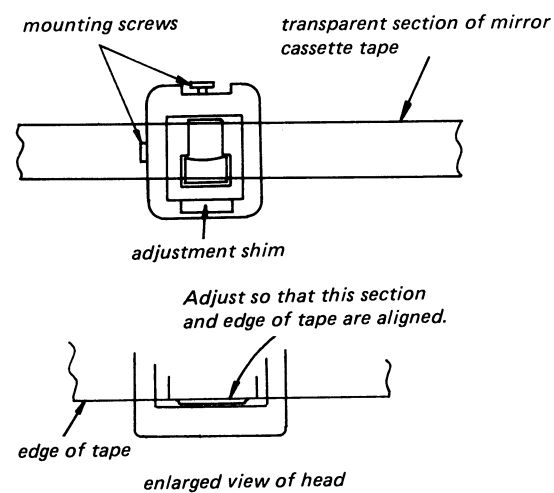
Torque	Torque meter	Meter reading
FWD	CQ-102C	28 – 60 g·cm (0.39 – 0.83 oz·inch)
FWD Back tension	CQ-102C	2 – 8 g·cm (0.03 – 0.1 oz·inch)
REV	CQ-102R	28 – 60 g·cm (0.39 – 0.83 oz·inch)
REV Back tension	CQ-102R	2 – 8 g·cm (0.03 – 0.1 oz·inch)
FF, REW	CQ-201B	80 – 165 g·cm (1.1 – 2.28 oz·inch)



Head Height Adjustment

The following adjustments should be made when the record/playback head is replaced.

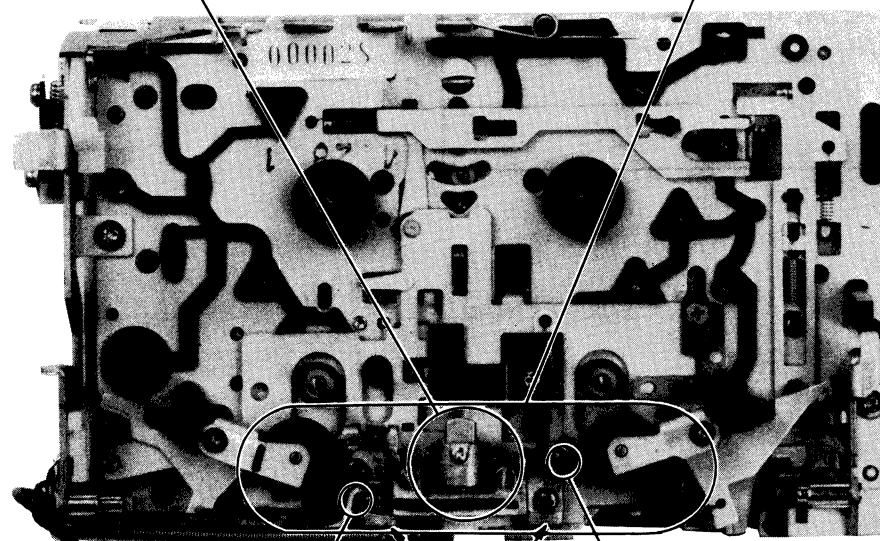
1. The head should be made after removing the head pad of the mirror cassette tape.
2. Using the leader section of the mirror cassette tape, adjustments are made by changing the adjusting shim so that the core and the edge of the tape become as shown in the illustration below when the tape is moved across the head.



Tape Path Adjustment

When assembling the erase head and head holder, and when replacing the tape guide (L), be sure to perform the following adjustments.

1. Using a mirror cassette, adjust each of the adjustment screws until there is not tape curling.
2. Perform adjustments by changing the height adjustment shim of the head holder assembly and the height adjustment shim of the record/playback head, so that the core of the record/playback head is positioned correctly for both FWD and REV.

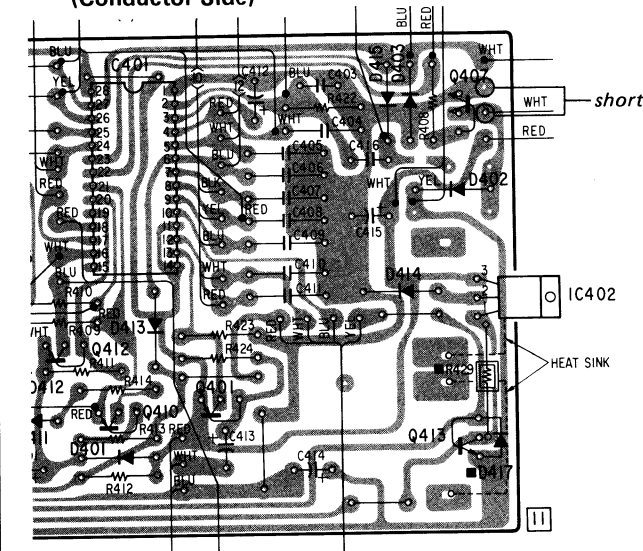


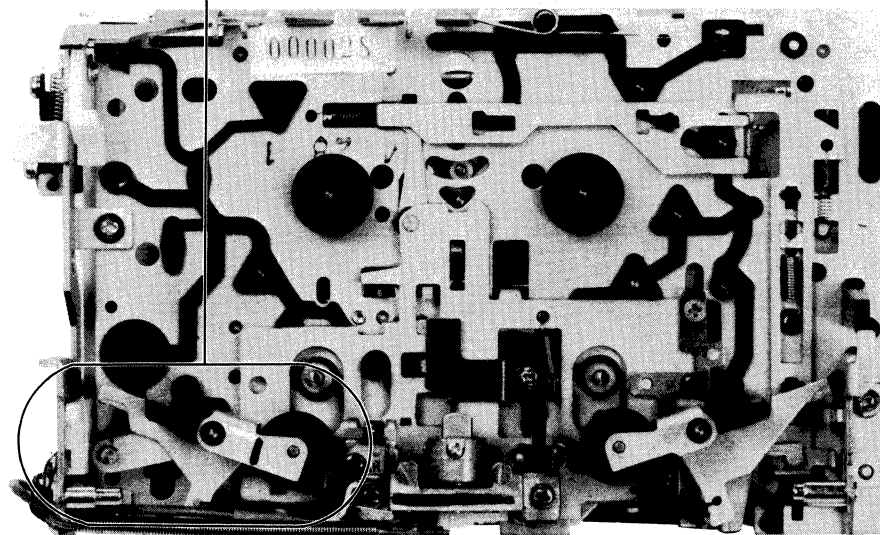
erase head tape pass adjustment screw
head holder assy height adjustment shim
tape guide adjustment screw

Supply Gear Retainer Position Adjustment

1. With the deck in the REV mode, short the collector and emitter of Q407 (this will place the deck in the pause state of the REV mode).

• System Control Board (Conductor Side)



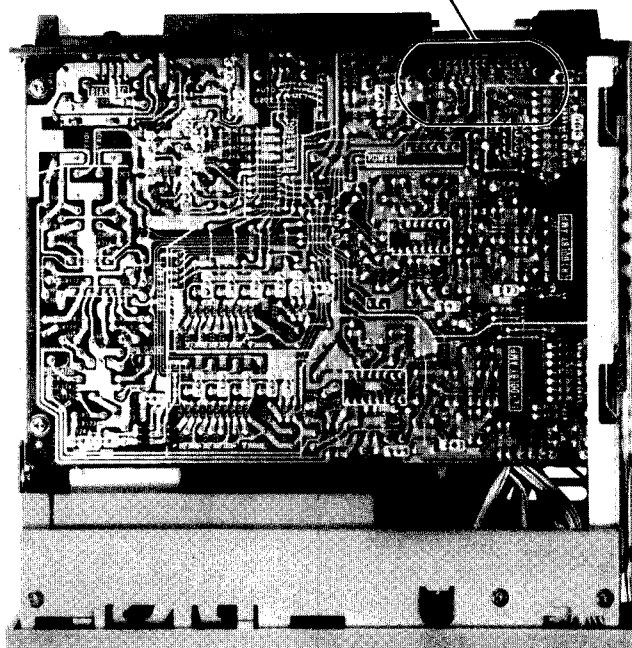
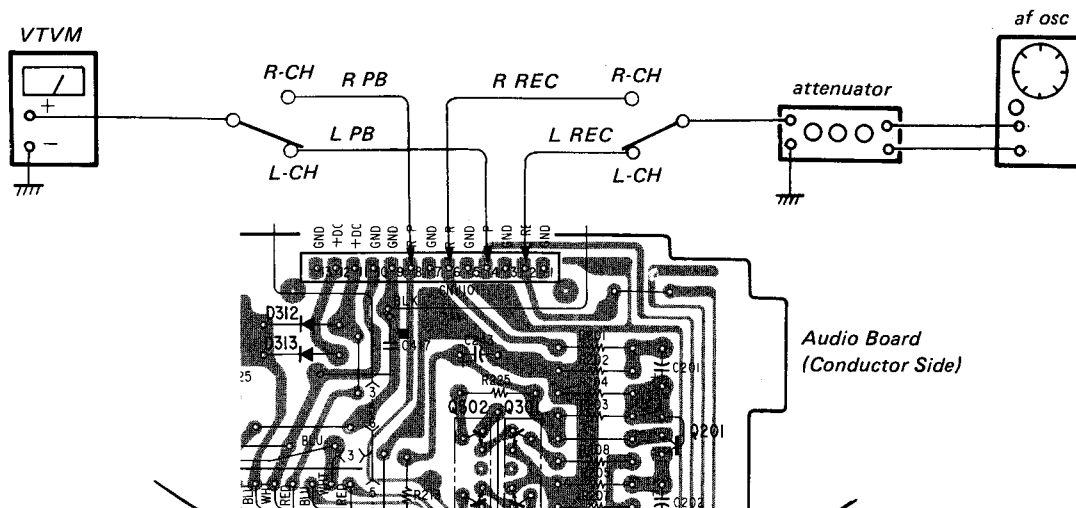


5-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual. (Playback section may be adjusted earlier than record section.)
The adjustments should be performed for both L-CH and R-CH.

- Output level check point

- Input level check point



Tape Speed Adjustment

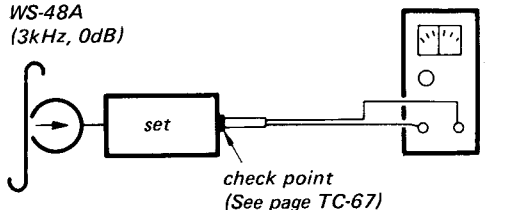
Setting:

TAPE SELECTOR switch: AUTO
DOLBY NR: OFF

Procedure:

Mode: forward playback

test tape
WS-48A
(3kHz, 0dB)



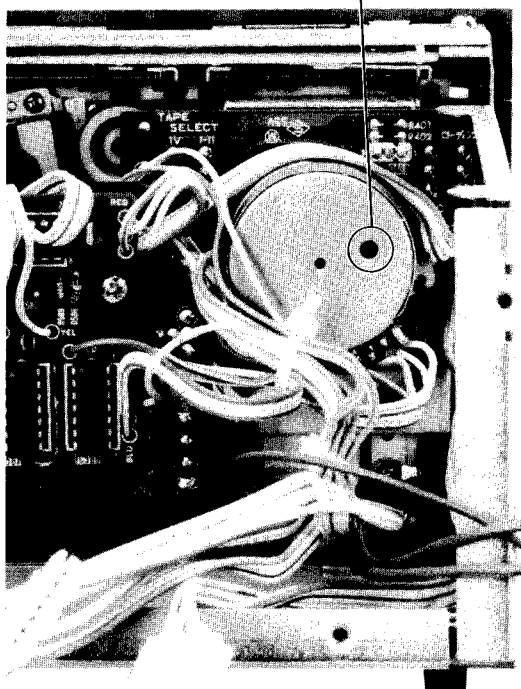
Specifications:

Speed checker	Digital frequency counter
$\pm 0.5\%$	2,985 – 3,015Hz

Frequency difference between the beginning and the end of the tape should be within 1% (30Hz).

Adjustment Location: Motor (M1)

Built-in adjustable resistor
(Adjust the speed by using screwdriver.)
(When turning the screw clockwise,
speed is faster.)

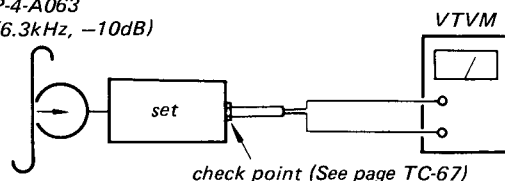


Forward Record/playback Head Azimuth Adjustment

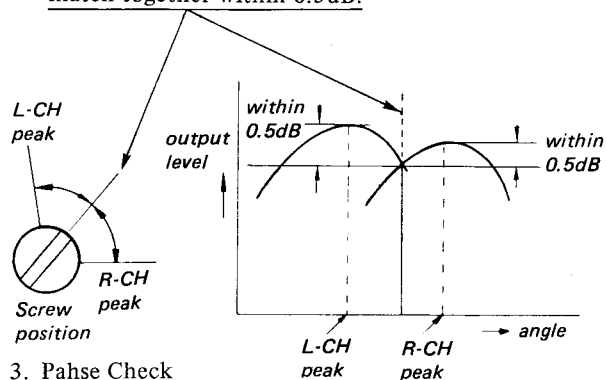
Procedure:

1. Mode: forward playback

test tape
P-4-A063
(6.3kHz, -10dB)



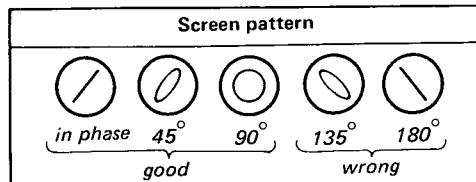
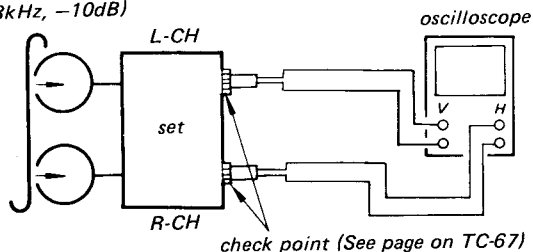
2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5dB.



3. Phase Check

Mode: forward playback

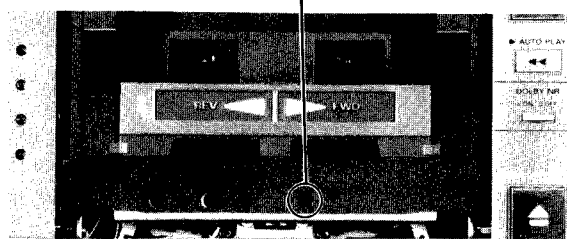
test tape
P-4-A063
(6.3kHz, -10dB)



4. After the adjustment, lock the screws with locking compound.

Adjustment Location:

adjustment screw



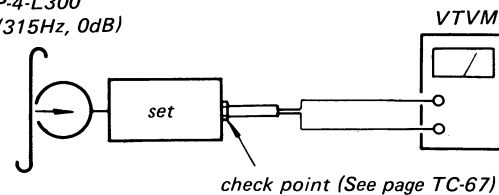
Playback Level Adjustment

Setting:

DOLBY NR switch: OFF
TAPE SELECTOR switch: AUTO

Procedure:

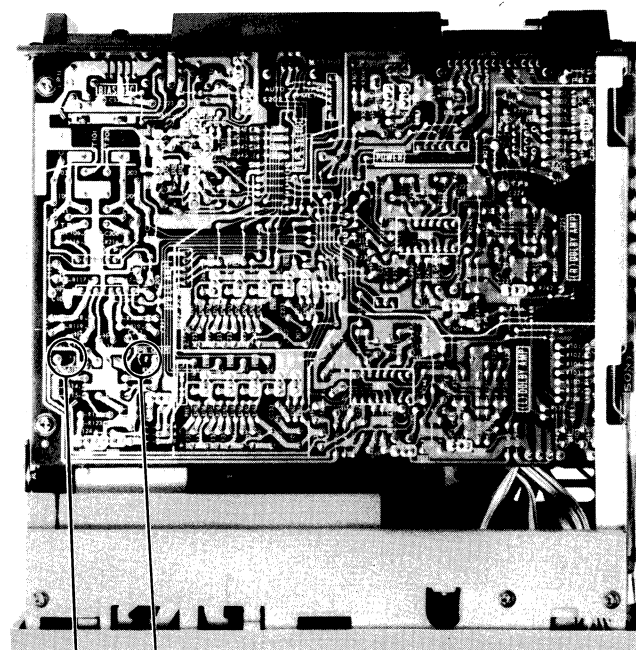
test tape
P-4-L300
(315Hz, 0dB)



Adjust RV101 (L-CH) and RV201 (R-CH) to obtain 0.29 – 0.32V (–7.5 to –8.5dB) on the VTVM.

Check that the Line out level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: Audio Board



RV101 RV201
(L-CH) (R-CH)

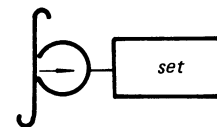
playback level adjustment

Level Meter Calibration

Proceudre:

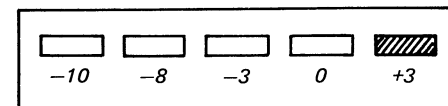
1. Mode: playback

test tape
P-4-L300
(315Hz, 0dB)

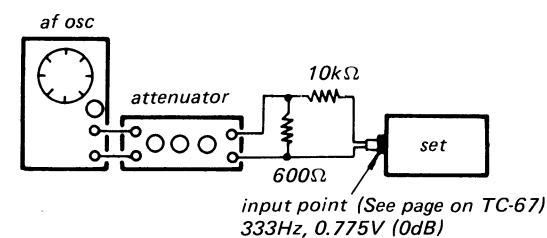


2. Adjust RV301 so that the most-rightside segment (+3dB) of the LED meter goes on and again turn it in the reverse direction until the segment just goes off.

LEVEL METER

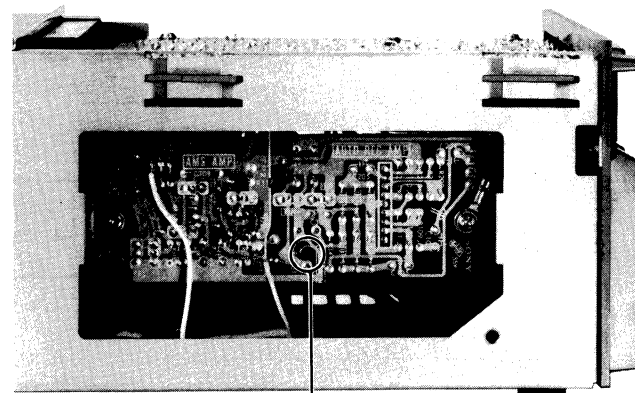


3. Mode: record



Make sure that all LEDs of level meter go on.

Adjustment Location: Audio Board



RV301

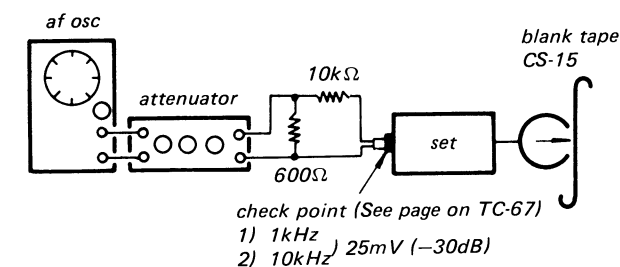
Record Bias Adjustment

Setting:

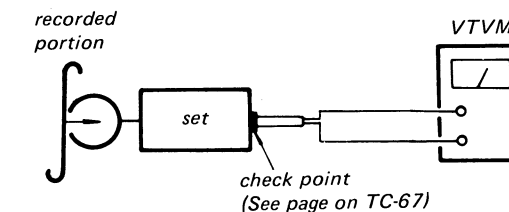
DOLBY NR switch: OFF
TAPE SELECTOR switch: AUTO
ISS switch: 1

Procedure:

1. Mode: record



2. Mode: playback

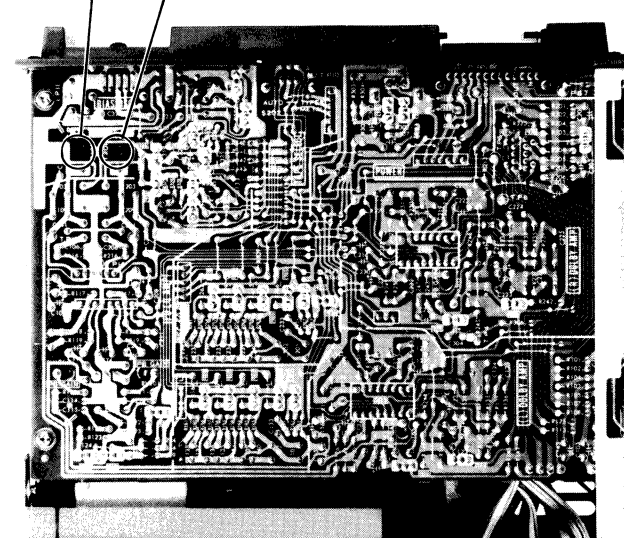


Adjust CT101 (L-CH), CT201 (R-CH) so that the measurement point level of 10kHz signal in 0dB relative to that of 1kHz.

Adjustment Location: audio board

Record Bias adjustment

CT101 CT201
(L-CH) (R-CH)



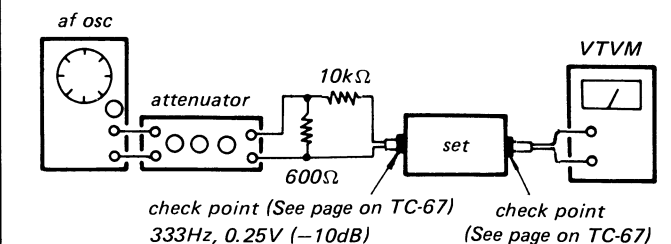
Record Level Adjustment

Setting:

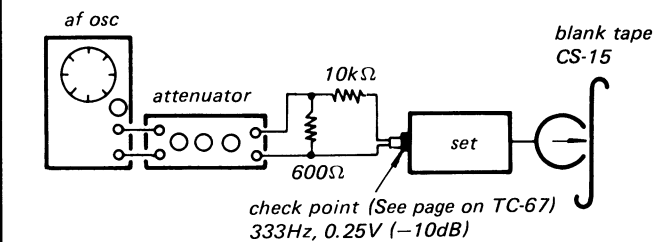
DOLBY NR switch: OFF
TAPE SELECTOR switch: AUTO
ISS switch: 1

Procedure:

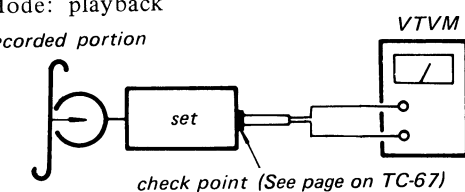
1. Mode: record



2. Mode: record

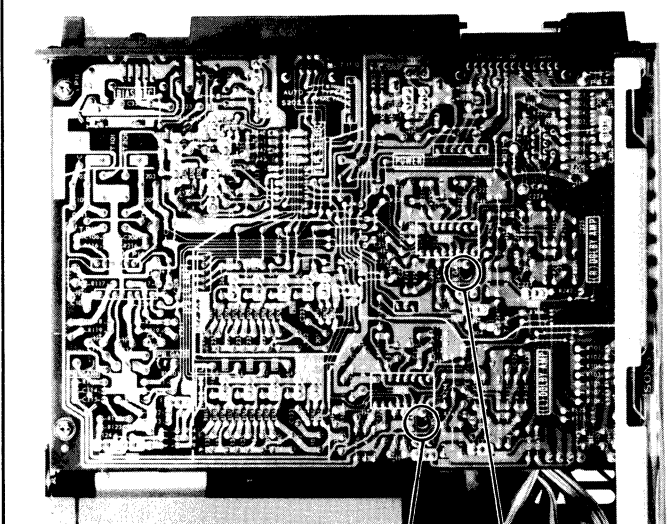


3. Mode: playback
recorded portion



4. Adjust RV102 (L-CH) and RV202 (R-CH) so that playback output level of step 3 is 0 ±0.5dB relative to that of step 1.

Adjustment Location: audio board



RV102 RV202
(L-CH) (R-CH)
record level adjustment

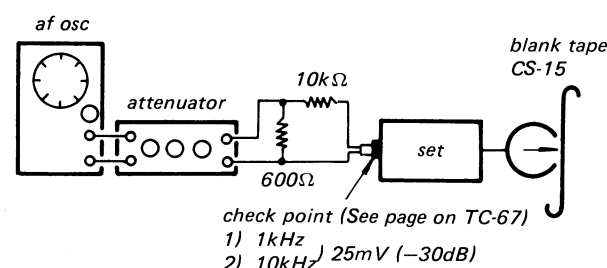
Record Bias Adjustment

Setting:

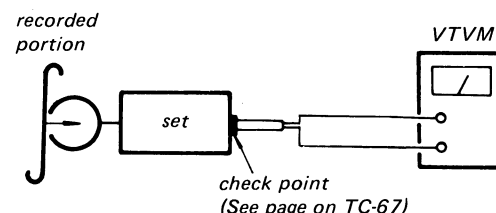
DOLBY NR switch: OFF
TAPE SELECTOR switch: AUTO
ISS switch: 1

Procedure:

1. Mode: record



2. Mode: playback

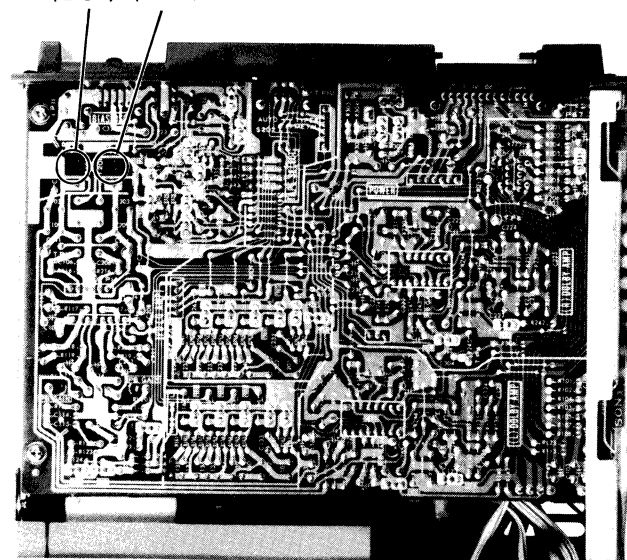


Adjust CT101 (L-CH), CT201 (R-CH) so that the measurement point level of 10kHz signal in 0dB relative to that of 1kHz.

Adjustment Location: audio board

Record Bias adjustment

CT101 (L-CH)
CT201 (R-CH)



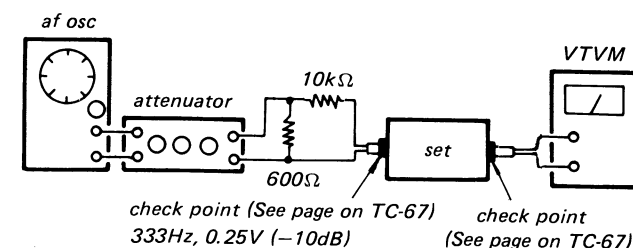
Record Level Adjustment

Setting:

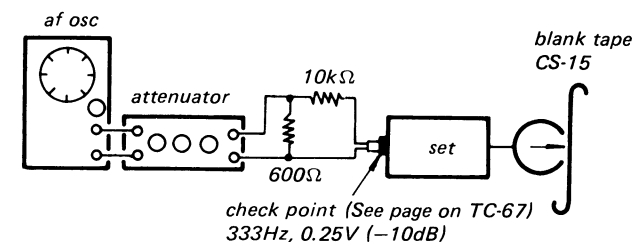
DOLBY NR switch: OFF
TAPE SELECTOR switch: AUTO
ISS switch: 1

Procedure:

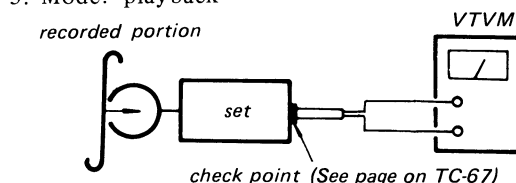
1. Mode: record



2. Mode: record

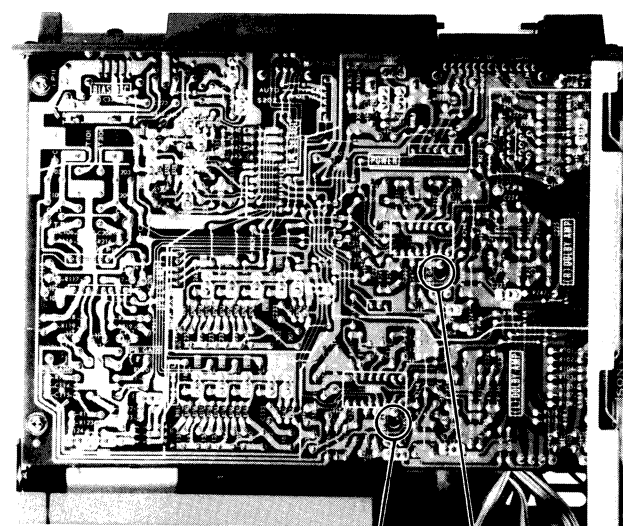


3. Mode: playback



4. Adjust RV102 (L-CH) and RV202 (R-CH) so that playback output level of step 3 is 0 ±0.5dB relative to that of step 1.

Adjustment Location: audio board

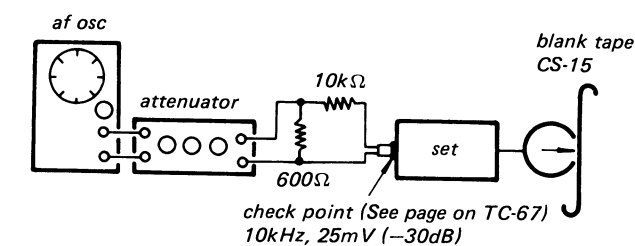


RV102 (L-CH)
RV202 (R-CH)
record level adjustment

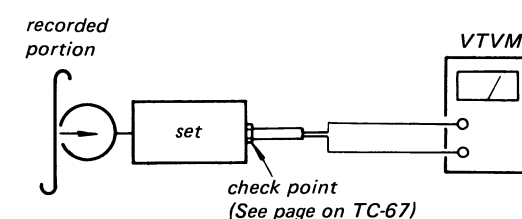
Reverse Playback Head Azimuth Adjustment

Procedure:

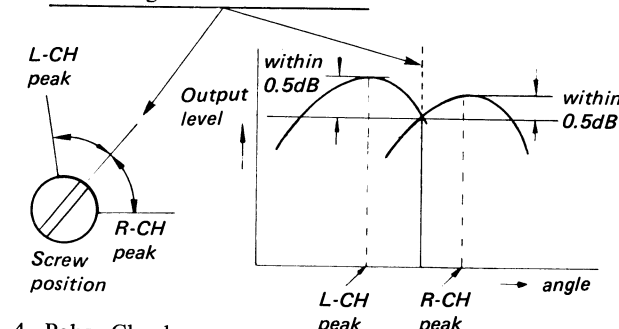
1. Mode: record



2. Mode: reverse playback

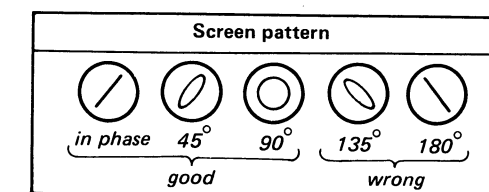
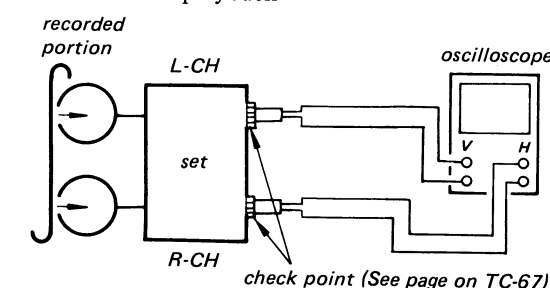


3. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5dB.



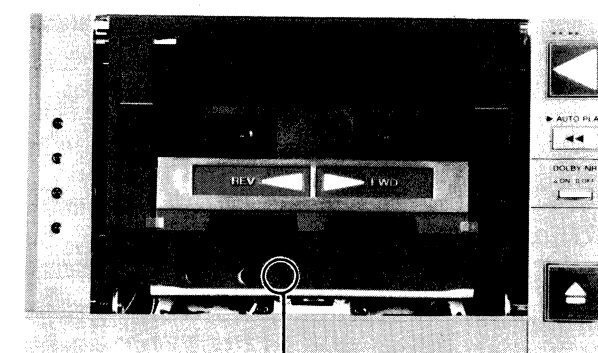
4. Phase Check

Mode: reverse playback



5. After the adjustment, lock the screws with locking compound.

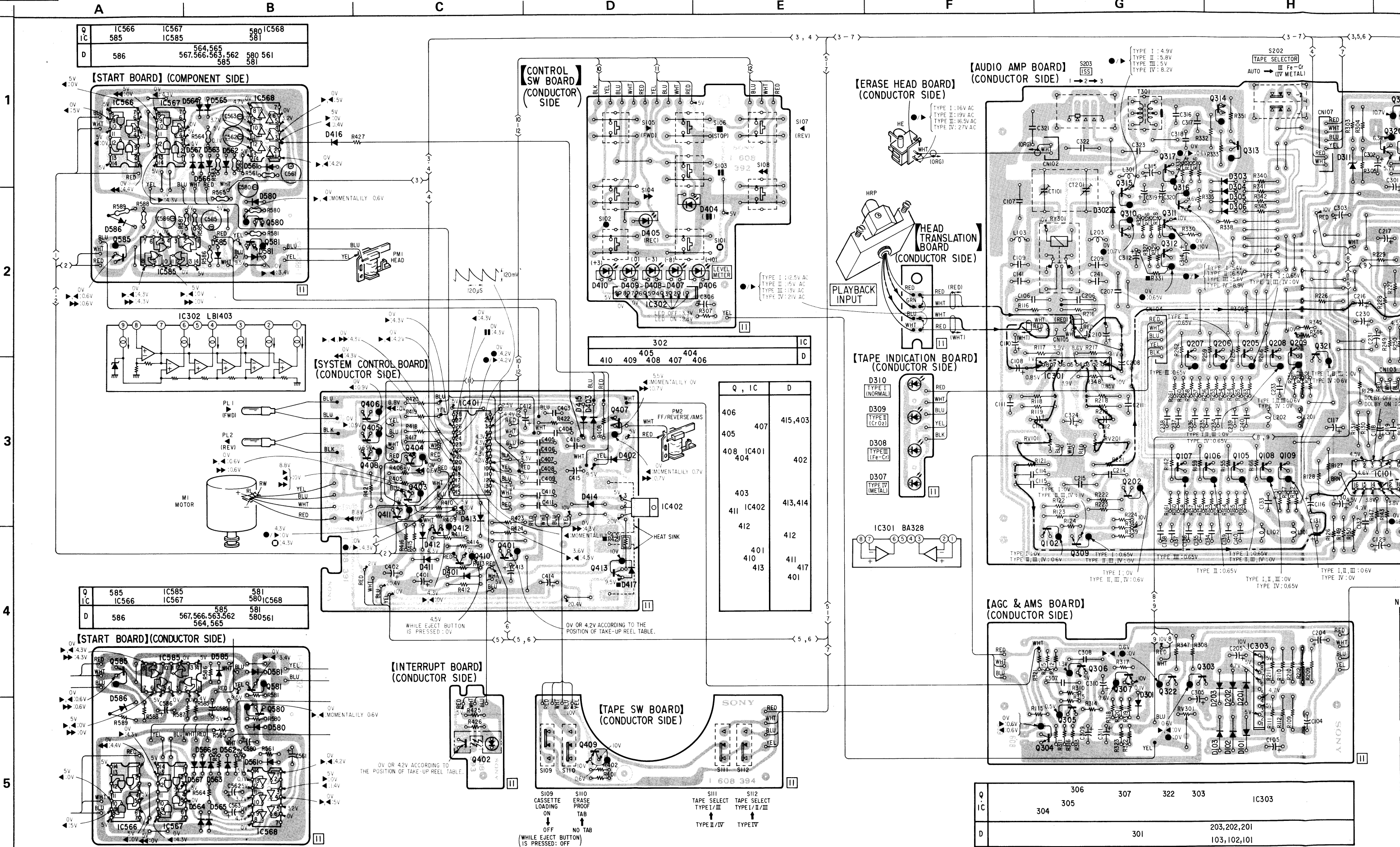
Adjustment Location:



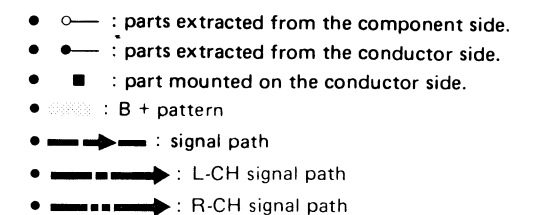
Adjustment screw

6-1. MOUNTING DIAGRAM

• See page TC-81 for Semiconductor lead layout.



K

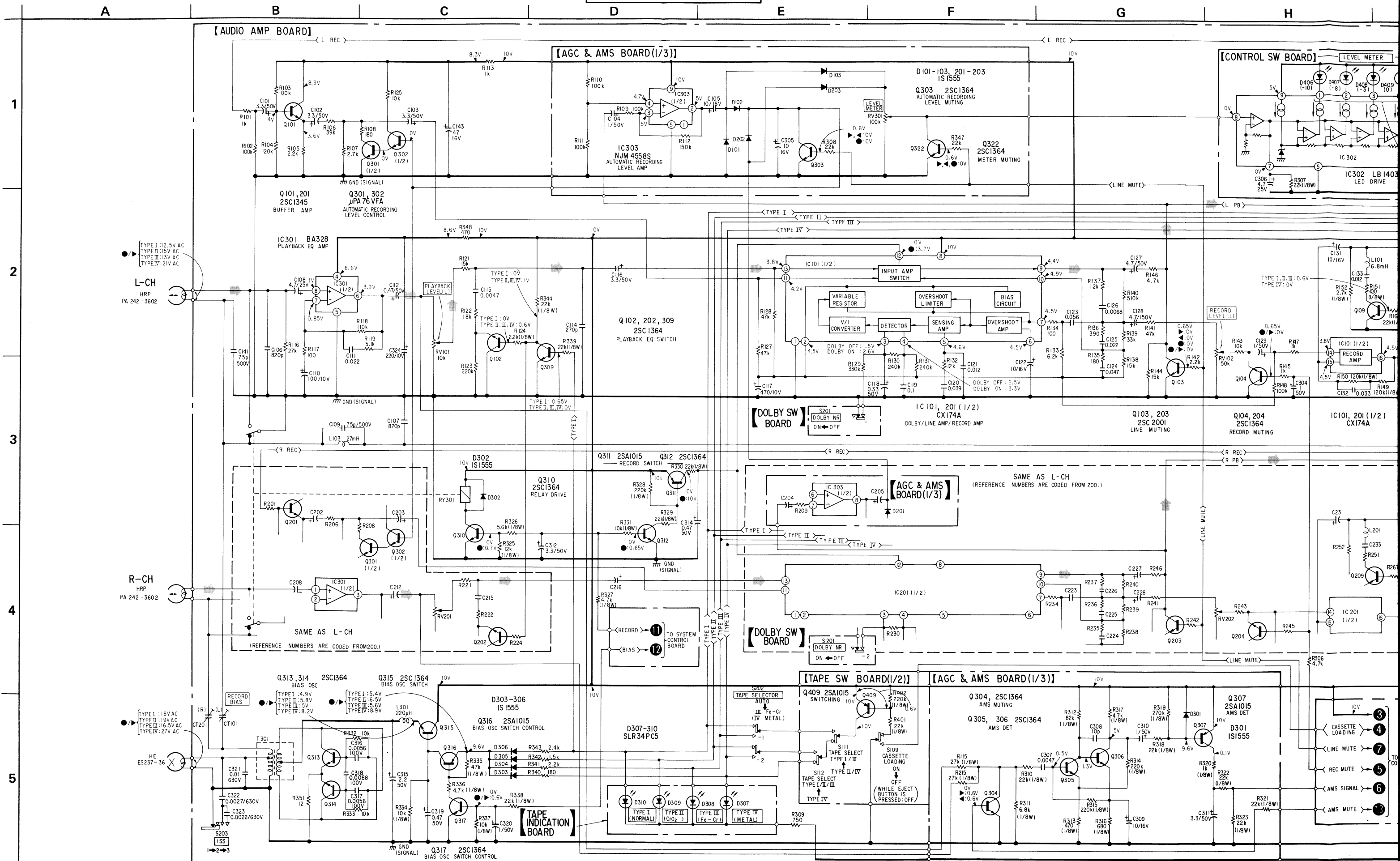


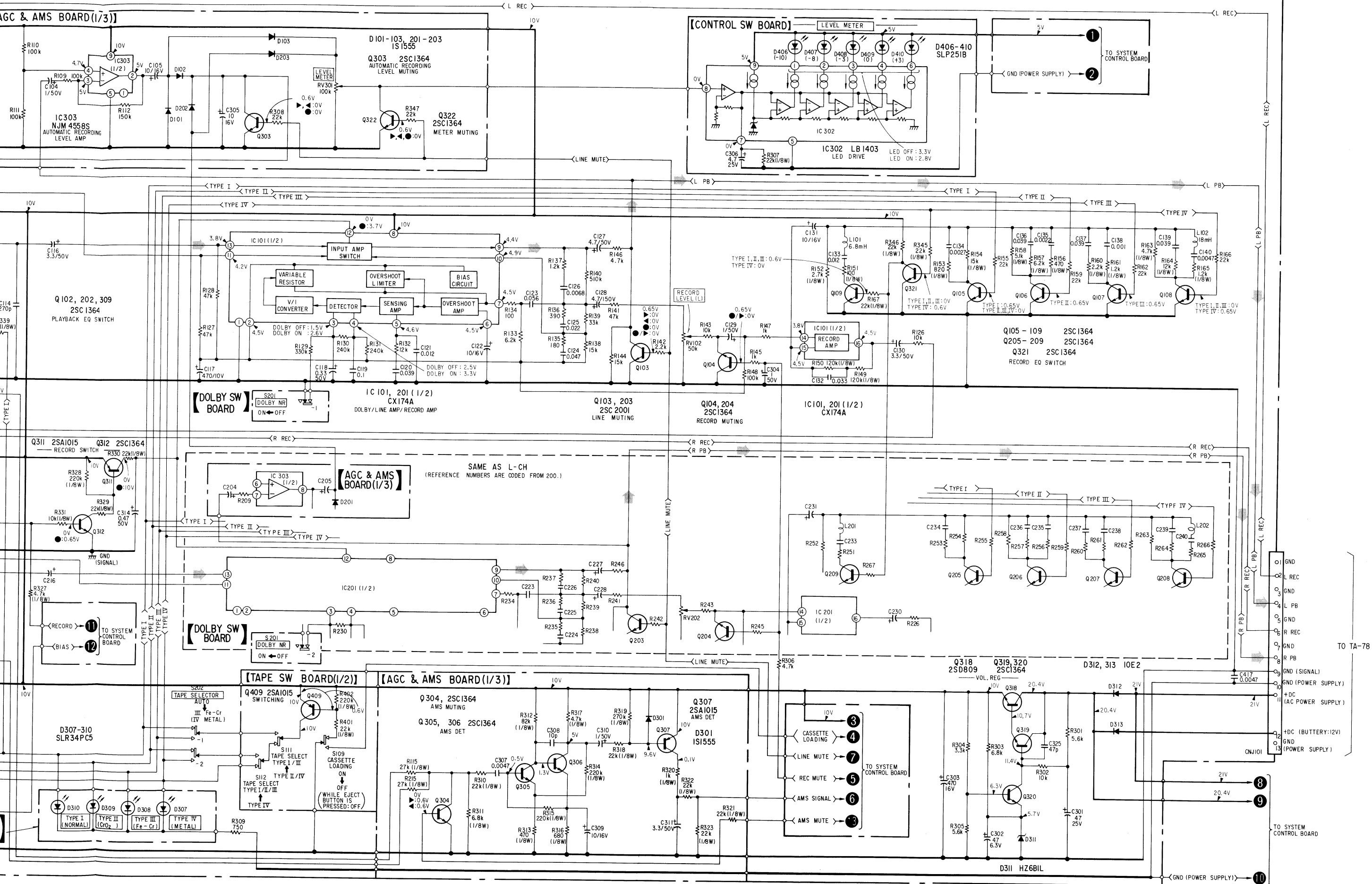
6-2. SCHEMATIC DIAGRAM
— AUDIO AMP SECTION —

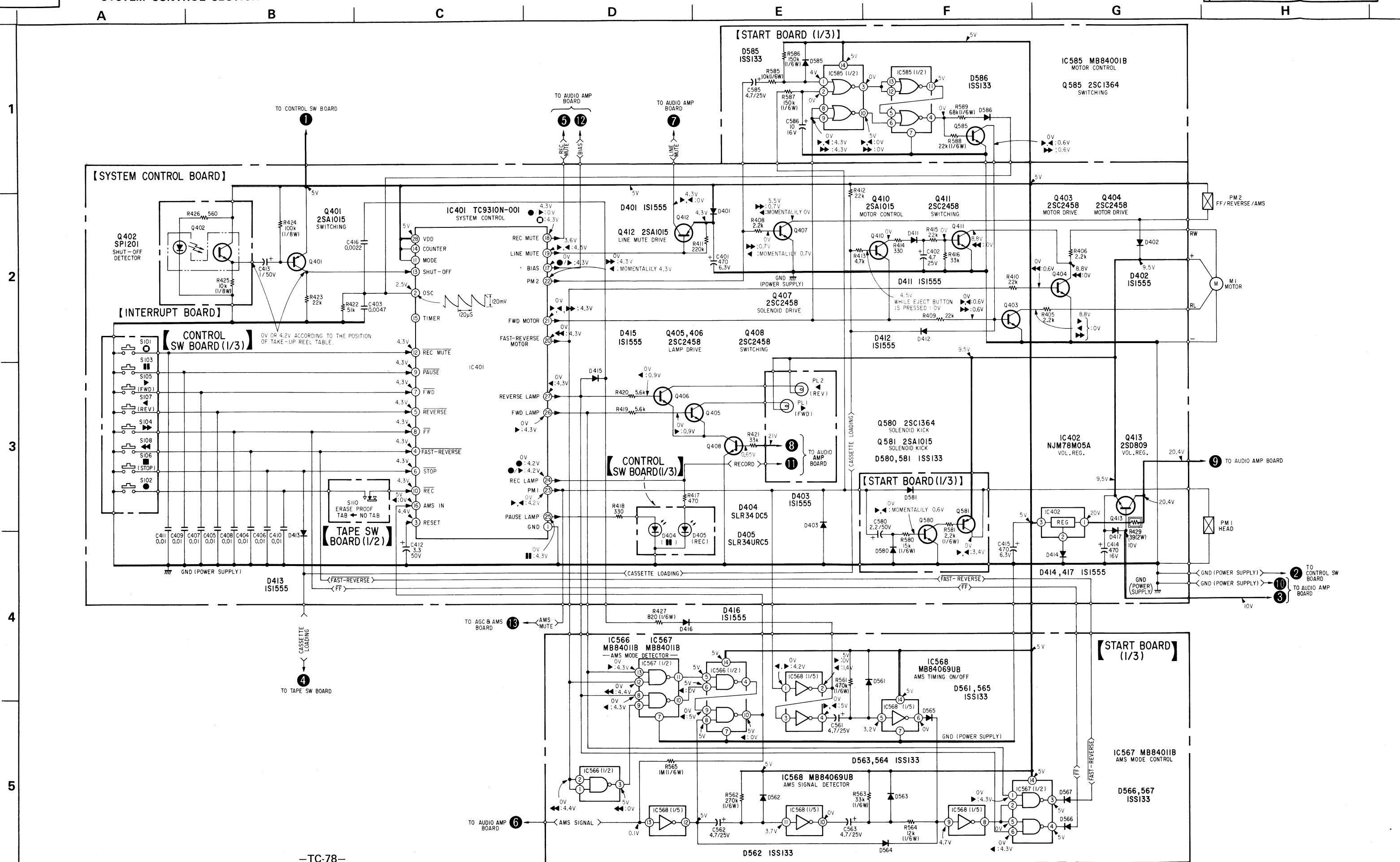
• See page TC-80 for Notes.

FH-7
TC-78

FH-7
TC-78

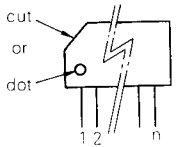
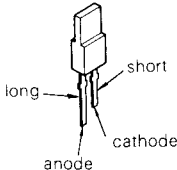
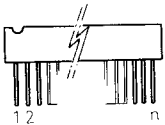
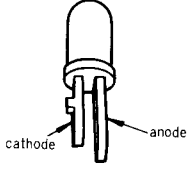
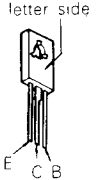
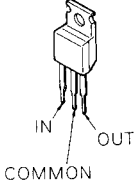
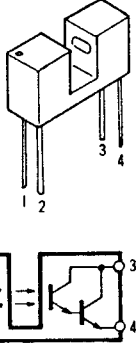
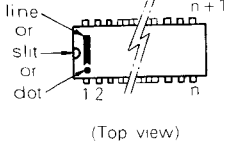
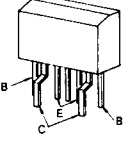
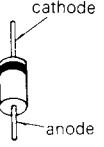
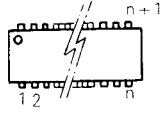






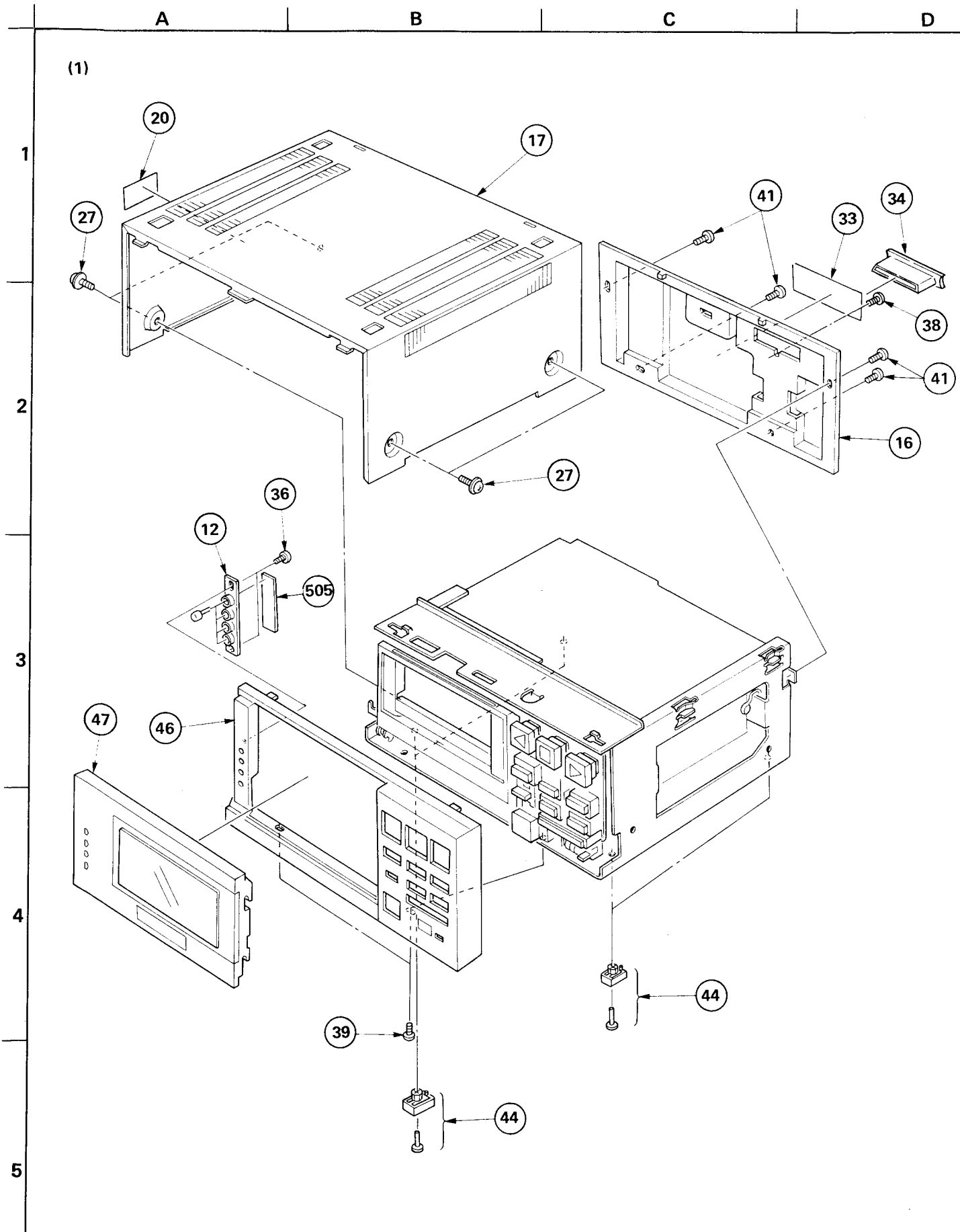


SEMICONDUCTOR LEAD LAYOUTS

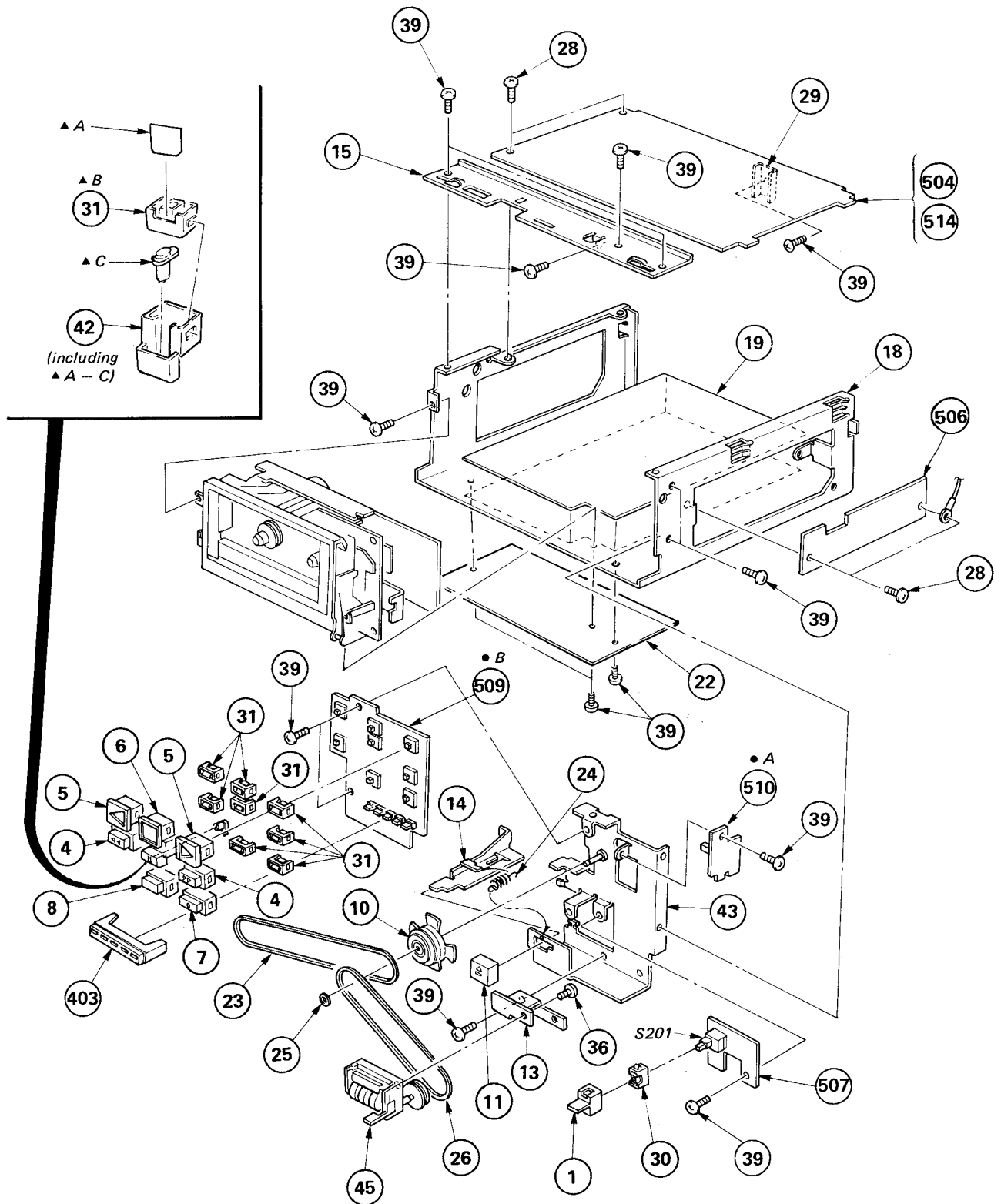
2SA1015 2SC945 2SC1345 2SC1364 2SC2001 	LB1403 NJM4558S 	SLP251B 
2SC2458 	BA328 	SLR34DC5 SLR34PC5 SLR34URC5 
2SD809 	NJM78M05A 	SPI201 
CX174A MB84069UB TC9310N-001 μPD4011C  (Top view)	μPA76V-FA 	10E2 1S1555 1SS133 HZ6B1L 
MB84001B MB84011B  (Top view)		

SECTION 7 EXPLODED VIEWS AND PARTS LIST

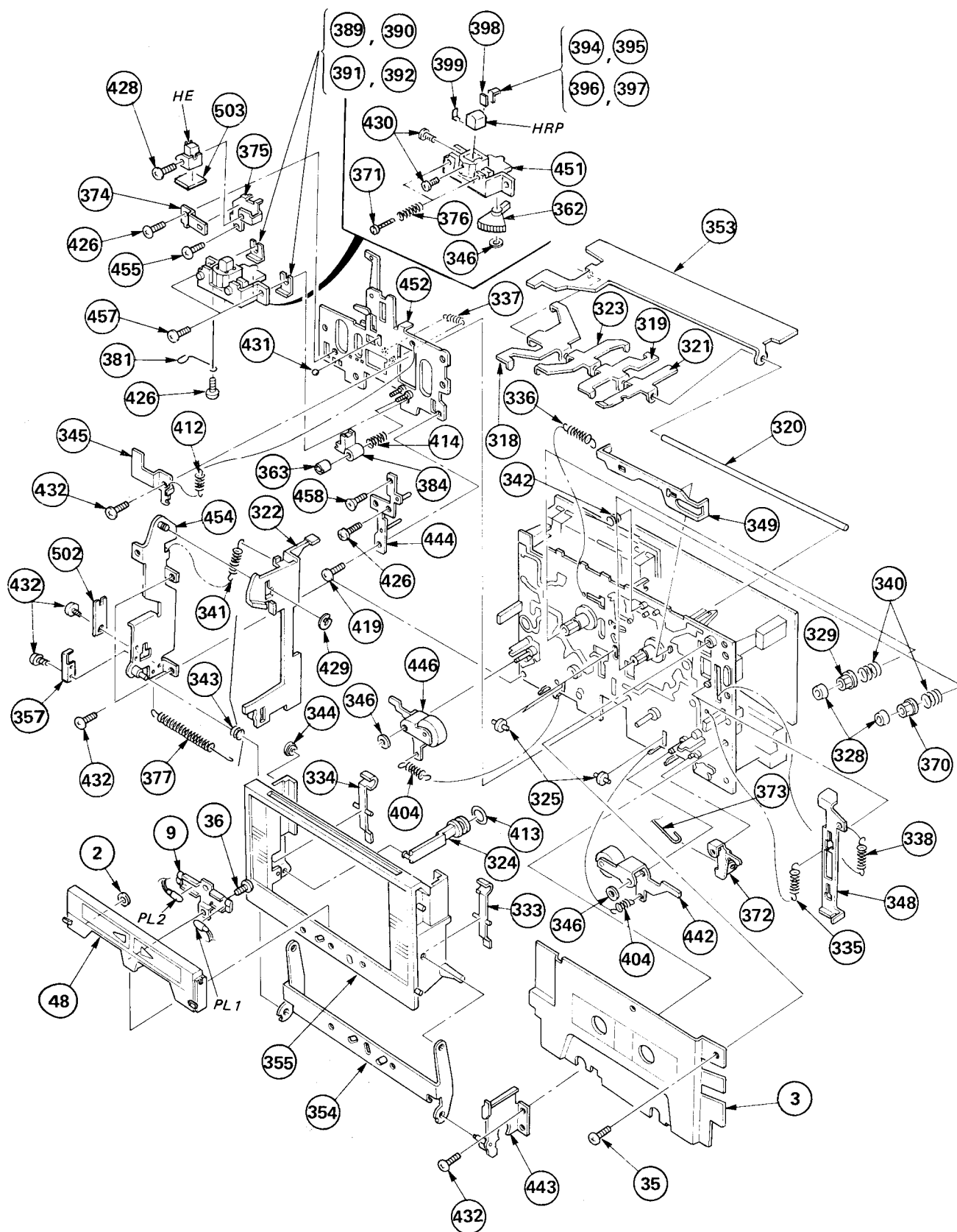
7-1. EXPLODED VIEWS

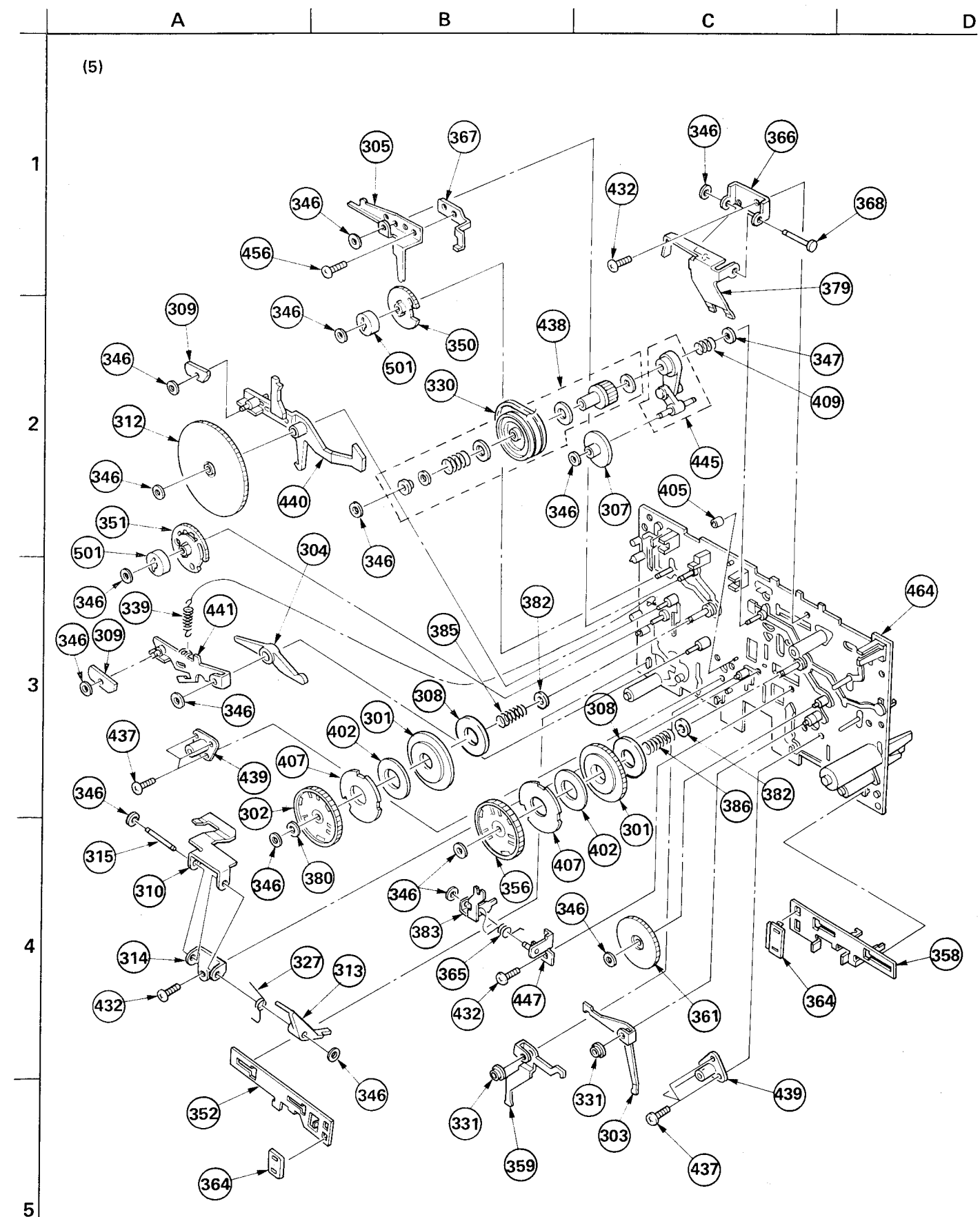
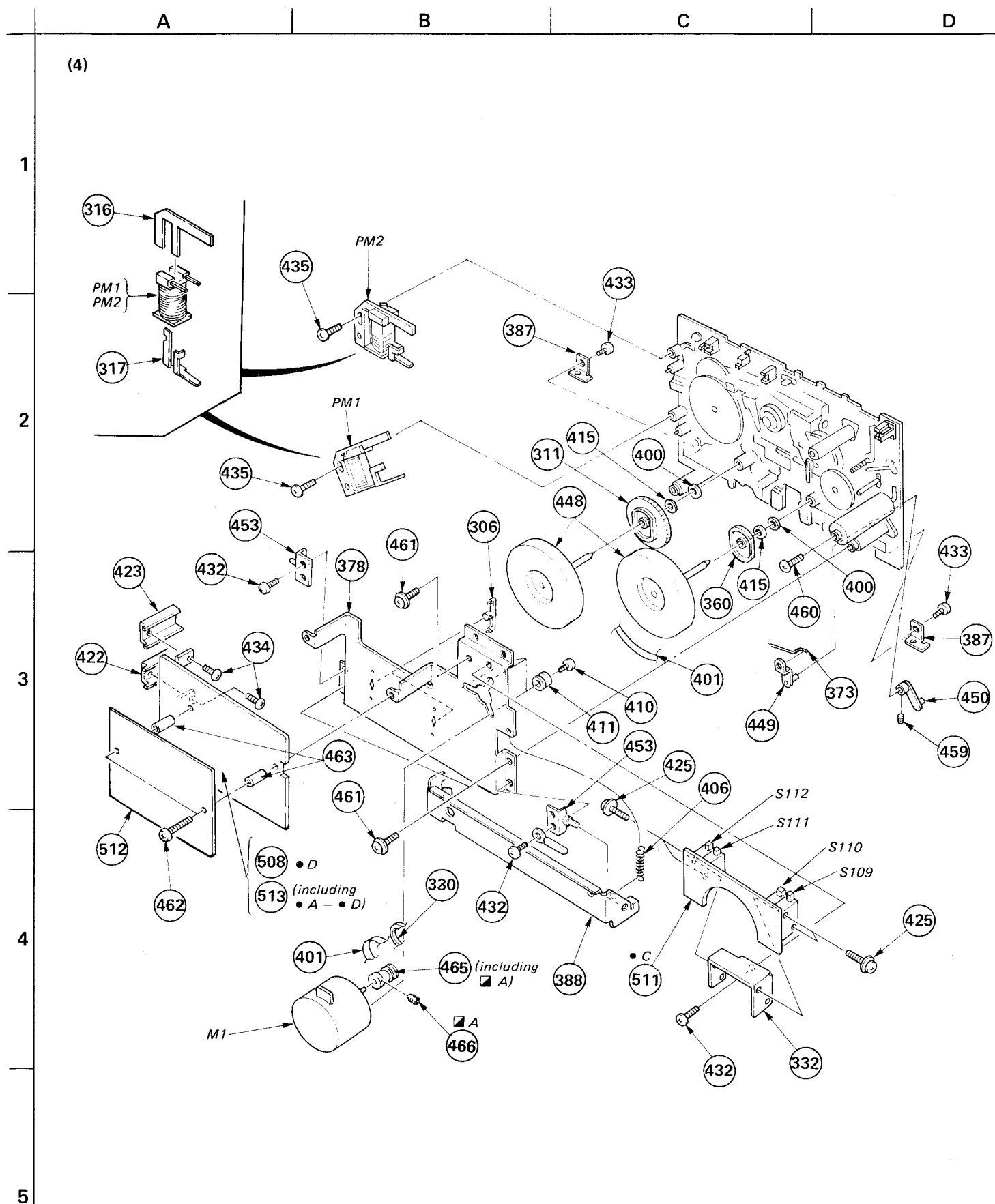


(2)



(3)





7-2. PARTS LIST

GENERAL SECTION

No.	Part No.	Description
1	3-302-902-00	KNOB, PUSH
2	3-307-390-00	BUSHING, LOADING SPRING
3	3-309-101-00	PLATE (A), ORNAMENTAL, MD
4	3-309-102-00	BUTTON, REW-FF
5	3-309-106-00	BUTTON, REV-FWD
6	3-309-107-00	BUTTON, STOP
7	3-309-111-00	BUTTON, REC
8	3-309-113-00	BUTTON, REC MUTE
9	3-309-115-00	HOLDER, LAMP
10	3-309-116-00	PULLEY, MIDWAY
11	3-309-117-00	BUTTON, EJECT
12	3-309-118-00	HOLDER, TS-LED
13	▲;3-309-119-00	BRACKET, COUNTER
14	▲;3-309-120-00	SLIDER, EJECT
15	▲;3-309-128-00	JOINT
16	3-309-129-00	PLATE, JACK
17	3-309-130-00	CASE
18	▲;3-309-132-00	CHASSIS
19	▲;3-309-133-00	PLATE, SHIELD
20	3-309-134-00	LABEL, MODEL NUMBER (W)
21	.....	
22	▲;3-309-137-00	PLATE, SHIELD
23	3-530-181-XX	BELT, COUNTER
24	▲;3-542-475-00	SPRING, TENSION
25	3-558-708-01	WASHER, STOPPER
26	3-533-363-00	BELT (A), COUNTER
27	3-703-354-11	SCREW (OS), CASE, CLAW
28	3-703-486-00	+PTTW 3X5
29	▲;4-861-002-11	HEAT SINK
30	4-864-307-00	RING
31	4-881-725-00	RING (TACT), FLEXIBLE
32	.....	
33	4-884-865-00	(AEP,UK)...LABEL, MODEL NUMBER (AEP/UK)
33	4-884-866-00	(E).....LABEL, MODEL NUMBER (E1/E2)
34	4-884-874-00	COVER, CONNECTOR (A)
35	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT
36	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S
37	.....	
38	7-685-547-19	SCREW +BTP 3X10 TYPE2 N-S
39	7-685-871-01	SCREW +BVTT 3X6 (S)
40	.....	
41	7-685-871-09	SCREW +BVTT 3X6 (S)
42	A-2325-013-A	BUTTON ASSY, PAUSE
43	▲;X-3309-101-0	CHASSIS ASSY, AMPLIFIER
44	X-4884-801-0	FOOT ASSY, RUBBER
45	1-548-563-31	COUNTER, TAPE

GENERAL SECTION

No.	Part No.	Description
46	X-3309-103-0	PANEL ASSY, FRONT
47	X-3309-104-0	LID ASSY, CASSETTE
48	X-3309-102-0	PLATE ASSY, ORNAMENTAL, HEAD

MECHANISM SECTION

No.	Part No.	Description
301	3-307-302-00	MAGNET, REEL TABLE
302	3-307-305-02	GEAR (T), REEL
303	▲;3-307-306-00	LEVER, SELECT, REVERSE
304	3-307-307-00	LEVER, FWD
305	▲;3-307-308-00	LEVER, FF
306	3-307-309-00	RETAINER (A), THRUST
307	3-307-312-00	GEAR, FR
308	3-307-313-00	PLATE, YOKE
309	3-307-315-00	ARBOR, MOVABLE
310	3-307-319-00	RETAINER, TAKE-UP GEAR
311	3-307-320-00	GEAR (T), PINION
312	3-307-321-00	GEAR (T), DRIVING
313	3-307-328-00	LEVER, TAKE-UP SELECTION
314	▲;3-307-329-00	PLATE, FULCRUM, SELECTION LEVER
315	3-307-330-00	PIN, FULCRUM PLATE
316	3-307-332-00	ARBOR, FIXED
317	3-307-333-00	ARBOR, TRIGGER
318	▲;3-307-337-00	LEVER, REC DETECTION
319	▲;3-307-338-00	LEVER, METAL DETECTION
320	▲;3-307-339-00	SHAFT, DETECTION LEVER
321	▲;3-307-344-00	LEVER, HALF RETAINER
322	3-307-345-00	SLIDER, EJECT
323	▲;3-307-346-00	LEVER, DETECTION
324	3-307-347-00	PISTON
325	3-307-348-00	ROLLER
326	.....	
327	3-307-355-00	SPRING
328	3-307-362-00	CAP, REEL
329	3-307-363-00	CLAW (N), REEL
330	3-307-366-00	BELT, FAST FORWARD

MECHANISM SECTION

No.	Part No.	Description
331	3-307-367-00	BUSHING, SELECT LEVER
332	▲;3-307-370-00	BRACKET, SWITCH
333	3-307-371-00	SPRING (LEFT)
334	3-307-372-00	SPRING (RIGHT)
335	3-307-373-00	SPRING, TENSION
336	3-307-374-00	SPRING, TENSION
337	3-307-375-00	SPRING, TENSION
338	3-307-377-00	SPRING, TENSION
339	3-307-378-00	SPRING, TENSION
340	3-307-380-00	SPRING, COMPRESSION
341	3-307-381-00	SPRING, TENSION
342	3-307-382-00	SPRING
343	3-307-383-00	SPRING
344	3-307-390-00	BUSHING, LOADING SPRING
345	3-307-391-00	SPRING
346	3-307-394-00	RETAINER (B), THRUST
347	3-307-395-00	RETAINER, SPRING
348	3-307-397-00	SLIDER, PAUSE
349	▲;3-307-399-00	SLIDER, MODE
350	3-307-401-00	GEAR, FF CAM
351	3-307-402-00	GEAR, FWD CAM
352	▲;3-307-403-00	SLIDER, FWD
353	▲;3-307-404-00	RETAINER, DETECTION SWITCH
354	▲;3-307-405-00	PLATE, FULCRUM, CASSETTE HOLDER
355	3-307-407-00	HOLDER, CASSETTE
356	3-307-412-00	GEAR, TAKE-UP REEL
357	3-307-416-00	STOPPER, LOADING
358	▲;3-307-420-00	SLIDER, REVERSE
359	▲;3-307-421-00	LEVER (R), FWD SELECTION
360	3-307-422-00	GEAR (S), PINION
361	3-307-423-00	GEAR (S), DRIVING
362	3-307-427-00	GEAR, HEAD, ROTARY
363	3-307-435-00	NUT, ADJUSTMENT, TAPE GUIDE
364	▲;3-307-437-00	BLOCK, HEAD SELECTION
365	3-307-441-00	SPRING
366	▲;3-307-443-00	BRACKET, RETAINER, SUPPLY GEAR
367	▲;3-307-444-00	LEVER, FF ASSIST
368	▲;3-307-445-00	SHAFT, RETAINER, SUPPLY GEAR
369	.....	
370	3-307-447-00	CLAW (R), REEL
371	3-307-448-00	SCREW, ADJUSTMENT, AZIMUTH
372	▲;3-307-449-00	LEVER (R), PAUSE
373	▲;3-307-450-00	ROD, PULL, PAUSE
374	3-307-457-00	SPRING
375	3-307-458-00	PLATE (L), ADJUSTMENT, HEAD

MECHANISM SECTION

No.	Part No.	Description
376	3-307-460-00	SPRING, COMPRESSION
377	3-307-461-00	SPRING, TENSION
378	▲;3-307-462-00	RETAINER (R), THRUST
379	▲;3-307-464-00	RETAINER, SUPPLY GEAR
380	3-307-465-00	RETAINER, TAKE-UP
381	▲;3-307-466-00	CLAMP
382	▲;3-307-467-00	RETAINER, SPRING
383	3-307-469-00	LEVER, SELECTION, SUPPLY
384	3-307-470-00	GUIDE (L), TAPE
385	3-307-471-00	SPRING, COMPRESSION
386	3-307-471-11	SPRING, COMPRESSION
387	▲;3-307-472-00	BRACKET, MD
388	▲;3-307-474-00	LEVER (R2), EJECT
389	3-307-477-01	SEAM (A), HEAD ADJUSTMENT (t=0.1)
390	3-307-477-11	SEAM (A), HEAD ADJUSTMENT (t=0.2)
391	3-307-477-21	SEAM (A), HEAD ADJUSTMENT (t=0.3)
392	3-307-477-31	SEAM (A), HEAD ADJUSTMENT (t=0.4)
393	.....	
394	3-307-479-01	SEAM (B), HEAD ADJUSTMENT (t=0.1)
395	3-307-479-11	SEAM (B), HEAD ADJUSTMENT (t=0.2)
396	3-307-479-21	SEAM (B), HEAD ADJUSTMENT (t=0.3)
397	3-307-479-31	SEAM (B), HEAD ADJUSTMENT (t=0.4)
398	3-307-480-00	SEAM, HEAD (t=0.05)
399	3-307-481-00	BASE, HEAD
400	3-307-482-00	WASHER, LUMILER
401	3-307-483-00	BELT (R), CAPSTAN
402	3-307-958-00	WASHER, POLYETHYLENE
403	3-309-105-00	HOLDER, REC-LED
404	3-527-189-00	SPRING, TENSION
405	3-538-051-00	RUBBER, BRAKE
406	3-578-393-00	SPRING, TENSION
407	3-561-827-00	PLATE (A), HYSTERESIS
408	.....	
409	3-566-903-00	SPRING
410	3-570-027-00	SCREW, MOTOR
411	3-570-118-00	CUSHION, MOTOR
412	3-570-914-00	SPRING, TENSION
413	3-575-392-00	RING, PISTON
414	3-644-718-00	SPRING, COMPRESSION
415	3-701-438-11	WASHER, 2.5
416	.....	
417	.....	
418	.....	
419	3-701-467-00	SCREW, LOCK
420	.....	

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (▲-▲▲-▲▲-XX or ▲-▲▲-▲▲-X) may be different from those used in the set.

CAPACITORS:

- All capacitors are in μF . Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF: μF , PF: μpF .

RESISTORS:

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F: nonflammable

COILS

- MMH: mH, UH: μH

SEMICONDUCTORS

- In each case, U: μ , for example: UA....: μA ..., UPA....: μPA ..., UPC....: μPC , UPD....: μPD ...

NOTE:

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- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (▲-▲▲-▲▲-XX or ▲-▲▲-▲▲-X) may be different from those used in the set.

CAPACITORS:

- All capacitors are in μF . Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF: μF , PF: μpF .

RESISTORS:

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F: nonflammable

COILS

- MMH: mH, UH: μH

MECHANISM SECTION

No.	Part No.	Description
421	.....	
422	♣;4-861-002-11	HEAT SINK
423	♣;4-866-647-00	HEAT SINK
424	.....	
425	7-621-760-05	+PSW, 2.6X16
426	7-621-772-00	SCREW +B 2X3
427	.....	
428	7-621-772-40	SCREW +B 2X8
429	7-624-105-04	STOP RING 2.3, TYPE -E
430	7-627-552-07	SCREW, PRECISION +P 1.7X2.5
431	7-671-111-11	STEEL, BOUL 1.5MM
432	7-685-860-01	SCREW +BVTT 2.6X4 (S)
433	7-685-870-01	SCREW +BVTT 3X5 (S)
434	7-685-871-01	SCREW +BVTT 3X6 (S)
435	7-687-204-21	TOTSU PTPWH 2X6 NON-SLIT, TYPE2
436	.....	
437	7-687-701-39	SCREW, TOTSU BTT 2.6X4
438	A-2142-022-A	PULLEY ASSY, FR
439	X-3307-303-0	BEARING ASSY, CAPSTAN
440	X-3307-304-0	LEVER ASSY, FF LOCK
441	♣;X-3307-305-0	LEVER ASSY, FWD LOCK
442	X-3307-307-0	PINCH ROLLER (N) ASSY
443	♣;X-3307-310-0	PLATE (RIGHT) ASSY, SIDE
444	X-3307-311-2	PLATE ASSY (AMS), ADJUSTMENT
445	X-3307-312-0	LEVER ASSY, FR
446	X-3307-316-0	PINCH ROLLER (R) ASSY
447	♣;X-3307-317-0	PLATE ASSY, FULCRUM, LEVER
448	X-3307-318-0	FLYWHEEL (R)-1 ASSY
449	♣;X-3307-319-0	ARM (A) ASSY, PAUSE
450	♣;X-3307-320-0	ARM (B) ASSY, PAUSE
451	X-3307-321-2	HOLDER ASSY, HEAD
452	X-3307-323-0	CHASSIS (R) ASSY, HEAD
453	♣;X-3307-326-0	PLATE (R2) ASSY, FULCRUM, EJECT
454	♣;X-3307-327-0	PLATE (L2) ASSY, SIDE
455	7-621-255-20	SCREW +P2X4
456	7-621-259-15	SCREW +P2.6X3
457	7-621-259-35	SCREW +P2.6X5
458	7-621-555-30	SCREW +K2X5
459	7-621-731-08	SET SCREW 2X2.5
460	7-685-864-01	SCREW +BVTT 2.6X4
461	7-687-246-21	SCREW, TOTSU, PTPWH 3X8, TYPE2
462	7-685-876-01	SCREW +BVTT 3X16
463	♣;3-002-407-11	COLLAR
464	♣;X-3307-331-1	CHASSIS ASSY, MECHANISM
465	X-3307-329-0	PULLEY (R) ASSY, MOTOR
466	7-621-732-08	SET SCREW 2X3

ELECTRICAL PARTS

Ref.No.	Part No.	Description
501	1-452-202-00	MAGNET
502	♣;1-608-170-00	PC BOARD, HEAD TRANSLATION
503	♣;1-608-268-00	PC BOARD, ERASE HEAD
504	♣;1-608-387-00	PC BOARD, AUDIO AMP
505	♣;1-608-388-00	PC BOARD, TAPE INDICATION
506	♣;1-608-389-00	PC BOARD, AGC & AMS
507	♣;1-608-390-00	PC BOARD, DOLBY SW
508	♣;1-608-391-00	PC BOARD, SYSTEM CONTROL
509	♣;1-608-392-00	PC BOARD, CONTROL SW
510	♣;1-608-393-00	PC BOARD, INTERRUPT
511	♣;1-608-394-00	PC BOARD, TAPE SW
512	♣;1-608-732-00	PC BOARD, START
513	♣;A-2019-148-A	MOUNTED PCB, SYSTEM CONTROL
514	♣;A-2056-173-A	MOUNTED PCB, AUDIO AMP
C101	1-123-354-00	ELECT 3.3MF 20% 50V
C102	1-123-354-00	ELECT 3.3MF 20% 50V
C103	1-123-354-00	ELECT 3.3MF 20% 50V
C104	1-123-380-00	ELECT 1MF 20% 50V
C105	1-123-356-00	ELECT 10MF 20% 16V
C106	1-161-322-00	CERAMIC 820PF 10% 50V
C107	1-161-322-00	CERAMIC 820PF 10% 50V
C108	1-123-369-00	ELECT 4.7MF 20% 25V
C109	1-107-167-00	MICA 75PF 5% 500V
C110	1-123-307-00	ELECT 100MF 20% 10V
C111	1-130-624-00	FILM 0.022MF 5% 50V
C112	1-123-351-00	ELECT 0.47MF 20% 50V
C114	1-161-316-00	CERAMIC 270PF 10% 50V
C115	1-161-377-00	CERAMIC 0.0047MF 20% 50V
C116	1-123-354-00	ELECT 3.3MF 20% 50V
C117	1-123-310-00	ELECT 470MF 20% 10V
C118	1-123-286-00	ELECT 0.33MF 20% 50V
C119	1-130-632-00	FILM 0.1MF 5% 50V
C120	1-130-627-00	FILM 0.039MF 5% 50V
C121	1-130-621-00	FILM 0.012MF 5% 50V
C122	1-123-356-00	ELECT 10MF 20% 16V
C123	1-130-629-00	FILM 0.056MF 5% 50V
C124	1-130-628-00	FILM 0.047MF 5% 50V
C125	1-130-624-00	FILM 0.022MF 5% 50V
C126	1-108-575-00	MYLAR 0.0068MF 5% 50V
C127	1-123-369-00	ELECT 4.7MF 20% 50V
C128	1-123-369-00	ELECT 4.7MF 20% 50V
C129	1-123-380-00	ELECT 1MF 20% 50V
C130	1-123-354-00	ELECT 3.3MF 20% 50V
C131	1-123-356-00	ELECT 10MF 20% 16V

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "♣" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF:μF, PF:μF.

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

- In each case, U : μ, for example:
 UA...: μA..., UPA...: μPA..., UPC...: μPC,
 UPD...: μPD...

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C132	1-130-626-00	FILM	0.033MF	5%	50V
C133	1-130-621-00	FILM	0.012MF	5%	50V
C134	1-108-565-00	MYLAR	0.0027MF	5%	50V
C135	1-108-563-00	MYLAR	0.0022MF	5%	50V
C136	1-130-627-00	FILM	0.039MF	5%	50V
C137	1-130-627-00	FILM	0.039MF	5%	50V
C138	1-108-555-00	MYLAR	0.001MF	5%	50V
C139	1-130-627-00	FILM	0.039MF	5%	50V
C140	1-108-571-00	MYLAR	0.0047MF	5%	50V
C141	1-107-167-00	MICA	75PF	5%	500V
C143	1-123-319-00	ELECT	47MF	20%	16V
C201	1-123-354-00	ELECT	3.3MF	20%	50V
C202	1-123-354-00	ELECT	3.3MF	20%	50V
C203	1-123-354-00	ELECT	3.3MF	20%	50V
C204	1-123-380-00	ELECT	1MF	20%	50V
C205	1-123-356-00	ELECT	10MF	20%	16V
C206	1-161-322-00	CERAMIC	820PF	10%	50V
C207	1-161-322-00	CERAMIC	820PF	10%	50V
C208	1-123-369-00	ELECT	4.7MF	20%	25V
C209	1-107-167-00	MICA	75PF	5%	500V
C210	1-123-307-00	ELECT	100MF	20%	10V
C211	1-130-624-00	FILM	0.022MF	5%	50V
C212	1-123-351-00	ELECT	0.47MF	20%	50V
C214	1-161-316-00	CERAMIC	270PF	10%	50V
C215	1-161-377-00	CERAMIC	0.0047MF	20%	50V
C216	1-123-354-00	ELECT	3.3MF	20%	50V
C217	1-123-310-00	ELECT	470MF	20%	10V
C218	1-123-286-00	ELECT	0.33MF	20%	50V
C219	1-130-632-00	FILM	0.1MF	5%	50V
C220	1-130-627-00	FILM	0.039MF	5%	50V
C221	1-130-621-00	FILM	0.012MF	5%	50V
C222	1-123-356-00	ELECT	10MF	20%	16V
C223	1-130-629-00	FILM	0.056MF	5%	50V
C224	1-130-628-00	FILM	0.047MF	5%	50V
C225	1-130-624-00	FILM	0.022MF	5%	50V
C226	1-108-575-00	MYLAR	0.0068MF	5%	50V
C227	1-123-369-00	ELECT	4.7MF	20%	50V
C228	1-123-369-00	ELECT	4.7MF	20%	50V
C229	1-123-380-00	ELECT	1MF	20%	50V
C230	1-123-354-00	ELECT	3.3MF	20%	50V
C231	1-123-356-00	ELECT	10MF	20%	16V
C232	1-130-626-00	FILM	0.033MF	5%	50V
C233	1-130-621-00	FILM	0.012MF	5%	50V
C234	1-108-565-00	MYLAR	0.0027MF	5%	50V
C235	1-108-563-00	MYLAR	0.0022MF	5%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C236	1-130-627-00	FILM	0.039MF	5%	50V
C237	1-130-627-00	FILM	0.039MF	5%	50V
C238	1-108-555-00	MYLAR	0.001MF	5%	50V
C239	1-130-627-00	FILM	0.039MF	5%	50V
C240	1-108-571-00	MYLAR	0.0047MF	5%	50V
C241	1-107-167-00	MICA	75PF	5%	500V
C243	1-123-319-00	ELECT	47MF	20%	16V
C301	1-123-332-00	ELECT	47MF	20%	25V
C302	1-123-294-00	ELECT	47MF	20%	6.3V
C303	1-123-323-00	ELECT	470MF	20%	16V
C304	1-123-380-00	ELECT	1MF	20%	50V
C305	1-131-371-00	TANTALUM	10MF	20%	16V
C306	1-123-328-00	ELECT	4.7MF	20%	25V
C307	1-161-377-00	CERAMIC	0.0047MF	20%	50V
C308	1-161-259-00	CERAMIC	10PF	5%	50V
C309	1-123-356-00	ELECT	10MF	20%	16V
C310	1-123-380-00	ELECT	1MF	20%	50V
C311	1-123-354-00	ELECT	3.3MF	20%	50V
C312	1-123-354-00	ELECT	3.3MF	20%	50V
C314	1-123-351-00	ELECT	0.47MF	20%	50V
C315	1-124-089-00	ELECT	2.2MF	20%	50V
C316	1-130-291-00	FILM	0.0056MF	5%	100V
C317	1-130-291-00	FILM	0.0056MF	5%	100V
C318	1-130-293-00	FILM	0.0068MF	5%	100V
C319	1-123-351-00	ELECT	0.47MF	20%	50V
C320	1-123-380-00	ELECT	1MF	20%	50V
C321	1-129-714-00	FILM	0.01MF	5%	630V
C322	1-129-928-00	FILM	0.0027MF	5%	630V
C323	1-129-898-00	FILM	0.0022MF	5%	630V
C324	1-123-308-00	ELECT	220MF	20%	10V
C325	1-101-880-00	CERAMIC	47PF	5%	50V
C401	1-123-298-00	ELECT	470MF	20%	6.3V
C402	1-123-328-00	ELECT	4.7MF	20%	25V
C403	1-108-571-00	MYLAR	0.0047MF	5%	50V
C412	1-123-354-00	ELECT	3.3MF	20%	50V
C413	1-123-380-00	ELECT	1MF	20%	50V
C414	1-123-323-00	ELECT	470MF	20%	16V
C415	1-123-298-00	ELECT	470MF	20%	6.3V
C416	1-108-563-00	MYLAR	0.0022MF	5%	50V
C417	1-161-328-00	CERAMIC	4700PF	30%	50V
C561	1-123-328-00	ELECT	4.7MF	20%	25V
C562	1-123-328-00	ELECT	4.7MF	20%	25V
C563	1-123-328-00	ELECT	4.7MF	20%	25V
C580	1-123-381-00	ELECT	2.2MF	20%	50V
C585	1-123-328-00	ELECT	4.7MF	20%	25V
C586	1-123-356-00	ELECT	10MF	20%	16V

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- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (▲-△△△-△△△-XX or ▲-△△△-△△△-X) may be different from those used in the set.

CAPACITORS:

- All capacitors are in μF . Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF: μF , PF: μF .

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

- In each case, U : μ , for example:
UA...: μA ..., UPA...: μPA ..., UPC...: μPC ...,
UPD...: μPD ...

ELECTRICAL PARTS

Ref.No.	Part No.	Description
	CNJ101 1-562-068-00	SOCKET, CONNECTOR 13P
	▲CNJ102;1-560-060-00	PIN, CONNECTOR 2P
	▲CNJ103;1-560-061-00	PIN, CONNECTOR 3P
	▲CNJ104;1-560-063-00	PIN, CONNECTOR 5P
	▲CNJ105;1-560-064-00	PIN, CONNECTOR 6P
	▲CNJ106;1-560-338-00	PIN, CONNECTOR 7P
	▲CNJ107;1-560-064-00	PIN, CONNECTOR 6P
	CT101 1-141-225-00	CAP, TUNING, TRIMAR
	CT201 1-141-225-00	CAP, TUNING, TRIMAR
	D101 8-719-815-55	DIODE 1S1555
	D102 8-719-815-55	DIODE 1S1555
	D103 8-719-815-55	DIODE 1S1555
	D201 8-719-815-55	DIODE 1S1555
	D202 8-719-815-55	DIODE 1S1555
	D203 8-719-815-55	DIODE 1S1555
	D301 8-719-815-55	DIODE 1S1555
	D302 8-719-815-55	DIODE 1S1555
	D303 8-719-815-55	DIODE 1S1555
	D304 8-719-815-55	DIODE 1S1555
	D305 8-719-815-55	DIODE 1S1555
	D306 8-719-815-55	DIODE 1S1555
	D307 8-719-902-77	DIODE SLR34PC5
	D308 8-719-902-77	DIODE SLR34PC5
	D309 8-719-902-77	DIODE SLR34PC5
	D310 8-719-902-77	DIODE SLR34PC5
	D311 8-719-910-64	DIODE HZ6B1L
	D312 8-719-200-02	DIODE 10E-2
	D313 8-719-200-02	DIODE 10E-2
	D401 8-719-815-55	DIODE 1S1555
	D402 8-719-815-55	DIODE 1S1555
	D403 8-719-815-55	DIODE 1S1555
	D404 8-719-902-78	DIODE SLR34DC5
	D405 8-719-934-05	DIODE SLR-34URC5
	D406 8-719-902-51	DIODE SLP251B
	D407 8-719-902-51	DIODE SLP251B
	D408 8-719-902-51	DIODE SLP251B
	D409 8-719-902-51	DIODE SLP251B
	D410 8-719-902-51	DIODE SLP251B
	D411 8-719-815-55	DIODE 1S1555
	D412 8-719-815-55	DIODE 1S1555
	D413 8-719-815-55	DIODE 1S1555
	D414 8-719-815-55	DIODE 1S1555
	D415 8-719-815-55	DIODE 1S1555
	D416 8-719-815-55	DIODE 1S1555
	D417 8-719-815-55	DIODE 1S1555

ELECTRICAL PARTS

Ref.No.	Part No.	Description
	D561 8-719-901-33	DIODE 1SS133
	D562 8-719-901-33	DIODE 1SS133
	D563 8-719-901-33	DIODE 1SS133
	D564 8-719-901-33	DIODE 1SS133
	D565 8-719-901-33	DIODE 1SS133
	D566 8-719-901-33	DIODE 1SS133
	D567 8-719-901-33	DIODE 1SS133
	D580 8-719-901-33	DIODE 1SS133
	D581 8-719-901-33	DIODE 1SS133
	D585 8-719-901-33	DIODE 1SS133
	D586 8-719-901-33	DIODE 1SS133
	HE 8-825-535-20	HEAD, ERASE (ES237-36)
	HRP 8-825-548-10	R/P HEAD (PA242-3602)
	IC101 8-759-300-74	IC CX-174A
	IC201 8-759-300-74	IC CX-174A
	IC301 8-759-932-80	IC BA328
	IC302 8-759-800-32	IC LB1403
	IC303 8-759-700-08	IC NJM4558S
	IC401 8-759-200-63	IC TC9310N001
	IC402 8-759-700-11	IC NJM78M05A
	IC566 8-759-984-11	IC MB84011B
	IC567 8-759-984-11	IC MB84011B
	IC568 8-759-984-69	IC MB84069UB
	IC585 8-759-985-01	IC MB84001B
	L101 1-408-255-00	MICRO INDUCTOR 6.8MMH
	L102 1-408-260-00	MICRO INDUCTOR 18MMH
	L103 1-408-262-00	MICRO INDUCTOR 27MMH
	L201 1-408-255-00	MICRO INDUCTOR 6.8MMH
	L202 1-408-260-00	MICRO INDUCTOR 18MMH
	L203 1-408-262-00	MICRO INDUCTOR 27MMH
	L301 1-408-383-00	MICRO INDUCTOR 220MH
	M1 1-541-201-00	MOTOR
	PL1 1-518-512-11	LAMP, PILOT
	PL2 1-518-512-21	LAMP, PILOT
	PM1 1-454-316-00	SOLENOID, PLUNGER, HEAD
	PM2 1-454-316-00	SOLENOID, PLUNGER, FF/REVER SE/AMS
	Q101 8-729-334-58	TRANSISTOR 2SC1345
	Q102 8-729-663-47	TRANSISTOR 2SC1364
	Q103 8-729-100-13	TRANSISTOR 2SC2001
	Q104 8-729-663-47	TRANSISTOR 2SC1364
	Q105 8-729-663-47	TRANSISTOR 2SC1364
	Q106 8-729-663-47	TRANSISTOR 2SC1364

NOTE:

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- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF:μF, PF:μμF.

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

- In each case, U : μ, for example:
 UA.... : μA...., UPA.... : μPA...., UPC.... : μPC,
 UPD.... : μPD....

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q107	8-729-663-47	TRANSISTOR 2SC1364
Q108	8-729-663-47	TRANSISTOR 2SC1364
Q109	8-729-663-47	TRANSISTOR 2SC1364
Q201	8-729-334-58	TRANSISTOR 2SC1345
Q202	8-729-663-47	TRANSISTOR 2SC1364
Q203	8-729-100-13	TRANSISTOR 2SC2001
Q204	8-729-663-47	TRANSISTOR 2SC1364
Q205	8-729-663-47	TRANSISTOR 2SC1364
Q206	8-729-663-47	TRANSISTOR 2SC1364
Q207	8-729-663-47	TRANSISTOR 2SC1364
Q208	8-729-663-47	TRANSISTOR 2SC1364
Q209	8-729-663-47	TRANSISTOR 2SC1364
Q301	8-759-100-22	IC UPA76V-FA
Q302	8-759-100-22	IC UPA76V-FA
Q303	8-729-663-47	TRANSISTOR 2SC1364
Q304	8-729-663-47	TRANSISTOR 2SC1364
Q305	8-729-663-47	TRANSISTOR 2SC1364
Q306	8-729-663-47	TRANSISTOR 2SC1364
Q307	8-729-201-52	TRANSISTOR 2SA1015
Q309	8-729-663-47	TRANSISTOR 2SC1364
Q310	8-729-663-47	TRANSISTOR 2SC1364
Q311	8-729-201-52	TRANSISTOR 2SA1015
Q312	8-729-663-47	TRANSISTOR 2SC1364
Q313	8-729-663-47	TRANSISTOR 2SC1364
Q314	8-729-663-47	TRANSISTOR 2SC1364
Q315	8-729-663-47	TRANSISTOR 2SC1364
Q316	8-729-201-52	TRANSISTOR 2SA1015
Q317	8-729-663-47	TRANSISTOR 2SC1364
Q318	8-729-180-93	TRANSISTOR 2SD809
Q319	8-729-663-47	TRANSISTOR 2SC1364
Q320	8-729-663-47	TRANSISTOR 2SC1364
Q321	8-729-663-47	TRANSISTOR 2SC1364
Q322	8-729-663-47	TRANSISTOR 2SC1364
Q401	8-729-201-52	TRANSISTOR 2SA1015
Q402	8-719-902-01	PHOTO INTERRUPTOR SPI201
Q403	8-729-245-83	TRANSISTOR 2SC2458
Q404	8-729-245-83	TRANSISTOR 2SC2458
Q405	8-729-245-83	TRANSISTOR 2SC2458
Q406	8-729-245-83	TRANSISTOR 2SC2458
Q407	8-729-245-83	TRANSISTOR 2SC2458
Q408	8-729-245-83	TRANSISTOR 2SC2458
Q409	8-729-201-52	TRANSISTOR 2SA1015
Q410	8-729-201-52	TRANSISTOR 2SA1015
Q411	8-729-245-83	TRANSISTOR 2SC2458
Q412	8-729-201-52	TRANSISTOR 2SA1015

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q413	8-729-180-93	TRANSISTOR 2SD809
Q580	8-729-663-47	TRANSISTOR 2SC1364
Q581	8-729-201-51	TRANSISTOR 2SA1015
Q585	8-729-663-47	TRANSISTOR 2SC1364
R101	1-246-473-00	CARBON 1K 5% 1/4W
R102	1-246-521-00	CARBON 100K 5% 1/4W
R103	1-246-521-00	CARBON 100K 5% 1/4W
R104	1-246-523-00	CARBON 120K 5% 1/4W
R105	1-246-481-00	CARBON 2.2K 5% 1/4W
R106	1-246-511-00	CARBON 39K 5% 1/4W
R107	1-246-483-00	CARBON 2.7K 5% 1/4W
R108	1-246-455-00	CARBON 180 5% 1/4W
R109	1-246-521-00	CARBON 100K 5% 1/4W
R110	1-246-521-00	CARBON 100K 5% 1/4W
R111	1-246-521-00	CARBON 100K 5% 1/4W
R112	1-246-525-00	CARBON 150K 5% 1/4W
R113	1-246-473-00	CARBON 1K 5% 1/4W
R115	1-246-800-00	CARBON 27K 5% 1/8W
R116	1-246-507-00	CARBON 27K 5% 1/4W
R117	1-246-449-00	CARBON 100 5% 1/4W
R118	1-246-522-00	CARBON 110K 5% 1/4W
R119	1-246-490-00	CARBON 5.1K 5% 1/4W
R121	1-246-501-00	CARBON 15K 5% 1/4W
R122	1-246-503-00	CARBON 18K 5% 1/4W
R123	1-246-529-00	CARBON 220K 5% 1/4W
R124	1-246-787-00	CARBON 2.2K 5% 1/8W
R125	1-246-497-00	CARBON 10K 5% 1/4W
R126	1-246-497-00	CARBON 10K 5% 1/4W
R127	1-246-513-00	CARBON 47K 5% 1/4W
R128	1-246-513-00	CARBON 47K 5% 1/4W
R129	1-246-533-00	CARBON 330K 5% 1/4W
R130	1-246-530-00	CARBON 240K 5% 1/4W
R131	1-246-530-00	CARBON 240K 5% 1/4W
R132	1-246-499-00	CARBON 12K 5% 1/4W
R133	1-246-492-00	CARBON 6.2K 5% 1/4W
R134	1-246-449-00	CARBON 100 5% 1/4W
R135	1-246-455-00	CARBON 180 5% 1/4W
R136	1-246-463-00	CARBON 390 5% 1/4W
R137	1-246-475-00	CARBON 1.2K 5% 1/4W
R138	1-246-501-00	CARBON 15K 5% 1/4W
R139	1-246-509-00	CARBON 33K 5% 1/4W
R140	1-246-538-00	CARBON 510K 5% 1/4W
R141	1-246-513-00	CARBON 47K 5% 1/4W
R142	1-246-481-00	CARBON 2.2K 5% 1/4W
R143	1-246-497-00	CARBON 10K 5% 1/4W
R144	1-246-501-00	CARBON 15K 5% 1/4W

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- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
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CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF: μF, PF: μμF.

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

- In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC,
UPD...: μPD...

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R145	1-246-473-00	CARBON	1K	5%	1/4W
R146	1-246-489-00	CARBON	4.7K	5%	1/4W
R147	1-246-473-00	CARBON	1K	5%	1/4W
R148	1-246-521-00	CARBON	100K	5%	1/4W
R149	1-246-523-00	CARBON	120K	5%	1/8W
R150	1-246-523-00	CARBON	120K	5%	1/8W
R151	1-246-771-00	CARBON	100	5%	1/8W
R152	1-246-788-00	CARBON	2.7K	5%	1/8W
R153	1-246-782-00	CARBON	820	5%	1/8W
R154	1-246-797-00	CARBON	15K	5%	1/8W
R155	1-246-505-00	CARBON	22K	5%	1/4W
R156	1-246-779-00	CARBON	470	5%	1/8W
R157	1-246-853-89	CARBON	6.2K	5%	1/8W
R158	1-246-852-00	CARBON	5.1K	5%	1/8W
R159	1-246-505-00	CARBON	22K	5%	1/4W
R160	1-246-787-00	CARBON	2.2K	5%	1/8W
R161	1-246-784-00	CARBON	1.2K	5%	1/8W
R162	1-246-505-00	CARBON	22K	5%	1/4W
R163	1-246-791-00	CARBON	4.7K	5%	1/8W
R164	1-246-796-00	CARBON	12K	5%	1/8W
R165	1-246-784-00	CARBON	1.2K	5%	1/8W
R166	1-246-505-00	CARBON	22K	5%	1/4W
R167	1-246-799-00	CARBON	22K	5%	1/8W
R201	1-246-473-00	CARBON	1K	5%	1/4W
R202	1-246-521-00	CARBON	100K	5%	1/4W
R203	1-246-521-00	CARBON	100K	5%	1/4W
R204	1-246-523-00	CARBON	120K	5%	1/4W
R205	1-246-481-00	CARBON	2.2K	5%	1/4W
R206	1-246-511-00	CARBON	39K	5%	1/4W
R207	1-246-483-00	CARBON	2.7K	5%	1/4W
R208	1-246-455-00	CARBON	180	5%	1/4W
R209	1-246-521-00	CARBON	100K	5%	1/4W
R210	1-246-521-00	CARBON	100K	5%	1/4W
R211	1-246-521-00	CARBON	100K	5%	1/4W
R212	1-246-525-00	CARBON	150K	5%	1/4W
R213	1-246-473-00	CARBON	1K	5%	1/4W
R215	1-246-800-00	CARBON	27K	5%	1/8W
R216	1-246-507-00	CARBON	27K	5%	1/4W
R217	1-246-449-00	CARBON	100	5%	1/4W
R218	1-246-522-00	CARBON	110K	5%	1/4W
R219	1-246-490-00	CARBON	5.1K	5%	1/4W
R221	1-246-501-00	CARBON	15K	5%	1/4W
R222	1-246-503-00	CARBON	18K	5%	1/4W
R223	1-246-529-00	CARBON	220K	5%	1/4W
R224	1-246-787-00	CARBON	2.2K	5%	1/8W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R225	1-246-497-00	CARBON	10K	5%	1/4W
R226	1-246-497-00	CARBON	10K	5%	1/4W
R227	1-246-513-00	CARBON	47K	5%	1/4W
R228	1-246-513-00	CARBON	47K	5%	1/4W
R229	1-246-533-00	CARBON	330K	5%	1/4W
R230	1-246-530-00	CARBON	240K	5%	1/4W
R231	1-246-530-00	CARBON	240K	5%	1/4W
R232	1-246-499-00	CARBON	12K	5%	1/4W
R233	1-246-492-00	CARBON	6.2K	5%	1/4W
R234	1-246-449-00	CARBON	100	5%	1/4W
R235	1-246-455-00	CARBON	180	5%	1/4W
R236	1-246-463-00	CARBON	390	5%	1/4W
R237	1-246-475-00	CARBON	1.2K	5%	1/4W
R238	1-246-501-00	CARBON	15K	5%	1/4W
R239	1-246-509-00	CARBON	33K	5%	1/4W
R240	1-246-538-00	CARBON	510K	5%	1/4W
R241	1-246-513-00	CARBON	47K	5%	1/4W
R242	1-246-481-00	CARBON	2.2K	5%	1/4W
R243	1-246-497-00	CARBON	10K	5%	1/4W
R244	1-246-501-00	CARBON	15K	5%	1/4W
R245	1-246-473-00	CARBON	1K	5%	1/4W
R246	1-246-489-00	CARBON	4.7K	5%	1/4W
R247	1-246-473-00	CARBON	1K	5%	1/4W
R248	1-246-521-00	CARBON	100K	5%	1/4W
R249	1-246-523-00	CARBON	120K	5%	1/8W
R250	1-246-523-00	CARBON	120K	5%	1/8W
R251	1-246-771-00	CARBON	100	5%	1/8W
R252	1-246-788-00	CARBON	2.7K	5%	1/8W
R253	1-246-782-00	CARBON	820	5%	1/8W
R254	1-246-797-00	CARBON	15K	5%	1/8W
R255	1-246-505-00	CARBON	22K	5%	1/4W
R256	1-246-779-00	CARBON	470	5%	1/8W
R257	1-246-853-89	CARBON	6.2K	5%	1/8W
R258	1-246-852-00	CARBON	5.1K	5%	1/8W
R259	1-246-505-00	CARBON	22K	5%	1/4W
R260	1-246-787-00	CARBON	2.2K	5%	1/8W
R261	1-246-784-00	CARBON	1.2K	5%	1/8W
R262	1-246-505-00	CARBON	22K	5%	1/4W
R263	1-246-791-00	CARBON	4.7K	5%	1/8W
R264	1-246-796-00	CARBON	12K	5%	1/8W
R265	1-246-784-00	CARBON	1.2K	5%	1/8W
R266	1-246-505-00	CARBON	22K	5%	1/4W
R267	1-246-799-00	CARBON	22K	5%	1/8W
R301	1-246-491-00	CARBON	5.6K	5%	1/4W
R302	1-246-497-00	CARBON	10K	5%	1/4W

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "•" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

CAPACITORS:

- All capacitors are in μF . Common capacitors are omitted. Refer to the following lists for their part numbers.
MF: μF , PF: μpF .

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

- In each case, U : μ , for example:
UA... : μA ..., UPA... : μPA ..., UPC... : μPC ,
UPD... : μPD ...

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R303	1-246-493-00	CARBON	6.8K	5%	1/4W
R304	1-246-485-00	CARBON	3.3K	5%	1/4W
R305	1-246-491-00	CARBON	5.6K	5%	1/4W
R306	1-246-489-00	CARBON	4.7K	5%	1/4W
R307	1-246-799-00	CARBON	22K	5%	1/8W
R308	1-246-505-00	CARBON	22K	5%	1/4W
R309	1-246-470-00	CARBON	750	5%	1/4W
R310	1-246-799-00	CARBON	22K	5%	1/8W
R311	1-246-793-00	CARBON	6.8K	5%	1/8W
R312	1-246-806-00	CARBON	82K	5%	1/8W
R313	1-246-779-00	CARBON	470	5%	1/8W
R314	1-246-811-00	CARBON	220K	5%	1/8W
R315	1-246-811-00	CARBON	220K	5%	1/8W
R316	1-246-781-00	CARBON	680	5%	1/8W
R317	1-246-791-00	CARBON	4.7K	5%	1/8W
R318	1-246-799-00	CARBON	22K	5%	1/8W
R319	1-247-046-00	CARBON	270K	5%	1/8W
R320	1-246-783-00	CARBON	1K	5%	1/8W
R321	1-246-799-00	CARBON	22K	5%	1/8W
R322	1-246-799-00	CARBON	22K	5%	1/8W
R323	1-246-799-00	CARBON	22K	5%	1/8W
R325	1-246-796-00	CARBON	12K	5%	1/8W
R326	1-246-792-00	CARBON	5.6K	5%	1/8W
R327	1-246-791-00	CARBON	4.7K	5%	1/8W
R328	1-246-811-00	CARBON	220K	5%	1/8W
R329	1-246-799-00	CARBON	22K	5%	1/8W
R330	1-246-799-00	CARBON	22K	5%	1/8W
R331	1-246-795-00	CARBON	10K	5%	1/8W
R332	1-246-497-00	CARBON	10K	5%	1/4W
R333	1-246-497-00	CARBON	10K	5%	1/4W
R334	1-246-795-00	CARBON	10K	5%	1/8W
R335	1-246-803-00	CARBON	47K	5%	1/8W
R336	1-246-791-00	CARBON	4.7K	5%	1/8W
R337	1-246-795-00	CARBON	10K	5%	1/8W
R338	1-246-799-00	CARBON	22K	5%	1/8W
R339	1-246-799-00	CARBON	22K	5%	1/8W
R340	1-246-455-00	CARBON	180	5%	1/4W
R341	1-246-481-00	CARBON	2.2K	5%	1/4W
R342	1-246-477-00	CARBON	1.5K	5%	1/4W
R343	1-246-482-00	CARBON	2.4K	5%	1/4W
R344	1-246-799-00	CARBON	22K	5%	1/8W
R345	1-246-799-00	CARBON	22K	5%	1/8W
R346	1-246-799-00	CARBON	22K	5%	1/8W
R347	1-246-505-00	CARBON	22K	5%	1/4W
R348	1-246-465-00	CARBON	470	5%	1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R351	1-246-427-00	CARBON	12	5%	1/4W
R401	1-246-799-00	CARBON	22K	5%	1/8W
R402	1-246-811-00	CARBON	220K	5%	1/8W
R405	1-246-481-00	CARBON	2.2K	5%	1/4W
R406	1-246-481-00	CARBON	2.2K	5%	1/4W
R408	1-246-481-00	CARBON	2.2K	5%	1/4W
R409	1-246-505-00	CARBON	22K	5%	1/4W
R410	1-246-505-00	CARBON	22K	5%	1/4W
R411	1-246-529-00	CARBON	220K	5%	1/4W
R412	1-246-505-00	CARBON	22K	5%	1/4W
R413	1-246-489-00	CARBON	4.7K	5%	1/4W
R414	1-246-461-00	CARBON	330	5%	1/4W
R415	1-246-799-00	CARBON	22K	5%	1/8W
R416	1-246-801-00	CARBON	33K	5%	1/8W
R417	1-246-465-00	CARBON	470	5%	1/4W
R418	1-246-461-00	CARBON	330	5%	1/4W
R419	1-246-491-00	CARBON	5.6K	5%	1/4W
R420	1-246-491-00	CARBON	5.6K	5%	1/4W
R421	1-246-509-00	CARBON	33K	5%	1/4W
R422	1-246-514-00	CARBON	51K	5%	1/4W
R423	1-246-505-00	CARBON	22K	5%	1/4W
R424	1-246-521-00	CARBON	100K	5%	1/4W
R425	1-246-795-00	CARBON	10K	5%	1/8W
R426	1-246-780-00	CARBON	560	5%	1/8W
R427	1-247-829-00	CARBON	820	5%	1/6W
R429	1-206-477-00	METAL	39	5%	2W
R561	1-247-895-00	CARBON	470K	5%	1/6W
R562	1-247-889-00	CARBON	270K	5%	1/6W
R563	1-247-867-00	CARBON	33K	5%	1/6W
R564	1-247-857-00	CARBON	12K	5%	1/6W
R565	1-247-903-00	CARBON	1M	5%	1/6W
R580	1-247-859-00	CARBON	15K	5%	1/6W
R581	1-247-839-00	CARBON	2.2K	5%	1/6W
R585	1-247-855-00	CARBON	10K	5%	1/6W
R586	1-247-883-00	CARBON	150K	5%	1/6W
R587	1-247-883-00	CARBON	150K	5%	1/6W
R588	1-247-863-00	CARBON	22K	5%	1/6W
R589	1-247-875-00	CARBON	68K	5%	1/6W
RV101	1-226-236-00	RES, ADJ, CARBON 10K			
RV102	1-226-238-00	RES, ADJ, CARBON 50K			
RV201	1-226-236-00	RES, ADJ, CARBON 10K			

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CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF: μF, PF: μμF.

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

- In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC,
UPD...: μPD...

ELECTRICAL PARTS

<u>Ref.No.</u>	<u>Part No.</u>	<u>Description</u>
RV202	1-226-238-00	RES, ADJ, CARBON 50K
RV301	1-226-239-00	RES, ADJ, CARBON 100K
RY301	1-515-473-00	RELAY
S101	1-552-412-00	SWITCH, KEY BOARD, REC MUTE
S102	1-552-412-00	SWITCH, KEY BOARD, REC
S103	1-552-412-00	SWITCH, KEY BOARD, PAUSE
S104	1-552-412-00	SWITCH, KEY BOARD, FF
S105	1-552-412-00	SWITCH, KEY BOARD, FWD
S106	1-552-412-00	SWITCH, KEY BOARD, STOP
S107	1-552-412-00	SWITCH, KEY BOARD, REV
S108	1-552-412-00	SWITCH, KEY BOARD, FAST REV
S109	1-554-205-00	SWITCH, SLIDE, CASSETTE LOADING
S110	1-554-205-00	SWITCH, SLIDE, ERASE PROOF
S111	1-554-205-00	SWITCH, SLIDE, TAPE SELECT
S112	1-554-205-00	SWITCH, SLIDE, TAPE SELECT
S201	1-554-118-00	SWITCH, PUSH, DOLBY NR
S202	1-552-334-00	SWITCH, BAND CHANGER, TAPE SELECTOR
S203	1-554-277-00	SWITCH, SLIDE, ISS
T301	1-433-259-00	TRANSFORMER, BIAS OSCILLATOR

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- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.
MF:μF, PF:μμF.

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- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

- In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC,
UPD...: μPD...

SERVICE MANUAL

SUPPLEMENT

File this supplement with the service manual.

Subject: System control board change

TC-78C:

US Model
Canadian Model

TC-78:

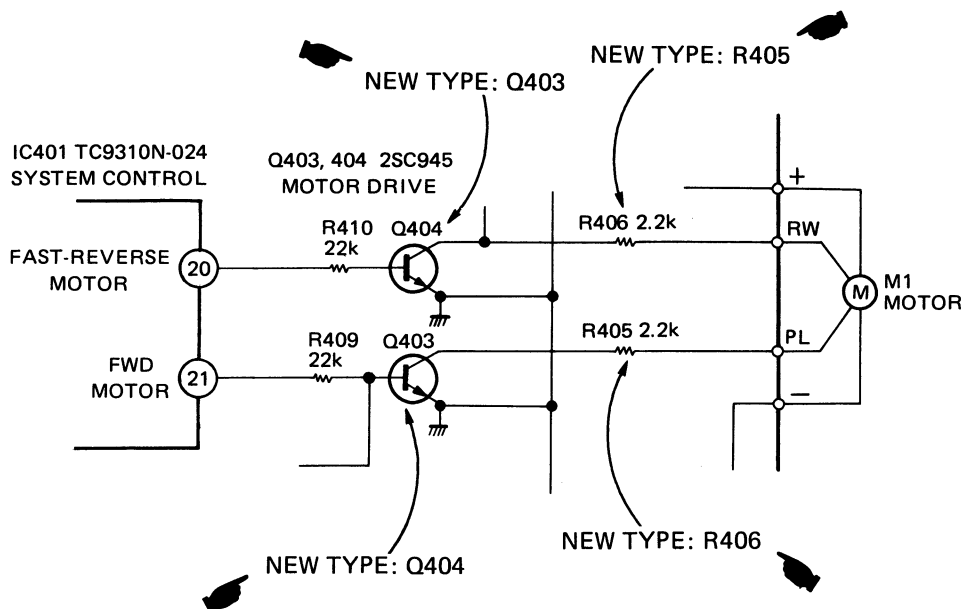
AEP Model
UK Model
E Model

No. 4

December, 1983

Because of system control board change, the new mounting diagram has been issued. As to the schematic diagram, refer to the service manual (Supplement No. 3) using TC9310N-024 for system control IC.

Besides, be careful of the difference of reference numbers (Q403, Q404, R405, R406) between the former type and the new type.



STEREO CASSETTE DECK

SONY®

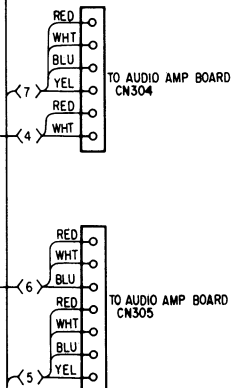
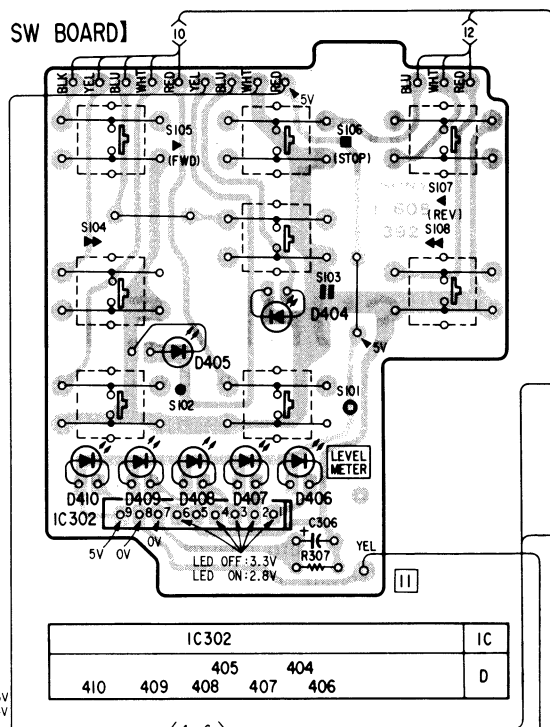
AUD

MOUNTING DIAGRAM

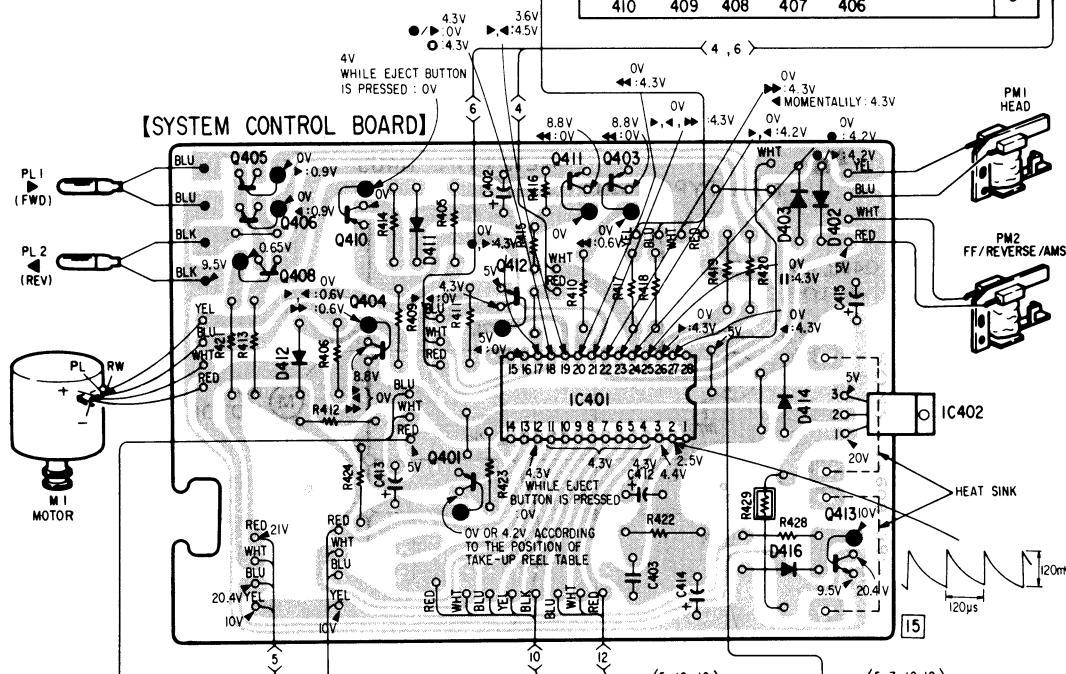
[CONTROL SW BOARD]

Note:

• : B+ pattern

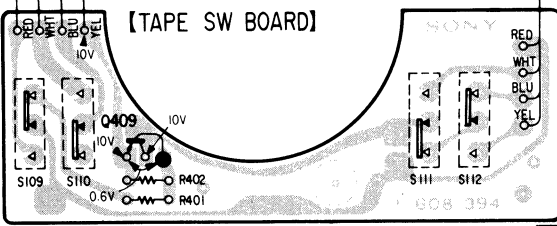


[SYSTEM CONTROL BOARD]

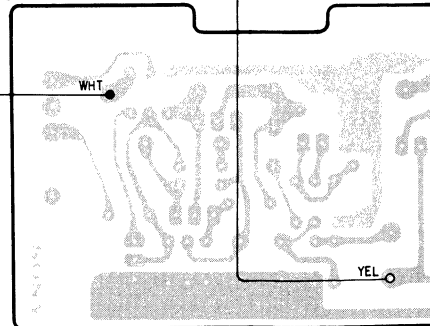


Q, IC	D
405	411
406	403
408	410
	412
404	
IC401	412
IC402	414
401	
413	416

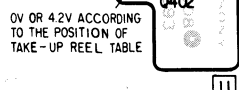
[TAPE SW BOARD]



[AGC/AMS BOARD]



[INTERRUPT BOARD]



S109 CASSETTE LOADING
ON
OFF

S110 ERASE/PROOF TAB
NO TAB

(WHILE EJECT BUTTON IS PRESSED : OFF)

Sony Corporation

-TC-2-