TC-142

AEP Model

THREE-HEAD CASSETTE-CORDER

SPECIFICATIONS

Power Requirements: DC 6 V
Battery size-C, 4 pcs, Sony rechargeable battery BP-16H, Car battery by using Sony car-battery cord DCC-127H
AC operation by using AC power adaptor AC-456C.

Battery Life: Sony long-life battery size-C
Approx. 5 hours in continuous recording
Sony rechargeable battery BP-16H (charged for approx. 21 hours)
Approx. 7 hours in continuous recording

Track: Two-track monaural

Tape Speed: 4.8 cm/s, $1\frac{7}{8}$ ips

Tape: Sony tape cassette or equivalent

Frequency Response: 70 ~ 10,000 Hz (NORMAL)
70 ~ 12,000 Hz (CrO_2)

Wow and Flutter: 0.26 % (RMS) weighted

Signal-to-Noise Ratio: 45 dB

Distortion: 3 %

Record Bias Frequency: Approx. 85 kHz

Erase Ratio: 60 dB

Cross Talk: 55 dB between tracks

Maximum Output Power: 1.2 W

Speaker: 7 x 10 cm, $2\frac{1}{2}$ x 4 inches
Voice coil impedance: 32 Ω

Semiconductors: 23 transistors, 1 FET (built-in microphone), 7 diodes

Built-in Microphone: Electret condenser microphone C-1003F

Record/Playback Head: PF160-36A (250 Ω/1 kHz)

Playback Head (monitor): PP153-61 (850 Ω/1 kHz)

Erase Head: EF135-36 (640 Ω/80 kHz)

Motor: DC servo motor D-013F

Automatic Shut-off Mechanism: Operates in any function mode by detecting the reel spindle rotation.

End Alarm: Alarm by END ALARM lamp and MONITOR sound, operates before end-of-tape in record mode (from approx. 1.5 minutes before end-of-tape with cassette C-60 used).

Inputs: MIC (mini jack)
Maximum sensitivity: −72 dB (0.19 mV)
Impedance: low
LINE IN (mini jack)
Maximum sensitivity: −22 dB (62 mV)
Impedance: 100 kΩ

Output: MONITOR (mini jack)
Normal level: 0 dB (0.775 V)
Load impedance: 8 Ω or greater than 10 kΩ

Dimensions: 247 (w) x 192 (d) x 72 (h) mm
$9\frac{3}{4}$ (w) x $7\frac{5}{8}$ (d) x $2\frac{7}{8}$ (h) inches

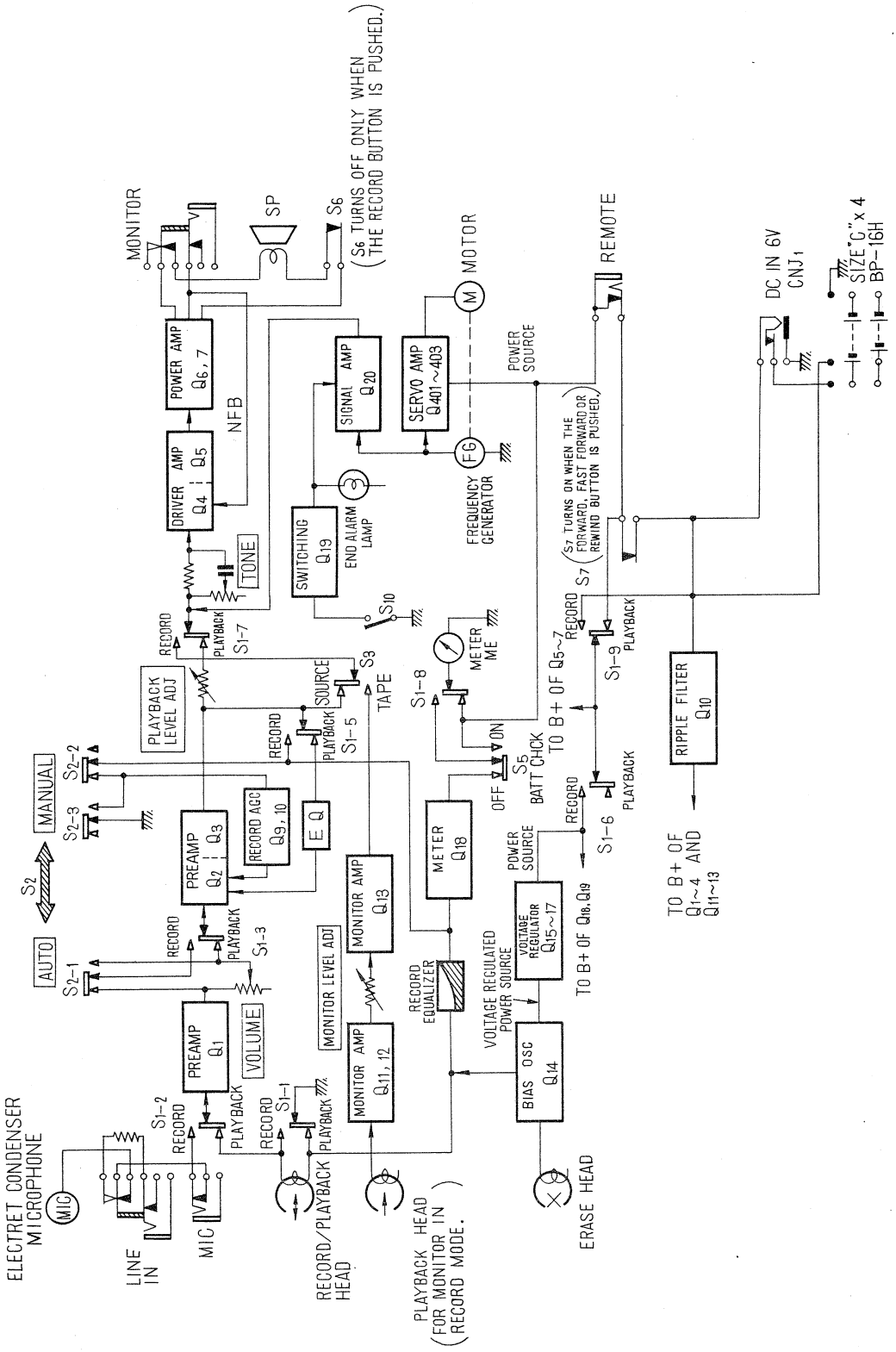
Weight: 2.4 kg, 5 lb 5 oz (with batteries)

SONY

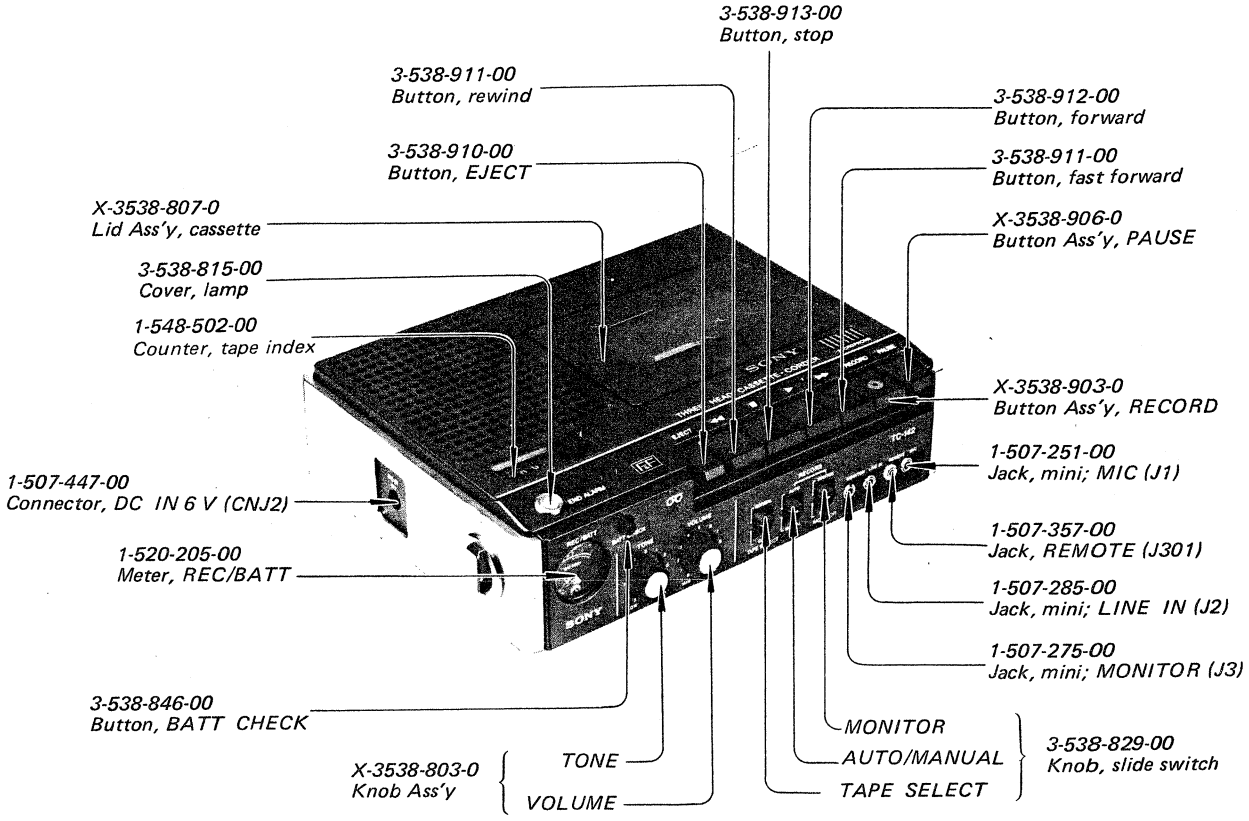
SERVICE MANUAL

SECTION 1
OUTLINE

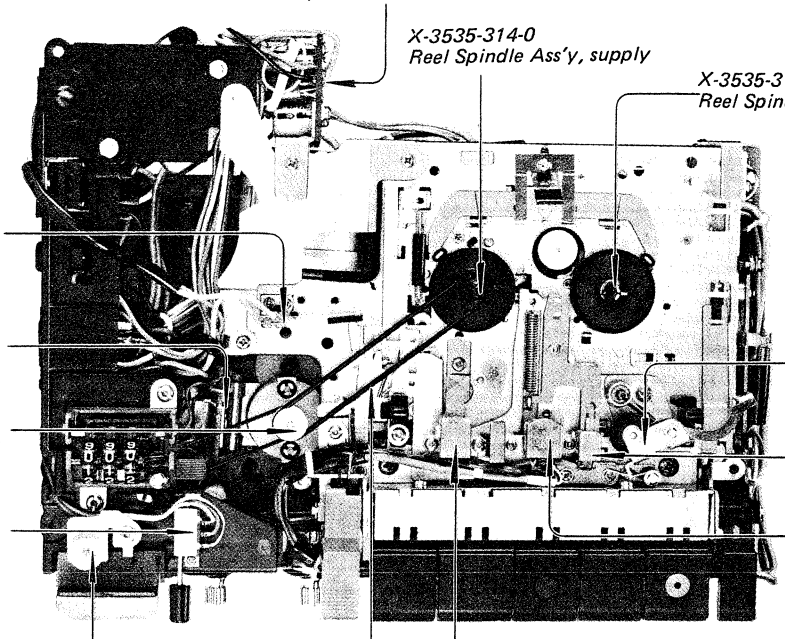
1-1. BLOCK DIAGRAM

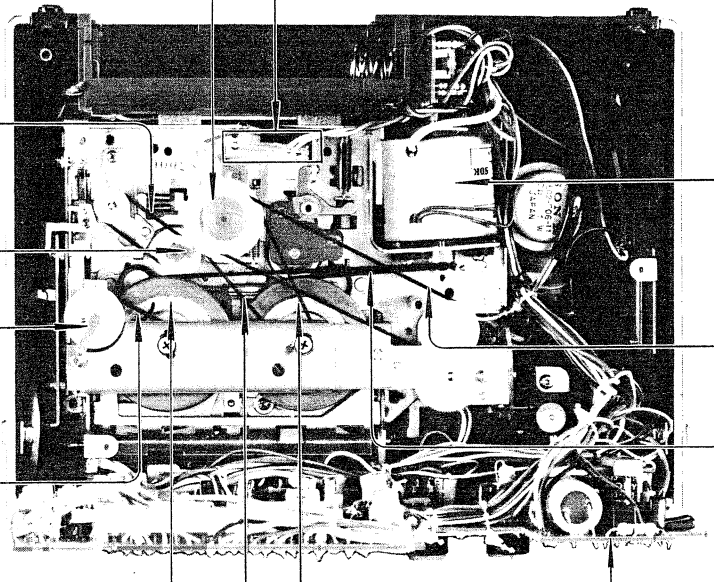


1-2. EXTERNAL VIEWS



1-3. INTERNAL VIEWS



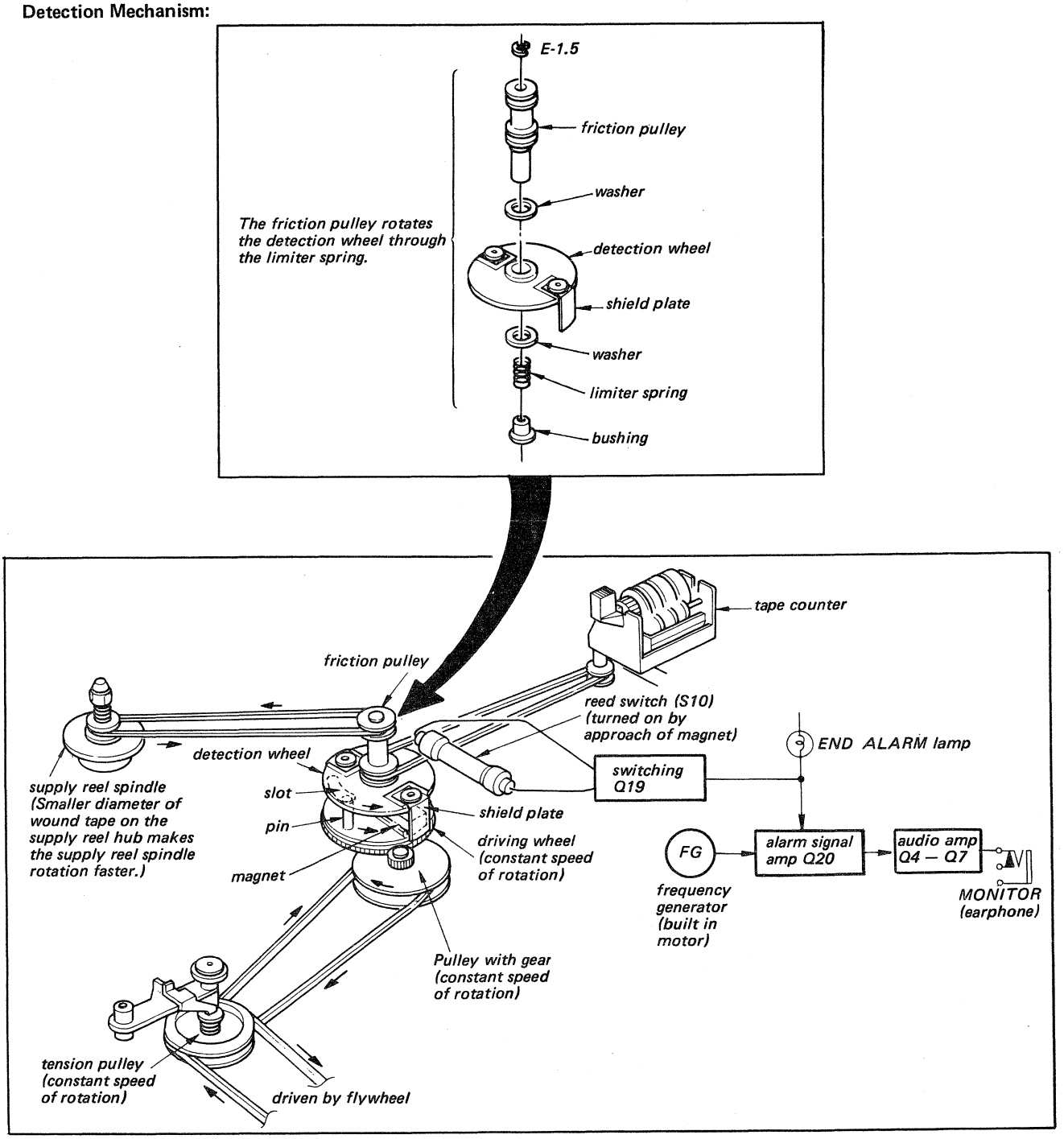


1-4. END ALARM SYSTEM

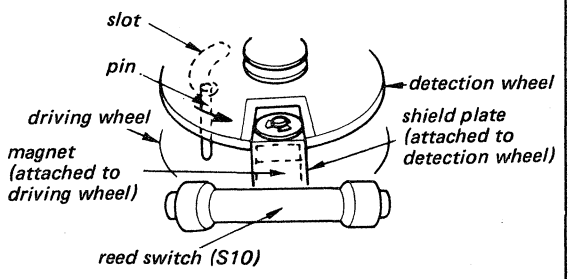
Model TC-142 is provided with END ALARM system which starts to flicker the lamp and to feed an alarm signal on the MONITOR sounds a few minutes before end-of-tape in record mode.
This system detects a difference of speed between the capstan rotation and the supply reel spindle rotation to switch on the alarm circuit. Alarm-starting time is, therefore, determined by the reel-hub diameter of cassette and the tape thickness.

Cassette Used	Time from Start of Alarm to End-of-Tape
C-30, C-60	Approx. 1.5 minutes
C-90	Approx. 2.5 minutes
C-120	Approx. 3.5 minutes

Detection Mechanism:

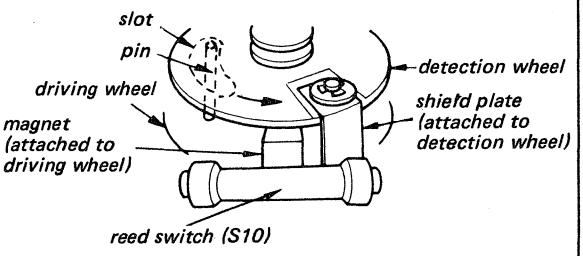


When the speed of detection wheel rotation is slower than the constant speed of driving wheel rotation;



Since the shield plate covers the magnet, this switch is not turned on even by approach of the magnet.

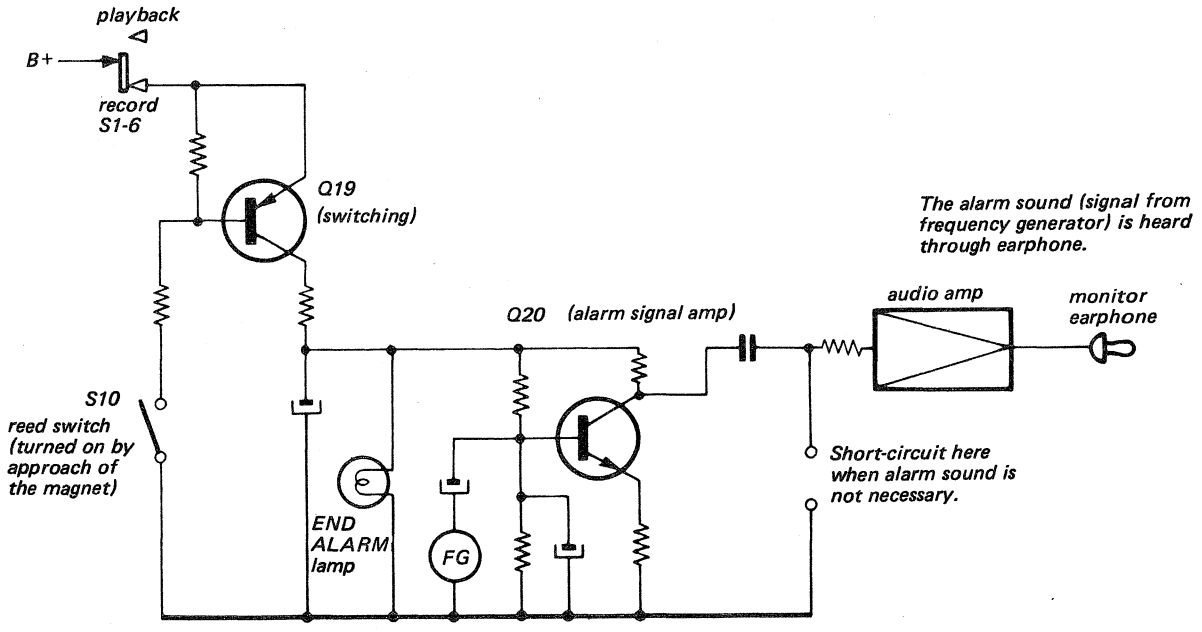
When the speed of detection wheel rotation is faster than the constant speed of driving wheel rotation (near end-of-tape);



This switch is turned on by approach of the magnet.

Alarm Circuit:

Approach of the magnet turns on the reed switch (S10) and makes the base voltage of Q19 lower. Q19 is turned on and B+ voltage is supplied to the END ALARM lamp and Q20. Only when the magnet approaches the reed switch, the lamp lights and Q20 amplifies the frequency generator signal for feeding it to the audio amplifier as an alarm signal. Since approach of the magnet is repeated by rotation of the driving wheel, the lamp flickers and the pulsating alarm signal is heard through the earphone.

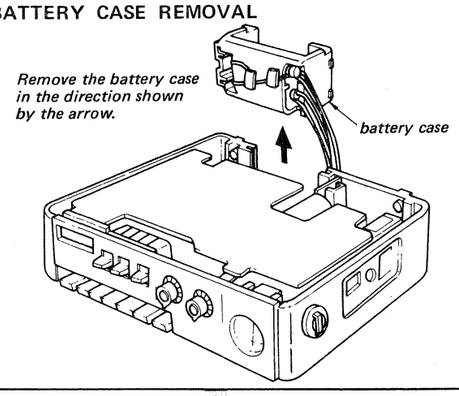


SECTION 2
DISASSEMBLY

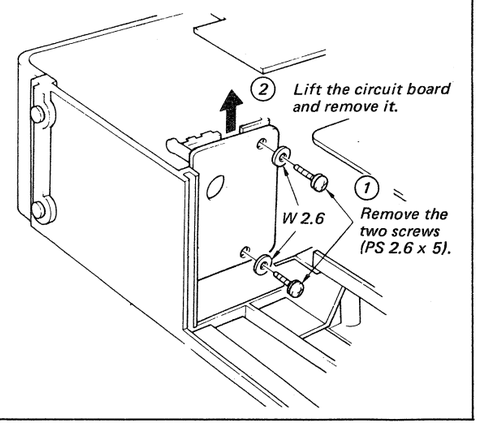
REAR CASE REMOVAL

1. Remove the battery lid.
2. Remove the five screws (B 2.6 x 8 black) on the rear case.

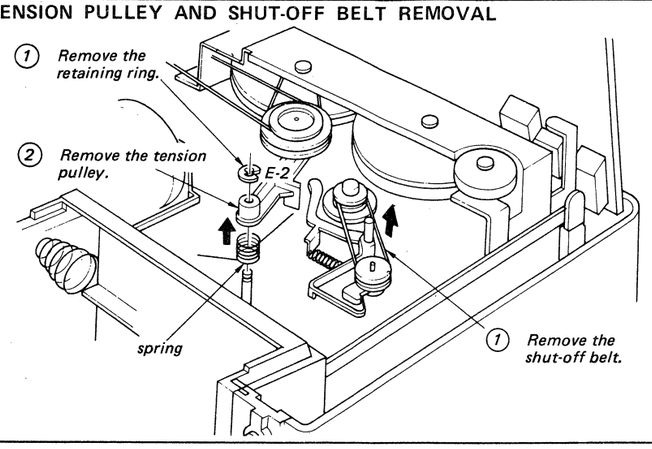
BATTERY CASE REMOVAL



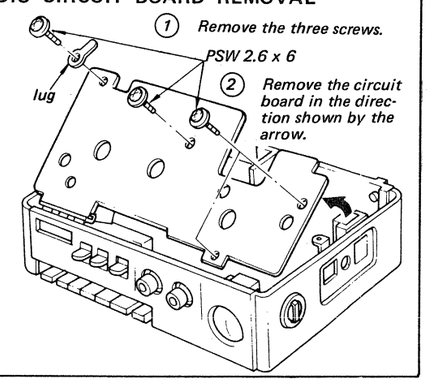
SERVO CIRCUIT BOARD REMOVAL



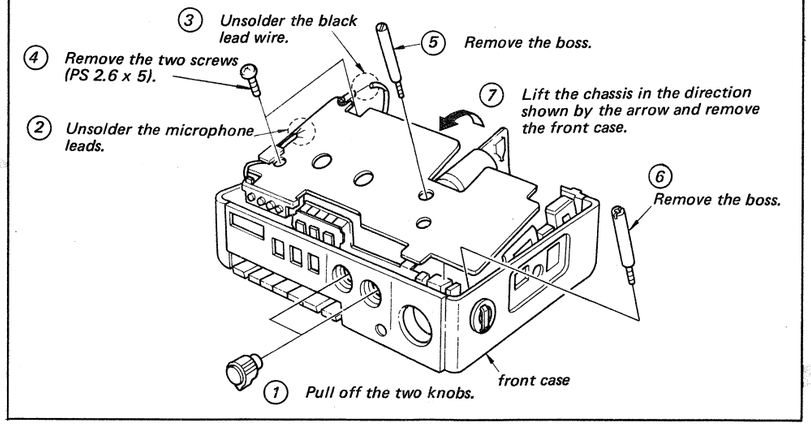
TENSION PULLEY AND SHUT-OFF BELT REMOVAL



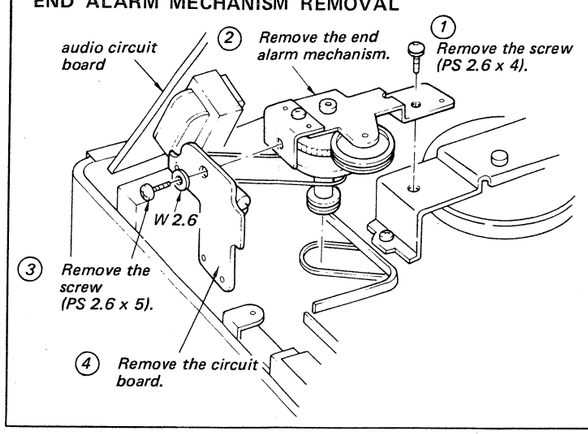
AUDIO CIRCUIT BOARD REMOVAL



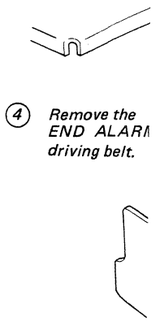
FRONT CASE REMOVAL



END ALARM MECHANISM REMOVAL



END ALARM D

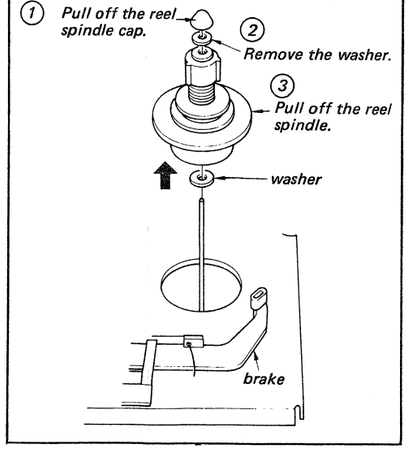


Note: If the clean

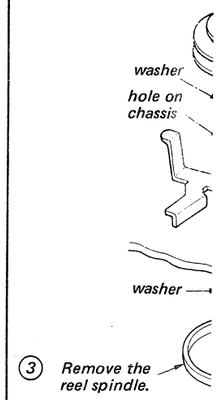
The supply reel spindle belt can be removed.

The counter belt and the motor can be removed.

SUPPLY REEL SPINDLE REMOVAL

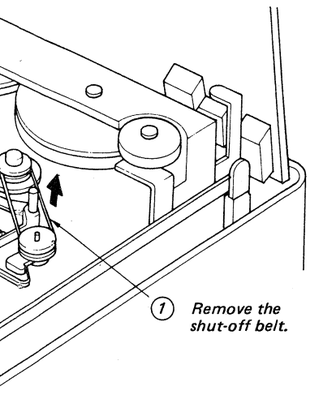


TAKE-UP REEL SPI

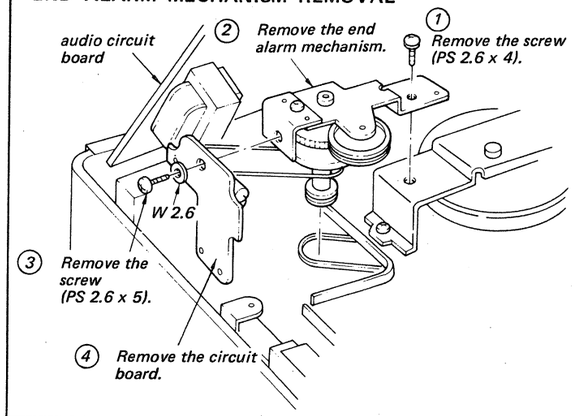


Note: When assemb have the lengt of the reel spi

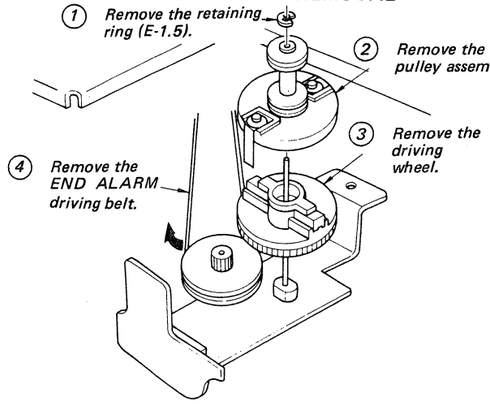
BELT REMOVAL



END ALARM MECHANISM REMOVAL

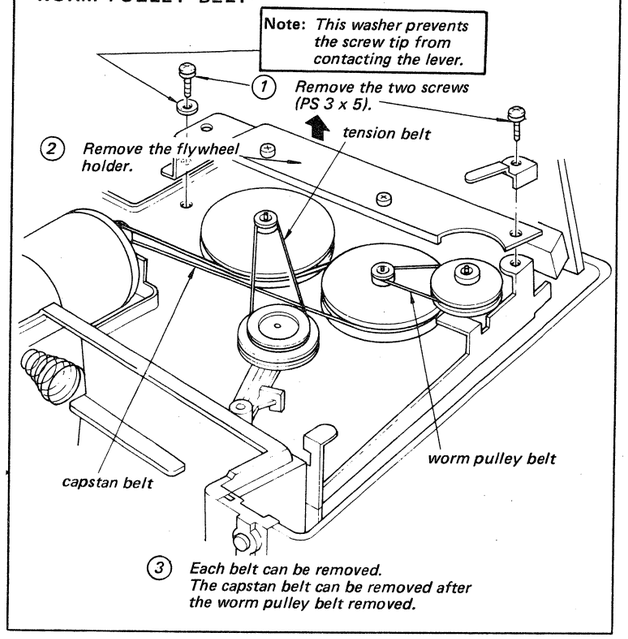


END ALARM DRIVING BELT REMOVAL



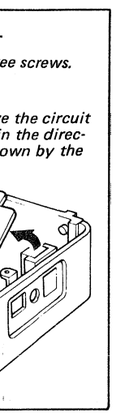
Note: If the belt is soiled with oil or grease, clean it with denatured alcohol.

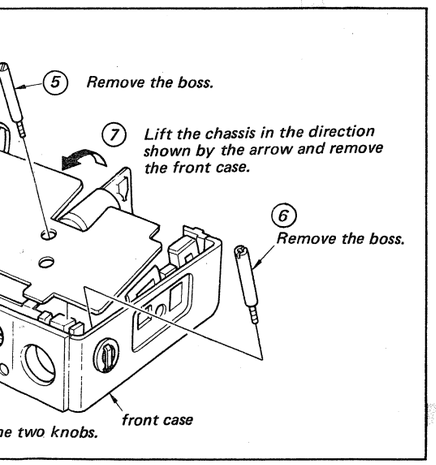
CAPSTAN BELT / TENSION BELT / WORM PULLEY BELT REMOVAL



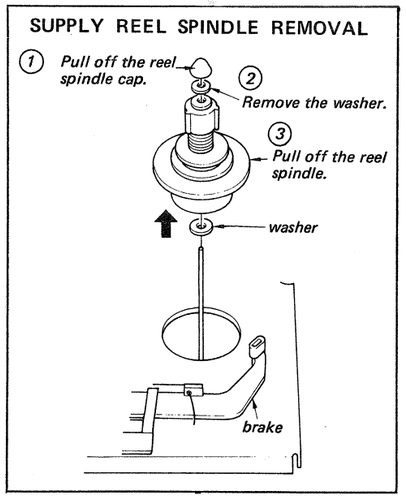
The supply reel spindle belt can be removed.

The counter belt and the motor can be removed.

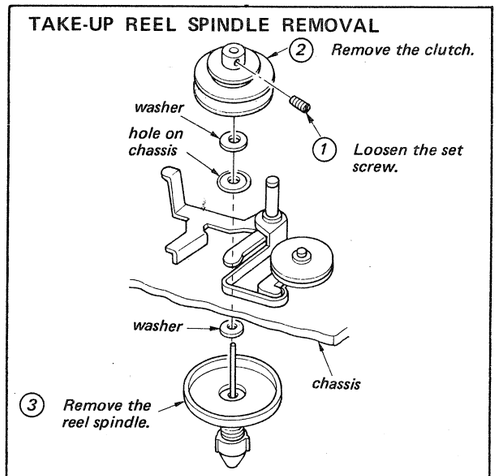




SUPPLY REEL SPINDLE REMOVAL

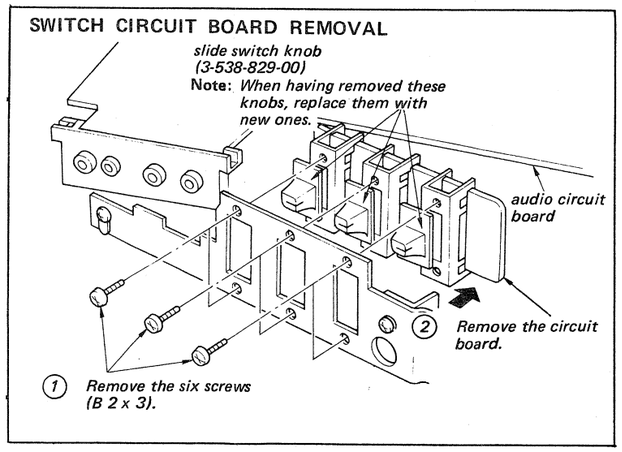


TAKE-UP REEL SPINDLE REMOVAL



Note: When assembling, attach the clutch to have the lengthwise play (0.1 to 0.2 mm) of the reel spindle.

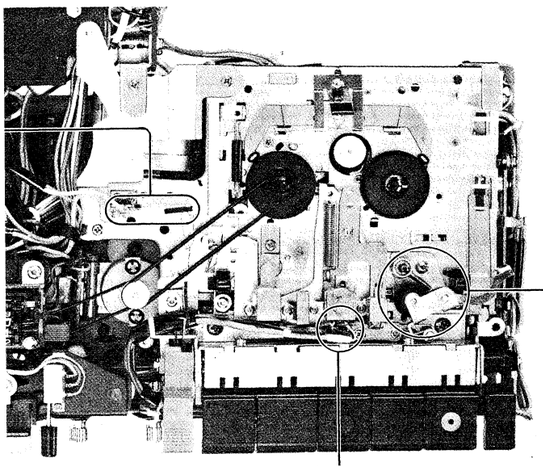
SWITCH CIRCUIT BOARD REMOVAL



Torque Measurement

Forward torque:	28 ~ 52 g·cm (0.39 ~ 0.72 oz·inch)
Fast forward torque:	55 ~ 100 g·cm (0.76 ~ 1.39 oz·inch)
Rewind torque:	55 ~ 95 g·cm (0.76 ~ 1.32 oz·inch)

Note: Forward torque is measured with Sony cassette type torque meter CQ101 (Part No. Y-20926-01-1).
Fast forward and rewind torques are measured with ordinary torque meter.



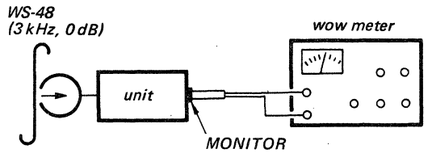
Wow and Flutter Measurement

Setting:

TONE control:	HIGH
VOLUME control:	mechanical mid

Procedure:

Mode: playback

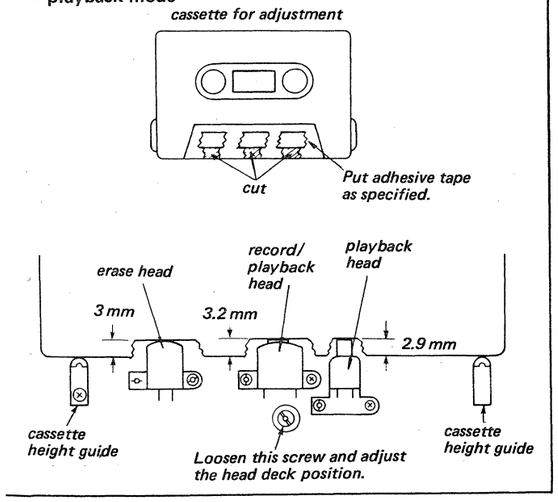


Specification:

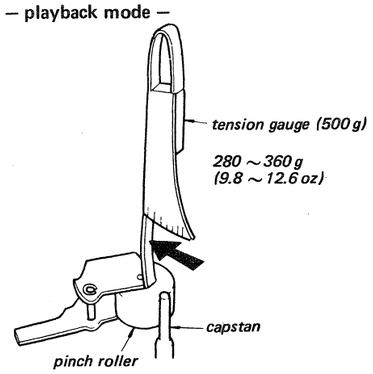
0.3 % (RMS) or less

Note: Measure wow and flutter for beginning, midway and end portion of WS-48.

Head Deck Adjustment
– playback mode –



Pinch Roller Pressure Measurement
– playback mode –



Push pinch roller away from the capstan using tension gauge, as shown by the arrow. Allow pinch roller to return slowly. The pressure (tension) should be measured at the point where the pinch roller just contacts the capstan.

3-2. ELECTRICAL ADJUSTMENTS

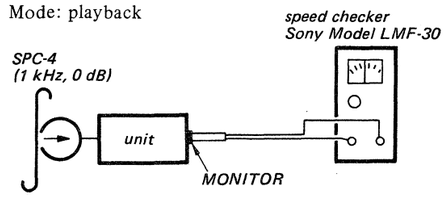
1. Tape Speed Adjustment

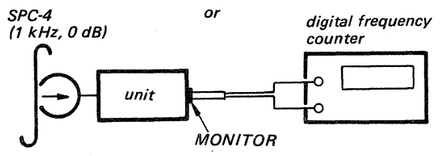
Settings:

VOLUME control:	mechanical mid
Power source:	6 V DC

Procedure:

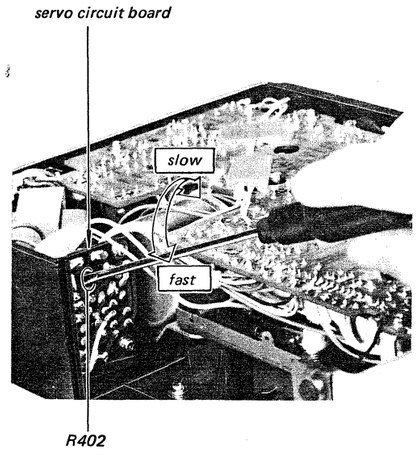
Mode: playback





Playback	Adjust	Speed Checker Reading	Digital Freq. Counter Reading
beginning of the tape	R402	0 %	1,000 Hz
end of the tape	check	within the deviation of 1.3 %	within the deviation of 13 Hz

Adjustment Location:



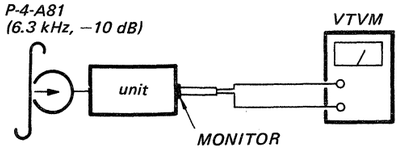
2. Record/playback Head Azimuth Adjustment

Settings:

TONE control:	HIGH max
VOLUME control:	mechanical mid

Procedure:

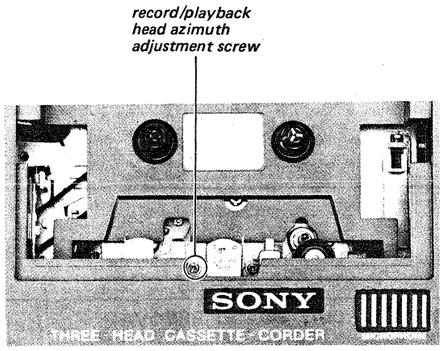
Mode: playback



Turn the adjustment screw for the highest VTVM reading.

Note: Several peaks may appear, take the highest.

Adjustment Location:



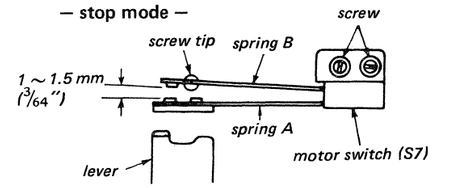
SECTION 3

ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

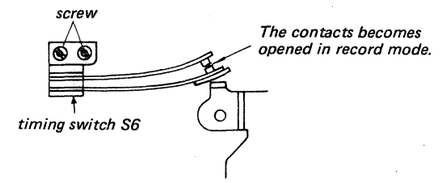
Motor Switch (S7) Adjustment

— stop mode —



1. Loosen the screws and adjust the switch position so that the spring B is located just above the center of screw tip.
2. Adjust by bending the spring A for the specified contact separation.

Timing Switch (S6) Adjustment



Make sure of the following functions:

1. When pressing RECORD button with no cassette loaded, the contacts should not be opened.
2. With RECORD button depressed, when slowly depressing the stop button, the contacts should be closed.
3. When slowly changing from the stop mode to the record mode, the howl should not be heard through the speaker.

If the above functions are not satisfied, loosen the screws and adjust the switch position.

Torque Measurement

Forward torque:	28 ~ 52 g·cm (0.39 ~ 0.72 oz·inch)
Fast forward torque:	55 ~ 100 g·cm (0.76 ~ 1.39 oz·inch)
Rewind torque:	55 ~ 95 g·cm (0.76 ~ 1.32 oz·inch)

Note: Forward torque is measured with Sony cassette type torque meter CQ101 (Part No. Y-20926-01-1).
Fast forward and rewind torques are measured with ordinary torque meter.

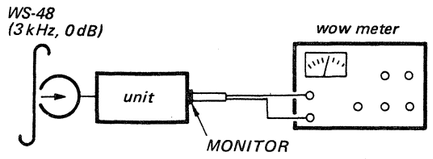
Wow and Flutter Measurement

Setting:

TONE control:	HIGH
VOLUME control:	mechanical mid

Procedure:

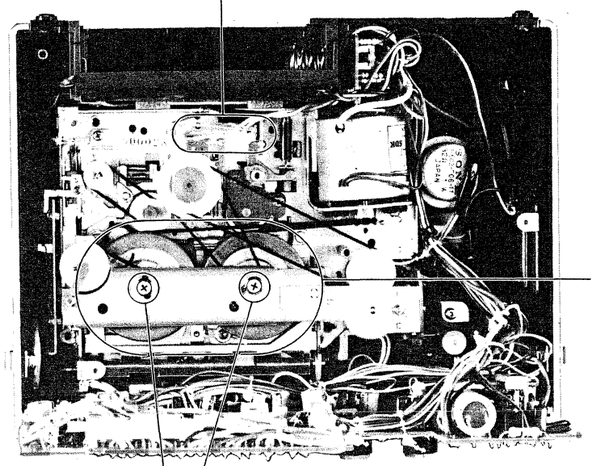
Mode: playback



Specification:

0.3 % (RMS) or less

Note: Measure wow and flutter for beginning, midway and end portion of WS-48.



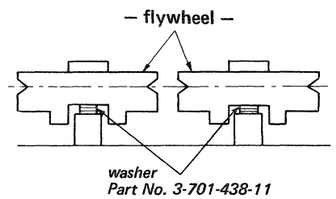
Flywheel Thrust Play Adjustment

— playback mode —

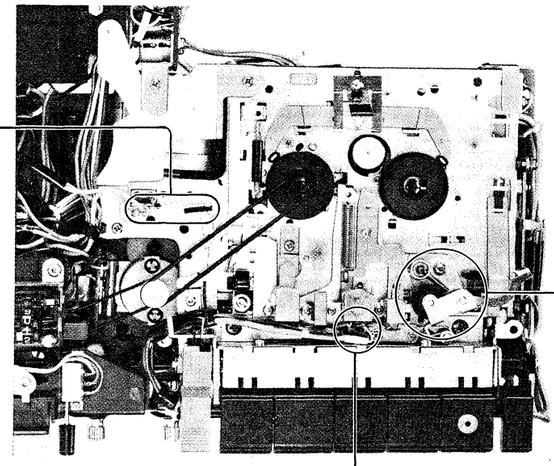
1. Supply 6 V DC to the DC IN 6 V jack with DC ammeter connected in series.
2. Loosen the both screws for sufficient thrust play.
3. Tighten one screw until the current suddenly increases, then loosen the screw 1/4 turn.
4. Adjust the other screw in the same way as step 3.
5. Apply locking compund to the screws.

Flywheel Height Adjustment

The grooves of two flywheels should be on the same level.

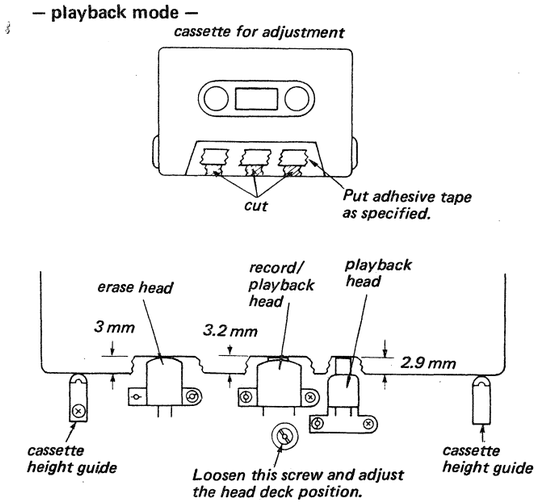


Adjust by changing the quantity of the washers.



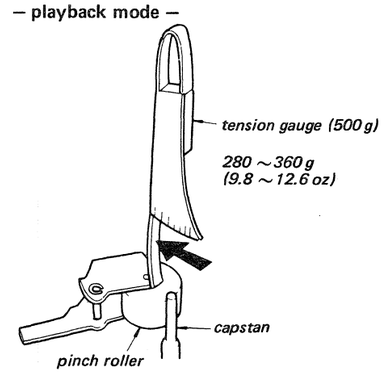
Head Deck Adjustment

— playback mode —



Pinch Roller Pressure Measurement

— playback mode —



Push pinch roller away from the capstan using tension gauge, as shown by the arrow. Allow pinch roller to return slowly. The pressure (tension) should be measured at the point where the pinch roller just contacts the capstan.

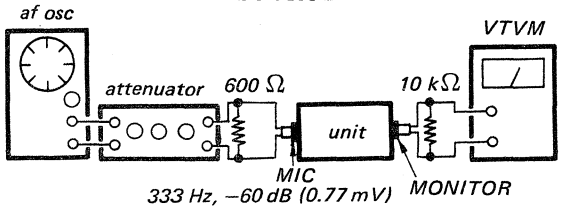
3. Playback (Monitor) Head Azimuth Adjustment

Settings:

AUTO/MANUAL switch:	MANUAL
TAPE SELECT switch:	NORMAL
TONE control:	HIGH max

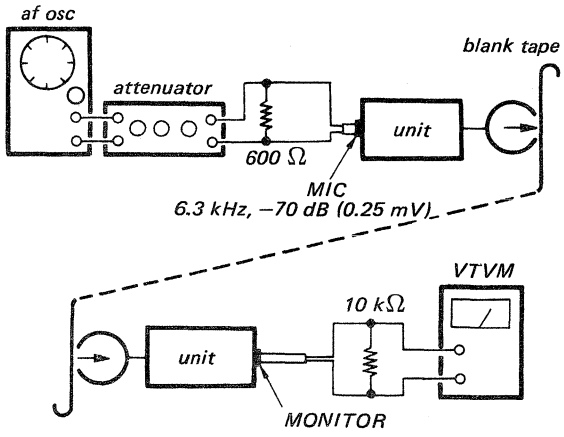
Procedure:

1. Bend the head guides outside for approximately 0.5 mm (1/64") clearance.
2. Mode: with RECORD button depressed
   MONITOR switch: SOURCE



   Adjust VOLUME control for 0 dB (0.775 V) VTVM reading.

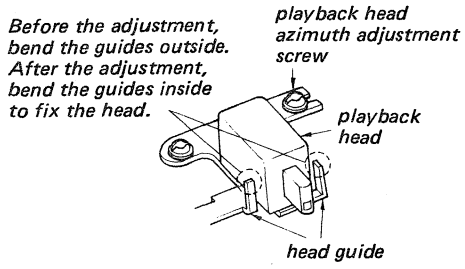
3. Mode: record
   MONITOR switch: TAPE



   Adjust the azimuth adjustment screw for maximam VTVM reading.

4. Bend the head guides inside to fix the head.
5. Apply the locking compound to the azimuth adjustment screw.

Adjustment Location:



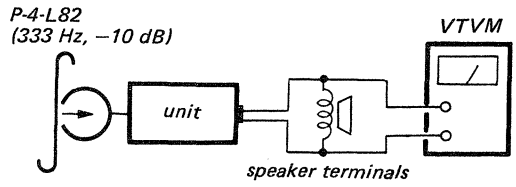
4. Playback Level Adjustment

Settings:

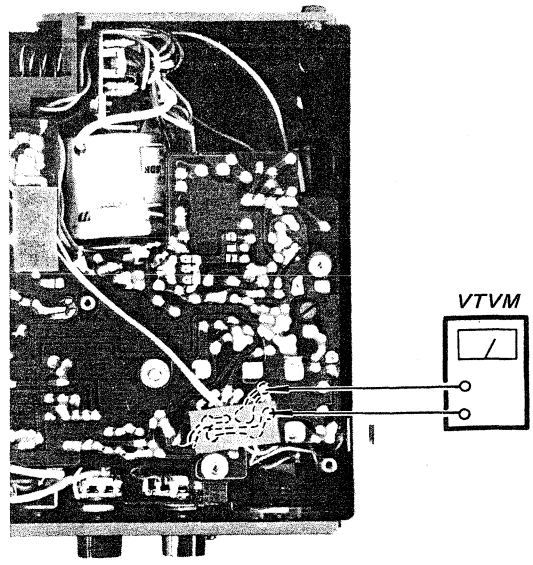
TAPE SELECT switch:	NORMAL
VOLUME control:	MAX
TONE control:	HIGH max
Power supply:	6 V DC

Procedure:

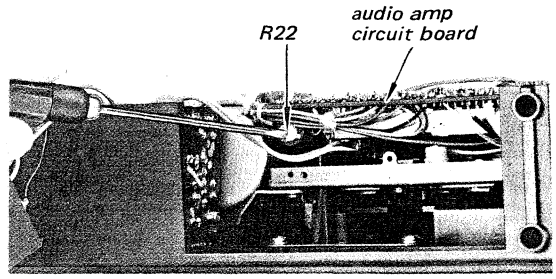
Mode: playback



Adjust R22 for + 13 dB (3.46 V) VTVM reading.



Adjustment Loaction:



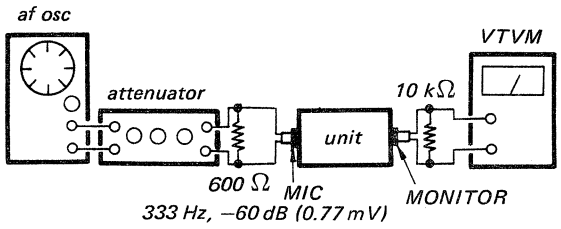
5. Level Meter Calibration

Settings:

TAPE SELECT switch:	NORMAL
AUTO/MANUAL switch:	MANUAL
MONITOR switch:	SOURCE
TONE control:	mechanical mid

Procedure:

1. Mode: with RECORD button depressed

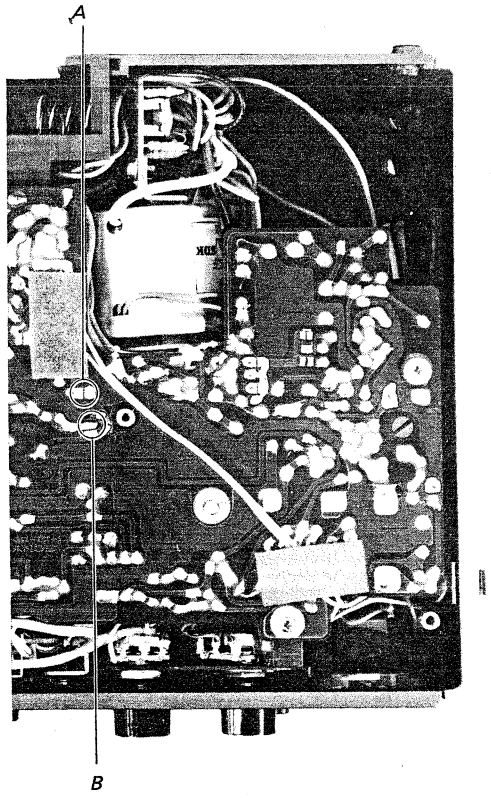


Adjust VOLUME control for 0 dB (0.775 V) VTVM reading.

2. Adjust by soldering the point A and point B for 0 reading on REC/BATT meter.

Note: Normally, the point A and point B are not soldered.

Adjustment Location:



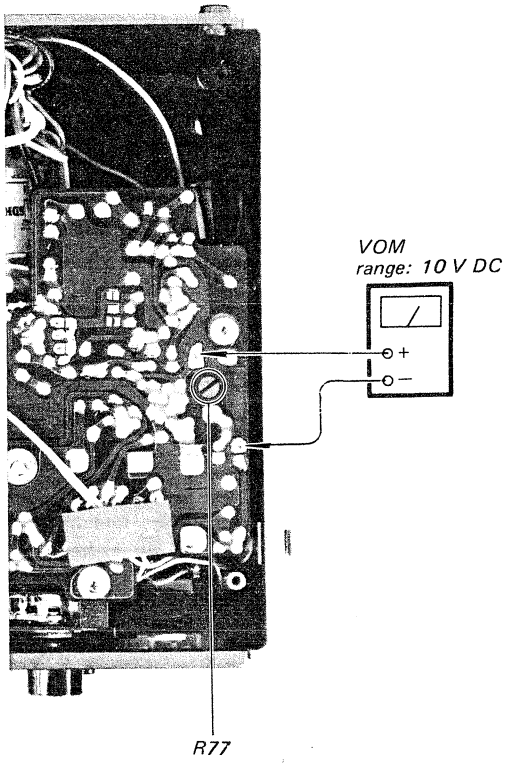
6. Power Supply Voltage Adjustment for Record Bias Oscillator

Settings:

Power supply: 6 V DC

Procedure:

With RECORD button depressed, Adjust R77 for 4.5 V VOM reading.



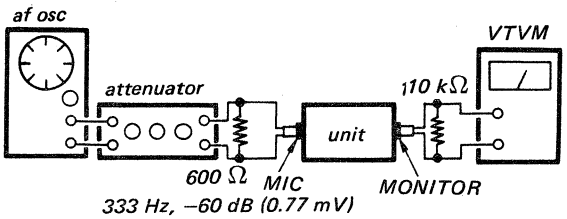
7. Record Bias Adjustment

Settings:

TAPE SELECT switch: NORMAL
AUTO/MANUAL switch: NAMUAL
TONE control: mechanical mid
Before this adjustment, perform "Power Supply Voltage Adjustment for Record Bias Oscillator".

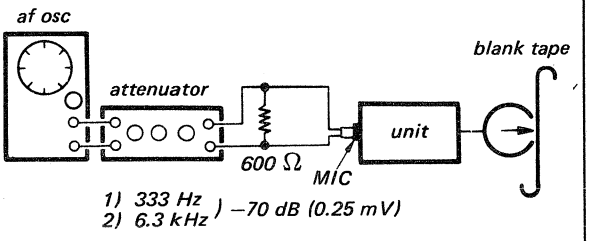
Procedure:

1. Mode: with RECORD button depressed
MONITOR switch: SOURCE

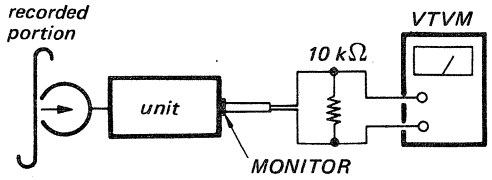


Adjust VOLUME control for 0 dB (0.775 V) VTVM reading.

2. Mode: record



3. Mode: playback



Playback	Adjust	VTVM Reading
333 Hz	VOLUME control	−10 dB (0.25 V)
6.3 kHz	check	−10 ± 2 dB (0.19 ~ 0.31 V)

4. If the output level at 6.3 kHz is out of the specified value, adjust by changing the connections at points 1 ~ 3 and points 4 ~ 6, and repeat Steps 1 ~ 3.

Note:

Connection Change	Output Level at 6.3 kHz
1 → 2 → 3	decrease
6 → 5 → 4	decrease

Normally, the point 2 and the points 5, 6 are connected.

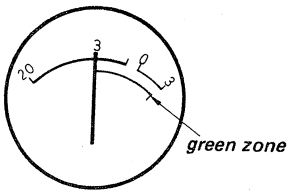
8. Battery Indicator Calibration

Settings:

VOLUME control: MIN
Power supply: 4.5 V DC

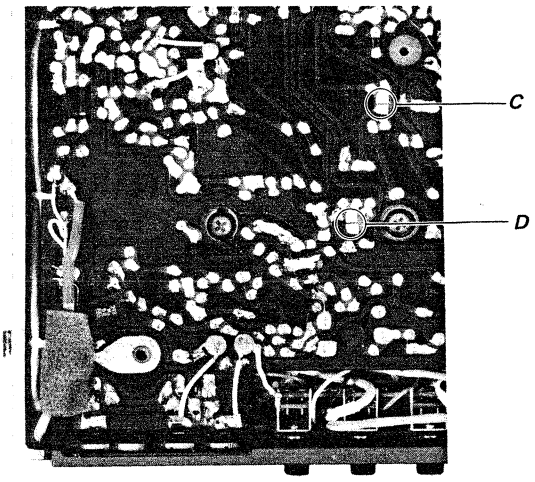
Procedure:

In record mode, Adjust by soldering the point C or point D so that REC/BATT meter indicates the left end of the green zone on the scale.

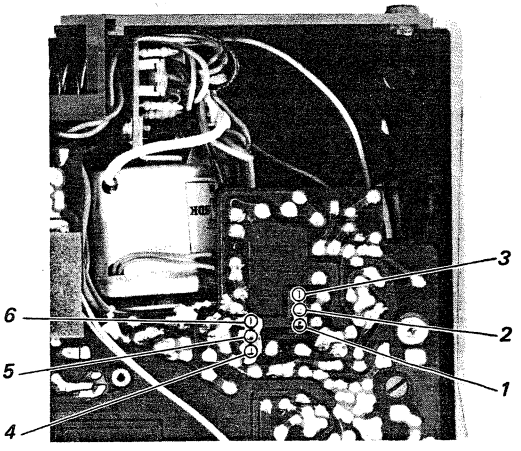


Note: Normally, the point C and point D are not soldered.

Adjustment Location:



Adjustment Location:



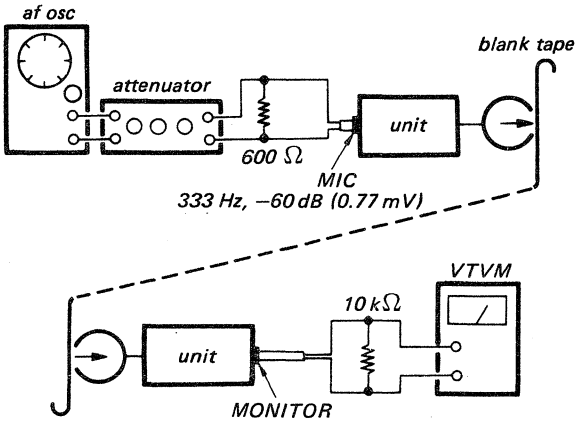
9. Monitor Level Adjustment

Settings:

TAPE SELECT switch: NORMAL
AUTO/MANUAL switch: MANUAL
TONE control: mechanical mid

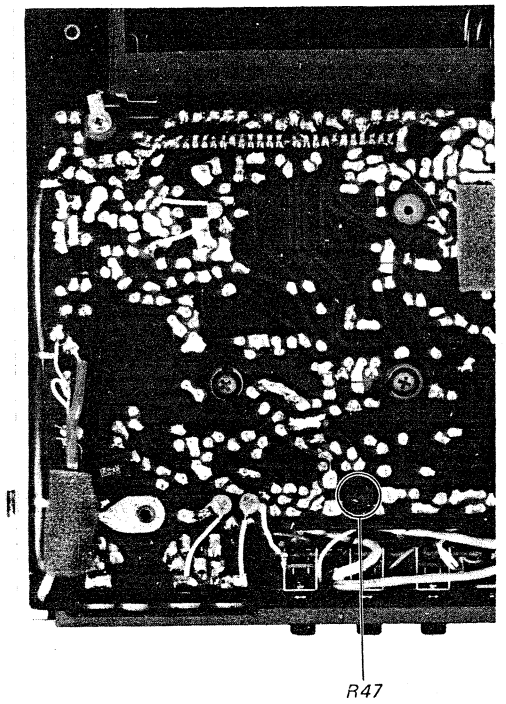
Procedure:

Mode: record



1. MONITOR switch: SOURCE
   Adjust VOLUME control for 0 dB (0.775 V) VTVM reading.
2. MONITOR switch: TAPE
   Adjust R47 for 0 dB (0.775 V) VTVM reading.

Adjustment Location:



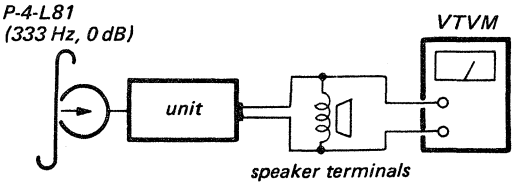
10. Playback Signal-to-Noise Ratio Measurement

Settings:

TAPE SELECT switch: NORMAL
TONE control: mechanical mid

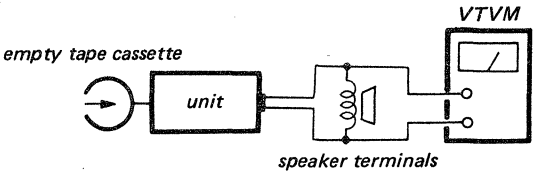
Procedure:

1. Mode: playback



   Adjust VOLUME control for +12 dB (3.1 V) VTVM reading.

2. Mode: playback



Specification:

Level in Step 2	Signal-to-Noise Ratio
−31 dB (22 mV) or less	43 dB or greater

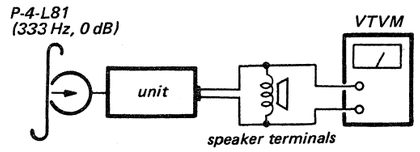
11. Playback Frequency Response Measurement

Settings:

TAPE SELECT switch:	NORMAL
TONE control:	mechanical mid

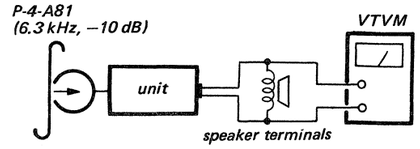
Procedure:

1. Mode: playback



Adjust VOLUME control for +12 dB (3.1 V) VTVM reading.

2. Mode: playback



Specification:

+2 dB ± 3 dB (0.69 V ~ 1.4 V) at 6.3 kHz

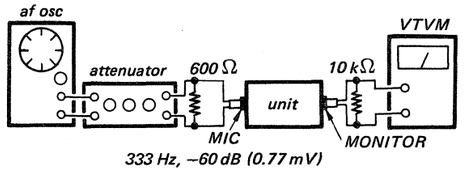
12. Overall Signal-to-Noise Ratio Measurement

Settings:

TAPE SELECT switch:	NORMAL
AUTO/MANUAL switch:	MANUAL
MONITOR switch:	SOURCE
TONE control:	mechanical mid

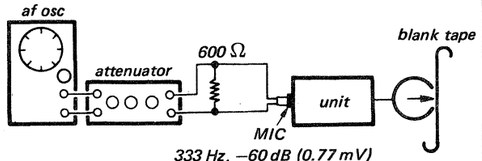
Procedure:

1. Mode: with RECORD button depressed

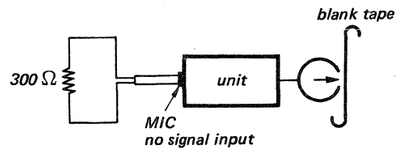


Adjust VOLUME control for 0 dB (0.775 V) VTVM reading.

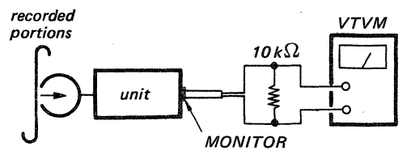
2. Mode: record



3. Mode: record



4. Mode: playback



Playback	VTVM Reading
333 Hz	Adjust VOLUME control. for 0 dB (0.775 V)
no signal	−40 dB (7.7 mV) or less

Specification:

Signal-to-noise ratio: 40 dB or greater

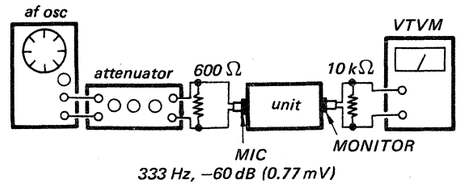
13. Overall Frequency Response Measurement

Settings:

TAPE SELECT switch:	NORMAL
AUTO/MANUAL switch:	MANUAL
MONITOR switch:	SOURCE
TONE control:	mechanical mid

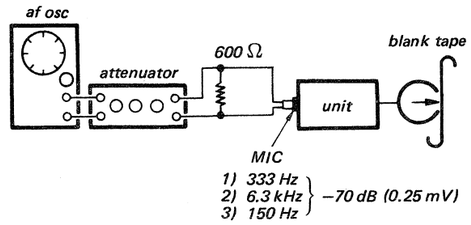
Procedure:

1. Mode: with RECORD button depressed

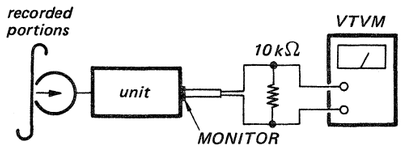


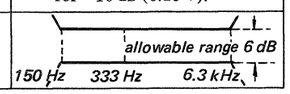
Adjust VOLUME control for 0 dB (0.775 V) VTVM reading.

2. Mode: record



3. Mode: playback



Playback	VTVM Reading
333 Hz	Adjust VOLUME control for −10 dB (0.25 V).
6.3 kHz 150 Hz	

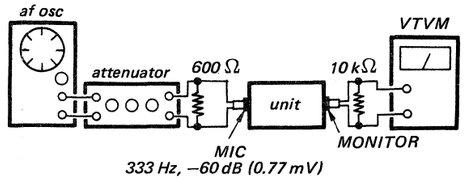
14. Overall Maximum Output Power Measurement

Settings:

TAPE SELECT switch:	NORMAL
AUTO/MANUAL switch:	MANUAL
MONITOR switch:	SOURCE
TONE control:	HIGH max
Power supply:	Use 6 V DC regulated power source.

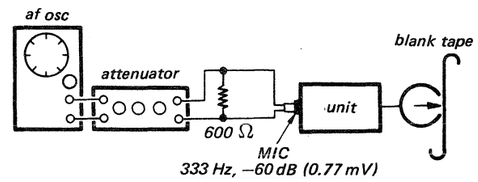
Procedure:

1. Mode: with RECORD button depressed

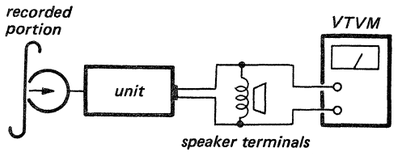


Adjust VOLUME control for 0 dB (0.775 V) VTVM reading.

2. Mode: record



3. Mode: playback
VOLUME control: MAX

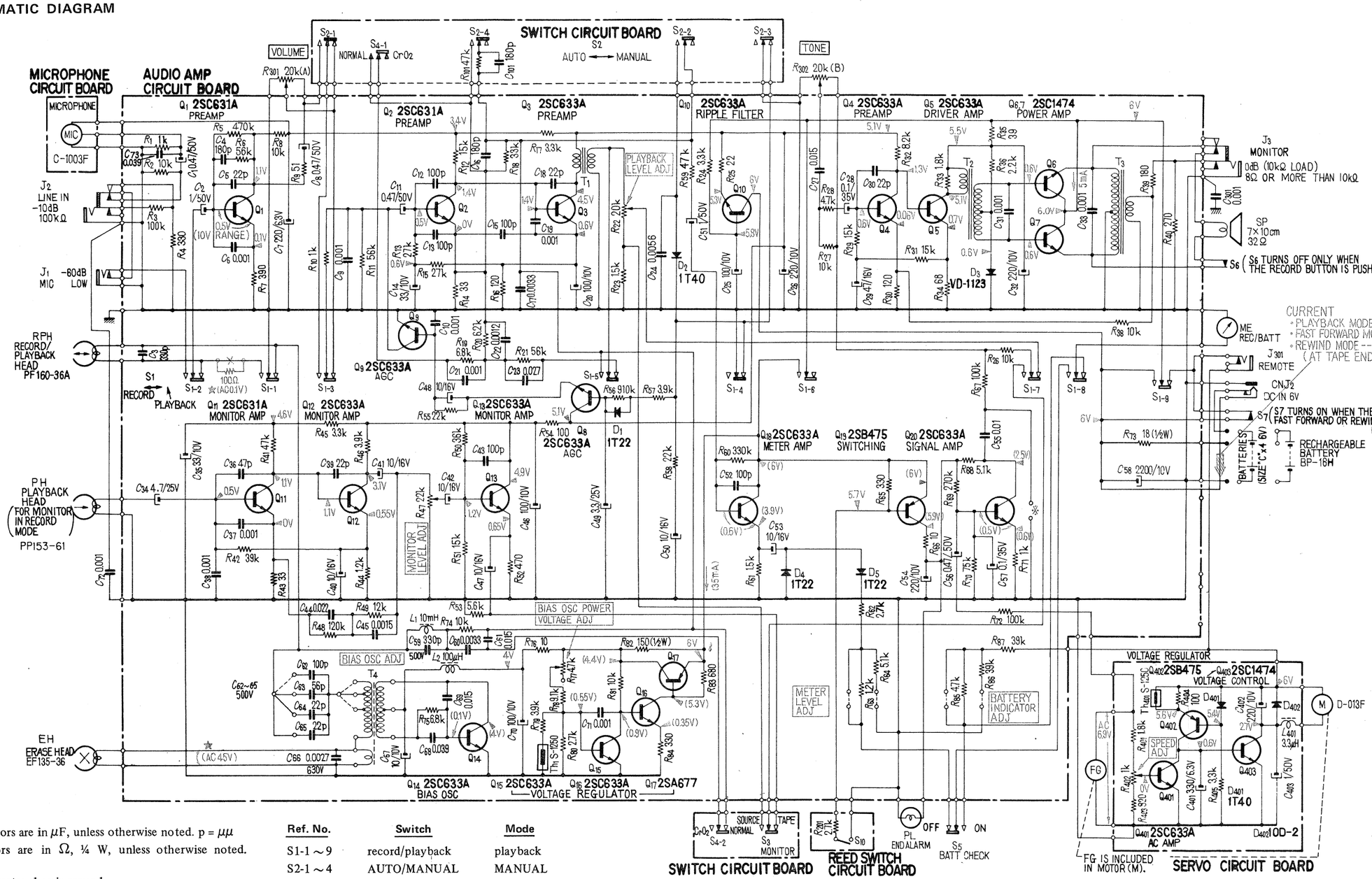


Specification:

+17 dB (5.5 V) or greater

SECTION 4
DIAGRAMS

4-1. SCHEMATIC DIAGRAM



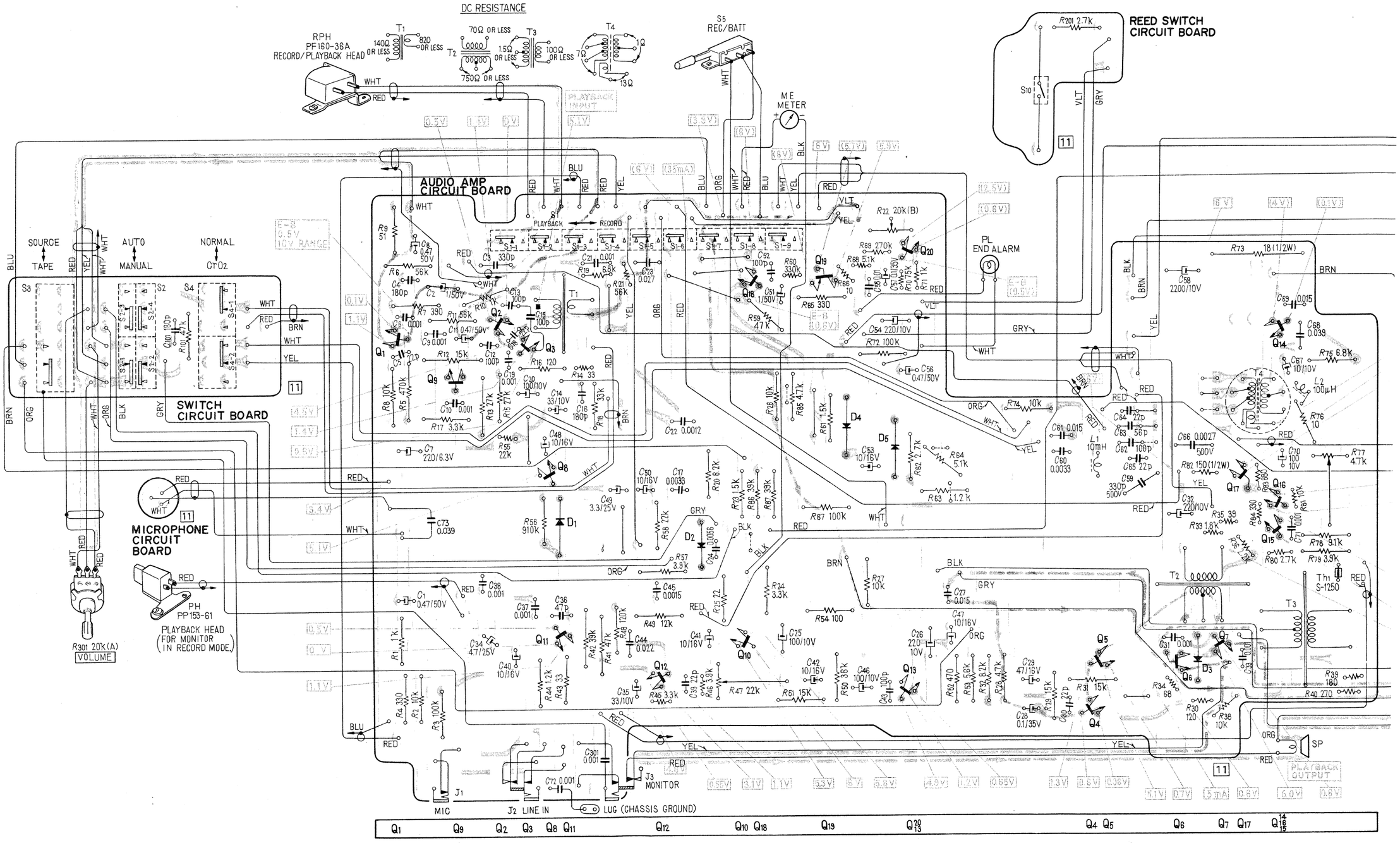
Note:

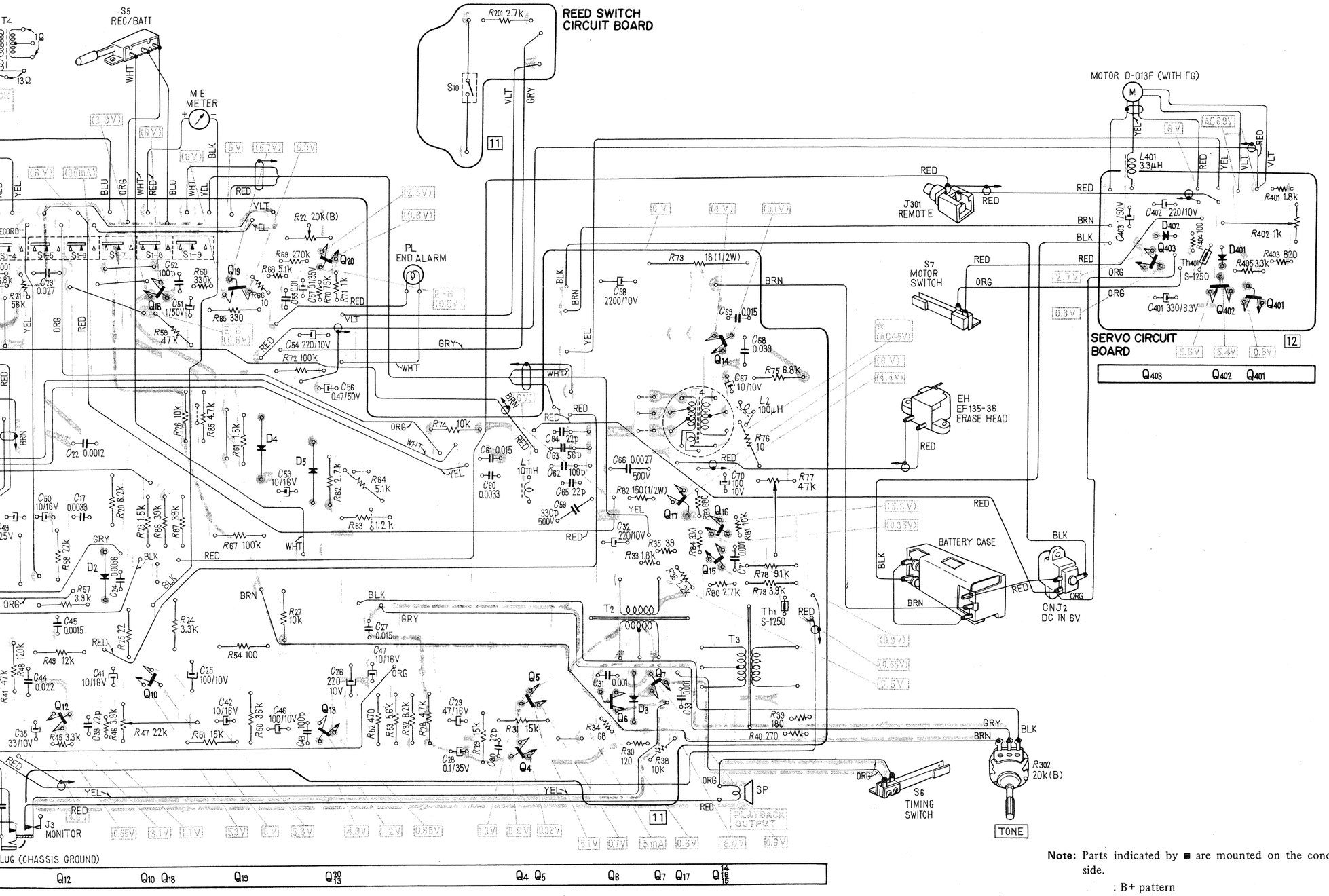
1. All capacitors are in μF, unless otherwise noted. p = μμ
2. All resistors are in Ω, ¼ W, unless otherwise noted. k = 1,000
3. ⏚ indicates chassis ground.
4. Voltages are DC with respect to ground, unless otherwise noted. Readings taken under no-signal conditions with a 20 kΩ/V VOM in playback mode. Readings in ( ) are in record mode.
   Variations may be noted due to normal production tolerances.
5. Voltages indicated by ☆ are AC, taken with VTVM in record mode.
6. Switch Mode:

Ref. No.	Switch	Mode
S1-1 ~ 9	record/playback	playback
S2-1 ~ 4	AUTO/MANUAL	MANUAL
S3	MONITOR	TAPE
S4-1 ~ 2	TAPE SELECT	NORMAL
S5	BATT CHECK	OFF
S6	timing	ON
S7	motor	ON
S8, 9	----------	
S10	END ALARM	OFF

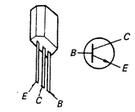
4-2. MOUNTING DIAGRAM

– Conductor Side –

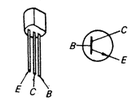




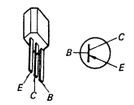
Q1, 2, 11: : 2SC631A
Q3 ~ 5, 8 ~ 10, Q12 ~ 16, 18, Q20, 401 : 2SC633A



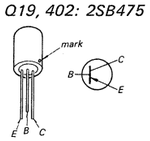
Q6, 7, 403: 2SC1474



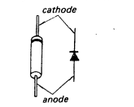
Q17: 2SA677



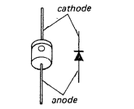
Q19, 402: 2SB475



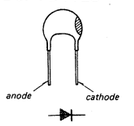
D1, 4, 5: 1T22
D2, 401: 1T40



D402: 10D-2



D3: VD1123



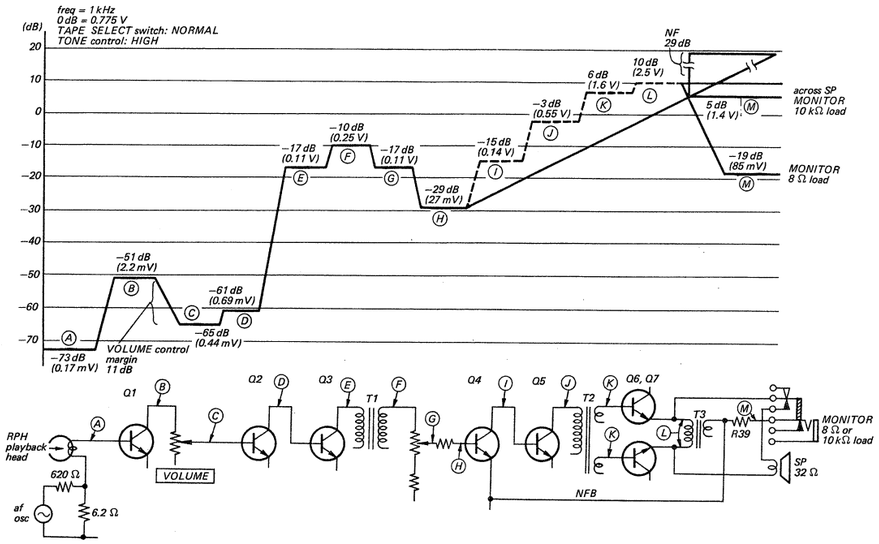
Note: Parts indicated by ■ are mounted on the conductor side.

: B+ pattern

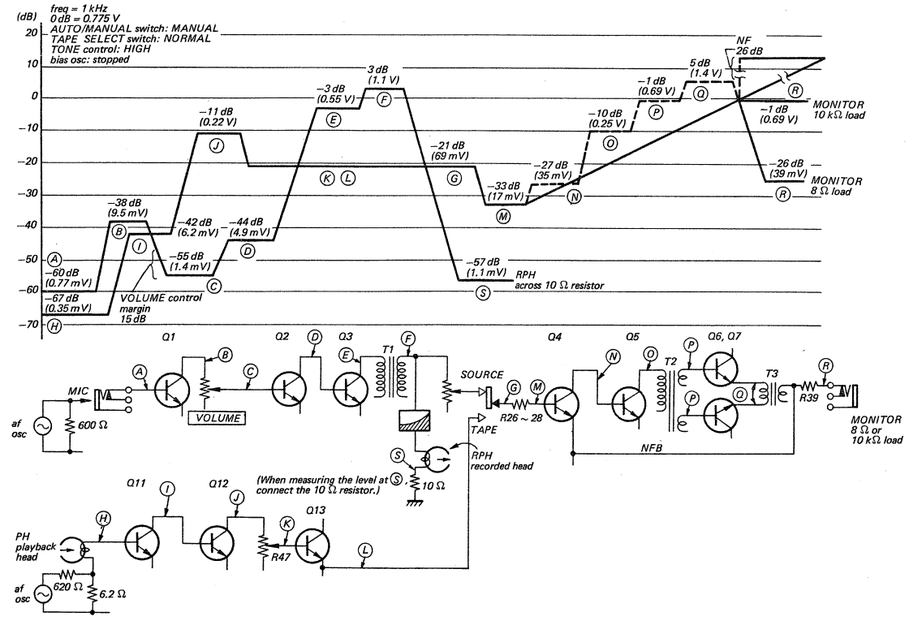
: signal path

4-3. LEVEL DIAGRAMS

Playback

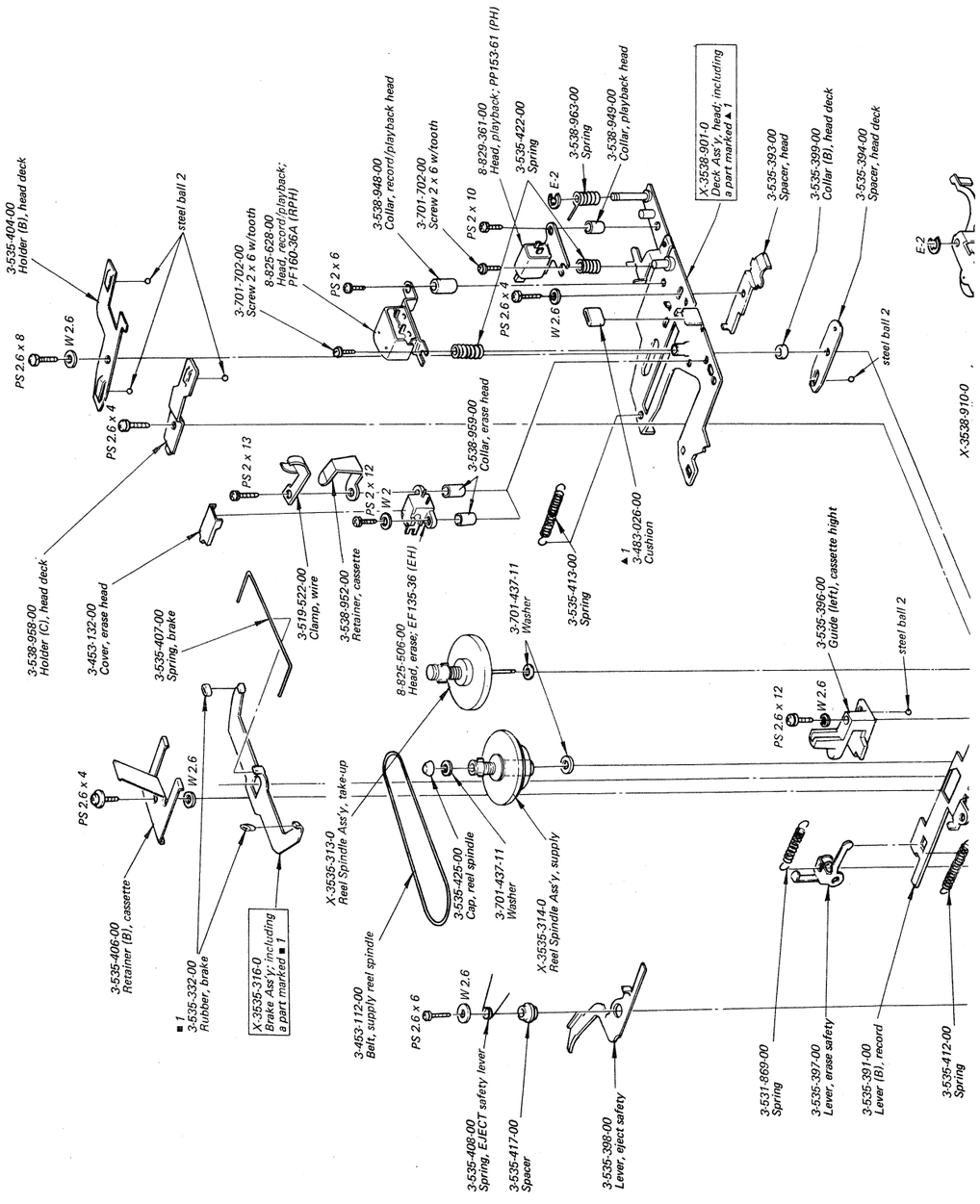


Record



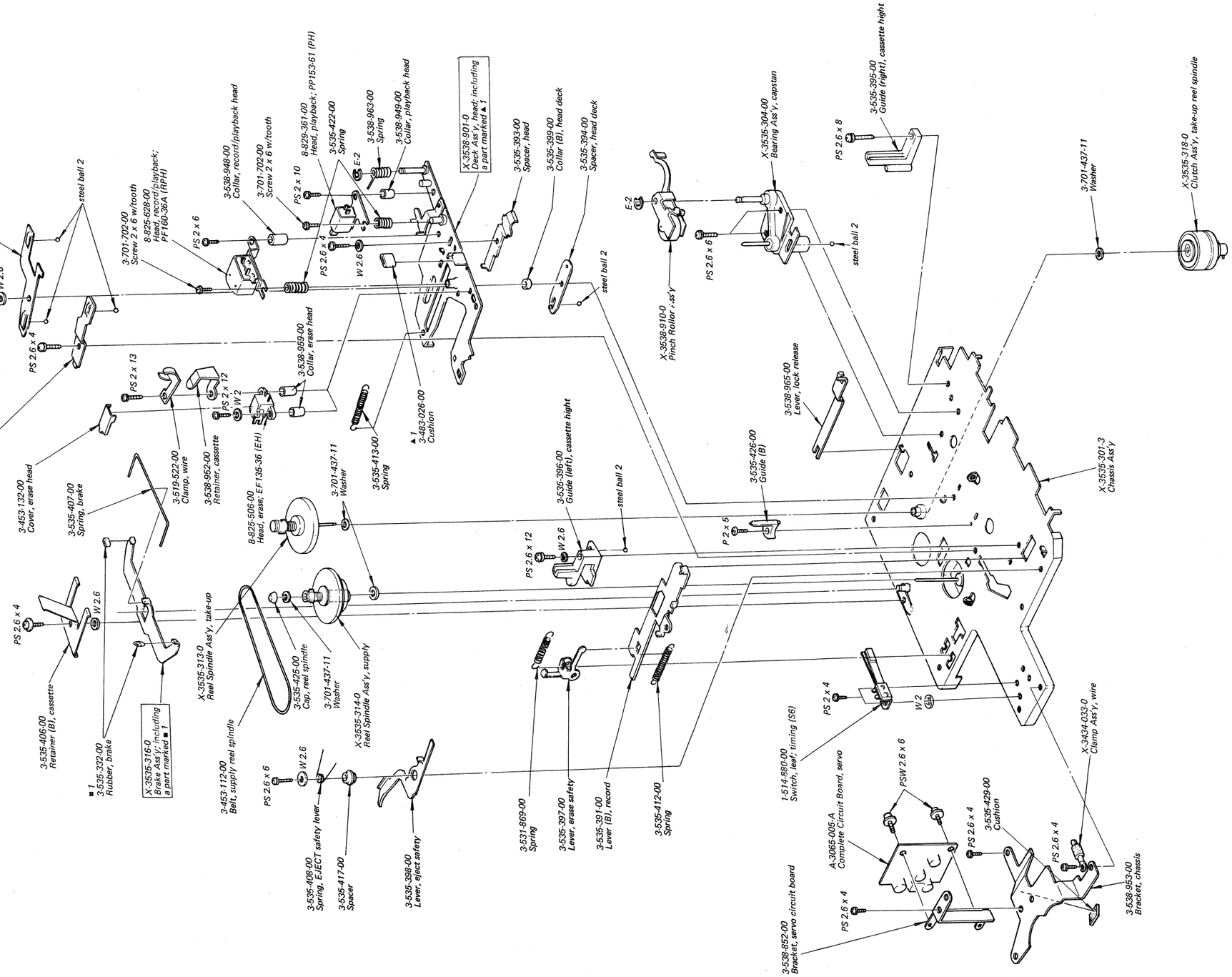
SECTION 5
EXPLODED VIEWS

5-1. CHASSIS TOP



SECTION 5
EXPLODED VIEWS

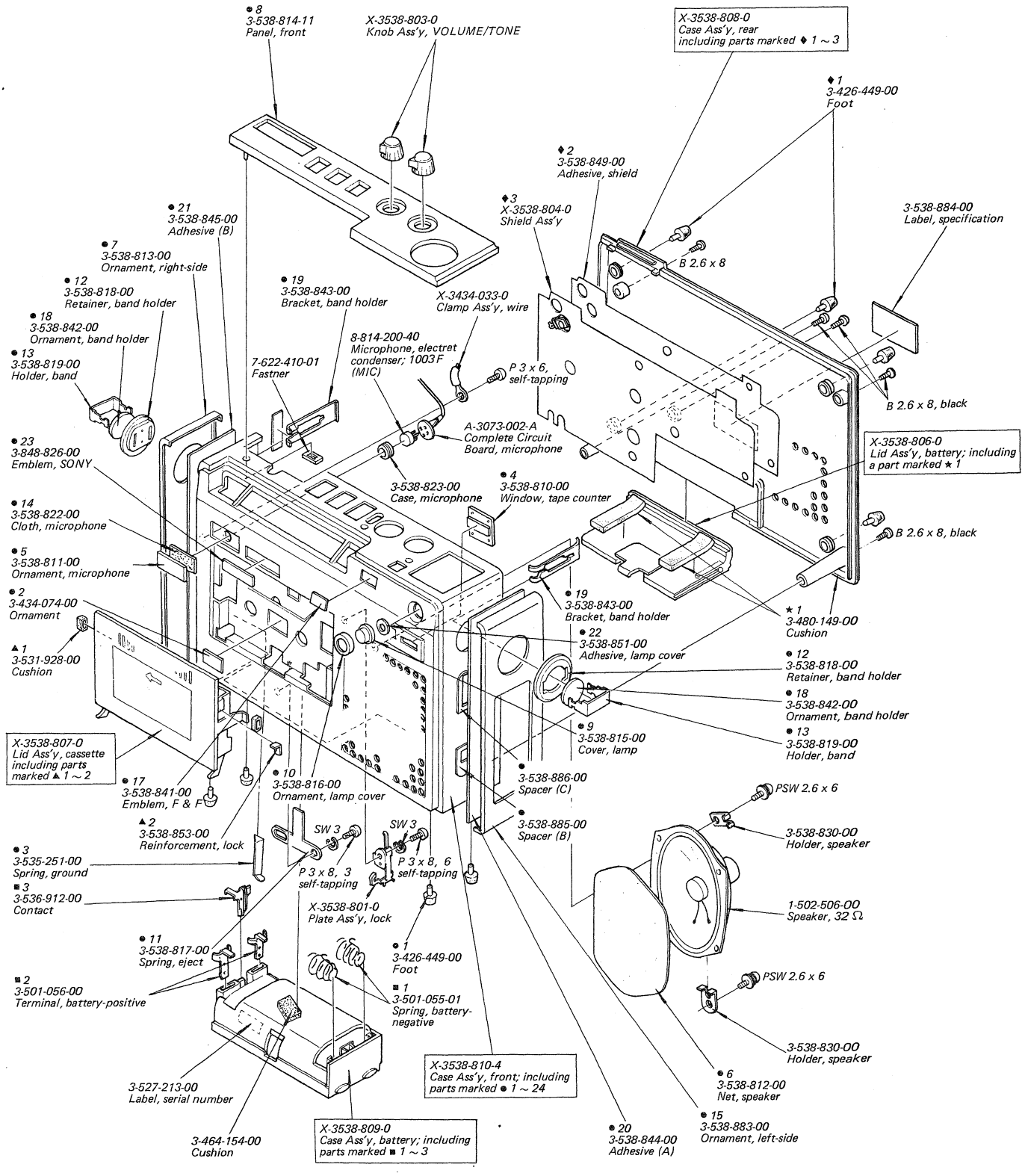
CHASSIS TOP



Note: 1. Parts without part numbers and names are not available.

2. All screws are Phillips type (cross recess type) unless otherwise indicated.
(–): slotted head

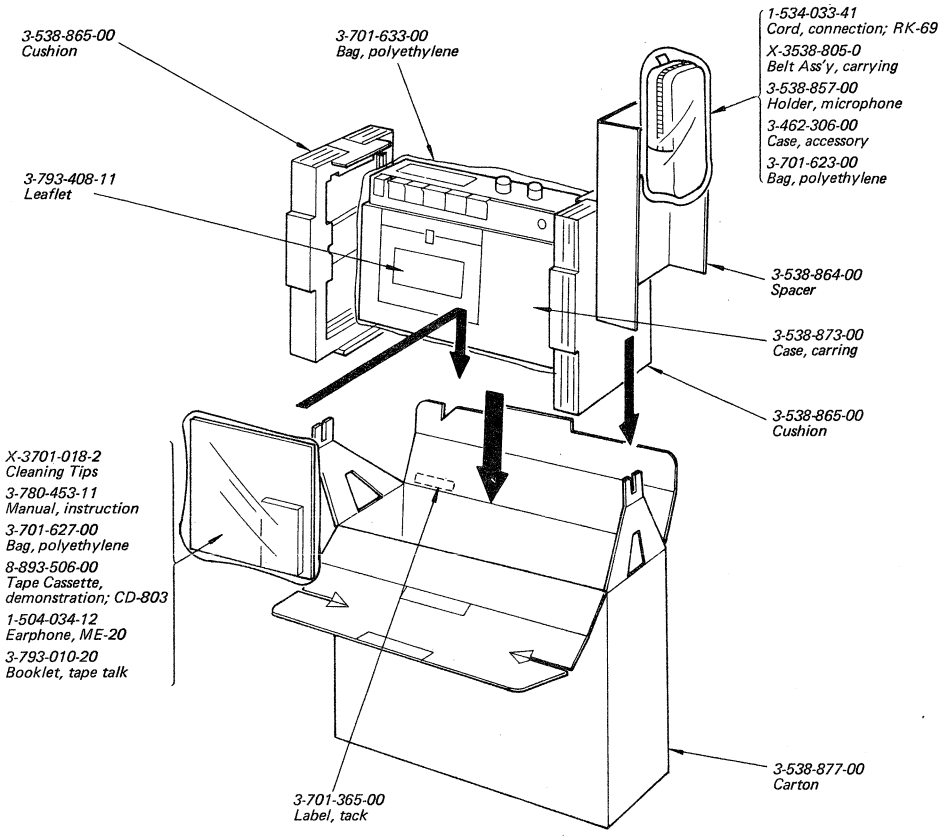
5-2. CASE AND PANELS



Note:

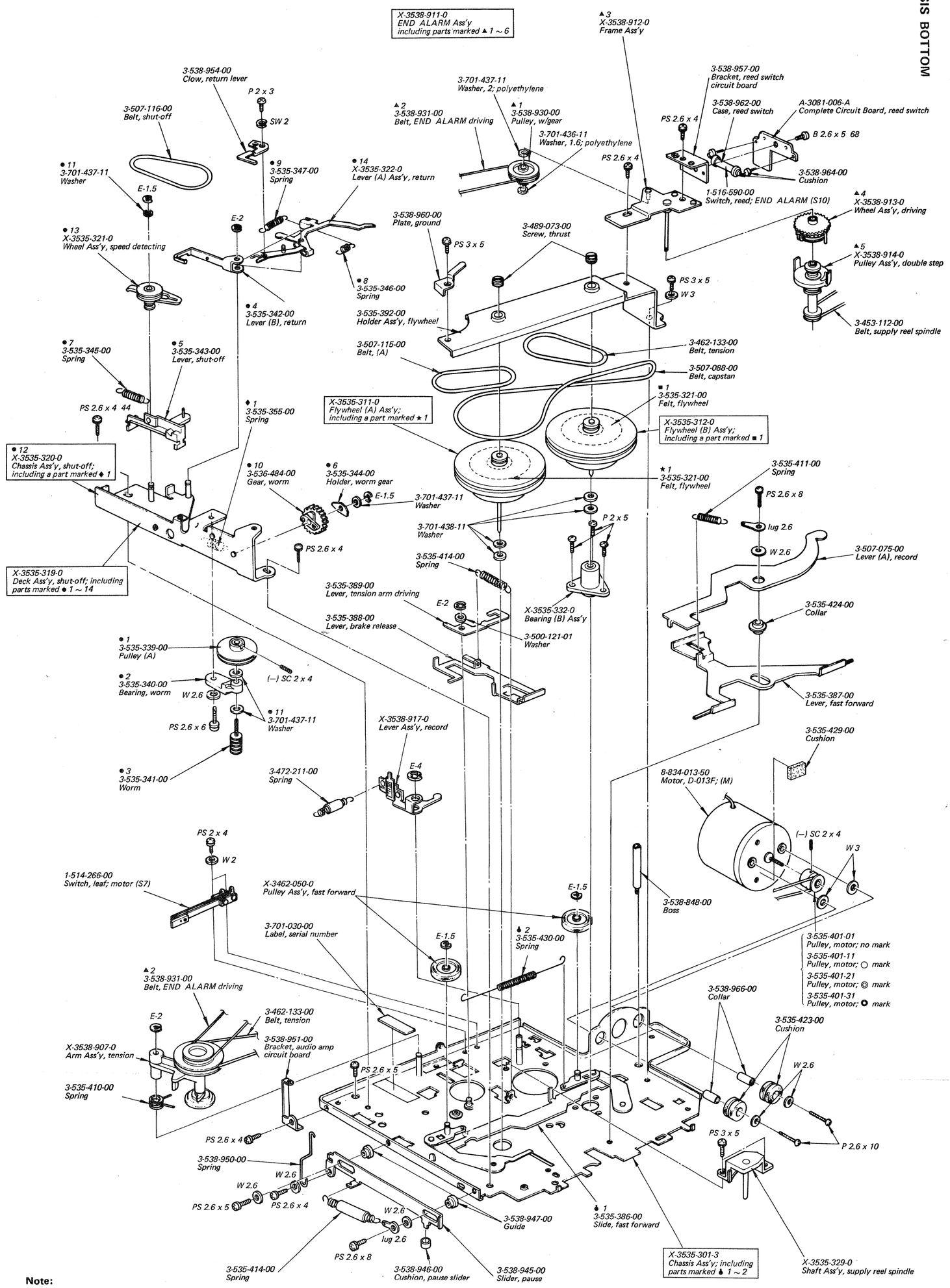
- ○ Items without part number and description are not available.
- ○ All screws are Phillips (cross recess) type unless otherwise noted.
  (−) = slotted head

5-3. PACKING



Note:

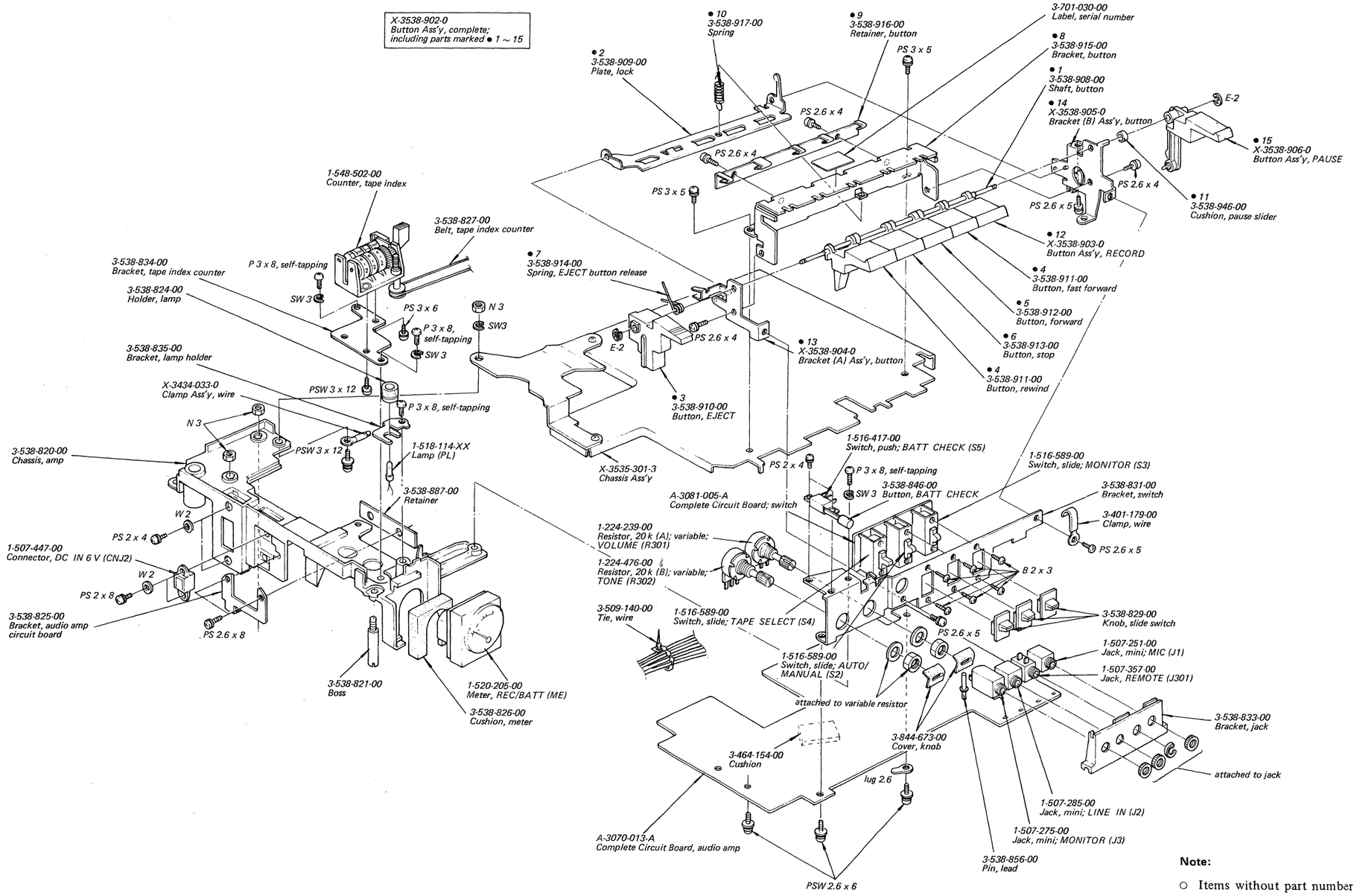
○ Items without part number and description are not available.



Note:

- ○ Items without part number and description are not available.
- ○ All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head

5-5. FUNCTION BUTTONS AND ELECTRICAL PARTS



Note:

- Items without part number and description are not available.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head

SECTION 6

ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description	
	COMPLETE CIRCUIT BOARDS		
	A-3070-013-A	Audio Amp	
	A-3081-005-A	Switch	
	A-3081-006-A	Reed Switch	
	A-3073-002-A	Microphone	
	A-3065-005-A	Servo	
	SEMICONDUCTORS		
Q1, 2		Transistor	2SC631A
Q3 ~ 5		Transistor	2SC633A
Q6, 7		Transistor	2SC1474
Q8 ~ 10		Transistor	2SC633A
Q11		Transistor	2SC631A
Q12 ~ 16		Transistor	2SC633A
Q17		Transistor	2SA677
Q18		Transistor	2SC633A
Q19		Transistor	2SB475
Q20		Transistor	2SC633A
Q401		Transistor	2SC633A
Q402		Transistor	2SB475
Q403		Transistor	2SC1474
D1		Diode	1T22
D2		Diode	1T40
D3		Diode	VD1123
D4, 5		Diode	1T22
D401		Diode	1T40
D402		Diode	10D-2
Th1	1-800-199-00	Thermistor	S-1250
Th401	1-800-199-00	Thermistor	S-1250
	COILS		
L1	1-407-504-00	10 mH, microinductor	
L2	1-407-169-00	100 μH, microinductor	
L401	1-407-484-00	3.3 μH, microinductor	

Ref. No.	Part No.	Description		
	TRANSFORMERS			
T1	1-423-207-00	Driver		
T2	1-423-208-00	Driver		
T3	1-427-379-00	Output		
T4	1-433-177-00	Bias Osc		
	CAPACITORS			
All capacitors are μF unless otherwise indicated. (elect = electrolytic, p = μμ)				
C1	1-121-726-11	0.47	50 V	elect
C2	1-121-391-11	1	50 V	elect
C3	1-102-112-11	330 p	50 V	ceramic
C4	1-102-109-11	180 p	50 V	ceramic
C5	1-102-959-11	22 p	50 V	ceramic
C6	1-102-074-11	0.001	50 V	ceramic
C7	1-121-419-11	220	6.3 V	elect
C8	1-121-726-11	0.47	50 V	elect
C9, 10	1-102-074-11	0.001	50 V	ceramic
C11	1-121-726-11	0.47	50 V	elect
C12, 13	1-102-106-11	100 p	50 V	ceramic
C14	1-121-402-11	33	10 V	elect
C15	1-102-106-11	100 p	50 V	ceramic
C16	1-102-109-11	180 p	50 V	ceramic
C17	1-105-667-12	0.0033	50 V	mylar
C18	1-102-959-11	22 p	50 V	ceramic
C19	1-102-074-11	0.001	50 V	ceramic
C20	1-121-414-11	100	10 V	elect
C21	1-105-661-12	0.001	50 V	mylar
C22	1-105-662-12	0.0012	50 V	mylar
C23	1-105-678-12	0.027	50 V	mylar
C24	1-105-670-12	0.0056	50 V	mylar
C25	1-121-414-11	100	10 V	elect
C26	1-121-420-11	200	10 V	elect
C27	1-105-675-12	0.015	50 V	mylar
C28	1-131-209-11	0.1	35 V	tantalum
C29	1-121-409-11	47	16 V	elect

Ref. No.	Part No.	Description		
C30	1-102-959-11	22 p	50 V	ceramic
C31	1-102-074-11	0.001	50 V	ceramic
C32	1-121-420-11	220	10 V	elect
C33	1-102-074-11	0.001	50 V	ceramic
C34	1-121-395-11	4.7	25 V	elect
C35	1-121-402-11	33	10 V	elect
C36	1-101-880-11	47 p	50 V	ceramic
C37, 38	1-102-074-11	0.001	50 V	ceramic
C39	1-102-959-11	22 p	50 V	ceramic
C40 ~ 42	1-121-651-11	10	16 V	elect
C43	1-102-106-11	100 p	50 V	ceramic
C44	1-105-677-12	0.022	50 V	mylar
C45	1-105-663-12	0.0015	50 V	mylar
C46	1-121-414-11	100	10 V	elect
C47, 48	1-121-651-11	10	16 V	elect
C49	1-121-391-11	3.3	25 V	elect
C50	1-121-651-11	10	16 V	elect
C51	1-121-391-11	1	50 V	elect
C52	1-102-106-11	100 p	50 V	ceramic
C53	1-121-651-11	10	16 V	elect
C54	1-121-420-11	220	10 V	elect
C55	1-105-673-12	0.01	50 V	mylar
C56	1-121-726-11	0.47	50 V	elect
C57	1-131-209-11	0.1	35 V	tantalum
C58	1-121-659-11	2200	10 V	elect
C59	1-107-181-11	330 p	500 V	silvered mica
C60	1-105-667-12	0.0033	50 V	mylar
C61	1-105-675-12	0.015	50 V	mylar
C62	1-107-169-11	100 p	500 V	silvered mica
C63	1-107-165-11	56 p	500 V	silvered mica
C64, 65	1-107-210-11	22 p	500 V	silvered mica
C66	1-129-707-11	0.0027	630 V	polypropylene
C67	1-131-193-21	10	10 V	tantalum
C68	1-105-680-12	0.039	50 V	mylar
C69	1-105-675-12	0.015	50 V	mylar
C70	1-121-414-11	100	10 V	elect
C71, 72	1-102-074-11	0.001	50 V	ceramic
C73	1-105-680-12	0.039	50 V	mylar

Ref. No.	Part No.	Description		
C101	1-102-109-11	180 p	50 V	ceramic
C301	1-102-074-11	0.001	50 V	ceramic
C401	1-121-751-11	330	6.3 V	elect
C402	1-121-420-11	220	10 V	elect
C403	1-121-391-11	1	50 V	elect

RESISTORS

All resistors are ¼W, composition type and in Ω unless otherwise indicated. (k = 1000)

R1	1-202-383-31	1 k	
R2	1-202-407-31	10 k	
R3	1-202-431-31	100 k	
R4	1-202-371-31	330	
R5	1-244-737-09	470 k	carbon, low noise
R6	1-202-425-31	56 k	
R7	1-202-373-31	390	
R8	1-244-697-09	10 k	carbon, low noise
R9	1-202-342-31	51	
R10	1-202-383-31	1 k	
R11	1-202-435-31	56 k	
R12	1-244-701-09	15 k	carbon, low noise
R13	1-244-707-09	27 k	carbon, low noise
R14	1-202-337-31	33	
R15	1-202-417-31	27 k	
R16	1-202-361-31	120	
R17	1-202-395-31	3.3 k	
R18	1-202-419-31	33 k	
R19	1-202-403-31	6.8 k	
R20	1-202-402-31	6.2 k	
R21	1-202-425-31	56 k	
R22	1-221-630-00	20 k, adjustable	
R23	1-202-387-31	1.5 k	
R24	1-202-395-31	3.3 k	
R25	1-202-333-31	22	
R26, 27	1-202-407-31	10 k	
R28	1-202-399-31	4.7 k	
R29	1-202-411-31	15 k	

Ref. No.	Part No.	Description	
R30	1-202-361-31	120	
R31	1-202-411-31	15 k	
R32	1-202-405-31	8.2 k	
R33	1-202-389-31	1.8 k	
R34	1-202-355-31	68	
R35	1-202-339-31	39	
R36	1-202-391-31	2.2 k	
R38	1-202-407-31	10 k	
R39	1-202-365-31	180	
R40	1-202-369-31	270	
R41	1-244-713-09	47 k	carbon, low noise
R42	1-244-711-09	39 k	carbon, low noise
R43	1-202-337-31	33	
R44	1-202-385-31	1.2 k	
R45	1-202-395-31	3.3 k	
R46	1-202-397-31	3.9 k	
R47	1-222-775-00	22 k, adjustable	
R48	1-202-433-31	120 k	
R49	1-202-409-31	12 k	
R50	1-202-420-31	36 k	
R51	1-202-411-31	15 k	
R52	1-202-375-31	470	
R53	1-202-401-31	5.6 k	
R54	1-202-359-31	100	
R55	1-202-415-31	22 k	
R56	1-202-454-31	910 k	
R57	1-202-397-31	3.9 k	
R58	1-202-415-31	22 k	
R59	1-202-423-31	47 k	
R60	1-202-443-31	330 k	
R61	1-202-387-31	1.5 k	
R62	1-202-393-31	2.7 k	
R63	1-202-385-31	1.2 k	
R64	1-202-400-31	5.1 k	
R65	1-202-371-31	330	
R66	1-202-325-31	10	
R67	1-202-431-31	100 k	

Ref. No.	Part No.	Description	
R68	1-202-400-31	5.1 k	
R69	1-202-441-31	270 k	
R70	1-202-428-31	75 k	
R71	1-202-383-31	1 k	
R72	1-202-431-31	100 k	
R73	1-244-831-11	18	carbon
R74	1-202-407-31	10 k	
R75	1-202-403-31	6.8 k	
R76	1-202-325-31	10	
R77	1-222-773-00	4.7 k, adjustable	
R78	1-202-406-31	9.1 k	
R79	1-202-397-31	3.9 k	
R80	1-202-393-31	2.7 k	
R81	1-202-407-31	10 k	
R82	1-202-553-31	150 ½ W	
R83	1-202-379-31	680	
R84	1-202-371-31	330	
R85	1-202-399-31	4.7 k	
R86, 87	1-202-421-31	39 k	
R101	1-202-423-31	47 k	
R201	1-202-393-31	2.7 k	
R301	1-224-239-00	20 k (A), variable; VOLUME	
R302	1-224-476-00	20 k (B), variable; TONE	
R401	1-242-679-11	1.8 k	carbon
R402	1-222-771-00	1 k, adjustable	
R403	1-242-671-11	820	carbon
R404	1-242-649-11	100	carbon
R405	1-242-685-11	3.3 k	carbon

SWITCHES

S1	1-516-400-21	Slide, record/playback
S2, S3, S4	1-516-589-00	Slide, AUTO/MANUAL, MONITOR, TAPE SELECT
S5	1-516-417-00	Push, BATT CHECK
S6	1-514-880-00	Leaf, timing
S7	1-514-266-00	Leaf, motor

Ref. No.	Part No.	Description
S8, 9		----------
S10	1-516-590-00	Reed, END ALARM
	CONNECTORS AND JACKS	
CNJ2	1-507-447-00	Connector, DC IN 6 V
J1	1-507-251-00	Jack, mini; MIC
J2	1-507-285-00	Jack, mini; LINE IN
J3	1-507-275-00	Jack, mini; MONITOR
J301	1-507-357-00	Jack, REMOTE

Ref. No.	Part No.	Description
	MISCELLANEOUS	
EH	8-825-506-00	Head, erase; EF135-36
PH	8-829-361-00	Head, playback; PP153-61
RPH	8-825-628-00	Head, record/playback; PF160-36A
M	8-834-013-50	Motor, D-013F
ME	1-520-205-00	Meter, REC/BATT
MIC	8-814-200-40	Microphone, electret condenser; C-1003F
PL	1-518-114-XX	Lamp
SP	1-502-506-00	Speaker, 32Ω

Hardware Nomenclature

P – Pan Head Screw

PS – Pan Head Screw with Spring Washer

K – Flat Countersunk Head Screw

B – Binding Head Screw

RK – Oval Countersunk Head Screw

T – Truss Head Screw

R – Round Head Screw

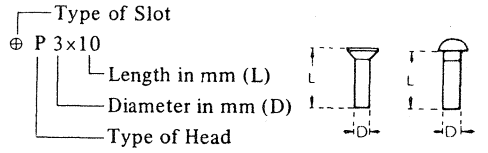
F – Flat Fillister Head Screw

SC – Set Screw

E – Retaining Ring (E Washer)

W – Washer
SW – Spring Washer
LW – Lock Washer
N – Nut

– Example –



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