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Photo: US, AEP, E model

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under license from Dolby Laboratories.

STEREO CASSETTE DECK

SPECIFICATIONS

GENERAL

- Power Requirements:** US, Canadian model:
120V ac, 60 Hz
AEP model:
220V ac ~, 50/60 Hz (or 240V ac ~
adjustable by authorized Sony Personnel)
E model:
110, 120, 220 or 240V ac ~ adjustable,
50/60 Hz
- Power Consumption:** 10W (US, Canadian model)
12W (AEP, E model)

- Dimensions:** US, AEP, E model
Approx. 410 (w) x 145 (h) x 260 (d) mm
16 1/8 (w) x 5 3/4 (h) x 10 1/4 (d) inches
Canadian model:
Approx. 440 (w) x 145 (h) x 260 (d) mm
17 3/8 (w) x 5 3/4 (h) x 10 1/4 (d) inches
including projecting parts and controls
- Weight:** US, AEP, E model:
Approx. 4.6 kg, 10 lb 3 oz
Canadian model:
Approx. 5.4 kg, 11 lb 15 oz

— Continued on page 2 —

SAFETY-RELATED COMPONENT WARNING!!
COMPONENTS IDENTIFIED BY SHADING AND MARK
⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED
VIEWS AND IN THE PARTS LIST ARE CRITICAL TO
SAFE OPERATION. REPLACE THESE COMPONENTS
WITH SONY PARTS WHOSE PART NUMBERS APPEAR
AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS
PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT
À LA SÉCURITÉ!
LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET
UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉ-
MATIQUES, LES VUES EXPLODÉES ET LA LISTE
DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ
DE FONCTIONNEMENT. NE REMPLACER CES
COMPOSANTS QUE PAR DES PIÈCES SONY DONT
LES NUMÉROS SONT DONNÉS DANS CE MANUEL
OU DES SUPPLÉMENTS PUBLIÉS PAR SONY.

Tape Transport Mechanism Type	MDS-20S2	
	Specification	Test Equipment
Forward Torque	25–55 g·cm (0.35–0.76 oz·inch)	Sony torque meter CQ-102 or 103
Fast Forward Torque and Rewind Torque	50–90 g·cm (0.69–1.25 oz·inch)	Sony torque meter CQ-201
Back Tension Torque	2.5–5 g·cm (0.03–0.07 oz·inch)	Sony torque meter CQ-102
Pinch Roller Pressure	260–400 g (9.17–14.1 oz)	Spring scale or tension gauge

SONY®
SERVICE MANUAL

TC-K15

TAPE RECORDER SECTION

- Recording System:** 4-track 2-channel stereo
- Fast Forward and
Rewind Time:** Approx. 90 sec. (with C-60)
- Frequency Response:** DOLBY NR OFF
US, Canadian model:
• With Type III cassette (Sony Fe-Cr)
30–16,000 Hz
40–15,000 Hz (± 3 dB)
• With Type II cassette (Sony EHF)
30–16,000 Hz
40–15,000 Hz (± 3 dB)
• With Type I cassette (Sony HFX)
30–14,000 Hz
40–12,500 Hz (± 3 dB)
AEP, E model:
• With Type III cassette (Sony Fe-Cr)
30–16,000 Hz
40–15,000 Hz (± 3 dB)
40–15,000 Hz (DIN)
• With Type II cassette (Sony CD-α)
30–16,000 Hz
40–15,000 Hz (± 3 dB)
40–15,000 Hz (DIN)
• With Type I cassette (Sony BHF)
30–14,000 Hz
40–12,500 Hz (± 3 dB)
40–12,500 Hz (DIN)
- Wow and Flutter:** 0.07% WRMS (US, Canadian model)
0.07% WRMS (NAB) } (AEP, E model)
± 0.2% (DIN)
- S/N Ratio:** DOLBY NR OFF
US, Canadian model:
• With Type III cassette (Sony Fe-Cr)
57 dB at peak level
• With Type II cassette (Sony EHF)
55 dB at peak level
AEP, E model:
• With Type III cassette (Sony Fe-Cr)
57 dB at peak level (NAB)
55 dB (DIN, 1975 rev.)
• With Type II cassette (Sony CD-α)
55 dB at peak level (NAB)
DOLBY NR ON
Improved by 5 dB at 1 kHz,
10 dB above 5 kHz

- Total Harmonic
Distortion:** 1.7% (With Sony Fe-Cr cassette)
- Bias Frequency:** 105 kHz
- Inputs:** MIC (two phone jacks)
sensitivity 0.25 mV (–70 dB)
for a low-impedance microphone
LINE IN (two phono jacks)
sensitivity 77.5 mV (–20 dB)
input impedance 50 kΩ
REC/PB (connector) (AEP, E model)
input impedance less than 10 kΩ
- Outputs:** LINE OUT (two phono jacks)
output level 0.435 V (–5 dB) at load
impedance 50 kΩ
suitable load impedance more than 10 kΩ
HEADPHONES (binaural jack)
output level 39mV(–26dB) at load
impedance 8Ω
REC/PB (connector) (AEP, E model)
output impedance less than 10 kΩ

0 dB = 0.775 V

MODEL IDENTIFICATION

— Specification Label —

US, Canadian model			
SONY	TAPECORDER		
	MODEL NO. TC-K15		
	AC 120V	60Hz	10W
	SERIAL NO.		

US, Canadian model

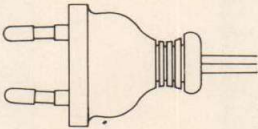
SONY	TAPECORDER			
	MODEL NO. TC-K15			
	SERIAL NO.			

AEP, E model

AEP model: AC 220V ~ 50/60 Hz 12W
E model: AC 110, 120, 220, 240V ~ 50/60 Hz 12W

— Power Cord —

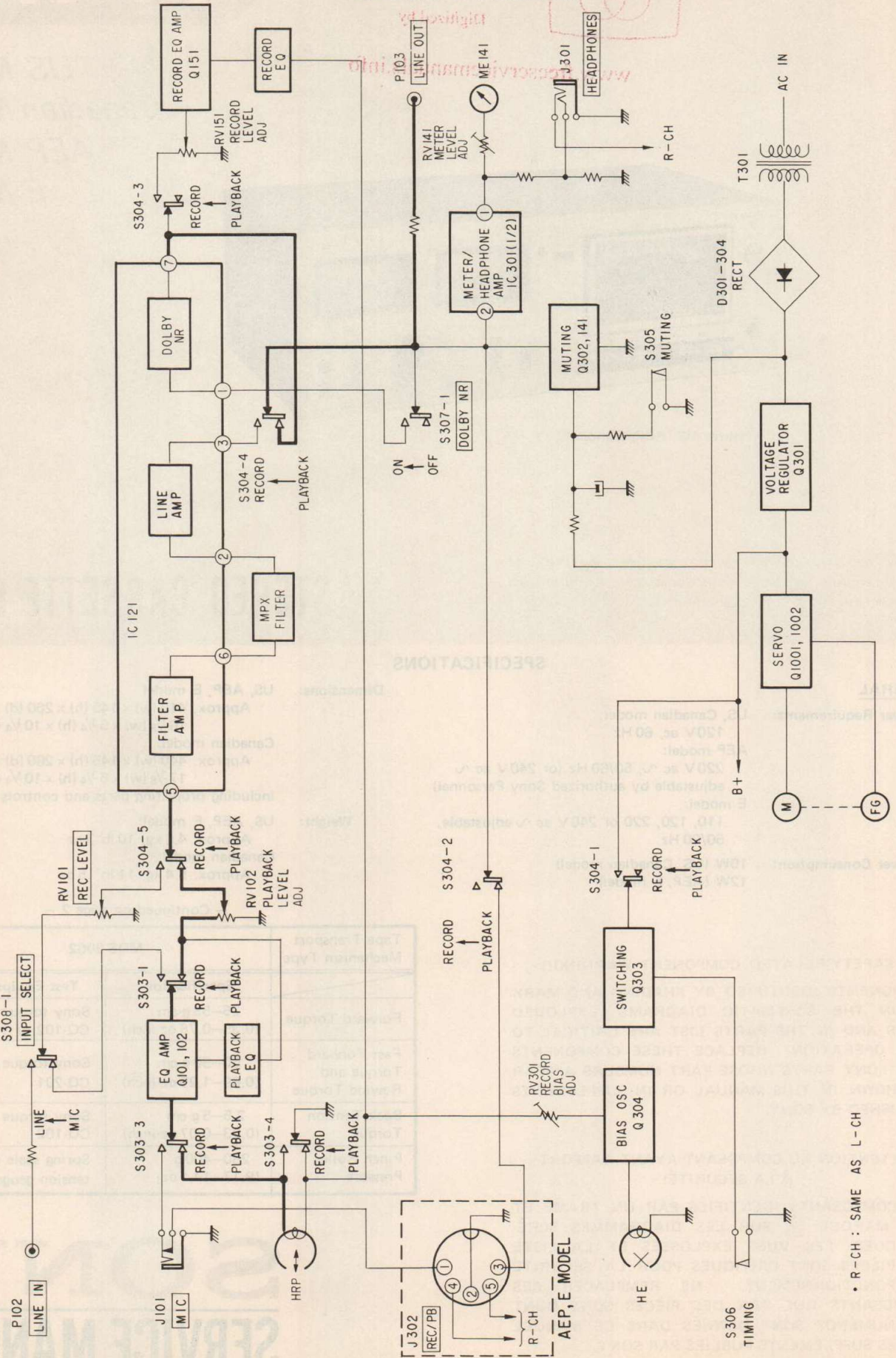
euro-plug (1-551-530-00)



parallel-blade plug (1-534-986-XX)



SECTION 1
BLOCK DIAGRAM



• R-CH : SAME AS L-CH

SECTION 2
DISASSEMBLY

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

TOP COVER AND FRONT PANEL REMOVAL

TOP COVER: 1, 2
FRONT PANEL: 3-6

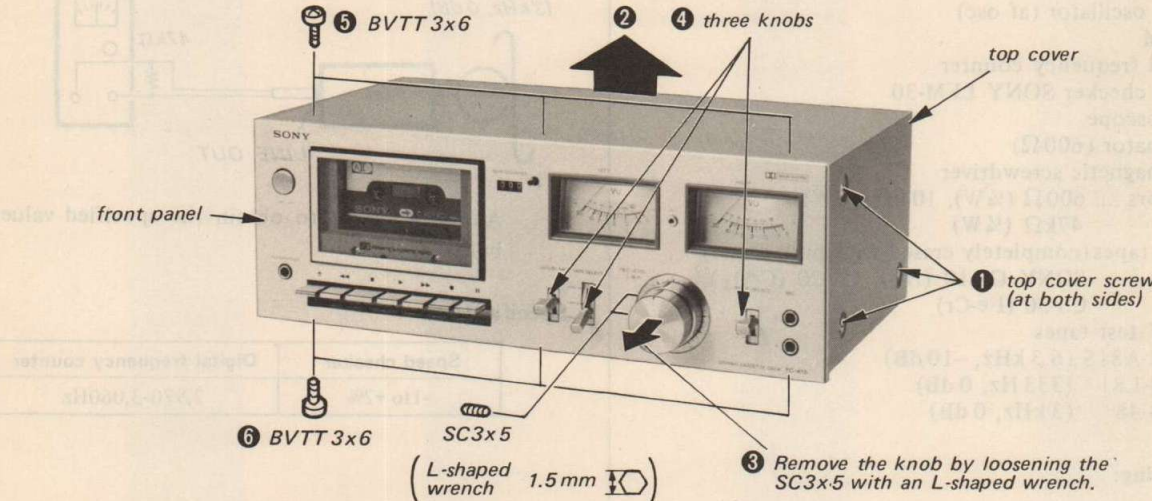
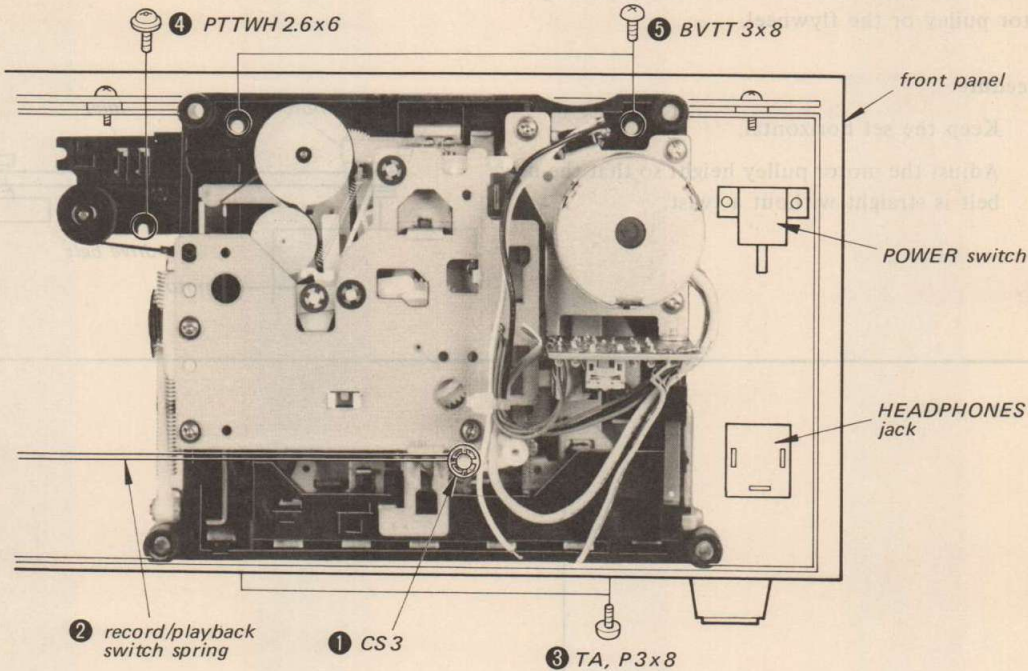
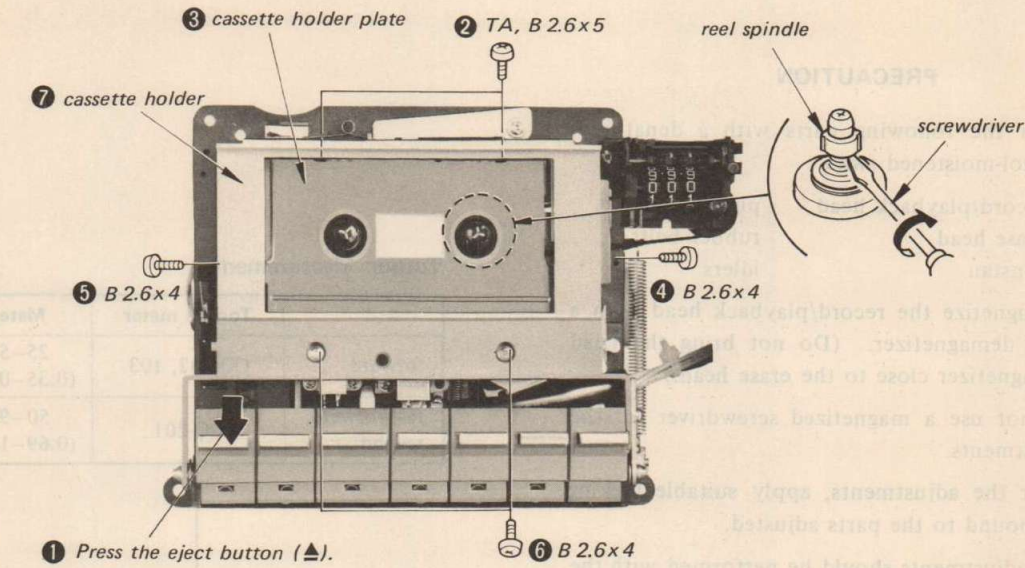


Photo: US, AEP, E model

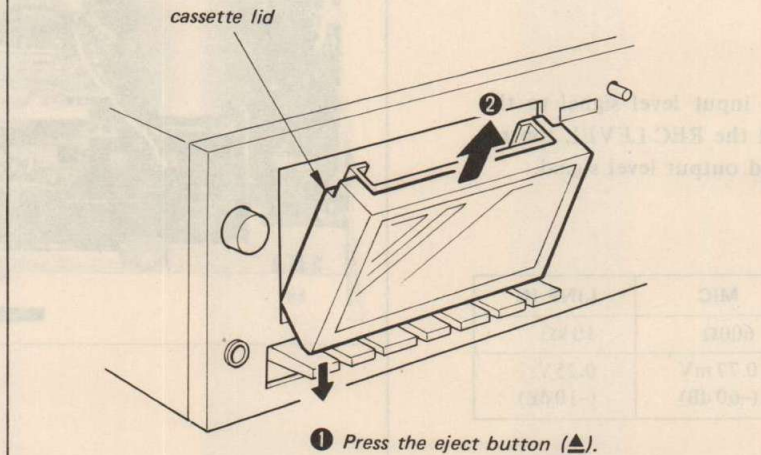
MECHANICAL BLOCK REMOVAL



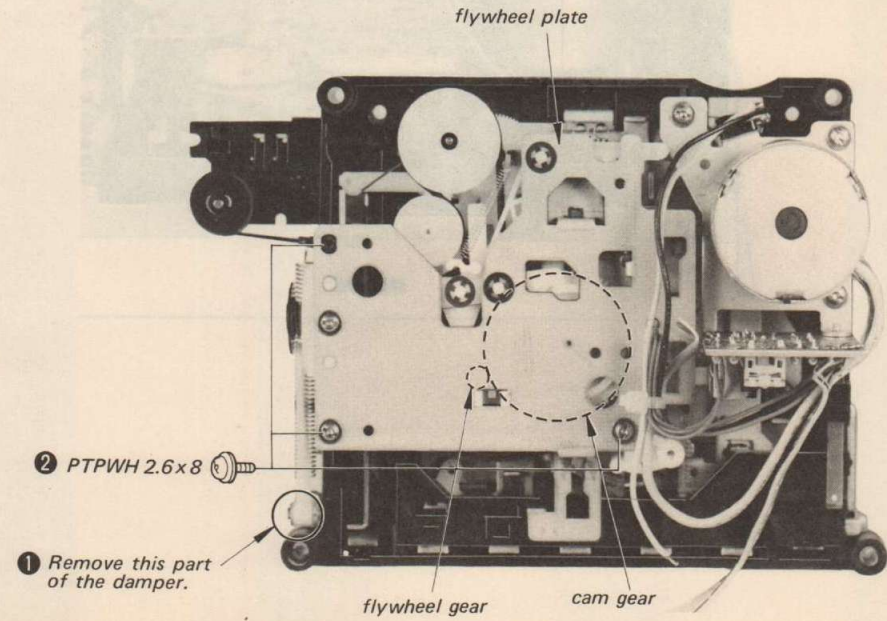
CASSETTE HOLDER AND REEL SPINDLE REMOVAL



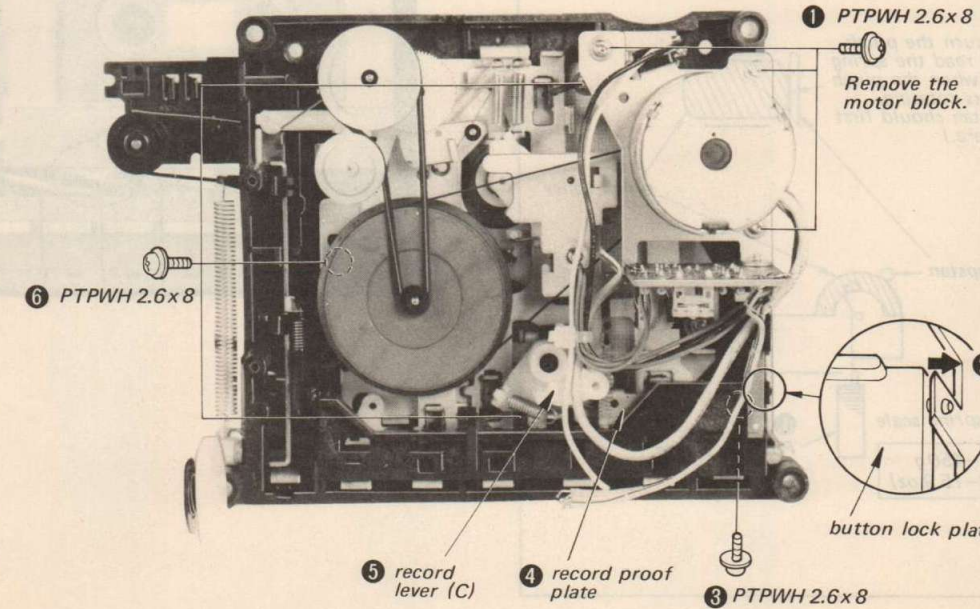
CASSETTE LID REMOVAL



FLYWHEEL PLATE REMOVAL



CHASSIS REMOVAL



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

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

record/playback head

erase head

capstan

pinch roller

rubber belts

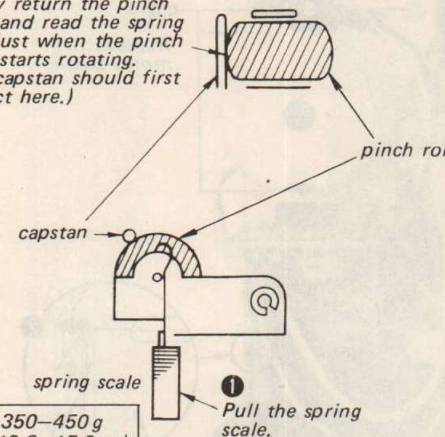
idlers
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

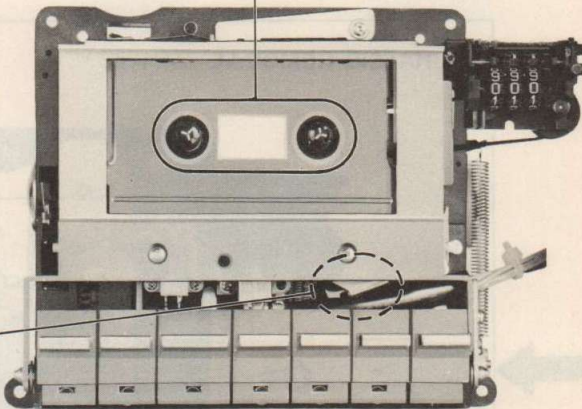
Torque Measurement

	Torque meter	Meter reading
forward	CQ-102, 103	25–55 g·cm (0.35–0.76 oz·inch)
fast-forward rewind	CQ-201	50–90 g·cm (0.69–1.25 oz·inch)

Pinch Roller Pressure Measurement

— Playback Mode —

- Slowly return the pinch roller and read the spring scale just when the pinch roller starts rotating. (The capstan should first contact here.)
- 
- 350–450 g
(12.3–15.9 oz)
- 1 Pull the spring scale.

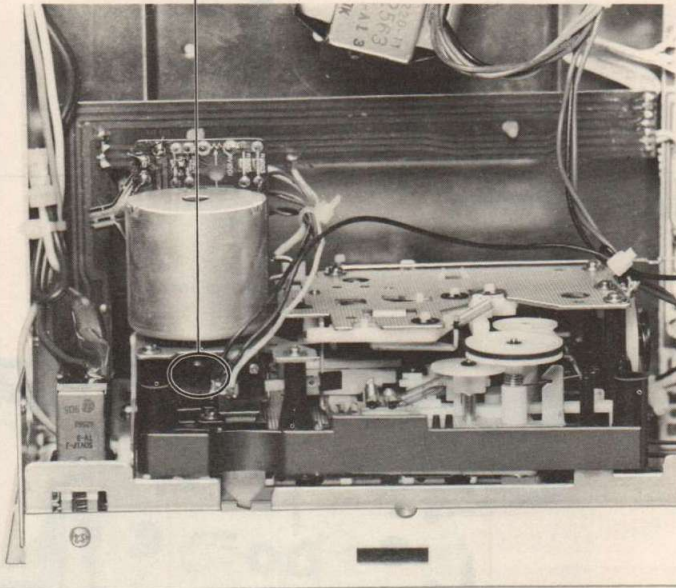
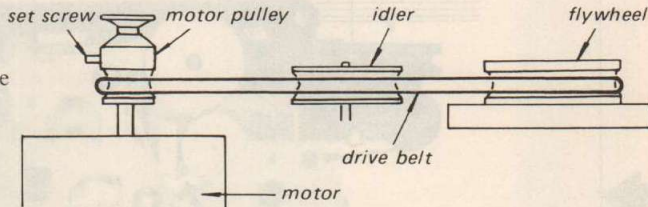


Motor Pulley Height Adjustment

Perform this adjustment, after replacing the motor pulley or the flywheel.

Procedure:

- Keep the set horizontal.
- Adjust the motor pulley height so that the drive belt is straight without a twist.



3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

Test Equipment/Tools Required:

audio oscillator (af osc)
VTVM
digital frequency counter
speed checker SONY LFM-30
oscilloscope
attenuator (600Ω)
non-magnetic screwdriver
resistors 600Ω (¼ W), 10 kΩ (¼ W),
47kΩ (¼ W)
blank tapes (completely erased with bulk eraser)
SONY CS-10 (HF), CS-20 (CrO₂),
CS-30 (Fe-Cr)
SONY test tapes
P-4-A81S (6.3 kHz, -10 dB)
P-4-L81 (333 Hz, 0 dB)
WS-48 (3 kHz, 0 dB)

Switch Setting:

Switch	Position
DOLBY NR	OFF
TAPE SELECT	TYPE I

TAPE SELECT switch settings in accordance with tape used are as follows.

TAPE	TAPE SELECT
CS-10	TYPE I
CS-20	TYPE II
CS-30	TYPE III

Standard Record:

Supply the standard input level signal to the LINE IN jack and set the REC LEVEL control to obtain the standard output level signal.

Standard Input Level

	MIC	LINE IN
source impedance	600Ω	10 kΩ
input level	0.77 mV (-60 dB)	0.25 V (-10 dB)

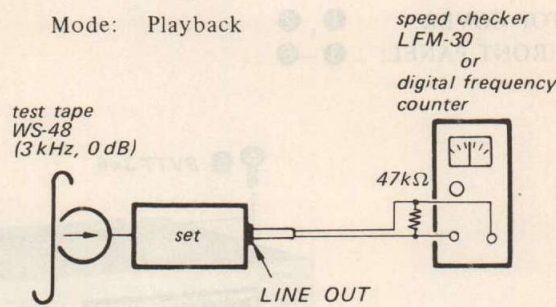
Standard Output Level

	LINE OUT	HEADPHONES
load impedance	47kΩ	8Ω
output level	0.44 V (-5 dB)	25 mV (-30 dB)

1. Tape Speed Adjustment

Procedure:

Mode: Playback



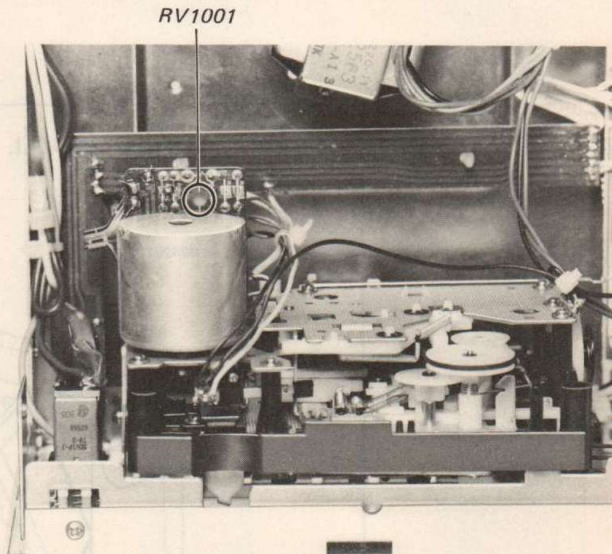
Adjust RV1001 to obtain the specified values below.

Specification:

Speed checker	Digital frequency counter
-1 to +2%	2,970-3,060Hz

Adjustment Location:

— servo amp board —



SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM
— Conductor Side —

Replacement Semiconductors
For replacement, use semiconductors except in ().

Q101, 201
Q102, 202

2SC1362
(2SC900E)

Q141, 241
Q151, 251
Q303
Q1001

2SC1364 (2SC945Q)
2SC1364

IC121, 221: NE646B

IC301: μ PC4558C

Q301: 2SC1061
Q302: 2SA1027R

2SC1096K
(2SA733Q)

Q304: 2SC2001 (2SC2001K)

Q1002: 2SD414

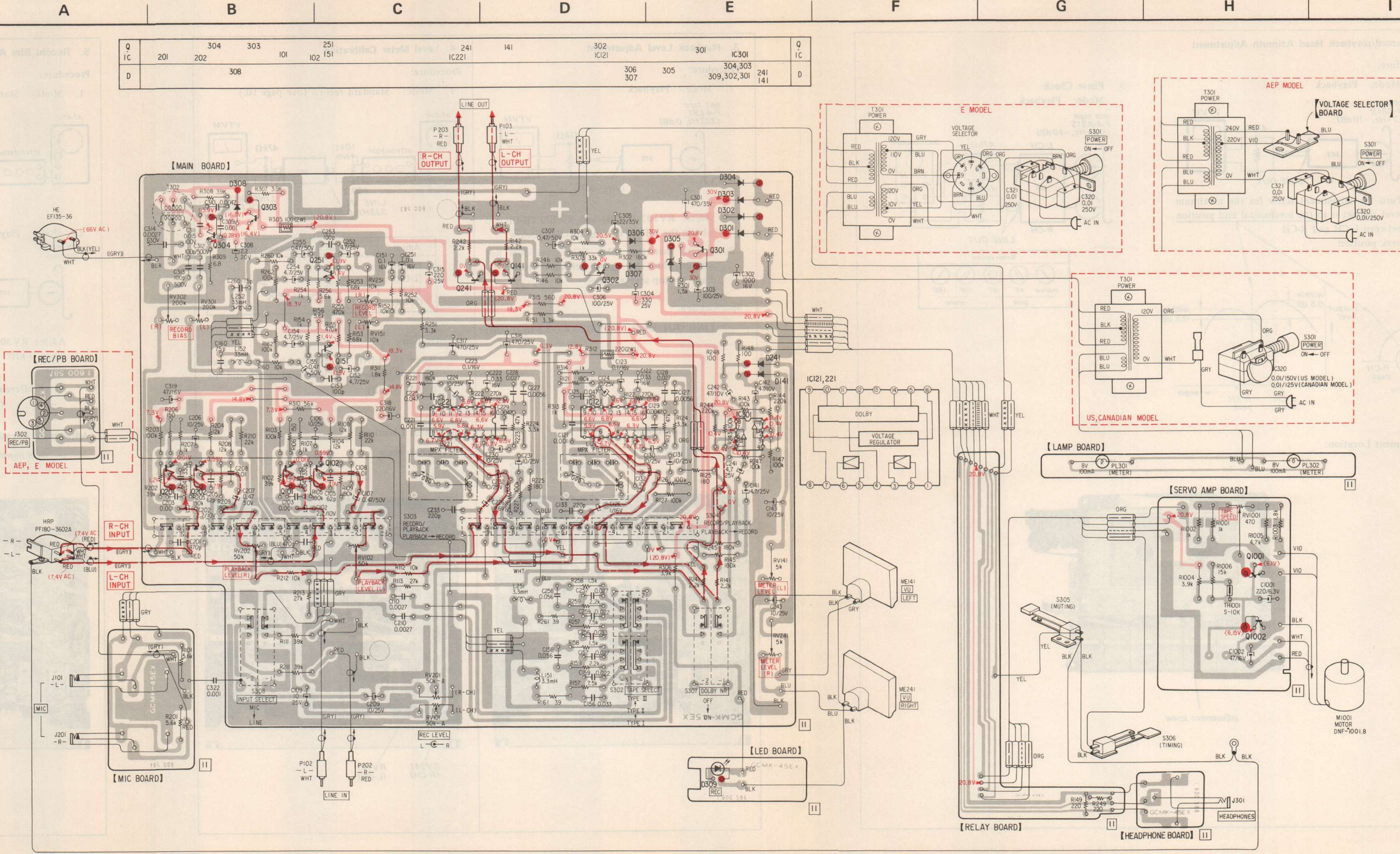
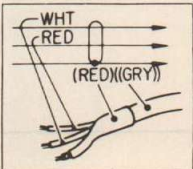
D141, 241:
D301-304:
D308
D306, 307:

1T261 (1N60)
10E2 (1N4002)
1S1555 (1S953)

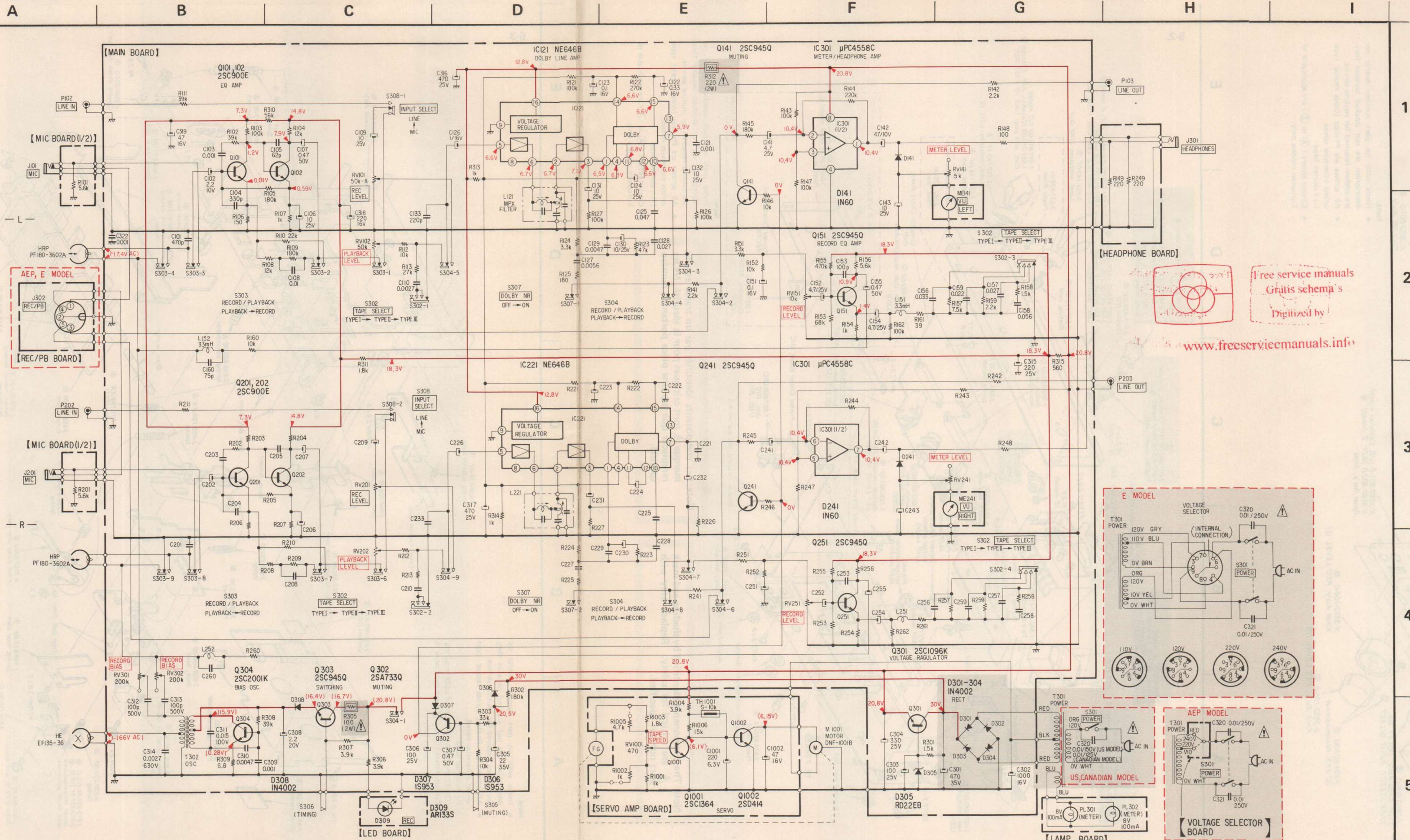
D305: EQB01-22
D309: PR4133S (AR133S)

RD22EB

- Note:
- : parts extracted from the component side.
 - Signal Path
 - : L-CH
 - - - : R-CH
 - · - · - : L-CH or R-CH
 - : B+ pattern
 - Color code of sleeving over the end of the jacket.



4-2. SCHEMATIC DIAGRAM



Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

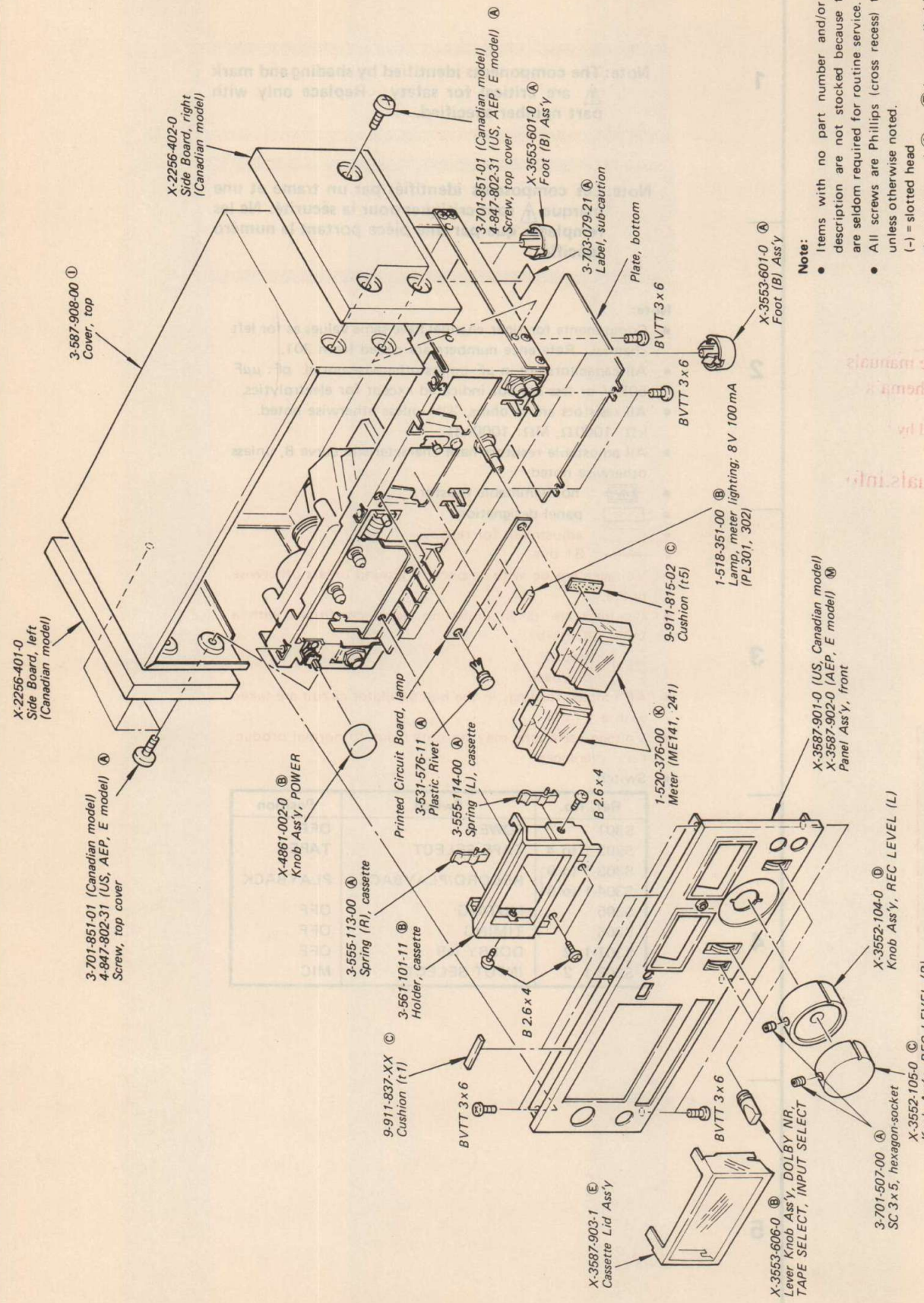
Note:

- Components for right channel have same values as for left channel. Reference numbers are coded from 201.
- All capacitors are in μF unless otherwise noted. pF : $\mu\mu\text{F}$
- All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted.
 $\text{k}\Omega$: 1000Ω , $\text{M}\Omega$: $1000\text{k}\Omega$
- All adjustable resistors have characteristic curve B, unless otherwise noted.
-  : nonflammable resistor.
-  : panel designation.
-  : adjustment for repair.
-  : B+ bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM ($20\text{ k}\Omega/\text{V}$).
 () : record
 { } : playback
- AC voltage readings in the bias oscillator circuit are taken with a VTVM.
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S301	POWER	OFF
S302-1 to 4	TAPE SELECT	TAPE I
S303-1 to 9 S304-1 to 9 }	RECORD/PLAYBACK	PLAYBACK
S305	MUTING	OFF
S306	TIMING	OFF
S307-1, 2	DOLBY NR	OFF
S308-1, 2	INPUT SELECT	MIC

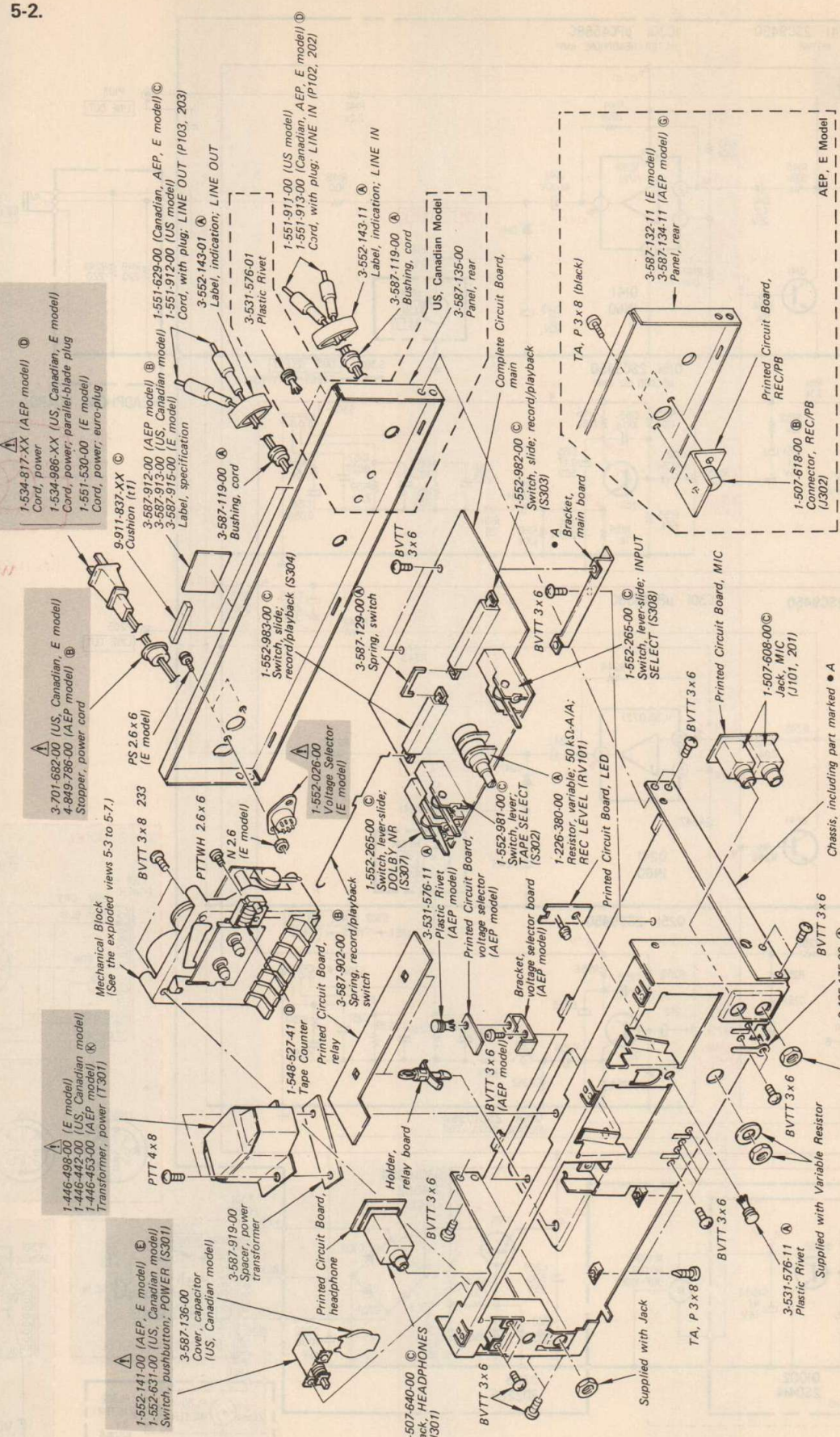
SECTION 5 EXPLODED VIEWS

5.1.



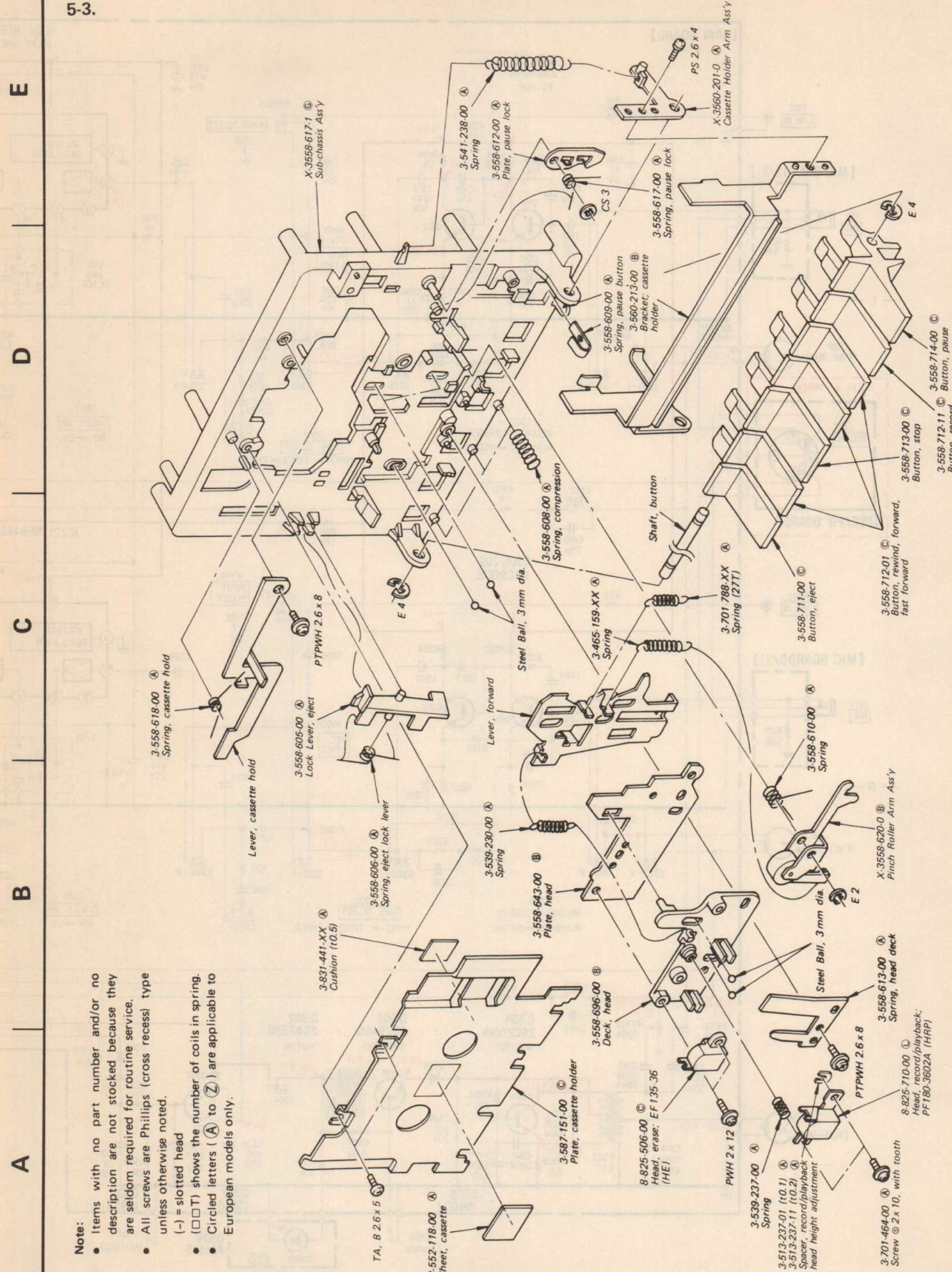
- Note:**
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
 - All screws are Phillips (cross recess) type unless otherwise noted.
 - (-) = slotted head
 - Circled letters (A) to (Z) are applicable to European models only.

5.2.



- Note:**
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
 - All screws are Phillips (cross recess) type unless otherwise noted.
 - (-) = slotted head
 - Circled letters (A) to (Z) are applicable to European models only.

5.3.

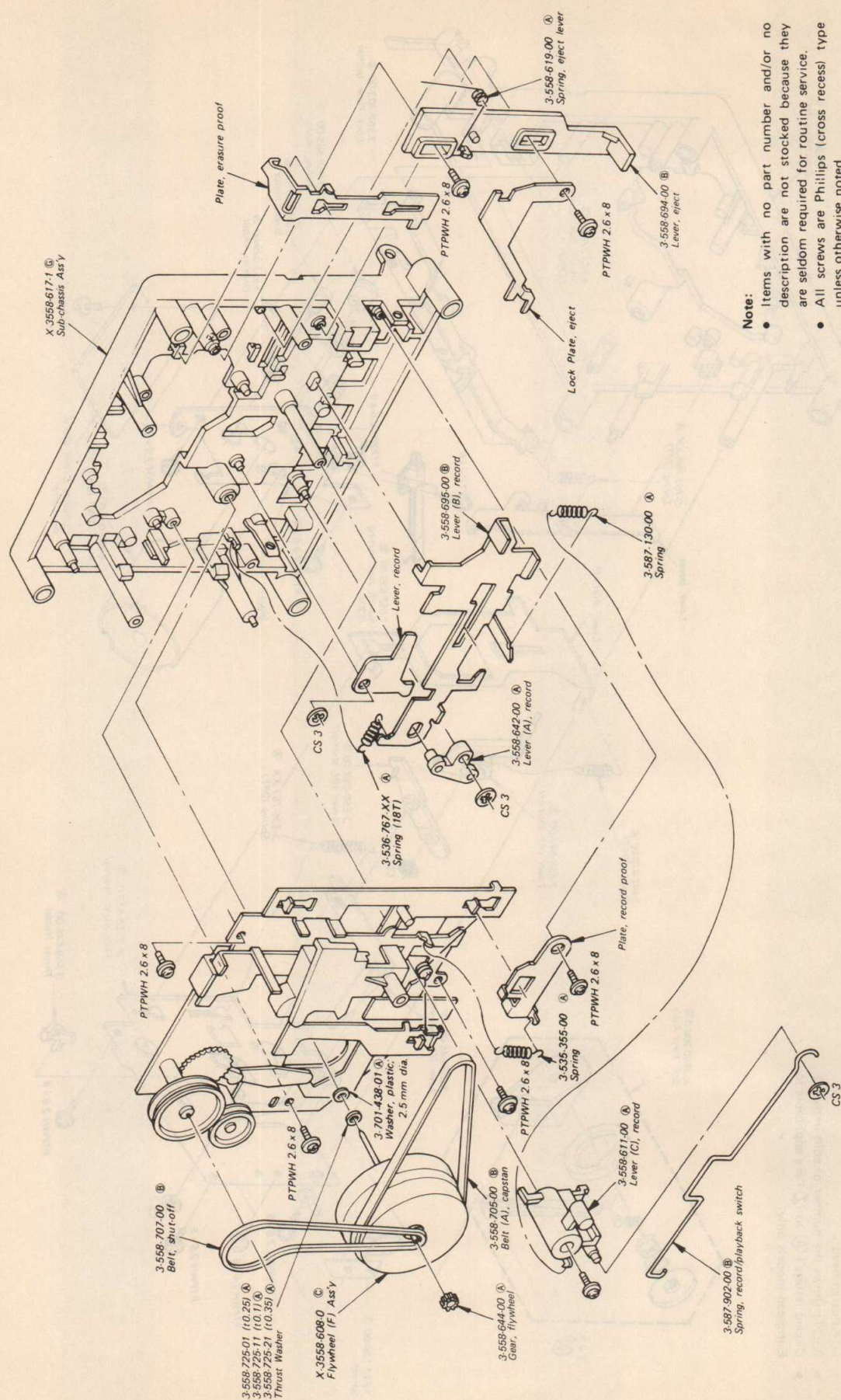


- Note:**
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
 - All screws are Phillips (cross recess) type unless otherwise noted.
 - (-) = slotted head
 - Circled letters (A) to (Z) are applicable to European models only.

Note: Les composants identifiés par un trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

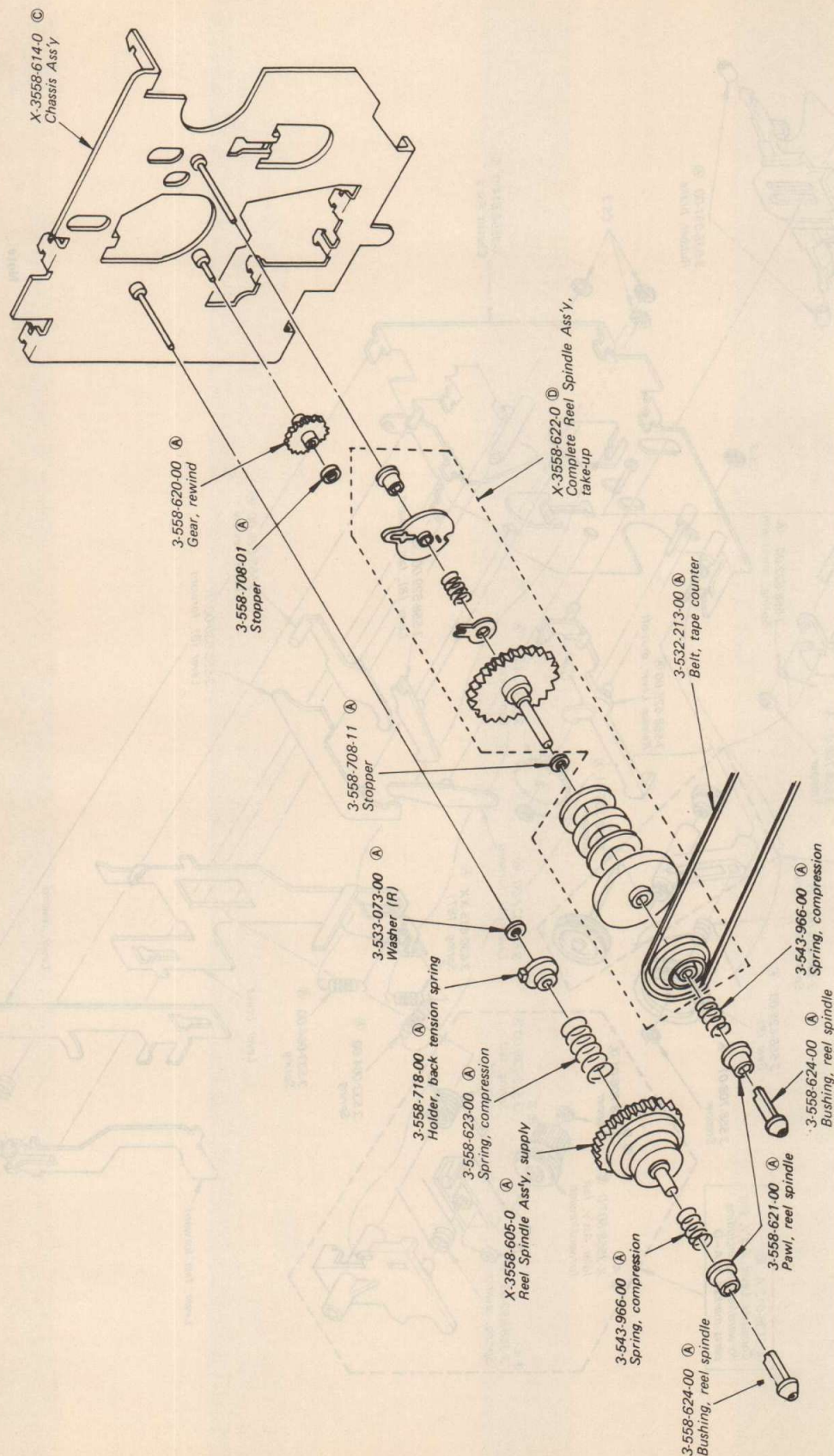
Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

5-4.

**Note:**

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
- (-) = slotted head
- (□□□) shows the number of coils in spring.
- Circled letters (A) to (Z) are applicable to European models only.

5-7.



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- Circled letters (A) to (Z) are applicable to European models only.

SECTION 6

ELECTRICAL PARTS LIST

Note: Circled letters (A) to (Z) are applicable to European models only.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
SEMICONDUCTORS					
Transistors					
⇒ Q101,201	8-729-665-47	(B) 2SC1362	T301	(A) 1-446-442-00	Power (US, Canadian model)
⇒ Q102,202			T301	(A) 1-446-453-00	(K) Power (AEP model)
⇒ Q141,241	8-729-663-47	(C) 2SC1364	T302	1-405-856-00	(B) Bias OSC
⇒ Q151,251			CAPACITORS		
⇒ Q301	8-729-316-12	(D) 2SC1061	All capacitors are in μ F and ceramic unless otherwise noted.		
⇒ Q302	8-729-612-77	(B) 2SA1027R	50WV or less are not indicated except for electrolytics. p: μ F, elect: electrolytic		
⇒ Q303	8-729-663-47	(C) 2SC1364	C101,201	1-102-824-00	(A) 470 p
⇒ Q304	8-729-100-13	(B) 2SC2001	C102,202	1-131-419-00	(B) 2.2 10V tantalum
Q1001	8-729-663-47	(C) 2SC1364	C103,203	1-102-074-00	(A) 0.001
Q1002	8-729-141-43	(B) 2SD414	C104,204	1-102-112-00	(A) 330 p
ICs					
IC121,221	8-759-906-46	(E) NE646B	C105,205	1-101-886-00	(A) 62 p
IC301	8-759-145-58	(D) μ PC4558C	C106,206	1-121-398-00	(A) 10 25V elect
Diodes					
⇒ D141,241	8-719-026-11	(A) 1T261	C107,207	1-121-726-00	(A) 0.47 50V elect
⇒ D301-304	(A) 8-719-200-02	(B) 10E2	C108,208	1-108-579-00	(A) 0.01 mylar
⇒ D305	8-719-931-22	(B) EQB01-22	C109,209	1-121-398-00	(A) 10 25V elect
⇒ D306,307	8-719-815-55	(B) 1S1555	C110,210	1-108-565-00	(B) 0.0027 mylar
⇒ D308	8-719-200-02	(B) 10E2	C121,221	1-102-074-00	(A) 0.001
⇒ D309	1-800-924-11	PR4133S	C122,222	1-131-454-00	(B) 0.33 16V tantalum
Thermistor					
TH1001	1-800-202-XX	(A) S-10K	C123,223	1-131-451-00	(B) 0.1 16V tantalum
COILS					
L121,221	1-231-576-00	(C) Filter, MPX	C124,224	1-121-398-00	(A) 10 25V elect
L151,251	1-407-962-00	(B) Microinductor, 3.3 mH	C125,225	1-108-595-00	(A) 0.047 mylar
L152,252	1-407-964-00	(B) Microinductor, 33 mH	C126,226	1-131-347-00	(B) 1 16V tantalum
TRANSFORMERS					
T301	(A) 1-446-498-00	Power (E model)	C127,227	1-108-573-00	(B) 0.0056 mylar
			C128,228	1-108-589-00	(A) 0.027 mylar
			C129,229	1-108-571-00	(B) 0.0047 mylar
			C130,230	1-121-398-00	(A) 10 25V elect
			C132,232		
			C133,233	1-102-110-00	(A) 220 p
			C141,241	1-121-395-00	(A) 4.7 25V elect
			C142,242	1-121-352-00	(A) 47 10V elect
			C143,243	1-121-398-00	(A) 10 25V elect
			C151,251	1-131-451-00	(B) 0.1 16V tantalum
			C152,252	1-121-395-00	(A) 4.7 25V elect
			C153,253	1-102-106-00	(A) 100 p
			C154,254	1-121-395-00	(B) 4.7 25V elect

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagram.

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Circled letters (A to Z) are applicable to European models only.

Ref. No.	Part No.	Description
C155,255	1-121-726-00 A 0.47	50 V elect
C156,256	1-108-591-00 A 0.033	mylar
C157,257	1-108-589-00 A 0.027	mylar
C158,258	1-108-597-00 A 0.056	mylar
C159,259	1-108-587-00 B 0.022	mylar
C160,260	1-101-890-00 A 75 p	
C301	A 1-121-361-00 B 470	35 V elect
C302	1-121-245-00 B 1000	16 V elect
C303	1-121-416-00 B 100	25 V elect
C304	1-121-654-00 B 330	25 V elect
C305	1-121-662-00 B 22	35 V elect
C306	1-121-416-00 B 100	25 V elect
C307	1-121-726-00 A 0.47	50 V elect
C308	1-131-196-00 B 2.2	20 V tantalum
C309	1-108-227-00 A 0.001	mylar
C310	1-108-234-00 A 0.0047	mylar
C311	1-108-379-00 A 0.015	100 V mylar
C312,313	1-107-004-00 A 100 p	500 V mica
C314	1-129-928-00 B 0.0027	630 V film
C315	1-121-422-00 B 220	25 V elect
C316,317	1-121-733-00 B 470	25 V elect
C318	1-121-421-00 B 220	16 V elect
C319	1-121-409-00 A 47	16 V elect
C320	A 1-161-518-00 0.01	125 V (Canadian model)
C320	A 1-161-519-00 0.01	150 V (US model)
C320,321	A 1-130-196-00 D 0.01	250 V polyethylene (AEP, E model)
C322	1-102-074-00 A 0.001	
C1001	1-121-419-00 B 220	6.3 V elect
C1002	1-121-409-00 A 47	16 V elect

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on the last page for their part numbers. All adjustable resistors have characteristic curve B, unless otherwise noted. kΩ: 1000 Ω

R305	A 1-206-640-00 A 100	2W metal-oxide (nonflammable)
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Note: The components identified by shading and mark A are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
R312	A 1-206-648-00 A 220	2W metal-oxide (nonflammable)
RV101	1-226-380-00 A 50 k-A/A, variable; REC LEVEL	
RV102,202	1-226-238-00 A 50 k, adjustable; playback level	
RV141,241	1-226-235-00 A 5 k, adjustable; meter level	
RV151,251	1-226-236-00 A 10 k, adjustable; record level	
RV301,302	1-226-240-00 B 200 k, adjustable; record bias	
RV1001	1-224-641-XX A 470, adjustable; tape speed	

SWITCHES

S301	A 1-552-141-00 E	Pushbutton, POWER (AEP, E model)
S301	A 1-552-631-00	Pushbutton, POWER (US, Canadian model)
S302	1-552-981-00 C	Lever, TAPE SELECT
S303	1-552-982-00 C	Slide, record/playback
S304	1-552-983-00 C	Slide, record/playback
S305	1-552-639-00 B	Leaf, muting
S306	1-552-725-00 B	Leaf, timing
S307	1-552-265-00 C	Lever-slide, DOLBY NR
S308	1-552-265-00 C	Lever-slide, INPUT SELECT

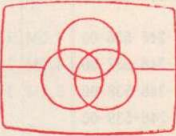
MISCELLANEOUS

HE	8-825-506-00 C	Head, erase; EF135-36
HRP	8-825-710-00 L	Head, record/playback; PF180-3602A
J101,201	1-507-608-00 C	Jack, MIC
J301	1-507-640-00 C	Jack, HEADPHONES
J302	1-507-618-00 B	Connector, REC/PB (AEP, E model)
M	8-835-006-00 L	Motor, DNF-1001B
ME141,241	1-520-376-00 K	Meter
P102,202	1-551-911-00	Cord, with plug; LINE IN (US model)
P102,202	1-551-913-00 D	Cord, with plug; LINE IN (Canadian, AEP, E model)
P103,203	1-551-629-00 C	Cord, with plug; LINE OUT (Canadian, AEP, E model)
P103,203	1-551-912-00	Cord, with plug; LINE OUT (US model)
PL301,302	1-518-351-00 B	Lamp, meter lighting; 8 V 100 mA

Note: Les composants identifiés par un tramé et une marque A sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Circled letters (A to Z) are applicable to European models only.

Ref. No.	Part No.	Description
A 1-534-817-XX D		Cord, power (AEP model)
A 1-534-986-XX		Cord, power; parallel-blade plug (US, Canadian, E model)
A 1-535-506-00 A		Joint Insulator
A 1-551-530-00		Cord, power; euro-plug (E model)
A 1-552-026-00		Voltage Selector (E model)



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Note: The components identified by shading and mark A are critical for safety. Replace only with part number specified.

ACCESSORIES AND PACKING MATERIALS

Part No.	Description
X-3701-105-0	A Tips Ass'y, cleaning
3-587-101-00	B Cushion (US, AEP, E model)
3-587-920-00	Carton (Canadian model)
3-587-921-00	Carton (US model)
3-587-922-00	D Carton (AEP, E model)
3-587-923-00	Cushion (Canadian model)
3-701-630-00	A Bag, plastic; instruction manual
3-770-898-11	D Manual, instruction (AEP, E model)
3-770-898-21	Manual, instruction (US model)
3-770-898-21	Manual, instruction (Canadian model)
3-794-541-31	
3-793-828-11	A Card, caution; cassette
3-794-233-21	Sheet, consumer products (US model)
4-855-809-00	B Bag, protection; set

Note: Les composants identifiés par un tramé et une marque A sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

1/4 WATT CARBON RESISTORS [Ⓐ]Note: Circled letter [Ⓐ] is applicable to European models only.

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:

P 3 x 10

L: Length in mm

D: Diameter in mm

Type of head

Indicated slotted-head only.

Unless otherwise indicated, it means cross-recessed head (Phillips type).



Nut, Washer, Retaining ring:

N 3

Diameter of usable screw or shaft

Reference designation

Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

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