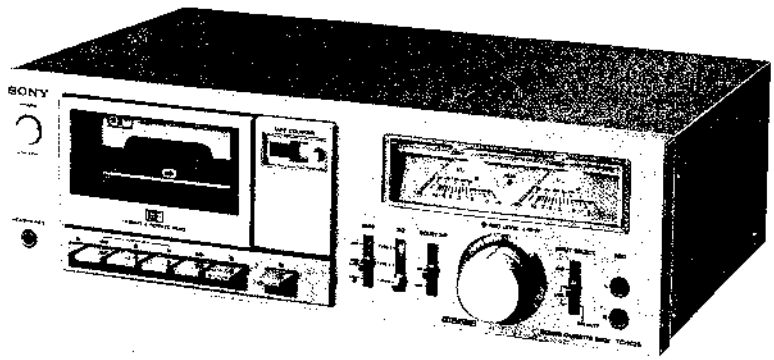

SPECIFICATIONS

GENERAL

Power Requirements:
US, Canadian models:
120 V ac, 60 Hz
AEP model:
220 V ac, 50/60 Hz
for 240 V ac by internal rewiring
UK model:
240 V ac, 50/60 Hz
for 220 V ac by internal rewiring
E model:
110, 120, 220 or 240 V ac, 50/60 Hz

Power Consumption:
10 W (US, Canadian model)
12 W (AEP, UK, E model)

Dimensions:
US, AEP, UK, E models:
approx. 430 mm (w) x 130 mm (h) x 290 (d) mm
17 (w) x 5 1/8 (h) x 11 1/2 (d) inches
Canadian model:
approx. 460 mm (w) x 130 (h) x 290 (d) mm
18 (w) x 5 1/8 (h) x 11 1/2 (d) inches
including projecting parts and controls

– Continued on page 7

Tape Transport Mechanism Type	TC-142/142SD	
	Specification	Test Equipment
Forward Torque	28 – 55 g-cm (0.39 – 0.76 oz-inch)	Sony torque meter CQ-102
Fast Forward Torque Rewind Torque	60 – 120 g-cm (0.84 – 1.66 oz-inch)	Sony torque meter CQ-201
Back Tension Torque	2.0 – 4.5 g-cm (0.03 – 0.06 oz-inch)	Sony torque meter CQ-102
Pinch Roller Pressure	310 – 390 g (11 – 13 oz)	spring scale or tension gauge

SERVICE MANUAL

TC-K35

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US Model
Canadian Model
AEP Model
UK Model
E Model

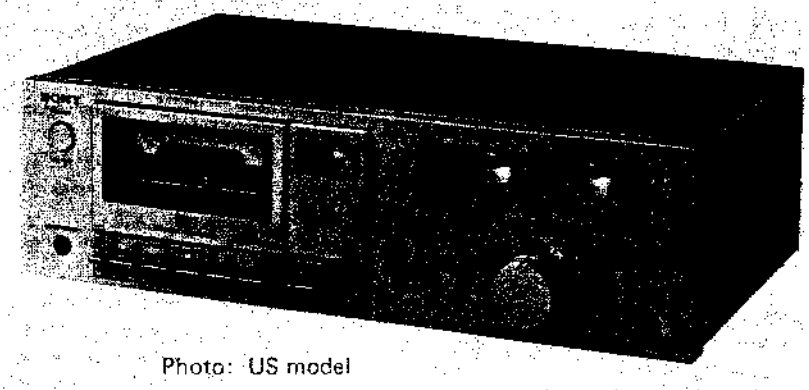

Photo: US model

'Dolby' and the double D symbol are the trade marks of Dolby Laboratories. Noise reduction system manufactured under license from Dolby Laboratories.

STEREO CASSETTE DECK

SPECIFICATIONS

GENERAL

Power Requirements: US, Canadian model:
120 V ac, 60 Hz
AEP model:
220 V ac ~, 50/60 Hz
(or 240 V ac by internal rewiring)
UK model:
240 V ac ~, 50/60 Hz
(or 220 V ac by internal rewiring)
E model:
110, 120, 220 or 240 V ac ~, 50/60 Hz

Power Consumption: 10 W (US, Canadian model)
12 W (AEP, UK, E model)

Dimensions: US, AEP, UK, E model:
approx. 430 (w) x 130 (h) x 290 (d) mm
17 (w) x 5 1/8 (h) x 11 1/2 (d) inches
Canadian model:
approx. 460 (w) x 130 (h) x 290 (d) mm
18 1/8 (w) x 5 1/8 (h) x 11 1/2 (d) inches
including projecting parts and controls

– Continued on page 2 –

Tape Transport Mechanism Type	TCM-91V2	
	Specification	Test Equipment
Forward Torque	28 – 55 g·cm (0.39 – 0.76 oz·inch)	Sony torque meter CQ-102
Fast Forward Torque Rewind Torque	60 – 120 g·cm (0.84 – 1.66 oz·inch)	Sony torque meter CQ-201
Back Tension Torque	2.0 – 4.5 g·cm (0.03 – 0.06 oz·inch)	Sony torque meter CQ-102
Pinch Roller Pressure	310 – 390 g (11 – 13 oz)	spring scale or tension gauge

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 TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES 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.

SONY®

SERVICE MANUAL

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C-K35

Weight: US, AEP, UK, E model:
approx. 5.8 kg, 12 lb 13 oz
Canadian model:
approx. 6.6 kg, 14 lb 9 oz

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)
  20 – 17,000 Hz
  30 – 15,000 Hz (±3 dB)
- With TYPE II cassette (Sony EHF)
  20 – 17,000 Hz
  30 – 15,000 Hz (±3 dB)
- With TYPE I cassette (Sony HFX)
  20 – 15,000 Hz

AEP, UK, E model:
- With TYPE III cassette (Sony Fe-Cr)
  20 – 17,000 Hz
  30 – 15,000 Hz (±3 dB)
  30 – 15,000 Hz (DIN)
- With TYPE II cassette (Sony CD-α)
  20 – 17,000 Hz
  30 – 15,000 Hz (±3 dB)
  30 – 15,000 Hz (DIN)
- With TYPE I cassette (Sony BHF)
  20 – 15,000 Hz
  30 – 13,000 Hz (DIN)

Wow and Flutter: 0.05 % WRMS (US, Canadian model)
0.05 % WRMS (NAB)
±0.14 % (DIN) } (AEP, UK, E model)

S/N Ratio: DOLBY NR OFF
US, Canadian model:
- With TYPE III cassette (Sony Fe-Cr)
  58 dB at peak level
- With TYPE II cassette (Sony EHF)
  56 dB at peak level

AEP, UK, E model:
- With TYPE III cassette (Sony Fe-Cr)
  58 dB at peak level (NAB)
  56 dB (DIN, 1975 rev.)
- With TYPE II cassette (Sony CD-α)
  56 dB at peak level (NAB)

DOLBY NR ON
Improved 5 dB at 1 kHz,
10 dB above 5 kHz

Total Harmonic Distortion: 1.3 % (with Sony Fe-Cr cassette)

Bias Frequency: 105 kHz

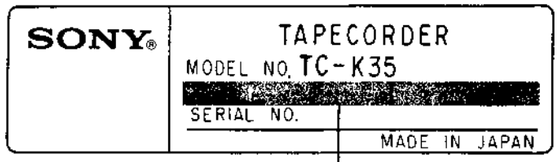
Inputs: MIC (two phone jacks)
sensitivity 0.25 mV (–70 dB)
for a low-impedance microphone
LINE IN (two phono jacks)
sensitivity 77.5 mV (–20 dB)
input impedance 50 kΩ
REC/PB (connector) . . (AEP, UK, E model)
input impedance less than 10 kΩ

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
Headphone output (binaural jack)
output level 39 mV (–26 dB) at load impedance 8 Ω
REC/PB (connector) . . (AEP, UK, E model)
output impedance less than 10kΩ

0 dB = 0.775 V

MODEL IDENTIFICATION

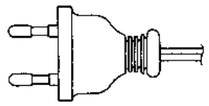
– Specification Label –



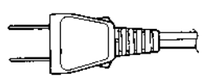
AC 120V	*60Hz*	*10W ..... US, Canadian model*
AC 220V~	*50/60Hz*	*12W ..... AEP model*
AC 240V~	*50/60Hz*	*12W..... UK model*
AC 110, 120, 220, 240V~	*50/60Hz*	*12W ..... E model*

– Power Cord –

E model: euro-plug 1-551-530-00

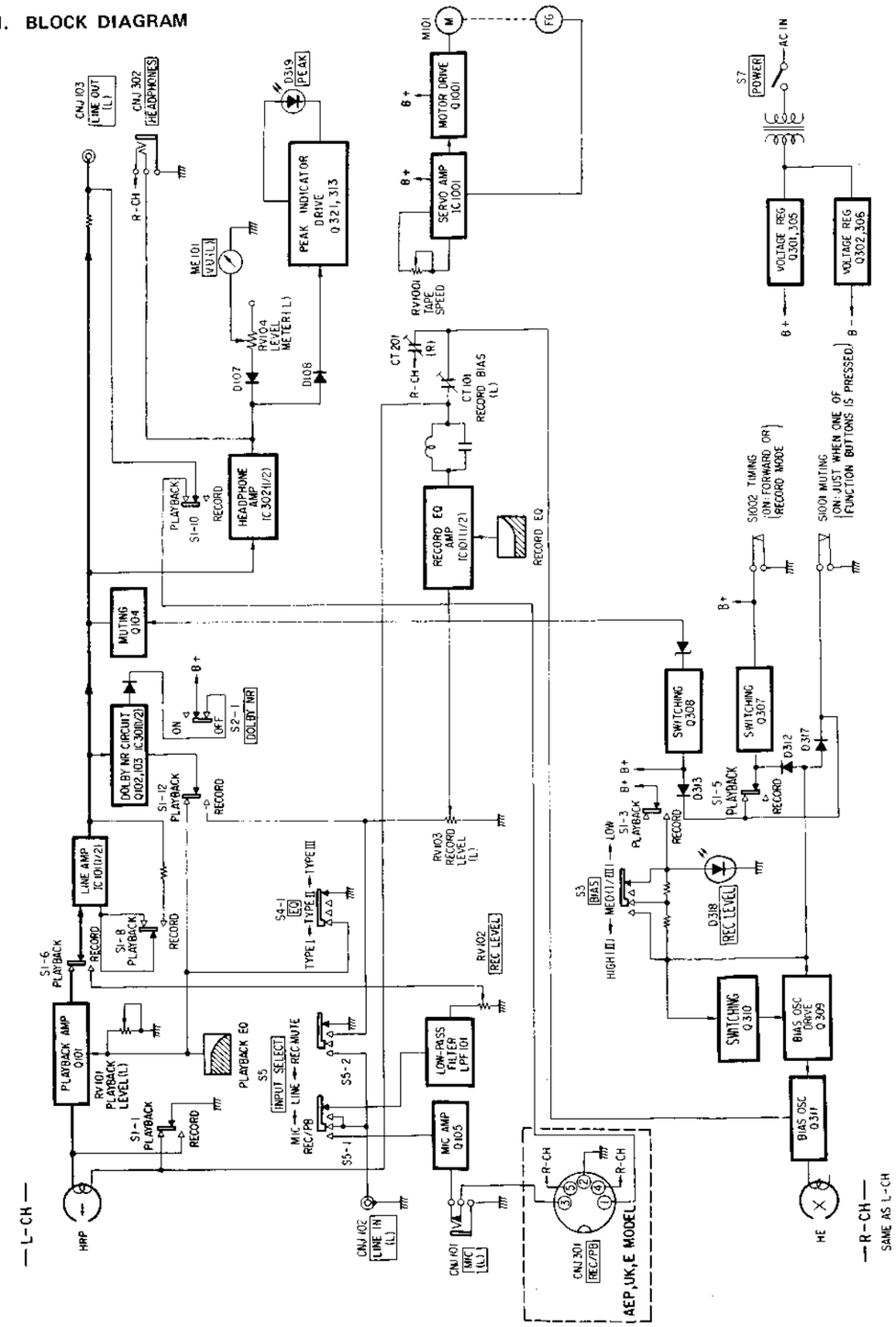


E model: parallel-blade plug 1-551-473-31



SECTION 1
OUTLINE

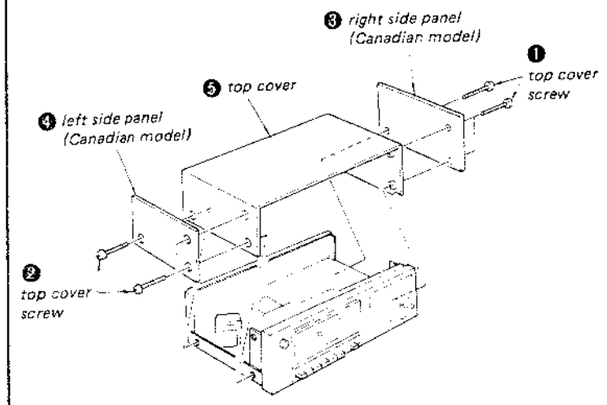
1-1. BLOCK DIAGRAM



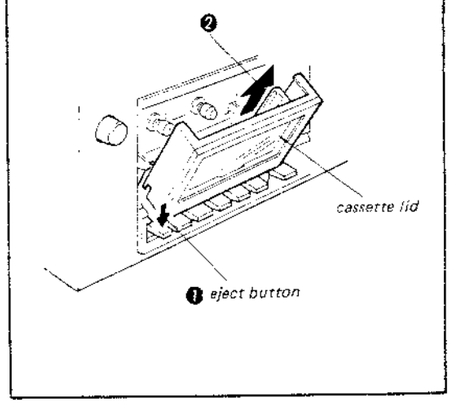
SECTION 2
DISASSEMBLY

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

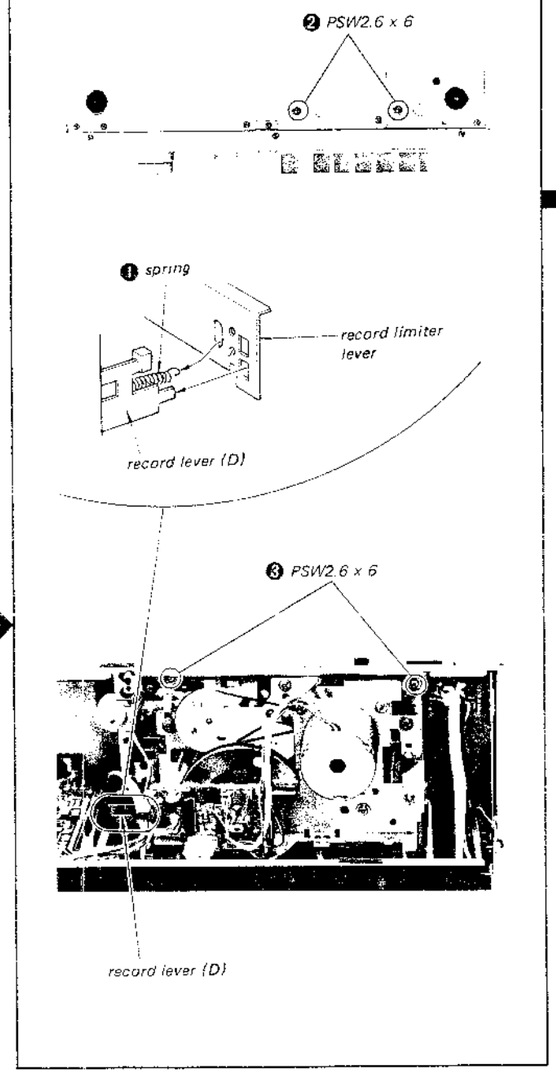
TOP COVER REMOVAL



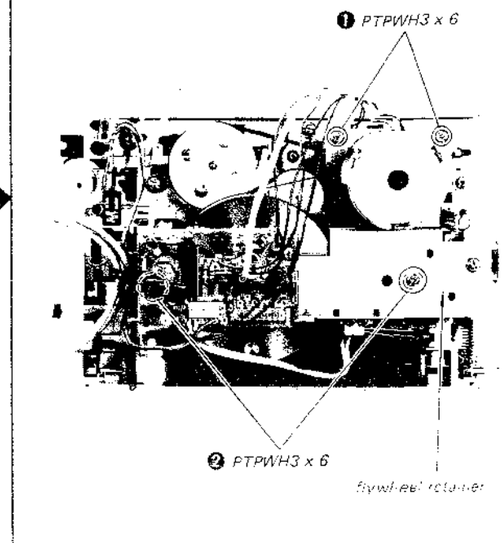
CASSETTE LID REMOVAL



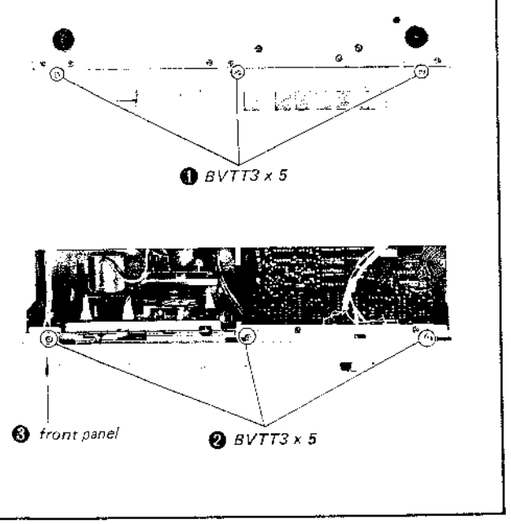
MECHANICAL BLOCK REMOVAL



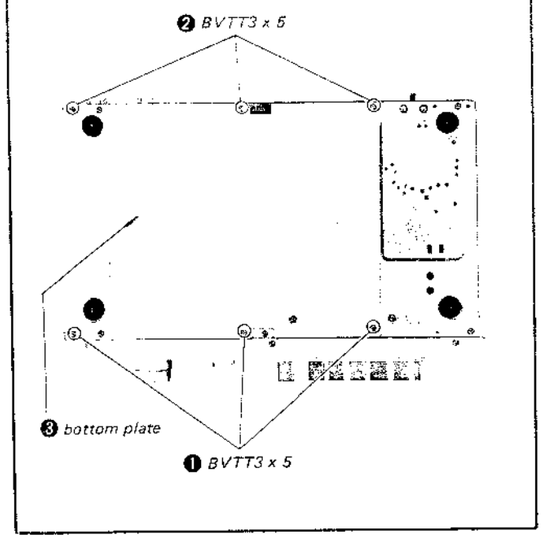
FLYWHEEL RETAINER REMOVAL



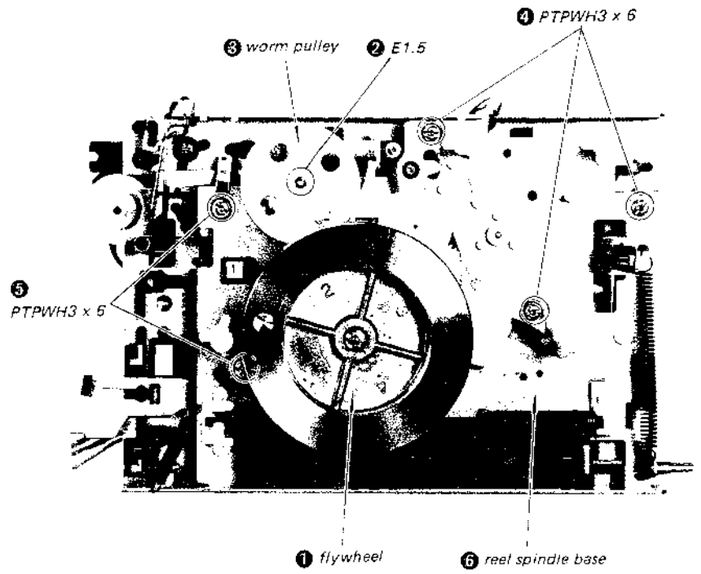
FRONT PANEL REMOVAL



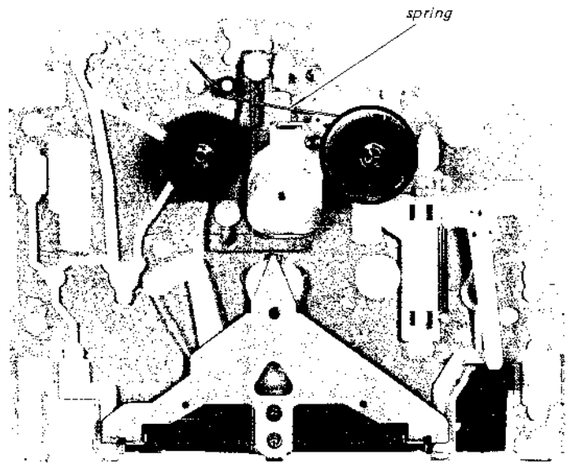
BOTTOM PLATE REMOVAL



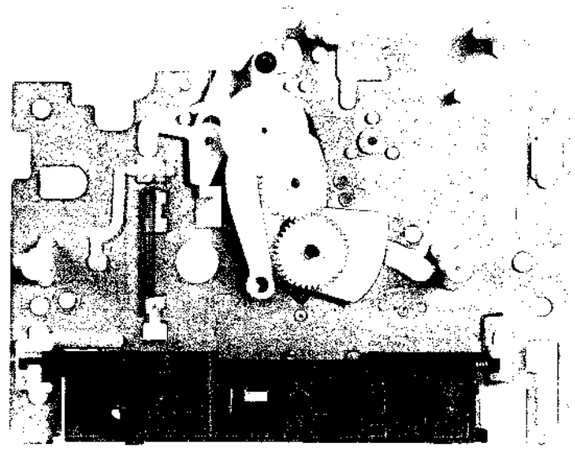
REEL SPINDLE BASE REMOVAL



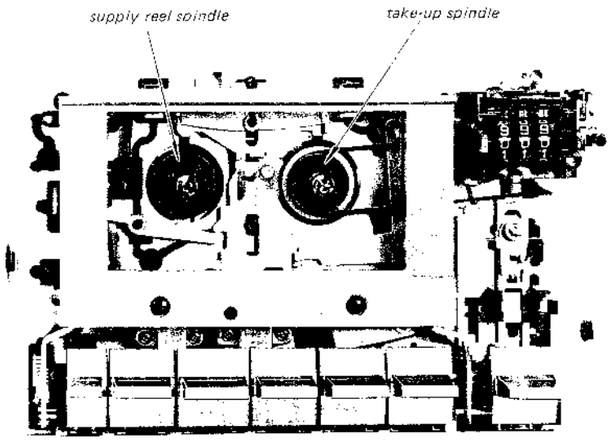
Reel spindle base front view



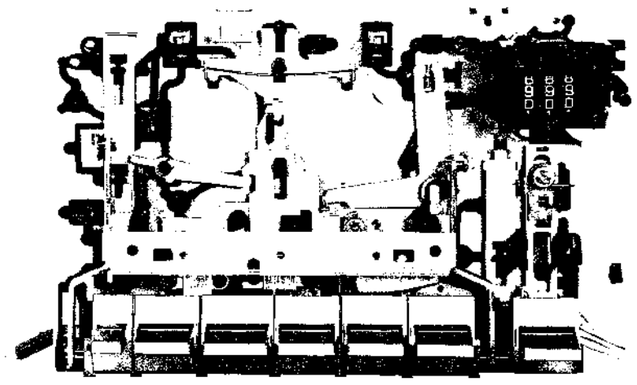
Reel spindle base rear view



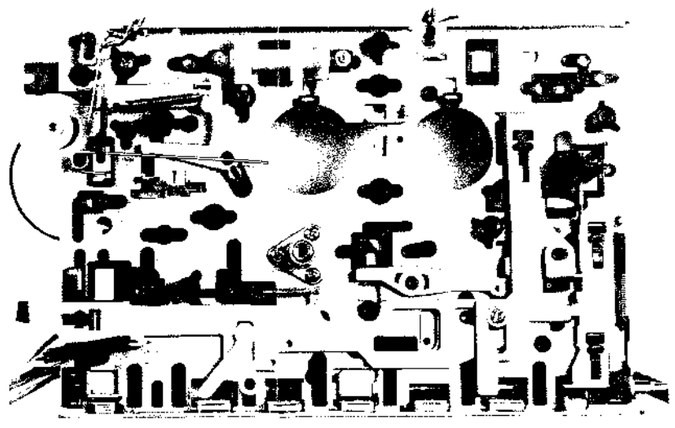
Reel spindle base is not removed.
(front view)



Reel spindle base is removed.
(front view)



Reel spindle base is removed.
(rear view)



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

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

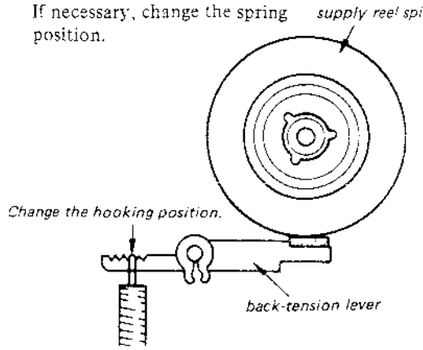
record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

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 unless otherwise noted.

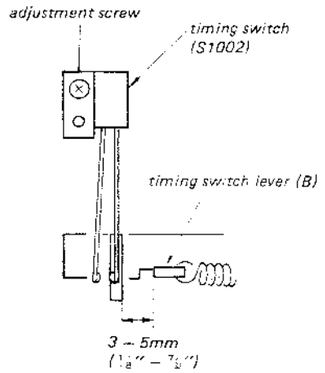
Back Tension Torque Adjustment
– playback mode –

Torque meter	Meter reading
CQ-102	2.0 – 4.5g·cm (0.02 – 0.06 oz·inch)

If necessary, change the spring position.

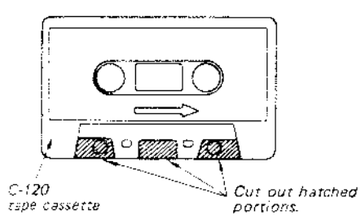


Timing Switch (S1002) Position Adjustment
– stop mode –

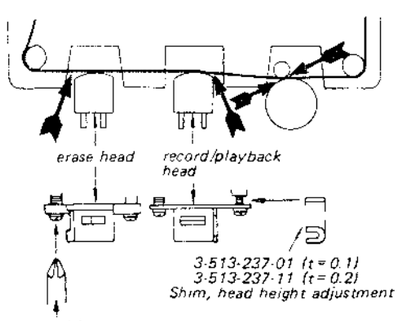


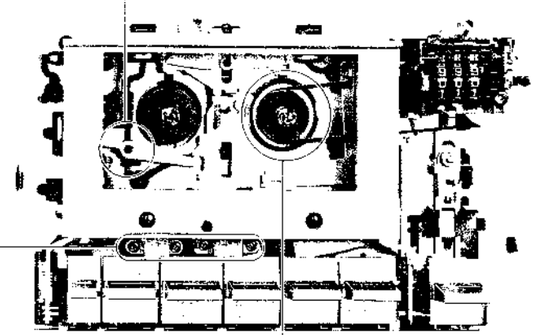
Head Height Adjustment

1. Prepare an adjustment cassette as shown below.



2. In playback mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at portions shown by arrows.

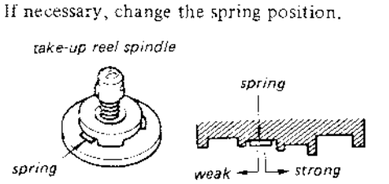




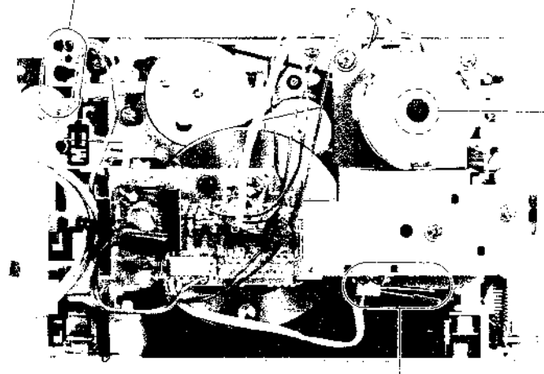
Forward Torque Adjustment
– playback mode –

Torque meter	Meter reading
CQ-102	28 – 55g·cm (0.39 – 0.76 oz·inch)

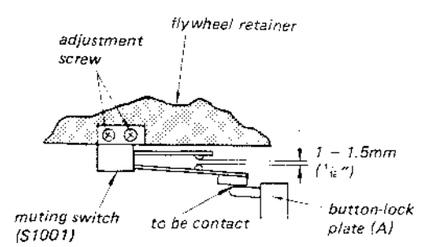
If necessary, change the spring position.



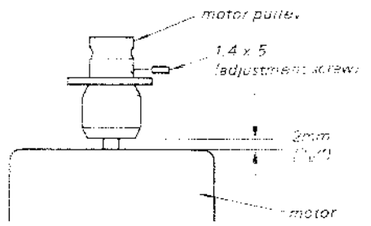
(Approx. 8g·cm per one slide.)



Muting Switch (S1001) Position Adjustment
– stop mode –



Pulley Height Adjustment
– stop mode –



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.

- Set the BIAS and EQ switches according to the tape as follows.

Tape	BIAS switch	EQ switch
CS-10	MED (I/III)	TYPE I
CS-25	HIGH (II)	TYPE II
CS-30	MED (I/III)	TYPE III

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch:	OFF
EQ switch:	TYPE I
BIAS switch:	MED (I/III)
INPUT SELECT switch:	LINE

- Standard Record:

  Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

	MIC	LINE IN	REC/PB (AEP, UK and E model)
source impedance	300Ω	10kΩ	100kΩ
input level	0.77mV (−60dB)	0.25V (−10dB)	17mV (−33dB)

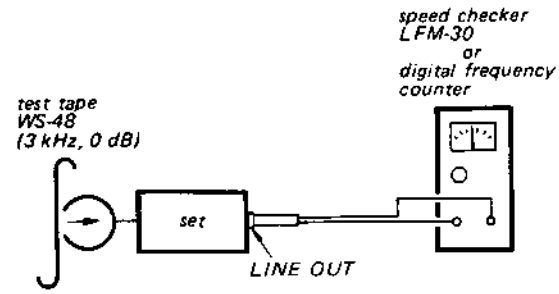
Standard Output Level

	LINE OUT	HEAD-PHONES	REC/PB (AEP, UK and E model)
load impedance	47kΩ	8Ω	50kΩ
output level	0.44V (−5dB)	39mV (−26dB)	0.44V (−5dB)

Tape Speed Adjustment

Procedure:

Mode: playback



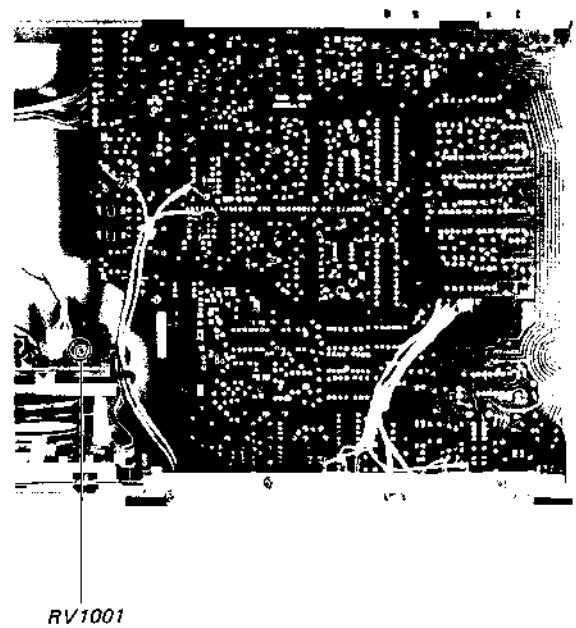
Specification:

Speed checker	Digital frequency counter
−0.6 – +0.6%	2980 – 3020Hz

Frequency difference between the beginning and the end of the tape should be within 0.6% (20Hz).

Adjustment Location:

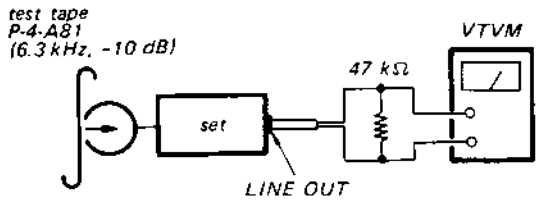
– servo amp board –



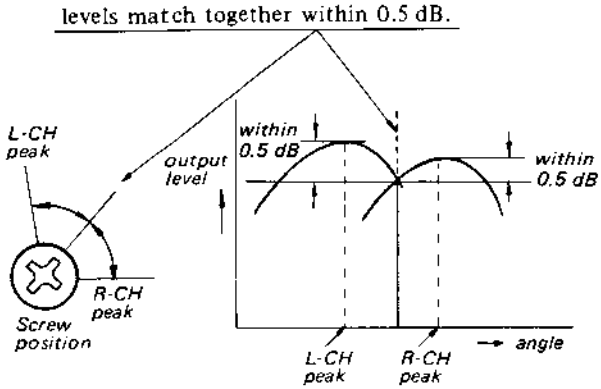
Record/playback Head Azimuth Adjustment

Procedure:

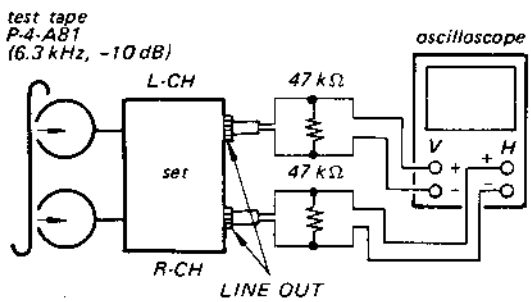
1. Mode: playback

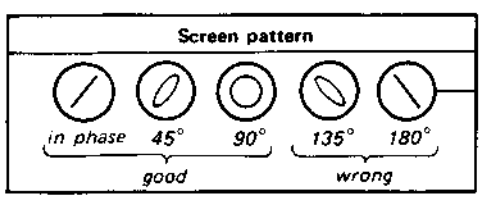


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw where both of output levels match together within 0.5 dB.

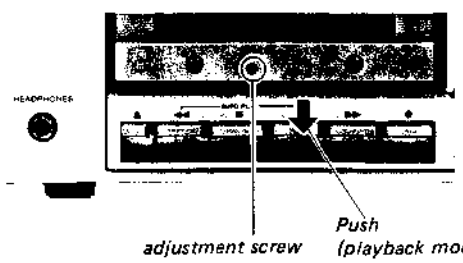


3. Phase Check
   Mode: playback





Adjustment Location:



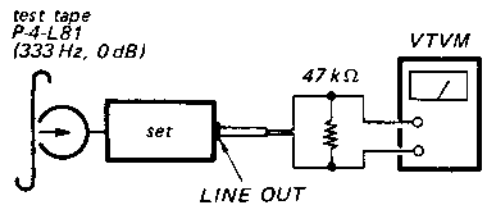
Playback Level Adjustment

Setting:

TAPE SELECT switch: TYPE I

Procedure:

Mode: playback



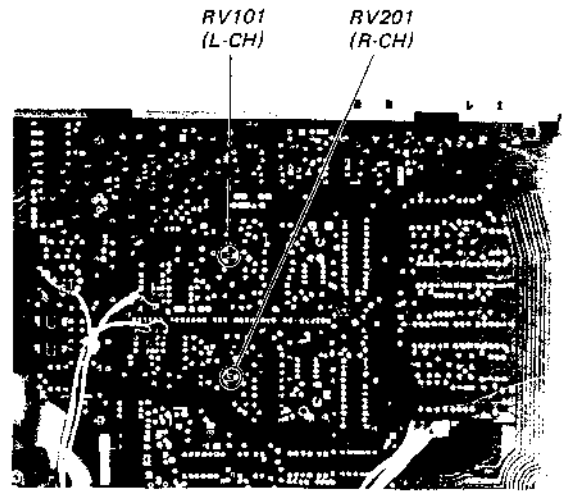
Specification:

LINE OUT level: 0.52 – 0.59V
(–3.5 to –2.5dB)
Level difference between channels:
less than 0.5dB
Level difference from TYPE I:
between –0.5dB and
+0.5dB
(TAPE SELECT switch: TYPE III)

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

Adjustment Location:

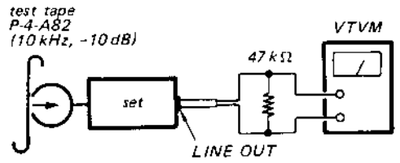
– audio amp board –



Playback Equalizer Adjustment

Procedure:

Mode: playback



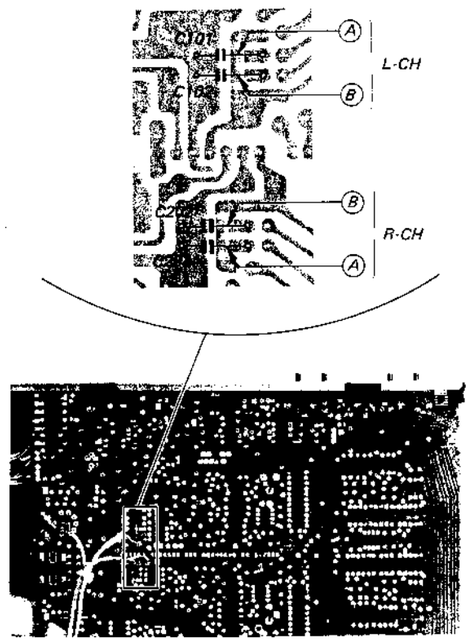
Specification:

EQ switch	LINE OUT level
TYPE I	0.13 – 0.24V (–15.5 to –10.5dB)
TYPE II or TYPE III	0.069 – 0.14V (–21 to –15dB)

Adjustment Location:

– audio amp board –

Bridge patterns	High frequency level
(open)	down
Ⓐ	↓
Ⓐ and Ⓑ	up



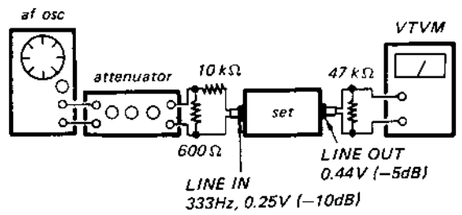
Level Meter Calibration

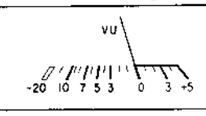
Setting:

REC LEVEL control: standard record
(See page 11.)

Procedure:

1. Mode: record

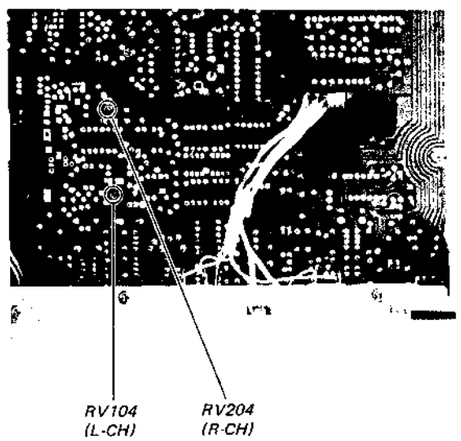


Adjust	Level meter reading : 0VU
RV104 (L-CH)	
RV204 (R-CH)	

Confirm that the pointer of the level meter is working smoothly.

Adjustment Location:

– audio amp board –



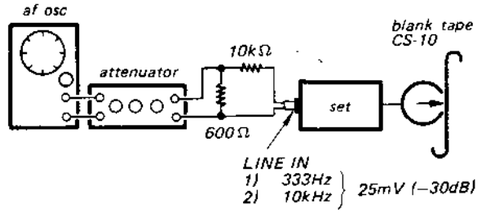
Record Bias Adjustment

Setting:

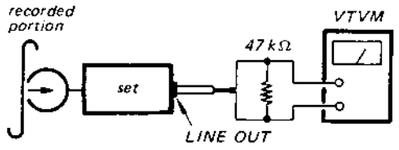
REC LEVEL control: standard record
(See page 11.)

Procedure:

1. Mode: record

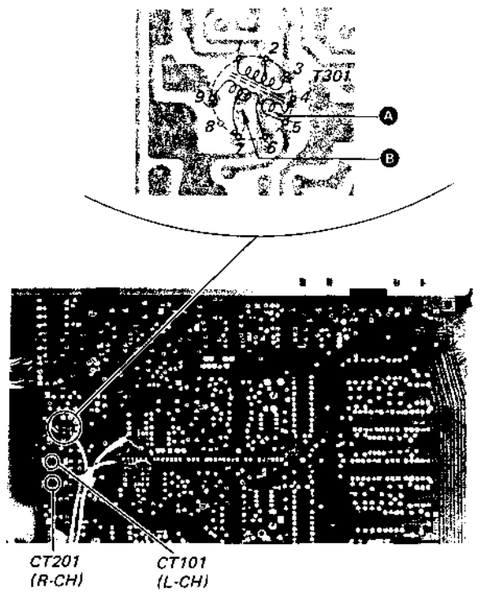


2. Mode: playback



Adjust CT101 (L-CH) and CT201 (R-CH) to make 1kHz and 10kHz signal output levels equal.
If necessary, unsolder portion Ⓐ and solder portion Ⓑ.

Adjustment Location: *– audio amp board –*



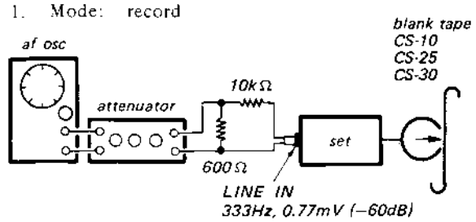
Record Level Adjustment

Setting:

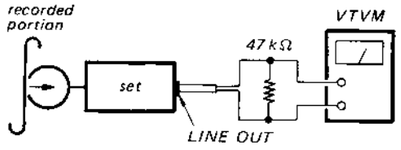
REC LEVEL control: standard record
(See page 11.)

Procedure:

1. Mode: record



2. Mode: playback

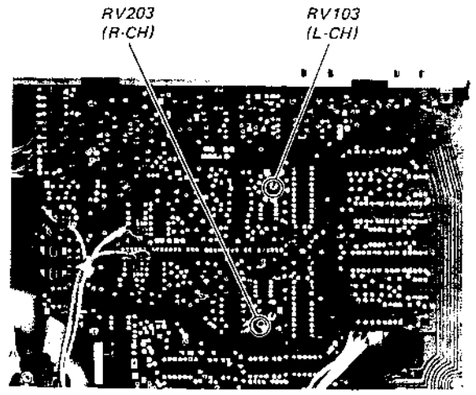


Specification:

tape	LINE OUT level
CS-10	0.41 – 0.46V (–5.5 to –4.5dB)
CS-25 CS-30	0.37 – 0.52V (–6.5 to –3.5dB)

Adjustment Location:

– audio amp board –



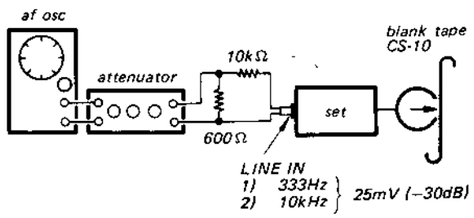
Record Bias Adjustment

Setting:

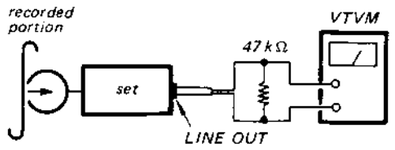
REC LEVEL control: standard record
(See page 11.)

Procedure:

1. Mode: record

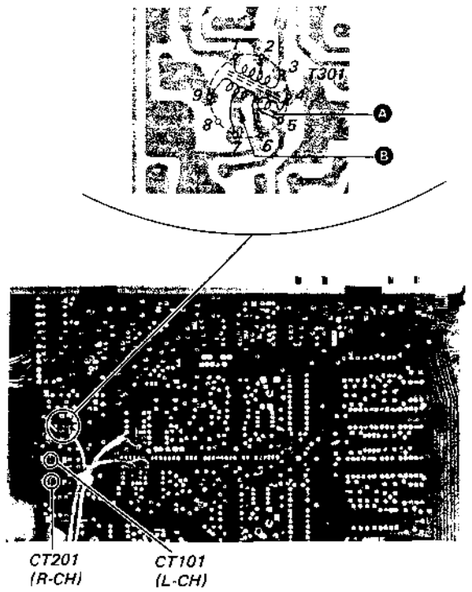


2. Mode: playback



Adjust CT101 (L-CH) and CT201 (R-CH) to make 1kHz and 10kHz signal output levels equal.
If necessary, unsolder portion Ⓐ and solder portion Ⓑ.

Adjustment Location: *– audio amp board –*



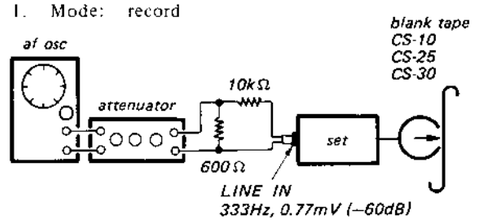
Record Level Adjustment

Setting:

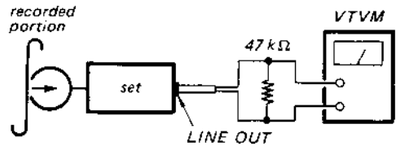
REC LEVEL control: standard record
(See page 11.)

Procedure:

1. Mode: record



2. Mode: playback

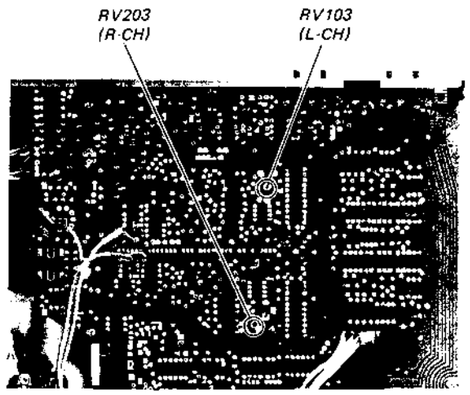


Specification:

tape	LINE OUT level
CS-10	0.41 – 0.46V (–5.5 to –4.5dB)
CS-25 CS-30	0.37 – 0.52V (–6.5 to –3.5dB)

Adjustment Location:

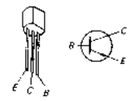
– audio amp board –



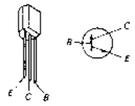
Replacement Semiconductors

For replacement, use semiconductors except in ( ).

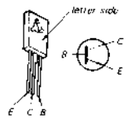
Q101, 201
Q102, 202
Q105, 205 : 2SC1345
Q104, 204 : 2SC2001



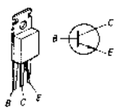
Q103, 203
Q305, 307
Q308, 310
Q312, 313 : 2SC1364



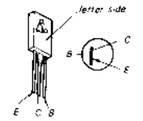
Q301 (US, Canadian model)
Q1001 : 2SD414



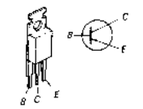
Q301 (AEP, UK, E model): 2SC1061



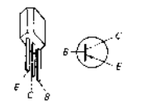
Q302 (US, Canadian model): 2SB548



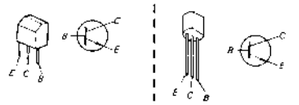
Q302 (AEP, UK, E model): 2SA671



Q306, 309: 2SA1027R (2SA1026)



Q311: 2SC1475 (2SC1213A)



IC101, 201 : NJM4560D
IC301 : μPC4556C
IC302 : μPC4557C

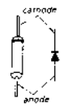
IC1001: CX069

D101, 201
D103, 203
D108, 208
D305, 311–313
D317 : 1S1555 (1T40)

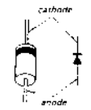
D102, 202
D107, 207 : 1T22AM (1T22)

D301–304
D307, 308
D315 : 10E2

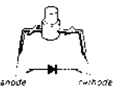
D314 : RD3.0E (RD3.0E-B)



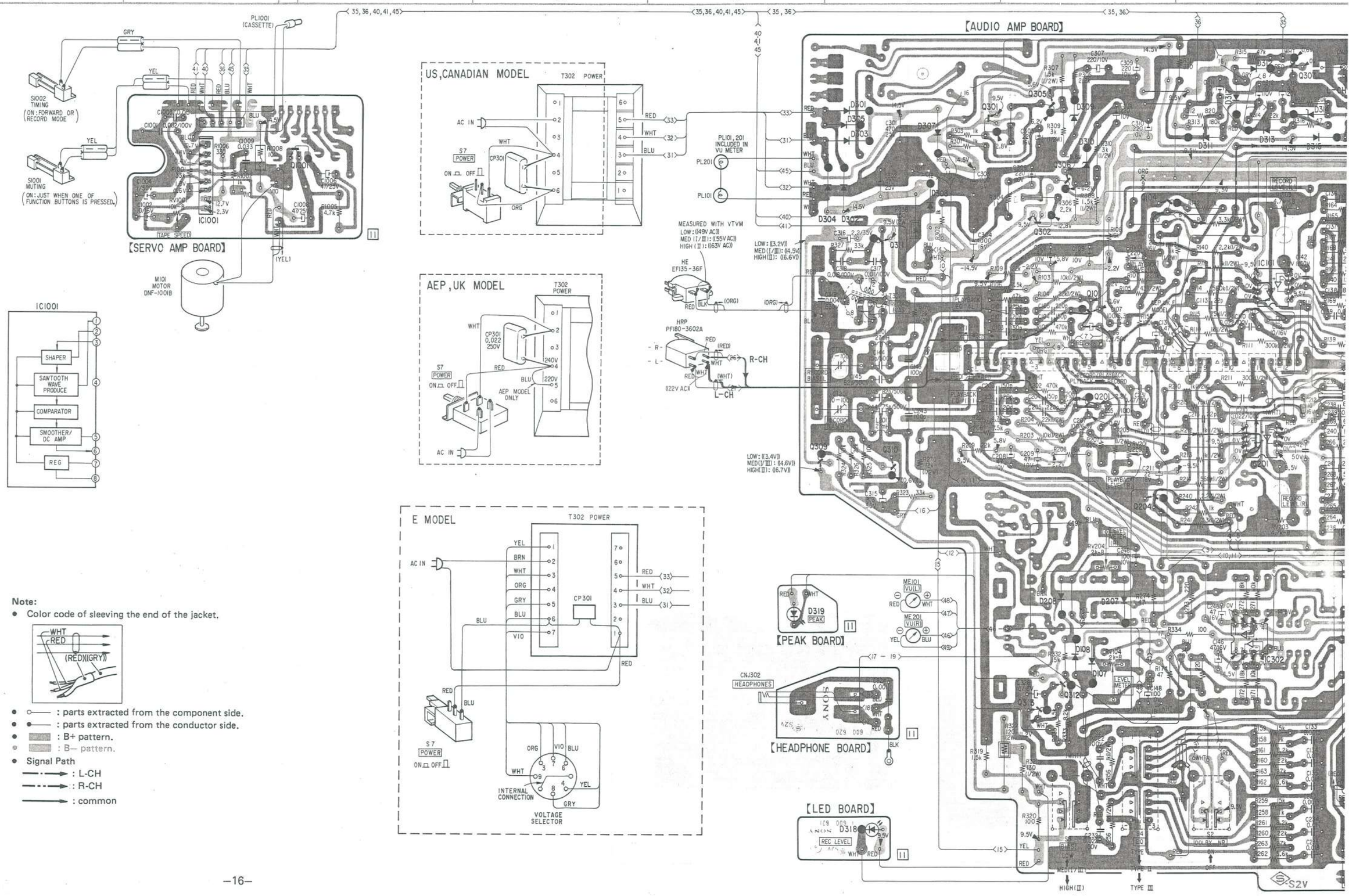
D309, 310, 316: HZ6B2L
(HZ6B1L)



D318, 319: SEL103R



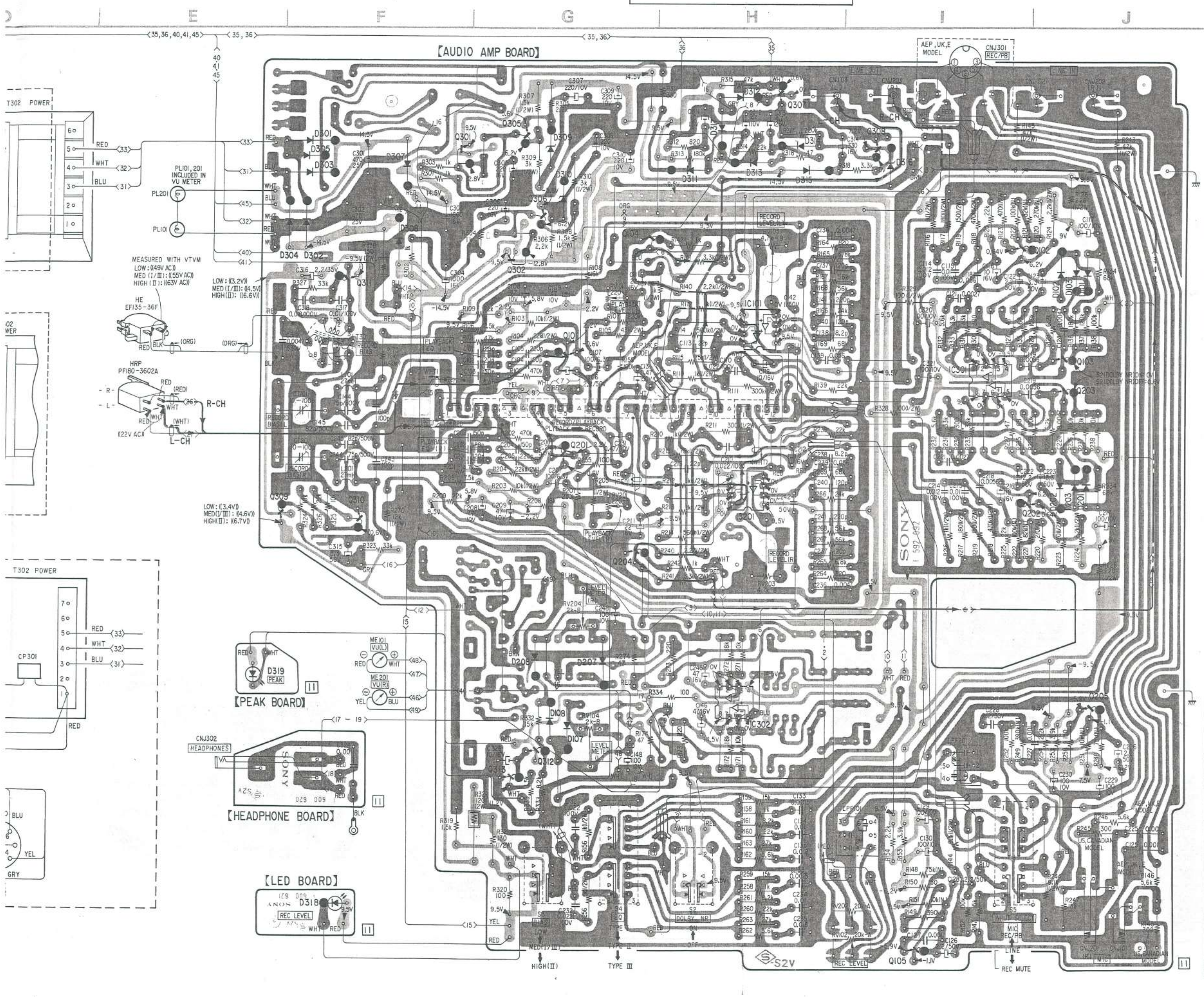
See page 15 for the semiconductor illustration.



Note:

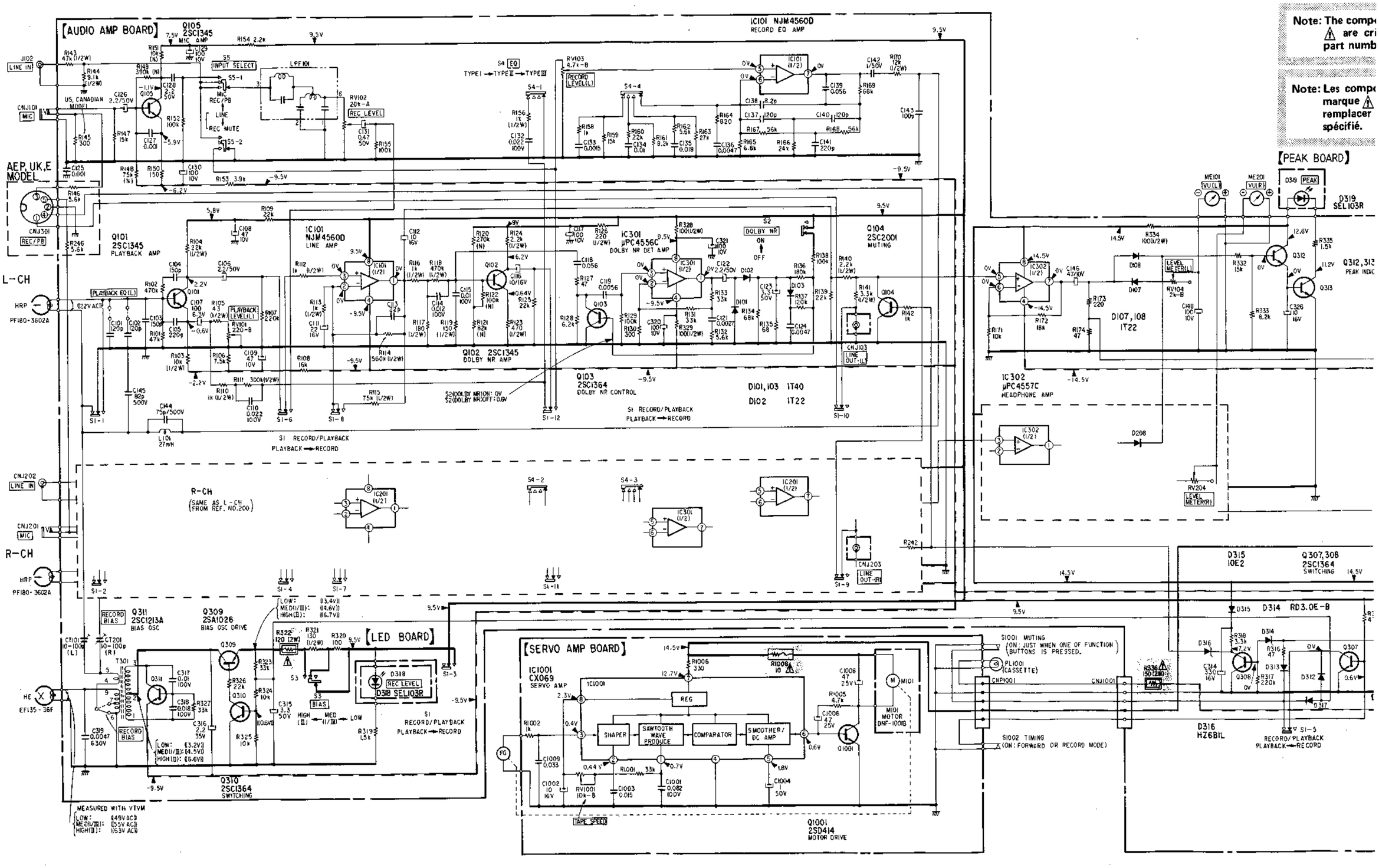
- Color code of sleeving the end of the jacket.

- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ▬ : B+ pattern.
- ▬ : B– pattern.
- Signal Path
  - —·—▶ : L-CH
  - —··—▶ : R-CH
  - ——▶ : common



	Q , IC	D
1	307, 305, 308, 301	312, 317, 301, 309, 314, 305, 313, 316, 303, 307, 311, 315, 310
2	306, 104, 102, 302, 311, IC101, 101, 103, IC301, 203	304, 302, 308, 102, 103, 101
3	201, IC201, 202, 309, 310, 204	202, 203, 201
4	IC302, 205, 312, 313	208, 207, 319, 108, 107
5	105	318
	Q , IC	D

4-2. SCHEMATIC DIAGRAM



TC-K35

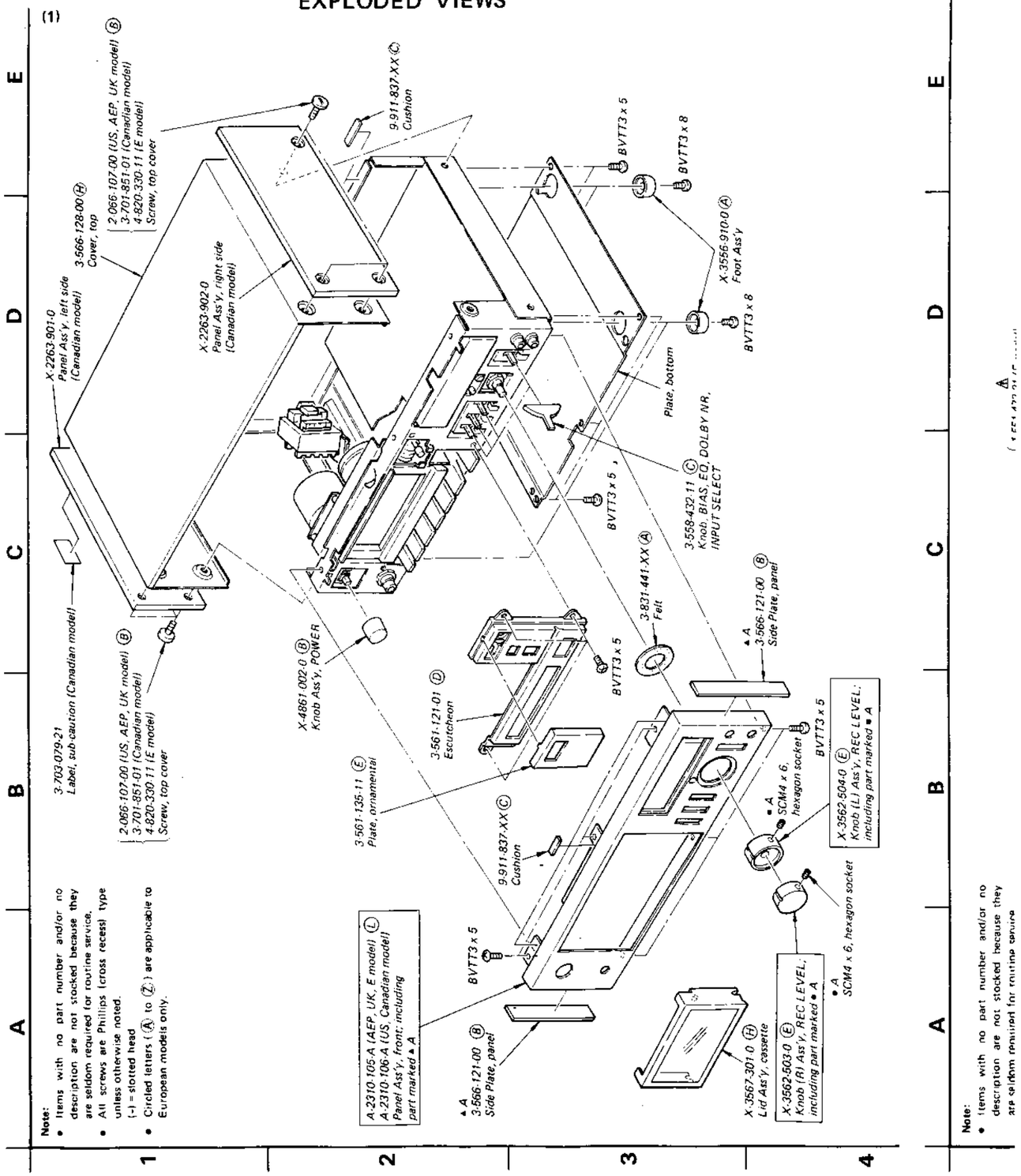
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé 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 200.
- All capacitors are in μF unless otherwise noted. pF = μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- ⊣▭⊢ : nonflammable resistor.
- ⊣∿⊢ : fusible resistor.
- {N} : low-noise resistor.
- ——— : B+ bus.
- – – – : B– bus.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20kΩ/V).
  (( )) : RECORD
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S1-1 to 1-12	RECORD/PLAYBACK	PLAYBACK
S2-1, 2	DOLBY NR	OFF
S3	BIAS	MED (I/III)
S4-1 to 4-4	EQ	TYPE I
S5-1 to 5-4	INPUT SELECT	LINE
S7	POWER	OFF
S1001	MUTING	OFF
S1002	TIMING	OFF

SECTION 5
EXPLODED VIEWS



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 (Ⓐ to Ⓗ) are applicable to European models only.

Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.

(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 (Ⓐ to Ⓩ) are applicable to European models only.

3-703-079-21
Label, sub-caution (Canadian model)

X-2263-901-0
Panel Ass'y, left side
(Canadian model)

3-566-128-00 Ⓗ
Cover, top

2-066-107-00 (US, AEP, UK model) Ⓑ
3-701-851-01 (Canadian model)
4-820-330-11 (E model)
Screw, top cover

2-066-107-00 (US, AEP, UK model) Ⓑ
3-701-851-01 (Canadian model)
4-820-330-11 (E model)
Screw, top cover

X-2263-902-0
Panel Ass'y, right side
(Canadian model)

X-4861-002-0 Ⓑ
Knob Ass'y, POWER

3-561-135-11 Ⓔ
Plate, ornamental

9-911-837-XX Ⓒ
Cushion

A-2310-105-A (AEP, UK, E model) Ⓛ
A-2310-106-A (US, Canadian model)
Panel Ass'y, front; including
part marked ▲A

3-561-121-01 Ⓓ
Escutcheon

▲A
3-566-121-00 Ⓑ
Side Plate, panel

BVTT3 x 5

9-911-837-XX Ⓒ
Cushion

BVTT3 x 5

BVTT3 x 5

BVTT3 x 5

3-831-441-XX Ⓐ
Felt

Plate, bottom

3-558-432-11 Ⓒ
Knob, BIAS, EQ, DOLBY NR,
INPUT SELECT

BVTT3 x 5

BVTT3 x 8

X-3556-910-0 Ⓐ
Foot Ass'y

BVTT3 x 8

X-3567-301-0 Ⓗ
Lid Ass'y, cassette

▲A
3-566-121-00 Ⓑ
Side Plate, panel

X-3562-503-0 Ⓔ
Knob (R) Ass'y, REC LEVEL;
including part marked • A

• A
SCM4 x 6,
hexagon socket

BVTT3 x 5

• A
SCM4 x 6, hexagon socket

X-3562-504-0 Ⓔ
Knob (L) Ass'y, REC LEVEL;
including part marked ■ A

(2)

Note:
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⚠ 1-551-473-31 (E model)
Cord, power; parallel-blade plug
1-551-530-00 (E model)
Cord, power; euro-plug
1-534-986-XX (US, Canadian model)
Cord, power

PSW2.6 x 6

3-701-682-00
Stopper, power cord
(US, Canadian, E model)

⚠ 1-534-817-XX Ⓓ
Cord, power (AEP model)

⚠ 1-534-777-00 Ⓓ
Cord, power (UK model)

3-567-302-00 (AEP model) Ⓑ
3-567-303-00 (US, Canadian model)
3-567-308-00 (UK model) Ⓑ
3-567-310-00 (E model)
Label, specification

B3 x 25

B3 x 6

3-413-691-00 Ⓐ
Clamp, power cord
(AEP, UK model)

1-552-521-00 Ⓒ
Switch, slide; record/playback (S1)

3-646-090-11 Ⓐ
Rivet, plastic; 4.5mm dia.

BVTT
3 x 5

BVTT3 x 5

3-561-123-00 (US, Canadian model)
3-561-124-00 (AEP, UK model) Ⓔ
3-567-311-00 (E model)
Panel, rear

⚠ 1-446-416-00 (US, Canadian model)
1-446-417-00 (AEP, UK model) Ⓚ
1-446-418-00 (E model)
Transformer, power (T302)

BVTT
3 x 5

Holder, power transformer

Plate, left side

BVTT3 x 5

Lug Plate

3-537-230-01 Ⓑ
Rubber

Frame, record limiter

Lever, record limiter

1-526-576-31 ⚠
Voltage Selector
(E model)

1-552-394-00 Ⓒ
Switch, lever-slide; EQ (S4)

1-552-393-00 Ⓒ
Switch, lever-slide; BIAS (S3)

1-552-723-00 Ⓒ
Switch, lever-slide; DOLBY NR (S2)

Shield Case

BVTT3 x 5

BVTT3 x 5

BVTT3 x 5

1-536 501-21 (AEP, UK, E model) Ⓓ
Jack, LINE IN, LINE OUT, REC/PB
(CNJ102, 103, 202, 203, 301)
1-507-531-00 (US, Canadian model)
Jack, LINE IN, LINE OUT
(CNJ102, 103, 202, 203)

Complete Circuit Board, record/playback

⚠ 1-552-407-11 (E model)
1-552-530-00 (US, Canadian model)
1-552-903-00 (AEP, UK model) Ⓓ
Switch, pushbutton; POWER (S7)

Printed Circuit Board, headphone

1-507-553-00 Ⓒ
Jack, HEADPHONES (CNJ302)

Chassis

Printed Circuit
Board, peak

PTPWH2.6 x 5

Printed Circuit Board,
meter

1-507-525-00 Ⓓ
Jack, MIC (CNJ101, 201)

1-552-724-00 Ⓓ
Switch, lever-slide; INPUT SELECT (S5)

1-226-591-00 Ⓔ
Resistor, 20kΩ/20kΩ-A; variable;
REC LEVEL (RV102, 202)

BVTT3 x 5

BVTT
3 x 5

BVTT3 x 5

BVTT3 x 5

Supplied with jack

Holder, VU meter

Plate, right side

BVTT3 x 5

PSW2.6 x 6

BVTT3 x 5

1-520-411-00 Ⓚ
Meter, VU (ME101, 201)

BVTT3 x 5

4-812-134-00 Ⓐ
Rivet, plastic; 3.5mm dia

PS3 x 10

BVTT3 x 5

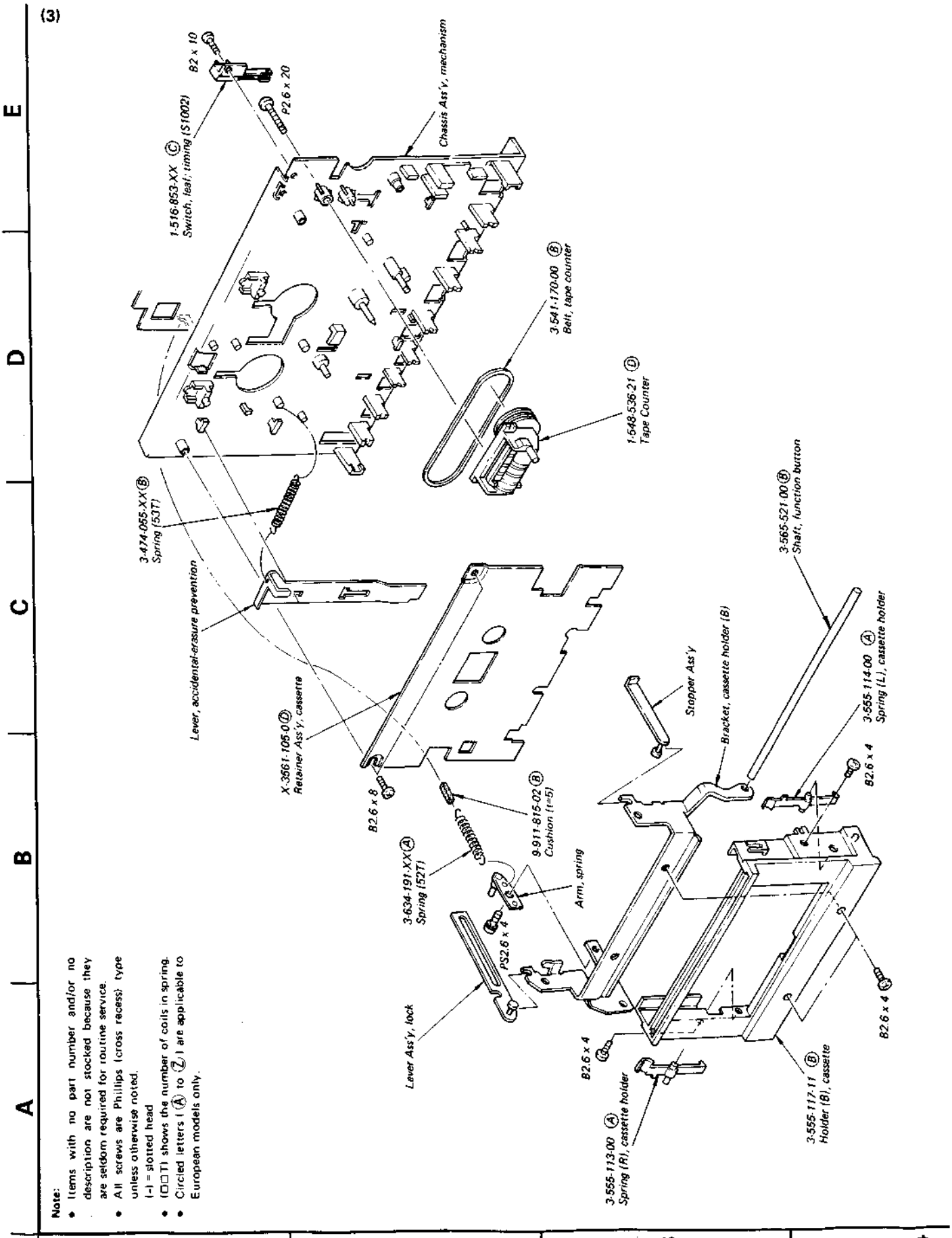
Supplied with variable resistor

Printed Circuit Board, LED

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

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

(3)

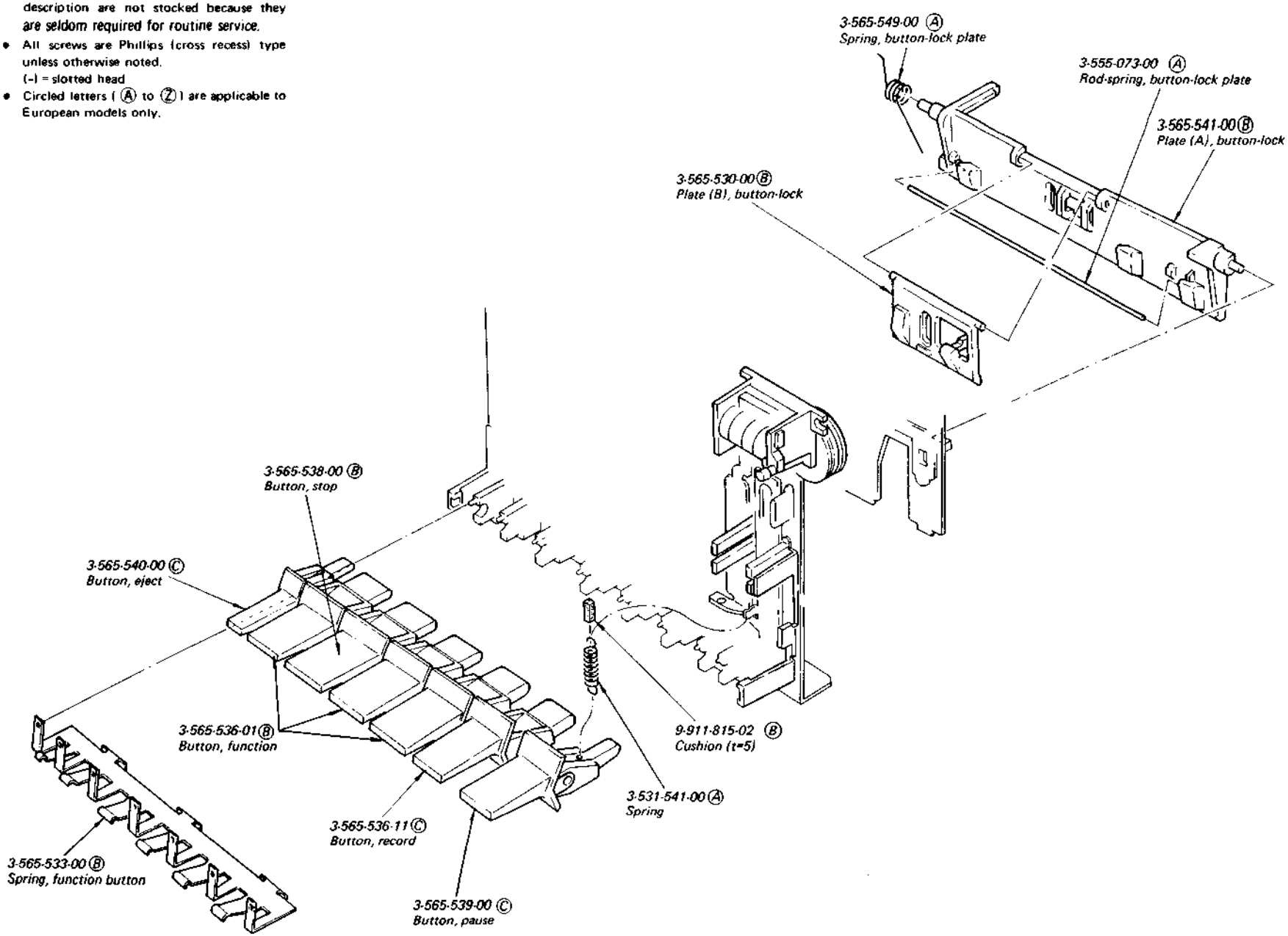


Note:

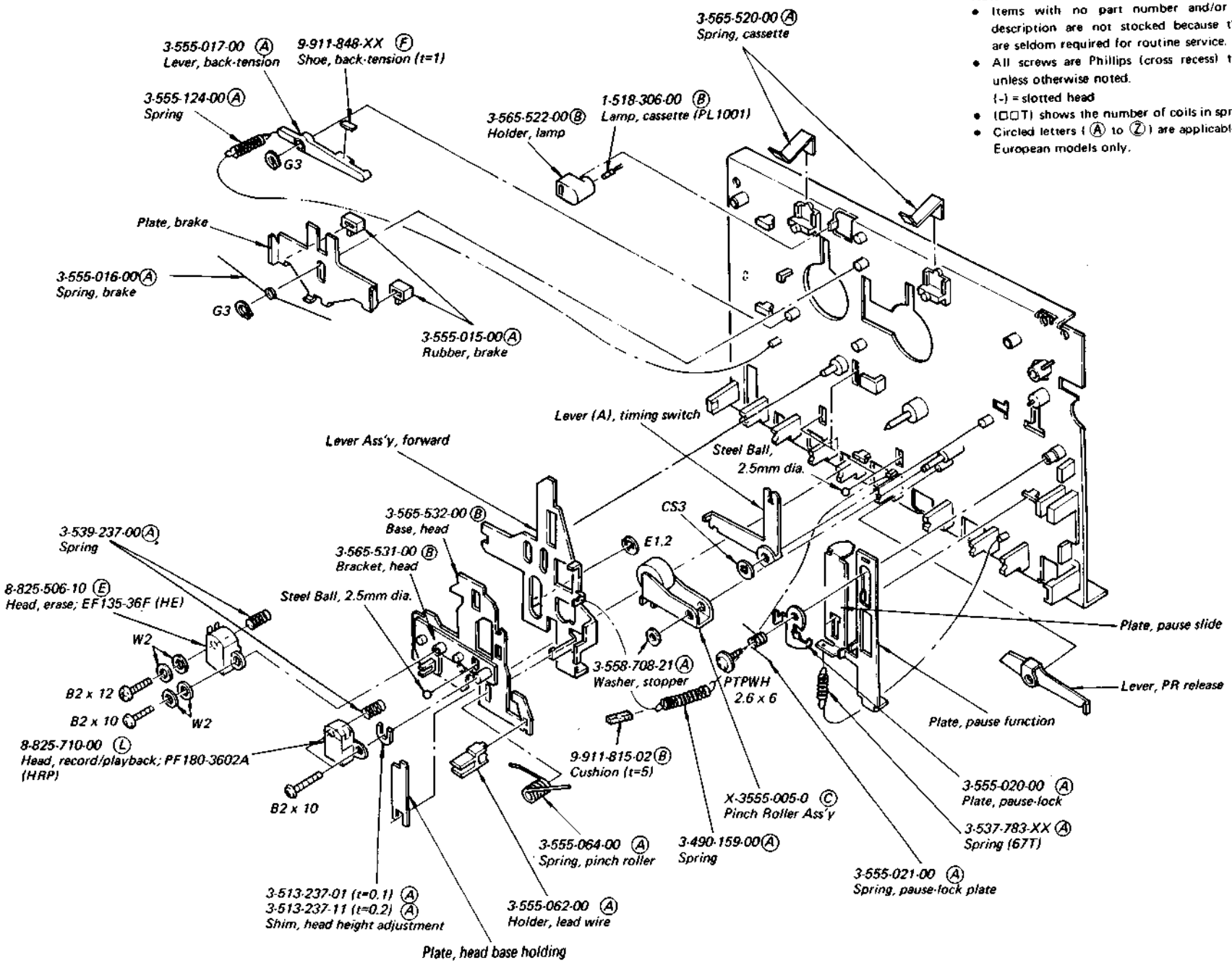
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓔ) are applicable to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

Note:

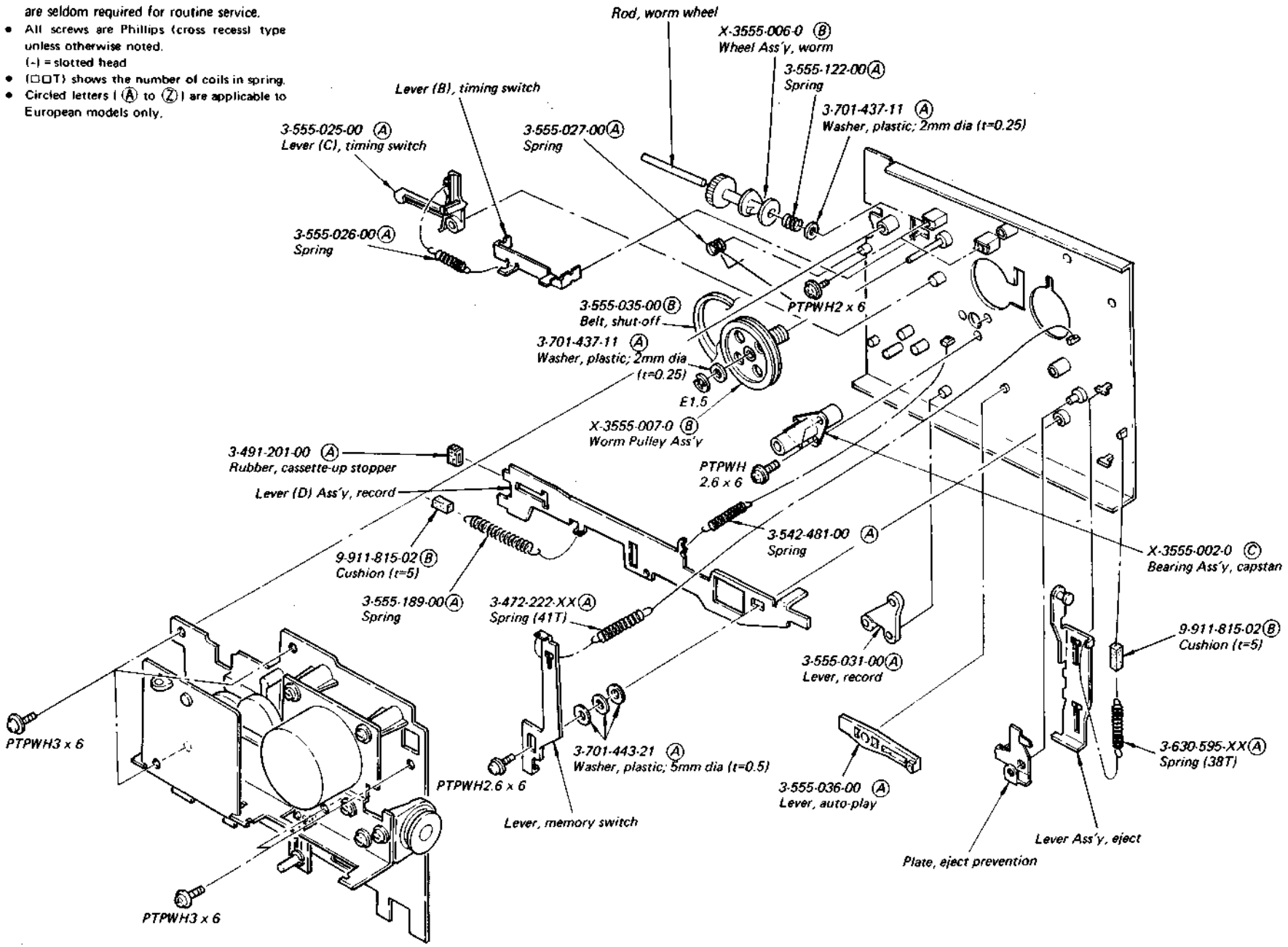
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

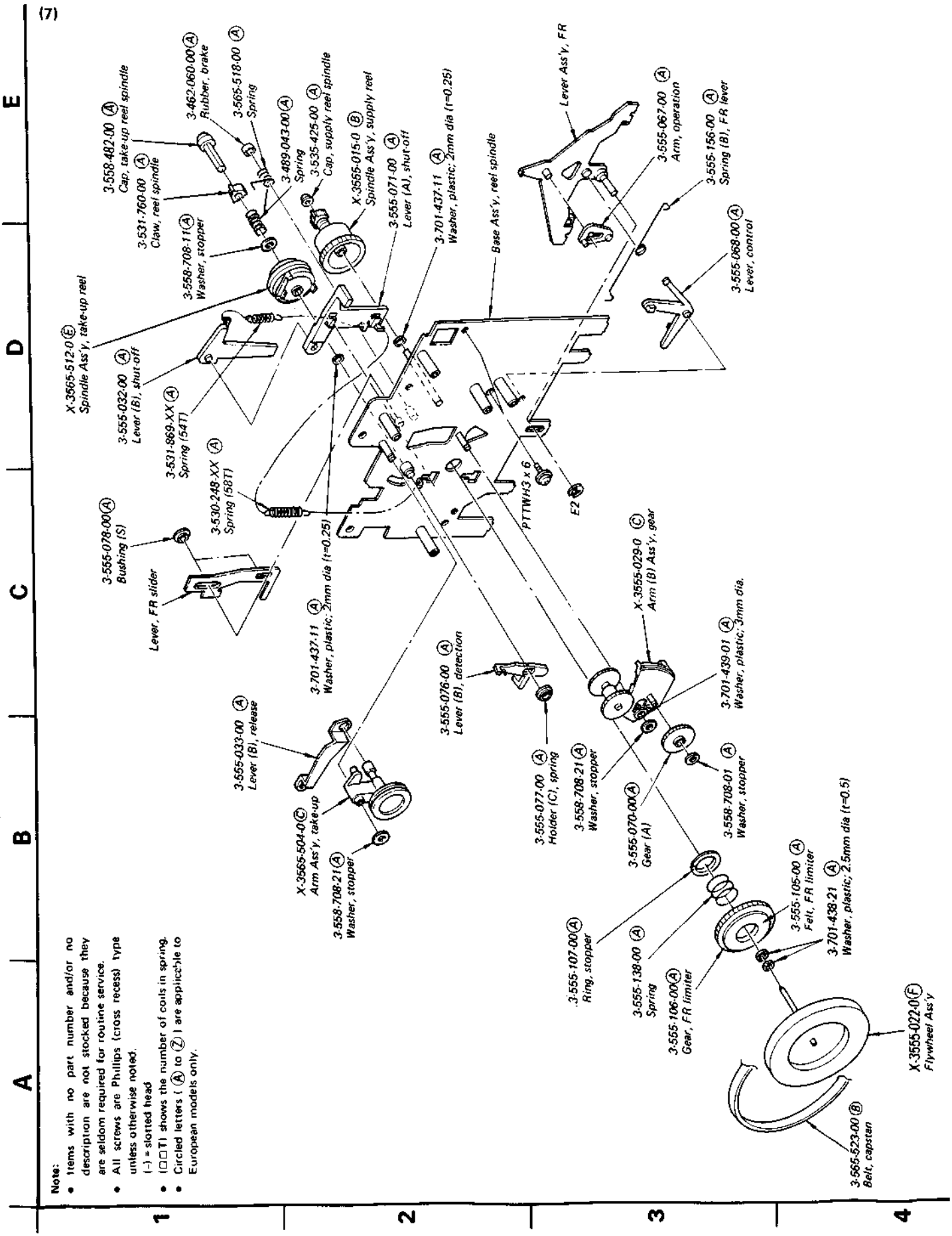


Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable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

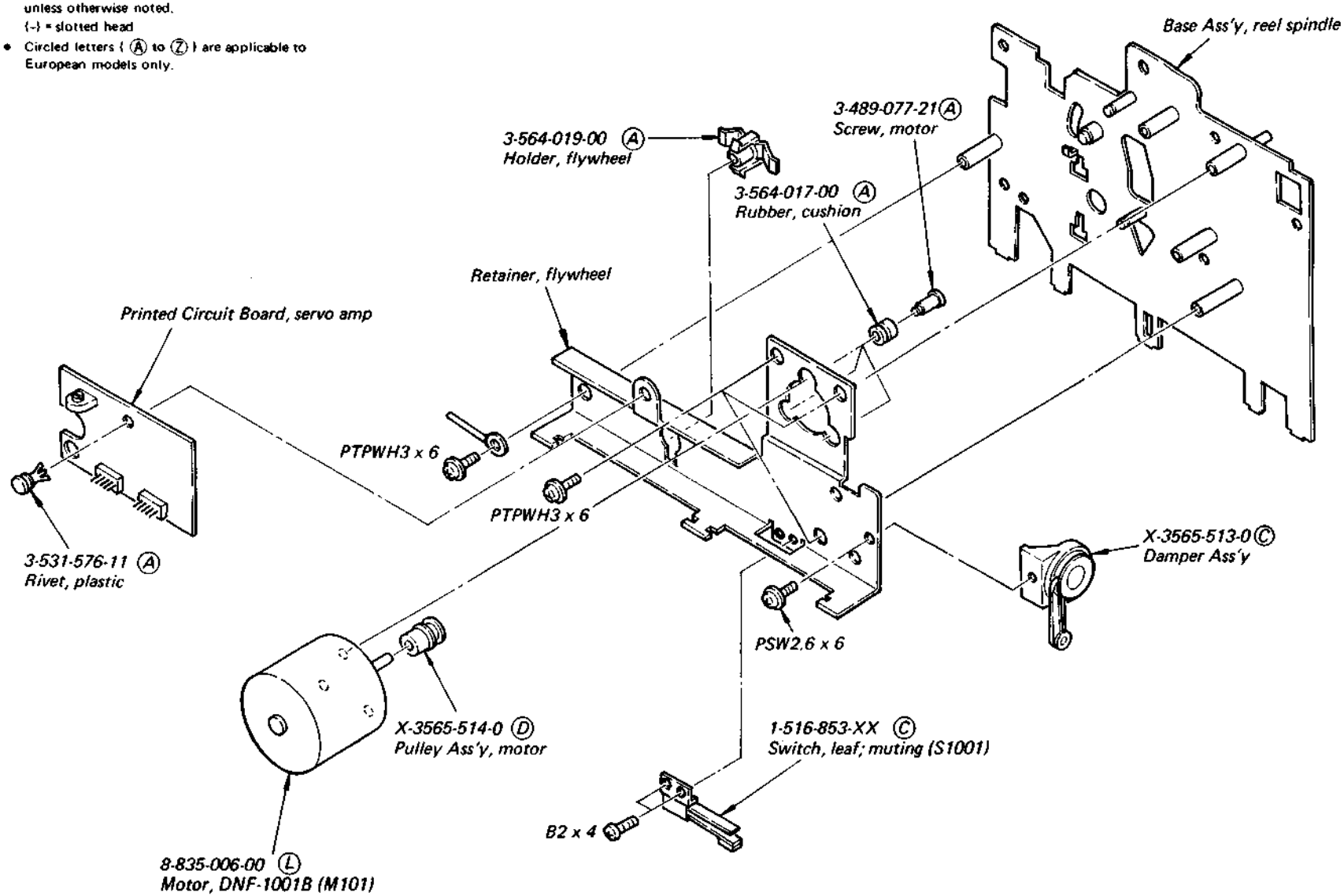


Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable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




(7)
A
B
C
D
E
1
2
3
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
• (□□T) shows the number of coils in spring.
• Circled letters (Ⓐ to Ⓩ) are applicable to European models only.
X-3565-512-0 Ⓔ Spindle Ass'y, take-up reel
3-558-482-00 Ⓐ Cap, take-up reel spindle
3-462-060-00 Ⓐ Rubber, brake
3-565-518-00 Ⓐ Spring
3-531-760-00 Ⓐ Claw, reel spindle
3-489-043-00 Ⓐ Spring
3-535-425-00 Ⓐ Cap, supply reel spindle
X-3555-015-0 Ⓑ Spindle Ass'y, supply reel
3-555-071-00 Ⓐ Lever (A), shut-off
3-701-437-11 Ⓐ Washer, plastic; 2mm dia (t=0.25)
Base Ass'y, reel spindle
Lever Ass'y, FR
3-555-067-00 Ⓐ Arm, operation
3-555-156-00 Ⓐ Spring (B), FR lever
3-555-068-00 Ⓐ Lever, control
3-558-708-11 Ⓐ Washer, stopper
3-555-032-00 Ⓐ Lever (B), shut-off
3-531-869-XX Ⓐ Spring (54T)
3-530-248-XX Ⓐ Spring (58T)
3-555-078-00 Ⓐ Bushing (S)
Lever, FR slider
3-701-437-11 Ⓐ Washer, plastic; 2mm dia (t=0.25)
PTTWH3 x 6
E2
3-555-033-00 Ⓐ Lever (B), release
X-3565-504-0 Ⓒ Arm Ass'y, take-up
3-558-708-21 Ⓐ Washer, stopper
3-555-076-00 Ⓐ Lever (B), detection
3-555-077-00 Ⓐ Holder (C), spring
3-558-708-21 Ⓐ Washer, stopper
X-3555-029-0 Ⓒ Arm (B) Ass'y, gear
3-701-439-01 Ⓐ Washer, plastic; 3mm dia.
3-555-070-00 Ⓐ Gear (A)
3-558-708-01 Ⓐ Washer, stopper
3-555-107-00 Ⓐ Ring, stopper
3-555-138-00 Ⓐ Spring
3-555-106-00 Ⓐ Gear, FR limiter
3-555-105-00 Ⓐ Felt, FR limiter
3-701-438-21 Ⓐ Washer, plastic; 2.5mm dia (t=0.5)
X-3555-022-0 Ⓕ Flywheel Ass'y
3-565-523-00 Ⓑ Belt, capstan

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 (Ⓐ to Ⓩ) are applicable to European models only.



SECTION 6
ELECTRICAL PARTS LIST

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

Ref. No.	*Part No.*	*Description*
		SEMICONDUCTORS
		Transistors
Q101, 201, Q102, 202	8-729-334-58	Ⓑ 2SC1345
Q103, 203	8-729-663-47	Ⓒ 2SC1364
Q104, 204	8-729-100-13	Ⓑ 2SC2001
Q105, 205	8-729-334-58	Ⓑ 2SC1345
Q301	8-729-141-43	2SD414 (US, Canadian model)
	8-729-316-12	Ⓓ 2SC1061 (AEP, UK, E model)
Q302	8-729-154-83	2SB548 (US, Canadian model)
	8-729-317-12	Ⓔ 2SA671 (AEP, UK, E model)
Q305	8-729-663-47	Ⓒ 2SC1364
⇒Q306	8-729-612-77	Ⓑ 2SA1027R
Q307, 308	8-729-663-47	Ⓒ 2SC1364
⇒Q309	8-729-612-77	Ⓑ 2SA1027R
Q310	8-729-663-47	Ⓒ 2SC1364
⇒Q311	8-760-413-10	Ⓑ 2SC1475
Q312, 313	8-729-663-47	Ⓒ 2SC1364
Q1001	8-729-141-43	Ⓑ 2SD414
		ICs
IC101, 201	8-759-745-60	Ⓑ NJM4560D
IC301	8-759-100-06	Ⓓ μPC4556C
IC302	8-759-145-57	Ⓓ μPC4557C
IC1001	8-750-690-00	Ⓓ CX069
		Diodes
⇒D101, 201	8-719-815-55	Ⓑ 1S1555
⇒D102, 202	8-719-422-21	Ⓑ 1T22AM
⇒D103, 203	8-719-815-55	Ⓑ 1S1555
⇒D107, 207	8-719-422-21	Ⓑ 1T22AM
⇒D108, 208	8-719-815-55	Ⓑ 1S1555
D301–304	⚠ 8-719-200-02	Ⓑ 10E2
⇒D305	⚠ 8-719-815-55	Ⓑ 1S1555
D307, 308	8-719-200-02	Ⓑ 10E2
⇒D309, 310	8-719-910-65	Ⓑ HZ6B2L
⇒D311–313	8-719-815-55	Ⓑ 1S1555
⇒D314	8-719-130-07	Ⓑ RD3.0E
D315	8-719-200-02	Ⓑ 10E2
⇒D316	8-719-910-65	Ⓑ HZ6B2L
⇒D317	8-719-815-55	Ⓑ 1S1555
D318, 319	8-719-301-03	Ⓑ SEL103R
		COILS
L101, 201	1-408-262-00	Ⓑ 27mH, microinductor
		TRANSFORMERS
T301	1-433-132-11	Ⓑ Osc
T302	⚠ 1-446-416-00	Power (US, Canadian model)
	⚠ 1-446-417-00	Ⓚ Power (AEP, UK model)
	⚠ 1-446-418-00	Power (E model)

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics and tantalum. p : μμF, elect : electrolytic

C101, 102, C201, 202	1-161-272-00	Ⓐ 120p		
C103, 104, C203, 204	1-161-313-00	Ⓐ 150p		
C105, 205	1-161-315-00	Ⓐ 220p		
C106, 206	1-123-353-00	Ⓑ 2.2	50V	elect
C107, 207	1-123-295-00	Ⓑ 100	6.3V	elect
C108, 109, C208, 209	1-123-306-00	Ⓑ 47	10V	elect
C110, 210	1-129-776-00	Ⓑ 0.022	100V	polyethylene
C111, 211	1-121-479-00	Ⓑ 22	16V	elect
C112, 212	1-123-316-00	Ⓑ 10	16V	elect
C113, 213	1-161-263-00	Ⓐ 22p		
C114, 214	1-129-896-00	Ⓐ 0.012	100V	polyethylene
C115, 215	1-129-701-00	Ⓐ 0.01	100V	polyethylene
C116, 216	1-123-316-00	Ⓑ 10	16V	elect
C117, 217	1-123-307-00	Ⓑ 100	10V	elect
C118, 218	1-108-597-00	Ⓑ 0.056		mylar

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

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

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

C-K35

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

Ref. No.	*Part No.*	*Description*		
C119, 219	1-108-573-00	Ⓑ 0.0056		mylar
C121, 221	1-108-565-00	Ⓑ 0.0027		mylar
C122, 222	1-123-353-00	Ⓑ 2.2	50V	elect
C123, 223	1-123-354-00	Ⓑ 3.3	50V	elect
C124, 224	1-161-383-00	Ⓐ 0.0047		
C125, 225	1-161-323-00	Ⓐ 0.001		
C126, 226	1-123-353-00	Ⓑ 2.2	50V	elect
C127, 227	1-161-323-00	Ⓐ 0.001		
C128, 228	1-123-230-00	Ⓑ 2.2	50V	elect (nonpolarized)
C129, 130, C229, 230	1-123-307-00	Ⓑ 100	10V	elect
C131, 231	1-123-351-00	Ⓑ 0.47	50V	elect
C132, 232	1-129-776-00	Ⓑ 0.022	100V	polyethylene
C133, 233	1-108-559-00	Ⓑ 0.0015		mylar
C134, 234	1-108-579-00	Ⓑ 0.01		mylar
C135, 235	1-108-585-00	Ⓑ 0.018		mylar
C136, 236	1-161-383-00	Ⓐ 0.0047		
C137, 237	1-161-272-00	Ⓐ 120p		
C138, 238	1-161-258-00	Ⓐ 8.2p		
C139, 239	1-108-597-00	Ⓑ 0.056		mylar
C140, 240	1-161-272-00	Ⓐ 120p		
C141, 241	1-161-315-00	Ⓐ 220p		
C142, 242	1-123-228-00	Ⓑ 1	50V	elect (nonpolarized)
C143, 243	1-161-271-00	Ⓐ 100p		
C144, 244	1-107-167-00	Ⓑ 75p	500V	mica
C145, 245	1-107-037-00	Ⓑ 47p	500V	silvered mica
C146, 246	1-123-306-00	Ⓑ 47	10V	elect
C148, 248	1-123-307-00	Ⓑ 100	10V	elect
C301, 302	⚠1-121-733-00	Ⓐ 470	25V	elect
C303, 304	1-121-245-00	Ⓐ 1000	16V	elect
C305, 306	1-123-321-00	Ⓑ 220	16V	elect
C307–310	1-123-308-00	Ⓑ 220	10V	elect
C311	1-123-316-00	Ⓑ 10	16V	elect
C312	1-123-306-00	Ⓑ 47	10V	elect
C313	1-123-328-00	Ⓑ 4.7	25V	elect
C314	1-123-322-00	Ⓑ 330	16V	elect
C315	1-123-354-00	Ⓑ 3.3	50V	elect
C316	1-131-217-00	Ⓑ 2.2	35V	tantalum
C317	1-129-701-00	Ⓑ 0.01	100V	polyethylene
C318	1-130-189-00	Ⓑ 0.018	100V	polyethylene
C319	1-129-710-00	Ⓑ 0.0047	630V	polyethylene
C320, 321	1-121-414-00	Ⓑ 100	10V	elect
C324	1-161-323-00	Ⓐ 0.001		
C326	1-123-316-00	Ⓑ 10	16V	elect
C1001	1-130-134-00	Ⓑ 0.082	100V	plastic
C1002	1-123-316-00	Ⓑ 10	16V	elect
C1003	1-108-583-00	Ⓑ 0.015		mylar
C1004	1-123-352-00	Ⓑ 1	50V	elect
C1006, C1008	1-123-332-00	Ⓑ 47	25V	elect
C1009	1-108-244-00	Ⓐ 0.033		mylar
CT101,201	1-141-225-00	Ⓒ Trimmer		

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on page 35 for their part numbers.

R103, 203	1-244-897-00	Ⓐ 10k	½W	carbon
R104, 204	1-244-905-00	Ⓐ 22k	½W	carbon
R105, 205	1-244-840-00	Ⓐ 43	½W	carbon
R110, 210	1-244-873-00	Ⓐ 1k	½W	carbon
R111, 211	1-244-932-00	Ⓐ 300k	½W	carbon
R112, 113, R212, 213	1-244-873-00	Ⓐ 1k	½W	carbon
R114, 214	1-244-939-00	Ⓐ 560k	½W	carbon
R115, 215	1-244-918-00	Ⓐ 75k	½W	carbon
R116, 216	1-244-873-00	Ⓐ 1k	½W	carbon
R117, 217	1-244-855-00	Ⓐ 180	½W	carbon
R118, 218	1-244-937-00	Ⓐ 470k	½W	carbon
R119, 219	1-244-853-00	Ⓐ 150	½W	carbon
R123, 223	1-244-865-00	Ⓐ 470	½W	carbon
R124, 224	1-244-881-00	Ⓐ 2.2k	½W	carbon
R126, 226	1-244-857-00	Ⓐ 220	½W	carbon
R140, 240	1-244-881-00	Ⓐ 2.2k	½W	carbon
R141, 241	1-244-885-00	Ⓐ 3.3k	½W	carbon
R143, 243	1-244-913-00	Ⓐ 47k	½W	carbon

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

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

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

Ref. No.	*Part No.*	*Description*			
R144, 244	1-244-896-00	Ⓐ 9.1k	½W	carbon
R156, 256	1-244-873-00	Ⓐ 1k	½W	carbon
R170, 270	1-244-899-00	Ⓐ 12k	½W	carbon
R307, 308	1-244-877-00	Ⓐ 1.5k	½W	carbon
R309, 310	1-244-884-00	Ⓐ 3k	½W	carbon
R321	1-244-852-00	Ⓐ 130	½W	carbon
R322	⚠1-206-642-00	Ⓑ 120	2W	metal oxide (nonflammable)
R334	1-244-849-00	Ⓐ 100	½W	carbon
R336	⚠1-206-644-00	Ⓑ 150	2W	metal oxide (nonflammable)
R1001	1-214-765-00	Ⓐ 33k	¼W	metal oxide
R1008	⚠1-217-523-00	Ⓑ 10	⅛W	fusible
RV101, 201	1-224-550-21	Ⓑ 220-B, adjustable; playback level		
RV102, 202	1-226-591-00	Ⓔ 20k/20k-A, variable; REC LEVEL		
RV103, 203	1-224-644-XX	Ⓑ 4.7k-B, adjustable; record level		
RV104, 204	1-226-234-00	Ⓑ 2k-B, adjustable; meter		
RV1001	1-226-431-00	Ⓑ 10k-B, adjustable; tape speed		

SWITCHES

S1	1-552-521-00	Ⓒ	Slide, record/playback
S2	1-552-723-00	Ⓒ	Lever-slide, DOLBY NR
S3	1-552-393-00	Ⓒ	Lever-slide, BIAS
S4	1-552-394-00	Ⓒ	Lever-slide, EQ
S5	1-552-724-00	Ⓓ	Lever-slide, INPUT SELECT
S7	⚠1-552-530-00		Pushbutton, POWER (US, Canadian model)
	⚠1-552-903-00	Ⓓ	Pushbutton, POWER (AEP, UK model)
	⚠1-552-407-11		Pushbutton, POWER (E model)
S1001,1002	1-516-853-XX	Ⓒ	Leaf, muting, timing

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

Ref. No.	*Part No.*	*Description*	
JACKS			
CNJ101, 201	1-507-525-00	Ⓓ	MIC
CNJ102,103 CNJ202,203	1-507-531-00		LINE IN, LINE OUT (US, Canadian model)
CNJ102, 103 CNJ202, 203 CNJ301	1-536-501-21	Ⓓ	LINE IN, LINE OUT, REC/PB (AEP, UK, E model)
CNJ302	1-507-553-00	Ⓒ	HEADPHONES

MISCELLANEOUS

LPF101,201	1-231-372-00	Ⓓ	Filter, low-pass
HE	8-825-506-10	Ⓔ	Head, erase; EF135-36F
HRP	8-825-710-00	Ⓛ	Head, record/playback; PF180-3602A
	⚠1-130-267-00	Ⓒ	Capacitor, 0.022μF 250V; film (AEP, UK model)
CP301	⚠1-231-326-11		Encapsulated Component (US, Canadian model)
	⚠1-231-057-31		Encapsulated Component (E model)
ME101, 201	1-520-411-00	Ⓚ	Meter, VU
PL101, 201	1-518-351-00	Ⓒ	Lamp, VU meter
PL1001	1-518-306-00	Ⓑ	Lamp, cassette
M101	8-835-006-00	Ⓛ	Motor, DNF-1001B
	⚠1-526-576-31		Voltage Selector (E model)
	⚠1-534-817-XX	Ⓓ	Cord, power (AEP model)
	⚠1-534-777-00	Ⓓ	Cord, power (UK model)
	⚠1-534-986-XX		Cord, power (US, Canadian model)
	⚠1-551-473-31		Cord, power; parallel-blade plug (E model)
	⚠1-551-530-00		Cord, power; euro-plug (E model)

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

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

ACCESSORIES AND PACKING MATERIALS

Part No.		*Description*
X-3701-105-0	Ⓐ	Tip Ass'y, head cleaning
1-551-734-11	Ⓓ	Cord, connection; RK-74A
3-429-126-00	Ⓑ	Bag, plastic (Canadian model)
3-561-142-00		Cushion, upper-front (Canadian model)
3-561-143-00		Cushion, upper-rear (Canadian model)
3-561-144-00		Cushion, bottom-right (Canadian model)
3-561-145-00		Cushion, bottom-left (Canadian model)
3-566-148-00	Ⓑ	Cushion, upper-front (US, AEP, UK, E model)
3-566-149-00	Ⓑ	Cushion, upper-rear (US, AEP, UK, E model)
3-566-150-00	Ⓑ	Cushion, bottom-right (US, AEP, UK, E model)
3-566-151-00	Ⓑ	Cushion, bottom-left (US, AEP, UK, E model)
3-567-305-00	Ⓓ	Carton (US, AEP, UK, E model)
3-567-306-00		Carton (Canadian model)
3-701-630-00	Ⓐ	Bag, plastic
3-770-882-11	Ⓔ	Manual, instruction (AEP, UK, E model)
3-770-882-21		Manual, instruction (US model)
3-770-882-21 3-794-491-31		Manual, instruction (Canadian model)
3-793-828-11	Ⓐ	Caution Card, cassette
3-794-233-21		Separate Sheet, consumer products (US model)
4-818-924-00	Ⓑ	Bag, plastic (US, AEP, UK, E model)

1/4 WATT CARBON RESISTORS Ⓐ

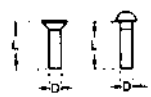
Note: Circled letter Ⓐ is applicable to European models only.

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	1-246-576-00	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	1-246-577-00	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	1-246-578-00	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	1-246-579-00	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	1-246-580-00	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	1-246-581-00	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	1-246-582-00	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	1-246-583-00	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	1-246-584-00	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	1-246-585-00	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	1-246-586-00	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	1-246-587-00	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		braizer-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	