# TC-399




# STEREO TAPE DECK

## SPECIFICATIONS

**Power Requirements:** 120V ac, 60Hz (US, Canadian model)
110V, 120V, 220V, 240V, 50/60Hz (UK, AEP model)

**Power Consumption:** 25W (US, Canadian model)
35W (AEP, UK model)

**Dimensions:** 415 (w) x 435 (h) x 190 (d) mm
16 3/8 (w) x 17 1/4 (h) x 7 1/2 (d) inches
including projecting parts and controls

**Weight:** Approx. 12.6kg (27 lb 13oz)
(US, Canadian model)
Approx. 12.9kg (28 lb 7oz)
(UK, AEP model)

**Track:** 4-track 2-channel stereo

**Tape Speed:** 19 cm/s (7 1/2 ips), 9.5 cm/s (3 3/4 ips)
4.8 cm/s (1 7/8 ips)

**Recording Time:** With 550m tape, 18cm reel
Stereo recording: 90 min. at 19 cm/s
Mono recording: 360 min. at 9.5 cm/s

**Fast Winding Time:** Approx. 120 sec. with 370m tape

**Reel:** 18cm or smaller

**Heads:** 1 record head, 1 playback head,
1 erase head

**Record Bias Frequency:** 160kHz

**Equalization:** NAB standard
(US, Canadian model)
JIS standard
19 cm/s ..... 3,180μS + 50μS
9.5 cm/s ..... 3,180μS + 90μS
(UK, AEP model)

**S/N Ratio:** With Sony Ferri-Chrome Tape
61 dB at peak level (NAB)
58 dB (DIN, 1975 rev.):
(UK, AEP model)

— Continued on page 2 —

SONY®
SERVICE MANUAL

# TC-399

**Total Harmonic Distortion:** 0.8%

**Frequency Response:** With Sony Ferri-Chrome tape or SLH tape
30–25,000 Hz ±3 dB at 19 cm/s
30–18,000 Hz ±3 dB at 9.5 cm/s
With regular tape
30–18,000 Hz ±3 dB at 19 cm/s
30–15,000 Hz ±3 dB at 9.5 cm/s

**Wow and Flutter:** 0.06% at 19 cm/s (NAB)
±0.09% at 19 cm/s (DIN): (UK, AEP model)
0.09% at 9.5 cm/s (NAB)
±0.12% at 9.5 cm/s (DIN): (UK, AEP model)

**Inputs:** MIC (two phono jacks)
sensitivity 0.25 mV (–70 dB)
for low impedance microphone
LINE IN (two phono jacks)
sensitivity 77.5 mV (–20 dB)
input impedance 100 kΩ
REC/PB (DIN connector): (UK, AEP model)
input impedance less than 10 kΩ

**Outputs:** LINE OUT (two phono jacks)
output level 0.435 V (–5 dB) at load impedance of 100 kΩ, with PB LEVEL controls set to center-detent position; 0.775 V (0 dB) with the PB LEVEL controls set to "10"
suitable load impedance more than 10 kΩ
HEADPHONES (binaural jack)
output level 38.8 mV (–26 dB)
at load impedance 8 Ω with PB LEVEL controls set to center-detent position
REC/PB (DIN connector): (UK, AEP model)
output impedance less than 10 kΩ

**0 dB = 0.775 V**

## MODEL IDENTIFICATION

(Specification Label)

**(US model)**

SONY
TAPECORDER TC-399
AC 120 V 60 Hz 25 W
NO.
MADE IN JAPAN

**(Canadian model)**

SONY
TAPECORDER TC-399
AC 120V 60Hz 25 W
NO.
MADE IN JAPAN

**(AEP, UK model)**

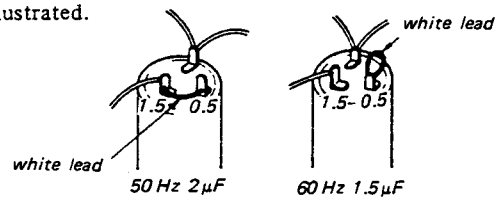
SONY
TAPECORDER TC-399
110,120,220,240V ~ 50/60Hz 35W
NO.
MADE IN JAPAN

# POWER FREQUENCY ADAPTATION

The motor pulley and tapping of the motor capacitor terminals must be changed, if the line frequency differs from what the recorder is set for.

**1. To change connection of the motor capacitor terminals**

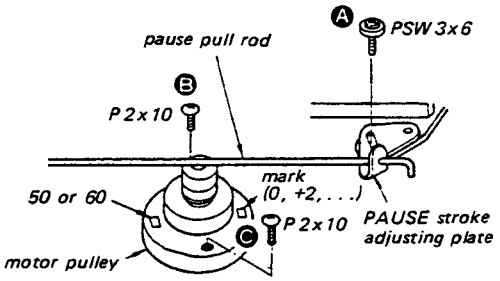
The motor capacitor is located at the upper side of the drive mechanism. Change the connection of the motor capacitor terminals by soldering as illustrated.




**2. To change motor pulley**

Remove the panel as described in DISASSEMBLY on page 5.

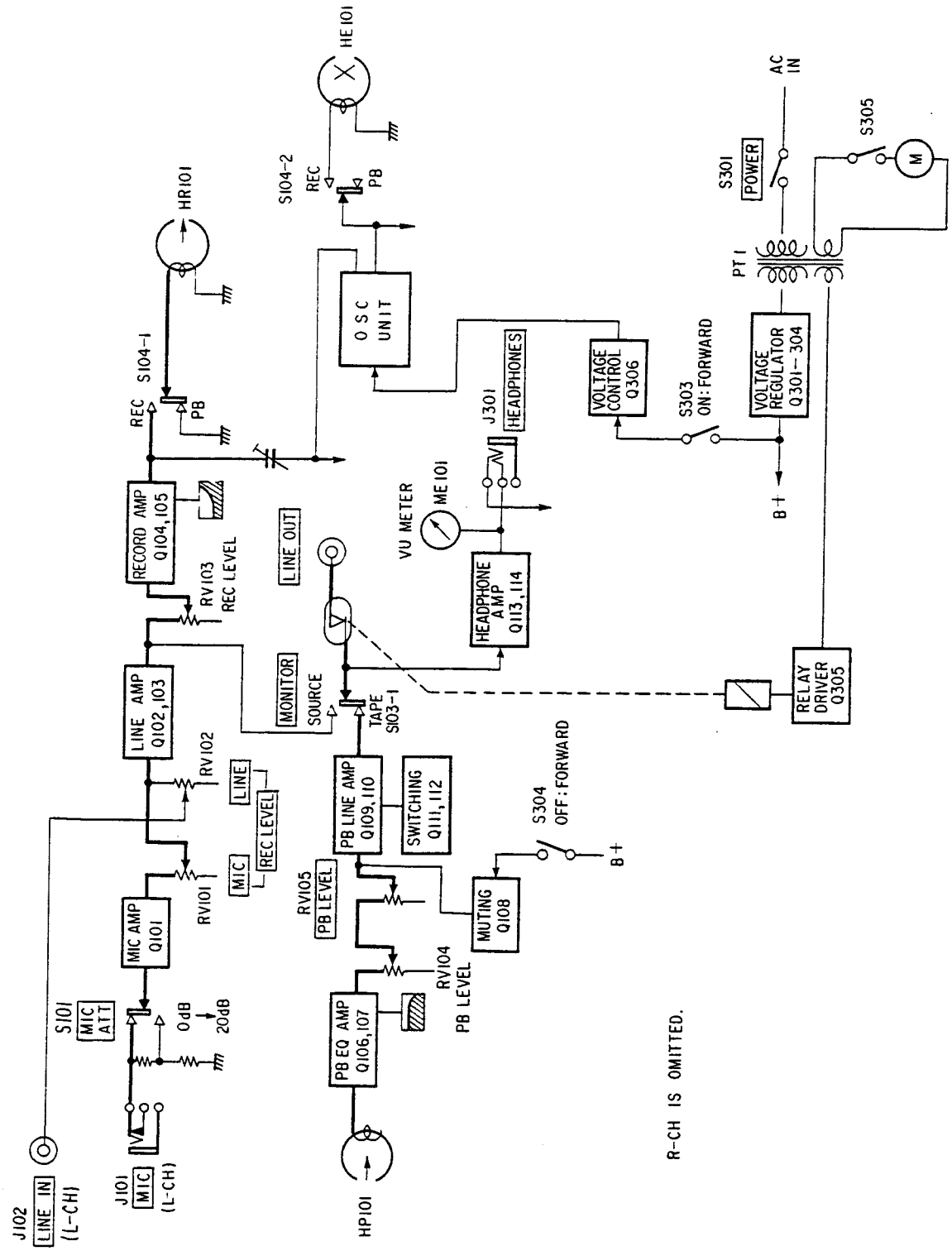
1. Remove the pause stroke adjusting plate by loosening the screw Ⓐ. Withdraw the pause pull rod.
2. Remove a rubber belt from the motor pulley and idler wheel.
3. Remove the motor pulley by loosening two screws Ⓑ and Ⓒ which hold the motor pulley.
4. Use the supplied motor pulley with the same mark and tighten the screws.



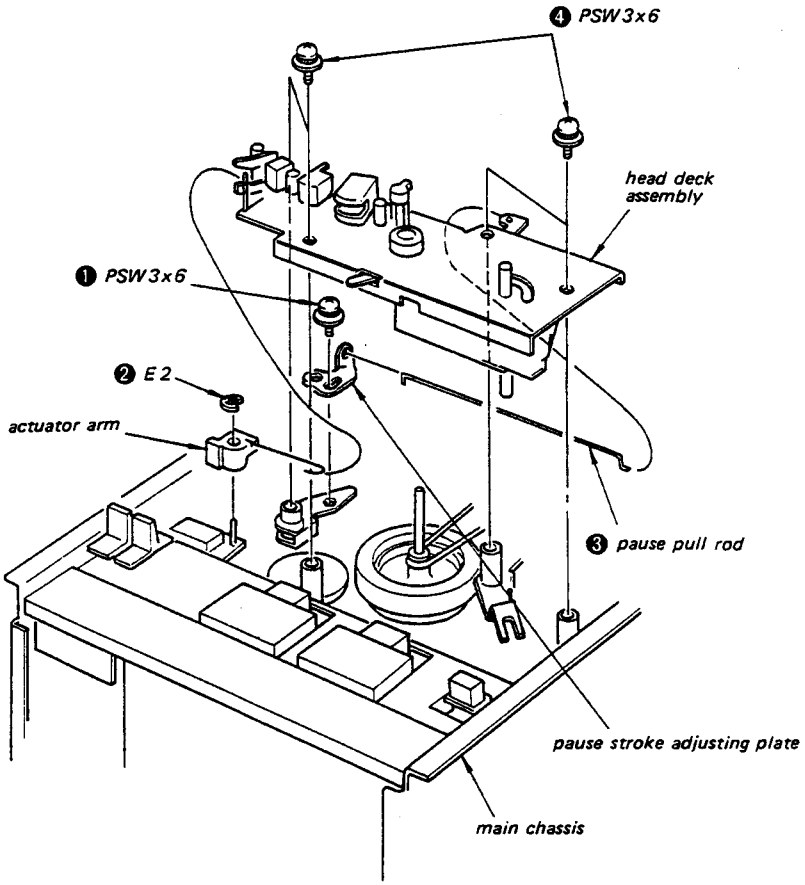

| Motor Pulley Part No. | | | |
|---|---|---|---|
| for 50 Hz | | for 60 Hz | |
| Mark on Motor Pulley | Part No. | Mark on Motor Pulley | Part No. |
| +2 | 3-518-067-61 | +2 | 3-518-068-61 |
| +1 | 3-518-067-51 | +1 | 3-518-068-51 |
| +0.5 | 3-518-067-41 | +0.5 | 3-518-068-41 |
| 0 | 3-518-067-01 | 0 | 3-518-068-01 |
| -0.5 | 3-518-067-11 | -0.5 | 3-518-068-11 |
| -1 | 3-518-067-21 | -1 | 3-518-068-21 |
| -2 | 3-518-067-31 | -2 | 3-518-068-31 |

# SECTION 1
# OUTLINE

## 1-1. BLOCK DIAGRAM



## HEAD DECK ASSEMBLY REMOVAL



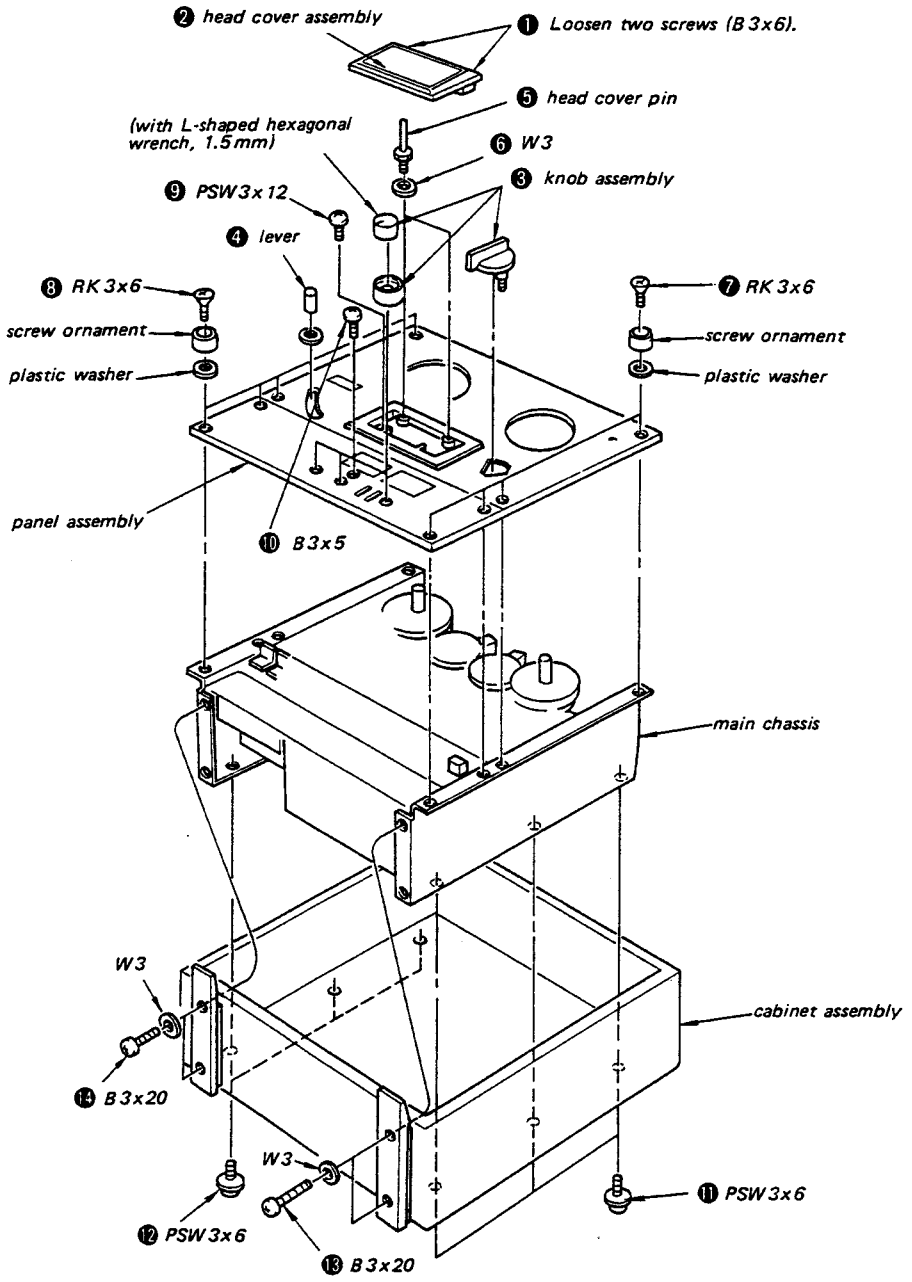

**Note:** After installing the head deck assembly, perform the Pause Stroke Adjustment.

# SECTION 2
# DISASSEMBLY

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

## PANEL ASSEMBLY AND MAIN CHASSIS REMOVAL

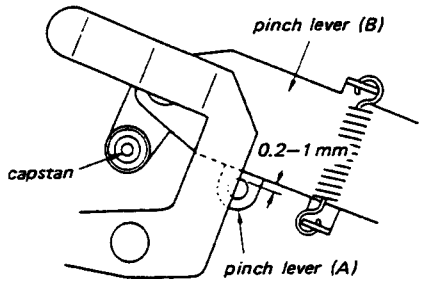
❶ to ❿ : Panel Assembly Removal
⓫ to ⓮ : Main Chassis Removal



### Pinch Roller Pressure Check

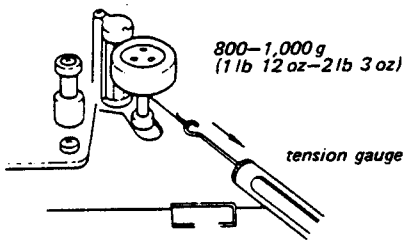
**– stop mode –**

1. Remove the head deck assembly.
2. Put a dummy capstan into the capstan bearing and be sure that the clearance between pinch levers (A) and (B) is 0.2–1 mm.



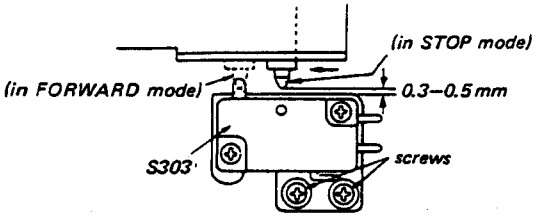

*head deck – back view –*

3. Be sure that the tension gauge indicates 800–1,000 g (1 lb 12 oz–2 lb 3 oz) when the pinch roller is detached from the capstan in forward mode.



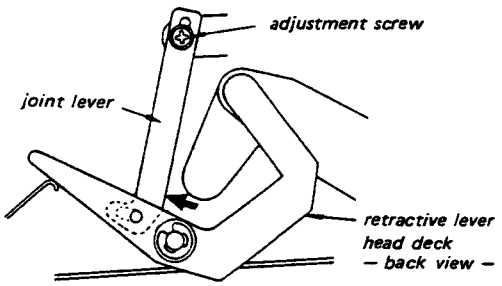

### Bias Osc Switch (S303) Position Adjustment

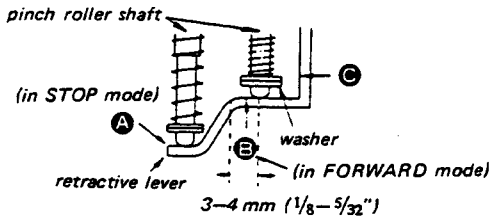
Loosen the two screws and adjust the switch position for the specified clearance. The switch should be turned on in forward mode. Confirm, when the mode is changed slowly from forward to stop, the record levers release after the switch is turned off.

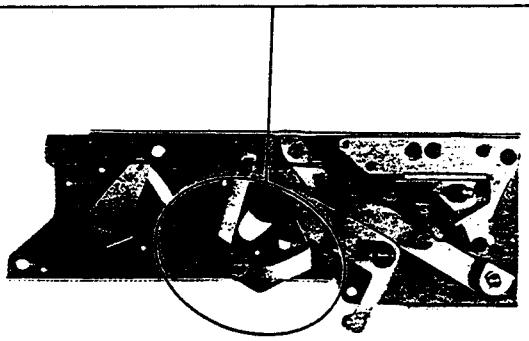



### Pinch Roller Stroke Adjustment

1. Remove the head deck assembly.
2. Loosen the adjustment screw and adjust the position of the joint lever so that the pinch roller shaft comes in contact with the retractive lever at position Ⓐ in stop mode.
3. Fix the adjustment screw while pushing the joint lever in the direction shown by the arrow.
4. Put the dummy capstan into the capstan bearing and be sure that the pinch roller shaft moves on surface Ⓑ of the retractive lever when the mode is changed from stop to forward.
5. Be sure that the washer on the pinch roller shaft does not come in contact with position Ⓒ when the mode is slowly changed from forward to fast forward.



*Head deck*
*– bottom view –*

# SECTION 3
# ADJUSTMENTS

## 3-1. MECHANICAL ADJUSTMENT

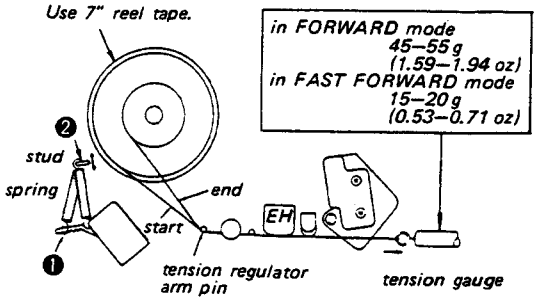
### PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
   record head — pinch roller
   playback head — rubber belts
   erase head — idlers
   capstan — tape guides
2. Demagnetize the record head and the playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply a suitable locking compound to the parts adjusted.
5. Adjustments should be performed in the order given in this service manual.
6. The adjustments and measurements should be performed with the rated power supply voltage unless otherwise noted.

### Tension Regulator Back-tension Adjustment

— forward and fast forward modes —

**Note:** This adjustment should be performed after the Tension Regulator Adjustment shown at the left.

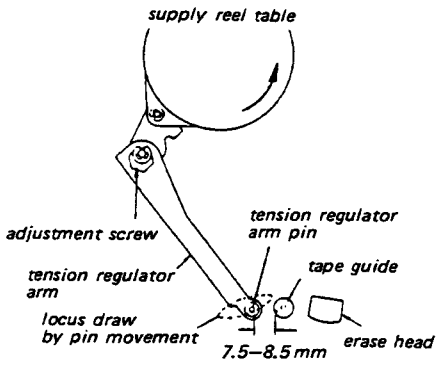



❶ *Adjust by changing the spring hook position.*
❷ *If necessary, bend the stud or perform the tension regulator adjustment again.*

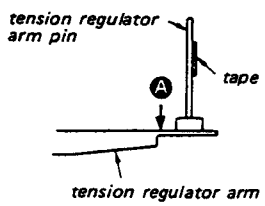
### Tension Regulator Adjustment

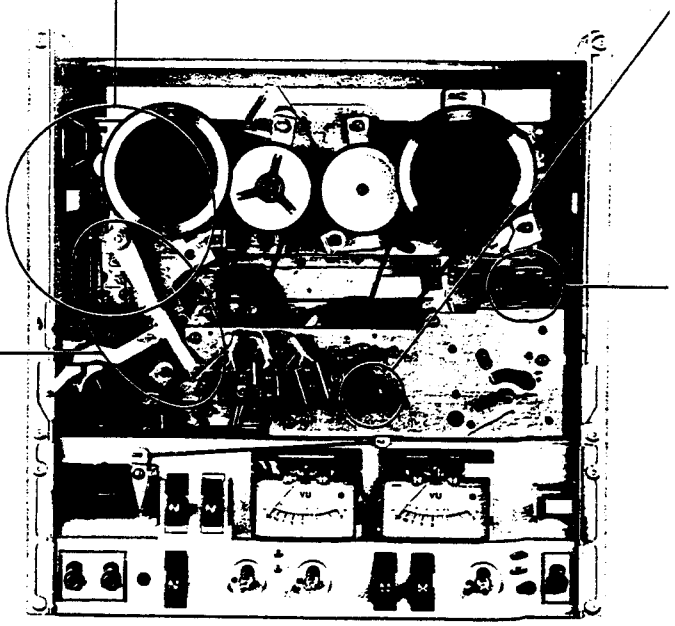
— stop mode —

1. Loosen the adjustment screw and adjust the tension regulator arm for the clearance after turning the supply reel table counterclockwise by hand.




2. Tape should be in contact with the tension regulator arm pin uniformly at both the beginning and end portions of it. If necessary, bend the portion Ⓐ.



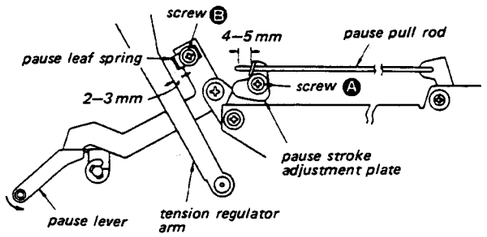



### Pause Stroke Adjustment

**– stop mode –**

**Note:** This adjustment should be performed after the Tension Regulator Adjustment shown on page 7.

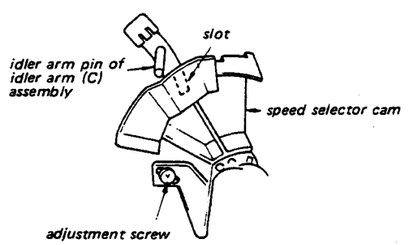
1. Adjust screw Ⓐ so that the distance between the end of the pause pull rod and the pause stroke adjustment plate is 4–5 mm in stop mode.
2. Be sure that the clearance between the pinch roller and the capstan is 0.5–1 mm when pulling the pause lever in forward mode, and the PAUSE lever (controlled by user) is not locked when pulling the pause lever in stop mode.
3. Adjust screw Ⓑ so that the clearance between the tension regulator arm and the pause leaf spring is 2–3 mm in stop mode. The brake should work, when pulling the pause lever in forward mode.

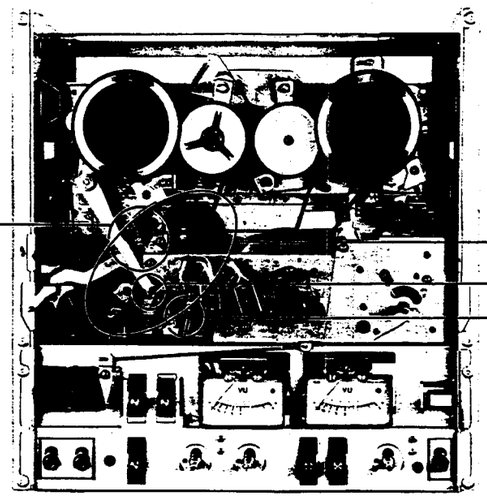


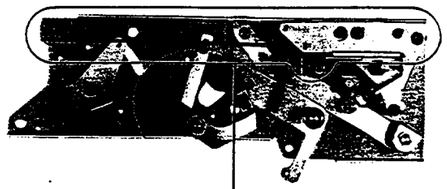

### Speed Selector Cam Position Adjustment

**– forward mode –**

Turn the adjustment screw and locate the idler arm pin in the slot at 19 cm/s tape speed.



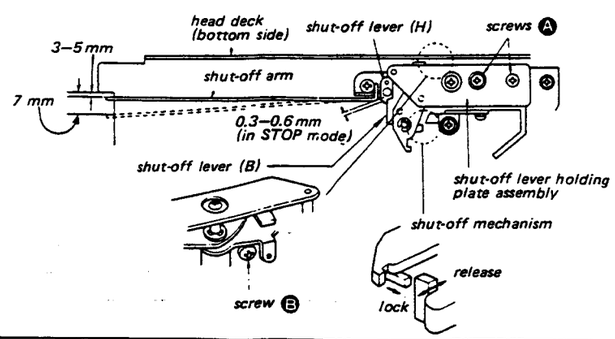





### Shut-off Mechanism Adjustment

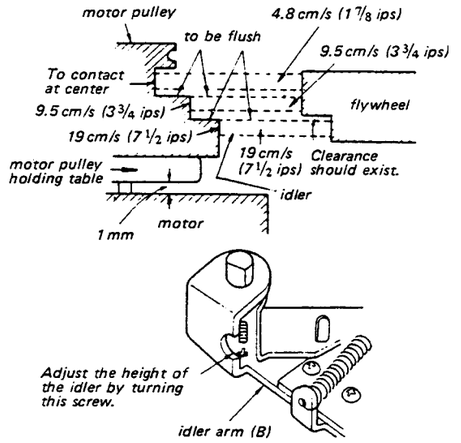
**– stop mode –**

1. Remove the head deck assembly.
2. Loosen two screws Ⓐ and adjust the postion of the shut-off lever holding plate assembly so that the shut-off mechanism is locked when the clearance between the shut-off arm end and head deck is 7 mm, and the shut-off mechanism is released completely when it is 3–5 mm.
3. Adjust screw Ⓑ so that the clearance between shut-off levers (B) and (H) is 0.3–0.6 mm in stop mode.




### Capstan Idler Position Adjustment

**– forward mode –**



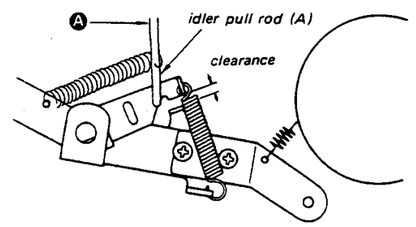

After the adjustment, the capstan idler should not come in contact with the flywheel and the 60 Hz motor pulley in stop mode and the clearance between the capstan idler and the 50 Hz motor pulley is more than 3 mm in stop mode.

### Idler Arm (C) Stroke Check

**– forward mode –**

At 4.8 cm/s (1 7/8 ips) tape speed:

| | |
|---|---|
| 50 Hz | The clearance is 0.5–0.7 mm. |
| 60 Hz | The clearance is 0.3–0.5 mm. |

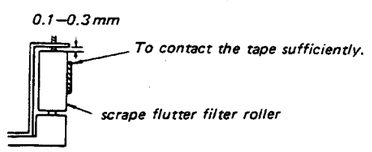



If necessary, bend the portion Ⓐ.

### Scrape Flutter Filter Roller Check

**– forward mode –**

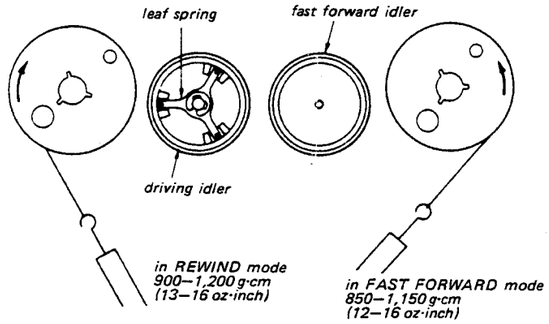
At 4.8 cm/s (1 7/8 ips) tape speed.



### Fast Forward and Rewind Torque Adjustment

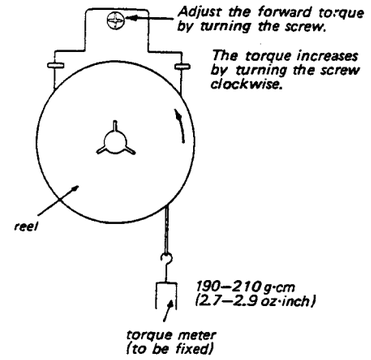
**– fast forward and rewind modes –**

Adjust the position of leaf spring to obtain the specified values on torque meter. (Read the values when the driving idler just stops.) As the leaf spring is positioned in lower position, the torque decrease.




### Forward Torque Adjustment

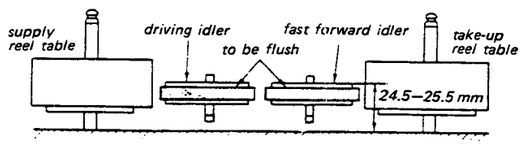
**– forward mode –**

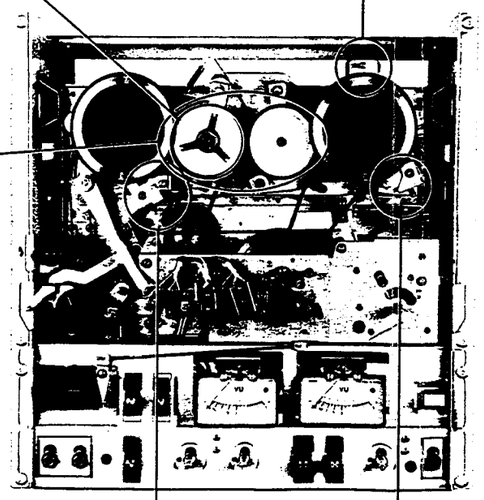



### Fast Forward and Driving Idler Height Adjustment

**– stop mode –**

If necessary, bend the idler arms for the clearance.



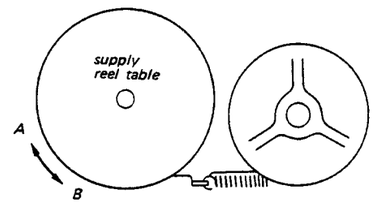



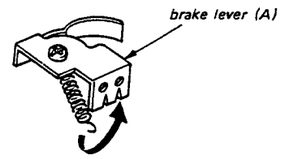
### Brake Adjustment

**– stop mode –**

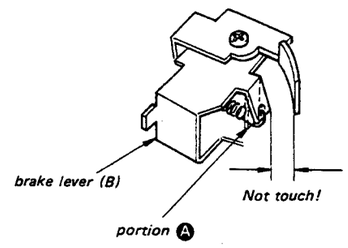
**Note:** After performing the Tension Regulator Adjustment, adjust the supply brake torque.

| | | |
|---|---|---|
| supply brake torque | direction A | 150–250 g·cm (2.09–3.47 oz·inch) |
| | direction B | 1300–1700 g·cm (18.07–23.63 oz·inch) |



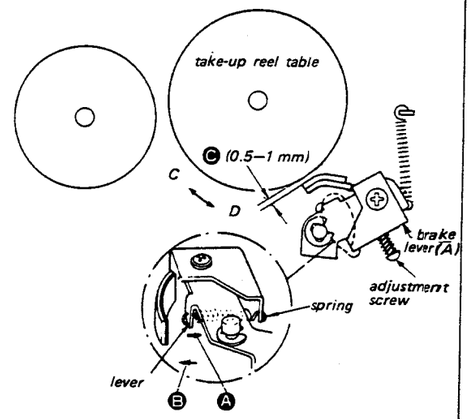




- If the meter reading is less than the specified value, hook the spring at the right hole.




- If the meter reading is more than the specified value, bend the portion A.

| | | |
|---|---|---|
| take-up brake torque | direction C | 350–450 g·cm (4.87–6.2 oz·inch) |
| | direction D | 1300–1700 g·cm (18.07–23.63 oz·inch) |



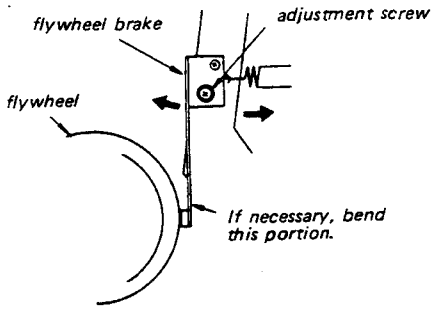

1. Turn the adjustment screw for the clearance C in record mode.
2. If necessary, bend the lever.

| Meter reading | Bending direction |
|---|---|
| more than specified value | A |
| less than specified value | B |

### Flywheel Brake Check

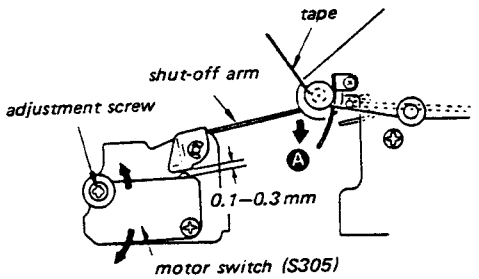
**— rewind mode —**

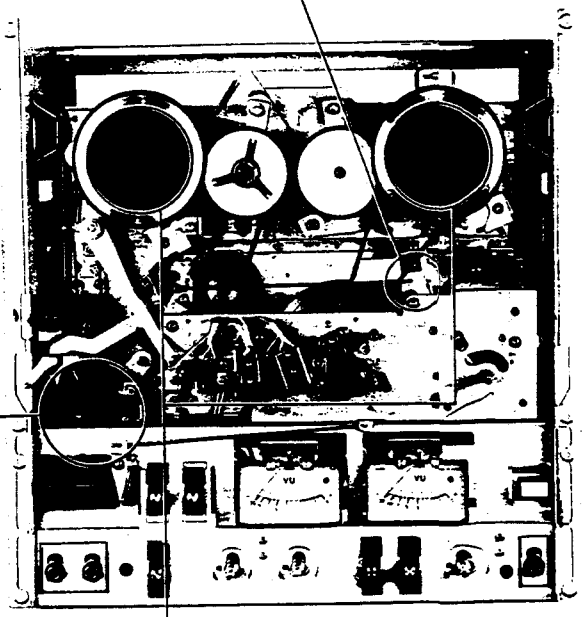
1. The brake should touch the flywheel in both rewind and stop modes.
2. The break should separate from the flywheel in both forward and fast forward modes.




### Motor Switch (S305) Position Adjustment

1. With the shut-off mechanism locked and a tape threaded, loosen the adjustment screw and adjust the position of the switch so that the switch turns on.
2. Push the shut-off arm in the direction Ⓐ. The switch should turn off when the shut-off mechanism is released.



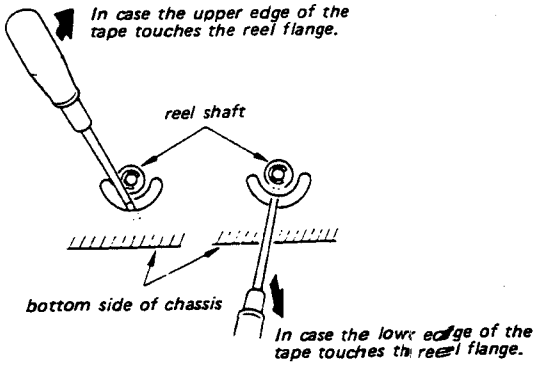



### Reel Table Height Adjustment

**— forward, rewind and fast forward modes —**

**Note:** Perform this adjustment for both the supply and take-up reels.

1. Adjust the reel table height by bending the chassis with a screwdriver to eliminate the tape touch to the flanges by using a standard 7-inch tape reel.
2. In playback mode, confirm that the tape does not touch the reel flanges at the tape start and tape end.
3. After the adjustment, recheck the playback torque and back tension.



## 3-2. ELECTRICAL ADJUSTMENT

**Note:** When connecting the measuring equipments to the input or the output jack, take the impedance maching correctly.

Test Tape J-19-F2:

| Tone | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Frequency (Hz) | 400 | 400 | 10 k | 12.5 k | 7 k | 80 | 40 |
| Level (dB) | 0 | -10 | -10 | -10 | -10 | -10 | -10 |

Standard Record:

Set the REC LEVEL control for the specified output level.

Standard Input Level

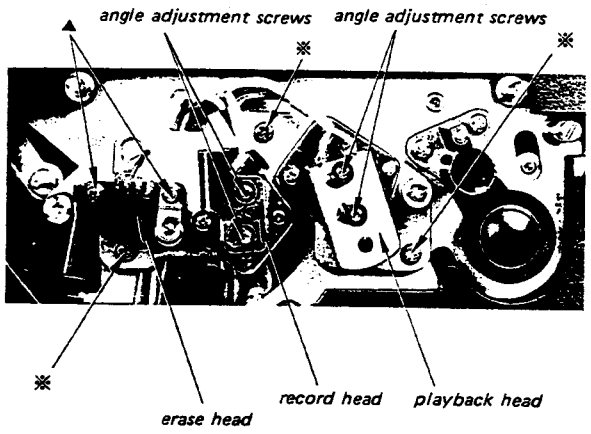
| | MIC | LINE IN |
|---|---|---|
| source impedance | 300Ω | 10 kΩ |
| input level | 0.77 mV (-60 dB) | 0.25 V (-10 dB) |

Standard Output Level

| | LINE OUT |
|---|---|
| load impedance | 100 kΩ |
| output level | 0.435 V (-5 dB) |

**Note on Replacing the Heads**

1. Erase Head Removal
   When removing the erase head from the head deck, remove the two screws shown with ▲.
   (Do not remove the three screws shown by ※.)
2. Record of Playback Head Removal
   When removing the record or the playback head, remove the respective angle adjustment screws.
   (Do not turn the screws except the angle adjustment screws).



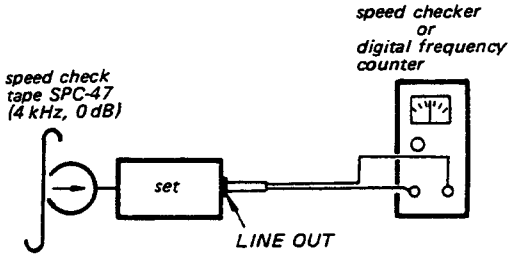
## Tape Speed Adjustment

Settings:

| | |
|---|---|
| TAPE SPEED selector: | 19 cm/s (7½ ips) |
| MONITOR switch: | TAPE |
| PB LEVEL control: | center-detented position |

Procedure:

Mode: playback at 19 cm/s (7½ ips)



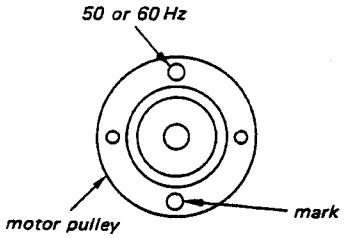

speed check tape SPC-47 (4 kHz, 0 dB)

no signal 4 min. → 4 kHz 2.5 min. → no signal 26 min.

Specification:

| Speed checker | Digital frequency counter |
|---|---|
| 1% | 3,960–4,040 Hz |

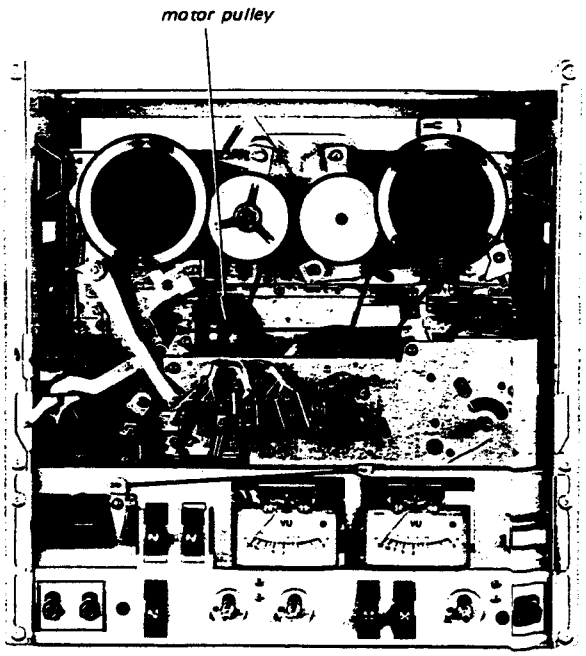
If necessary, replace the motor pulley.




| 50 Hz | | | |
|---|---|---|---|
| Mark | Part No. | Tape speed | |
| +2 | 3-518-067-61 | +2% | fast |
| +1 | 3-518-067-51 | +1% | ↑ |
| +0.5 | 3-518-067-41 | +0.5% | |
| 0 | 3-518-067-01 | standard | |
| -0.5 | 3-518-067-11 | -0.5% | |
| -1 | 3-518-067-21 | -1% | ↓ |
| -2 | 3-518-067-31 | -2% | slow |

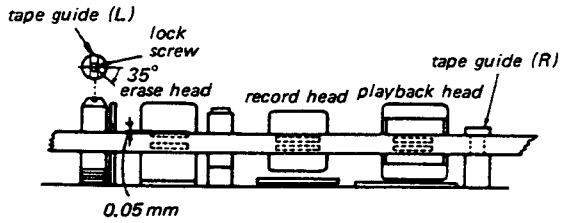
| 60 Hz | | | |
|---|---|---|---|
| Mark | Part No. | Tape speed | |
| +2 | 3-518-068-61 | +2% | fast |
| +1 | 3-518-068-51 | +1% | ↑ |
| +0.5 | 3-518-068-41 | +0.5% | |
| 0 | 3-518-068-01 | standard | |
| -0.5 | 3-518-068-11 | -0.5% | |
| -1 | 3-518-068-21 | -1% | ↓ |
| -2 | 3-518-068-31 | -2% | slow |

Adjustment Location:



## Tape Path Adjustment

### A. Tape Guide (left) Adjustment



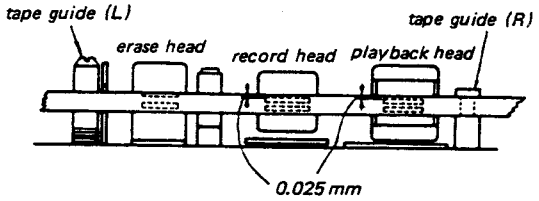

**Procedure:**

1. Thread a tape and place the set in playback mode.
2. Loosen the lock screw and align the upper edge of the erase head core and that of the tape by turning the tape guide (L).
3. Turn the tape guide (L) clockwise by approximately 35 degrees from the position obtained in the preceding step so that the upper edge of the tape is approximately 0.05 mm lower than the upper edge of the erase head core.
4. Fix the tape guide with the lock screw.

### B. Record and Playback Head Preadjustment

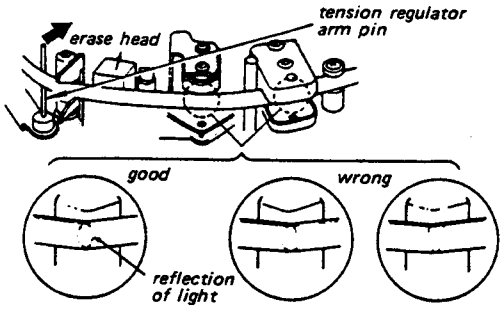
(Rough adjustment for the Playback Head Angle Adjustment and Playback Head Azimuth Adjustment)

**Note:** This adjustment and the following adjustments (Playback Head Angle Adjustment and Playback Head Azimuth Adjustment) should be repeated alternately several times.

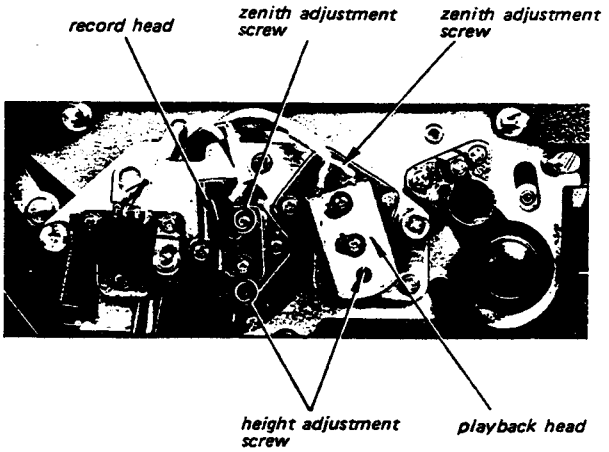



**Procedure:**

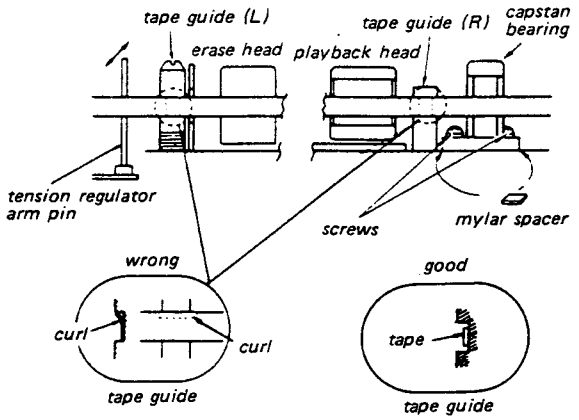
1. Align the upper edges of the record and playback head cores and that of the tape by evenly turning the record and playback head height adjustment screws.
2. Turn the record and playback head height adjustment screws clockwise by approximately 15 degrees so that the upper edges of the record and playback head cores are 0.025 mm lower than that of the tape and memorize the angle of turns.
3. Turn the zenith adjustment screws by the same angle of turns to the same direction as the record and playback head height adjustment screws.
4. Thread the tape Super 150 or PS-2 and place the set in playback mode at 19 cm/s (7½ ips).
5. Make the tape loose a little by pushing the tension regulator arm pin in the direction shown by the arrow and then adjust the playback head and record head zenith adjustment screws to obtain the reflection of light as shown below.




**Adjustment Location:**



## Tape Curl Adjustment




**Procedure:**

1. Thread the tape Super 200 (thin tape) and place the set in playback mode at 4.8 cm/s (1 7/8 ips).
2. Be sure that the tape comes in contact with the two tape guides exactly as shown above.
   a) If the tape curls at the tape guide (L), adjust by bending the tension regulator arm pin.
   b) If the tape curls at the tape guide (R), loosen the two capstan bearing holding screws and adjust by adding or removing the mylar spacer.

   **Note:** After adding or removing the mylar spacer (0.1 mm thick), perform the playback head zenith adjustment. (See "Record and Playback Head Preadjustment" on page 16.)

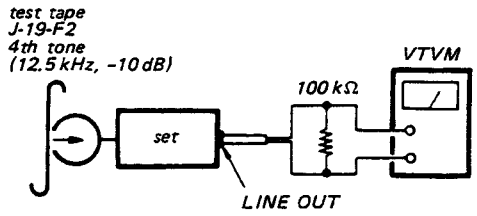
## Playback Head Angle Adjustment

**Settings:**

| | |
|---|---|
| TAPE SELECT EQ switch: | NORMAL |
| TAPE SPEED selector: | 19 cm/s (7 ½ ips) |
| MONITOR switch: | TAPE |
| PB LEVEL control: | center-detented position |

**Procedure:**

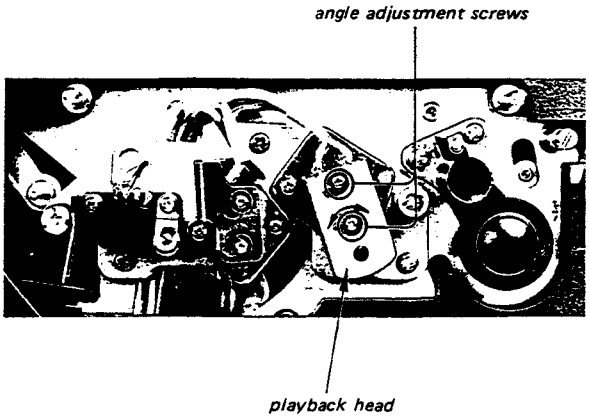
1. Mode: playback




2. Adjust the angle-adjustment screws for a maximum reading.
3. Apply back-tension by holding the supply reel table, and then adjust the angle of the head by loosening the two angle-adjustment screws so that the readings on both L-CH and R-CH do not rise.

   **Note:** Unless the playback head is installed at correct angle, the readings will rise.

**Adjustment Location:**



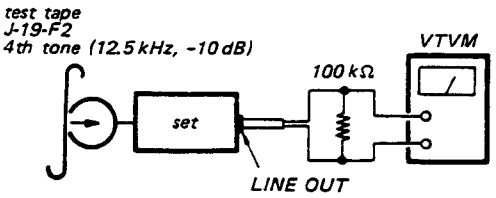
**Playback Head Azimuth Adjustment**

Settings:

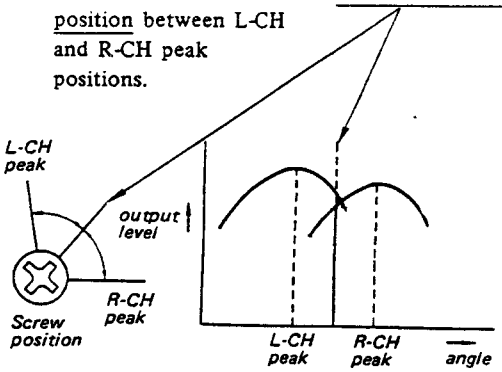
| | |
|---|---|
| TAPE SELECT EQ switch: | NORMAL |
| TAPE SPEED selector: | 19 cm/s (7½ ips) |
| MONITOR switch: | TAPE |
| PB LEVEL control: | center-detented position |

**Procedure:**

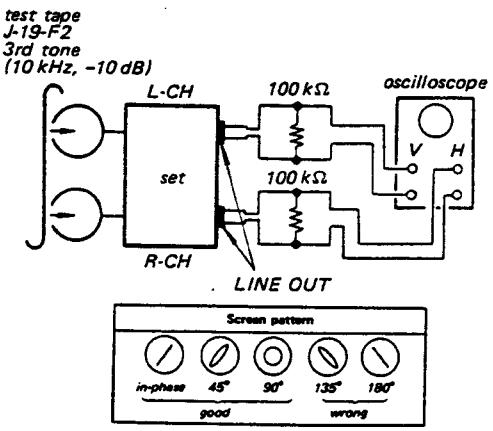
1. Be sure that the playback head is fixed sufficiently to the head deck with the holding screw as shown below and "Tape Path Adjustment" has been made.
2. Mode: playback



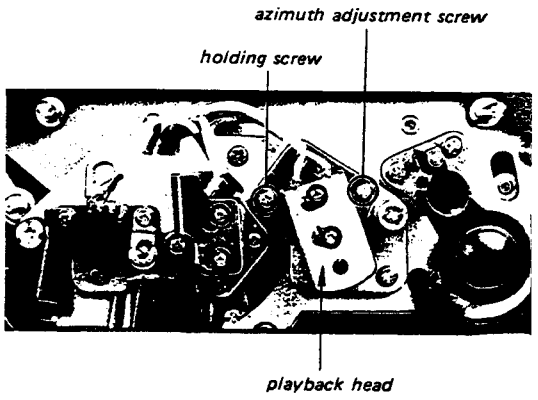

3. Turn the azimuth adjustment screw for the maximum level and set it to the mechanical mid position between L-CH and R-CH peak positions.




4. Mode: playback




**Adjustment Location:**



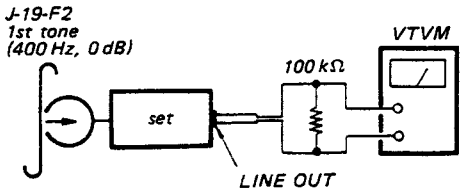
## Playback Level Adjustment

**Settings:**

| | |
|---|---|
| TAPE SELECT EQ switch: | NORMAL |
| TAPE SPEED selector: | 19 cm/s (7½ ips) |
| MONITOR switch: | TAPE |
| PB LEVEL control: | center-detented position |

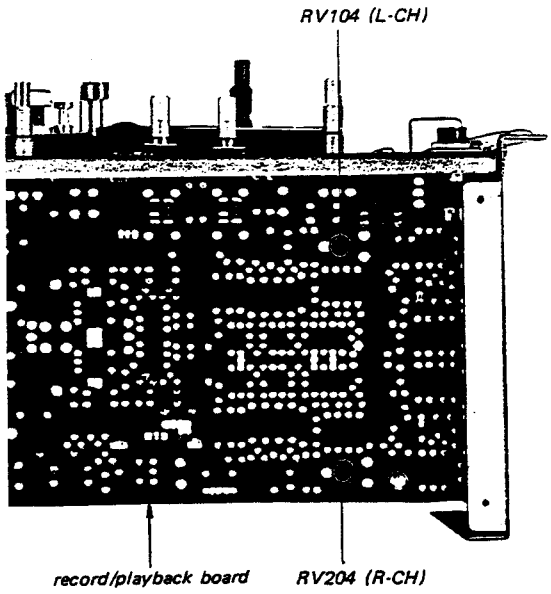
**Procedure:**

1. Mode: playback




2. Adjust RV104 (L-CH) and RV204 (R-CH) for 0.435 V (−5 dB) reading.

**Adjustment Location:**



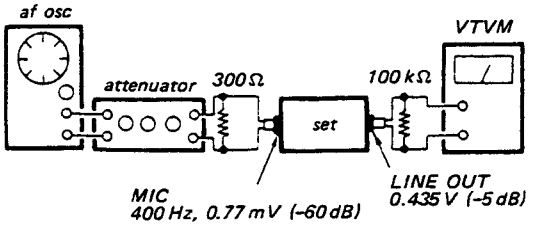

## VU Meter Calibration

**Setting:**

MONITOR switch: SOURCE

**Procedure:**

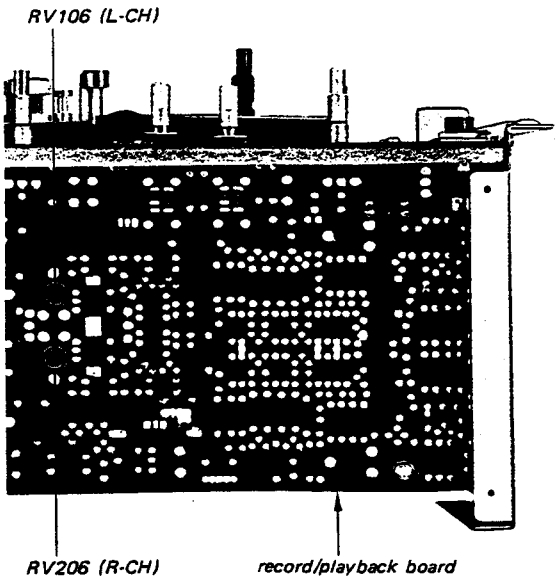
1. Mode: record




2.

| Adjust | VU meter indication |
|---|---|
| RV106 (L-CH)<br>RV206 (R-CH) | "0" |

**Adjustment Location:**



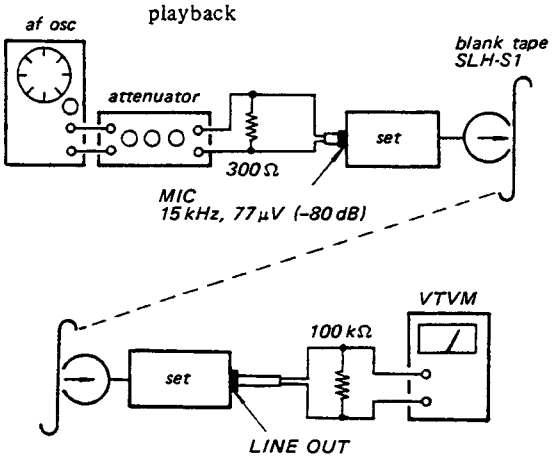
## Record Head Azimuth and Track Position Adjustment

Settings:

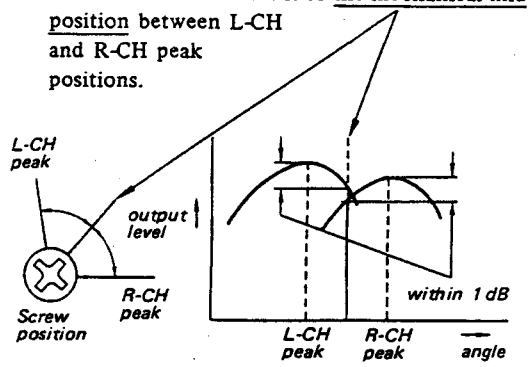
| | |
|---|---|
| TAPE SELECT switch: | SPECIAL |
| TAPE SPEED selector: | 19 cm/s (7½ ips) |
| MONITOR switch: | TAPE |

**Procedure:**

1. Mode: standard record and simultaneous playback

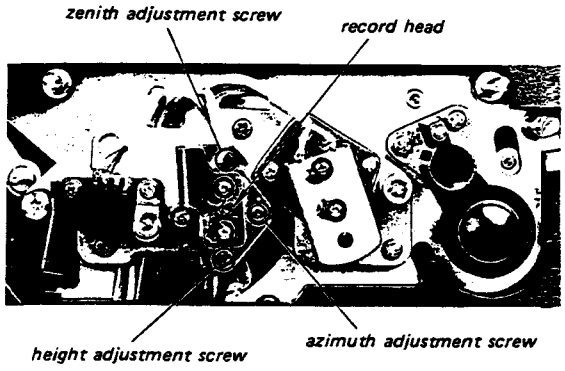



2. Turn the azimuth adjustment screw for the maximum level and set it to the mechanical mid position between L-CH and R-CH peak positions.




3. Supply a 1 kHz signal of 0.77 mV (-60 dB) into R-CH MIC jack and record and simultaneously playback the signal with the blank tape.
4. Adjust the height adjustment screw for the maximum output and memorize the angle of turns of the screw.
5. Turn the zenith adjustment screw by the same angle of turns obtained in preceding step 4.
6. After the adjustment, check Tape Path Adjustment on page 16 again.

**Adjustment Location:**



## Bias Trap Coil Adjustment

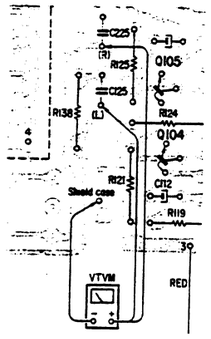
**Settings:**

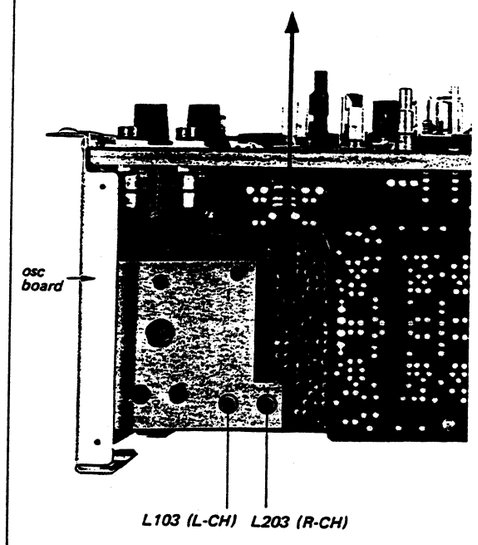
| | |
|---|---|
| TAPE SELECT switch: | NORMAL |
| TAPE SPEED selector: | 19 cm/s (7½ ips) |
| MIC REC LEVEL control: | minimum position |
| MONITOR switch: | SOURCE |

**Procedure:**

1. Do not use a shielded lead wire.
2. Place the set in record mode without tape.
3. Adjust L103 (L-CH) and L203 (R-CH) to obtain the minimum reading.

**Adjustment Location:**



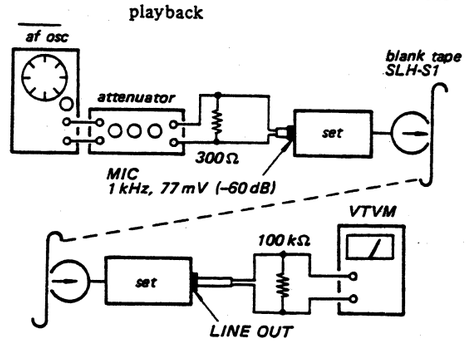

## Record Bias Adjustment

**Settings:**

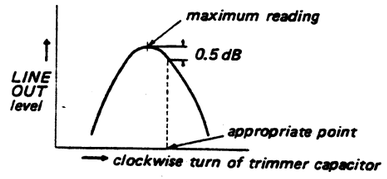
| | |
|---|---|
| TAPE SELECT switch: | SPECIAL |
| TAPE SPEED selector: | 19 cm/s (7½ ips) |
| MONITOR switch: | TAPE |

**Procedure:**

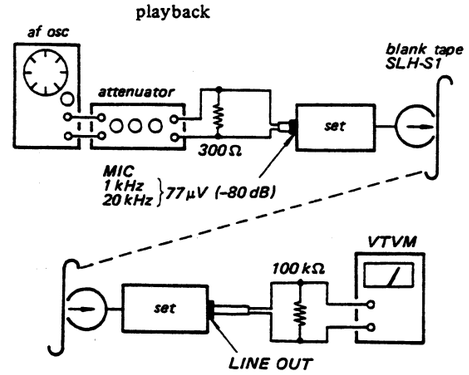
1. Be sure that "Bias Trap Coil Adjustment" has been made.
2. Mode: standard record and simultaneous playback




3. As trimmer capacitor C128 (L-CH) or C228 (R-CH) is slowly turned clockwise, the reading will go up to a maximum and then start falling again. Adjust the capacitor until the VTVM reads 0.5 dB below and beyond the maximum reading.

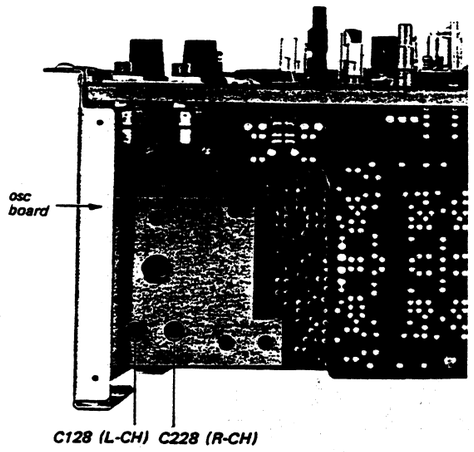



4. Mode: standard record and simultaneous playback




The LINE OUT level of 20 kHz signal is -3 dB–0 dB relative to 1 kHz signal level.

**Adjustment Location:**





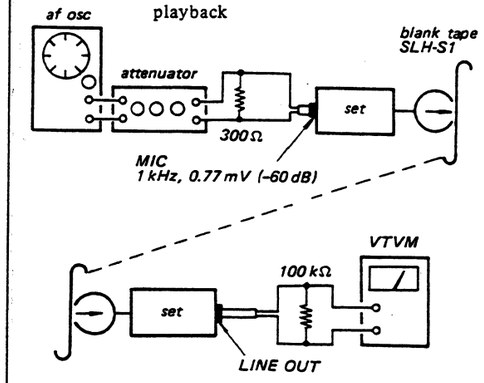

## Record Level Adjustment

**Setting:**

| | |
|---|---|
| TAPE SELECT switch: | SPECIAL |
| TAPE SPEED selector: | 19 cm/s (7½ ips) |
| MONITOR switch: | TAPE |

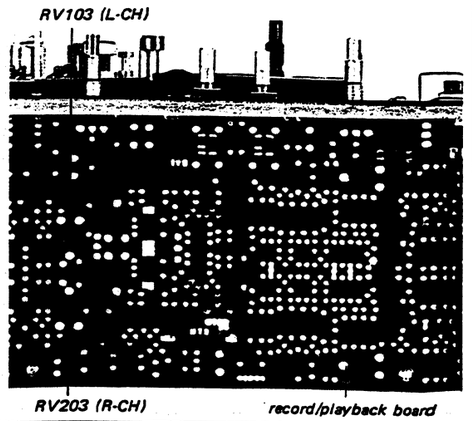
**Procedure:**

1. Mode: standard record and simultaneous playback



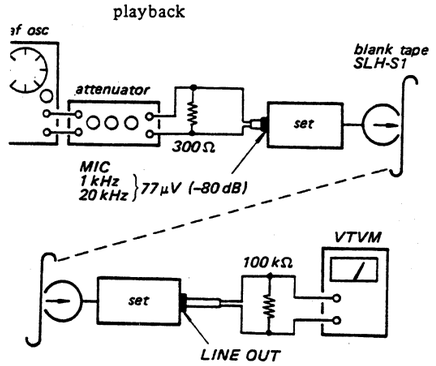

2. Adjust RV103 (L-CH) and RV203 (R-CH) for 0.435 V (–5 dB) reading.
3. Be sure that the reading is 0.435 V (–5 dB) when changing the MONITOR switch from TAPE to SOURCE position and the pointer of VU meter stays at "0".
4. When TAPE SPEED switch is changed to 9.5 cm/s (3¾ ips) and 4.8 cm/s (1⅞ ips), the readings of both L and R channels should be within 2 dB.

**Adjustment Location:**



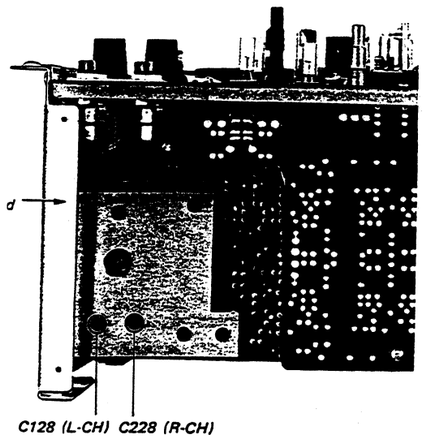
TC-399

:. Mode: standard record and simultaneous playback




The LINE OUT level of 20 kHz signal is –3 dB–0 dB relative to 1 kHz signal level.

**djustment Location:**



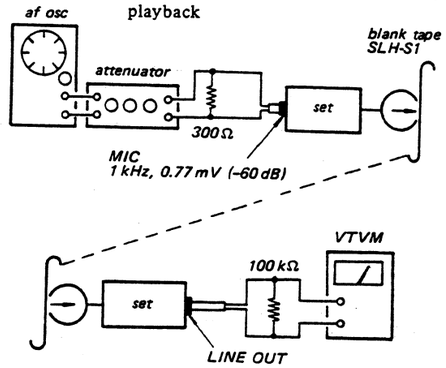

**Record Level Adjustment**

**Setting:**

| | |
|---|---|
| TAPE SELECT switch: | SPECIAL |
| TAPE SPEED selector: | 19 cm/s (7½ ips) |
| MONITOR switch: | TAPE |

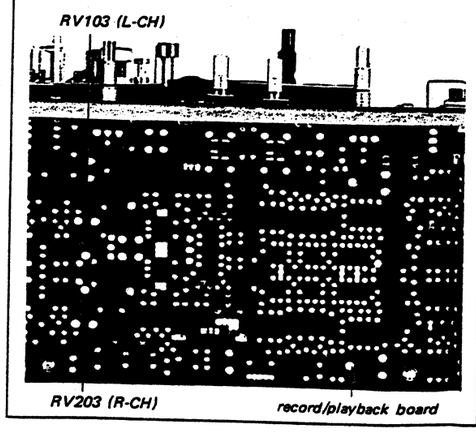
**Procedure:**

1. Mode: standard record and simultaneous playback




2. Adjust RV103 (L-CH) and RV203 (R-CH) for 0.435 V (–5 dB) reading.
3. Be sure that the reading is 0.435 V (–5 dB) when changing the MONITOR switch from TAPE to SOURCE position and the pointer of VU meter stays at "0".
4. When TAPE SPEED switch is changed to 9.5 cm/s (3¾ ips) and 4.8 cm/s (1⅞ ips), the readings of both L and R channels should be within 2 dB.

**Adjustment Location:**



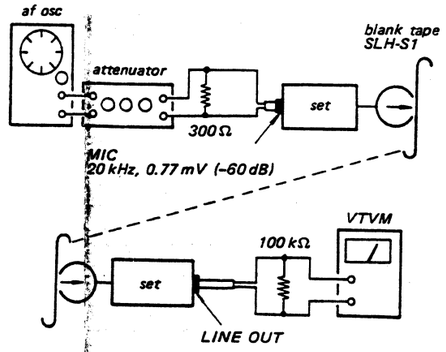

**Dummy Coil Adjustment**

**Setting:**

| | |
|---|---|
| TAPE SELECT switch: | NORMAL |
| TAPE SPEED selector: | 19 cm/s (7½ ips) |
| MONITOR switch: | TAPE |

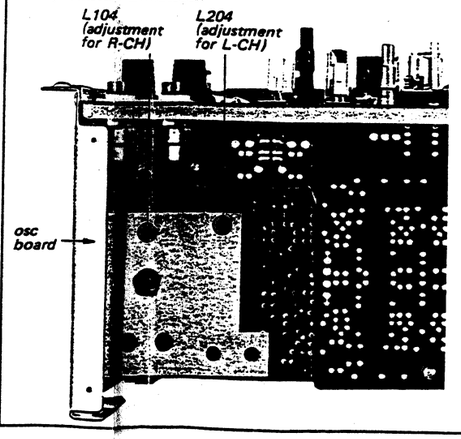
**Procedure:**

Mode: standard record and simultaneous playback




| Step | Mode | Adjust | Remarks |
|---|---|---|---|
| 1 | stereo record and simultaneous playback | – | Memorize VTVM reading. |
| 2 | L channel record and simultaneous playback | L204 | Same VTVM reading as in step 1. |
| 3 | R channel record and simultaneous playback | L104 | |

**Adjustment Location:**



# SECTION 4
# DIAGRAMS

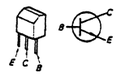
## 4-1. MOUNTING DIAGRAM

### Replacement Semiconductors

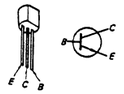
For replacement, use semiconductors except in ( ).

Q101, 201
Q102, 202
Q106, 206
Q107, 207
Q109, 209 : 2SC1345

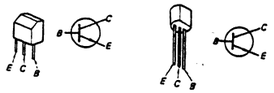
Q103–105
Q203–205
Q110, 210
Q113, 213 : 2SC1345 (2SC458)



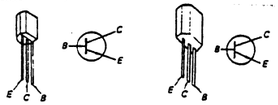
Q114, 214
Q306 : 2SC1475 (2SC1318)



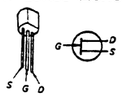
Q302, 303: 2SC1345 (2SC1890)



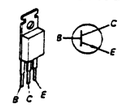
Q108, 208
Q111, 211
Q112, 212
Q305 : 2SC1364 (2SC633A)



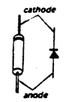
Q301: 2SK30 (2SK30A)



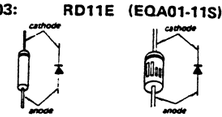
Q304: 2SC1173



D101, 201, 305: 1T22AM (1T22)
D304, 306: 1S1555 (1T40)

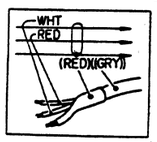



D301, 302: 10E2 (SIB01-02)
D303: RD11E (EQA01-11S)

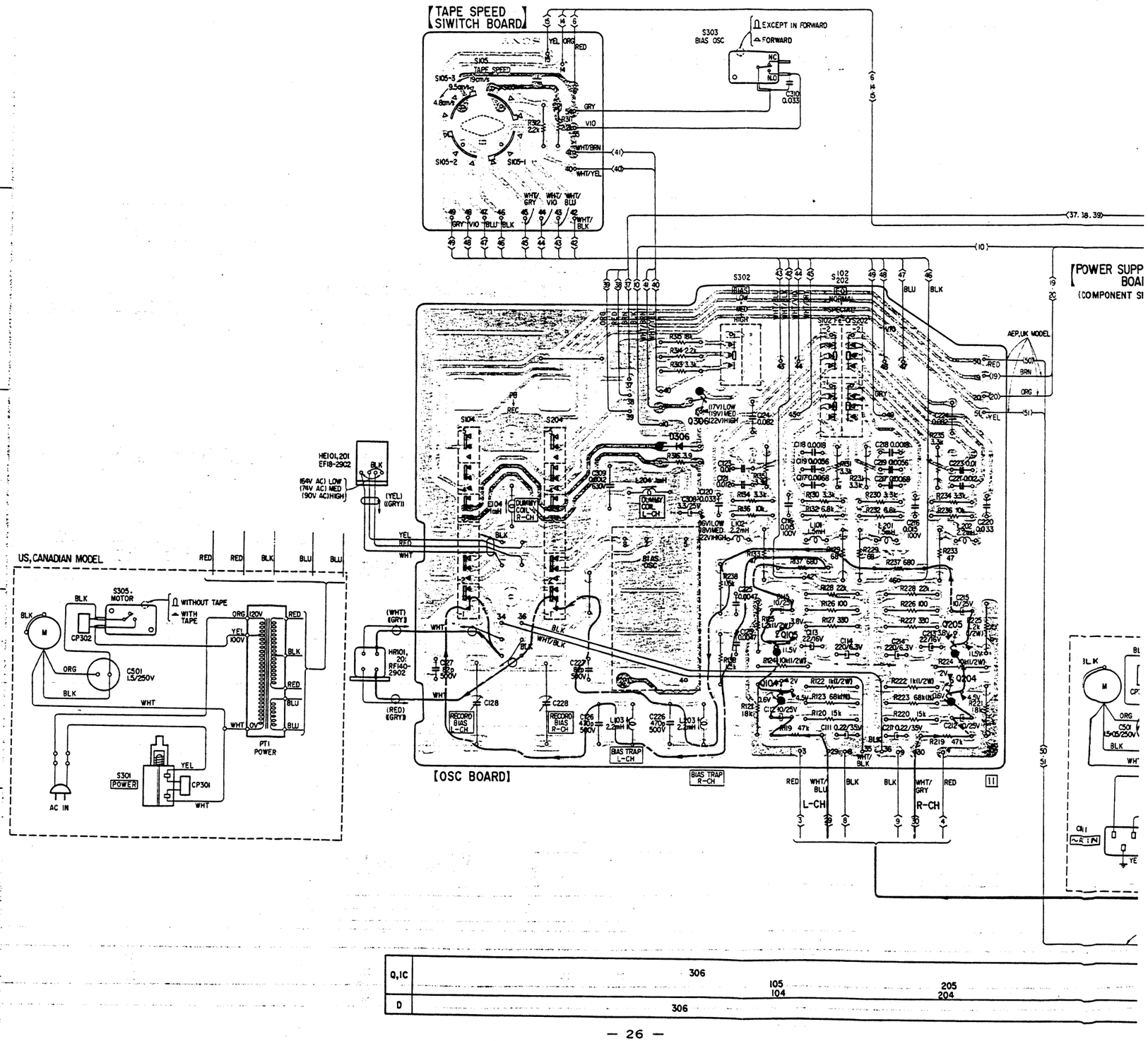



**Note:**

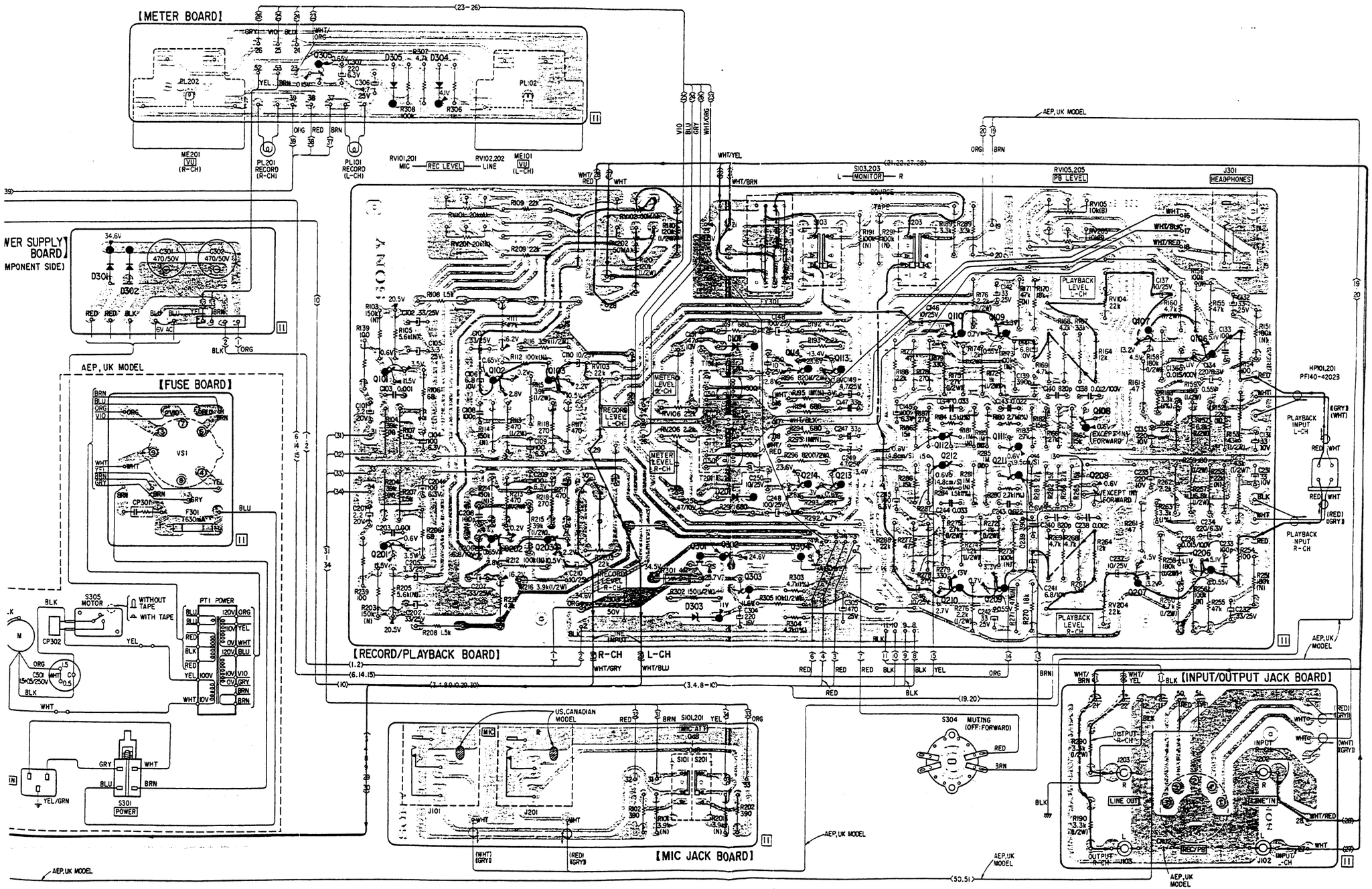
- ▭ : B+ pattern.
- Signal Path
  ——→ : L-CH
  —·—→ : R-CH
- DC resistance measurements are with coils connected on the circuit board, and are approximate.
- Color code of sleeving over the end of the jacket.



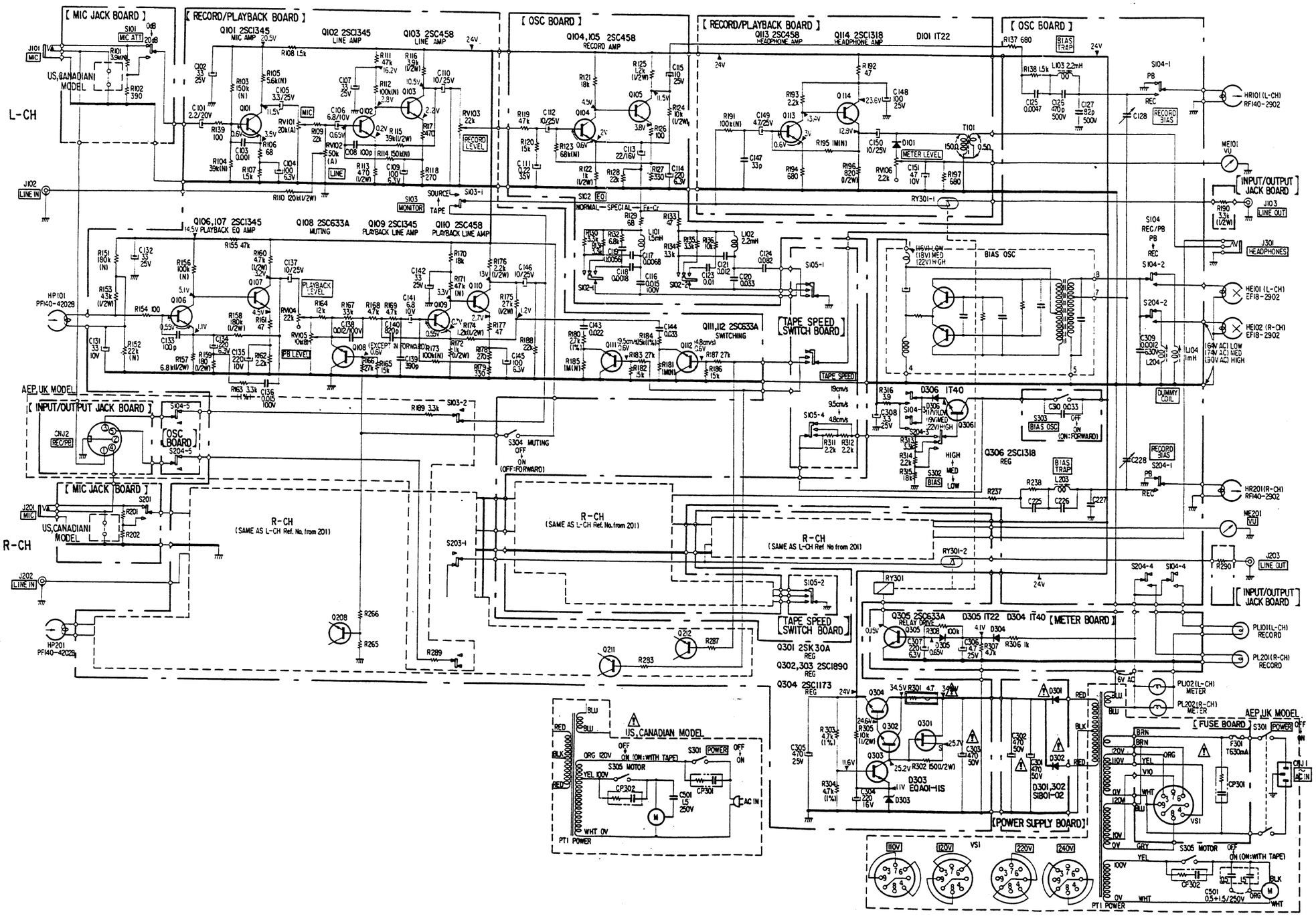


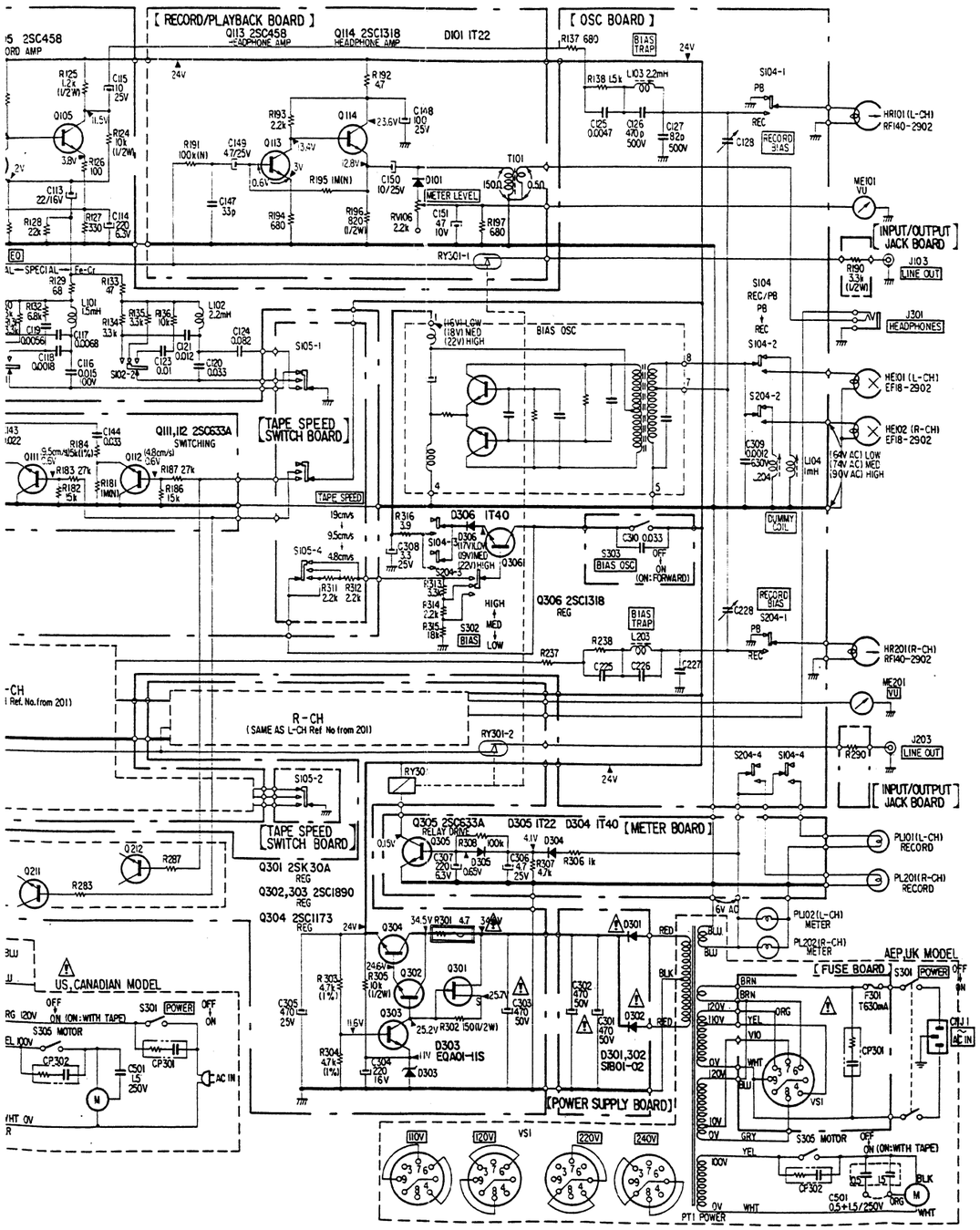




| | | |


【METER BOARD】
PL202
PL102
ME201 VU (R-CH)
ME101 VU (L-CH)
PL201 RECORD (R-CH)
PL101 RECORD (L-CH)
RV101,201 MIC — REC LEVEL
RV102,202 LINE
【POWER SUPPLY】 BOARD (COMPONENT SIDE)
【FUSE BOARD】
AEP,UK MODEL
S305 MOTOR
WITHOUT TAPE
WITH TAPE
PTI POWER
CP302
S301 POWER
【RECORD/PLAYBACK BOARD】
R-CH
L-CH
S103,203 MONITOR
RV105,205 PB LEVEL
J301 HEADPHONES
SOURCE
TAPE
PLAYBACK LEVEL R-CH
PLAYBACK LEVEL L-CH
RECORD LEVEL R-CH
RECORD LEVEL L-CH
METER LEVEL R-CH
METER LEVEL L-CH
HP101,201 PF140-42023
PLAYBACK INPUT L-CH
PLAYBACK INPUT R-CH
S304 MUTING (OFF:FORWARD)
【INPUT/OUTPUT JACK BOARD】
US,CANADIAN MODEL
【MIC JACK BOARD】
S101,201 MIC ATT
J101
J201
J102
J103
J203
LINE OUT
LINE IN
OUTPUT R-CH
INPUT L-CH
REC/PB

| | | |


[ MIC JACK BOARD ]
[ RECORD/PLAYBACK BOARD ]
[ OSC BOARD ]
[ RECORD/PLAYBACK BOARD ]
[ OSC BOARD ]
L-CH
US,CANADIAN MODEL
Q101 2SC1345 MIC AMP
Q102 2SC1345 LINE AMP
Q103 2SC458 LINE AMP
Q104,105 2SC458 RECORD AMP
Q113 2SC458 HEADPHONE AMP
Q114 2SC1318 HEADPHONE AMP
D101 IT22
Q106,107 2SC1345 PLAYBACK EQ AMP
Q108 2SC633A MUTING
Q109 2SC1345 PLAYBACK LINE AMP
Q110 2SC458 PLAYBACK LINE AMP
Q111,112 2SC633A SWITCHING
[TAPE SPEED SWITCH BOARD]
BIAS OSC
AEP,UK MODEL
[ INPUT/OUTPUT JACK BOARD ]
[ MIC JACK BOARD ]
R-CH
(SAME AS L-CH Ref. No. from 201)
Q208
Q211
Q212
Q306 2SC1318 REG
Q301 2SK30A REG
Q302,303 2SC1890 REG
Q304 2SC1173 REG
Q305 2SC633A RELAY DRIVE
D305 IT22
D304 IT40 [METER BOARD]
D303 EQA01-11S
D301,302 SI801-02
[POWER SUPPLY BOARD]
[FUSE BOARD]
US,CANADIAN MODEL
PT1 POWER
[INPUT/OUTPUT JACK BOARD]
HP101 PF140-42028
HP201 PF140-42028
HR101(L-CH) RF140-2902
HR201(R-CH) RF140-2902
HE101(L-CH) EF18-2902
HE102(R-CH) EF18-2902
PL101(L-CH) RECORD
PL201(R-CH) RECORD
PL102(L-CH) METER
PL202(R-CH) METER




**Note:**

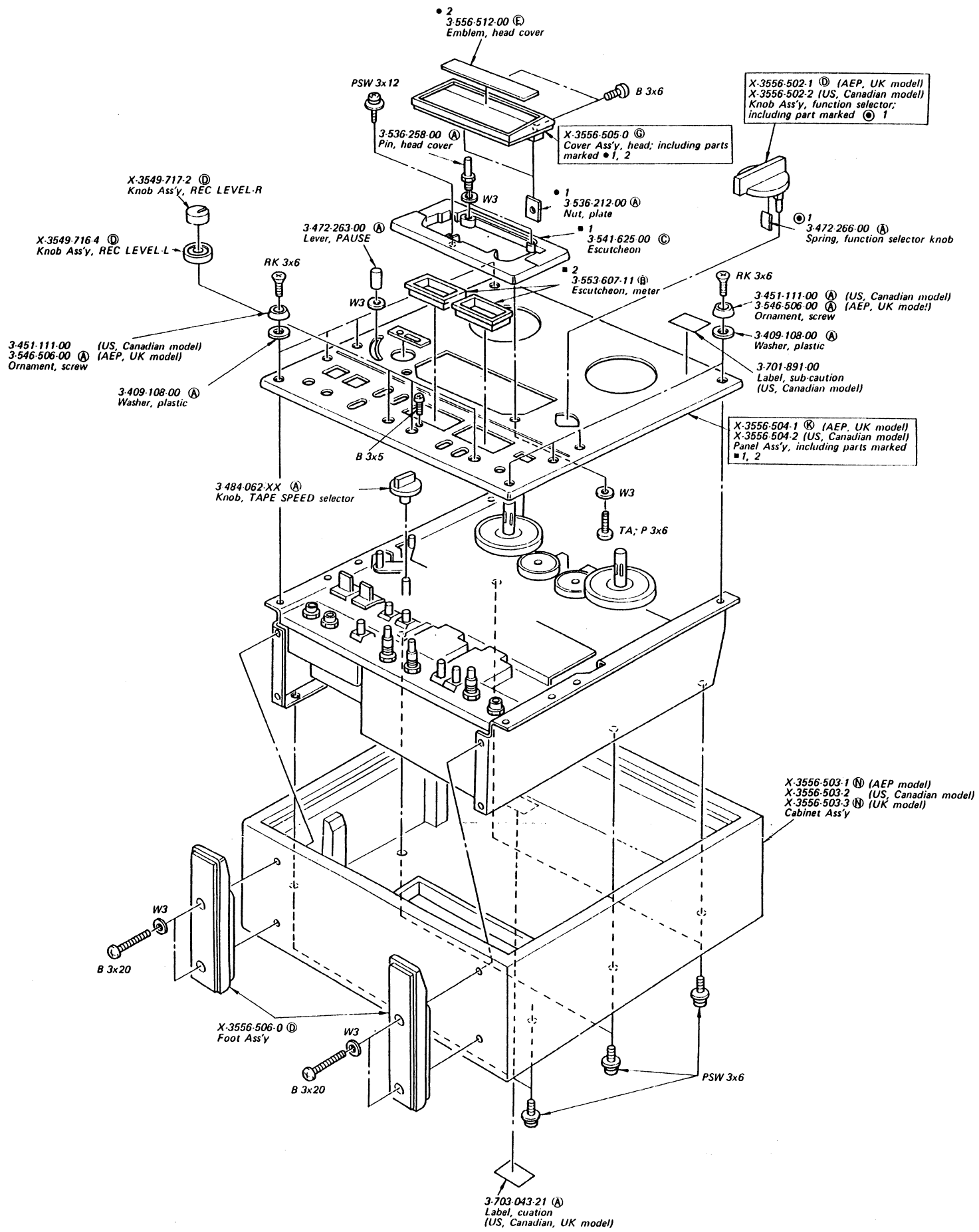
- Components for right channel have same values as for left channel. Reference numbers are coded from 201.
- All capacitors are in μF unless otherwise noted. pF = μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ = 1000Ω, MΩ = 1000kΩ
- ▭ : fusible and nonflammable resistor.
- (N) : low-noise resistor.
- 1% indicates component tolerance.
- ▬ : B+ bus.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- ⏚ : direct connection to points marked ⏚ on the chassis.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken in stop mode with a VOM (20kΩ/V). ( ) : record mode
- AC voltage readings in the bias oscillator circuit are taken with a VTVM.
- Transistor base-emitter voltages are measured on the 2.5V range.
- Voltage variations may be noted due to normal production tolerances.
- Switch

| Ref. No. | Switch | Position |
|---|---|---|
| S101, 201 | MIC ATT | 0dB |
| S102, 202 | EQ | SPECIAL |
| S103, 203 | MONITOR | TAPE |
| S104, 204 | REC/PB | PB |
| S105, 205 | TAPE SPEED | 19cm/s (7½ ips) |
| S301 | POWER | OFF |
| S302 | BIAS | MED |
| S303 | BIAS OSC | OFF |
| S304 | MUTING | OFF |
| S305 | MOTOR | OFF |

**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.**

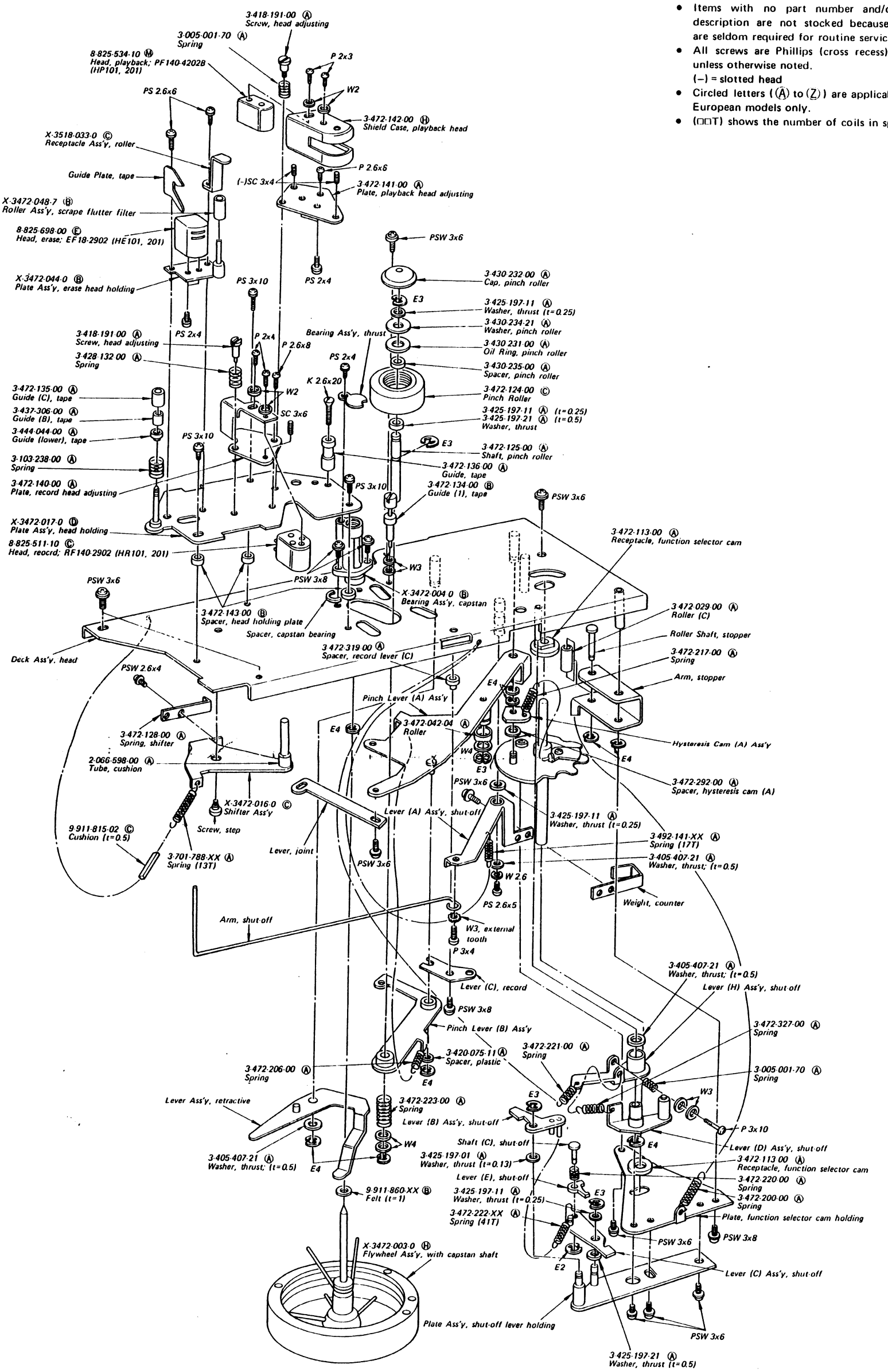
5-1.




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

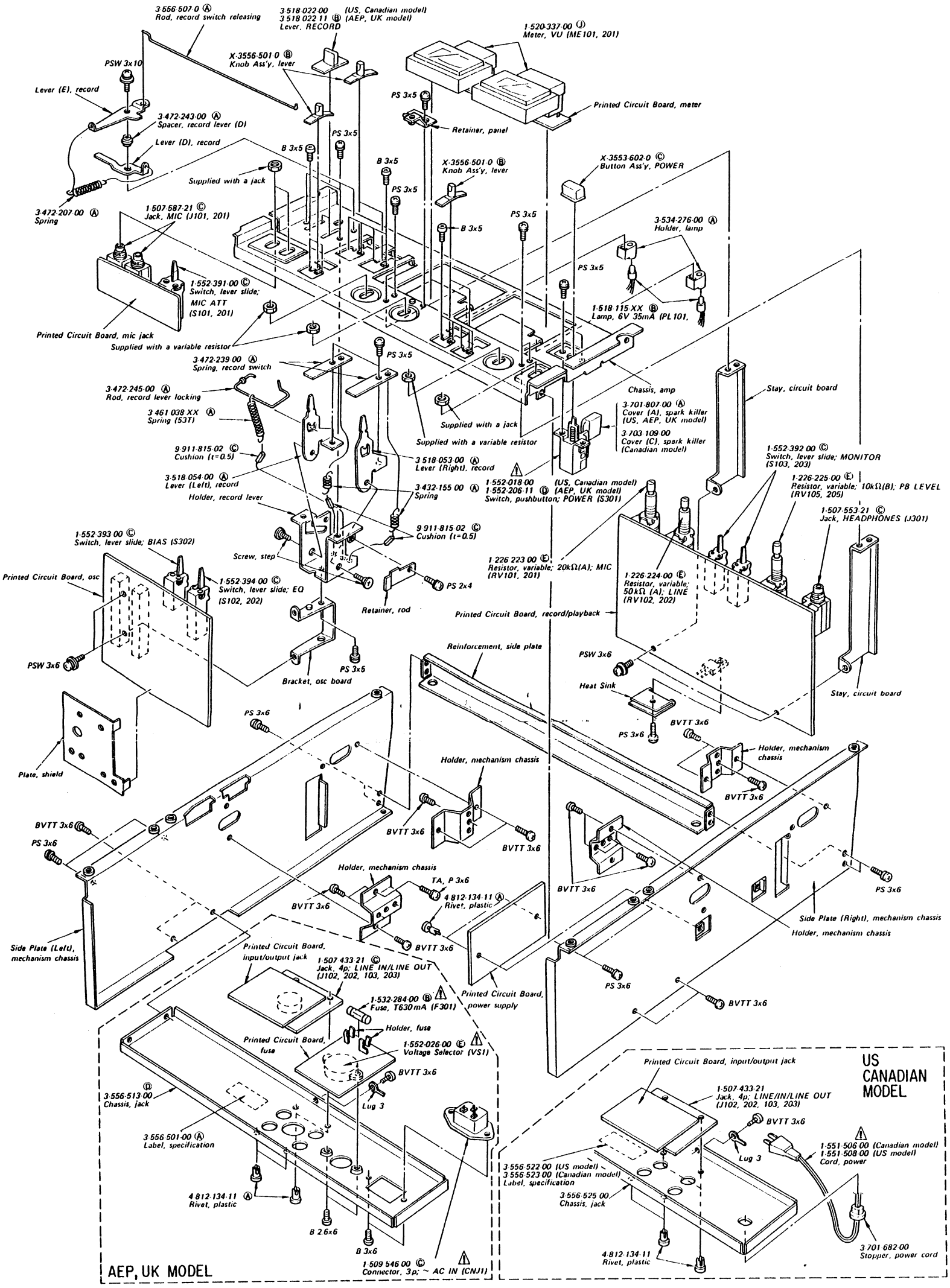
5-2.




**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 (Ⓐ to Ⓩ) are applicable to European models only.
- (□□T) shows the number of coils in spring.

5-3.



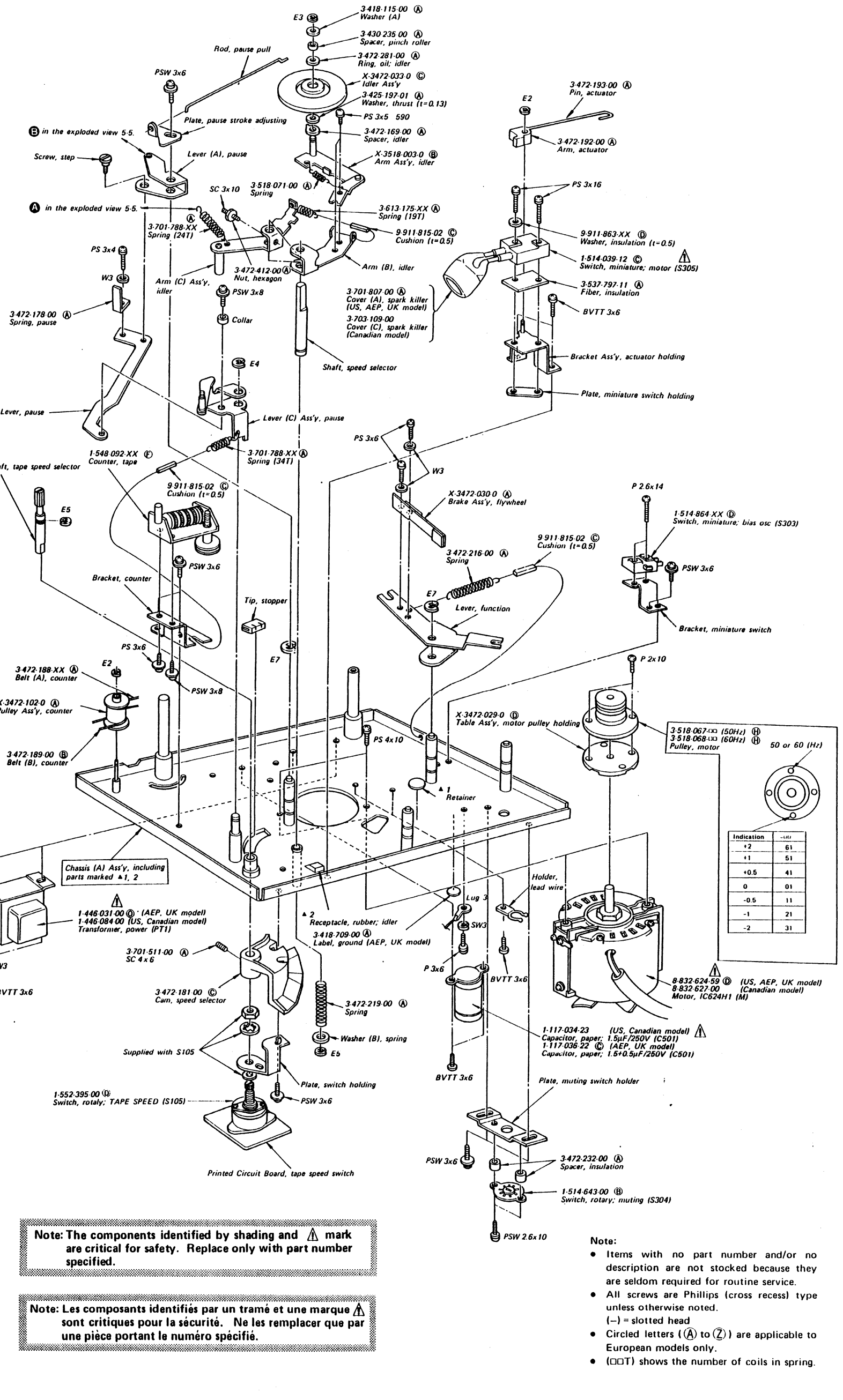

**Note: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.**

**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:

- 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.
- (□□T) shows the number of coils in spring.

5-4.




**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:

- 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.
- (□□T) shows the number of coils in spring.

5-5.




**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.
- (□□T) shows the number of coils in spring.

# SECTION 6
# ELECTRICAL PARTS LIST

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

| Ref. No. | Part No. | Description |
|---|---|---|
| | | **SEMICONDUCTORS** |
| | | **Transistors** |
| Q101,201<br>Q102,202 | 8-729-334-58 | Ⓑ 2SC1345 |
| ⇒Q103,203<br>⇒Q104,204<br>⇒Q105,205 | 8-729-334-58 | Ⓑ 2SC1345 |
| Q106,206<br>Q107,207 | 8-729-334-58 | Ⓑ 2SC1345 |
| ⇒Q108,208 | 8-729-663-47 | Ⓑ 2SC1364 |
| Q109,209 | 8-729-334-58 | Ⓑ 2SC1345 |
| ⇒Q110,210 | 8-729-334-58 | Ⓑ 2SC1345 |
| ⇒Q111,211<br>⇒Q112,212 | 8-729-663-47 | Ⓑ 2SC1364 |
| ⇒Q113,213 | 8-729-334-58 | Ⓑ 2SC1345 |
| ⇒Q114,214 | 8-760-413-10 | Ⓒ 2SC1475 |
| ⇒Q301 | 8-729-203-04 | Ⓑ 2SK30 |
| ⇒Q302,303 | 8-729-334-58 | Ⓑ 2SC1345 |
| Q304 | 8-729-217-33 | Ⓒ 2SC1173 |
| ⇒Q305 | 8-729-663-47 | Ⓑ 2SC1364 |
| ⇒Q306 | 8-760-413-10 | Ⓒ 2SC1475 |
| | | **Diodes** |
| ⇒D101,201 | 8-719-422-21 | Ⓐ 1T22AM |
| ⇒D301,302 ⚠ | 8-719-200-02 | Ⓑ 10E2 |
| ⇒D303 | 8-719-111-07 | Ⓑ RD11E |
| ⇒D304 | 8-719-815-55 | Ⓑ 1S1555 |
| ⇒D305 | 8-719-422-21 | Ⓐ 1T22AM |
| ⇒D306 | 8-719-815-55 | Ⓑ 1S1555 |
| | | **COILS** |
| L101,201 | 1-407-213-XX | Ⓐ 1.5 mH |
| L102,202 | 1-407-198-XX | Ⓐ 2.2 mH |
| L103,203 | 1-407-286-00 | Ⓑ 2.2 mH, adjustable |
| L104,204 | 1-407-284-00 | Ⓑ 1 mH, adjustable |

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

| Ref. No. | Part No. | Description |
|---|---|---|
| | | **TRANSFORMERS** |
| PT1 ⚠ | 1-446-031-00<br>1-446-084-00 | Ⓞ Power (AEP, UK model)<br>Power (US, Canadian model) |
| T101,201 | 1-427-424-11 | Ⓒ Output |
| | | **CAPACITORS** |

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

| | | | | |
|---|---|---|---|---|
| C101,201 | 1-131-196-11 | Ⓑ 2.2 | 20V | tantalum |
| C102,202 | 1-121-404-11 | Ⓐ 33 | 25V | elect |
| C103,203 | 1-102-074-11 | Ⓐ 0.001 | | |
| C104,204 | 1-121-413-11 | Ⓐ 100 | 6.3V | elect |
| C105,205 | 1-121-392-11 | Ⓐ 3.3 | 25V | elect |
| C106,206 | 1-131-230-11 | Ⓑ 6.8 | 10V | tantalum |
| C107,207 | 1-121-404-11 | Ⓐ 33 | 25V | elect |
| C108,208 | 1-102-975-11 | Ⓐ 100p | | |
| C109,209 | 1-121-413-11 | Ⓐ 100 | 6.3V | elect |
| C110,210 | 1-121-398-11 | Ⓐ 10 | 25V | elect |
| C111,211 | 1-131-211-11 | Ⓑ 0.22 | 35V | tantalum |
| C112,212 | 1-121-398-11 | Ⓐ 10 | 25V | elect |
| C113,213 | 1-121-479-11 | Ⓐ 22 | 16V | elect |
| C114,214 | 1-121-419-11 | Ⓐ 220 | 6.3V | elect |
| C115,215 | 1-121-398-11 | Ⓐ 10 | 25V | elect |
| C116,216 | 1-129-927-11 | Ⓑ 0.015 | 100V | polyethylene |
| C117,217 | 1-108-575-12 | Ⓐ 0.0068 | | mylar |
| C118,218 | 1-108-561-12 | Ⓐ 0.0018 | | mylar |
| C119,219 | 1-108-573-12 | Ⓐ 0.0056 | | mylar |
| C120,220 | 1-108-591-12 | Ⓐ 0.033 | | mylar |
| C121,221 | 1-108-581-12 | Ⓐ 0.012 | | mylar |
| C123,223 | 1-108-579-12 | Ⓐ 0.01 | | mylar |
| C124,224 | 1-108-601-12 | Ⓑ 0.082 | | mylar |
| C125,225 | 1-108-571-12 | Ⓐ 0.0047 | | mylar |
| C126,226 | 1-107-185-11 | Ⓐ 470p | 500V | mica |
| C127,227 | 1-107-037-11 | Ⓐ 82p | 500V | mica |
| C128,228 | 1-141-010-XX | Ⓑ | | trimmer |

**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 | | |
|---|---|---|---|---|---|
| C131,231 | 1-131-195-11 | Ⓑ | 33 | 10V | elect |
| C132,232 | 1-121-404-11 | Ⓐ | 33 | 25V | elect |
| C133,233 | 1-102-975-11 | Ⓐ | 100p | | |
| C134,234 | 1-121-419-11 | Ⓐ | 220 | 6.3V | elect |
| C135,235 | 1-121-420-11 | Ⓐ | 220 | 10V | elect |
| C136,236 | 1-129-927-11 | Ⓑ | 0.015 | 100V | polyethylene |
| C137,237 | 1-121-398-11 | Ⓐ | 10 | 25V | elect |
| C138,238 | 1-129-896-11 | Ⓐ | 0.012 | 100V | polyethylene |
| C139,239 | 1-102-113-11 | Ⓐ | 390p | | |
| C140,240 | 1-102-117-11 | Ⓐ | 820p | | |
| C141,241 | 1-131-230-11 | Ⓑ | 6.3 | 10V | tantalum |
| C142,242 | 1-121-404-11 | Ⓐ | 33 | 25V | elect |
| C143,243 | 1-108-587-12 | Ⓐ | 0.022 | | mylar |
| C144,244 | 1-108-591-12 | Ⓐ | 0.033 | | mylar |
| C145,245 | 1-121-413-11 | Ⓐ | 100 | 6.3V | elect |
| C146,246 | 1-121-398-11 | Ⓐ | 10 | 25V | elect |
| C147,247 | 1-102-969-11 | Ⓒ | 33p | | |
| C148,248 | 1-121-416-11 | Ⓐ | 100 | 25V | elect |
| C149,249 | 1-121-395-11 | Ⓐ | 4.7 | 25V | elect |
| C150,250 | 1-121-398-11 | Ⓐ | 10 | 25V | elect |
| C151,251 | 1-121-352-11 | Ⓐ | 47 | 10V | elect |
| C301–303 | ⚠ 1-121-810-11 | Ⓑ | 470 | 50V | elect |
| C304 | 1-121-421-11 | Ⓑ | 220 | 16V | elect |
| C305 | 1-121-733-11 | Ⓑ | 470 | 25V | elect |
| C306 | 1-121-961-11 | Ⓐ | 4.7 | 25V | elect |
| C307 | 1-121-981-11 | Ⓑ | 220 | 6.3V | elect |
| C308 | 1-121-392-11 | Ⓐ | 3.3 | 25V | elect |
| C309 | 1-129-703-11 | Ⓑ | 0.0012 | 630V | polyethylene |
| C310 | 1-108-244-12 | Ⓐ | 0.033 | | mylar |
| C501 | ⚠ 1-117-034-23 | | 1.5 | 250V | paper |
| | | | (US, Canadian model) | | |
| C501 | ⚠ 1-117-036-22 | Ⓒ | 1.5+0.5 | 250V | paper |
| | | | (AEP, UK model) | | |

| Ref. No. | Part No. | | Description | | |
|---|---|---|---|---|---|
| | | | **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 variable and adjustable resistors have characteristic curve B, unless otherwise noted. | | |
| R110,210 | 1-244-923-11 | Ⓐ | 120 k | ½W | carbon |
| R113,213 | 1-244-865-11 | Ⓐ | 470 | ½W | carbon |
| R115,215 | 1-244-911-11 | Ⓐ | 39 k | ½W | carbon |
| R116,216 | 1-244-887-11 | Ⓐ | 3.9 k | ½W | carbon |
| R122,222 | 1-244-873-11 | Ⓐ | 1 k | ½W | carbon |
| R124,224 | 1-244-897-11 | Ⓐ | 10 k | ½W | carbon |
| R125,225 | 1-244-875-11 | Ⓐ | 1.2 k | ½W | carbon |
| R153,253 | 1-244-912-11 | Ⓐ | 43 k | ½W | carbon |
| R157,257 | 1-244-893-11 | Ⓐ | 6.8 k | ½W | carbon |
| R158,258 | 1-244-927-11 | Ⓐ | 180 k | ½W | carbon |
| R159,259 | 1-244-855-11 | Ⓐ | 180 | ½W | carbon |
| R160,260 | 1-244-889-11 | Ⓐ | 4.7 k | ½W | carbon |
| R163,263 | 1-214-144-11 | Ⓐ | 3.3 k | ¼W | metal oxide (1%) |
| R172,272 | 1-244-873-11 | Ⓐ | 1 k | ½W | carbon |
| R174,274 | 1-244-875-11 | Ⓐ | 1.2 k | ½W | carbon |
| R175,275 | 1-244-907-11 | Ⓐ | 27 k | ½W | carbon |
| R176,276 | 1-244-881-11 | Ⓐ | 2.2 k | ½W | carbon |
| R180,280 | 1-214-142-11 | Ⓐ | 2.7 k | ¼W | metal oxide (1%) |
| R184,284 | 1-214-136-11 | Ⓐ | 1.5 k | ¼W | metal oxide (1%) |
| R190,290 | 1-244-885-11 | Ⓐ | 3.3 k | ½W | carbon |
| R196,296 | 1-244-871-11 | Ⓐ | 820 | ½W | carbon |
| R301 | ⚠ 1-217-383-11 | Ⓑ | 4.7 | ¼W | fusible (nonflammable) |
| R302 | 1-244-853-11 | Ⓐ | 150 | ½W | carbon |
| R303,304 | 1-214-148-11 | Ⓐ | 4.7 k | ¼W | metal oxide (1%) |
| R305 | 1-244-897-11 | Ⓐ | 10 k | ½W | carbon |
| RV101,201 | 1-226-223-00 | Ⓔ | 20 k (A), variable; MIC | | |
| RV102,202 | 1-226-224-00 | Ⓔ | 50 k (A), variable; LINE | | |
| RV103,203 | 1-224-646-XX | Ⓑ | 22 k, adjustable; RECORD LEVEL | | |
| RV104,204 | 1-224-646-XX | Ⓑ | 22 k, adjustable; PLAYBACK LEVEL | | |
| RV105,205 | 1-226-225-00 | Ⓑ | 10 k, variable; PB LEVEL | | |
| RV106,206 | 1-224-643-XX | Ⓑ | 2.2 k, adjustable; METER LEVEL | | |

**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.**

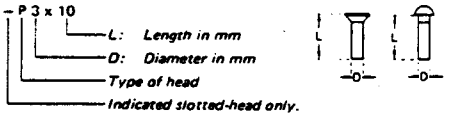
## 1/4 WATT CARBON RESISTORS Ⓐ

**Note:** Circled letter Ⓐ is applicable to European model only.

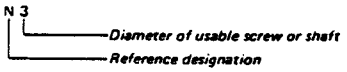
| Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0 | 1-244-601-11 | 10 | 1-244-625-11 | 100 | 1-244-649-11 | 1.0k | 1-244-673-11 | 10 k | 1-244-697-11 | 100k | 1-244-721-11 | 1.0M | 1-244-745-11 |
| 1.1 | 1-244-602-11 | 11 | 1-244-626-11 | 110 | 1-244-650-11 | 1.1k | 1-244-674-11 | 11 k | 1-244-698-11 | 110k | 1-244-722-11 | 1.1M | 1-244-746-11 |
| 1.2 | 1-244-603-11 | 12 | 1-244-627-11 | 120 | 1-244-651-11 | 1.2k | 1-244-675-11 | 12 k | 1-244-699-11 | 120k | 1-244-723-11 | 1.2M | 1-244-747-11 |
| 1.3 | 1-244-604-11 | 13 | 1-244-628-11 | 130 | 1-244-652-11 | 1.3k | 1-244-676-11 | 13 k | 1-244-700-11 | 130k | 1-244-724-11 | 1.3M | 1-244-748-11 |
| 1.5 | 1-244-605-11 | 15 | 1-244-629-11 | 150 | 1-244-653-11 | 1.5k | 1-244-677-11 | 15 k | 1-244-701-11 | 150k | 1-244-725-11 | 1.5M | 1-244-749-11 |
| 1.6 | 1-244-606-11 | 16 | 1-244-630-11 | 160 | 1-244-654-11 | 1.6k | 1-244-678-11 | 16 k | 1-244-702-11 | 160k | 1-244-726-11 | 1.6M | 1-244-750-11 |
| 1.8 | 1-244-607-11 | 18 | 1-244-631-11 | 180 | 1-244-655-11 | 1.8k | 1-244-679-11 | 18 k | 1-244-703-11 | 180k | 1-244-737-11 | 1.8M | 1-244-751-11 |
| 2.0 | 1-244-608-11 | 20 | 1-244-632-11 | 200 | 1-244-656-11 | 2.0k | 1-244-680-11 | 20 k | 1-244-704-11 | 200k | 1-244-728-11 | 2.0M | 1-244-752-11 |
| 2.2 | 1-244-609-11 | 22 | 1-244-633-11 | 220 | 1-244-657-11 | 2.2k | 1-244-681-11 | 22 k | 1-244-705-11 | 220k | 1-244-729-11 | 2.2M | 1-244-753-11 |
| 2.4 | 1-244-610-11 | 24 | 1-244-634-11 | 240 | 1-244-658-11 | 2.4k | 1-244-682-11 | 24 k | 1-244-706-11 | 240k | 1-244-730-11 | 2.4M | 1-244-754-11 |
| 2.7 | 1-244-611-11 | 27 | 1-244-635-11 | 270 | 1-244-659-11 | 2.7k | 1-244-683-11 | 27 k | 1-244-707-11 | 270k | 1-244-731-11 | 2.7M | 1-244-755-11 |
| 3.0 | 1-244-612-11 | 30 | 1-244-636-11 | 300 | 1-244-660-11 | 3.0k | 1-244-684-11 | 30 k | 1-244-708-11 | 300k | 1-244-732-11 | 3.0M | 1-244-756-11 |
| 3.3 | 1-244-613-11 | 33 | 1-244-637-11 | 330 | 1-244-661-11 | 3.3k | 1-244-685-11 | 33 k | 1-244-709-11 | 330k | 1-244-733-11 | 3.3M | 1-244-757-11 |
| 3.6 | 1-244-614-11 | 36 | 1-244-638-11 | 360 | 1-244-662-11 | 3.6k | 1-244-686-11 | 36 k | 1-244-710-11 | 360k | 1-244-734-11 | 3.6M | 1-244-758-11 |
| 3.9 | 1-244-615-11 | 39 | 1-244-639-11 | 390 | 1-244-663-11 | 3.9k | 1-244-687-11 | 39 k | 1-244-711-11 | 390k | 1-244-735-11 | 3.9M | 1-244-759-11 |
| 4.3 | 1-244-616-11 | 43 | 1-244-640-11 | 430 | 1-244-664-11 | 4.3k | 1-244-688-11 | 43 k | 1-244-712-11 | 430k | 1-244-736-11 | 4.3M | 1-244-760-11 |
| 4.7 | 1-244-617-11 | 47 | 1-244-641-11 | 470 | 1-244-665-11 | 4.7k | 1-244-689-11 | 47 k | 1-244-713-11 | 470k | 1-244-737-11 | 4.7M | 1-244-761-11 |
| 5.1 | 1-244-618-11 | 51 | 1-244-642-11 | 510 | 1-244-666-11 | 5.1k | 1-244-690-11 | 51 k | 1-244-714-11 | 510k | 1-244-738-11 | 5.1M | 1-244-762-11 |
| 5.6 | 1-244-619-11 | 56 | 1-244-643-11 | 560 | 1-244-667-11 | 5.6k | 1-244-691-11 | 56 k | 1-244-715-11 | 560k | 1-244-739-11 | | |
| 6.2 | 1-244-620-11 | 62 | 1-244-644 11 | 620 | 1-244-668-11 | 6.2k | 1-244-692-11 | 62 k | 1-244-716-11 | 620k | 1-244-740-11 | | |
| 6.8 | 1-244-621-11 | 68 | 1-244-645-11 | 680 | 1-244-669-11 | 6.8k | 1-244-693-11 | 68 k | 1-244-717-11 | 680k | 1-244-741-11 | | |
| 7.5 | 1-244-622-11 | 75 | 1-244-646-11 | 750 | 1-244-670-11 | 7.5k | 1-244-694-11 | 75 k | 1-244-718-11 | 750k | 1-244-742-11 | | |
| 8.2 | 1-244-623-11 | 82 | 1-244-647-11 | 820 | 1-244-671-11 | 8.2k | 1-244-695-11 | 82 k | 1-244-719-11 | 820k | 1-244-743-11 | | |
| 9.1 | 1-244-624-11 | 91 | 1-244-648-11 | 910 | 1-244-672-11 | 9.1k | 1-244-696-11 | 91 k | 1-244-720-11 | 910k | 1-244-744-11 | | |

## HARDWARE NOMENCLATURE

**Screw:**




**Nut, Washer, Retaining ring:**




| 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<br>PSP | | pan-head screw with spring washer | binding-head (B) screw and spring washer for replacement |
| PSW<br>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 | |



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78D06101-1
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Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

| Ref. No. | Part No. | | Description |
|---|---|---|---|
| | | | **SWITCHES** |
| S101,201 | 1-552-391-00 | Ⓒ | Lever Slide, MIC ATT |
| S102,202 | 1-552-394-00 | Ⓒ | Lever Slide, EQ |
| S103,203 | 1-552-392-00 | Ⓒ | Lever Slide, MONITOR |
| S104,204 | 1-516-367-XX | Ⓒ | Push, REC/PB |
| S105 | 1-552-395-00 | Ⓓ | Rotaly, TAPE SPEED |
| S301 | ⚠ 1-552-018-00 | | Pushbutton, POWER (US, Canadian model) |
| S301 | ⚠ 1-552-206-11 | Ⓓ | Pushbutton, POWER (AEP, UK model) |
| S302 | 1-552-393-00 | Ⓒ | Lever Slide, BIAS |
| S303 | 1-514-864-XX | Ⓓ | Miniature, BIAS OSC |
| S304 | 1-514-643-00 | Ⓑ | Rotary, MUTING |
| S305 | ⚠ 1-514-039-12 | Ⓒ | Miniature, MOTOR |
| | | | **MISCELLANEOUS** |
| CNJ1 | ⚠ 1-509-546-00 | Ⓒ | Connector, 3p; ∿ AC IN (AEP, UK model) |
| CNJ2 | 1-509-549-00 | Ⓑ | Connector, REC/PB (AEP, UK model) |
| CP301 | ⚠ 1-231-057-31 | Ⓑ | Encapsulated Component (AEP, UK model) |
| CP301,302 | ⚠ 1-231-325-11 | | Encapsulated Component (US model) |
| CP301,302 | ⚠ 1-231-345-11 | | Encapsulated Component (Canadian model) |
| CP302 | ⚠ 1-231-325-11 | Ⓒ | Encapsulated Component (AEP, UK model) |
| F301 | ⚠ 1-532-284-00 | Ⓑ | Fuse, T630mA (AEP, UK model) |
| HE101,201 | 8-825-698-00 | Ⓔ | Head, erase; EF18-2902 |
| HP101,201 | 8-825-534-10 | Ⓛ | Head, playback; PF140-4202B |
| HR101,201 | 8-825-511-10 | Ⓚ | Head, record; RF140-2902 |
| J101,201 | 1-507-587-21 | Ⓒ | Jack, MIC |
| J102,202 J103,203 | 1-507-433-21 | Ⓝ | Jack, 4p; LINE IN/LINE OUT |
| J301 | 1-507-553-21 | Ⓝ | Jack, HEADPHONES |
| M | ⚠ 8-832-624-56 | Ⓜ | Motor, IC624H1 (US, AEP, UK model) |
| M | ⚠ 8-832-627-00 | | Motor, IC624H1 (Canadian model) |
| ME101,201 | 1-520-337-00 | Ⓙ | Meter, VU |
| PL101,201 | 1-518-115-XX | Ⓑ | Lamp, 6V 35mA |
| RY301 | 1-515-294-00 | Ⓕ | Relay |
| VS1 | ⚠ 1-552-026-00 | Ⓔ | Voltage Selector (AEP, UK model) |
| | 1-464-029-00 | Ⓖ | OSC Pack |
| | ⚠ 1-551-506-00 | | Cord, power (Canadian model) |
| | ⚠ 1-551-508-00 | | Cord, power (US model) |

**ACCESSORIES & PACKING MATERIALS**

| Part No. | | Description |
|---|---|---|
| X-2440-055-1 | Ⓚ | Reel Ass'y, R-7MB (UK model) |
| X-2440-069-0 | | Reel Ass'y, R-7ES (US, Canadian model) |
| X-2440-073-0 | Ⓚ | Reel Ass'y, R-7MB (AEP model) |
| X-3701-105-0 | Ⓐ | Cleaning Tip Ass'y (Canadian, AEP, UK model) |
| 1-534-049-31 | Ⓔ | Cord, connection; RK-74 |
| 1-534-819-12 | Ⓖ | Cord, power (UK model) |
| 3-401-193-00 | | Tape (US model) |
| 3-556-528-00 | Ⓖ | Carton (AEP, UK, Canadian model) |
| 3-556-529-00 | Ⓑ | Spacer |
| 3-556-530-00 | Ⓒ | Cushion, right |
| 3-556-531-00 | Ⓒ | Cushion, left |
| 3-556-532-00 | Ⓑ | Cushion, bottom |
| 3-556-534-00 | | Carton (US model) |
| 3-701-630-00 | Ⓐ | Bag, plastic |
| 3-701-684-11 | Ⓑ | Card, power voltage indication (AEP, UK model) |
| 3-770-504-11 | Ⓔ | Manual, instruction (AEP, UK model) |
| 3-770-504-21 | | Manual, instruction (US model) |
| 3-770-504-21 3-794-247-31 | | Manual, instruction (Canadian model) |
| 4-848-648-00 | Ⓑ | Bag, protection |

**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.**