TC-203SD

1187

Canada Model
USA Model

STEREO CASSETTE DECK

SPECIFICATIONS

Power Requirements: 120 V AC, 60 Hz

Power Consumption: 20 W

Track System: 4-track, 2-channel stereo

Tape Speed: 4.8 cm/s (1⅞ ips)

Tape: SONY tape cassette or equivalent

Recording Time: (with C-120 tape cassette) 2 hrs

Frequency Response: NORMAL: 20~15,000 Hz
Fe-Cr, CrO_2: 20~17,000 Hz

Record Bias Frequency: Approx. 100 kHz

Overall Signal-to-Noise Ratio: DOLBY* NR OFF
NORMAL: 52 dB
Fe-Cr, CrO_2: 54 dB

Wow and Flutter: 0.08 % (RMS) weighted

Inputs: MIC (phone) 2
impedance: low
maximum sensitivity: -72 dB (0.19 mV)
LINE IN (binaural) 1
(phono) 2
input impedance: 100 kΩ
maximum sensitivity: -22 dB (62 mV)

Output: LINE OUT (phono) 2
load impedance: more than 10 kΩ
normal level: 0 dB (0.775 V)/100 kΩ at LINE control maximum
AC OUTLET 1
300 W, unswitched

Record/playback Head: PF145-3602A2

Erase Head: EF135-36

Semiconductors: 33 transistors, 2 ICs and 22 diodes

Dimensions: 435 (w) x 155 (h) x 320 (d) mm
17 3/16 (w) x 6 1/8 (h) x 12 5/8 (d) inches

Weight: 8.5 kg, 18 lb 12 oz

* The word Dolby is the trademark of Dolby Laboratories, Inc.

SONY®
SERVICE MANUAL

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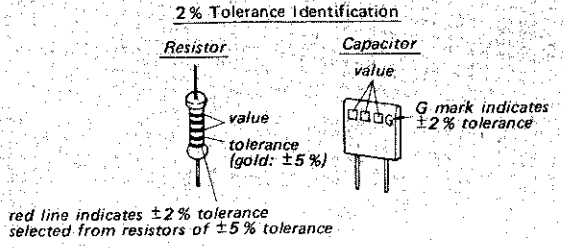
When ordering replacement parts, use PART NUMBERS listed in Parts Lists or shown in EXPLODED VIEWS.
Parts List reference numbers should not be used.

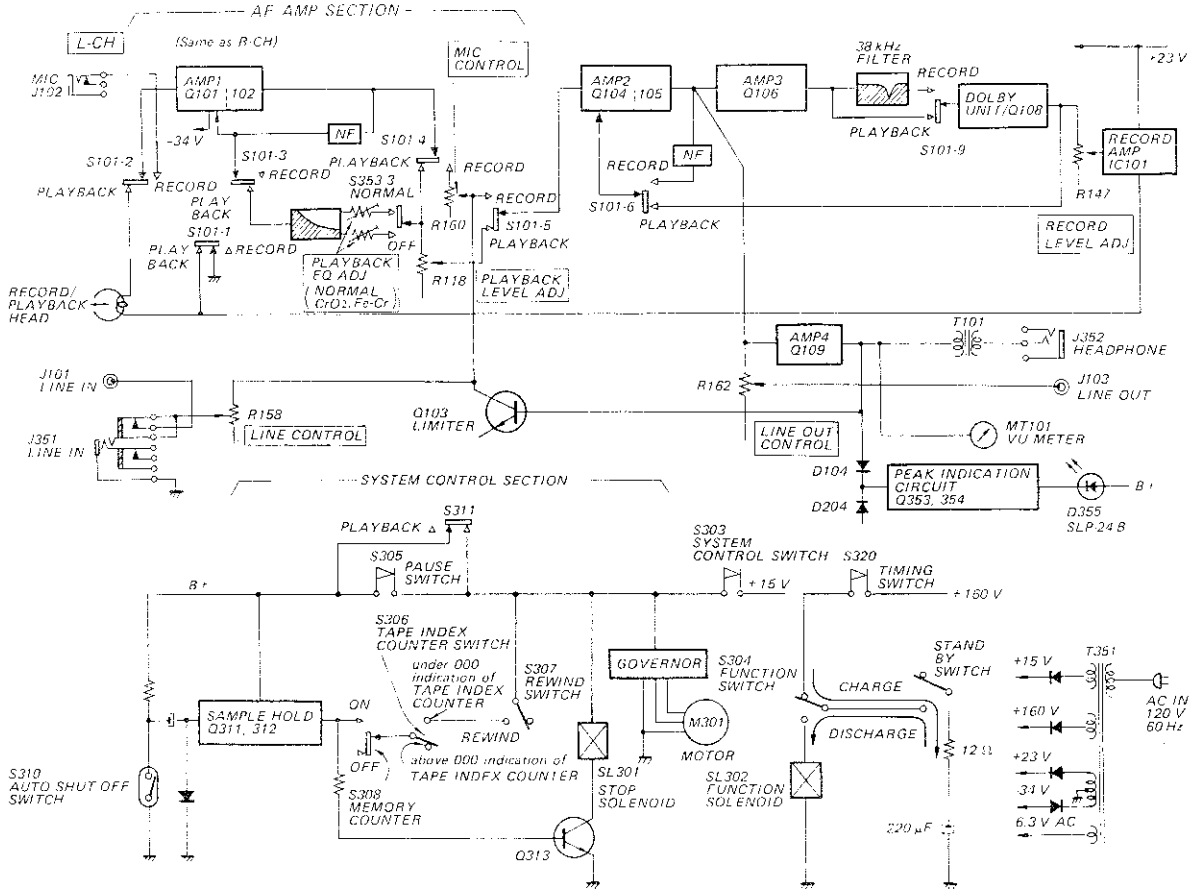
CAUTION

1. *Record and playback level adjustments should be carefully made. The levels must be as specified for correct DOLBY circuit operation.*
2. *When replacing resistors and capacitors needing ±2 % tolerance, use only those with red line or G mark, as DOLBY system requires precise circuit operation.*

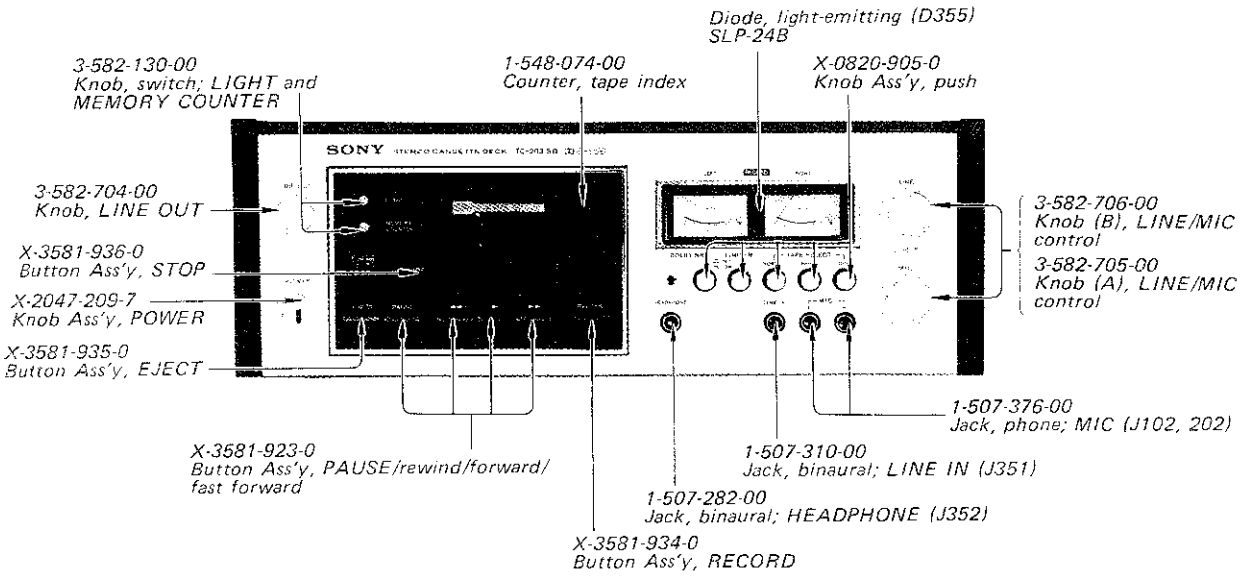


SECTION 1
OUTLINE

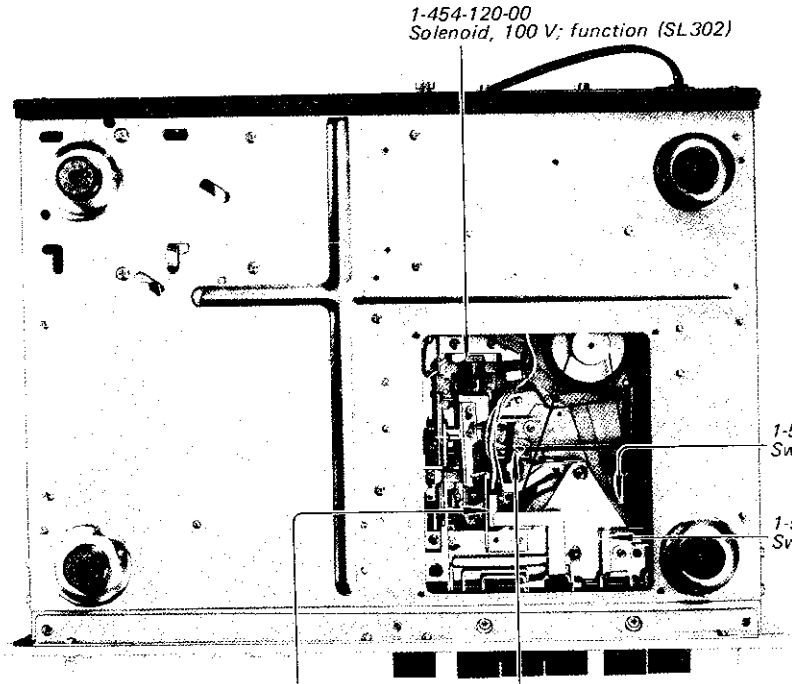
1-1. BLOCK DIAGRAM



1-2. EXTERNAL VIEW (1)

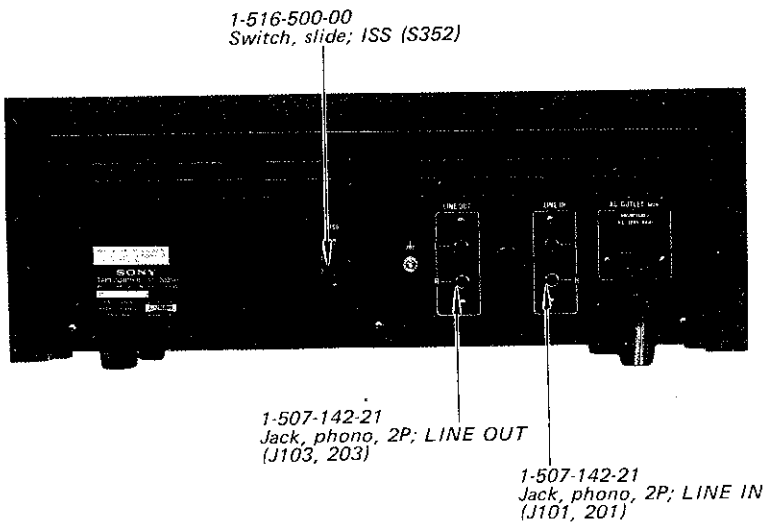


1-3. EXTERNAL VIEW (2)

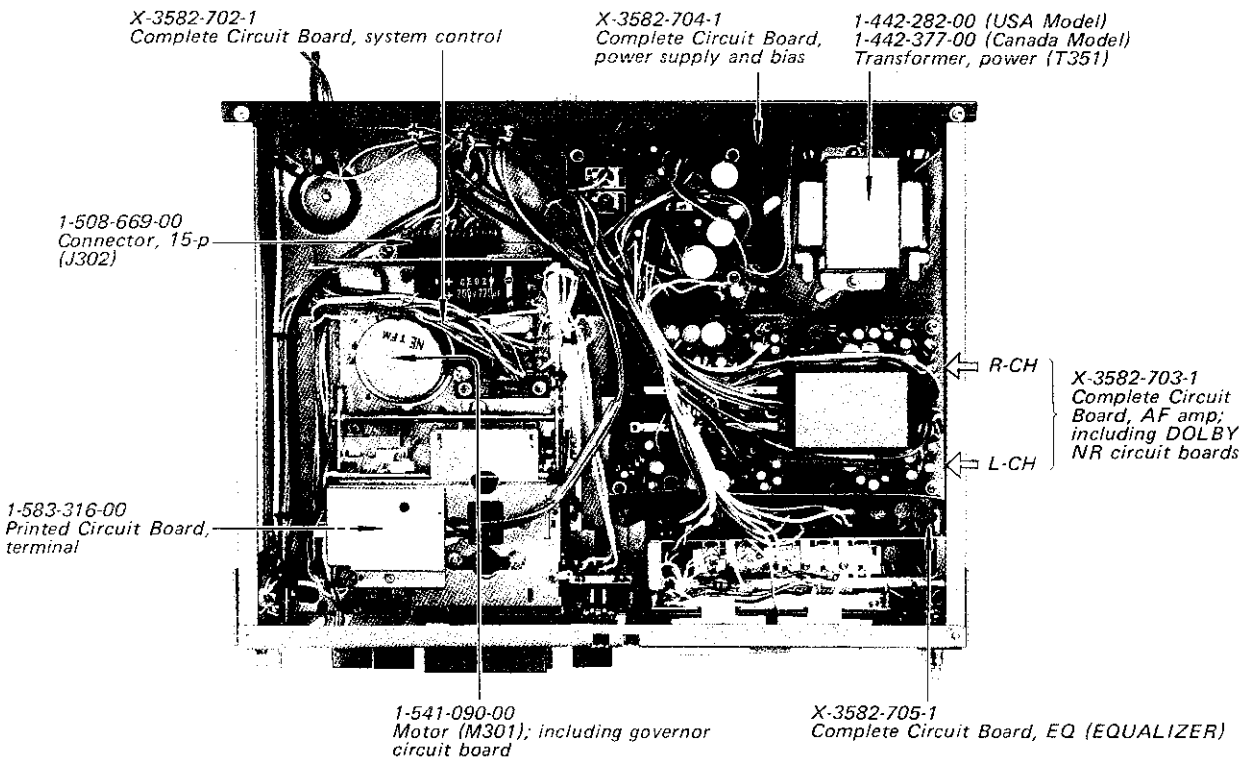


Note: Bottom cover is removed.

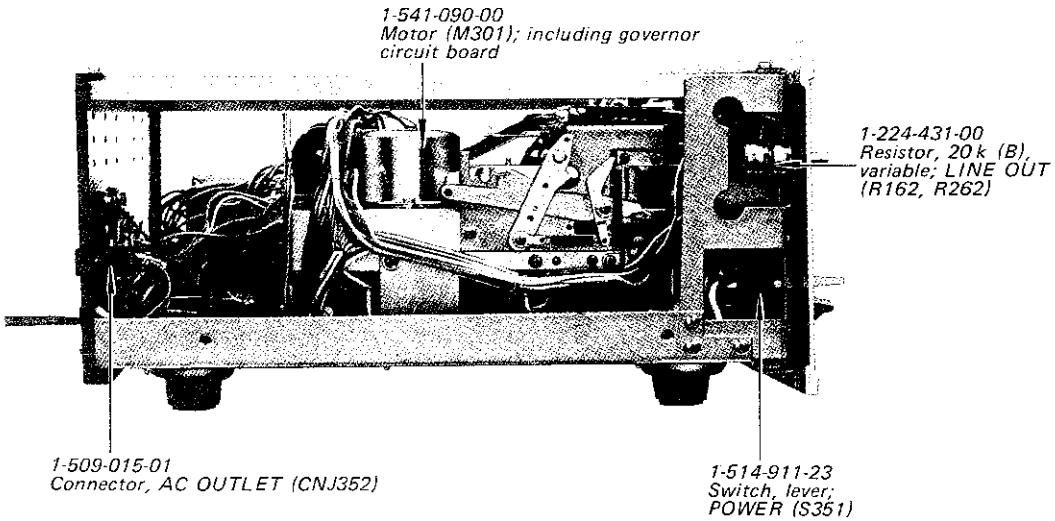
1-4. EXTERNAL VIEW (3)



1-5. INTERNAL VIEW (1)



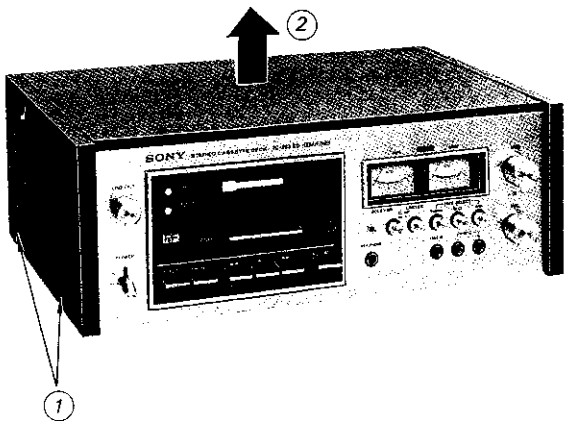
1-6. INTERNAL VIEW (2)



SECTION 2
DISASSEMBLY

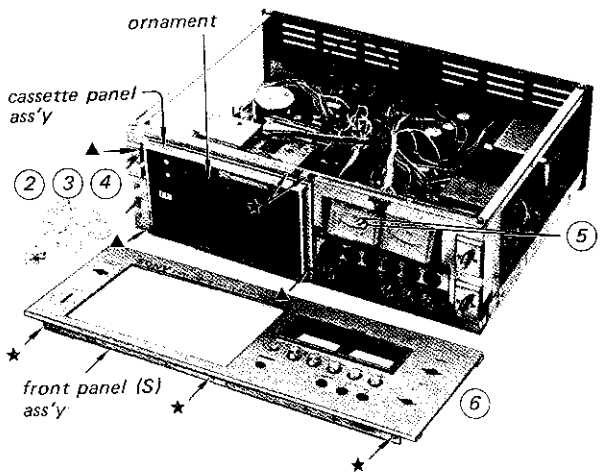
2-1. CASE (S) ASS'Y REMOVAL

1. Remove four case screws from both sides of the case.
2. Remove case.



2-2. FRONT PANEL (S) ASS'Y REMOVAL

1. Turn the unit off.
2. Loosen set screws and remove LINE, MIC and LINE OUT knobs.
3. Remove nuts and washers from LINE, MIC and LINE OUT controls.
4. Pull off POWER knob ass'y.
5. Remove five screws P 3×6.
6. Pull the panel forward about an inch and remove two pin-connectors to light-emitting diode.
7. Remove the panel completely.



Note: ▲ : screw B 2.6×5 (cassette panel ass'y removal)
★ : screw P 3×6

2-3. CASSETTE PANEL ASS'Y REMOVAL

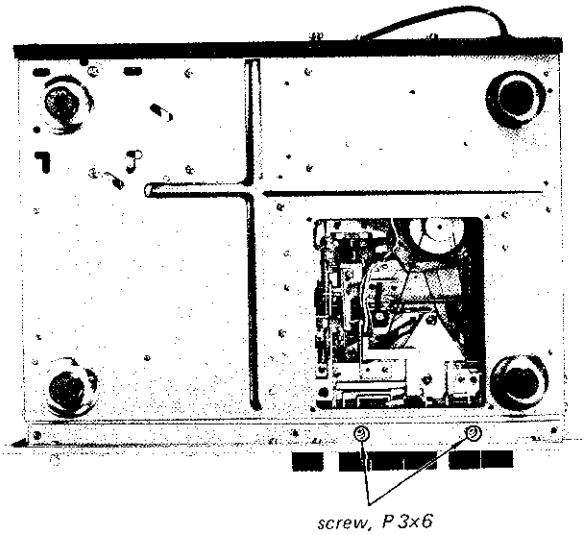
1. Remove front panel as outlined in 2-2 above.
2. Press the LIGHT and MEMORY switches.
3. Remove three screws B 2.6×5.
4. Pull off the top part of the cassette panel. When the LIGHT and MEMORY switches get out of the holes for them, pull up the panel.
5. Carefully take out the panel.

2-4. ORNAMENT REMOVAL

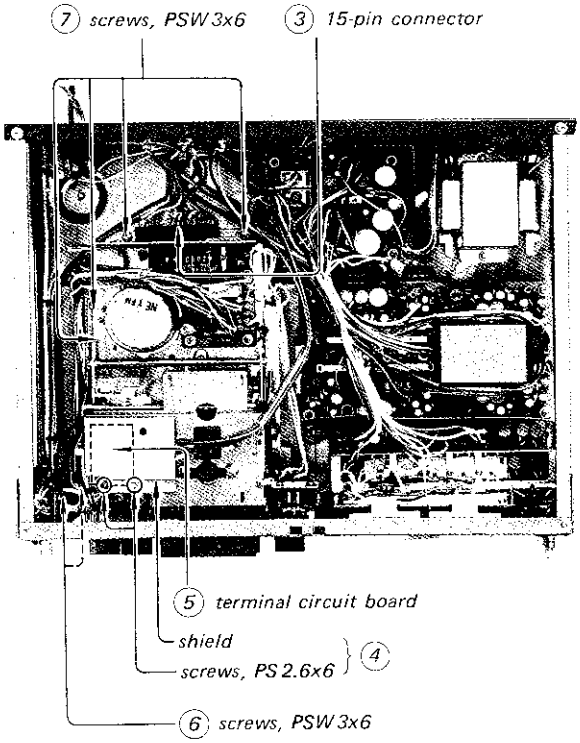
1. Pull off the left part of the ornament with the fingers.
2. Remove the ornament by releasing the right part of the ornament.

2-5. MECHANICAL BLOCK REMOVAL

1. Remove front and cassette panels as outlined in 2-2 and 2-3 above.
2. Remove two screws.



3. Disconnect 15-pin connector from connector circuit board.
4. Remove two screws, PS 2.6×6, and shield.
5. Remove terminal circuit board.
6. Remove two screws PSW 3×6 from front panel chassis.
7. Remove four screws PSW 3×6 from chassis.



8. Remove mechanical block from chassis. Note the relationship between mechanical block and record lever ass'y for the convenience of re-attaching the mechanical block.

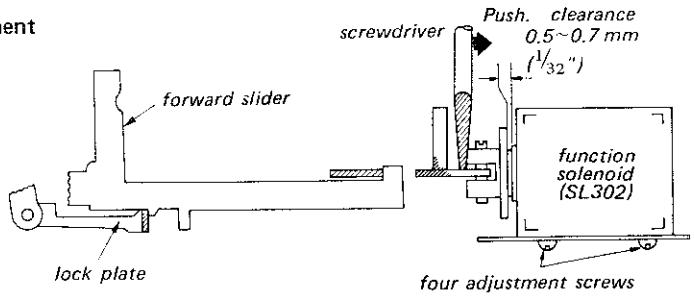
SECTION 3
ADJUSTMENTS

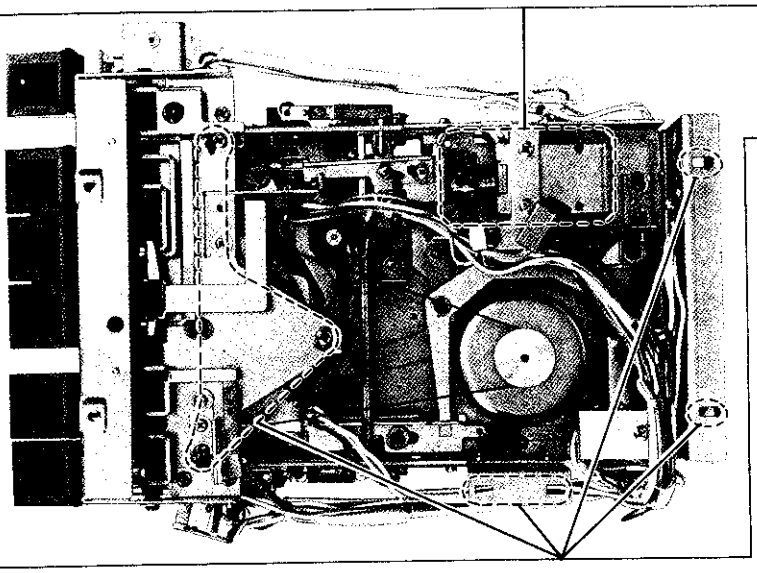
3-1. MECHANICAL ADJUSTMENT

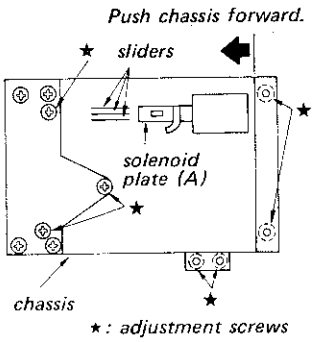
Function Solenoid (SL302) Position Adjustment

– Playback mode –

1. Load tape cassette.
2. Turn the set off. Loosen the adjustment screws and adjust the position of function solenoid to obtain the specified clearance.
3. Lock the screws after adjustment.



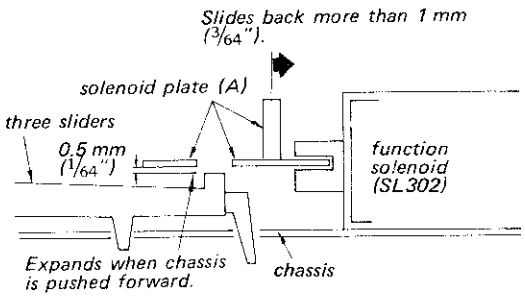


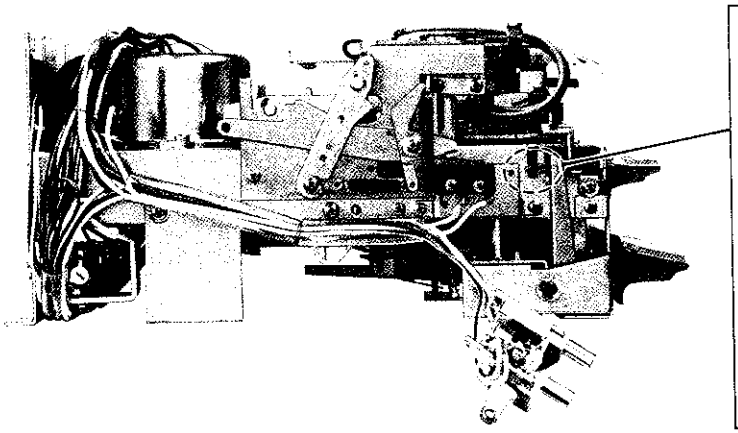


Slider Height Adjustment

– STOP mode –

Assure that solenoid plate slides back to the stationary position in more than 1 mm (3/64"). If not, loosen adjustment screws and push chassis forward to obtain the specified clearance between slider and solenoid plate (A). After adjustment, lock the adjustment screws.

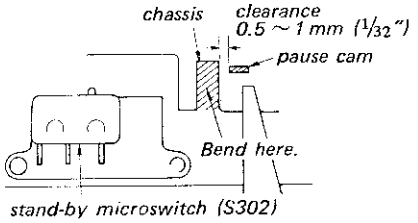




Pause Cam Position Adjustment

– PAUSE mode –

Adjust by bending the chassis to obtain the specified clearance.

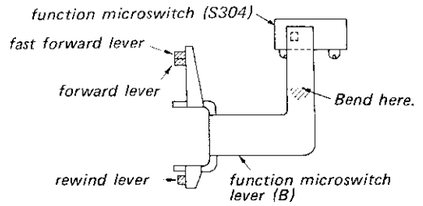


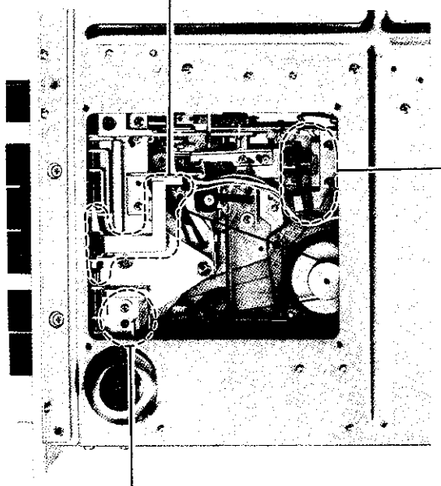
Function Microswitch Lever (B) Adjustment

– STOP, Fast Forward, Rewind and Playback Modes –

Adjust by bending the specified portion of function microswitch lever (B) so that the switch starts to operate just before each button locks.

Note: Edges of forward, rewind and fast forward levers should contact edge of function microswitch lever (B) in stationary mode of the set.

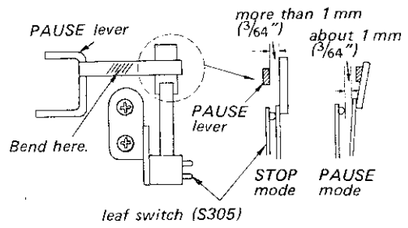




PAUSE Leaf Switch (S305) Adjustment

– STOP and PAUSE modes –

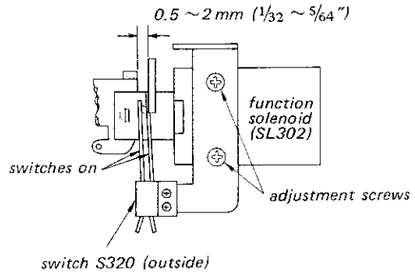
Adjust by bending PAUSE lever to obtain the specified clearances.



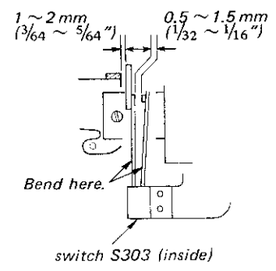
Timing and System Control Leaf Switch (S320, 303) Adjustments

– STOP mode –

1. Timing Leaf Switch (S320):
   Loosen adjustment screws and adjust switch position to obtain the specified clearances. After adjustment, lock the screws.



2. System Control Leaf Switch (S303):
   Adjust by bending leafs to obtain the specified clearances.



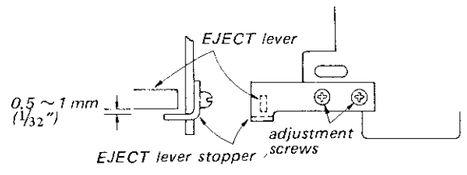
EJECT Lever Stopper Position Adjustment

– Playback mode –

Turn the unit on and load tape cassette.

Loosen two adjustment screws and adjust position of EJECT lever stopper to obtain the specified clearance.

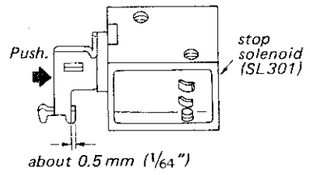
After adjustment, lock the screws.

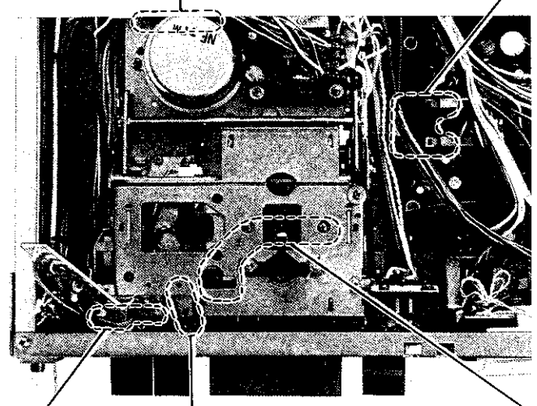


Stop Solenoid (SL301) Position Adjustment

– STOP mode –

Loosen two screws on top side of chassis and adjust solenoid position to obtain the specified clearance between edge of slot in the chassis and edge of stop solenoid plate.



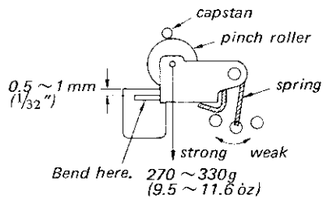


Pinch Roller Pressure Adjustment

– Playback mode –

Load tape cassette. Adjust by bending the specified portion of pinch roller ass'y to obtain the specified clearance.

Adjust spring hooking position to obtain the specified pressure.



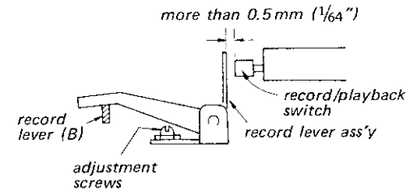
Record Lever Ass'y Position Adjustment

– STOP mode –

Load tape cassette. Loosen two adjustment screws and adjust record lever position to obtain the specified clearance.

Assure that the record/playback switches operate normally in RECORD mode.

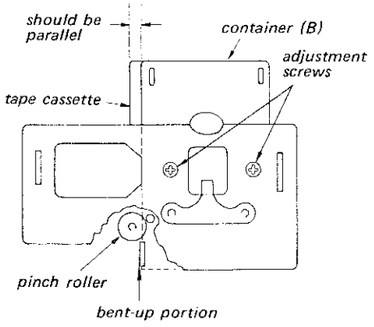
After adjustment, lock the screws.



Container (B) Position Adjustment

Load tape cassette. Loosen two adjustment screws and adjust position of container (B) so that the edges of cassette and container become parallel.

Note: Pinch roller should not touch the bent-up portion of container (B) when the unit is turned on and forward button is pressed.

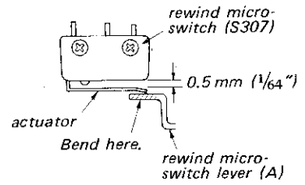


Rewind Microswitch Lever (A) Adjustment

– Rewind mode –

Turn the unit on and load tape cassette.

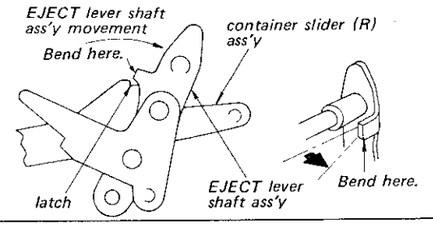
Adjust by bending the specified portion of rewind microswitch lever (A) so that the rewind microswitch (S307) actuates.



EJECT Lever Shaft Ass'y Balance Adjustment

– STOP mode –

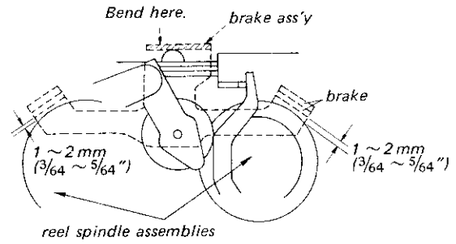
While loading tape cassette, adjust the locking timing of the EJECT lever shaft ass'y by bending the specified portions of both sides. Both projections should fall in the latches at the same time.



Brake Ass'y Adjustment

– Playback, Fast Forward and Rewind Modes –

Adjust by bending the specified portion of the brake ass'y to obtain the specified clearances between brake and reel spindle assemblies.



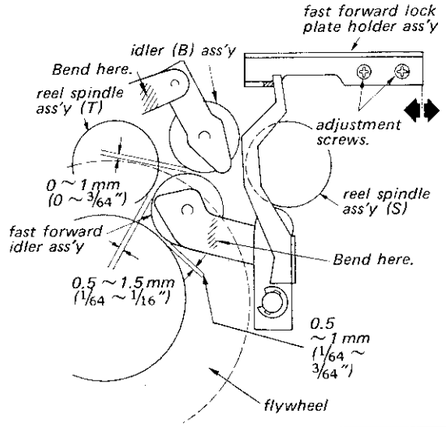
Fast Forward Idler (B) Ass'y Adjustment

– STOP mode –

Loosen two adjustment screws and adjust the position of the fast forward lock plate holder ass'y to obtain the specified clearances.

Idler Height Adjustment

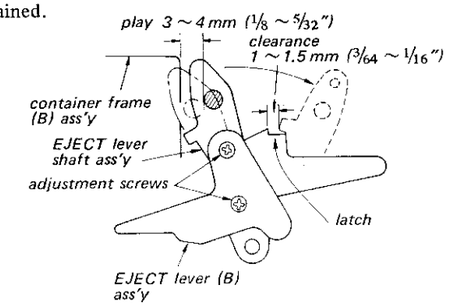
Adjust by bending the specified portions of idler assemblies to make their heights flush with reel spindle assemblies.

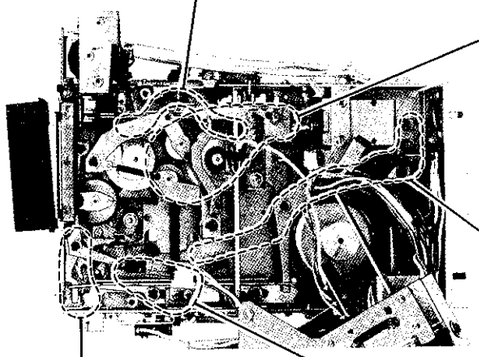


EJECT Lever Shaft Ass'y Stroke Adjustment

– STOP mode –

Loosen two adjustment screws and adjust the position of EJECT lever shaft ass'y to obtain the specified play when tape cassette is slowly loaded. When the EJECT lever shaft ass'y is fully pushed backwards, the specified clearance should be obtained.



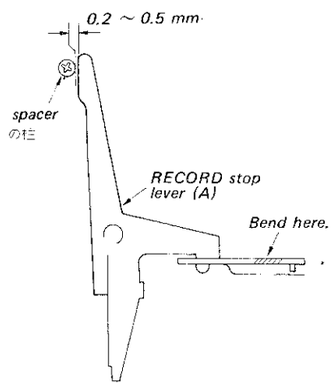


RECORD Stop Lever (A) Adjustment

– STOP mode –

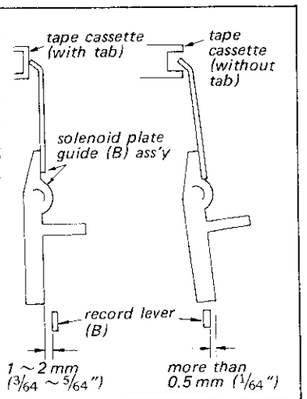
Do not load tape cassette.

Adjust the position of the lever by bending the specified portion to obtain the specified clearance.



Record Lever (B) Position Adjustment

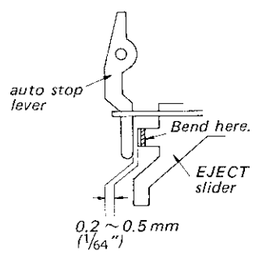
Adjust by bending edge of record lever (B) to obtain the specified clearances using tape cassette with and without tab.



EJECT Slider Adjustment

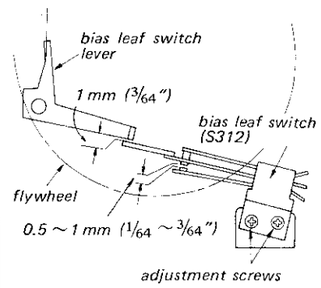
– STOP mode –

Adjust by bending the specified portion of the EJECT slider to obtain the specified clearance between the EJECT slider and auto stop lever.



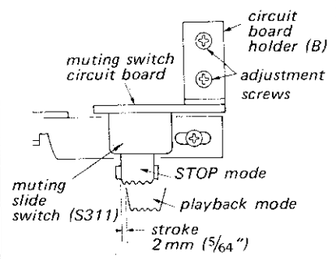
Bias Leaf Switch (S312) Position Adjustment

Loosen two adjustment screws. By pressing STOP button, adjust switch position to obtain the specified clearances.



Muting Slide Switch (S311) Position Adjustment

1. STOP mode:
   Loosen two adjustment screws and move the muting switch circuit board holder (B) to obtain the specified knob position.
2. By pressing forward button, push the pole of function solenoid (SL302) to lock forward button. Switch knob stroke should be 2 mm (5/64").



3-2. ELECTRICAL ADJUSTMENTS AND MEASUREMENTS

PRECAUTION

1. Clean the following parts with an alcohol moistened swab:
   record playback head
   erase head
   capstan
   pinch roller
   rubber belt
   idlers
2. Demagnetize record/playback head with a head demagnetizer. (Don't use magnetized screwdriver for adjustments).
3. After the adjustments, apply locking compound to the parts adjusted.
4. Adjustments should be performed in the order arranged in this service manual.
5. Adjustments and measurements should be performed each channel with rated voltage unless otherwise specified.
6. The adjustments and measurements require the test equipment as follows:
   * VOM (20 kΩ/V)
   * VTVM
   * audio oscillator (af osc)
   * attenuator (600 Ω)
   * digital frequency counter
   * fixed resistors
     300 Ω (¼ W)
     600 Ω (¼ W)
     100 kΩ (¼ W)
   * blank tapes SONY CS-10 (HF)
   * speed checker SONY LFM-30
   * test tapes SONY P-4-A81S
     (6.3 kHz, −10 dB)
     P-4-L81
     (333 Hz, 0 dB)
     SPC-4
     (1 kHz, 0 dB)
7. Rated input and output levels are as follows:

rated input level (1 kHz)

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

rated output level (1 kHz)

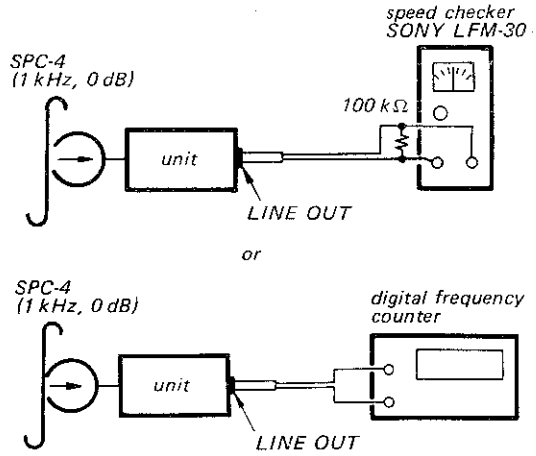
	LINE OUT	HEADPHONE
load resistor	100 kΩ	8 Ω
level	0 dB (0.775 V)	−28 dB (31 mV)

8. Controls and switches are to be set to the positions as follows unless otherwise specified.
   LINE OUT control: maximum
   TAPE SELECT switch: NORMAL
   DOLBY switch: OFF
   LIMITER switch: OFF

1. Tape Speed Adjustment

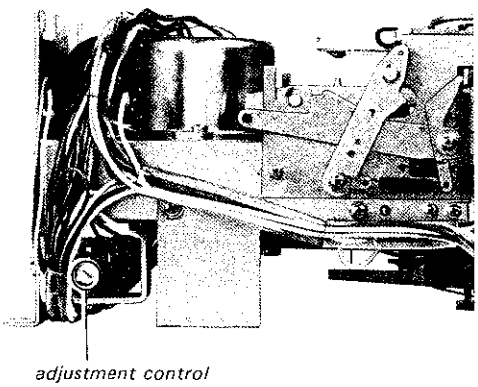
Procedure

Mode: playback



Adjust the adjustment control to obtain 0% checker indication or 1,000 Hz counter indication.

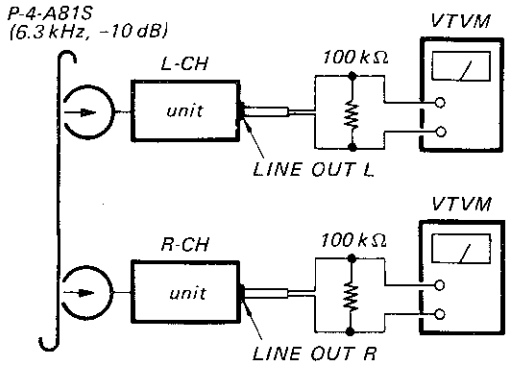
Adjustment Location:



2. Record/playback Head Azimuth Adjustment

Procedure

1. Mode: playback



Carefully adjust the adjustment screw to obtain maximum VTVM readings for both L and R channels. If the readings don't coincide, set the screw midway between the two screw-positions. After adjustment, lock the screw.

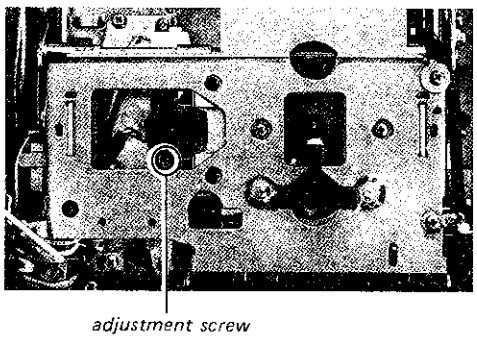
2. Mode: STOP and playback repeatedly

Assure that azimuth is not changed observing VTVM's.

Specification:

Normal azimuth should be obtained within 0.5 dB of maximum readings.

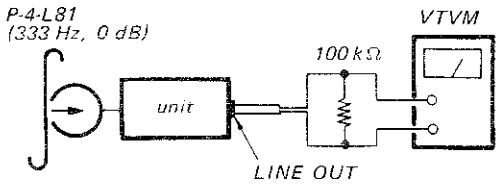
Adjustment Location



3. Playback Level Adjustment

Procedure:

Mode: playback

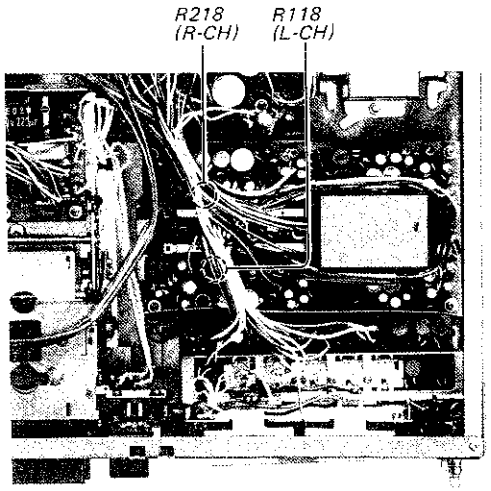


Adjust R118 (L-CH) and R218 (R-CH) to obtain 0 dB (0.775 V) VTVM reading.
By repeating playback and STOP modes, assure that the LINE OUT level does not change.

Specification:

−1 dB ~ +1 dB (0.69 ~ 0.85 V)

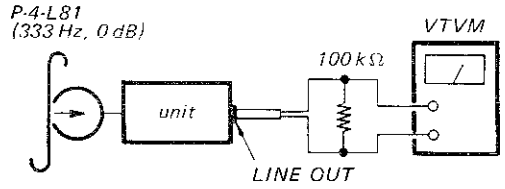
Adjustment Location:



4. Playback Equalizer Adjustment

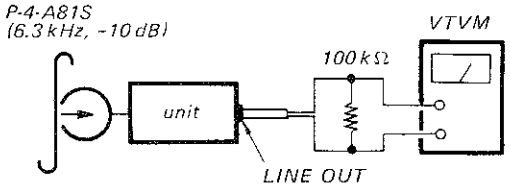
Procedure:

1. Mode: playback



LINE OUT level: −0.5 dB ~ +0.5 dB
(0.74 ~ 0.82 V)

2. TAPE SELECT switch: CrO_2 or Fe-Cr



Adjust R117 (L-CH) and R217 (R-CH) to obtain the level 16.3 dB ± 1 dB lower than that obtained in 1) above.

Specification:

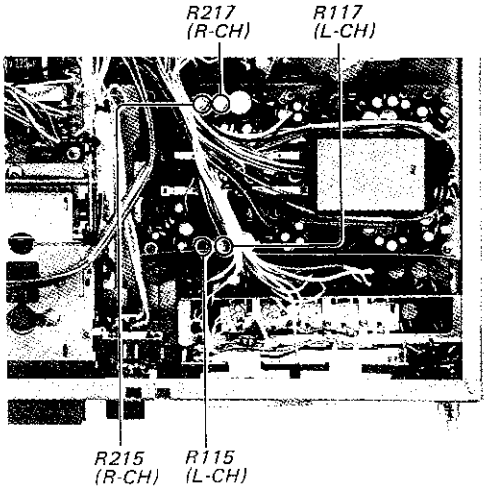
15.3 ~ 17.3 dB lower

Set the TAPE SELECT switch back to NORMAL position and adjust R115 (L-CH) and R215 (R-CH) to obtain the level 11.5 dB lower than that obtained in 1) above.

Specification:

10.5 ~ 12.5 dB lower

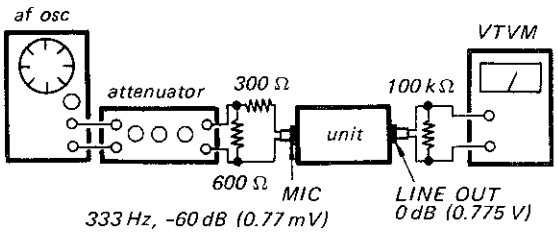
Adjustment Location:



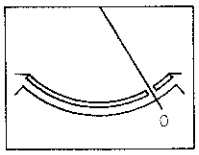
5. VU Meter Calibration

Procedure:

Mode: record
MIC control: 0 dB (0.775 V) LINE OUT position.



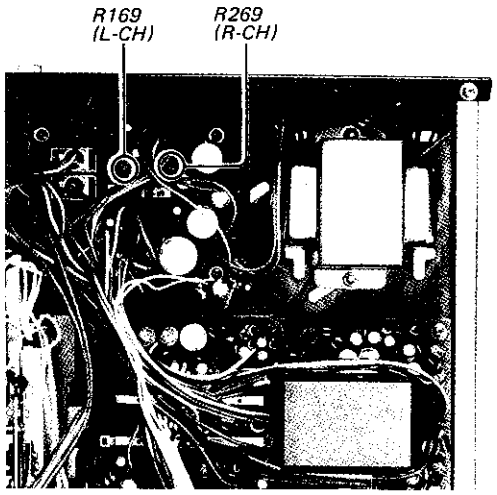
Adjust R169 (L-CH) and R269 (R-CH) so that VU meter needles place 0 VU.



Specification:

When the input level is adjusted for 0 VU indications, LINE OUT level should be −1 dB ~ +1 dB (0.69~0.85 V).

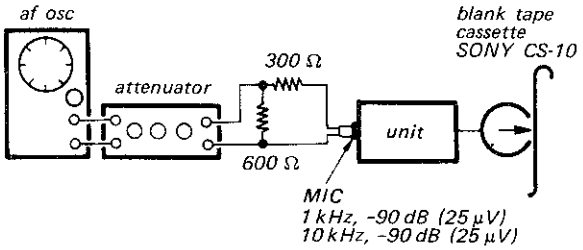
Adjustment Location:



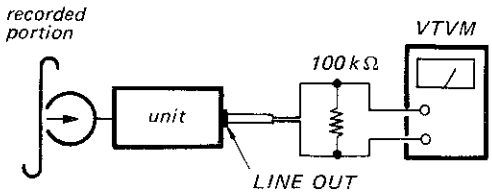
6. Record Bias Adjustment

Procedure:

1. Mode: record
   MIC control: at the position as set in VU Meter Calibration



2. Mode: playback



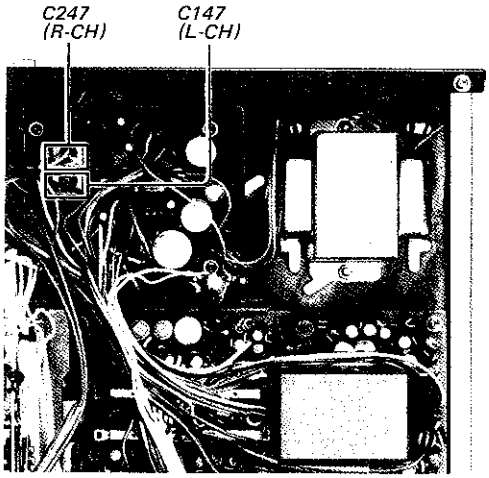
Adjust C147 (L-CH) and C247 (R-CH) to obtain the same LINE OUT level for 1 kHz and 10 kHz signals.

3. Repeat steps 1. and 2.

Specification:

10 kHz signal output level diference from 1 kHz signal should be −0.5 dB ~ +0.5 dB.

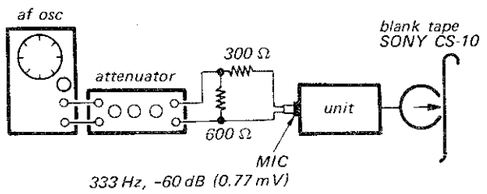
Adjustment Location:



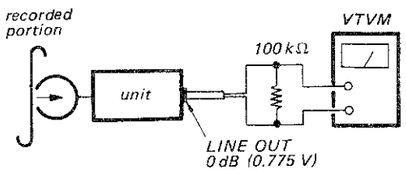
7. Record Level Adjustment

Procedure:

1. Mode: record
   MIC control: 0 dB (0.775 V) LINE OUT position.



2. Mode: playback

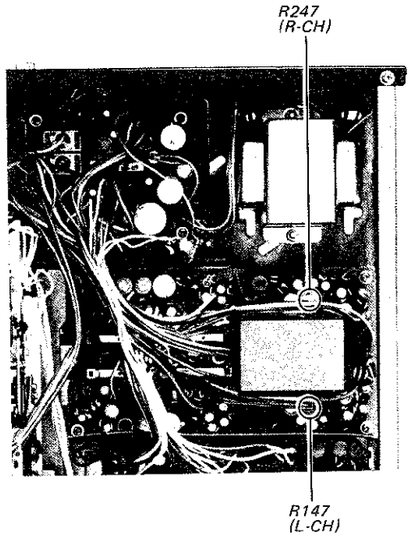


   Adjust R147 (L-CH) and R247 (R-CH) to obtain LINE OUT level of 0 dB (0.775 V).

Specification:

-0.5 dB ~ +0.5 dB (0.74 ~ 0.82 V)

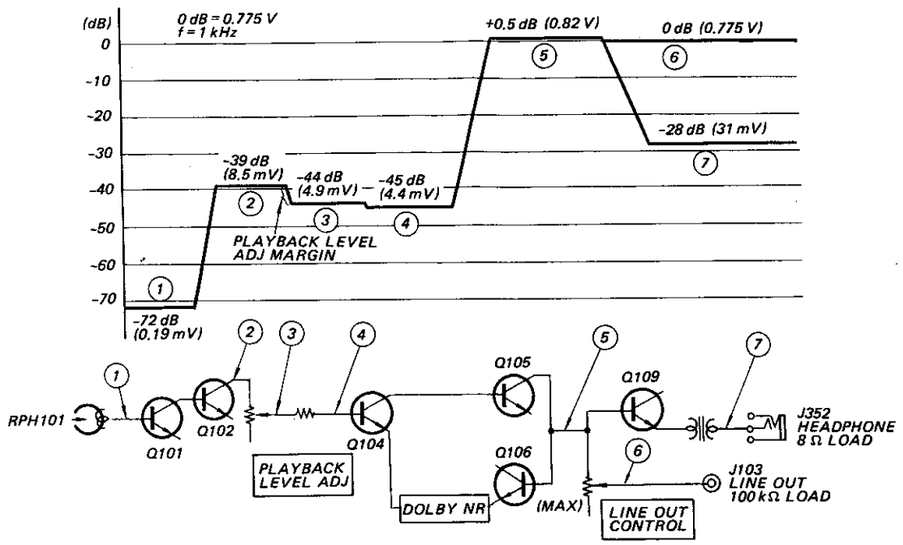
Adjustment Location:



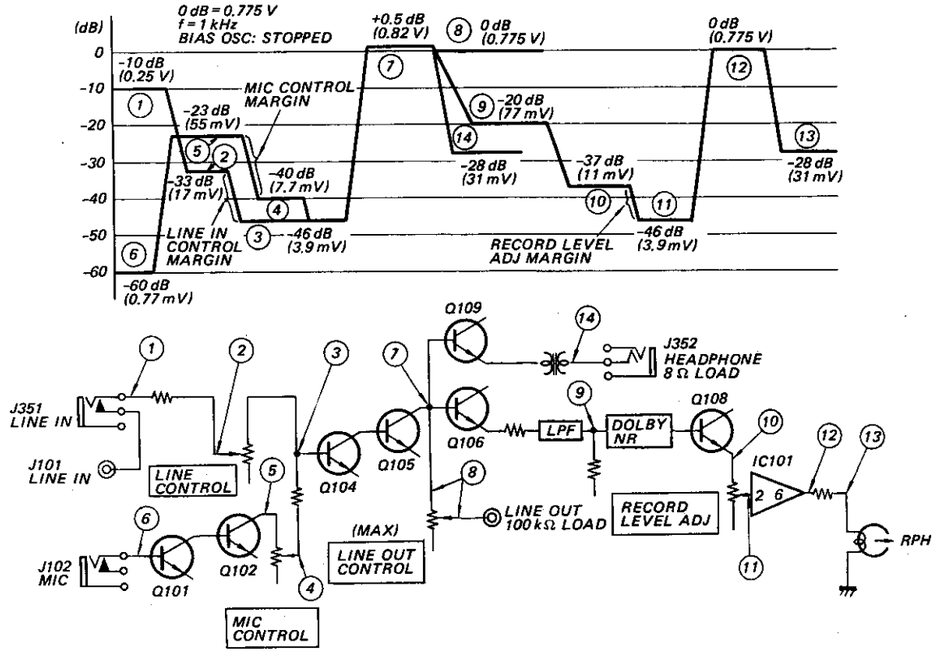
SECTION 4
DIAGRAMS

4-1. LEVEL DIAGRAMS

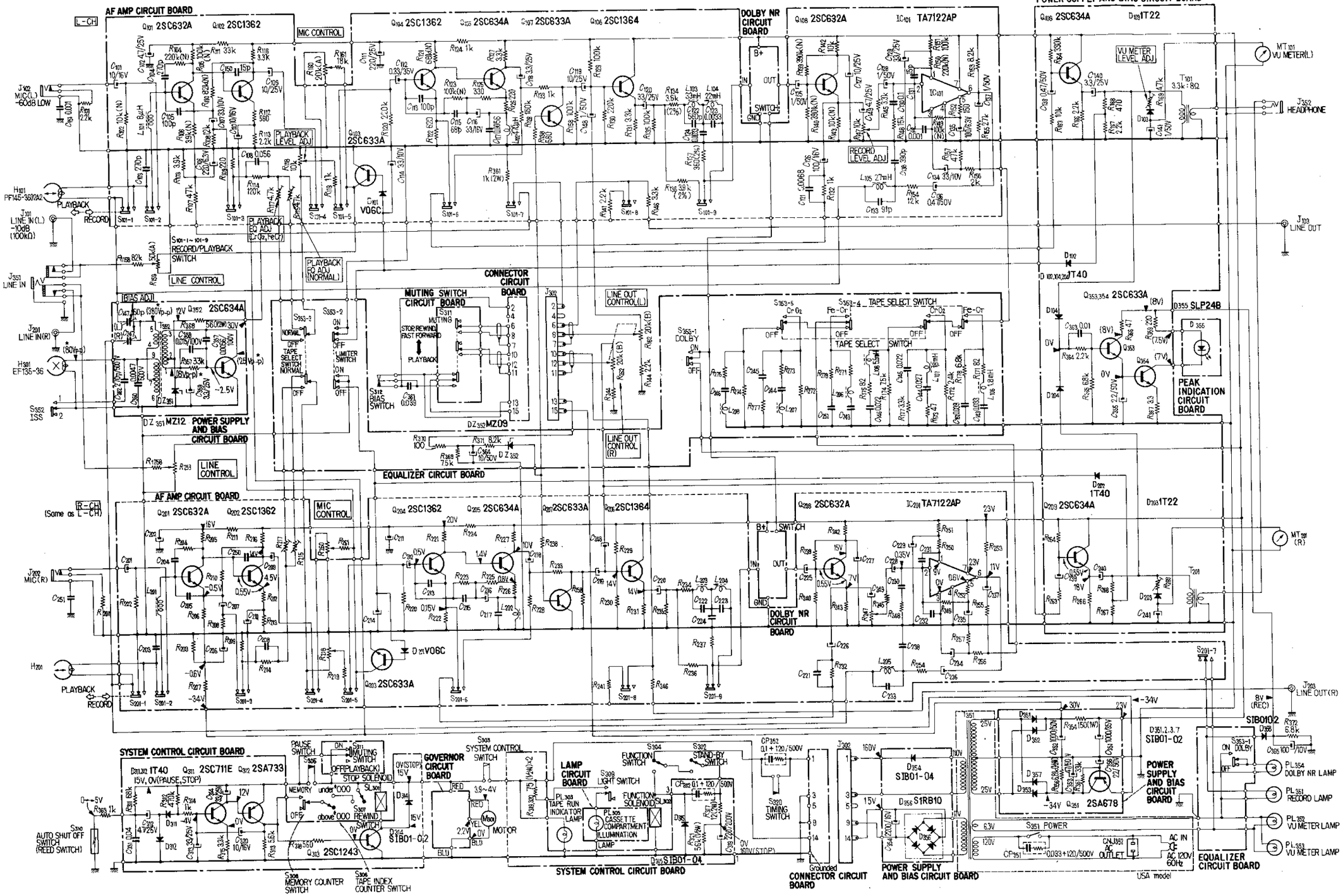
PLAYBACK

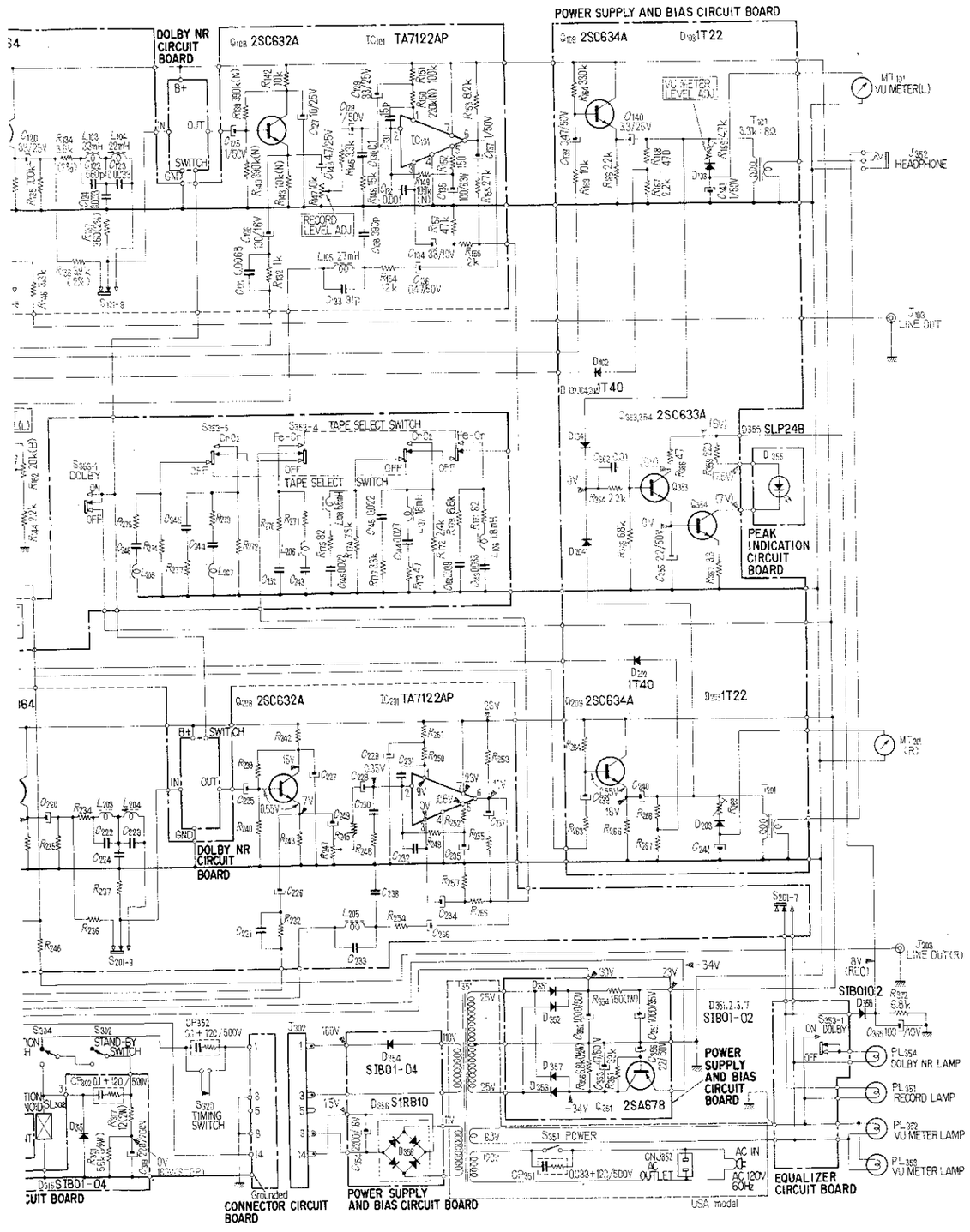


RECORD



4-2. SCHEMATIC DIAGRAM (1)





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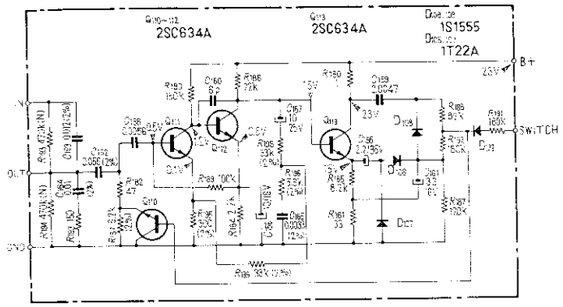
4-3. SCHEMATIC DIAGRAM (2)

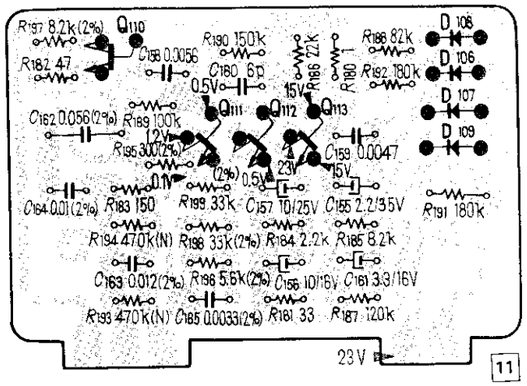
— DOLBY Circuit —



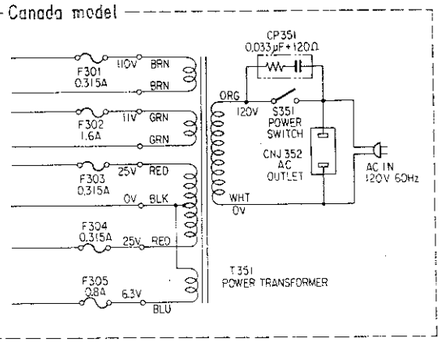
4-4. MOUNTING DIAGRAM (1)

— DOLBY Circuit —

— Conductor Side —

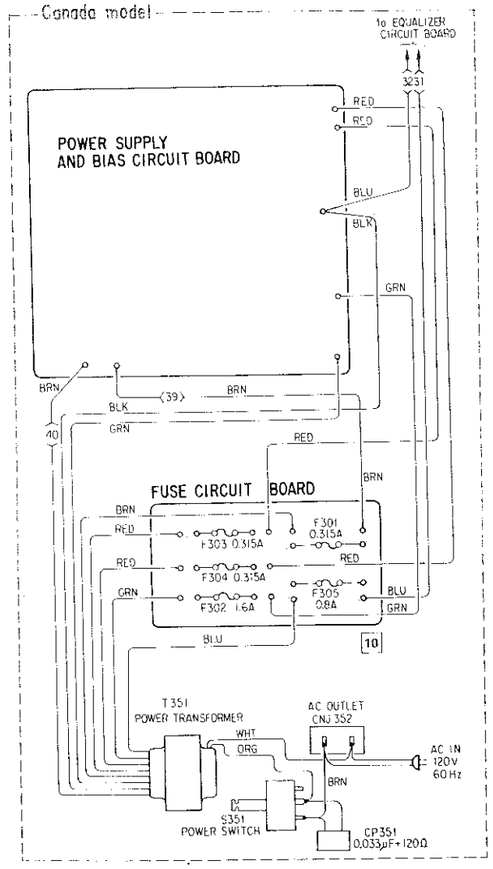


Canada model



4-5. MOUNTING DIAGRAM (2)

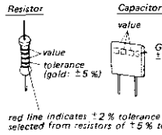
— Conductor Side —



Note:

- All resistors and capacitors are in Ω and μF respectively, unless otherwise specified. P=pμ
- Letter in ( ) suffixed to variable resistor value indicates characteristics.
- ⏚ : Chassis ground
- Components for R-CH have the same values as for L-CH
- (N) : Low noise resistor
- Voltage values shown are measured with a voltmeter (20kΩ/V DC). Variations may be noted due to normal production tolerances.
  - no mark : playback mode voltage
  - ( ) : record or PAUSE mode voltage
  - ★ : AC voltage values are measured with a VTVM in record mode.
- GOVERNOR CIRCUIT BOARD is included in MOTOR M301.
- ※ 000: indication of tape index counter.
- When replacing resistors and capacitors needing ±2% tolerance, use only those with red line or G mark, since DOLBY system requires precise circuit operation.

2% Tolerance Identification



- Switch mode:

Ref. No.	Switch	Mode
S101,201	record/playback	playback
S302	stand-by	OFF
S303	system control	OFF
S304	function	OFF
S305	PAUSE	ON
S306	tape index counter	OFF
S307	rewind	OFF
S308	MEMORY COUNTER	OFF
S309	LIGHT	OFF
S310	auto shut-off	–
S311	muting	OFF
S312	bias	–
S320	timing	ON
S351	POWER	OFF
S352	ISS	2
S353-1	DOLBY NR	OFF
S353-2	LIMITER	OFF
S353-3	TAPE SELECT (NORMAL)	ON
S353-4	TAPE SELECT (Fe-Cr)	OFF
S353-5	TAPE SELECT (CrO2)	OFF

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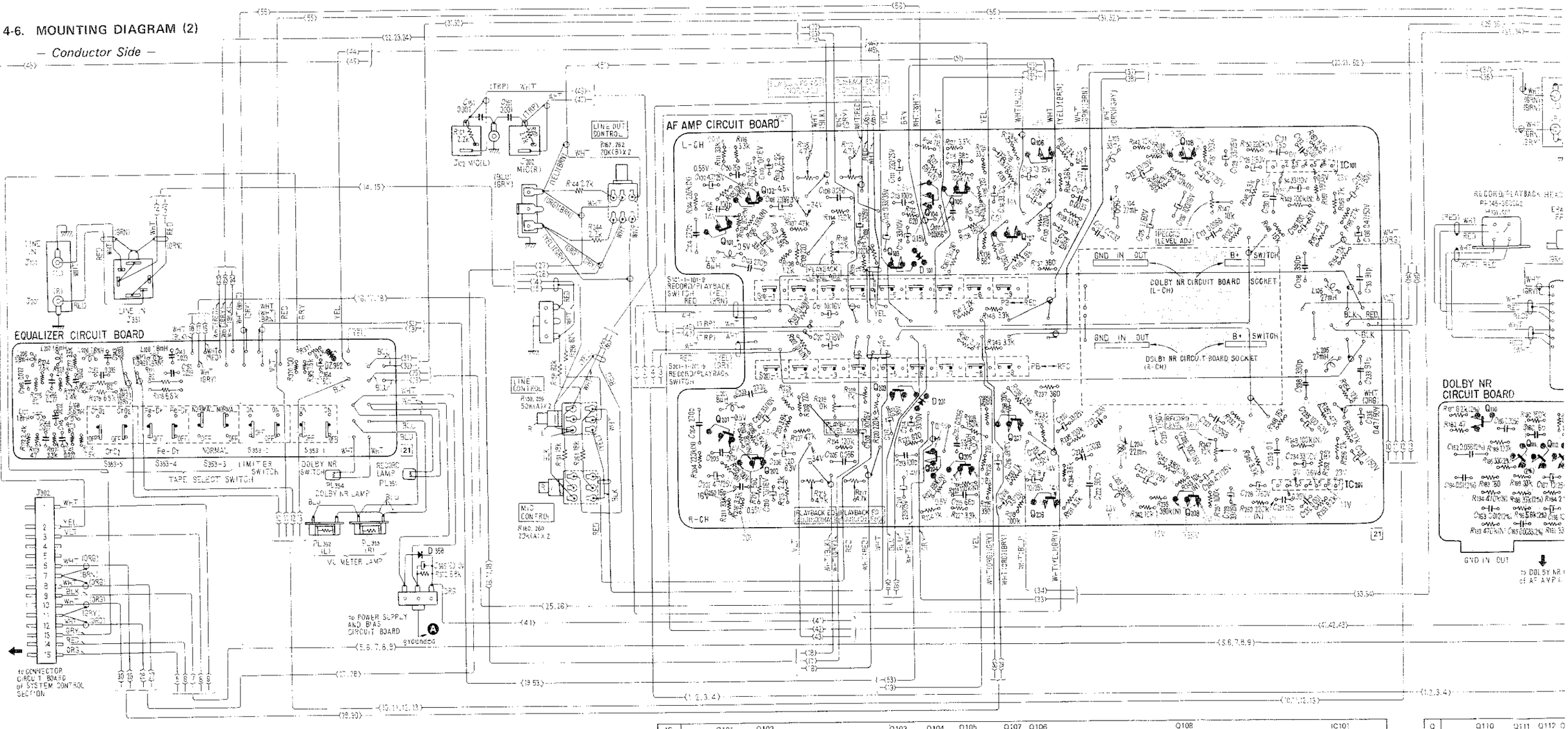
4-6. MOUNTING DIAGRAM (2)

— Conductor Side —

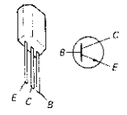


D	DZ352	D353

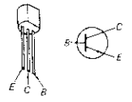
IC	Q101	Q102	Q103	Q104	Q105	Q107	Q106	Q108	IC101
Q	Q201	Q202	Q203	Q204	Q205	Q207	Q206	Q208	IC201
D	D101 D201								
ADJ	R115 R215	R118 R218	R117 R217	R147 R247					

Q	Q110	Q111	Q112	Q
D				

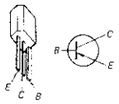
Q101 (201), 108 (208):
2SC632A
Q103 (203), 107 (207), 353 (354):
2SC633A
Q105 (205), 109 (209), 110~113, 352:
2SC634A



Q102 (202), 104 (204):
2SC1362
Q106 (206): 2SC1364



Q351: 2SA678

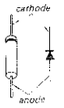


iC101, 201: TA7122AP

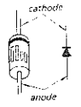
D101, 201: VO6C

D102, 104, 202, 204: 1T40
108, 109: 1S1555

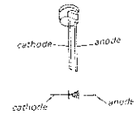
D103, 203: 1T22
106, 107: 1T22A



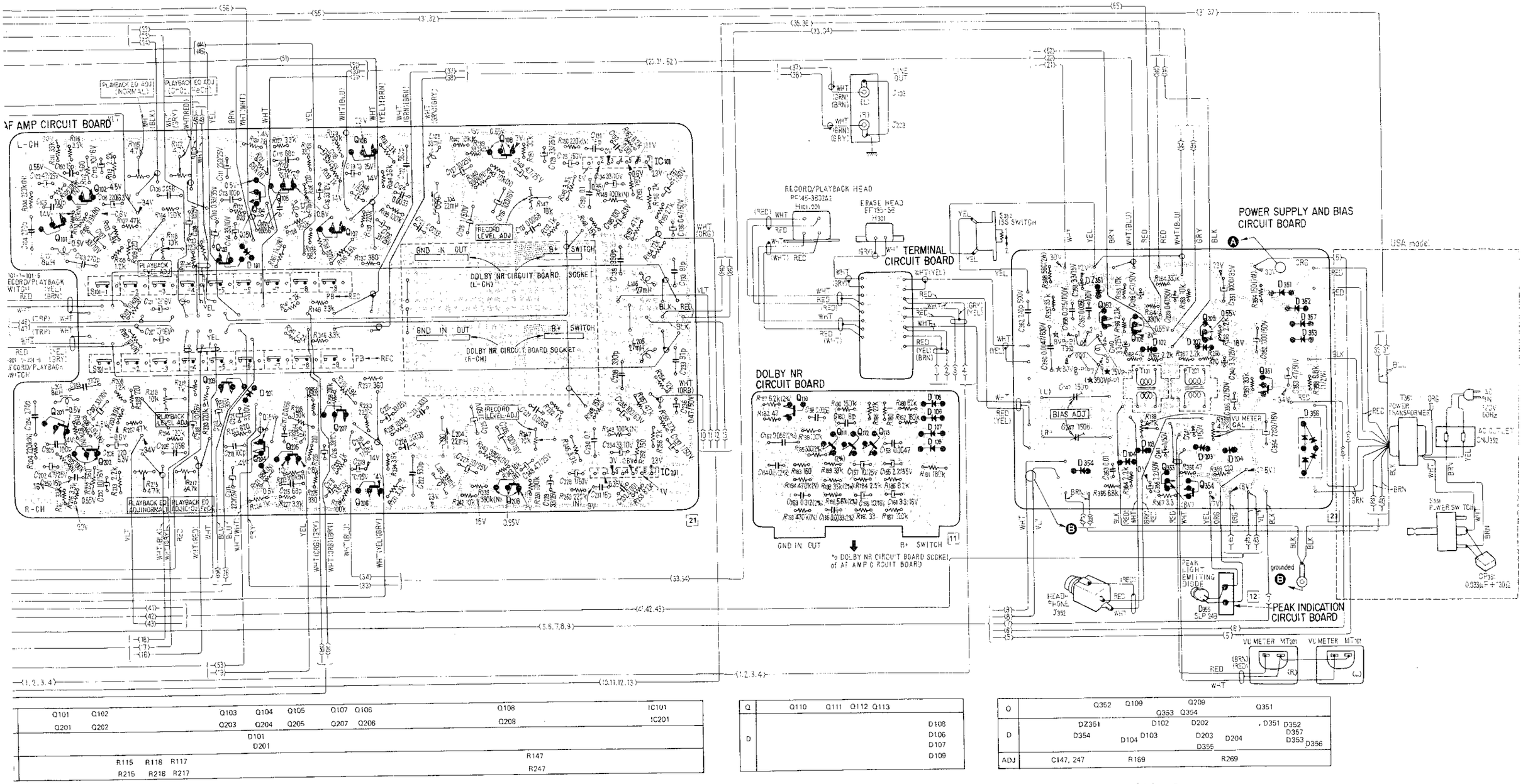
D351, 352, 353, 357 358: SIB01-02
D354: SIB01-04



D355: SLP24B



TC-203SD

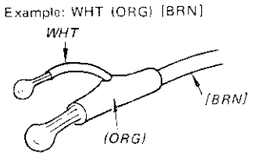


Q	Q101	Q102	Q103	Q104	Q105	Q107	Q106	Q108	IC101
	Q201	Q202	Q203	Q204	Q205	Q207	Q206	Q208	IC201
D	D101								
	D201								
ADJ	R115	R118	R117					R147	
	R215	R218	R217					R247	

Q	Q110	Q111	Q112	Q113
D	D108			
	D106			
	D107			
	D109			

Q		Q352	Q109	Q209		Q351						
			Q353	Q354								
D	DZ351		D102	D202		D351	D352					
	D354		D104	D103	D203	D204		D357				
					D355			D353	D356			
ADJ	C147, 247		R169		R269							

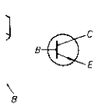
Note: • : B+ pattern
• Color indication for the shielded wires.
Example: WHT (ORG) [BRN]



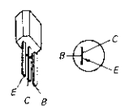
• TRP: transparent

02), 104 (204):

06): 2SC1364



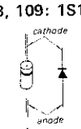
Q351: 2SA678



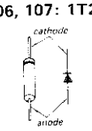
IC101, 201: TA7122AP

D101, 201: VO6C

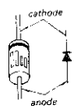
D102, 104, 202, 204: 1T40
108, 109: 1S1555



D103, 203: 1T22
106, 107: 1T22A

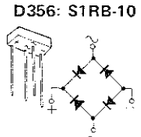


D351, 352, 353, 357
358: SIB01-02
D354: SIB01-04

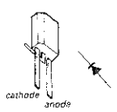


D355: SLP24B

D356: S1RB-10

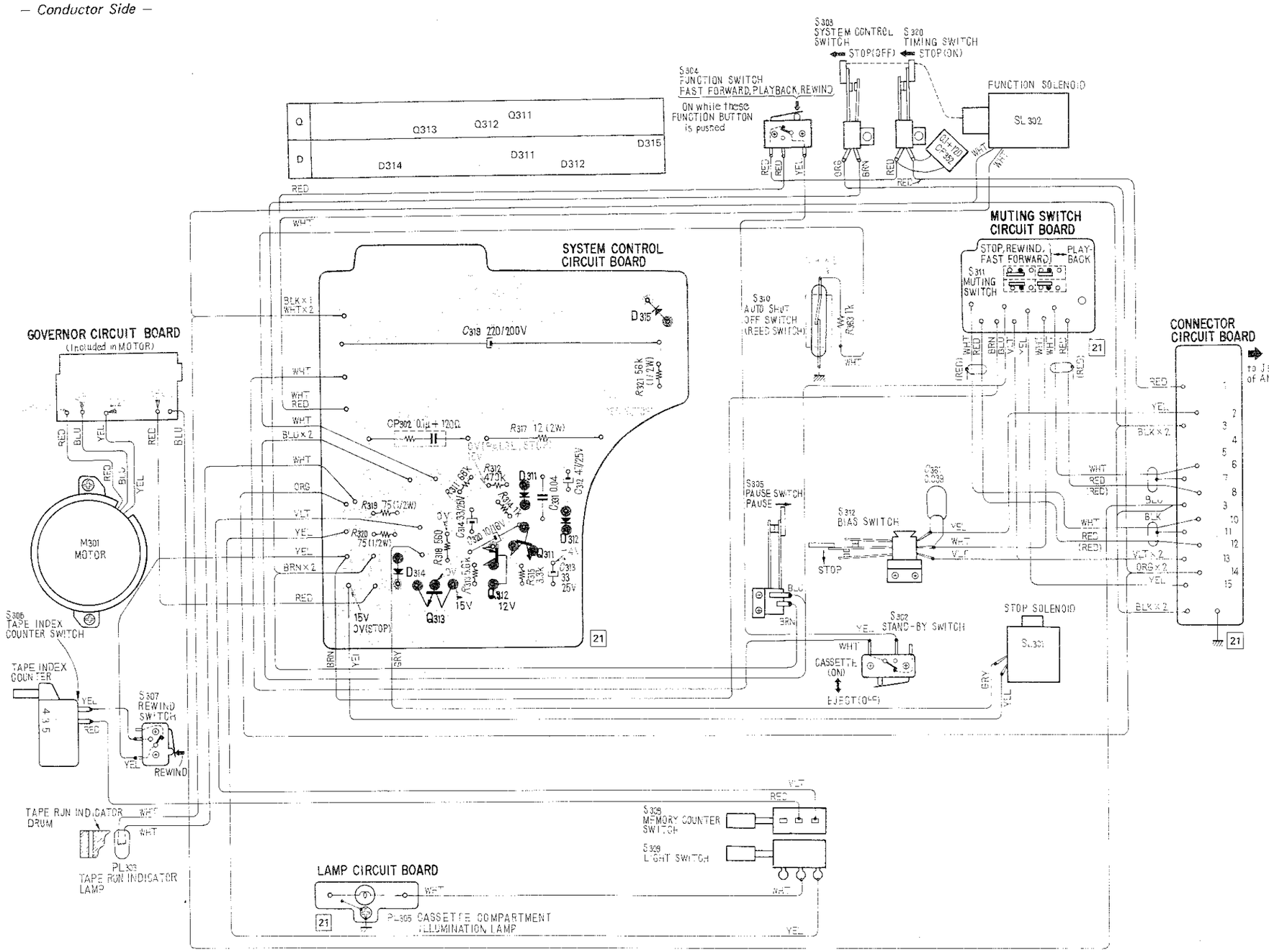


DZ351: MZ12

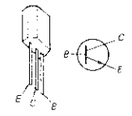


4-7. MOUNTING DIAGRAM (4)

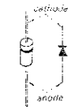
– Conductor Side –



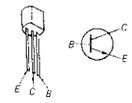
Q110~113: 2SC634A



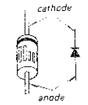
D311, 312: 1T40



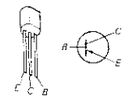
Q311: 2SC711E



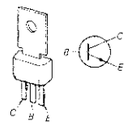
D314: SIB01-02
D315: SIB01-04



Q312: 2SA733



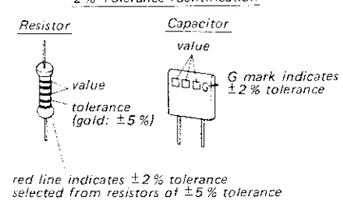
Q313: 2SC1243



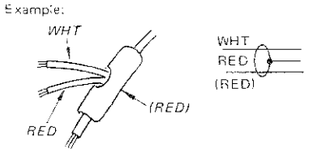
Note:

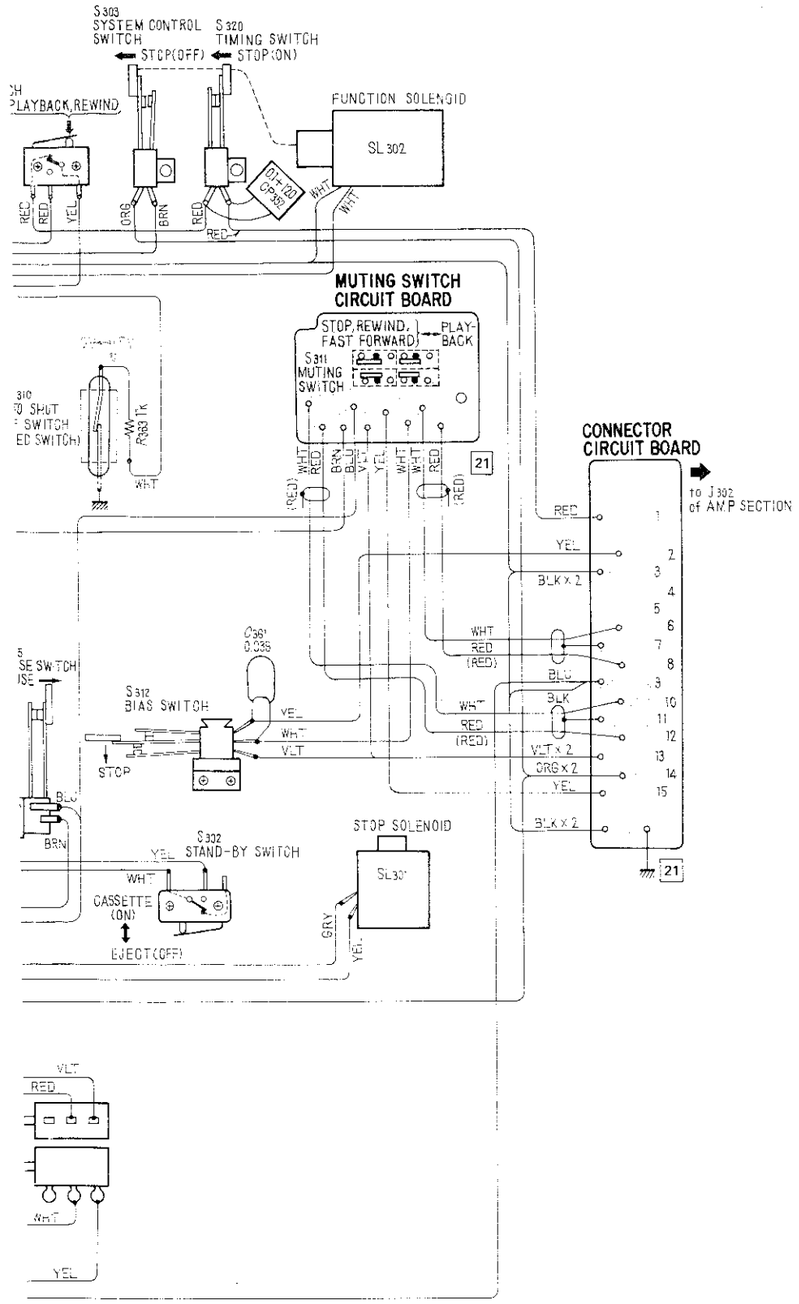
- All resistors and capacitors are in Ω and μF respectively, unless otherwise specified. p = μμ
- Letter in ( ) suffixed to variable resistor value indicates characteristics.
- ⏚ : Chassis ground
- Components for R-CH have the same values as for L-CH.
- Voltage values shown are measured with a voltmeter (20 kΩ/V DC). Variations may be noted due to normal production tolerances.
  - no mark : playback mode voltage
  - ( ) : record or PAUSE
- When replacing resistors and capacitors needing ±2% tolerance, use only those with red line or G mark, since DOLBY system requires precise circuit operation.

2% Tolerance Identification

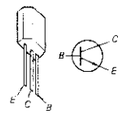


- ▭ : B+ pattern
- Shielded wires.
  Example:

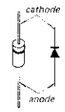




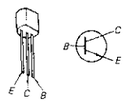
Q110~113: 2SC634A



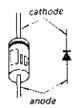
D311, 312: 1T40



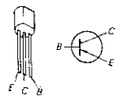
Q311: 2SC711E



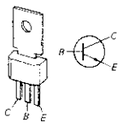
D314: SIB01-02
D315: SIB01-04



Q312: 2SA733



Q313: 2SC1243



Note:

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- Letter in ( ) suffixed to variable resistor value indicates characteristics.
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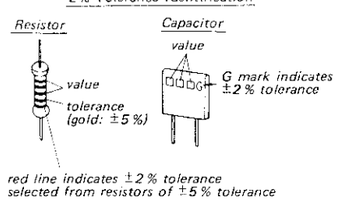
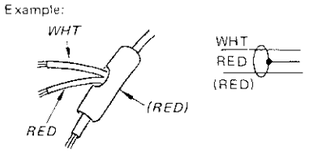
2% Tolerance Identification

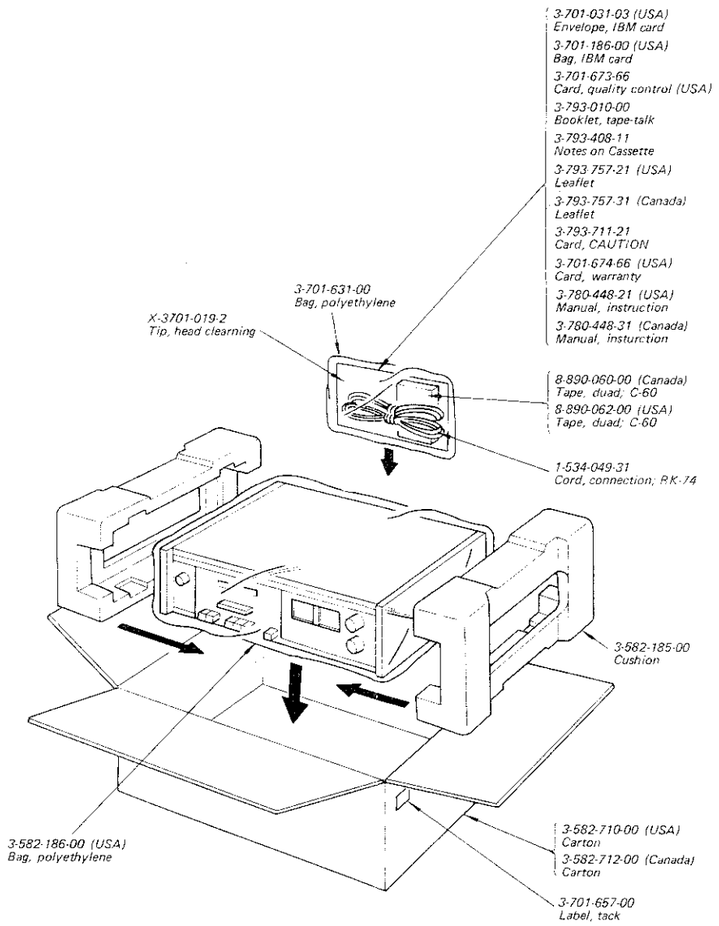


- : B+ pattern
- Shielded wires.
  Example:



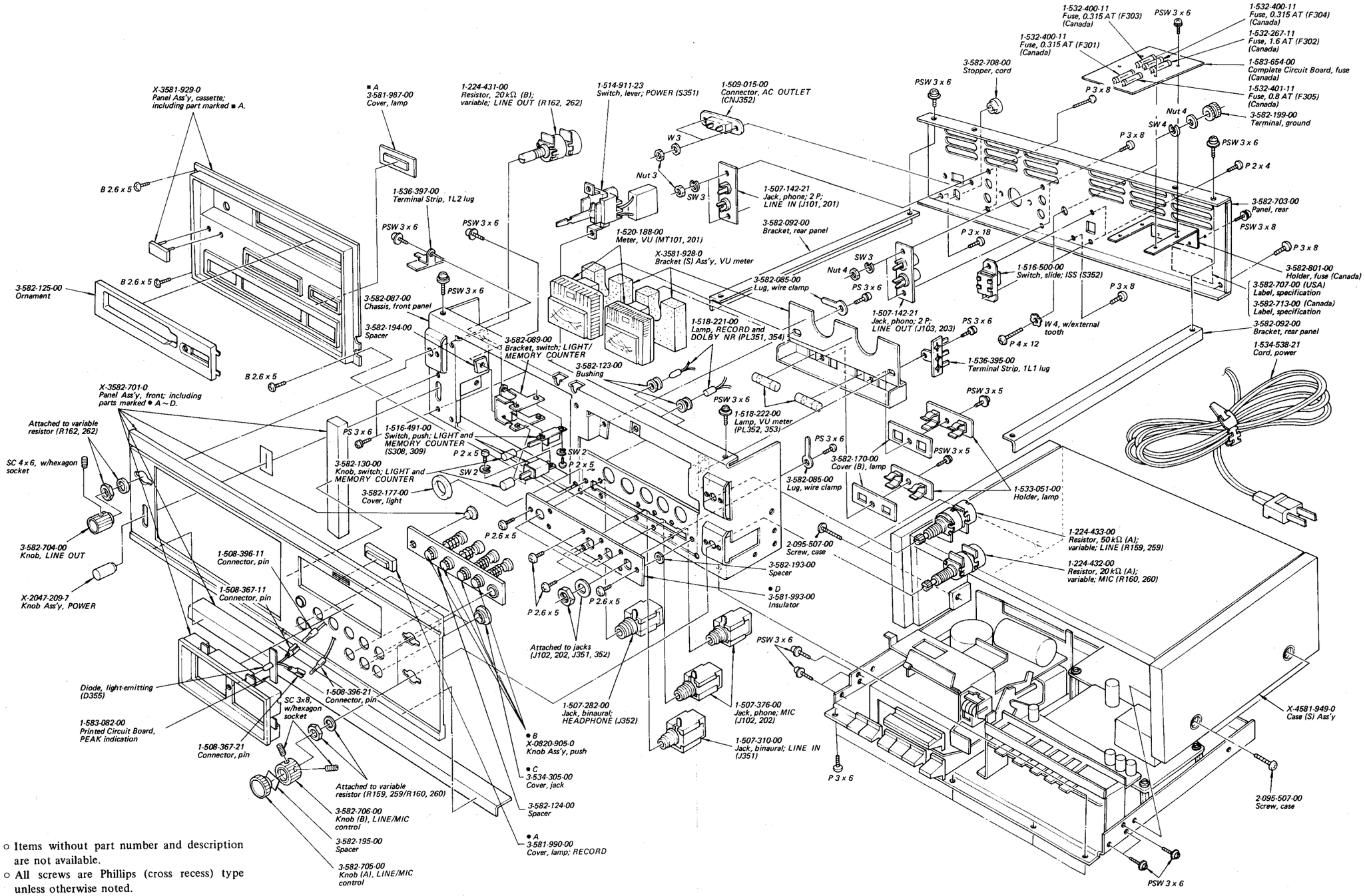
SECTION 5
PACKING AND EXPLODED VIEWS

5-1. PACKING



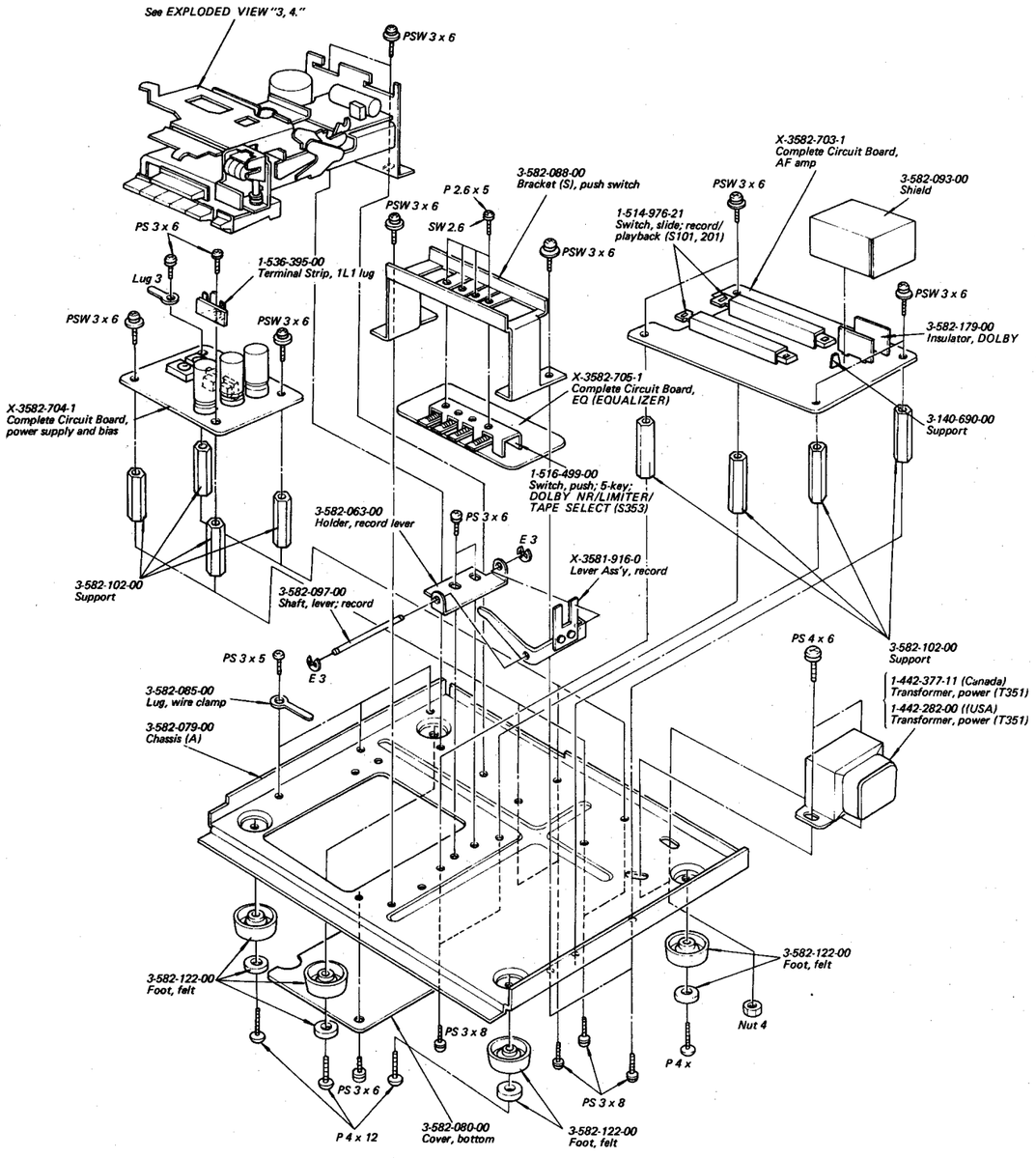
Note: ☼ Items without part number and description are not available.

5-2. EXPLODED VIEW (1)



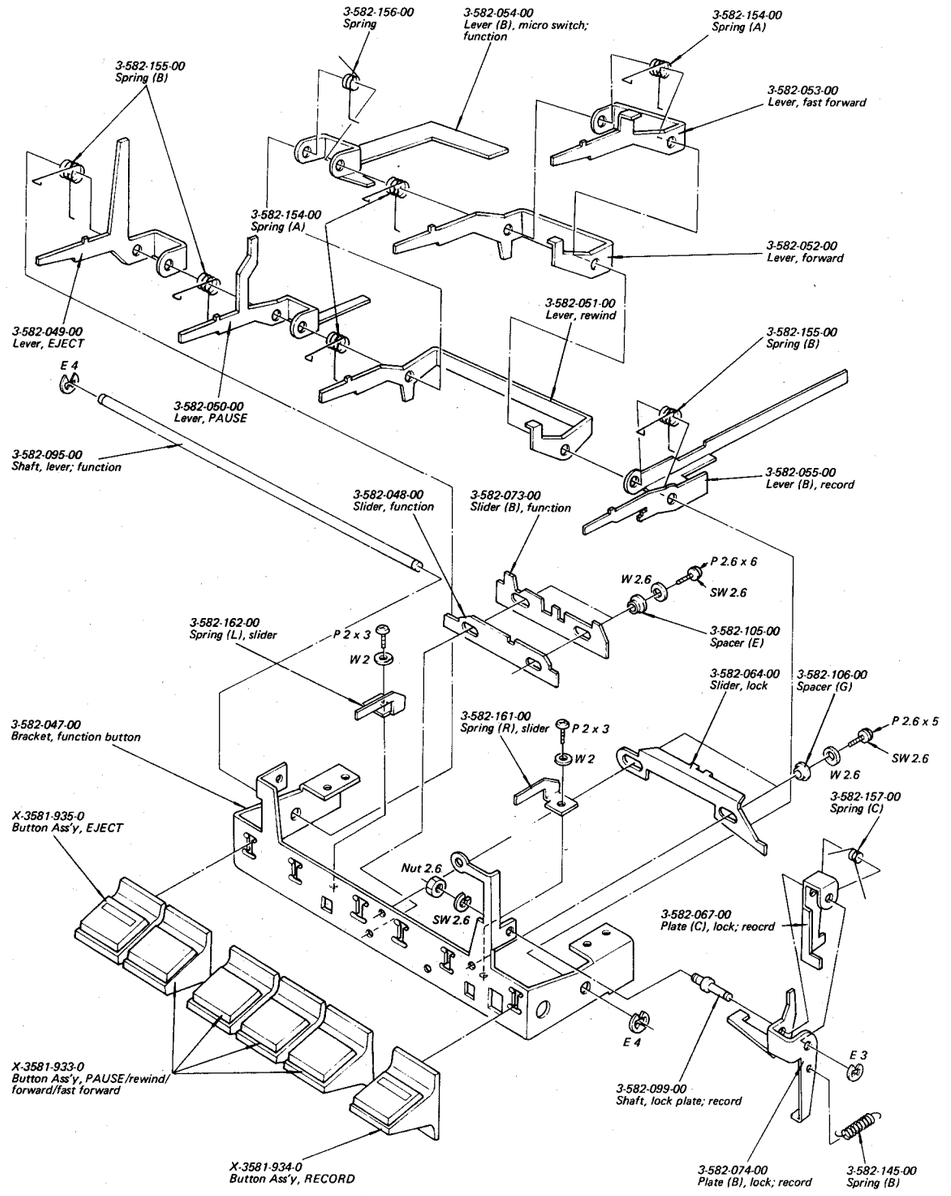
Note: ○ Items without part number and description are not available.
○ All screws are Phillips (cross recess) type unless otherwise noted.
(–) = slotted head

5-3. EXPLODED VIEW (2)



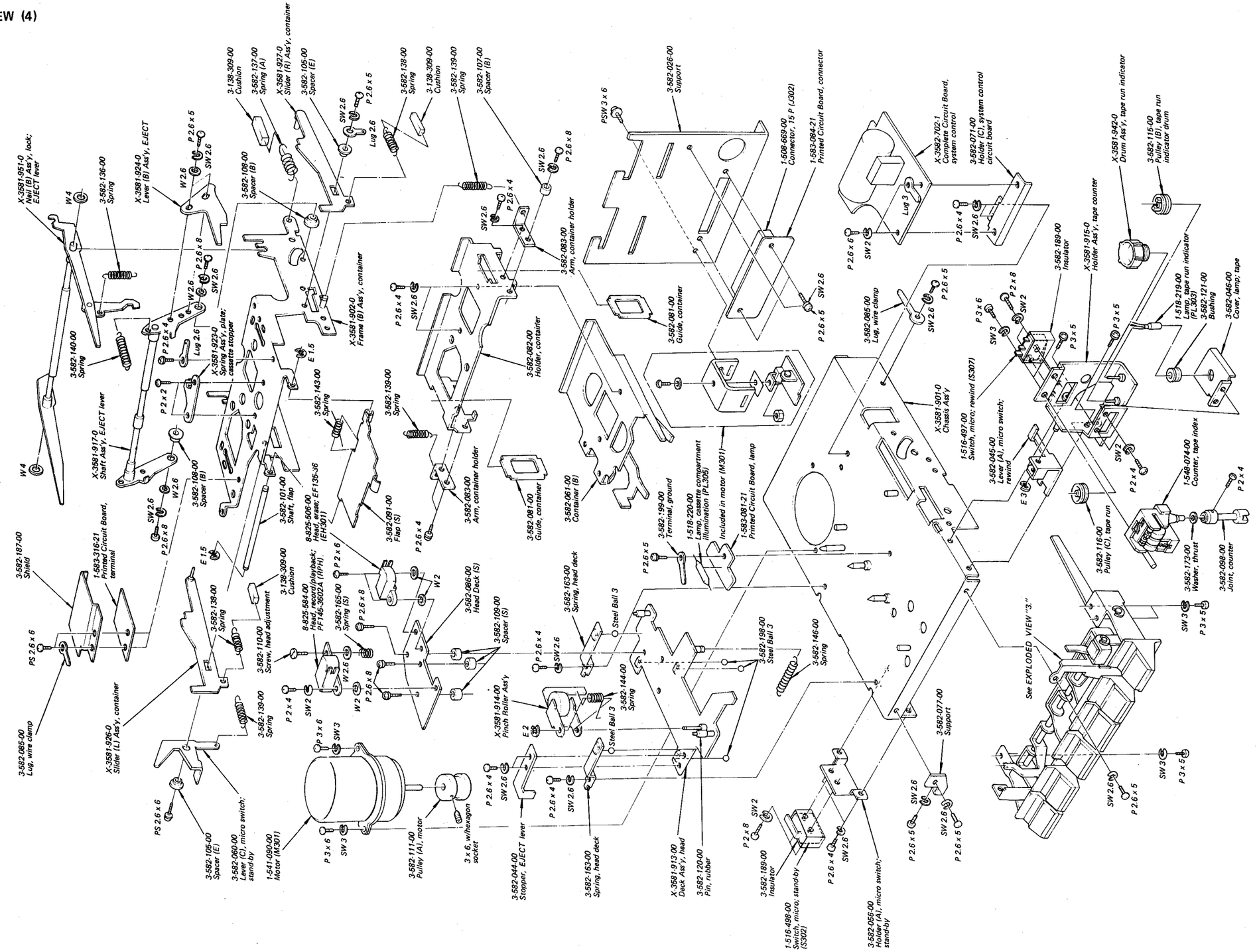
Note: ○ Items without part number and description are not available.
○ All screws are Phillips (cross recess) type unless otherwise noted.
(–) = slotted head

5-4. EXPLODED VIEW (3)



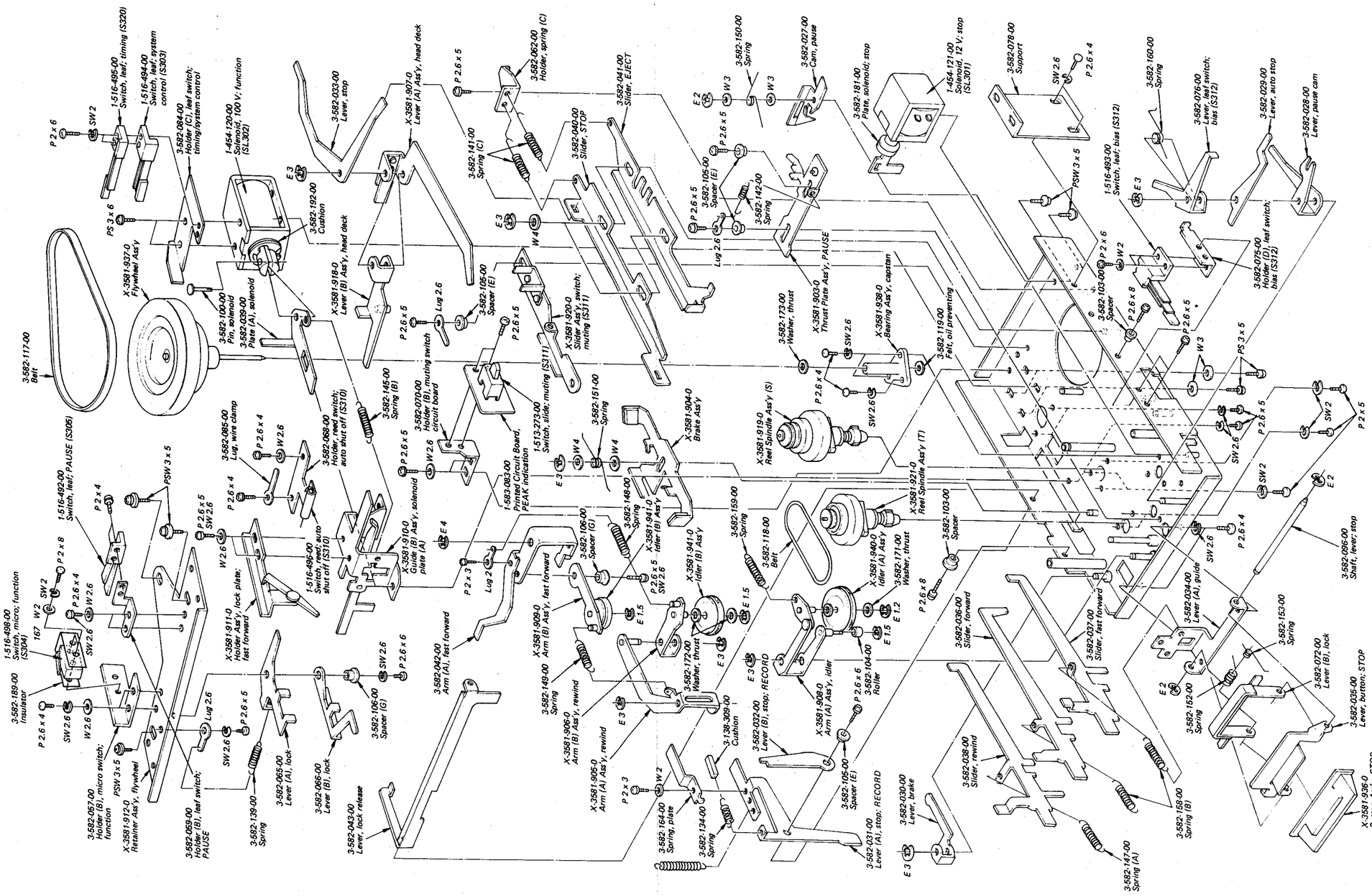
Note: ○ Items without part number and description are not available.
○ All screws are Phillips (cross recess) type unless otherwise noted.
(–) = slotted head

5-5. EXPLODED VIEW (4)



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

5-6. EXPLODED VIEW (5)



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

SECTION 6
ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
	COMPLETE CIRCUIT BOARDS	
	X-3582-702-1	System Control
	X-3582-703-1	AF amp, including DOLBY NR circuit boards
	X-3582-704-1	Power Supply and Bias
	X-3582-705-1	EQ (EQUALIZER)
	PRINTED CIRCUIT BOARDS	
	1-583-081-00	Lamp
	1-583-082-00	PEAK indication
	1-583-083-00	Muting Switch
	1-583-084-00	Connector
	1-583-316-00	Terminal
	1-583-654-00	Fuse (Canada Model)
	SEMICONDUCTORS	
Q101, 201	Transistor	2SC632A
Q102, 202	Transistor	2SC1362
Q103, 203	Transistor	2SC633A
Q104, 204	Transistor	2SC1362
Q105, 205	Transistor	2SC634A
Q106, 206	Transistor	2SC1364
Q107, 207	Transistor	2SC633A
Q108, 208	Transistor	2SC632A
Q109, 209	Transistor	2SC634A
Q110, 210	Transistor	2SC634A
Q111~113, Q211~213	Transistor	2SC634A
Q311	Transistor	2SC711E
Q312	Transistor	2SA733
Q313	Transistor	2SC1243
Q351	Transistor	2SA678
Q352	Transistor	2SC634A
Q353, 354	Transistor	2SC633A
IC101, 201	Integrated Circuit,	TA7122AP
D101, 201	Diode	VO-6C
D102, 202	Diode	1T-40
D103, 203	Diode	1T-22
D104, 204	Diode	1T-40
D311, 312	Diode	1T-40
D314	Diode	SIB01-02
D315	Diode	SIB01-04
D351~353	Diode	SIB01-02
D354	Diode	SIB01-04
D355	Diode	SLP-24B
D356	Diode	SIRB-10
D357, 358	Diode	SIB01-02
DZ351	Diode	MZ-12
DZ352	Diode	MZ-09

COILS

Ref. No.	Part No.		
L101, 201	1-407-519-00	8 μH	inductor
L102, 202	1-407-177-00	470 μH	microinductor
L103, 203	1-407-510-00	33 mH	microinductor
L104, 204	1-407-240-00	22 mH	variable inductor
L105, 205	1-407-509-00	27 mH	microinductor
L106, 206, L107, 207	1-407-495-00	1.8 mH	microinductor
L108, 208	1-407-501-00	5.6 mH	microinductor

TRANSFORMERS

T101, 201	1-427-299-00	Headphone Output
T351	1-442-282-00	Power (USA)
	1-442-377-00	Power (Canada)
T352	1-433-132-11	Bias Osc

CAPACITORS

All capacitors are in μF unless otherwise indicated. (p = μμ, elect = electrolytic).

C101, 201	1-121-651-11	10	16V	elect
C102, 202	1-121-395-11	4.7	25V	elect
C103, 203, C104, 204	1-107-095-11	270p	50V	silvered mica
C105, 205	1-107-085-11	100p	50V	silvered mica
C106, 206	1-121-419-11	220	6.3V	elect
C107, 207	1-121-402-11	33	10V	elect
C108, 208	1-105-522-12	0.056	50V	mylar
C109, 209	1-121-398-11	10	25V	elect
C110, 210	1-121-651-11	10	16V	elect
C111, 211	1-121-422-11	220	25V	elect
C112, 212	1-131-212-11	0.33	35V	tantalum
C113, 213	1-107-085-11	100p	50V	silvered mica
C114, 214	1-121-402-11	33	10V	elect
C115, 215	1-107-127-11	68p	50V	silvered mica

Ref. No.	Part No.		Description
C116, 216	1-121-402-11	33	10V elect
C117, 217	1-105-510-12	0.0056	50V mylar
C118, 218	1-121-392-11	3.3	25V elect
C119, 219	1-121-398-11	10	25V elect
C120, 220	1-121-404-11	33	25V elect
C121, 221	1-105-511-12	0.0068	50V mylar
C122, 222	1-107-236-11	560p	50V silvered mica
C123, 223 C124, 224	1-105-507-12	0.0033	50V mylar
C125, 225	1-121-391-11	1	50V elect
C126, 226	1-121-415-11	100	16V elect
C127, 227	1-121-398-11	10	25V elect
C128, 228	1-121-391-11	1	50V elect
C129, 229	1-121-404-11	33	25V elect
C130, 230	1-105-525-12	0.1	50V mylar
C131, 231	1-107-111-11	15 p	50V silvered mica
C132, 232	1-105-501-12	0.001	50V mylar
C133, 233	1-107-168-11	91 p	50V silvered mica
C134, 234	1-121-402-11	33	10V elect
C135, 235	1-121-413-11	100	6.3V elect
C136, 236	1-121-726-11	0.47	50V elect
C137, 237	1-121-391-11	1	50V elect
C138, 238	1-107-242-11	390 p	50V silvered mica
C139, 239	1-121-726-11	0.47	50V elect
C140, 240	1-121-392-11	33	25V elect
C141, 241	1-121-391-11	1	50V elect
C143, 243	1-105-519-12	0.033	50V mylar
C144, 244	1-105-518-12	0.027	50V mylar
C145, 245 C146, 246	1-105-517-12	0.022	50V mylar
C147, 247	1-141-165-11	150 p	trimmer
C148, 248	1-121-391-11	1	50V elect
C149, 249	1-121-395-11	4.7	25V elect
C150, 250	1-107-111-11	15 p	50V silvered mica
C151, 251	1-105-661-12	0.001	50V mylar
C152, 252	1-105-520-12	0.039	50V mylar
C155, 255	1-121-726-11	1	50V elect
C156, 256	1-121-651-11	10	16V elect
C157, 257	1-121-398-11	10	25V elect
C158, 258	1-105-510-12	0.0056	50V mylar
C159, 259	1-105-669-12	0.0047	50V mylar
C160, 260	1-107-103-11	6 p	50V silvered mica
C161, 261	1-131-197-61	3.3	16V tantalum
C162, 262	1-129-899-11	0.056	100V ± 2% polystyrene
C163, 263	1-129-896-21	0.012	100V ± 2% polystyrene
C164, 264	1-129-701-21	0.01	100V ± 2% polystyrene
C165, 265	1-129-794-21	0.0033	100V ± 2% polystyrene
C312	1-121-395-11	4.7	25V elect
C313, 314	1-121-404-11	33	25V elect
C319	1-121-412-11	220	200V elect
C331	1-101-006-11	0.04	50V ceramic
C351	1-121-388-11	1000	35V elect
C352	1-127-413-11	1000	50V solid aluminum
C353	1-121-411-11	47	50V elect
C354	1-127-660-11	2200	16V solid aluminum
C355	1-121-450-11	2.2	50V elect
C356	1-121-152-11	22	50V elect
C357	1-105-710-12	0.0056	100V mylar
C358	1-105-715-12	0.015	100V mylar
C359	1-131-197-11	3.3	25V tantalum
C360	1-129-710-11	0.0047	630V polystyrene
C361	1-105-680-12	0.039	50V mylar
C362	1-107-018-11	270 p	500V silvered mica
C363	1-105-673-12	0.01	50V mylar
C364	1-121-738-11	10	50V elect
C365	1-121-414-11	100	10V elect

RESISTORS

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

R101, 201	1-244-681-11	2.2 k	
R102, 202	1-242-697-09	10 k	low noise
R103, 203	1-242-687-11	3.9 k	
R104, 204	1-242-729-09	220 k	low noise
R105, 205	1-242-721-09	100 k	low noise
R106, 206	1-242-687-09	3.9 k	low noise
R107, 207	1-242-713-11	47 k	
R108, 208	1-242-675-11	1.2 k	
R109, 209	1-242-657-11	220	
R110, 210	1-242-719-09	82 k	low noise
R111, 211	1-242-709-11	33 k	
R112, 212	1-242-667-11	560	
R113, 213	1-242-681-11	2.2 k	
R114, 214	1-242-723-11	120 k	
R115, 215	1-221-978-00	4.7 k	adjustable
R116, 216	1-242-685-11	3.3 k	
R117, 217	1-221-978-00	4.7 k	adjustable
R118, 218	1-222-701-00	10 k	
R119, 219	1-242-673-11	1 k	

Ref. No.	Part No.		Description
R120, 220	1-242-729-11	220 k	
R121, 221	1-242-717-09	68 k	low noise
R122, 222	1-242-668-11	620	
R123, 223	1-242-721-09	100 k	low noise
R124, 224	1-242-673-11	1 k	
R125, 225	1-242-661-11	330	
R126, 226	1-242-657-11	220	
R127, 227	1-242-685-11	3.3 k	
R128, 228	1-242-725-11	150 k	
R129, 229	1-242-721-11	100 k	
R130, 230	1-242-729-11	220 k	
R131, 231	1-242-685-11	3.3 k	
R132, 232 R133, 233	1-242-673-11	1 k	
R134, 234	1-210-871-11	3.6 k	±2%
R135, 235	1-242-721-11	100 k	
R136, 236	1-210-872-11	3.9 k	±2%
R137, 237	1-210-870-11	360	±2%
R138, 238	1-242-667-11	560	
R139, 239 R140, 240	1-242-735-09	390 k	low noise
R141, 241	1-242-681-11	2.2 k	
R142, 242	1-242-697-11	10 k	
R143, 243	1-242-697-09	10 k	low noise
R144, 244	1-244-681-11	2.2 k	
R145, 245 R146, 246	1-242-685-11	3.3 k	
R147, 247	1-222-701-00	10 k	adjustable
R148, 248	1-242-701-11	15 k	
R149, 249	1-242-721-09	100 k	low noise
R150, 250	1-242-729-09	220 k	low noise
R151, 251	1-242-721-11	100 k	
R152, 252	1-242-653-11	150	
R153, 253	1-242-695-11	8.2 k	
R154, 254	1-242-699-11	12 k	
R155, 255	1-242-707-11	27 k	
R156, 256	1-242-680-11	2 k	
R157, 257	1-242-713-11	47 k	
R158, 258	1-244-719-11	82 k	
R159, 259	1-224-433-00	50 k (A), variable; LINE	
R160, 260	1-224-432-00	20 k (A), variable; MIC	
R161, 261	1-244-703-11	18 k	
R162, 262	1-224-431-00	20 k (B), variable; LINE OUT	
R163, 263	1-242-697-11	10 k	
R164, 264	1-242-733-11	330 k	

Ref. No.	Part No.		Description
R166, 266 R167, 267	1-242-681-11	2.2 k	
R168, 268	1-242-665-11	470	
R169, 269	1-221-978-00	4.7 k, adjustable	
R171, 271	1-242-647-11	82	
R172, 272	1-242-682-11	2.4 k	
R173, 273	1-242-641-11	47	
R174, 274	1-242-694-11	7.5 k	
R178, 278	1-242-693-11	6.8 k	
R180, 280	1-242-601-11	1	
R181, 281	1-242-637-11	33	
R182, 282	1-242-641-11	47	
R183, 283	1-242-653-11	150	
R184, 284	1-242-681-11	2.2 k	
R185, 285	1-242-695-11	8.2 k	
R186, 286	1-242-705-11	22 k	
R187, 287	1-242-723-11	120 k	
R188, 288	1-242-719-11	82 k	
R189, 289	1-242-721-11	100 k	
R190, 290	1-242-725-11	150 k	
R191, 291 R192, 292	1-242-727-11	180 k	
R193, 293 R194, 294	1-242-737-09	470 k	low noise
R195, 295	1-210-850-11	300	±2%
R196, 296	1-210-852-11	5.6 k	±2%
R197, 297	1-210-853-11	6.2 k	±2%
R198, 298 R199, 299	1-210-855-11	33 k	±2%
R311	1-242-717-11	68 k	
R312	1-242-737-11	470 k	
R313	1-242-691-11	5.6 k	
R314	1-242-673-11	1 k	
R315	1-242-685-11	3.3 k	
R317	1-206-115-11	12	2W metal oxide
R318	1-124-667-11	560	
R319, 320	1-244-846-11	75	
R321	1-244-915-11	56 k	
R351	1-242-709-11	33 k	
R354	1-213-133-11	150	metal oxide
R356	1-244-893-11	6.8 k	
R357	1-242-709-11	33 k	
R359	1-242-657-11	220	
R361	1-206-016-11	1 k	2W metal oxide

Ref. No.	Part No.	Description
R363	1-242-673-11	1 k
R364	1-242-681-11	2.2 k
R365	1-242-693-11	6.8 k
R366	1-242-641-11	47
R367	1-242-613-11	3.3
R368	1-206-043-11	560 2W metal oxide
R369	1-242-694-11	7.5 k
R370	1-242-649-11	100
R371	1-242-695-11	8.2 k

SWITCHES

S101, 201	1-514-976-21	Slide, record/playback
S301		----------
S302	1-516-498-00	Micro, stand-by
S303	1-516-494-00	Leaf, system control
S304	1-516-498-00	Micro, function
S305	1-516-492-00	Leaf, PAUSE
S306		Included in tape index counter
S307	1-516-497-00	Micro, rewind
S308, 309	1-516-491-00	Push, LIGHT/MEMORY COUNTER
S310	1-516-496-00	Reed, auto shut-off
S311	1-513-273-00	Slide, muting
S312	1-516-493-00	Leaf, bias
S320	1-516-495-00	Leaf, timing
S351	1-514-911-23	Lever, POWER
S352	1-516-500-00	Slide, ISS
S353	1-516-499-00	Push, 5-key; DOLBY NR/LIMITER/TAPE SELECT

JACKS

CNJ352	1-509-015-01	Connector, AC OUTLET
J101, 201	1-507-142-21	Phono, 2P; LINE IN
J102, 202	1-507-376-00	Phone, MIC
J103, 203	1-507-142-21	Phono, 2P; LINE OUT
J302	1-508-669-00	Connector, 15P
J351	1-507-310-00	Binaural, LINE IN
J352	1-507-282-00	Binaural, HEADPHONE

Ref. No.	Part No.	Description

MISCELLANEOUS

CP302	1-101-534-21	Encapsulated Component, C-R (0.1 μF + 120 Ω, 500 V)
CP351	1-231-057-31	Encapsulated Component, C-R (0.033 μF + 120 Ω, 500 V)
CP352	1-101-534-21	Encapsulated Component, C-R (0.1 μF + 120 Ω, 500 V)
F301	1-532-400-00	Fuse, 0.315AT (Canada)
F302	1-532-267-00	Fuse, 1.6AT (Canada)
F303, 304	1-532-400-00	Fuse, 0.315AT (Canada)
F305	1-532-401-00	Fuse, 0.8AT (Canada)
PL303	1-518-219-00	Lamp, tape run indication
PL305	1-518-220-00	Lamp, cassette compartment illumination
PL351	1-518-221-00	Lamp, RECORD
PL352, 353	1-518-222-00	Lamp, VU meter
PL354	1-518-221-00	Lamp, DOLBY NR
M301	1-541-090-00	Motor, including governor circuit board
MT101, 201	1-520-188-00	Meter, VU
SL301	1-454-121-00	Solenoid, 12V; stop
SL302	1-454-120-00	Solenoid, 100V; function
RPH101, RPH201	8-825-584-00	Head, record/playback; PF145-3602A
EH301	8-825-506-00	Head, erase; EF135-36
	1-508-367-11	Connector, pin
	1-508-367-21	Connector, pin
	1-508-396-11	Connector, pin
	1-508-396-21	Connector, pin
	1-533-051-13	Holder, lamp
	1-534-538-21	Cord, power (USA)
	1-534-986-21	Cord, power (Canada)
	1-535-081-00	Pin, terminal
	1-535-506-00	Crimping terminal
	1-536-395-00	Terminal Strip, 1L1
	1-536-397-00	Terminal Strip, 1L2

SECTION 7
HARDWARE

Part No.	*Description*
	SCREWS
	All screws are Phillips type (cross recess type) unless otherwise indicated. (-): slotted head.
7-621-255-13	P 2 x 3
7-621-255-35	P 2 x 5
7-621-255-55	P 2 x 8
7-621-259-25	P 2.6 x 4
7-621-259-35	P 2.6 x 5
7-621-259-45	P 2.6 x 6
7-621-259-55	P 2.6 x 8
7-621-281-13	P 2 x 2
7-682-124-02	P 2 x 4
7-682-146-01	P 3 x 5
7-682-147-04	P 3 x 6
7-682-148-01	P 3 x 8
7-682-534-04	B 2.6 x 5
7-682-646-01	PS 3 x 5
7-682-647-04	PS 3 x 6
7-682-648-03	PS 3 x 8
7-682-660-01	PS 4 x 6
7-682-663-02	PS 4 x 12
7-682-946-01	PSW 3 x 5
7-682-947-01	PSW 3 x 6
	WASHERS
7-623-105-12	2
7-623-107-02	2.6
7-623-108-12	3
7-623-110-12	4
7-623-205-22	2 spring
7-623-207-22	2.6 spring
7-623-208-22	3 spring
7-623-210-22	4 spring
7-623-410-08	4, w/external tooth
	RETAINING RINGS
7-624-102-01	E 1.5
7-624-104-01	E 2
7-624-106-01	E 3
7-624-108-01	E 4
	MISCELLANEOUS
7-671-113-01	Steel Ball 3
7-683-239-01	SC 3 x 6, w/hexagon socket
7-683-247-31	SC 4 x 6, w/hexagon socket
7-684-022-00	Nut 2.6
7-684-013-00	Nut 3
7-684-014-00	Nut 4
7-623-507-11	Lug 2.6
7-623-508-11	Lug 3

– Hardware Nomenclature –

P – Pan Head Screw .....

PS – Pan Head Screw with Spring Washer .....

K – Flat Countersunk Head Screw ...

B – Binding Head Screw .....

RK – Oval Countersunk Head Screw ..

T – Truss Head Screw .....

R – Round Head Screw .....

F – Flat Fillister Head Screw .....

SC – Set Screw .....

E – Retaining Ring (E Washer) .....

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

– Example –

P 3x10
- Length in mm (L)
- Diameter in mm (D)
- Type of Head