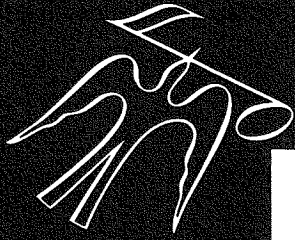


Service Manual

PRICE \$1.00

RC-80

SERIAL NUMBERS
BEGINNING 10001



The Fisher[®] RC-80



**Stereophonic
Tape-Cassette Recorder**

2 TEST EQUIPMENT and SERVICE TIPS

The following equipment is required to completely test and align modern high-fidelity amplifiers, tuners, and receivers.

- Line Voltage Autotransformer or Voltage Regulator
- DC Vacuum Tube Voltohmmeter
- Accurately Calibrated AC Vacuum Tube Voltmeter
- Oscilloscope (Flat to 100 KHz Minimum)
- Low-Distortion Audio (Sine Wave) Generator
- Intermodulation Distortion Analyzer
- Harmonic Distortion Analyzer
- 2 — Load resistors, 8-Ohms, 100 Watt (Minimum Rating)
- AM/FM Signal Generator
- 10.7 MHz Sweep Generator
- Multiplex Generator (preferably with RF output)
- 455 kHz Sweep Generator
- Ferrite Test Loop Stick
- 2 — Full Range Speakers for Listening Tests
- Stereo Source — Turntable, Tape Recorder, etc.
- Soldering Iron with Small Tip, Fully Insulated from AC Line
- Suction Desoldering Tool

CAUTION: This precision high-fidelity instrument should be serviced only by qualified personnel, trained in the repair of transistor equipment and printed circuitry.

Many of these items are included only as a reminder — they are normal procedures for experienced technicians. Shortcuts may be taken, but these often cause additional damage to transistors, circuit components, or printed circuit boards.

SOLDERING: A well-tinned, hot, clean soldering iron tip will make soldering easier, without causing damage to the printed circuit board or the components mounted on it. Regular use of a sponge cleaner will maintain a clean soldering surface. The heat available at the tip, (not the wattage of the iron) is important. Some 50-watt irons reach temperatures of 1,000° F, while others will hardly melt solder. Small-diameter tips should be used for single solder connections, pyramid and chisel tips for large areas.

Always disconnect the AC power cord from the line when soldering. Turning the power switch OFF is not sufficient. Power-line leakage paths, through the heating element of the iron, may destroy transistors.

PARTS REMOVAL: If a part is not being returned for in-warranty factory replacement, it may be cut in half (with diagonal cutting pliers) to make removal easier. Multiple terminal parts, such as IF transformers, or electrolytic capacitors, should be removed using special de-soldering tips made especially for this purpose. Removing solder from terminals, reduces the possibility of breaking the printed circuit board when the part is removed.

ACCIDENTAL SHORTS: A clean working area, free of metal particles, screws, etc., is an important preventive in avoiding servicing problems. Screws, removed from the chassis during servicing, should be stored in a box until needed. While a set is operating, it takes only an instant for a base-to-collector short to destroy a transistor (and others direct-coupled to it). In the time it takes for a dropped screw, washer, or screw-driver, to contact a pair of terminals (or terminal and chassis), a transistor can be ruined.

SOLID-STATE DEVICES: Integrated Circuits contain the equivalent of many circuit parts, including transistors, diodes, resistors, and capacitors. The preferred troubleshooting procedure requires isolating the trouble to one stage using AC signal tracing methods. Once the suspected stage is located, the DC voltages at the input and output leads are measured to give an accurate indication of the operating conditions of the IC. DO NOT use an ohmmeter to check continuity with the IC mounted on the printed circuit board. Forward biasing the internal junctions within the IC may burn out the transistors. Do not replace a defective IC until all external resistors, capacitors, and transformers are checked first, to prevent the replacement IC from failing immediately due to a defect in the connecting components. Solder and unsolder each lead separately using a pliers or other heat sink on the lead to

prevent damage from excessive heat. Check that the leads are connected to the correct locations on the printed circuit board before turning the set on.

Whenever possible, a transistor tester should be used to determine the condition of a transistor or diode. Ohmmeter checks do not provide conclusive data, and many even destroy the junction(s) within the device.

Never attempt to repair a transistor power amplifier module until the power supply filter-capacitors are fully discharged.

If an output or driver transistor becomes defective (opens or shorts), always check ALL direct-coupled transistors and diodes in that channel. In addition, check the bias pot., and other parts in the bias network, before installing replacement transistors. All output and driver transistors in one channel may be destroyed if the bias network is defective. After parts replacement, check bias for specified idling current.

In some applications, replacement of transistors must be made from the same beta group as the original type. The beta group is indicated by a colored marking on the transistor. Include this information when ordering replacements.

When mounting a replacement power transistor, be sure the bottom of the flange, mica insulator, and the surface of the heat sink, are free of foreign matter. Dust and grit will prevent flat contact, reducing heat transfer to the heat sink. Metallic particles can puncture the insulator, cause a short, and destroy the transistor.

Silicone grease must be used between the transistor and the mica insulator, and between the mica and the heat sink, for best heat transfer. Use Dow-Corning DC-3, or an equivalent compound made for power transistor heat conduction.

Use care when making connections to speakers and output terminals. To reduce the possibility of shorts, lugs should be used on the exposed ends, or stranded wire should be tinned to prevent frayed wire ends. Current in the speakers and output circuitry is quite high — poor contacts, or small wire, can cause significant power losses. For wire lengths greater than 30 feet, 16 AWG, or heavier, should be used.

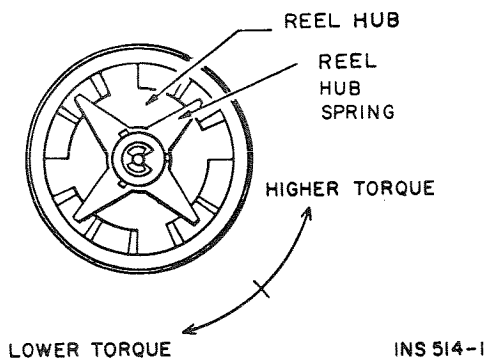
VOLTAGE MEASUREMENTS: All voltages are measured with the line voltage adjusted to 120 volts. All measured voltages are $\pm 10\%$. DC voltages are measured to ground with a VTVM, with no signal input unless otherwise noted. AC signal voltages are measured under the conditions specified on the schematic.

ALIGNMENT PROCEDURES: DO NOT attempt realignment unless the required test equipment is available, and the alignment procedure is thoroughly understood.

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TAKEUP TORQUE AND SUPPLY TORQUE ADJUSTMENT

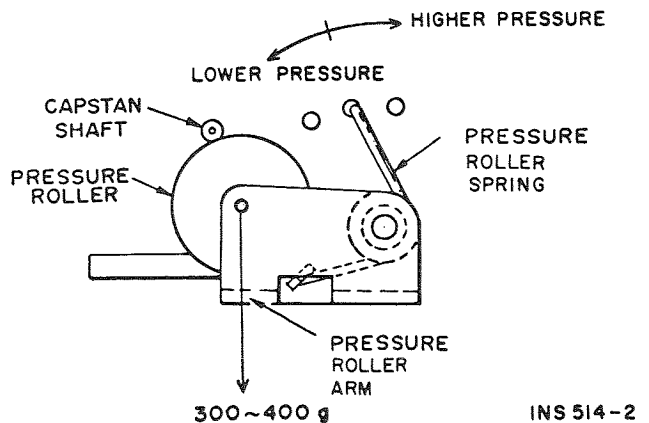
- (1) Remove top and bottom cabinets of the cassette recorder.
- (2) Remove cassette case.
- (3) To adjust torque, move the reel hub spring as shown in the figure.
- (4) The Takeup Torque should be $45g \pm 10g$.
- (5) The Supply Torque should be 35g to 60g.



takeup torque and supply torque adjustment

PRESSURE ROLLER ADJUSTMENT

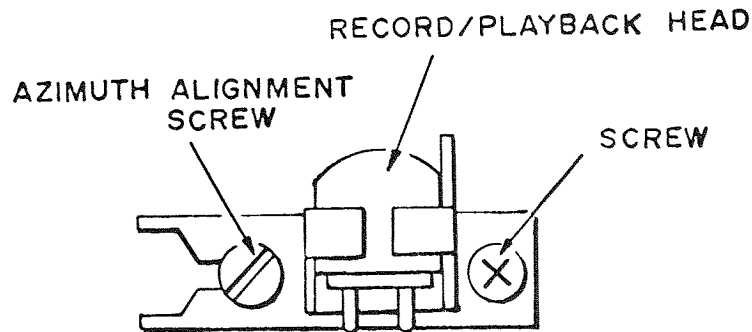
- (1) Remove top and bottom cabinets of the cassette recorder.
- (2) Remove cassette case.
- (3) Depress PLAY/RCD pushbutton.
- (4) To adjust pressure roller, move pressure roller spring as shown in the figure.
- (5) The pressure roller should be 300g to 400g at the center of the roller. Measurement should be made when pressure roller pulls away from the capstan shaft.



pressure roller adjustment

4 TRANSPORT MECHANISM ADJUSTMENT

record/playback azimuth alignment



INS 514-3

ALIGNMENT CASSETTE

NOTE: Some of the following adjustment procedures require the use of a BASF Calibration Tape, which complies with DIN Standard 45513, Part 6.

This tape, supplied on a 7-inch open reel, must be respooled (with oxide coating facing outward) into an empty cassette cartridge before it can be used. After respooling, the plastic tabs blocking the two small holes on the rear of the cassette should be broken off to mechanically lock out the RCRD key, making erasure or re-recording impossible. Although the tape is recorded with German language announcements, an accompanying data sheet (describing the tape) is printed in English. The use of this alignment tape is required for

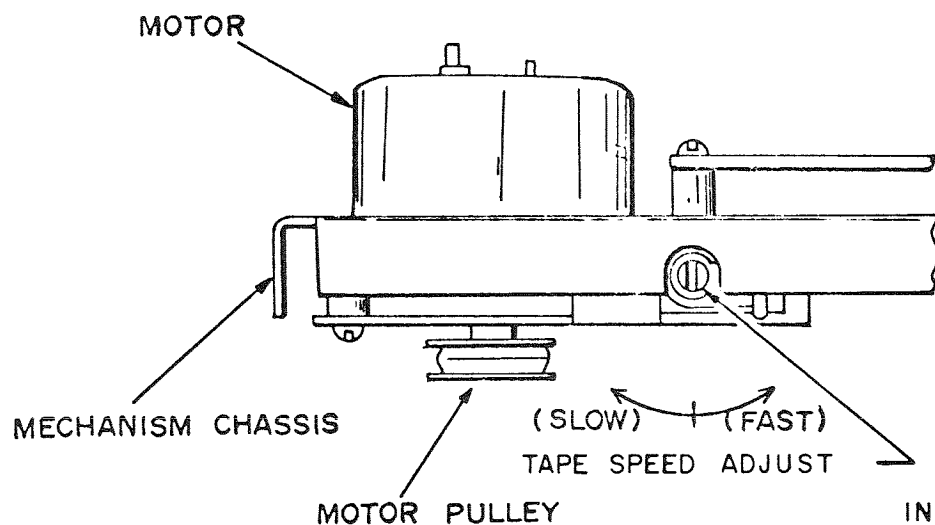
accurate adjustments. Care should be taken to avoid exposing the tape to stray magnetic fields.

For some other procedures a Dolby Reference Level Tape (400 Hz, 20mM/mm) is required.

RECORD/PLAYBACK AZIMUTH ALIGNMENT

- (1) Connect an AC VTVM between either the Left or Right Channel PLAYBACK OUTPUT jack and chassis ground.
- (2) Insert the alignment cassette and play the 10 kHz alignment portion of the tape.
- (3) Adjust the azimuth alignment screw (see figure) to obtain maximum output voltage indication on the AC VTVM.

tape speed adjustment

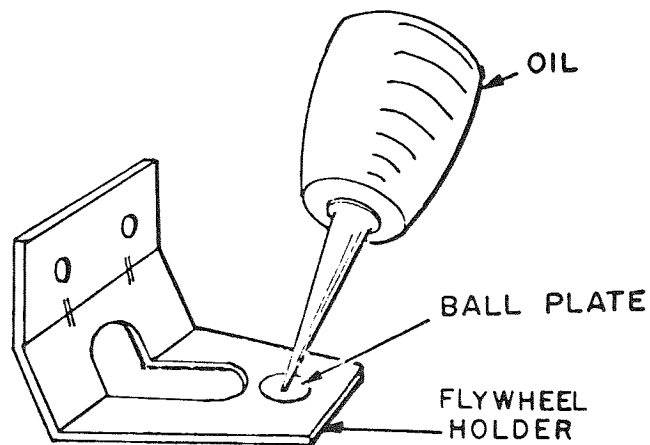
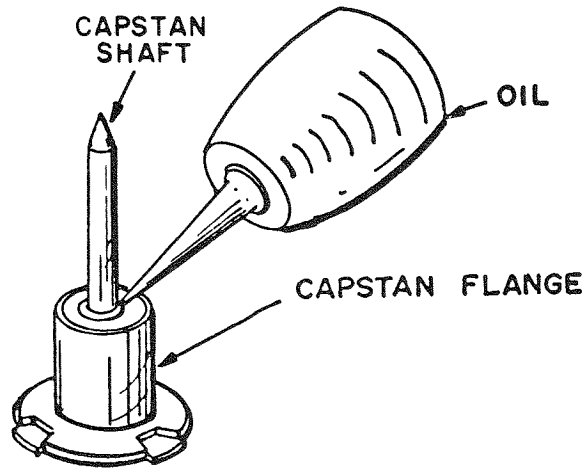


INS 514-4

TAPE SPEED ADJUSTMENT

CAUTION: The following procedure requires the use of a frequency counter to accurately set the tape speed. Any other method used for speed determination may result in a significant speed error.

- (1) Connect a frequency counter to either the Left or Right Channel PLAYBACK OUTPUT jack.
- (2) Insert the alignment cassette and play the 333 Hz reference level portion of the tape.
- (3) Adjust the Tape Speed Adj potentiometer (accessible from the rear apron of the cassette recorder) for an average reading of 333 Hz on the frequency counter.



INS 514-5

LUBRICATION

Lubricate the cassette recorder after 500 hours of use as described in the following procedure.

- (1) Remove top and bottom cabinets of the cassette recorder.
- (2) Remove cassette case.
- (3) Remove main chassis.
- (4) Apply a few drops of light machine oil between capstan and capstan flange. See figure.

CAUTION: Do not allow oil to touch the pressure roller, counter belt, and other rubber parts. If oil touches any of these parts, wipe the parts clean.

- (5) Apply a few drops of oil to the ball plate of the flywheel holder. See figure.

6 ELECTRICAL ADJUSTMENTS

DOLBY INPUT LEVEL ADJUSTMENT

- (1) Make sure that DOLBY SYSTEM IN pushbutton is released.
- (2) Connect an AC VTVM to Right Channel PLAYBACK OUTPUT jack.
- (3) Insert the 400 Hz, 20 mM/mm Dolby Reference Level Tape.
- (4) Play tape. While depressing DOLBY TEST switch, adjust potentiometer VR202 located on Level Adjust P.C.B. to obtain a 100 mV indication on AC VTVM.
- (5) Repeat steps (1) through (4) for left channel, adjusting potentiometer VR102 located on Level Adjust P.C.B.

OUTPUT LEVEL ADJUSTMENT

- (1) Make sure that DOLBY SYSTEM IN pushbutton is released.
- (2) Connect an AC VTVM to Right Channel PLAYBACK OUTPUT jack.
- (3) Connect an audio generator to Right Channel HI LEVEL INPUT jack. Set audio generator frequency to 400 Hz at a level of 0.5 volt.
- (4) Insert a blank cassette.

WARNING: DO NOT INSERT THE ALIGNMENT CASSETTE.

- (5) Depress PAUSE key; simultaneously depress RCRD and PLAY/RCRD keys.
- (6) Depress DOLBY TEST switch and adjust RECORD LEVEL control to obtain a 100 mV indication on AC VTVM.
- (7) Release DOLBY TEST switch and adjust Output Level Adj potentiometer VR206 to obtain a 1-volt indication on AC VTVM.
- (8) Repeat steps (1) through (7) for left channel, adjusting Output Level Adj potentiometer VR106.

METER LEVEL ADJUSTMENT

- (1) Make sure that DOLBY SYSTEM IN pushbutton is released.
- (2) Connect an AC VTVM to Right Channel PLAYBACK OUTPUT jack.
- (3) Insert the 400 Hz, 20 mM/mm Dolby Reference Level Tape.
- (4) Play tape. Adjust Meter Level Adj potentiometer VR204 to obtain a 0 VU indication on cassette recorder's VU meter.
- (5) Repeat steps (1) through (4) for left channel, adjusting Meter Level Adj potentiometer VR104.

RECORDING AMPLIFIER EQUALIZER ADJUSTMENT

- (1) Make sure that DOLBY SYSTEM IN pushbutton is released.
- (2) Connect an AC VTVM to Right Channel PLAYBACK OUTPUT jack.
- (3) Connect an audio generator to Right Channel HI LEVEL INPUT jack. Set audio generator frequency to 1 kHz at a level of 0.5 volt.
- (4) Insert a blank cassette.

WARNING: DO NOT INSERT THE ALIGNMENT CASSETTE.

- (5) Depress PAUSE key; simultaneously depress RCRD and PLAY/RCRD keys.
- (6) Adjust RECORD LEVEL control until cassette recorder's VU meter indicates 0 VU. Note AC VTVM indication.
- (7) Reduce audio generator output level until VTVM indicates 20 dB below level noted in step (6).
- (8) Stop bias oscillator by shorting capacitor C7 located on Main P.C.B. Solder a short wire on Copper side of P.C. Board.
- (9) Disconnect VTVM from Right Channel PLAYBACK OUTPUT jack. Connect VTVM with alligator clip leads to Record/Playback head. Connect hot lead to pin at upper right (white wire in blue sleeve). Be sure to connect the other VTVM lead to chassis ground.
- (10) Note VTVM indication.
- (11) Change audio generator frequency to 14 kHz.
- (12) Adjust Peaking Coil L203 to obtain peak indication on AC VTVM.

- (13) Rotate Peaking Coil L203 clockwise from peak position until VTVM indicates +17 dB \pm 2 dB with respect to 1 kHz indication obtained in step (10).
- (14) Temporarily remove short described in step (8). Repeat steps (1) through (8) for left channel.
- (15) Remove VTVM cable from Left Channel PLAYBACK OUTPUT jack. Connect VTVM with clip leads to Record/Playback head. Connect hot lead to pin at lower right (white wire in gray sleeve). Be sure to connect other VTVM lead to chassis ground.
- (16) Note VTVM indication. Repeat steps (11) through (13), adjusting Peaking Coil L103.
- (17) Remove short described in step (8) before proceeding with remaining adjustments.

RECORDING BIAS ADJUSTMENT

- (1) Make sure that DOLBY SYSTEM IN pushbutton is released.
- (2) Connect an AC VTVM to Right Channel PLAYBACK OUTPUT jack.
- (3) Connect an audio generator to Right Channel HI LEVEL INPUT jack. Set audio generator frequency to 1 kHz at a level of 0.5 volt.
- (4) Insert a blank cassette.

WARNING: DO NOT INSERT THE ALIGNMENT CASSETTE.

- (5) Depress simultaneously RCRD and PLAY/RCRD keys. Adjust RECORD LEVEL control for 0 VU indication on cassette recorder's VU meter.
- (6) Play back the signal recorded at 0 VU and note output level indication on AC VTVM.
- (7) Repeating steps (5) and (6), adjust Record Head Bias Adj potentiometer VR205 to obtain maximum playback indication on AC VTVM.
- (8) Repeat steps (1) through (7) for left channel, adjusting Record Head Bias Adj potentiometer VR105.

RECORD PLAYBACK LEVEL ADJUSTMENT

- (1) Make sure that DOLBY SYSTEM IN pushbutton is released.
- (2) Connect an AC VTVM to Right Channel PLAYBACK OUTPUT Jack.
- (3) Connect an audio generator to Right Channel HI LEVEL INPUT jack. Set audio generator frequency to 1 kHz at a level of 0.5 volt.
- (4) Insert a blank cassette.

WARNING: DO NOT INSERT THE ALIGNMENT CASSETTE.

- (5) Simultaneously depress RCRD and PLAY/RCRD keys. Adjust RECORD LEVEL control to obtain 0 VU indication on cassette recorder's VU meter.
- (6) Play back the signal recorded at 0 VU and note output level indication on AC VTVM.
- (7) Repeating steps (5) and (6), adjust potentiometer VR203 located on Level Adjust P.C.B. to obtain a 1-volt playback output level indication on AC VTVM.
- (8) Repeat steps (1) through (7) for left channel, adjusting potentiometer VR103 located on Level Adjust P.C.B.

READJUSTMENT OF RECORDING BIAS

- (1) Make sure that DOLBY SYSTEM IN pushbutton is released.
- (2) Connect an AC VTVM to Right Channel PLAYBACK OUTPUT jack.
- (3) Connect an audio generator to Right Channel HI LEVEL INPUT jack. Set audio generator frequency to 1 kHz at a level of 0.5 volt.
- (4) Insert a blank cassette.

WARNING: DO NOT INSERT THE ALIGNMENT CASSETTE.

- (5) Depress RCRD and PLAY/RCRD keys simultaneously.
- (6) Adjust RECORD LEVEL control until the cassette recorder's VU meter indicates 0 VU. Note VTVM indication.

- (7) Leaving RECORD LEVEL control at the position found in step (6), adjust audio generator output level until AC VTVM indicates 20 dB below level noted in step (6).
- (8) Record a short passage at the -20 dB level. Without interrupting the recording process, change audio generator frequency to 10 kHz.
- (9) Play back recording, noting difference in VTVM output level indication, if any, between 1 kHz and 10 kHz passages.
- (10) If necessary, adjust Record Head Bias Adj potentiometer VR205 to obtain minimum change in playback output level as indicated on VTVM between the 1 kHz and 10 kHz recordings.
- (11) Repeat steps (1) through (10) for left channel, adjusting Record Head Bias Adj potentiometer VR105.

MULTIPLEX FILTER ADJUSTMENT

- (1) Make sure that DOLBY SYSTEM IN pushbutton is released.
- (2) Connect an AC VTVM to Right Channel PLAYBACK OUTPUT jack.
- (3) Connect an audio generator to Right Channel HI LEVEL INPUT jack. Set audio generator frequency to 19 kHz.
- (4) Insert a blank cassette.

WARNING: DO NOT INSERT THE ALIGNMENT CASSETTE.

- (5) Depress PAUSE key; simultaneously depress RCRD and PLAY/RCRD keys.
- (6) Adjust 19 kHz MPX Filter coil L202 to obtain minimum reading on AC VTVM.
- (7) Repeat steps (1) through (6) for left channel, adjusting 19 kHz MPX Filter coil L102.

BIAS FREQUENCY ADJUSTMENT

(a) The following procedure may be used if a frequency counter is available.

- (1) Make sure that DOLBY SYSTEM IN pushbutton is released.
- (2) Connect frequency counter input to either Channel PLAYBACK OUTPUT jack.
- (3) Insert a blank cassette.

WARNING: DO NOT INSERT THE ALIGNMENT CASSETTE.

- (4) Depress PAUSE key; simultaneously depress RCRD and PLAY/RCRD keys.
- (5) Read frequency counter, adjusting Bias Frequency Adj coil L1 until bias oscillator frequency is 105 kHz.
- (6) If the frequency counter is not sensitive enough to measure the bias frequency, it can be coupled to the recorder's erase head by means of a properly wired pickup head. The cassette must first be removed. The recorder can be placed in Record Pause mode if safety interlock pin at upper left is held in as RCRD and PLAY/RCRD keys are depressed.

(b) The following procedures may be used if a frequency counter is not available.

- (1) Make sure that DOLBY SYSTEM IN pushbutton is released.
- (2) Connect the Right Channel PLAYBACK OUTPUT jack to the vertical input of an oscilloscope.
- (3) Connect an audio generator to the horizontal input of the oscilloscope. Set audio generator frequency to 105 kHz.
- (4) Insert a blank cassette.

WARNING: DO NOT INSERT THE ALIGNMENT CASSETTE.

- (5) Depress PAUSE key; simultaneously depress RCRD and PLAY/RCRD keys.
- (6) Adjust Bias Frequency Adj coil L1 until a circular pattern (Lissajou) appears on the oscilloscope.

BIAS TRAP ADJUSTMENT

- (1) Make sure that the DOLBY SYSTEM IN pushbutton is released.
- (2) Insert a blank cassette.

WARNING: DO NOT INSERT THE ALIGNMENT CASSETTE.

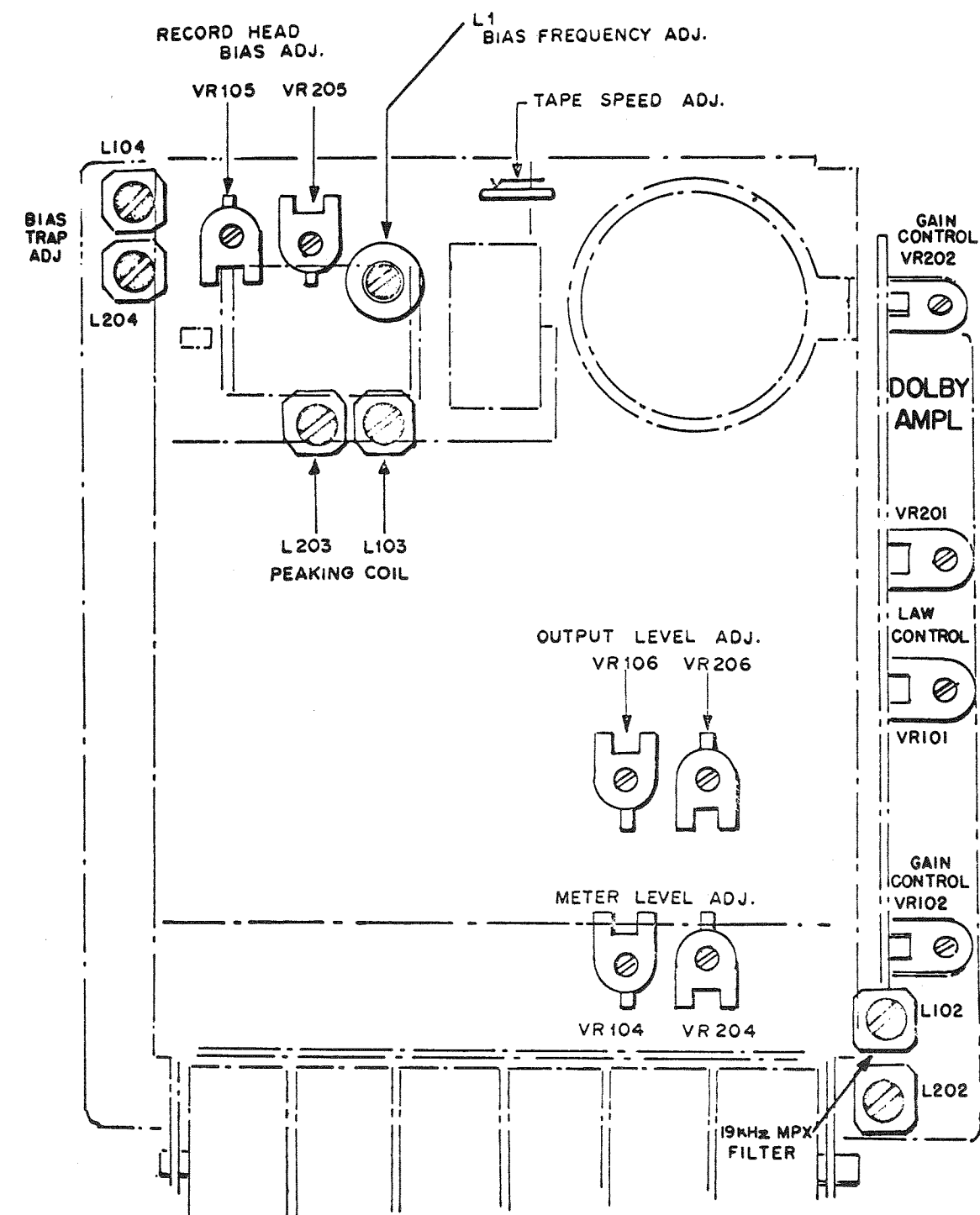
- (3) Depress PAUSE key; simultaneously depress RCRD and PLAY/RCRD keys.
- (4) Using an AC VTVM, measure the collector to ground voltage of transistor X208 located on Main P.C. Board (R/P Amp).
- (5) Adjust Bias Trap Adj coil L204 for minimum voltage indication on AC VTVM. The minimum voltage should be less than 1 volt.
- (6) Repeat steps (1) through (3) for left channel.
- (7) Using an AC VTVM, measure the collector to ground voltage of transistor X108 located on Main P.C. Board (R/P Amp).
- (8) Adjust Bias Trap Adj coil L104 for minimum voltage indication on AC VTVM. The minimum voltage should be less than 1 volt.

DOLBY AMPLIFIER ADJUSTMENT

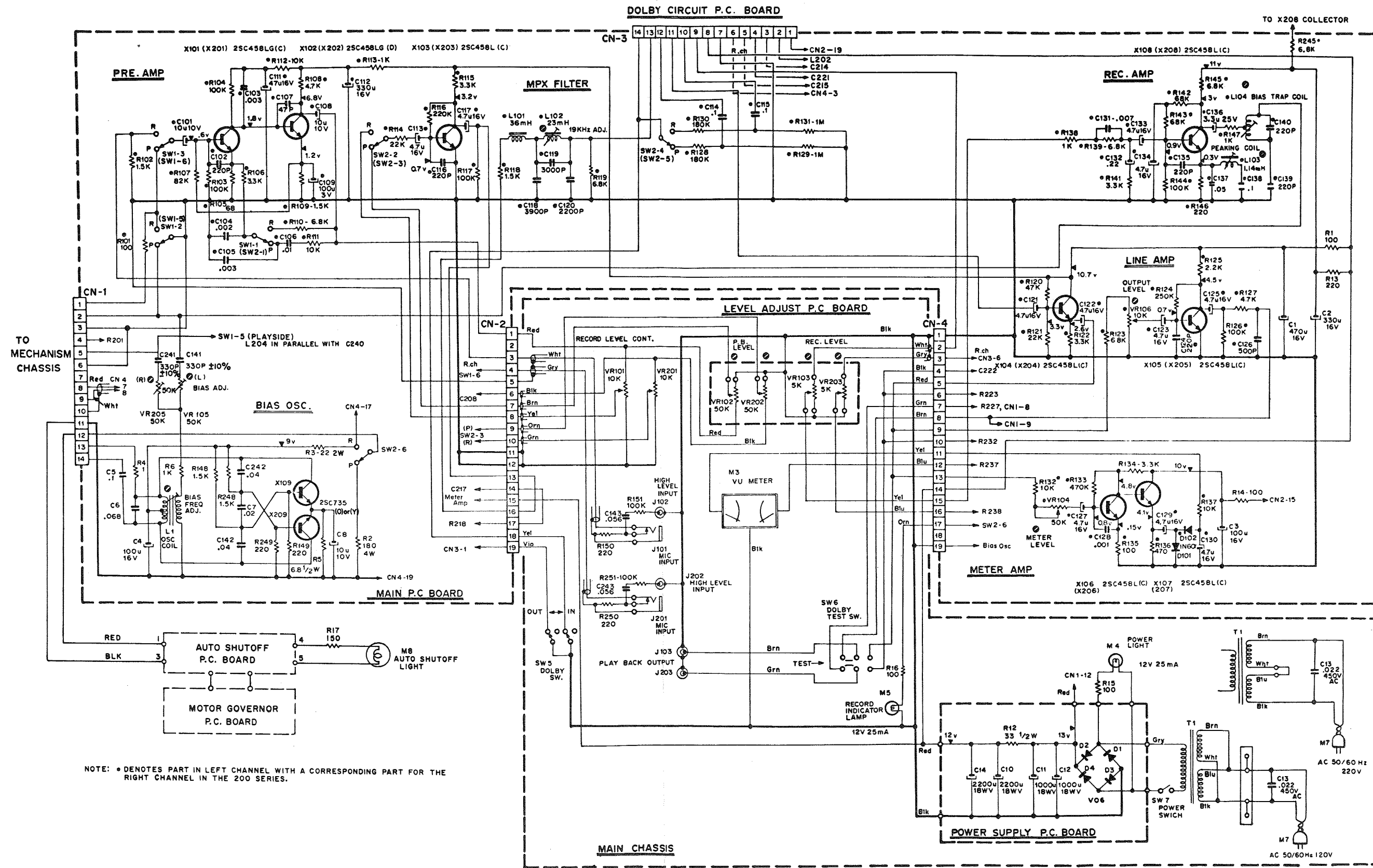
- (1) Stop the bias oscillator by shorting capacitor C7 located at Main P.C. Board. Solder a short wire on the Copper side of the Main P.C. Board (R/P Amplifier).
- (2) Set Law Control VR101 to maximum counterclockwise position.
- (3) Set Law Control VR201 to maximum clockwise position.
- (4) Set Gain Control VR102 to maximum clockwise position.
- (5) Set Gain Control VR202 to maximum clockwise position.
- (6) Insert a blank cassette.
- (7) Short the gates of field effect transistors FET103 and FET203 to chassis ground.
- (8) Make sure that the DOLBY SYSTEM IN pushbutton is released.

WARNING: DO NOT INSERT THE ALIGNMENT CASSETTE.

- (9) Connect an audio generator to Right Channel HI LEVEL INPUT Jack. Set audio generator frequency to 5 kHz.
- (10) Connect an AC VTVM to Right Channel PLAYBACK OUTPUT jack.
- (11) Depress PAUSE key; simultaneously depress RCRD and PLAY/RCRD keys.
- (12) Depress DOLBY TEST switch located on rear apron of the recorder and hold it in place. Note VTVM indication and adjust audio generator output level until VTVM indicates 3 mV. Release DOLBY TEST switch.
- (13) Remove VTVM connection to Right Channel PLAYBACK OUTPUT jack. Using alligator clip leads, connect the hot lead from VTVM to CN4-3 point on Level Adjust P.C. Board (or to CN3-6 on Dolby Amplifier P.C. Board). Ground the other VTVM lead to chassis. Note VTVM reading.
- (14) Turn on the Dolby Amplifier by depressing DOLBY SYSTEM IN pushbutton. Adjust Gain Control VR202 until VTVM indicates 10 dB above the level noted in step (13). Note VTVM indication after this adjustment.
- (15) Remove gate short of field effect transistor FET203. Adjust Law Control VR201 until VTVM indicates 2 dB below level noted in step (14).
- (16) Repeat steps (8) through (12) for left channel.
- (17) Remove the VTVM connection to Left Channel PLAYBACK OUTPUT jack. Using alligator clip leads, connect hot lead from VTVM to CN4-2 point on Level Adjust P.C. Board (or to output terminal CN3-9 on Dolby Amplifier P.C. Board). Ground the other VTVM lead to chassis. Note VTVM indication.
- (18) Turn on Dolby Amplifier by depressing DOLBY SYSTEM IN pushbutton. Adjust Gain Control VR102 until VTVM indicates 10 dB above level noted in step (17). Note VTVM indication after this adjustment.
- (19) Remove gate short of field effect transistor FET103. Adjust Law Control VR101 until VTVM indicates 2 dB below level noted in step (18).
- (20) Remove bias oscillator short described in step (1).

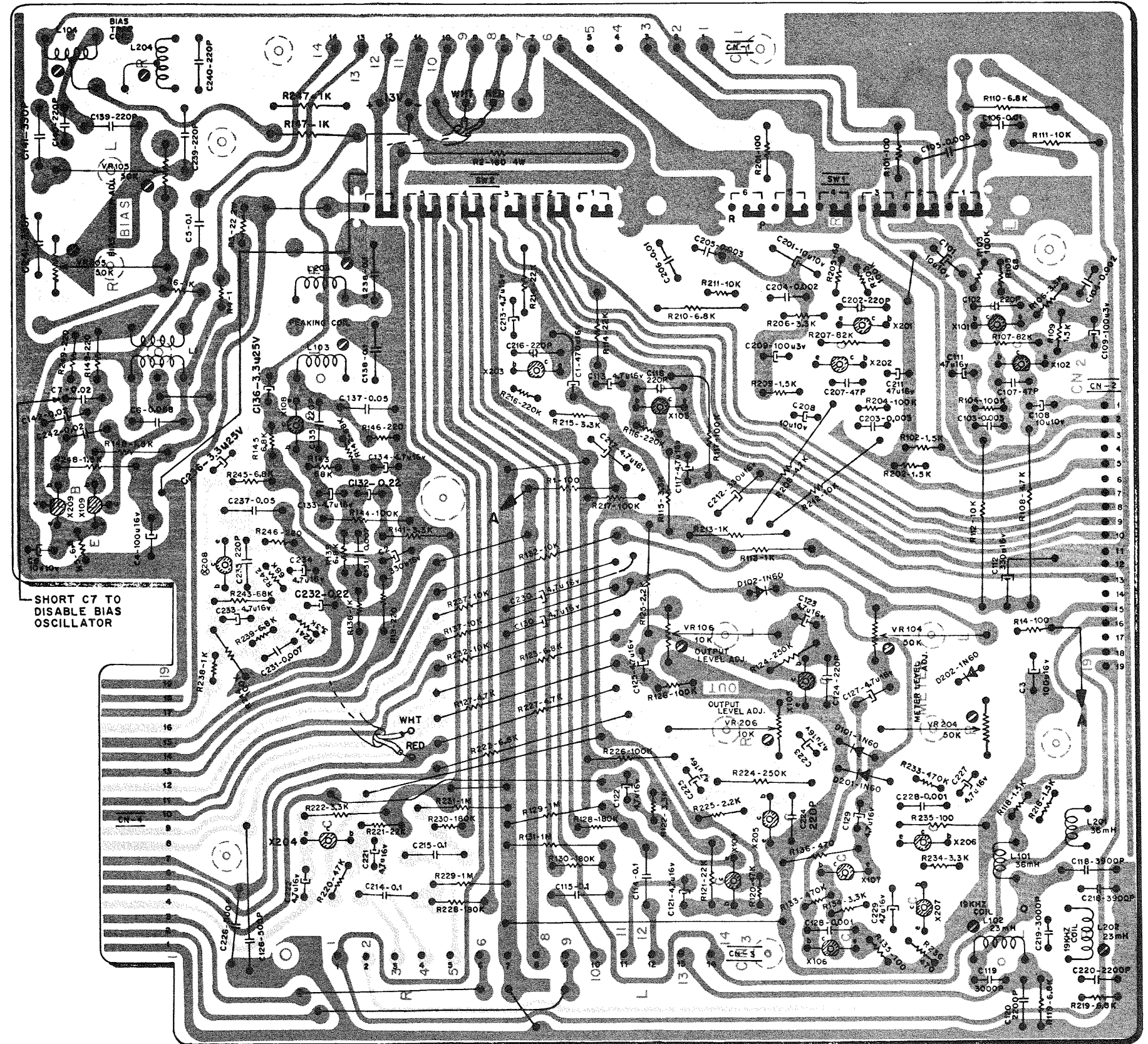


8 MAIN CHASSIS



MAIN CHASSIS PARTS LIST

Ref. Symbol	Part No.
POWER SUPPLY PCB	
D1, D2, D3, D4	TP1681B1501
C11, C12	TP4054B1673
C10, C14	TP4053B1835
LEVEL ADJUST PCB	
VR102, VR202	TP4053B1807
VR103, VR203	TP4053B1805
MAIN PCB	
X109, X209	TP1681B1421
X103, X203, X104, X204, X105, X205, X106, X206, X107, X207, X108, X208	TP4054B1666(C)
X101, X201	TP1681B1421
X102, X202	TP1681B1433
C136, C236	TP4053B1838
C113, C213, C117, C217, C121, C221, C122, C222, C123, C223, C125, C225, C133, C233, C134, C234, C127, C227, C129, C229, C130, C230	TP1681B1389
C8, C101, C201, C108, C208	TP4054B78
C111, C211	TP4053B1403
C109, C209	TP4054B81
C3, C4	TP4054B1400
C2, C112, C212	TP4054B1502
C1	TP1681B1392
D101, D201, D102, D202	TP1681B30P
L1	TP4054B3503
L104, L204	TP4053B68S
L103, L203	TP4054B1434
L101, L201	TP4053B3562
L102, L202	TP4053B3563
VR104, VR204, VR105, VR205	TP4053B1807
VR106, VR206	TP4053B1595

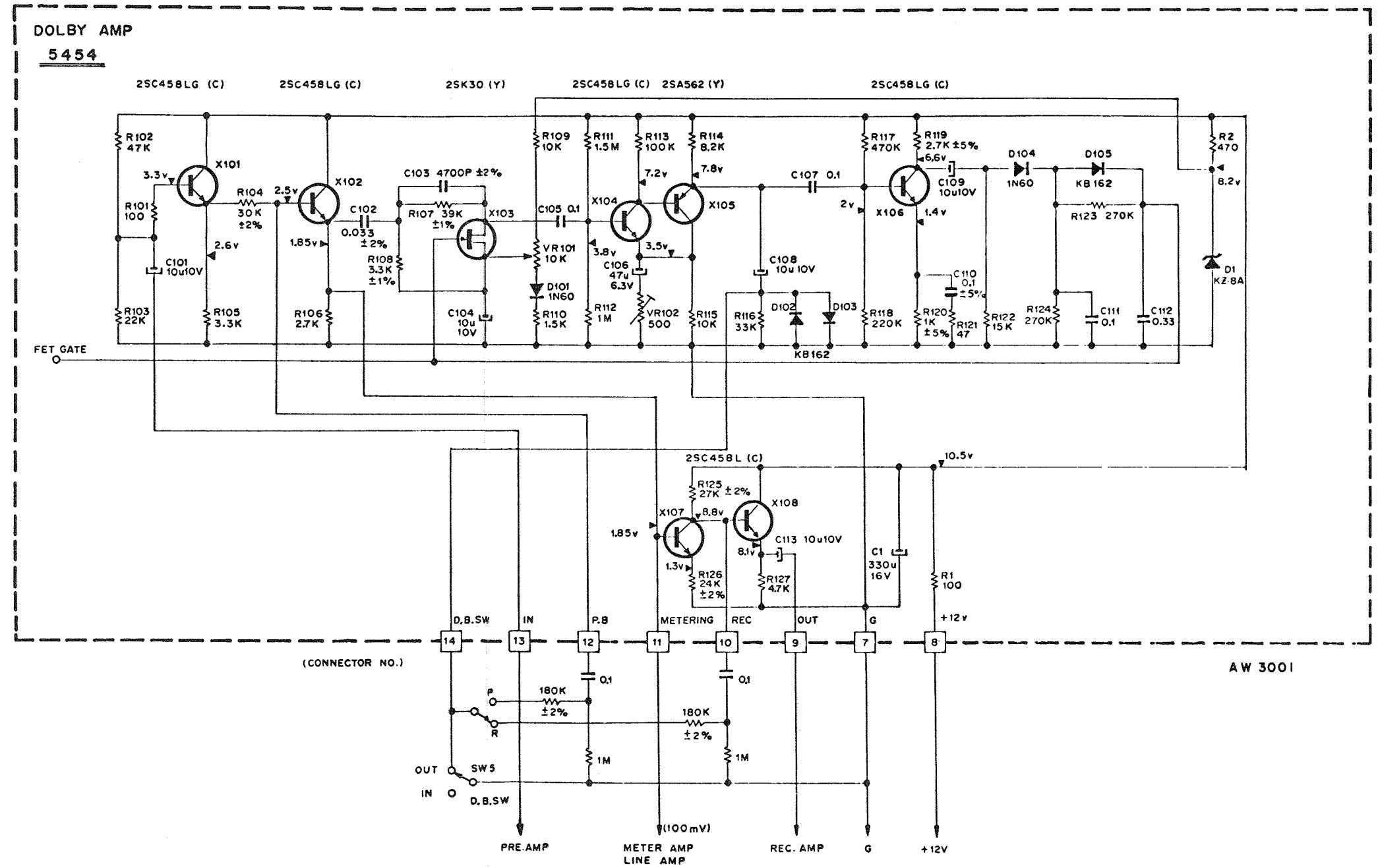


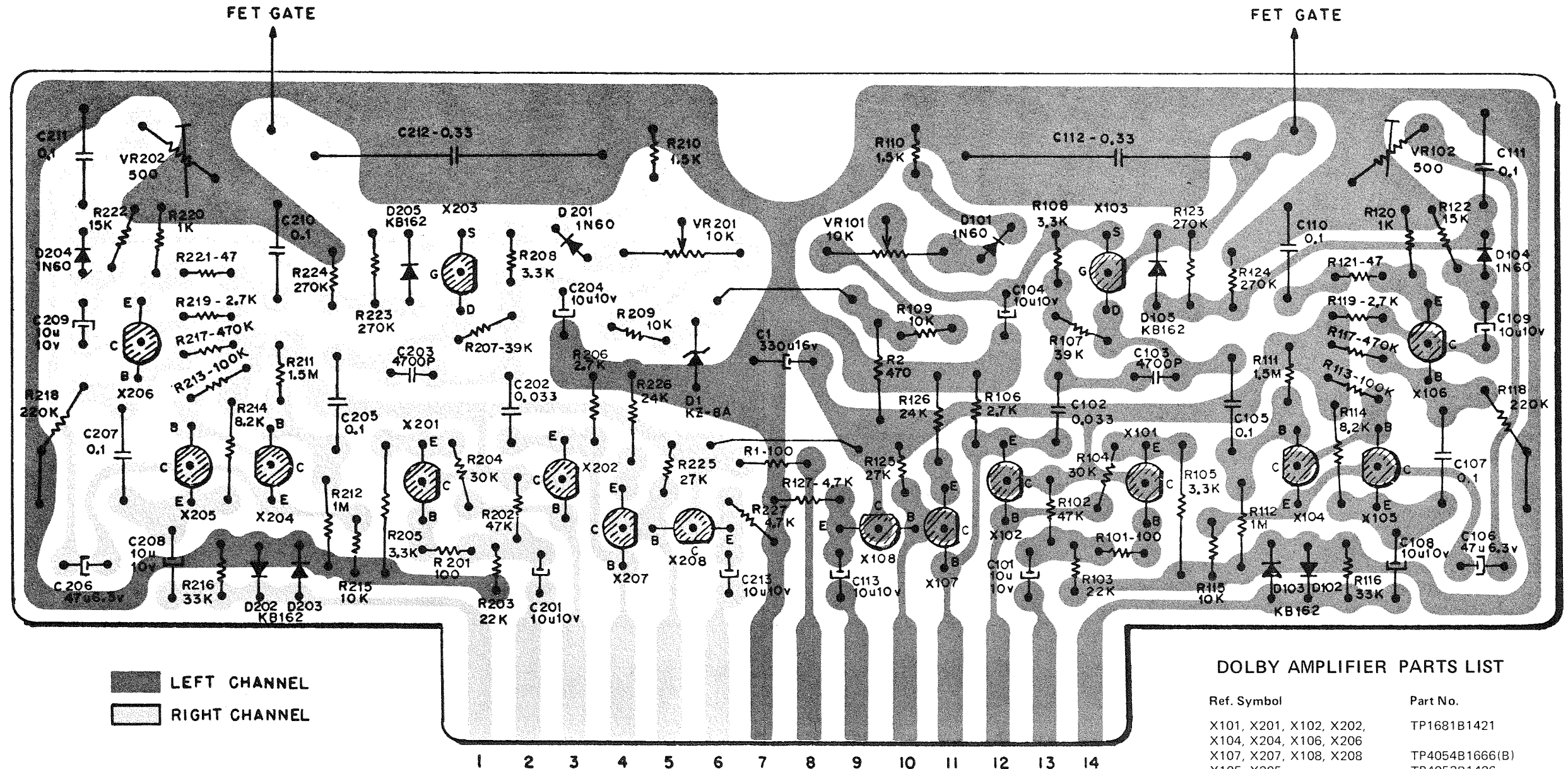
LEFT CHANNEL
 RIGHT CHANNEL

10 DOLBY AMPLIFIER

CN 3

RIGHT CHANNEL	
D.B. SW	1
INPUT	2
P.B.	3
METERING	4
REC.	5
OUTPUT	6
G	7
+12V	8
LEFT CHANNEL	
OUTPUT	9
REC.	10
METERING	11
P.B.	12
INPUT	13
D.B. SW	14



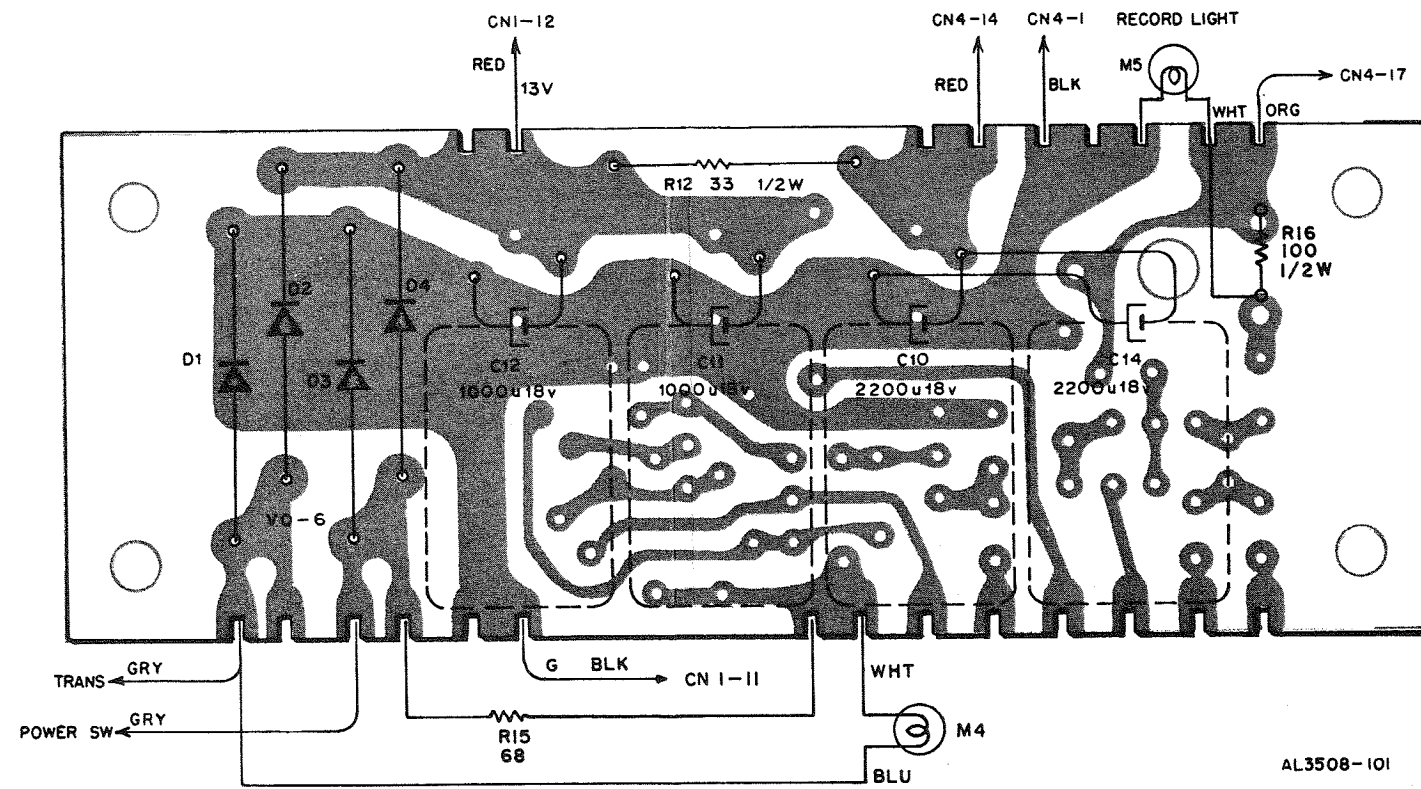


LEFT CHANNEL
 RIGHT CHANNEL

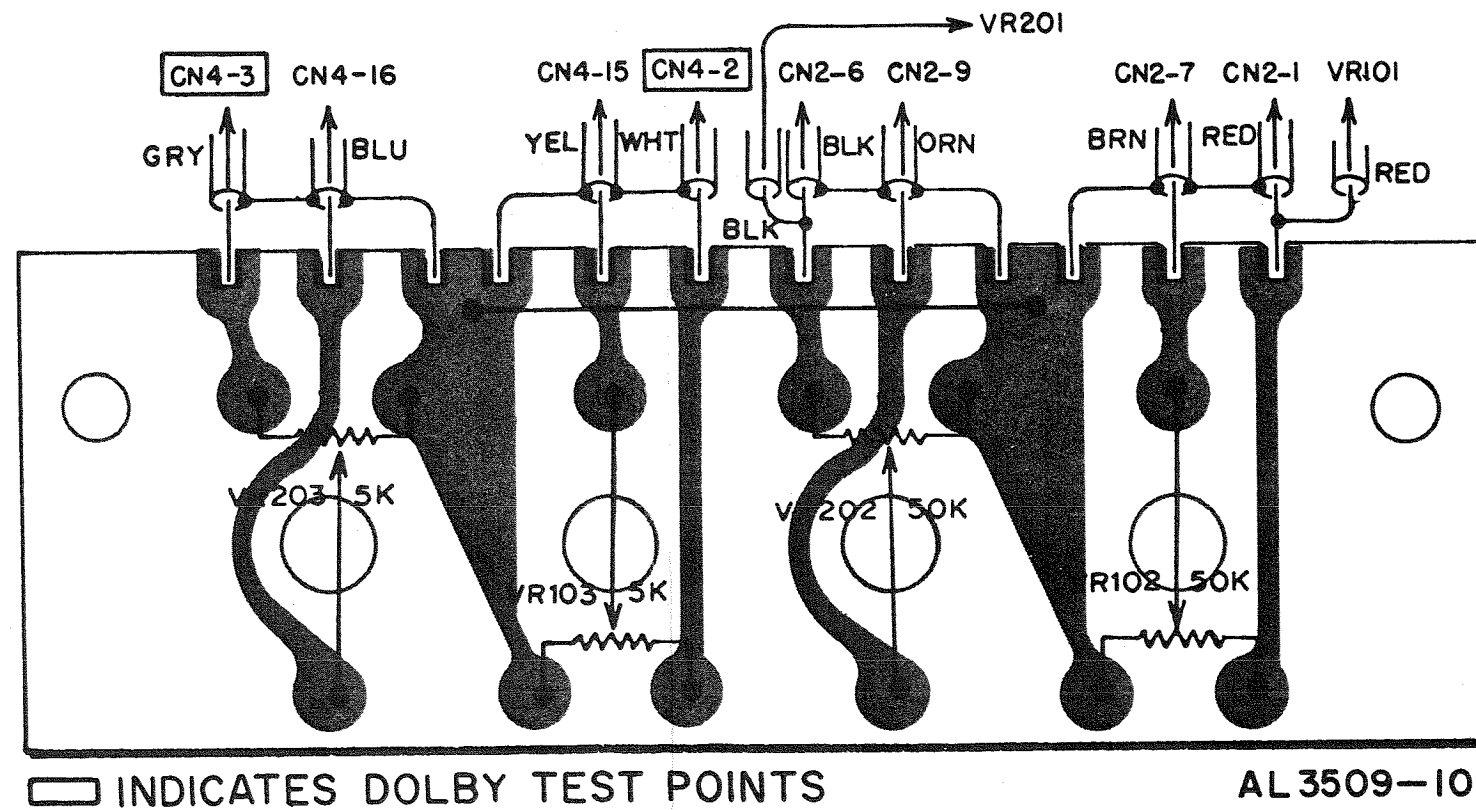
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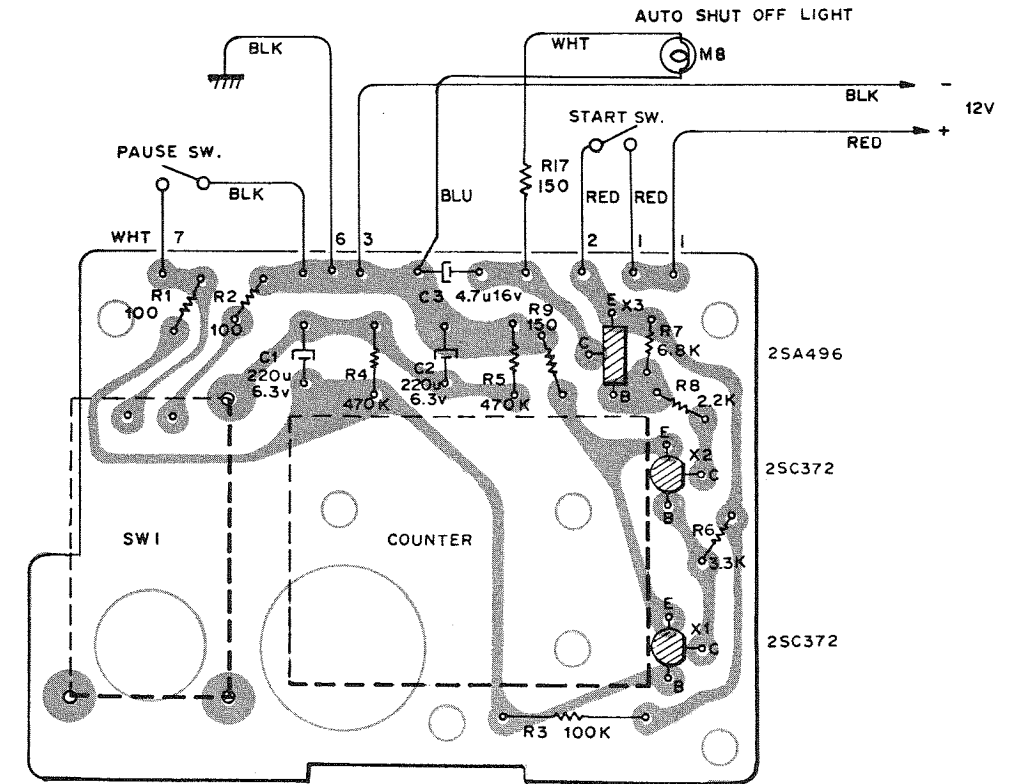
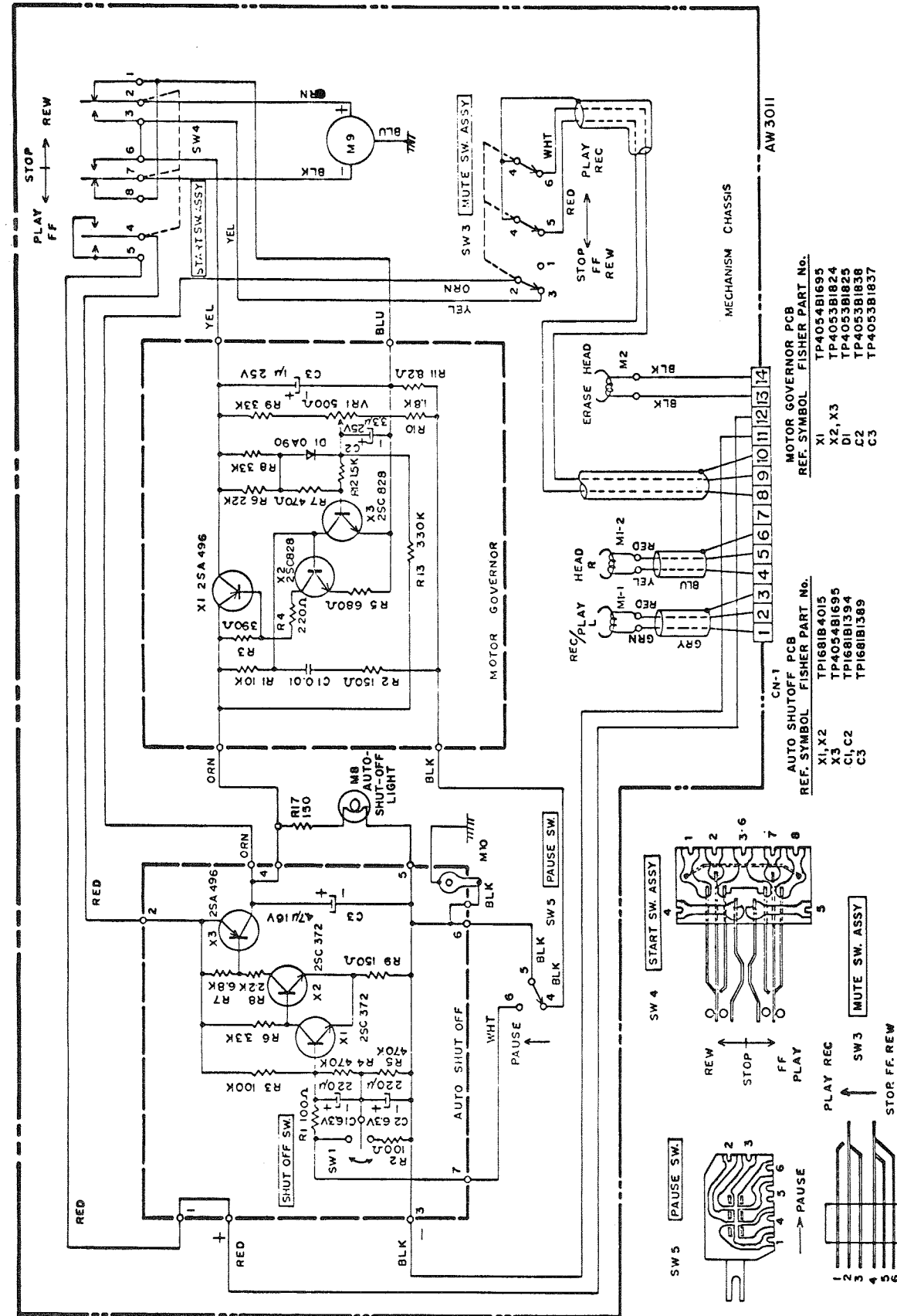
DOLBY AMPLIFIER PARTS LIST

Ref. Symbol	Part No.
X101, X201, X102, X202, X104, X204, X106, X206	TP1681B1421
X107, X207, X108, X208	TP4054B1666(B)
X105, X205	TP4053B1426
X103, X203	TP4053B1600
D102, D202, D103, D203, D105, D205	TP4053B1599
D101, D201, D104, D204	TP1681B30P
D1	TP4053B1808
C101, C201, C104, C204, C108, C208, C109, C209, C113, C213	TP4054B78
C106, C206	TP4053B1403
C1	TP4054B1502
VR102, VR202	TP4053B1601
VR101, VR201	TP4053B1458

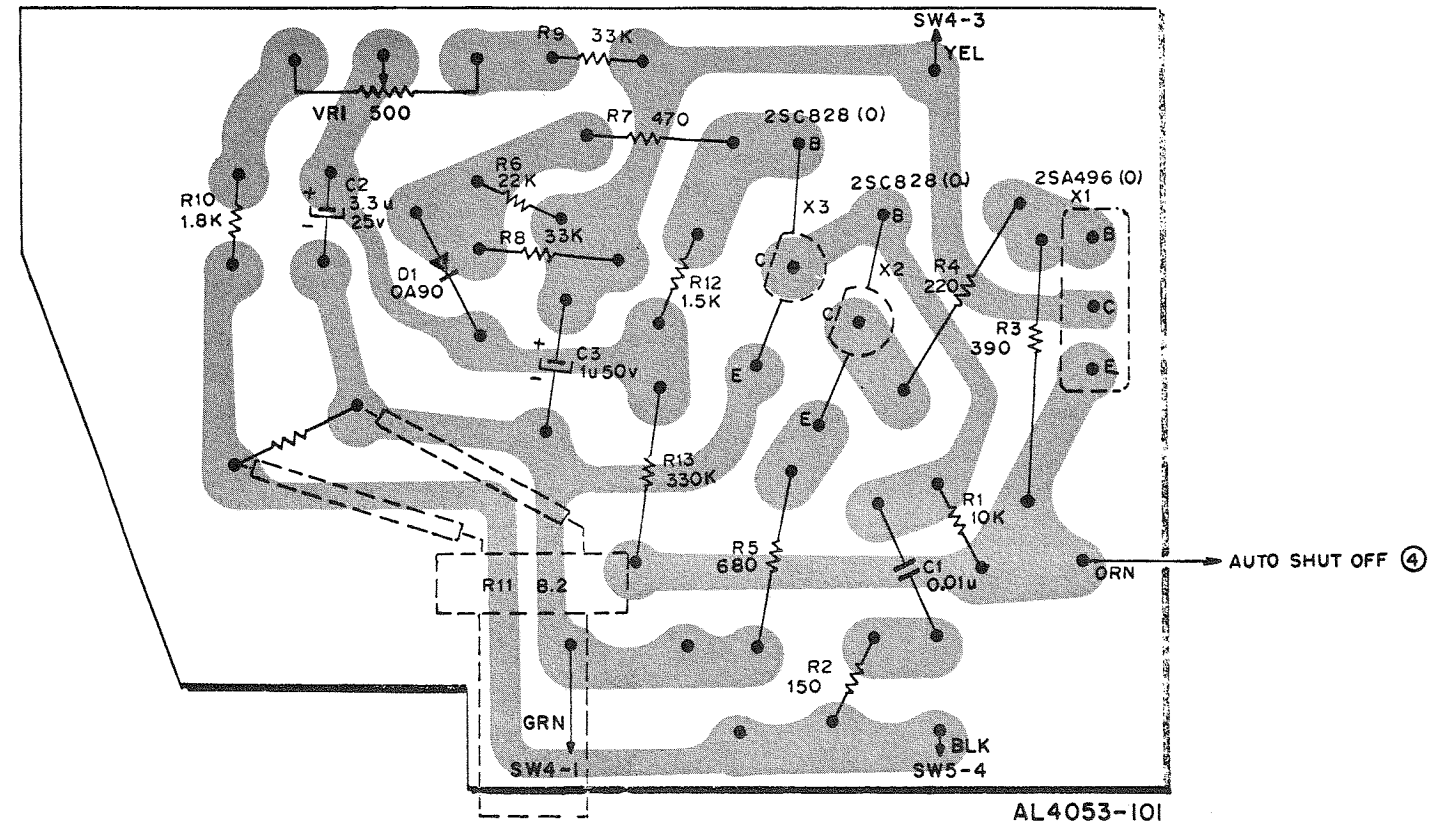


LEVEL ADJUST





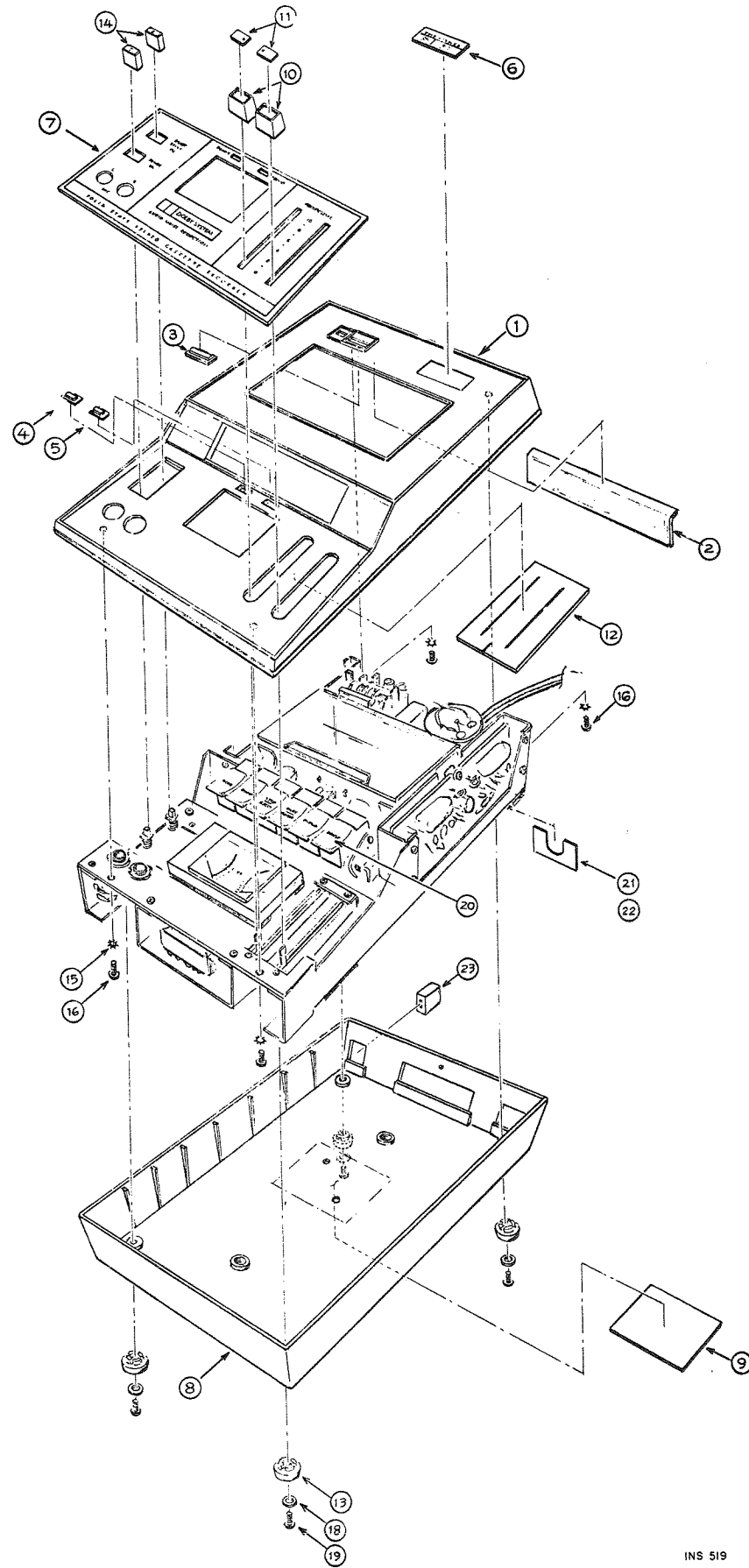
AL3129-101



AL4053-101

MOTOR GOVERNOR

14 CABINET ASSEMBLY

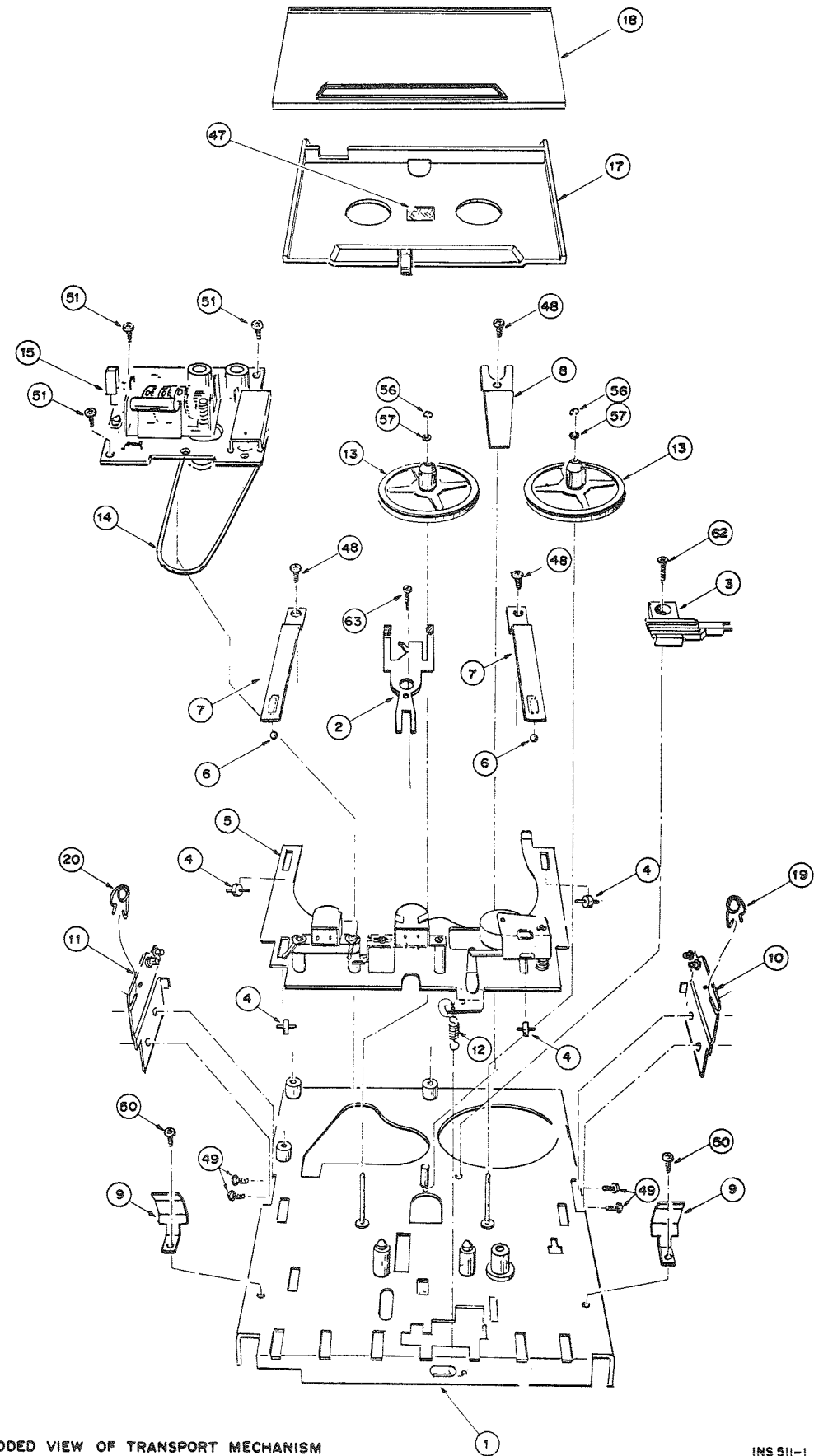


MECHANICAL PARTS CABINET ASSEMBLY

Item	Part No.	Description
1	TP4053A3044	Top Cabinet
2	TP4054A3022	Shield Felt
3	TP4054A3014	Counter Cover
4	TP4054A3015	Power Light Cover
5	TP4054A3016	Record Light Cover
6	TP4053M3066	Name Plate RC-80
7	TP4053M3067	Control Panel RC-80
8	TP4053A3045	Bottom Cabinet
9	TP4053M3069	Serial No. Plate
10	TP4053H3075	Level Control Knob
11	TP4053M3068	Level Control Knob Name Plate (Inserts)
12	TP4053A3046	Level Control Felt Shield
13	TP1681A3021	Rubber Foot
14	TP4053B3595	Pushbutton
15	TP4053E172	3 mm Toothed Washer
16	TP4053E502	Screw M3 x 5 Pan Head
18	TP4053 E183	Washer (3.5 mm x 7 mm x 0.5 mm T)
19	TP4053 E536	Screw M3 x 10 Pan Head Steel Bronze
20	TP4053C3598	Deck Button G
21	TP4054M3039	AC Switch Plate 120V
22	TP4054M3040	AC Switch Plate 220V
23	TP4053B3591	Test Button

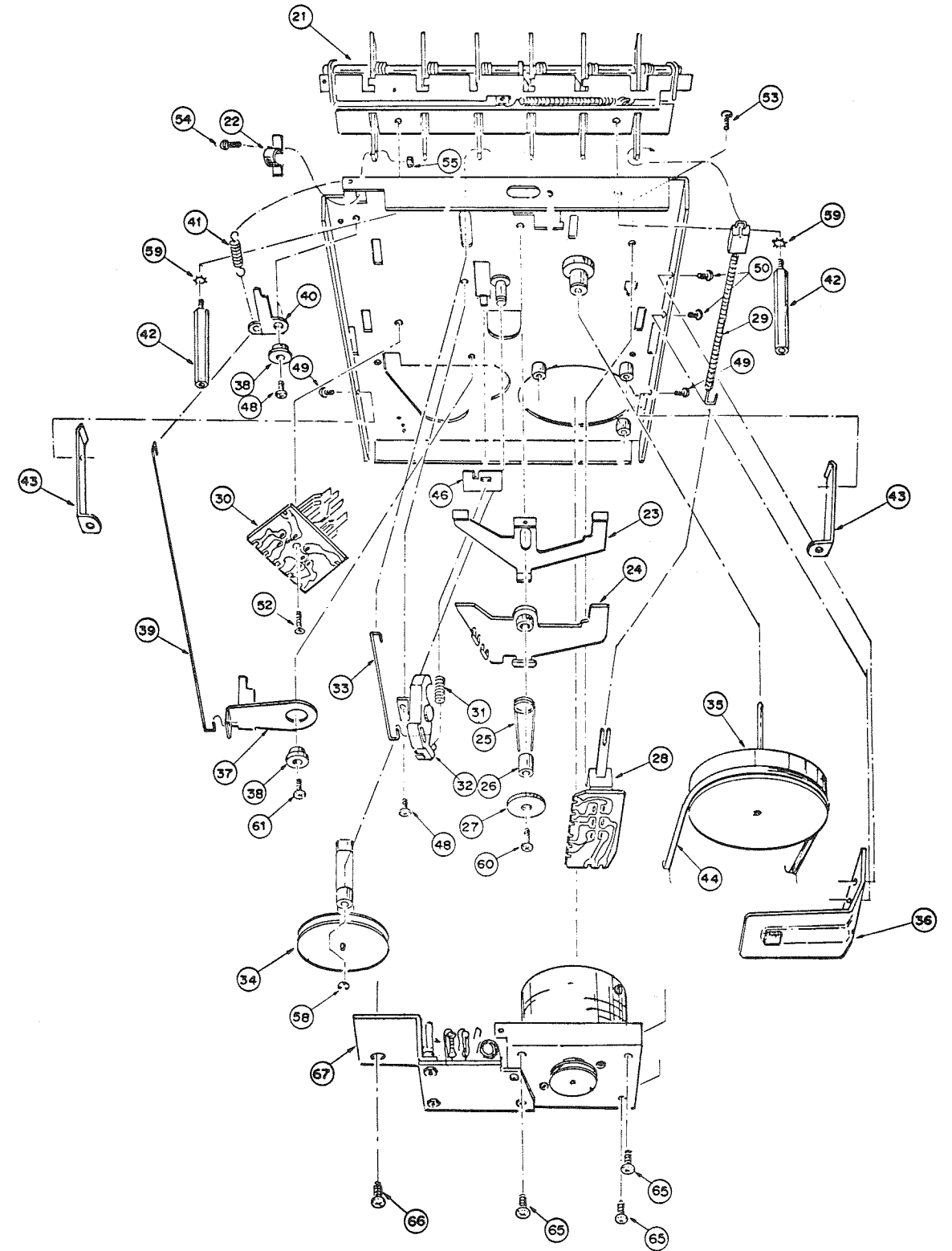
MECHANICAL PARTS TRANSPORT ASSEMBLY

Item	Part No.	Description
1	TP4054CA3101	Chassis Assembly
2	TP4054CA3104	Brake Assembly
3	TP4054CA3107	Mute Switch Assembly
4	TP4054C3504	Head Base Guide Roller
5	TP4054CA3102	Head Base Assembly
6	TP4054C3595	3mm Steel Ball
7	TP4054C3513	Ball Retainer Spring
8	TP4054C3564	Cassette Case Spring
9	TP4054C3544	Cassette Guide
10	TP4054CA3108	Cassette Case Holder R Assembly
11	TP4054CA3109	Cassette Case Holder L Assembly
12	TP4054C3562	Head Base Return Spring
13	TP4054CA3103	Reel Hub Assembly
14	TP4053C3568	Counter Belt
15	TP4053CA3106	Auto Shutoff Assembly
17	TP4054C3586	Cassette Case B
18	TP4054C3606	Cassette Lid A-2
19	TP4054C3654	Lid Spring R
20	TP4054C3653	Lid Spring L
21	TP4054CA3114	Pushbutton Assembly
22	TP4054C3589	Record Switch Spring
23	TP4054C3647	Rocker Arm
24	TP4054C3646	F.R.P. Lever B
25	TP4054C3650	Lever Spring B
26	TP4054C3648	Rocker Arm Pipe
27	TP4054E142	2.6mm Flat Washer (2.6 x 7.5 x 0.5)
28	TP4054CA3128	Pause Switch Assembly
29	TP4054CA3117	Pause Switch Linkage Assembly
30	TP4053CA3113	Motor Switch Assembly
31	TP4054C3552	Eject Spring
32	TP4054CA3118	Eject Arm Assembly
33	TP4054C3553	Eject Linkage Wire
34	TP4054CA3116	Idler Pulley Assembly
35	TP4054CA3115	Capstan Flywheel Assembly
36	TP4054CA3119	Flywheel Holder Assembly
37	TP4054C3545	Record Sensor
38	TP4054C3546	Record Lock Shaft (Washer Type)
39	TP4054C3548	Record Sensor Linkage
40	TP4054C3652	Record Lock Lever B
41	TP4054C3561	Record Lock Lever Spring
42	TP4054C3197	Amp Stud
43	TP4054C3563	P.C.B. Stud
44	TP4054C3616	Driving Belt
46	TP4054C3644	Spring Stopper
47	TP4054M3016	Silver Tape
48	TP4054E228	Screw M2.6 x 6 Philips Ft
49	TP4054E219	Screw M2.6 x 5 Philips Pan Head
50	TP4054E226	Screw M2.6 x 4 Pan Head
51	TP4054E121	Screw M2.6 x 6 Philips Pan Head
52	TP4054E223	Screw M2 x 10 Flat Head
53	TP4054E227	Screw M2.6 x 4 Flat Head
54	TP4054E217	Screw M2 x 6 Philips Pan Head
55	TP4054E176	M2 Nut
56	TP4054E165	E-Ring E-1.2
57	TP4054C3613	1.6mm Mylar Washer
58	TP4054E222	E-Ring E-2
59	TP4054E172	Washer 3mm
60	TP4054E229	Screw M2.6 x 10 Pan Head Ft
61	TP4054E231	Screw M2.6 x 8 Pan Head Ft
62	TP4054E230	Screw M2.6 x 10 Flat Ft
63	TP4054E124	Screw M2 x 4 Pan Head
65	TP4054E219	Screw M2.6 x 5 Pan Head
66	TP4054E228	Screw M2.6 x 6 Pan Head Ft
67	TP4053CA3126	Motor Assembly



EXPLODED VIEW OF TRANSPORT MECHANISM

INS 511-1

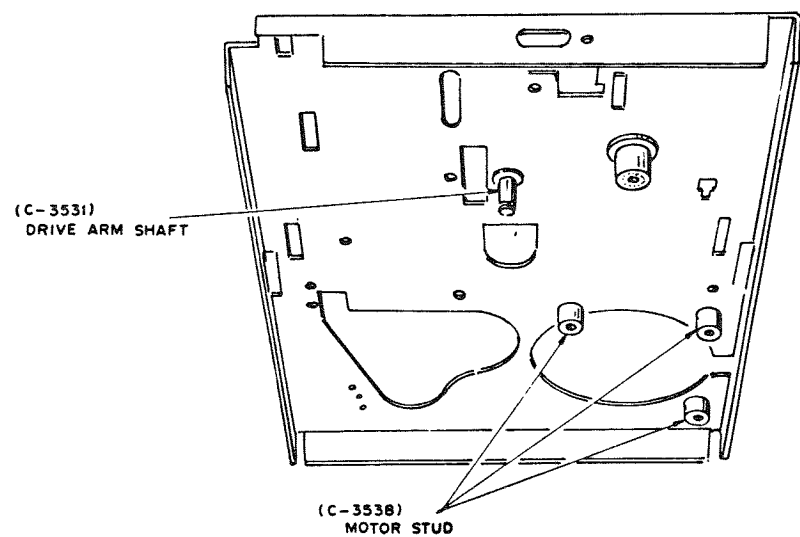
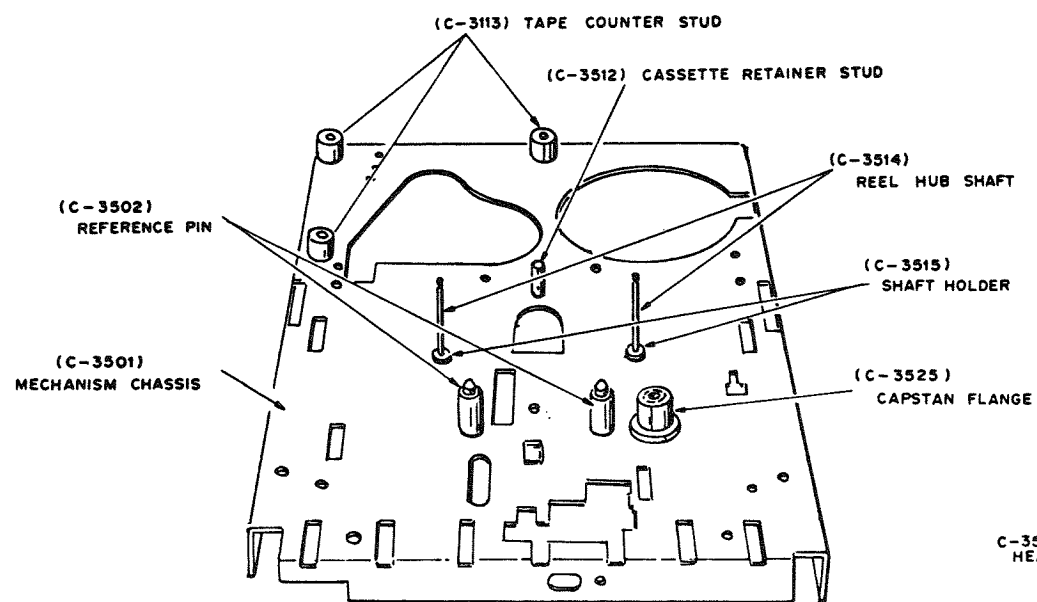


EXPLODED VIEW OF TRANSPORT MECHANISM

INS 511-2

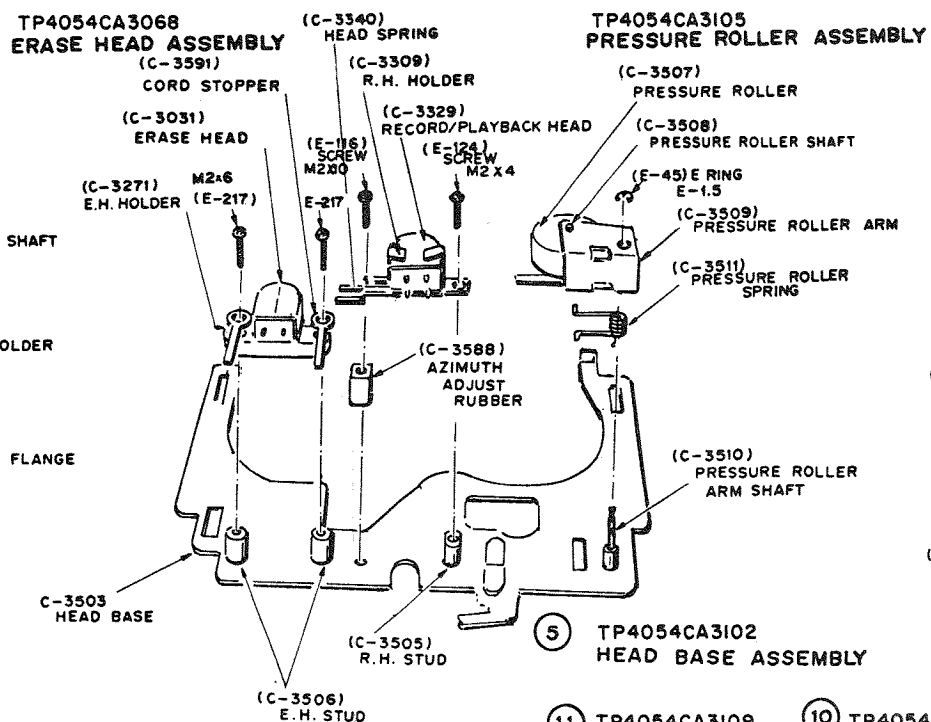
16 TRANSPORT SUBASSEMBLY

① TP4054CA-3101 CHASSIS ASSEMBLY

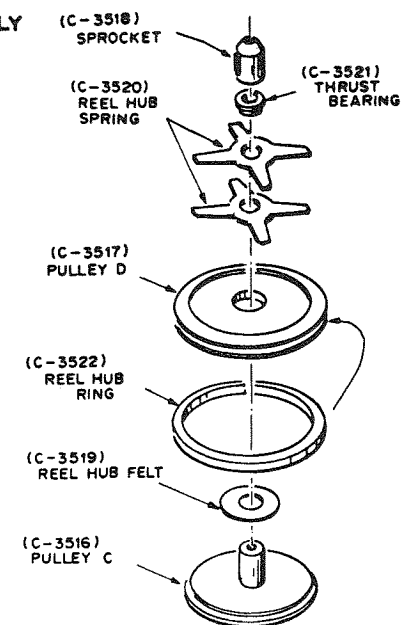


SUB ASSEMBLY (MECHANISM)

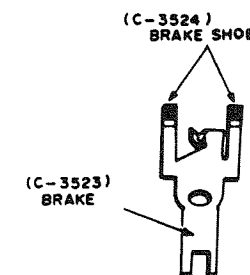
TP4054CA-3096 RECORD/PLAYBACK HEAD ASSEMBLY



⑬ TP4054CA3103 REEL HUB ASSEMBLY



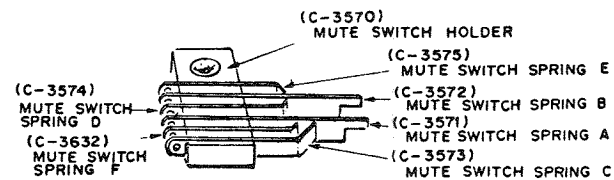
② TP4054CA3104 BRAKE ASSEMBLY



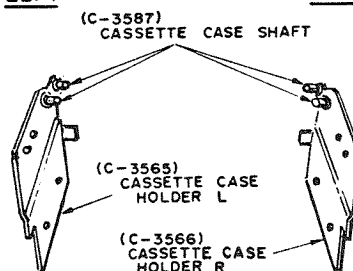
⑤ TP4054CA3102 HEAD BASE ASSEMBLY

⑪ TP4054CA3109 CASSETTE CASE HOLDER LEFT

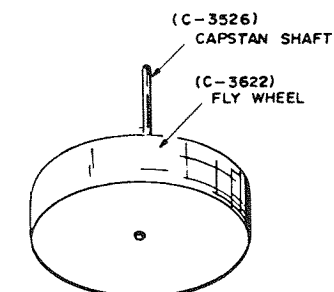
③ TP4054CA3107 MUTE SWITCH ASSEMBLY



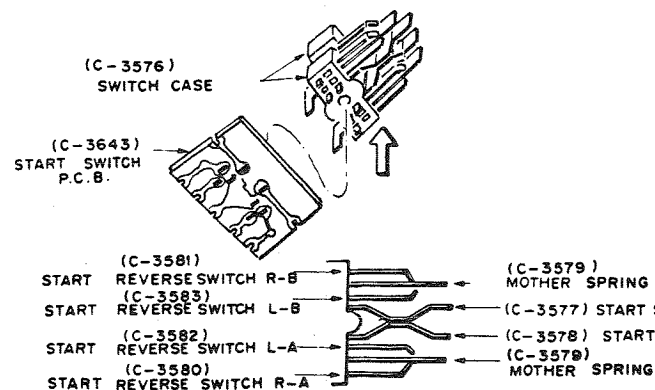
⑩ TP4054CA3108 CASSETTE CASE HOLDER RIGHT



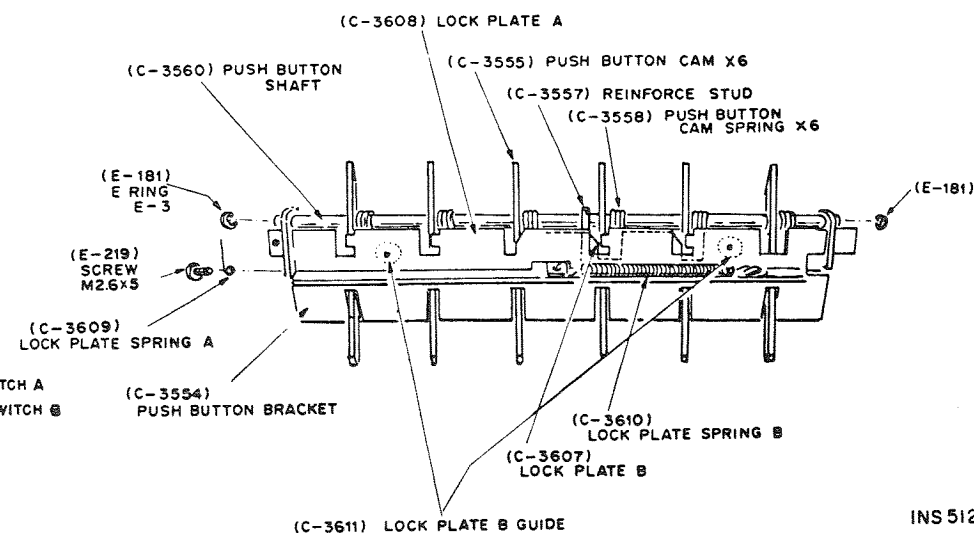
③⑤ TP4054CA3115 CAPSTAN FLYWHEEL ASSEMBLY



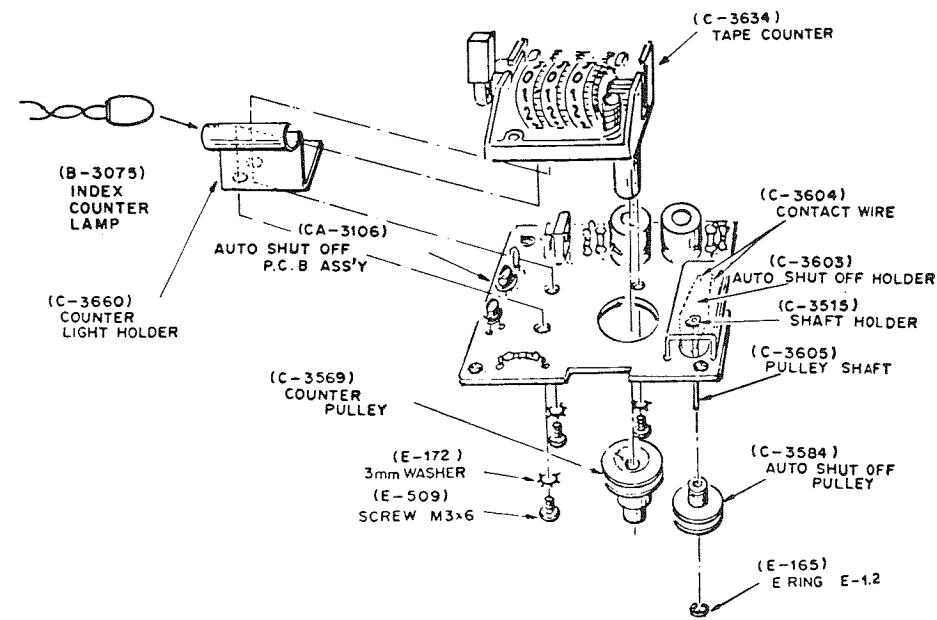
③⑩ TP4054CA3113 START SWITCH ASSEMBLY



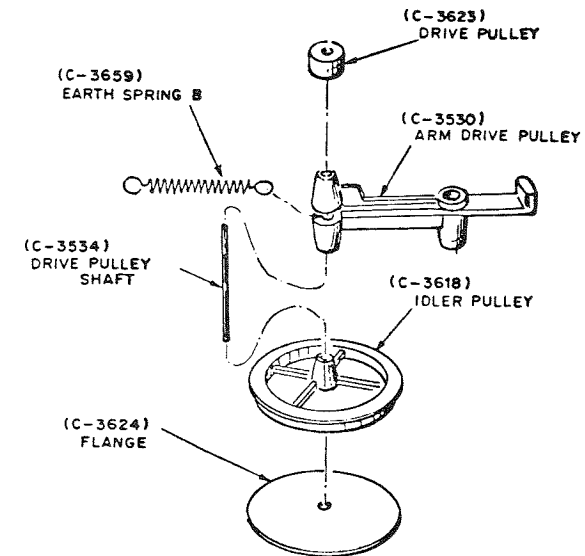
②① TP4054CA3114 PUSH BUTTON ASSEMBLY



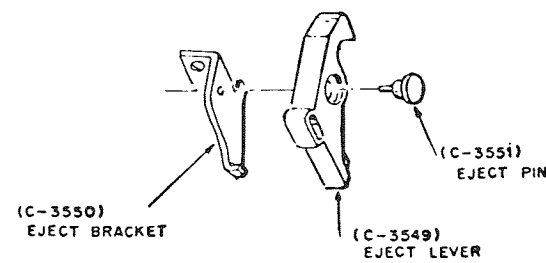
15 TP4053CA-3106
AUTO SHUT OFF ASS'Y



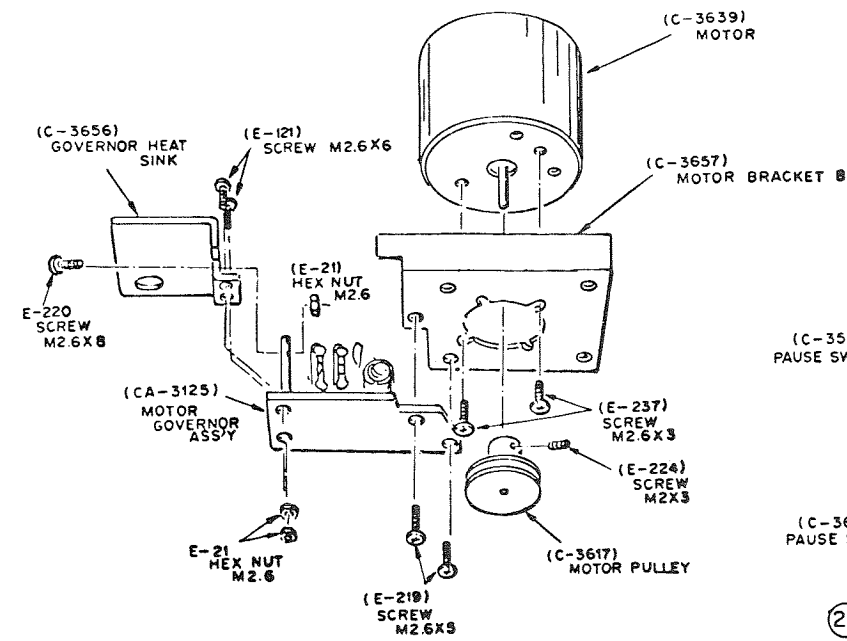
34 TP4054CA-3116
IDLER PULLEY ASS'Y



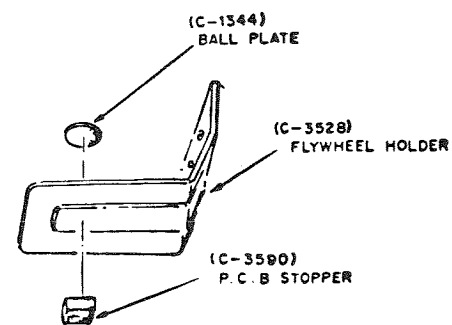
32 TP4054CA-3118
EJECT ARM ASS'Y



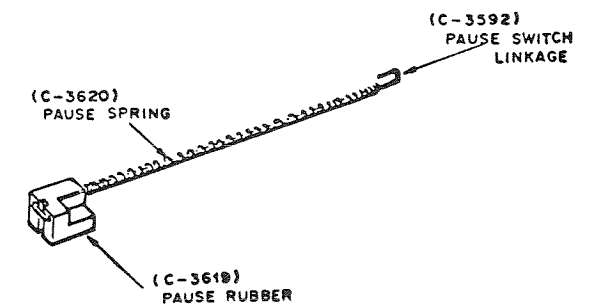
67 TP4053CA-3126
MOTOR ASS'Y



36 TP4054CA-3119
FLYWHEEL HOLDER ASS'Y



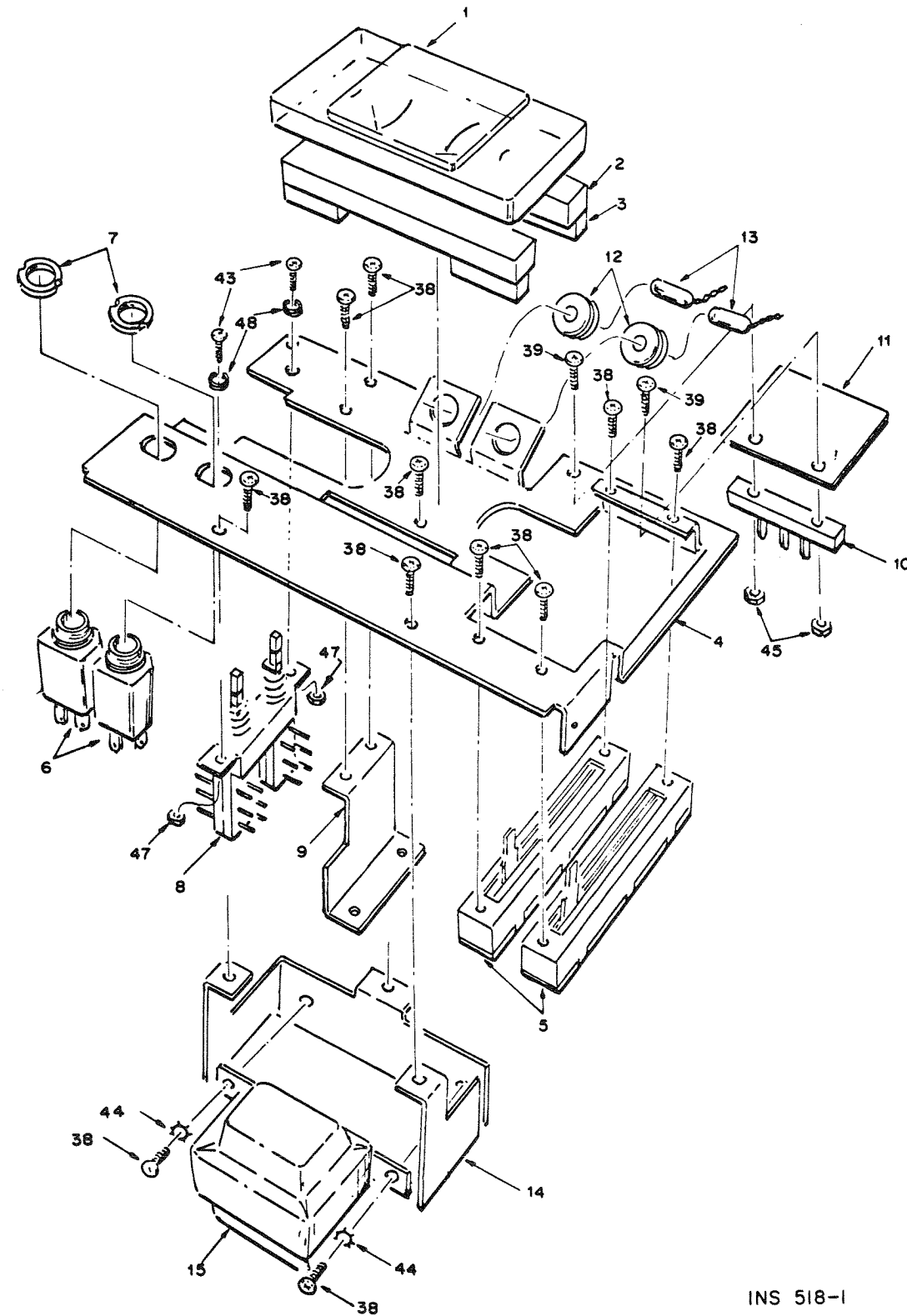
29 TP4054CA-3117
PAUSE SWITCH LINKAGE ASS'Y



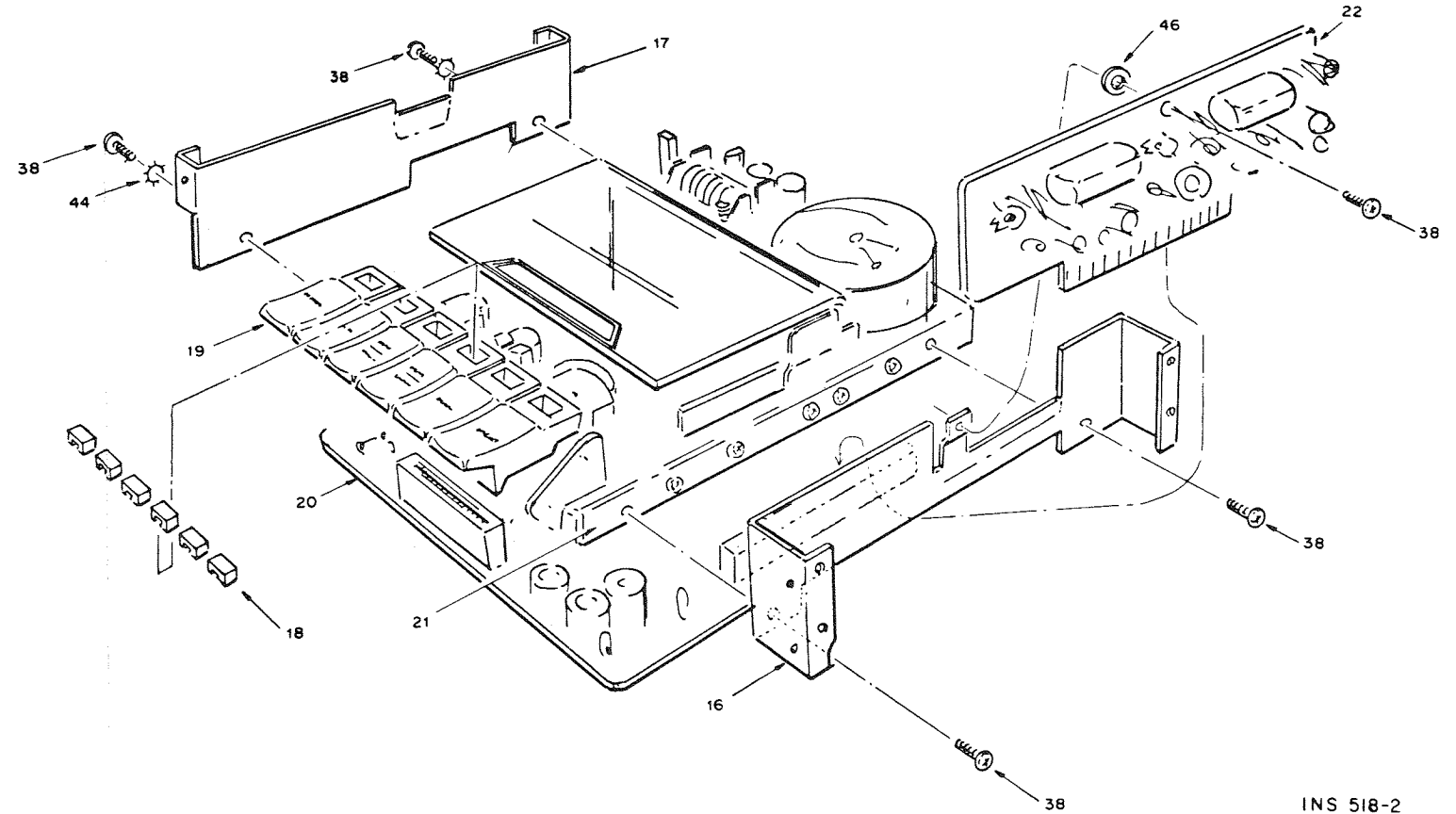
28 TP4054CA-3128
PAUSE SWITCH ASS'Y

SUB ASSEMBLY (MECHANISM)

18 CHASSIS ASSEMBLY



INS 518-1

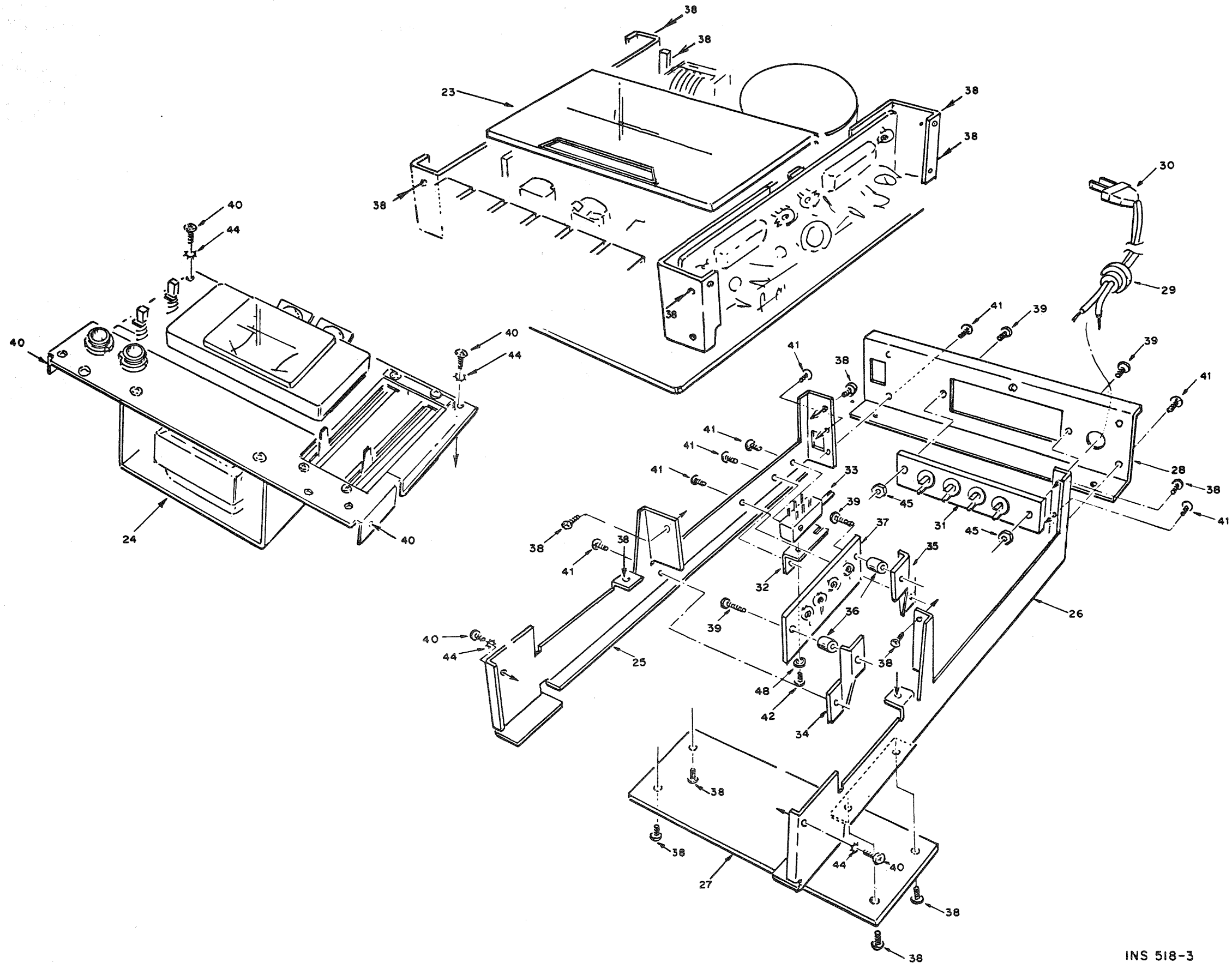


INS 518-2

MECHANICAL PARTS CHASSIS ASSEMBLY

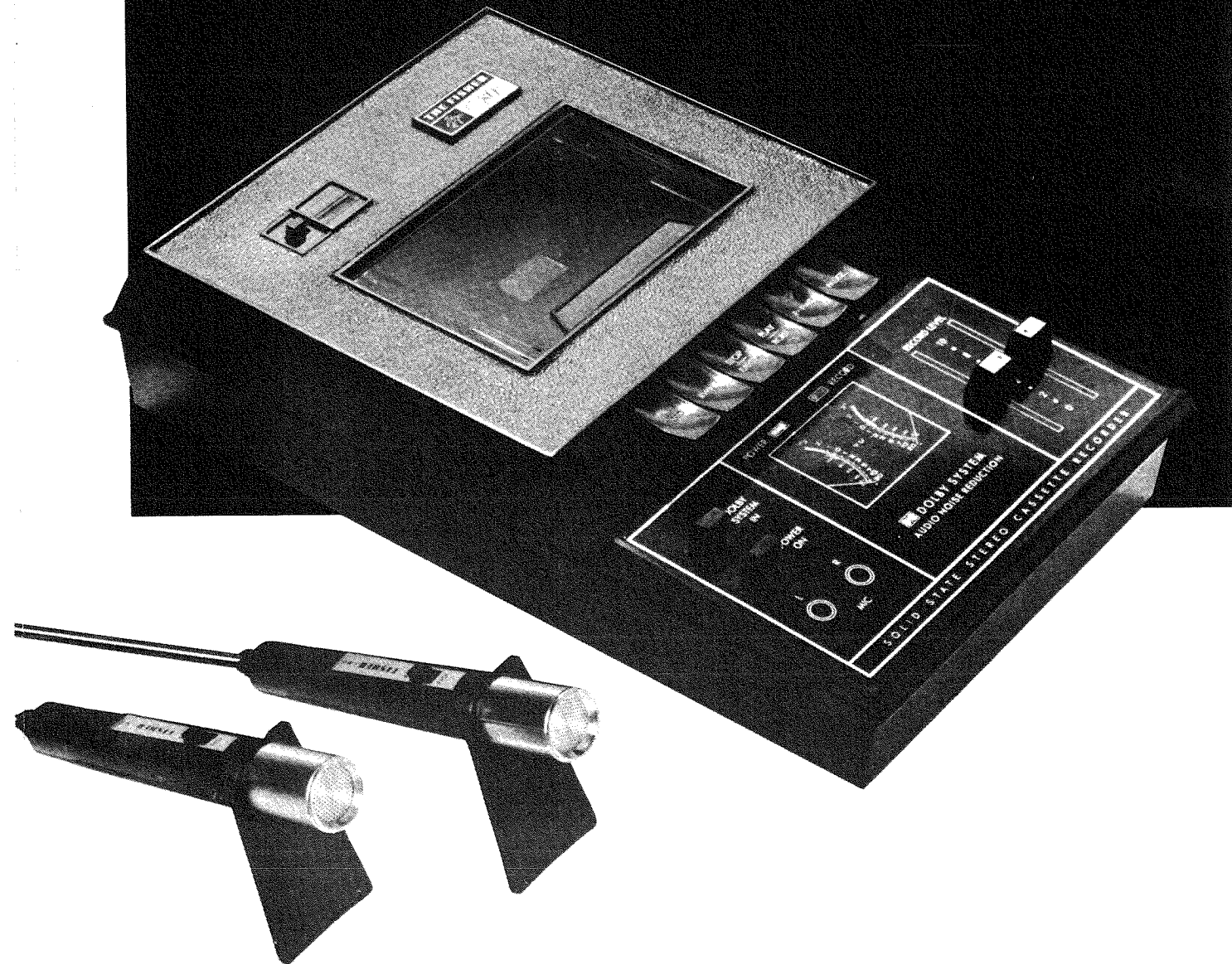
Item	Part No.	Description	Item	Part No.	Description
1	TP4054B3039	Level Meter	26	TP4053B3517	Side Plate (R)
2	TP4053B3596	Meter Cushion	27	TP4053BA3508	Power Supply P.C.B. Assembly
3	TP4053B3638	Meter Plate	28	TP4053B3593	Jack Plate
4	TP4053B3594	Control Chassis	29	TP4054B4021	Cord Stopper
5	TP4053B3568	Slide Volume 10K (B) VR101, VR201	30	TP4054B1197	Power Cord M7
6	TP4054B3083	Mold Jack	31	TP4053B3516	4P Pin Jack
7	TP4054B1517	Jack Nut	32	TP4053B3590	Switch Holder
8	TP4053B3571	Switch SW5, SW7	33	TP4053B3587	Switch SW6 UEG 221
9	TP4053B3603	Power Supply P.C.B. Holder	34	TP4053B3637	Level Control P.C.B. Holder (B)
10	TP4054B3509	3P Terminal	35	TP4053B3592	Level Control P.C.B. Holder (A)
11	TP4054B3510	3P Terminal Insulation Plate	36	TP4053C9	P.C.B. Stud
12	TP4054B1431	Rubber Bushing	37	TP4053BA3509	Level Adjust P.C.B. Assembly
13	TP4053B3075	Pilot Lamp 12V, 25 mA, M4, M5	38	TP4054E509	Screw M3 x 6 Philips Round Head
14	TP4053B3604	Transformer Holder	39	TP4054E503	Screw M3 x 10 Philips Round Head
15	TP4053B3574	Power Transformer T1	40	TP4053E522	Screw M3 x 4 Philips Round Head
16	TP4053B3517	Side Plate (R)	41	TP4053E533	Screw M3 x 5 Flat Head
17	TP4053B3518	Side Plate (L)	42	TP4053E5	Screw M2.6 x 4 Philips Round Head
18	TP4054C3593	Pushbutton	43	TP4053E121	Screw M2.6 x 6 Philips Round Head
19	TP4053C3598	Deck Button G	44	TP4054E172	3mm Toothed Washer
20	TP4053BA3503	Main P.C.B. Assembly (R/P Amplifier)	45	TP4054E507	M3 Nut
21	TP4053BA3504	Mechanism Chassis Assembly	46	TP4053E71	3mm Fiber Washer
22	TP4053BA3502	Dolby P.C.B. Assembly	47	TP4053E21	M2.6 Nut
23	TP4053BA3506	Deck Mechanism Assembly	48	TP4053E26	M2.6mm Spring Washer
24	TP4053BA3507	Control Chassis Assembly	*	TP4053B3569	Main P.C.B. Shield Plate
25	TP4053B3518	Side Plate (L)	*	TP4053E236	Screw M2.6 x 14 Philips Pan Head
			*	TP4053E142	Washer 2.6mm
			*	TP4053B3609	P.C.B. Stud

* denotes Main P.C.B. Shield Plate and mounting hardware not shown on figure.



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