TC-350

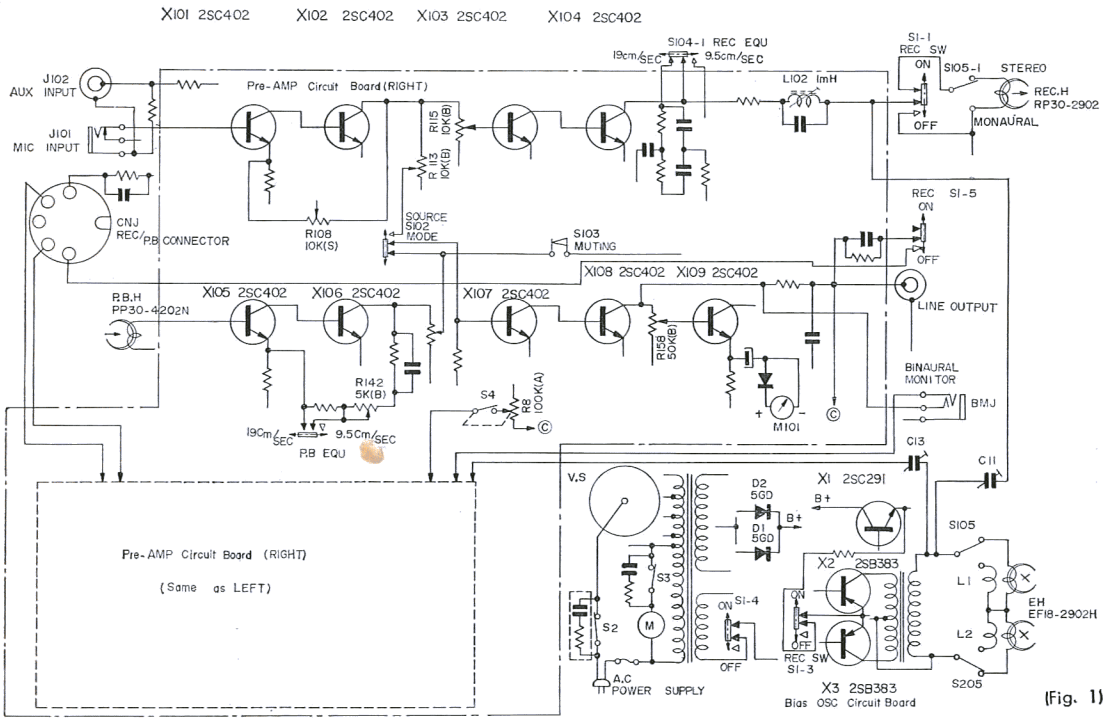
Specifications

Power requirements :	50W, AC100V, 110V, 117V, 125V, 220V or 240V, 50/60 c/s (Only AC 117V 60 c/s for U. S. A.)
Reel :	7″ or less
Tape speed :	7-1/2 and 3-3/4 ips. (19 and 9.5 cm/s)
Recording system :	4-track stereophonic or monophonic
Frequency response :	30～20,000 c/s at 7-1/2 ips. ±3 db 50～15,000 c/s at 7-1/2 ips. 30～14,000 c/s at 3-3/4 ips.
Signal-to-noise ratio :	Better than 50 db
Flutter and wow :	Less than 0.17% RMS at 7-1/2 ips. Less than 0.25% RMS at 3-3/4 ips.
Harmonic distortion :	Less than 3% at 0 db (0.775V) line output
Level indication :	Two VU meters record : NAB standard playback : calibrated to 0 db (0.775V) line output
Fast forward and rewind time :	Within 4 min. (1,200′ tape)
Input :	Microphone Sensitivity : −72 db (0.19 mV) Impedance : low (will accommodate any microphone with 250～1KΩ impedance) Auxiliary Sensitivity : −22 db (0.06 V) Impedance : approx. 100KΩ Integrated record/playback connector Sensitivity : −42 db (6.15 mV) Impedance : approx. 100 KΩ
Output :	Line Output level : 0 db (0.775 V) Impedance : optimum load impedance 100 KΩ Binaural monitor Output level : −1 db (0.692 V) Impedance : accommodates 10 KΩ headset Integrated record/playback connector Output level : 0 db (0.775 V) Impedance : optimum load impedance 500 KΩ
Transistor :	2SC402×18, 2SB381×2, 2SC291×1
Diode :	1T22A×2, 5G-D×2
Dimensions :	15-3/4(W)×6-5/16(H)×13″(D) (400×160×320 mm)
Weight :	Approx. 17 lbs. 3 ozs. (7.8 kgs.)

SONY®

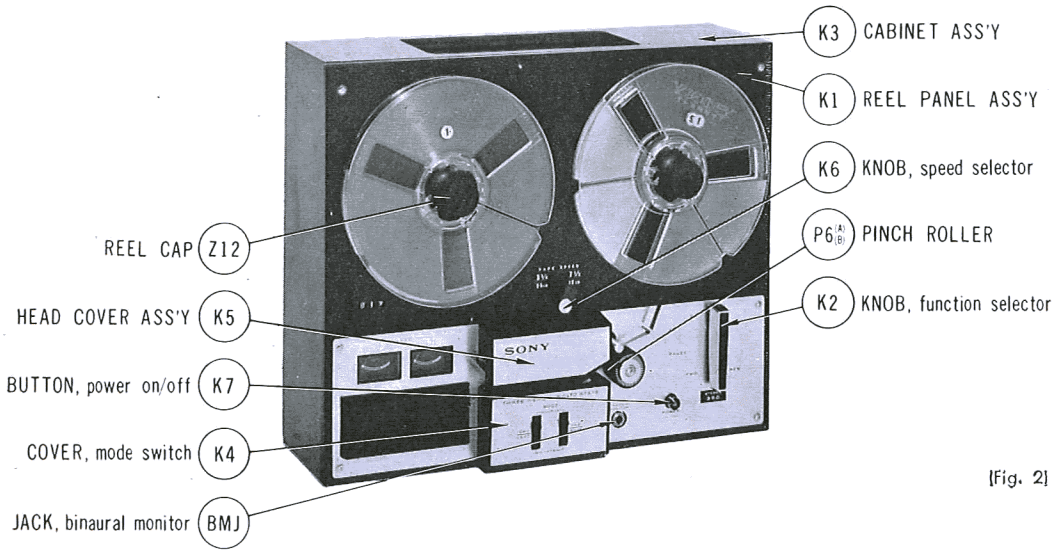
SERVICING GUIDE

Block Diagram



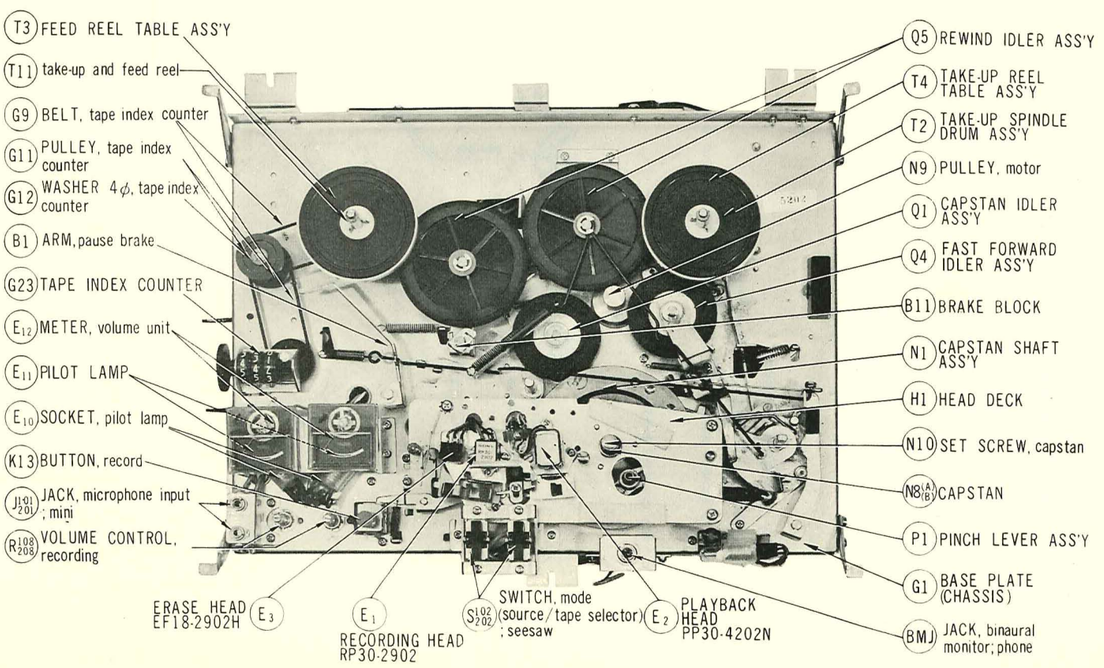
(Fig. 1)

Cabinet Top View



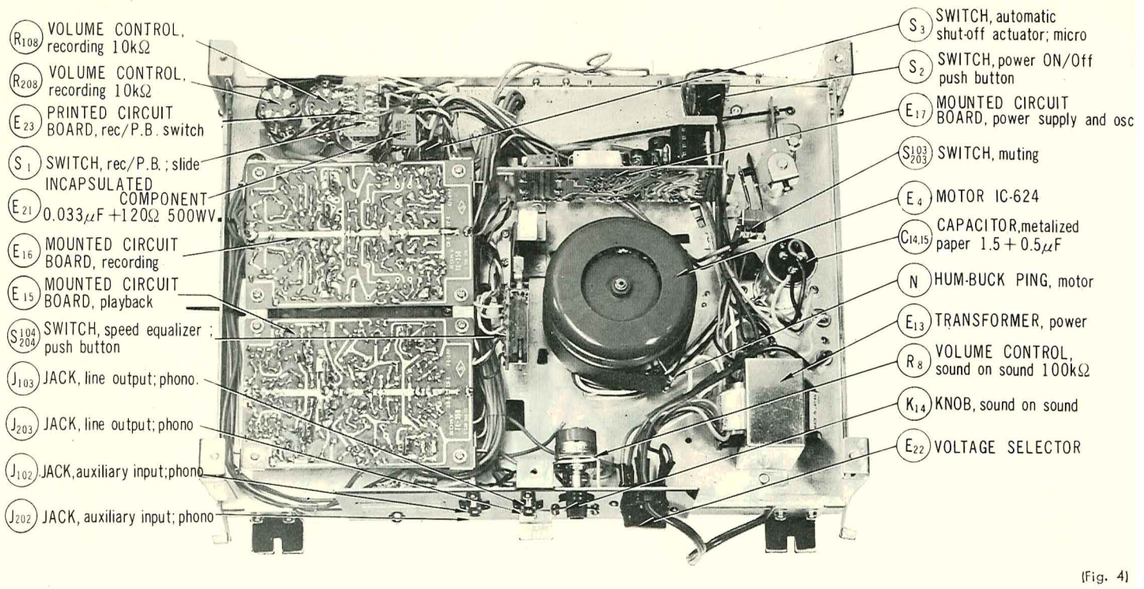
(Fig. 2)

Chassis Top View



(Fig. 3)

Chassis Bottom View



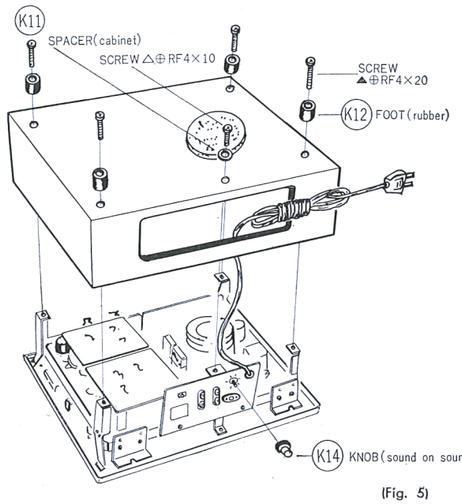
(Fig. 4)

Removal of Cabinet

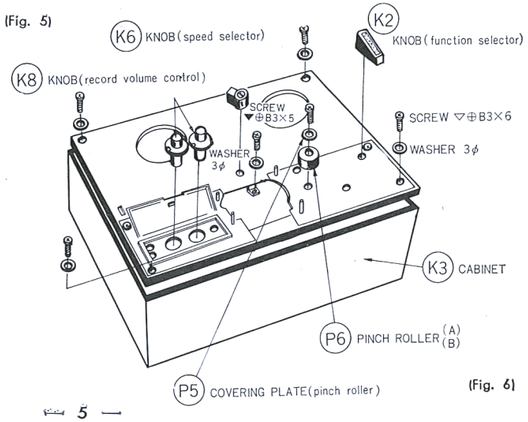
1. Turn up-side down the recorder on a soft pad.
2. Remove four Screws (⊕RF 4×20 marked with ▲ in Fig. 5), four Rubber Feet, one Screw (⊕RF 4×10 marked with △ in Fig. 5), one Cabinet Spacer and Tone sound on Sound Control Knob as shown in Fig. 5.
3. Lift up the Cabinet gently.

Removal of Reel Panel

1. Remove Mode Switch Cover and Head Cover. (Fig. 1)
2. Remove Function Selector Knob, Speed Selector Knob and Pinch Roller by loosening the respective Set Screws. (Fig. 2)
3. Remove four Screws (⊕B 3×6 marked with ▽ in Fig. 6.), four 3φ Washers, one Screw (⊕RF 3×5 marked with ▼ in Fig. 6.) and one 3φ Washer as shown in Fig. 6.
4. Open the Cover for Recording Box and pull out two Record Volume Control Knobs.
   Note : If the Record Volume Control Knobs are too tight to remove, try to lift Reel Panel up slightly and the Record Volume Control Knobs will come up for easy removal.
5. Now Reel Panel can be removed and main mechanism can be checked.
   Note : When re-assemblying the Reel Panel, the Record Volume Control Shafts must be located just at the center of the respective holes.



(Fig. 5)



(Fig. 6)

Removal of Printed Circuit Boards

Printed Circuit Boards can be checked without disassembled. When it is necessary to remove the Circuit Boards, proceed as follows :

Circuit Board for Playback Amplifier

1. Take out two Holding Screws (⊕RF 3×6 marked with ◯ in Fig. 7), two 3φ SPRING WASHERS and two 3φ WASHERS as shown in Fig. 7.
2. Slide the PRINTED CIRCUIT BOARD (playback amplifier) rightwards and remove it from the left Bracket as shown in Fig. 7.

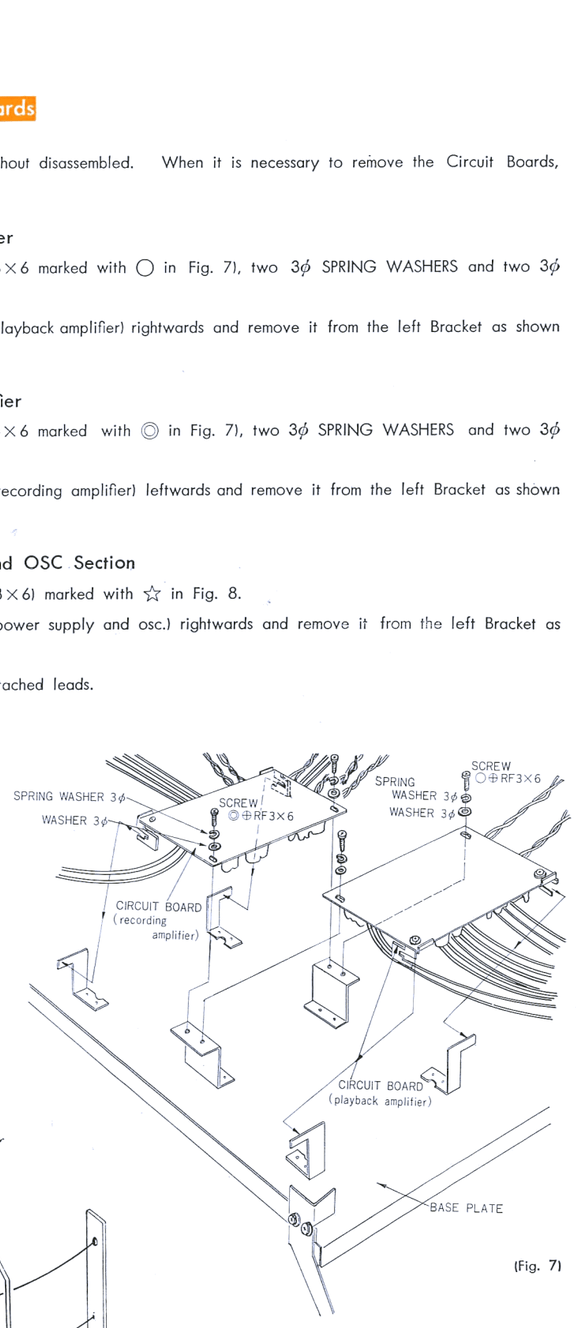
Circuit Board for Recording Amplifier

1. Take out two Holding Screws (⊕RF 3×6 marked with ◎ in Fig. 7), two 3φ SPRING WASHERS and two 3φ WASHERS as shown in Fig. 7.
2. Slide the PRINTED CIRCUIT BOARD (recording amplifier) leftwards and remove it from the left Bracket as shown in Fig. 7.

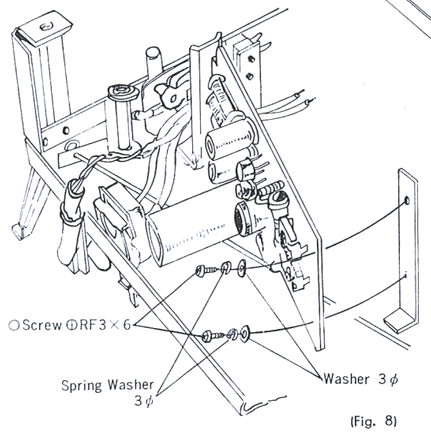
Circuit Board for Power Supply and OSC Section

1. Take out two Holding Screws (⊕RK 3×6) marked with ☆ in Fig. 8.
2. Slide the PRINTED CIRCUIT BOARD (power supply and osc.) rightwards and remove it from the left Bracket as shown in Fig. 8.

Note : Take care not to cut the attached leads.



(Fig. 7)



(Fig. 8)

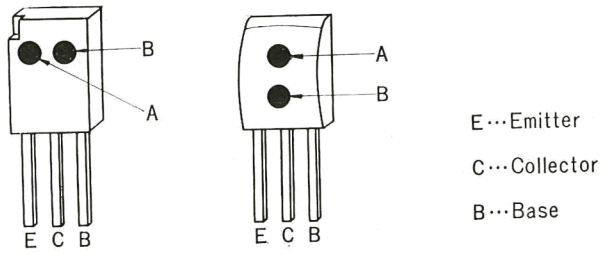
Lead Indication and Color Code of Silicon Transistor 2SC40 Ⓐ-Ⓑ

○ The leads of the Transistor 2SC40Ⓐ-Ⓑ are attached in the order of Emitter, Collector and Base from the left with the marked side of the transistor faced up as shown in Fig. 9.

○ Color Code 2SC40Ⓐ-Ⓑ

Color means the specified digit to be put in Ⓐ and Ⓑ as follows.

Position of color mark \ digit	1	2	3	4	5	6
A (left or upper side)	red	yellow	white			
B (right or lower side)	brown	red	orange	yellow	green	blue



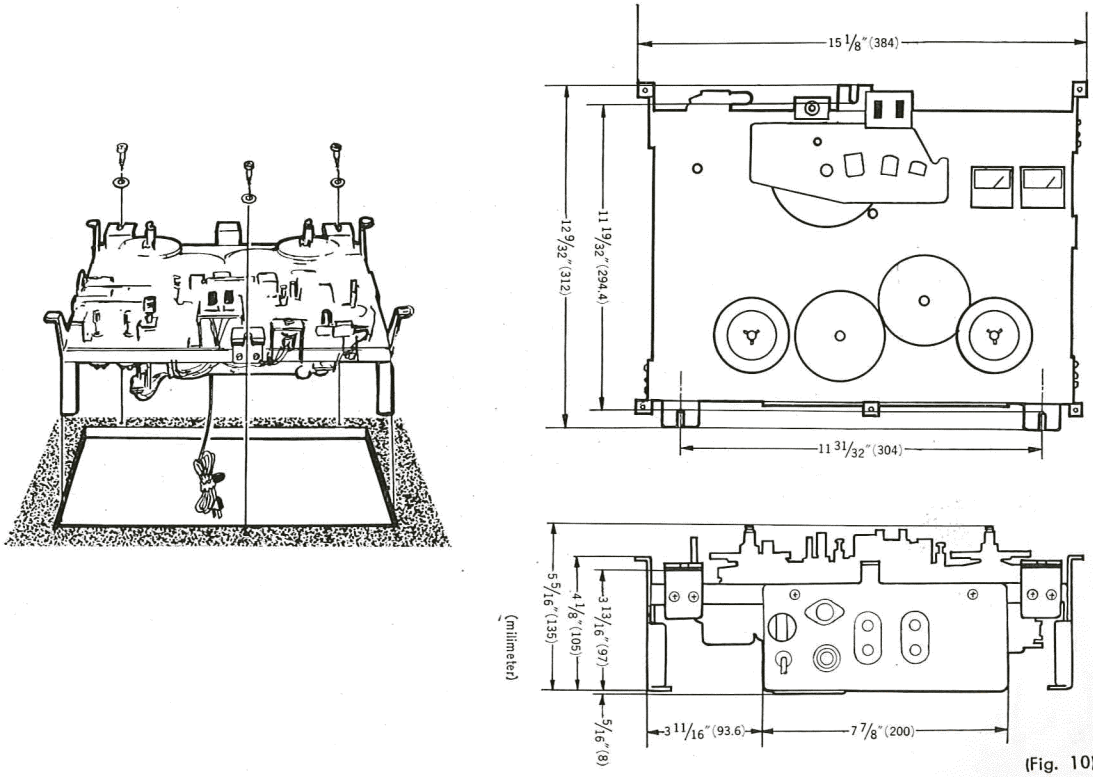
(A) (B)

(Fig. 9)

To Install the Unit to other Equipment

When it is desired to install the Unit to other equipment, proceed as follows:

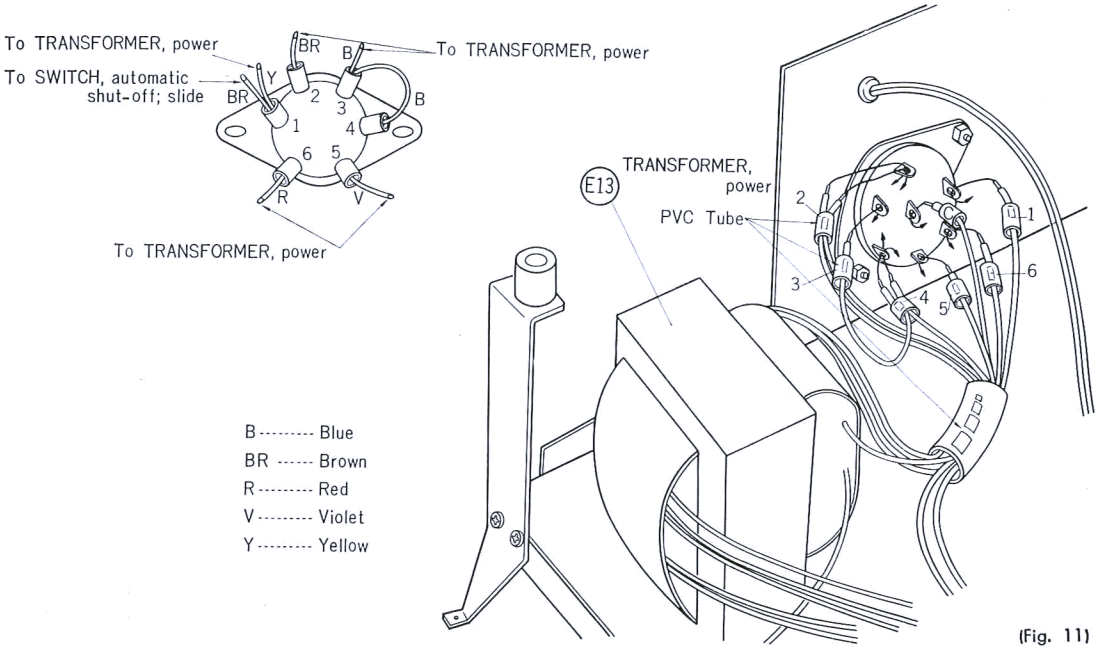
1. Remove the REEL PANEL referring to Fig. 6.
2. Remove the CABINET referring to Fig. 5.
3. Install the unit in opening (15-1/8″×11-19/32″, 384×294.4 mm) on the Board with three WOOD SCREWS (⊕B 3×6) and Rack Mounting Bracket as shown in Fig. 10.



(Fig. 10)

Lead Connection for Voltage Selector Socket

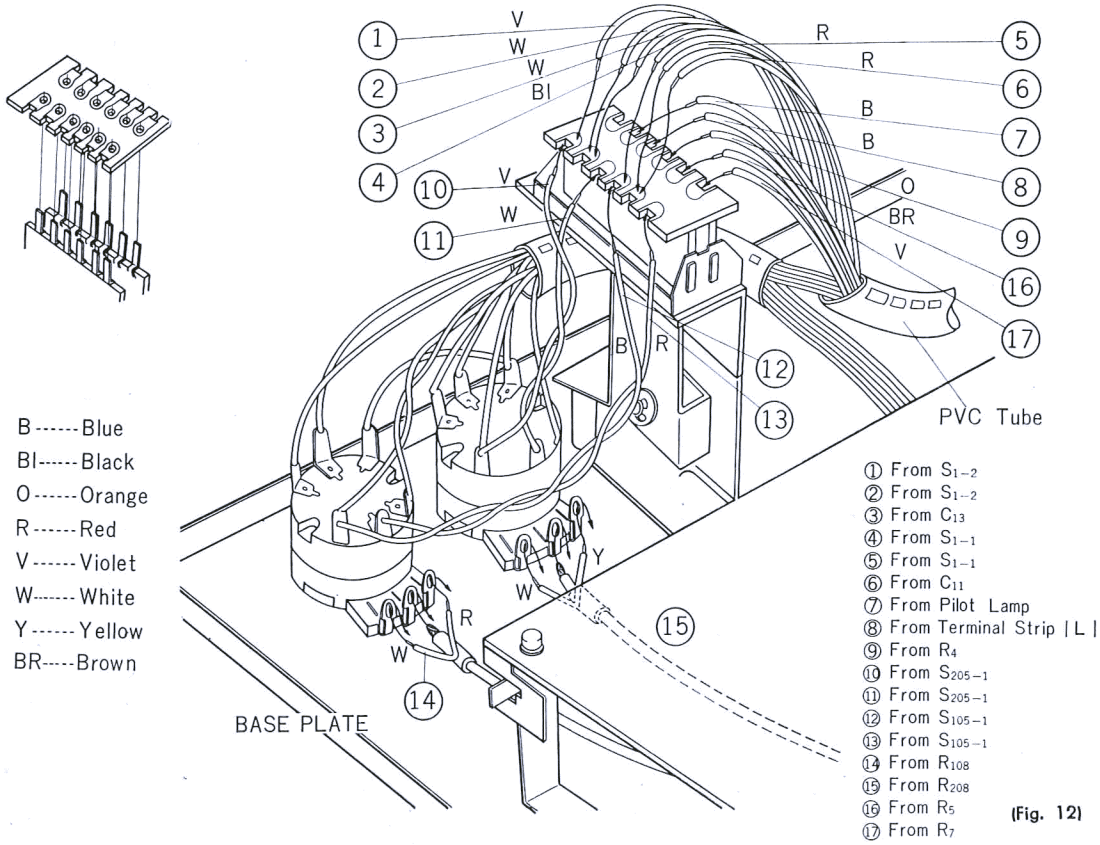
When Voltage Selector Socket is replaced, wire the lead as shown Fig. 11.



(Fig. 11)

Lead Connection for Volume Control (record) and Switch (rec/P.B.)

When Record Volume Control and Rec/P.B Switch is replaced, wire the lead as shown in Fig. 12.



(Fig. 12)

Alignment Procedure

The alignment is to be performed at a tape speed of 7-1/2 ips unless otherwise specified.

Use the SONY Alignment Tape " N-19-F_2"

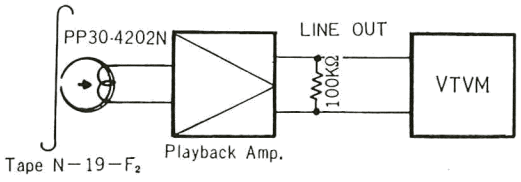
Connect two VTVMs to the Line Out Jacks (J_{103} & J_{203}).

Playback Azimuth Alignment

1. Thread an alignment tape (N-19-F_2).
2. During playback of the 10 Kc/s of −22 dBs (59mV) tone recorded on the first section of the tape, adjust the azimuth alignment screw for maximum indication on the VTVM.

   Note : 1. The azimuth alignment screw is located on the right side of the playback head.

   Note : 2. The Playback Head Mounting Plate must always be kept 1.6 mm high from the HEAD DECK as shown in Fig. 14 which is set in the factory. As the correct positioning is very difficult without jig take care not to turn the adjustment screws, marked with ▲ shown in Fig. 14 even in replacing the Playback Head.



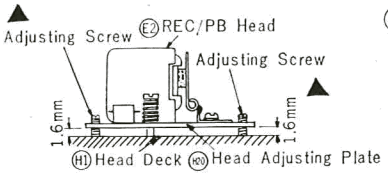
(Fig. 13)

Elevation Alignment

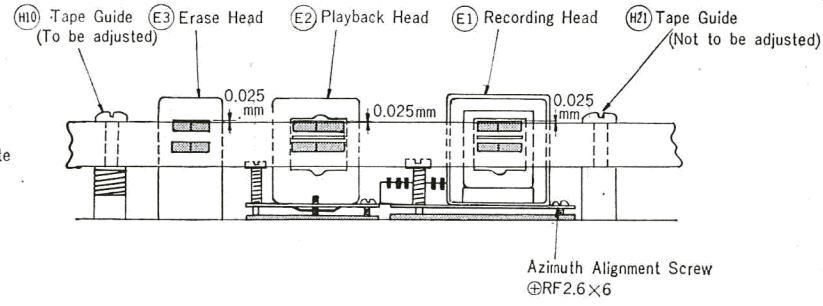
The exact vertical positionings of Head are adjusted at the factory and should never need readjustment.

However, when replacing Head or Tape Guide, height of the replaced part in relation to the tape should be checked as follows ;

1. Thread a tape.
2. Align the upper edges of the Head Cores and upper edge of the tape by turning the Tape Guide located on the left side of the Erase Head.
3. Turn the Tape Guide clockwise by approximately 20° from the position obtained in the preceding process, so that the upper edge of the tape is approximately 0.025 mm lower than that of the Erase Head Core.



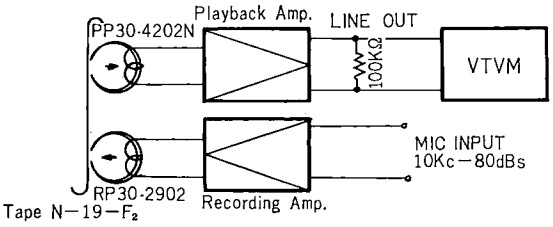
(Fig. 14)



(Fig. 15)

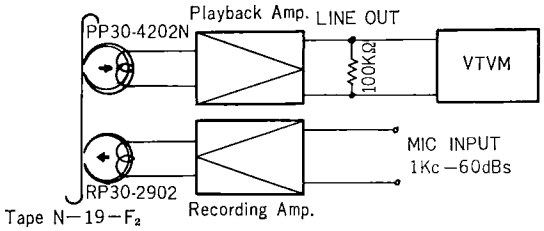
Record Azimuth Alignment

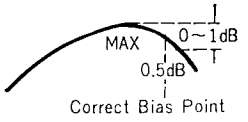
1. Switch the monitor to the tape position.
2. Feed a 10 Kc signal of −80 dBs (77.5 μV) on both channels through the Mic. Jacks (J_{101} & J_{201}).
3. Adjust the azimuth alignment screw of the Record Head for maximum output reading on the VTVM.



Recording Bias Alignment

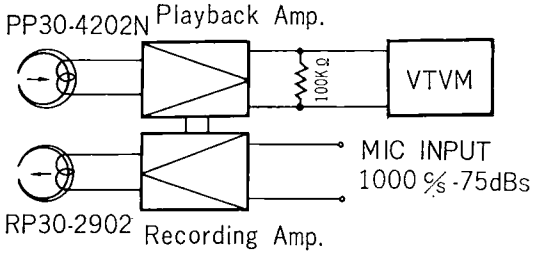
1. Set the machine in record mode.
2. Thread a blank tape on the machine.
3. Set the Monitor Switches, S_{102} and S_{202} to the tape position.
4. Feed a 1 Kc signal of −60 dBs (0.775mV) into the Mic Jack.
5. Turn the Trimmer Capacitor clockwise slowly. The VTVM reading will go up, reaching a maximum and then falling again. Continue to turn the Trimmer Capacitor until the VTVM reads 0.5 dB below the maximum value.





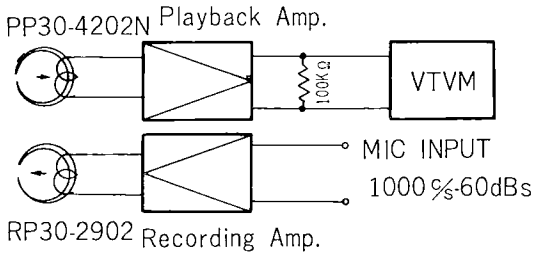
Source Monitor Level Alignment

1. Feed a 1 Kc signal of −75 dBs (0.135 mV) to the Mic. Input Jack (J_{101} & J_{201}).
2. Turn the Volume Controls, R_{108} and R_{208}, counter-clockwise to the full.
3. Set the Monitor Switch (S_{102} and S_{202}) to the source position.
4. Set the Adjustable Resistors, R_{113} and R_{213}, to get line output of 0 dBs. (0.775V)



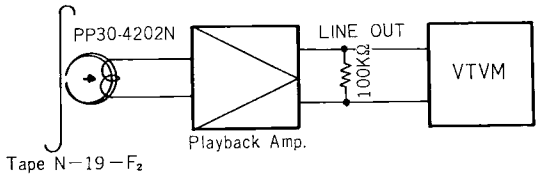
Recording Level Alignment

1. Set the Monitor Switch (S_{102} and S_{202}) to the source position.
2. Feed a 1Kc signal of −60 dBs (0.775 mV) into the Mic Input Jack. (J_{101} and J_{201})
3. Turn the Volume Controls R_{108} and R_{208} clockwise to the full so that line output level is 0 dBs. (0.775V)
4. Set the Monitor Switch (S_{102} and S_{202}) to the tape position.
5. Record a 1Kc signal of −60 dBs. (0.775 mV)
6. Playback a signal recorded in the step 5 and set the Adjustable Resistors, R_{115} and R_{215}, so that line output level is 0 dBs. (0.775V)



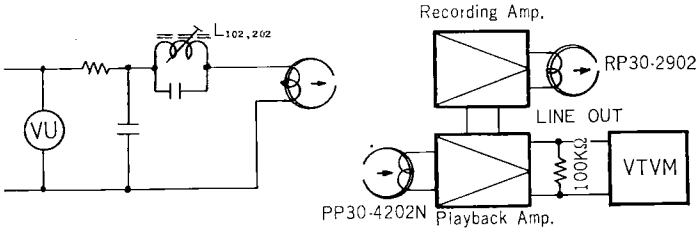
Playback Output Level Adjustment

1. Playback the 700 c/s of −12 dBs (190mV) tone recorded on the second section of the alignment tape (N-19-F_2).
2. Adjust R_{147} and R_{247} so that line output level is 0 dBs (0.775V). Standard : 0 dBs±1.0 dB.



Bias Trap Adjustment

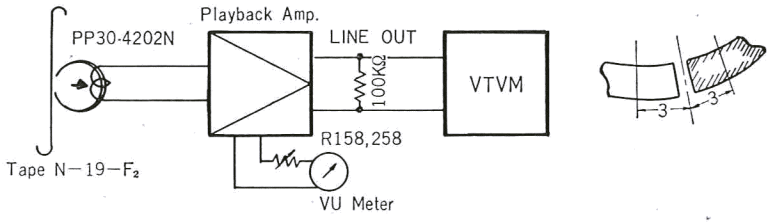
1. Set the machine in record mode without threading a tape.
2. Connect a VTVM to Line Output Jack (J_{103} & J_{203}) and place Trimmer Capacitors (C_{11} & C_{13} in Fig. 16) to maximum.
3. Adjust the Trap Coil (L_{102} & L_{202}) for minimum indication on the VTVM.



Playback Level Adjustment

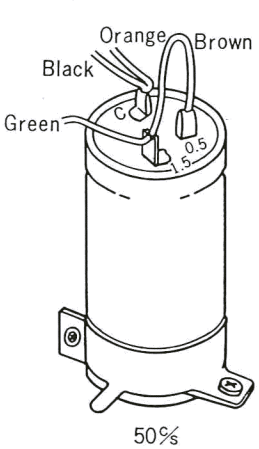
1. Playback the 700 c/s of −12 dbs tone recorded on the second section of the alignment tape (N-19-F_2)
2. Adjust the Potentiometers, R_{158} and R_{258}, so that the pointer of the Level Meter is just at the boundary between the Red portion and the White portion while keeping line output at 0 dBs (0.775V).

   Note : Tolerance should be ±3 mm from the center of the boundary.

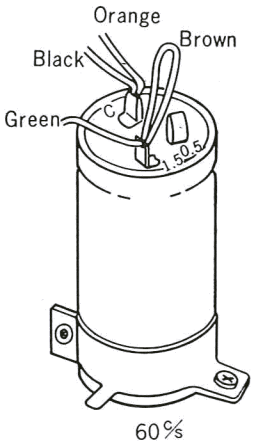


Modification to different power line frequency

	For 50 c/s	For 60 c/s
1. Connection between terminals of the Metalized Paper Capacitor (MP.)	Connected (2μF)	Disconnected (1.5μF)
2. Pinch Roller	0-027-476-01 (Red)	0-027-477-01 (White)
3. Capstan	0-027-483-05 (Red)	0-027-483-06 (White)

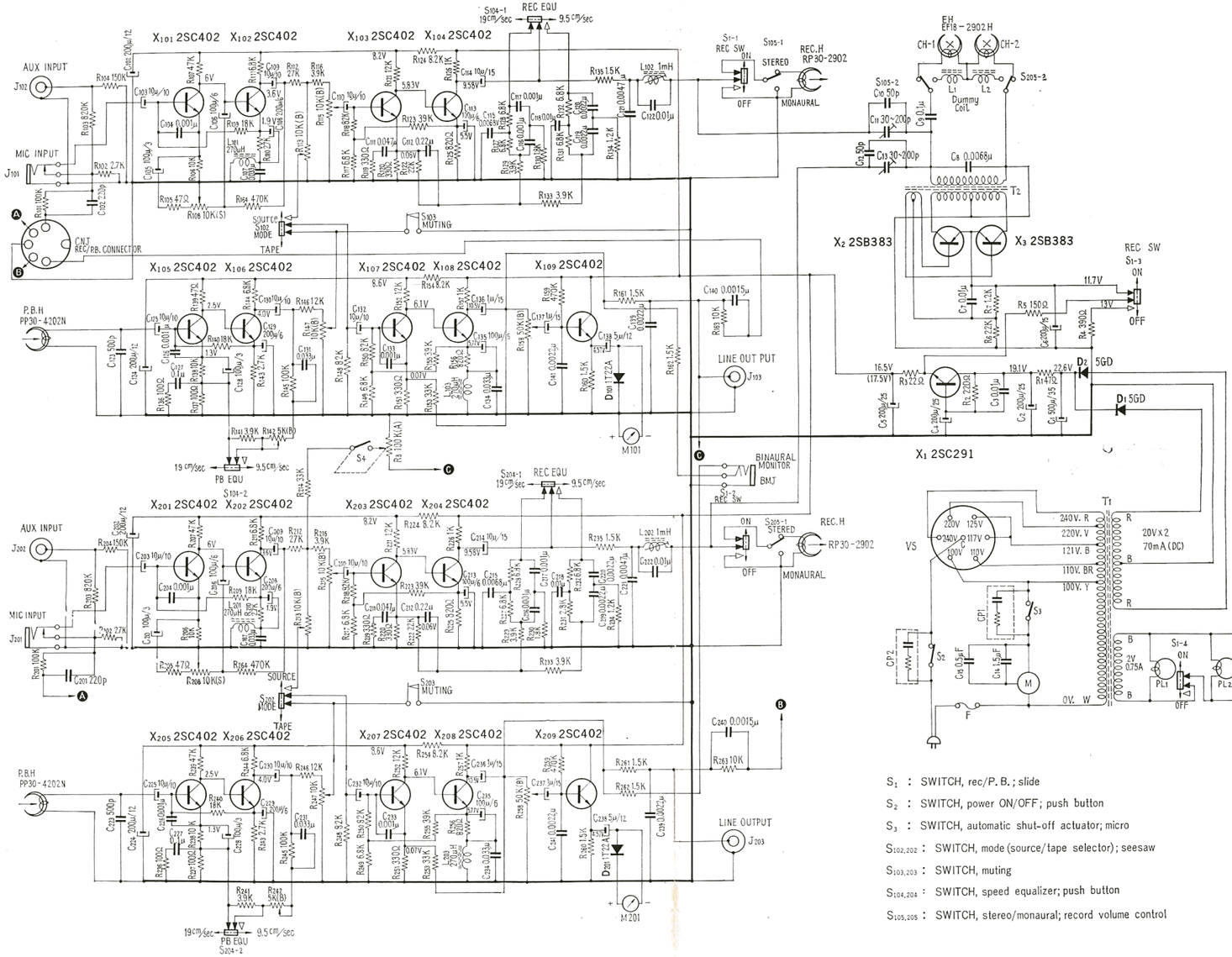


50%



60%

Circuit Schematic



S_1 : SWITCH, rec/P. B.; slide

S_2 : SWITCH, power ON/OFF; push button

S_3 : SWITCH, automatic shut-off actuator; micro

$S_{102,202}$: SWITCH, mode (source/tape selector); seesaw

$S_{103,203}$: SWITCH, muting

$S_{104,204}$: SWITCH, speed equalizer; push button

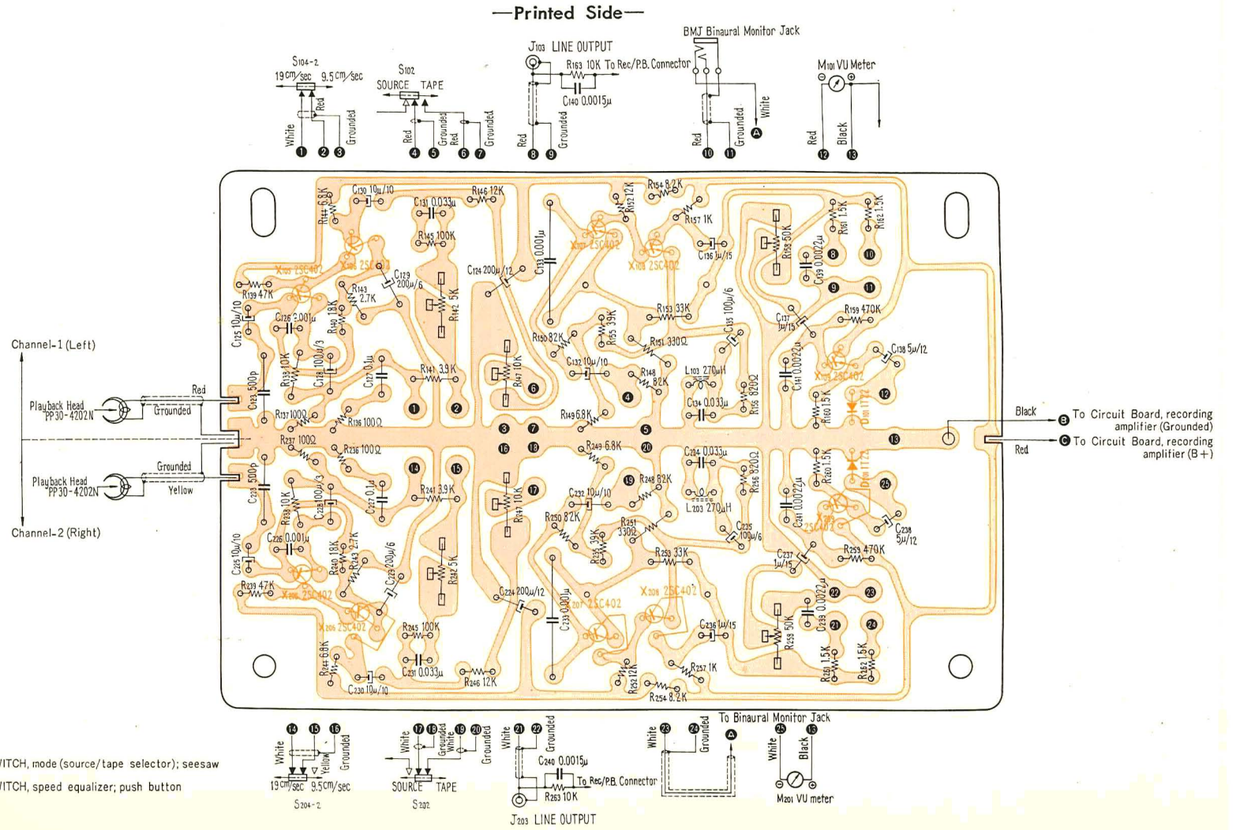
$S_{105,205}$: SWITCH, stereo/monaural; record volume control

For the Sets Up to Serial Number 18,000

Mounting Diagram

Playback Amplifier Section

—Printed Side—



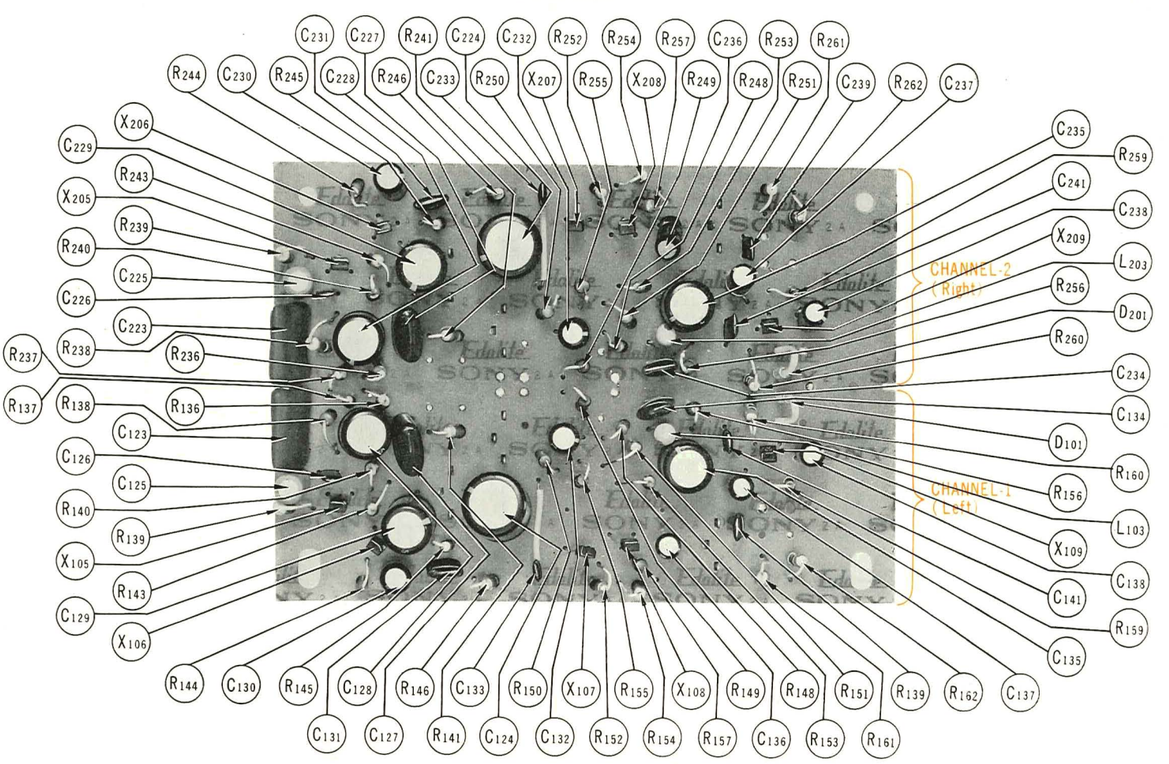
$S_{102-202}$: SWITCH, mode (source/tape selector); seesaw

$S_{104,204}$: SWITCH, speed equalizer; push button

Mounting Diagram

Playback Amplifier Section

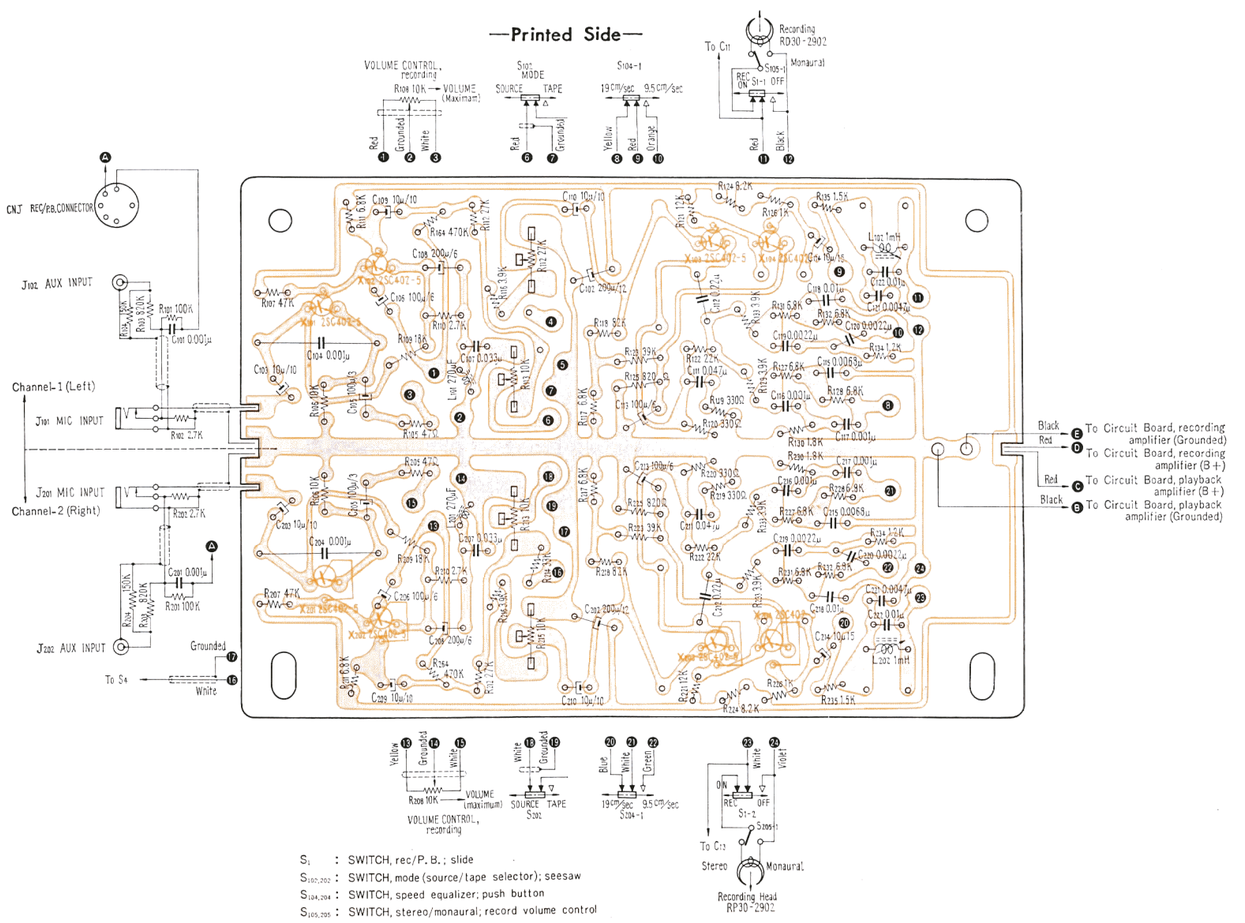
— Parts Side —



Mounting Diagram

Recording Amplifier Section

—Printed Side—



S_1 : SWITCH, rec/P. B. ; slide

$S_{102,202}$: SWITCH, mode (source/tape selector); seesaw

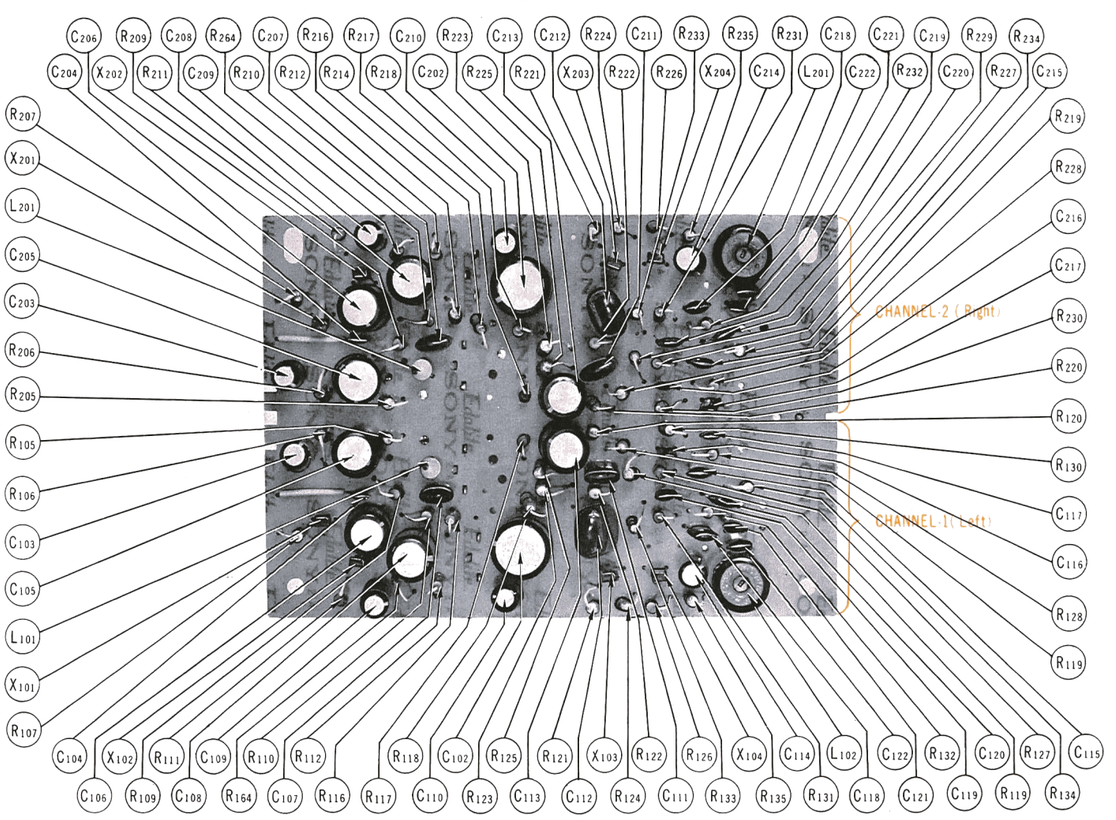
$S_{104,204}$: SWITCH, speed equalizer; push button

$S_{105,205}$: SWITCH, stereo/monaural; record volume control

Mounting Diagram

Recording Amplifier Section

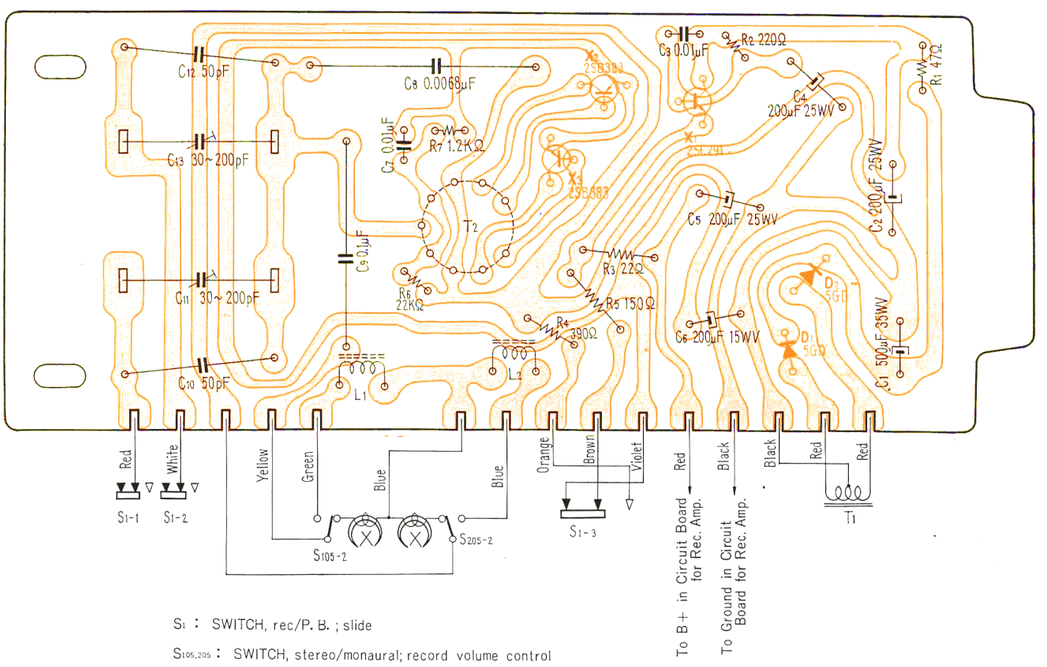
—Parts Side—



Mounting Diagram

Power Supply and OSC Section

– Printed Side –



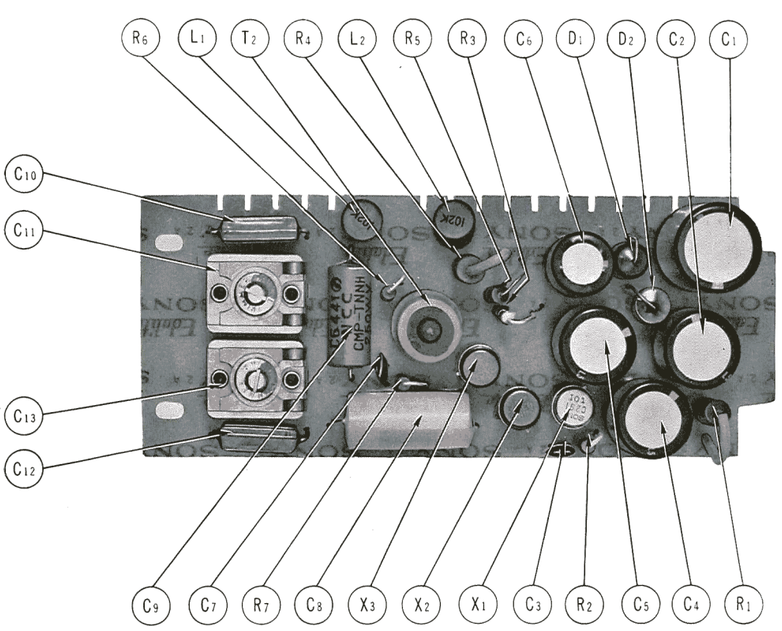
S_1 : SWITCH, rec/P. B. ; slide

$S_{105,205}$: SWITCH, stereo/monaural; record volume control

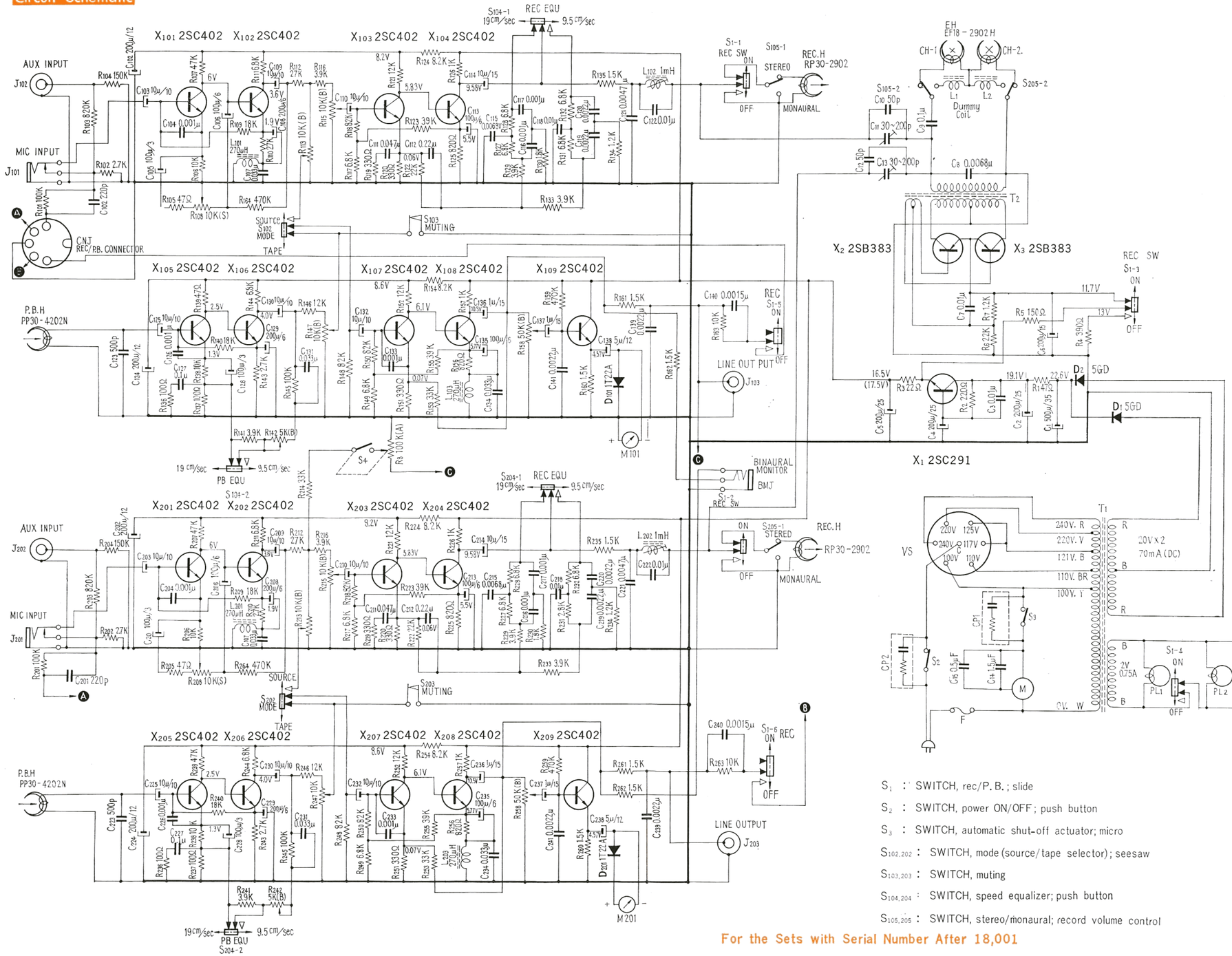
Mounting Diagram

Power Supply and OSC Section

– Parts Side –



Circuit Schematic



S_1 : SWITCH, rec/P.B.; slide

S_2 : SWITCH, power ON/OFF; push button

S_3 : SWITCH, automatic shut-off actuator; micro

$S_{102,202}$: SWITCH, mode (source/tape selector); seesaw

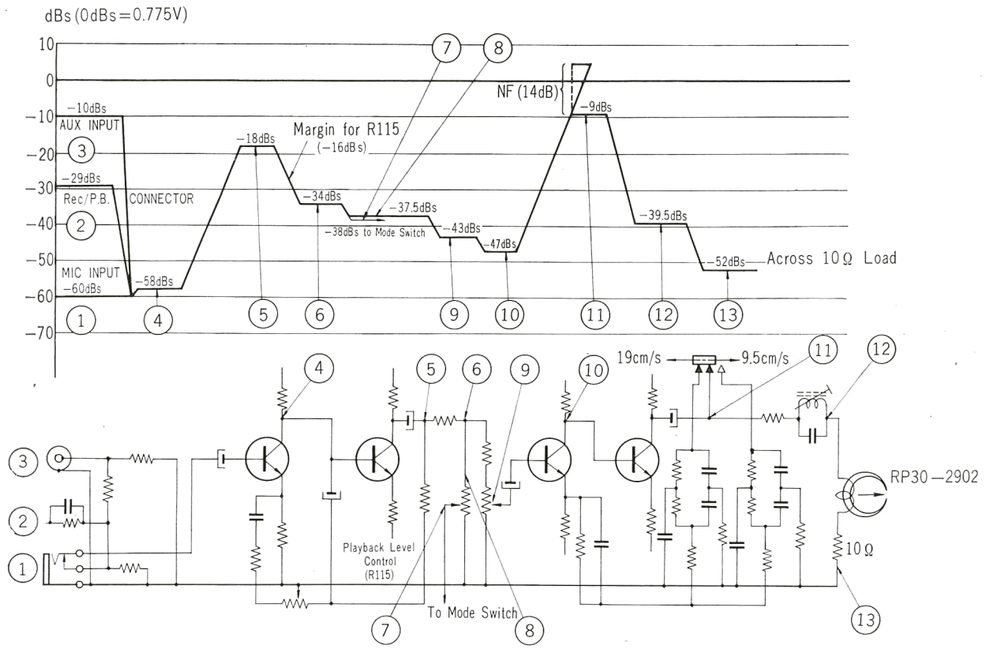
$S_{103,203}$: SWITCH, muting

$S_{104,204}$: SWITCH, speed equalizer; push button

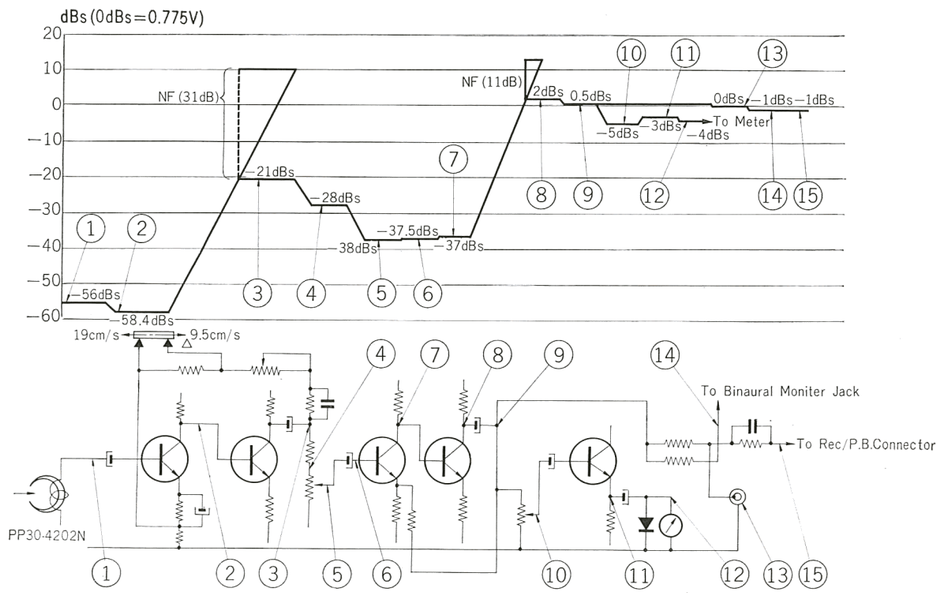
$S_{105,205}$: SWITCH, stereo/monaural; record volume control

For the Sets with Serial Number After 18,001

Recording Level Diagram



Playback Level Diagram



Parts List

Part No.	Symbol No.	Description
		K. CABINET & APPEARANCE ITEMS
X-34280-06-3	K1	REEI PANEL ASS'Y
3-428-011-	K1-1	REEL PANEL
-012-02	K1-2	DECORATION WASHER
0-027-179-	K1-3	STUD, head cover holding
3-409-108-	K1-4	NYLON WASHER, reel panel
3-418-012-01	K1-5	TAPE GUIDE
3-419-091-	K1-6	FELT WASHER, black
-204-	K1-7	RECORDING BOX
-217-	K1-8	SPECIAL NUT (A)
-222-	K1-9	SPECIAL NUT (B)
7-621-255-56	K1-10	SCREW, MACHINE ; pan head phill. 2×6
-770-52	K1-11	SCREW, MACHINE ; binding head phill.
7-622-207-02	K1-12	NUT, lock 2.6φ
-208-02	K1-13	NUT, lock 3φ
7-623-207-22	K1-14	WASHER, spring 2.6φ
-208-22	K1-15	WASHER, spring 3φ
X-34280-08-	K2	KNOB, function selector
3-409-106-	K2-1	SET SCREW, function selector
X-34280-09-	K3	CABINET ASS'Y
3-402-777-	K3-1	VENTILATOR
X-34280-10-1	K4	COVER, mode switch
3-428-023-01	K4-1	DECORATION PLATE, gold
X-34280-11-1	K5	HEAD COVER ASS'Y
3-428-025-02	K5-1	DECORATION PLATE, gold
X-34090-12-8	K6	KNOB, speed selector
3-403-454-	K6-1	SET SCREW, speed selector knob
X-34190-06-	K7	BUTTON, power on/off
3-428-134-$\frac{01}{11}$	K8	KNOB, record volume control
0-051-221-	K9	SPACER, power on/off button
3-409-108-	K10	WASHER, reel panel
-191-	K11	SPACER, cabinet
3-424-049-	K12	FOOT, rubber
3-419-053-	K13	BUTTON, record
-062-$\frac{11}{12}$	K14	KNOB, sound on sound

Part No.	Symbol No.	Description
		A. AMPLIFIER BLOCK
0-051-235-	A1	BRACKET, wire retainer
-428-	A2	WASHER, terminal strip insulating
3-401-156-	A3	SPACER, mini jack
-179-	A4	WIRE RETAINER
		B. BRAKE BLOCK
3-428-103-	B1	ARM, pause brake
-117-	B2	ARM, brake (take-up reel)
-124-	B3	ROD, pause brake control
-133-	B4	SPRING, pause brake control rod
-135-	B5	BRAKE SHOE, pause brake arm
0-027-200-	B6	SPRING, brake block
-249-	B7	BRAKE FELT, brake arm
0-037-240-	B8	SPRING, brake arm (take-up reel)
0-051-076-	B9	LEVER, pause brake selection control
3-402-706-	B10	SPRING, brake arm (feed reel)
3-419-093-	B11	BRAKE BLOCK
		F. FUNCTION SELECTOR MECHANISM
X-34280-03-	F1	CAM, function selector
X-00270-12-	F2	ARM, stepper
0-027-134-	F3	SPACER, stepper arm
0-037-018-	F4	SPRING, stepper arm
3-419-025-	F5	CAM, muting switch
-040-	F6	SHAFT, function selector cam
-080-	F7	SET SCREW, function selector cam
		G. DECK BLOCK
X-34280-01-	G1	BASE PLATE (CHASSIS)
0-027-040-	G1-1	THRUST DISC, valcanized fiber
X-34280-07-	G2	BRACKET, jack mounting
X-34190-08-	G3	BRACKET, rack mounting
3-428-101-	G4	BRACKET, mode selector switch
-102-	G5	BRACKET, binaural monitor jack
-105-	G6	PLATE, pilot lamp holding
-113-	G7	BRACKET (B), printed circuit board
-114-	G8	BRACKET (c), printed circuit board
0-037-205-	G9	BELT, tape index counter
3-103-527-	G10	RUBBER STAPLE
3-407-040-	G11	PULLEY, tape index counter
-071-	G12	WASHER 4φ, tape index counter pulley
3-410-032-	G13	VINYL STAPLE, AC power cord
3-413-090-	G14	SHAFT, tape index counter pulley shaft
3-419-003-	G15	METAL LEG (A), base plate
-004-	G16	METAL LEG (B), base plate
-010-	G17	BRACKET, volume unit meter
-028-	G18	BRACKET, muting switch
-029-	G19	PLATE, pilot lamp
-043-	G20	SPACER, tape index counter pulley
-057-	G21	CUSHION, volume unit meter
-059-01	G22	BRACKET, microphone jack
Y-20071-01-1	G23	TAPE INDEX COUNTER
		H. HEAD DECK BLOCK
X-34280-02-	H1	HEAD DECK
X-34120-04-	H2	HEAD HINGE ASS'Y
X-34120-15-	H3	PLATE, head shield
3-428-106-	H4	SPACER, playback head
-125-	H5	SPACER, head hinge
-132-	H6	SPRING, playback head adjusting
0-027-473-	H7	TAPE PAD, playback & erase head
0-051-363-	H8	TAPE PAD (LARGE), head shield plate
0-056-312-	H9	TAPE PAD (SMALL), head shield plate
3-103-201-	H10	TAPE GUIDE (LEFT)
-203-	H11	SPRING, tape guide adjusting

Parts List

Part No.	Symbol No.	Description
3–401–068–	H12	SPRING, rec. & playback head adjusting
3–402–788–	H13	TAPE GUARD
3–409–109–	H14	SHAFT, tape guide
3–410–042–	H15	TAPE PAD SHIFTER
3–412–078–	H16	TERMINAL STRIP, playback head ; black
–080–	H17	SPACER, erase head mounting ; black
–121–	H18	SHIELD CASE, playback head
–137–	H19	SPRING, recording head
3–413–008–	H20	PLATE, playback head height adjusting
–075–	H21	TAPE GUIDE (RIGHT)
		N. CAPSTAN & FLYWHEEL MECHANISM
X–37010–11–1	N1	CAPSTAN SHAFT ASS'Y
0–027–036–	N2	SUPPORT, capstan shaft holder
–038–	N3	RING CAP, capstan shaft holder
–155–	N4	HOLDER, capstan shaft
–170–	N5	SET SCREW, motor pulley
–230–	N6	METAL RING, oil retainer
–250–	N7	OIL RING, capstan shaft holder
–483–05	N8 (A)	CAPSTAN 50 c/s
–483–06	N8 (B)	CAPSTAN 60 c/s
0–037–029–20	N9	PULLEY, motor
–220–02	N10	SET SCREW, capstan
3–103–139–	N11	HUM-BUCK RING, motor
–140–	N12	SUPPORT, hum-buck ring
3–409–101–	N13	NYLON WASHER, capstan shaft
–162–	N14	OIL ABSORBER, capstan shaft
		P. PINCH ROLLER MECHANISM
X–34190–11–	P1	PINCH LEVER ASS'Y
0–027–181–	P2	METAL RING, pinch roller
–193–	P3	SPRING, pinch lever
–479–	P4	OIL RING, pinch roller
3–403–425–	P5	COVERING PLATE, pinch roller
0–027–476–	P6 (A)	PINCH ROLLER 50 c/s
–477–	P6 (B)	PINCH ROLLER 60 c/s
		Q. IDLER MECHANISM
X–00270–03–	Q1	CAPSTAN IDLER ASS'Y
X–00270–09–	Q2	ARM, rewind idler ; left
X–00270–10–	Q3	SHAFT, rewind idler ; right
X–00270–19–0	Q4	FAST FORWARD IDLER ASS'Y
X–00270–25–	Q5	REWIND IDLER ASS'Y
0–027–472–01	Q5–1	TIRE, black
X–00370–05–5	Q6	ARM, capstan idler
X–34090–21–	Q7	ARM, fast forward idler
3–428–121–	Q8	ROD, fast forward idler controlling
–126–	Q9	PUSH ROD, rewind idler controlling
–127–	Q10	PULL ROD, fast forward idler controlling
–128–	Q11	SPRING, fast forward idler arm (horizontal use)
0–027–019–	Q12	BRACKET, rewind idler guide
–020–	Q13	BRACKET, fast forward idler guide
–035–	Q14	WASHER 5ϕ, fast forward idler
–194–	Q15	SPRING, rewind idler arm ; left
–197–	Q16	SPRING, capstan idler arm
–215–	Q17	FELT, fast forward idler
–216–	Q18	OIL RING 5ϕ, capstan & fast forward idler

Part No.	Symbol No.	Description
0–027–220–	Q19	PAPER WASHER 5ϕ, capstan & fast forward idler
–221–	Q20	FIBER WASHER 6ϕ, rewind idler
0–041–206–01	Q21	CUSHION, fast forward idler retainer plate
3–401–122–	Q22	SPRING, fast forward idler
3–402–838–	Q23	PLATE, fast forward idler arm
3–409–097–	Q24	PLATE, fast forward idler retainer
–102–	Q25	NYLON WASHER, fast forward idler
–210–	Q26	CUSHION, fast forward idler arm
3–412–145–	Q27	SPRING, capstan & rewind idler
3–419–045–	Q28	PUSH ROD, capstan idler controlling
–211–	Q29	NYLON CAP, capstan idler
–221–	Q30	FELT WASHER, oil retainer
		S. SPEED SELECTOR MECHANISM
0–027–131–	S1	SHAFT, speed selector
–198–	S2	SPRING, speed selector shaft
0–037–247–	S3	PIN, speed selector shaft
–248–	S4	WASHER, speed selector shaft
3–428–109–	S5	LEVER, speed equalizer switch controlling
–110–	S6	BRACKET, speed equalizer switch holding
3–401–088–	S7	SPACER, speed equalizer switch control lever
		T. REEL TABLE BLOCK
X–00270–39–2	T1	FRICTION DISC, feed reel
3–409–246–	T1–1	FELT, friction disc
X–34090–37–	T2	TAKE-UP SPINDLE DRUM ASS'Y
3–409–218–	T2–1	FELT, friction
0–027–245–	T2–2	FELT, rewind tension
–247–	T2–3	FELT, oil absorber
X–34090–48–1	T3	FEED REEL TABLE ASS'Y
X–34090–29–8	T3–1	FEED REEL TABLE, top part
3–402–808–	T3–2	FEED REEL TABLE, middle part
–812–	T3–3	FEED REEL TABLE, lower part
–837–	T3–4	THRUST WASHER
3–403–467–	T3–5	FELT, friction
0–027–208–	T3–6	SPRING, friction
7–624–112–01	T3–7	RETAINING RING E-8
X–34090–49–1	T4	TAKE-UP REEL TABLE ASS'Y
X–34090–29–8	T4–1	TAKE-UP REEL TABLE, top part
3–402–808–	T4–2	TAKE-UP REEL TABLE, middle part
–812–	T4–3	TAKE-UP REEL TABLE, lower part
–837–	T4–4	THRUST WASHER
3–403–467–	T4–5	FELT, friction
0–027–301–	T4–6	SPRING, friction
7–624–112–01	T4–7	RETAINING RING E-8
0–027–022–	T5	FRICTION DISC, take-up reel
–119–	T6	SHAFT, take-up reel table
–120–	T7	SHAFT, feed reel table
–121–	T8	SPACER, feed reel table
–180–03	T9	SPACER, take-up reel table
3–408–069–	T10	FELT WASHER, take-up spindle drum
3–409–201–	T11	NYLON SPACER, take-up & feed reel
–202–	T12	METAL SPACER, take-up & feed reel
3–419–096–	T13	WASHER, take-up & feed reel

Parts List

Part No.	Symbol	Description
		U. RECORDING MECHANISM
X–34280–04–	U1	LEVER, rec/playback selector switch controlling
–05–	U2	BRACKET, rec/playback selector switch holding
X–34190–07–	U3	MUTING SWITCH
–13–	U4	BRACKET, recording shaft stopper
7–621–259–	U5	SET SCREW, recording shaft stopper bracket
3–428–107–	U6	LEVER, record setting
–108–	U7	BRACKET, rec/playback selector switch holding
–122–	U8	SHAFT, recording
–130–	U9	SPRING, rec/playback selector switch control lever
–131–	U10	SPRING, record setting lever
–136–	U11	WASHER, recording shaft stopper bracket retainer
0–041–013–	U12	SPRING, record lever
7–623–108–12	U13	WASHER 3ϕ, recording button
		W. AUTOMATIC SHUT-OFF ACTUATOR
X–34120–17–	W1	AUTOMATIC SHUT-OFF ACTUATOR ASS'Y
3–428–104–	W2	LEVER, automatic shut-off actuator cam
–123–	W3	PULL ROD, automatic shut-off actuator lever
–129–	W4	PULL LEVER, automatic shut-off actuator control
0–037–249–	W5	SPLIT NUT 2ϕ, pull rod
0–041–040–	W6	SPACER, automatic shut-off actuator control pull lever
3–401–122–	W7	SPRING, automatic shut-off actuator cam lever
3–419–026–	W8	PULL LEVER, automatic shut-off actuator control
3–419–078–	W9	CAM, automatic shut-off actuator
		Y. SCREWS, WASHERS & MISCELLANEOUS
		SCREW, MACHINE ; pan head phill.
7–621–255–15		2×3
–256–85		2×7
–255–53		2×8
–255–65		2×10
–255–75		2×12
–259–15		2.6×3
–259–25		2.6×4
–259–45		2.6×6
–261–15		3×3
–261–25		3×4
–261–35		3×5
–261–43		3×6
–261–45		3×6
–261–55		3×8
–261–56		3×8
–261–65		3×10
–261–75		3×12
–261–85		3×14
–268–45		4×6
7–628–268–55		4×8
–268–53		4×8
–268–65		4×10
–268–75		4×12
–269–25		4×20
		SCREW, MACHINE ; truss head phill.
7–621–461–57		3×8
		SCREW, MACHINE ; binding head phill.
–770–25		3×6
–770–71		3×8
		SCREW, MACHINE ; flat head phill.
–555–42		2×6
–556–02		2×16
–712–57		SCREW, MACHINE ; set 2.6×6
–713–38		〃 〃 3×5
7–623–205–22		WASHER, spring 2ϕ
–207–22		〃 〃 2.6ϕ
–208–22		〃 〃 3ϕ
–210–22		〃 〃 4ϕ
–105–12		WASHER, plain 2ϕ
–105–22		〃 〃 (large) 2ϕ
–107–12		〃 〃 2.6ϕ
–108–12		〃 〃 3ϕ
–108–22		〃 〃 (large) 3ϕ
–110–12		〃 〃 4ϕ
–112–22		〃 〃 (large) 5ϕ
–113–12		〃 〃 6ϕ
–408–05		WASHER, ext. tooth 3ϕ
7–624–106–01		RETAINING RING, E type 3ϕ
–109–01		〃 〃 5ϕ
7–622–108–02		NUT 3ϕ
–110–02		〃 4ϕ
–208–02		NUT, lock 3ϕ
7–623–508–01		SOLDER LUG 3ϕ
		Z. ACCESSORIES & PACKING MATERIALS
3–790–225–11	Z1	INSTRUCTION MANUAL
3–793–009–11	Z2	INSPECTION TAG
8–860–007–00	Z3	REEL R-7A
1–534–049–01	Z4	CONNECTION CORD RK-56
3–103–191–00	Z5	POLYETHYLENE BAG
3–401–193–02	Z6	HEAD CLEANING RIBBON
3–793–010–20	Z7	TAPE TALK
0–027–483–05	Z8 (A)	CAPSTAN 50 c/s
–483–06	Z8 (B)	〃 60 c/s
0–041–127–01	Z9	ACCESSORY BAG
0–027–476–01	Z10 (A)	PINCH ROLLER 50 c/s
–477–01	Z10 (B)	〃 60 c/s
3–701–020–00	Z11	CHECK SHEET BAG
X–34090–35–1	Z12	REEL CAP
3–428–137–01	Z13	VINYL COVER, dust-proof
X–34280–12–2	Z14	CARTON
3–428–702–01	Z15	LABEL, specifications
–703–01	Z16	LABEL, back cover
3–701–028–01	Z17 (A)	TACK LABEL 50 c/s
–029–01	Z17 (B)	TACK LABEL 60 c/s

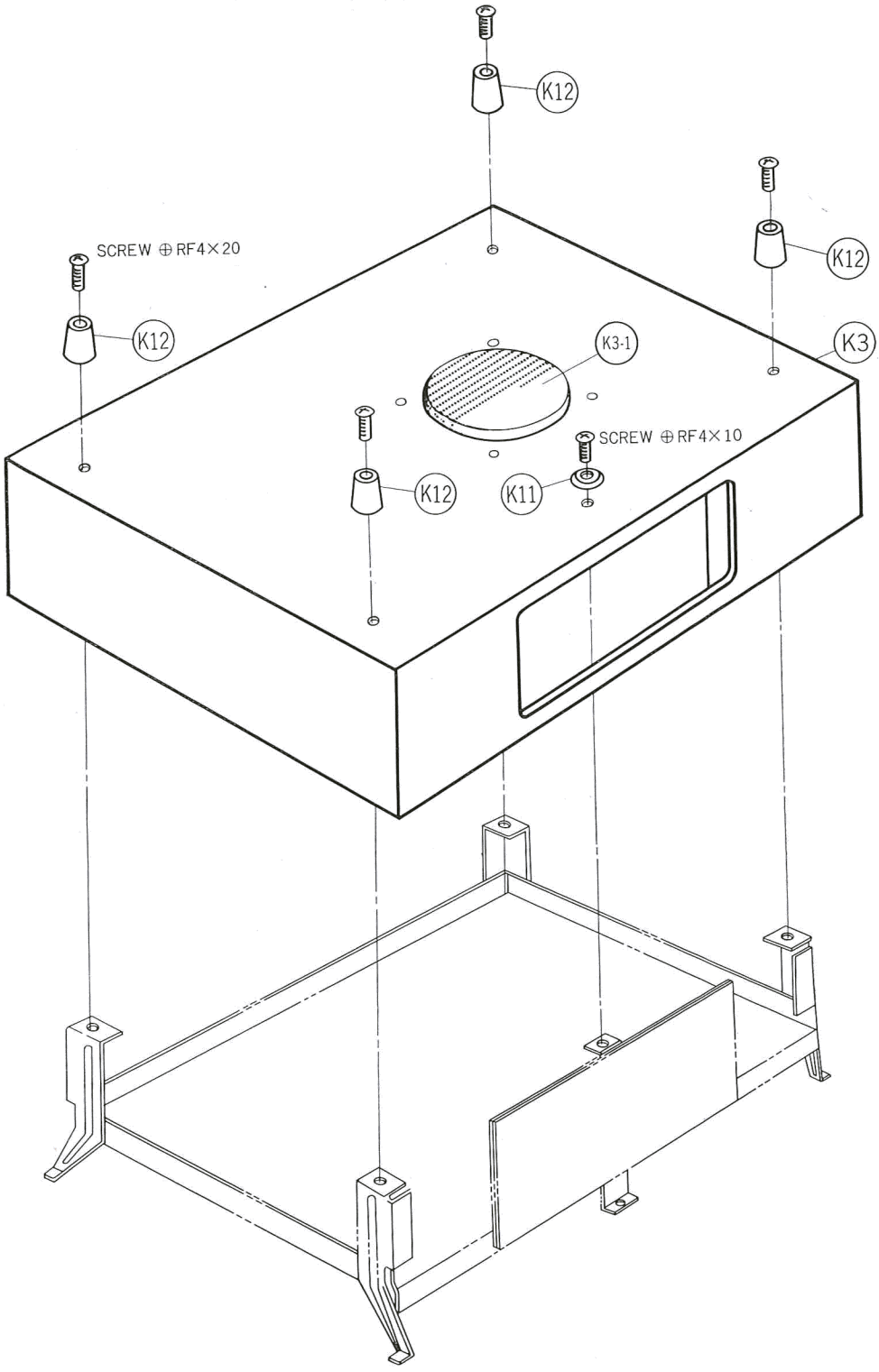
Part No.	Symbol No.	Description
		III. ELECTRICAL PARTS
		E. ELECTRICAL PARTS (GENERAL BLOCK)
	X_1	TRANSISTOR 2SC292-1
	X_2	// 2SB383-1
	X_3	// 2SB383-1
	X_{101}	// 2SC402-5 (Low Noise)
	X_{102}	// 2SC402-5 (Low Noise)
	X_{103}	// 2SC402-5
	X_{104}	// 2SC402-5
	X_{105}	// 2SC402-5 (Low Noise)
	X_{106}	// 2SC402-5 (Low Noise)
	X_{107}	// 2SC402-5
	X_{108}	// 2SC402-5
	X_{109}	// 2SC402-4
	X_{201}	// 2SC402-5 (Low Noise)
	X_{202}	// 2SC402-5 (Low Noise)
	X_{203}	// 2SC402-5
	X_{204}	// 2SC402-5
	X_{205}	// 2SC402-5 (Low Noise)
	X_{206}	// 2SC402-5 (Low Noise)
	X_{207}	// 2SC402-5
	X_{208}	// 2SC402-5
	X_{209}	// 2SC402-4
	D_1	DIODE 5GD
	D_2	// 5GD
	D_{101}	// 1T22A
	D_{201}	// 1T22A
82-4129-00	E_1	RECORDING HEAD RP30-2902
82-1242-23	E_2	PLAYBACK HEAD PP30-4202N
82-6629-21	E_3	ERASE HEAD EF18-2902H
83-2624-00	E_4	MOTOR IC-624
1-509-029-	CNJ	CONNECTOR, rec/P.B.
1-507-106-	BMJ	JACK, binaural monitor ; phone
-053-	$J_{101, 201}$	JACK, microphone input ; mini
-142-	$J_{102, 202}$	JACK, auxiliary input ; phono
-142-	$J_{103, 203}$	JACK, line output ; phono
1-533-006-	E_5	FUSE HOLDER
1-532-014-	E_6	FUSE 0.8A
1-534-241-	E_7	AC POWER CORD
1-536-030-	E_8	TERMINAL STRIP 2L2
-028-	E_9	// 1L1
1-514-219-	S_1	SWITCH, rec/P.B. ; slide
-140-	S_2	SWITCH, power on/off ; push button
-039-	S_3	SWITCH, automatic shut-off actuator ; micro
1-514-091-	$S_{102, 202}$	SWITCH, mode (source/tape selector) ; seesaw
-133-	$S_{103, 203}$	SWITCH, muting
1-513-081-	$S_{104, 204}$	SWITCH, equalizer ; push button
1-517-003-	E_{10}	SOCKET, pilot lamp
1-518-052-	E_{11}	PILOT LAMP
1-524-036-	E_{12}	METER, volume unit
1-441-254-	E_{13}	TRANSFORMER, power
1-433-081-	E_{14}	TRANSFORMER, bias oscillation
X-34280-55-	E_{15}	MOUNTED CIRCUIT BOARD, playback
-56-	E_{16}	MOUNTED CIRCUIT BOARD, recording
-57-	E_{17}	MOUNTED CIRCUIT BOARD, osc & power supply
1-538-390-	E_{18}	PRINTED CIRCUIT BOARD, osc & power supply
-389-	E_{19}	PRINTED CIRCUIT BOARD, recording
-388-	E_{20}	PRINTED CIRCUIT BOARD, playback
1-431-038-	L_1	DUMMY COIL 1mH
-038-	L_2	DUMMY COIL 1mH
1-407-049-	L_{101}	MICRO INDUCTOR 270μH
1-409-038-	L_{102}	TRAP COIL 1mH
-049-	L_{103}	MICRO INDUCTOR 270μH
-049-	L_{201}	MICRO INDUCTOR 270μH
-038-	L_{202}	TRAP COIL 1mH
-049-	L_{203}	MICRO INDUCTOR 270μH
1-231-057-	E_{21}	ENCAPSULATED COMPONENT 0.033μF+120Ω 500WV
1-509-064-	E_{22}	VOLTAGE ADAPTOR
		C. CAPACITORS
		CAPACITOR,
1-121-361-	C_1	electrolytic 500μF 35WV
-156-	C_2	// 200μF 25WV
1-105-673-	C_3	mylar 0.01μF 50WV
1-121-156-	C_4	electrolytic 200μF 25WV
-156-	C_5	// 200μF 25WV
-173-	C_6	// 200μF 15WV
1-105-673-	C_7	mylar 0.01μF 50WV
1-129-382-	C_8	polyethylene 0.0068μF 600WV
1-117-005-	C_9	metalized paper 0.1μF 250WV
1-109-082-	C_{10}	mica 50pF 500WV
1-141-010-	C_{11}	trimmer 30~200pF
1-109-082-	C_{12}	mica 50pF 500WV
1-141-010-	C_{13}	trimmer 30~200pF
1-117-036-	$C_{14, 15}$	metalized 1.5+0.5μF
1-107-005-	$C_{101, 201}$	silvered mica 220pF 500WV
1-121-121-	$C_{102, 202}$	electrolytic 200μF 12WV
-105-	$C_{103, 203}$	// 10μF 10WV
1-105-661-	$C_{104, 204}$	mylar 0.001μF 50WV
1-121-111-	$C_{105, 205}$	electrolytic 100μF 3WV
-051-	$C_{106, 206}$	// 100μF 6WV
1-105-679-	$C_{107, 207}$	mylar 0.033μF 50WV
1-121-061-	$C_{108, 208}$	electrolytic 200μF 6WV
-105-	$C_{109, 209}$	// 10μF 10WV
-105-	$C_{110, 210}$	// 10μF 10WV
1-105-681-	$C_{111, 211}$	mylar 0.047μF 50WV
-849-	$C_{112, 212}$	// 0.22μF 50WV
1-121-051-	$C_{113, 213}$	electrolytic 100μF 6WV
-192-	$C_{114, 214}$	// 10μF 15WV
1-105-671-	$C_{115, 215}$	mylar 0.0068μF 50W
-661-	$C_{116, 216}$	// 0.001μF 50WV
-661-	$C_{117, 217}$	// 0.001μF 50WV
-673-	$C_{118, 218}$	// 0.01μF 50WV
-665-	$C_{119, 219}$	// 0.0022μF 50WV
-665-	$C_{120, 220}$	// 0.0022μF 50WV
-669-	$C_{121, 221}$	// 0.0047μF 50WV
-673-	$C_{122, 222}$	// 0.01μF 50WV
1-107-007-	$C_{123, 223}$	silvered mica 500pF 500WV
1-121-121-	$C_{124, 224}$	electrolytic 200μF 12WV

Parts List

Part No.	Symbol No.	Description
1-121-105-	$C_{125, 225}$	electrolytic 10μF 10WV
1-105-661-	$C_{126, 226}$	mylar 0.001μF 50WV
-845-	$C_{127, 227}$	// 0.1μF 50WV
1-121-111-	$C_{128, 228}$	electrolytic 100μF 3WV
-061-	$C_{129, 229}$	// 200μF 6WV
-105-	$C_{130, 230}$	// 10μF 10WV
1-105-679-	$C_{131, 231}$	mylar 0.033μF 50WV
1-121-105-	$C_{132, 232}$	electrolytic 10μF 10WV
1-105-661-	$C_{133, 233}$	mylar 0.001μF 50WV
-679-	$C_{134, 234}$	// 0.033μF 50WV
1-121-051-	$C_{135, 235}$	electrolytic 100μF 6WV
-174-	$C_{136, 236}$	// 1μF 15WV
-174-	$C_{137, 237}$	// 1μF 15WV
-117-	$C_{138, 238}$	// 5μF 12WV
1-105-823-	$C_{140, 240}$	mylar 0.0015μF 50WV
-665-	$C_{141, 241}$	// 0.0022μF 50WV
		R. RESISTORS
		RESISTOR,
1-201-816-	R_1	composition 47Ω RC1
1-242-657-	R_2	carbon 220Ω RD1/4UR
-633-	R_3	// 22Ω //
1-201-815-	R_4	composition 390Ω RC1
-470-	R_5	// 470Ω RC1/2
1-242-705-	R_6	carbon 22KΩ RD1/4UR
-675-	R_7	// 1.2KΩ //
1-221-640-	R_8	VOLUME CONTROL, sound on sound 100KΩ
		RESISTOR,
1-244-721-	$R_{101, 201}$	carbon 100KΩ RD1/4SR
1-201-237-	$R_{102, 202}$	composition 2.7KΩ RC1/4
1-244-743-	$R_{103, 203}$	carbon 820KΩ RD1/4SR
-725-	$R_{104, 204}$	// 150KΩ //
1-240-441-	$R_{105, 205}$	// 47Ω RD1/8US
1-209-909-	$R_{106, 206}$	// 10KΩ RD1/4UR
-908-	$R_{107, 207}$	// 47KΩ //
1-221-641-	$R_{108, 208}$	VOLUME CONTROL, recording 10KΩ
		RESISTOR,
1-240-503-	$R_{109, 209}$	carbon 18KΩ RD1/8US
-483-	$R_{110, 210}$	// 2.7KΩ //
-493-	$R_{111, 211}$	// 6.8KΩ //
-507-	$R_{112, 212}$	// 27KΩ //
1-221-383-	$R_{113, 213}$	adjustable 10KΩ (B)
1-240-509-	R_{114}	carbon 33KΩ RD1/8US
1-221-383-	$R_{115, 215}$	adjustable 10KΩ (B)
1-240-487-	$R_{116, 216}$	carbon 3.9KΩ RD1/8US
1-240-493-	$R_{117, 217}$	carbon 6.8KΩ RD1/8US
-519-	$R_{118, 218}$	// 82KΩ //
-461-	$R_{119, 219}$	// 330Ω //
-461-	$R_{120, 220}$	// 330Ω //
-499-	$R_{121, 221}$	// 12KΩ //
-505-	$R_{122, 222}$	// 22KΩ //
-511-	$R_{123, 223}$	// 39KΩ //
-495-	$R_{124, 224}$	// 8.2KΩ //
-471-	$R_{125, 225}$	// 820Ω //
-473-	$R_{126, 226}$	// 1KΩ //
-493-	$R_{127, 227}$	// 6.8KΩ //
-493-	$R_{128, 228}$	// 6.8KΩ //
-487-	$R_{129, 229}$	// 3.9KΩ //
-493-	$R_{130, 230}$	// 6.8KΩ //
-493-	$R_{131, 231}$	// 6.8KΩ //
-493-	$R_{132, 232}$	// 6.8KΩ //
-487-	$R_{133, 233}$	// 3.9KΩ //
-475-	$R_{134, 234}$	// 1.2KΩ //
-477-	$R_{135, 235}$	// 1.5KΩ //
-449-	$R_{136, 236}$	// 100Ω //
-449-	$R_{137, 237}$	// 100Ω //
1-209-909-	$R_{138, 238}$	// 10KΩ RD1/4UR
-908-	$R_{139, 239}$	// 47KΩ //
1-240-503-	$R_{140, 240}$	// 18KΩ RD1/8US
-487-	$R_{141, 241}$	// 3.9KΩ //
1-221-311-	$R_{142, 242}$	adjustable 5KΩ (B)
1-240-483-	$R_{143, 243}$	carbon 2.7KΩ RD1/8US
-493-	$R_{144, 244}$	// 6.8KΩ //
-521-	$R_{145, 245}$	// 100KΩ //
-499-	$R_{146, 246}$	// 12KΩ //
1-221-383-	$R_{147, 247}$	adjustable 10KΩ (B)
1-240-519-	$R_{148, 248}$	carbon 82KΩ RD1/8US
-493-	$R_{149, 249}$	// 6.8KΩ //
-519-	$R_{150, 250}$	// 82KΩ //
-461-	$R_{151, 251}$	// 330Ω //
-499-	$R_{152, 252}$	// 12KΩ //
-509-	$R_{153, 253}$	// 33KΩ //
-495-	$R_{154, 254}$	// 8.2KΩ //
-511-	$R_{155, 255}$	// 39KΩ //
-471-	$R_{156, 256}$	// 820Ω //
-473-	$R_{157, 257}$	// 1KΩ //
1-221-629-	$R_{158, 258}$	adjustable 50KΩ (B)
1-240-537-	$R_{159, 259}$	carbon 470KΩ RD1/8US
-477-	$R_{160, 260}$	// 1.5KΩ //
-477-	$R_{161, 261}$	// 1.5KΩ //
-477-	$R_{162, 262}$	// 1.5KΩ //
1-244-697-	$R_{163, 263}$	// 10KΩ RD1/4SR
1-240-537-	$R_{164, 264}$	// 470KΩ RD1/8US

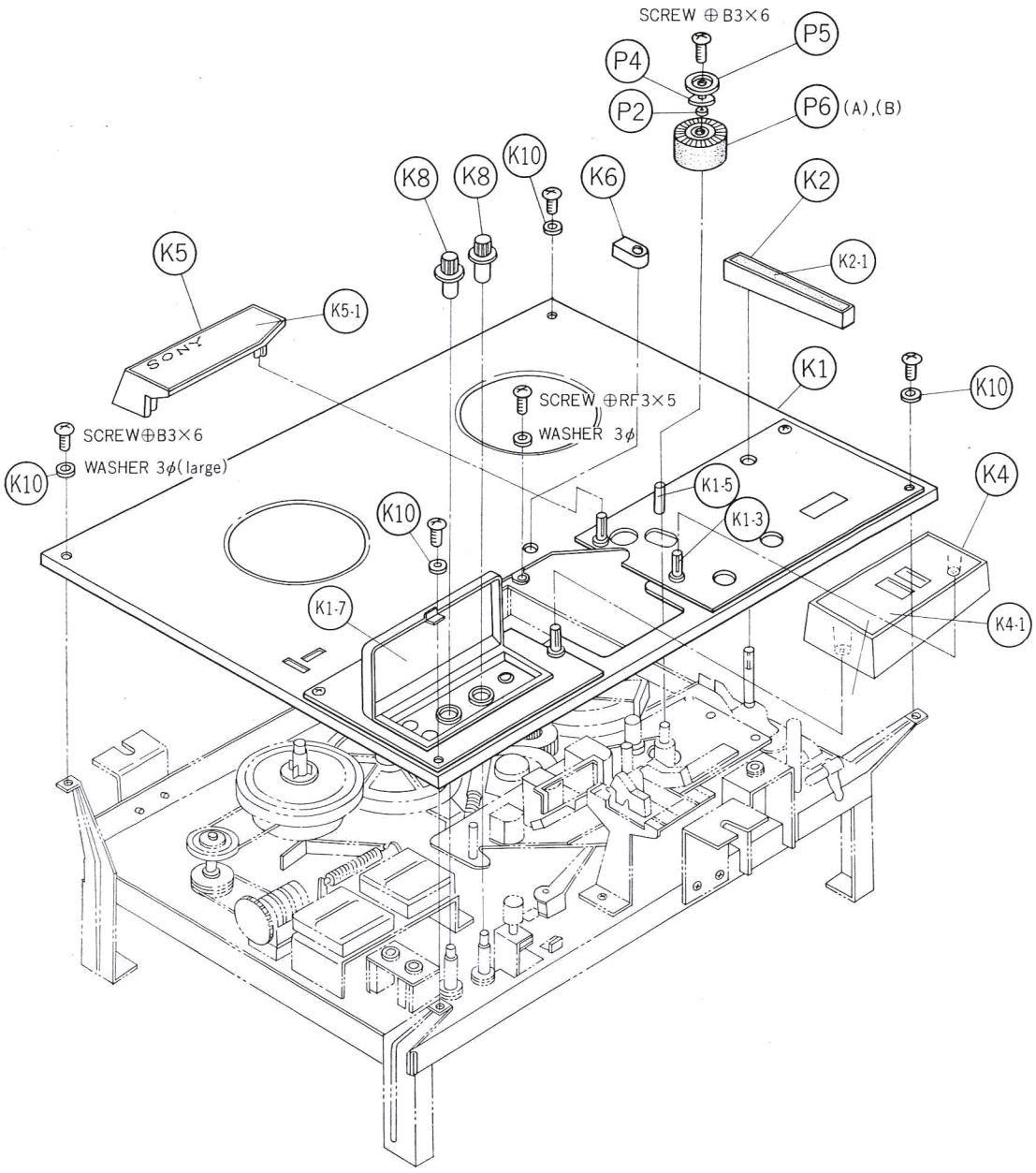
Exploded Diagram

(1)



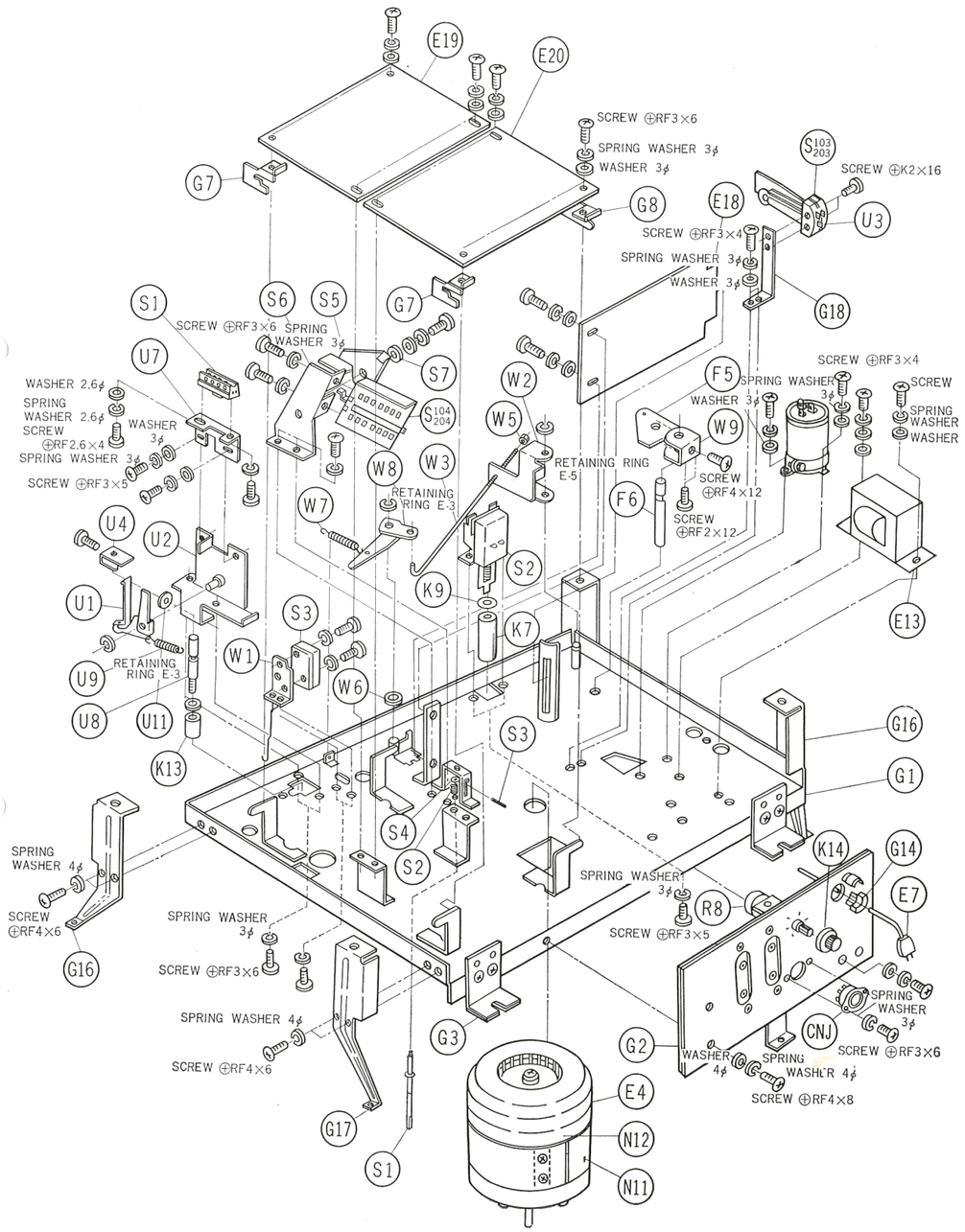
Exploded Diagram

(2)



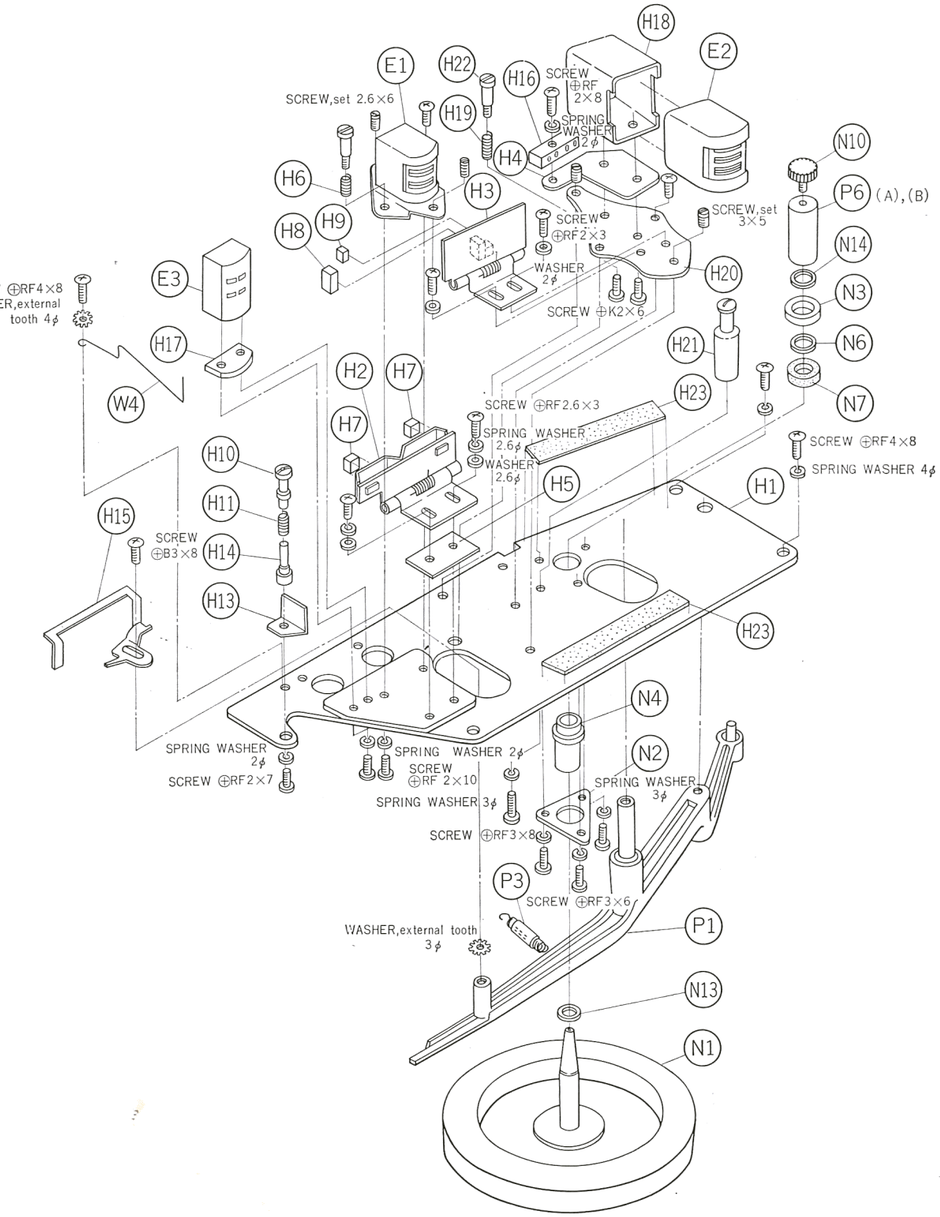
Exploded Diagram

(3)

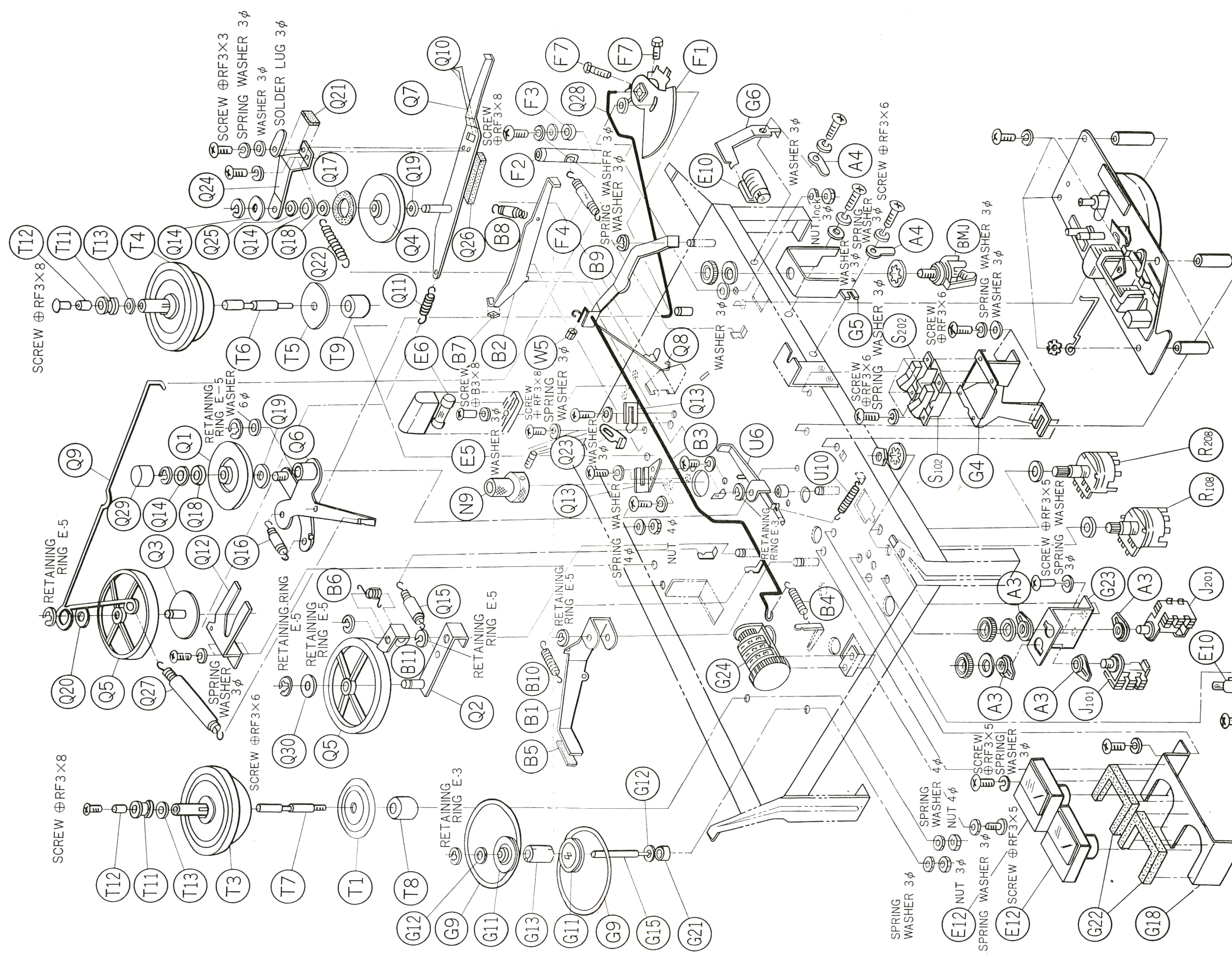


Exploded Diagram

(4)



Exploded Diagram
(5)



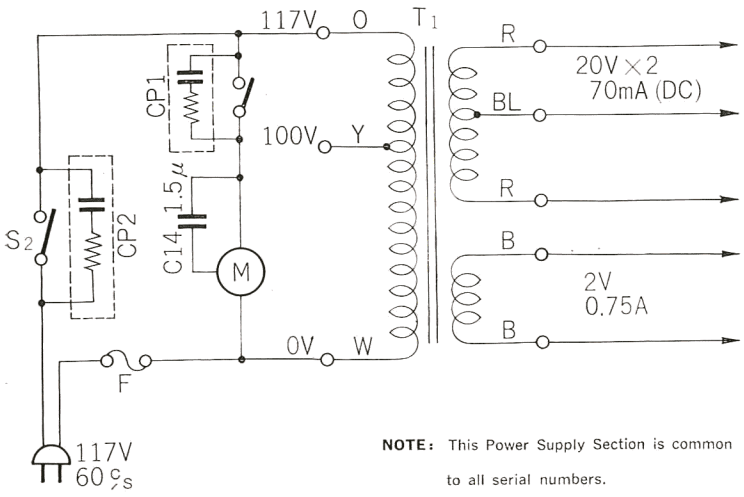
SONY CORPORATION

f-O Oct-1966

Printed in Japan

Circuit Schematic

—Power Supply Section for U. S. A.—



NOTE: This Power Supply Section is common to all serial numbers.

Parts List for U. S. A. (additional)

Ref. No.	Part No.	Description	Q'ty
	X-34038-05-	PINCH ROLLER ASS'Y, strobo disk	1
	3-422-204-03	CAUTION LABEL	1
	3-793-011-	CHECK SHEET	1
	-016-	INSTRUCTION MANUAL, strobo disk	1
	-030-	BOOKLET, SONY tape	1
	3-716-111-11	INSPECTION CARD	1
	X-37010-08-1	HEAD CLEANING RIBBON ASS'Y	1
	3-154-330-11	CORD w/plug, UL	1
	1-441-236-12	TRANSFORMER, power T_1	1
	1-117-035-22	CAPACITOR, metalized C_{14}	1