〈R42-245-0〉

Service Manual

STEREO CASSETTE TAPE DECK

T-3500/F

〔T-3300/F〕

〈72C02M9IK〉

PIONEER®

CONTENTS

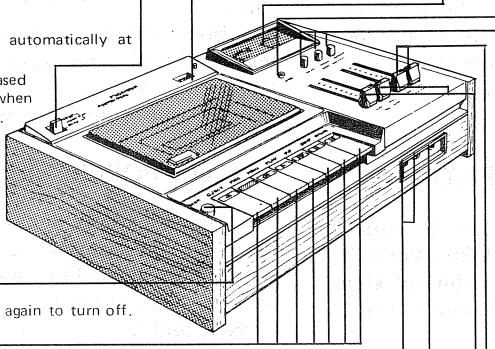
11. PARTS LISTS OF EXPLODED VIEW

1. SPECIFICATIONS

System	Compact cassette system
Motor	4-pole hysteresis synchronous
Recording	AC bias system, 85 kHz
Erasing	AC system
Head	One 4-track, 2-channel ferrite head for REC and P.B. One 4-track, 2-channel ferrite head for erasing
Fast winding time	Less than 70 sec. (at C-60 tape)
Wow and flutter	Less than 0.14% (WRMS)
Frequency response	40 to 12,000Hz (at standard tape) 40 to 13,000Hz (at low-noise high output tape) 40 to 15,000Hz (at chromium dioxide tape)
Signal-to-noise ratio	More than 45 dB
Input sensitivity/impedance	Line input 50mV/100kΩ minimum Microphone 0.5mV/50kΩ minimum
Output level/impedance	Line output 0.775V/50kΩ Headphones 0.15mV/8Ω
REC/P.B. connection jack	German DIN standard (5-pin)
Complement	18 silicon transistors 11 diodes
Subfunctions	1. Automatic stop or automatic cassette pop up (selectable) 2. Tape selector (recording bias recording level and equalizing curve) * Standard (regular tape) * LH (low-noise high output tape) * Chrome (chromium dioxide tape) 3. Pause button, locked type 4. 3-digit tape counter
Power requirements	110V, 120V, 130V, 220V and 240V (switchable) 50Hz or 60Hz
Power consumption	25W (max.)
Overall dimensions	14-1/4(W) x 8-15/16(D) x 4-5/8(H) in. 362(W) x 227(D) x 117(H) mm
Weight	Without package 12lb 6oz/5.6 kg With package 15lb 6oz/7 kg
Furnished parts	One MEMOREX (U.S.A.) chromium dioxide C-60 non-recorded tape Two stereo connection cords (pin-plug type) One head cleaning kit One spare fuse One copy of operating instructions
Cabinet	Natural walnut

NOTE: Specifications and the design subject to possible modification without notice due to improvements.

2. PART IDENTIFICATION



RESET BUTTON
Put the button to reset the counter to "000".

LEVEL METERS
Indicate the signal levels of both channels during recording and playback.

RECORDING LAMP
Lights when the unit is in recording mode.

AUTOMATIC TAPE END SHUT-OFF SWITCH
POP UP : Cassette is ejected automatically at end of tape.
STOP : Mechanism is released (neutral position) when tape ends or breaks.

TAPE SELECTOR BUTTONS
STANDARD: Push this button when recording on standard tape cassettes.
L.H. : When recording on low-noise high-output or other, similarly specified tape cassettes.
CHROME : When recording on chromium dioxide tape cassettes.

POWER SWITCH
Push to turn power on, push again to turn off.

PB LEVEL CONTROLS
For adjusting the level during playback.

REC LEVEL CONTROLS
For adjusting the level during recording.

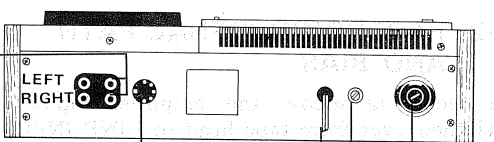
FUNCTION BUTTONS
EJECT(⏏) : Stops the tape, opens the lid and ejects the tape cassette.
REC(●) : For recording.
REW(◀◀) : For rewinding the tape from right to left.
PLAY(▶) : For playback; also used for recording, together with the REC button.
F.F.(▶▶) : Fast forward winding from left to right.
STOP(■): Stops the tape.
PAUSE(▮▮): For interruptions during recording or playback.

HEADPHONES JACK
Output level: 0.15 mW
Impedance: 8 Ω

MICROPHONE JACKS
Input level: 0.5 mV
Impedance: 50 kΩ

LINE INPUT
Input level: 50 mV
Impedance: 100 kΩ

LINE OUTPUT
Output level: 0.775 V
Load impedance: 50 kΩ



DIN-TYPE REC/P.B. CONNECTOR

POWER CORD

GROUND TERMINAL (GND)
Ground connection not absolutely required but recommended in case of hum or noise. Connect it to the ground terminal of your amplifier.

LINE VOLTAGE SELECTOR & FUSE
Fuse rating 0.5A (220V and 240V)
1.0A (110V, 120V and 130V)

3. CIRCUIT DESCRIPTION

As this cassette recorder is a two-head type, the amplifier stages are used, in principle, both for recording and playback with only some changes in their characteristics. This is effected by selection of different negative feedback factors with switches.
The patterns in the little boxes in the block diagram show the approximate frequency response curves for each case. Letters R and P at the different switch positions denote "Recording" and "Playback," respectively.

3-1 PLAYBACK SIGNAL PATH

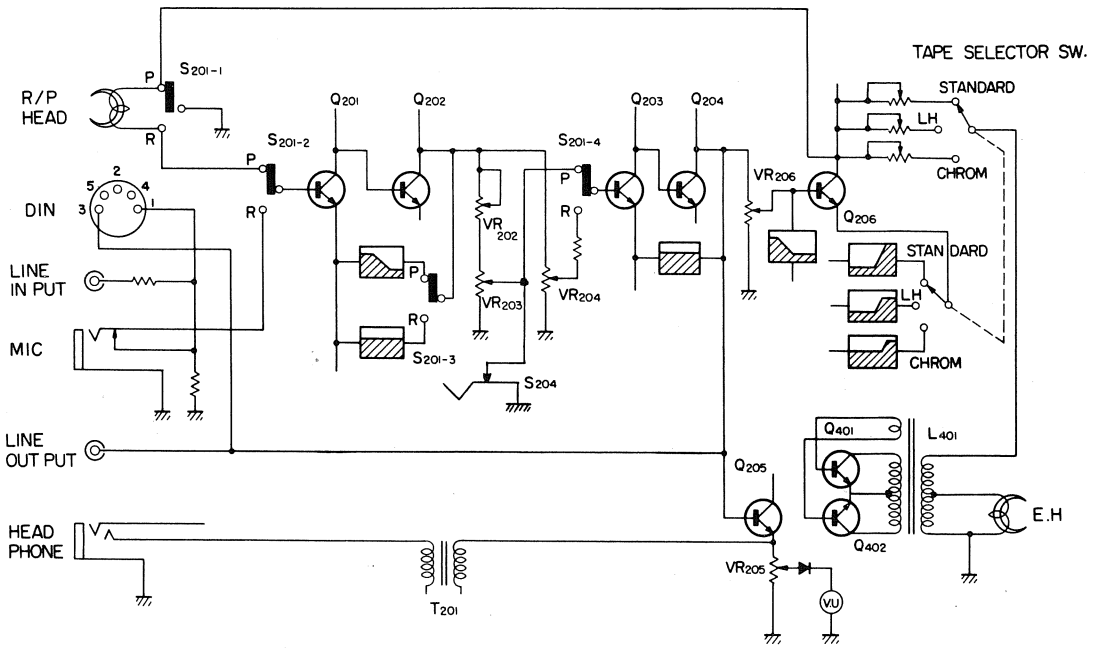
The signal from the head first enters the equalizer stage consisting of Q201 and Q202 through the S201—2. This switch changes the hot side of the head for recording and playback function.
Playback equalizing response is maintained by the characteristics of the feedback loop between Q202 collector and Q201 emitter.
Next, the amplified and equalized signal is controlled by VR203 (i.e. the P.B. LEVEL control on the front panel).
The signal then enters the line amplifier stage Q203 and Q204, from where it passes to the LINE OUTPUT terminals.
Another portion of the signal is fed to the buffer amplifier Q205 for driving LEVEL meter (VU) and headphones.

3-2 RECORDING SIGNAL PATH AND BIAS

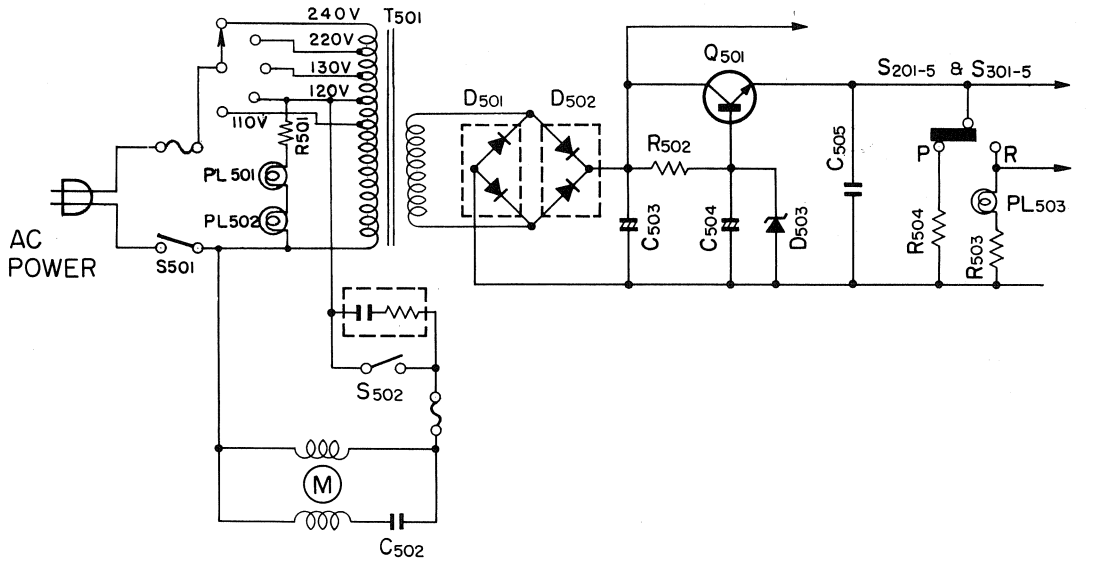
In recording mode, the amplifier input is switched over from tape head to LINE INPUT or MIC INPUT, which is effected by S201—3. This switch also changes the characteristics of the first amplifer stage (Q201, Q202) to flat response.
In recording, the level control is switched from VR203 to VR204 by switch S201—4. The next stage (Q203, Q204) functions in the same way as in playback. The final stage of the signal path consists of semi-fixed potentiometer VR206, and Q206 with a high-boost circuit in its emitter side.
Compensation for different types of recording tapes is effected by selecting different frequency characteristics of this high-boost circuit, while the low frequency range is also compensated, albeit very slightly, by the CR network between the base of Q206 and the ground slider.
The bias oscillator is a push-pull circuit consisting of Q401 and Q402. It is designed to produce low distortion and sufficient power even for chromium dioxide tapes.

3-3 DC POWER SUPPLY

The power supply, consisting of bridge rectifiers and transistorized ripple filter with its base potential regulated by zener diode D503, is able to withstand variations in line voltage and DC current drain.
S502 is linked to the cassette compartment so that the motor can begin to rotate only when a cassette has been put in the compartment.



REC/P.B. CIRCUIT DIAGRAM Fig. 1



POWER SUPPLY CIRCUIT DIAGRAM Fig. 2

3-4 AUTOMATIC SENSING CIRCUIT

Model T-3500 is equipped with an automatic release mechanism to stop the tape transport at the tape end.

For sensing, there are a precision magnetic reed switch and a rotating magnet which is linked to the tape counter idler shaft (see Fig. 3). This reed switch is named S103 in Fig. 4.

The input to Q16 is a pulse generated by the opening and closing of S103. Output from Q16 is rectified by diodes and then applied to a Schmitt circuit consisting of Q17 and Q18. As long as potential is present at the base of Q17, in other words as long as the tape is running, Q17 is conductive while Q18 is off.

When the magnet stops rotating at the end of the tape, the DC output from the rectifier to the Q18 base is interrupted, and Q18 thus becomes conductive. In this way, current flows through relay RL-1, activating the solenoid which releases the mechanism.

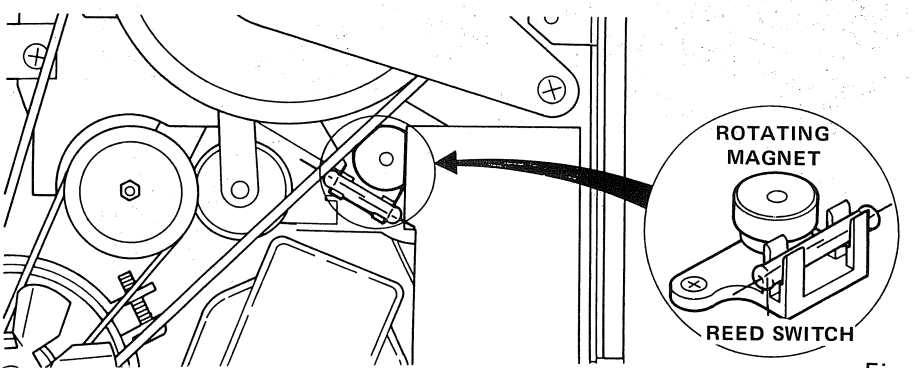
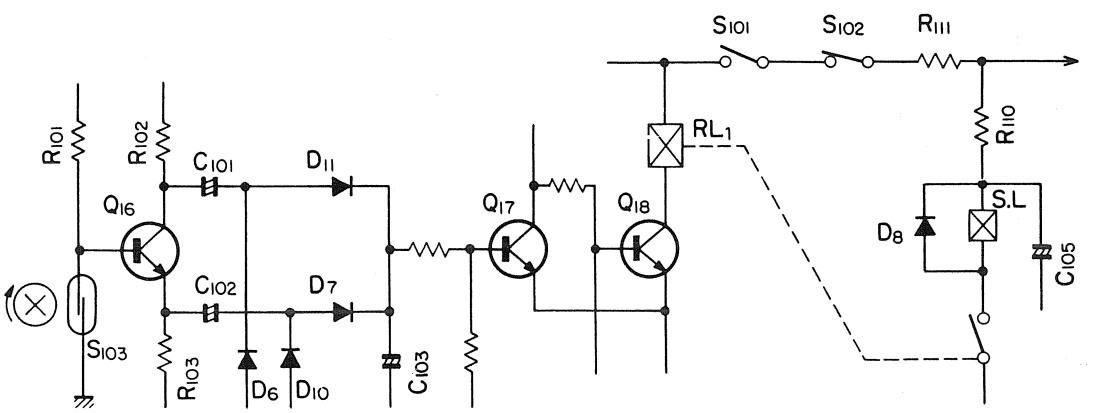


Fig. 3



SENSING CIRCUIT DIAGRAM

Fig. 4

4. DISASSEMBLY

4-1 CONTROL PANEL

Must be removed for checking LEVEL meter and replacing level controls.

1. Pull off the four knobs.
2. Remove screw ① in Fig. 5, then remove the panel.
3. The LEVEL meter is loose now. Handle them with care.

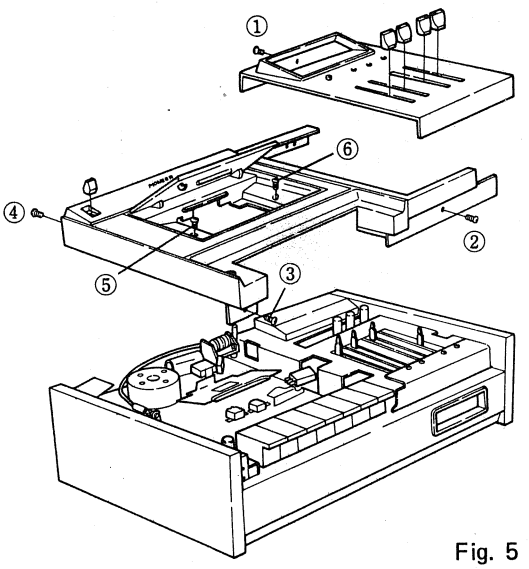


Fig. 5

4-2 DECK PANEL

Must be removed for checking and replacing heads, tape path, tape counter.

1. Pull off the AUTOMATIC TAPE END SHUT-OFF switch knob.
2. Remove screws ② to ⑥ in Fig. 5.
3. While depressing the EJECT button, remove the deck panel.

4-3 WOODEN CABINET

Must be removed for checks, adjustments and replacements of amplifier and mechanism.

1. Remove screws ① to ⑤ on bottom panel (Fig. 6).
2. Remove screws ⑥ to ⑩ on rear panel.

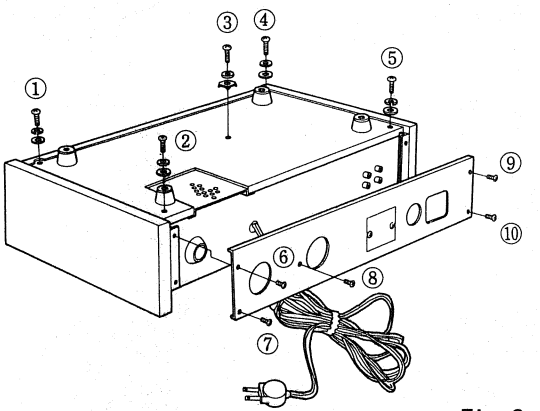


Fig. 6

5. TROUBLESHOOTING CHART

5-1 PROBLEMS WITH MECHANISM AND POWER SOURCE.

PROBLEM	CHECK POINTS
No power input.	1. Outlet contacts and fuse, check causes if fuse is burned out.
Motor does not rotate.	1. Cassette tape not engaged in compartment. 2. Voltages across motor winding, switch (S 502) contacts and actuator. 3. Motor bearing wear.
Capstan does not rotate.	1. Motor rotation. 2. Capstan bearing wear. 3. Drive belt between flywheel and motor pulley.
Wow and flutter irregular tape movement or failure.	1. Deformed pinch roller or dust on pinch roller, capstan and heads, also moving parts such as bearings, belts, etc. 2. Supply reel shaft rotation. 3. Take-up reel shaft rotation.
Does not fast wind.	1. Slack in take-up belt or dust, also moving parts such as bearings, belts, etc. 2. Adjust tension of take-up belt. 3. Motor rotation. 4. Idler pulley clutch, see 6.7
Button does not look.	1. Button housing, also check cassette for broken tab. 2. Button locking springs.
Does not pop up.	1. Sensing circuit. 2. Solenoid coil.
PAUSE button does not lock.	1. Pause bracket, see 6.4
Mechanical noise	1. Rotating parts in contact. 2. Bearings and motor.
Wow	1. Try other cassette. 2. Worn capstan bearing or bent capstan. 3. Pinch roller pressure, slip, adhesion or deformation. 4. Position of capstan drive belt. 5. Back tension spring of supply reel clutch.
Tape winds onto capstan or pinch roller.	1. Tape adhesion. 2. Warped tape. 3. Pinch roller or capstan adhesion. 4. Try other cassette.

PROBLEM	CHECK POINTS
Cassette pop up out of mode.	1. Take-up reel rotation. 2. Reed switch and revolving magnet. 3. Sensing circuit.
Does not pop up.	1. AUTOMATIC TAPE END SHUT-OFF switch position. 2. B plus voltage. 3. Relay winding and contact. 4. The solenoid coil diode. 5. Solenoid coil. 6. Sensing circuit.
Tape counter does not turn.	1. Counter belt. 2. Counter pulley drive shaft. 3. Take-up reel rotation.

5-2 ELECTRONICS

PROBLEM	CHECK POINTS
No playback	1. B plus voltage from power supply unit. 2. Head winding, signal path wiring and switch connections. 3. Signal terminal connections.
Low playback	1. Dust on head surface. 2. Check signal level for each amplifier stage.
Playback distortion	1. Distortion on recorded tape. 2. B plus voltage. 3. High level input. 4. LEVEL meter rectifier diode.
Drop out	1. Head surface. 2. Poor tape quality.
Lack of treble	1. Head surface. 2. Poor playing tape. 3. Head azimuth.
Lack of base	1. Playback equalizing amplifier characteristics, see 7.3
Noise and hum	1. Switch contacts in playback signal path, playback volume. 2. Playback amplifier components. 3. Check outside equipment signals fed into inputs for leakage flux.

PROBLEM	CHECK POINTS
Plays back but does not record.	1. Input signal source and jack contacts. 2. Switch contacts in recording signal path, also variable resistors. 3. Oscillator circuit. 4. Flexible wier, see 6.5
Recording sensitivity low but correct playback.	1. Input level. 2. Check recording tape and TAPE SELECTOR buttons switch position. 3. Oscillator outputs, bias circuit and components.
Sharp playback sound	1. Mal-setting TAPE SELECTOR buttons.
Does not erase.	1. Erase head surface and winding. 2. B plus voltage on oscillator. 3. Especially mal-setting TAPE SELECTOR buttons.
Much crosstalk	1. Try other cassette. 2. Head azimuth.

6. MECHANICAL ADJUSTMENTS

6·1 ADJUSTMENT OF FLYWHEEL THRUST BEARING

This adjustment is required when considerable wow is noticed, or after the capstan has been replaced.

1. Move capstan up and down by hand. Its play, i.e. the play in the flywheel thrust bearing, should be 0.2 ~ 0.5mm.
   If there is too much or too little play, adjust as follows:
2. Remove wooden cabinet. Loosen hex. nut (Fig. 7) about 1 or 2 turns.
3. Adjust thrust bearing screw (Fig. 7) with screwdriver to obtain correct amount of play.
4. Do not tighten thrust screw very forcefully.
5. If flywheel bearing becomes dirty, remove bearing screw and clean carefully, then re-insert and adjust play.

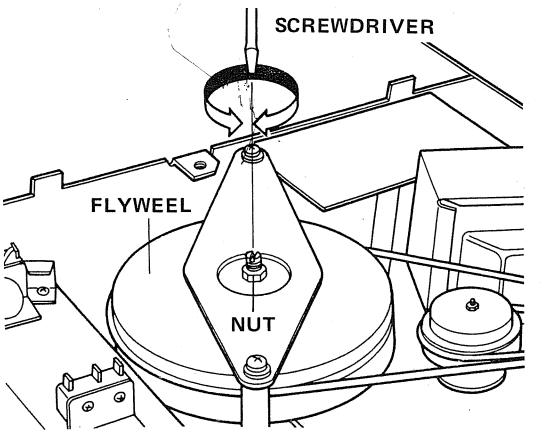


Fig. 7

6·2 ADJUSTMENT OF PINCH ROLLER PRESSURE

This adjustment is required after the pinch rollar has been replaced or when considerable wow is noticed due to slippage.

1. Remove deck panel.
2. Attach tension gauge as shown in Fig. 8, pull as indicated by arrow.
   Reading should be 130 ~ 210 grams.
3. If proper tension reading is not obtained, refer to small insert in Fig. 8. Change anchoring of pinch roller spring (helical spring) to obtain proper tension.

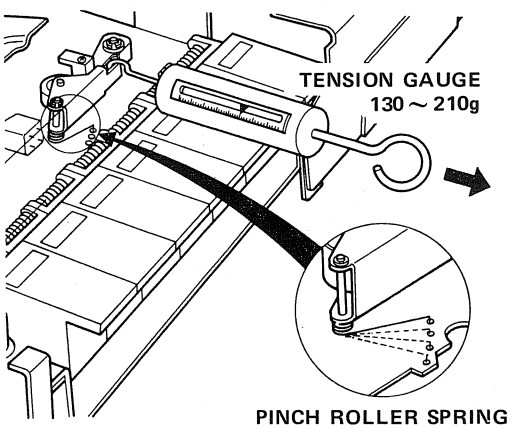


Fig. 8

6·3 ADJUSTMENT OF PUSH-BUTTONS AFTER REPLACEMENT

This adjustment is required after the push-button assembly has been replaced.

1. Refer to Fig. 9. Adjust position of push-button assembly so that clearance between pushbutton shaft and SHAFT becomes 64 ± 0.2 mm.
2. Confirm that there is no play between push-button shaft stay and pushbutton shaft. See small insert in Fig. 9.
3. Take clearance on the left as shown in small insert in Fig. 9.

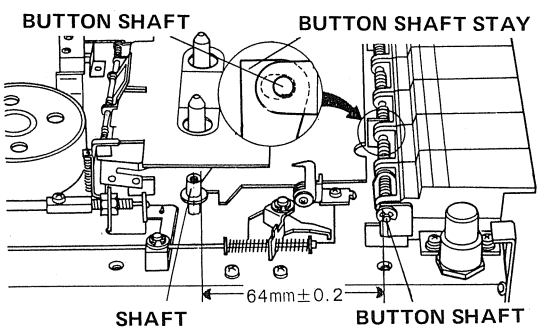


Fig. 9

6-4 ADJUSTMENT OF PAUSE RATCHET POSITION

This adjustment is required after the push-button assembly has been replaced or when the PAUSE button does not function correctly.

1. When the PAUSE button is locked and then pressed once more, it should release. Confirm this action.
2. To adjust, first remove the wooden cabinet.
3. Loosen arrest screw of pause ratchet unit (Fig. 10). Adjust ratchet position (sideways) until proper button lock and release action is obtained.
4. Tighten arrest screw.

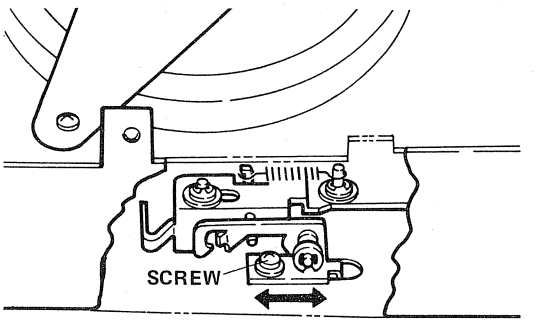


Fig. 10

6-5 ADJUSTMENT OF FLEXIBLE WIRE

This adjustment is required only if the unit does not record although it is properly set in recording mode.

1. Remove deck panel.
2. When the REC button is locked by pushing slowly, confirm that slide switch (see Fig. 11) is pulled in direction indicated by arrow.
3. If slide switch does not function properly, wire length must be adjusted. See insert in Fig. 11. Loosen special nut, adjust wire length, then re-tighten nut.

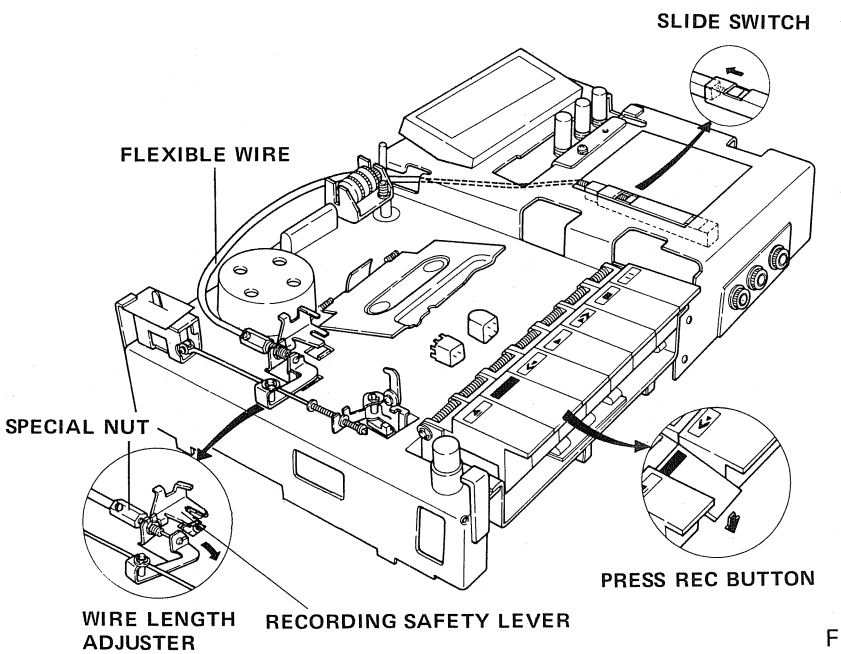


Fig. 11

6-6 ADJUSTMENT OF SOLENOID POSITION

This adjustment is required after the solenoid has been replaced or if the automatic functions at the tape end do not work properly.

1. Set the AUTOMATIC TAPE END SHUT-OFF SWITCH to position POP UP.
2. Remove wooden cabinet.
3. Refer to Fig. 12. Push solenoid core inward by hand. Its stroke of lever connected to core should be 3~6 mm, and it should move smoothly.
4. To adjust, loosen the two screws (Fig. 12), adjust position of solenoid to obtain proper core stroke, then tighten screws again.
5. Load tape cassette, confirm proper pop-up function at end of tape.
   Then re-attach wooden cabinet.

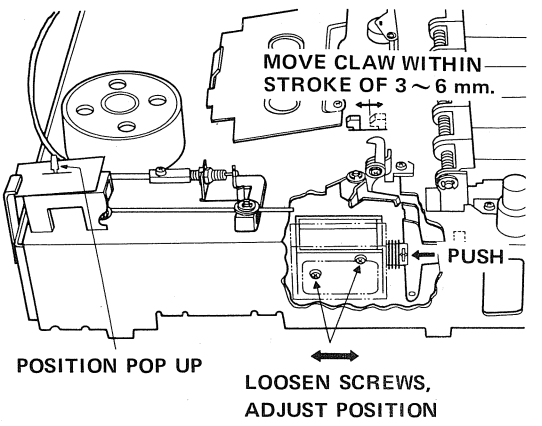


Fig. 12

6-7 ADJUSTMENT OF IDLER PULLEY CLUTCH

This adjustment is required when the unit does not rewind or fast-wind properly.

1. Remove wooden cabinet.
2. Refer to Fig. 13. Use torque gauge with two-prong adaptor. Put unit in rewind function. Pulley torque should be 100 ~ 140 gram/cm.
3. To adjust, first disassemble idler pulley. Refer to Fig. 14.
4. Set plate spring in different section of clutch disk.
   In case of being too strong: direction A
   In case of being too weak: direction B
5. Re-assemble pulley, repeat torque measurement and confirm proper operation.

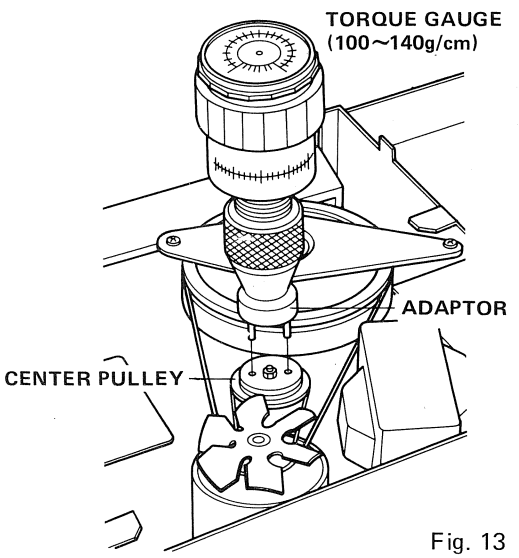


Fig. 13

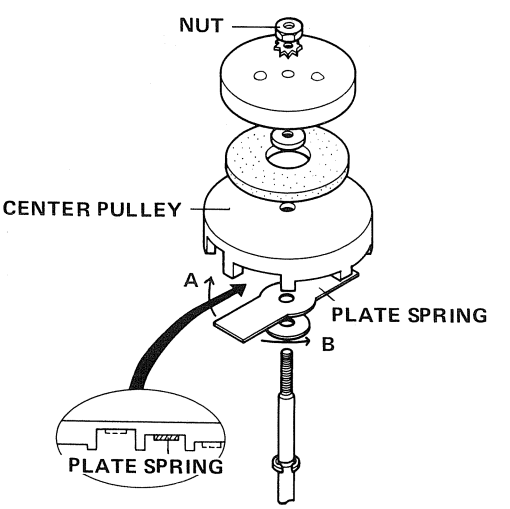


Fig. 14

6-8 ADJUSTMENT OF IDLER HEIGHT

This adjustment is required after the idler has been replaced or when mechanical noise is noticed.

1. Height of idler should be perfectly aligned with reel base, and top edge of idler must not touch reel base.
2. To adjust idler height, insert a washer under or over the idler.

6-9 ADJUSTMENT OF FAST FORWARD AND REWIND TAKE-UP TORQUE

This adjustment is required when smooth tape take-up is not possible in rewind or fast forward mode, although the idler pulley clutch (6.7 page 12) is properly adjusted.

1. Remove cabinet. Remove thrust bearing plate (Fig. 16).
2. Pull flywheel-capstan assembly out, taking care not to bend it.
3. Lock PAUSE button. Press REW button.
4. Stop the left-hand reel shaft by hand.
5. While holding the reel shaft, change the position of the rewind tension spring (see insert in Fig. 16) so that idler pulley clutch rotates slowly due to slippage.
6. Next, put unit in fast forward mode.
7. Hold the take-up reel shaft by hand.
8. While holding the reel shaft, change the position of the fast forward tension spring (see insert in Fig. 16) so that idler pulley clutch rotates slowly due to slippage.

- **IT IS ADVISABLE TO MEASURE THE REWIND AND/OR FAST FORWARD TAKE-UP TORQUE WITH A TORQUE GAUGE AFTER PERFORMING THE ABOVE ADJUSTMENTS**

1. Attach torque gauge to reel shaft.
2. Lock PAUSE button.
3. Put unit in rewind or fast forward mode.
4. Torque gauge will rotate about 1/2 turn. Reading when gauge stops should be 90 ~ 150 gram/cm.

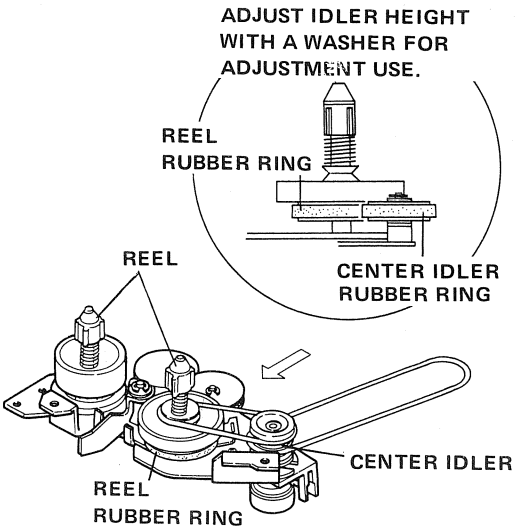


Fig. 15

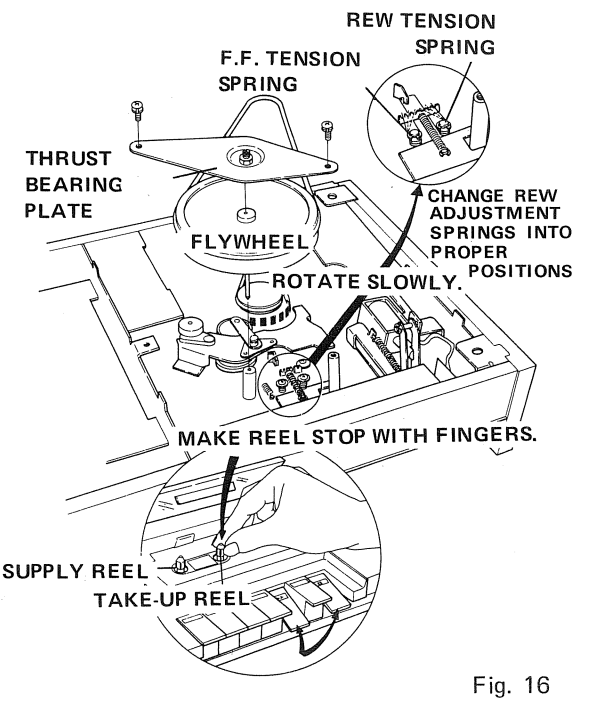


Fig. 16

In the FAST FORWORD mode, support TAKE-UP reel with your fingers for torque adjustment, and also, in the REWIND mode, support SUPPLY reel.

7. ELECTRICAL ALIGNMENT

7-1 HEAD SLIT ANGLE ADJUSTMENT (AZIMUTH)

REQUIRED INSTRUMENTS: *VOLTMETER *TEST TAPE (MTT-116L TEAC)

1. Clean head surface, pinch roller and capstan.
2. Connect Voltmeters to LINE OUTPUT.
3. Set P.B. LEVEL controls at maximum.
4. Play the second band (10kHz, −10dB level) of test tape.
5. Adjust screw-1 (Fig. 17) for maximum reading on the voltmeters.
6. If channels show a large output difference, try to adjust head direction for lateral.
7. Lock screw with paint after adjustment.
8. Fig. 18 shows relations between tape and head height.

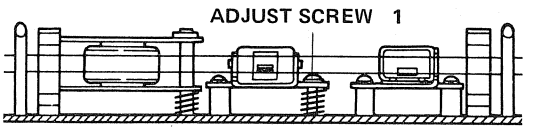


Fig. 17

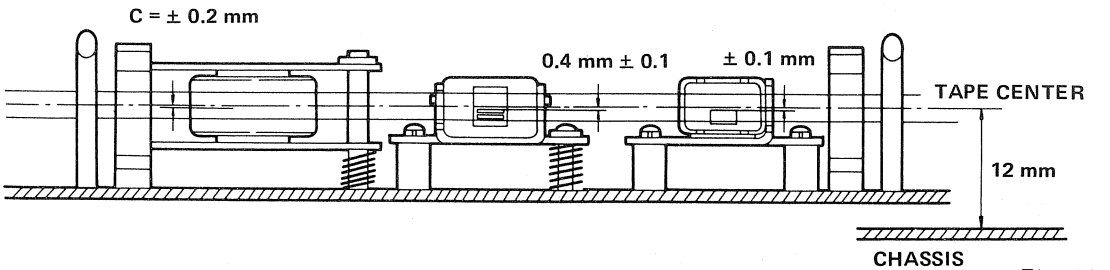


Fig. 18

7-2 CALIBRATION OF PLAYBACK SENSITIVITY

REQUIRED INSTRUMENTS: *VOLTMETER *TEST TAPE (MTT-116L TEAC)

1. Clean head surface.
2. Connect the voltmeters to LINE OUTPUT.
3. Set P.B. LEVEL controls at maximum.
4. Play the first band (333Hz) of test tape, adjust VR202 (L channel), adjust VR302 (R) to obtain 1.2V (4dB) reading on the voltmeters, refer to Fig. 19.

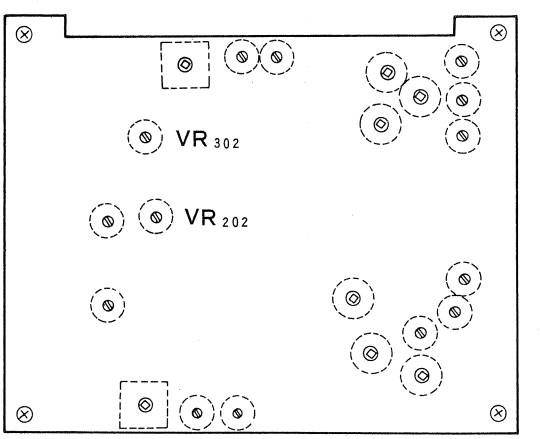


Fig. 19

7-3 PLAYBACK EQUALIZATION ALIGNMENT

REQUIRED INSTRUMENTS: *VOLTMETER *TEST TAPE (MTT-116L TEAC)

1. Clean head surface, connect voltmeters to LINE OUTPUT.
2. Play the second band (333Hz) of test tape, set the P.B. LEVEL controls position for a 230mV (—10dB) reading on the voltmeters.
3. Play the third band (6.3kHz) of test tape, adjust VR201 (L channel) and VR301 (R) for an output reading of 230mV (—10dB).
4. Repeat steps 2 and 3 several times.
5. Fig. 21 shows specified playback frequency response.

7-4 RECORDING BIAS ALIGNMENT

REQUIRED INSTRUMENTS: *VOLTMETER FREQUENCY COUNTER

1. Check the B plus voltage.
2. Set P.B. and REC LEVEL controls to minimum level.
3. Depress REC button, put into recording mode.
4. Connect voltmeters to No. 205 (L channel) and No. 305 (R) terminal of the P.C.B. Amp unit and ground.
5. Confirm a bias oscillator frequency range of 80kHz to 90kHz.
6. Adjust variable resistors to obtain readings on the following reference chart, repeat procedure and confirm.

TAPE SELECTOR BUTTON	VOLTAGE READINGS	ADJUSTMENT VR
STANDARD	1.2mV	L channel VR207 R channel VR307
L.H	1.2mV	L channel VR208 R channel VR308
CHROME	1.7mV	L channel VR209 R channel VR309

7-5 BIAS TRAP ALIGNMENT

REQUIRED INSTRUMENTS: *OSCILLOSCOPE *VOLTMETERS

1. Connect the scope to TP 1. (L channel), TP 2(R) on P.C.B. Amp and ground.
2. Connect the voltmeters to LINE OUTPUT.
3. Set REC LEVEL controls at maximum, put into record mode.

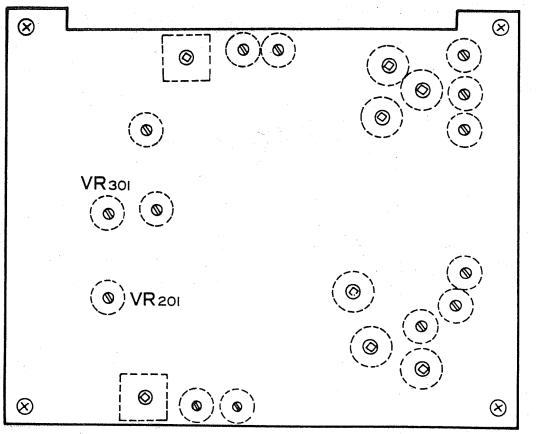


Fig. 20

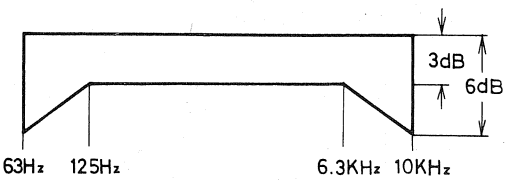


Fig. 21

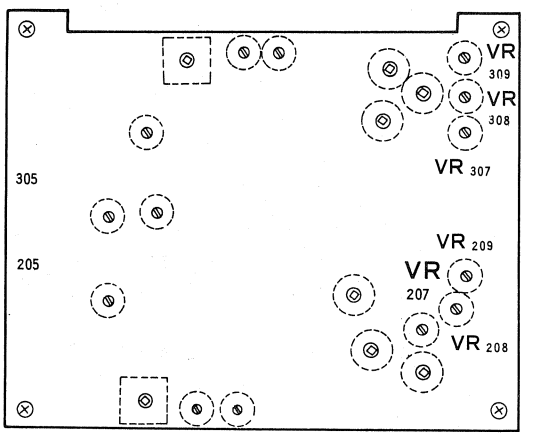


Fig. 22

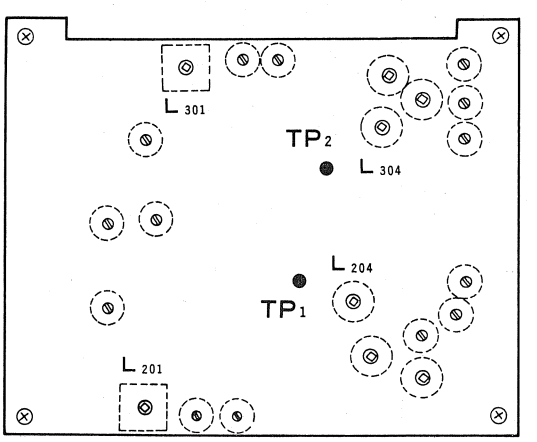


Fig. 23

4. Adjust L204 (L channel), L304 (R) for minimum decreasing wave form on the scope.
5. Next adjust L201 (L channel), L301 (R) for minimum readings on the voltmeters, under 40mV.
6. Check the bias leakages for all positions of the TAPE SELECTOR buttons as above value.

7-6 RECORDING SENSITIVITY ALIGNMENT

REQUIRED INSTRUMENTS: *VOLTMETER *AUDIO GENERATOR *BASF STANDARD TAPE C-90

1. Put into record mode, depress the TAPE SELECTOR buttons to STANDARD.
2. Connect the voltmeter to LINE OUTPUT and connect audio generator to LINE INPUT, apply 333Hz 100mV signal from generator.
3. Adjust REC LEVEL control for a 0.775V (0dB) voltmeter reading and record in on C-90 tape.
4. Upon playback of C-90 tape a LINE OUTPUT reading of the same 0.775V step 3 value should be obtained.
5. If not, adjust VR206 (L channel), VR306 (R).

7-7 OVERALL FREQUENCY RESPONSE ALIGNMENT

REQUIRED INSTRUMENTS: *VOLTMETER *AUDIO GENERATOR

1. Check and adjust playback sensitivity by 7.2, also 7.3 playback equalization.
2. Set the P.B. LEVEL controls at maximum.
3. Connect voltmeter to LINE OUTPUT, connect audio generator to LINE INPUT.
4. Set REC LEVEL control as in step 3 of 7.6, repeating sensitivity alignment procedure.
5. Do not change REC level control during following steps.
6. Feed a 333Hz 78mV (—20dB) and a 6.8kHz 78mV (—20dB) signal from the generator, record both signals.
7. Playback above step 6 and check the output frequency of each signal at the LINE OUTPUT.
8. Referring to the following chart, adjust the variable resistors to the stated reference frequency values.

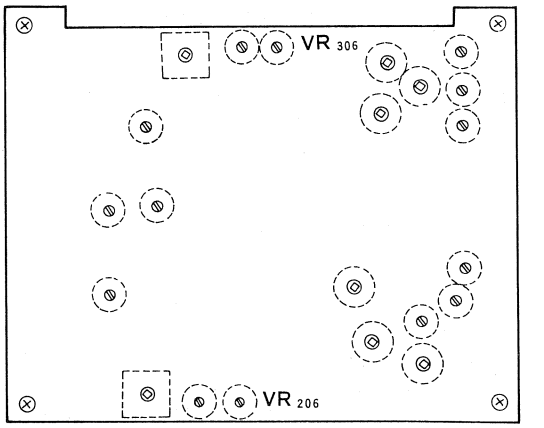


Fig. 24

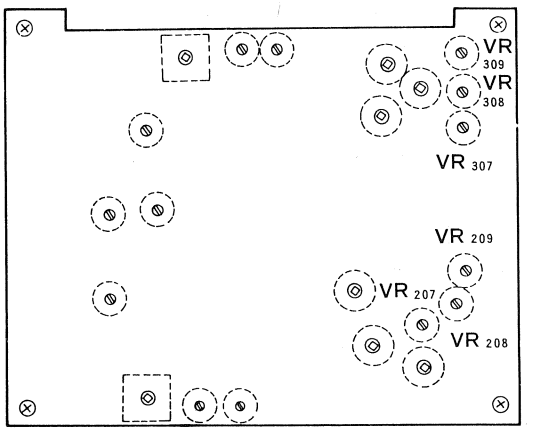


Fig. 25

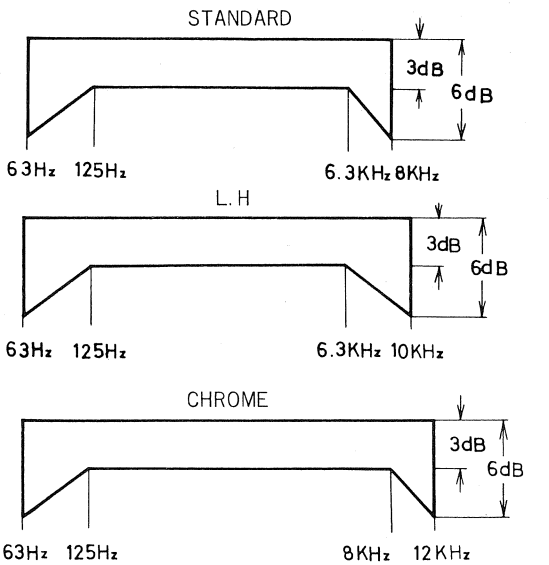


Fig. 26

CASSETTE TAPE	TAPE SELECTOR	DIFFERENCE RANGE	ADJUSTMENT VR
BASF C-90	STANDARD	0 ~ −1dB	L channel VR207 R channel VR307
MEMOREX L.H C-90	L.H	0 ~ +1dB	L channel VR208 R channel VR308
MEMOREX Chromium dioxide C-60	CHROME	0 ~ +2dB	L channel VR209 R channel VR309

9. Fig. 26 shows specified frequency response for each tape.

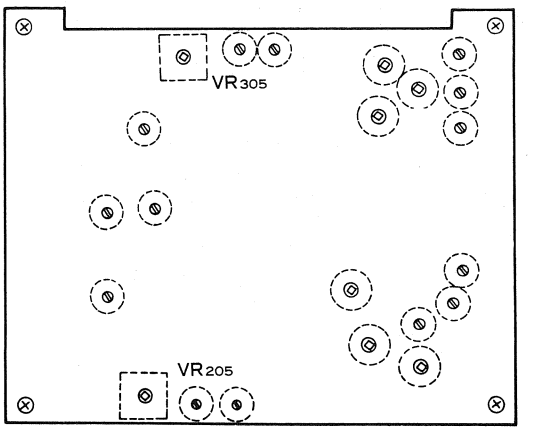


Fig. 27

7-8 LEVEL METER CALIBRATION

REQUIRED INSTRUMENTS: *VOLTMETER *AUDIO GENERATOR

1. Connect voltmeter to LINE OUTPUT, generator to LINE INPUT.
2. Apply a 333Hz 100mV (−18dB) signal from the generator.
3. Set REC button and adjust REC LEVEL control to obtain a voltmeter reading of 0.775V (0dB).
4. Adjust VR205 (L channel), VR305 (R) until the indicators on the LEVEL meter are at "0" marked position.

8. ADAPTATION TO A DIFFERENT LINE FREQUENCY "AC CYCLES"

Since the tape speed depends upon the AC line frequency, the unit must be adjusted if you use it in an area or country with different "AC cycles."

1. Remove the ten (①~ ⑩) screws and the wooden cabinet (Fig. 6 on page 6).
2. For 60Hz AC operation:
   Set the drive belt on the smaller diameter portion of the motor pulley. See Fig. 28.
3. For 50Hz AC operation:
   Set the drive belt on the larger diameter portion of the motor pulley. See Fig. 29.
4. Give the flywheel a few turns by hand to make sure that the belt is in correct position.
5. Dirt or oil on the drive belt must be wiped off immediately and carefully. Use a soft cloth moistened with pure alcohol.

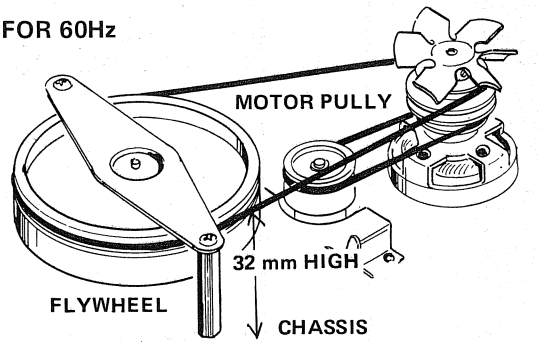


Fig. 28

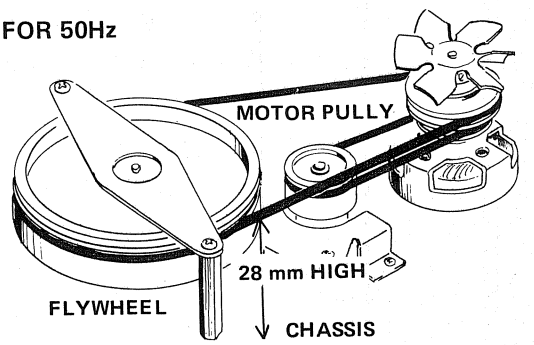


Fig. 29

9. LINE VOLTAGE AND FUSE

Turn the fuse cap of the line voltage selector (on the back of the unit) and remove the fuse (Fig. 30). Then remove the voltage selector plug and put it back in such a way that the correct voltage figure is visible in the cutout in the plug.

Also, check the rating of the fuse. For 220 or 240 volt operation, a 0.5 ampere fuse must be used. For 110, 120 or 130 volt, use a 1 ampere fuse. Insert the proper fuse, then put the fuse cap back into position.

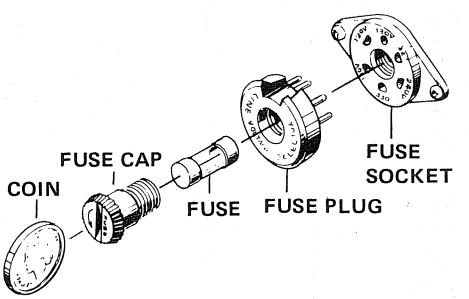
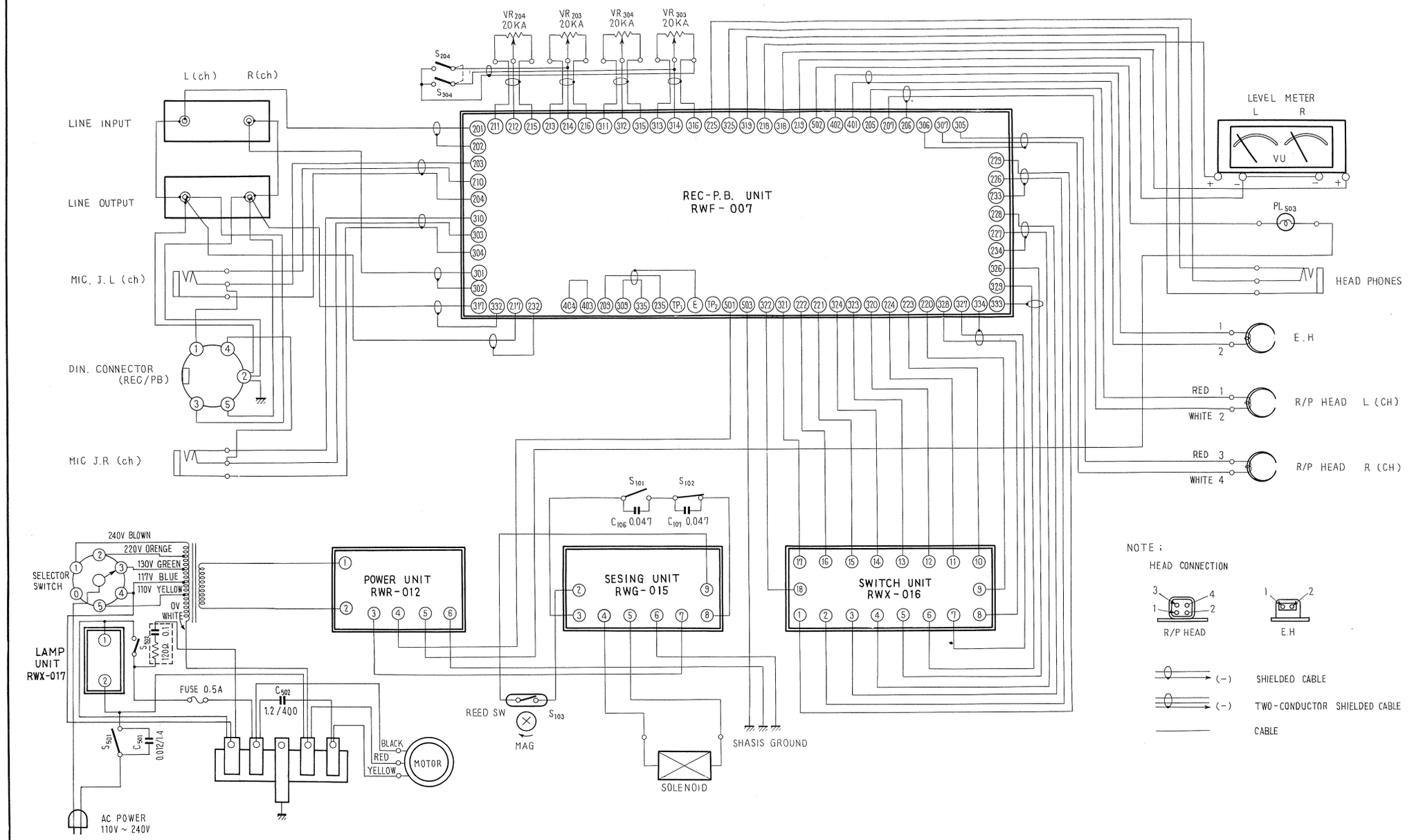


Fig. 30

10. SCHEMATIC DIAGRAMS, P.C.B. PATTERNS AND PARTS LIST

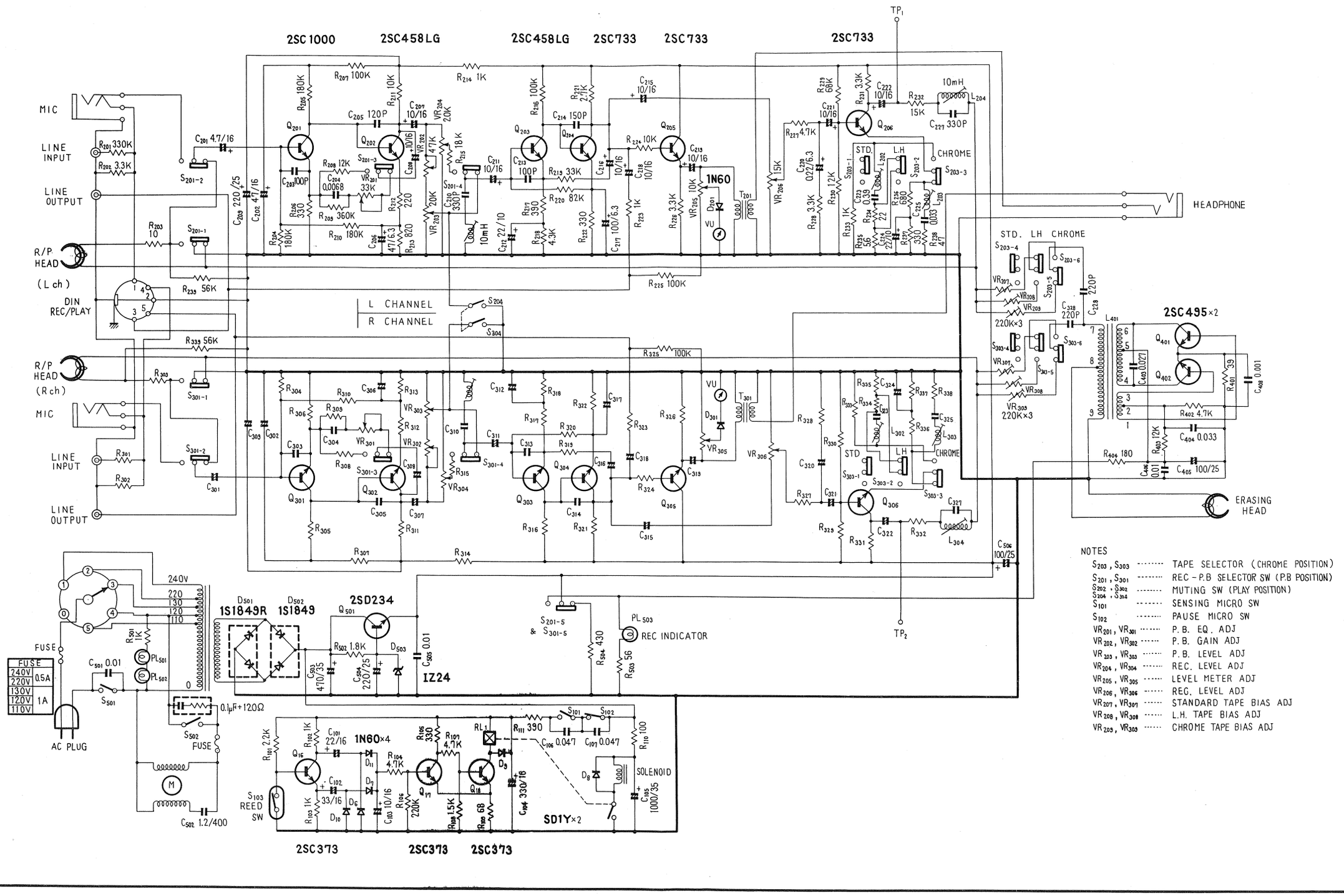
10.1 CONNECTION DIAGRAMS

T-3500



10.2 SCHEMATIC DIAGRAMS

T-3500/F



NOTES

- S_{203}, S_{303} ····· TAPE SELECTOR (CHROME POSITION)
- S_{201}, S_{301} ····· REC-P.B SELECTOR SW (P.B POSITION)
- S_{202}, S_{302}, S_{204}, S_{304} ····· MUTING SW (PLAY POSITION)
- S_{101} ····· SENSING MICRO SW
- S_{102} ····· PAUSE MICRO SW
- VR_{201}, VR_{301} ····· P.B. EQ. ADJ
- VR_{202}, VR_{302} ····· P.B. GAIN ADJ
- VR_{203}, VR_{303} ····· P.B. LEVEL ADJ
- VR_{204}, VR_{304} ····· REC. LEVEL ADJ
- VR_{205}, VR_{305} ····· LEVEL METER ADJ
- VR_{206}, VR_{306} ····· REG. LEVEL ADJ
- VR_{207}, VR_{307} ····· STANDARD TAPE BIAS ADJ
- VR_{208}, VR_{308} ····· L.H. TAPE BIAS ADJ
- VR_{209}, VR_{309} ····· CHROME TAPE BIAS ADJ

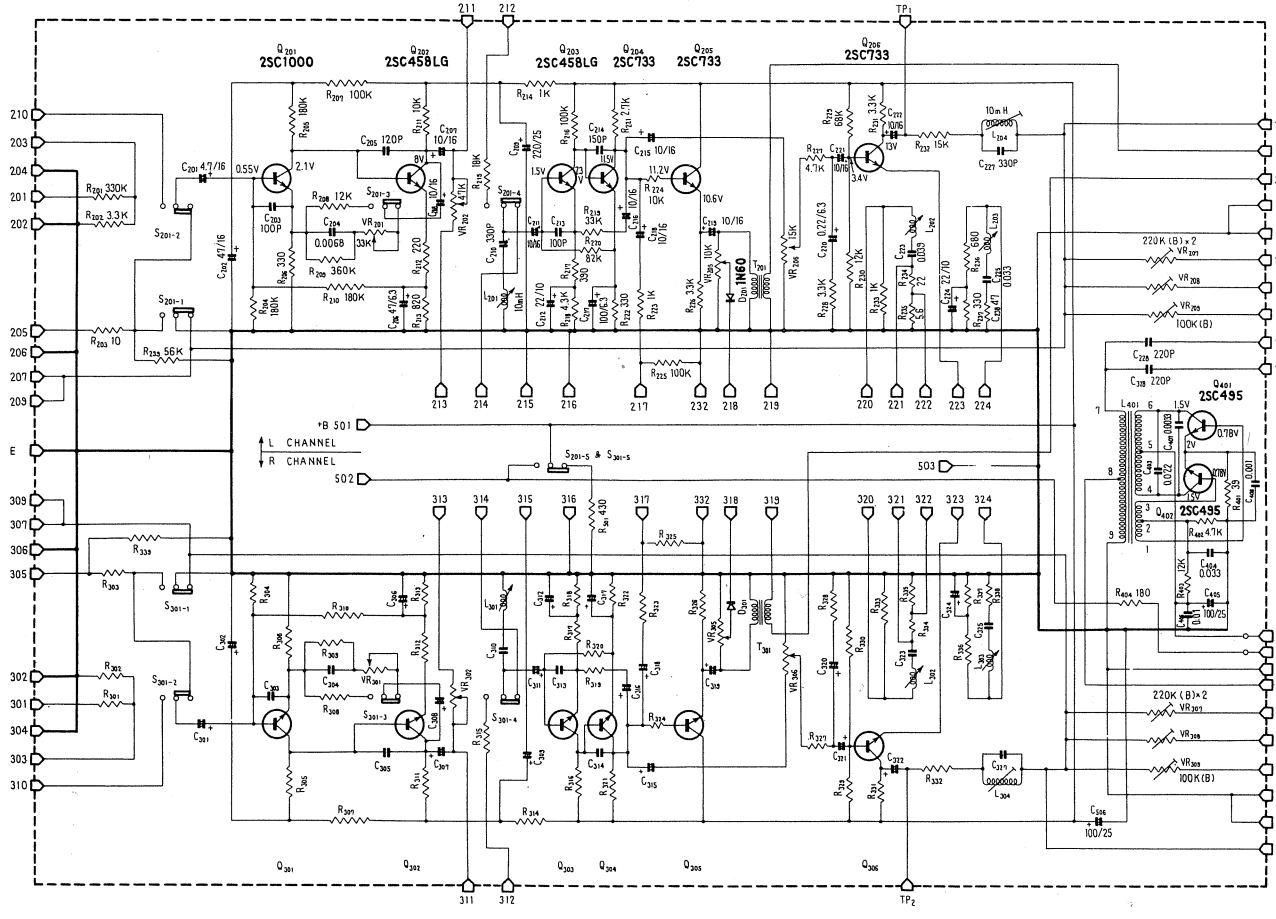
PARTS LIST OF MISCELLANEOUS

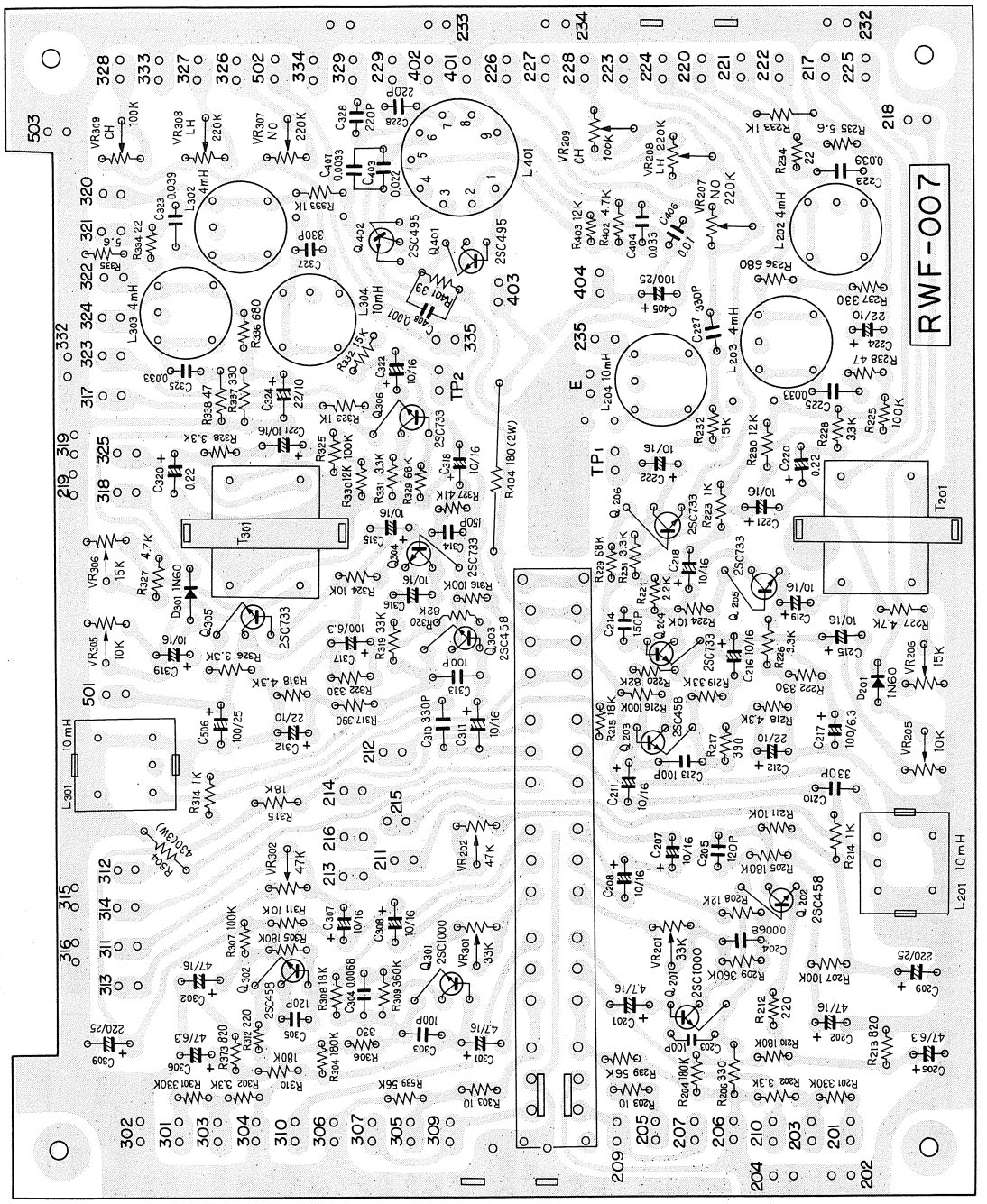
Symbol	Description	Part No.	
	SENSING UNIT	RWG-015-A	
	POWER SUPPLY UNIT	RWR-012-B	
	REC/P.B AMPLIFIER UNIT	RWF-007-D	
	SWITCH UNIT	RWX-016-0	
	LAMP UNIT	RWX-017-C	
M	Motor	N11-411-B	
	Power transformer	RTT-012-A	
	Solenoid	N15-410-B	
	Sensing magnet	RNG-008-A	
S501	Power switch	S31-406-C	
S103	Reed switch	RSX-002-0	
S302	Muting switch	RSK-007-0	
S202	Muting switch	RSK-007-0	
S101	Sensing switch	RSF-002-A	
S102	Pause switch	S21-416-0	
S502	Motor switch	RSF-002-A	
C502	Capacitor	C15-407-A	
C106	Ceramic capacitor 0.047μF	CKDYF473Z50	
C107	Ceramic capacitor 0.047μF	CKDYF473Z50	
	Spark killer	W53-045-0	
RPH	REC/P.B head	RPB-007-C	
E.H	Erasing head	RPB-008-A	
VU	Level meter	RAW-005-B	
VR203	P.B level control	RCW-001-0	
VR202	REC level control	C81-435-0	

Symbol	Description	Part No.	
VR303	P.B level control	RCW-001-0	
VR302	REC level control	RCW-001-0	
	Fuse holder	ARK-005-0	
	Fuse holder for motor	RKC-001-0	
	Fuse 1A	E21-402-0	
	Fuse 0.5A (motor)	E21-007-0	
	Power cord	D11-003-E	
	Head phones jack	RKN-002-0	
	Microphone jack	K72-024-0	
	DIN socket	K93-003-B	
	4P pin jack	RKB-001-A	
PL503	REC indicator	E22-851-B	
	Knob for level control	RAA-013-A	
	Knob for tape selector	AAD-010-0	
	Operating instructions	RRB-010-0	

10.3 REC/P.B AMPLIFIER UNIT (RWF-007)

REC P.B. UNIT
RWF-007




RWF-007

PARTS LIST OF REC/P.B. AMPLIFIER UNIT

CAPACITOR

IN μF, 50V UNLESS OTHERWISE NOTED, p: μμF

Symbol	Description			Part No.	
C201	Electrolytic	4.7	16V	CEA4R7P16	
C202	Electrolytic	47	16V	CEA470P16	
C203	Seramic	100p		CCDSL101K50	
C204	Mylar	0.0068		CQMA682K50	
C205	Styrol	120p		RCE-009-0	
C206	Electrolytic	47	6.3V	CEA470P6R3	
C207	Electrolytic	10	16V	CEA100P16	
C208	Electrolytic	10	16V	CEA100P16	
C209	Electrolytic	220	25V	CEA221P25	
C210	Styrol	330p		RCE-008-0	
C211	Electrolytic	10	16V	CEA100P16	
C212	Electrolytic	22	10V	CEA220P10	
C213	Ceramic	100p		CCDSL101K50	
C214	Styrol	150p		RCE-007-0	
C215	Electrolytic	10	16V	CEA100P16	
C216	Electrolytic	10	16V	CEA100P16	
C217	Electrolytic	100	6.3V	CEA101P6R3	
C218	Electrolytic	10	16V	CEA100P16	
C219	Electrolytic	10	16V	CEA100P16	
C220	Electrolytic	0.22	10V	CSSAR22X10	
C221	Electrolytic	10	16V	CEA100P16	
C222	Electrolytic	10	16V	CEA100P16	
C223	Mylar	0.039		CQMA393K50	
C224	Electrolytic	22	10V	CEA220P10	
C225	Mylar	0.033		CQMA333K50	

Symbol	Description			Part No.	
C226		.....	.....	.....	
C227	Styrol	330p		RCE-008-0	
C228	Styrol	220p		RCE-006-0	
C229		.....	.....	.....	
C230		.....	.....	.....	
C301	Electrolytic	4.7	16V	CEA4R7P16	
C302	Electrolytic	47	16V	CEA470P16	
C303	Ceramic	100p		CCDSL101K50	
C304	Mylar	0.0068		CQMA682K50	
C305	Styrol	120p		RCE-009-0	
C306	Electrolytic	47	6.3V	CEA470P6R3	
C307	Electrolytic	10	16V	CEA100P16	
C308	Electrolytic	10	16V	CEA100P16	
C309	Electrolytic	220	25V	CEA221P25	
C310	Styrol	330p		RCE-008-0	
C311	Electrolytic	10	16V	CEA100P16	
C312	Electrolytic	22	10V	CEA220P10	
C313	Ceramic	100p		CCDSL101K50	
C314	Styrol	150p		RCE-007-0	
C315	Electrolytic	10	16V	CEA100P16	
C316	Electrolytic	10	16V	CEA100P16	
C317	Electrolytic	100	6.3V	CEA101P6R3	
C318	Electrolytic	10	16V	CEA100P16	
C319	Electrolytic	10	16V	CEA100P16	
C320	Electrolytic	0.22	10V	CSSAR22X10	
C321	Electrolytic	10	16V	CEA100P16	
C322	Electrolytic	10	16V	CEA100P16	
C323	Mylar	0.039		CQMA393K50	
C324	Electrolytic	22	10V	CEA220P10	
C325	Mylar	0.033		CQMA333K50	

Symbol	Description			Part No.	
C326		.....	.....	.....	
C327	Styrol	330p		RCE-008-0	
C328	Styrol	220p		RCE-006-0	
C329		.....	.....	.....	
C330		.....	.....	.....	
C401		.....	.....	.....	
C402		.....	.....	.....	
C403	Mylar	0.027		CQMA273K50	
C404	Mylar	0.033		CQMA333K50	
C405	Electrolytic	100	25V	CEA101P25	
C406	Mylar	0.01		CQMA103K50	
C407	Mylar	0.0033	.....	CQMA332K50	
C408	Mylar	0.001	.....	CQMA102K50	
C503		.....	.....	.....	
C504		.....	.....	.....	
C505		.....	.....	.....	
C506	Electrolytic	100	25V	CEA101P25	

RESISTORS

IN Ω, ¼ WATT UNLESS OTHERWISE NOTED k: kΩ, M: MΩ.

Symbol	Description	Part No.	
R201	Carbon film 330k	RD¼VS334J	
R202	Carbon film 3.3k	RD¼VS332J	
R203	Carbon film 10	RD¼VS100J	
R204	Carbon film 180k	RD¼VS184J	
R205	Carbon film 180k	RD¼VS184J	
R206	Carbon film 330	RD¼VS331J	
R207	Carbon film 100k	RD¼VS104J	
R208	Carbon film 12k	RD¼VS123J	
R209	Carbon film 360k	RD¼VS364J	
R210	Carbon film 180k	RD¼VS184J	

Symbol	Description	Part No.	
R211	Carbon film 10k	RD¼VS103J	
R212	Carbon film 220	RD¼VS221J	
R213	Carbon film 820	RD¼VS821J	
R214	Carbon film 1k	RD¼VS102J	
R215	Carbon film 18k	RD¼VS183J	
R216	Carbon film 100k	RD¼VS104J	
R217	Carbon film 390	RD¼VS391J	
R218	Carbon film 4.3k	RD¼VS432J	
R219	Carbon film 33k	RD¼VS333J	
R220	Carbon film 82k	RD¼VS823J	
R221	Carbon film 2.7k	RD¼VS272J	
R222	Carbon film 330	RD¼VS331J	
R223	Carbon film 1k	RD¼VS102J	
R224	Carbon film 10k	RD¼VS103J	
R225	Carbon film 100k	RD¼VS104J	
R226	Carbon film 3.3k	RD¼VS332J	
R227	Carbon film 4.7k	RD¼VS472J	
R228	Carbon film 3.3k	RD¼VS332J	
R229	Carbon film 68k	RD¼VS683J	
R230	Carbon film 12k	RD¼VS123J	
R231	Carbon film 3.3k	RD¼VS332J	
R232	Carbon film 15k	RD¼VS153J	
R233	Carbon film 1k	RD¼VS102J	
R234	Carbon film 22	RD¼VS220J	
R235	Carbon film 5.6	RD¼VS5R6J	
R236	Carbon film 680	RD¼VS681J	
R237	Carbon film 330	RD¼VS331J	
R238	Carbon film 47	RD¼VS470J	
R239	Carbon film 56k	RD¼VS563J	
R240	.....	.....	

Symbol	Description	Part No.	
R301	Carbon film 330k	RD¼VS334J	
R302	Carbon film 3.3k	RD¼VS332J	
R303	Carbon film 10	RD¼VS100J	
R304	Carbon film 180k	RD¼VS184J	
R305	Carbon film 180k	RD¼VS184J	
R306	Carbon film 330	RD¼VS331J	
R307	Carbon film 100k	RD¼VS104J	
R308	Carbon film 12k	RD¼VS123J	
R309	Carbon film 360k	RD¼VS364J	
R310	Carbon film 180k	RD¼VS184J	
R311	Carbon film 100k	RD¼VS104J	
R312	Carbon film 220	RD¼VS221J	
R313	Carbon film 820	RD¼VS821J	
R314	Carbon film 1k	RD¼VS102J	
R315	Carbon film 18k	RD¼VS183J	
R316	Carbon film 100k	RD¼VS104J	
R317	Carbon film 390	RD¼VS391J	
R318	Carbon film 4.3k	RD¼VS432J	
R319	Carbon film 33k	RD¼VS333J	
R320	Carbon film 82k	RD¼VS823J	
R321	Carbon film 2.7k	RD¼VS272J	
R322	Carbon film 330	RD¼VS331J	
R323	Carbon film 1k	RD¼VS102J	
R324	Carbon film 10k	RD¼VS103J	
R325	Carbon film 100k	RD¼VS104J	
R326	Carbon film 3.3k	RD¼VS332J	
R327	Carbon film 4.7k	RD¼VS472J	
R328	Carbon film 3.3k	RD¼VS332J	
R329	Carbon film 68k	RD¼VS683J	
R330	Carbon film 12k	RD¼VS123J	

Symbol	Description	Part No.	
R331	Carbon film 3.3k	RD¼VS332J	
R332	Carbon film 15k	RD¼VS153J	
R333	Carbon film 1k	RD¼VS102J	
R334	Carbon film 22	RD¼VS220J	
R335	Carbon film 5.6	RD¼VS5R6J	
R336	Carbon film 680	RD¼VS681J	
R337	Carbon film 330	RD¼VS331J	
R338	Carbon film 47	RD¼VS470J	
R339	Carbon film 56k	RD¼VS563J	
R340	.....	.....	
R401	Carbon film 39	RD¼VS390J	
R402	Carbon film 4.7k	RD¼VS472J	
R403	Carbon film 12k	RD¼VS123J	
R404	Metal oxide 180 2W	RS2P181J	
R405	.....	.....	
R501	.....	.....	
R502	.....	.....	
R503	.....	.....	
R504	Metal oxide 430 3W	RS3P431J	
R505	.....	.....	
VR201	Semi-fixed 33k-(B)	C81-426-0	
VR202	Semi-fixed 47k-(B)	C92-048-0	
VR203	....	.....	
VR204	....	.....	
VR205	Semi-fixed 10k-(B)	C92-049-0	
VR206	Semi-fixed 15k-(B)	RCP-004-0	
VR207	Semi-fixed 220k-(B)	RCP-005-0	
VR208	Semi-fixed 220k-(B)	RCP-005-0	
VR209	Semi-fixed 100k-(B)	C92-047-0	
VR210	.....	.....	

Symbol	Description	Part No.	
VR301	Semi-fixed 33k-(B)	C81-426-0	
VR302	Semi-fixed 47k-(B)	C92-048-0	
VR303	....	.....	
VR304	....	.....	
VR305	Semi-fixed 10k-(B)	C92-049-0	
VR306	Semi-fixed 15k-(B)	RCP-004-0	
VR307	Semi-fixed 220k-(B)	RCP-005-0	
VR308	Semi-fixed 220k-(B)	RCP-005-0	
VR309	Semi-fixed 100k-(B)	C92-047-0	
VR310	.....	.....	

SEMICONDUCTORS

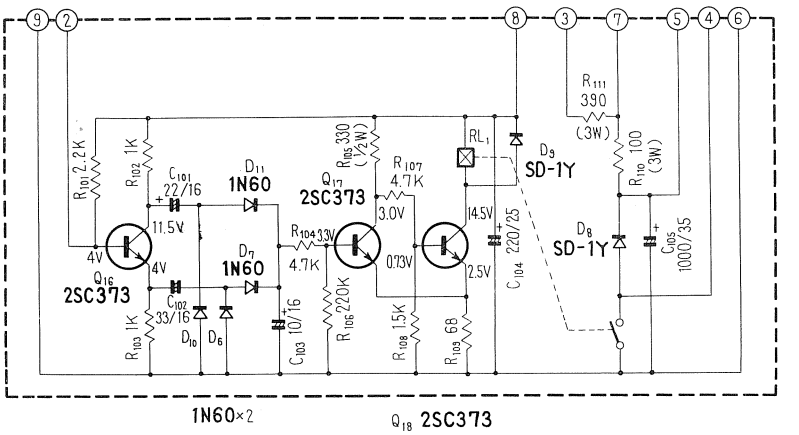
Symbol	Description	Part No.	
Q201	Transistor 2SC1000 GR or BL		
Q202	Transistor 2SC458LG B or C		
Q203	Transistor 2SC458LG B or C		
Q204	Transistor 2SC733 Y or GR		
Q205	Transistor 2SC733 Y or GR		
Q206	Transistor 2SC733 Y or GR		
Q301	Transistor 2SC1000 GR or BL		
Q302	Transistor 2SC458LG B or C		
Q303	Transistor 2SC458LG B or C		
Q304	Transistor 2SC733 Y or GR		
Q305	Transistor 2SC733 Y or GR		
Q306	Transistor 2SC733 Y or GR		
Q401	Transistor 2SC495 OR		
Q402	Transistor 2SC495 OR		
D201	Diode IN60		
D301	Diode IN60		

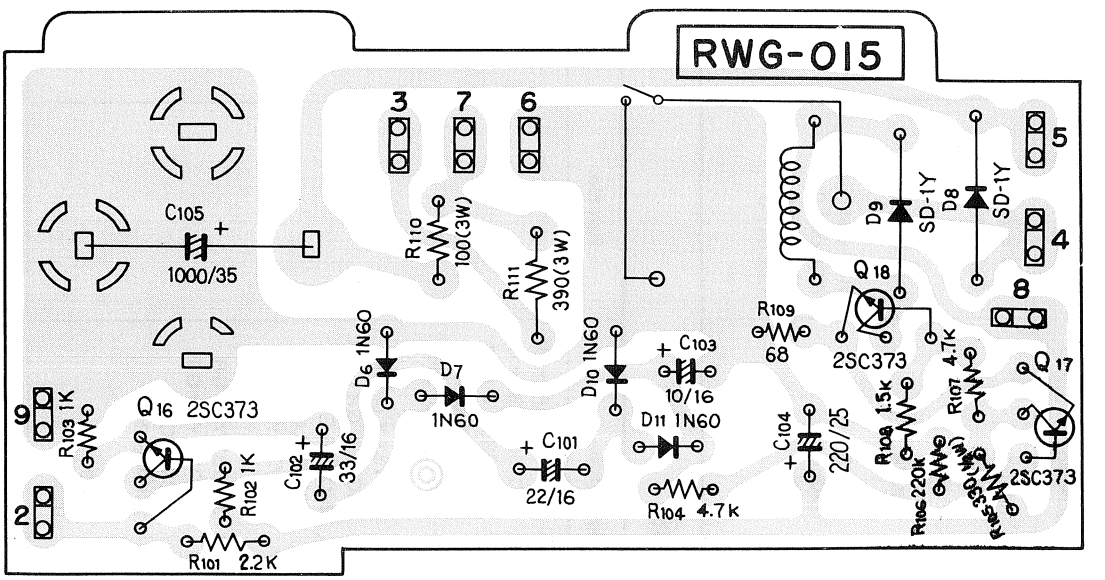
TRANSFORMERS AND COILS

Symbol	Description	Part No.	
T201	Matching transformer	T61-408-A	
T301	Matching transformer	T61-408-A	
L201	Trap coil	T84-401-A	
L202	Peaking coil	RTF-001-A	
L203	Peaking coil	RTF-001-A	
L204	Trap coil	T84-401-A	
L301	Trap coil	T84-401-A	
L302	Peaking coil	RTF-001-A	
L303	Peaking coil	RTF-001-A	
L304	Trap coil	T84-401-A	
L401	Oscillator coil	RTD-004-0	
	CL-type slide switch	S41-410-0	

10.4 SENSING UNIT (RWG-015)

SENSING UNIT
RWG-015





PARTS LIST OF SENSING UNIT

CAPACITORS

Symbol	Description	Part No.	
C101	Electrolytic 22 16V	RCH-003-0	
C102	Electrolytic 33 16V	RCH-004-0	
C103	Electrolytic 10 16V	RCH-002-0	
C104	Electrolytic 220 25V	CEA221P25	
C105	Electrolytic 1000 35V	C52-068-0	

RESISTORS

Symbol	Description	Part No.	
R101	Carbon film 2.2k	RD¼VS222J	
R102	Carbon film 1k	RD¼VS102J	
R103	Carbon film 1k	RD¼VS102J	
R104	Carbon film 4.7k	RD¼VS472J	
R105	Carbon film 330 ½W	RD½PS331J	
R106	Carbon film 220k	RD¼VS224J	
R107	Carbon film 4.7k	RD¼VS472J	
R108	Carbon film 1.5k	RD¼VS152J	
R109	Carbon film 68	RD¼VS680J	
R110	Carbon film 100 3W	RO3P101K	
R111	Carbon film 390 3W	RO3P391K	

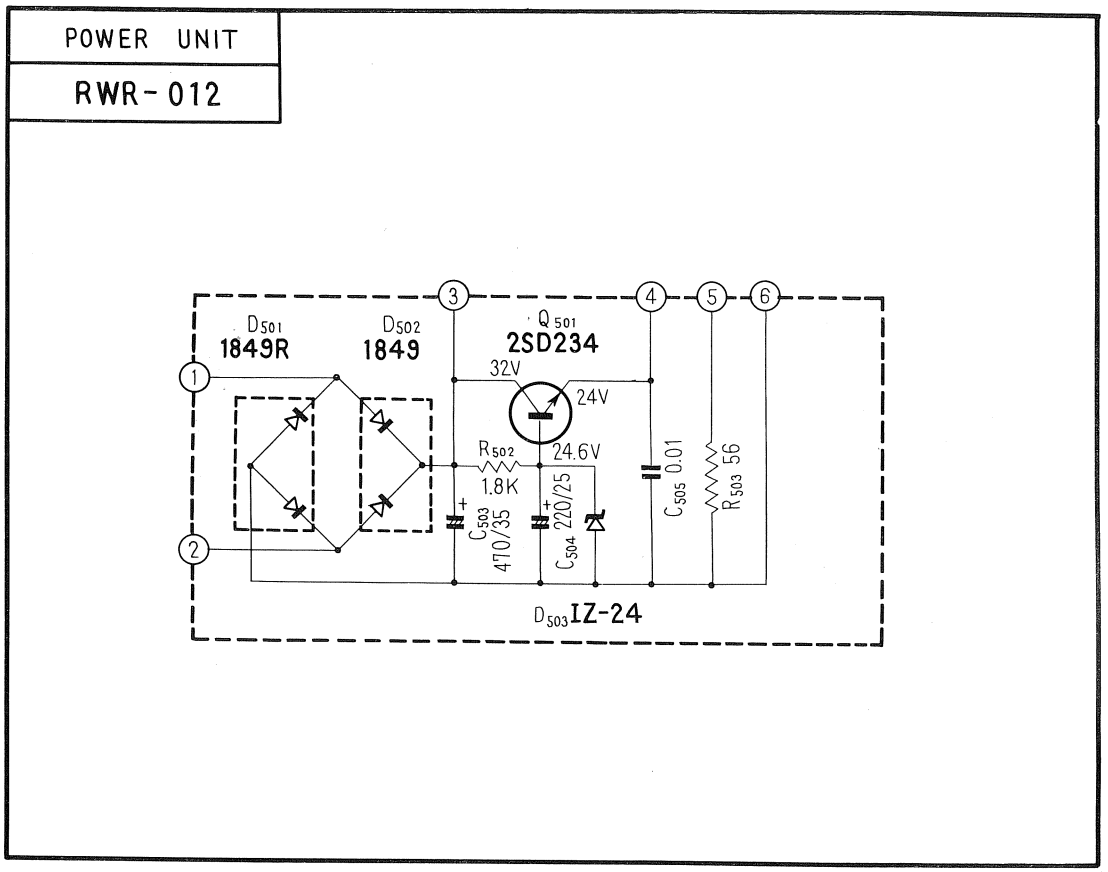
SEMICONDUCTORS

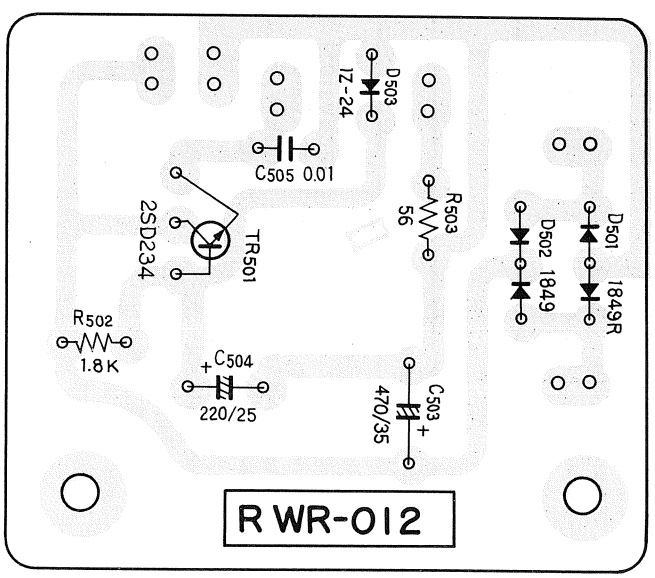
Symbol	Description	Part No.	
Q16	Transistor 2SC373		
Q17	Transistor 2SC373		
Q18	Transistor 2SC373		
D6	Diode IN60		
D7	Diode IN60		
D8	Diode SD-1Y		
D9	Diode SD-1Y		
D10	Diode IN60		
D11	Diode IN60		

OTHER

Symbol	Description	Part No.	
RL1	Relay	S61-417-A	

10.5 POWER UNIT (RWR-012)





PARTS LIST OF POWER UNIT

CAPACITORS

Symbol	Description	Part No.	
C503	Electrolytic 470 35V	CEA471P35	
C504	Electrolytic 220 25V	CEA221P25	
C505	Mylar 0.01	CQMA103K50	

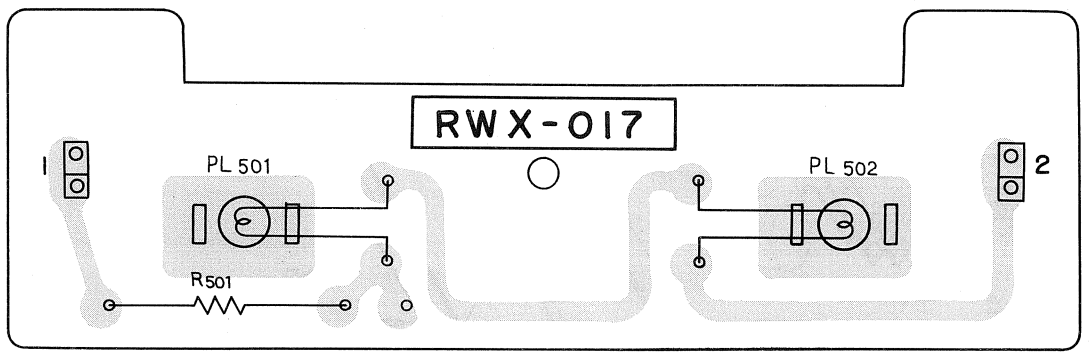
RESISTORS

Symbol	Description	Part No.	
R502	Carbon film 1.8k	RD¼VS182J	
R503	Metal oxide 56 2W	RS2P560K	

SEMICONDUCTORS

Symbol	Description	Part No.	
Q501	Transistor 2SD234-0		
D501	Diode 1S1849R		
D502	Diode 1S1849R		
D503	Zener diode 1Z24		

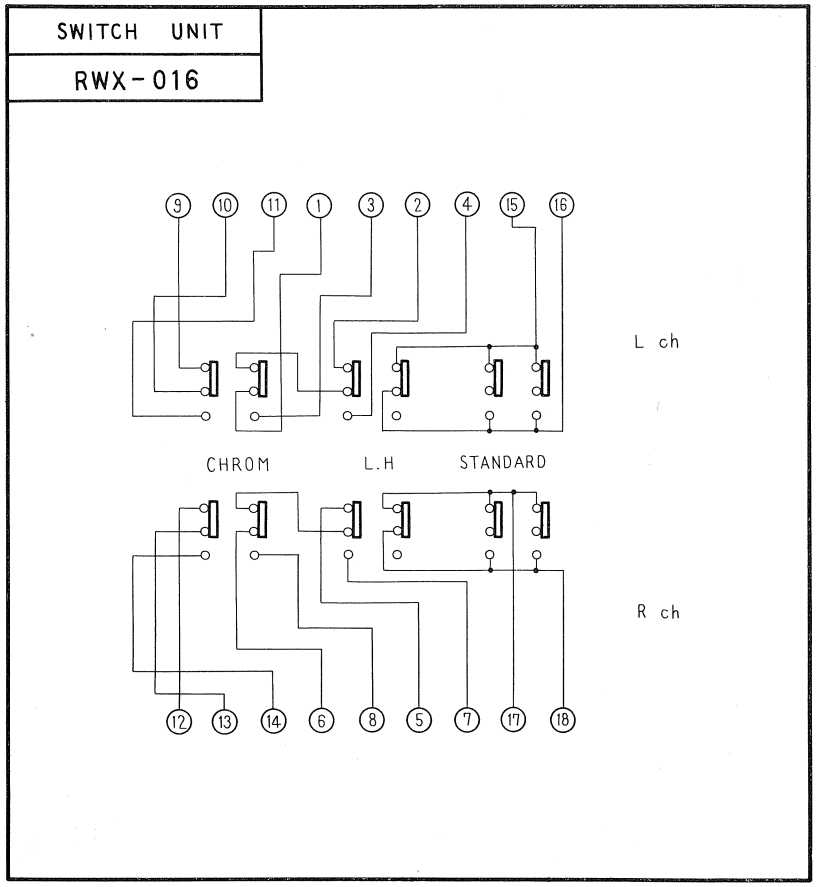
10.6 LAMP UNIT (RWX-017)

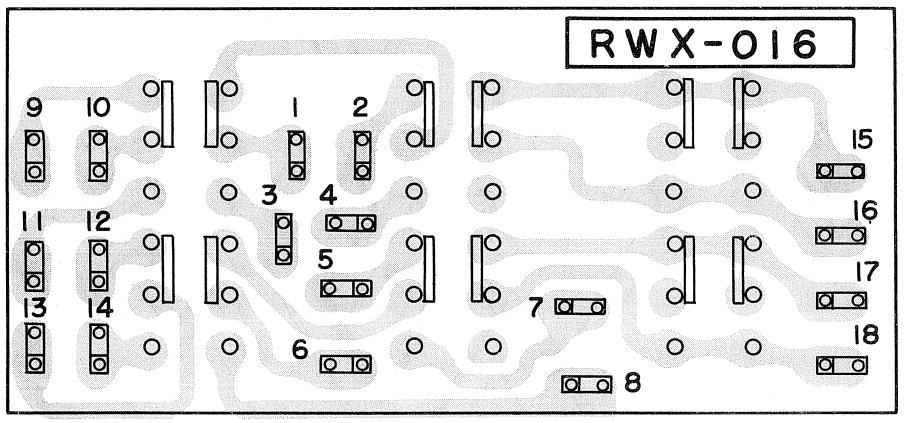


PARTS LIST OF LAMP UNIT

Symbol	Description	Part No.	
PL-501	Pilot lamp (B)	REL-004-A	
PL-502	Pilot lamp (B)	REL-004-A	
	Lamp holder	RKX-003-0	
R501	Metal oxide 1k 2W	RCN-005-0	

10.7 SWITCH UNIT (RWX-016)



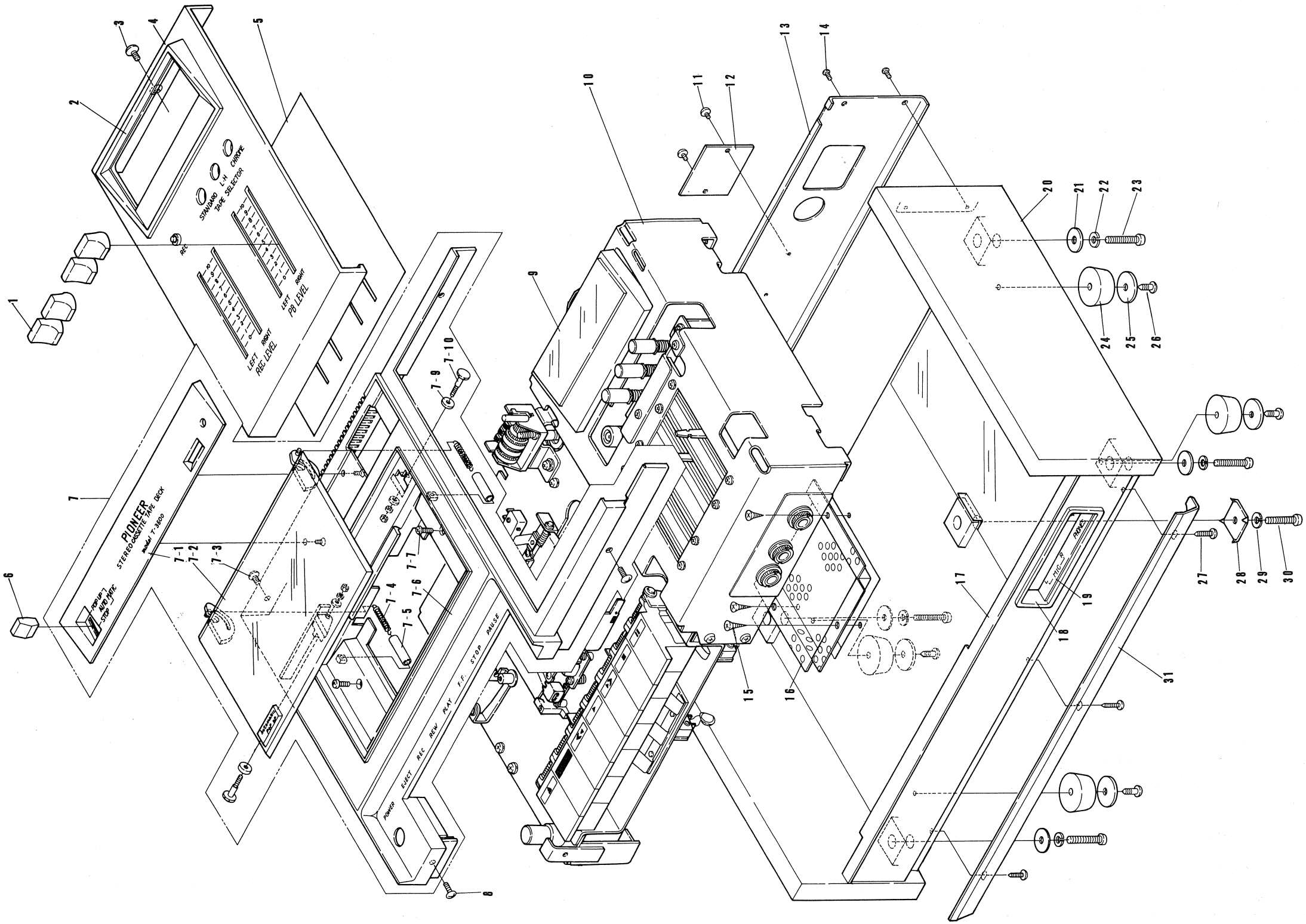


PARTS LIST OF SWITCH UNIT

Symbol	Description	Part No.	
	UNI-push switch	RSG-002-0	

11. PARTS LISTS OF EXPLODED VIEW

11.1 DECORATIVE PARTS

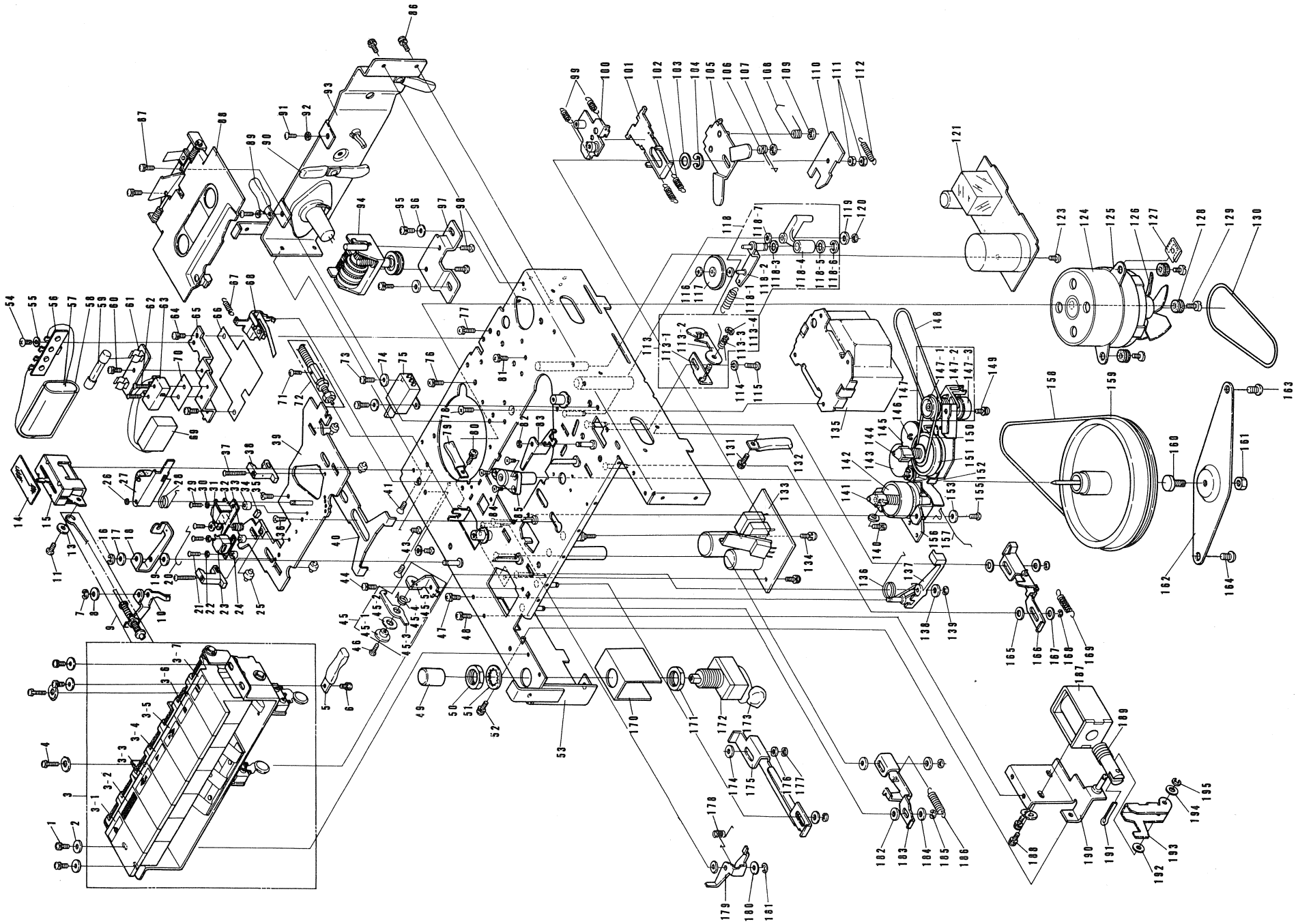


PARTS LIST OF DECORATIVE PARTS

Key No.	Description	Part No.	
1	Knob for level control	RAA-013-A	
2	Meter cover	RAP-011-A	
3	Fillister screw M3 x 8		
4	Control panel assy	RXX-027	
5	Mask	RED-027-0	
6	Selector knob A	RAA-012-A	
7	Top cover assy	RXX-029	
7-1	Indicator panel	RAH-045-B	
7-2	Cassette cover assy	RXX-028	
7-3	Truss head screw M3 x 6		
7-4	Cassette cover spring	RBH-007-A	
7-5	Vinyl tube 5ϕ x 25 mm		
7-6	Deck panel	RXA-226-0	
7-7	Pan head screw M3 x 6		
7-8			
7-9	Cassette cover break	RED-026	
7-10	Cassette cover pin	RLA-164-0	
8	Truss head screw M3 x 6		
9	Level meter	RAW-005-B	
10	Chassis	RNB-021-B	

Key No.	Description	Part No.	
11	Binding screw M3 x 4		
12	Model name plate	RLA-032-A	
13	Rear panel	RNC-056-0	
14	Machine screw M3 x 6		
15			
16	Punching metal	RAS-002-0	
17	Alumina	RAP-014-A	
18	Jack frame	A66-415-0	
19	Jack name plate	A61-415-A	
20	Wooden case assy	RXX-030	
21	Flat washer M6		
22	Spring washer M4		
23	Pan head screw M4 x 25		
24	Foot	REC-011-0	
25	Felt pad	RED-028-0	
26	Pan head screw 3.1 x 13		
27	Tapping screw M3 x 6		
28	Claw washer		
29	Spring washer M4		
30	Pan head screw M4 x 20		
31	Front cover	RAH-040-0	

11.2 MECHANISMS



PARTS LIST OF MECHANISMS

Key No.	Description	Part No.	
1	Pan head screw M3 x 6		
2	Spring washer M3		
3	Push button assy	RXX-018	
3-1	EJECT button assy	RXX-026	
3-2	REC button assy	RXX-025	
3-3	REW button assy	RXX-024	
3-4	PLAY button assy	RXX-023	
3-5	F.F. button assy	RXX-022	
3-6	STOP button assy	RXX-021	
3-7	PAUSE button assy	RXX-020	
4	Pan head screw M2 x 6		
5	Cord fixer	M46-657	
6	Pan head screw M3 x 6		
7	Retaining washer E-type (2ϕ)		
8	Nylon washer	E32-478	
9	AUTO POPUP joint assy	W73-412-C	
10	AUTO POPUP lever	N63-436-A	
11	Pan head screw M3 x 6		
12			
13	Flat washer M3		
14	Mask	RED-005-0	
15	AUTO POPUP switch	RXA-176-A	
16	Retaining washer E-type 2ϕ		
17	Nylon washer	E32-478	
18	Recording cam B	RNE-045-0	
19	Nylon washer	E32-478	
20	Recording cam spring B	RBH-066-0	
21	Pan head screw M2 x 8		
22	Spring washer M2		
23	Erasing head	RPB-008-A	

Key No.	Description	Part No.	
24	Erasing head bass	RLA-109-0	
25	Rotating shaft	RLA-086-A	
26	Retaining washer E-type 1.5ϕ		
27	Pinch roller assy	RXA-154-A	
28	Pinch roller spring	B31-474-A	
29	Pan head screw M2 x 8		
30	Spring washer M2		
31	Flat washer M2		
32	REC/P.B head	RPB-007-C	
33	Head spring	RBH-067-A	
34	REC/P.B. head bass	RLA-106-B	
35	Tension rubber	REB-038-A	
36	Countersunk head screw M2.6 x 6		
37	Countersunk head screw M2 x 18		
38	Cassette guide A	RNK-028-C	
39	Sliding board A	RXA-225-0	
40	Sliding brake	RXA-155-B	
41	Countersunk head screw M3 x 6		
42			
43	Pan head screw M3 x 6		
44	Pan head screw M3 x 6		
45	Cassette cover claw assy	RXA-041-A	
45-1	Bushing	N23-421-0	
45-2	Washer	B22-421-0	
45-3	Claw	RNE-043-0	
45-4	Spring	RBH-013-0	
45-5	Frame	N63-419-0	
46	Pan head screw M2.6 x 6		
47	Pan head screw M3 x 6		
48	Pan head screw M3 x 6		

Key No.	Description	Part No.	
49	Knob for power switch	RAA-001-A	
50	Nut		
51	Washer		
52	Pan head screw M3 x 6		
53	Chassis	RXA-230-0	
54	Pan head screw M3 x 6		
55	Spring washer M3		
56	Terminal strip-type 1L4P	K13-042-A	
57	Capacitor	C15-407-A	
58	Insulating tube	RDM-003-0	
59	Fuse 0.5A	E21-007-0	
60	Pan head screw M3 x 6		
61	1P fuse holder	RKC-001-0	
62	Pan head screw M2 x 10		
63	Microswitch	RSF-002-A	
64	Pan head screw M3 x 6		
65	Fuse holder mounting	RNE-234-A	
66	Insulating fiber	REE-022-A	
67	Recording lever spring	RBH-030-0	
68	Recording lever assy	RXA-158-0	
69	Spark killer	W53-045-0	
70	Insulating fiber	REE-018-0	
71	Pan head screw M2.6 x 4		
72	Flexible wire assy	RXA-227-0	
73	Pan head screw M2.6 x 6		
74	Flat washer M2.6		
75	Muting switch	RSK-007-0	
76	Pan head screw M3 x 6		
77	Pan head screw M3 x 6		
78	Coutersunk head screw M3 x 6		

Key No.	Description	Part No.	
79	Cord fixer	M46-657-A	
80	Pan head screw M3 x 6		
81	Pan head screw M3 x 6		
82	Retaining washer E-type 2ϕ		
83	Pinch off cam	RNE-177-A	
84	Countersunk head screw M2.6 x 6		
85	Capstan bearing	W72-519-0	
86	Pan head screw M3 x 6		
87	Pan head screw M3 x 6		
88	EJECT board unit	RXX-014-0	
89	Cord fixer	M46-657-A	
90	Cord fixer	M46-027-0	
91	Pan head screw M3 x 6		
92	Spring washer M3		
93	Rear chassis A	RNC-040-A	
94	Counter	RAW-009-0	
95	Pan head screw M3 x 6		
96	Flat washer M3		
97	Counter bracket	RNE-22-0	
98	Pan head screw M3 x 6		
99	Sliding arm spring B	RBH-085-A	
100	Sliding arm B	RXA-159-A	
101	Sliding arm A	RNE-175-A	
102	Sliding arm spring A	RBH-057-0	
103	Nylon washer	B22-426	
104	Retaining washer E-type 5ϕ		
105	Fast forward cam	RXA-223-A	
106	REW spring	RBH-083-A	
107	Retaining washer E-type 3ϕ		
108	Fast forward spring	RBH-082-A	

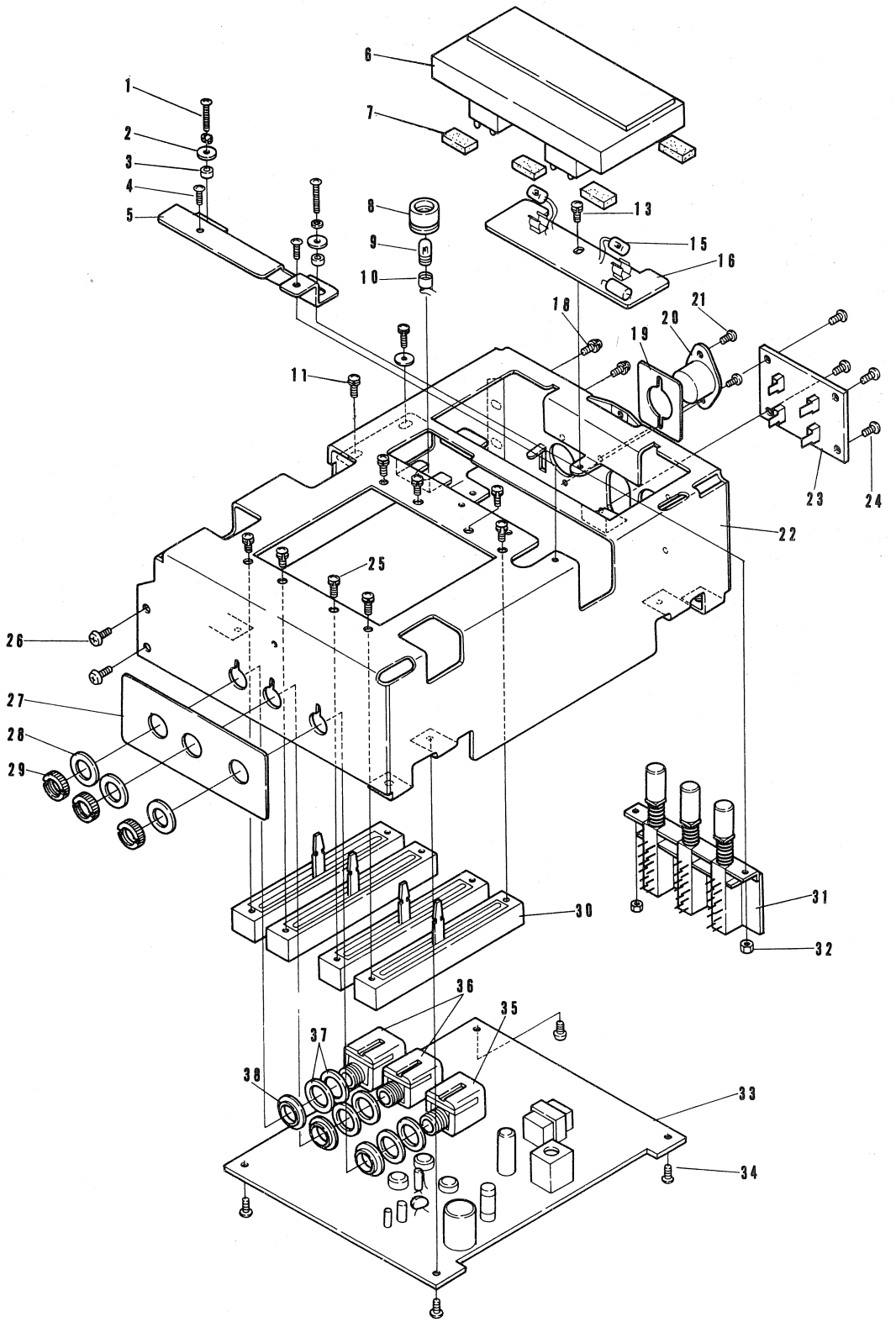
Key No.	Description	Part No.	
109	Retaining washer E-type 3ϕ		
110	Plate	RNE-183-0	
111	Nut M2.6		
112	Spring	RBH-042-A	
113	Pause ratchet assy	E17-453	
113-1	Pause ratchet assy frame	RXA-095-0	
113-2	Pause ratchet	N64-432-B	
113-3	Ratchet spring	RBH-049-0	
113-4	Retaining washer E-type 2ϕ		
114	Spring washer M3		
115	Pan head screw M3 x 6		
116	Teflon washer	E32-484	
117	Take-up idler	RXA-095-0	
118	Pause cam	E17-437	
118-1	Take-up spring	RBH-044	
118-2	Take-up idler arm	W72-521-A	
118-3	Nylon washer 8 x 5.2 x 0.2		
118-4	Pause cam	REC-024-A	
118-5	Nylon washer 8 x 5.2 x 0.2		
118-6	Retaining washer E-type 4ϕ		
118-7			
119	Nylon washer	B22-420	
120	Retaining washer E-type 2ϕ		
121	SENSING UNIT	RWG-015-0	
122			
123	Pan head screw M2.6 x 6		
124	Motor	N11-411-B	
125	Motor mounting plate	RNE-231-A	
126	Motor pulley	RXA-174-0	
127	Earth lug	RNE-199-0	

Key No.	Description	Part No.	
128	Anti-vibration ruber	REB-030-0	
129	Screw	RBA-001-0	
130	Motor belt	N28-420-0	
131	Pan head screw M3 x 6		
132	Cord fixer	M46-657	
133	POWER SUPPLY UNIT	RWR-012-B	
134	Pan head screw M3 x 6	M46-657	
135	Power transformer	RTT-012-A	
136	EJECT lever spring	B31-483-A	
137	EJECT lever	N93-468-A	
138	Nylon washer	E32-478	
139	Retaining washer E-type 2ϕ		
140	Pan head screw M3 x 5		
141	Reel cap	REC-023-C	
142	Supply reel	RXA-151-0	
143	Center pulley	RXX-019	
144	Reel cap	REC-023-0	
145	Take-up idler	RXA-095-0	
146	Center idler arm	RXA-220-0	
147	Reed switch assy	RXX-033	
147-1	Sensing assy	RXA-144-A	
147-2	Reed switch	RSX-002-0	
147-3	Sensing magnet	RNC-008-0	
148	Counter belt A	REB-012-0	
149	Pan head screw M3 x 6		
150	Counter belt B	REB-013-0	
151	Take-up reel	RXA-075-0	
152	Brake	RNE-160-0	
153	Flat washer M3		
154			

Key No.	Description	Part No.	
155	Pan head screw M3 x 6		
156	Sub chassis	RXA-135-A	
157	EJECT lever spring	BBH-027-0	
158	Capstan belt	N28-419-0	
159	Flywheel	W71-436-A	
160	Thrust screw	E32-486-0	
161	Nut M4		
162	Thrust holder	N63-410-0	
163	Pan head screw M4 x 6		
164	Pan head screw M4 x 6		
165	Nylon washer	E32-478	
166	Pause arm	W72-527-0	
167	Nylon washer	E32-478-0	
168	Retaining washer E-type 2ϕ		
169	Pause arm spring	RBH-047-0	
170	Switch cover	REE-007-0	
171	Nut for power switch		
172	Power switch	S31-406-C	
173	Ceramic capacitor 0.01μF DC1.4kV	C43-003-0	
174	Nylon washer	E32-478	
175	Recording arm	RNE-172-C	
176	Nylon washer	B22-420	
177	Retaining washer E-type 2ϕ		
178	Recording cam spring	RBH-069-0	
179	Recording cam	N63-425-A	
180	Nylon washer	E32-478	
181	Retaining washer E-type 2ϕ		
182	Nylon washer	E32-478	
183	EJECT arm	RNE-046-A	
184	Nylon washer	E32-478	

Key No.	Description	Part No.	
185	Retaining washer E-type 2ϕ		
186	Sliding lever spring	RBH-018-0	
187	Solenoid	N15-410-B	
188	Pan head screw M3 x 6		
189	Solenoid spring	RBH-002-A	
190	Solenoid bracket	A72-535-A	
191	Pin 2.5 x 12		
192	Nylon washer	E32-478	
193	AUTO POPUP lever	N63-418-0	
194	Nylon washer	E32-478	
195	Retaining washer E-type 2ϕ		

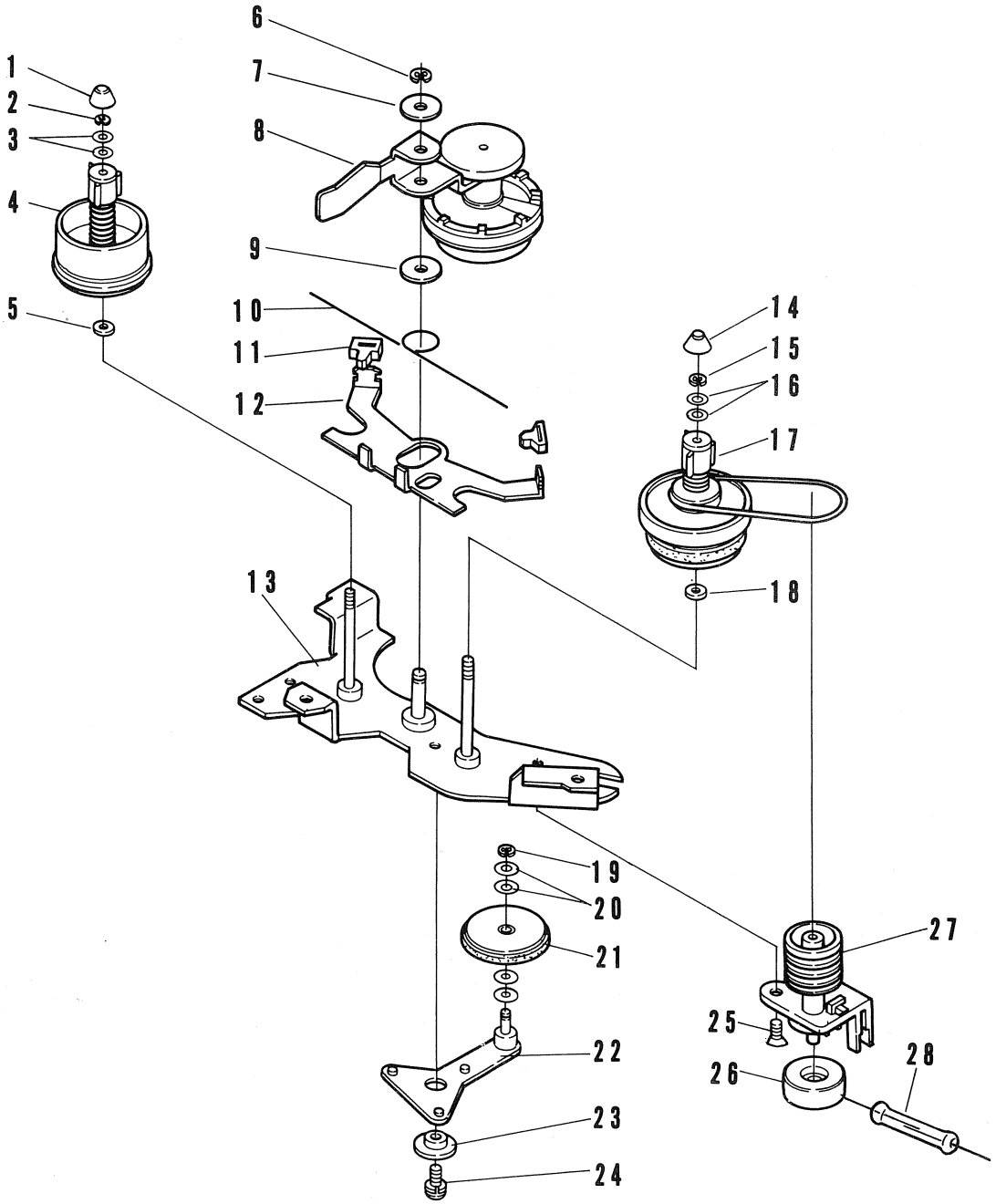
11.3 AMPLIFIER COMPONENTS



Key No.	Description	Part No.	
1	Pan head screw M2.6 x 8		
2	Flat washer M3		
3	Bushing	RLA-103-0	
4	Tapping screw M3 x 6		
5	Stay	RNE-197-B	
6	Level meter	RAW-005-B	
7	Meter cushion	RED-009-0	
8	Lamp holder	REB-851-B	
9	Pilot lamp	E22-851-B	
10	Lamp socket	RRK-005-0	
11	Pan head screw M3 x 6		
12			
13	Pan head screw M3 x 6		
14			
15	Pilot lamp B	REL-004-A	
16	LAMP UNIT	RWX-017-0	
17			
18	Pan head screw M3 x 6		
19	Panel	A65-403-B	
20	DIN socket	K93-003-B	
21	Binding screw M2.6 x 6		
22	Chassis	RNB-021-B	
23	4P pin jack	RKB-001-0	
24	Tapping M3 x 6		
25	Pan head screw M3 x 6		
26	Screw M3 x 6		
27	Jack name plate	RAH-012-0	
28	Washer	RBF-003-0	
29	Net	RBN-001-0	
30	Level control	C81-435-0	

Key No.	Description	Part No.	
31	Switch unit	RWX-016-0	
32	Nut M2.6		
33	REC/P.B AMP UNIT	RWF-007-B	
34	Pan head tap tight M3 x 6		
35	Headphones jack	RKN-002-0	
36	Microphone jack	K72-024-0	
37	Washer	RBF-003-0	
38	Insulater	E32-045-0	

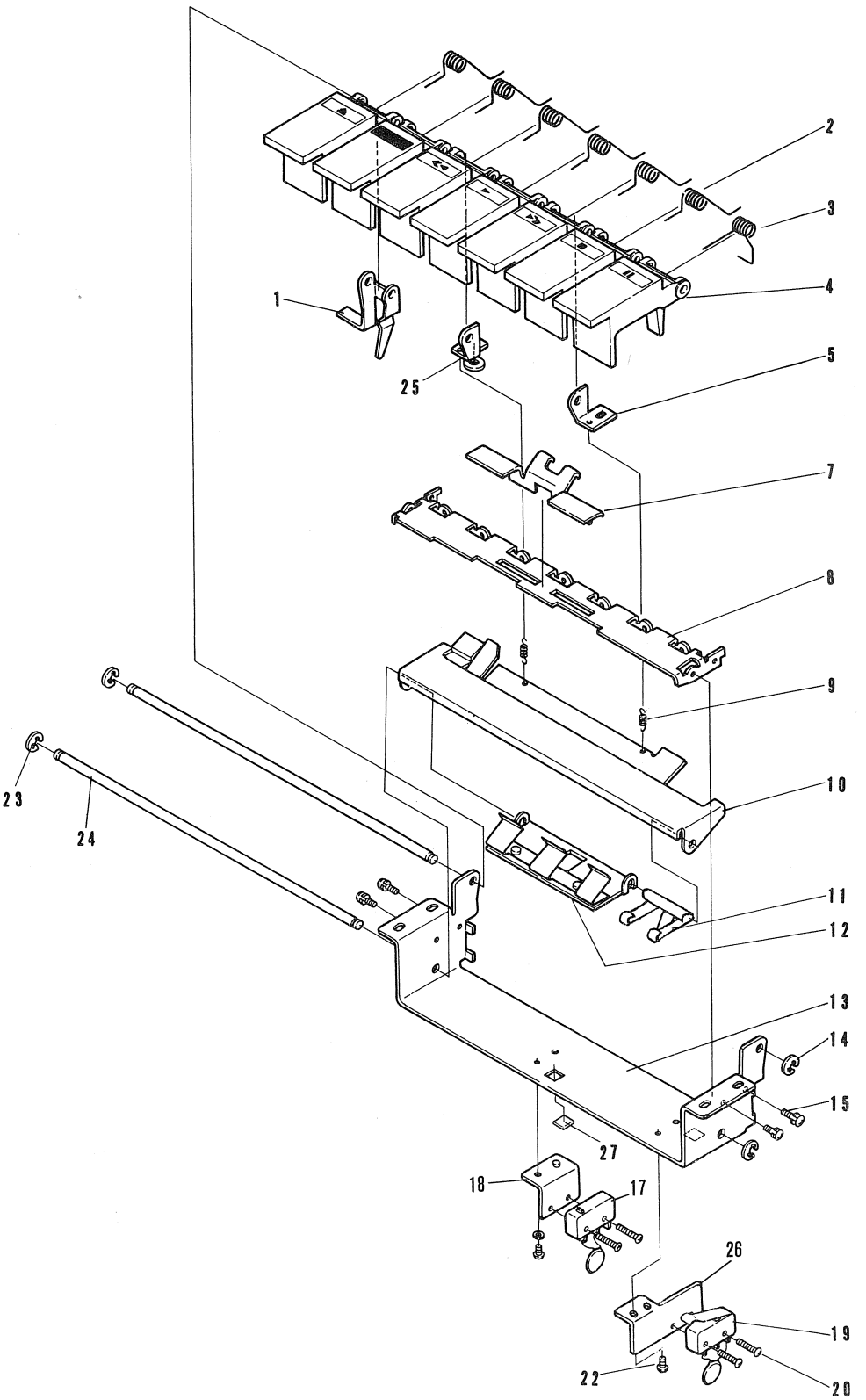
11.4 REEL BASE



PARTS LIST OF REEL BASE

Key No.	Description	Part No.	
1	Reel cap	REC-023-0	
2	Retaining washer E-type 1.2ϕ		
3	Nylon washer	E32-481	
4	Supply reel	RXA-151-0	
5	Teflon washer	E32-482	
6	Retaining washer E-type 2ϕ		
7	Nylon washer	E32-490	
8	Center pulley	RXX-019	
9	Nylon washer	E32-490	
10	Braking spring	B31-486-B	
11	Brake shoe	RNK-078-0	
12	Brake	RNE-160-0	
13	Sub chassis	RXA-135-A	
14	Reel cap	REC-023-0	
15	Retaining washer E-type 1.2ϕ		
16	Nylon washer	E32-481	
17	Take-up reel	RXA-075-0	
18	Teflon washer	E32-482	
19	Retaining washer E-type 1.2ϕ		
20	Teflon washer	E32-484-0	
21	Center idler	RXA-095-0	
22	Center idler arm	RXA-220-0	
23	Center arm	RLA-096-0	
24	Pan head screw M3 x 6		
25	Countersunk head screw M3 x 6		
26	Sensing magnet	RNC-008-A	
27	Sensing	RXA-144-A	
28	Reed switch	RSX-002-0	

11.5 BUTTON



PARTS LIST OF BUTTON

Key No.	Description	Part No.	
1	AUTO Eject lever	RNE-191-A	
2	Button	RBH-062-0	
3	Pause button spring	RBH-104-0	
4	Button		
5	Button stay B	RNE-243-0	
6			
7	N.D.L actuator	RNE-300-0	
8	Button stopper	RNC-030-B	
9	Lock board spring	RBH-064-0	
10	Lock board	RNC-046-0	
11	Microswitch actuator B	RBK-054-A	
12	Microswitch actuator	RXA-157-0	
13	Button chassis	RNC-054-0	
14	Retaining washer E-type M2.6 x 6		
15	Countersunk head screw M2.6 x 6		
16			
17	Microswitch	RSF-002-0	
18	Microswitch frame	RNE-189-A	
19	Microswitch	S21-416-0	
20	Pan head screw M2 x 10		
21			
22	Pan head screw M3 x 6		
23	Retaining washer E-type 3ϕ		
24	Button stay	N22-438-0	
25	Button stay A	RNE-242-0	
26	Microswitch frame	RNC-291-0	
27	Actuator damper	REB-028	

12. LEVEL DIAGRAMS

DIAGRAM AT RECORDING

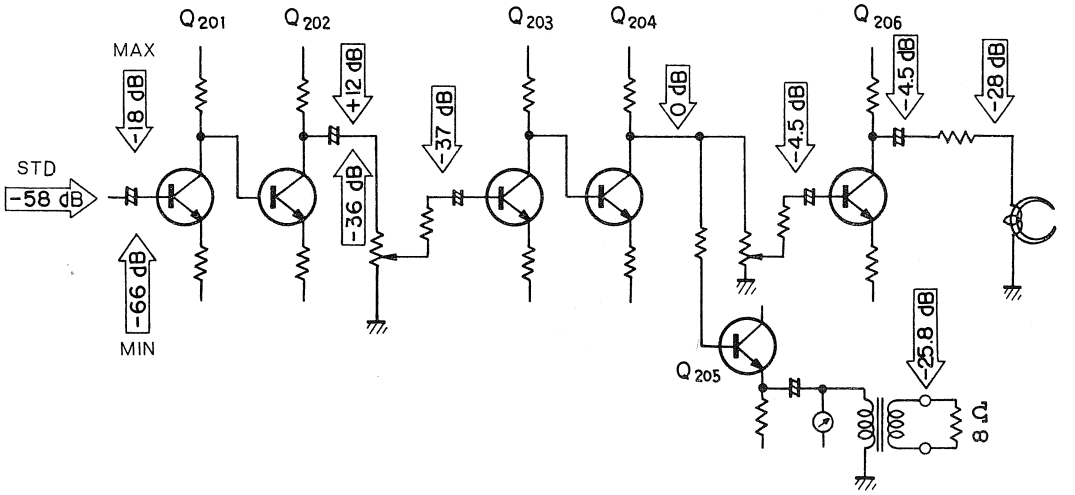
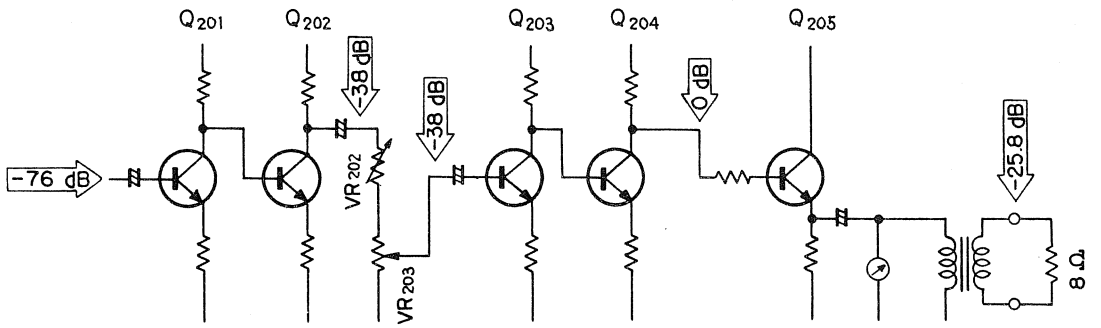
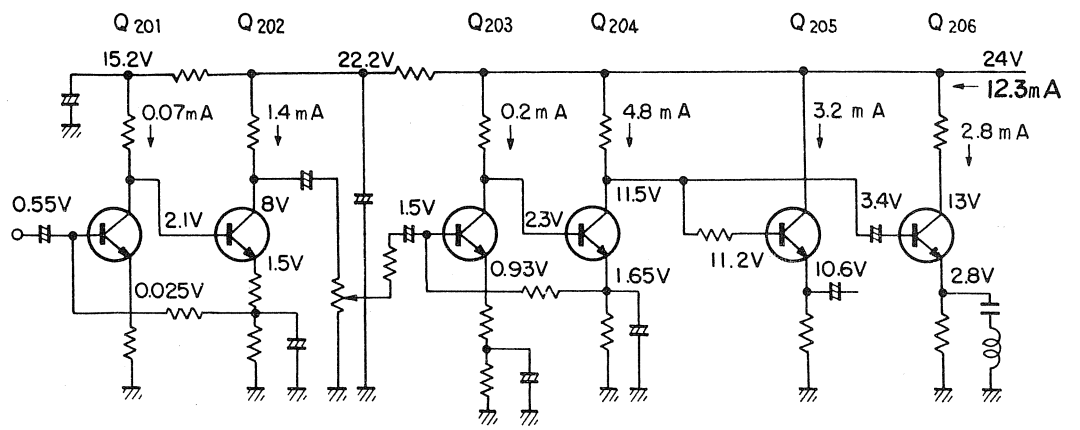


DIAGRAM AT PLAYBACK

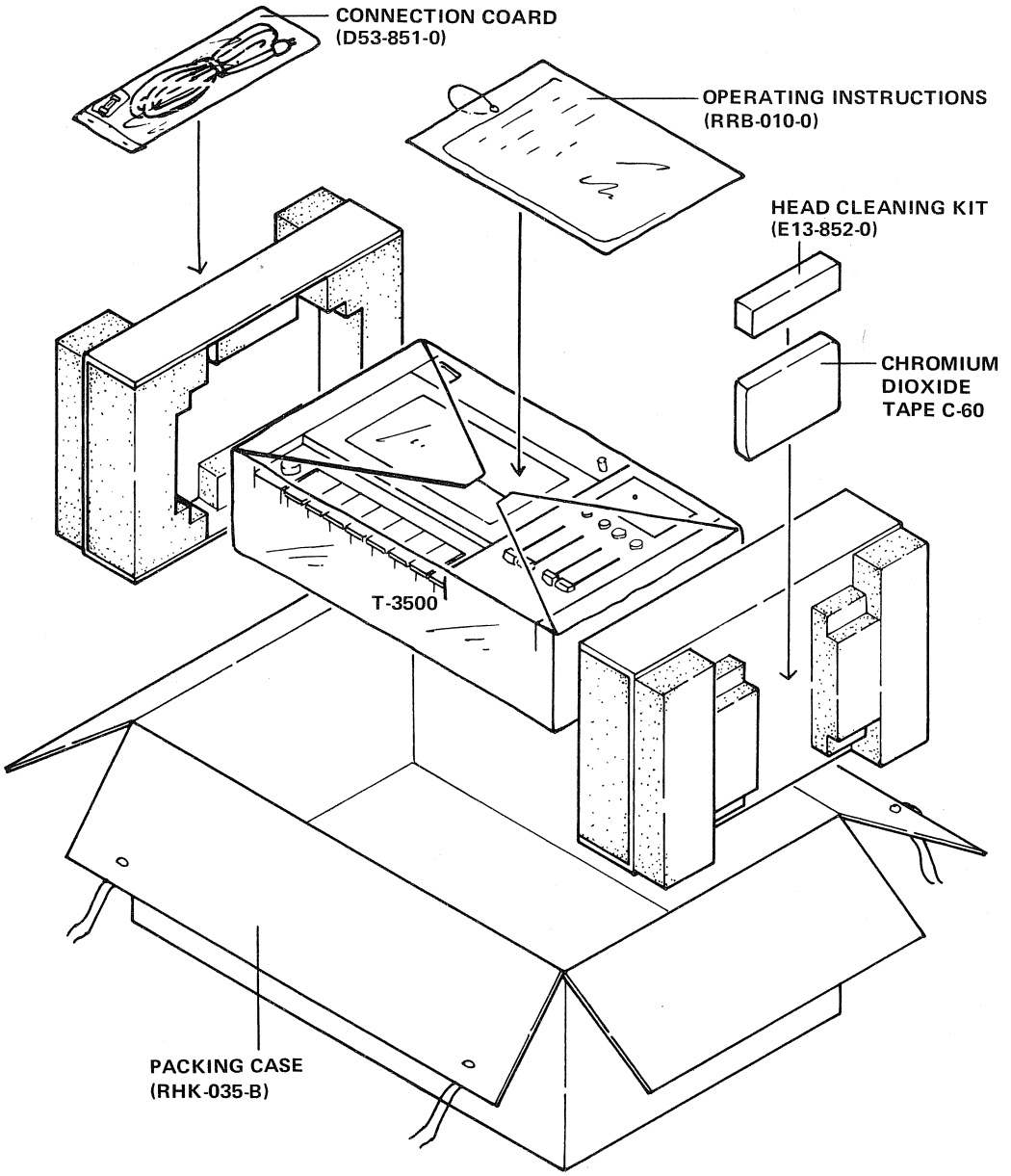


VR202, 203 MAX

VALUES OF VOLTAGE & CURENT



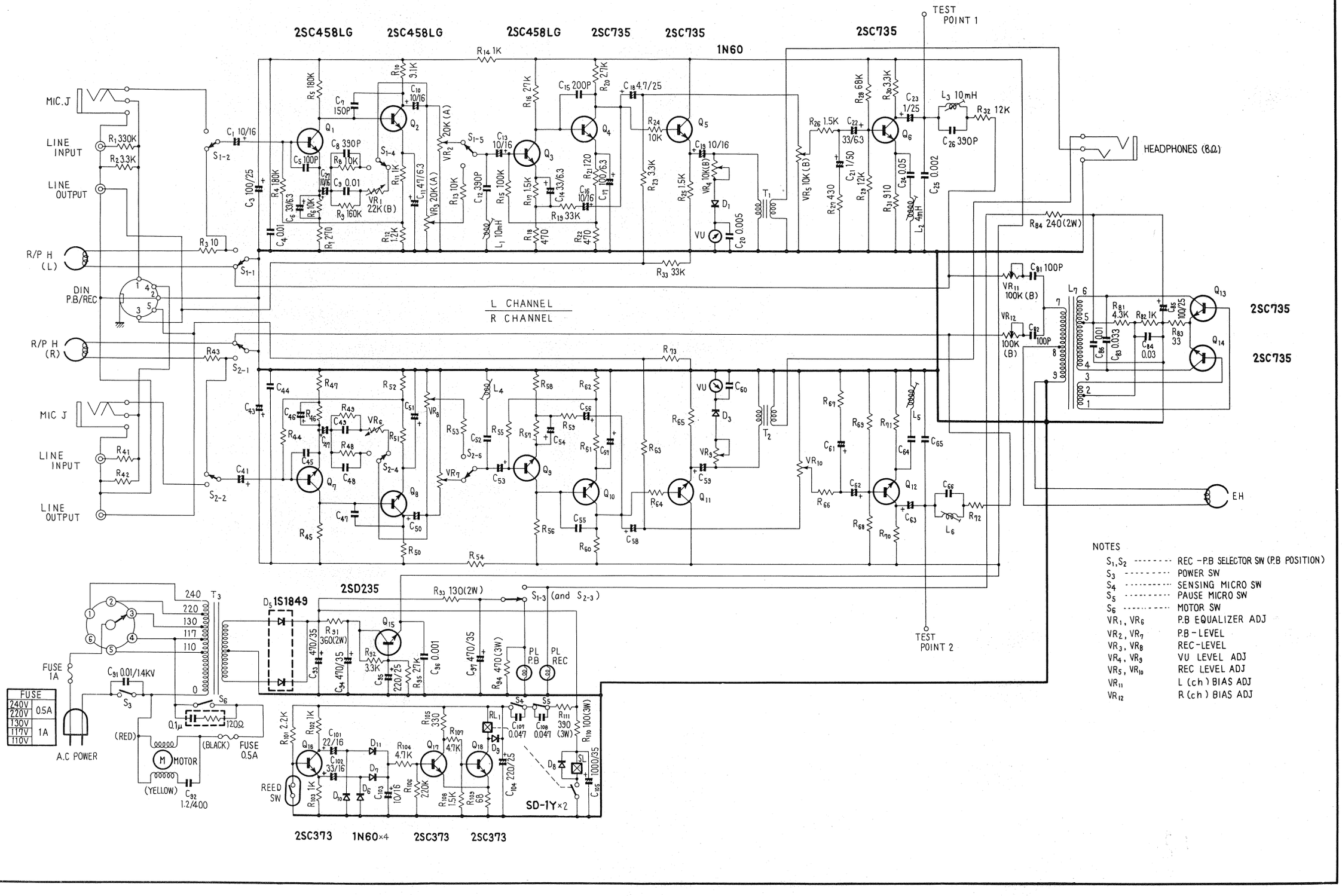
13. PACKING METHOD



T-3300/F

As an improved version of the cassette tape deck T-3300, we put on the market the T-3300A whose sensing circuit boards was substantially changed into the same as that of the T-3500. Consequntly, concerning the circuit diagram and adjustment for the sensing circuit board of the T-3300A, refer to the same of the T-3500. See page 47 of the T-3500 service manual about sensing mechanisms.

T-3300



NOTES

S_1, S_2	REC-P.B SELECTOR SW (P.B POSITION)
S_3	POWER SW
S_4	SENSING MICRO SW
S_5	PAUSE MICRO SW
S_6	MOTOR SW
VR_1, VR_6	P.B EQUALIZER ADJ
VR_2, VR_7	P.B-LEVEL
VR_3, VR_8	REC-LEVEL
VR_4, VR_9	VU LEVEL ADJ
VR_5, VR_{10}	REC LEVEL ADJ
VR_{11}	L (ch) BIAS ADJ
VR_{12}	R (ch) BIAS ADJ

Symbol No.	Description	Part No.	
	SENSING UNIT	RWG-015-0	
	POWER SUPPLY UNIT	RWR-011-A	
	REC/P.B. AMPLIFIER	W15-426-D	
	OSILLATOR UNIT	RWA-003-0	
M	MOTOR	N11-411-B	
T3	Power transformer	T52-417-A	
SL	Solenoid	N15-410-B	
	Sensing magnet	RNC-008-A	
S3	Power switch	S31-406-C	
	Reed switch	RSX-002-0	
S4	Microswitch	RSF-002-0	
S5	Microswitch	S21-416-0	
S6	Microswitch	RSF-002-0	
C91	Capacitor 0.01μF 1.4kV	C43-003-0	
C92	Capacitor	C15-407-0	
C107	Cramic 0.047μF 50V	CKDY473Z50	
C108	Cramic 0.047μF 50V	CKDY473Z50	
	Sperk keller	W53-045-0	
	REC/P.B. head	P54-404-B	
	Erasing head	RPB-008-A	
VU	Level meyrt meter	A91-404-0	
VR2	Level control	C81-435-0	
VR3	Level control	C81-435-0	
VR7	Level control	C81-435-0	
VR8	Level control	C81-435-0	
	Fuse holder	S11-018-0	
	Fuse 1A	E21-004-0	
	Fuse 0.5A	E21-007-0	

Symbol No.	Description	Part No.	
	Power cord	D11-003-E	
	Headphones jack	RKN-002-0	
	Microphone jack	K72-024-0	
	DIN socket	K93-003-B	
	4P pin jack	RKB-001-0	
P.L-P.B.	Pilot lamp (green)	E22-405-B	
P.L-REC	Pilot lamp (red)	E22-854-C	
	Knob for level control	A18-405-0	
	Knob for AUTO POP-UP	A18-406-A	
RL1	Rlay	S61-417-0	

PIONEER ELECTRONIC CORPORATION
15-5, 4-Chome, Ohmori-nishi, Ohta-ku, Tokyo, Japan

U.S. PIONEER ELECTRONICS CORPORATION
178 Commerce Road, Carlstadt New Jersey 07072 U.S.A.

PIONEER ELECTRONIC (EUROPE) N.V.
Noorderlaan 83, 2030 Antwerp, Belgium