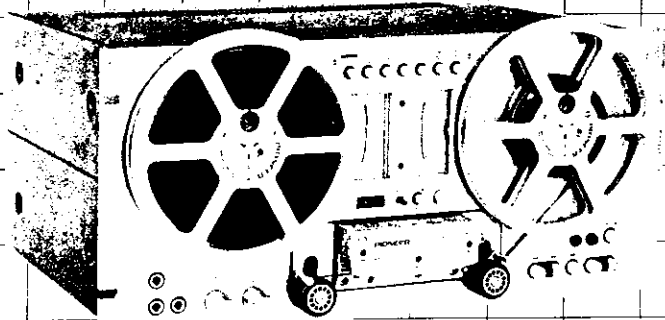


3-MOTOR 4-HEAD
TAPE DECK

RT-707

OPERATING INSTRUCTIONS

KCU



IMPORTANT NOTICE

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep in a secure area. This is for your security.

 **PIONEER**[®]

WARNING: TO PREVENT FIRE OR SHOCK HAZARD,
DO NOT EXPOSE THIS APPLIANCE TO RAIN OR
MOISTURE.

SPECIFICATIONS

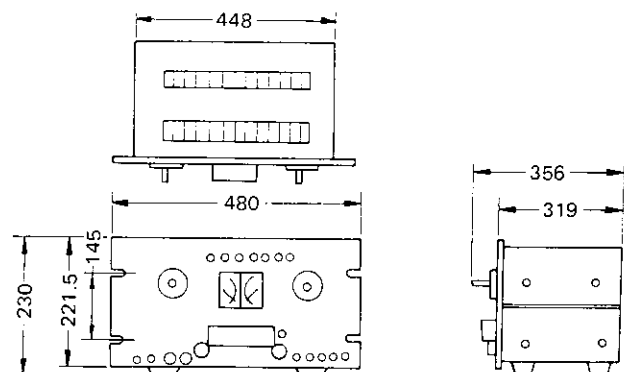
Type	4-track, 2-channel stereo tape deck (Recording, playback with reverse playback)
Operation system	Solenoid drive, Pushbutton direct change system, Timer can be set for recording and playback.
Heads	Recording Head ; 1 Erase Heads ; 1 Forward playback Head ; 1 Reverse playback Head ; 1
Motors	Capstan drive motor ; 1 (FG-system, AC servo, direct drive) Reel base drive motors ; 2 (6-pole inner rotor induction type)
Acceptable Reel Size	7in (17cm)
Tape Speed	19cm/s (7-1/2ips), 9.5cm/s (3-3/4ips) ±0.5%
Fast Forward/Rewind Times	Less than 100 sec. with 7-inch reel and 370m tape
Wow and Flutter	Less than 0.05% WRMS (19cm/s) Less than 0.08% WRMS (9.5cm/s)
Signal-to-Noise Ratio	More than 58dB
Total Harmonic Distortion	Less than 1% (19cm/s)
Frequency Response	
19cm/s	20Hz to 28,000Hz (30Hz to 24,000Hz ±3dB)
9.5cm/s	20Hz to 20,000Hz (30Hz to 16,000Hz ±3dB)
Crosstalk	More than 50dB
Channel Separation	More than 50dB
Erasure Rate	More than 70dB
Recording Bias Frequency	125kHz
Equalization	NAB Standards
Inputs (Sensitivity/Maximum allowable level/Input impedance)	
MIC; 0.25mV/125mV/27kΩ, 6mm diam. jacks (suitable microphone, 250Ω to 30kΩ)	
LINE; 50mV/25V/100kΩ, DIN; 16mV/8V/1.3kΩ, DIN standards	
Outputs (Reference level/Maximum level/Load impedance)	
LINE; 450mV/700mV/50kΩ, DIN; 450mV/700mV/50kΩ, DIN standards	
HEADPHONES; 70mV/8Ω, 6mm diam. jack	
Semiconductors	67 transistors (4 FET's), 5 IC's, 47 diodes (1 thyristor, 2 LED's, 4 Zener diodes, 2 varistors,)
Accessory Functions	
• Pitch control (±6% of rated tape speed)	
• Auto reverse playback (with sensing tape: manual reverse is possible)	
• Auto repeat (counter-interlocked)	
• Recording mode switches (L, R independent)	
• Tape selectors: BIAS (STD/LH); EQ (STD/LH)	
• MIC/LINE mixing	
• Output volume controls	
• Pause indicator lamp	
Power Requirements	AC 120V 60Hz
Power Consumption	120 watts, Max.
AC Outlets	Unswitched (300W max.) x 1
Dimensions	480(W) x 230(H) x 356(D)mm 18-29/32 x 9-1/16 x 14in
Weight	Without package; 20.0kg 44lb 1oz With package; 23.5kg 51lb 13oz

- Accessories
- 7in metal reel (Pioneer PR-85) x 1
 - Connecting cord with pin plugs x 2
 - Head cleaning kit x 1
 - Sensing tape x 1
 - Splicing tape x 1
 - Operating instructions x 1

NOTE:

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

Dimensions



unit = mm

Test Conditions:

1. Reference tape: Scotch #206
2. Reference recording level: meter 0dB level (NAB standard reference level)
3. Reference signal: 1,000Hz
4. Wow & Flutter: at 3,000Hz weighted RMS
5. Frequency response: measured at -20dB level (19cm/s)
6. Signal-to-Noise ratio: measured at +6dB level
7. Total Harmonic Distortion: measured at reference recording level
8. Channel separation: measured at reference recording level
9. Channel crosstalk: measured at 0dB level (reference recording level)
10. Sensitivity: Input level (mV) for reference recording measured with input (recording) level control set at maximum position.
11. Maximum allowable input level: measured at the point where the output signal wave is clipped while gradually turning the input control.
12. Reference output level: meter 0dB level.
13. Maximum output (playback) level: Output level to reference recording level, measured with output (playback) level control set at maximum position.

3-MOTOR 4-HEAD TAPE DECK

RT-707

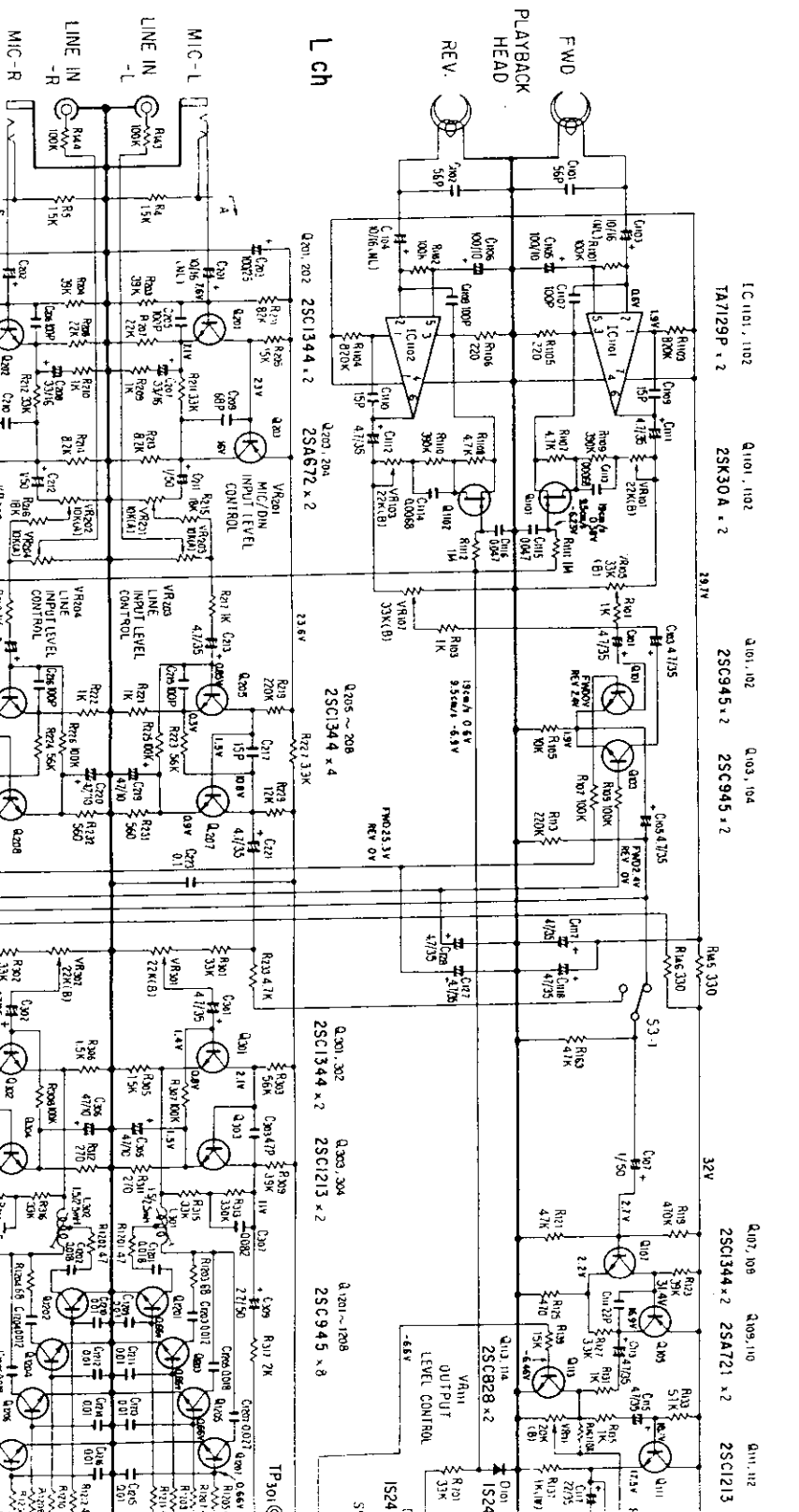
KCU

1

2

3

4

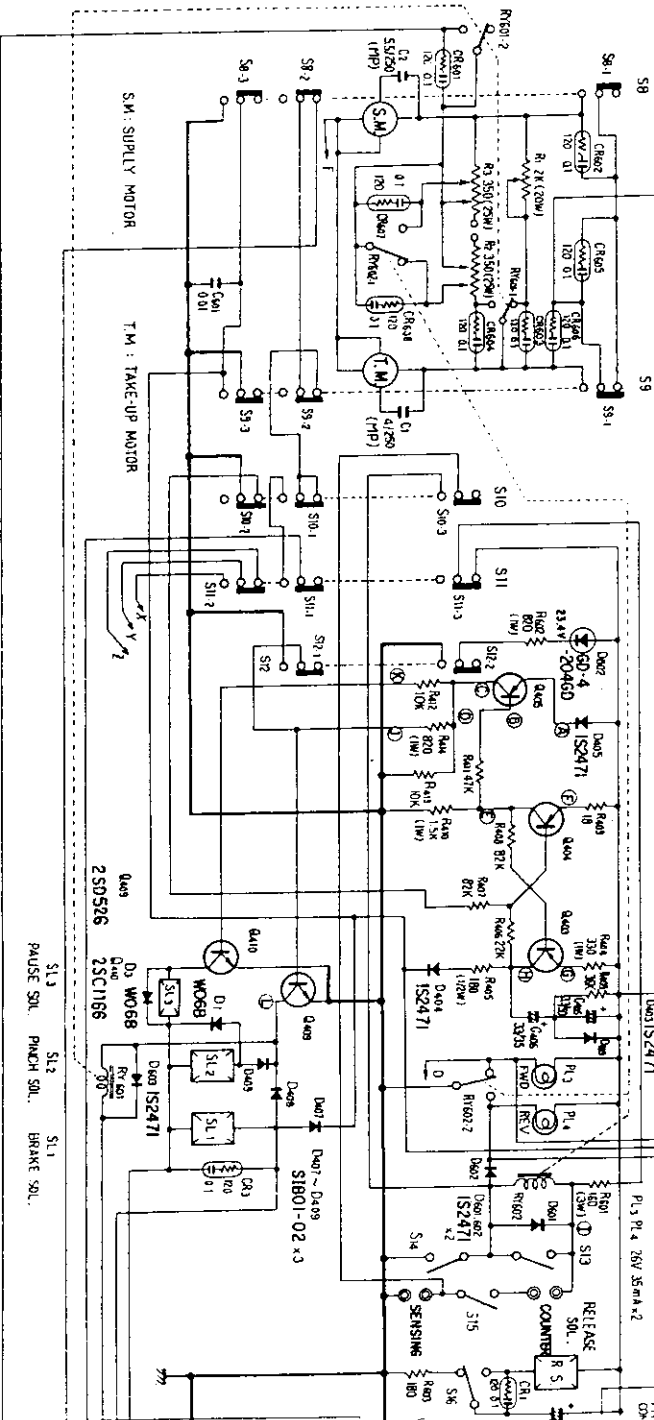
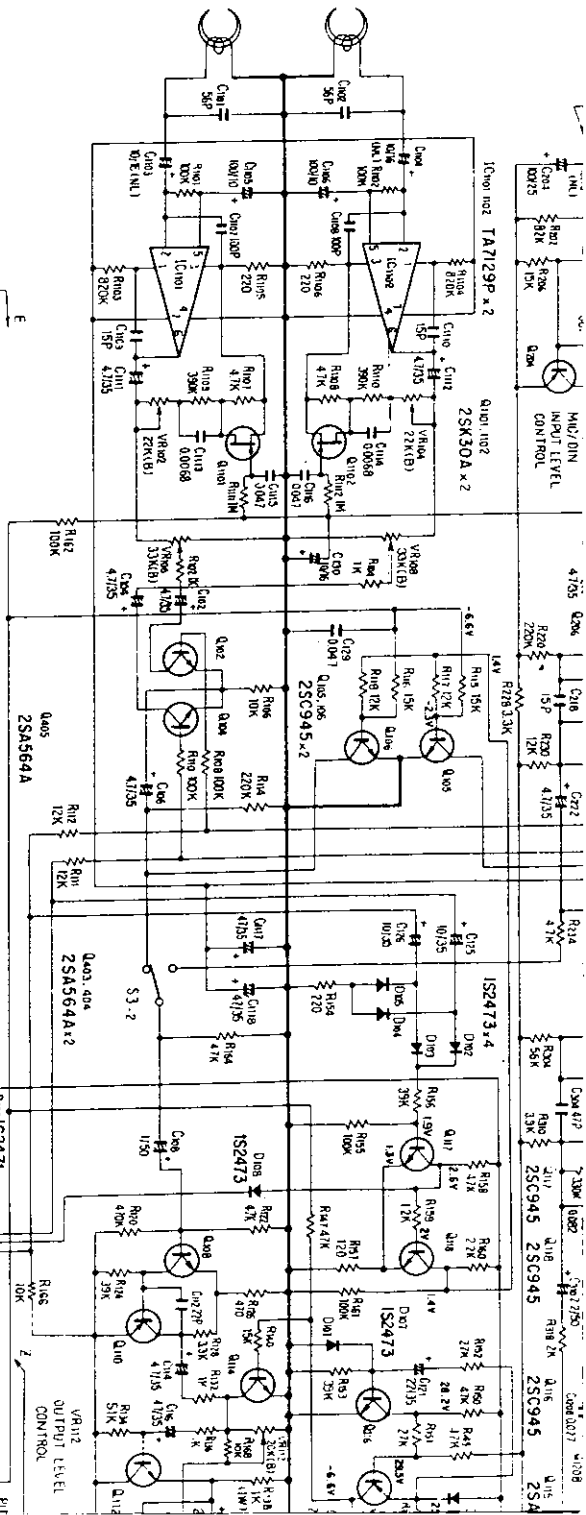


R ch

PLAYBACK
HEAD

FWD

REV



CONTROL	A	B	C	D	E	F	G	H	I	J	K	L
STOP	25.5V	25.2V	0	0	25.4V	25.5V	25.8V	24.7V	25.5V	0	0	25.5V
PLAY	24.4V	23.6V	24.3V	24.3V	18V	25.2V	25.2V	25.2V	0.8V	0.7V	0.3V	0.3V
PLAY/REC	24.4V	23.6V	24.3V	24.3V	18V	25.2V	25.2V	25.2V	0.1V	0.8V	0.7V	0.3V
FAST	25.3V	25.1V	0	0	25.2V	25.3V	25.6V	0.9V	25.5V	0	0	25.5V
PLAY/PAUSE	24.8V	24.1V	24.7V	24.7V	18V	25.7V	25.6V	25.1V	25.7V	0	0.7V	25.5V
REV												

DC VOLTAGE AT NO INPUT SIGNAL
RESISTORS : IN OHM 1/4W ±5% TOLERANCE UNLESS OT
NOTED K : KΩ M : MΩ
CAPACITORS
IN μF UNLESS OTHERWISE NOTED P : pF



➤

10. HEAD ADJUSTMENTS

Before beginning head adjustment:

- Clean the head and demagnetize the head with a head-eraser.
- The following test equipment are necessary in head adjustment and electrical circuit adjustment.

1. AC voltmeter (millivoltmeter) $\times 2$
2. Oscilloscope
3. Audio frequency generator
4. Frequency counter
5. STD-154 (play system adjustment tape)
6. STD-502 (record/play general adjustment tape)

- Use all the specified measurement tapes.
- Position the switches as follows unless otherwise specified:
 - Tape speed 19cm/s
 - BIAS switch STD
 - EQ switch STD
 - MONITOR switch TAPE
 - MODE switch STEREO REC
 - Playback control Center click
- Make the level at measurement 0dBv=1V and connect a 50k Ω (47 ~ 51k Ω) dummy resistor to the LINE OUTPUT terminals.

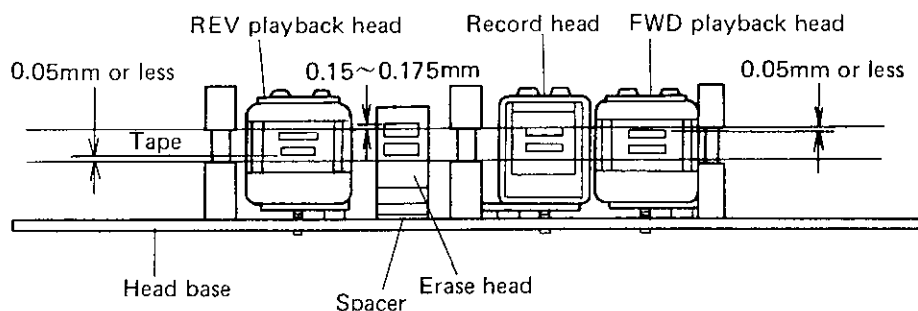


Fig. 30

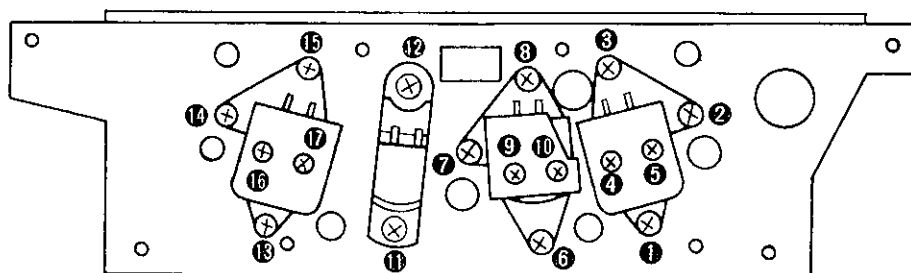


Fig. 31

10.1 HEAD ROUGH ADJUSTMENT

• HEIGHT Adjustment

Adjust the screws of Fig. 31 so that the heads and tape become the dimensions shown in Fig. 30 when the tape has been run.

- | | |
|-------------------------|----------|
| FWD playback head | ①, ②, ③ |
| REV playback head | ⑬, ⑭, ⑮ |
| Record head | ⑥, ⑦, ⑧ |
| Erase head..... | * ⑪, * ⑫ |

*When the height of the erase head is not the dimension given in Fig. 30, loosen screws 11, 12 and adjust the height by inserting an adjustment spacer under the head.

- | | |
|-----------------------|---------|
| Spacer A (0.1t) | RNF-077 |
| Spacer B (0.2t) | RNF-078 |

• TILT Adjustment

Adjust the screws of Fig. 31 so that the top and bottom of the front of the head contact the tape uniformly when the tape is running.

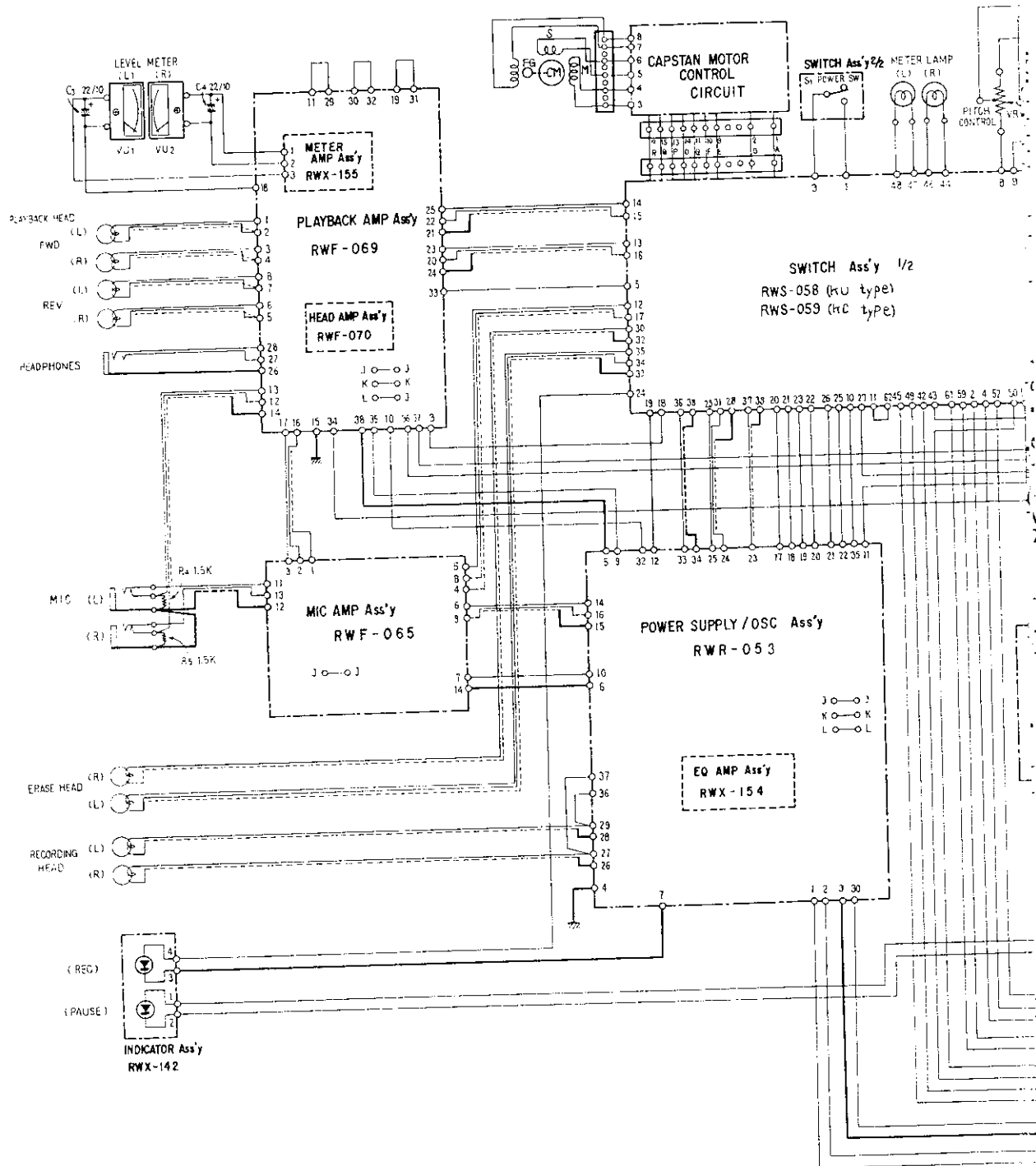
- | | |
|-------------------------|------|
| FWD playback head | ①, ③ |
| REV playback head | ⑬, ⑮ |
| Record head | ⑥, ⑧ |

• AZIMUTH Adjustment

Adjust the screws of Fig. 31 so that the head gaps are at right angles to the tape.

- | | |
|-------------------------|---|
| FWD playback head | ② |
| REV playback head | ⑭ |
| Record head | ⑦ |

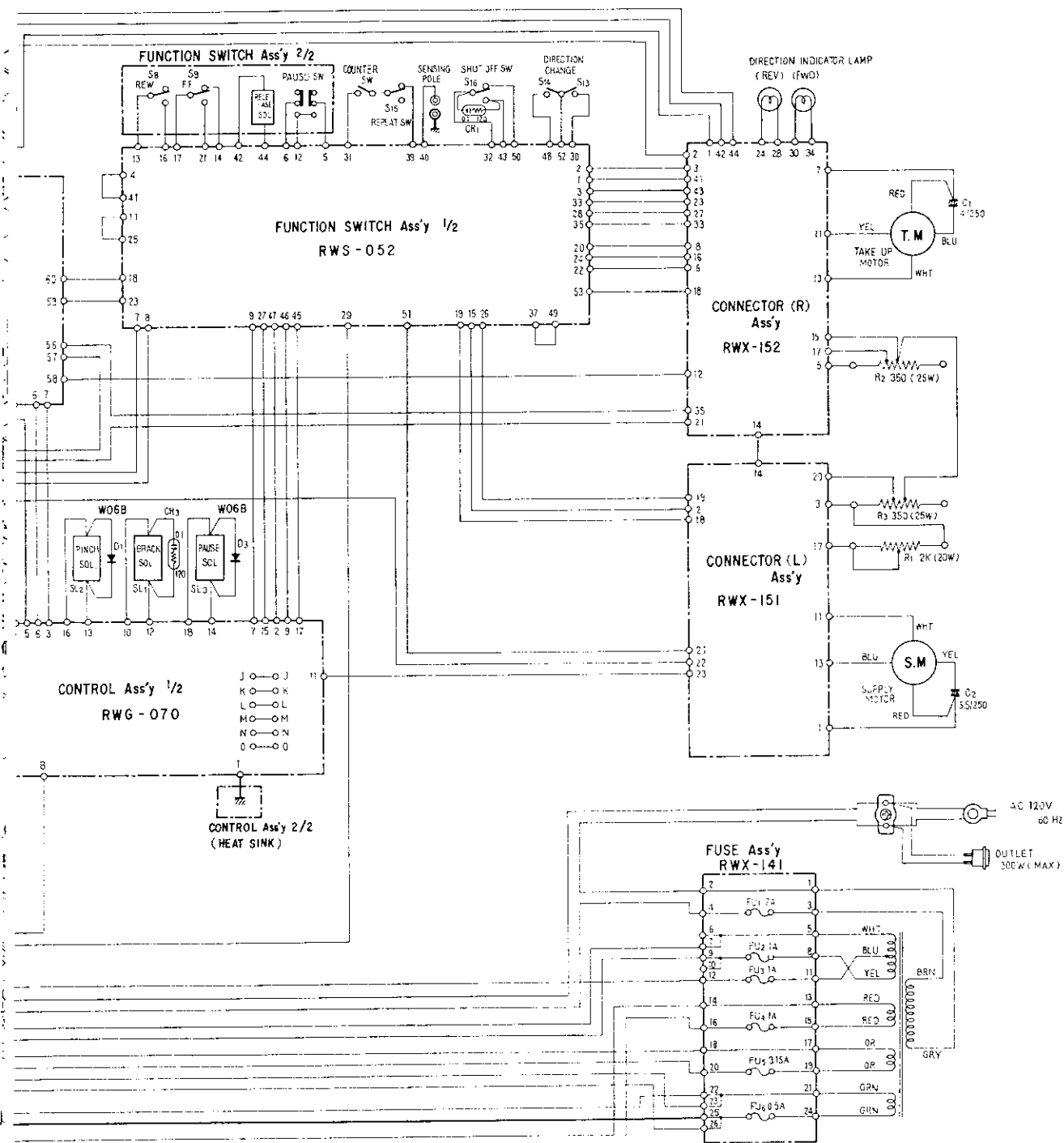
A



D

C

B



D

HEADPHONES

RWF-065, No.2

1

3

4

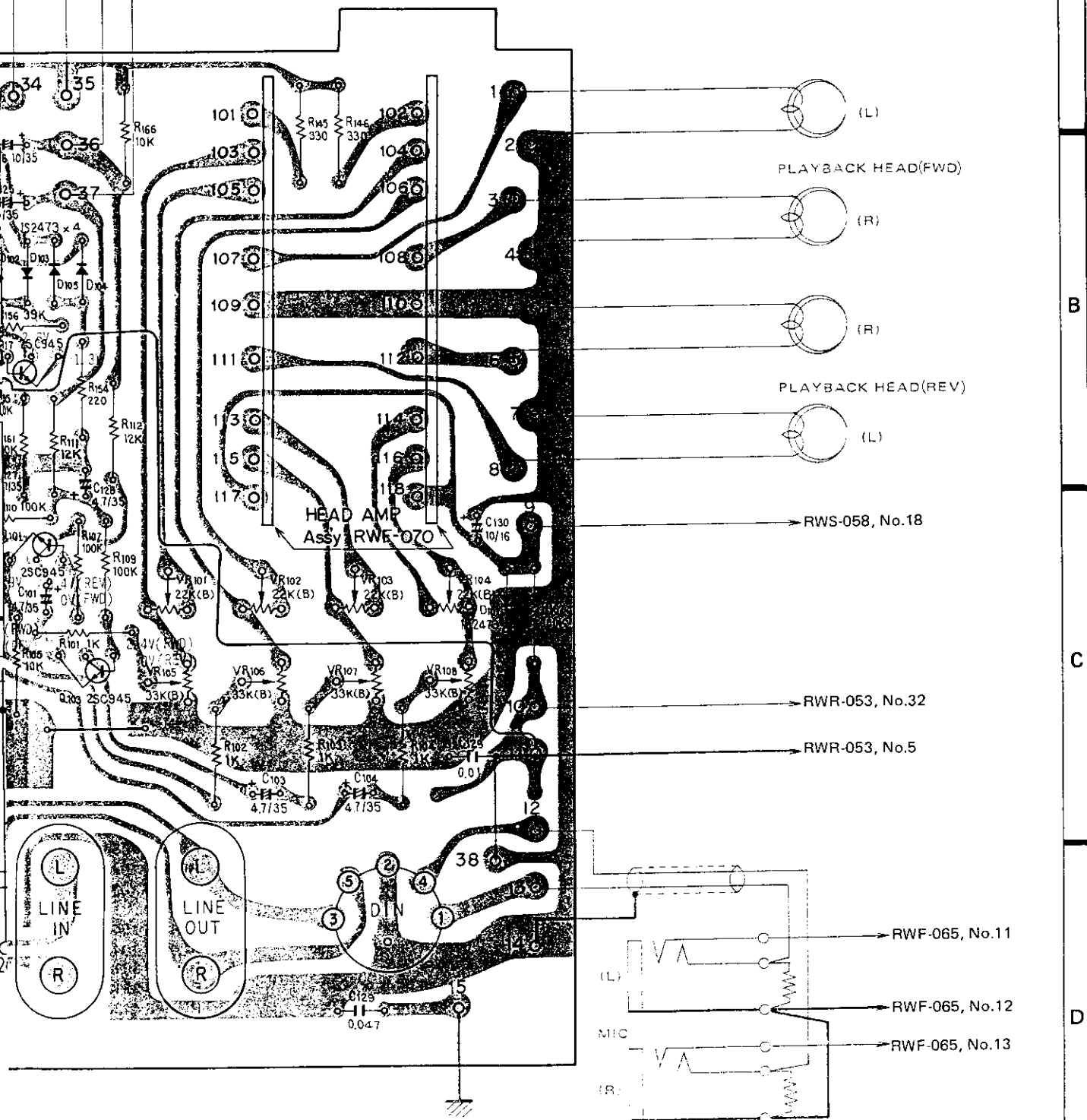
5

6

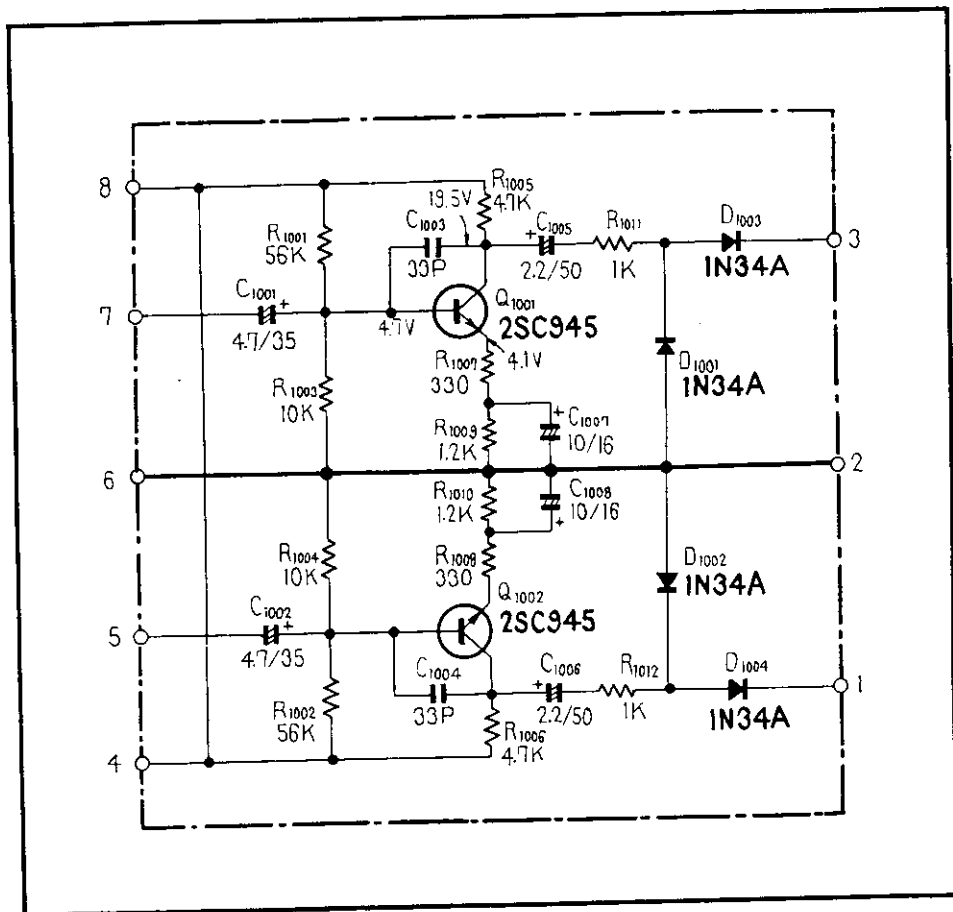
RWR-053, No.9

RWX-152, No.21

RWS-058, No.57

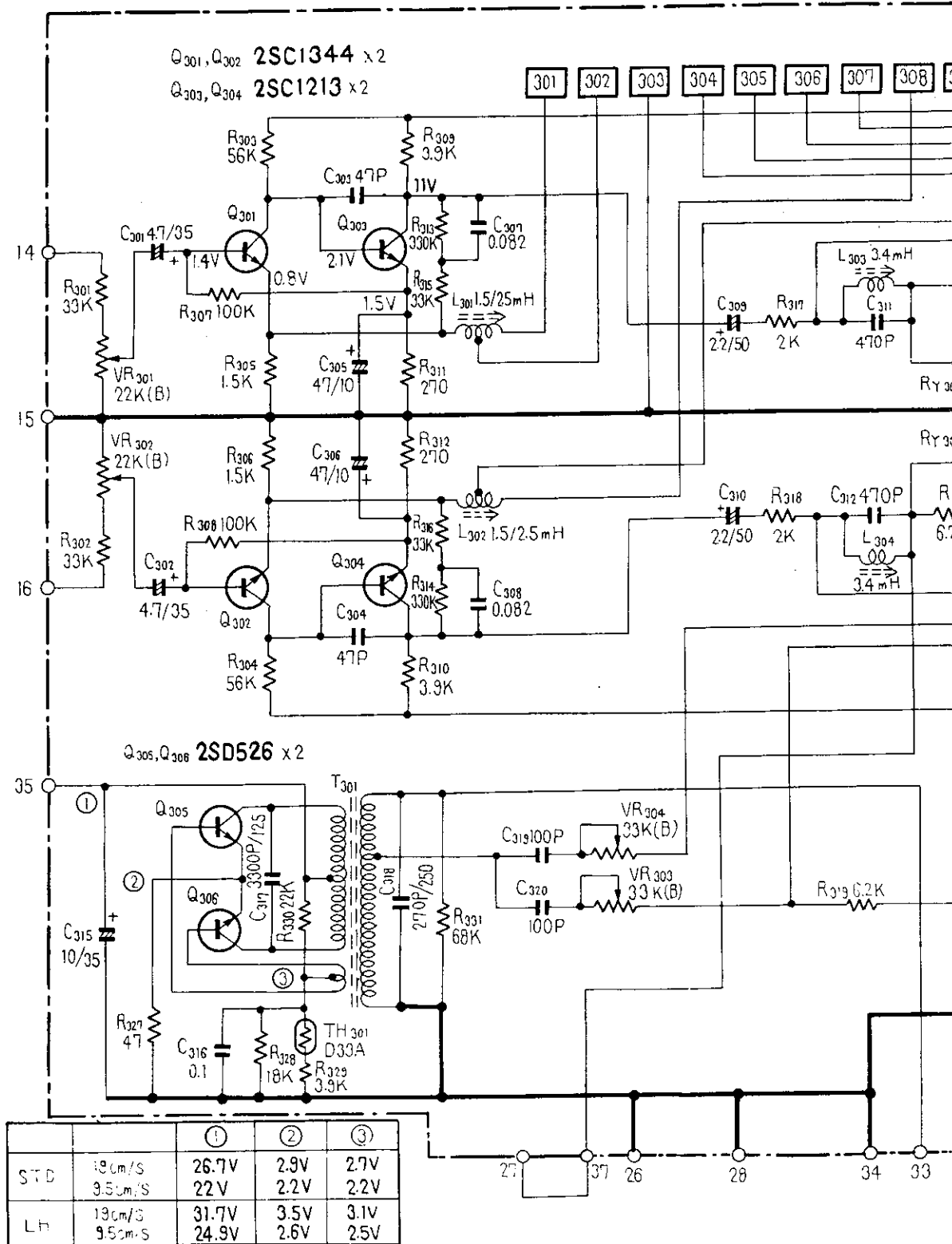


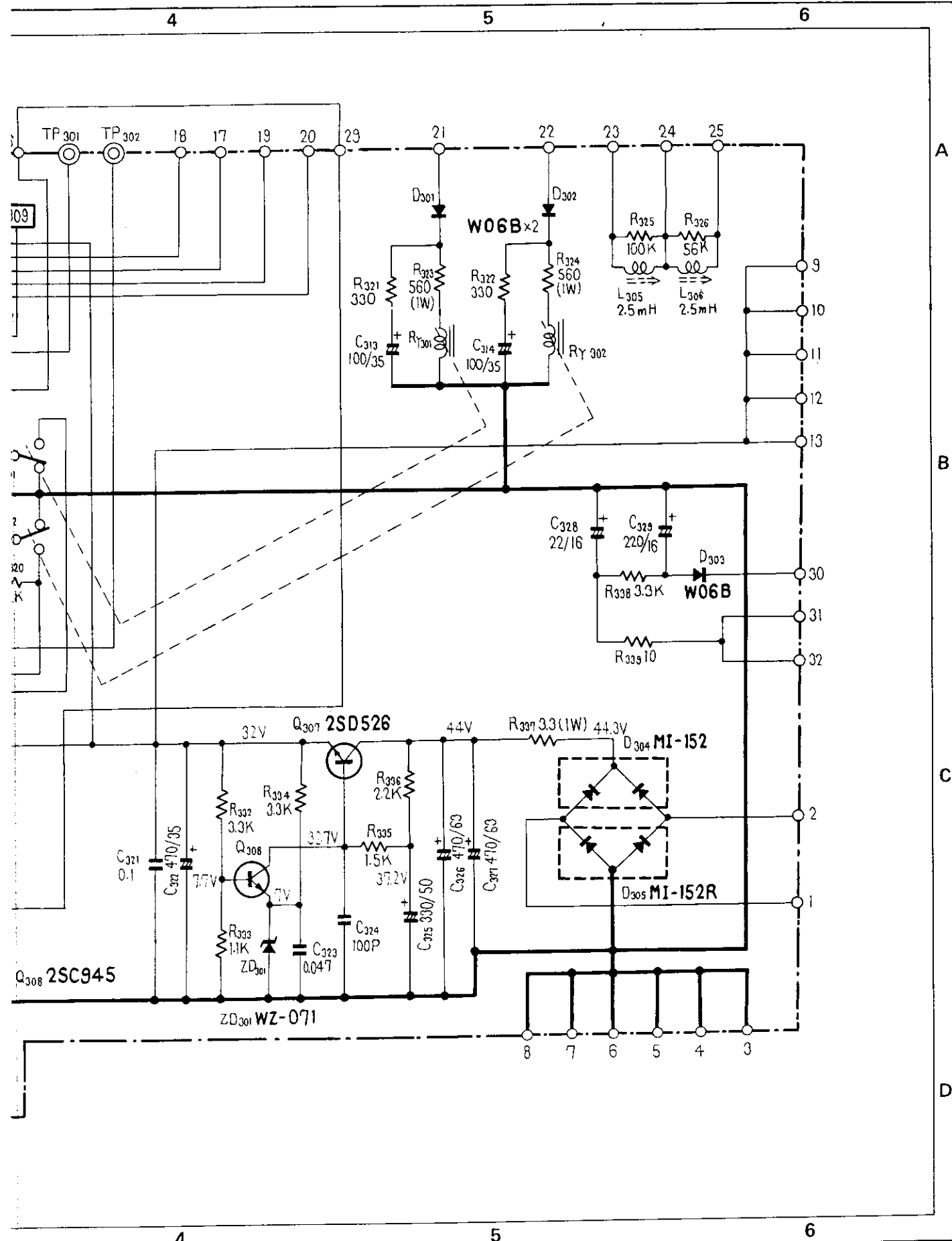
13.6 METER AMPLIFIER ASSEMBLY (RWX-155)



$$\{L\} \vee U,$$
 $(R) \vee U_2$

C. 22,10





Foil side

RWS-053, No.10

RWS-058, No.38

RWS-053, No.36

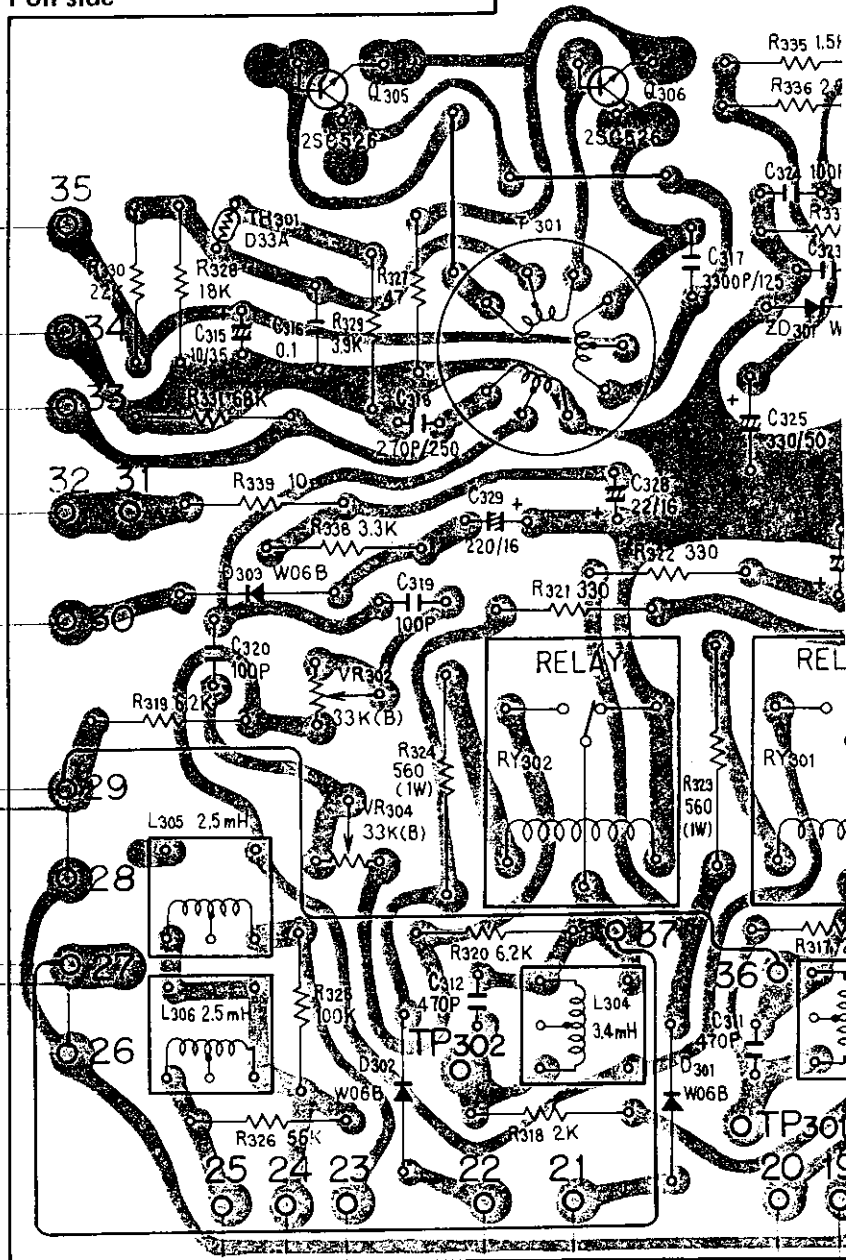
RWF-069, No.10

RWX-141, No.22

(L)

RECORDING HEAD

(R)



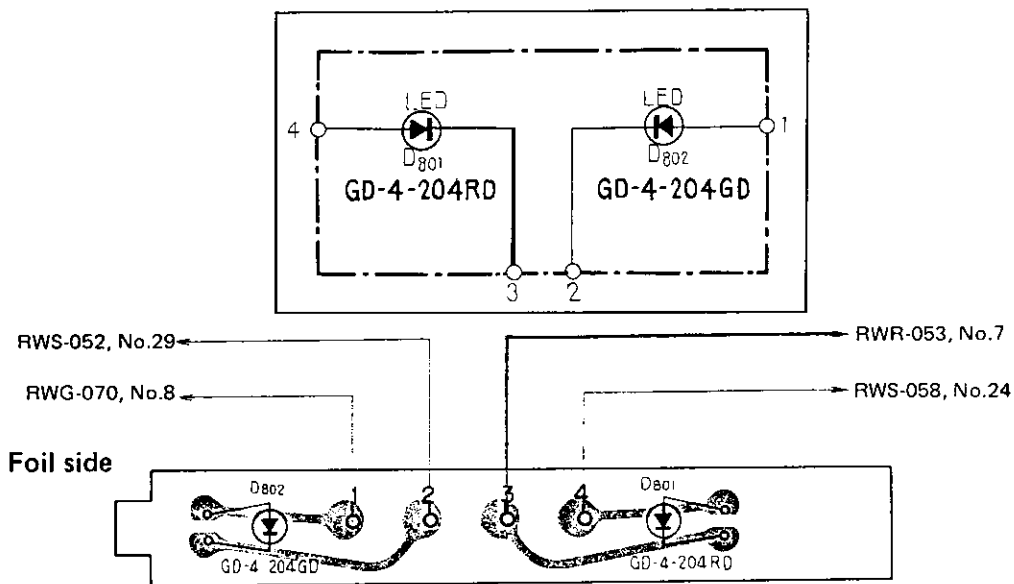
RWS-058, No.29

RWS-058, No.31

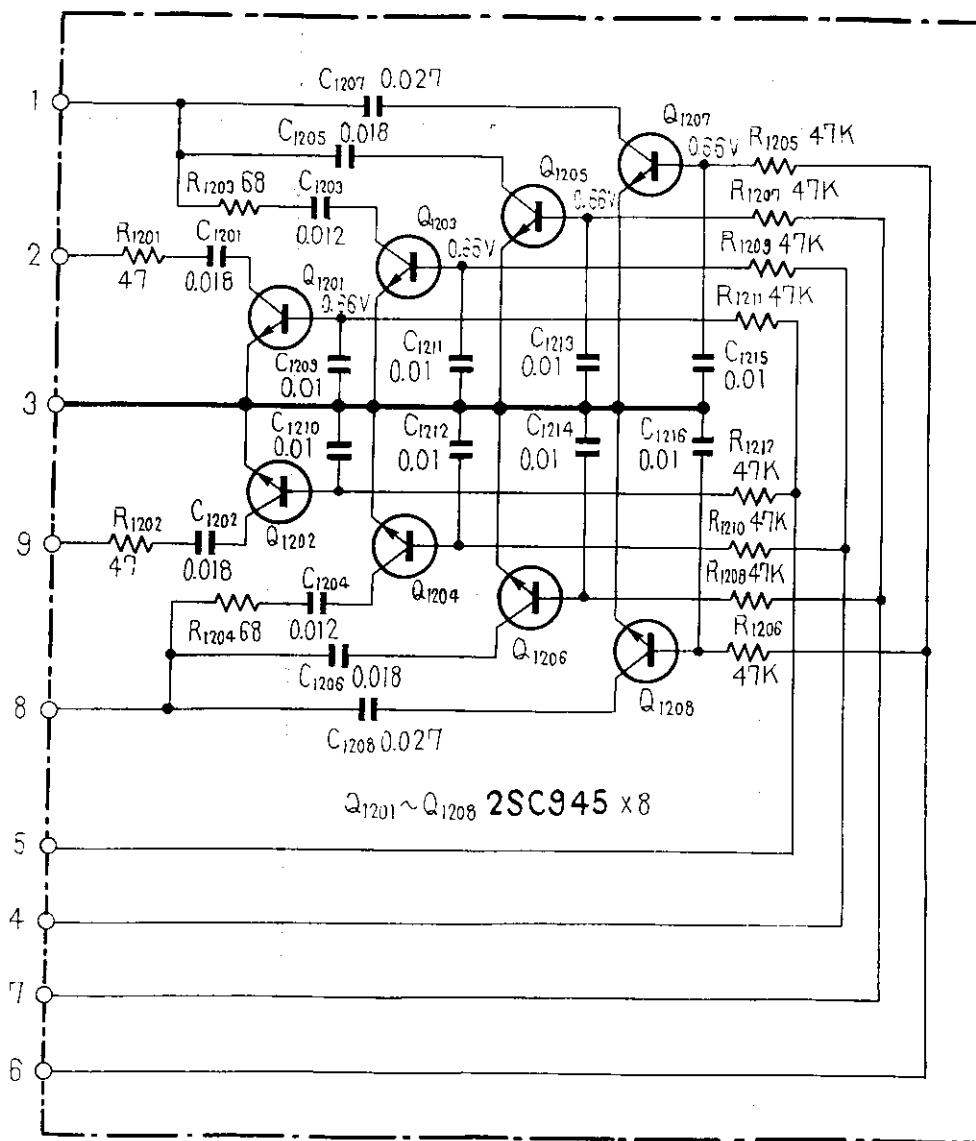
RWS-058, No.37

RWS-058, No.25

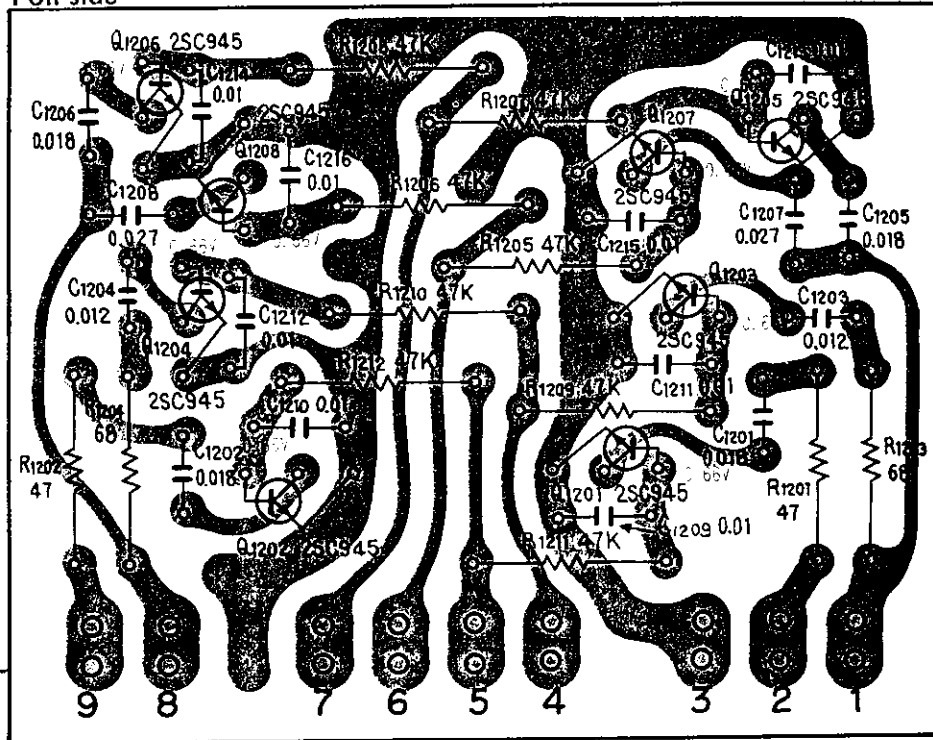
13.8 INDICATOR ASSEMBLY (RWX-142)



13.10 EQUALIZER AMPLIFIER ASSEMBLY (RWX-154)

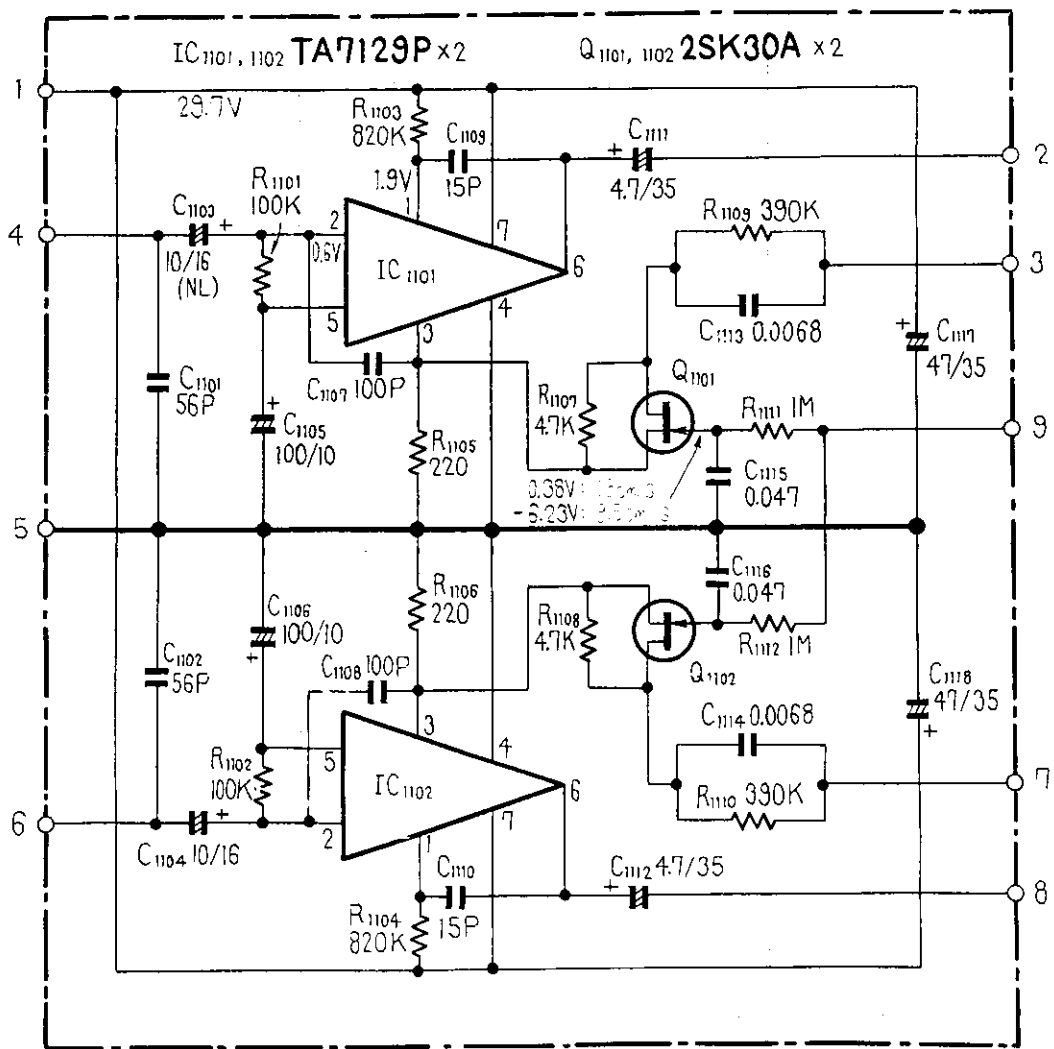


Foil side



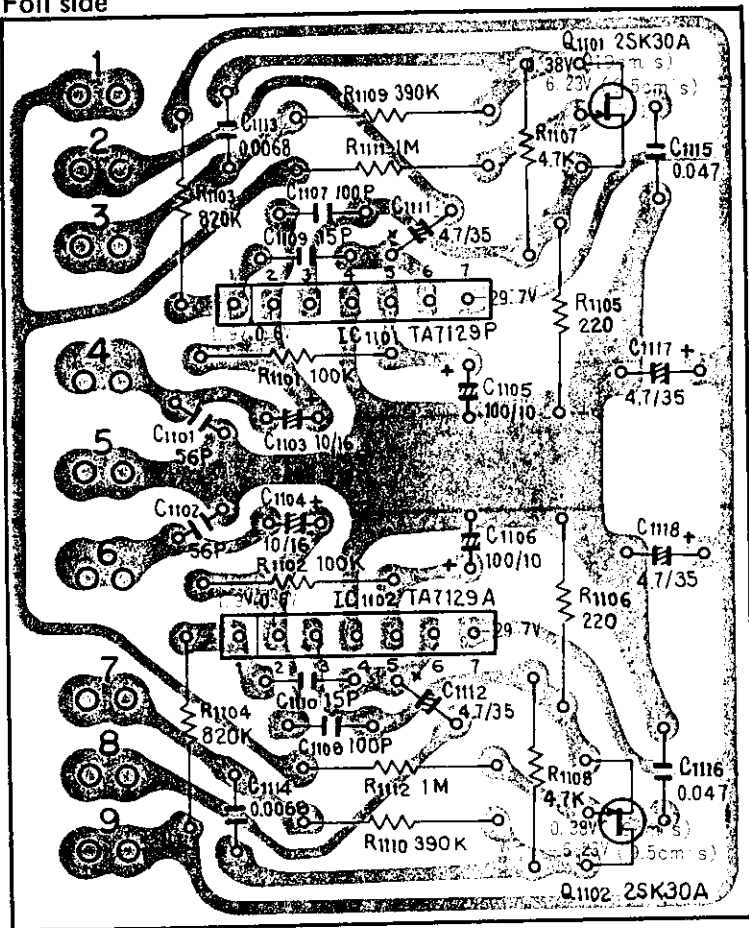
ON POWER AND OSCILLATION ASSEMBLY (RWR-053)

13.11 HEAD AMPLIFIER ASSEMBLY (RWF-070)



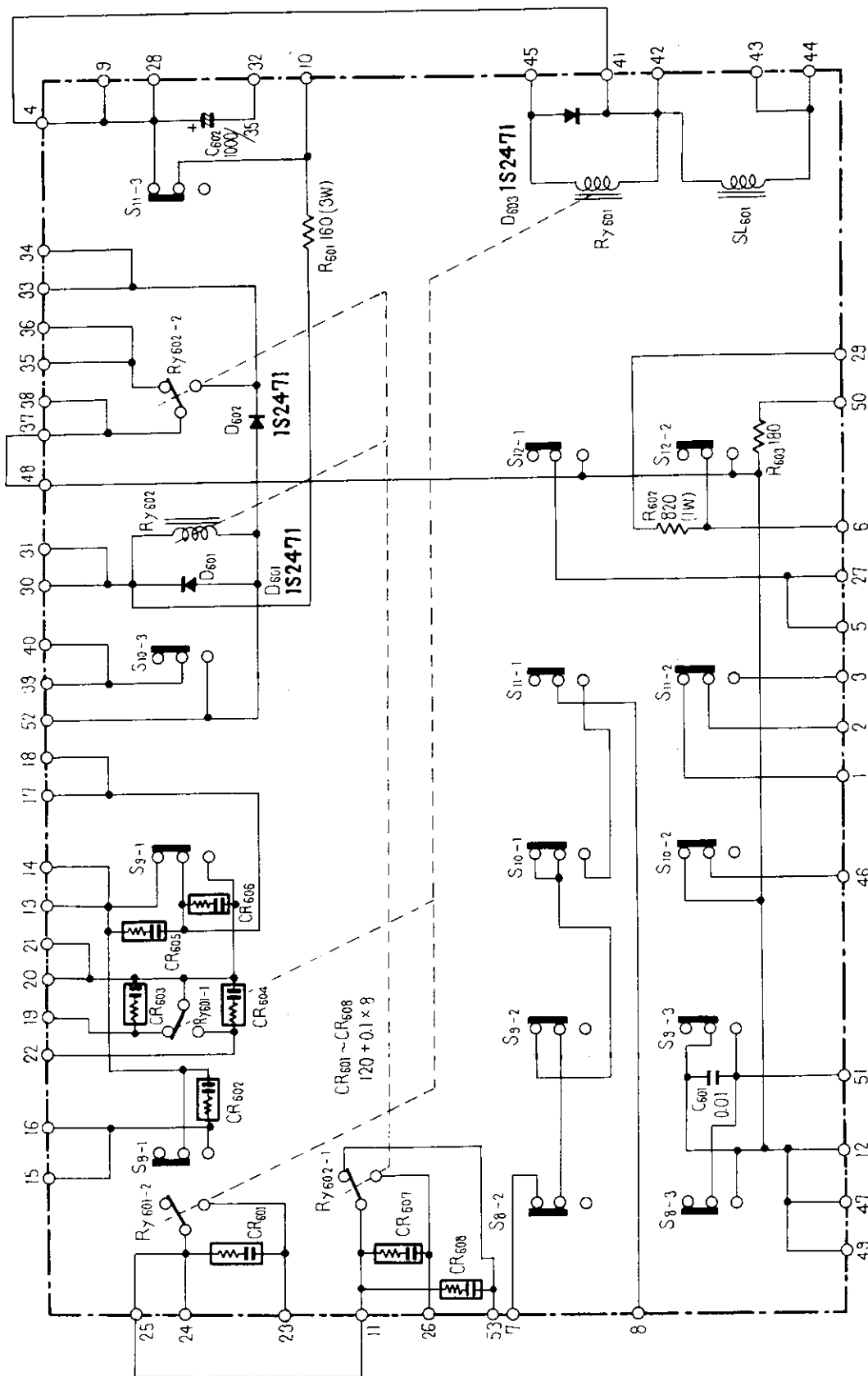
Foil side

ON PLAYBACK AMPLIFIER
ASSEMBLY (RWF-069)

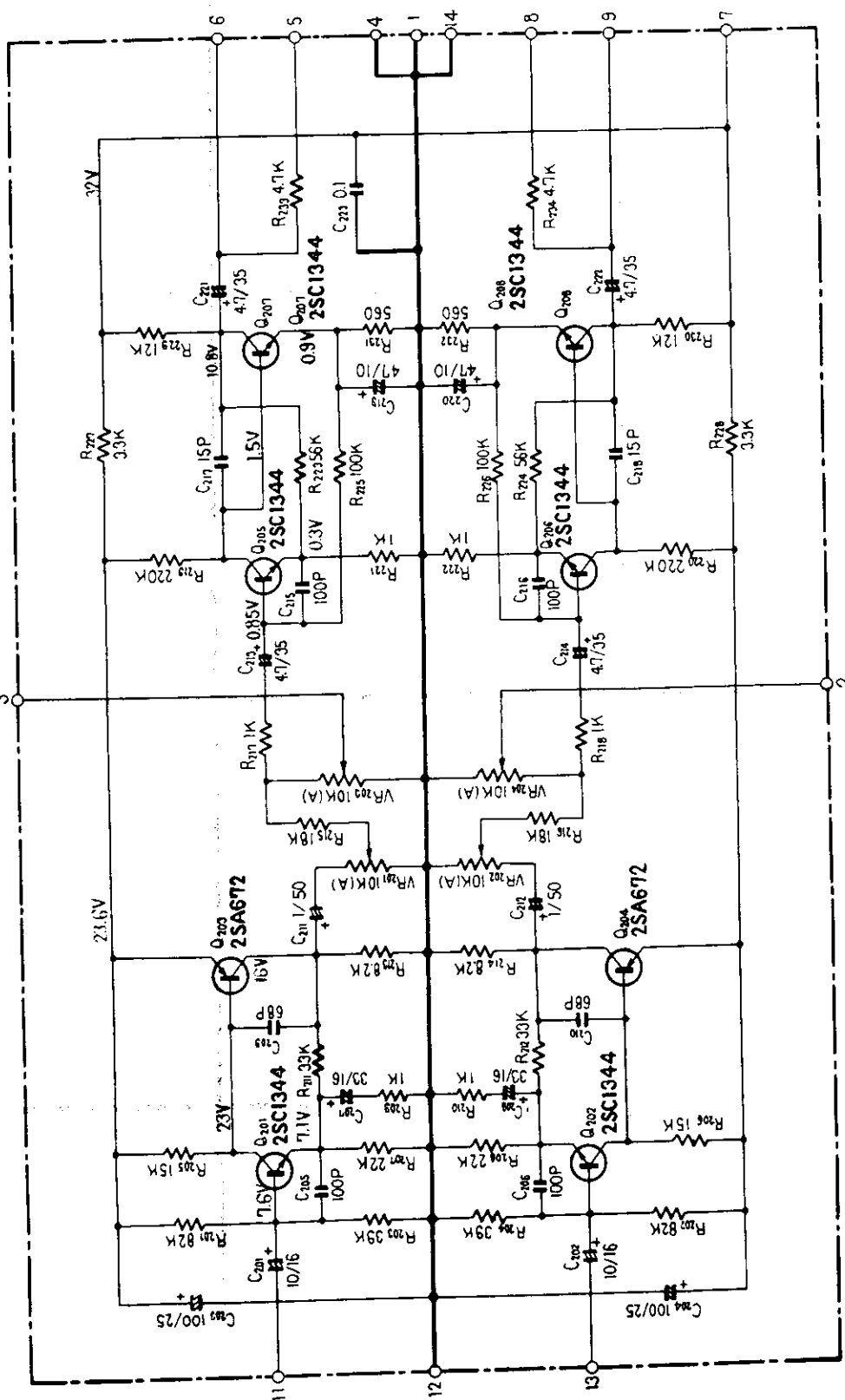


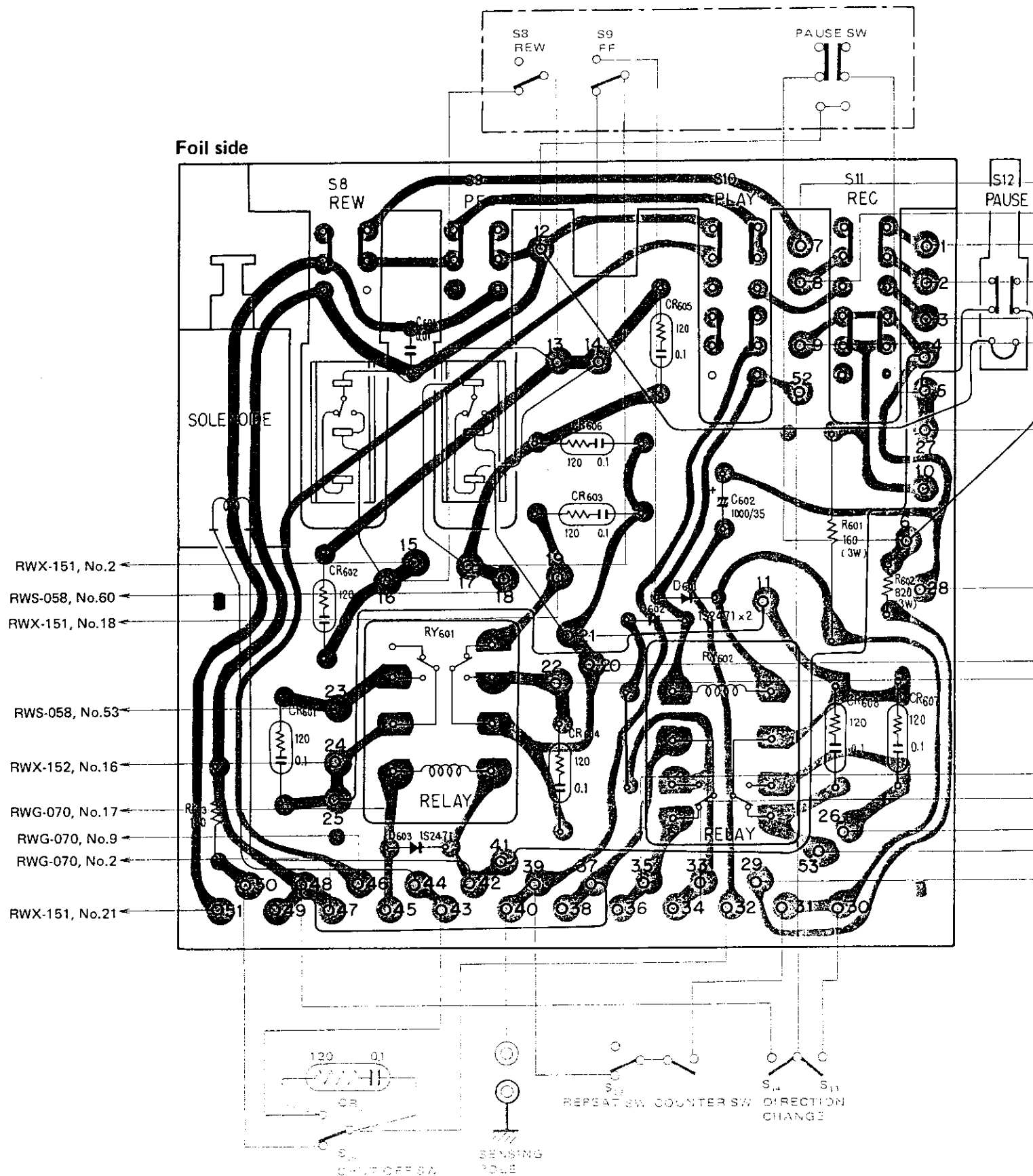
RESISTORS

13.14 FUNCTION SWITCH ASSEMBLY (RWS-052)



13.15 MIC AMPLIFIER ASSEMBLY (RWF-065)





This is a detailed photograph of a custom electronic circuit board, likely a radio receiver. The board is populated with numerous electronic components including resistors, capacitors, and integrated circuits. It features a complex layout of copper traces and is labeled with component values and designations. The board is oriented vertically with pins at the top and bottom edges.

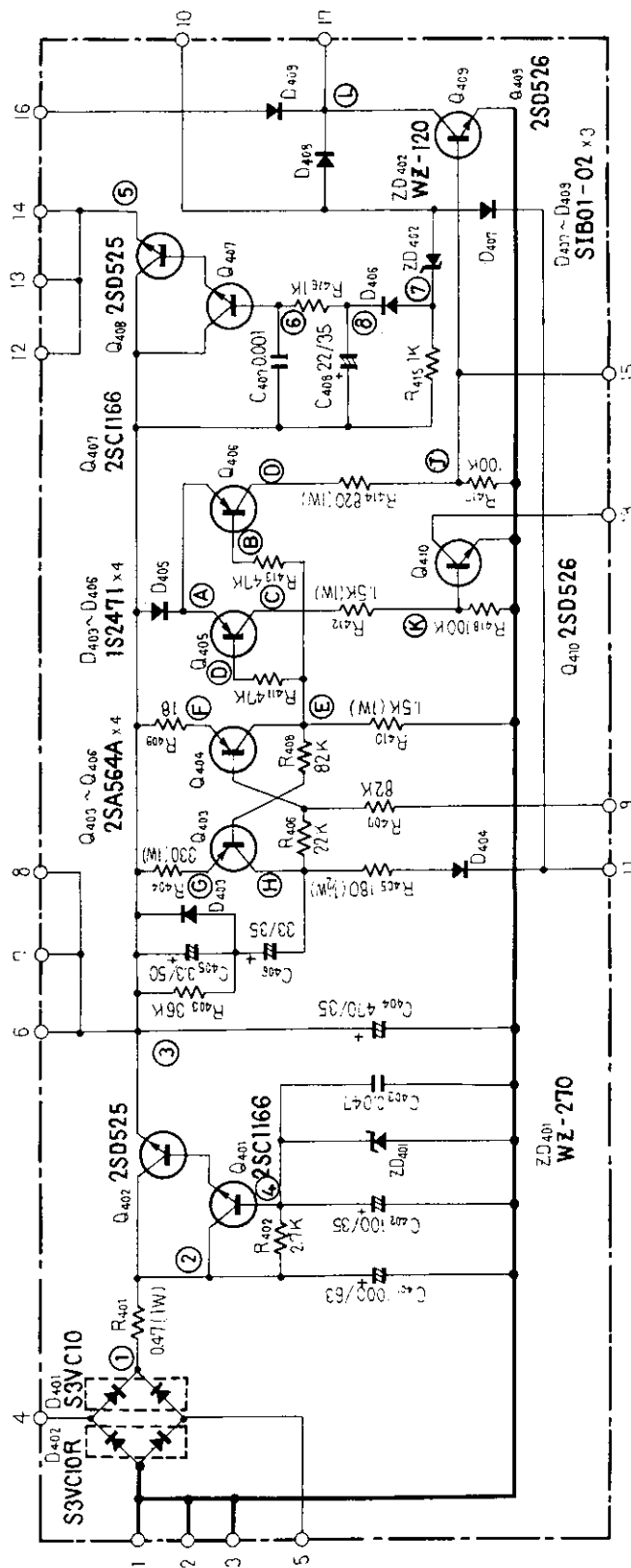
Component Labels and Values:

- Resistors:** R23 56K, R24 100K, R25 100K, R26 100K, R27 22K, R28 22K, R29 22K, R30 22K, R31 82K, R32 15K, R33 4.7K, R34 4.7K, R35 4.7K, R36 4.7K, R37 4.7K, R38 4.7K, R39 4.7K, R40 4.7K, R41 4.7K, R42 4.7K, R43 4.7K, R44 4.7K, R45 4.7K, R46 4.7K, R47 4.7K, R48 4.7K, R49 4.7K, R50 4.7K, R51 4.7K, R52 4.7K, R53 4.7K, R54 4.7K, R55 4.7K, R56 4.7K, R57 4.7K, R58 4.7K, R59 4.7K, R60 4.7K, R61 4.7K, R62 4.7K, R63 4.7K, R64 4.7K, R65 4.7K, R66 4.7K, R67 4.7K, R68 4.7K, R69 4.7K, R70 4.7K, R71 4.7K, R72 4.7K, R73 4.7K, R74 4.7K, R75 4.7K, R76 4.7K, R77 4.7K, R78 4.7K, R79 4.7K, R80 4.7K, R81 4.7K, R82 4.7K, R83 4.7K, R84 4.7K, R85 4.7K, R86 4.7K, R87 4.7K, R88 4.7K, R89 4.7K, R90 4.7K, R91 4.7K, R92 4.7K, R93 4.7K, R94 4.7K, R95 4.7K, R96 4.7K, R97 4.7K, R98 4.7K, R99 4.7K, R100 4.7K.
- Capacitors:** C21 100pF, C22 100pF, C23 100pF, C24 100pF, C25 100pF, C26 100pF, C27 100pF, C28 100pF, C29 100pF, C30 100pF, C31 100pF, C32 100pF, C33 100pF, C34 100pF, C35 100pF, C36 100pF, C37 100pF, C38 100pF, C39 100pF, C40 100pF, C41 100pF, C42 100pF, C43 100pF, C44 100pF, C45 100pF, C46 100pF, C47 100pF, C48 100pF, C49 100pF, C50 100pF, C51 100pF, C52 100pF, C53 100pF, C54 100pF, C55 100pF, C56 100pF, C57 100pF, C58 100pF, C59 100pF, C60 100pF, C61 100pF, C62 100pF, C63 100pF, C64 100pF, C65 100pF, C66 100pF, C67 100pF, C68 100pF, C69 100pF, C70 100pF, C71 100pF, C72 100pF, C73 100pF, C74 100pF, C75 100pF, C76 100pF, C77 100pF, C78 100pF, C79 100pF, C80 100pF, C81 100pF, C82 100pF, C83 100pF, C84 100pF, C85 100pF, C86 100pF, C87 100pF, C88 100pF, C89 100pF, C90 100pF, C91 100pF, C92 100pF, C93 100pF, C94 100pF, C95 100pF, C96 100pF, C97 100pF, C98 100pF, C99 100pF, C100 100pF.
- Integrated Circuits:** IC1, IC2, IC3, IC4, IC5, IC6, IC7, IC8, IC9, IC10, IC11, IC12, IC13, IC14, IC15, IC16, IC17, IC18, IC19, IC20, IC21, IC22, IC23, IC24, IC25, IC26, IC27, IC28, IC29, IC30, IC31, IC32, IC33, IC34, IC35, IC36, IC37, IC38, IC39, IC40, IC41, IC42, IC43, IC44, IC45, IC46, IC47, IC48, IC49, IC50, IC51, IC52, IC53, IC54, IC55, IC56, IC57, IC58, IC59, IC60, IC61, IC62, IC63, IC64, IC65, IC66, IC67, IC68, IC69, IC70, IC71, IC72, IC73, IC74, IC75, IC76, IC77, IC78, IC79, IC80, IC81, IC82, IC83, IC84, IC85, IC86, IC87, IC88, IC89, IC90, IC91, IC92, IC93, IC94, IC95, IC96, IC97, IC98, IC99, IC100.

-RWF-069, No.12

- RWF-069, No.13

13.16 CONTROL ASSEMBLY (RWG-070)



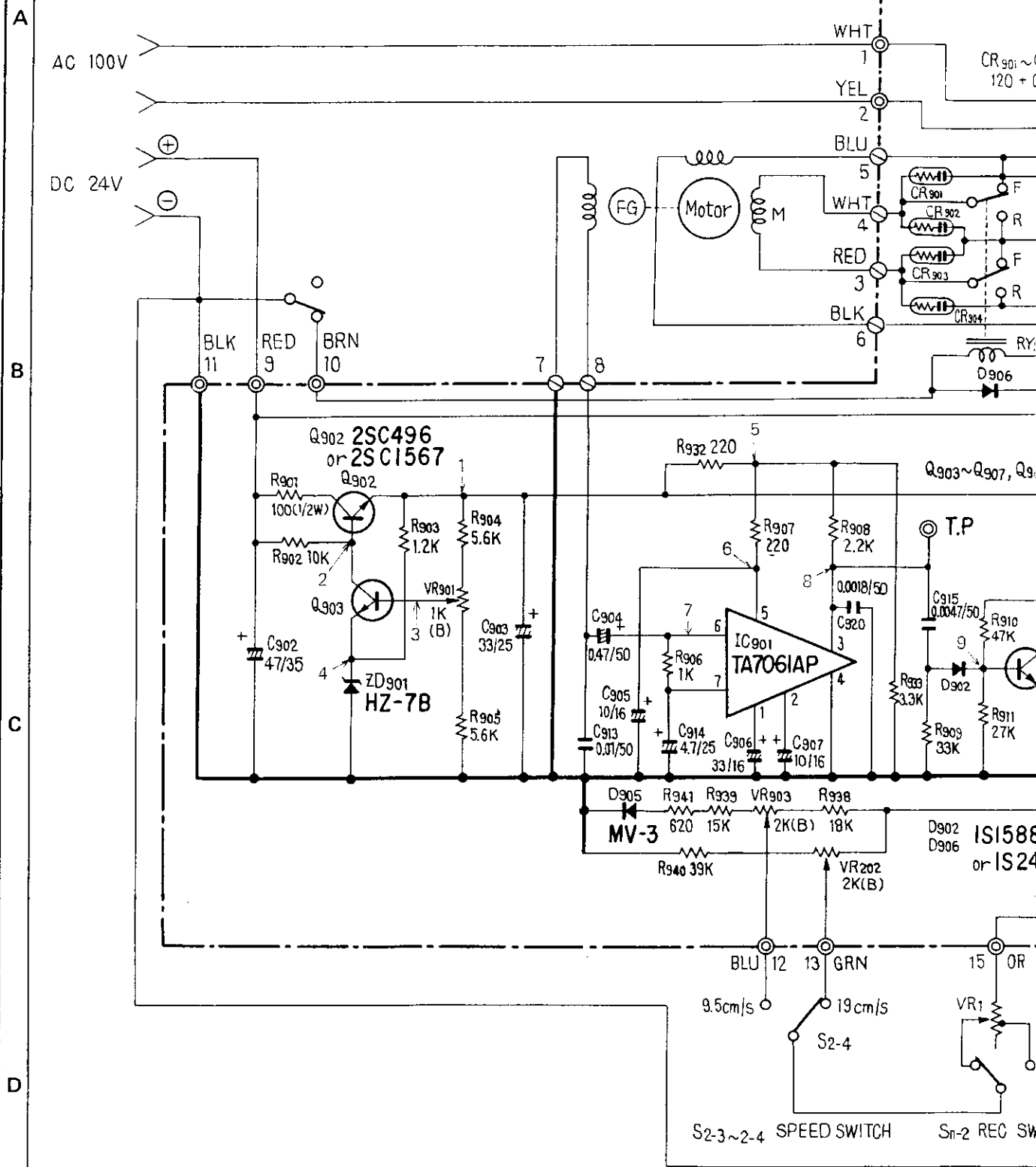
CONTROL

	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ	Ⓘ	Ⓚ	Ⓛ
STOP	25.5V	25.2V	0	0	25.4V	25.5V	25.8V	24.7V	0	0	25.5V
PLAY	24.4V	23.6V	24.3V	24.3V	1.8V	25.2V	25.2V	25.2V	0.8V	0.7V	0.3V
PLAY/REC	24.4V	23.6V	24.3V	24.3V	1.8V	25.2V	25.2V	25.2V	0.8V	0.7V	0.3V
FAST	25.3V	25.1V	0	0	25.2V	25.3V	25.6V	0.9V	0	0	25.5V
PLAY/PAUSE	24.8V	24.1V	24.7V	24.7V	1.8V	25.7V	25.6V	25.1V	0	0.7V	25.5V
REV											

POWER SUPPLY

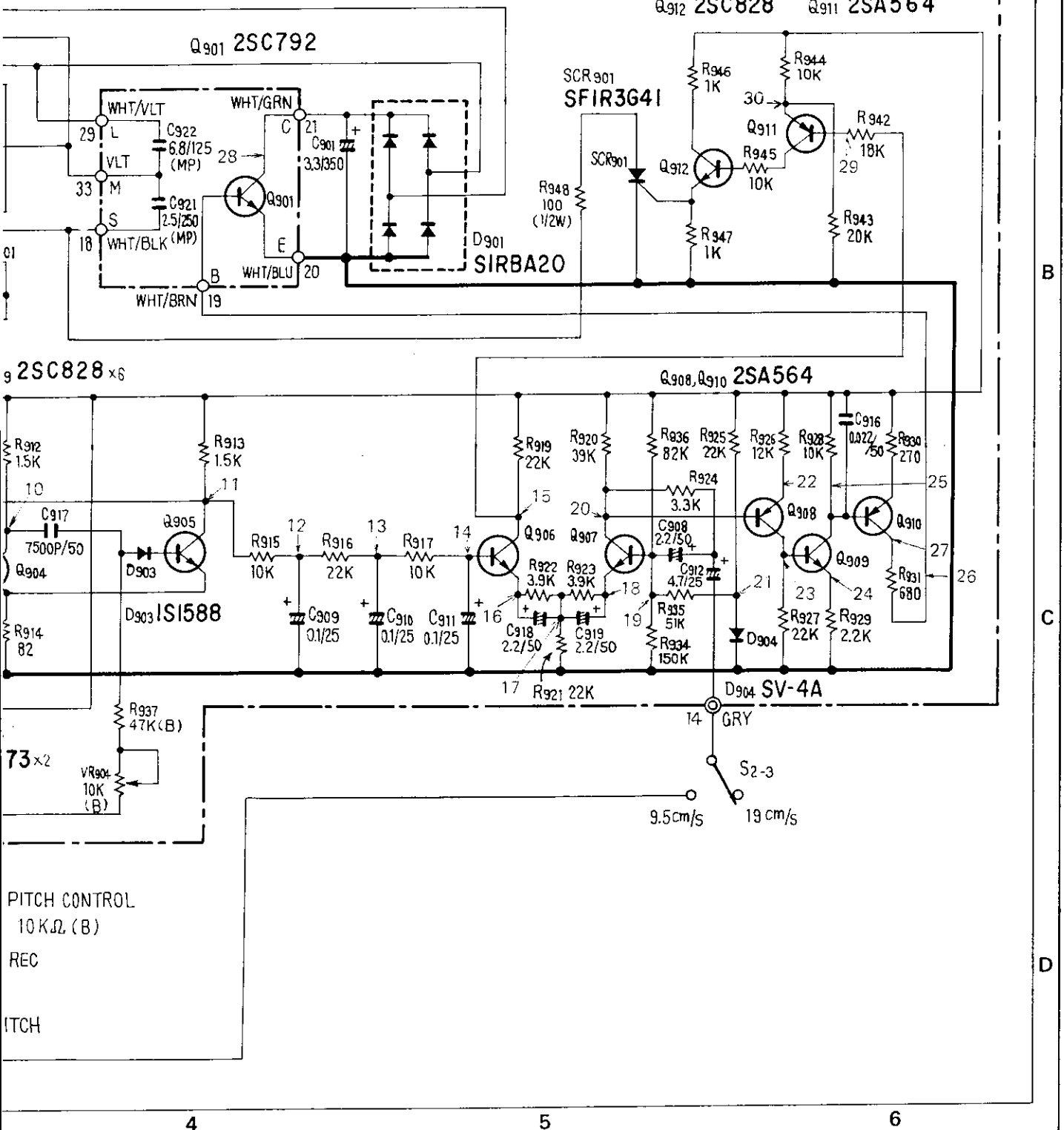
	①	②	③	④	⑤	⑥	⑦	⑧
STOP	41V	40.7V	25.6V	27V	24.9V	25.5V	25.8V	25.5V
PLAY	33.6V	33V	25.2V	26.6V	11V	12.4V	12.9V	12.4V
FAST	38V	37.8V	25.4V	26.8V	11V	12.4V	12.7V	12.4V

13.17 SERVO AMPLIFIER ASSEMBLY (RWG-076)



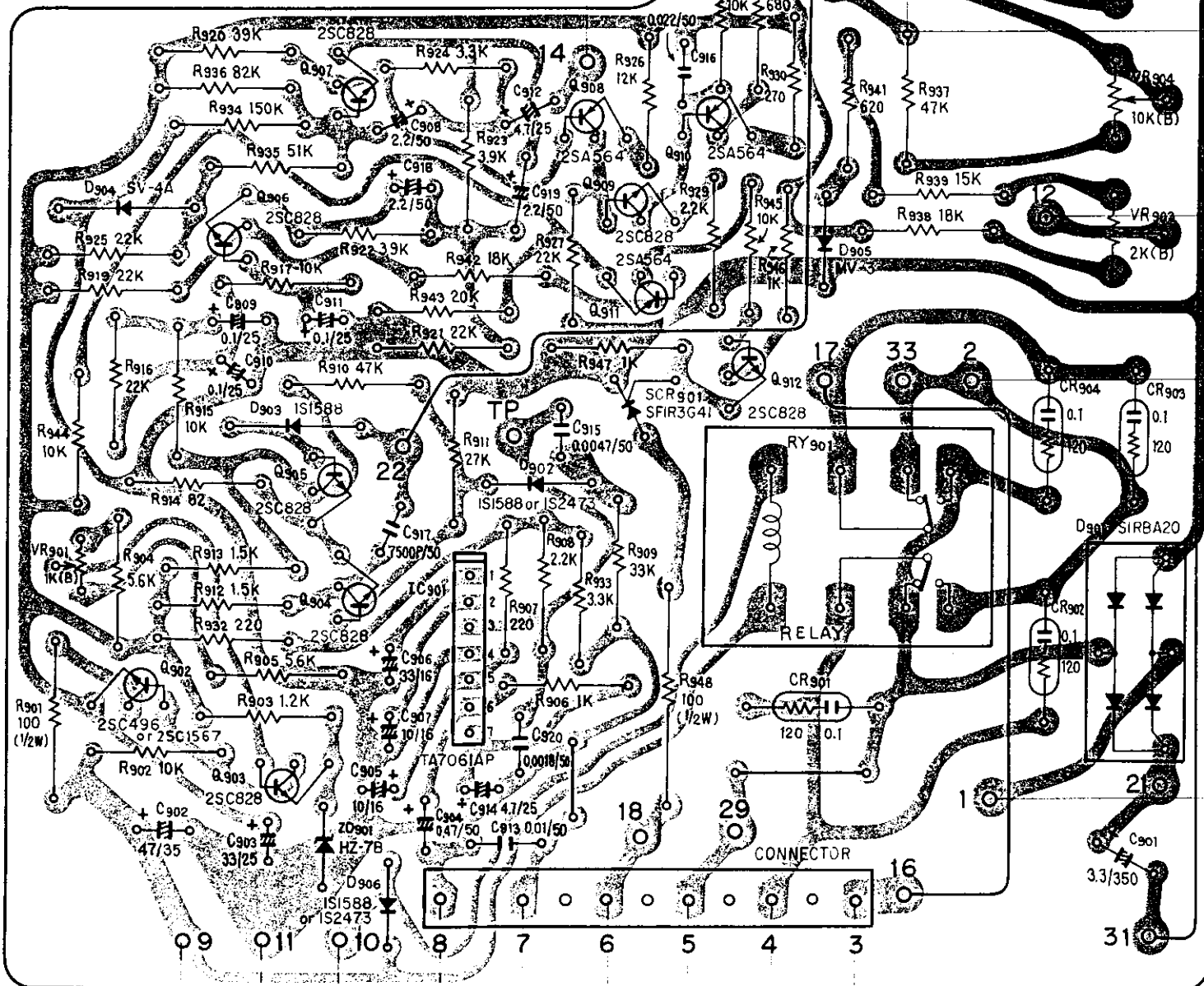
NOTE:

The voltage at each measure points are indicated on page 99.

R904
1 x 4

RWS-058, No.0

Foil side



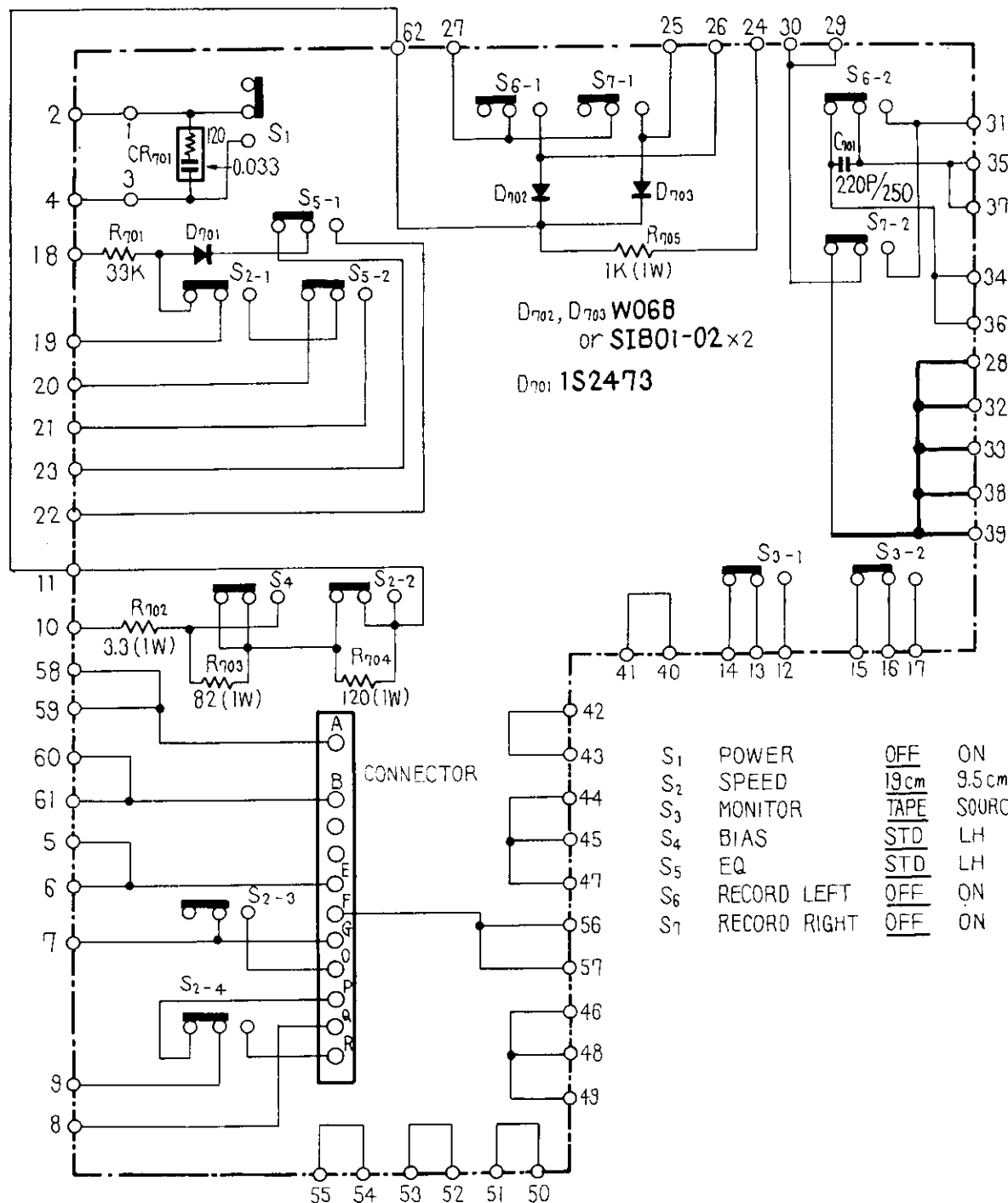
RWS-058, No.E

RWS-058, No.G

RWS-058, No.F

F0

13.18 SWITCH ASSEMBLY (RWS-058 KC type)
(RWS-059 KU type)



S ₁	POWER	<u>OFF</u>	ON
S ₂	SPEED	<u>19cm</u>	9.5cm
S ₃	MONITOR	<u>TAPE</u>	SOURCE
S ₄	BIAS	<u>STD</u>	LH
S ₅	EQ	<u>STD</u>	LH
S ₆	RECORD LEFT	<u>OFF</u>	ON
S ₇	RECORD RIGHT	<u>OFF</u>	ON

