

# Service Manual

Open Deck  
**RS-1700**

**Vol. 1**

"Isolated Loop" Quartz-Locked  
Direct-Drive Three-Motor Auto-  
Reverse Open-Reel Tape Deck

## Information:

The Service Manual for model RS-1700  
is in 2 parts: Vol. 1 and Vol. 2.

Vol. 1 does not include measurements  
and adjustments.

Refer to Vol. 2 for these items.



## RS-1500U MECHANISM SERIES

### Specifications (Catalog specifications for sales)

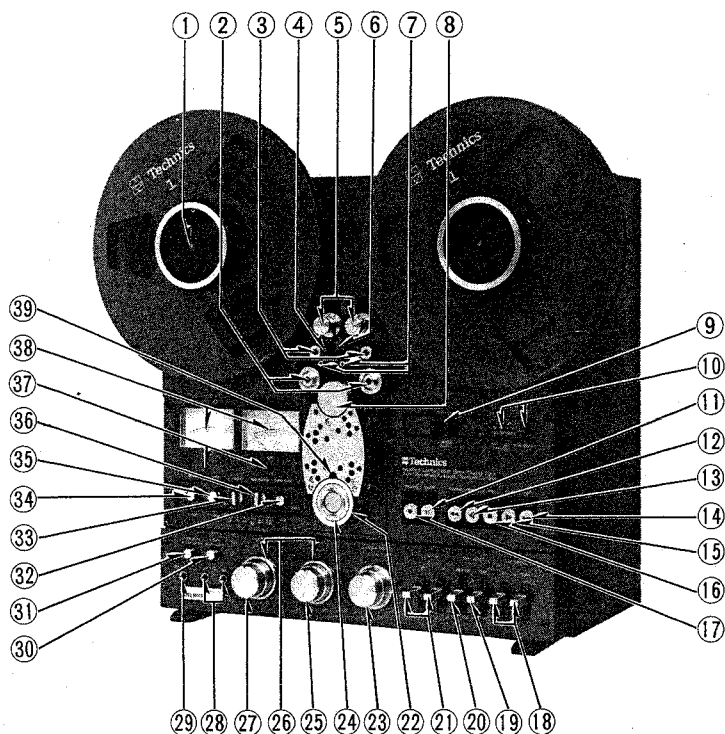
|                        |                                                                                          |                                                            |                                                                                                                                                                                            |
|------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operation:             | Automatic reverse                                                                        | Auto-stop sensing:                                         | Photoelectric, Tension roller switches or Take-up reel table servo control system                                                                                                          |
| Track system:          | 4-track 2-channel recording, playback, erasure on both way                               | Recording bias:                                            | 120 kHz                                                                                                                                                                                    |
| Heads:                 | 6 heads system                                                                           | Bias level:                                                | BIAS selector at "1" 90%<br>at "2" 100%<br>at "3" 110%                                                                                                                                     |
| Motors:                | 2-record/erasure combination head and 2-playback head                                    | Equalization:                                              | NAB standard position "2" of "EQ" and "BIAS" selector set for Scotch #207 tape                                                                                                             |
| Capstan:               | 3 direct-drive motors system                                                             | Recording level calibration:                               | Referenced to 185 nWb/m                                                                                                                                                                    |
|                        | Quartz control phase-locked DC brushless servo direct-drive motor                        | Inputs:                                                    |                                                                                                                                                                                            |
| Reel table:            | 2-tape tension controlled DC brushless direct-drive motor                                | MIC;                                                       | Unbalanced phone type jack sensitivity 0.25 mV (−72 dB), input impedance 4.7 KΩ (at 0 VU, Mic. level control at maximum position) 2.5 mV (−52 dB)/4.7 KΩ with 20 dB Mic.                   |
| Reel size:             | 13 cm to 26.5 cm (5" to 10-1/2") outside diameter                                        | LINE;                                                      | Unbalanced phono type jack sensitivity 60 mV (−24 dB), input impedance 150 KΩ overload margin = infinity (line input connected to LINE IN level control before pass through the amplifier) |
| Tape speed:            | 38 cm/s, 19 cm/s and 9.5 cm/s (15 ips, 7-1/2 ips and 3-3/4 ips) (recording and playback) | THROUGH OUT;                                               | Same as LINE IN (connected in parallel to LINE IN)                                                                                                                                         |
| Wow and flutter:       |                                                                                          | Outputs:                                                   |                                                                                                                                                                                            |
| 38 cm/s (15 ips);      | 0.018% (WRMS), ±0.035% (Peak DIN)                                                        | LINE;                                                      | 2-pair of unbalanced phone type jack output level 0.55 V at 0 VU (output level control at "8")                                                                                             |
| 19 cm/s (7-1/2 ips);   | 0.03% (WRMS), ±0.06% (Peak DIN)                                                          |                                                            | 0.775 V or more at output level control maximum output impedance less than 3 KΩ load impedance 22 KΩ over                                                                                  |
| 9.5 cm/s (3-3/4 ips);  | 0.06% (WRMS), ±0.12% (Peak DIN)                                                          | HEADPHONE;                                                 | Stereo phone type jack output level 80 mV at 0.55 V line output load impedance 8Ω                                                                                                          |
| Speed deviation:       | ±0.1% at 38 cm/s (15 ips)                                                                | Power requirements:                                        | AC 110/125/220/240 V, 50/60 Hz                                                                                                                                                             |
| Speed fluctuation:     | 0.05% at 38 cm/s (15 ips)                                                                | DC 24 V, 4.9 A peak (with optional battery adaptor RP-086) |                                                                                                                                                                                            |
| Frequency response:    |                                                                                          | Power consumption:                                         | 160 W                                                                                                                                                                                      |
| 38 cm/s (15 ips);      | 30~30,000 Hz ±3 dB (rec. level = −10 dB from 0 VU)                                       | Weight:                                                    | 25.7 kg, (56 lbs 9 oz)                                                                                                                                                                     |
| 19 cm/s (7-1/2 ips);   | 20~25,000 Hz ±3 dB (rec. level = −20 dB from 0 VU)                                       | Dimensions (W×H×D):                                        | 45.6 cm×44.6 cm×25.8 cm (18"×17-1/2"×10-1/8")                                                                                                                                              |
| 9.5 cm/s (3-3/4 ips);  | 20~15,000 Hz ±3 dB (rec. level = −20 dB from 0 VU)                                       |                                                            |                                                                                                                                                                                            |
| Signal-to-noise ratio: | Weighted (ASA-A curve) 1 kHz                                                             |                                                            |                                                                                                                                                                                            |
| Recording level:       | (3% THD) (185 nWb/m + 6 dB)                                                              |                                                            |                                                                                                                                                                                            |
| 38 cm/s (15 ips);      | 68 dB 62 dB                                                                              |                                                            |                                                                                                                                                                                            |
| 19 cm/s (7-1/2 ips);   | 68 dB 62 dB                                                                              |                                                            |                                                                                                                                                                                            |
| 9.5 cm/s (3-3/4 ips);  | 67 dB 60 dB                                                                              |                                                            |                                                                                                                                                                                            |
| Distortion (THD):      | Measured via tape at 400 Hz (at any speed)                                               |                                                            |                                                                                                                                                                                            |
|                        | Less than 0.8% (0 VU)                                                                    |                                                            |                                                                                                                                                                                            |
|                        | Less than 2.0% (185 nWb/m + 6 dB)                                                        |                                                            |                                                                                                                                                                                            |
| Channel separation:    | Better than 50 dB                                                                        |                                                            |                                                                                                                                                                                            |
| Erasing ratio:         | Better than 65 dB (rec. level = +10 dB at 1 kHz)                                         |                                                            |                                                                                                                                                                                            |
| Pitch control:         | ±6% (recording and playback)                                                             |                                                            |                                                                                                                                                                                            |
| Time counter accuracy: | ±1% at 38 cm/s (15 ips)                                                                  |                                                            |                                                                                                                                                                                            |
| Fast winding time:     | 150 sec. for 762 m (1.5 mil, 2500 feet) tape                                             |                                                            |                                                                                                                                                                                            |
| Auto-reverse sensing:  | Photoelectric                                                                            |                                                            |                                                                                                                                                                                            |

Specifications based on use of Technics RT-10B218 (Scotch #207) tape.  
Specifications are subject to change without notice.

**Technics**

**Matsushita Electric Trading Co., Ltd.**  
P.O. Box 288, Central Osaka Japan

# LOCATION OF CONTROLS AND COMPONENTS



- ① Reel clasper
- ② Double pinch rollers
- ③ Tape marker
- ④ Light sensing system: Light-emitting diode
- ⑤ Tension rollers
- ⑥ Light sensing system: Photo-transistor
- ⑦ Guide pins
- ⑧ Capstan
- ⑨ Cue lever/DC power switch
- ⑩ Time counter, reset button
- ⑪ Pause button
- ⑫ Rewind button
- ⑬ Reverse button
- ⑭ Fast-forward button
- ⑮ Forward button
- ⑯ Stop button
- ⑰ Record button
- ⑱ Record mode switches
- ⑲ Bias selector
- ⑳ Equalization selector
- ㉑ Monitor switches
- ㉒ Reversing roller
- ㉓ Output level controls
- ㉔ Edit dial
- ㉕ Line-input level controls
- ㉖ Preset markers
- ㉗ Microphone level controls
- ㉘ Microphone jack
- ㉙ Headphones jack
- ㉚ Microphone attenuator switch
- ㉛ Meter scale selector
- ㉜ Timer start switch
- ㉝ Tape speed selector
- ㉞ Power switch
- ㉟ Pitch control
- ㊱ Reverse selector
- ㊲ Level meter zero-point adjustment screws
- ㊳ Level meters
- ㊴ Stroboscope lamp
- ㊵ Voltage selector
- ㊶ Remote-control connector
- ㊷ Power cord holder
- ㊸ Battery selector
- ㊹ DC IN connector
- ㊺ Power cord
- ㊻ Ground terminal
- ㊼ Line input jacks
- ㊽ "Throughout" jacks
- ㊾ Line output jacks

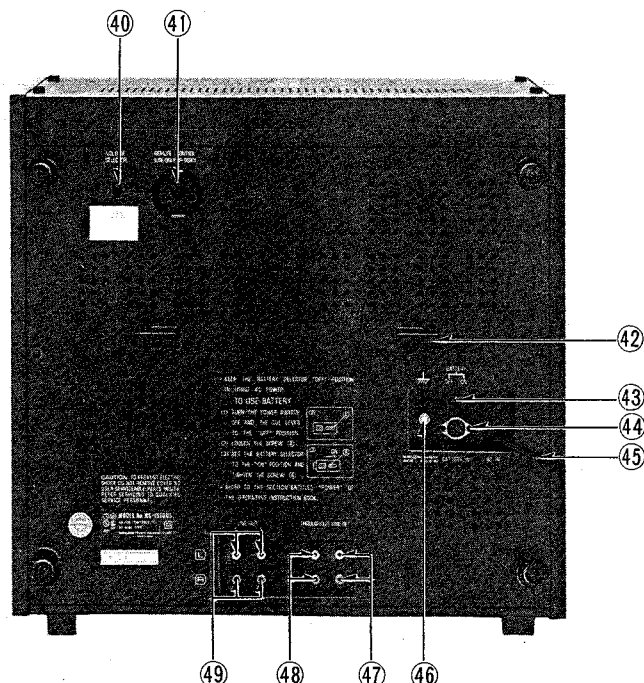


Fig. 1

1  
2025

# AMPLIFIER SECTION BLOCK DIAGRAM

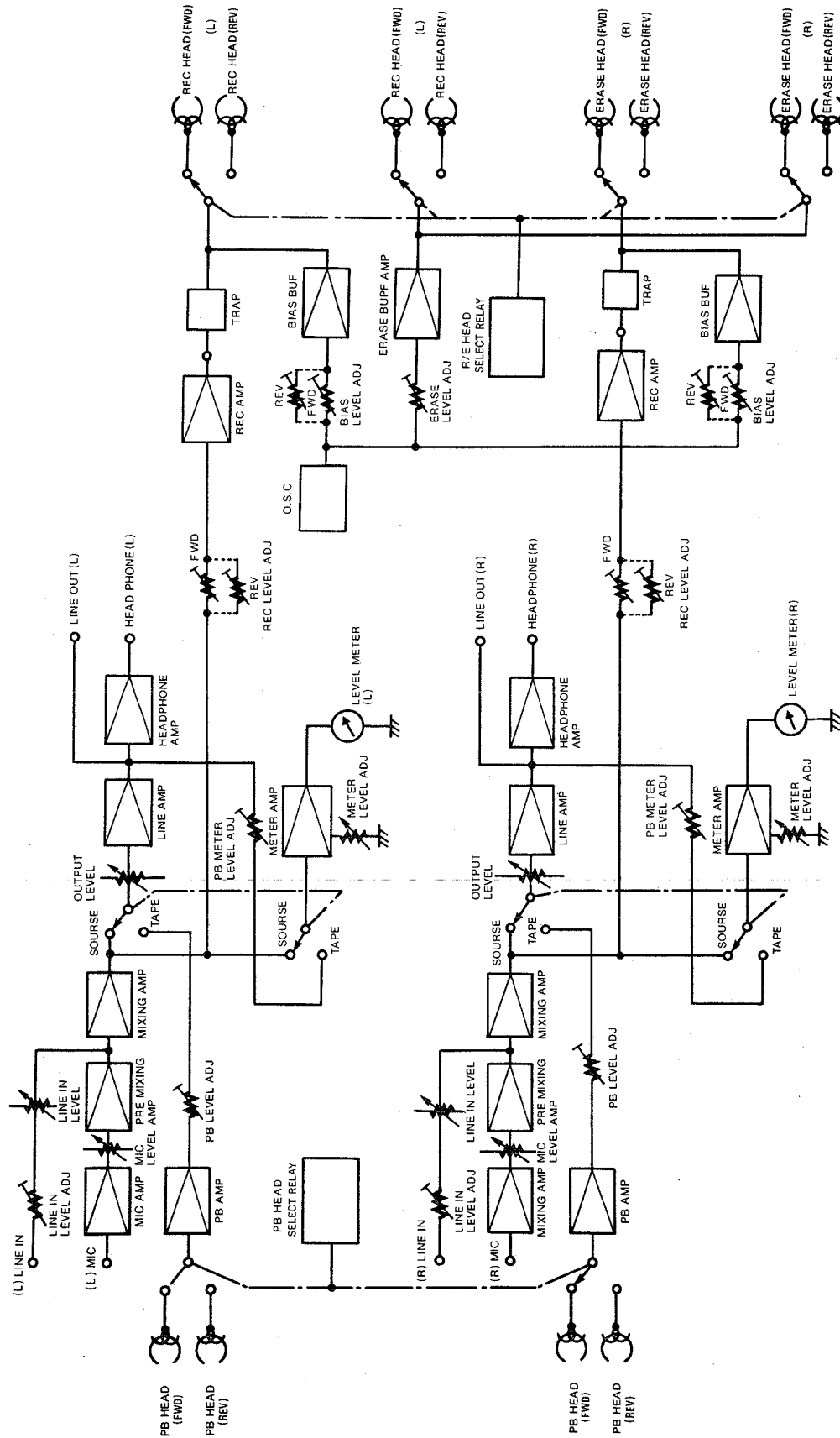


Fig. 2

# MAIN CONTROL CIRCUIT SECTION

## Equivalent Circuit

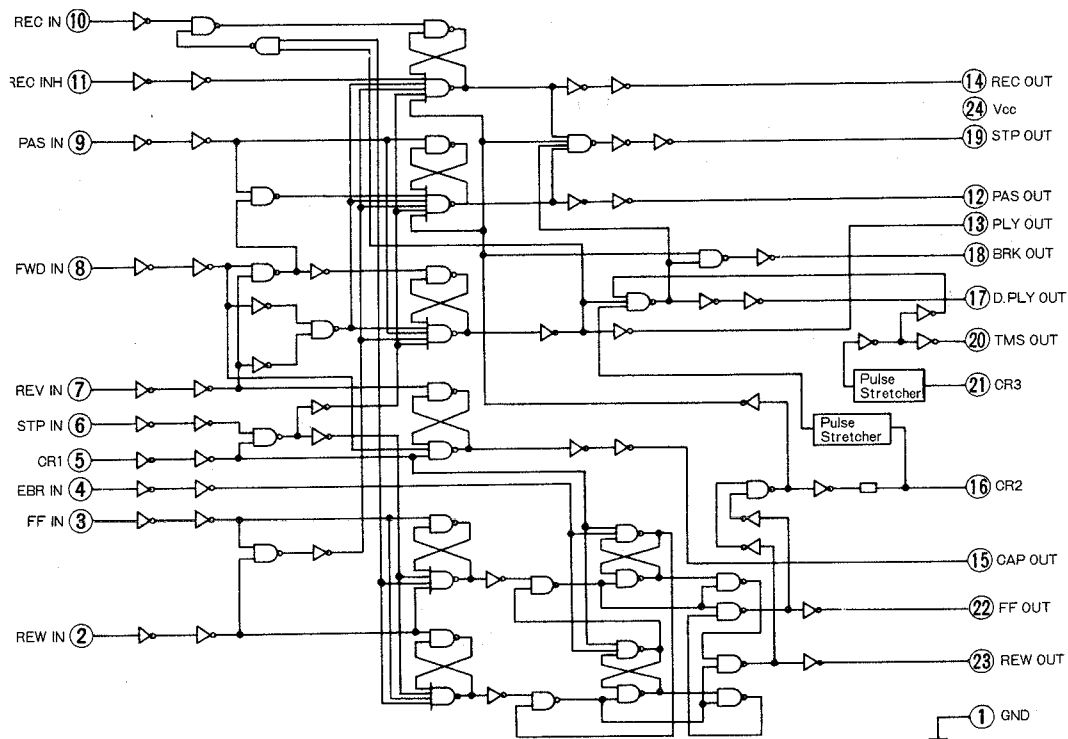
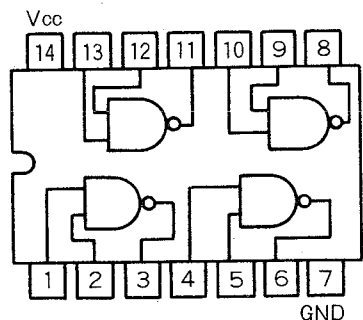


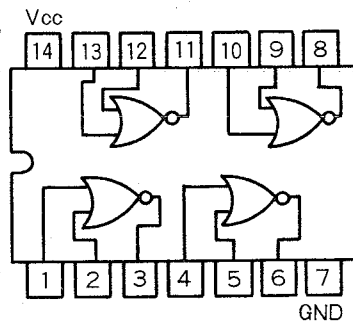
Fig. 3

## Internal Circuit of ICs.

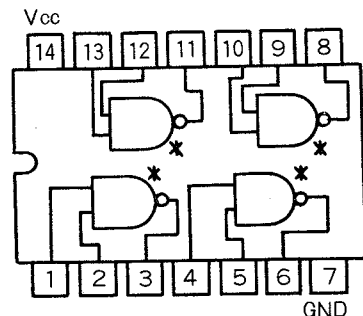
M53200P Quadruple 2-Input Positive Nand gate



M53202P Quadruple 2-Input Positive Nor gate



M53203P Quadruple 2-Input Positive Nand gate



M53204P Hex Inverter

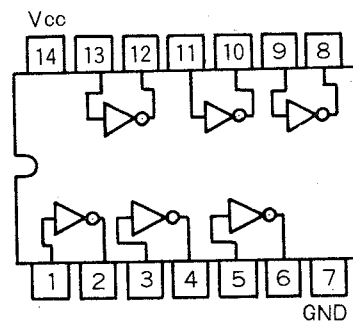


Fig. 4

# DISASSEMBLY INSTRUCTIONS

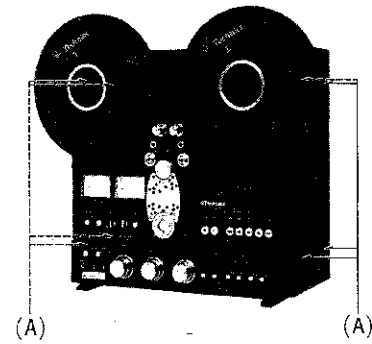


Fig. 5

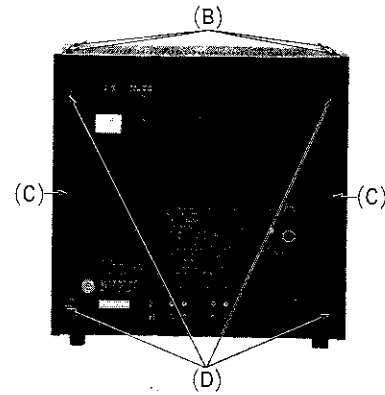


Fig. 6

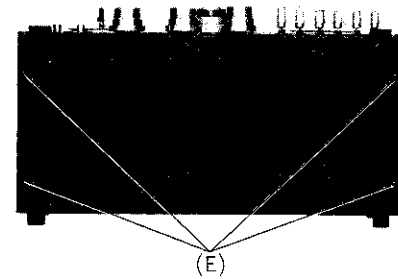


Fig. 7

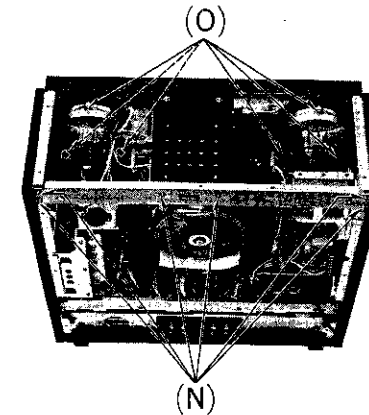


Fig. 14

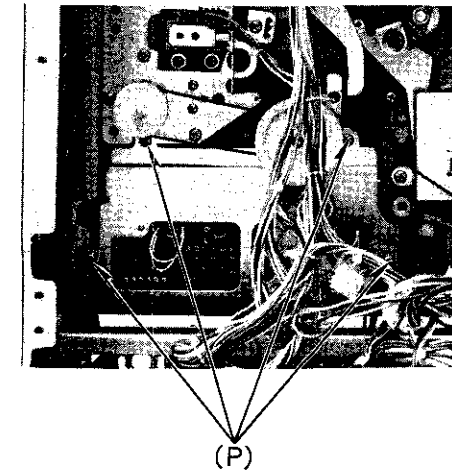


Fig. 15

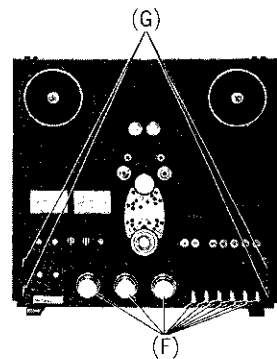


Fig. 8

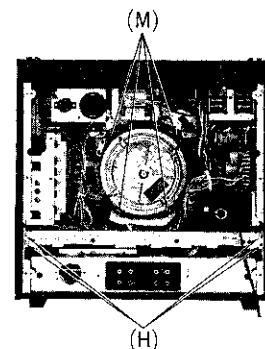


Fig. 9



Fig. 10

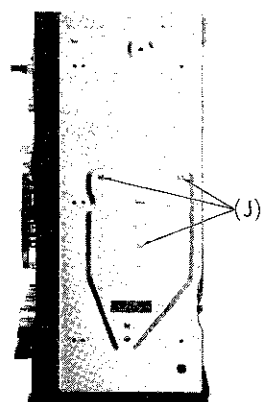


Fig. 11

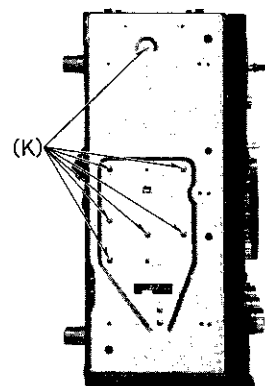


Fig. 12

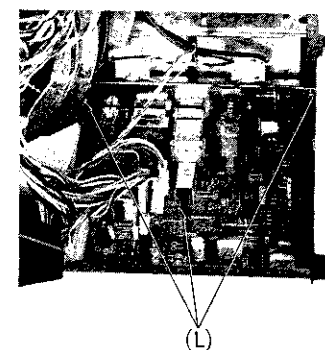
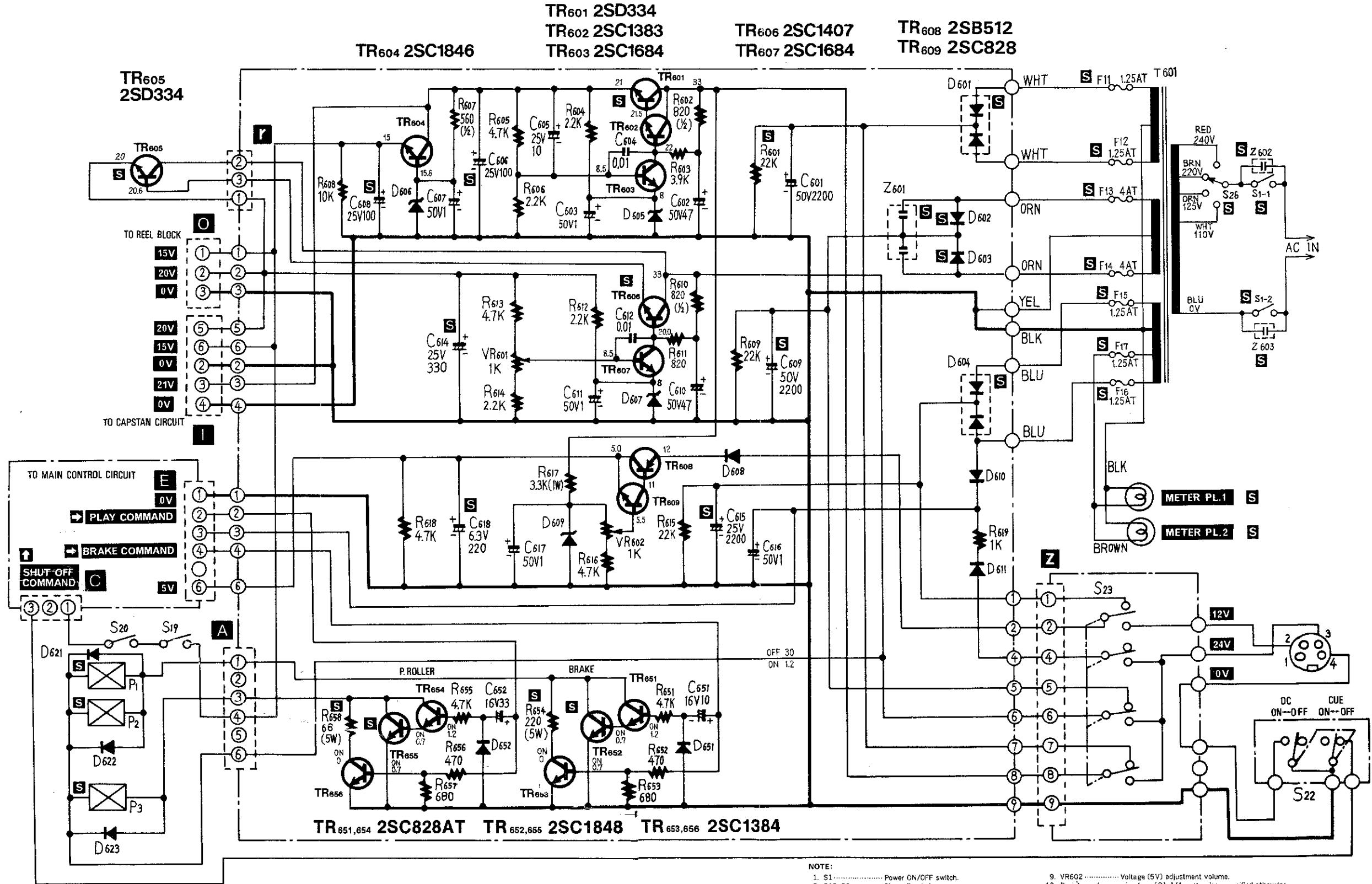


Fig. 13

| Procedure | To remove —                                                   | Remove —                     | Pcs.             | Shown in fig. — |
|-----------|---------------------------------------------------------------|------------------------------|------------------|-----------------|
| 1         | Side board                                                    | Screws (A)                   | (8)              | 5               |
| —         | Top cover                                                     | Screws (B)                   | (4)              | 6               |
| —         | Rear cover                                                    | Screws (C) (D)               | (2), (4)         | 6               |
| —         | Bottom cover                                                  | Screws (E)                   | (4)              | 7               |
| 2         | Function panel and main P.C.B assembly                        | Knobs (F)<br>Screws (G)      | (9), (4)         | 8               |
| —         | Main control P.C.B assembly                                   | Screws (H) (I)<br>Connectors | (4), (1)<br>(10) | 9, 10           |
| —         | Reel motor driving P.C.B and reel motor tension control P.C.B | Screws (J)                   | (3)              | 11              |
| —         | Power supply P.C.B                                            | Screws (K)                   | (7)              | 12              |
| —         | Capstan motor control P.C.B                                   | Screws (L)                   | (3)              | 13              |
| —         | Capstan motor assembly                                        | Screws (M)                   | (4)              | 9               |
| —         | Power transformer angle assembly                              | Screws (N)                   | (6)              | 14              |
| 3         | Reel motor assembly                                           | Screws (O)                   | (6)              | 14              |
| —         | Function button control P.C.B assembly                        | Screws (P)                   | (4)              | 15              |

# SCHEMATIC DIAGRAM MODEL RS-1700

## Power Supply Section

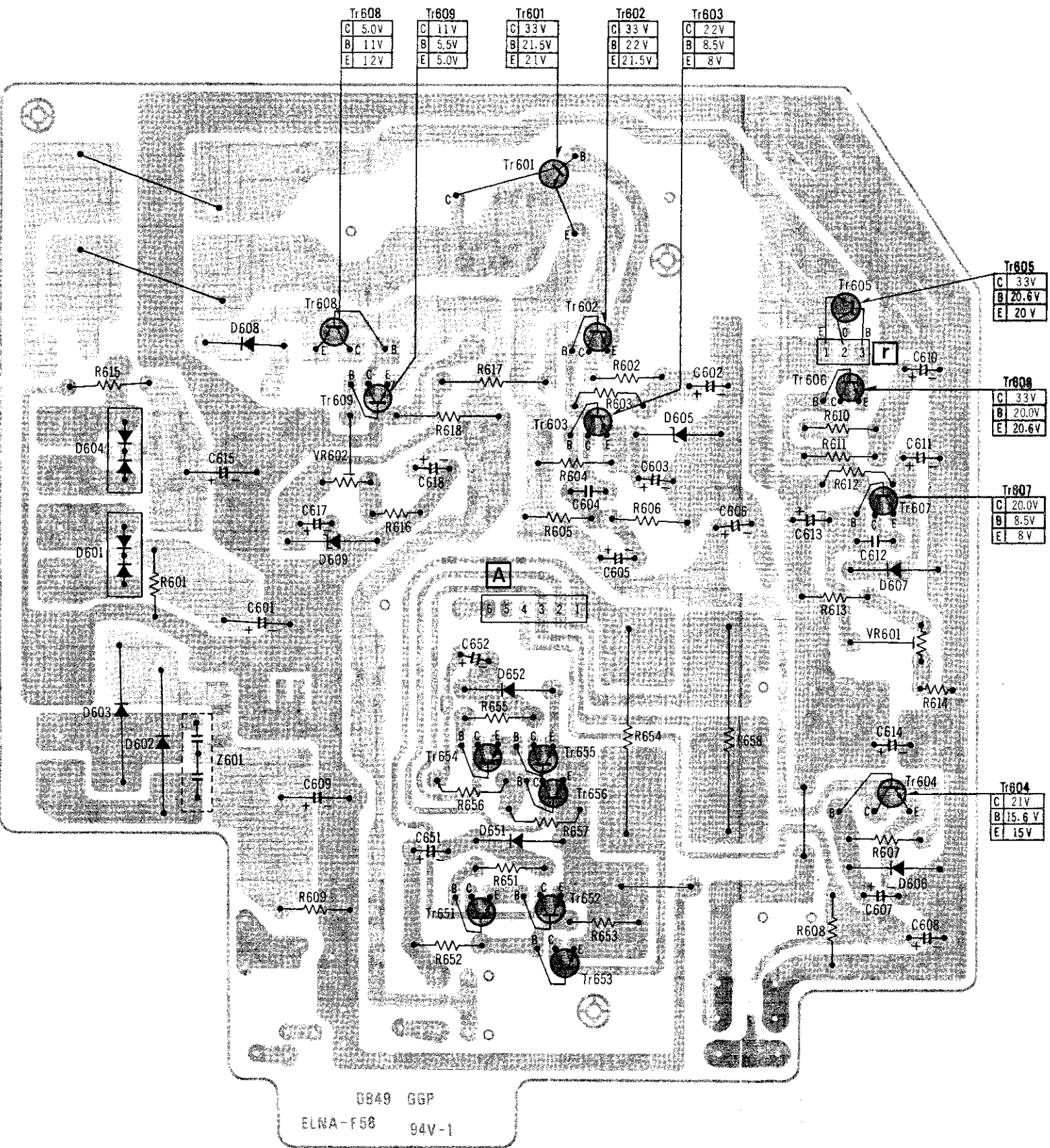


**NOTE:**

- S1..... Power ON/OFF switch.
- S2..... Shut-off switch.
- S3..... Cue ON/OFF & DC power ON/OFF switch.
- S4..... AC/DC select switch.
- S5..... AC voltage select switch.
- S6..... AC voltage select switch.
- S7..... Brake plunger.
- S8..... Pressure roller plunger.
- S9..... Voltage (20V) adjustment volume.
- S10..... Voltage (5V) adjustment volume.
- Resistor values are in ohms ( $\Omega$ ), 1/4 watt unless specified otherwise. K=1,000.
- Capacitor values are in microfarads ( $\mu$ F) unless specified otherwise. P=Pico-farads.
- All voltage values show in circuitry are under no signal condition with volume control at minimum position. For measurement, use VTVM.
- Indicates that only parts specified by the manufacturer be used for safety.

# CIRCUIT BOARD

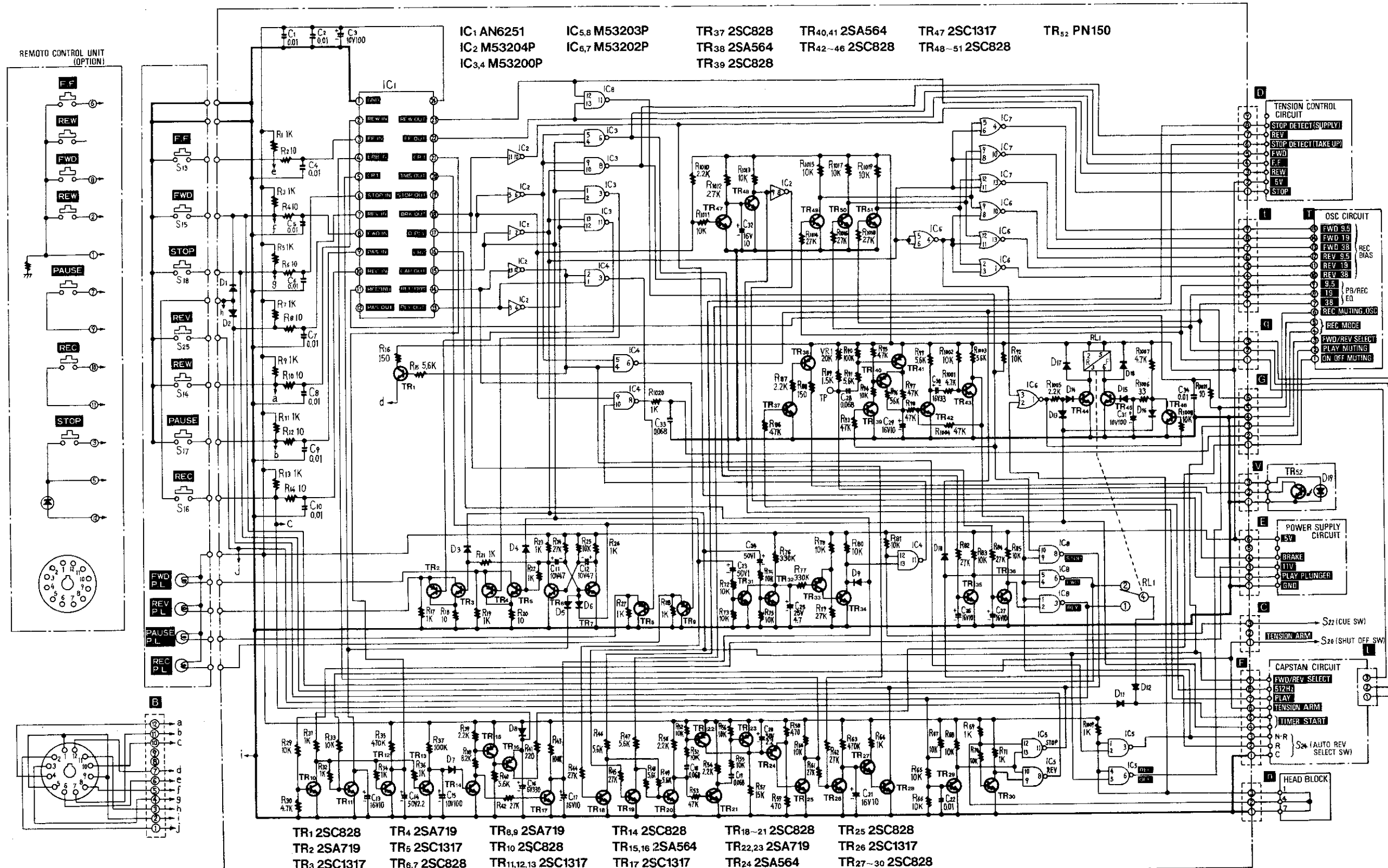
## Power Supply



NOTE:  
The circuit shown in red on the conductor is B circuit.  
Values indicated in   are DC voltage between the chassis  
and electrical parts.

# SCHEMATIC DIAGRAM MODEL RS-1700

## Main Control Section

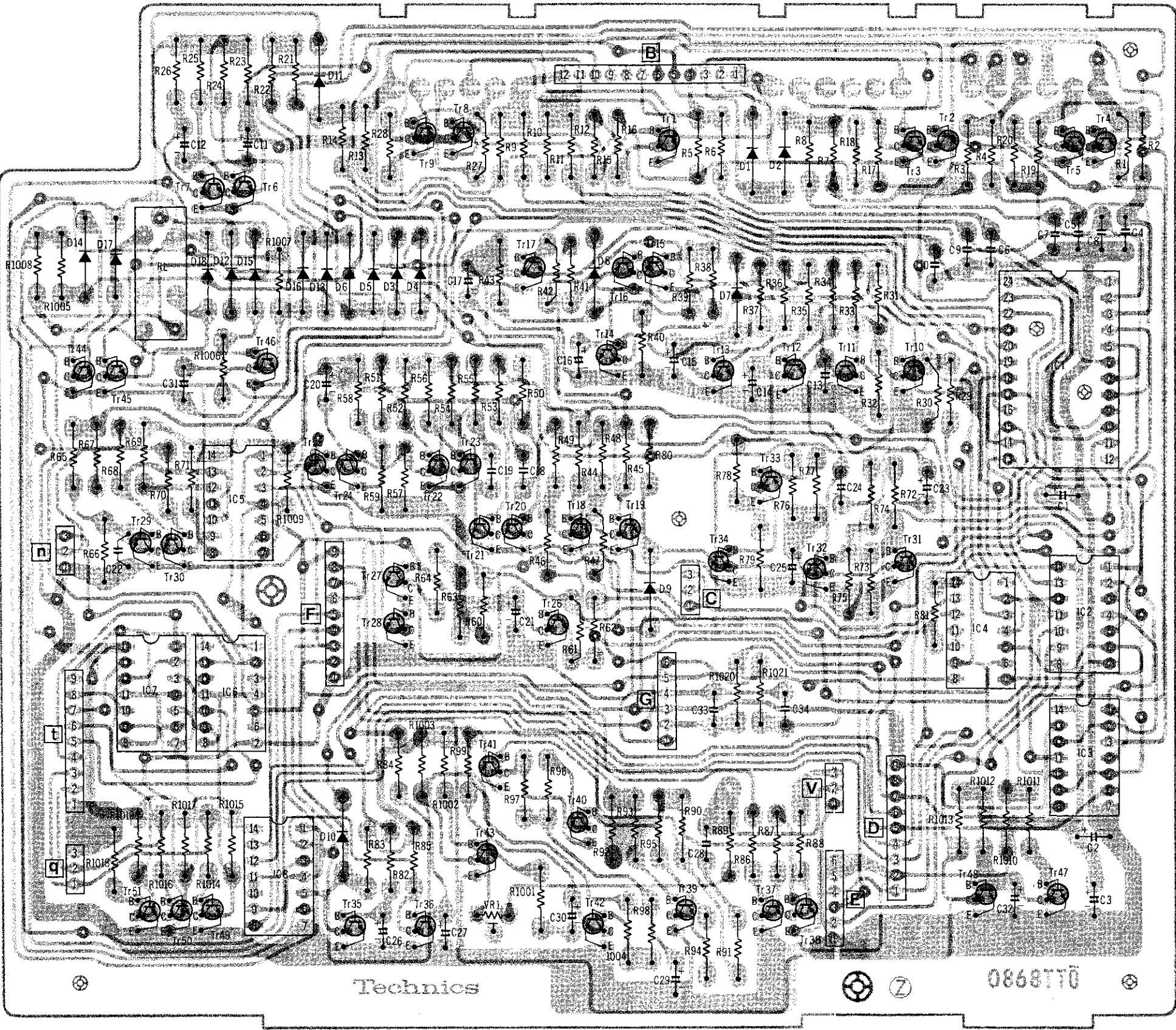


### NOTE:

- S13~18, 25..... Control key switch.
- VR1..... Photo transistor adjustment VR.
- RL1..... Forward/reverse select relay.
- Resistor values are in ohms ( $\Omega$ ), 1/4 watt unless specified otherwise.  
K=1,000.
- Capacitor values are in microfarads ( $\mu$ F) unless specified otherwise.  
P = Pico-farads.
- All voltage values show in circuitry are under no signal condition with volume control at minimum position.  
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# CIRCUIT BOARD

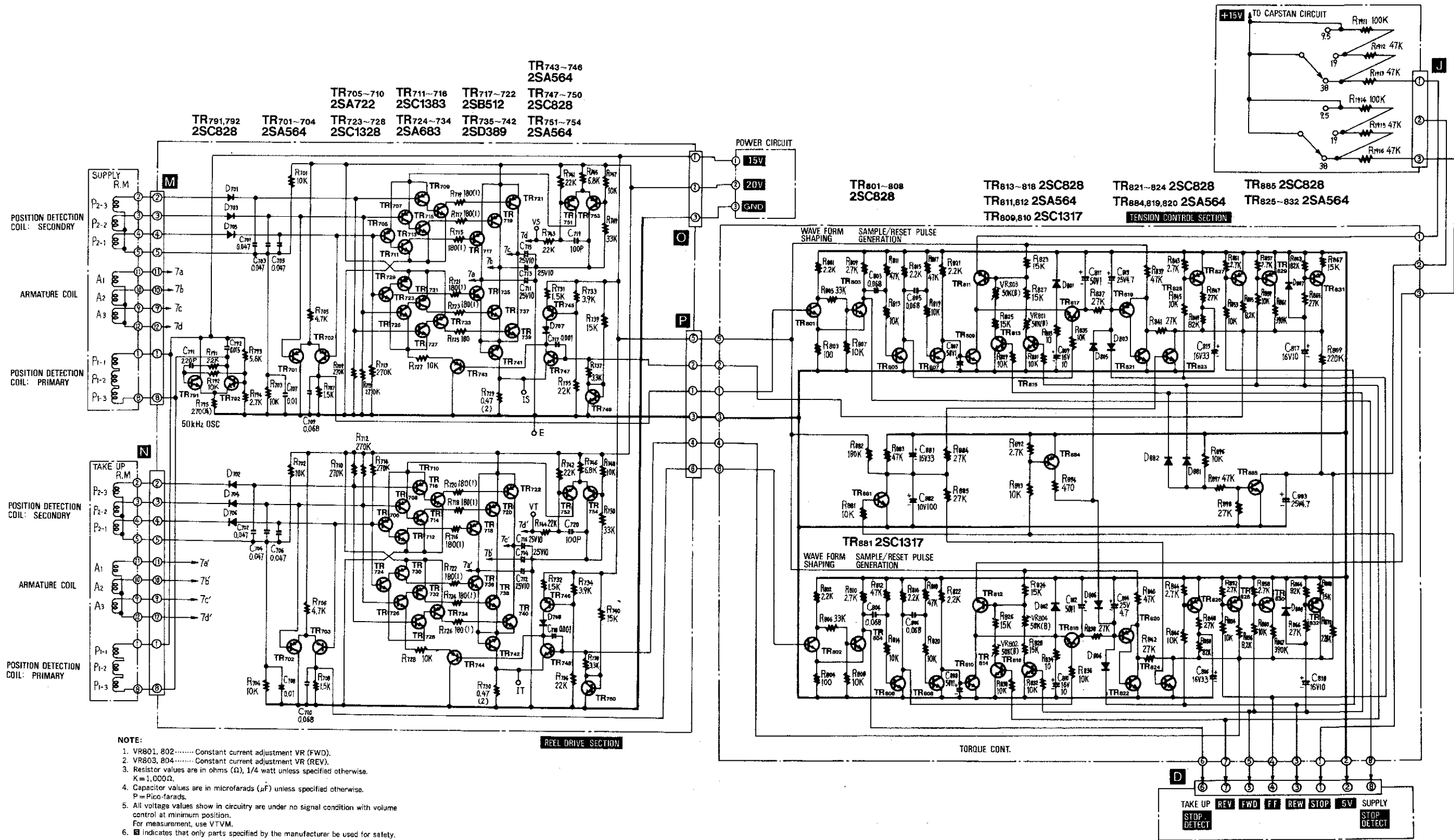
Main Control



NOTE:  
The circuit shown in red on the conductor is B circuit.  
Values indicated in    are DC voltage between the chassis and electrical parts.

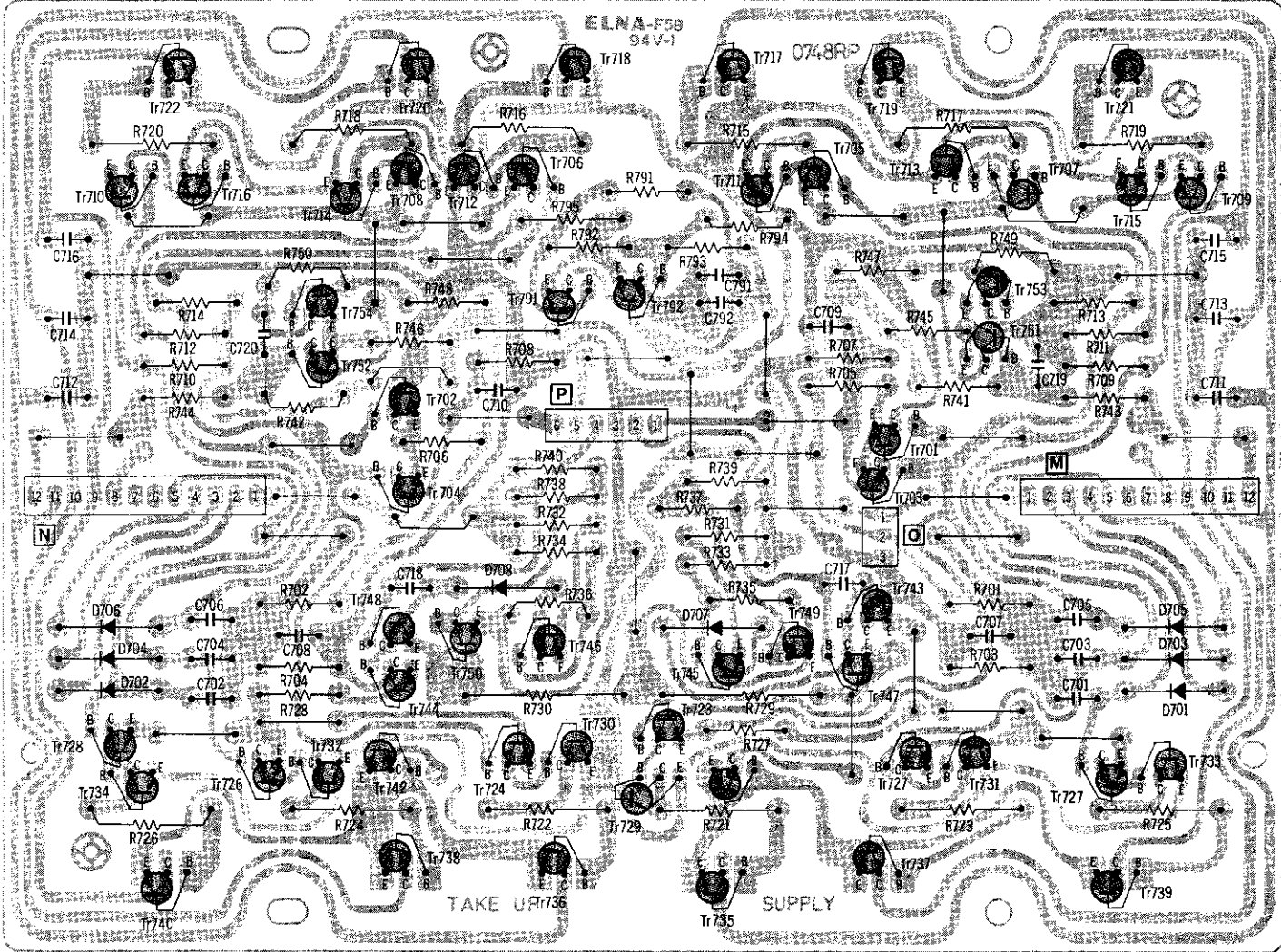
# SCHEMATIC DIAGRAM MODEL RS-1700

## Reel Motor Section

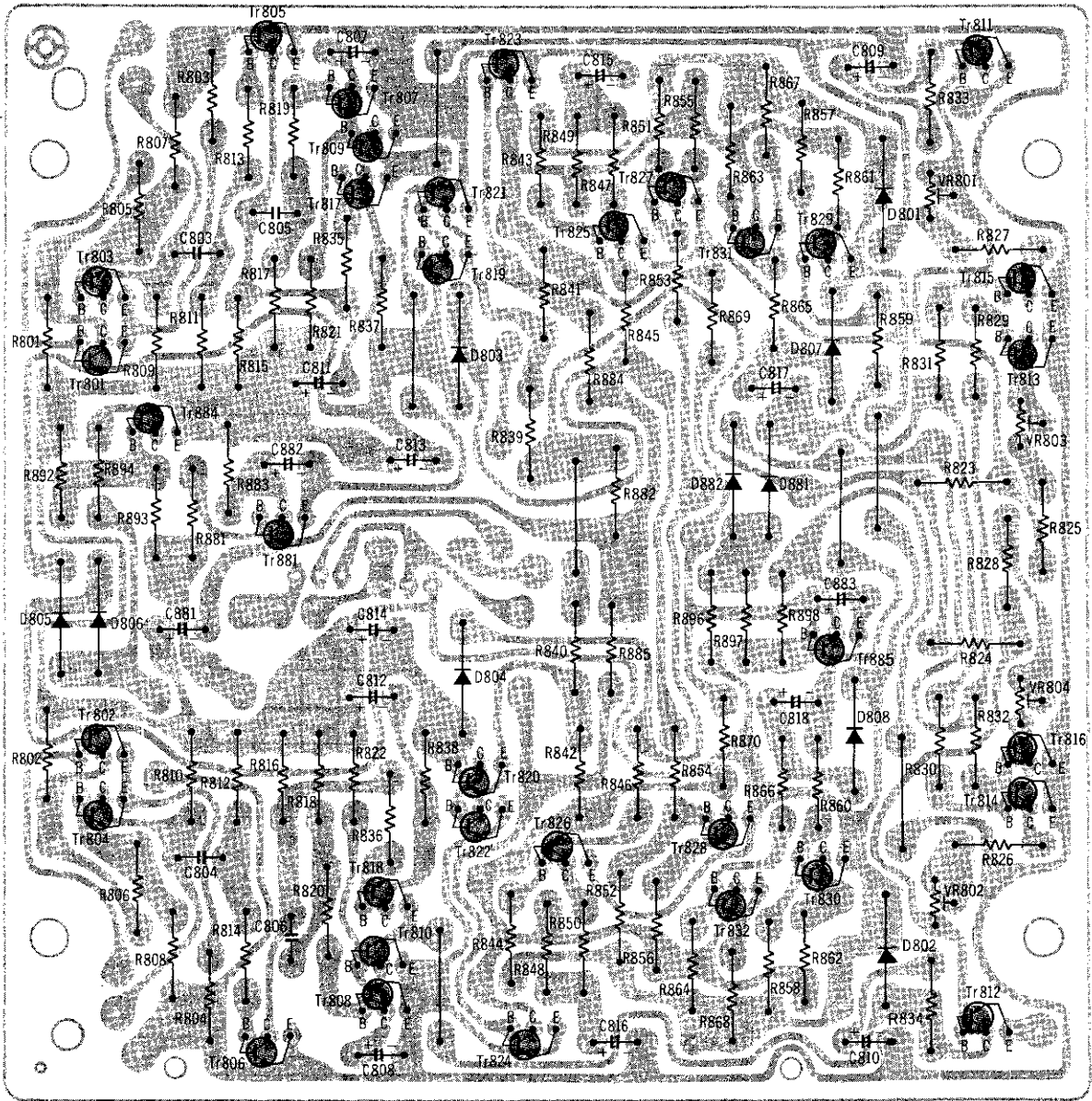


CIRCUIT BOARD

Reel Motor Driving



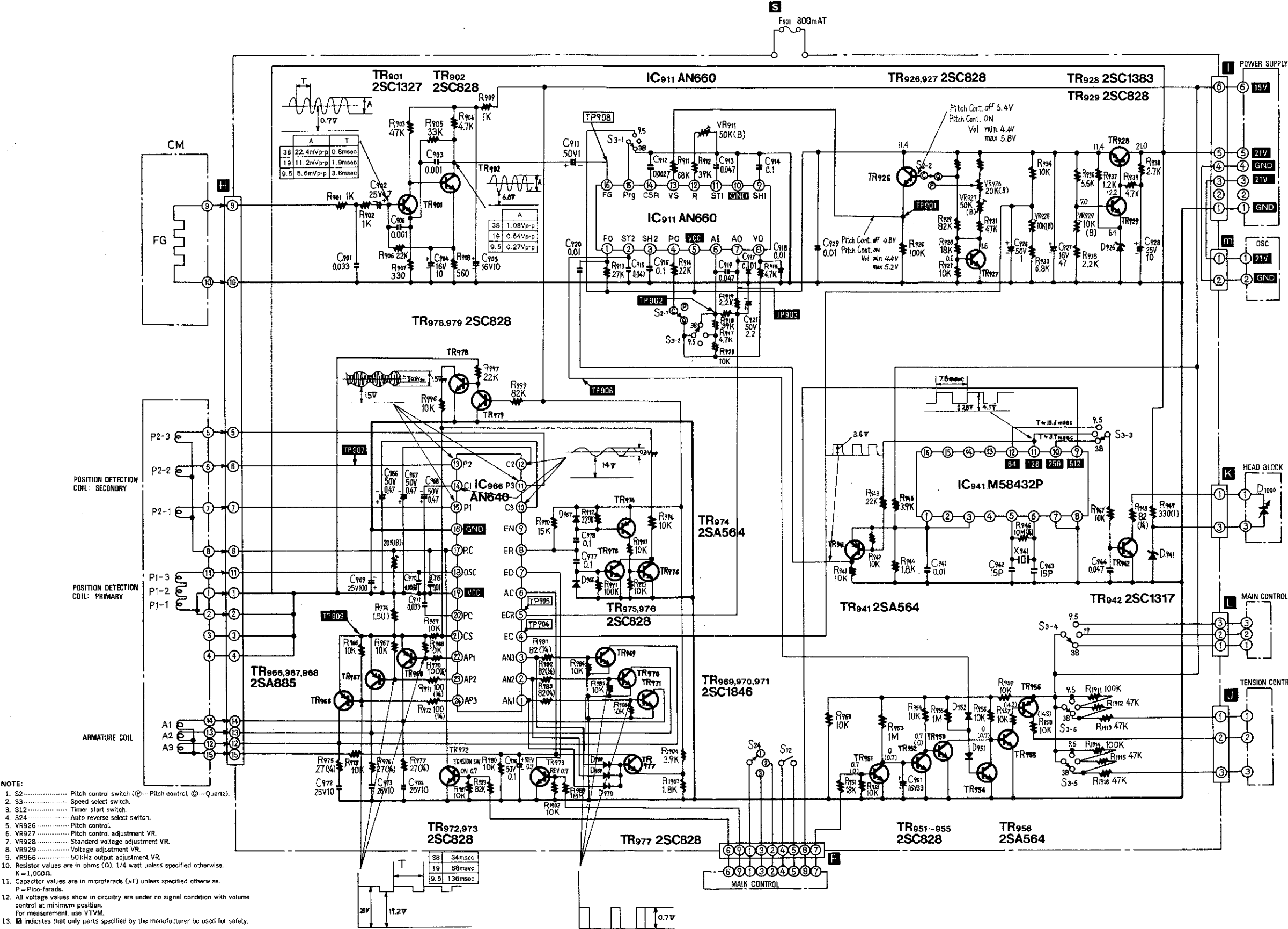
Reel Motor Tension Control



NOTE:  
The circuit shown in red on the conductor is B circuit.  
Values indicated in   are DC voltage between the chassis and electrical parts.

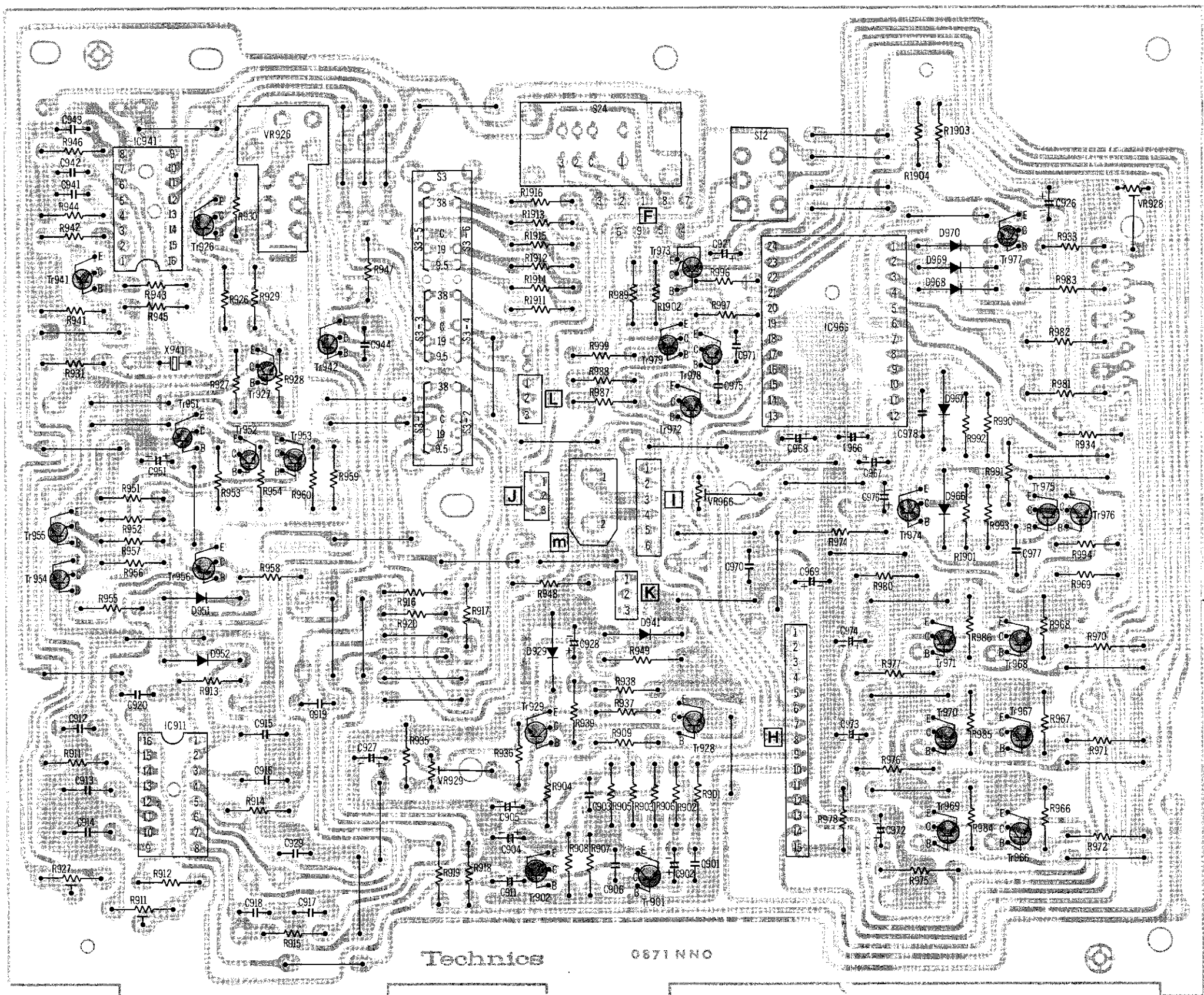
# SCHEMATIC DIAGRAM MODEL RS-1700

## Capstan Motor Section



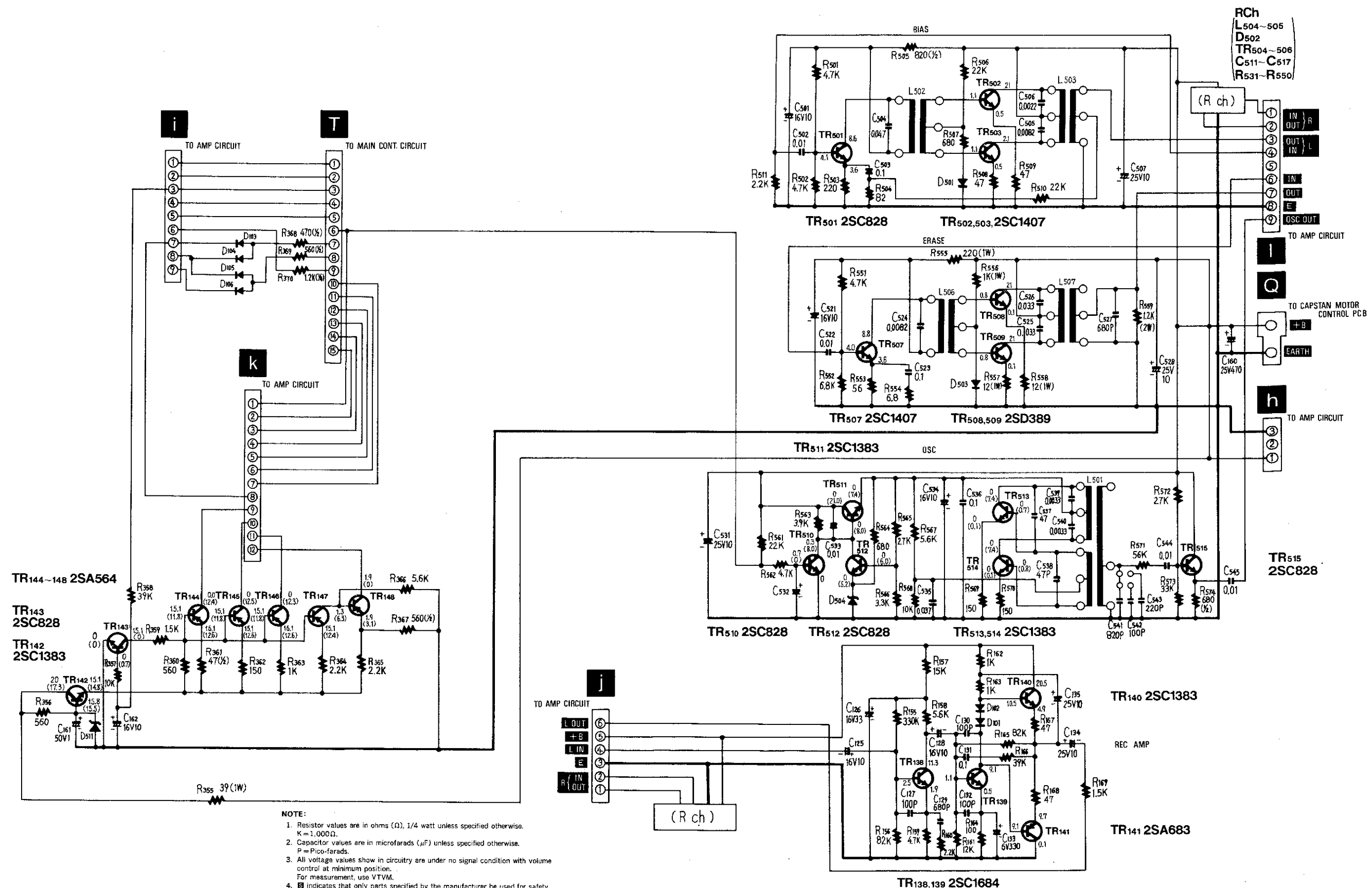
# CIRCUIT BOARD

Capstan Motor Control



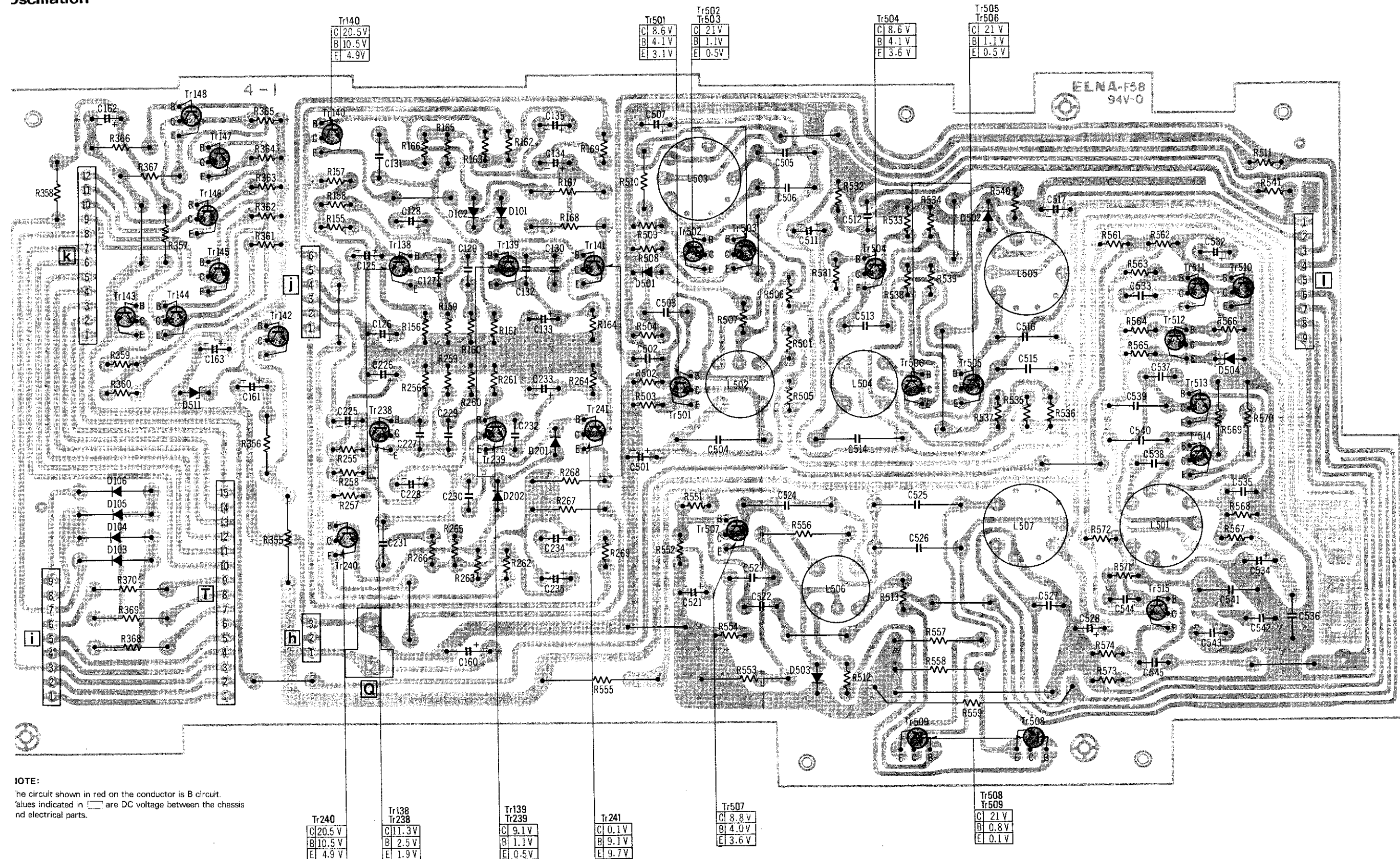
# SCHEMATIC DIAGRAM MODEL RS-1700

## Oscillation Section



# CIRCUIT BOARD

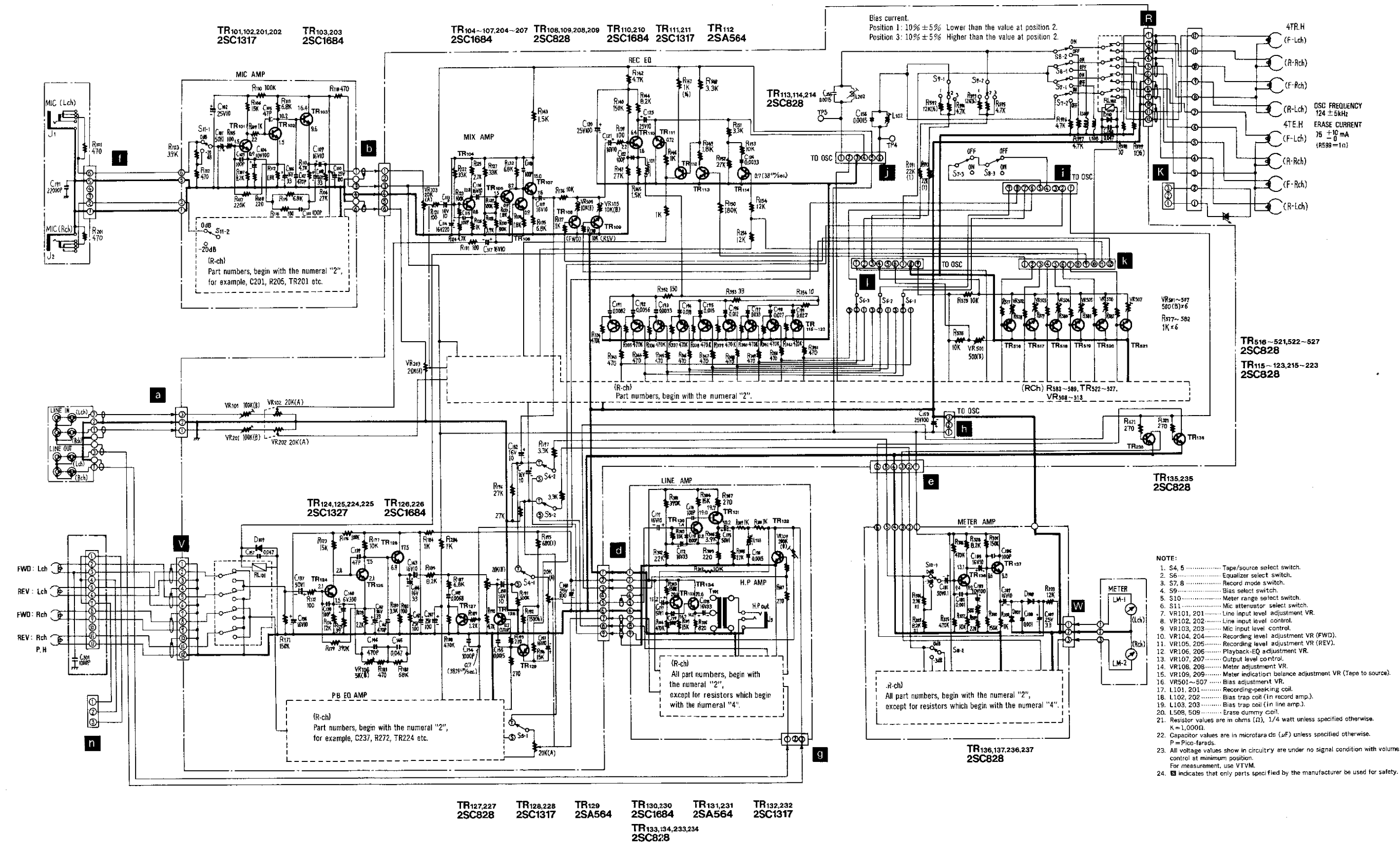
Oscillation



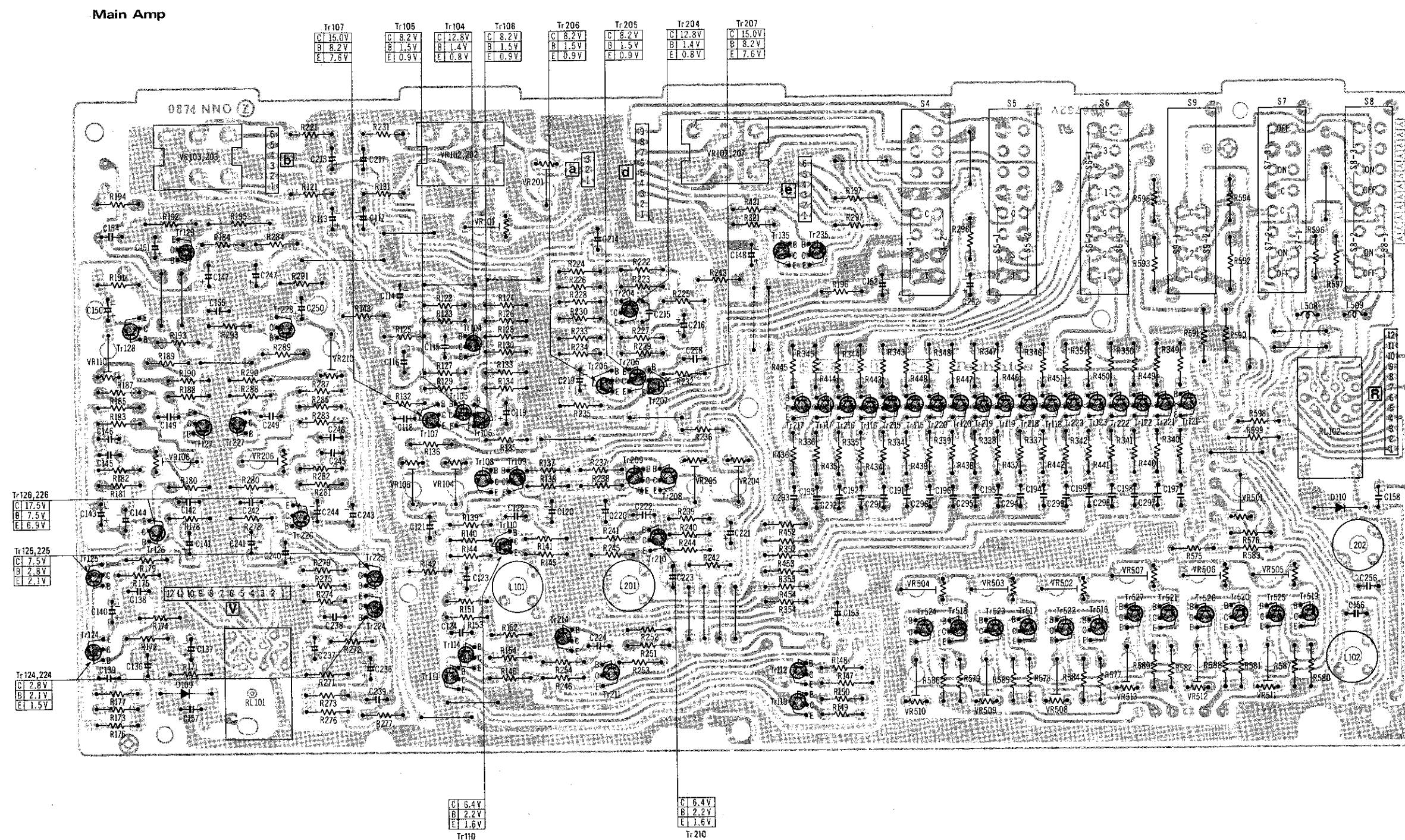
NOTE:  
The circuit shown in red on the conductor is B circuit.  
Values indicated in   are DC voltage between the chassis and electrical parts.

SCHEMATIC DIAGRAM MODEL RS-1700

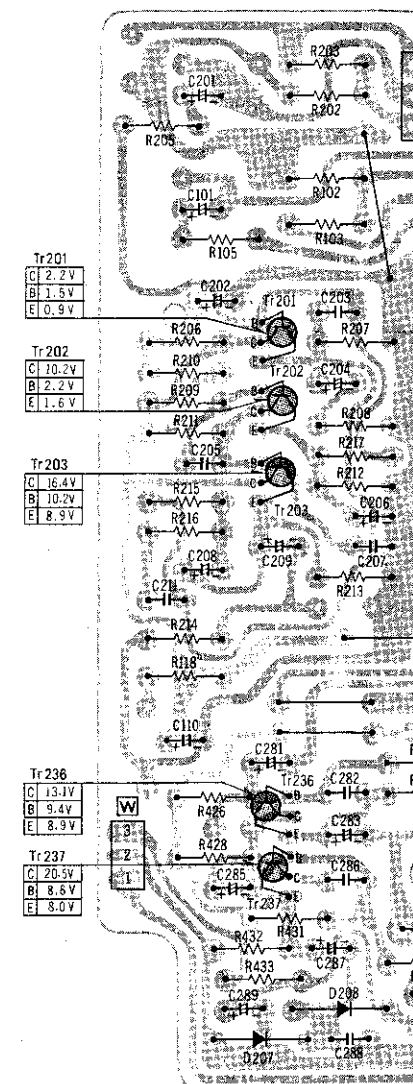
Main Amp Section



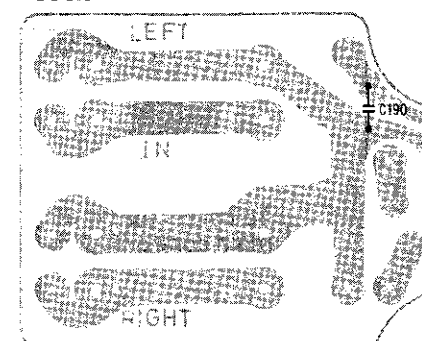
## CIRCUIT BOARD

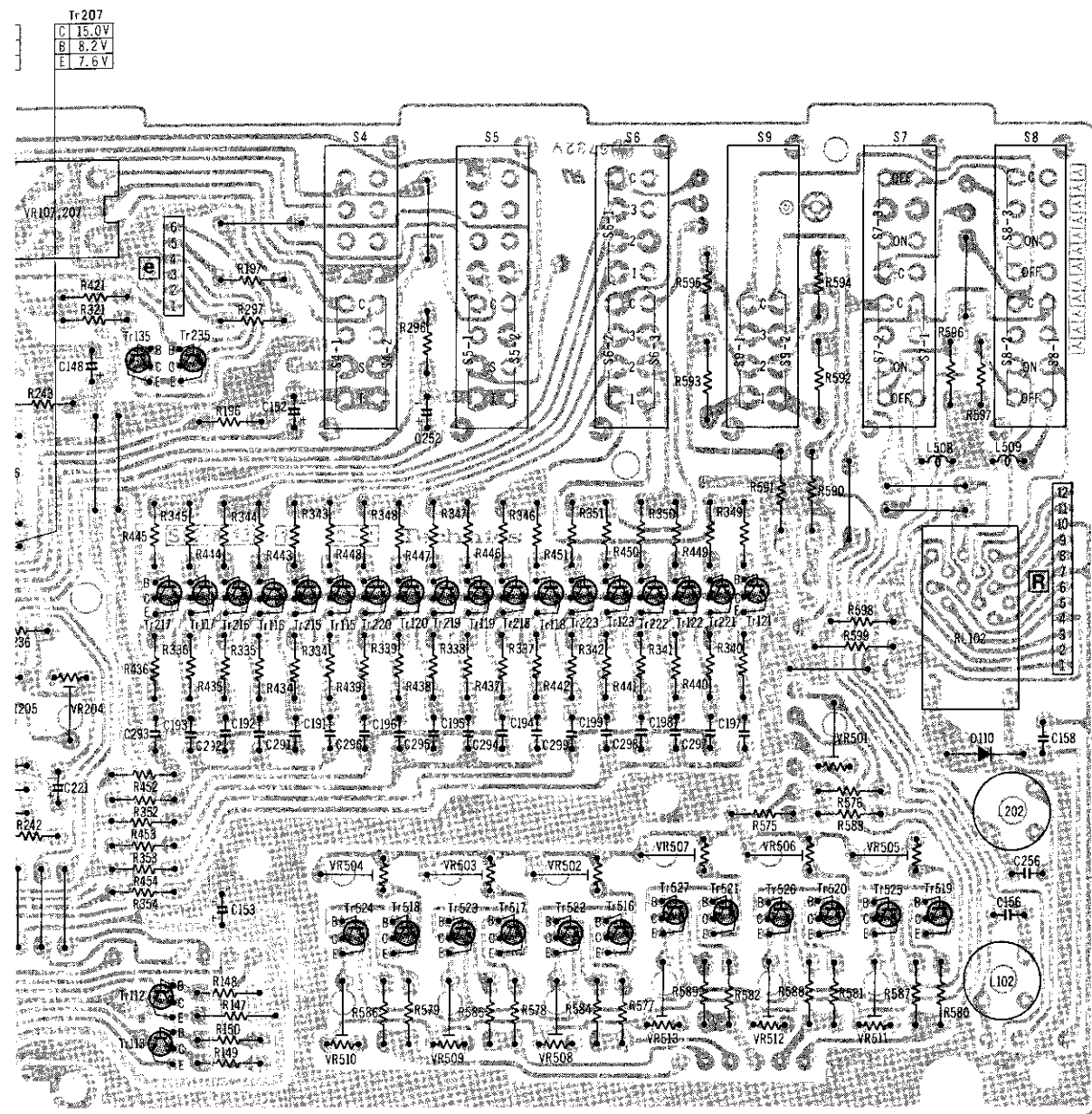


### Mic and Meter Amp

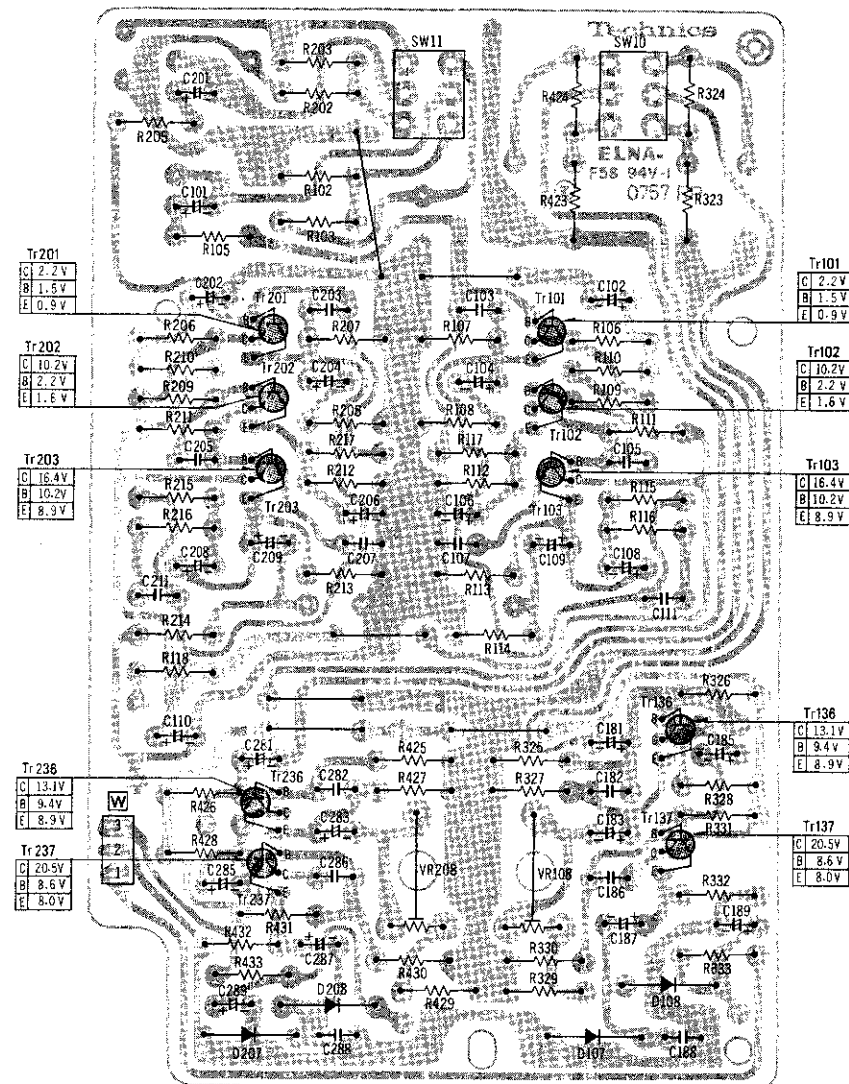


**Jack**

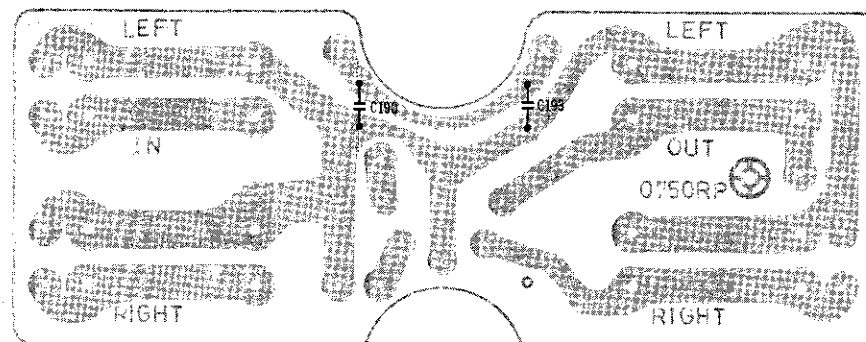




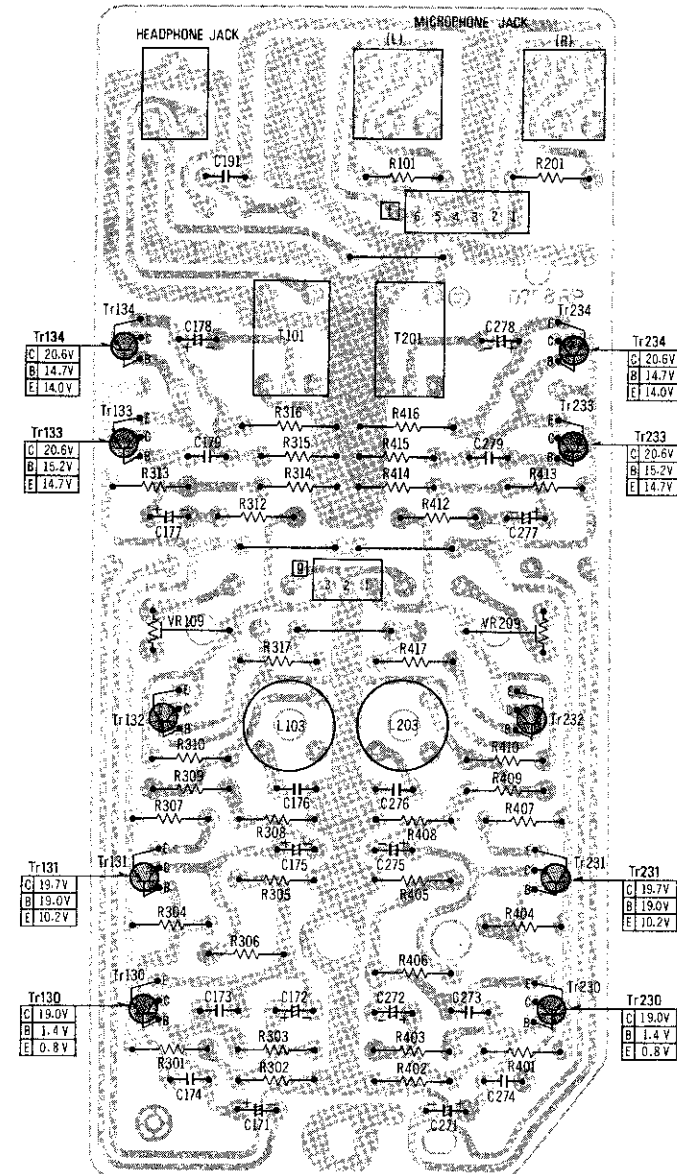
# Mic and Meter Amp



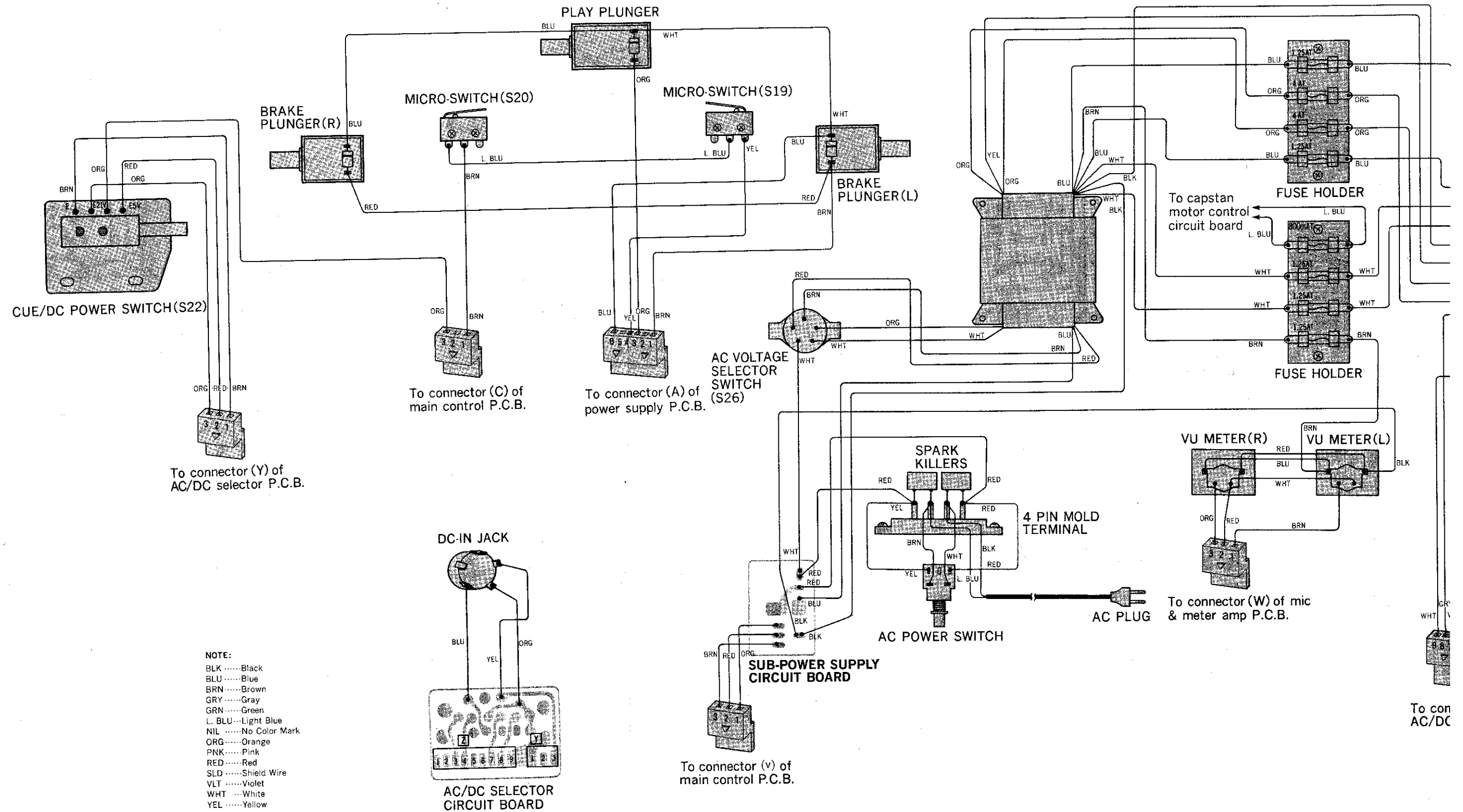
# Jack



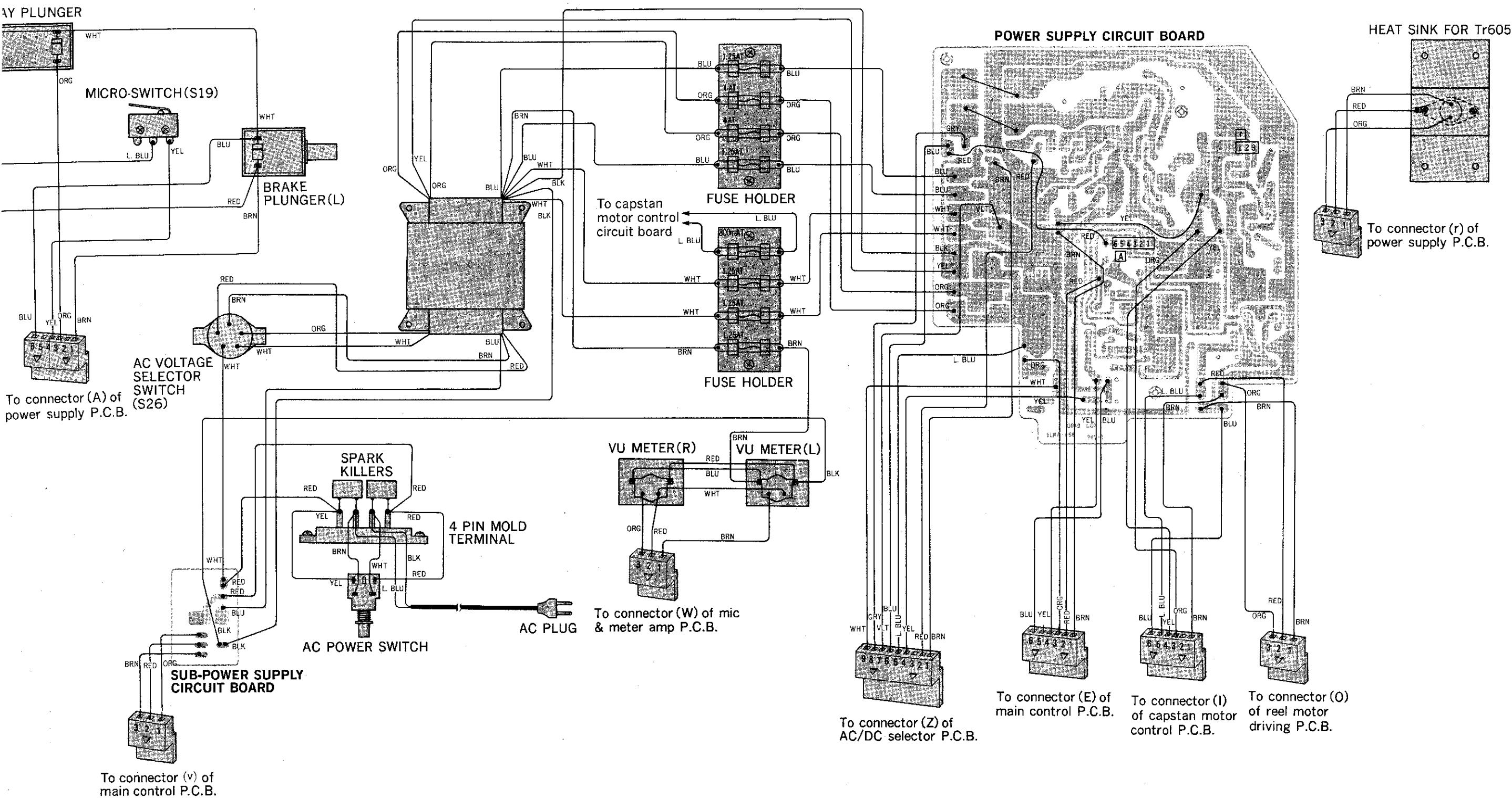
# Line-out Headphone Amp



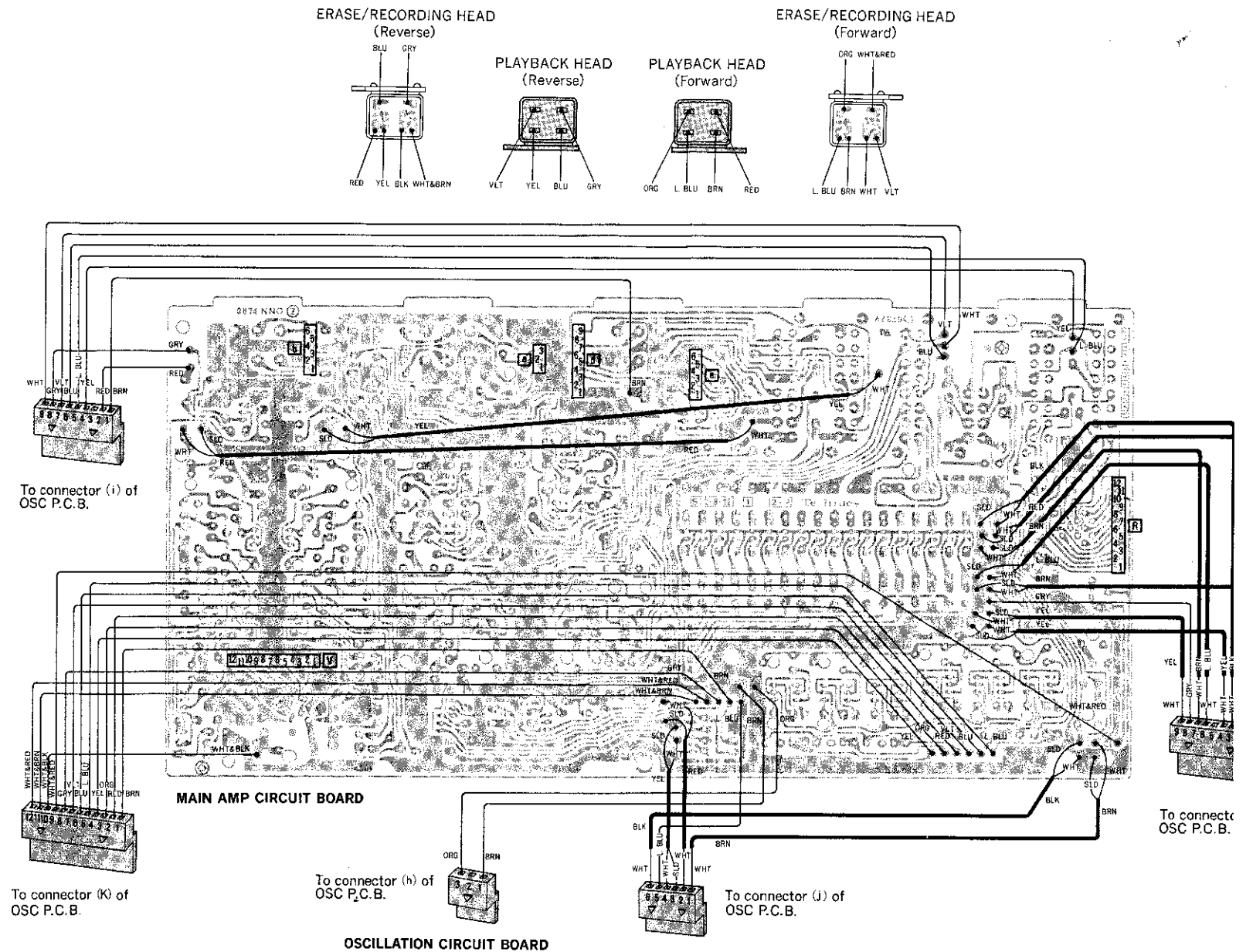
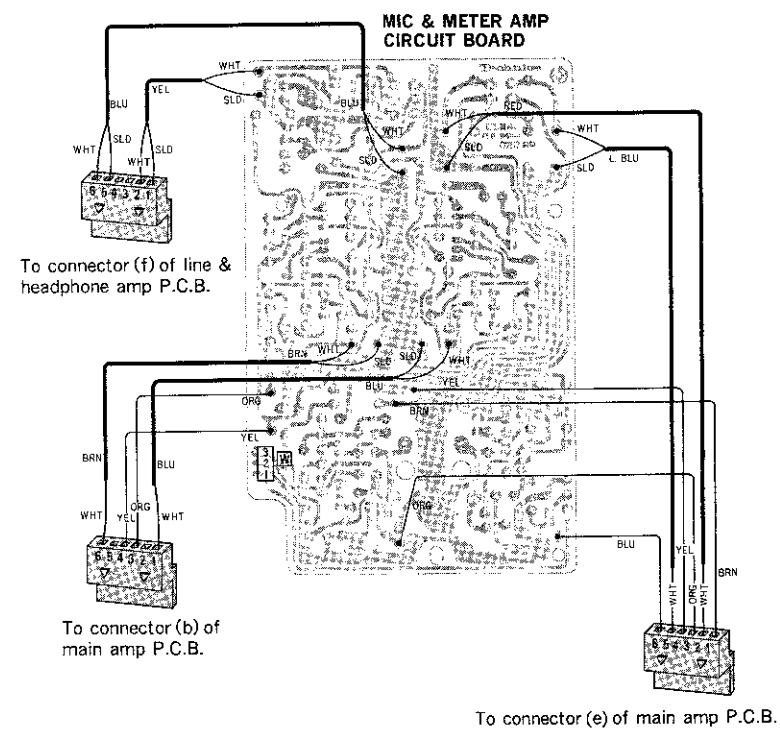
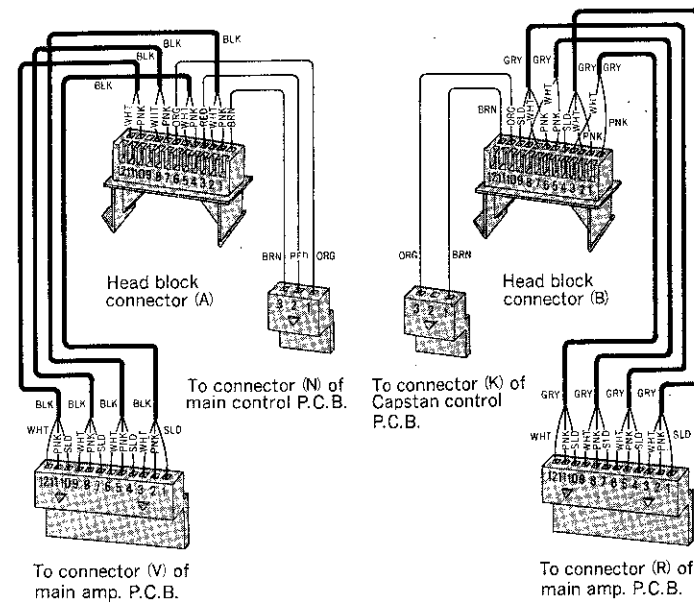
# WIRING CONNECTION DIAGRAM MODEL RS-1700



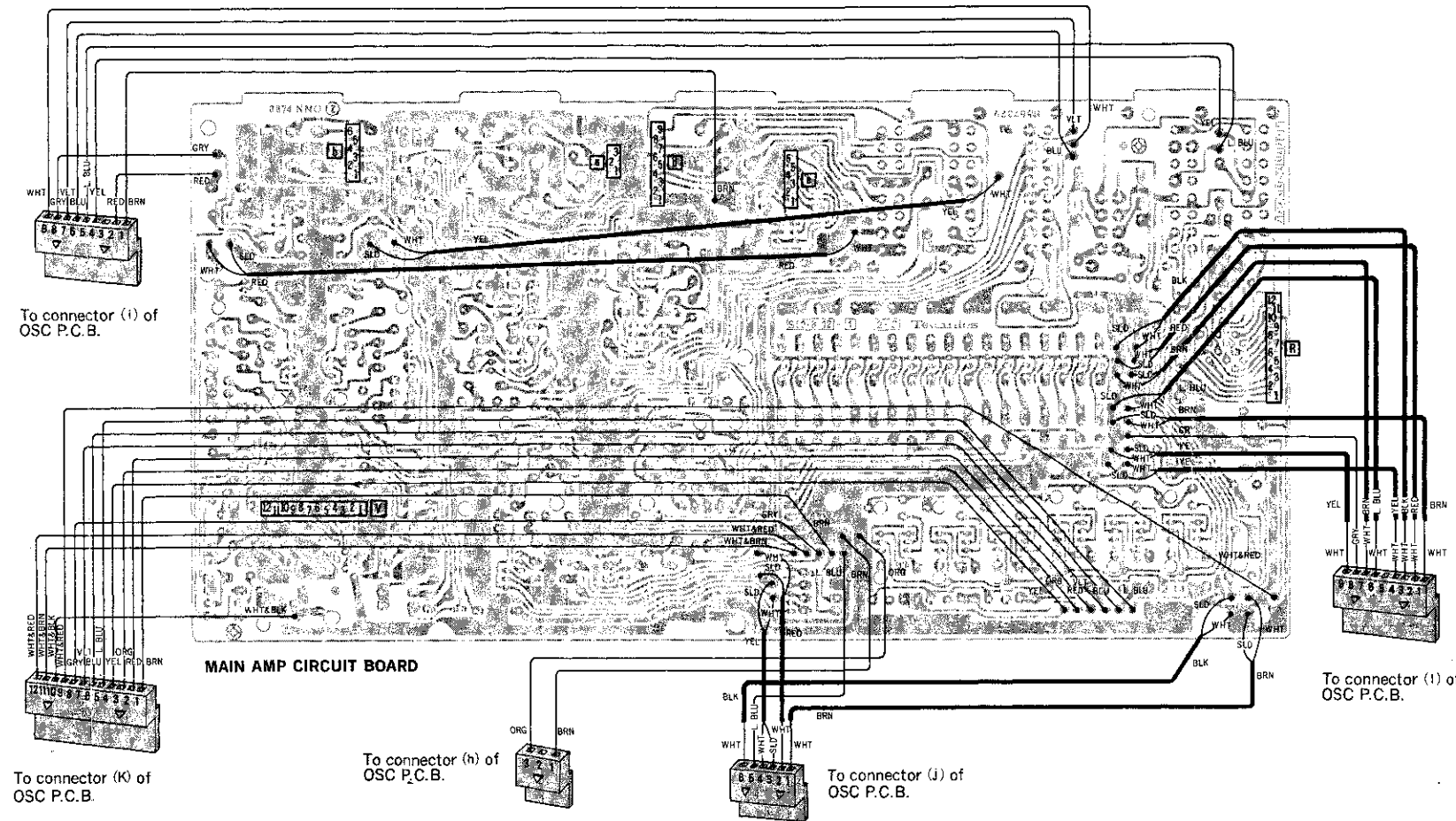
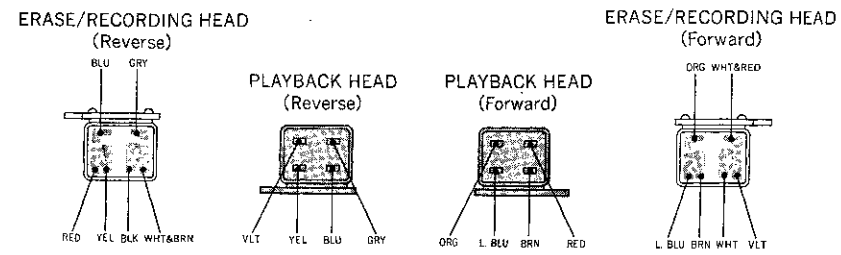
DEL RS-1700



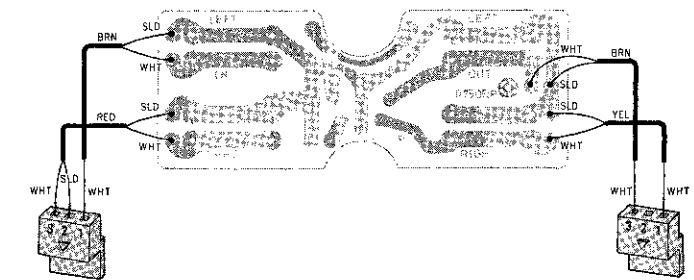
# WIRING CONNECTION DIAGRAM MODEL RS-1700



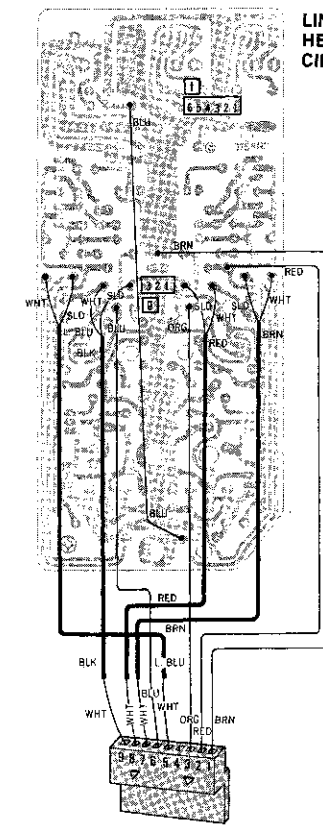
# GRAM MODEL RS-1700



## JACK CIRCUIT BOARD



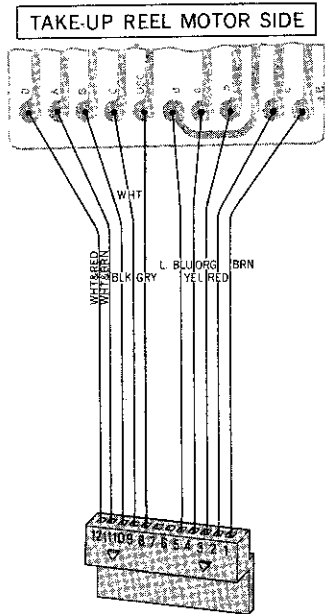
## LINE-OUT & HEADPHONE AMP CIRCUIT BOARD



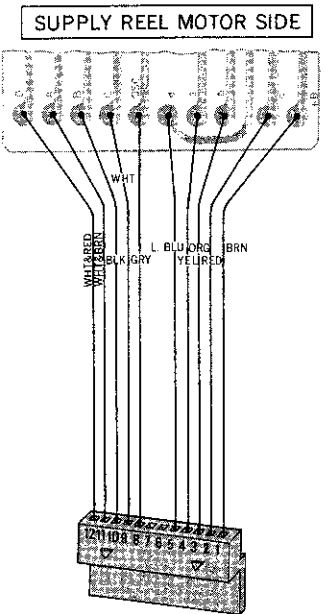
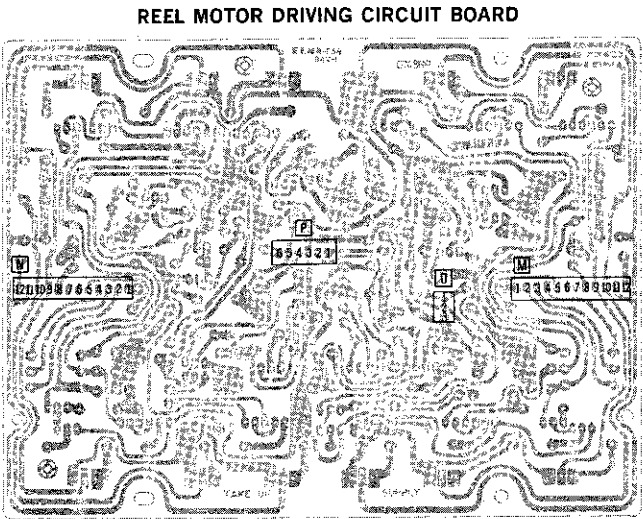
### NOTE:

BLK .....Black  
 BLU .....Blue  
 BRN .....Brown  
 GRY .....Gray  
 GRN .....Green  
 L. BLU...Light Blue  
 NIL .....No Color Mark  
 ORG .....Orange  
 PNK .....Pink  
 RED .....Red  
 SLD .....Shield Wire  
 VLT .....Violet  
 WHT .....White  
 YEL .....Yellow

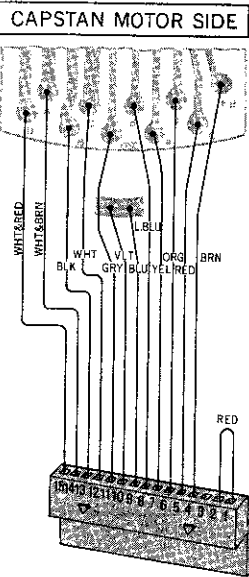
WIRING CONNECTION DIAGRAM MODEL RS-1700



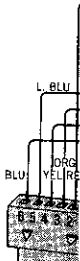
To connector (N) of reel motor driving P.C.B.



To connector (M) of reel motor driving P.C.B.

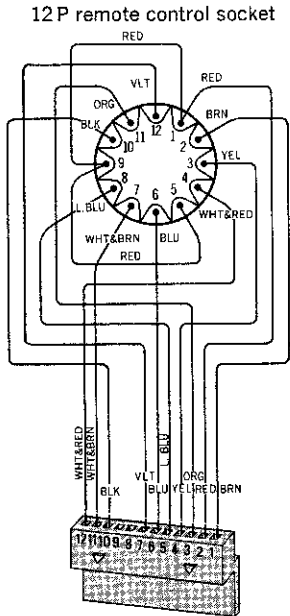


To connector (H) of capstan motor control P.C.B.

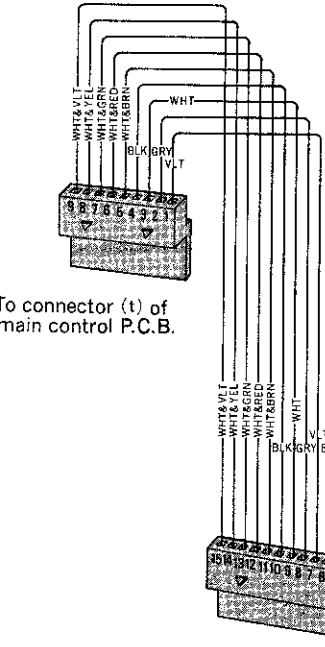
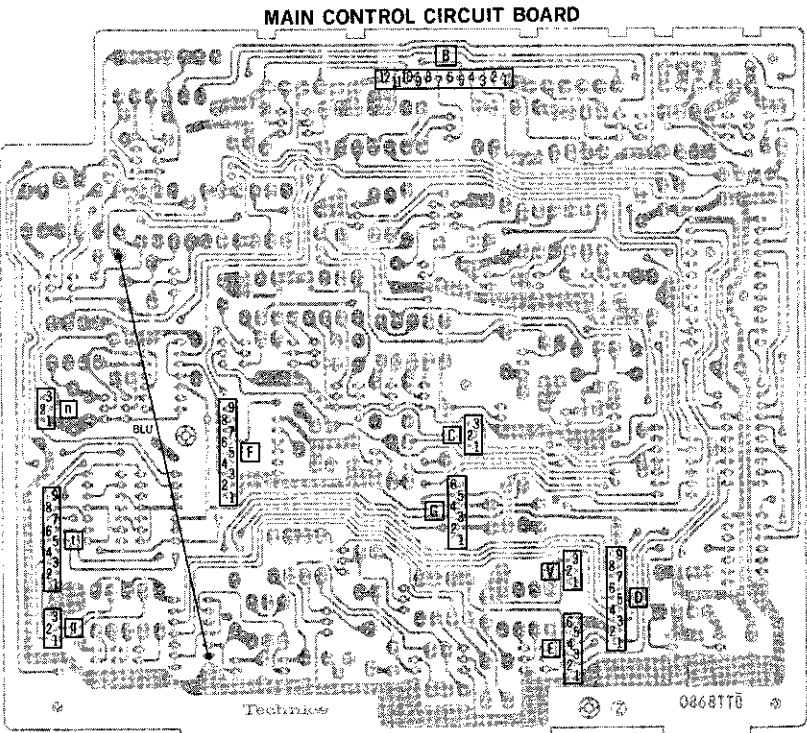


To connector (F) of reel motor driving P.C.B.

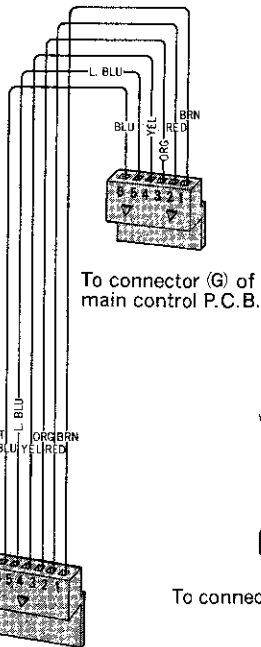
- NOTE:
- BLK .....Black
  - BLU .....Blue
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  - GRY .....Gray
  - GRN .....Green
  - L. BLU.....Light Blue
  - NIL .....No Color Mark
  - ORG .....Orange
  - PNK .....Pink
  - RED .....Red
  - SLD .....Shield Wire
  - VLT .....Violet
  - WHT .....White
  - YEL .....Yellow



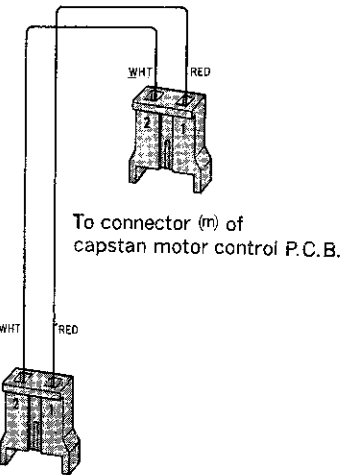
To connector (B) of main control P.C.B.



To connector (t) of main control P.C.B.



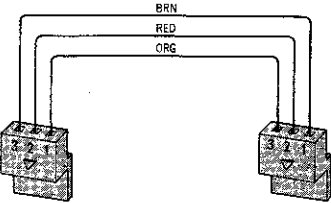
To connector (g) of main control P.C.B.



To connector (m) of capstan motor control P.C.B.

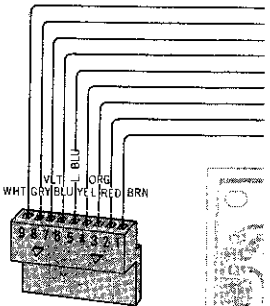
To connector (Q) of OSC P.C.B.

To connector (T) of OSC P.C.B.



To connector (q) of main control P.C.B.

To connector (L) of capstan motor control P.C.B.



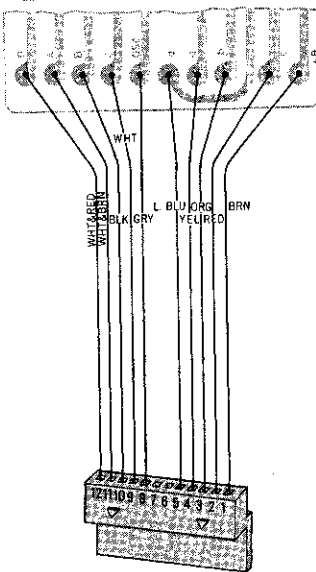
To connector (F) of main control P.C.B.

1 MODEL RS-1700

IRD



SUPPLY REEL MOTOR SIDE

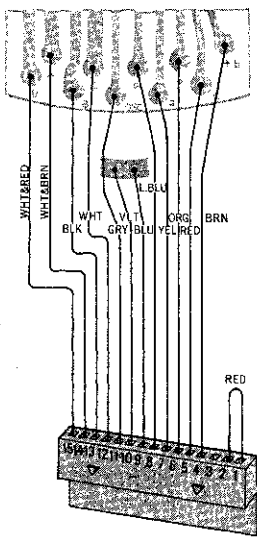


To connector (M) of reel motor driving P.C.B.

NOTE:

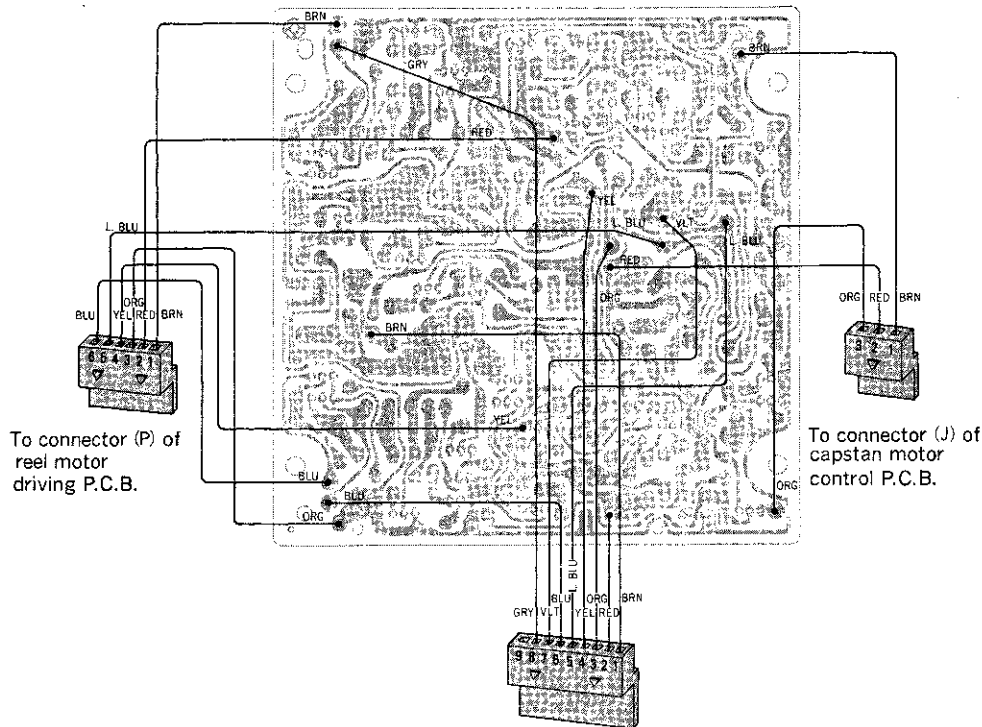
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- BLU .....Blue
- BRN .....Brown
- GRY .....Gray
- GRN .....Green
- L. BLU.....Light Blue
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- ORG .....Orange
- PNK .....Pink
- RED .....Red
- SLD .....Shield Wire
- VL T .....Violet
- WHT .....White
- YEL .....Yellow

CAPSTAN MOTOR SIDE

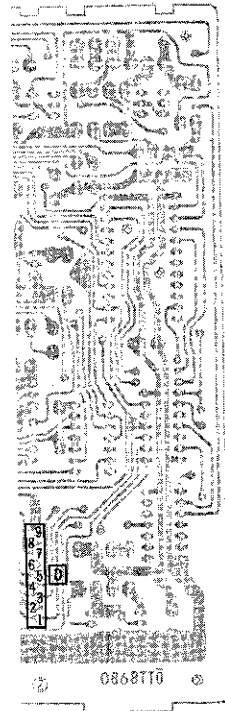


To connector (H) of capstan motor control P.C.B.

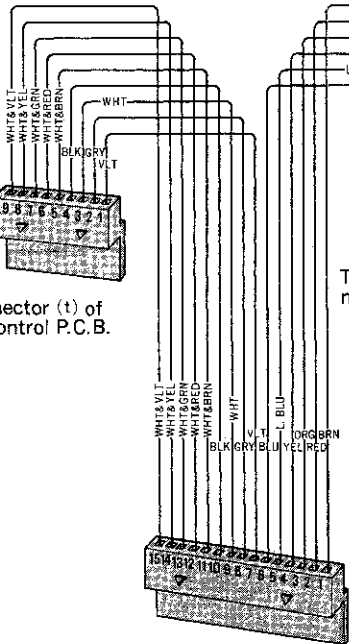
REEL MOTOR TENSION CONTROL CIRCUIT BOARD



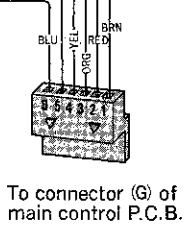
To connector (D) of main control P.C.B.



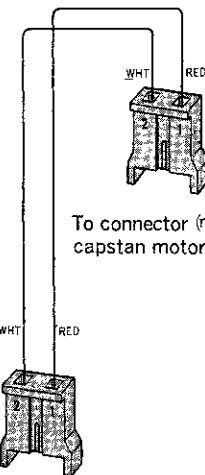
To connector (t) of main control P.C.B.



To connector (T) of OSC P.C.B.

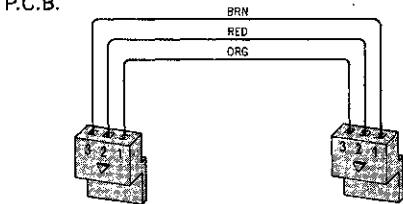


To connector (G) of main control P.C.B.



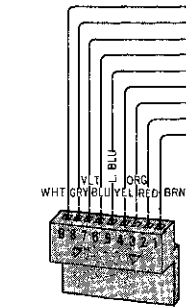
To connector (m) of capstan motor control P.C.B.

To connector (Q) of OSC P.C.B.

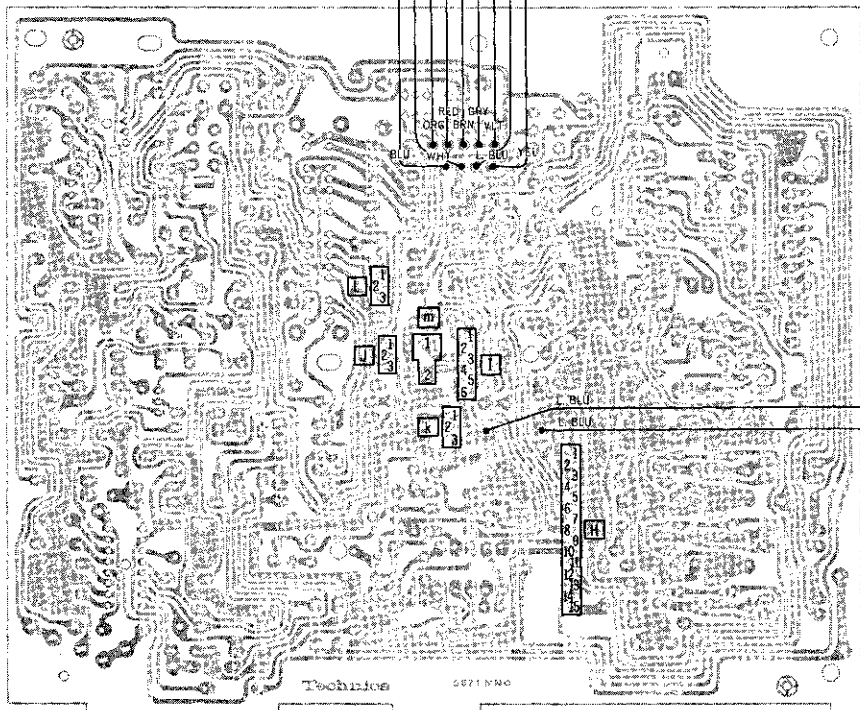


To connector (q) of main control P.C.B.

To connector (L) of capstan motor control P.C.B.



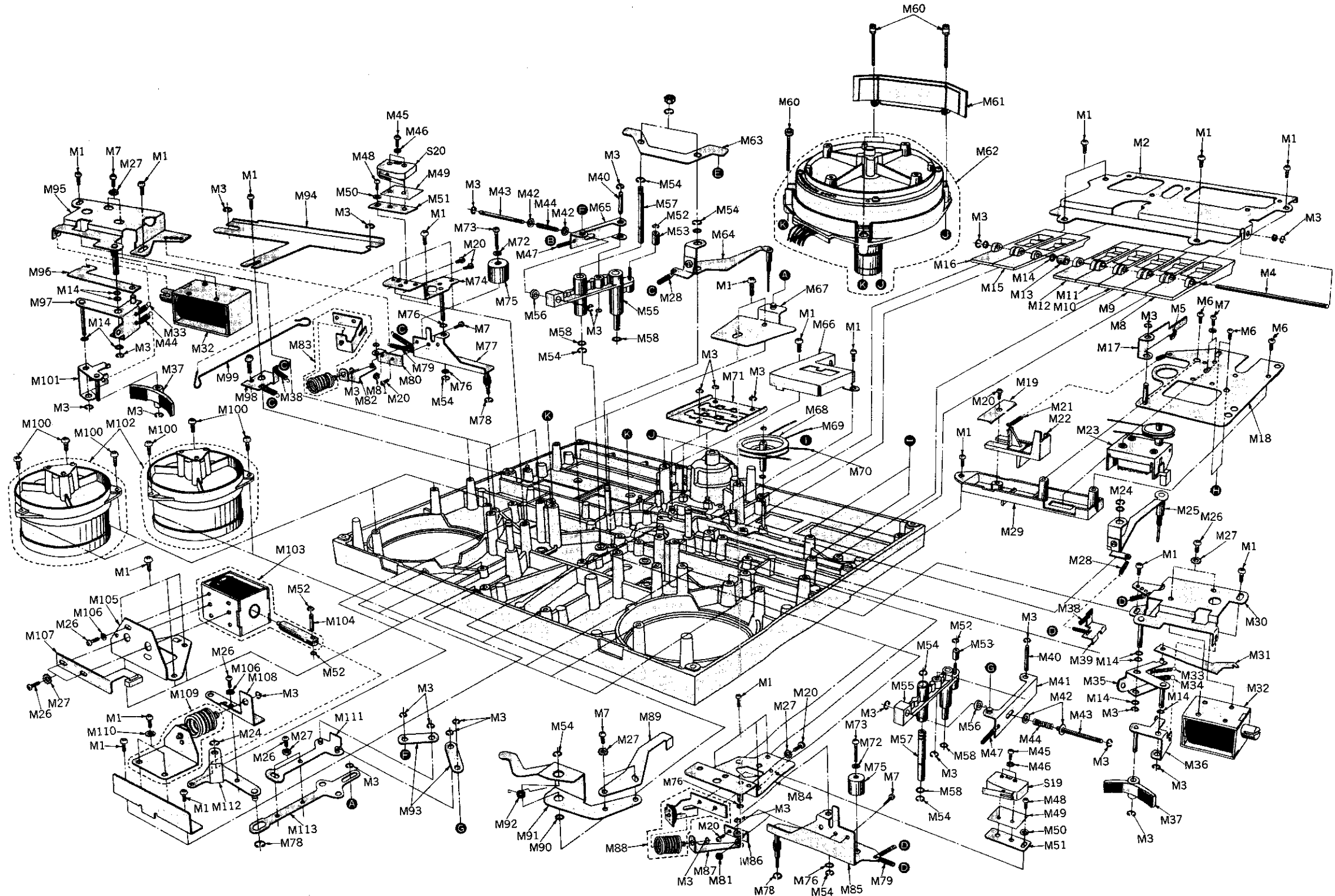
To connector (F) of main control P.C.B.



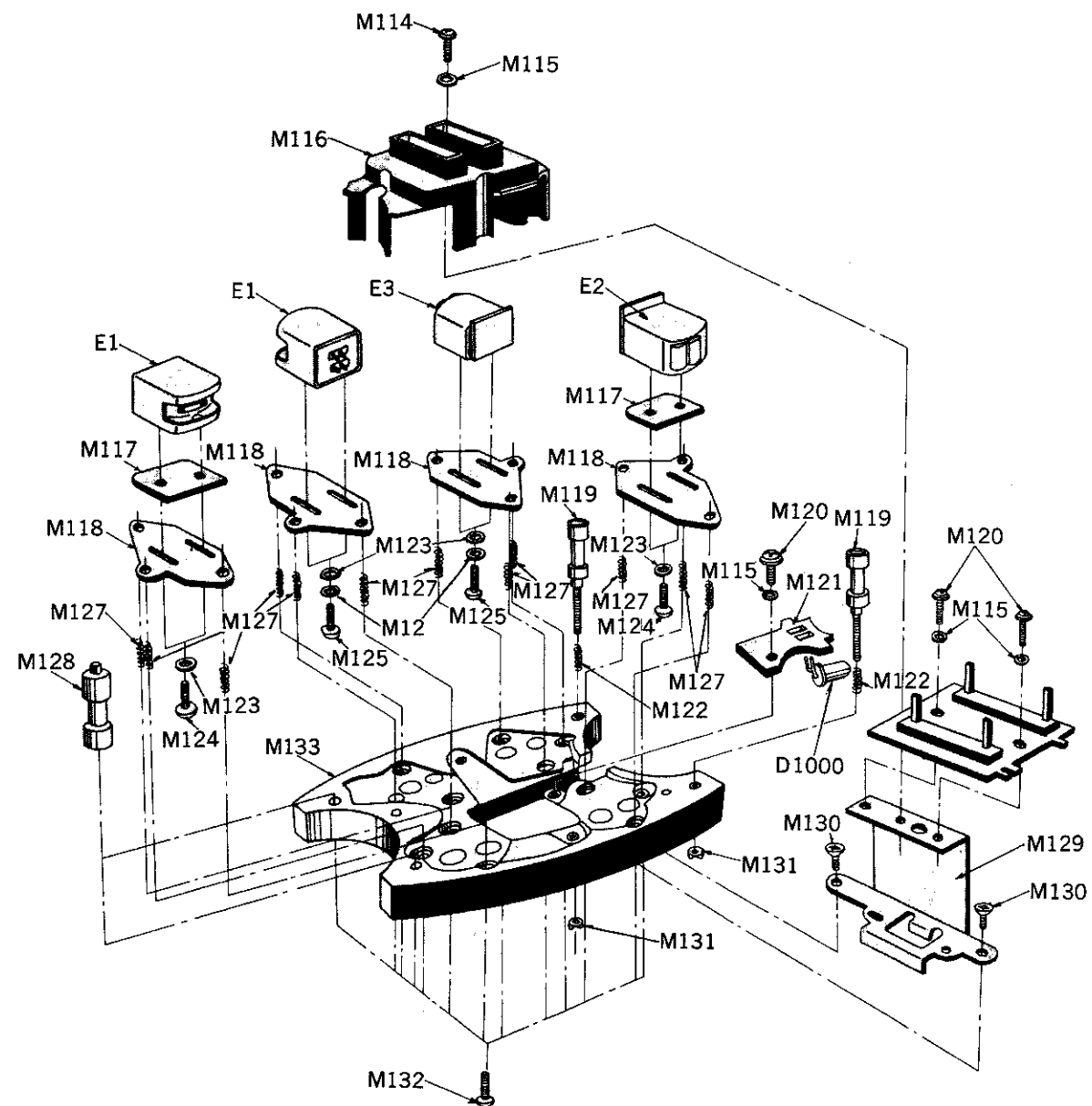
CAPSTAN MOTOR CONTROL CIRCUIT BOARD

To 800 mA fuse in power supply section

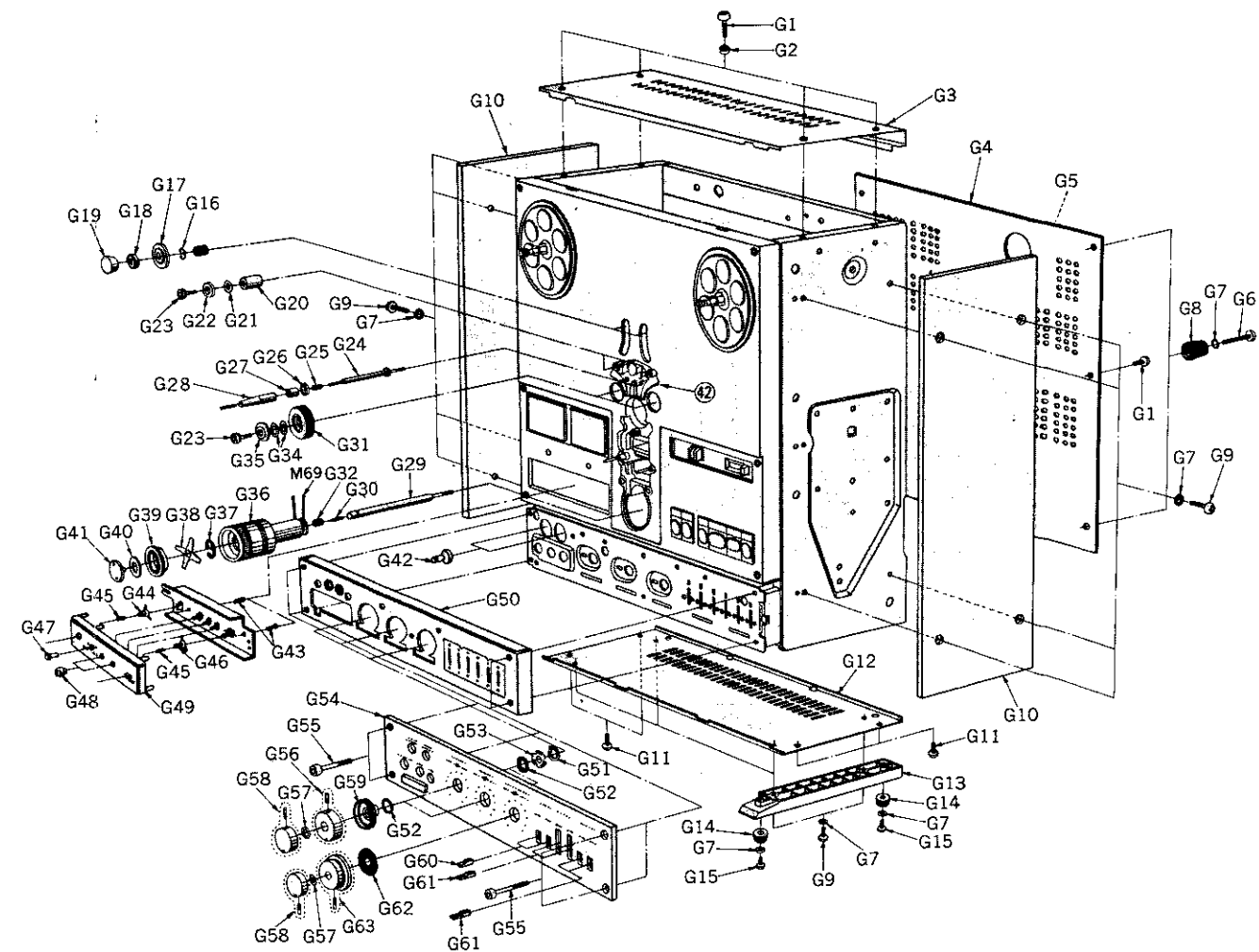
# EXPLODED VIEWS



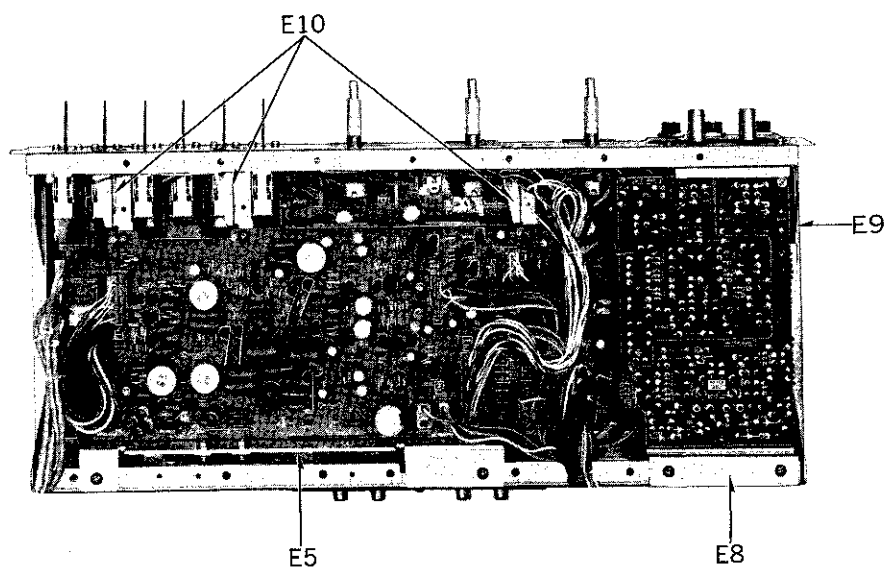
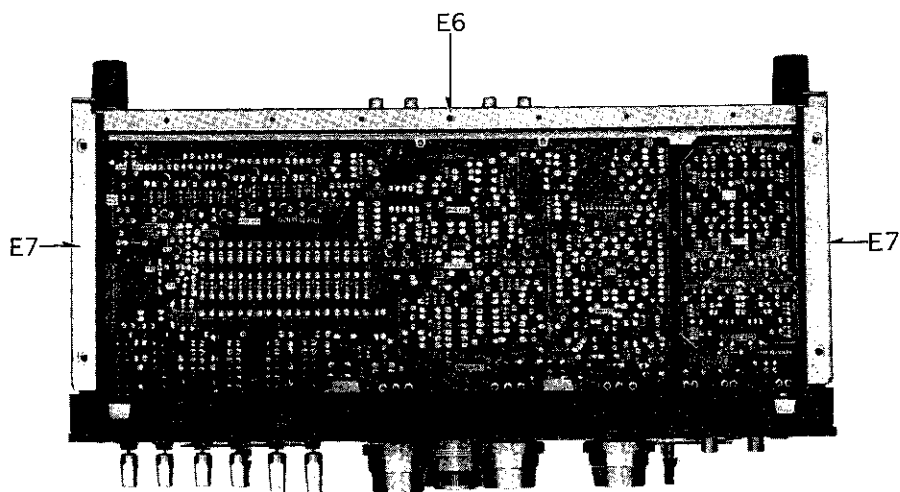
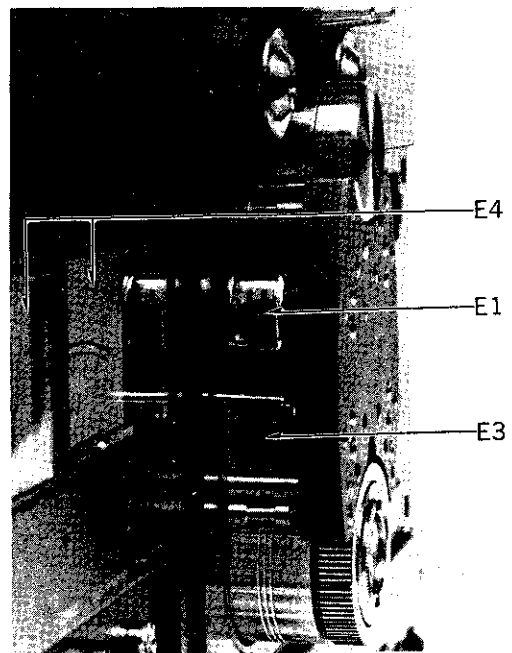
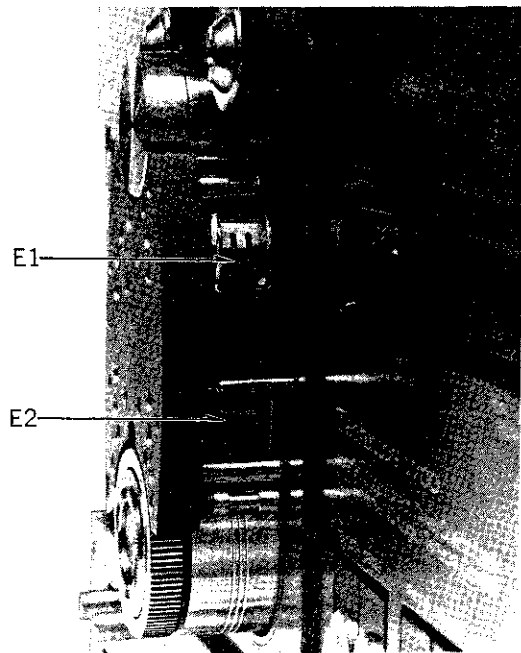
## EXPLODED VIEWS

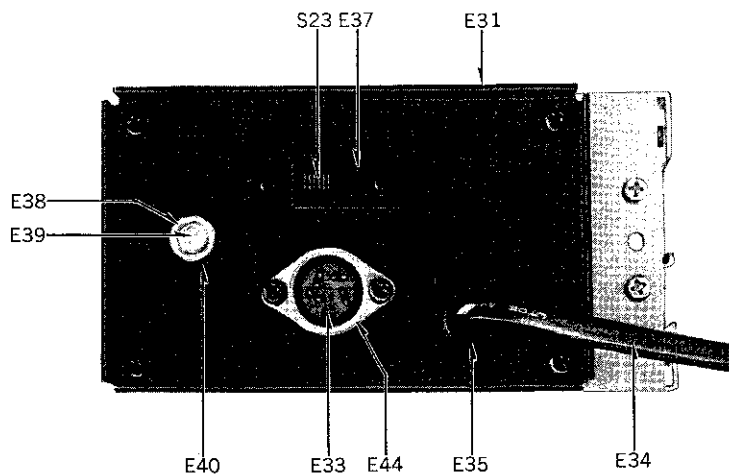
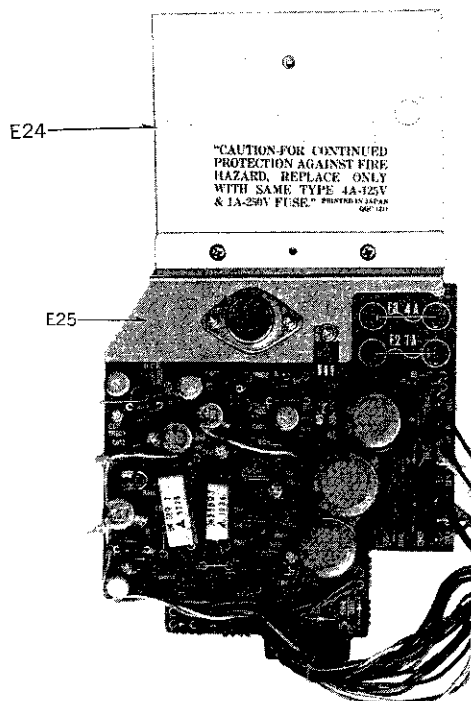
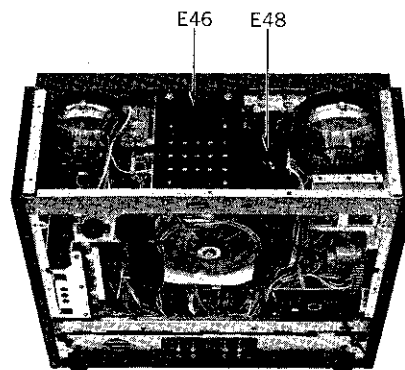
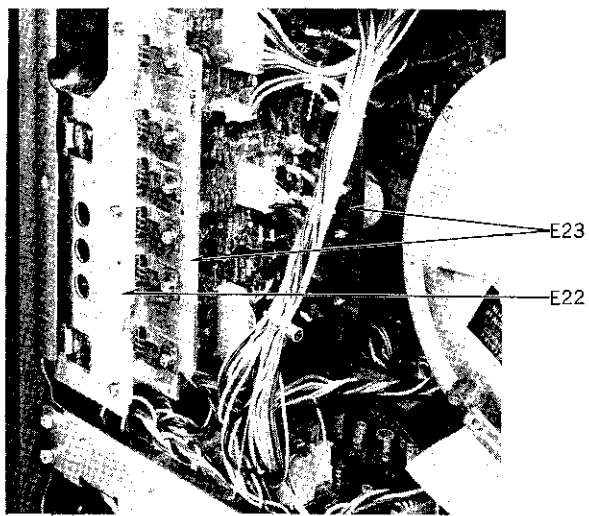
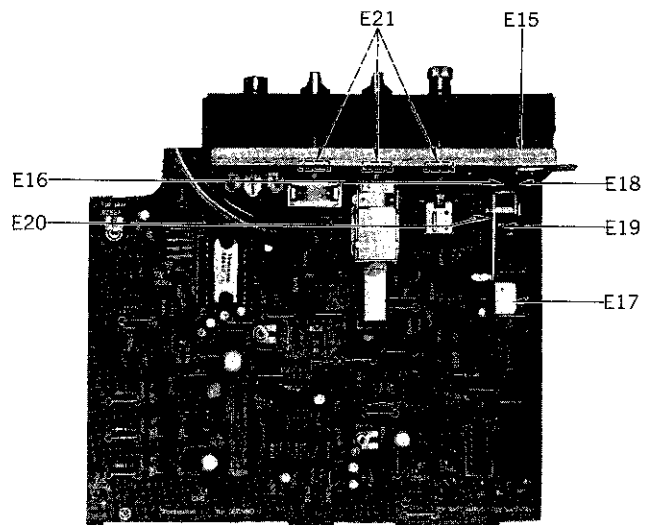
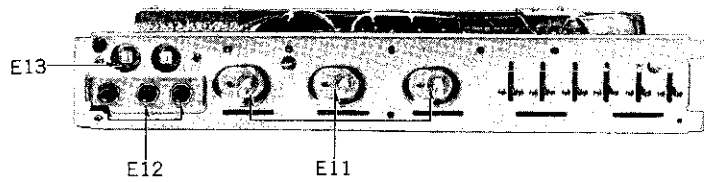


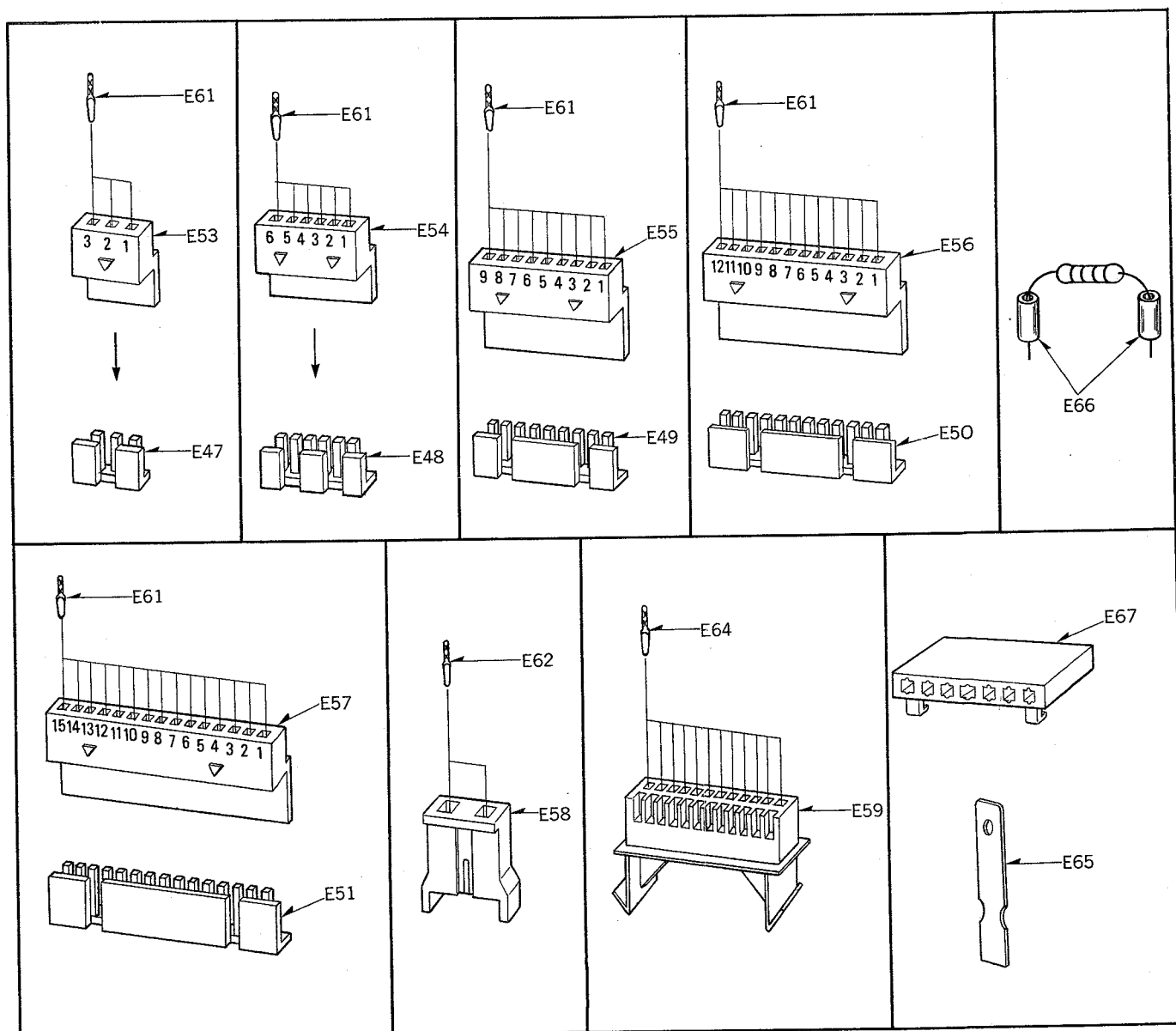
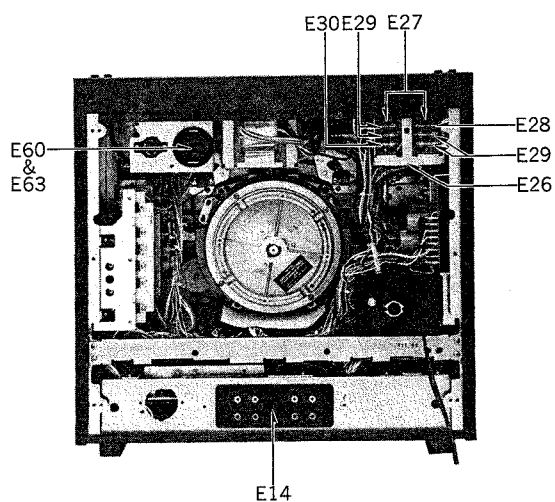
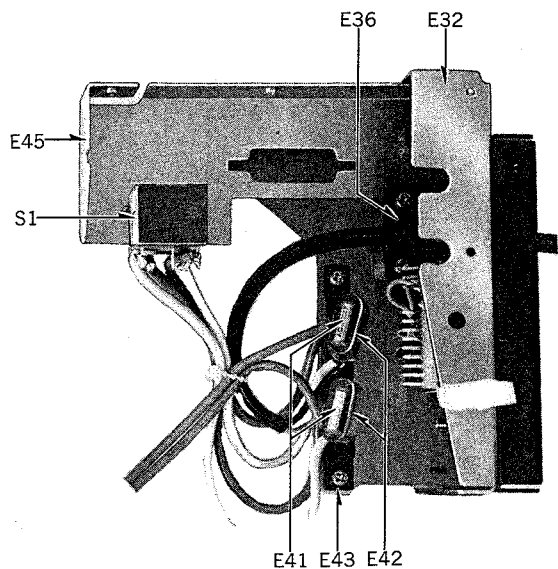
## CABINET PARTS



# ELECTRICAL PARTS LOCATION







# Service Manual

## Original

Open Deck

## RS-1700

Vol. 2

### Information:

The RS-1700 Service Manual Vol. 2 is provided for the purposes of measurements and adjustments. Use Vol. 2 together with Vol. 1. The measuring and adjusting methods of RS-1700 are almost the same as those of RS-1500US. Common items are summed up into a list to simplify the manual. So, for details, refer to the RS-1500US Service Manual.



**FOR MEASURE-  
MENTS AND  
ADJUSTMENTS**

### RS-1500U MECHANISM SERIES

### Specifications (Catalog specifications for sales)

Operation: Automatic reverse  
Track system: 4-track 2-channel recording, playback, erasure on both way  
Heads: 6 heads system  
2-record/erasure combination head and 2-playback head  
Motors: 3 direct-drive motors system  
Capstan: Quartz control phase-locked DC brushless servo direct-drive motor  
Reel table: 2-tape tension controlled DC brushless direct-drive motor  
Reel size: 13 cm to 26.5 cm (5" to 10-1/2") outside diameter  
Tape speed: 38 cm/s, 19 cm/s and 9.5 cm/s (15 ips, 7-1/2 ips and 3-3/4 ips) (recording and playback)  
Wow and flutter: 38 cm/s (15 ips); 0.018% (WRMS),  $\pm 0.035\%$  (Peak DIN)  
19 cm/s (7-1/2 ips); 0.03% (WRMS),  $\pm 0.06\%$  (Peak DIN)  
9.5 cm/s (3-3/4 ips); 0.06% (WRMS),  $\pm 0.12\%$  (Peak DIN)  
Speed deviation:  $\pm 0.1\%$  at 38 cm/s (15 ips)  
Speed fluctuation: 0.05% at 38 cm/s (15 ips)  
Frequency response: 38 cm/s (15 ips); 30 ~ 30,000 Hz  $\pm 3$  dB (rec. level = -10 dB from 0 VU)  
19 cm/s (7-1/2 ips); 20 ~ 25,000 Hz  $\pm 3$  dB (rec. level = -20 dB from 0 VU)  
9.5 cm/s (3-3/4 ips); 20 ~ 15,000 Hz  $\pm 3$  dB (rec. level = -20 dB from 0 VU)  
Signal-to-noise ratio: Weighted (ASA-A curve) 1 kHz (3% THD) (185 nWb/m + 6 dB)  
Recording level: 38 cm/s (15 ips); 68 dB 62 dB  
19 cm/s (7-1/2 ips); 68 dB 62 dB  
9.5 cm/s (3-3/4 ips); 67 dB 60 dB  
Distortion (THD): Measured via tape at 400 Hz (at any speed)  
Less than 0.8% (0 VU)  
Less than 2.0% (185 nWb/m + 6 dB)  
Channel separation: Better than 50 dB  
Erasing ratio: Better than 65 dB (rec. level = +10 dB at 1 kHz)  
Pitch control:  $\pm 6\%$  (recording and playback)  
Time counter accuracy:  $\pm 1\%$  at 38 cm/s (15 ips)  
Fast winding time: 150 sec. for 762 m (1.5 mil, 2500 feet) tape  
Auto-reverse sensing: Photoelectric

Auto-stop sensing: Photoelectric, Tension roller switches or Take-up reel table servo control system  
Recording bias: 120 kHz  
Bias level: BIAS selector at "1" 90%  
at "2" 100%  
at "3" 110%  
Equalization: NAB standard position "2" of "EQ" and "BIAS" selector set for Scotch #207 tape  
Recording level calibration: Referenced to 185 nWb/m  
Inputs: MIC; Unbalanced phone type jack sensitivity 0.25 mV (-72 dB), input impedance 4.7 K $\Omega$  (at 0 VU, Mic. level control at maximum position) 2.5 mV (-52 dB)/4.7 K $\Omega$  with 20 dB Mic.  
Attenuation switch on. overload margin 55 dB (75 dB with 20 dB Mic. Att.) applicable microphone impedance 400  $\Omega$  ~ 10 K $\Omega$   
LINE; Unbalanced phono type jack sensitivity 60 mV (-24 dB), input impedance 150 K $\Omega$  overload margin = infinity (line input connected to LINE IN level control before pass through the amplifier)  
THROUGH OUT; Same as LINE IN (connected in parallel to LINE IN)  
Outputs: LINE; 2-pair of unbalanced phone type jack output level 0.55 V at 0 VU (output level control at "8")  
0.775 V or more at output level control maximum output impedance less than 3 K $\Omega$  load impedance 22 K $\Omega$  over  
HEADPHONE; Stereo phone type jack output level 80 mV at 0.55 V line output load impedance 8  $\Omega$   
Power requirements: AC 110/125/220/240 V, 50/60 Hz  
DC 24 V, 4.9 A peak (with optional battery adaptor RP-086)  
Power consumption: 160 W  
Weight: 25.7 kg, (56 lbs 9 oz)  
Dimensions (W x H x D): 45.6 cm x 44.6 cm x 25.8 cm (18" x 17-1/2" x 10-1/8")

Specifications based on use of Technics RT-10B218 (Scotch #207) tape.  
Specifications are subject to change without notice.

**Matsushita Electric Trading Co., Ltd.**  
P.O. Box 288, Central Osaka Japan

2505

## I. TEST PREPARATION AND TEST INSTRUMENTS

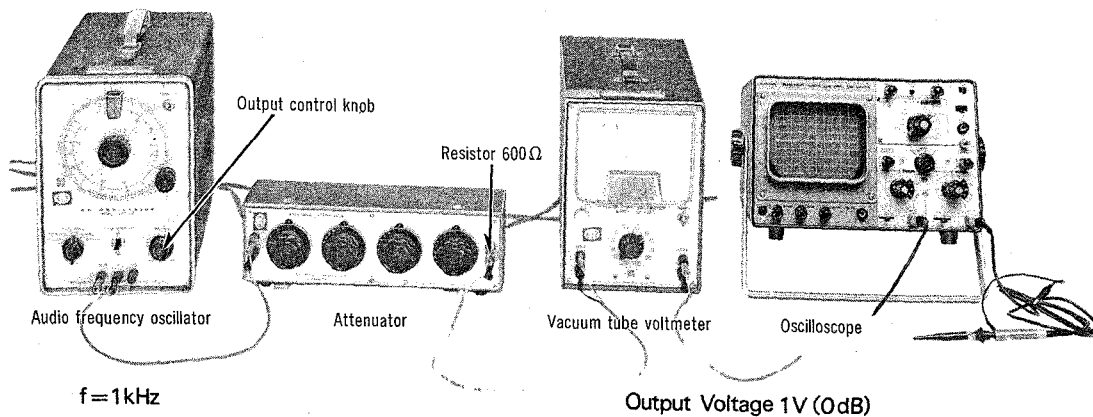
1. Prepare test instruments which are equivalent in accuracy to those shown below.
2. The test instruments should be inspected and corrected by specialists once every 6 months, because a long period of use without maintenance may increase errors in indication.
3. Warm-up the test instruments for 30 minutes and the set to be measured for 10 minutes before taking the measurements. If not, there may arise an error or difference between the initial value and the stabilized value measured after "aging".
4. Test instruments

The instruments required are the same as those for RS-1500US.  
Refer to RS-1500US Service Manual Vol. 2 P6—P8.

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## II. MEASUREMENT CONDITIONS

1. Standard measurement conditions
  - \* Ambient temperature: 10—30°C (50—86°F)
  - \* Ambient humidity: 30—90% RH
  - \* Power voltage accuracy:  $\pm 3\%$
2. Position of tape recorder
  - \* When measuring, place the unit under test in a horizontal position.
3. Oscillator output voltage adjustment
  - \* Connect the equipments as shown in the following and adjust the oscillator output control for 1 V ( $f = 1$  kHz) through the attenuator while keeping the attenuator at 0 dB.
  - \* When supplying a signal to the tape recorder amplifier, adjust the input level using the attenuator.



### III. TEST TAPE

#### Test tape life

The more frequently the test tape is used, the more the tape characteristics will deteriorate (e.g. lowering of recorded level, worsening of frequency response particularly in high-frequency range, and an increase in wow due to tape elongation) until measured values become unreliable. Even in such a case when a tape is not used, but stored, for a long period of time, tape shows deterioration in performance because of self damagenetization due to storage conditions, etc.

Please refer to the tape life specification and take care not to use a tape longer than its rated life when servicing.

Frequency of use: Not more than 20 times for each tape length.

Storage period: Not more than 60 months.

#### \* Test tape

| PARTS NO.  | PARTS NAME                                                    | SPECIFICATIONS | REMARKS                                                                                                                                                  |
|------------|---------------------------------------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| QZZOF380EX | Standard recording level, azimuth and frequency response tape |                | <ul style="list-style-type: none"> <li>Tape speed: 38 cm/s</li> <li>Full track:</li> <li>400 Hz 0 dB,</li> <li>20 kHz—31.5 Hz</li> <li>-10 dB</li> </ul> |
| QZZOF190EX | Standard recording level, azimuth and frequency response tape |                | <ul style="list-style-type: none"> <li>Tape speed: 19 cm/s</li> <li>Full track:</li> <li>400 Hz, 0 dB</li> <li>16 kHz—31.5 Hz</li> <li>-10 dB</li> </ul> |
| QZZOW380EX | Wow and tape-speed tape                                       |                | <ul style="list-style-type: none"> <li>Tape speed: 38 cm/s</li> <li>Full track: 8 (min)</li> <li>3 kHz 0 dB</li> </ul>                                   |
| QZZOW190EX | Wow and tape-speed tape                                       |                | <ul style="list-style-type: none"> <li>Tape speed: 19 cm/s</li> <li>Full track: 8 (min)</li> <li>3 kHz 0 dB</li> </ul>                                   |
| QZZORA218  | Reference blank tape                                          |                | <ul style="list-style-type: none"> <li>Unrecorded tape (550m)</li> </ul>                                                                                 |

# MEASUREMENT AND ADJUSTMENT

## RS-1700

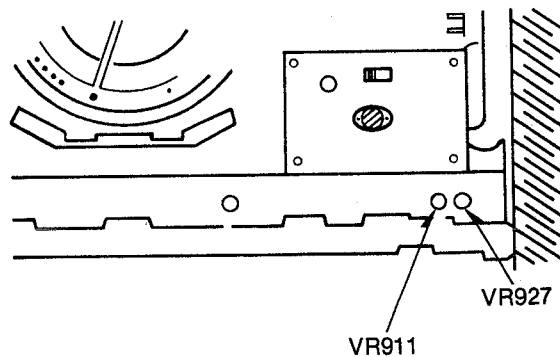
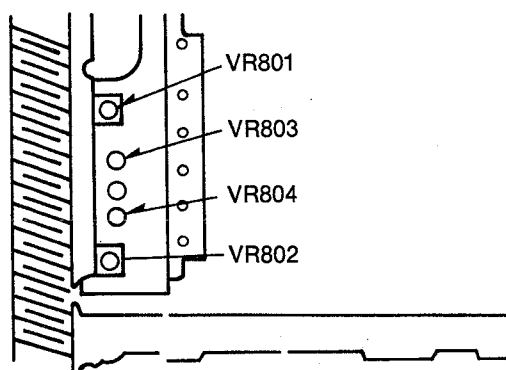
For measurement and adjustment method, there is no great difference from that for Model RS-1500US. Therefore please refer to the Service Manual Vol. 2 of RS-1500US, RS-1506US.

| Item                                                                                                                      | Specification                                                                                                                                                                                                                                                                                                                                                                                     | Measurement Point | Adjustment Part                                                   | Remarks                                 |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------|-----------------------------------------|----------------|----------------|--------------------|------|------|-------------------|-------|------|-----------------|-------|-------|-------------------------------------------------------------------------------------------|
| <div><div>Mechanism Section</div><div>Please refer to Service Manual Vol. 2 (P2—P20) of RS-1500US, RS-1506US.</div></div> |                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                                                                   |                                         |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
| Pressure Roller position                                                                                                  | Symmetrical left and right with relation to the Capstan                                                                                                                                                                                                                                                                                                                                           | <div></div>       | Screw (A) and (B)<br>(Refer to fig. 3 in the Vol. 2 of RS-1500US) |                                         |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
| Cue lever                                                                                                                 | Same as RS-1500US                                                                                                                                                                                                                                                                                                                                                                                 |                   |                                                                   |                                         |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
| Pressure or Pressure Roller                                                                                               | 900 ± 100 gr                                                                                                                                                                                                                                                                                                                                                                                      | <div></div>       | Position of P. Roller Plunger                                     |                                         |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
| Stopper Position                                                                                                          | Same as RS-1500US                                                                                                                                                                                                                                                                                                                                                                                 |                   |                                                                   |                                         |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
| Height of Pressure Roller                                                                                                 | Same as RS-1500US                                                                                                                                                                                                                                                                                                                                                                                 |                   |                                                                   |                                         |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
| Braks                                                                                                                     | Stronger direction:<br>470 ± 70 gr<br>Weaker direction:<br>140 ± 25 gr                                                                                                                                                                                                                                                                                                                            | <div></div>       | Brake plunger                                                     | Specified with 115 mm of diameter reel. |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
| Tension Roller height                                                                                                     | Same as RS-1500US                                                                                                                                                                                                                                                                                                                                                                                 |                   |                                                                   |                                         |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
| Reel Table height                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                                                                   |                                         |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
| Tape Guide                                                                                                                | Refer to page 12 of this book.                                                                                                                                                                                                                                                                                                                                                                    |                   |                                                                   |                                         |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
| Tape Tension                                                                                                              | <div>Takeup torque:<br/>65 ± 5 gr<br/>Bake tension:<br/>75 ± 5 gr</div> <div>FWD mode Tape speed: 19 cm/s</div> <table><tr><td>Check point</td><td>I<sub>T</sub></td><td>I<sub>S</sub></td></tr><tr><td>with 10" reel tape</td><td>3.8V</td><td>3.2V</td></tr><tr><td>with 7" reel tape</td><td>2.45V</td><td>1.9V</td></tr><tr><td>adjustment part</td><td>VR802</td><td>VR801</td></tr></table> |                   |                                                                   | Check point                             | I <sub>T</sub> | I <sub>S</sub> | with 10" reel tape | 3.8V | 3.2V | with 7" reel tape | 2.45V | 1.9V | adjustment part | VR802 | VR801 | Use a full wound tape<br>I <sub>T</sub> : for Takeup<br>I <sub>S</sub> : for Back-tension |
| Check point                                                                                                               | I <sub>T</sub>                                                                                                                                                                                                                                                                                                                                                                                    | I <sub>S</sub>    |                                                                   |                                         |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
| with 10" reel tape                                                                                                        | 3.8V                                                                                                                                                                                                                                                                                                                                                                                              | 3.2V              |                                                                   |                                         |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
| with 7" reel tape                                                                                                         | 2.45V                                                                                                                                                                                                                                                                                                                                                                                             | 1.9V              |                                                                   |                                         |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |
| adjustment part                                                                                                           | VR802                                                                                                                                                                                                                                                                                                                                                                                             | VR801             |                                                                   |                                         |                |                |                    |      |      |                   |       |      |                 |       |       |                                                                                           |

| Item | Specification                | Measurement Point | Adjustment Part | Remarks                                                          |
|------|------------------------------|-------------------|-----------------|------------------------------------------------------------------|
|      | REV mode Tape speed: 19 cm/s |                   |                 | I <sub>T</sub> : for Back-tension<br>I <sub>S</sub> : for Takeup |
|      |                              |                   |                 |                                                                  |
|      |                              |                   |                 |                                                                  |
|      |                              |                   |                 |                                                                  |
|      |                              |                   |                 |                                                                  |

Adjustment of  
Auto-reverse  
Detection circuit

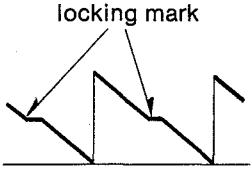
Adjust VR1 so that the wave form of output signal from a photo-transistor  
becomed sharp. (Refer to page 14)



Tape speed  
and  
wow & flutter

Please refer to Serviv Manual Vol. 2 (P19—P20) of RS-1500US, RS-1506US.

| Tape Speed<br>(cm/s) | Speed Deviation<br>$\frac{f-3000}{3000} \times 100(\%)$ | Speed Fluctuation<br>$\frac{f_1-f_2}{3000} \times 100(\%)$ | Wow & Flutter   |                  | Pitch<br>Control<br>(%) |
|----------------------|---------------------------------------------------------|------------------------------------------------------------|-----------------|------------------|-------------------------|
|                      |                                                         |                                                            | JIS<br>WRMS (%) | DIN<br>W/P-P (%) |                         |
| 38                   | ±0.10                                                   | 0.10                                                       | 0.018           | ±0.035           | ±6                      |
| 19                   | ±0.15                                                   | 0.15                                                       | 0.03            | ±0.08            | ±6                      |
| 9.5                  | ±0.20                                                   | 0.20                                                       | 0.06            | ±0.16            | ±6                      |

| Item                                                                                                                   | Specification                                                                     | Measurement Point                                      | Adjustment Part              | Remarks                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. DC Power voltage                                                                                                    | DC $5 \pm 0.4$ V                                                                  | TP901                                                  | VR929                        |                                                                                                                                                                                              |
| 2. Standard voltage                                                                                                    | DC $0 \pm 0.05$ V                                                                 | TP904 and TP905<br>(Terminal No. 4 and No. 5 of IC966) | VR928                        | <ul style="list-style-type: none"> <li>• Short circuit between TP902 and TP903</li> <li>• Adjust VR928 so that voltage between TP904 and TP905 becomes <math>0 \pm 0.005</math> V</li> </ul> |
| 3. Quartz lock position                                                                                                |  | TP906                                                  | VR911                        | <ul style="list-style-type: none"> <li>• Refer to page 13 for details</li> <li>• Adjust so that locking mark position at the center.</li> </ul>                                              |
| 4. Position detecting signal output                                                                                    | 1.5Vp-p                                                                           | TP907                                                  | VR966                        |                                                                                                                                                                                              |
| 5. Pitch control                                                                                                       | $\pm 6(\%)$                                                                       |                                                        | VR927                        | <ul style="list-style-type: none"> <li>• Refer to page 14 for details</li> <li>• Pitch control: ON and set at center.</li> </ul>                                                             |
| <b>Playback Heads</b> Refer to Service Manual Vol. 2 of RS-1500US, RS-1506US.                                          |                                                                                   |                                                        |                              |                                                                                                                                                                                              |
| <b>Playback Head</b> Please refer to Service Manual Vol. 2 (P22—P24) of RS-1500US, RS-1506US and page 15 of this book. |                                                                                   |                                                        |                              |                                                                                                                                                                                              |
| <b>Playback Amplifier</b> Please refer to Service Manual Vol. 2 (P25—P27) of RS-1500US, RS-1506US.                     |                                                                                   |                                                        |                              |                                                                                                                                                                                              |
| Standard Playback Output                                                                                               | 0.55 V                                                                            | Line out jack                                          | VR110 (L-CH)<br>VR210 (R-CH) | <ul style="list-style-type: none"> <li>• Use test tape</li> <li>• 8 position of output control</li> </ul>                                                                                    |

| Item                                                                                                                                                                         | Specification                                      | Measurement Point | Adjustment Part              | Remarks                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Playback Frequency Response                                                                                                                                                  |                                                    |                   | VR106 (L-CH)<br>VR206 (R-CH) | <ul style="list-style-type: none"> <li>Adjustment should be done at high frequency range with 38 cm/s tape speed</li> </ul> |
| <p><b>38 cm/s tape speed</b></p> <p><b>19 cm/s tape speed</b></p> <p><b>9.5 cm/s tape speed</b></p> <p><b>Note:</b> Dotted line show the frequency response of REV mode.</p> |                                                    |                   |                              |                                                                                                                             |
| Playback S/N ratio                                                                                                                                                           | 48dB or more (38/19cm/s)<br>46dB or more (9.5cm/s) | Line out jack     |                              | Unweighted                                                                                                                  |
| Maximum Playback Output                                                                                                                                                      | 0.775 V                                            | Line out jack     |                              | With output control at max. position.                                                                                       |
| <b>Record Amplifier</b> <p>Please refer to Service Manual Vol. 2 (P28—P34) of RS-1500US, RS-1506US.</p>                                                                      |                                                    |                   |                              |                                                                                                                             |
| Standard recording level                                                                                                                                                     | Mic in:<br>- 72 ± 2dB<br>Line in:<br>- 24 ± 3dB    | Line out jack     |                              | Standard of output 0.55 V at "8" position of output control                                                                 |

| Item                                                                                                                                                                                                                                                                                                                                                               | Specification                                                     | Measurement Point        | Adjustment Part                                                                                                                                                                                                                                                                                                                                                                   | Remarks |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Line input level adjustment                                                                                                                                                                                                                                                                                                                                        | $-24 \pm 3 \text{ dB}$                                            | Line out jack            | VR101 (L-CH)<br>VR201 (R-CH)                                                                                                                                                                                                                                                                                                                                                      |         |
| Level meter (Source position)                                                                                                                                                                                                                                                                                                                                      | 0 VU                                                              | Level meter              | VR108 (L-CH)<br>VR208 (R-CH)                                                                                                                                                                                                                                                                                                                                                      |         |
| Bias Osc. frequency                                                                                                                                                                                                                                                                                                                                                | $124 \pm 5 \text{ kHz}$                                           | $I_{ER}(TP3)$            | Soldering or unsoldering C542 or C543                                                                                                                                                                                                                                                                                                                                             |         |
| Erase current                                                                                                                                                                                                                                                                                                                                                      | $75 + \begin{smallmatrix} 10 \\ - 0 \end{smallmatrix} \text{ mA}$ | $I_{ER}(TP3)$            | VR501 <ul style="list-style-type: none"> <li>Erase current = <math>\frac{\text{Value read on VTVM (V)}}{1 \text{ ohm (R599)}}</math></li> <li>Value indicated should be for each erase head.</li> <li>When there is difference among value for FWD L-CH and R-CH, and REV L-CH and R-CH, adjustment should be made so that the lowest one becomes within the standard.</li> </ul> |         |
| <b>Oscillation Circuit Adjustment</b><br>1. Connect VTVM to test point $I_B$ (TP2) and $I_{ER}$ (TP3).<br>2. Set the unit in the recording mode.<br>3. Adjust respectively the adjustment coils (as shown below) so that the output at the test point will be maximum.<br>Lch recording bias current L502<br>Rch recording bias current L504<br>Erase current L506 |                                                                   |                          |                                                                                                                                                                                                                                                                                                                                                                                   |         |
| Bias current leakage-1                                                                                                                                                                                                                                                                                                                                             | 1 V or less                                                       | TP4 (L-CH)<br>TP5 (R-CH) | L102 (L-CH)<br>L202 (L-CH)                                                                                                                                                                                                                                                                                                                                                        |         |
| Bias current Leakage-2                                                                                                                                                                                                                                                                                                                                             | 3 mV or less                                                      | Line out jack            | L103 (L-CH)<br>L203 (R-CH)                                                                                                                                                                                                                                                                                                                                                        |         |
| <b>Record Head and Erase Head</b><br>Please refer to the Service Manual Vol. 2 (P36—P37) of RS-1500US, RS-1506US except overall frequency response.                                                                                                                                                                                                                |                                                                   |                          |                                                                                                                                                                                                                                                                                                                                                                                   |         |

| Item                                                                                                                                                                                                                             | Specification | Measurement Point                                                                                                                                                                                                 | Adjustment Part | Remarks |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| <div> <div>Overall frequency response</div> <div>Overall Specification</div> <div> <p>Eq. selector:<br/>Position 2<br/>Bias selector:<br/>Position 2<br/>Line input:<br/>– 34dB (38cm/s)<br/>– 44dB (19/9.5)</p> </div> </div>   |               |                                                                                                                                                                                                                   |                 |         |
| <b>Adjustment parts:</b><br><b>FWD direction:</b><br>38cm/s tape speed<br>VR504 (L-CH)<br>VR510 (R-CH)<br>19cm/s tape speed<br>VR503 & L101 (L-CH)<br>VR509 & L201 (R-CH)<br>9.5 cm/s tape speed<br>VR502 (L-CH)<br>VR508 (R-CH) |               | <b>REV direction:</b><br>38cm/s tape speed<br>VR507 (L-CH)<br>VR513 (R-CH)<br>19cm/s tape speed<br>VR506 (L-CH)<br>VR512 (R-CH)<br>9.5 cm/s tape speed<br>VR505 (L-CH)<br>VR511 (R-CH)                            |                 |         |
|                                                                                                                                                                                                                                  |               | <b>Note:</b> <ul style="list-style-type: none"> <li>Adjustment parts (variable resistors) beginning with VR are actually used bias current change.</li> <li>L101 and L201 adjust the REC equalization.</li> </ul> |                 |         |

## **Adjustment Procedure:**

### **A) FWD direction, 19 cm/s tape speed**

1. 400 Hz, - 44 dB of input to Line In jacks.
2. Adjust VR503 (L-CH) and VR509 (R-CH) for maximum Line output.
3. Change the input frequency to 10 kHz, and again adjust VR503 and VR509 so that the Line output becomes the same value as for 400 Hz in step 2.
4. Again change the input frequency to 25 kHz, and adjust L101 (L-CH) and L202 (R-CL) so that the Line output becomes 2 dB lower than that of 400 Hz in step 2 above.
5. Then confirm the overall frequency response for other frequencies is in the standard.

### **B) FWD direction, 38 cm/s tape speed**

1. 400 Hz, - 44 dB of input to Line In jacks.
2. Adjust VR504 (L-CH) and VR510 (R-CH) for the maximum Line output.
3. Change the input frequency to 26 kHz, and adjust again VR504 and VR510 so that the Line output becomes 1 dB lower than that of 400 Hz in step 2.
4. Then change the input frequency to 30 kHz and confirm that the Line output is within - 2 dB compared with output of 400 Hz in step 2 above.
5. After above, confirm that the overall frequency response for other frequencies is in the standard.

### **C) FWD direction, 9.5 cm/s tape speed**

1. 400 Hz, - 44 dB of input to Line In jacks.
2. Adjust VR502 (L-CH) and VR508 (R-CH) for the maximum Line output.
3. Change the input frequency to 14 kHz, and adjust again VR502 and VR508 so that the Line output becomes within - 2 dB compared with the output of 400 Hz in step 2 above.
4. Then confirm the overall frequency response for each frequency.

### **D) REV direction, 38 cm/s tape speed**

Adjustment method is the same as in FWD direction but adjustment should be done by using VR507 (L-CH) and VR513 (R-CH).

### **E) REV direction, 19 cm/s tape speed**

1. 400 Hz, - 44 dB of input to Line In jacks.
2. Adjust VR506 (L-CH) and (R-CH) for the maximum Line output.
3. And change the input frequency to 25 kHz, and adjust VR506 and VR512 so that the Line output becomes within - 2 dB with compared to the output of 400 Hz in step 2 above.
4. Then confirm that overall frequency response for each frequency is within the standard.

### **F) REV direction, 9.5 cm/s tape speed**

Adjustment method is the same way as in FWD direction but adjustment parts are VR505 (L-CH) and VR511 (R-CH).

| Item                   | Specification                                                                                                                                                                                                                                                                         | Measurement Point    | Adjustment Part                                 | Remarks |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------|---------|
| Bias current           | Bias selector: 2<br>38cm/s:<br>around 2.9mA<br>19cm/s:<br>around 2.7mA<br>9.5cm/s:<br>around 2.3mA<br>For position 1 of Bias selector:<br>10% less than that with position 2 of Bias selector.<br>For position 3 of Bias selector:<br>10% more than with position 2 of Bias selector. | I <sub>B</sub> (TP2) | Refer to overall frequency response adjustment. |         |
| Recording equalization |                                                                                                                                                                                                                                                                                       |                      |                                                 |         |

**Compensation values depending upon frequencies.**

Tape speed: 38cm/s, Eq. position: 2

|                |       |       |     |         |       |
|----------------|-------|-------|-----|---------|-------|
| Frequency (Hz) | 31.5  | 100   | 400 | 6.3 K   | 20 K  |
| Value (dB)     | 3 ± 2 | 1 ± 2 | 0   | - 2 ± 2 | 2 ± 3 |

Tape speed: 19cm/s, Eq. position: 2

|                |     |       |        |
|----------------|-----|-------|--------|
| Frequency (Hz) | 400 | 6.3 K | 16 K   |
| Value (dB)     | 0   | 3 ± 3 | 12 ± 4 |

Tape speed: 9.5cm/s, Eq. position: 2

|                |     |       |        |
|----------------|-----|-------|--------|
| Frequency (Hz) | 400 | 6.3 K | 12.5 K |
| Value (dB)     | 0   | 4 ± 3 | 15 ± 4 |

**Compensation value depending upon EQ. positions.**

Tape speed: 38cm/s, Frequency: 20kHz

|              |         |   |         |
|--------------|---------|---|---------|
| Eq. position | 1       | 2 | 3       |
| Value (dB)   | + 3 ± 1 | 0 | - 3 ± 1 |

Tape speed: 19cm/s, Frequency: 16kHz

|              |       |   |         |
|--------------|-------|---|---------|
| Eq. position | 1     | 2 | 3       |
| Value (dB)   | 3 ± 2 | 0 | - 3 ± 2 |

Tape speed: 9.5cm/s, Frequency: 12.5kHz

|            |       |   |         |
|------------|-------|---|---------|
| Position   | 1     | 2 | 3       |
| Value (dB) | 4 ± 3 | 0 | - 4 ± 3 |

| Item                       | Specification                                                                  | Measurement Point | Adjustment Part                                                                                | Remarks                                                                                                                                         |
|----------------------------|--------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Overall gain               | $0.55\text{ V} \pm 1\text{ dB}$<br>( $0.775\text{ V} \pm 1\text{ dB}$ )        | Line out jack     | FWD direction<br>VR104 (L-CH)<br>VR204 (R-CH)<br>REV direction<br>VR105 (L-CH)<br>VR205 (R-CH) | <ul style="list-style-type: none"> <li>Line in: <math>-24\text{ dB}</math></li> <li>Output level control "8" position (Max position)</li> </ul> |
| Recording current          | $180\text{ }\mu\text{A}$                                                       | IB (TP2)          | _____                                                                                          | Remove fuse on oscillation circuit board to stop the bias oscillation.                                                                          |
| Level meter (for playback) | 0VU                                                                            | On meter          | VR109 (L-CH)<br>VR209 (R-CH)                                                                   | Monitor:<br>Tape position                                                                                                                       |
| Overall S/N ratio          | 38cm/s:<br>46dB or more<br>19cm/s:<br>46dB or more<br>9.5cm/s:<br>44dB or more | Line out jack     | _____                                                                                          | <ul style="list-style-type: none"> <li>Frequency 1 kHz</li> </ul>                                                                               |
| Erase ratio                | 1 kHz:<br>70dB or more<br>100Hz:<br>60dB or more                               | Line out jack     | _____                                                                                          | Tape speed:<br>38cm/s<br>Input: $-14\text{ dB}$                                                                                                 |
| Overall distortion         | 0.8% or less                                                                   | Line out jack     | _____                                                                                          |                                                                                                                                                 |

# 1. MECHANISM

The items, methods and specifications for measurements and adjustments are basically the same as for RS-1500US. Therefore, only these items which differ between RS-1700 and RS-1500US are mentioned in the following.

## [1] Tape Transport

Thread 150% blank tape through the unit and run the tape forward and reverse at a speed of 19cm/sec. Then make the following adjustments so that the tape is not curled by the tape guide tension roller.

[A] Tension Rollers Height Adjustment.

[B] Reel Tables Height Adjustment.

[C] Tape Guide Adjustment.

Since the adjustments in (A) and (B) are the same as for RS-1500US, refer to RS-1500US Service Manual Vol. 2.

### 1) Tape Guide Adjustment

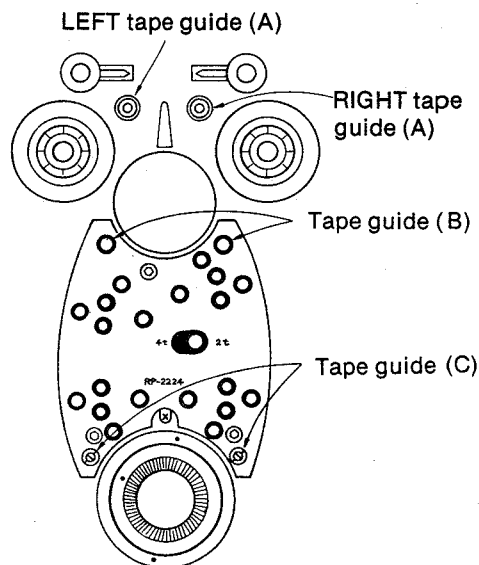
Tape guide (B) is fixed, and the tape transport can be adjusted with tape guide (A) and tape guide (C).

a) Make the adjustment so that the tape runs at the center of tape guide (B) without being curled.

- \* LEFT tape guide (A) in forward mode.
- \* RIGHT tape guide (A) in reverse mode.

b) Tape guide (C)

Adjust tape guide (C) so that the tape is not curled at tape guide (C) in forward and reverse modes.



**c) The factors of tape travel variation can be summarized as follows:**

**Forward mode**

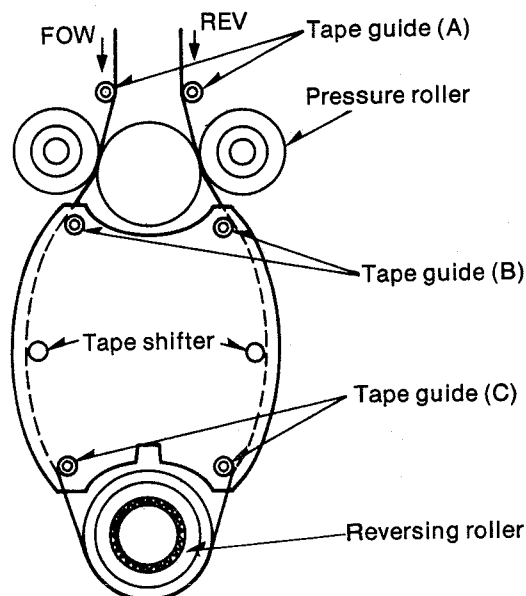
- Left tension roller height.
- Height of tape guide (A).
- Tilt and contact of reverse playback head.
- Tilt of reversing roller (when tape is curled at tape guide (C)).

**Reverse mode**

- Right tension roller height.
- Height of tape guide (A).
- Tilt and contact of forward playback head.
- Tilt of reversing roller.

**FF/REW mode**

- Heights of tape guides (A), (B), (C).
- Verticality of tape shifter.



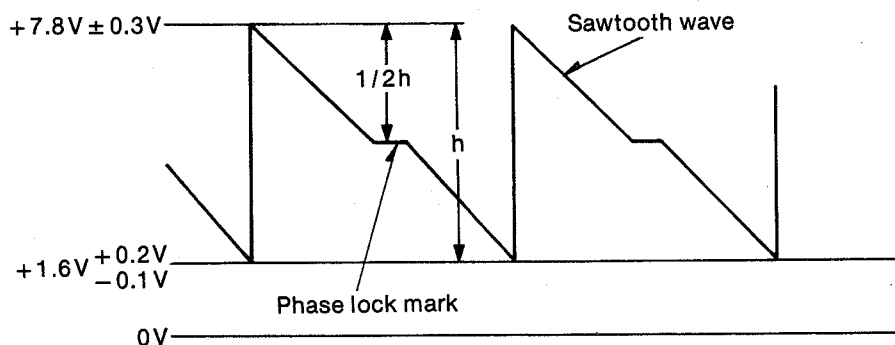
## [2] Tape Speed, Wow and Flutter

Since the contents of 1) Tape speed measurement, 2) Tape speed fluctuation measurement, and 3) Wow and flutter measurement are the same as for RS-1500US, refer to RS-1500US Service Manual Vol. 2. But for pitch control adjustment and capstan motor circuit adjustment, RS-1700 differs from RS-1500US as follows:

### 1) Adjustment of Capstan Motor Circuit

Connect oscilloscope to TP906. (Dual-trace oscilloscope is not needed for RS-1700.)

2. Set AC/DC selector switch of oscilloscope to DC position.
3. Thread 10" or 7" real tape and set tape speed selector to 9.5 cm/sec.
4. Playback the tape (at the middle of tape wound).
5. Make the adjustment so that the output waveform of TP906 is as shown below at VR911.



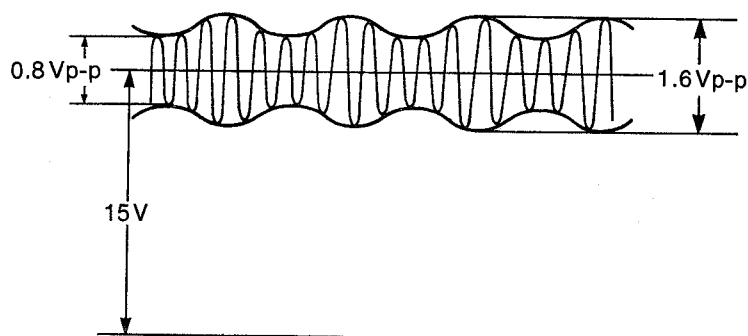
- The phase lock mark is shifted upward when the tape speed is changed to 19cm/sec. and 38cm/sec. If it is stationary, there will be no problem.

## 2) Pitch Control Adjustment

- Set the pitch control switch to ON, maintaining the connection made in section 1).
- Thread 10" or 7" real tape and set tape speed selector to 9.5cm/sec.
- Adjust VR927 so that the lock mark of sawtooth wave is as stationary as possible (actually the lock mark moves slowly).

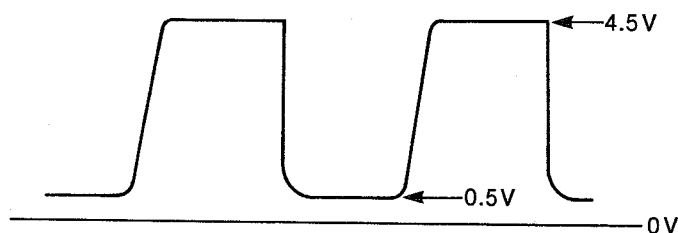
## 3) Position Detecting Signal Output

- Connect oscilloscope to TP907 (capstan motor control circuit board).
- Set the tape speed to 9.5cm/sec. in playback mode.
- Measure the peak-to-peak voltage of position detecting signal of TP907 with the oscilloscope.
- If the measured signal voltage is markedly different from the voltage shown below, make the necessary adjustment with VR966.



## 4) Adjustment of Auto Reverse Detection Circuit

- Retain the tension roller so that shut-off switch (S19, S20) turns ON.
- Set the unit to playback mode without tape threaded. Connect oscilloscope to TP (main control circuit board R89 1.5K), and then check the waveform.
- Adjust VR1 so that the voltage waveform of TP becomes a sharper square waveform and its amplitude is as shown below.



## 2. HEAD ADJUSTMENT

The head composition of RS-1700 is different from that of RS-1500US. It is composed of Forward Erase/Record Head, Forward Playback Head, Reverse Frase/Record Head, and Reverse Playback Head. For alignment, however, RS-1700 is basically the same as RS-1500US.

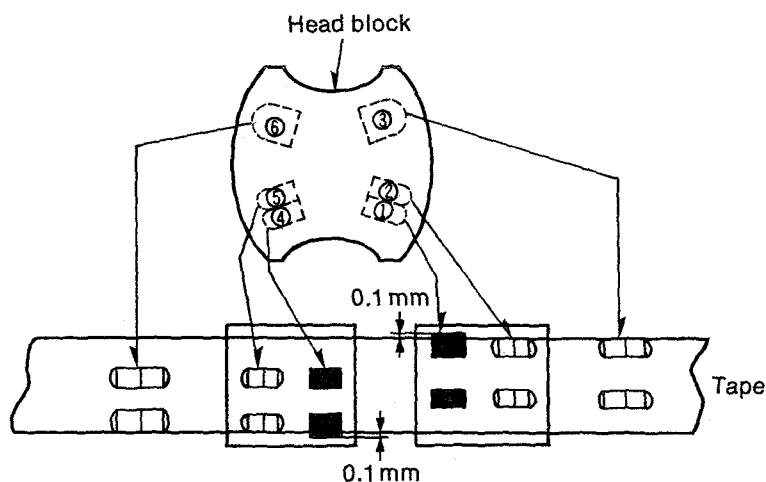
- (1) Playback head adjustment (both forward and reverse).
  - (2) Frase/Record head adjustment (both forward and reverse).
- Regarding (1) and (2), the following adjustments are necessary.

- [A] Head height.
- [B] Tilt.
- [C] Azimuth.
- [D] Contact and tangency.
- [E] Phase.

Since the adjustment methods for (A) and (B) are the same as for RS-1500US, refer to RS-1500US Service Manual Vol. 2 P22—P24, P36—P37.

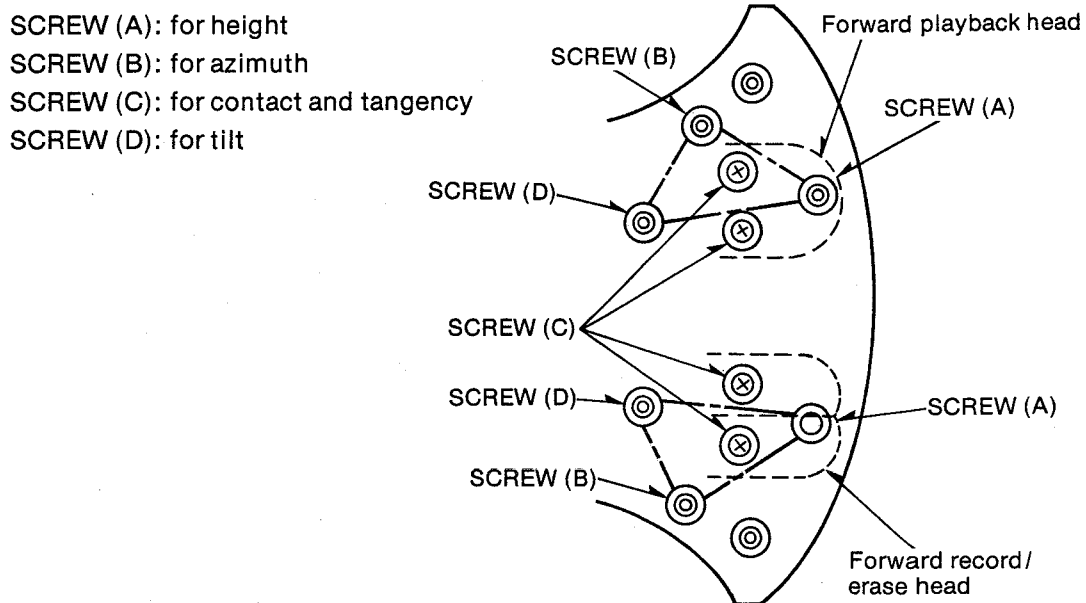
### [1] Head Setting

- a) Tape transport must be adjusted and checked before the adjustment of electrical characteristics. But if the tape travel is not normal, carry out the above-stated tape guide adjustment, and then check and adjust the head position; i.e. head height, tilt, tangent and tape contact.
- b) Since the adjustment of each head is the same as for RS-1500US, refer to RS-1500US Service Manual Vol. 2. Incidentally, make the adjustments for RS-1700 in forward and reverse modes.
- c) Head height, and tape touch of Record/Erase head.

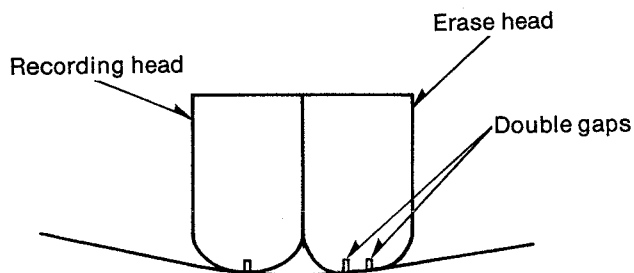


- ① Forward erase head.
- ② Forward record head.
- ③ Forward playback head.
- ④ Reverse erase head.
- ⑤ Reverse record head.
- ⑥ Reverse playback head.

- (1) The height of each head from the tape must be visually checked and then adjusted with head height adjustment screw as shown above.



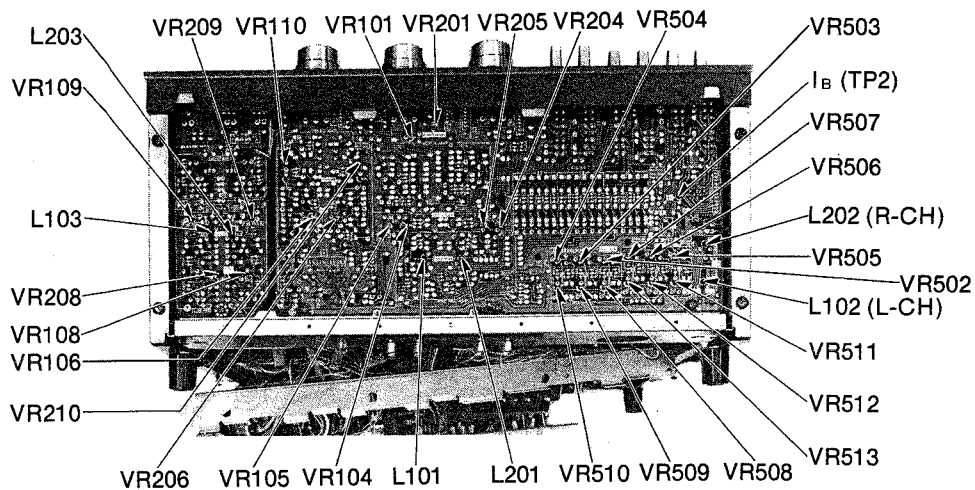
- (2) Tape touch of Record/Erase head.



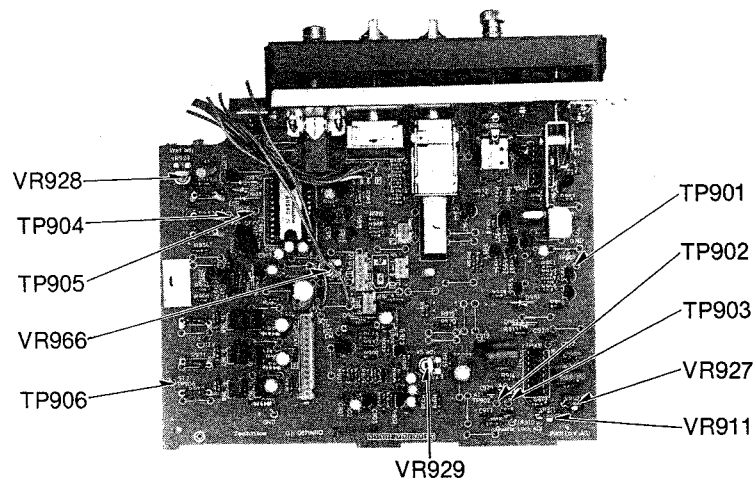
Adjust the Record/Erase head position with head adjustment screw (C) so that record head gap and erase head gaps touch the tape as illustrated above.

# ADJUSTMENT PARTS LOCATION

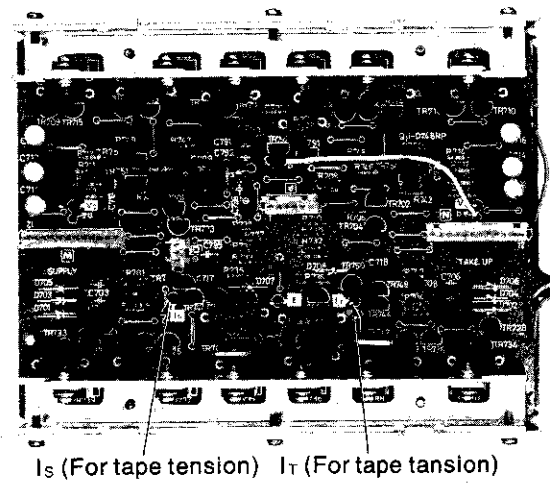
## Line-out Headphone/Main Amplifier



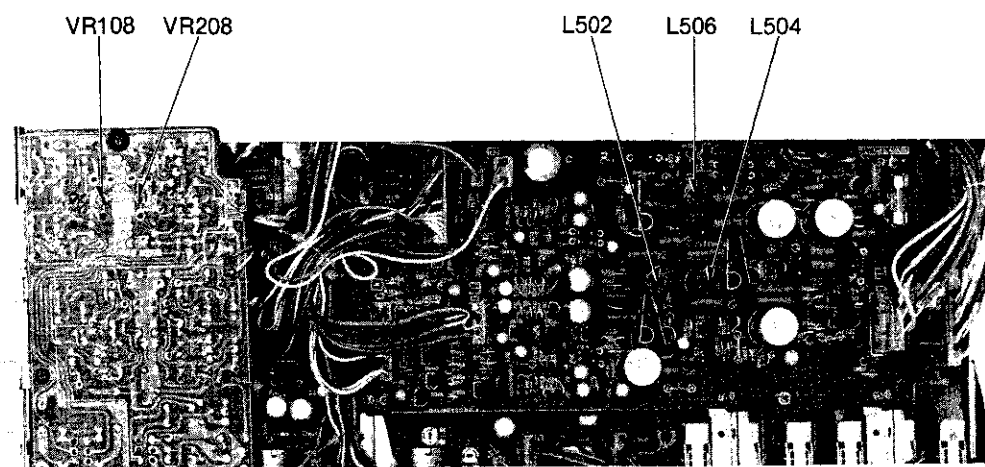
## Capstan Motor Control Circuit



# Reel Motor Driving Circuit

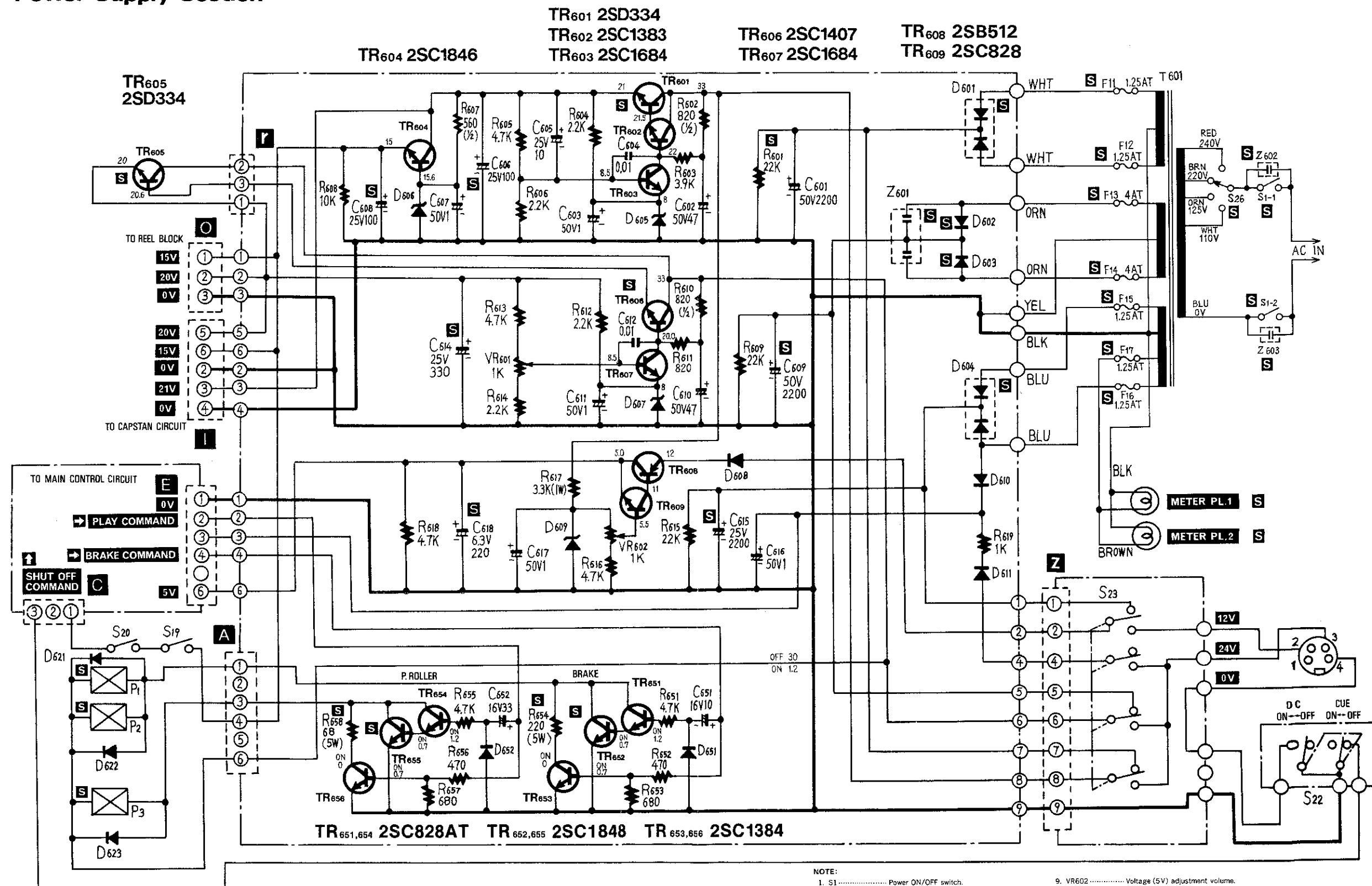


# Mic and Meter Amplifier/ Oscillation Circuit



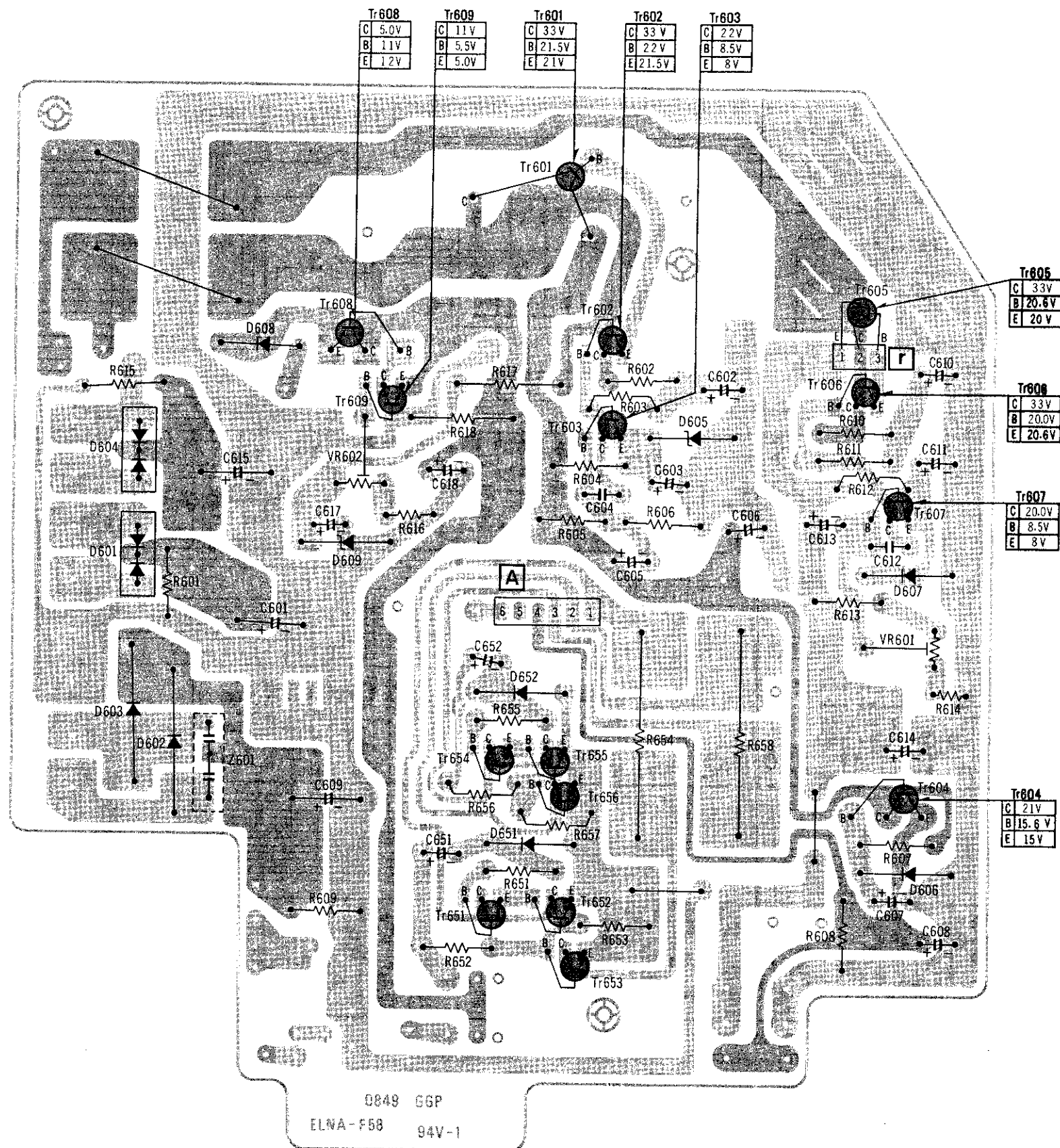
# SCHEMATIC DIAGRAM MODEL RS-1700

## Power Supply Section



# CIRCUIT BOARD

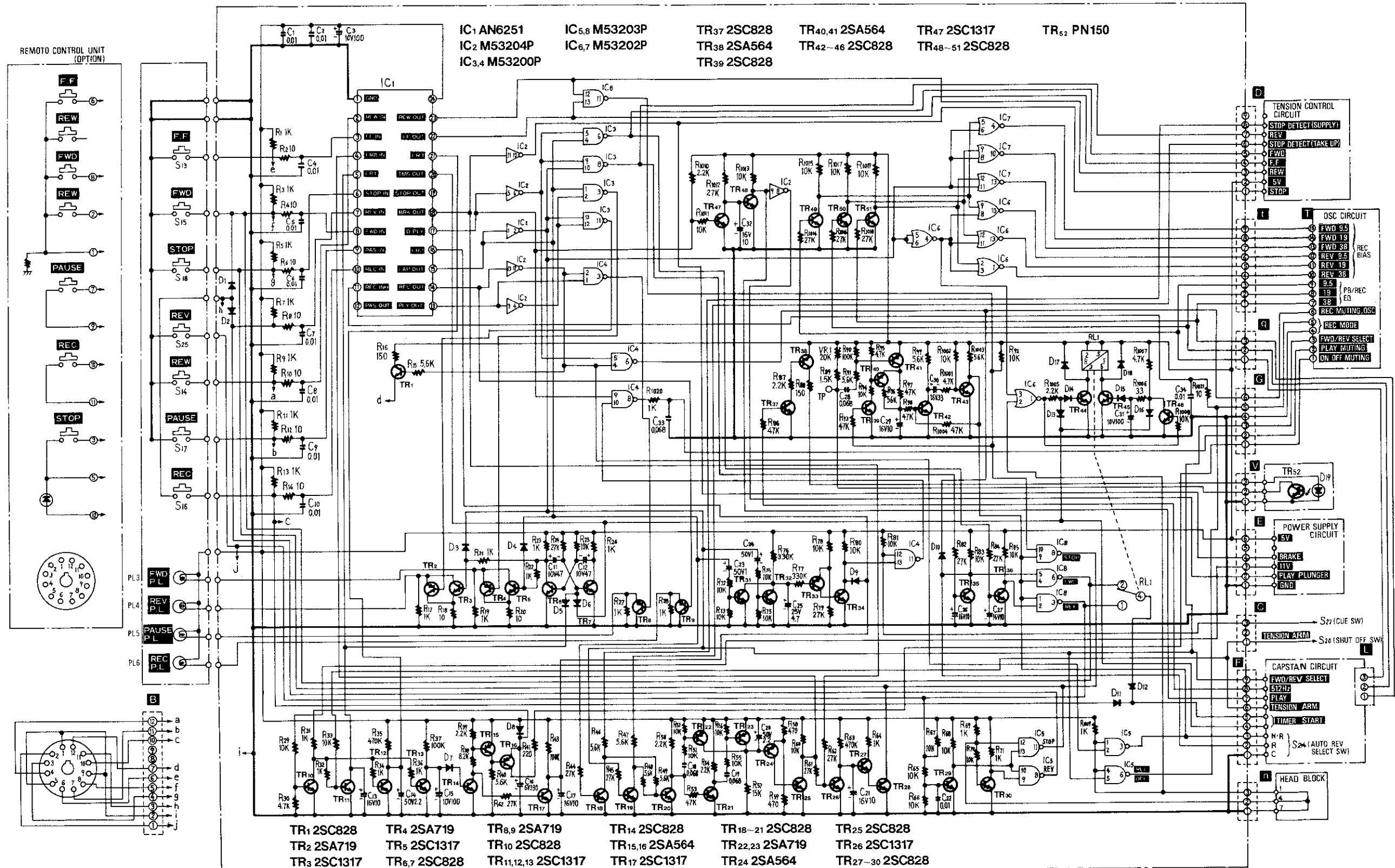
## Power Supply



**NOTE:**  
The circuit shown in red on the conductor is B circuit.  
Values indicated in    are DC voltage between the chassis and electrical parts.

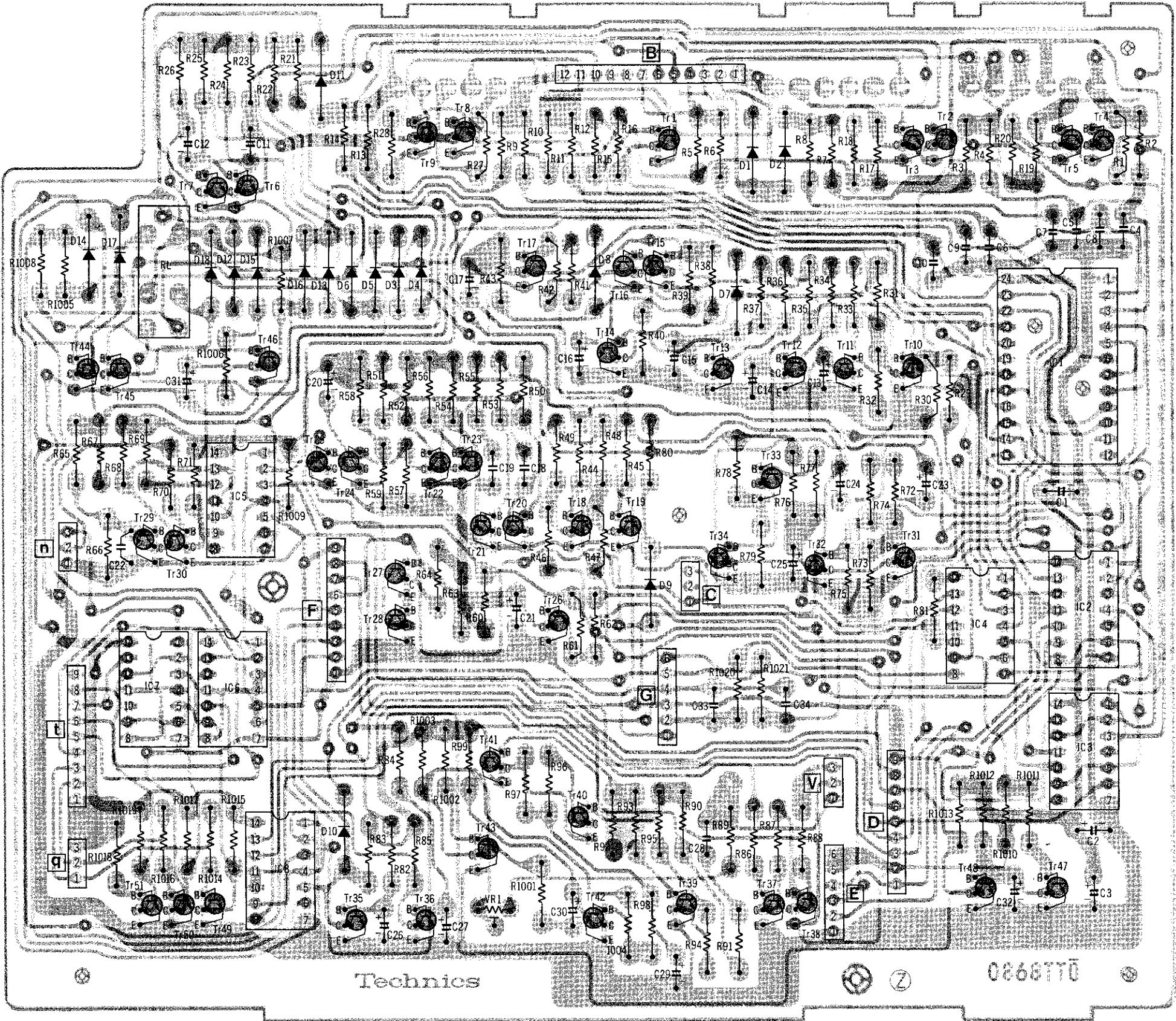
# SCHEMATIC DIAGRAM MODEL RS-1700

## Main Control Section



# CIRCUIT BOARD

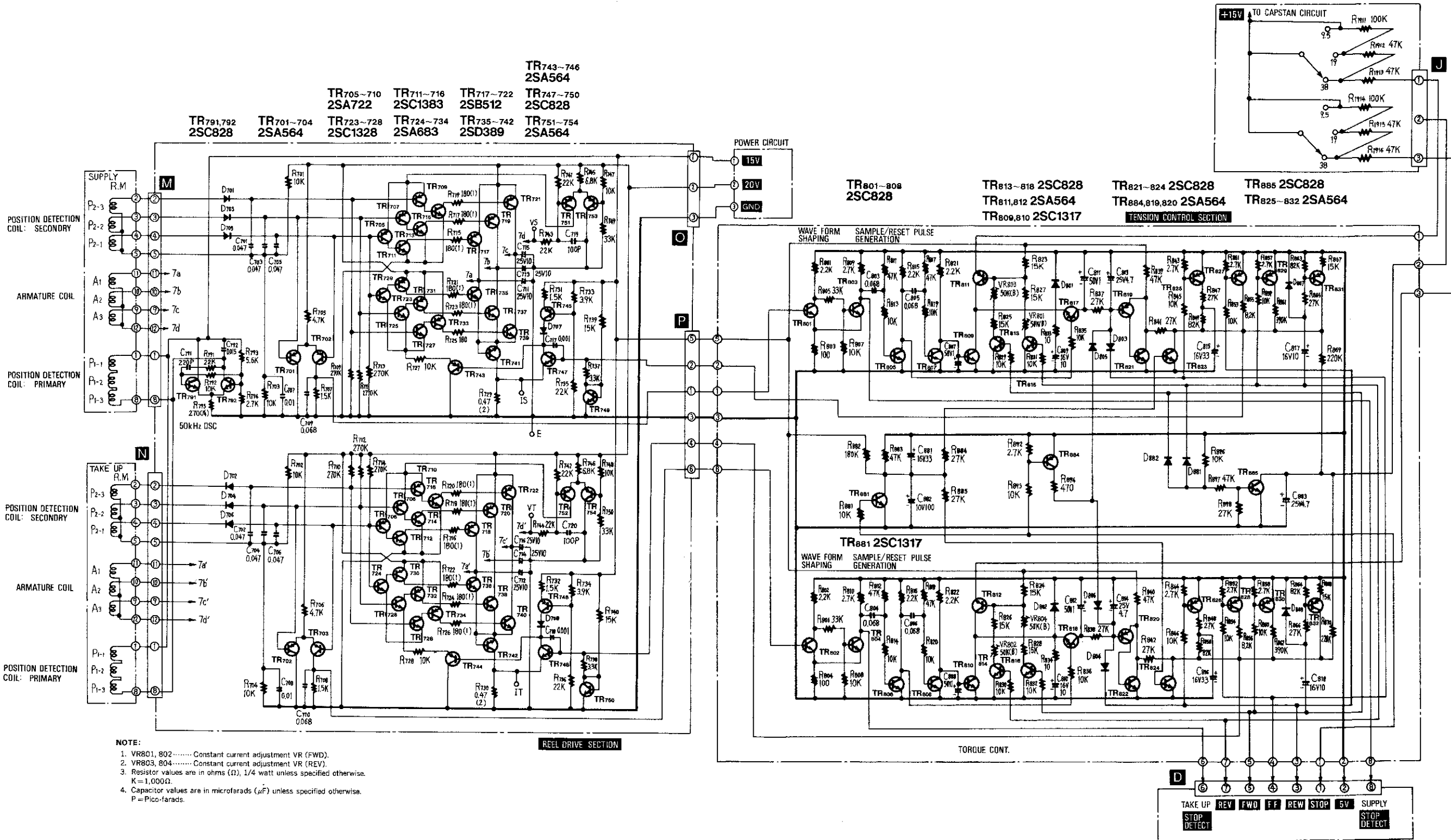
Main Control



NOTE:  
The circuit shown in red on the conductor is B circuit.

SCHEMATIC DIAGRAM MODEL RS-1700

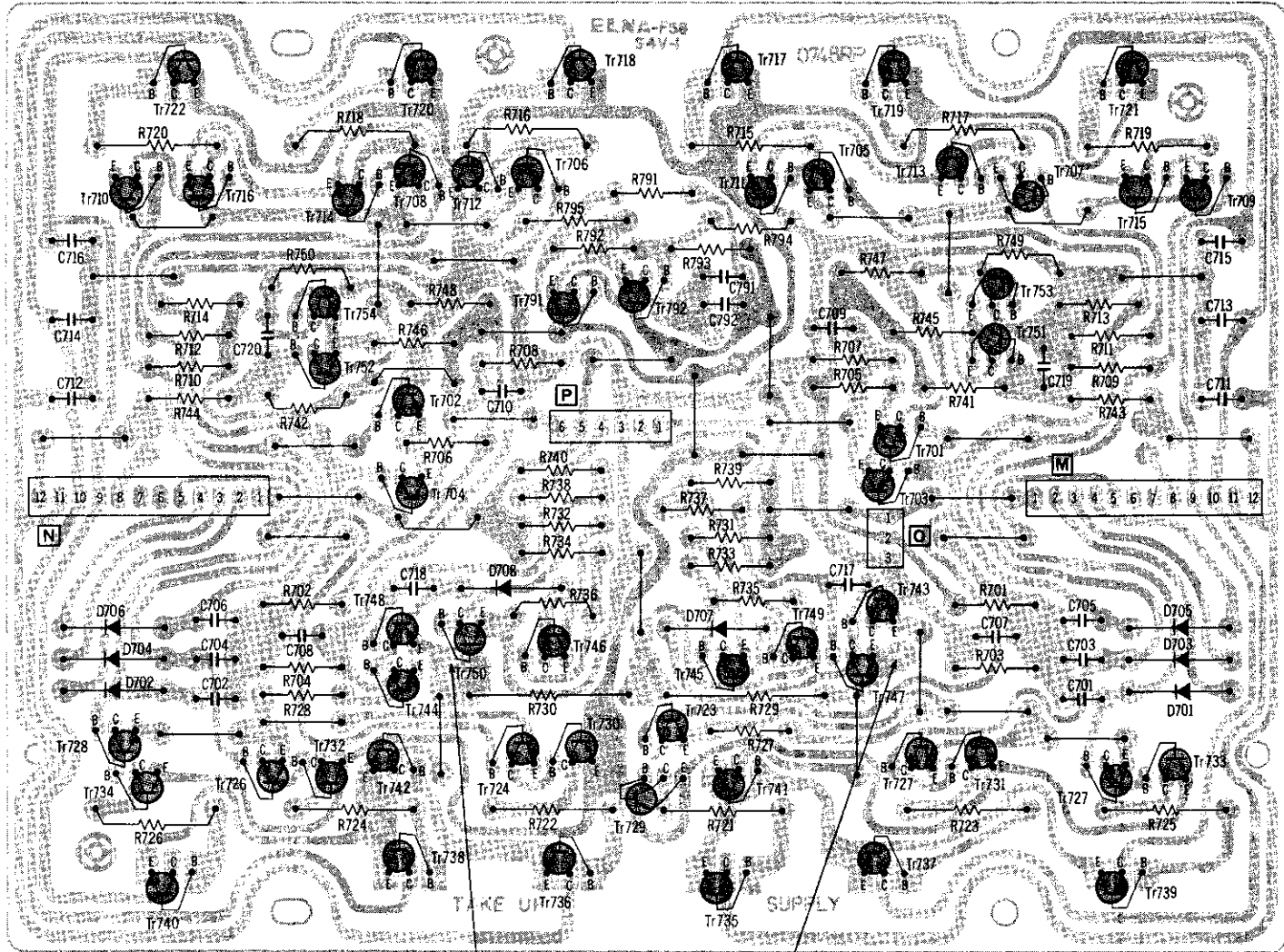
Reel Motor Section



# CIRCUIT BOARD

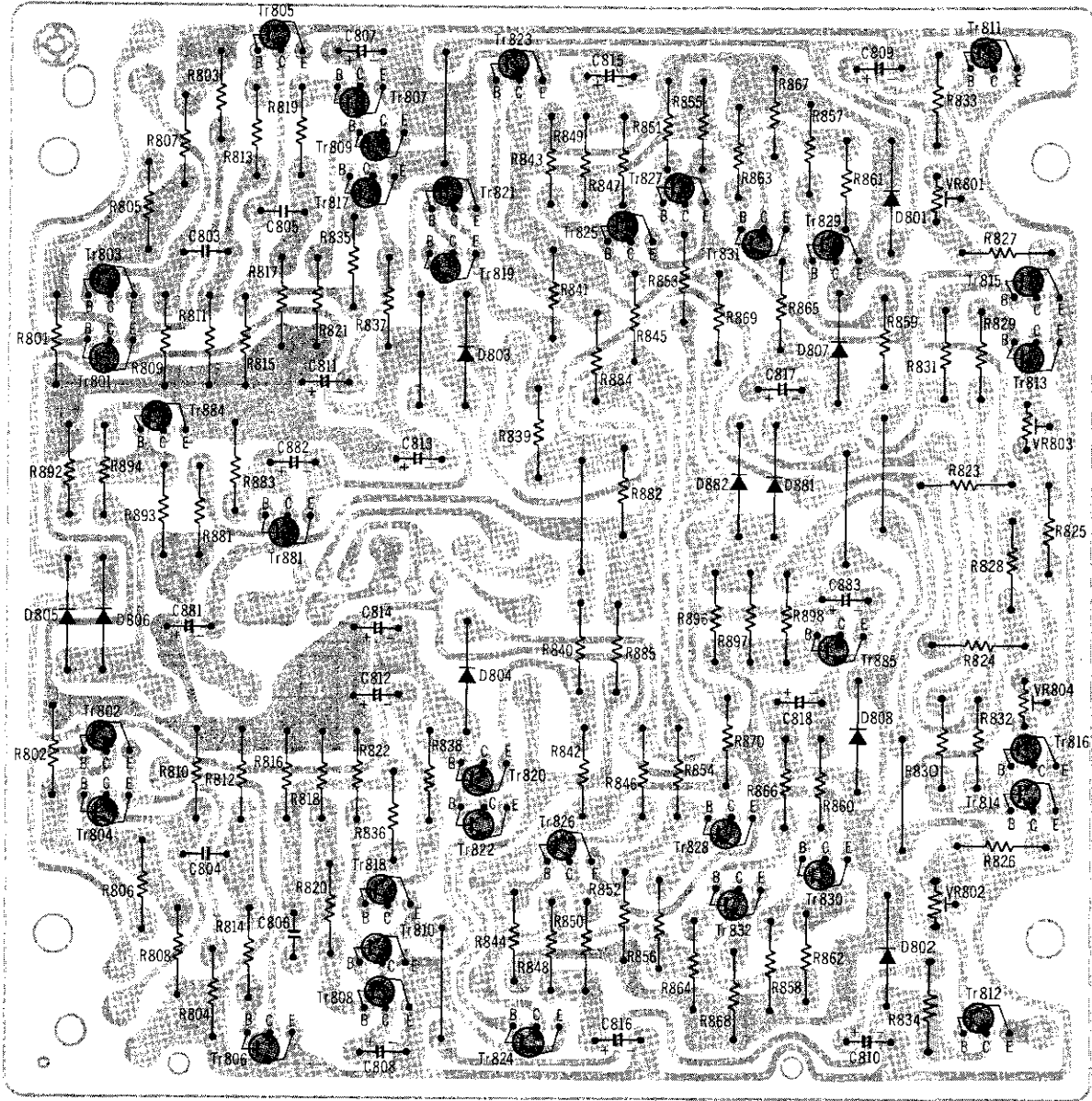
2

## Reel Motor Driving



It (For tape tension)      Is (For tape tension)

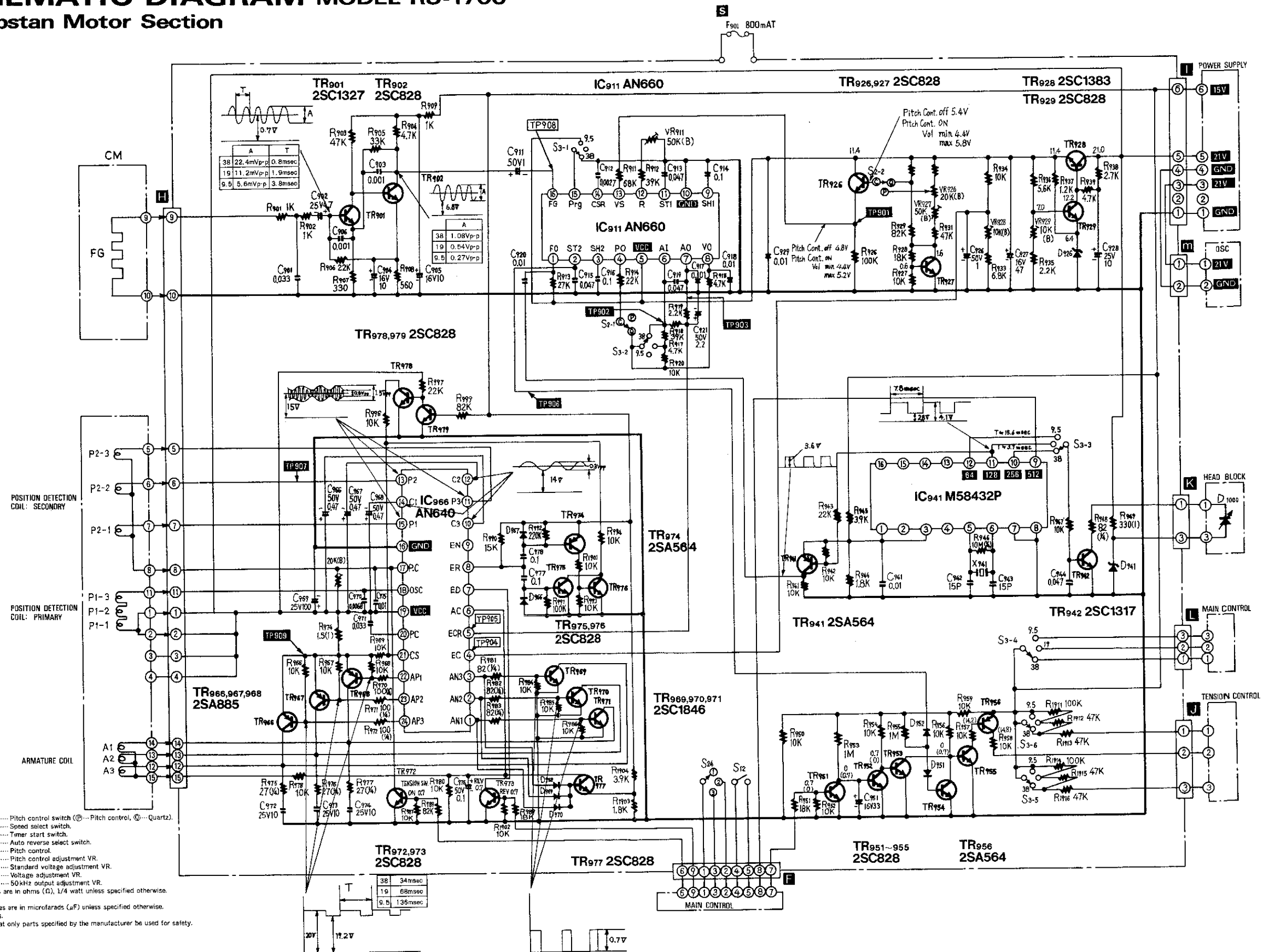
## Reel Motor Tension Control



NOTE:  
The circuit shown in red on the conductor is B circuit.

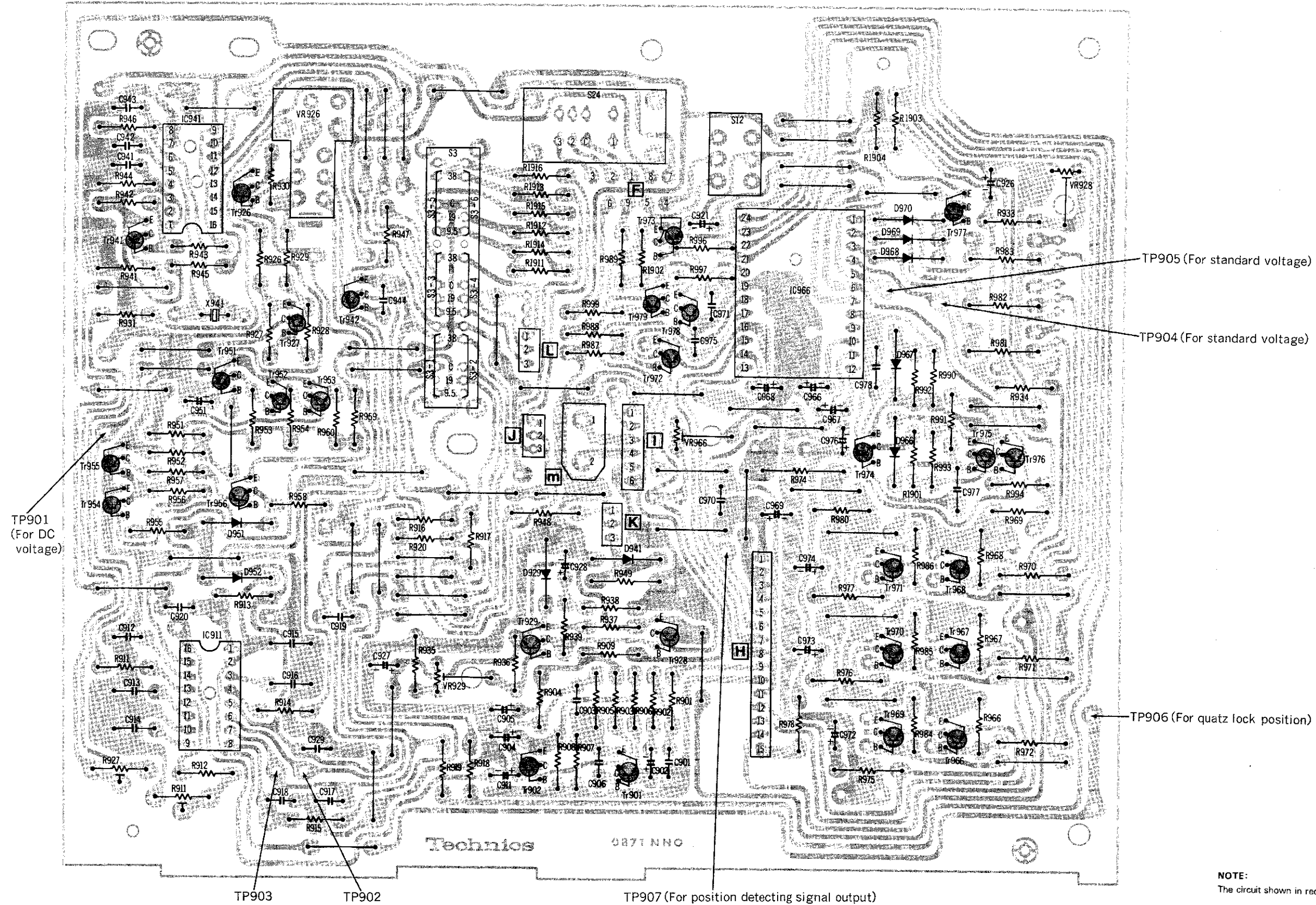
# SCHEMATIC DIAGRAM MODEL RS-1700

## Capstan Motor Section



# CIRCUIT BOARD

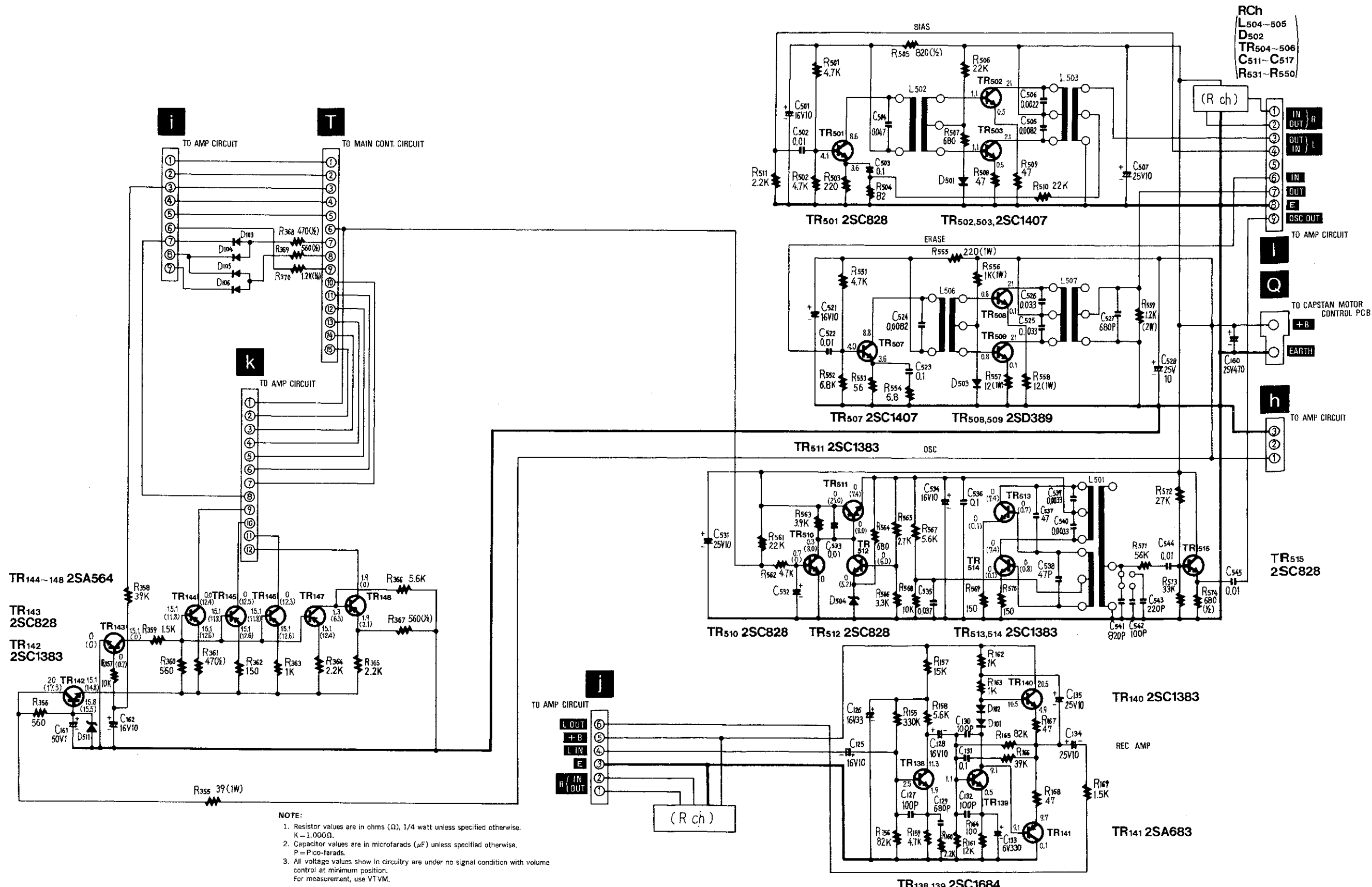
Capstan Motor Control



NOTE:  
The circuit shown in red on the conductor is B circuit.

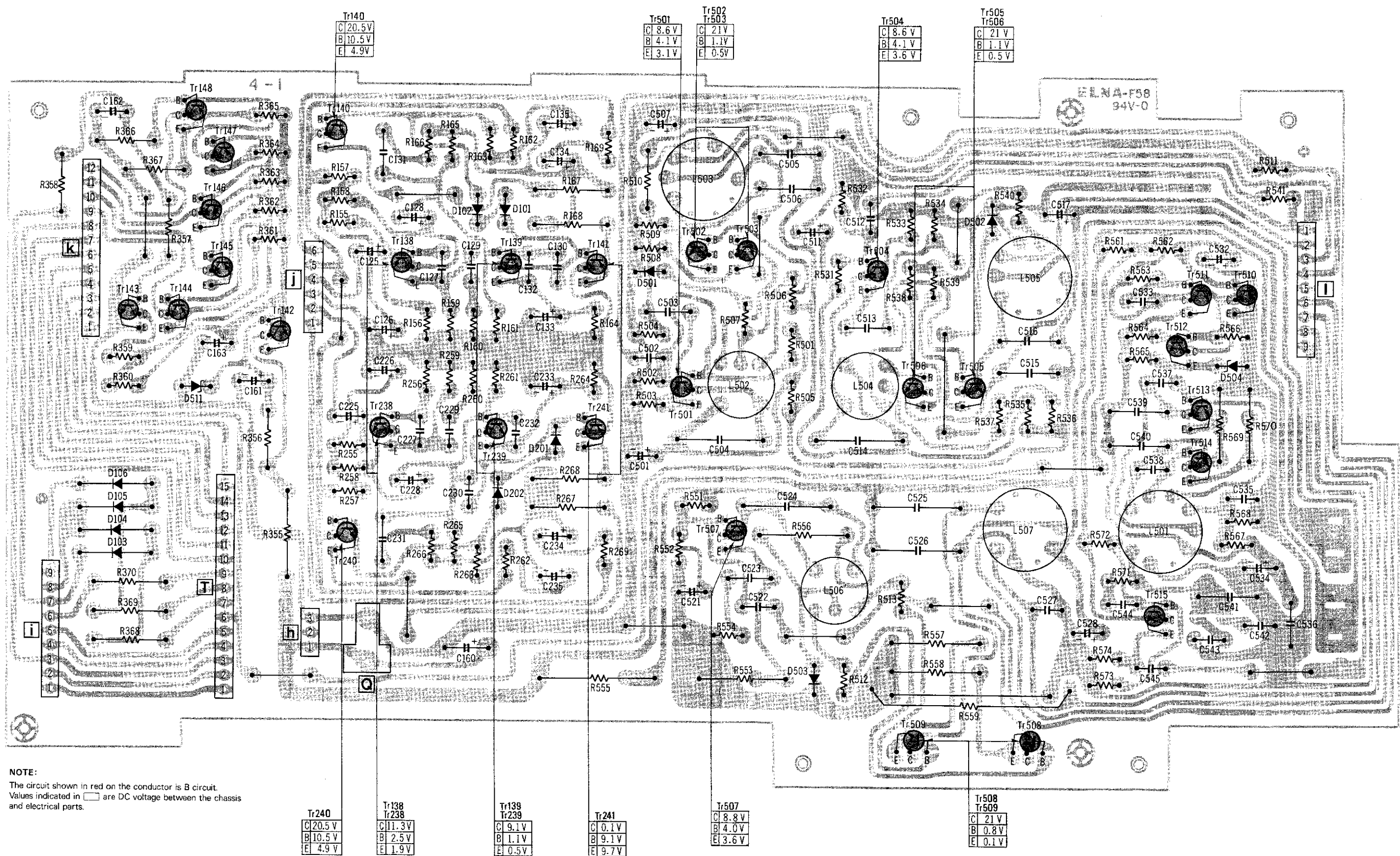
# SCHEMATIC DIAGRAM MODEL RS-1700

## Oscillation Section

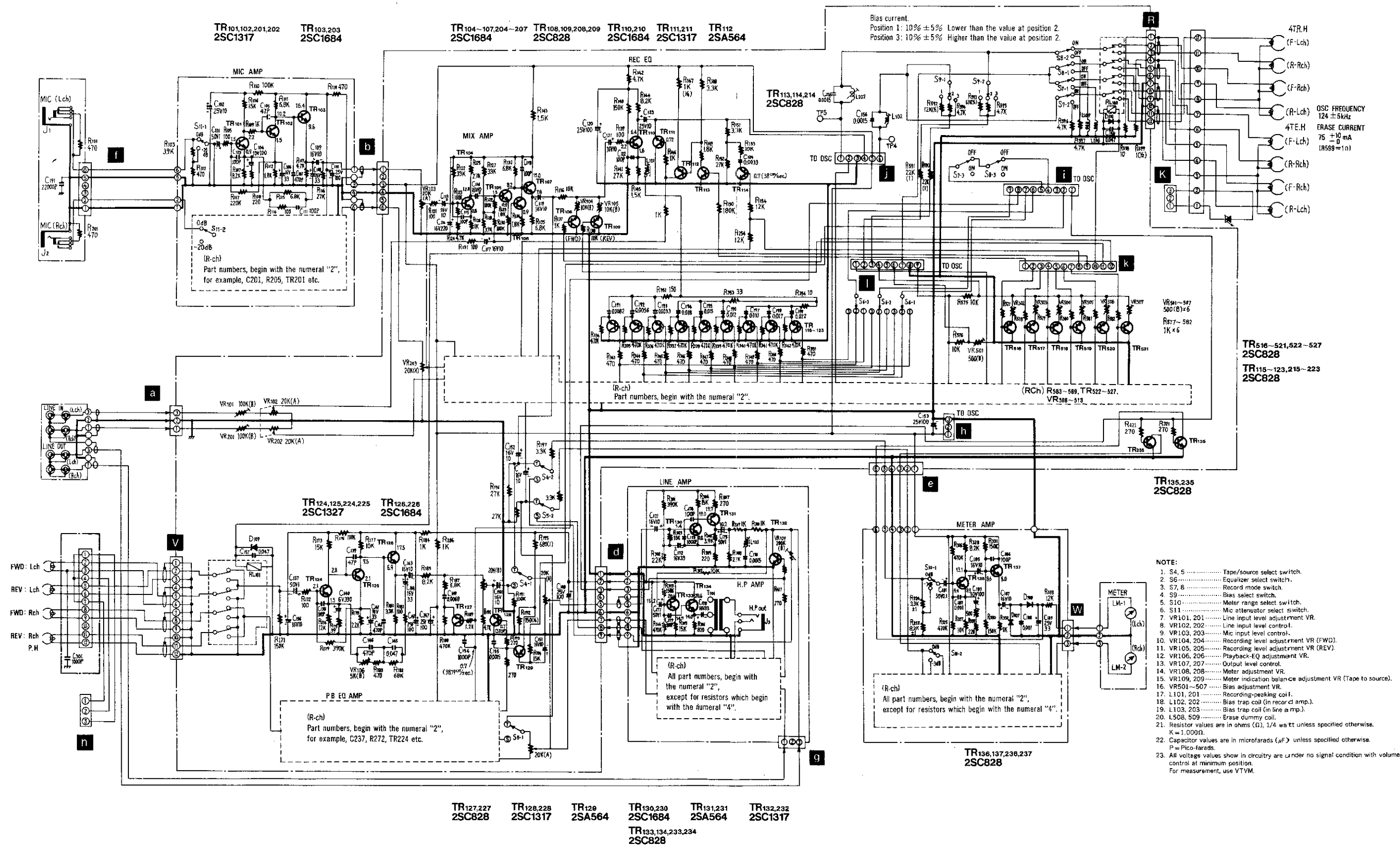


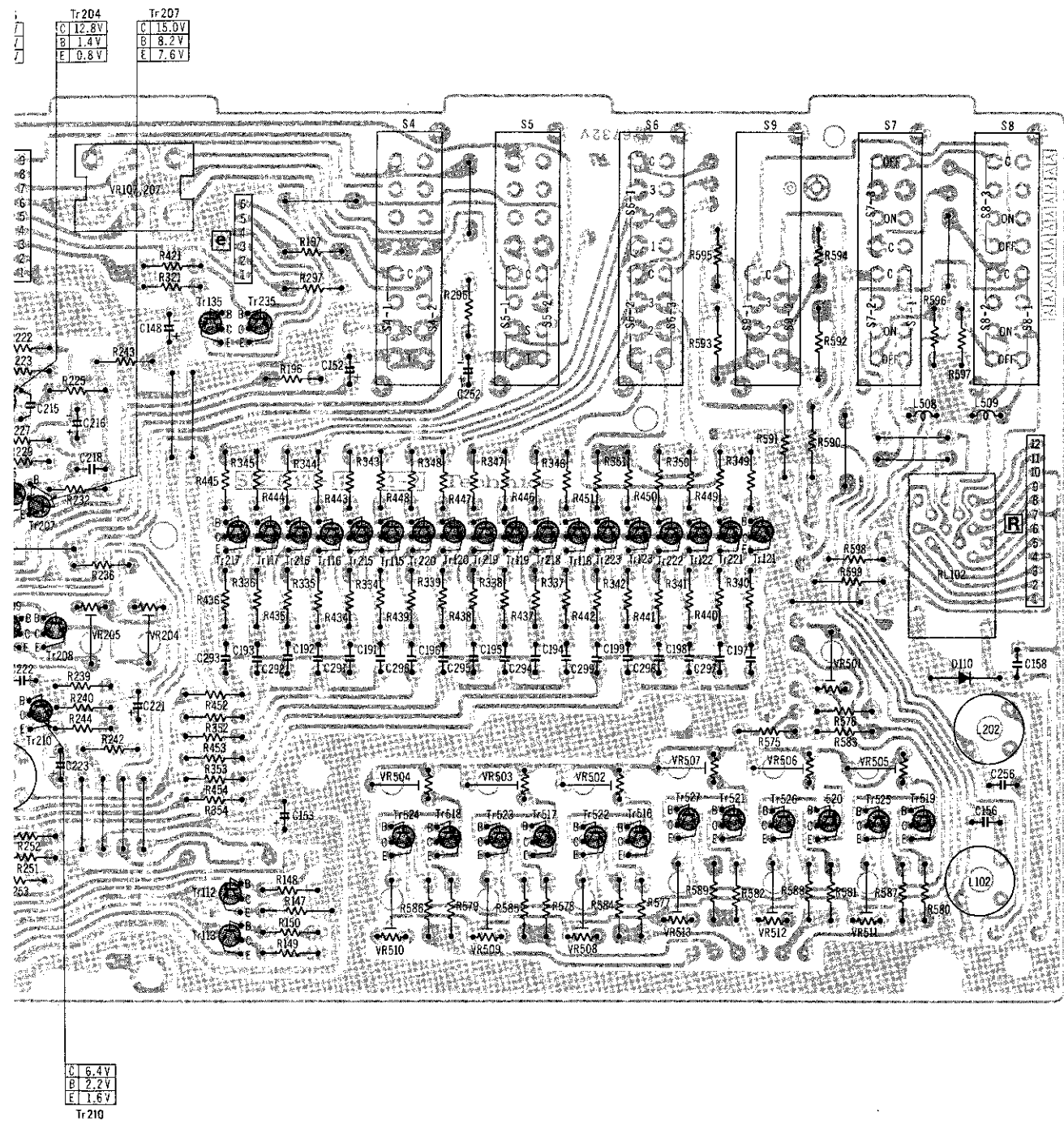
# CIRCUIT BOARD

Oscillation

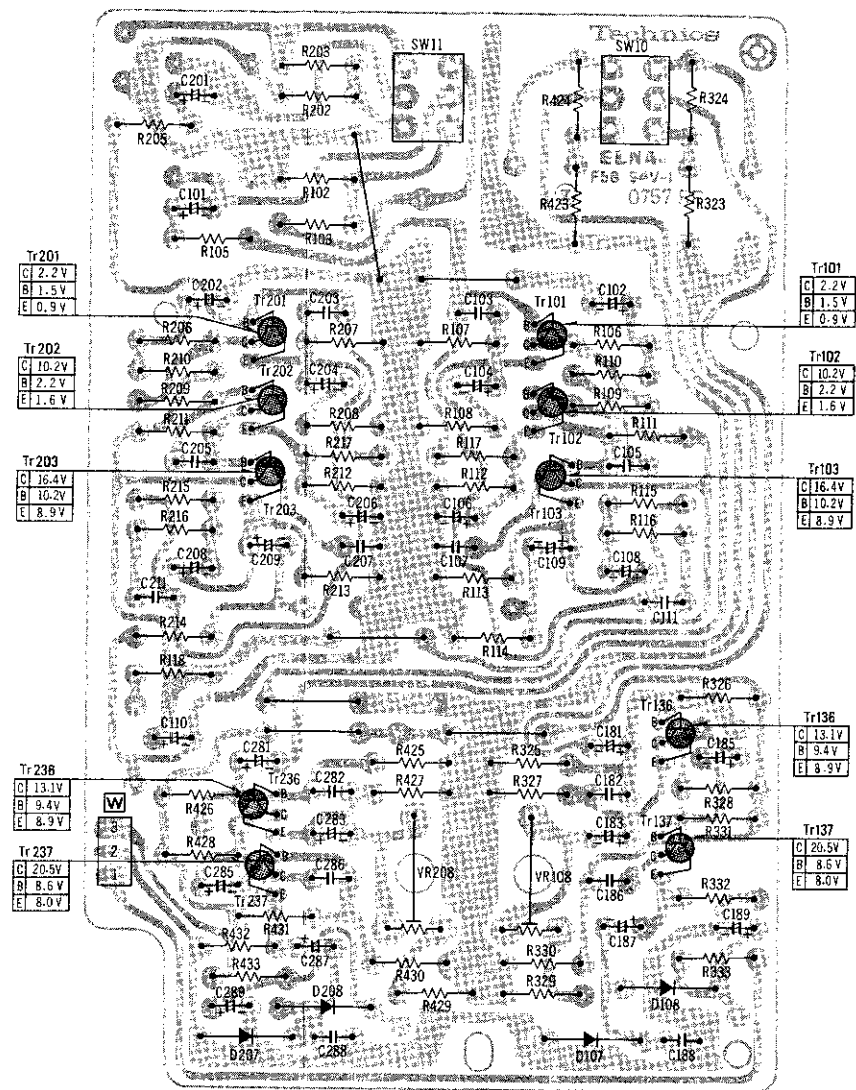


## Main Amp Section

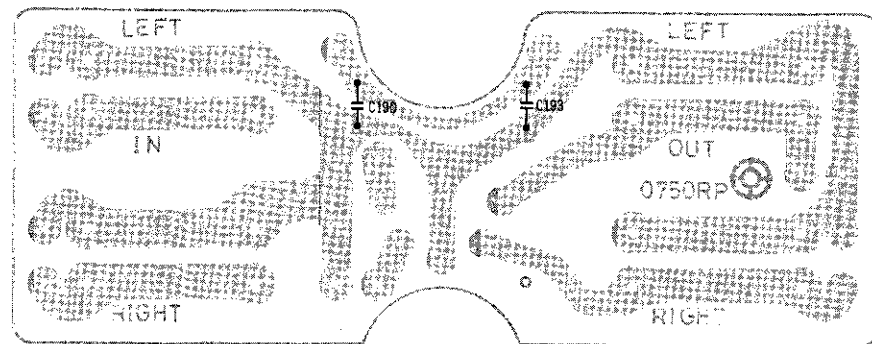




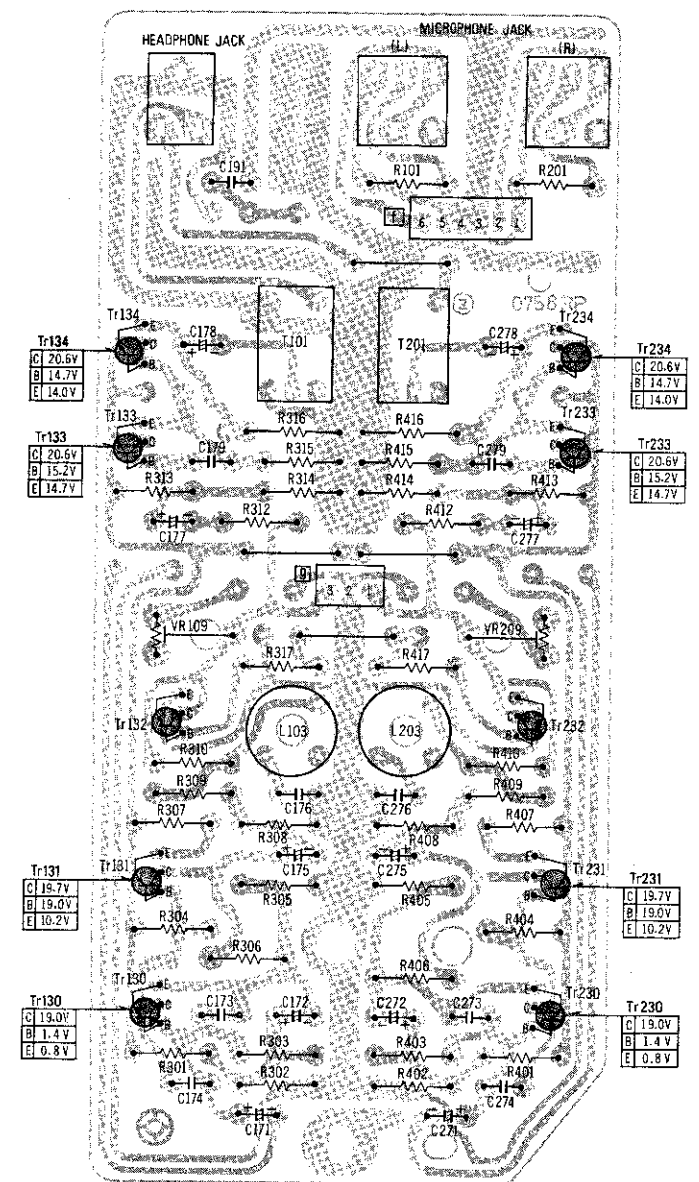
### Mic and Meter Amp



### Jack



### Line-out Headphone Amp



### NOTE:

The circuit shown in red on the conductor is B circuit.  
Values indicated in   are DC voltage between the chassis and electrical parts.



# REPLACEMENT PARTS LIST    MODEL RS-1700 (Technics)

NOTE:  indicated that only parts specified by the manufacturer be used for safety.

| Ref. No.                | Part No.   | Part Name & Description                | Pcs/<br>Set | Remarks |
|-------------------------|------------|----------------------------------------|-------------|---------|
| <b>MECHANICAL PARTS</b> |            |                                        |             |         |
| M1                      | XTN4+10B   | Tapping Screw                          | 15          |         |
| M2                      | QXH0273    | Function Button Holding Plate Assembly | 1           |         |
| M3                      | XUC3FT     | Stop Ring                              | 30          |         |
| M4                      | QMN2142    | Shaft                                  | 1           |         |
| M5                      | QBG1132    | Stopper Rubber                         | 1           |         |
| M6                      | XTN3+12B   | Tapping Screw                          | 3           |         |
| M7                      | XSN3+6S    | Screw                                  | 4           |         |
| M8                      | QXB0504    | Fast Forward Button Assembly           | 1           |         |
| M9                      | QXB0502    | Forward Playback Button Assembly       | 1           |         |
| M10                     | QXB0506    | Stop Button Assembly                   | 1           |         |
| M11                     | QXB0503    | Reverse Playback Button Assembly       | 1           |         |
| M12                     | QXB0505    | Rewind Button Assembly                 | 1           |         |
| M13                     | QMC0050    | Collar                                 | 1           |         |
| M14                     | QBW2019    | Washer                                 | 9           |         |
| M15                     | QXB0501    | Pause Button Assembly                  | 1           |         |
| M16                     | QXB0500    | Record Button Assembly                 | 1           |         |
| M17                     | QML3024    | Switch Arm                             | 1           |         |
| M18                     | QXA0608    | Counter Holding Plate                  | 1           |         |
| M19                     | QMF1862    | Stopper Plate                          | 1           |         |
| M20                     | XTN3+8B    | Screw                                  | 6           |         |
| M21                     | QBT1601    | Slide Plate Spring                     | 1           |         |
| M22                     | QGO1284    | Cue Button-1                           | 1           |         |
| M23                     | QDC0087    | Counter                                | 1           |         |
| M24                     | XUC5FT     | Stop Ring                              | 2           |         |
| M25                     | QXL1148    | Shifter Arm Assembly                   | 1           |         |
| M26                     | XSN3+6S    | Screw                                  | 5           |         |
| M27                     | XWC3B      | Washer                                 | 7           |         |
| M28                     | QBT1239    | Spring                                 | 2           |         |
| M29                     | QMH2004    | Cue Holder                             | 1           |         |
| M30                     | QXA0606    | Angle (L) Assembly                     | 1           |         |
| M31                     | QMR1571    | Rod (L)                                | 1           |         |
| M32                     | QME0147    | Brake Plunger                          | 2           |         |
| M33                     | QBT1420    | Recording Lever Spring                 | 2           |         |
| M34                     | QBT1687    | Spring                                 | 2           |         |
| M35                     | QXL1111    | Arm (L)                                | 1           |         |
| M36                     | QXL1108    | Sub Arm (L) Assembly                   | 1           |         |
| M37                     | QXL1112    | Brake Lever Assembly                   | 2           |         |
| M38                     | QBT1322    | Spring                                 | 2           |         |
| M39                     | QMF1929    | Spring Hook Plate                      | 1           |         |
| M40                     | QMN2139    | Shaft                                  | 1           |         |
| M41                     | QXL1103    | Sub Arm (L) Assembly                   | 1           |         |
| M42                     | XWG4       | Washer                                 | 4           |         |
| M43                     | QMN2140    | Shaft                                  | 2           |         |
| M44                     | QBC1071    | Spring                                 | 2           |         |
| M45                     | XSN2+12    | Screw                                  | 2           |         |
| M46                     | XWA2BFZ    | Washer                                 | 2           |         |
| M47                     | QBT1664    | Spring                                 | 2           |         |
| M48                     | XSN26+6    | Screw                                  | 2           |         |
| M49                     | QBK1217    | Isolation Sheet                        | 2           |         |
| M50                     | XWA26B     | Washer                                 | 2           |         |
| M51                     | QMF1682    | Switch Holding Plate                   | 2           |         |
| M52                     | XUC2FT     | Stop Ring                              | 4           |         |
| M53                     | QDP1704    | Roller                                 | 2           |         |
| M54                     | XUC5FT     | Stop Ring                              | 7           |         |
| M55                     | QXL1098    | Pressure Roller Lever Assembly         | 2           |         |
| M56                     | QMC0053    | Spacer                                 | 2           |         |
| M57                     | QMS2428    | Shaft                                  | 2           |         |
| M58                     | QBW0034    | Washer                                 | 4           |         |
| M60                     | XVE5C30FZS | Hexagon Screw                          | 3           |         |
| M61                     | QXH0268    | Flywheel Cover                         | 1           |         |
| M62                     | QXS1090Z   | Capstan Motor Assembly                 | 1           |         |

| Ref. No. | Part No. | Part Name & Description         | Pcs/<br>Set | Remarks  |          |
|----------|----------|---------------------------------|-------------|----------|----------|
|          |          |                                 |             | Ref. No. | Part No. |
| M63      | QMA3193  | Angle                           | 1           | M95      | QXA0607  |
| M64      | QXL1149  | Shifter Arm (R) Assembly        | 1           | M96      | QMR1572  |
| M65      | QXL1104  | Sub Arm (R) Assembly            | 1           | M97      | QXL1110  |
| M66      | QMA2955  | Cover Angle                     | 1           | M98      | QMF1930  |
| M67      | QXH0248  | Masking Plate                   | 1           | M99      | QBS1109  |
| M68      | QDP1702  | Connection Pulley               | 1           | M100     | XTN4+14B |
| M69      | QDB0173  | Counter Belt-A                  | 1           |          |          |
| M70      | QDB0215  | Counter Belt-B                  | 1           | M101     | QXL1109  |
|          |          |                                 |             | M102     | QXD0070Z |
| M71      | QMF1947  | Connector Holding Plate         | 1           | M103     | QME0138  |
| M72      | XWA4     | Washer                          | 2           | M104     | QMN2168  |
| M73      | XSN4+30S | Screw                           | 2           | M105     | QMF1874  |
| M74      | QXH0258  | Tension Lever (R) Holding Plate | 1           | M106     | XWA3B    |
| M75      | QMC0052  | Spacer                          | 2           | M107     | QXA0633  |
| M76      | QBW2022  | Washer                          | 4           | M108     | QMA3124  |
| M77      | QXL1106  | Tension Lever (R) Assembly      | 1           | M109     | QXQ0097  |
| M78      | XUC4FT   | Stop Ring                       | 3           | M110     | XWA4     |
| M79      | QBT1843  | Spring                          | 2           |          |          |
| M80      | QMA2984  | Angle                           | 1           | M111     | QXH0259  |
|          |          |                                 |             | M112     | QXL1107  |
| M81      | QNQ1069  | Nut                             | 2           | M113     | QMF1855  |
| M82      | QXR0307  | Air Damper Rod (R) Assembly     | 1           |          |          |
| M83      | QXQ0095  | Air Damper (R) Assembly         | 1           |          |          |
| M84      | QXH0257  | Tension Lever (L) Holding Plate | 1           |          |          |
| M85      | QXL1105  | Tension Lever (L) Assembly      | 1           |          |          |
| M86      | QMA2985  | Angle                           | 1           | M114     | XSN26+8  |
| M87      | QXR0308  | Air Damper Rod (L) Assembly     | 1           | M115     | XWA26B   |
| M88      | QXQ0096  | Air Damper (L) Assembly         | 1           | M116     | QGC1065  |
| M89      | QMF1852  | Adjustment Plate                | 1           | M117     | QMF1941  |
| M90      | QBW2023  | Washer                          | 1           | M118     | QMZ1181  |
|          |          |                                 |             | M119     | QXZ0060  |
|          |          |                                 |             | M120     | XSN26+6  |
|          |          |                                 |             | M121     | QKJ0163  |
| M91      | QML3007  | Cue Lever                       | 1           | M122     | QBC1304  |
| M92      | QBN1346  | Spring                          | 1           | M123     | XWA2BFZ  |
| M93      | QMR1531  | Connecting Rod                  | 1           |          |          |
| M94      | QXH0259  | Meter Holding Plate             | 1           | M124     | XSN2+5   |

| Ref. No.    | Part No.   | Part Name & Description | Pcs/<br>Set | Remarks    |           |
|-------------|------------|-------------------------|-------------|------------|-----------|
|             |            |                         |             |            |           |
| M125        | XS2+4      | Screw                   | 4           |            |           |
| M126        | XWG2FZ     | Washer                  | 4           |            |           |
| M127        | QBC1180    | Spring                  | 12          |            |           |
| M128        | QMG0029    | Tape Guide              | 2           |            |           |
| M129        | QMA2929    | Angle                   | 1           |            |           |
| M130        | XSS26+6BV  | Screw                   | 2           |            |           |
| M131        | QNQ1069    | Nut                     | 2           |            |           |
| M132        | QH1248     | Screw                   | 14          |            |           |
| M133        | QMK1680    | Head Base Plate         | 1           |            |           |
| RESISTORS   |            |                         |             |            |           |
| R1          | ERD25TJ102 | Carbon Resistor         | 1           | 1KΩ 1/4W   | SD SUPPLY |
| R2          | ERD25TJ100 | "                       | 1           | 10Ω 1/4W   | "         |
| R3          | ERD25TJ102 | "                       | 1           | 1KΩ 1/4W   | "         |
| R4          | ERD25TJ100 | "                       | 1           | 10Ω 1/4W   | "         |
| R5          | ERD25TJ102 | "                       | 1           | 1KΩ 1/4W   | "         |
| R6          | ERD25TJ100 | "                       | 1           | 10Ω 1/4W   | "         |
| R7          | ERD25TJ102 | "                       | 1           | 1KΩ 1/4W   | "         |
| R8          | ERD25TJ100 | "                       | 1           | 10Ω 1/4W   | "         |
| R9          | ERD25TJ102 | "                       | 1           | 1KΩ 1/4W   | "         |
| R10         | ERD25TJ100 | "                       | 1           | 10Ω 1/4W   | "         |
| R11         | ERD25TJ102 | "                       | 1           | 1KΩ 1/4W   | "         |
| R12         | ERD25TJ100 | "                       | 1           | 10Ω 1/4W   | "         |
| R13         | ERD25TJ102 | "                       | 1           | 1KΩ 1/4W   | "         |
| R14         | ERD25TJ100 | "                       | 1           | 10Ω 1/4W   | "         |
| R15         | ERD25TJ562 | "                       | 1           | 5.6KΩ 1/4W | "         |
| R16         | ERD25TJ151 | "                       | 1           | 150Ω 1/4W  | "         |
| R17         | ERD25TJ102 | "                       | 1           | 1KΩ 1/4W   | "         |
| R18         | ERD25TJ100 | "                       | 1           | 10Ω 1/4W   | "         |
| R19         | ERD25TJ102 | "                       | 1           | 1KΩ 1/4W   | "         |
| R20         | ERD25TJ100 | "                       | 1           | 10Ω 1/4W   | "         |
| R21, 22, 23 | ERD25TJ102 | "                       | 3           | 1KΩ 1/4W   | "         |
| R24         | ERD25TJ273 | "                       | 1           | 27KΩ 1/4W  | "         |
| R25         | ERD25TJ103 | "                       | 1           | 10KΩ 1/4W  | "         |

| Ref. No.           | Part No.   | Part Name & Description | Pcs/<br>Set | Remarks   |  | Ref. No.     | Part No.    | Part Name & Description | Pcs/<br>Set | Remarks   |  |
|--------------------|------------|-------------------------|-------------|-----------|--|--------------|-------------|-------------------------|-------------|-----------|--|
|                    |            |                         |             |           |  |              |             |                         |             |           |  |
| R72, 73,<br>74, 75 | ERD25TJ103 | Carbon Resistor         | 4           | SD SUPPLY |  | R112         | ERD25TJ182  | Carbon Resistor         | 1           | SD SUPPLY |  |
| R76, 77            | ERD25TJ334 | "                       | 2           | "         |  | R113         | ERD25TJ472  | "                       | 1           | "         |  |
| R78                | ERD25TJ103 | "                       | 1           | "         |  | R114         | ERD25TJ273  | "                       | 1           | "         |  |
| R79                | ERD25TJ273 | "                       | 1           | "         |  |              |             |                         |             |           |  |
| R80, 81            | ERD25TJ103 | "                       | 2           | "         |  | R115         | ERD25TJ682  | "                       | 1           | "         |  |
| R82                | ERD25TJ273 | "                       | 1           | "         |  | R116         | ERD25TJ101  | "                       | 1           | "         |  |
| R83                | ERD25TJ103 | "                       | 1           | "         |  | R117         | ERD25TJ224  | "                       | 1           | "         |  |
| R84                | ERD25TJ273 | "                       | 1           | "         |  | R118         | ERG12ANJ471 | Metal-oxide Resistor    | 1           | "         |  |
| R85                | ERD25TJ103 | "                       | 1           | "         |  | R121         | ERD25TJ101  | Carbon Resistor         | 1           | "         |  |
| R86                | ERD25TJ473 | "                       | 1           | "         |  | R122         | ERD25TJ333  | "                       | 1           | "         |  |
| R87                | ERD25TJ222 | "                       | 1           | "         |  | R123         | ERD25TJ104  | "                       | 1           | "         |  |
| R88                | ERD25TJ151 | "                       | 1           | "         |  | R124         | ERD25TJ472  | "                       | 1           | "         |  |
| R89                | ERD25TJ152 | "                       | 1           | "         |  | R125         | ERD25TJ272  | "                       | 1           | "         |  |
| R90                | ERD25TJ104 | "                       | 1           | "         |  | R126         | ERD25TJ102  | "                       | 1           | "         |  |
| R91                | ERD25TJ562 | "                       | 1           | "         |  |              |             |                         |             |           |  |
| R92                | ERD25TJ103 | "                       | 1           | "         |  | R127         | ERD25TJ333  | "                       | 1           | "         |  |
| R93                | ERD25TJ473 | "                       | 1           | "         |  | R128         | ERD25TJ392  | "                       | 1           | "         |  |
| R94                | ERD25TJ103 | "                       | 1           | "         |  | R129,<br>130 | ERD25TJ104  | "                       | 2           | "         |  |
| R95                | ERD25TJ472 | "                       | 1           | "         |  | R131         | ERD25TJ101  | "                       | 1           | "         |  |
| R96                | ERD25TJ562 | "                       | 1           | "         |  | R132         | ERD25TJ682  | "                       | 1           | "         |  |
| R97                | ERD25TJ473 | "                       | 1           | "         |  | R133,<br>134 | ERD25TJ182  | "                       | 2           | "         |  |
| R98                | ERD25TJ472 | "                       | 1           | "         |  | R135         | ERD25TJ682  | "                       | 1           | "         |  |
| R99                | ERD25TJ562 | "                       | 1           | "         |  | R136         | ERD25TJ103  | "                       | 1           | "         |  |
| R101,<br>102       | ERD25TJ471 | "                       | 1           | "         |  | R137         | ERD25TJ102  | "                       | 1           | "         |  |
| R103               | ERD25TJ392 | "                       | 1           | "         |  | R138         | ERD25TJ103  | "                       | 1           | "         |  |
| R105               | ERD25TJ101 | "                       | 1           | "         |  | R139         | ERD25TJ101  | "                       | 1           | "         |  |
| R106               | ERD25TJ153 | "                       | 1           | "         |  | R140         | ERD25TJ154  | "                       | 1           | "         |  |
| R107               | ERD25TJ822 | "                       | 1           | "         |  | R141         | ERD25TJ273  | "                       | 1           | "         |  |
| R108               | ERD25TJ271 | "                       | 1           | "         |  | R142         | ERD25TJ472  | "                       | 1           | "         |  |
| R109               | ERD25TJ102 | "                       | 1           | "         |  | R143         | ERD25TJ152  | "                       | 1           | "         |  |
| R110               | ERD25TJ104 | "                       | 1           | "         |  | R144         | ERD25TJ822  | "                       | 1           | "         |  |
| R111               | ERD25TJ682 | "                       | 1           | "         |  | R145         | ERD25TJ152  | "                       | 1           | "         |  |
|                    |            |                         |             |           |  | R146,<br>147 | ERD25TJ102  | "                       | 2           | "         |  |
|                    |            |                         |             |           |  | R148         | ERD25TJ332  | "                       | 1           | "         |  |

| Ref. No.  | Part No.    | Part Name & Description       | Pcs/<br>Set | Remarks   |  |
|-----------|-------------|-------------------------------|-------------|-----------|--|
|           |             |                               |             |           |  |
| R149      | ERD25TJ182  | Carbon Resistor 1.8KΩ 1/4W    | 1           | SD SUPPLY |  |
| R150      | ERD25TJ184  | " 180KΩ 1/4W                  | 1           | "         |  |
| R151      | ERD25TJ332  | " 3.2KΩ 1/4W                  | 1           | "         |  |
| R152      | ERD25TJ273  | " 27KΩ 1/4W                   | 1           | "         |  |
| R153      | ERD25TJ103  | " 10KΩ 1/4W                   | 1           | "         |  |
| R154      | ERD25TJ122  | " 1.2KΩ 1/4W                  | 1           | "         |  |
| R155      | ERD25TJ334  | " 330KΩ 1/4W                  | 1           | "         |  |
| R156      | ERD25TJ823  | " 82KΩ 1/4W                   | 1           | "         |  |
| R157      | ERD25TJ153  | " 15KΩ 1/4W                   | 1           | "         |  |
| R158      | ERD25TJ562  | " 5.6KΩ 1/4W                  | 1           | "         |  |
| R159      | ERD25TJ472  | " 4.7KΩ 1/4W                  | 1           | "         |  |
| R160      | ERD25TJ222  | " 2.2KΩ 1/4W                  | 1           | "         |  |
| R161      | ERD25TJ123  | " 12KΩ 1/4W                   | 1           | "         |  |
| R162, 163 | ERD25TJ102  | " 1KΩ 1/4W                    | 2           | "         |  |
| R164      | ERD25TJ101  | " 100Ω 1/4W                   | 1           | "         |  |
| R165      | ERD25TJ823  | " 82KΩ 1/4W                   | 1           | "         |  |
| R166      | ERD25TJ393  | " 39KΩ 1/4W                   | 1           | "         |  |
| R167, 168 | ERG12ANJ470 | Metal-oxide Resistor 47Ω 1/2W | 2           | "         |  |
| R169      | ERD25TJ152  | Carbon Resistor 1.5KΩ 1/4W    | 1           | "         |  |
| R170      | ERD25TJ272  | " 2.7KΩ 1/4W                  | 1           | "         |  |
| R171      | ERD25TJ154  | " 150KΩ 1/4W                  | 1           | "         |  |
| R172      | ERD25TJ101  | " 100Ω 1/4W                   | 1           | "         |  |
| R173      | ERD25TJ153  | " 15KΩ 1/4W                   | 1           | "         |  |
| R174      | ERD25TJ123  | " 12KΩ 1/4W                   | 1           | "         |  |
| R175      | ERD25TJ390  | " 39Ω 1/4W                    | 1           | "         |  |
| R176      | ERD25TJ104  | " 100KΩ 1/4W                  | 1           | "         |  |
| R177      | ERD25TJ103  | " 10KΩ 1/4W                   | 1           | "         |  |
| R178      | ERD25TJ222  | " 2.2KΩ 1/4W                  | 1           | "         |  |
| R179      | ERD25TJ394  | " 390KΩ 1/4W                  | 1           | "         |  |
| R180      | ERD25TJ332  | " 3.3KΩ 1/4W                  | 1           | "         |  |
| R181      | ERD25TJ101  | " 100Ω 1/4W                   | 1           | "         |  |
|           | — Cont. —   |                               |             |           |  |
| R182      | ERD25TJ683  | Carbon Resistor 68KΩ 1/4W     | 1           | SD SUPPLY |  |
| R183      | ERD25TJ471  | " 470Ω 1/4W                   | 1           | "         |  |
| R184      | ERD25TJ102  | " 1KΩ 1/4W                    | 1           | "         |  |
| R185      | ERD25TJ822  | " 8.2KΩ 1/4W                  | 1           | "         |  |
| R187      | ERD25TJ682  | " 6.8KΩ 1/4W                  | 1           | "         |  |
| R188      | ERD25TJ474  | " 470KΩ 1/4W                  | 1           | "         |  |
| R189      | ERD25TJ122  | " 1.2KΩ 1/4W                  | 1           | "         |  |
| R190      | ERD25TJ472  | " 4.7KΩ 1/4W                  | 1           | "         |  |
| R191      | ERD25TJ104  | " 100KΩ 1/4W                  | 1           | "         |  |
| R192      | ERGIANJ151  | Metal-oxide Resistor 150Ω 1W  | 1           | "         |  |
| R193      | ERG12ANJ271 | " 270Ω 1/2W                   | 1           | "         |  |
| R194      | ERD25TJ153  | Carbon Resistor 15KΩ 1/4W     | 1           | "         |  |
| R195      | ERGIANJ681  | Metal-oxide Resistor 680Ω 1W  | 1           | "         |  |
| R196      | ERD25TJ273  | Carbon Resistor 27KΩ 1/4W     | 1           | "         |  |
| R197      | ERD25TJ332  | " 3.3KΩ 1/4W                  | 1           | "         |  |
| R201, 202 | ERD25TJ471  | " 470Ω 1/4W                   | 2           | "         |  |
| R203      | ERD25TJ392  | " 3.9KΩ 1/4W                  | 1           | "         |  |
| R205      | ERD25TJ101  | " 100Ω 1/4W                   | 1           | "         |  |
| R206      | ERD25TJ153  | " 15KΩ 1/4W                   | 1           | "         |  |
| R207      | ERD25TJ822  | " 8.2KΩ 1/4W                  | 1           | "         |  |
| R208      | ERD25TJ271  | " 270Ω 1/4W                   | 1           | "         |  |
| R209      | ERD25TJ102  | " 1KΩ 1/4W                    | 1           | "         |  |
| R210      | ERD25TJ104  | " 100KΩ 1/4W                  | 1           | "         |  |
| R211      | ERD25TJ682  | " 6.8KΩ 1/4W                  | 1           | "         |  |
| R212      | ERD25TJ182  | " 1.8KΩ 1/4W                  | 1           | "         |  |
| R213      | ERD25TJ472  | " 4.7KΩ 1/4W                  | 1           | "         |  |
| R214      | ERD25TJ273  | " 27KΩ 1/4W                   | 1           | "         |  |
| R215      | ERD25TJ682  | " 6.8KΩ 1/4W                  | 1           | "         |  |
| R216      | ERD25TJ101  | " 100Ω 1/4W                   | 1           | "         |  |
| R217      | ERD25TJ224  | " 220KΩ 1/4W                  | 1           | "         |  |
| R221      | ERD25TJ101  | " 100Ω 1/4W                   | 1           | "         |  |
| R222      | ERD25TJ333  | " 33KΩ 1/4W                   | 1           | "         |  |

| Ref. No.  | Part No.    | Part Name & Description        | Pcs/<br>Set | Remarks   |  |
|-----------|-------------|--------------------------------|-------------|-----------|--|
|           |             |                                |             |           |  |
| R223      | ERD25TJ104  | Carbon Resistor 100KΩ 1/4W     | 1           | SD SUPPLY |  |
| R224      | ERD25TJ472  | " 4.7KΩ 1/4W                   | 1           | "         |  |
| R225      | ERD25TJ272  | " 2.7KΩ 1/4W                   | 1           | "         |  |
| R226      | ERD25TJ102  | " 1KΩ 1/4W                     | 1           | "         |  |
| R227      | ERD25TJ333  | " 33KΩ 1/4W                    | 1           | "         |  |
| R228      | ERD25TJ392  | " 3.9KΩ 1/4W                   | 1           | "         |  |
| R229, 230 | ERD25TJ104  | " 100KΩ 1/4W                   | 2           | "         |  |
| R231      | ERD25TJ101  | " 100Ω 1/4W                    | 1           | "         |  |
| R232      | ERD25TJ682  | " 6.8KΩ 1/4W                   | 1           | "         |  |
| R233, 234 | ERD25TJ182  | " 1.8KΩ 1/4W                   | 2           | "         |  |
| R235      | ERD25TJ682  | " 6.8KΩ 1/4W                   | 1           | "         |  |
| R236      | ERD25TJ103  | " 10KΩ 1/4W                    | 1           | "         |  |
| R237      | ERD25TJ102  | " 1KΩ 1/4W                     | 1           | "         |  |
| R238      | ERD25TJ103  | " 10KΩ 1/4W                    | 1           | "         |  |
| R239      | ERD25TJ101  | " 100Ω 1/4W                    | 1           | "         |  |
| R240      | ERD25TJ154  | " 150KΩ 1/4W                   | 1           | "         |  |
| R241      | ERD25TJ273  | " 27KΩ 1/4W                    | 1           | "         |  |
| R242      | ERD25TJ472  | " 4.7KΩ 1/4W                   | 1           | "         |  |
| R243      | ERD25TJ152  | " 1.5KΩ 1/4W                   | 1           | "         |  |
| R244      | ERD25TJ822  | " 8.2KΩ 1/4W                   | 1           | "         |  |
| R245      | ERD25TJ152  | " 1.5KΩ 1/4W                   | 1           | "         |  |
| R246      | ERD25TJ102  | " 1KΩ 1/4W                     | 1           | "         |  |
| R251      | ERD25TJ332  | " 3.3KΩ 1/4W                   | 1           | "         |  |
| R252      | ERD25TJ273  | " 27KΩ 1/4W                    | 1           | "         |  |
| R253      | ERD25TJ103  | " 10KΩ 1/4W                    | 1           | "         |  |
| R254      | ERD25TJ122  | " 1.2KΩ 1/4W                   | 1           | "         |  |
| R255      | ERD25TJ334  | " 330KΩ 1/4W                   | 1           | "         |  |
| R256      | ERD25TJ823  | " 82KΩ 1/4W                    | 1           | "         |  |
| R257      | ERD25TJ153  | " 15KΩ 1/4W                    | 1           | "         |  |
| R258      | ERD25TJ562  | " 5.6KΩ 1/4W                   | 1           | "         |  |
| R259      | ERD25TJ472  | " 4.7KΩ 1/4W                   | 1           | "         |  |
| R260      | ERD25TJ222  | " 2.2KΩ 1/4W                   | 1           | "         |  |
| R261      | ERD25TJ123  | Carbon Resistor 12KΩ 1/4W      | 1           | SD SUPPLY |  |
| R262, 263 | ERD25TJ102  | " 1KΩ 1/4W                     | 2           | "         |  |
| R264      | ERD25TJ101  | " 100Ω 1/4W                    | 1           | "         |  |
| R265      | ERD25TJ823  | " 82KΩ 1/4W                    | 1           | "         |  |
| R266      | ERD25TJ393  | " 39KΩ 1/4W                    | 1           | "         |  |
| R267, 268 | ERG12ANJ470 | Metal-oxide Resistor 47Ω 1/2W  | 2           | "         |  |
| R269      | ERD25TJ152  | Carbon Resistor 1.5KΩ 1/4W     | 1           | "         |  |
| R271      | ERD25TJ154  | " 150KΩ 1/4W                   | 1           | "         |  |
| R272      | ERD25TJ101  | " 100Ω 1/4W                    | 1           | "         |  |
| R273      | ERD25TJ153  | " 15KΩ 1/4W                    | 1           | "         |  |
| R274      | ERD25TJ123  | " 12KΩ 1/4W                    | 1           | "         |  |
| R275      | ERD25TJ390  | " 39Ω 1/4W                     | 1           | "         |  |
| R276      | ERD25TJ104  | " 100KΩ 1/4W                   | 1           | "         |  |
| R277      | ERD25TJ103  | " 10KΩ 1/4W                    | 1           | "         |  |
| R278      | ERD25TJ222  | " 2.2KΩ 1/4W                   | 1           | "         |  |
| R279      | ERD25TJ394  | " 390KΩ 1/4W                   | 1           | "         |  |
| R280      | ERD25TJ332  | " 3.3KΩ 1/4W                   | 1           | "         |  |
| R281      | ERD25TJ101  | " 100Ω 1/4W                    | 1           | "         |  |
| R282      | ERD25TJ683  | " 68KΩ 1/4W                    | 1           | "         |  |
| R283      | ERD25TJ471  | " 470Ω 1/4W                    | 1           | "         |  |
| R284      | ERD25TJ102  | " 1KΩ 1/4W                     | 1           | "         |  |
| R285      | ERD25TJ822  | " 8.2KΩ 1/4W                   | 1           | "         |  |
| R287      | ERD25TJ682  | " 6.8KΩ 1/4W                   | 1           | "         |  |
| R288      | ERD25TJ474  | " 470KΩ 1/4W                   | 1           | "         |  |
| R289      | ERD25TJ122  | " 1.2KΩ 1/4W                   | 1           | "         |  |
| R290      | ERD25TJ472  | " 4.7KΩ 1/4W                   | 1           | "         |  |
| R291      | ERD25TJ104  | " 100KΩ 1/4W                   | 1           | "         |  |
| R293      | ERG12ANJ271 | Metal-oxide Resistor 270Ω 1/2W | 1           | "         |  |
| R294      | ERD25TJ153  | Carbon Resistor 15KΩ 1/4W      | 1           | "         |  |
| R296      | ERD25TJ273  | " 27KΩ 1/4W                    | 1           | "         |  |
| R297      | ERD25TJ332  | " 3.3KΩ 1/4W                   | 1           | "         |  |
| R301      | ERD25TJ394  | " 390KΩ 1/4W                   | 1           | "         |  |

| Ref. No.                                     | Part No.    | Part Name & Description | Pcs/<br>Set | Remarks   |  |
|----------------------------------------------|-------------|-------------------------|-------------|-----------|--|
|                                              |             |                         |             |           |  |
| R302                                         | ERD25TJ223  | Carbon Resistor         | 1           | SD SUPPLY |  |
| R303                                         | ERD25TJ103  | "                       | 1           | "         |  |
| R304                                         | ERD25TJ153  | "                       | 1           | "         |  |
| R305                                         | ERD25TJ221  | "                       | 1           | "         |  |
| R306                                         | ERD25TJ392  | "                       | 1           | "         |  |
| R307                                         | ERD25TJ271  | "                       | 1           | "         |  |
| R308                                         | ERD25TJ273  | "                       | 1           | "         |  |
| R309, 310                                    | ERD25TJ102  | "                       | 2           | "         |  |
| R312                                         | ERD25TJ103  | "                       | 1           | "         |  |
| R313                                         | ERD25TJ154  | "                       | 1           | "         |  |
| R314                                         | ERD25TJ474  | "                       | 1           | "         |  |
| R315                                         | ERD25TJ153  | "                       | 1           | "         |  |
| R316                                         | ERD25TJ821  | "                       | 1           | "         |  |
| R317, 321                                    | ERD25TJ271  | "                       | 2           | "         |  |
| R323                                         | ERD25TJ822  | "                       | 1           | "         |  |
| R324                                         | ERD25TJ332  | "                       | 1           | "         |  |
| R325, 326                                    | ERD25TJ474  | "                       | 2           | "         |  |
| R327                                         | ERD25TJ103  | "                       | 1           | "         |  |
| R328                                         | ERD25TJ822  | "                       | 1           | "         |  |
| R329                                         | ERD25TJ221  | "                       | 1           | "         |  |
| R330, 331                                    | ERD25TJ154  | "                       | 2           | "         |  |
| R332                                         | ERD25TJ102  | "                       | 1           | "         |  |
| R333                                         | ERD25TJ123  | "                       | 1           | "         |  |
| R334, 335, 336, 337, 338, 339, 340, 341, 342 | ERD25TJ474  | "                       | 9           | "         |  |
| R343, 344, 345, 346, 347, 348, 349, 350, 351 | ERD25TJ471  | "                       | 9           | "         |  |
| R352                                         | ERD25TJ151  | "                       | 1           | "         |  |
| R353                                         | ERD25TJ330  | "                       | 1           | "         |  |
| R354                                         | ERD25TJ100  | "                       | 1           | "         |  |
| R355                                         | ERG1ANJ390  | Metal-oxide Resistor    | 1           | "         |  |
| R356                                         | ERD25TJ561  | Carbon Resistor         | 1           | "         |  |
| R357                                         | ERD25TJ103  | Carbon Resistor         | 1           | SD SUPPLY |  |
| R358                                         | ERD25TJ393  | "                       | 1           | "         |  |
| R359                                         | ERD25TJ152  | "                       | 1           | "         |  |
| R360                                         | ERD25TJ561  | "                       | 1           | "         |  |
| R361, 362                                    | ERD25TJ470  | "                       | 2           | "         |  |
| R363                                         | ERD25TJ102  | "                       | 1           | "         |  |
| R364, 365                                    | ERD25TJ222  | "                       | 2           | "         |  |
| R366                                         | ERD25TJ562  | "                       | 1           | "         |  |
| R367                                         | ERD25TJ561  | "                       | 1           | "         |  |
| R368                                         | ERG12ANJ471 | Metal-oxide Resistor    | 1           | "         |  |
| R369                                         | ERG12ANJ561 | "                       | 1           | "         |  |
| R370                                         | ERD25TJ122  | "                       | 1           | "         |  |
| R401                                         | ERD25TJ394  | Carbon Resistor         | 1           | "         |  |
| R402                                         | ERD25TJ223  | "                       | 1           | "         |  |
| R403                                         | ERD25TJ103  | "                       | 1           | "         |  |
| R404                                         | ERD25TJ153  | "                       | 1           | "         |  |
| R405                                         | ERD25TJ221  | "                       | 1           | "         |  |
| R406                                         | ERD25TJ392  | "                       | 1           | "         |  |
| R407                                         | ERD25TJ271  | "                       | 1           | "         |  |
| R408                                         | ERD25TJ273  | "                       | 1           | "         |  |
| R409, 410                                    | ERD25TJ102  | "                       | 2           | "         |  |
| R412                                         | ERD25TJ103  | "                       | 1           | "         |  |
| R413                                         | ERD25TJ154  | "                       | 1           | "         |  |
| R414                                         | ERD25TJ474  | "                       | 1           | "         |  |
| R415                                         | ERD25TJ153  | "                       | 1           | "         |  |
| R416                                         | ERG12ANJ821 | Metal-oxide Resistor    | 1           | "         |  |
| R417, 421                                    | ERD25TJ271  | Carbon Resistor         | 2           | "         |  |
| R423                                         | ERD25TJ822  | "                       | 1           | "         |  |
| R424                                         | ERD25TJ332  | "                       | 1           | "         |  |
| R425, 426                                    | ERD25TJ474  | "                       | 2           | "         |  |
| R427                                         | ERD25TJ103  | "                       | 1           | "         |  |
| R428                                         | ERD25TJ822  | "                       | 1           | "         |  |

| Ref. No.                                     | Part No.    | Part Name & Description        | Pcs/<br>Set | Remarks   |           |
|----------------------------------------------|-------------|--------------------------------|-------------|-----------|-----------|
|                                              |             |                                |             |           |           |
| R429                                         | ERD25TJ221  | Carbon Resistor 220Ω 1/4W      | 1           | SD SUPPLY |           |
| R430, 431                                    | ERD25TJ154  | " 150KΩ 1/4W                   | 2           | "         |           |
| R432                                         | ERD25TJ102  | " 1KΩ 1/4W                     | 1           | "         |           |
| R433                                         | ERD25TJ123  | " 12KΩ 1/4W                    | 1           | "         |           |
| R434, 435, 436, 437, 438, 439, 440, 441, 442 | ERD25TJ474  | " 470KΩ 1/4W                   | 9           | "         |           |
| R443, 444, 445, 446, 447, 448, 449, 450, 451 | ERD25TJ471  | " 470Ω 1/4W                    | 9           | "         |           |
| R452                                         | ERD25TJ151  | " 150Ω 1/4W                    | 1           | "         |           |
| R453                                         | ERD25TJ330  | " 33Ω 1/4W                     | 1           | "         |           |
| R454                                         | ERD25TJ100  | " 10Ω 1/4W                     | 1           | "         |           |
| R501, 502                                    | ERD25TJ472  | " 4.7KΩ 1/4W                   | 2           | "         |           |
| R503                                         | ERD25TJ221  | " 220Ω 1/4W                    | 1           | "         |           |
| R504                                         | ERD25TJ820  | " 82Ω 1/4W                     | 1           | "         |           |
| R505                                         | ERG12ANJ821 | Metal-oxide Resistor 820Ω 1/2W | 1           | "         |           |
| R506                                         | ERD25TJ223  | Carbon Resistor 22KΩ 1/4W      | 1           | "         |           |
| R507                                         | ERD25TJ681  | " 680Ω 1/4W                    | 1           | "         |           |
| R508, 509                                    | ERD25TJ470  | " 47Ω 1/4W                     | 2           | "         |           |
| R510                                         | ERD25TJ223  | " 22KΩ 1/4W                    | 1           | "         |           |
| R511                                         | ERD25TJ222  | " 2.2KΩ 1/4W                   | 1           | "         |           |
| R512, 513                                    | ERD25TJ561  | " 560Ω 1/4W                    | 2           | "         |           |
| R531, 532                                    | ERD25TJ472  | " 4.7KΩ 1/4W                   | 2           | "         |           |
| R533                                         | ERD25TJ221  | " 220Ω 1/4W                    | 1           | "         |           |
| R534                                         | ERD25TJ820  | " 82Ω 1/4W                     | 1           | "         |           |
| R535                                         | ERG12ANJ821 | Metal-oxide Resistor 820Ω 1/2W | 1           | "         |           |
| R536                                         | ERD25TJ223  | Carbon Resistor 22KΩ 1/4W      | 1           | "         |           |
| R537                                         | ERD25TJ681  | " 680Ω 1/4W                    | 1           | "         |           |
| R538, 539                                    | ERD25TJ470  | " 47Ω 1/4W                     | 2           | "         |           |
| R540                                         | ERD25TJ223  | " 22KΩ 1/4W                    | 1           | "         |           |
| R541                                         | ERD25TJ222  | " 2.2KΩ 1/4W                   | 1           | "         |           |
| R551                                         | ERD25TJ472  | " 4.7KΩ 1/4W                   | 1           | "         |           |
| R552                                         | ERD25TJ682  | " 6.8KΩ 1/4W                   | 1           | "         |           |
| R553                                         | ERG12ANJ560 | Metal-oxide Resistor 56Ω 1/2W  | 1           |           |           |
| R554                                         | ERD25TJ6R8  | Carbon Resistor 6.8Ω 1/4W      | 1           |           | SD SUPPLY |
| R555                                         | ERG1ANJ221  | Metal-oxide Resistor 220Ω 1W   | 1           |           | "         |
| R556                                         | ERG1ANJ102  | " 1KΩ 1W                       | 1           |           | "         |
| R557, 558                                    | ERG1ANJ120  | " 12Ω 1W                       | 2           |           | "         |
| R559                                         | ERG2ANJ122  | " 1.2KΩ 2W                     | 1           |           | "         |
| R561                                         | ERD25TJ223  | Carbon Resistor 22KΩ 1/4W      | 1           |           | "         |
| R562                                         | ERD25TJ472  | " 4.7KΩ 1/4W                   | 1           |           | "         |
| R563                                         | ERD25TJ392  | " 3.9KΩ 1/4W                   | 1           |           | "         |
| R564                                         | ERD25TJ681  | " 680Ω 1/4W                    | 1           |           | "         |
| R565                                         | ERD25TJ272  | " 2.7KΩ 1/4W                   | 1           |           | "         |
| R566                                         | ERD25TJ332  | " 3.3KΩ 1/4W                   | 1           |           | "         |
| R567                                         | ERD25TJ562  | " 5.6KΩ 1/4W                   | 1           |           | "         |
| R568                                         | ERD25TJ103  | " 10KΩ 1/4W                    | 1           |           | "         |
| R569, 570                                    | ERG12ANJ151 | Metal-oxide Resistor 150Ω 1/2W | 2           |           | "         |
| R571                                         | ERD25TJ563  | Carbon Resistor 56KΩ 1/4W      | 1           |           | "         |
| R572                                         | ERD25TJ273  | " 27KΩ 1/4W                    | 1           |           | "         |
| R573                                         | ERD25TJ333  | " 33KΩ 1/4W                    | 1           |           | "         |
| R574                                         | ERG12ANJ681 | Metal-oxide Resistor 680Ω 1/2W | 1           |           | "         |
| R575                                         | ERD25TJ562  | Carbon Resistor 5.6KΩ 1/4W     | 1           |           | "         |
| R576                                         | ERD25TJ103  | " 10KΩ 1/4W                    | 1           |           | "         |
| R577, 578, 579, 580, 581, 581                | ERD25TJ102  | " 1KΩ 1/4W                     | 6           |           | "         |
| R583                                         | ERD25TJ562  | " 5.6KΩ 1/4W                   | 1           |           | "         |
| R584, 585, 586, 587, 588, 589                | ERD25TJ102  | " 1KΩ 1/4W                     | 6           |           | "         |
| R590, 591                                    | ERG1ANJ223  | Metal-oxide Resistor 22KΩ 1W   | 2           |           | "         |
| R592, 593                                    | ERG12ANJ123 | " 12KΩ 1/2W                    | 2           |           | "         |
| R594, 595, 596, 597                          | ERD25TJ472  | Carbon Resistor 4.7KΩ 1/4W     | 4           |           | "         |
| R598                                         | ERD25TJ100  | " 10Ω 1/4W                     | 1           |           | "         |
| R599                                         | ERX12ANJ1R0 | Metal-oxide Resistor 1Ω 1/2W   | 1           |           | "         |

| Ref. No.                      | Part No.    | Part Name & Description        | Pcs/<br>Set | Remarks   |  |
|-------------------------------|-------------|--------------------------------|-------------|-----------|--|
|                               |             |                                |             |           |  |
| R601                          | ERD25TJ223  | Carbon Resistor 22KΩ 1/4W      | 1           | SD SUPPLY |  |
| R602                          | ERG12ANJ821 | Metal-oxide Resistor 820Ω 1/2W | 1           | "         |  |
| R603                          | ERD25TJ392  | Carbon Resistor 3.9KΩ 1/4W     | 1           | "         |  |
| R604                          | ERD25TJ222  | " 2.2KΩ 1/4W                   | 1           | "         |  |
| R605                          | ERD25TJ472  | " 4.7KΩ 1/4W                   | 1           | "         |  |
| R606                          | ERD25TJ222  | " 2.2KΩ 1/4W                   | 1           | "         |  |
| R607                          | ERG12ANJ561 | Metal-oxide Resistor 560Ω 1/2W | 1           | "         |  |
| R608                          | ERD25TJ103  | Carbon Resistor 10KΩ 1/4W      | 1           | "         |  |
| R609                          | ERD25TJ223  | " 22KΩ 1/4W                    | 1           | "         |  |
| R610, 611                     | ERG12ANJ821 | Metal-oxide Resistor 820Ω 1/2W | 2           | "         |  |
| R612                          | ERD25TJ222  | Carbon Resistor 2.2KΩ 1/4W     | 1           | "         |  |
| R613                          | ERD25TJ472  | " 4.7KΩ 1/4W                   | 1           | "         |  |
| R614                          | ERD25TJ222  | " 2.2KΩ 1/4W                   | 1           | "         |  |
| R615                          | ERD25TJ223  | " 22KΩ 1/4W                    | 1           | "         |  |
| R616                          | ERD25TJ472  | " 4.7KΩ 1/4W                   | 1           | "         |  |
| R617                          | ERG12ANJ332 | Metal-oxide Resistor 3.3KΩ 1W  | 1           | "         |  |
| R618                          | ERD25TJ472  | Carbon Resistor 4.7KΩ 1/4W     | 1           | "         |  |
| R619                          | ERD25TJ273  | " 27KΩ 1/4W                    | 1           | "         |  |
| R651                          | ERD25TJ472  | " 4.7KΩ 1/4W                   | 1           | "         |  |
| R652                          | ERD25TJ471  | " 470Ω 1/4W                    | 1           | "         |  |
| R653                          | ERD25TJ681  | " 680Ω 1/4W                    | 1           | "         |  |
| R654                          | ERF52J221   | Cement Resistor 220Ω 1W        | 1           | "         |  |
| R655                          | ERD25TJ472  | Carbon Resistor 4.7KΩ 1/4W     | 1           | SD SUPPLY |  |
| R656                          | ERD25TJ471  | " 470Ω 1/4W                    | 1           | "         |  |
| R657                          | ERD25TJ681  | " 680Ω 1/4W                    | 1           | "         |  |
| R658                          | ERF72J680   | Cement Resistor 68Ω 1W         | 1           | "         |  |
| R701, 702, 703, 704           |             |                                |             |           |  |
|                               | ERD25TJ103  | Carbon Resistor 10KΩ 1/4W      | 4           | SD SUPPLY |  |
| R705, 706                     | ERD25TJ472  | " 4.7KΩ 1/4W                   | 2           | "         |  |
| R707, 708                     | ERD25TJ152  | " 1.5KΩ 1/4W                   | 2           | "         |  |
| R709, 710, 711, 712, 713, 714 |             |                                |             |           |  |
|                               | ERD25TJ274  | " 270KΩ 1/4W                   | 6           | "         |  |

| Ref. No.            | Part No.   | Part Name & Description | Pcs/<br>Set | Remarks   |          |
|---------------------|------------|-------------------------|-------------|-----------|----------|
|                     |            |                         |             | Ref. No.  | Part No. |
| R829, 830, 831, 832 | ERD25TJ103 | Carbon Resistor         | 4           | SD SUPPLY |          |
| R833, 834           | ERD25TJ100 | "                       | 2           | "         |          |
| R835, 836           | ERD25TJ103 | "                       | 2           | "         |          |
| R837, 838           | ERD25TJ273 | "                       | 2           | "         |          |
| R839, 840           | ERD25TJ473 | "                       | 2           | "         |          |
| R841, 842           | ERD25TJ273 | "                       | 2           | "         |          |
| R843, 844           | ERD25TJ272 | "                       | 2           | "         |          |
| R845, 846           | ERD25TJ103 | "                       | 2           | "         |          |
| R847, 848           | ERD25TJ273 | "                       | 2           | "         |          |
| R849, 850           | ERD25TJ823 | "                       | 2           | "         |          |
| R851, 852           | ERD25TJ272 | "                       | 2           | "         |          |
| R853, 854           | ERD25TJ103 | "                       | 2           | "         |          |
| R855, 856           | ERD25TJ822 | "                       | 2           | "         |          |
| R857, 858           | ERD25TJ272 | "                       | 2           | "         |          |
| R859, 860           | ERD25TJ103 | "                       | 2           | "         |          |
| R861, 862           | ERD25TJ394 | "                       | 2           | "         |          |
| R863, 864           | ERD25TJ823 | "                       | 2           | "         |          |
| R865, 866           | ERD25TJ273 | "                       | 2           | "         |          |
| R867, 868           | ERD25TJ153 | "                       | 2           | "         |          |
| R869, 870           | ERD25TJ224 | "                       | 2           | "         |          |
| R881                | ERD25TJ103 | "                       | 1           | "         |          |
| R882                | ERD25TJ184 | "                       | 1           | "         |          |
| R883                | ERD25TJ473 | "                       | 1           | "         |          |
| R884, 885           | ERD25TJ273 | "                       | 2           | "         |          |
| R892                | ERD25TJ272 | "                       | 1           | "         |          |
| R893                | ERD25TJ103 | "                       | 1           | "         |          |
| R894                | ERD25TJ471 | "                       | 1           | "         |          |
| R896                | ERD25TJ103 | "                       | 1           | "         |          |
| R897                | ERD25TJ473 | "                       | 1           | "         |          |
| R898                | ERD25TJ273 | "                       | 1           | "         |          |
| R901, 902           | ERD25TJ102 | "                       | 2           | "         |          |
| R903                | ERD25TJ473 | Carbon Resistor         | 1           | SD SUPPLY |          |
| R904                | ERD25TJ472 | "                       | 1           | "         |          |
| R905                | ERD25TJ333 | "                       | 1           | "         |          |
| R906                | ERD25TJ223 | "                       | 1           | "         |          |
| R907                | ERD25TJ331 | "                       | 1           | "         |          |
| R908                | ERD25TJ561 | "                       | 1           | "         |          |
| R909                | ERD25TJ102 | "                       | 1           | "         |          |
| R911                | ERD25TJ683 | "                       | 1           | "         |          |
| R912                | ERD25TJ393 | "                       | 1           | "         |          |
| R913                | ERD25TJ273 | "                       | 1           | "         |          |
| R914                | ERD25TJ223 | "                       | 1           | "         |          |
| R915, 917           | ERD25TJ472 | "                       | 2           | "         |          |
| R918                | ERD25TJ393 | "                       | 1           | "         |          |
| R919                | ERD25TJ222 | "                       | 1           | "         |          |
| R920                | ERD25TJ103 | "                       | 1           | "         |          |
| R926                | ERD25TJ104 | "                       | 1           | "         |          |
| R927                | ERD25TJ103 | "                       | 1           | "         |          |
| R928                | ERD25TJ183 | "                       | 1           | "         |          |
| R929                | ERD25TJ823 | "                       | 1           | "         |          |
| R930                | ERD25TJ124 | "                       | 1           | "         |          |
| R931                | ERD25TJ473 | "                       | 1           | "         |          |
| R932                | ERD25TJ124 | "                       | 1           | "         |          |
| R933                | ERD25TJ682 | "                       | 1           | "         |          |
| R934                | ERD25TJ103 | "                       | 1           | "         |          |
| R935                | ERD25TJ222 | "                       | 1           | "         |          |
| R936                | ERD25TJ562 | "                       | 1           | "         |          |
| R937                | ERD25TJ122 | "                       | 1           | "         |          |
| R938                | ERD25TJ272 | "                       | 1           | "         |          |
| R939                | ERD25TJ472 | "                       | 1           | "         |          |
| R941, 942           | ERD25TJ103 | "                       | 2           | "         |          |
| R943                | ERD25TJ223 | "                       | 1           | "         |          |
| R944                | ERD25TJ182 | "                       | 1           | "         |          |

| Ref. No.                                        | Part No.     | Part Name & Description               | Pcs/<br>Set | Remarks   |  |
|-------------------------------------------------|--------------|---------------------------------------|-------------|-----------|--|
|                                                 |              |                                       |             |           |  |
| R945                                            | ERD25TJ392   | Carbon Resistor 3.9KΩ 1/4W            | 1           | SD SUPPLY |  |
| R946                                            | ERD25TJ106   | " 10MΩ 1/4W                           | 1           | "         |  |
| R947                                            | ERD25TJ103   | " 10KΩ 1/4W                           | 1           | "         |  |
| R948                                            | ERD25TJ820   | " 82Ω 1/4W                            | 1           | "         |  |
| R949                                            | ERGIANJ331   | Metal-oxide Resistor 330Ω 1W          | 1           | "         |  |
| R951                                            | ERD25TJ183   | Carbon Resistor 18KΩ 1/4W             | 1           | "         |  |
| R952                                            | ERD25TJ103   | " 10KΩ 1/4W                           | 1           | "         |  |
| R953                                            | ERD25TJ105   | " 1MΩ 1/4W                            | 1           | "         |  |
| R954                                            | ERD25TJ103   | " 10KΩ 1/4W                           | 1           | "         |  |
| R955                                            | ERD25TJ105   | " 1MΩ 1/4W                            | 1           | "         |  |
| R956, 957, 958, 959, 960,<br>966, 967, 968, 969 |              |                                       |             |           |  |
| R970, 971, 972                                  |              |                                       |             |           |  |
| R974                                            | ERGI2ANJ101  | Metal-oxide Resistor 100Ω 1/2W        | 3           | "         |  |
| R975, 976, 977                                  | ERXIANJ1R5   | " 1.5Ω 1W                             | 1           | "         |  |
| R978,<br>980                                    | ERD25TJ270   | Carbon Resistor 27Ω 1/4W              | 3           | "         |  |
| R981, 982, 983                                  | ERD25TJ103   | " 10KΩ 1/4W                           | 2           | "         |  |
| R984, 985, 986, 987                             | ERD25TJ820   | Metal-oxide Resistor 82Ω 1/2W         | 3           | "         |  |
| R988                                            | ERD25TJ103   | Carbon Resistor 10KΩ 1/4W             | 4           | "         |  |
| R989                                            | ERD25TJ823   | " 82KΩ 1/4W                           | 1           | "         |  |
| R990                                            | ERD25TJ183   | " 18KΩ 1/4W                           | 1           | "         |  |
| R991                                            | ERD25TJ153   | " 15KΩ 1/4W                           | 1           | "         |  |
| R992                                            | ERD25TJ104   | " 100KΩ 1/4W                          | 1           | "         |  |
| R993, 994, 996                                  | ERD25TJ224   | " 220KΩ 1/4W                          | 1           | "         |  |
| R997                                            | ERD25TJ103   | " 10KΩ 1/4W                           | 3           | "         |  |
| R999                                            | ERD25TJ223   | " 22KΩ 1/4W                           | 1           | "         |  |
| R1001                                           | ERD25TJ823   | " 82KΩ 1/4W                           | 1           | "         |  |
|                                                 | ERD25TJ472   | " 4.7KΩ 1/4W                          | 1           | "         |  |
| R1002                                           | ERD25TJ103   | Carbon Resistor 10KΩ 1/4W             | 1           | SD SUPPLY |  |
| R1003                                           | ERD25TJ562   | " 5.6KΩ 1/4W                          | 1           | "         |  |
| R1004                                           | ERD25TJ473   | " 47KΩ 1/4W                           | 1           | "         |  |
| R1005                                           | ERD25TJ222   | " 2.2KΩ 1/4W                          | 1           | "         |  |
| R1006                                           | ERD25TJ330   | " 33Ω 1/4W                            | 1           | "         |  |
| R1007                                           | ERD25TJ472   | " 4.7KΩ 1/4W                          | 1           | "         |  |
| R1008                                           | ERD25TJ103   | " 10KΩ 1/4W                           | 1           | "         |  |
| R1009                                           | ERD25TJ102   | " 1KΩ 1/4W                            | 1           | "         |  |
| R1010                                           | ERD25TJ222   | " 2.2KΩ 1/4W                          | 1           | "         |  |
| R1011                                           | ERD25TJ103   | " 10KΩ 1/4W                           | 1           | "         |  |
| R1012                                           | ERD25TJ273   | " 27KΩ 1/4W                           | 1           | "         |  |
| R1013                                           | ERD25TJ103   | " 10KΩ 1/4W                           | 1           | "         |  |
| R1014                                           | ERD25TJ273   | " 27KΩ 1/4W                           | 1           | "         |  |
| R1015                                           | ERD25TJ103   | " 10KΩ 1/4W                           | 1           | "         |  |
| R1016                                           | ERD25TJ273   | " 27KΩ 1/4W                           | 1           | "         |  |
| R1017                                           | ERD25TJ103   | " 10KΩ 1/4W                           | 1           | "         |  |
| R1018                                           | ERD25TJ273   | " 27KΩ 1/4W                           | 1           | "         |  |
| R1019                                           | ERD25TJ103   | " 10KΩ 1/4W                           | 1           | "         |  |
| R1020                                           | ERD25TJ102   | " 1KΩ 1/4W                            | 1           | "         |  |
| R1021                                           | ERD25TJ100   | " 10Ω 1/4W                            | 1           | "         |  |
| R1901,<br>1902                                  | ERD25TJ103   | " 10KΩ 1/4W                           | 2           | "         |  |
| R1903                                           | ERD25TJ182   | " 1.8KΩ 1/4W                          | 1           | "         |  |
| R1904                                           | ERD25TJ392   | " 3.9KΩ 1/4W                          | 1           | "         |  |
| R1911                                           | ERD25TJ104   | " 100KΩ 1/4W                          | 1           | "         |  |
| R1912,<br>1913                                  | ERD25TJ473   | " 47KΩ 1/4W                           | 2           | "         |  |
| R1914                                           | ERD25TJ104   | " 100KΩ 1/4W                          | 1           | "         |  |
| R1915,<br>1916                                  | ERD25TJ473   | " 47KΩ 1/4W                           | 2           | "         |  |
| <b>VARIABLE RESISTORS</b>                       |              |                                       |             |           |  |
| VR1                                             | EVNK0AA00B24 | Semi-fixed Variable Resistor 20KΩ (B) | 1           |           |  |
| VR101                                           | EVNK4AA00B15 | " 100KΩ (B)                           | 1           |           |  |
|                                                 | — Cont. —    |                                       |             |           |  |

| Ref. No.                                                             | Part No.     | Part Name & Description         | Pcs/<br>Set | Remarks   | Ref. No.     | Part No.    | Part Name & Description | Pcs/<br>Set | Remarks   |
|----------------------------------------------------------------------|--------------|---------------------------------|-------------|-----------|--------------|-------------|-------------------------|-------------|-----------|
| VR102, 103<br>202, 203                                               | EVFFWAR30A24 | Variable Resistor               | 2           |           | C15          | ECEA10V100  | Electrolytic Capacitor  | 1           | SD SUPPLY |
| VR104,<br>105                                                        | EVNK4AA00B14 | Semi-fixed<br>Variable Resistor | 2           |           | C16          | ECEA6V330   | "                       | 1           | "         |
| VR106                                                                | EVNK4AA00B53 | "                               | 1           |           | C17          | ECEA16Z10   | "                       | 1           | "         |
| VR107,<br>207                                                        | EVFFWAR30A24 | Variable Resistor               | 1           |           | C18, 19      | ECQM05683KZ | Mylar Capacitor         | 2           |           |
| VR108                                                                | EVL3SAA00B52 | Semi-fixed<br>Variable Resistor | 1           |           | C20          | ECEA50Z2R2  | Electrolytic Capacitor  | 1           | SD SUPPLY |
| VR109                                                                | EVNK4AA00B25 | "                               | 1           |           | C21          | ECEA16Z10   | "                       | 1           | "         |
| VR110                                                                | EVNK4AA00B24 | "                               | 1           |           | C22          | ECKD1H103ZF | Ceramic Capacitor       | 1           |           |
| VR201                                                                | EVNK4AA00B15 | "                               | 1           |           | C23, 24      | ECEA50V1    | Electrolytic Capacitor  | 2           | SD SUPPLY |
| VR204,<br>205                                                        | EVNK4AA00B14 | "                               | 2           |           | C25          | ECEA25Z4R7  | "                       | 1           | "         |
| VR206                                                                | EVNK4AA00B53 | "                               | 1           |           | C26, 27      | ECEA16V10   | "                       | 2           | "         |
| VR208                                                                | EVL3SAA00B52 | "                               | 1           |           | C28          | ECQM05683KZ | Mylar Capacitor         | 1           |           |
| VR209                                                                | EVNK4AA00B25 | "                               | 1           |           | C29          | ECEA16V10   | Electrolytic Capacitor  | 1           | SD SUPPLY |
| VR210                                                                | EVNK4AA00B24 | "                               | 1           |           | C30          | ECEA16V33   | "                       | 1           | "         |
| VR501, 502, 503, 504, 505, 506, 507,<br>508, 509, 510, 511, 512, 513 | EVNK4AA00B52 | "                               | 13          |           | C31          | ECEA10V100  | "                       | 1           | "         |
| VR601,<br>602                                                        | EVNK4AA00B13 | "                               | 2           |           | C32          | ECEA16V10   | "                       | 1           | "         |
| VR801, 802, 803, 804                                                 | EVNK0AA00B54 | "                               | 4           |           | C33          | ECQM05683KZ | Mylar Capacitor         | 1           |           |
| VR911                                                                | EVL50AA00B54 | "                               | 1           |           | C34          | ECKD1H103ZF | Ceramic Capacitor       | 1           |           |
| VR926                                                                | QVKF25B24    | Variable Resistor               | 1           |           | C101         | ECSZ25AFIE  | Tantalum Capacitor      | 1           |           |
| VR927                                                                | EVL50AA00B54 | Semi-fixed<br>Variable Resistor | 1           |           | C102         | ECEA35V10   | Electrolytic Capacitor  | 1           | SD SUPPLY |
| VR928,<br>929                                                        | EVNK4AA00B14 | "                               | 2           |           | C103         | ECCD1H101K  | Ceramic Capacitor       | 1           |           |
| VR966                                                                | EVNK4AA00B24 | "                               | 1           |           | C104         | ECEA10V100  | Electrolytic Capacitor  | 1           | SD SUPPLY |
|                                                                      |              |                                 |             |           | C105         | ECCD1H470KC | Ceramic Capacitor       | 1           |           |
|                                                                      |              |                                 |             |           | C106         | ECEA16V33   | Electrolytic Capacitor  | 1           | SD SUPPLY |
|                                                                      |              |                                 |             |           | C107         | ECKD1H471KB | Ceramic Capacitor       | 1           |           |
|                                                                      |              |                                 |             |           | C108         | ECEA16V33   | Electrolytic Capacitor  | 1           | SD SUPPLY |
| C1, 2                                                                | ECKD1H103ZF  | Ceramic Capacitor               | 2           |           | C109         | ECEA16V10   | "                       | 1           | "         |
| C3                                                                   | ECEA10V100   | Electrolytic Capacitor          | 1           | SD SUPPLY | C110         | ECEA25V100  | "                       | 1           | "         |
| C4, 5, 6, 7, 8, 9, 10                                                |              |                                 |             |           | C111         | ECCD1H101K  | Ceramic Capacitor       | 1           |           |
| C11, 12                                                              | ECKD1H103ZF  | Ceramic Capacitor               | 7           |           | C113         | ECEA16V10   | Electrolytic Capacitor  | 1           | SD SUPPLY |
| C13                                                                  | ECEA16V47    | Electrolytic Capacitor          | 2           | SD SUPPLY | C114         | ECEA16V220  | "                       | 1           | "         |
|                                                                      |              |                                 |             |           | C115         | ECCD1H101K  | Ceramic Capacitor       | 1           |           |
| C14                                                                  | ECEA50V2R2   | "                               | 1           | "         | C116,<br>117 | ECEA16V10   | Electrolytic Capacitor  | 2           | SD SUPPLY |

| Ref. No.       | Part No.    | Part Name & Description | Pcs/<br>Set | Remarks   |  | Ref. No.  | Part No.    | Part Name & Description | Pcs/<br>Set | Remarks   |  |
|----------------|-------------|-------------------------|-------------|-----------|--|-----------|-------------|-------------------------|-------------|-----------|--|
|                |             |                         |             |           |  |           |             |                         |             |           |  |
| C118           | ECDD1H101K  | Ceramic Capacitor       | 1           |           |  | C153      | ECEA25V100  | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C119           | ECEA16V10   | Electrolytic Capacitor  | 1           | SD SUPPLY |  | C154, 155 | ECKD1H102KB | Ceramic Capacitor       | 2           |           |  |
| C120           | ECEA25V100  | "                       | 1           | "         |  | C156      | ECQM05152KZ | Mylar Capacitor         | 1           |           |  |
| C121           | ECEA16V10   | "                       | 1           | "         |  | C157, 158 | ECQM05473KZ | "                       | 2           |           |  |
| C122           | ECDD1H101K  | Ceramic Capacitor       | 1           | SD SUPPLY |  | C160      | ECEA35V470  | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C123           | ECEA35V10   | Electrolytic Capacitor  | 1           |           |  | C161      | ECEA50V1    | "                       | 1           | "         |  |
| C124           | ECQM05332JZ | Mylar Capacitor         | 1           |           |  | C162, 171 | ECEA16V10   | "                       | 2           | "         |  |
| C125           | ECEA16V10   | Electrolytic Capacitor  | 1           | SD SUPPLY |  | C172      | ECEA16V33   | "                       | 1           | "         |  |
| C126           | ECEA16V33   | "                       | 1           | "         |  | C173      | ECKD1H102KB | Ceramic Capacitor       | 1           |           |  |
| C127           | ECDD1H101K  | Ceramic Capacitor       | 1           |           |  | C174      | ECDD1H101K  | "                       | 1           |           |  |
| C128           | ECEA16V10   | Electrolytic Capacitor  | 1           | SD SUPPLY |  | C175      | ECEA50V1    | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C129           | EQQS1681JZ  | Styrol Capacitor        | 1           |           |  |           |             |                         |             |           |  |
| C130           | ECDD1H101K  | Ceramic Capacitor       | 1           |           |  | C176      | ECQM05152KZ | Mylar Capacitor         | 1           |           |  |
| C131           | ECQM05104JZ | Mylar Capacitor         | 1           |           |  | C177      | ECEA50V1    | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C132           | ECDD1H101K  | Ceramic Capacitor       | 1           |           |  | C178      | ECEA16V33   | "                       | 1           | "         |  |
| C133           | ECEA6V330   | Electrolytic Capacitor  | 1           | SD SUPPLY |  | C179      | ECDD1H101K  | Ceramic Capacitor       | 1           |           |  |
| C134, 135      | ECEA35V10   | "                       | 2           | "         |  | C181      | ECEA50ZR1   | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C136           | ECEA16V10   | "                       | 1           | "         |  | C182      | ECKD1H102KB | Ceramic Capacitor       | 1           |           |  |
| C137           | EC5Z25AF1E  | Tantalum Capacitor      | 1           |           |  | C183      | ECEA10V100  | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C138           | ECDD1H101K  | Ceramic Capacitor       | 1           |           |  | C185      | ECEA16V10   | "                       | 1           | "         |  |
| C139           | ECDD1H470KC | "                       | 1           |           |  | C186      | ECDD1H101K  | Ceramic Capacitor       | 1           |           |  |
| C140           | ECEA6V330   | Electrolytic Capacitor  | 1           | SD SUPPLY |  | C187      | ECEA16V10   | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C141           | ECEA16V33   | "                       | 1           | "         |  | C188      | ECQM05102KZ | Mylar Capacitor         | 1           |           |  |
| C142           | ECKD1H471KB | Ceramic Capacitor       | 1           |           |  | C189      | ECEA50V3R3  | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C143           | ECEA16V10   | Electrolytic Capacitor  | 1           | SD SUPPLY |  | C190      | ECQM05822JZ | Mylar Capacitor         | 1           |           |  |
| C144           | ECEA16V33   | "                       | 1           | "         |  | C191      | ECKD1H223ZF | Ceramic Capacitor       | 1           |           |  |
| C145           | ECQM05473JZ | Ceramic Capacitor       | 1           |           |  | C192      | ECQM05562JZ | Mylar Capacitor         | 1           |           |  |
| C146           | ECKD1H471KB | "                       | 1           |           |  | C193      | ECQM05332JZ | "                       | 1           |           |  |
| C147, 148      | ECEA25V100  | Electrolytic Capacitor  | 2           | SD SUPPLY |  | C194      | ECQM05183JZ | "                       | 1           |           |  |
| C149           | ECQM05682JZ | Mylar Capacitor         | 1           |           |  | C195      | ECQM05153JZ | "                       | 1           |           |  |
| C150, 151, 152 | ECEA16V10   | Electrolytic Capacitor  | 3           | SD SUPPLY |  | C196      | ECQM05123JZ | "                       | 1           |           |  |
|                |             |                         |             |           |  | C197      | ECQM05333JZ | "                       | 1           |           |  |
|                |             |                         |             |           |  |           | — Cont. —   |                         |             |           |  |

| Ref. No.  | Part No.    | Part Name & Description | Pcs/<br>Set | Remarks  |           | Ref. No.  | Part No.    | Part Name & Description | Pcs/<br>Set | Remarks  |           |
|-----------|-------------|-------------------------|-------------|----------|-----------|-----------|-------------|-------------------------|-------------|----------|-----------|
|           |             |                         |             |          |           |           |             |                         |             |          |           |
| C198      | EQM05273JZ  | Mylar Capacitor         | 1           | 0.027μF  |           | C234      | ECEA35V10   | Electrolytic Capacitor  | 2           | 10μF     | SD SUPPLY |
| C199      | EQM05223JZ  | "                       | 1           | 0.022μF  |           | C235      | ECEA16V10   | "                       | 1           | 10μF     | "         |
| C201      | EC5Z25AF1E  | Tantalum Capacitor      | 1           | 1μF      |           | C236      | EC5Z25AF1E  | Tantalum Capacitor      | 1           | 1μF      | "         |
| C202      | ECEA35V10   | Electrolytic Capacitor  | 1           | 10μF     | SD SUPPLY | C237      | ECCD1H101K  | Ceramic Capacitor       | 1           | 100pF    | "         |
| C203      | ECCD1H101K  | Ceramic Capacitor       | 1           | 100pF    |           | C238      | ECCD1H101K  | "                       | 1           | 47pF     | "         |
| C204      | ECEA10V100  | Electrolytic Capacitor  | 1           | 100μF    | SD SUPPLY | C239      | ECEA6V330   | Electrolytic Capacitor  | 1           | 330μF    | SD SUPPLY |
| C205      | ECCD1H470KC | Ceramic Capacitor       | 1           | 47pF     |           | C240      | ECEA16V33   | "                       | 1           | 33μF     | "         |
| C206      | ECEA16V33   | Electrolytic Capacitor  | 1           | 33μF     | SD SUPPLY | C241      | ECKD1H471KB | Ceramic Capacitor       | 1           | 470pF    | "         |
| C207      | ECKD1H471KB | Ceramic Capacitor       | 1           | 470pF    |           | C242      | ECEA16V10   | Electrolytic Capacitor  | 1           | 10μF     | SD SUPPLY |
| C208      | ECEA16V33   | Electrolytic Capacitor  | 1           | 33μF     | SD SUPPLY | C243      | ECEA16V33   | "                       | 1           | 33μF     | "         |
| C209      | ECEA16V10   | "                       | 1           | 10μF     | "         | C244      | EQM05473JZ  | Mylar Capacitor         | 1           | 0.047μF  | "         |
| C211      | ECCD1H101K  | Ceramic Capacitor       | 1           | 100pF    |           | C245      | ECKD1H471KB | Ceramic Capacitor       | 1           | 470pF    | "         |
| C213      | ECEA16V10   | Electrolytic Capacitor  | 1           | 10μF     | SD SUPPLY | C246      | ECEA25V100  | Electrolytic Capacitor  | 1           | 100μF    | SD SUPPLY |
| C214      | ECEA16V220  | "                       | 1           | 220μF    | "         | C247      | EQM05682JZ  | Mylar Capacitor         | 1           | 0.0068μF | "         |
| C215      | ECCD1H101K  | Ceramic Capacitor       | 1           | 100pF    |           | C249      | ECEA16V10   | Electrolytic Capacitor  | 2           | 10μF     | SD SUPPLY |
| C216, 217 | ECEA16V10   | Electrolytic Capacitor  | 2           | 10μF     | SD SUPPLY | C250, 252 | EQM05152KZ  | Mylar Capacitor         | 1           | 0.0015μF | "         |
| C218      | ECCD1H101K  | Ceramic Capacitor       | 1           | 100pF    |           | C256      | ECEA16V10   | Electrolytic Capacitor  | 1           | 10μF     | SD SUPPLY |
| C219      | ECEA16V10   | Electrolytic Capacitor  | 1           | 10μF     | SD SUPPLY | C271      | ECEA16V33   | "                       | 1           | 33μF     | "         |
| C220      | ECEA25V100  | "                       | 1           | 100μF    | "         | C272      | ECKD1H102KB | Ceramic Capacitor       | 1           | 0.001μF  | "         |
| C221      | ECEA16V10   | "                       | 1           | 10μF     | "         | C273      | ECCD1H101K  | "                       | 1           | 100pF    | "         |
| C222      | ECCD1H101K  | Ceramic Capacitor       | 1           | 100pF    |           | C274      | ECEA50V1    | Electrolytic Capacitor  | 1           | 1μF      | SD SUPPLY |
| C223      | ECEA35V10   | Electrolytic Capacitor  | 1           | 10μF     | SD SUPPLY | C275      | EQM05152KZ  | Mylar Capacitor         | 1           | 0.0015μF | "         |
| C224      | EQM05332JZ  | Mylar Capacitor         | 1           | 0.0033μF |           | C276      | ECEA50V1    | Electrolytic Capacitor  | 1           | 1μF      | SD SUPPLY |
| C225      | ECEA16V10   | Electrolytic Capacitor  | 1           | 10μF     | SD SUPPLY | C277      | ECEA16V33   | "                       | 1           | 33μF     | "         |
| C226      | ECEA16V33   | "                       | 1           | 33μF     | "         | C278      | ECCD1H101K  | Ceramic Capacitor       | 1           | 100pF    | "         |
| C227      | ECCD1H101K  | Ceramic Capacitor       | 1           | 100pF    |           | C279      | ECEA50Z1    | Electrolytic Capacitor  | 1           | 0.1μF    | SD SUPPLY |
| C228      | ECEA16V10   | Electrolytic Capacitor  | 1           | 10μF     | SD SUPPLY | C281      | ECKD1H102KB | Ceramic Capacitor       | 1           | 0.001μF  | "         |
| C229      | EQS1681JZ   | Styrol Capacitor        | 1           | 680pF    |           | C282      | ECEA10V100  | Electrolytic Capacitor  | 1           | 100μF    | SD SUPPLY |
| C230      | ECCD1H101K  | Ceramic Capacitor       | 1           | 100pF    |           | C283      | ECEA16V10   | "                       | 1           | 10μF     | "         |
| C231      | EQM05104JZ  | Mylar Capacitor         | 1           | 0.1μF    |           | C285      | ECCD1H101K  | Ceramic Capacitor       | 1           | 100pF    | "         |
| C232      | ECCD1H101K  | Ceramic Capacitor       | 1           | 100pF    |           | C286      | ECEA16V10   | Electrolytic Capacitor  | 1           | 10μF     | SD SUPPLY |
| C233      | ECEA6V330   | Electrolytic Capacitor  | 1           | 330μF    | SD SUPPLY | C287      | EQM05102KZ  | Mylar Capacitor         | 1           | 0.001μF  | "         |

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|-------------------------------|--------------|-------------------------|-------------|-----------|--|
|                               |              |                         |             |           |  |
| C289                          | ECEA50V3R3   | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C290                          | ECQM05822JZ  | Mylar Capacitor         | 1           |           |  |
| C292                          | ECQM05662JZ  | "                       | 1           |           |  |
| C293                          | ECQM05332JZ  | "                       | 1           |           |  |
| C294                          | ECQM05183JZ  | "                       | 1           |           |  |
| C295                          | ECQM05153JZ  | "                       | 1           |           |  |
| C296                          | ECQM05123JZ  | "                       | 1           |           |  |
| C297                          | ECQM05333JZ  | "                       | 1           |           |  |
| C298                          | ECQM05273JZ  | "                       | 1           |           |  |
| C299                          | ECQM05223JZ  | "                       | 1           |           |  |
| C501                          | ECEA16V10    | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C502                          | ECQM05103KZ  | Mylar Capacitor         | 1           |           |  |
| C503                          | ECQM05104KZ  | "                       | 1           |           |  |
| C504                          | ECQF4473KZ   | Polypropylene Capacitor | 1           |           |  |
| C505, 506                     | ECQF4822KZ   | "                       | 2           |           |  |
| C507                          | ECEA35V10    | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C511                          | ECEA16V10    | "                       | 1           | "         |  |
| C512                          | ECQM05103KZ  | Mylar Capacitor         | 1           |           |  |
| C513                          | ECQM05104KZ  | "                       | 1           |           |  |
| C514                          | ECQF4473KZ   | Polypropylene Capacitor | 1           |           |  |
| C515, 516                     | ECQF4822KZ   | "                       | 2           |           |  |
| C517                          | ECEA35V10    | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C521                          | ECEA16V10    | "                       | 1           | "         |  |
| C522                          | ECQM05103KZ  | Mylar Capacitor         | 1           |           |  |
| C523                          | ECQM05104KZ  | "                       | 1           |           |  |
| C525, 526                     | ECQF4333KZ   | Polypropylene Capacitor | 2           |           |  |
| C527                          | ECQS5681J    | Styrol Capacitor        | 1           |           |  |
| C528                          | EC5Z25EF10Q  | Tantalum Capacitor      | 1           |           |  |
| C533                          | ECQM05103KZ  | Mylar Capacitor         | 1           |           |  |
| C534                          | ECEA16V10    | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C535                          | ECQM05393KZ  | Mylar Capacitor         | 1           |           |  |
| C536                          | ECQM05104KZ  | "                       | 1           |           |  |
| C537, 538, 539, 540           | ECCD1H470KC  | Ceramic Capacitor       | 2           |           |  |
| C541                          | ECQF6332KZ   | Polypropylene Capacitor | 2           |           |  |
| C542                          | ECQF6102KZ   | "                       | 1           |           |  |
|                               | ECQS5101J    | Styrol Capacitor        | 1           |           |  |
| C543                          | ECQS5221J    | "                       | 1           |           |  |
| C544, 545                     | ECQM05103KZ  | Mylar Capacitor         | 2           |           |  |
| C601                          | ECET50R2200S | Electrolytic Capacitor  | 1           |           |  |
| C602                          | ECEA50V47    | "                       | 1           | SD SUPPLY |  |
| C603                          | ECEA50V1     | "                       | 1           | "         |  |
| C604                          | ECKD1H103ZF  | Ceramic Capacitor       | 1           |           |  |
| C605                          | ECEA35V10    | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C606                          | ECEA25V100   | "                       | 1           | "         |  |
| C607                          | ECEA50V1     | "                       | 1           | "         |  |
| C608                          | ECEA25V100   | "                       | 1           | "         |  |
| C609                          | ECET50R2200S | "                       | 1           |           |  |
| C610                          | ECEA50V47    | "                       | 1           | SD SUPPLY |  |
| C611                          | ECEA50V1     | "                       | 1           | "         |  |
| C612                          | ECKD1H103ZF  | Ceramic Capacitor       | 1           |           |  |
| C614                          | ECEA25V330   | Electrolytic Capacitor  | 1           | SD SUPPLY |  |
| C615                          | ECET25R2200S | "                       | 1           |           |  |
| C616, 617                     | ECEA50V1     | "                       | 2           | SD SUPPLY |  |
| C618                          | ECEA6V220    | "                       | 1           | "         |  |
| C651                          | ECEA16V10    | "                       | 1           | "         |  |
| C652                          | ECEA16V33    | "                       | 1           | "         |  |
| C701, 702, 703, 704, 705, 706 | ECQM05473KZ  | Mylar Capacitor         | 6           |           |  |
| C707, 708                     | ECQM05103KZ  | "                       | 2           |           |  |
| C709, 710                     | ECQM05683KZ  | "                       | 2           |           |  |
| C711, 712, 713, 714, 715, 716 | ECEA25N10    | Electrolytic Capacitor  | 6           | SD SUPPLY |  |
| C717, 718                     | ECQM05102KZ  | Mylar Capacitor         | 2           |           |  |
| C719, 720                     | ECCD1H101K   | Ceramic Capacitor       | 2           |           |  |



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|-----------------------------------------------|------------|-------------------------|-------------|---------|----------------------------------------------------|------------|-------------------------|-------------|---------|
| Tr22, 23                                      | 2SA719     | Transistor              | 2           |         | Tr130                                              | 2SC1684    | Transistor              | 1           |         |
| Tr24                                          | 2SA564     | "                       | 1           |         | Tr131                                              | 2SA564     | "                       | 1           |         |
| Tr25                                          | 2SC828     | "                       | 1           |         | Tr132                                              | 2SC1317    | "                       | 1           |         |
| Tr26                                          | 2SC1317    | "                       | 1           |         | Tr133, 134, 135, 136, 137                          |            |                         |             |         |
| Tr27, 28, 29, 30                              | 2SC828     | "                       | 4           |         | Tr138, 139                                         | 2SC828     | "                       | 5           |         |
| Tr31, 32                                      | 2SC1317    | "                       | 2           |         | Tr140                                              | 2SC1684    | "                       | 2           |         |
| Tr33                                          | 2SA564     | "                       | 1           |         | Tr141                                              | 2SC1383    | "                       | 1           |         |
| Tr34                                          | 2SC1317    | "                       | 1           |         | Tr142                                              | 2SA683     | "                       | 1           |         |
| Tr35, 36, 37                                  | 2SC828     | "                       | 3           |         | Tr143                                              | 2SC1383    | "                       | 1           |         |
| Tr38                                          | 2SA564     | "                       | 1           |         | Tr144                                              | 2SC828     | "                       | 1           |         |
| Tr39                                          | 2SC828     | "                       | 1           |         | Tr145, 146, 147, 148                               |            |                         |             |         |
| Tr40, 41                                      | 2SA564     | "                       | 2           |         | Tr201, 202                                         | 2SA564     | "                       | 5           |         |
| Tr42, 43, 44, 45, 46                          |            | "                       |             |         | Tr203, 204, 205, 206, 207                          | 2SC1327MST | "                       | 2           |         |
| Tr47                                          | 2SC828     | "                       | 5           |         | Tr208, 209                                         | 2SC1684    | "                       | 5           |         |
| Tr48, 49, 50, 51                              | 2SC1317    | "                       | 1           |         | Tr210                                              | 2SC828     | "                       | 2           |         |
| Tr52                                          | PN150      | Photo Transistor        | 1           |         | Tr211                                              | 2SC1684    | "                       | 1           |         |
| Tr101, 102                                    | 2SC1327MST | Transistor              | 2           |         | Tr214, 215, 216, 217, 218, 219, 220, 221, 222, 223 | 2SC1317    | "                       | 1           |         |
| Tr103, 104, 105, 106, 107                     |            | "                       |             |         | Tr224, 225                                         | 2SC828     | "                       | 10          |         |
| Tr108, 109                                    | 2SC1684    | "                       | 5           |         | Tr226                                              | 2SC1327MST | "                       | 2           |         |
| Tr110                                         | 2SC828     | "                       | 2           |         | Tr227                                              | 2SC1684    | "                       | 1           |         |
| Tr111                                         | 2SC1684    | "                       | 1           |         | Tr228                                              | 2SC828     | "                       | 1           |         |
| Tr112                                         | 2SC1317    | "                       | 1           |         | Tr229                                              | 2SC1317    | "                       | 1           |         |
| Tr113, 114                                    | 2SA564     | "                       | 1           |         | Tr230                                              | 2SC1684    | "                       | 1           |         |
| Tr115, 116, 117, 118, 119, 120, 121, 122, 123 | 2SC828     | "                       | 2           |         | Tr231                                              | 2SA564     | "                       | 1           |         |
| Tr124, 125                                    | 2SC1684    | "                       | 9           |         | Tr232                                              | 2SC1317    | "                       | 1           |         |
| Tr126                                         | 2SC1327MST | "                       | 2           |         | Tr233, 234, 235, 236, 237                          |            |                         |             |         |
| Tr127                                         | 2SC1684    | "                       | 1           |         | Tr238, 239                                         | 2SC828     | "                       | 5           |         |
| Tr128                                         | 2SC828     | "                       | 1           |         | Tr240                                              | 2SC1684    | "                       | 2           |         |
| Tr129                                         | 2SC1317    | "                       | 1           |         | Tr241                                              | 2SC1383    | "                       | 1           |         |
|                                               | 2SA564     | "                       | 1           |         | Tr501                                              | 2SA683     | "                       | 1           |         |
|                                               |            | "                       | 1           |         |                                                    | 2SC828     | "                       | 1           |         |

| Ref. No.                                                          | Part No. | Part Name & Description | Pcs/<br>Set | Remarks | Ref. No.                                           | Part No. | Part Name & Description | Pcs/<br>Set | Remarks |
|-------------------------------------------------------------------|----------|-------------------------|-------------|---------|----------------------------------------------------|----------|-------------------------|-------------|---------|
| Tr502, 503                                                        | 2SC1407  | Transistor              | 2           |         | Tr717, 718, 719, 720, 721, 722                     |          | Transistor              | 6           |         |
| Tr504                                                             | 2SC828   | "                       | 1           |         | Tr723, 724, 725, 726, 727, 728                     | 2SB512   |                         |             |         |
| Tr505, 506, 507                                                   |          |                         |             |         |                                                    | 2SC1328  |                         | 6           |         |
| Tr508, 509                                                        | 2SC1407  | "                       | 3           |         | Tr729, 730, 731, 732, 733, 734                     | 2SA683   |                         | 6           |         |
| Tr510                                                             | 2SD389   | "                       | 2           |         |                                                    |          |                         |             |         |
| Tr511                                                             | 2SC828   | "                       | 1           |         | Tr735, 736, 737, 738, 739, 740, 741, 742           |          |                         |             |         |
| Tr512                                                             | 2SC1383  | "                       | 1           |         |                                                    | 2SD389   |                         | 8           |         |
| Tr513, 514                                                        | 2SC828   | "                       | 1           |         | Tr743, 744, 745, 746                               |          |                         |             |         |
| Tr515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527 | 2SC1383  | "                       | 2           |         | Tr747, 748, 749, 750                               | 2SA564   |                         | 4           |         |
|                                                                   | 2SC828   | "                       | 13          |         |                                                    | 2SC828   |                         | 4           |         |
| Tr601                                                             | 2SD334   | "                       | 1           |         | Tr751, 752, 753, 754                               |          |                         |             |         |
|                                                                   |          |                         |             |         |                                                    | 2SA564   |                         | 4           |         |
| Tr602                                                             | 2SC1383  | "                       | 1           |         | Tr791, 792, 801, 802, 803, 804, 805, 806, 807, 808 |          |                         |             |         |
| Tr603                                                             | 2SC1684  | "                       | 1           |         |                                                    | 2SC828   |                         | 10          |         |
| Tr604                                                             | 2SC1846  | "                       | 1           |         | Tr809, 810                                         | 2SC1317  |                         | 2           |         |
| Tr605                                                             | 2SD334   | "                       | 1           |         | Tr811, 812                                         | 2SA564   |                         | 2           |         |
| Tr606                                                             | 2SC1407  | "                       | 1           |         | Tr813, 814, 815, 816, 817, 818                     |          |                         |             |         |
| Tr607                                                             | 2SC1317  | "                       | 1           |         |                                                    | 2SC828   |                         | 6           |         |
| Tr608                                                             | 2SB512   | "                       | 1           |         | Tr819, 820                                         | 2SA564   |                         | 2           |         |
| Tr609                                                             | 2SC828   | "                       | 1           |         | Tr821, 822, 823, 824                               |          |                         |             |         |
| Tr651                                                             | 2SC328AT | "                       | 1           |         |                                                    | 2SC828   |                         | 4           |         |
| Tr652                                                             | 2SC1848  | "                       | 1           |         |                                                    |          |                         |             |         |
|                                                                   |          |                         |             |         | Tr825, 826, 827, 828, 829, 830, 831, 832           |          |                         |             |         |
| Tr653                                                             | 2SC1384  | "                       | 1           |         |                                                    | 2SA564   |                         | 8           |         |
| Tr654                                                             | 2SC328AT | "                       | 1           |         | Tr881                                              | 2SC1317  |                         | 1           |         |
| Tr655                                                             | 2SC1848  | "                       | 1           |         | Tr884                                              | 2SA564   |                         | 1           |         |
| Tr656                                                             | 2SC1384  | "                       | 1           |         | Tr885                                              | 2SC828   |                         | 1           |         |
| Tr701, 702, 703, 704                                              |          |                         |             |         | Tr901                                              | 2SC1327  |                         | 1           |         |
|                                                                   | 2SA564   | "                       | 4           |         | Tr902, 926, 927                                    |          |                         |             |         |
| Tr705, 706, 707, 708, 709, 710                                    |          |                         |             |         |                                                    | 2SC828   |                         | 3           |         |
|                                                                   | 2SA722   | "                       | 6           |         | Tr928                                              | 2SC1383  |                         | 1           |         |
| Tr711, 712, 713, 714, 715, 716                                    |          |                         |             |         | Tr929                                              | 2SC828   |                         | 1           |         |
|                                                                   | 2SC1383  | "                       | 6           |         |                                                    |          |                         |             |         |

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|---------------------------|----------|--------------------------------|-------------|---------|---------------------------------------------------------------------------------|----------|-------------------------|-------------|-----------|
| Tf941                     | 2SA564   | Transistor                     | 1           |         | D19                                                                             | LN55     | LED                     | 1           |           |
| Tf942                     | 2SC1317  | "                              | 1           |         | D101, 102                                                                       | MA150    | Diode                   | 2           |           |
| Tf951, 952, 953, 954, 955 |          |                                |             |         | D103, 104, 105, 106                                                             |          |                         |             |           |
|                           | 2SC828   | "                              | 5           |         | MA150                                                                           |          | "                       | 4           |           |
| Tf956                     | 2SA564   | "                              | 1           |         | OA90M                                                                           |          | "                       | 2           |           |
| Tf966, 967, 968           |          |                                |             |         | D107, 108                                                                       | MA150    | "                       | 2           |           |
|                           | 2SA885   | "                              | 3           |         | D109, 110                                                                       | MA150    | "                       | 2           |           |
| Tf969, 970, 971           |          |                                |             |         | D201, 202                                                                       | MA150    | "                       | 2           |           |
|                           | 2SC1846  | "                              | 3           |         | D207, 208                                                                       | OA90M    | "                       | 2           |           |
| Tf972, 973                | 2SC828   | "                              | 2           |         | D501, 502, 503                                                                  |          |                         |             |           |
| Tf974                     | 2SA564   | "                              | 1           |         | QVDM8513ARM                                                                     |          | "                       | 3           |           |
| Tf975, 976, 977, 978, 979 |          |                                |             |         | D504                                                                            | MA1056   | "                       | 1           |           |
|                           | 2SC828   | "                              | 5           |         | D511                                                                            | MA1150   | "                       | 1           |           |
|                           |          | <b>INTEGRATED CIRCUITS</b>     |             |         | D601                                                                            | RVD10DC2 | Silicon Rectifier       | 1           | RD SUPPLY |
| IC1                       | AN6251   | Integrated Circuit             | 1           |         | D602, 603                                                                       | SR3AM2N  | "                       | 2           |           |
| IC2                       | M53204P  | "                              | 1           |         | D604                                                                            | RVD10DC2 | "                       | 1           | RD SUPPLY |
| IC3, 4                    | M53200P  | "                              | 2           |         | D605                                                                            | MA1062   | Diode                   | 1           |           |
| IC5                       | M53203P  | "                              | 1           |         | D606                                                                            | MA1150   | "                       | 1           |           |
| IC6, 7                    | M53202P  | "                              | 2           |         | D607                                                                            | MA1062   | "                       | 1           |           |
| IC8                       | M53203P  | "                              | 1           |         | D608                                                                            | SM102    | Silicon Rectifier       | 1           |           |
| IC911                     | AN660    | "                              | 1           |         | D609                                                                            | MA1062   | Diode                   | 1           |           |
| IC941                     | M58432P  | "                              | 1           |         | D610                                                                            | SM102    | Silicon Rectifier       | 1           |           |
| IC966                     | AN640    | "                              | 1           |         | D611                                                                            | MA150    | Diode                   | 1           |           |
|                           |          | <b>DIODES &amp; RECTIFIERS</b> |             |         | D651, 652                                                                       | OA90M    | "                       | 2           |           |
| D1, 2, 3, 4, 5, 6         | OA90M    | Diode                          | 6           |         | D701, 702, 703, 704, 705, 706, 707, 708, 801, 802, 803, 804, 805, 806, 807, 808 |          |                         | 16          |           |
| D7                        | MA150    | "                              | 1           |         | MA150LF                                                                         |          | "                       |             |           |
| D8                        | SM102    | "                              | 1           |         | D881, 882                                                                       | OA90M    | "                       | 2           |           |
| D9                        | MA150    | "                              | 1           |         | D926                                                                            | MA1062   | "                       | 1           |           |
| D10, 11, 12, 13           | OA90M    | "                              | 4           |         | D941                                                                            | MA1056   | "                       | 1           |           |
| D14, 15                   | MA150    | "                              | 2           |         | D951, 952, 956, 967, 968, 969, 970                                              |          | "                       | 7           |           |
| D16                       | OA90M    | "                              | 1           |         | MA150                                                                           |          | "                       |             |           |
| D17, 18                   | MA150    | "                              | 2           |         | LN21                                                                            |          | LED                     | 1           |           |
|                           |          |                                |             |         | D1000                                                                           |          |                         |             |           |

| Ref. No.                | Part No.       | Part Name & Description                     | Pcs/<br>Set | Remarks |
|-------------------------|----------------|---------------------------------------------|-------------|---------|
|                         |                | <b>TRANSFORMERS</b>                         |             |         |
| T101, 201               | QLT2D10A       | Headphone Transformer                       | 2           |         |
| T601                    | QLP2BFA        | Power Transformer                           | 1           |         |
|                         |                | <b>COILS</b>                                |             |         |
| L101                    | QLH2020        | Peaking Coil                                | 1           |         |
| L102, 103               | QLH2019        | Bias Trap Coil                              | 2           |         |
| L201                    | QLH2020        | Peaking Coil                                | 1           |         |
| L202, 203               | QLH2019        | Bias Trap Coil                              | 2           |         |
| L501                    | QLB0182        | Oscillator Coil                             | 1           |         |
| L502                    | QLB0181        | High Frequency Coil                         | 1           |         |
| L503                    | QLB0182        | Oscillator Coil                             | 1           |         |
| L504                    | QLB0181        | High Frequency Coil                         | 1           |         |
| L505                    | QLB0182        | Oscillator Coil                             | 1           |         |
| L506                    | QLB0181        | High Frequency Coil                         | 1           |         |
| L507                    | QLB0182        | Oscillator Coil                             | 1           |         |
| L508, 509               | QLQX6814Y      | Erase Dummy Coil                            | 2           |         |
|                         |                | <b>SWITCHES</b>                             |             |         |
| S1                      | QSW2214        | Power ON/OFF Switch                         | 1           |         |
| S2                      | Refer to VR926 | Pitch Control Switch                        | (1)         |         |
| S3                      | QSR6301        | Speed Select Switch                         | 1           |         |
| S4, 5                   | QST4211        | Tape/Source Select Switch                   | 2           |         |
| S6                      | QST4306        | Equalizer Select Switch                     | 1           |         |
| S7, 8                   | QST4208        | Record Mode Switch                          | 2           |         |
| S9                      | QST2302        | Bias Select Switch                          | 1           |         |
| S10                     | QSW2209        | Meter Range Select Switch                   | 1           |         |
| S11                     | QSW2209        | MIC Attenuator Switch                       | 1           |         |
| S12                     | QSW2208        | Timer Start Switch                          | 1           |         |
| S13, 14, 15, 16, 17, 18 |                |                                             |             |         |
| S19, 20                 | EQQPAR11K      | Control Key Switch                          | 6           |         |
|                         | QSM0068        | Micro Switch                                | 2           |         |
|                         |                | <b>RELAYS</b>                               |             |         |
|                         | QSK0134        | Lead Relay                                  | 1           |         |
|                         | QSK0423        | Relay                                       | 2           |         |
|                         |                | <b>FUSES</b>                                |             |         |
|                         | XBAQ125028     | Fuse (1.25AT)                               | 5           |         |
|                         | XBAQ400032N    | " (4AT)                                     | 2           |         |
|                         | XBAQ080030     | " (800mAT)                                  | 1           |         |
|                         |                | <b>ELECTRICAL PARTS</b>                     |             |         |
| E1                      | QWY4011        | Playback Head                               | 2           |         |
| E2                      | QWY4014        | Erase/Recording Head (Forward)              | 1           |         |
| E3                      | QWY4015        | Erase/Recording Head (Reverse)              | 1           |         |
| E4                      | QSL9009RNM     | Level Meter                                 | 2           |         |
|                         |                | <b>Main Amplifier Section</b>               |             |         |
| E5                      | QMA3188        | Heat Sink                                   | 1           |         |
| E6                      | QMA2926        | Back Side Angle                             | 1           |         |
| E7                      | QMA2932        | Side Angle (Left, Right)                    | 2           |         |
| E8                      | QMA2944        | MIC and Meter Amplifier Holding Angle       | 1           |         |
| E9                      | QMA2938        | MIC and Meter Amplifier Sub Holding Angle   | 1           |         |
| E10                     | QMA3189        | P.C.B. Holding Angle                        | 3           |         |
| E11                     | QNQ1039        | Nut for VR                                  | 3           |         |
| E12                     | QNQ1070        | Nut for MIC and Holding Angle               | 3           |         |
| E13                     | QMA3147        | Switch Holding Angle                        | 1           |         |
| E14                     | QEJ5001SM      | LINE IN/OUT Jack Board Assembly             | 1           |         |
| E15                     |                | <b>Capstan Motor Control P.C.B. Section</b> |             |         |
|                         | QMA3192        | Switch Angle                                | 1           |         |



| Ref. No. | Part No.   | Part Name & Description   | Pcs/<br>Set | Remarks |  | Ref. No. | Part No.   | Part Name & Description  | Pcs/<br>Set | Remarks |  |
|----------|------------|---------------------------|-------------|---------|--|----------|------------|--------------------------|-------------|---------|--|
|          |            |                           |             |         |  |          |            |                          |             |         |  |
| G11      | XSN4+8S    | Screw                     | 4           |         |  | G43      | XTN3+8B    | Tapping Screw            | 2           |         |  |
| G12      | QGC1067    | Bottom Cover              | 1           |         |  | G44      | QXB0494    | Push Button (C) Assembly | 1           |         |  |
| G13      | QMH2005    | Foot Holder               | 2           |         |  | G45      | QBC1231    | Spring                   | 2           |         |  |
| G14      | QKJ0178    | Foot for Bottom Side      | 4           |         |  | G46      | QXB0493    | Push Button (B) Assembly | 1           |         |  |
| G15      | XTN3+12B   | Tapping Screw             | 4           |         |  | G47      | QYT0451    | Pitch Control Knob       | 1           |         |  |
| G16      | XUC4FT     | Stop Ring                 | 2           |         |  | G48      | QYT0452    | Knob Assembly            | 2           |         |  |
| G17      | QMG0033    | Tape Guide-1              | 2           |         |  | G49      | QYP0688    | Operation Panel Assembly | 1           |         |  |
| G18      | XLCQ0001   | Tension Roller            | 2           |         |  | G50      | QYP0683    | Panel (B)                | 1           |         |  |
| G19      | QMG0034    | Tape Guide-2              | 2           |         |  |          |            |                          |             |         |  |
| G20      | QMC0074    | Sleeve                    | 2           |         |  | G51      | XUB16FP    | C Ring                   | 2           |         |  |
|          |            |                           |             |         |  | G52      | QKJ0167    | Spacer                   | 4           |         |  |
| G21      | QBG1559    | Stopper Rubber            | 2           |         |  | G53      | QBP1712    | Plate Spring             | 2           |         |  |
| G22      | QMC0054    | Spacer                    | 2           |         |  | G54      | QYK0092    | Function Panel Cover     | 1           |         |  |
| G23      | XVE3C8FZS  | Hexagon Screw             | 4           |         |  | G55      | XVE4C30FZS | Hexagon Screw            | 4           |         |  |
| G24      | QHQ1247    | Step Screw                | 2           |         |  | G56      | QYT0407    | Volume Knob (D) Assembly | 2           |         |  |
| G25      | QBC1278    | Tape Guide Spring         | 2           |         |  | G57      | QBJ3299    | Washer                   | 3           |         |  |
| G26      | QMG0046    | Tape Guide-3              | 2           |         |  | G58      | QYT0406    | Volume Knob (C) Assembly | 3           |         |  |
| G27      | QMG0045    | Tape Guide-4              | 2           |         |  | G59      | QYT0413    | Master Knob Assembly     | 1           |         |  |
| G28      | QMG0031    | Tape Guide-5              | 2           |         |  | G60      | QYT0449    | Lever Knob (L) Assembly  | 2           |         |  |
| G29      | QMS2430    | Reversing Roller Shaft    | 1           |         |  |          |            |                          |             |         |  |
| G30      | XXE3D10FZS | Screw                     | 1           |         |  | G61      | QYT0450    | Lever Knob Assembly      | 4           |         |  |
|          |            |                           |             |         |  | G62      | QBJ1459    | Spacer                   | 1           |         |  |
|          |            |                           |             |         |  | G63      | QYT0412    | Knob (L) Assembly        | 1           |         |  |
|          |            |                           |             |         |  |          |            | <b>ACCESSORIES</b>       |             |         |  |
| G31      | QXP0544    | Pressure Roller Assembly  | 2           |         |  | A1       | RP023A     | Connection Cord          | 2           |         |  |
| G32      | QBC1202    | Spring                    | 1           |         |  | A2       | QYQ0271    | Reel Holder              | 2           |         |  |
| G34      | QBW2016    | Washer                    | 2           |         |  | A3       | QYC0183    | Dust Cover Assembly      | 1           |         |  |
| G35      | QGK2731    | Pressure Roller Ornament  | 2           |         |  | A4       | QYQ0274    | Reel Table Spacer        | 1           |         |  |
| G36      | QXP0559    | Reversing Roller Assembly | 1           |         |  | A5       | QFX0013    | Head Cleaner             | 1           |         |  |
| G37      | XUC7FT     | Stop Ring                 | 1           |         |  | A6       | QQT2221    | Instruction Book         | 1           |         |  |
| G38      | QBP1714    | Plate Spring              | 1           |         |  |          |            |                          |             |         |  |
| G39      | QDP1701    | Roller                    | 1           |         |  |          |            |                          |             |         |  |
| G40      | QBF1254    | Felt                      | 1           |         |  |          |            |                          |             |         |  |
|          |            |                           |             |         |  |          |            |                          |             |         |  |
| G41      | QGK2643    | Roller Ornament           | 1           |         |  |          |            |                          |             |         |  |
| G42      | QXB0492    | Push Button Assembly      | 2           |         |  |          |            |                          |             |         |  |

| Ref. No. | Part No.     | Part Name & Description          | Pcs/<br>Set | Remarks |
|----------|--------------|----------------------------------|-------------|---------|
| P1       | QPN3646      | <b>PACKINGS</b><br>Inner Packing | 1           |         |
| P2       | QPA0238      | Cushion-A                        | 1           |         |
| P3       | QPA0239      | Cushion-B                        | 1           |         |
| P4       | QPA0240      | Cushion-C                        | 1           |         |
| P5       | QPA0241      | Cushion-D                        | 1           |         |
| P6       | QPA0242      | Cushion-E                        | 1           |         |
| P7       | XZB50X58XA05 | Poly Sheet for Main Unit         | 1           |         |