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SECTION 1

**SERVICE MANUAL**

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL OPERATING PRINCIPLES AND ADJUSTMENTS.

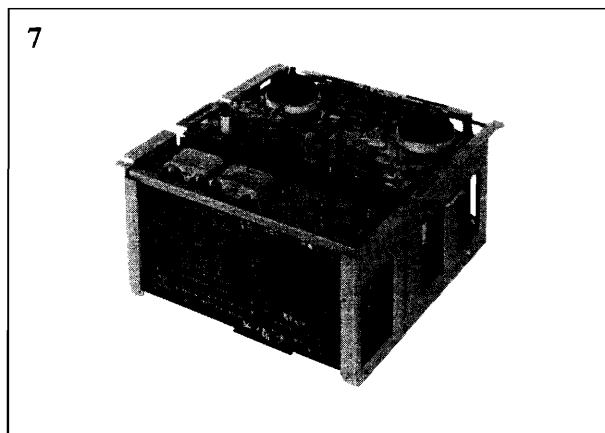
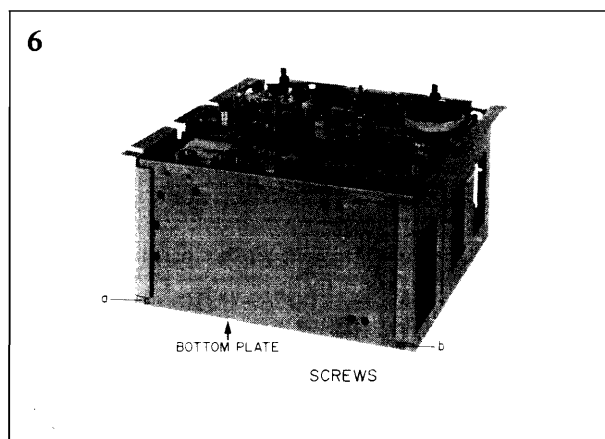
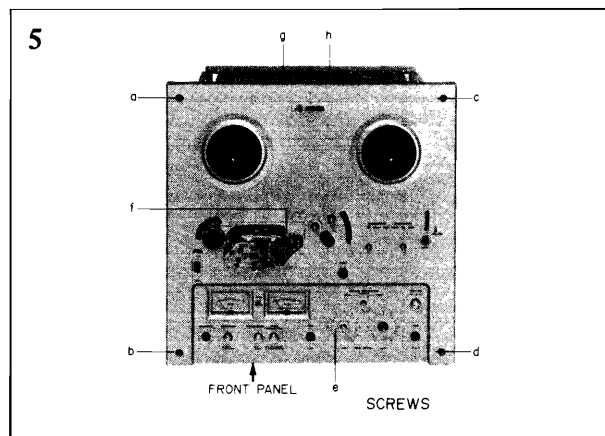
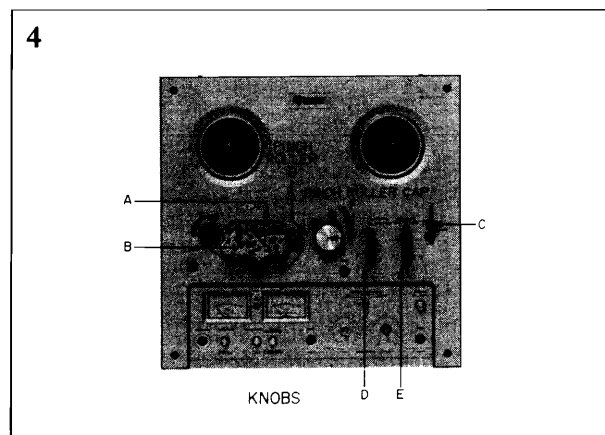
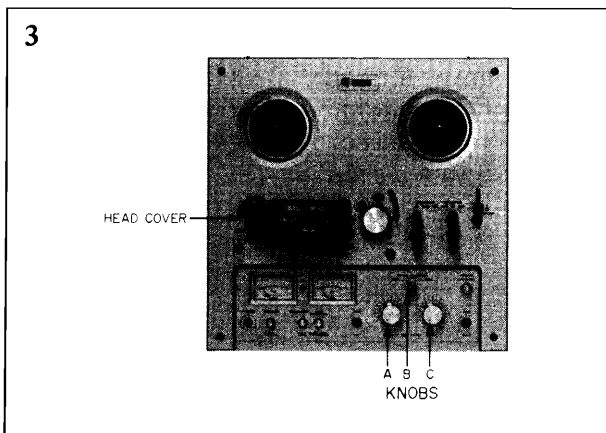
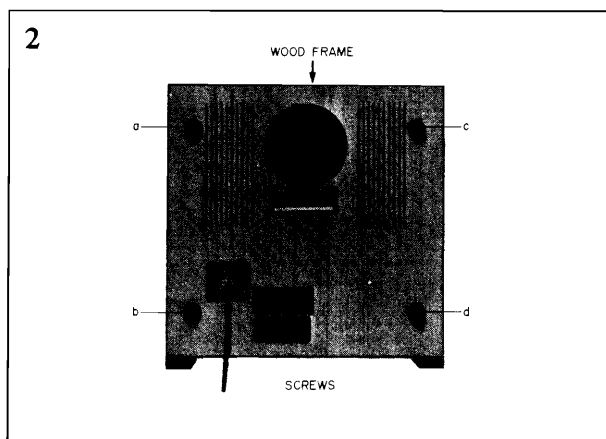
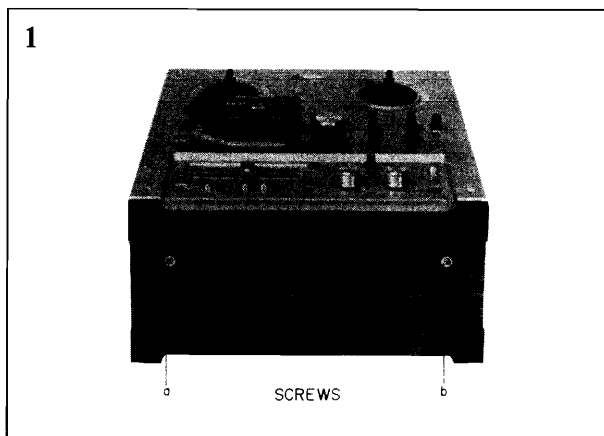
# I. TECHNICAL DATA

|                              |  |
|------------------------------|--|
| TRACK SYSTEM                 | 4 track, 2 channel stereo/monaural system  |
| REEL CAPACITY                | Up to 7" reel  |
| TAPE SPEED                   | 7-1/2 and 3-3/4 ips  |
| WOW AND FLUTTER              | Less than 0.09% RMS, 0.17% (DIN 45 500) at 7-1/2 ips<br>Less than 0.18% RMS at 3-3/4 ips   |
| FREQUENCY RESPONSE           | 30 to 25,000 Hz $\pm 3$ dB at 7-1/2 ips =<br>30 to 19,000 Hz $\pm 3$ dB at 3-3/4 ips   |
| DISTORTION                   | Less than 1% (1,000 Hz "0" VU)   |
| SIGNAL TO NOISE RATIO        | Better than 56 dB (measured via tape with peak recording level of +6 VU)   |
| ERASE RATIO                  | Better than 70 dB  |
| BIAS FREQUENCY               | 100 kHz  |
| HEADS                        | (3): One GX playback, one GX recording and one erase head  |
| MOTORS                       | (3): One 4/8 pole self-lubricating hysteresis synchronous capstan drive motor<br>and two eddy current outer-rotor reel drive motor |
| FAST FORWARD AND REWIND TIME | 90 sec using 1,200 ft tape   |
| OUTPUT JACKS                 | Line (2): 0.775V ("0" VU)<br>Required load impedance: more than 20 k ohms<br>Phone (1): 50 mV/8 ohms                               |
| INPUT JACKS                  | Microphone (2): 0.3 mV/2.2 k ohms<br>Required microphone impedance: 600 ohms<br>Line (2): 70 mV/100 k ohms                         |
| DIN JACK                     | Input 0.3 mV/Output 0.5V   |
| SEMI-CONDUCTORS              | Transistors 27, Diodes 17  |
| POWER REQUIREMENTS           | CSA, UL and LA Models: 120V, 60 Hz only<br>CEE Models: 220V, 50 Hz only<br>Other Models: 110/120/220/240V, 50/60 Hz switchable     |
| DIMENSIONS                   | 380(W) $\times$ 390(H) $\times$ 295(D)mm<br>(15.0 $\times$ 15.4 $\times$ 11.6")  |
| WEIGHT                       | 15.7 kg (34.6 lbs)   |

\* For improvement purposes, specifications and design are changed without notice.

## II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.



### III. CONTROLS

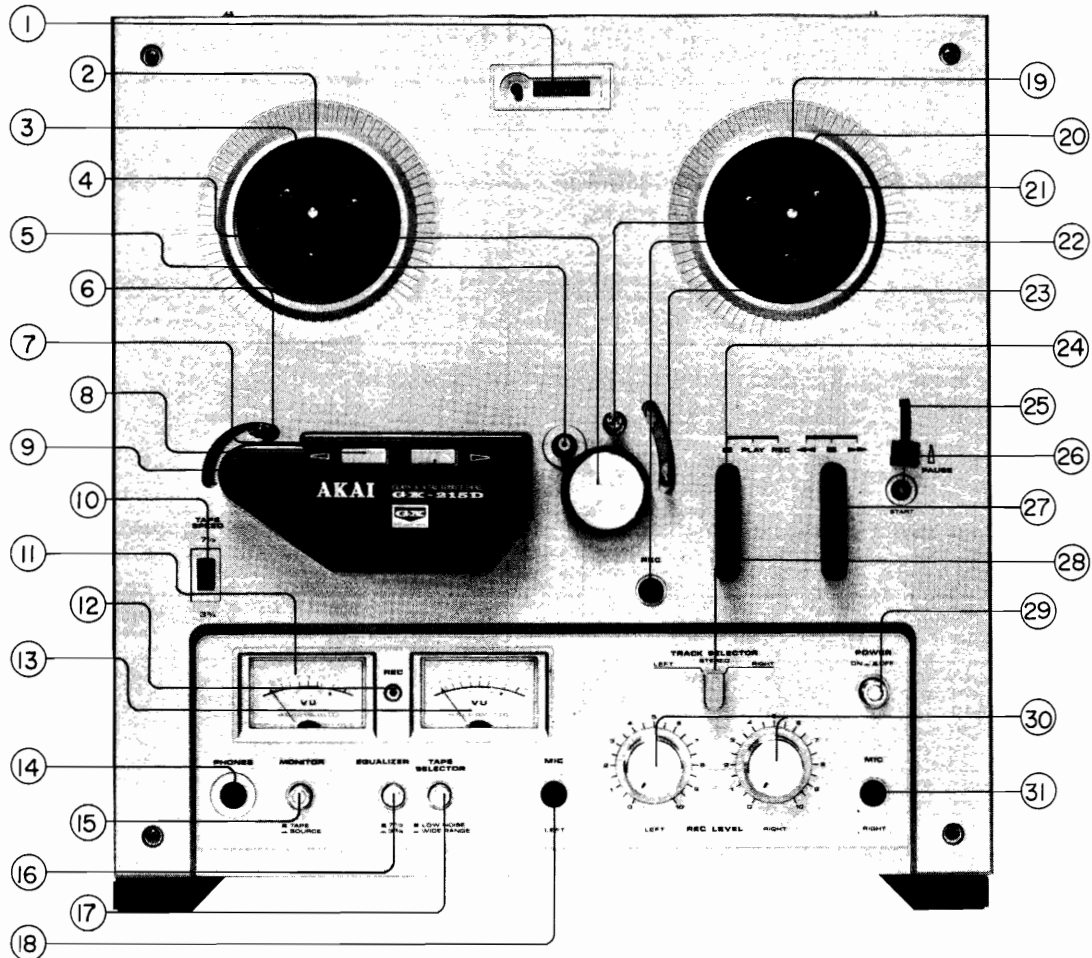


Fig. 1 Controls

- |   |  |
|---|--|
| 1. INDEX COUNTER AND RESET BUTTON               | 17. TAPE SELECTOR SWITCH                 |
| 2. REEL RETAINER (Left)                         | 18. MICROPHONE JACK (Left)               |
| 3. SUPPLY REEL TABLE                            | 19. REEL RETAINER (Right)                |
| 4. PINCH ROLLER                                 | 20. TAKE-UP REEL TABLE                   |
| 5. CAPSTAN                                      | 21. TAPE GUIDE                           |
| 6. TENSION ARM (Automatic reverse sensing pole) | 22. RECORDING BUTTON                     |
| 7. HEAD COVER                                   | 23. AUTOMATIC STOP/TENSION LEVER         |
| 8. MANUAL REVERSE BUTTON (Reverse direction)    | 24. PLAY/RECORD LEVER                    |
| 9. MANUAL REVERSE BUTTON (Forward direction)    | 25. PAUSE LEVER                          |
| 10. TAPE SPEED SELECTOR                         | 26. START BUTTON                         |
| 11. VU METER (Left)                             | 27. FAST FORWARD/REWIND LEVER            |
| 12. RECORDING INDICATOR LAMP                    | 28. TRACK SELECTOR LEVER                 |
| 13. VU METER (Right)                            | 29. POWER SWITCH                         |
| 14. HEADPHONE JACK                              | 30. RECORDING LEVEL CONTROL (Left/Right) |
| 15. MONITOR SWITCH                              | 31. MICROPHONE JACK (Right)              |
| 16. EQUALIZER SWITCH                            |  |

# IV. PRINCIPAL PARTS LOCATION

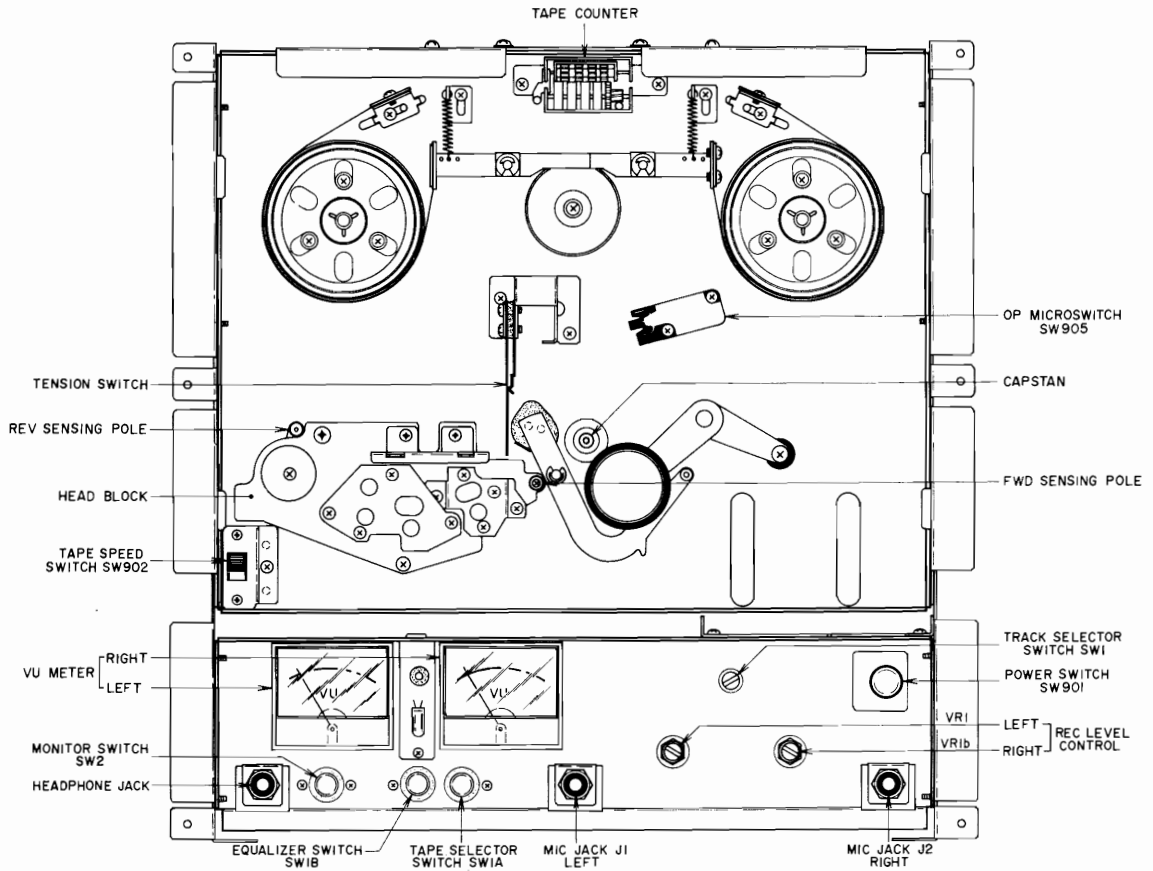


Fig. 2 Front View

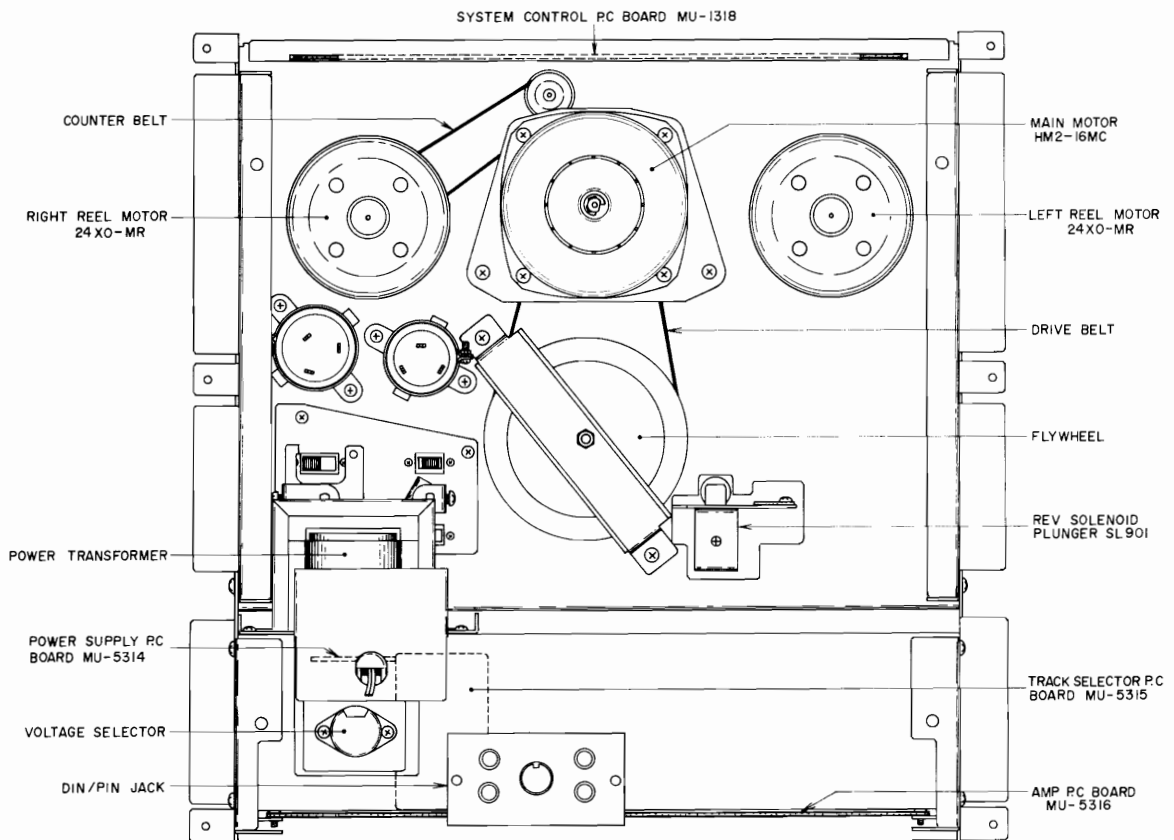


Fig. 3 Rear View

## V. MECHANISM ADJUSTMENT

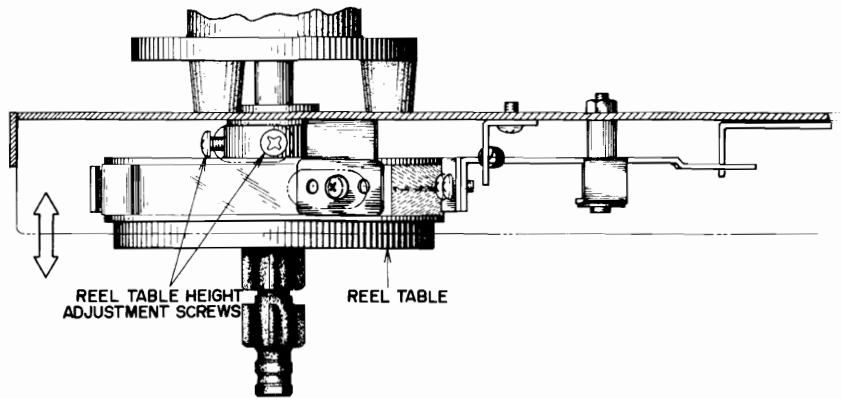


Fig. 4 Reel Table Height Adjustment

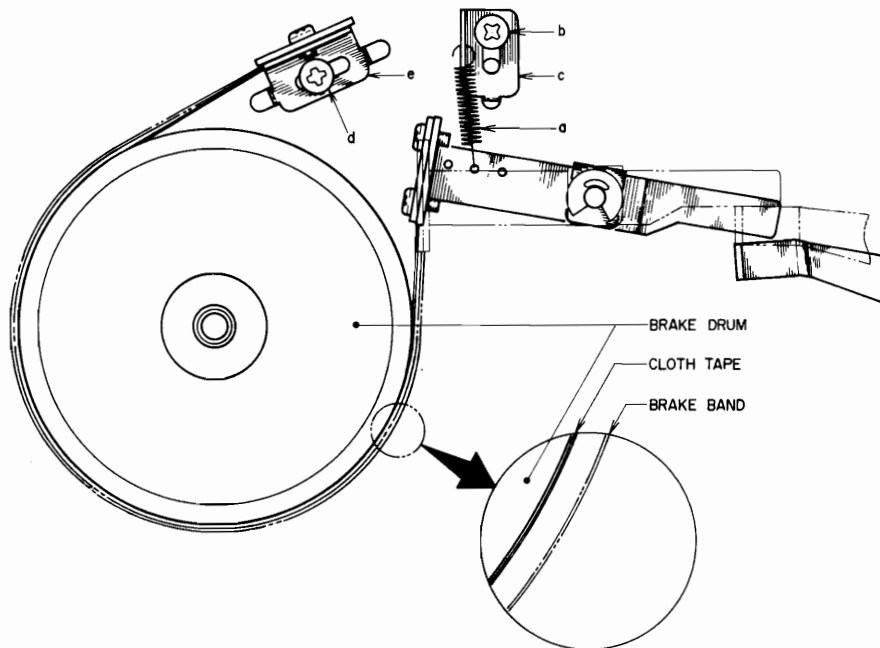


Fig. 5 Brake Tension Adjustment

### 1. REEL TABLE HEIGHT ADJUSTMENT

As shown in Fig. 4, loosen reel table height adjustment screws, and adjust reel table height by moving table in direction of arrow and positioning so that the tape winds in the center of the reel.

### 2. BRAKE TENSION ADJUSTMENT

Brake tension adjustment can be made as follows: (Refer to Fig. 5)

- 1) Change position of suspended spring (a) by hooking the lower end to either the left or the right hole.
- 2) Loosen screw (b) and adjust the vertical position of spring suspension metal (c).
- 3) Loosen screw (d) and adjust the horizontal position of brake band suspension metal (e).
- 4) Only the left side is shown in Fig. 5, but the right side must be adjusted in the same way.

**NOTE:** In making brake tension adjustments, at all modes except stop mode, confirm that the brake band completely separates from the cloth tape on the brake drum. (Refer to Fig. 5.)

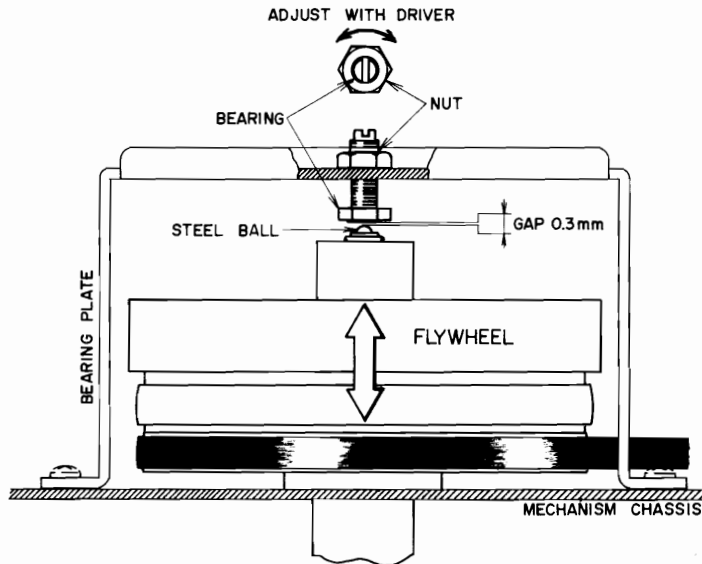


Fig. 6 Flywheel Loose Play Adjustment

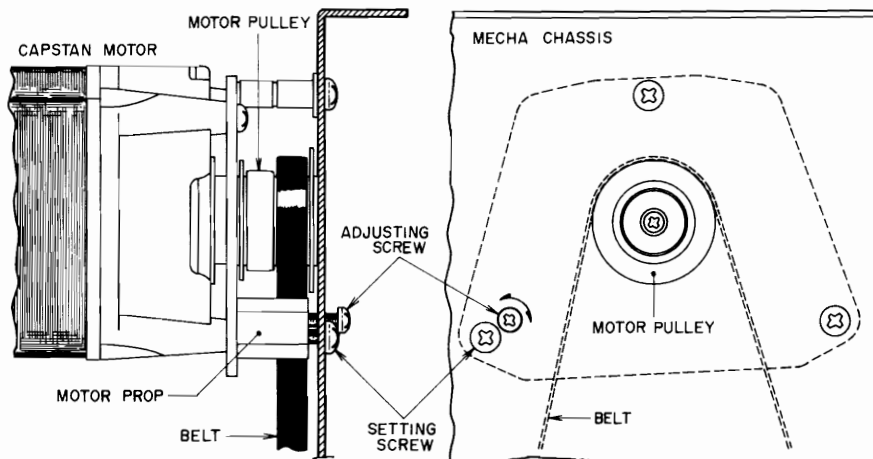


Fig. 7 Flywheel Belt Position Adjustment

**3. LEFT AND RIGHT REEL MOTOR TENSION AT VARIOUS OPERATING MODES**

| Mode \ Reel Motor | Left Reel Motor | Right Reel Motor |
|-------------------|-----------------|------------------|
| FWD PB            | 60g             | 180g             |
| REV PB            | 180g            | 60g              |
| F.FWD             | 10g             | 400g             |
| RWD               | 400g            | 10g              |

Chart 1

**4. FLYWHEEL LOOSE PLAY ADJUSTMENT**

Turn the adjustment screw to obtain a 0.3 mm gap between the steel ball and bearing when the flywheel is moved in the direction of the arrow as shown in Fig. 6.

**5. FLYWHEEL BELT POSITION ADJUSTMENT**

- 1) With capstan motor revolutions operating at Rev. mode, loosen setting screw and turn flywheel belt position adjustment screw until the flywheel belt comes to the center of the motor pulley. (Refer to Fig. 7.)
- 2) Tighten setting screw to maintain center positioning of flywheel belt at Rev. mode.
- 3) Confirm that the flywheel belt runs on the center of the motor pulley at Fwd. mode also.

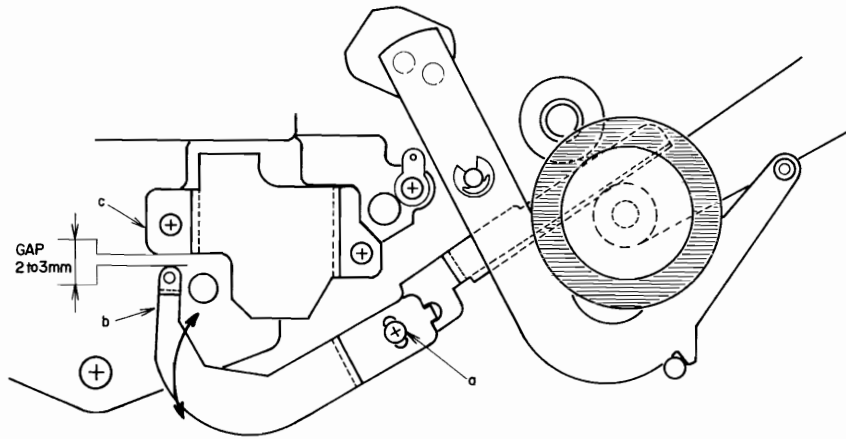


Fig. 8 Shifter Lever Adjustment

## 6. SHIFTER LEVER ADJUSTMENT

Loosen screw (a) and adjust by moving shifter lever (b) so that at play mode the gap between shifter lever (b) and angle plate (c) is 2~3 mm.



## VI. HEAD ADJUSTMENT

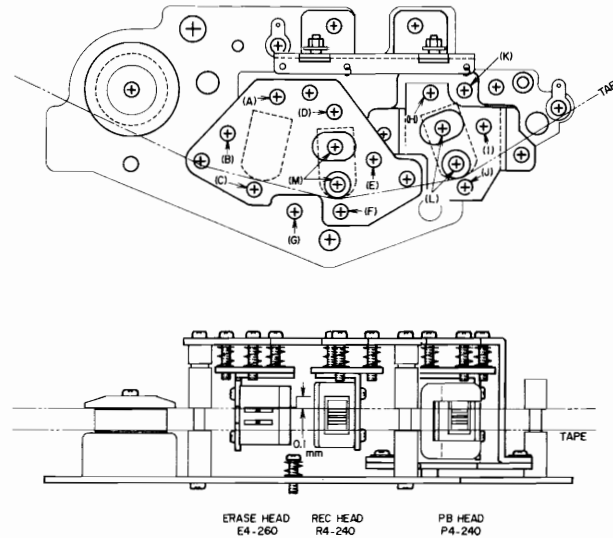


Fig. 9 Head Adjustment

| Step | Adjustment Item                       | Test Tape Supply Signal                               | Mode     | Adjustment Point | Remarks   |
|------|---------------------------------------|---|----------|------------------|---|
| 1    | Erase Head Height Adjustment          | Optional  | Play     | (A) (B) (C)      | Upper edge of Ch1 head core is 0.1 mm higher than upper edge of the tape.   |
| 2    | Recording Head Height Adjustment      | Optional  | Play     | (D) (E) (F)      | Upper edge of Ch1 head core is the same height as the upper edge of the tape.                                       |
| 3    | Playback Head Height Adjustment (FWD) | Optional  | Fwd Play | (G)              | Same as Step 2.   |
| 4    | Playback Head Height Adjustment (REV) | Optional  | Rev Play | (K)              | Lower edge of Ch2 head core is the same height as the lower edge of the tape.                                       |
| 5    | Playback Head Azimuth Alignment       | 8,000 Hz<br>9.5 cm/sec<br>test tape                   | Fwd Play | (H) (I) (J)      | Maximum output, both channels.  |
| 6    | Playback Head Gap Alignment           | 8,000 Hz<br>9.5 cm/sec<br>test tape                   | Fwd Play | (L)              | Adjust head gap surface so that there is no change in output level when tension is applied to the supply reel side. |
| 7    | Recording Head Azimuth Alignment      | Scotch #211 tape,<br>15,000 Hz<br>-20 VU<br>recording | Rec      | (E)              | Same as Step 5.   |
| 8    | Recording Head Gap Alignment          | Scotch #211 tape,<br>15,000 Hz<br>-20 VU<br>recording | Rec      | (M)              | Same as Step 6.   |

Chart 2

- NOTE: 1. Set Tape Speed to 7-1/2 ips (19 cm/sec).  
 2. Regarding Step 3, when replacing a head or for slight head adjustment, do not move screw (G). Adjust with screws (D) (E) and (F) and then make the next Step 4 adjustment.

## VII. AMPLIFIER ADJUSTMENT

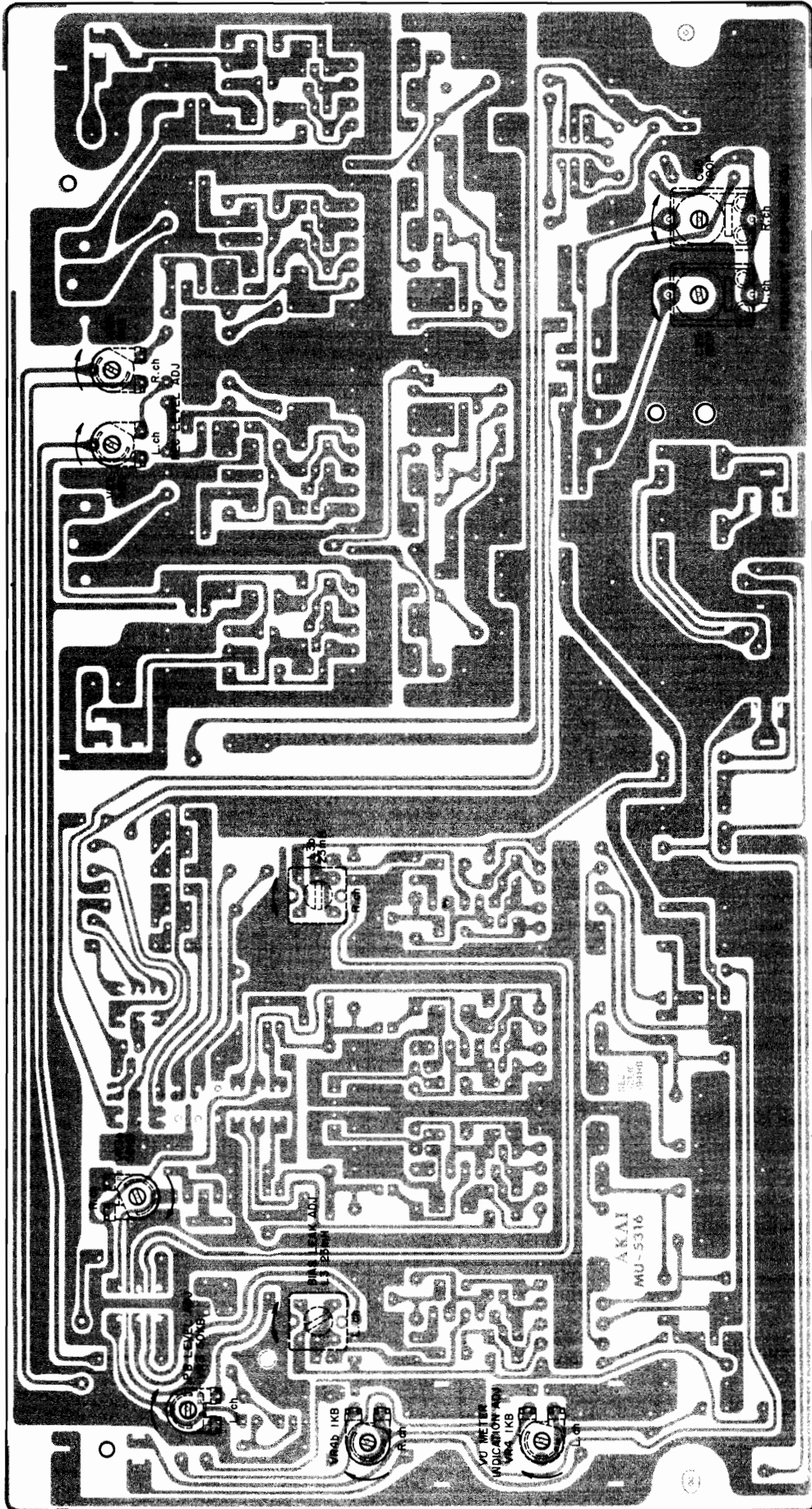


Fig. 10 Amp P.C Board MU-5316

## Recording and Playback Amplifier Adjustment

| Step | Adjustment Item      | Test Tape Supply Signal                                | Mode         | Adjustment Point                       | Result   | Remarks  |
|------|----------------------|--|--------------|--|--|--|
| 1    | Playback Level       | 700 Hz 7-1/2 ips Test Tape                             | FWD PLAY     | VR3 50 kB (MU-5316)                    | 0 dBm<br>±0.5 dB                                     | ±1.0 dB in relation to 0 dBm at RVS mode.                                  |
| 2    | VU Meter Sensitivity | 700 Hz 7-1/2 ips Test Tape                             | FWD PLAY     | VR4 1 kB (MU-5316)                     | "0" VU indication                                    |  |
| 3    | Recording Level      | SCOTCH #176 tape 1,000 Hz "0" VU recording             | REC and PLAY | REC Volume VR1 50 kB                   | 0 dBm<br>±0.5 dB                                     | Monitor Switch to TAPE position and Tape Selector to LOW NOISE position.   |
|      |                      | SCOTCH #176 tape 1,000 Hz "0" VU recording             | REC and PLAY | VR2 5 kB (MU-5316)                     | 0 dBm<br>±0.5 dB                                     | Monitor Switch to SOURCE position and Tape Selector to LOW NOISE position. |
| 4    | Frequency Response   | SCOTCH #176 tape 1,000 Hz, 10,000 Hz -20 dBm recording | REC and PLAY | C29 (Left)<br>C30 (Right)<br>(MU-5316) | Adjust to +1 dB at 10,000 Hz in relation to 1,000 Hz | Tape Selector to LOW NOISE position and Tape Speed to 3-3/4 ips.           |
| 5    | Bias Leak            |  | REC          | L3 34 mH (MU-5316)                     | Less than -30 dB                                     | With Monitor Switch to TAPE and SOURCE positions.                          |

Chart 3

## VIII. DC RESISTANCE OF VARIOUS COILS

| Part                         | Designation             | DC Resistance  |
|------------------------------|-------------------------|--|
| Main Motor                   | HM2-16MC                | Between PNK-RED 130 ohms<br>Between PNK-BRN 180 ohms<br>Between GRN-GRY 360 ohms<br>Between GRN-YLW 370 ohms |
| Reel Motor                   | 24X0-MR                 | Between BLU-RED 47 ohms<br>Between YLW-GRN 166 ohms  |
| Reverse Solenoid Plunger     | 840FHT1<br>48V 220 ohms | 220 ohms $\pm 15\%$  |
| Relay                        | MY4-02-US DC24          | 660 ohms   |
| Reed Relay                   | L-24                    | 1,600 ohms   |
| Headphone Output Transformer | N19-349S                | Primary: 160 ohms $\pm 15\%$<br>Secondary: 0.64 ohms $\pm 15\%$  |
| Oscillator Coil              | OT-204                  | Between 1-3 0.3 ohms<br>Between 4-6 0.7 ohms<br>Between 7-9 8.2 ohms   |
| Erase Head                   | E4-260                  | 3.5 ohms   |
| Recording Head               | R4-240                  | 6.2 ohms   |
| Playback Head                | P4-240                  | 220 ohms   |

Chart 4

NOTE: Resistance values shown in this chart are average values.

## IX. CLASSIFICATIONS OF VARIOUS P.C BOARDS

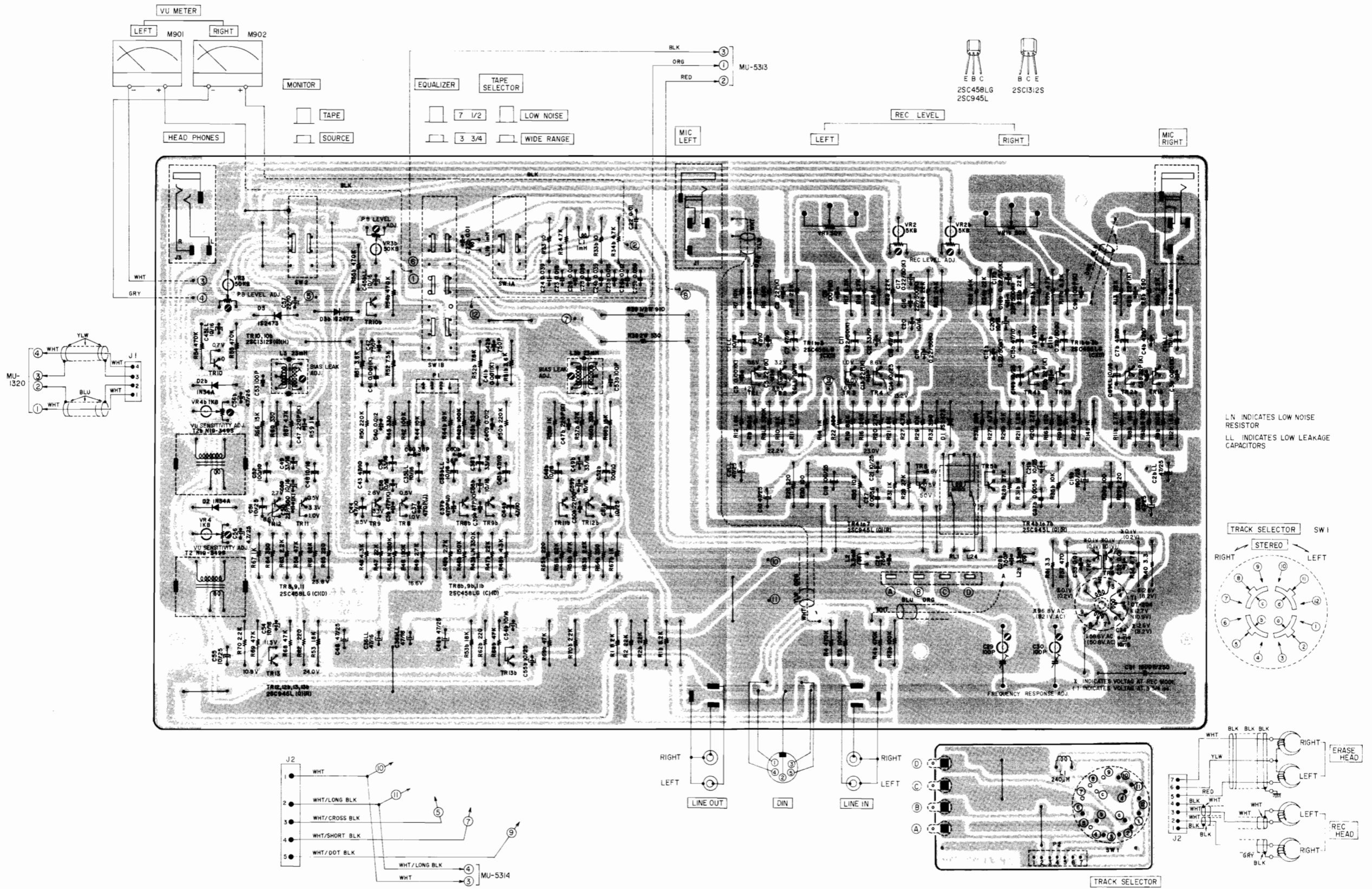
### 1. RELATION OF P.C BOARD TITLE AND IDENTIFICATION NUMBER

| P.C Board                | Number of P.C Board |
|--------------------------|---------------------|
| Amp P.C Board            | MU-5316             |
| System Control P.C Board | MU-1318             |
| Power Supply P.C Board   | MU-5314             |
| Track Selector P.C Board | MU-5315             |
| Lamp P.C Board           | MU-5313             |
| Switch P.C Board         | MU-1319             |
| Head Switch P.C Board    | MU-1320             |

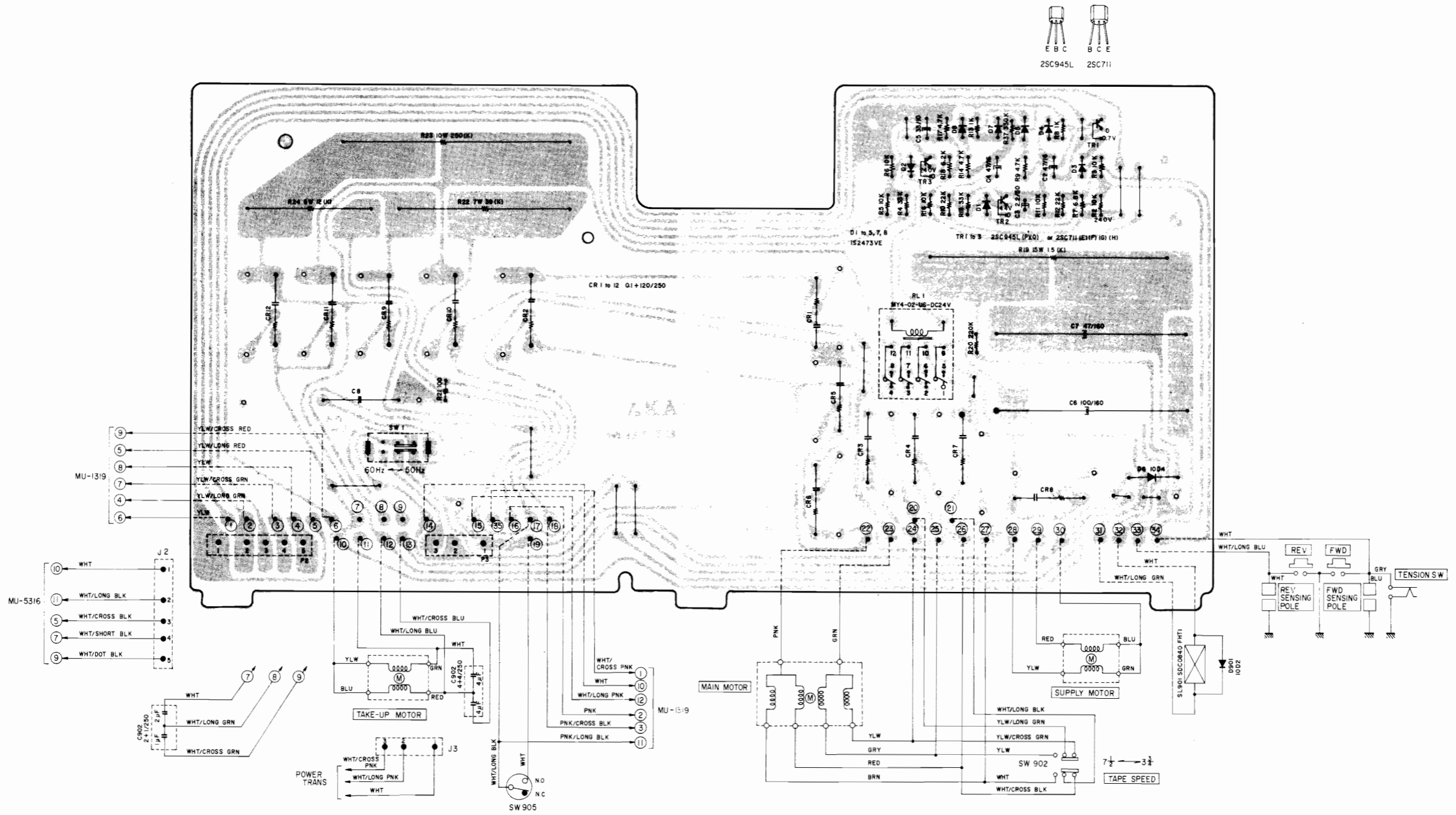
Chart 5

## 2. COMPOSITION OF VARIOUS P.C BOARDS

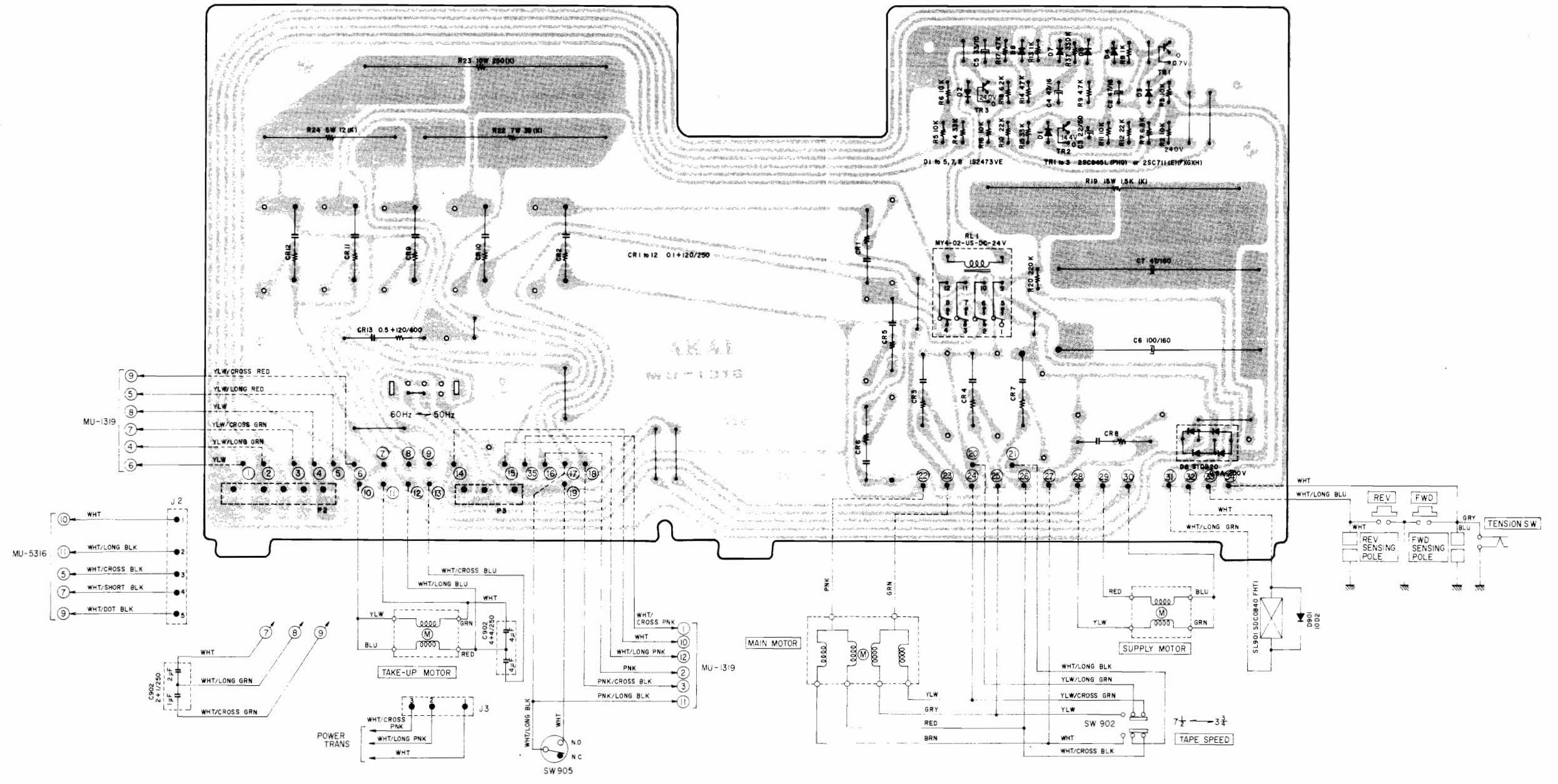
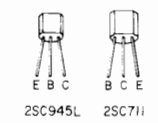
### 1) AMP. P.C BOARD MU-5316 & TRACK SELECTOR P.C BOARD MU-5315



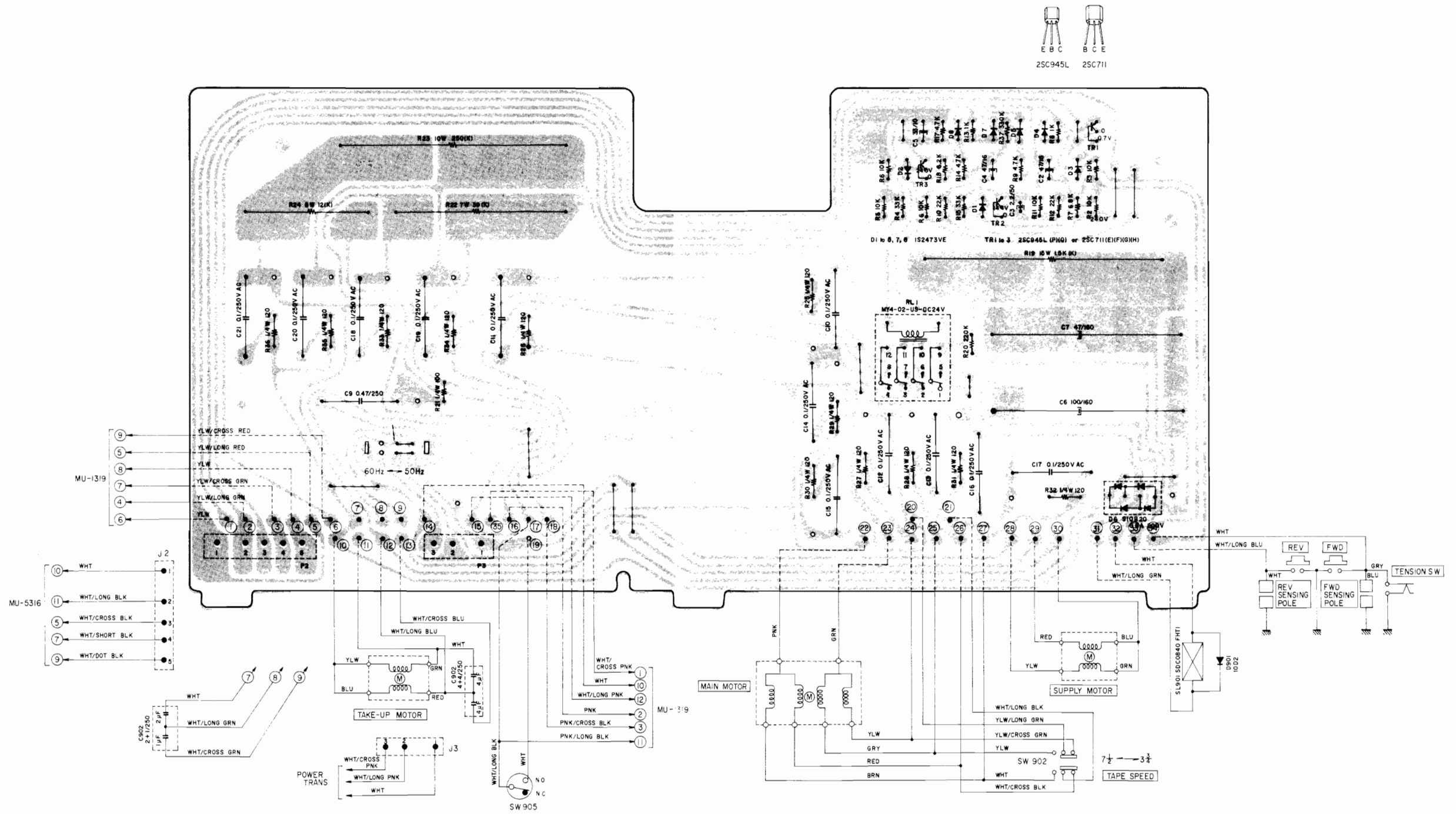
2) SYSTEM CONTROL P.C BOARD MU-1318 (U/T)



3) SYSTEM CONTROL P.C BOARD MU-1318 (CSA)

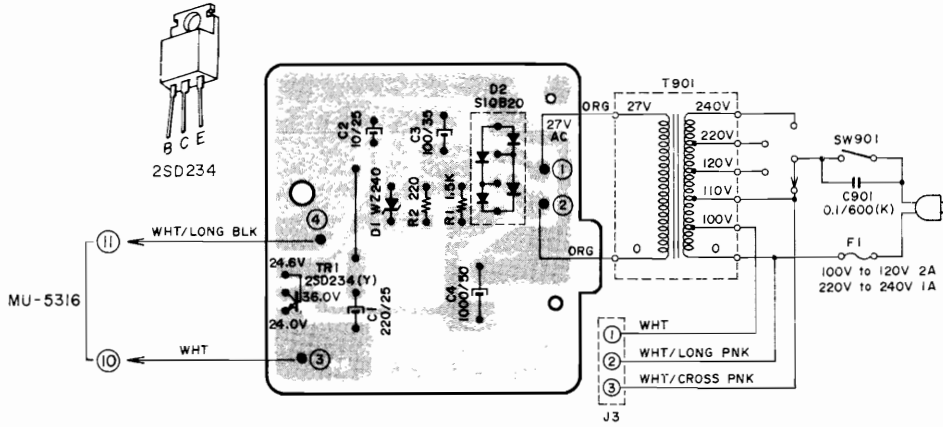


4) SYSTEM CONTROL P.C BOARD MU-1318 (CEE)

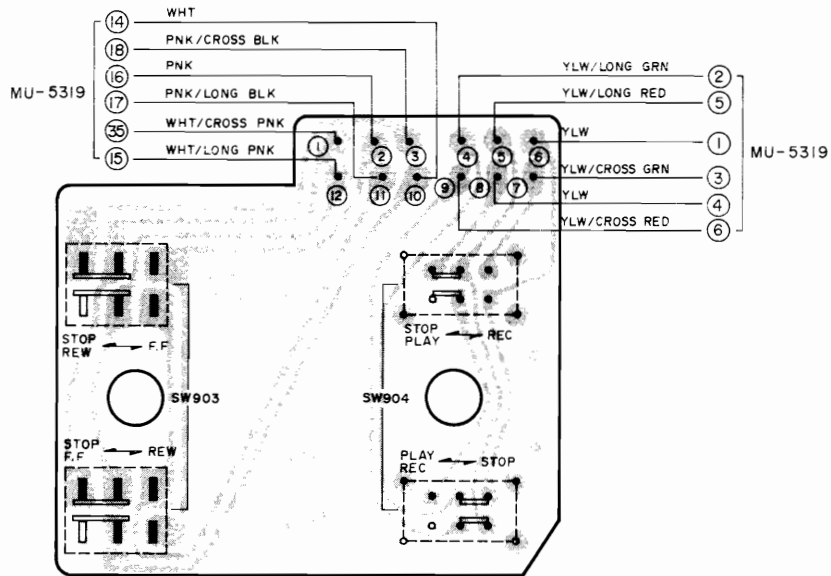




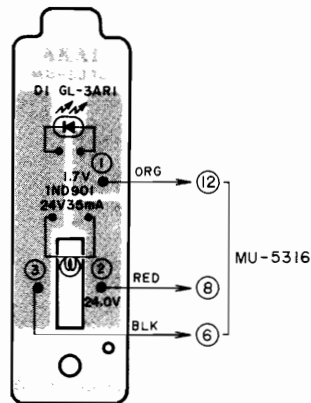
5) POWER SUPPLY P.C BOARD MU-5314



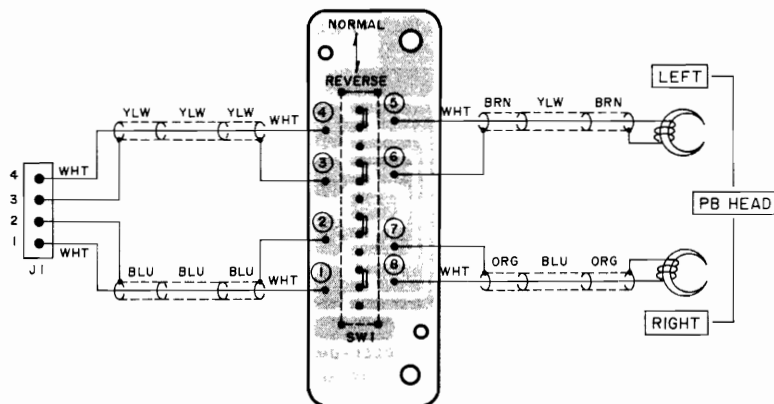
6) SWITCH P.C BOARD MU-1319



7) LAMP P.C BOARD MU-5313



8) HEAD SWITCH P.C BOARD MU-1320



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SECTION 2

**PARTS LIST**

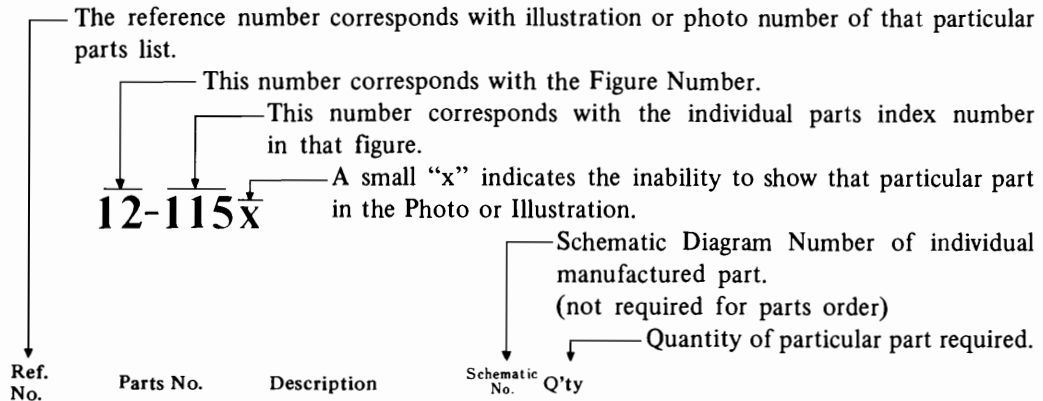
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| 6. SW. BLOCK .....                                 | 32 |
| 7. MECHA ASSEMBLY BLOCK .....                      | 34 |
| 8. P.C BOARDS .....                                | 36 |
| (1) AMP P.C BOARD (MU-5316) BLOCK .....            | 36 |
| (2) TRACK SELECTOR P.C BOARD (MU-5315) BLOCK ..... | 36 |
| (3) SYS. CON P.C BOARD (MU-1318) BLOCK .....       | 36 |
| (4) POWER SUPPLY P.C BOARD (MU-5314) BLOCK .....   | 37 |
| (5) LAMP P.C BOARD (MU-5313) BLOCK .....           | 37 |
| 9. AMP ASSEMBLY BLOCK .....                        | 38 |
| 10. FINAL ASSEMBLY BLOCK .....                     | 40 |
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Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

## HOW TO USE THIS PARTS LIST

1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read List



| Ref. No.                  | Parts No. | Description                | Schematic No. | Q'ty |
|---------------------------|-----------|----------------------------|---------------|------|
| <b>FLYWHEEL BLOCK #13</b> |           |                            |               |      |
| 12-115x                   | 800425    | Flywheel Block Assy. Comp. | RDG #13       | 1    |
| 12-116                    | 244506    | Flywheel Only              | RD-233        | 1    |
| 12-117x                   | 244754    | Felt, Flywheel             | RD-275        | 1    |
| 12-118                    | 251324    | Main Metal Case            | RD-236        | 1    |
| 12-119                    | 253080    | Main Metal                 | RD-237        | 1    |

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of Components of the Schematic Diagram or Service Manual.
5. Please utilize separate "Common List for Service Parts" for Resistor Parts orders.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.  
It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

**CAUTION:**

1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Service Manual (Basic Parts List) may be partially changed, please use this parts list for all future reference.



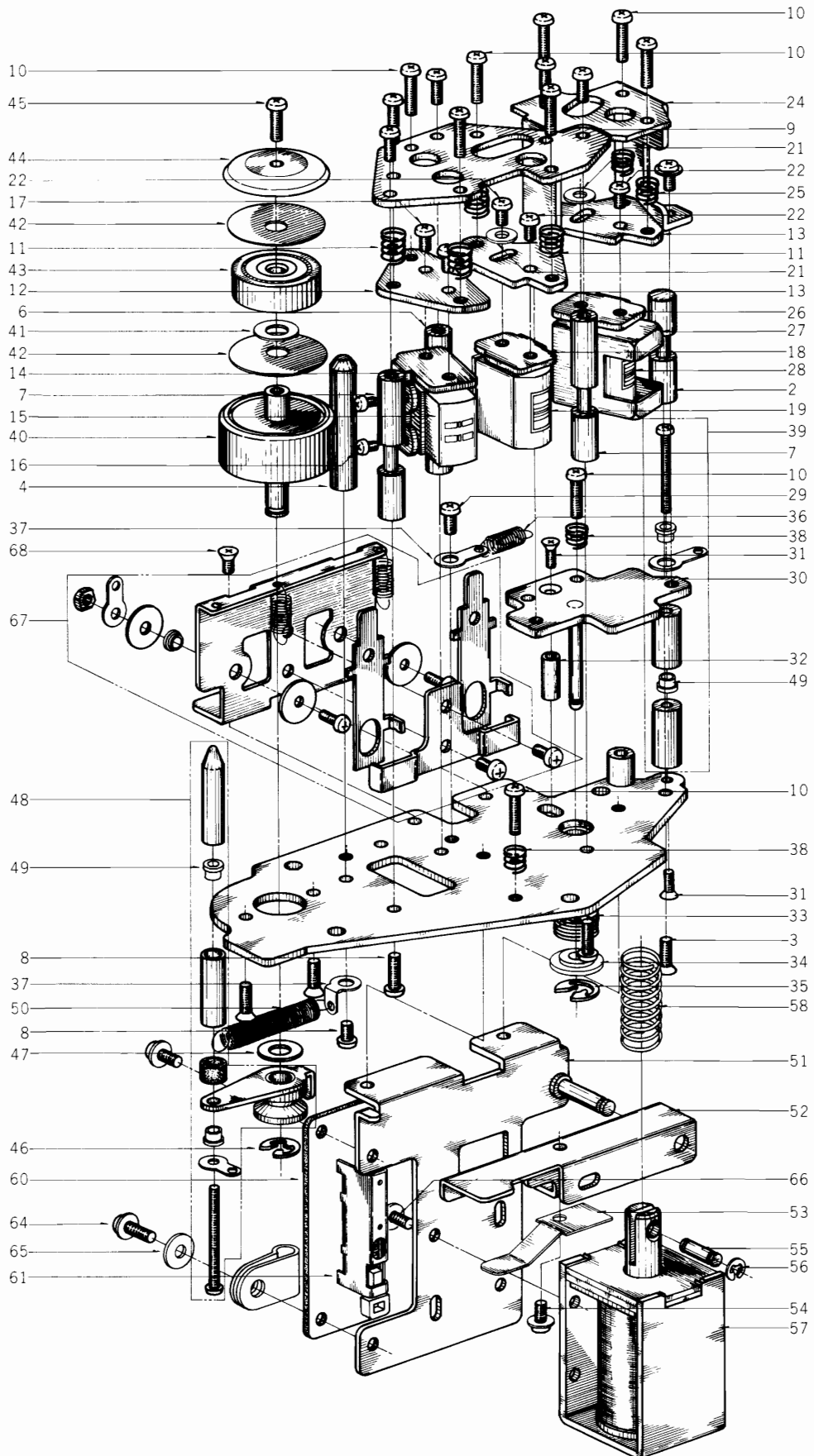
## 1. RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

| Parts No. | Description                            | Note                    |
|-----------|--|-------------------------|
| BA272002  | Syscon P.C Board Comp. MU-1318         | U/T                     |
| BA272013  | Syscon P.C Board Comp. MU-1318         | CEE                     |
| BA272024  | Syscon P.C Board Comp. MU-1318         | CSA                     |
| BA272092  | Track Selector P.C Board Comp. MU-5315 |                         |
| BA272182  | Power Supply P.C Board Comp. MU-5314   |                         |
| BA302435  | Amp P.C Board Comp. MU-5316            | U/T                     |
| BA302436  | Amp P.C Board Comp. MU-5316            | CEE                     |
| BA302437  | Amp P.C Board Comp. MU-5316            | CSA                     |
| BC249164  | Case Block Comp. MU-6308               |                         |
| BF271934  | Flywheel Block Comp.                   |                         |
| BM271912  | Motor (HM2-16MC) Block Comp.           |                         |
| BS271923  | SW. Block Comp.                        |                         |
| BT249388  | Power Trans. MUT-5                     | U/T                     |
| BT249401  | Power Trans. MUT-7                     | CEE                     |
| BT249390  | Power Trans. MUT-6                     | CSA                     |
| BR271945  | Reel Table (L) Block Comp.             |                         |
| BR271956  | Reel Table (R) Block Comp.             |                         |
| EA258287  | Lamp P.C Board MU-5313                 |                         |
| EA264936  | Head Switch P.C Board MU-1320          |                         |
| EA300256  | Switch P.C Board MU-1319               |                         |
| EC207898  | Trimmer/C. TM-110 100 PF               | C29, 30 (MU-5316)       |
| ED219464  | Germanium Diode 1N34A                  | D2 (MU-5316)            |
| ED224548  | Silicon Diode 10D2                     | D901                    |
| ED224550  | Silicon Diode 10D4                     | D6 (MU-1318)            |
| ED249377  | LED GL-3AR1                            | D1 (MU-5313)            |
| ED249581  | Silicon Diode S1QB20 0.8A 200V         | D2 (MU-5314)            |
| ED511918  | Zener Diode WZ-240                     | D1 (MU-5314)            |
| ED560913  | Silicon Diode 1S2473VE                 | D1 to 5, 7, 8 (MU-1318) |
| ED624903  | Silicon Diode 1S2473                   | D1, 3 (MU-5316)         |
| EL619064  | Lamp (L/T) 24V 35mA                    | IND901                  |
| EM666450  | VU Meter D18A68R                       | M901, 902               |
| EO383365  | OSC Coil OT-204                        | T1 (MU-5316)            |
| EP249344  | Reed Relay L24                         | RL1 (MU-5316)           |
| EP249647  | Plunger Solenoid SDC0840FHT1           | SL901                   |
| EP638763  | Relay MY4-O-US DC24V                   | L1 (MU-1318)            |
| ES224436  | Push SW. JP01                          | U/T, CSA                |
| ES242346  | Push SW. JP17                          | CEE                     |
| ES249254  | Push SW. SUE-12                        | SW1 (MU-5316)           |
| ES249276  | Push SW. SUE-24                        | SW2 (MU-5316)           |

| Parts No. | Description                 | Note                         |
|-----------|-----------------------------|------------------------------|
| ES258232  | Slide SW. S-2930            | SW1 (MU-1318)                |
| ES258467  | Slide SW. SSB-022           | SW904                        |
| ES479485  | Slide SW. S-1               | SW903                        |
| ES494302  | Slide SW. CL104B            | SW1 (MU-1320)                |
| ES562465  | Micro SW. K-1               | SW905                        |
| ET242390  | Transistor 2SD234 (Y)       | TR1 (MU-5314)                |
| ET391768  | Transistor 2SC458LG (C) (D) | TR1 to 3, 8, 9, 11 (MU-5316) |
| ET603257  | Transistor 2SC1312S (G) (H) | TR10 (MU-5316)               |
| ET635837  | Transistor 2SC945L (Q) (R)  | TR4 to 7, 12, 13 (MU-5316)   |
| ET639437  | Transistor 2SC945L (P) (Q)  | TR1 to 3 (MU-1318)           |
| EV249243  | Vol. V24L52PHN60R 15A 50K   | VR1 (MU-5316)                |
| HE563220  | ERASE HEAD E4-260           |                              |
| HP271978  | PB HEAD P4-240              |                              |
| HR271980  | REC HEAD R4-240             |                              |
| MB247904  | Counter Belt MU-1302        |                              |
| MB541012  | Drive Belt (Flat) MC-1209   | Same as GX-210D              |
| MC259312  | Counter                     |                              |
| MP271170  | Pinch Roller LC-321         | Same as GX-210D              |
| SK249096  | Mecha Knob MU-6303          |                              |
| SK259345  | Pause Knob (C) MR-612       | Same as GX-210D              |
| SK264892  | Selector Knob B CI-6020     |                              |
| SK631056  | Single Knob MY-6208         |                              |
| SK634410  | Push Button Knob J 91-5051  | Same as GXC-760D             |
| SK694888  | Knob 3 CP-5019              |                              |
| SP247408  | Front Panel MU-6307         |                              |

## 2. ILLUSTRATION OF HEAD BLOCK

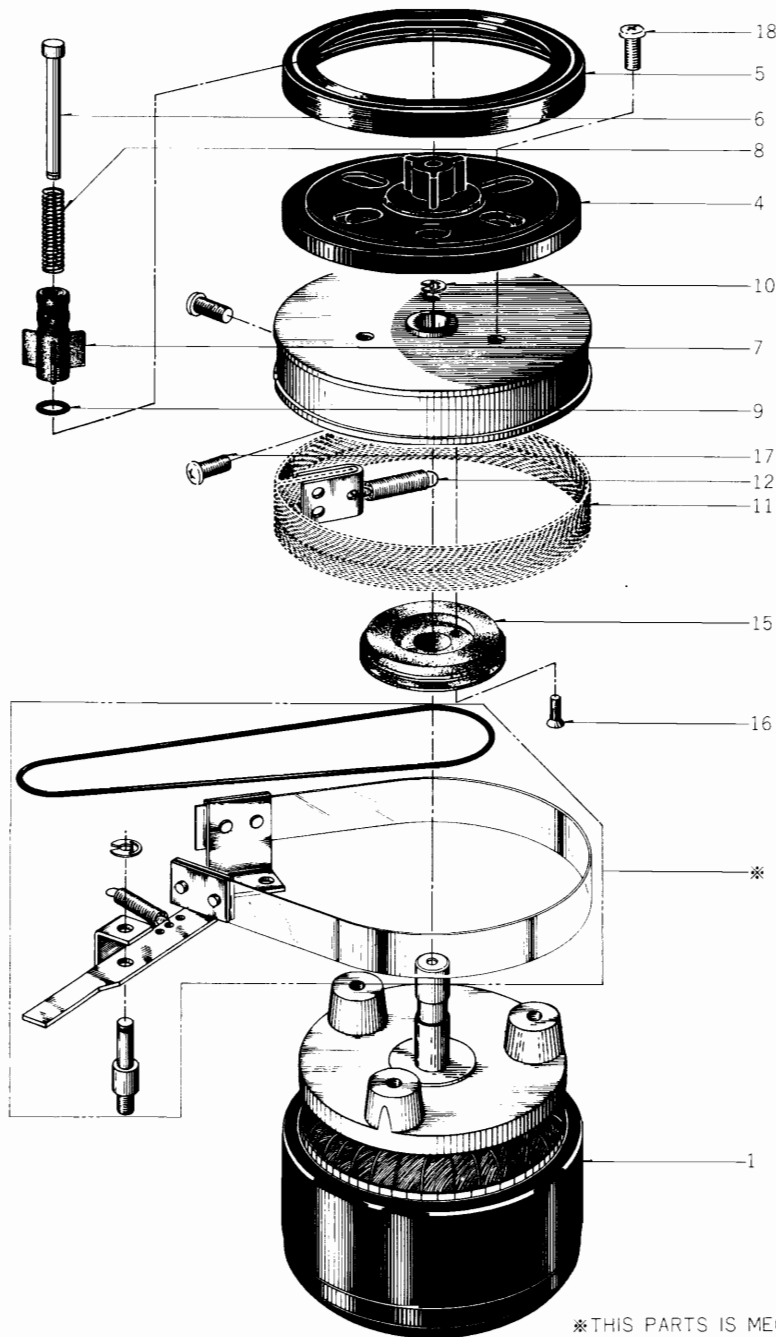


## 2) HEAD BLOCK

| Ref. No. | Parts No. | Description                      | Schematic No. | Q'ty | Ref. No. | Parts No. | Description                 | Schematic No. | Q'ty |
|----------|-----------|----------------------------------|---------------|------|----------|-----------|-----------------------------|---------------|------|
| 2-1x     | BH271967  | Head Block Comp.                 |               | 1    | 2-67     | BL271991  | DS Lever Block Comp.        |               | 1    |
| 2-2      | HZ317597  | Tape Guide A, MR-4               | MR-4          | 1    |          |           | GX-215D                     | MU-1010       | 1    |
| 2-3      | ZS414033  | Screw, countersunk head 3x8      |               | 3    | 2-68     | ZS327835  | Screw, countersunk head 3x5 |               | 2    |
| 2-4      | MH247757  | Head Cover Prop                  | MU-0302       | 1    | 2-69x    | ZS417137  | Screw, binding head 3x4     |               | 1    |
| 2-5x     | ZS369900  | Screw, pan head 3x8,<br>w/washer |               | 1    | 2-70x    | BZ302439  | Micro Connector Assy        |               | 1    |
| 2-6      | MH544195  | Head Table Prop                  | MU-0002       | 1    |          |           |                             |               |      |
| 2-7      | HZ544206  | Tape Guide                       | MU-0003       | 2    |          |           |                             |               |      |
| 2-8      | ZS421806  | Screw, pan head 3x8              |               | 3    |          |           |                             |               |      |
| 2-9      | HZ248321  | Head Hanger Plate                | MU-0305       | 1    |          |           |                             |               |      |
| 2-10     | ZS380046  | Screw, pan head 3x10             |               | 11   |          |           |                             |               |      |
| 2-11     | ZG540584  | Angle Adjust Spring G            | TW-0025       | 6    |          |           |                             |               |      |
| 2-12     | HZ261865  | EH Mt. Base                      | MU-0341       | 1    |          |           |                             |               |      |
| 2-13     | HZ248308  | Head Mt. Plate                   | MU-0307       | 2    |          |           |                             |               |      |
| 2-14     | ML248365  | EH Angle                         | MU-0304       | 1    |          |           |                             |               |      |
| 2-15     | HE563220  | ERASE HEAD E4-260                |               | 1    |          |           |                             |               |      |
| 2-16     | ZS201475  | Screw, pan head 2x3              |               | 2    |          |           |                             |               |      |
| 2-17     | ZS608477  | Screw, pan head 3x4              |               | 2    |          |           |                             |               |      |
| 2-18     | ML248310  | RH Angle                         | MU-0306       | 1    |          |           |                             |               |      |
| 2-19     | HR271980  | REC HEAD (R4-240)<br>GX-215D(R)  |               | 1    |          |           |                             |               |      |
| 2-20x    | ZS477876  | Screw, pan head 2x3              |               | 4    |          |           |                             |               |      |
| 2-21     | ZW265026  | Washer D3.1x7x0.5t               |               | 2    |          |           |                             |               |      |
| 2-22     | ZS417216  | Screw, pan head 3x4              |               | 4    |          |           |                             |               |      |
| 2-23x    | ZS379350  | Screw, pan head 3x6              |               | 4    |          |           |                             |               |      |
| 2-24     | ML248275  | Base Angle                       | MU-0309       | 1    |          |           |                             |               |      |
| 2-25     | ZG382757  | Angle Adjust Spring D            | RD-A12        | 3    |          |           |                             |               |      |
| 2-26     | ML248297  | PH Angle                         | MU-0308       | 1    |          |           |                             |               |      |
| 2-27     | HZ248242  | Head Shield                      | MU-0312       | 1    |          |           |                             |               |      |
| 2-28     | HP271978  | PB HEAD (P4-240)<br>GX-215D(P)   |               | 1    |          |           |                             |               |      |
| 2-29     | ZS422076  | Screw, pan head 3x5              |               | 4    |          |           |                             |               |      |
| 2-30     | MZ300780  | Angle Base Part GX-215D          | MU-0310       | 1    |          |           |                             |               |      |
| 2-31     | ZS554938  | Screw, countersunk head<br>2.3x6 |               | 2    |          |           |                             |               |      |
| 2-32     | MS296076  | Hold-down Base Guide             | MU-0347       | 1    |          |           |                             |               |      |
| 2-33     | ZG317902  | PH Spring                        | MR-13         | 1    |          |           |                             |               |      |
| 2-34     | ZW317913  | Spring Holder                    | MR-12         | 1    |          |           |                             |               |      |
| 2-35     | ZW290283  | 'U' Ring 2.85M                   | 6-1-1         | 1    |          |           |                             |               |      |
| 2-36     | ZG247151  | PW Arm Spring B                  | CA-0021       | 1    |          |           |                             |               |      |
| 2-37     | ZW562476  | Earth Lug M3                     |               | 3    |          |           |                             |               |      |
| 2-38     | ZG382757  | Angle Adjust Spring D            | RD-A12        | 2    |          |           |                             |               |      |
| 2-39     | MZ297810  | Sensing Pole Assy MU-3           | MC-0003       | 1    |          |           |                             |               |      |
| 2-40     | MS297821  | Roller Guide Assy MU-3           | MC-0001       | 1    |          |           |                             |               |      |
| 2-41     | ZW326463  | Washer (PBP) D5.1x10.3x0.2t      |               | 1    |          |           |                             |               |      |
| 2-42     | ZW231805  | Tape Guide Washer (Large)        | 3A-356        | 2    |          |           |                             |               |      |
| 2-43     | MV447491  | Bearing SSR-1950 ZD52            |               | 1    |          |           |                             |               |      |
| 2-44     | MZ247961  | Retaining Ring Case              | MU-0317       | 1    |          |           |                             |               |      |
| 2-45     | ZS421740  | Screw, pan head 3x8              |               | 1    |          |           |                             |               |      |
| 2-46     | ZW270123  | 'E' Ring 4M                      | 6-1-9         | 1    |          |           |                             |               |      |
| 2-47     | ZW259885  | Washer (PBP) D5.1x10.3x0.1t      |               | 2    |          |           |                             |               |      |
| 2-48     | MS297832  | Sensing Guide Assy MU-3          | MC-0002       | 1    |          |           |                             |               |      |
| 2-49     | HZ317632  | Insulator Collar A               | MR-36         | 2    |          |           |                             |               |      |
| 2-50     | ZG317114  | Tension Lever Spring             | MR-39         | 1    |          |           |                             |               |      |
| 2-51     | MZ280236  | Plunger Base Part MU-3           | MU-0313       | 1    |          |           |                             |               |      |
| 2-52     | ML247994  | Lever, Head Base                 | MU-0315       | 1    |          |           |                             |               |      |
| 2-53     | MZ247972  | SW. Retaining Plate              | MU-0316       | 1    |          |           |                             |               |      |
| 2-54     | ZS608275  | Screw, pan head 3x5,<br>w/washer |               | 1    |          |           |                             |               |      |
| 2-55     | ZS287021  | Solenoid Pin (B)                 | MU-0346       | 1    |          |           |                             |               |      |
| 2-56     | ZW270088  | 'E' Ring 1.9M                    | 6-1-9         | 2    |          |           |                             |               |      |
| 2-57     | EP249647  | Plunger Solenoid<br>SDC0840FHT1  | 44-1-84       | 1    |          |           |                             |               |      |
| 2-58     | ZG247948  | Head Return Spring               | MU-0319       | 1    |          |           |                             |               |      |
| 2-59x    | ED224548  | Silicon Diode 10D2               | 45-2-14       | 1    |          |           |                             |               |      |
| 2-60     | EA264936  | Head SW. P.C Board               | MU-1320       | 1    |          |           |                             |               |      |
| 2-61     | ES494302  | Slide SW. CL104B                 | 25-3-79       | 1    |          |           |                             |               |      |
| 2-62x    | ZS558101  | Screw, pan head 3x6,<br>w/washer |               | 2    |          |           |                             |               |      |
| 2-63x    | EZ663175  | Cord Retainer RME71A             | 2-7-53        | 1    |          |           |                             |               |      |
| 2-64     | ZS608332  | Screw, pan head 3x8,<br>w/washer |               | 2    |          |           |                             |               |      |
| 2-65     | ZW301256  | Washer (PBP) D5.1x10.3x0.6t      |               | 1    |          |           |                             |               |      |
| 2-66     | ZS558101  | Screw, pan head 3x6,<br>w/washer |               | 1    |          |           |                             |               |      |

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.

### 3. ILLUSTRATION OF REEL MOTOR/TABLE BLOCK

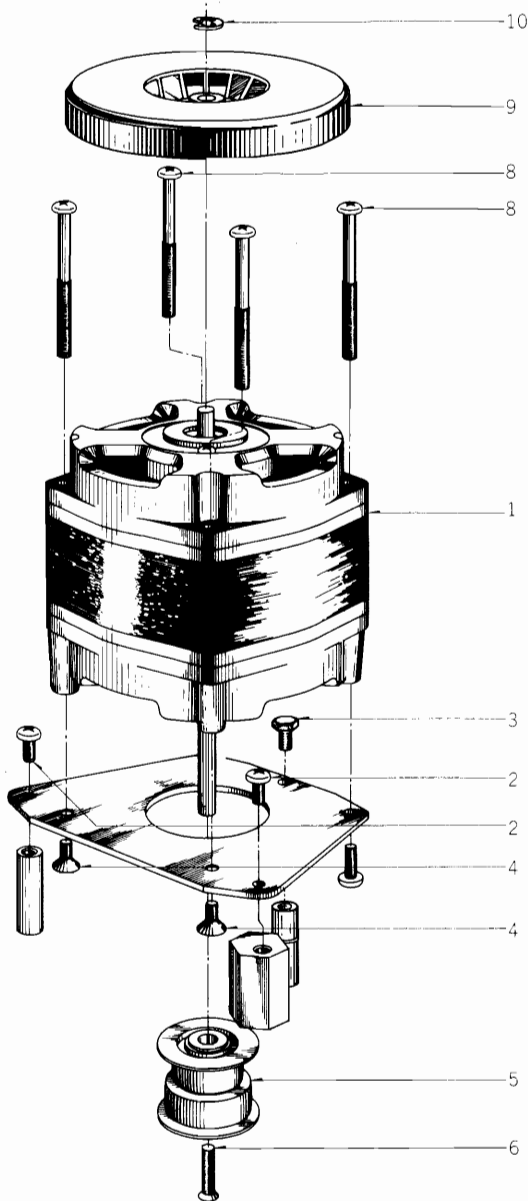


### 3) REEL MOTOR/TABLE BLOCK

| Ref. No. | Parts No. | Description                       | Schematic No. | Q'ty | Ref. No. | Parts No. | Description                       | Schematic No. | Q'ty |
|----------|-----------|-----------------------------------|---------------|------|----------|-----------|-----------------------------------|---------------|------|
| 3-1      | BM314741  | Motor Block Comp. 24XO-2 (Torque) |               | 2    | 3-10     | ZW270088  | 'E' Ring 1.9M                     | 6-1-9         | 1    |
| 3-2x     | BR271945  | Reel Table (L) Block Comp.        |               | 1    | 3-11     | MT436860  | Brake Cloth Comp. MR              | MR-269        | 1    |
| 3-3x     | BR271956  | Reel Table (R) Block Comp.        |               | 1    | 3-12     | ZG317496  | Felt Tension Spring               | MR-260        | 1    |
| 3-4      | MT248523  | Reel Table Disk                   | MU-1315       | 1    | 3-13x    | ZW562476  | Earth Lug M3                      |               | 1    |
| 3-5      | MT300426  | Reel Table Rubber                 | MU-1322       | 1    | 3-14x    | ZS417216  | Screw, pan head 3x4               |               | 1    |
| 3-6      | MS342000  | Reel Shaft                        | 3R-108        | 1    | 3-15     | MR317507  | Counter Pulley (R)                | MR-217        | 1    |
| 3-7      | MT255420  | Reel Retainer                     | 3R-102        | 1    | 3-16     | ZS432663  | Screw, countersunk head 2.3x6 (R) |               | 2    |
| 3-8      | ZG255633  | Reel Spring                       | 3R-109        | 1    | 3-17     | ZS424056  | Screw, pan head 4x10              |               | 2    |
| 3-9      | MT516565  | 'O' Ring 2.8x1.9                  | 3R-139        | 1    | 3-18     | ZS355511  | Screw, binding head 3x6           |               | 6    |

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.

#### 4. ILLUSTRATION OF MAIN MOTOR BLOCK



#### 4) MAIN MOTOR BLOCK

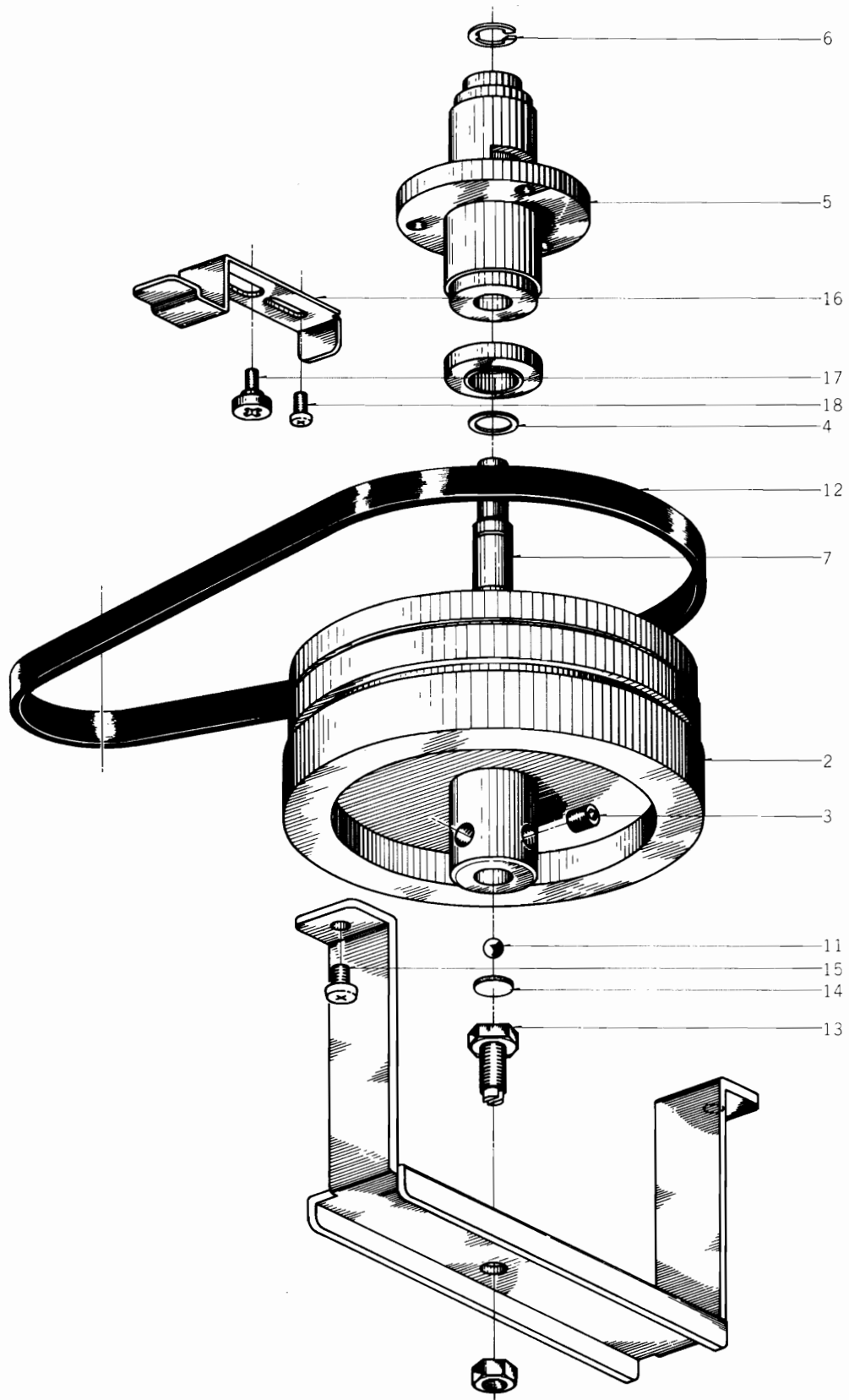
| Ref. No. | Parts No. | Description                          | Schematic No. | Q'ty |
|----------|-----------|--------------------------------------|---------------|------|
| 4-1      | BM244675  | Motor Block (HM2-16MC)<br>Comp. MU   |               | 1    |
| 4-2      | ZS424056  | Screw, pan head 4x10                 |               | 2    |
| 4-3      | ZS272395  | Motor Prop Retaining Screw,<br>M-7   | 24X-732       | 1    |
| 4-4      | ZS427026  | Screw, countersunk head<br>4x10      |               | 2    |
| 4-5      | MR673738  | Motor Pulley Part ND                 | MC-7201       | 1    |
| 4-6      | ZS413921  | Screw, oval countersunk<br>head 3x15 |               | 1    |
| 4-7x     | ZW273914  | Spring Washer                        |               | 1    |
| 4-8      | ZS427037  | Screw, pan head 4x50,<br>w/washer    |               | 4    |
| 4-9      | MZ529108  | Main Motor Fan                       | ND-7010       | 1    |
| 4-10     | ZW270123  | 'E' Ring 4M                          | 6-1-9         | 1    |

#### 5) FLYWHEEL BLOCK

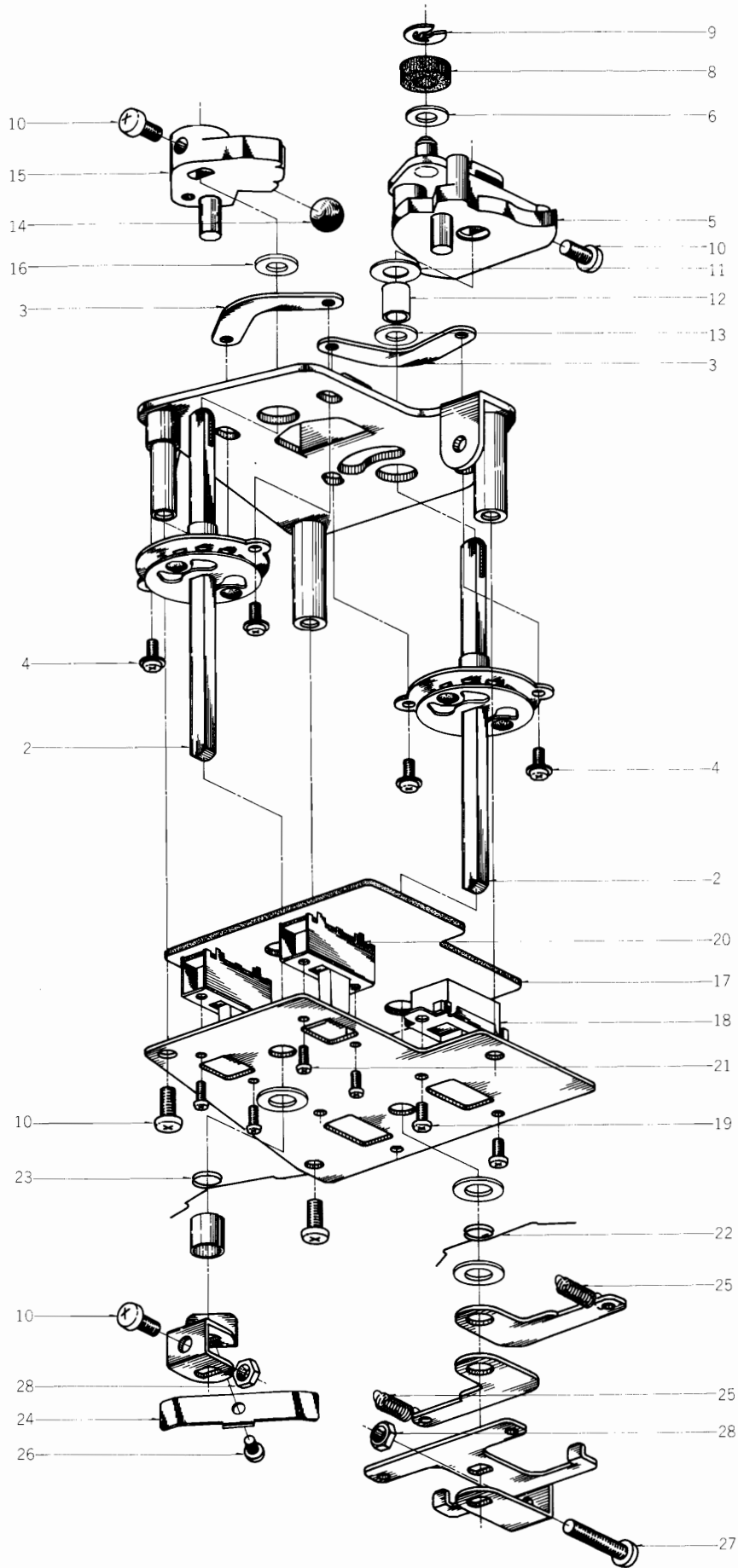
| Ref. No. | Parts No. | Description                                | Schematic No. | Q'ty |
|----------|-----------|--|---------------|------|
| 5-1x     | BF271934  | Flywheel Block Comp.                       |               | 1    |
| 5-2      | BF673683  | Flywheel 24 Part LS                        |               | 1    |
| 5-3      | ZS373577  | Set Screw, hexagon socket<br>5x6 (Flat/P.) |               | 2    |
| 5-4      | ZW447208  | Flywheel Thrust B<br>D7.9x13x0.5t          | 101025        | 1    |
| 5-5      | MZ688318  | Main Case Part MH                          | MH-206        | 1    |
| 5-6      | MH244710  | Flywheel Fixing Pin                        | 900-250       | 1    |
| 5-7      | MS476572  | Main Shaft, D6                             | MR-2005       | 1    |
| 5-8x     | ZS413201  | Screw, pan head 4x8                        |               | 1    |
| 5-9x     | ZS427026  | Screw, countersunk head<br>4x10            |               | 1    |
| 5-10x    | ZS200485  | Screw, countersunk head<br>4x10 D=8.5      | MH-136        | 1    |
| 5-11     | MV269965  | Steel Ball D4                              |               | 1    |
| 5-12     | MB541012  | Drive Belt (Flat)<br>D116.9x1.6x7          | MC-1209       | 1    |
| 5-13     | MZ585900  | Shaft Support                              | LS-1203       | 1    |
| 5-14     | ZW392681  | Washer (Nylon) D8x1t<br>(without hole)     |               | 1    |
| 5-15     | ZS413302  | Screw, pan head 4x5                        |               | 2    |
| 5-16     | ML248545  | Cycle Change Lever                         | MU-1316       | 1    |
| 5-17     | ZS469710  | MR Graduated Screw                         | MR-254        | 1    |
| 5-18     | ZS323728  | Screw, binding head 3x5                    |               | 1    |

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.

5. ILLUSTRATION OF FLYWHEEL BLOCK



6. ILLUSTRATION OF SW. BLOCK

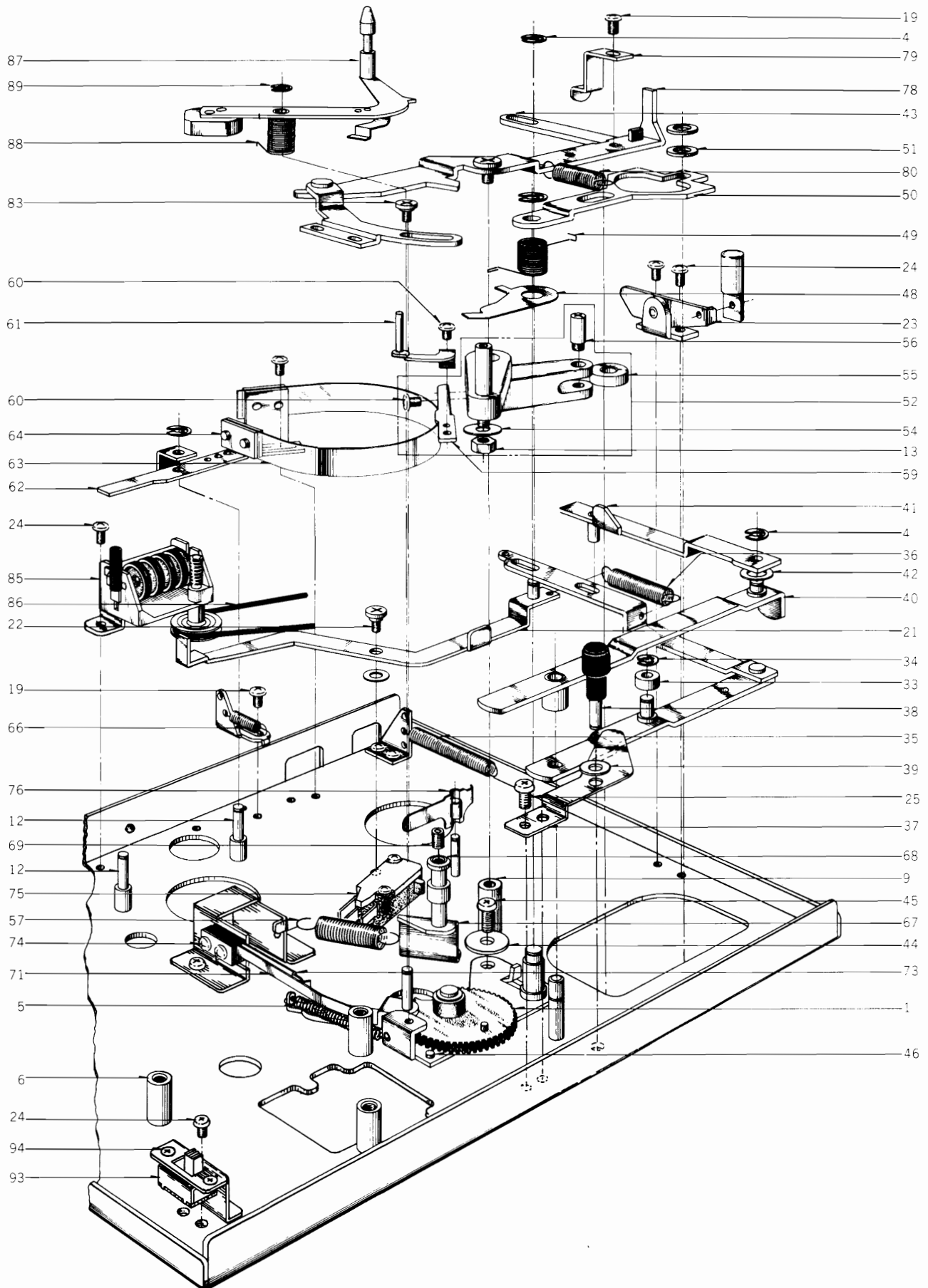




## 6) SW. BLOCK

| Ref. No. | Parts No. | Description                      | Schematic No. | Q'ty |
|----------|-----------|----------------------------------|---------------|------|
| 6-1x     | BS271923  | SW. Block Comp.                  |               | 1    |
| 6-2      | ES316934  | Rewind Shaft (Y Type)            | 25-8-5        | 2    |
| 6-3      | MZ316945  | Nut Plate                        | MR-245        | 2    |
| 6-4      | ZS558101  | Screw, pan head 3x6,<br>w/washer |               | 4    |
| 6-5      | MZ671872  | Cam A-3 MR                       | MR-242        | 1    |
| 6-6      | ZW259942  | Washer (Fiber)<br>D5.1x10.3x0.5t |               | 1    |
| 6-7x     | ZW260133  | Washer (Fiber) D6.1x10x1t        |               | 2    |
| 6-8      | MR269730  | Cam Roller D12                   | 900-213       | 1    |
| 6-9      | ZW290283  | 'U' Ring 2.85M                   | 6-1-1         | 1    |
| 6-10     | ZS413201  | Screw, pan head 4x8              |               | 5    |
| 6-11     | ZW260201  | Washer (Nylon) D6.2x13x1t        |               | 3    |
| 6-12     | MZ258502  | Spacer 6x8                       | 7-2-6         | 1    |
| 6-13     | ZW260087  | Washer (Fiber) D6.1x10x0.5t      |               | 2    |
| 6-14     | MV270066  | Steel Ball D8                    |               | 1    |
| 6-15     | MZ217271  | Cam B (Without Tap)              | 900-206       | 1    |
| 6-16     | ZW376402  | Washer (Fiber) D5.1x10.3x1t      |               | 2    |
| 6-17     | EA300256  | SW. P.C Board Part GX-215D       | MU-1319       | 1    |
| 6-18     | ES479485  | Slide SW. S-1                    | 25-3-66       | 2    |
| 6-19     | ZS422076  | Screw, pan head 3x5              |               | 4    |
| 6-20     | ES258467  | Slide SW. SSB-022                | 25-3-127      | 2    |
| 6-21     | ZS479474  | Screw, pan head 2.6x5            |               | 2    |
| 6-22     | ZG248681  | SW. Spring A                     | MU-2305       | 1    |
| 6-23     | ZG248760  | SW. Spring B                     | MU-2307       | 1    |
| 6-24     | ZG248657  | SW. Spring                       | MU-2304       | 1    |
| 6-25     | ZG284398  | Wind Spring                      | MU-2308       | 2    |
| 6-26     | ZS432674  | Screw, pan head 3x3              |               | 1    |
| 6-27     | ZS554771  | Screw, pan head 4x20             |               | 1    |
| 6-28     | ZW413188  | Nut M4, #1                       |               | 2    |

## 7. ILLUSTRATION OF MECHA ASSEMBLY BLOCK



## 7) MECHA ASSEMBLY BLOCK

| Ref. No.                    | Parts No. | Description                         | Schematic No. | Q'ty | Ref. No. | Parts No. | Description                               | Schematic No. | Q'ty |
|-----------------------------|-----------|-------------------------------------|---------------|------|----------|-----------|---|---------------|------|
| <b>ECCENTRIC GEAR BLOCK</b> |           |                                     |               |      |          |           |   |               |      |
| 7-1                         | MZ248005  | Eccentric Gear                      | 4TR-245       | 1    | 7-65x    | ML396810  | Brake Lever B                             | KD-1038       | 1    |
| 7-2x                        | ZW861344  | Washer (PBP) D6.1x10x0.4t           |               | 1    | 7-66     | ZG315011  | Brake Lever Spring                        | MR-116        | 2    |
| 7-3x                        | ZW260144  | Washer (Nylon) D6.1x10x0.3t         |               | 1    | 7-67     | MZ672074  | Reverse Guide Base Part MR                | MR-229        | 1    |
| 7-4                         | ZW290283  | 'U' Ring 2.85M                      | 6-1-1         | 8    | 7-68     | HZ315090  | Reverse Guide                             | RD-225        | 1    |
| 7-5                         | ZG437253  | Eccentric Gear Return Spring        | MS-2022       | 1    | 7-69     | ZS609254  | Set Screw, hexagon socket<br>4x6 (cup/p.) |               | 1    |
| <b>ASSEMBLY BLOCK</b>       |           |                                     |               |      |          |           |   |               |      |
| 7-6                         | MH247533  | Head Prop E                         | 100012        | 3    | 7-70x    | HZ225540  | SW. Spacer B                              | 3A-131        | 1    |
| 7-7x                        | ZS413201  | Screw, pan head 4x8                 |               | 3    | 7-71     | ES316361  | Tension SW.                               | MR-235        | 1    |
| 7-8x                        | ZS260346  | Flat Screw                          | 7-1-66        | 1    | 7-72x    | HZ225527  | SW. Spacer                                | 3A-130B       | 3    |
| 7-9                         | MS317362  | Pinch Roller Arm Shaft              | MR-125        | 1    | 7-73     | ES316372  | Repeater SW.                              | 3A-132        | 1    |
| 7-10x                       | ZW274026  | Spring Washer                       |               | 1    | 7-74     | ZS421806  | Screw, pan head 3x8                       |               | 2    |
| 7-11x                       | ZW413278  | Nut M5, #1                          |               | 1    | 7-75     | ES562465  | Micro SW. K-1                             | 25-1-26       | 1    |
| 7-12                        | MH247893  | Brake Prop                          | MU-1303       | 2    | 7-76x    | ML316394  | Operation SW. Lever                       | MR-112        | 1    |
| 7-13                        | ZW413188  | Nut M4, #1                          |               | 3    | 7-77     | ZW270088  | 'E' Ring 1.9M                             | 6-1-9         | 1    |
| 7-14x                       | ZW413267  | Flange Nut M4                       |               | 1    | 7-78     | ML672030  | MR Quick Lever Part MR                    | MR-233        | 1    |
| 7-15x                       | ZW273688  | Nut M2.3                            |               | 1    | 7-79     | MZ316451  | Pause Stopper, M-7                        | MH-126        | 1    |
| 7-16x                       | ZS260346  | Flat Screw                          | 7-1-66        | 2    | 7-80     | ZG301061  | Pause Spring 990A                         | 4TR-128       | 1    |
| 7-17x                       | ZS447840  | Tapping Screw #2 3x8 (BR)           |               | 6    | 7-81     | MH289168  | Pause Lever Fastener                      | LE-1007       | 1    |
| 7-18x                       | ZS325495  | Tapping Screw #2 3x6 (BR)           |               | 2    | 7-82x    | ZW260010  | Washer (PBP) D6.1x10x0.1t                 |               | 1    |
| 7-19x                       | ZS323728  | Screw, binding head 3x5             |               | 7    | 7-83     | ZS469710  | MR Graduated Screw                        | MR-254        | 1    |
| 7-20x                       | ZS424056  | Screw, pan head 4x10                |               | 6    | 7-84x    | ZW273802  | Toothed Lock Washer                       |               | 1    |
| 7-21                        | ML679151  | Brake Lever C Part MR               | MR-227        | 1    | 7-85     | MC259312  | Counter MU-3                              | 9-1-52        | 1    |
| 7-22                        | ZS469710  | MR Graduated Screw                  | MR-254        | 1    | 7-86     | MB247904  | Counter Belt                              | MU-1302       | 1    |
| 7-23                        | ML674357  | Start Lever Part MS                 | 4TR-122       | 1    | 7-87     | BL316484  | AS Lever Block Comp.<br>MR, MS, MC        |               | 1    |
| 7-24                        | ZS422076  | Screw, pan head 3x5                 |               | 11   | 7-88     | ZG300751  | MU AS Lever Spring                        | MU-1323       | 1    |
| 7-25                        | ZS417150  | Screw, pan head 4x6                 |               | 3    | 7-89     | ZW290294  | 'U' Ring 2.85M                            | 6-1-1B        | 1    |
| 7-26x                       | ZW330412  | Adjust. Washer (U)<br>D4x13x0.13t   |               | 1    | 7-90x    | EC249592  | MP/C. 4+4 μF 250WV                        | 24-9-116      | 1    |
| 7-27x                       | ZW330423  | Adjust. Washer (U)<br>D4x13x0.25t   |               | 1    | 7-91x    | EC266411  | MP/C. 2+1 μF 250WV<br>(Wrapping Type)     | 24-9-119      | 1    |
| 7-28x                       | ZW603797  | Adjust. Washer (U)<br>D4x13x0.5t    |               | 1    | 7-92x    | ZW376391  | Washer (Polyslider)<br>D6.1x10x0.13t      |               | 1    |
| 7-29x                       | ZW413190  | Adjust. Washer (U)<br>D4x13x0.8t    |               | 1    | 7-93     | ES375478  | Slide SW. ESD-279DU                       | 25-3-23       | 1    |
| 7-30x                       | ZW330456  | Adjust. Washer (U)<br>D4x13x1t      |               | 1    | 7-94     | ZS369145  | Screw, countersunk head<br>3x5 D=5        |               | 2    |
| 7-31x                       | ZW439547  | Adjust. Washer (U)<br>D4x13x1.5t    |               | 1    |          |           |   |               |      |
| 7-32x                       | ZS424056  | Screw, pan head 4x10                |               | 3    |          |           |   |               |      |
| 7-33                        | MR314785  | Cam Roller D9                       | MR-237        | 1    |          |           |   |               |      |
| 7-34                        | ZW270101  | 'E' Ring 3M                         | 6-1-9         | 1    |          |           |   |               |      |
| 7-35                        | ZG314818  | D Lever Spring                      | MR-114        | 1    |          |           |   |               |      |
| 7-36                        | ZG314706  | Spring IB                           | MR-115        | 1    |          |           |   |               |      |
| 7-37                        | MZ628211  | REC. Stopper                        | LE-1602       | 1    |          |           |   |               |      |
| 7-38                        | SB625004  | REC. Button (RED)                   | 900-167       | 1    |          |           |   |               |      |
| 7-39                        | ZW259773  | Washer (Nylon) D4.1x7x0.5t          |               | 1    |          |           |   |               |      |
| 7-40                        | ML673694  | 707 Lever A Part 707                | LC-103        | 1    |          |           |   |               |      |
| 7-41                        | ML672028  | MRC Lever Part MR                   | MR-108        | 1    |          |           |   |               |      |
| 7-42                        | ZW419826  | Washer (Fiber) D6.2x10x1t           |               | 2    |          |           |   |               |      |
| 7-43                        | ML314864  | IB Lever                            | MR-111        | 1    |          |           |   |               |      |
| 7-44                        | MZ692864  | Gear Table Collar                   | MR-1004       | 1    |          |           |   |               |      |
| 7-45                        | ZS413201  | Screw, pan head 4x8                 |               | 1    |          |           |   |               |      |
| 7-46                        | ZS207314  | Amp. Lever Set Screw                | 3A-737        | 1    |          |           |   |               |      |
| 7-47x                       | ZW259885  | Washer (PBP) D5.1x10.3x0.1t         |               | 1    |          |           |   |               |      |
| 7-48                        | MZ218125  | Gear Stopper                        | 4TR-120       | 1    |          |           |   |               |      |
| 7-49                        | ZG226697  | Stopper Spring                      | 4TR-121       | 1    |          |           |   |               |      |
| 7-50                        | ML228868  | Auto Mecha Control Lever            | 4TR-125       | 1    |          |           |   |               |      |
| 7-51                        | ZW260087  | Washer (Fiber) D6.1x10x0.5t         |               | 1    |          |           |   |               |      |
| 7-52                        | ML293747  | Pinch Roller Lever Comp.<br>GX-215D |               | 1    |          |           |   |               |      |
| 7-53x                       | ZW237868  | Washer D5.1x10x1t                   |               | 1    |          |           |   |               |      |
| 7-54                        | ZW675033  | Washer (SPC) D5.1x10.3x0.8t         |               | 1    |          |           |   |               |      |
| 7-55                        | MR269763  | Cam Roller D13                      | 900-154       | 1    |          |           |   |               |      |
| 7-56                        | MS582906  | Cam Roller Shaft A-1                | 7-3-6         | 1    |          |           |   |               |      |
| 7-57                        | ZG455692  | Pinch Roller Spring, MS             | MS-1015       | 1    |          |           |   |               |      |
| 7-58x                       | ZW314943  | Washer (Nylon) D8                   | MR-113        | 1    |          |           |   |               |      |
| 7-59                        | ML248556  | Shifter Lever B                     | MU-1317       | 1    |          |           |   |               |      |
| 7-60                        | ZS608275  | Screw, pan head 3x5,<br>w/washer    |               | 2    |          |           |   |               |      |
| 7-61                        | ML262798  | Shifter Lever Part MU-3             | MU-1308       | 1    |          |           |   |               |      |
| 7-62                        | ML314976  | Brake Lever A                       | MR-210        | 1    |          |           |   |               |      |
| 7-63                        | MT314987  | Brake Band                          | MR-213        | 1    |          |           |   |               |      |
| 7-64                        | ZS417216  | Screw, pan head 3x4                 |               | 4    |          |           |   |               |      |

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.

## 8. P.C BOARDS

### (1) AMP P.C BOARD (MU-5316) BLOCK

| Symbol No.  | Parts No. | Description   | Schematic No. | Q'ty |
|-------------|-----------|---|---------------|------|
| (1)-1       | BA302435  | Amp P.C Board Comp.<br>(MU-5316)                      |               | 1    |
| (1)-2       | BA302436  | Amp P.C Board Comp.<br>(MU-5316) (CEE)                |               | 1    |
| (1)-3       | BA302437  | Amp P.C Board Comp.<br>(MU-5316) (CSA)                |               | 1    |
| (1)-TR1to3  | ET391768  | Transistor<br>2SC458LG(C)(D)                          | 45-1-29       | 6    |
| (1)-TR4to7  | ET398711  | Transistor<br>2SC945L(Q)(R)                           | 45-1-85       | 6    |
| (1)-TR8,9   | ET391768  | Transistor<br>2SC458LG(C)(D)                          | 45-1-29       | 4    |
| (1)-TR10    | ET603257  | Transistor<br>2SC1312S(G)(H)                          | 45-1-182      | 2    |
| (1)-TR11    | ET391768  | Transistor<br>2SC458LG(C)(D)                          | 45-1-29       | 2    |
| (1)-TR12,13 | ET398711  | Transistor<br>2SC945L(Q)(R)                           | 45-1-85       | 4    |
| (1)-D1      | ED624903  | Silicon Diode 1S2473                                  | 45-3-28       | 1    |
| (1)-D2      | ED219464  | Germanium Diode<br>1N34A                              | 45-3-1        | 2    |
| (1)-D3      | ED624903  | Silicon Diode 1S2473                                  | 45-3-28       | 2    |
| (1)-J1,2    | EJ249221  | Mic. Jack MU  | 31-2-77       | 2    |
| (1)-J3      | EJ249232  | Headphone Jack MU                                     | 31-2-77       | 1    |
| (1)-VR1     | EV249243  | Vol. V24L52PHN60R<br>15A 50k                          | 36-2-42       | 2    |
| (1)-VR2     | EV464207  | Semi-fixed/Vol.<br>V8K4-1 5 k $\Omega$                | 36-10-266     | 2    |
| (1)-VR3     | EV464220  | Semi-fixed/Vol.<br>V8K4-1 50 k $\Omega$               | 36-10-266     | 2    |
| (1)-VR4     | EV478686  | Semi-fixed/Vol.<br>V8K4-1 1 k $\Omega$                | 36-10-266     | 2    |
| (1)-SW1     | ES249254  | Push SW. MU   | 25-5-240      | 1    |
| (1)-SW2     | ES249276  | Push SW. MU   | 25-5-241      | 1    |
| (1)-RL1     | EP249344  | Reed Relay, L Type<br>L24                             | 47-2-28       | 1    |
| (1)-T1      | EO383365  | OSC. Coil OT-204                                      | 23-4-20       | 1    |
| (1)-T2      | BT490702  | Headphone Trans.<br>N19-349S                          | 38-2-32       | 2    |
| (1)-L1      | EO243977  | Ferri Inductor<br>FL7H 1 MH(J)                        | 23-1-3        | 2    |
| (1)-L2(L)   | EO243988  | Ferri Inductor<br>FL7H 3.3 MH(J)                      | 23-1-3        | 1    |
| (1)-L2(R)   | EO301467  | Ferri Inductor<br>RX-9P 3.3 MH(J)                     | 23-1-275      | 1    |
| (1)-L3      | EO624857  | Inductor<br>GE6070A 23 MH                             | 23-1-227      | 2    |
| (1)-R30     | ER564772  | Fuse/R. FRN50 1/4<br>100 ohms(K) 200 mA<br>(CEE, CSA) | 35-14-9       | 2    |
| (1)-R38     | ER653545  | Metal Oxide Film/R.<br>2W 330 ohms(K)                 | 35-15-18      | 1    |
| (1)-C9      | EC208350  | Styrol/C. 100PF(K)<br>50WV (Vert. Type)               | 24-11-11      | 2    |
| (1)-C28     | EC562678  | Styrol/C. 750PF(J)<br>50WV (Vert. Type)               | 24-11-3       | 2    |
| (1)-C29,30  | EC207898  | Trimmer/C. TM-110<br>100PF                            | 24-2-37       | 2    |
| (1)-C31     | EC558235  | Styrol/C. 1800PF(J)<br>250WV (Tub. Type)              | 24-11-10      | 1    |
| (1)-C37     | EC405898  | Styrol/C. 470PF(J)<br>50WV (Vert. Type)               | 24-11-3       | 2    |
| (1)-C42     | EC562678  | Styrol/C. 750PF(J)<br>50WV (Vert. Type)               | 24-11-3       | 2    |
| (1)-C44     | EC262743  | Tantalum/C.<br>4.7 $\mu$ F(M) 10WV                    | 24-15-10      | 2    |
| (1)-C47     | EC516712  | Styrol/C. 220PF(K)<br>50WV (Vert. Type)               | 24-11-3       | 2    |
| (1)-C53     | EC513944  | Styrol/C. 100PF(J)<br>50WV (Vert. Type)               | 24-11-3       | 2    |
| (1)-4       | EJ249300  | Jack Plate MU   | 31-5-136      | 1    |
| (1)-5       | EJ249333  | Micro Connector<br>4P Plug MU                         | 42-1-105      | 1    |

### (2) TRACK SELECTOR P.C BOARD (MU-5315) BLOCK

| Symbol No. | Parts No. | Description                                    | Schematic No. | Q'ty |
|------------|-----------|--|---------------|------|
| (2)-1      | BA272092  | Track Selector<br>P.C Board Comp.<br>(MU-5315) |               | 1    |
| (2)-SW1    | ES249355  | Rotary SW.<br>SRM1043X04                       | 25-6-104      | 1    |
| (2)-L1     | EO565558  | Ferri Inductor<br>FL9H 240 $\mu$ H(J)          | 23-1-213      | 1    |
| (2)-2      | EJ249366  | Micro Connector<br>7P Plug MU                  | 42-1-104      | 1    |

### (3) SYS. CON P.C BOARD (MU-1318) BLOCK

| Symbol No.  | Parts No. | Description   | Schematic No. | Q'ty |
|-------------|-----------|---|---------------|------|
| (3)-1       | BA272002  | Sys. Con P.C Board<br>Comp. (MU-1318)                     |               | 1    |
| (3)-2       | BA272013  | Sys. Con P.C Board<br>Comp. (MU-1318)<br>(CEE)            |               | 1    |
| (3)-3       | BA272024  | Sys. Con P.C Board<br>Comp. (MU-1318)<br>(CSA)            |               | 1    |
| (3)-TR1to3  | ET453486  | Transistor<br>2SC711(E)(F)                                | 45-1-67       | 3    |
| (3)-D1to5   | ED560913  | Silicon Diode<br>1S2473VE                                 | 45-3-23       | 5    |
| (3)-D6      | ED224550  | Silicon Diode 10D4<br>(CSA)                               | 45-2-16       | 1    |
| (3)-D6      | ED249581  | Silicon Diode SIQB20<br>0.8A 200V (RED)                   | 45-2-74       | 1    |
| (3)-D7,8    | ED560913  | Silicon Diode<br>1S2473VE                                 | 45-3-23       | 2    |
| (3)-L1      | EP300132  | Relay MY4-02-US-L   | 47-1-32       | 1    |
| (3)-SW1     | ES258232  | Slide SW. S-2930<br>(U/L)                                 | 25-3-129      | 1    |
| (3)-CR1to12 | ER376435  | Spark Quencher<br>0.1 $\mu$ +120 ohms<br>250WV (U/T, CSA) | 41-1-35       | 1    |
| (3)-CR13    | ER570532  | Spark Quencher<br>0.5 $\mu$ +120 ohms<br>400WV (CSA)      | 41-1-58       | 1    |
| (3)-R19     | ER558461  | Cement/R. 15W<br>1.5k(K)<br>(Metal Ox. Film/T)            | 35-16-29      | 1    |
| (3)-R22     | ER554883  | Cement/R. 7W<br>39 ohms(K)<br>(Wire-wound Type)           | 35-16-4       | 1    |
| (3)-R23     | ER554861  | Cement/R. 10W<br>250 ohms(K)<br>(Wire-wound Type)         | 35-16-5       | 1    |
| (3)-R24     | ER554905  | Cement/R. 5W<br>12 ohms(K)<br>(Wire-wound Type)           | 35-16-3       | 1    |
| (3)-C8      | EC258355  | Capacitor, Spark<br>Quencher QC-05<br>(QC Type) (U/T)     | 24-16-10      | 1    |
| (3)-C9      | EC258377  | MP/C. PEM271<br>0.47 $\mu$ F 250V AC<br>(CEE)             | 24-9-118      | 1    |
| (3)-C10to21 | EC258298  | MP/C. PEM271<br>0.1 $\mu$ F 250V AC<br>(CEE)              | 24-9-118      | 12   |
| (3)-4       | EJ207854  | 3P Plug, PC   | 42-1-96       | 1    |
| (3)-5       | EJ249210  | 5P Plug, PC MU  | 42-1-106      | 1    |
| (3)-6       | ZS455207  | Tapping Screw #2,<br>3x5 (BR)                             |               | 4    |

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.

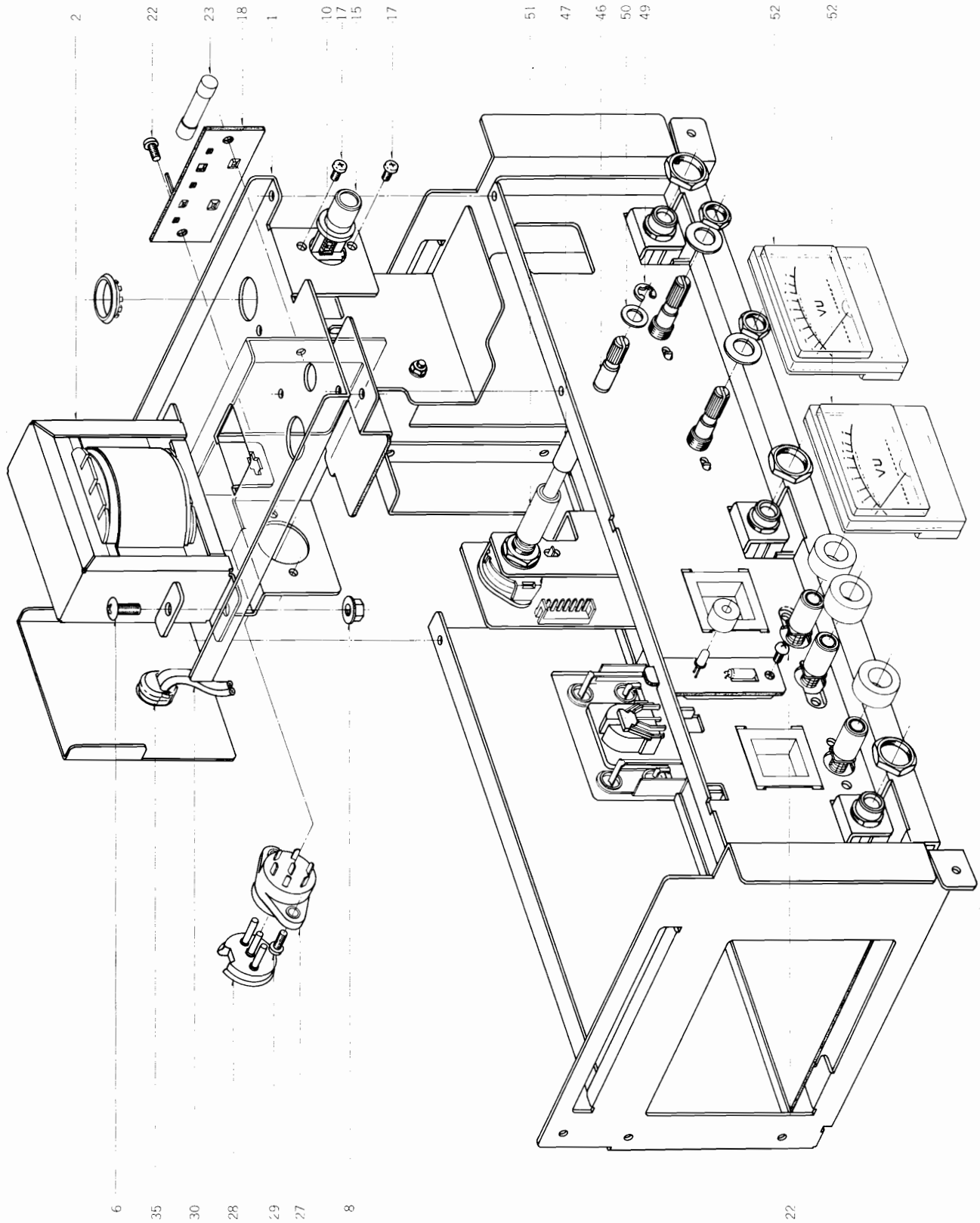
**(4) POWER SUPPLY P.C BOARD  
(MU-5314) BLOCK**

| Symbol No. | Parts No. | Description                                  | Schematic No. | Q'ty |
|------------|-----------|--|---------------|------|
| (4)-1      | BA272182  | Power Supply<br>P.C Board Comp.<br>(MU-5314) | MU-9753       | 1    |
| (4)-TR1    | ET242370  | Transistor 2SD234(Y)                         | 45-1-81       | 1    |
| (4)-D1     | ED242368  | Zener Diode WZ-240                           | 45-6-37       | 1    |
| (4)-D2     | ED249581  | Silicon Diode SIQB20<br>0.8A 200V (RED)      | 45-2-74       | 1    |
| (4)-2      | ZS421806  | Screw, pan head 3x8                          |               | 1    |
| (4)-3      | ZW273756  | Nut M3, #1                                   |               | 1    |
| (4)-4      | EZ260381  | Mylar Sheet P103KA                           | 45-16-8       | 1    |
| (4)-5      | EZ209215  | Insulator Bush B308D                         | 45-16-7       | 1    |
| (4)-6      | ZS325495  | Tapping Screw #2<br>3x6 (BR)                 |               | 1    |
| (4)-7      | ZW273802  | Toothed Lock Washer                          |               | 1    |

**(5) LAMP P.C BOARD (MU-5313) BLOCK**

| Symbol No. | Parts No. | Description            | Schematic No. | Q'ty |
|------------|-----------|------------------------|---------------|------|
| (5)-1      | EA258287  | Lamp P.C Board         | MU-5313       | 1    |
| (5)-D1     | ED249377  | LED GL-3ARI            | 45-15-14      | 1    |
| (5)-IND901 | EL619064  | Lamp (L/T) 24V<br>35MA | 28-2-40       | 1    |

# 9. ILLUSTRATION OF AMP ASSEMBLY BLOCK

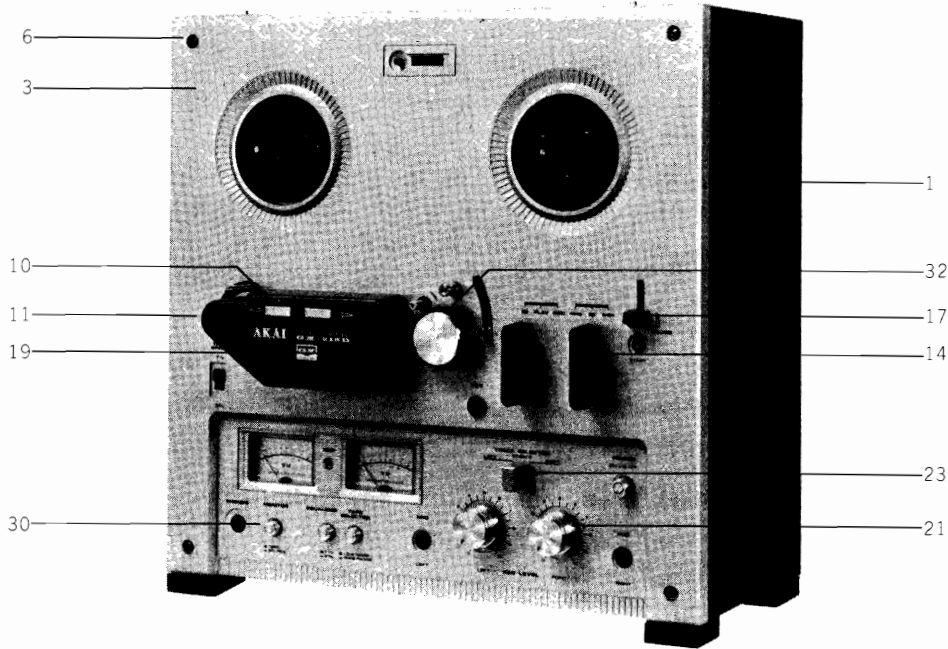


## 9) AMP ASSEMBLY BLOCK

| Ref. No.                  | Parts No. | Description  | Schematic No. | Q'ty |
|---------------------------|-----------|--|---------------|------|
| <b>POWER SUPPLY BLOCK</b> |           |  |               |      |
| 9-1                       | MZ280192  | Trans. Base Part MU-3  | MU-5302       | 1    |
| 9-2                       | BT249388  | Power Trans. MUT-5 (U/T)                                     | 38-4-456      | 1    |
| 9-3x                      | BT249401  | Power Trans. MUT-7<br>(CEE, VDE)                             | 38-4-458      | 1    |
| 9-4x                      | BT249390  | Power Trans. MUT-6 (CSA)                                     | 38-4-457      | 1    |
| 9-5x                      | BT249423  | Power Trans. MUT-8 (BEAB)                                    | 38-4-459      | 1    |
| 9-6                       | ZS479463  | Screw, truss head 4x10 (U/T)                                 |               | 2    |
| 9-7x                      | ZS600816  | Screw, truss head 4x8<br>(CEE, CSA, BEAB, VDE)               |               | 4    |
| 9-8                       | ZW413267  | Flange Nut M4 (U/T)  |               | 2    |
| 9-9x                      | ZW413267  | Flange Nut M4<br>(CEE, CSA, BEAB, VDE)                       |               | 4    |
| 9-10                      | ES224436  | Push SW. JP01 (U/T)  | 25-5-221      | 1    |
| 9-11x                     | ES242346  | Push SW. JP17 (CSA)  | 25-5-224      | 1    |
| 9-12x                     | ES239218  | Push SW. JP01 (TV-4) (CEE)                                   | 25-5-222      | 1    |
| 9-13x                     | EC699298  | PE-9P Film/C. 0.1 $\mu$ F(K)<br>600WV (U/T)                  | 24-3-8        | 1    |
| 9-14x                     | EC286198  | Ceramic/C. AL-10<br>0.01 $\mu$ F(Z) 125WV (CEE)              | 24-5-69       | 1    |
| 9-15                      | SK694888  | Knob 3 MU-3  | CP-5019       | 1    |
| 9-16x                     | SK236970  | Power Knob (BL)  | MU-6320       | 1    |
| 9-17                      | ZS422076  | Screw, pan head 3x5  |               | 2    |
| 9-18                      | EJ249557  | Fuse Terminal Plate MU                                       | 40-1-125      | 1    |
| 9-19x                     | EJ249568  | 2P Fuse Holder (Small) MU<br>(CEE, VDE)                      | 40-1-129      | 1    |
| 9-20x                     | EJ249570  | 3P Fuse Holder (Small) MU<br>(CSA, VDE)                      | 40-1-130      | 1    |
| 9-21x                     | EJ262754  | 3P Fuse Holder (Small)<br>(Wrapping) (BEAB)                  | 40-1-142      | 1    |
| 9-22                      | ZS325495  | Tapping Screw #2 3x6 (BR)                                    |               | 21   |
| 9-23                      | EF233447  | Fuse 2A 250V   | 39-1-55       | 1    |
| 9-24x                     | EF258344  | Fuse (SEMKO T Type)<br>800 mA T (CEE, VDE)                   | 39-1-53       | 2    |
| 9-25x                     | EF591535  | Fuse 0.8A 125V (CSA)   | 39-1-52       | 3    |
| 9-26x                     | EF258344  | Fuse (SEMKO T Type)<br>800 mA T (BEAB)                       | 39-1-53       | 3    |
| 9-27                      | EJ249467  | Voltage Selector MU  | 42-1-109      | 1    |
| 9-28                      | EJ262732  | Socket (Volt. Selector)                                      | 31-1-190      | 1    |
| 9-29                      | ZS447840  | Tapping Screw #2, 3x8 (BR)                                   |               | 2    |
| 9-30                      | EW540123  | AC Cord CUL 2.5M   | 26-3-20       | 1    |
| 9-31x                     | EW516600  | AC Cord CEE VM-0065  | 26-3-28       | 1    |
| 9-32x                     | EW516475  | AC Cord CSA 2.5M   | 26-3-20       | 1    |
| 9-33x                     | EW604585  | AC Cord BSI  | 26-3-37       | 1    |
| 9-34x                     | EW604618  | AC Cord KMA VM-0064  | 26-3-34       | 1    |
| 9-35                      | EZ631945  | Strain Relief SR-4N-4  | 2-7-49        | 1    |
| 9-36x                     | EZ246936  | Strain Relief SR-6W-1<br>(BEAB)                              | 2-7-8         | 1    |
| 9-37x                     | EJ293927  | 3P Mini-connector Assy<br>GX-215D (U/T, CSA)                 | MU-9703       | 1    |
| 9-38x                     | EJ295288  | 3P Mini-connector Assy<br>GX-215D (CEE, BEAB, BDE)           | MU-9703       | 1    |
| 9-39x                     | EJ258243  | Terminal Plate, Wrapping<br>Type 1L3P (CEE, VDE)             | 33-3-30       | 1    |
| 9-40x                     | EJ249502  | Terminal Plate, Wrapping<br>Type MU (CEE, CSA,<br>BEAB, VDE) | 33-3-29       | 1    |
| 9-41x                     | ZS434250  | Screw, pan head 4x8,<br>w/washer (BEAB)                      |               | 1    |
| 9-42x                     | ZW273881  | Earth Lug (BEAB)   |               | 1    |
| 9-43x                     | ZW413188  | Nut M4, #1 (BEAB)  |               | 1    |
| <b>ASSEMBLY BLOCK</b>     |           |  |               |      |
| 9-44x                     | ZS379350  | Screw, pan head 3x6  |               | 4    |
| 9-45x                     | ZW260370  | Nylon Rivet 3.4x5.5  | 2-7-56        | 2    |
| 9-46                      | MZ248938  | SW. Connector A  | MU-5306       | 1    |
| 9-47                      | MZ248940  | SW. Connector B  | MU-5307       | 1    |
| 9-48x                     | ZS417216  | Screw, pan head 3x4  |               | 1    |
| 9-49                      | ZW270123  | 'E' Ring 4M  | 5-1-9         | 2    |
| 9-50                      | ZW260076  | Washer (Nylon) D6.1x10x0.5t                                  |               | 1    |
| 9-51                      | TA646773  | Joint  | AA-5240       | 1    |
| 9-52                      | EM666450  | VU Meter D18A68R   | 46-1-118      | 2    |
| 9-53x                     | EM236968  | VU Meter D18B43R (BL)  | 46-1-160      | 2    |
| 9-54x                     | EJ297854  | Mini-Connector Assy MU-3                                     | MU-9704       | 1    |

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.

## 10. PHOTO OF FINAL ASSEMBLY BLOCK



## 10) FINAL ASSEMBLY BLOCK

| Ref. No. | Parts No. | Description                          | Schematic No. | Q'ty |
|----------|-----------|--------------------------------------|---------------|------|
| 10-1     | BC249164  | Case Block Comp.                     | MU-6308       | 1    |
| 10-2x    | BC287267  | Case Block Comp. (BL)                | MU-6308       | 1    |
| 10-3     | SP247408  | Front Panel                          | MU-6307/6314  | 1    |
| 10-4x    | SP237036  | Front Panel (B) (BL)                 | MU-6307/6314  | 1    |
| 10-5x    | ZW299496  | Panel Nut                            | MU-6321       | 1    |
| 10-6     | ZS396044  | Screw, binding head 3x8              |               | 4    |
| 10-7x    | ZS297641  | Tapping Screw #2 3x8 PW<br>(Binding) |               | 4    |
| 10-8x    | MH249197  | Head Cover Prop A                    | MU-6310       | 1    |
| 10-9x    | ZW287190  | Nylon Washer D6.2x13x2t              |               | 4    |
| 10-10    | SB249063  | Direction Button                     | MU-6301       | 2    |
| 10-11    | SC249153  | Head Cover                           | MU-6305/6316  | 1    |
| 10-12x   | SC287100  | Head Cover (B) (BL)                  | MU-6305/6316  | 1    |
| 10-13x   | SZ639562  | Head Cover Retainer B                | ND-6018       | 2    |
| 10-14    | SK249096  | Mecha Knob                           | MU-6303       | 2    |
| 10-15x   | SK287291  | Mecha Knob (B) Part (BL)             | MU-6303       | 2    |
| 10-16x   | ZS253405  | Mecha Knob Screw                     | 7-1-46        | 1    |
| 10-17    | SK259345  | Pause Knob (C) MU-3                  | MR-612        | 1    |
| 10-18x   | SK287280  | Pause Knob (D) Part MU-3<br>(BL)     | MR-612        | 1    |
| 10-19    | SK425158  | Pinch Roller Cap MR                  | MS-6020       | 1    |
| 10-20x   | ZS312265  | Pinch Roller Cap Screw               | LD-630        | 1    |
| 10-21    | SK631056  | Single Knob CW                       | MY-6208       | 2    |
| 10-22x   | SK287278  | Single Knob (B) Part MU-3<br>(BL)    | MY-6208       | 2    |
| 10-23    | SK264892  | Selector Knob B                      | CI-6020       | 1    |
| 10-24x   | SK691288  | Selector Knob (BL)                   | CI-6020       | 1    |
| 10-25x   | SA428714  | LM Rubber Foot, w/screw<br>4x25      | LM-404        | 4    |
| 10-26x   | SA679285  | LM Rubber Foot                       | 3-18-5        | 1    |
| 10-27x   | ZW419646  | Washer (SPC) D4.5x9.8x0.5t           |               | 1    |
| 10-28x   | ZS324281  | Screw, pan head 4x25                 |               | 1    |
| 10-29x   | ZS665550  | Screw, pan head 4x15,<br>w/washer    |               | 2    |
| 10-30    | SK634410  | Push Button Knob J TE                | 91-5051       | 3    |
| 10-31x   | SK607127  | Push Knob A (BL)                     | A5-5022       | 3    |
| 10-32    | MP271170  | Pinch Roller, LC D=38                | LC-321        | 1    |

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.



## 11. LIST OF INTERCHANGEABLE SEMICONDUCTORS

As far as service is concerned, in case the original parts cannot be obtained, the interchangeable parts listed below can be substituted.

| Original Parts                     |                      |                     | Interchangeable Parts   |                                  |
|------------------------------------|----------------------|---------------------|---|----------------------------------|
| Description                        | Parts No.            | Utilizing P.C Board | Description   | Parts No.                        |
| 2SC458LG (C) (D)                   | ET391768             | MU-5316             | 2SC693U (F) (G)<br>2SC1000 (BL) (GR)<br>2SC1312 (F) (G)                     | ET429647<br>ET622181<br>ET539987 |
| 2SC945L (Q) (R)<br>2SC945L (P) (Q) | ET635837<br>ET639437 | MU-5316<br>MU-1318  | 2SC536 (E) (F) (G) (H)<br>2SC711 (E) (F) (G) (H)<br>2SC1641 (Q) (R) (S) (E) | ET246846<br>ET619727<br>ET603843 |
| 2SC1312S (G) (H)                   | ET603257             | MU-5316             | 2SC458LG (C) (D)  | ET391768                         |
| 2SD234 (Y)                         | ET242390             | MU-5314             | 2SD313 (D) (E) (F)<br>2SC1060 (B) (C)                                       | ET522911<br>ET393614             |
| 1N34A                              | ED219464             | MU-5316             | 1S188AM<br>1N60   | ED562386<br>ED428204             |
| 1S2473<br>1S2473VE                 | ED624903<br>ED560913 | MU-5316<br>MU-1318  | 1S1588<br>WG599   | ED557447<br>ED514721             |
| 10D4                               | ED224550             | MU-1318             | 1N4004  | ED570273                         |
| 10D2                               | ED224548             |                     | 1N4003  | ED570295                         |
| 0.8A 200V                          | ED249581             | MU-5314             |   |                                  |
| WZ240                              | ED511918             | MU-5314             | RD24A<br>RD24A (MN)   | ED229072<br>ED315415             |
| GL-3AR1                            | ED249377             | MU-5318             |   |                                  |

# INDEX

| Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. |
|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|
| BA272002  | (3)-1                 | EM666450  | 9-52                  | ML248275  | 2-24                  | SP247408  | 10-3                  | ZS447840  | 7-17x                 |
| BA272013  | (3)-2                 | EO243977  | (1)-L1                | ML248297  | 2-26                  | SZ639562  | 10-13x                | ZS447840  | 9-29                  |
| BA272024  | (3)-3                 | EO243988  | (1)-L2(L)             | ML248310  | 2-18                  | TA646773  | 9-51                  | ZS455207  | (3)-6                 |
| BA272029  | (2)-1                 | EO301467  | (1)-L2(R)             | ML248365  | 2-14                  | ZG226697  | 7-49                  | ZS469710  | 5-17                  |
| BA272182  | (4)-1                 | EO383365  | (1)-T1                | ML248545  | 5-16                  | ZG247151  | 2-36                  | ZS469710  | 7-22                  |
| BA302435  | (1)-1                 | EO565558  | (2)-L1                | ML248556  | 7-59                  | ZG247948  | 2-58                  | ZS469710  | 7-83                  |
| BA302436  | (1)-2                 | EO624857  | (1)-L3                | ML262798  | 7-61                  | ZG248657  | 6-24                  | ZS477876  | 2-20x                 |
| BA302437  | (1)-3                 | EP249344  | (1)-RL1               | ML293747  | 7-52                  | ZG248681  | 6-22                  | ZS479463  | 9-6                   |
| BC249164  | 10-1                  | EP249647  | 2-57                  | ML314864  | 7-43                  | ZG248760  | 6-23                  | ZS479474  | 6-21                  |
| BC287267  | 10-2x                 | EP300132  | (3)-L1                | ML314976  | 7-62                  | ZG255633  | 3-8                   | ZS554771  | 6-27                  |
| BF271934  | 5-1x                  | ER376435  | (3)-CR1to12           | ML316394  | 7-76x                 | ZG284398  | 6-25                  | ZS554938  | 2-31                  |
| BF673683  | 5-2                   | ER554861  | (3)-R23               | ML396810  | 7-65x                 | ZG300751  | 7-88                  | ZS558101  | 2-62x                 |
| BH271967  | 2-1x                  | ER554883  | (3)-R22               | ML672028  | 7-41                  | ZG301061  | 7-80                  | ZS558101  | 2-66                  |
| BL271991  | 2-67                  | ER554905  | (3)-R24               | ML672030  | 7-78                  | ZG314706  | 7-36                  | ZS558101  | 6-4                   |
| BL316484  | 7-87                  | ER558461  | (3)-R19               | ML673694  | 7-40                  | ZG314818  | 7-35                  | ZS600816  | 9-7x                  |
| BM244675  | 4-1                   | ER564772  | (1)-R30               | ML674357  | 7-23                  | ZG315011  | 7-66                  | ZS608275  | 2-54                  |
| BM314741  | 3-1                   | ER570532  | (3)-CR13              | ML679151  | 7-21                  | ZG317114  | 2-50                  | ZS608275  | 7-60                  |
| BR271945  | 3-2x                  | ER653545  | (1)-R38               | MP271170  | 10-32                 | ZG317496  | 3-12                  | ZS608332  | 2-64                  |
| BR271956  | 3-3x                  | ES224436  | 9-10                  | MR269730  | 6-8                   | ZG317902  | 2-33                  | ZS608477  | 2-17                  |
| BS271923  | 6-1x                  | ES239218  | 9-12x                 | MR269763  | 7-55                  | ZG382757  | 2-25                  | ZS609254  | 7-69                  |
| BT249388  | 9-2                   | ES242346  | 9-11x                 | MR314785  | 7-33                  | ZG382757  | 2-38                  | ZS665550  | 10-29x                |
| BT249390  | 9-4x                  | ES249254  | (1)-SW1               | MR317507  | 3-15                  | ZG437253  | 7-5                   | ZW231805  | 2-42                  |
| BT249401  | 9-3x                  | ES249276  | (1)-SW2               | MR673738  | 4-5                   | ZG455692  | 7-57                  | ZW237868  | 7-53x                 |
| BT249423  | 9-5x                  | ES249355  | (2)-SW1               | MS296076  | 2-32                  | ZG540584  | 2-11                  | ZW259773  | 7-39                  |
| BT490702  | (1)-T2                | ES258232  | (3)-SW1               | MS297821  | 2-40                  | ZS200485  | 5-10x                 | ZW259885  | 2-47                  |
| BZ302439  | 2-70x                 | ES258467  | 6-20                  | MS297832  | 2-48                  | ZS201475  | 2-16                  | ZW259885  | 7-47x                 |
| EA258287  | (5)-1                 | ES316361  | 7-71                  | MS317362  | 7-9                   | ZS207314  | 7-46                  | ZW259942  | 6-6                   |
| EA264936  | 2-60                  | ES316372  | 7-73                  | MS342000  | 3-6                   | ZS253405  | 10-16x                | ZW260010  | 7-82x                 |
| EA300256  | 6-17                  | ES316934  | 6-2                   | MS476572  | 5-7                   | ZS260346  | 7-8x                  | ZW260076  | 9-50                  |
| EC207898  | (1)-C29,30            | ES375478  | 7-93                  | MS582906  | 7-56                  | ZS260346  | 7-16x                 | ZW260087  | 6-13                  |
| EC208350  | (1)-C9                | ES479485  | 6-18                  | MT248523  | 3-4                   | ZS272395  | 4-3                   | ZW260087  | 7-51                  |
| EC249592  | 7-90x                 | ES494302  | 2-61                  | MT255420  | 3-7                   | ZS287021  | 2-55                  | ZW260133  | 6-7x                  |
| EC258298  | (3)-C10to21           | ES562465  | 7-75                  | MT300426  | 3-5                   | ZS297641  | 10-7x                 | ZW260144  | 7-3x                  |
| EC258355  | (3)-C8                | ET242370  | (4)-TR1               | MT314987  | 7-63                  | ZS312265  | 10-20x                | ZW260201  | 6-11                  |
| EC258377  | (3)-C9                | ET391768  | (1)-TR1to3            | MT436860  | 3-11                  | ZS323728  | 5-18                  | ZW260370  | 9-45x                 |
| EC262743  | (1)-C44               | ET391768  | (1)-TR8,9             | MT516565  | 3-9                   | ZS323728  | 7-19x                 | ZW265026  | 2-21                  |
| EC266411  | 7-91x                 | ET391768  | (1)-TR11              | MV269965  | 5-11                  | ZS324281  | 10-28x                | ZW270088  | 2-56                  |
| EC286198  | 9-14x                 | ET398711  | (1)-TR4to7            | MV270066  | 6-14                  | ZS325495  | (4)-6                 | ZW270088  | 3-10                  |
| EC405898  | (1)-C37               | ET398711  | (1)-TR12,13           | MV447491  | 2-43                  | ZS325495  | 7-18x                 | ZW270088  | 7-77                  |
| EC513944  | (1)-C53               | ET453486  | (3)-TR1to3            | MZ217271  | 6-15                  | ZS325495  | 9-22                  | ZW270101  | 7-34                  |
| EC516712  | (1)-C47               | ET603257  | (1)-TR10              | MZ218125  | 7-48                  | ZS327835  | 2-68                  | ZW270123  | 2-46                  |
| EC558235  | (1)-C31               | EV249243  | (1)-VR1               | MZ247961  | 2-44                  | ZS355511  | 3-18                  | ZW270123  | 4-10                  |
| EC562678  | (1)-C28               | EV464207  | (1)-VR2               | MZ247972  | 2-53                  | ZS369145  | 7-94                  | ZW270123  | 9-49                  |
| EC562678  | (1)-C42               | EV464220  | (1)-VR3               | MZ248005  | 7-1                   | ZS369900  | 2-5x                  | ZW273688  | 7-15x                 |
| EC699298  | 9-13x                 | EV478686  | (1)-VR4               | MZ248938  | 9-46                  | ZS373577  | 5-3                   | ZW273756  | (4)-3                 |
| ED219464  | (1)-D2                | EW516475  | 9-32x                 | MZ248940  | 9-47                  | ZS379350  | 2-23x                 | ZW273802  | (4)-7                 |
| ED224548  | 2-59x                 | EW516600  | 9-31x                 | MZ258502  | 6-12                  | ZS379350  | 9-44x                 | ZW273802  | 7-84x                 |
| ED224550  | (3)-D6                | EW540123  | 9-30                  | MZ280192  | 9-1                   | ZS380046  | 2-10                  | ZW273881  | 9-42x                 |
| ED242368  | (4)-D1                | EW604585  | 9-33x                 | MZ280236  | 2-51                  | ZS396044  | 10-6                  | ZW273914  | 4-7x                  |
| ED249377  | (5)-D1                | EW604618  | 9-34x                 | MZ297810  | 2-39                  | ZS413201  | 5-8x                  | ZW274026  | 7-10x                 |
| ED249581  | (3)-D6                | EZ209215  | (4)-5                 | MZ300780  | 2-30                  | ZS413201  | 6-10                  | ZW287190  | 10-9x                 |
| ED249581  | (4)-D2                | EZ246936  | 9-36x                 | MZ316451  | 7-79                  | ZS413201  | 7-7x                  | ZW290283  | 2-35                  |
| ED560913  | (3)-D1to5             | EZ260381  | (4)-4                 | MZ316945  | 6-3                   | ZS413201  | 7-45                  | ZW290283  | 6-9                   |
| ED560913  | (3)-D7,8              | EZ631945  | 9-35                  | MZ529108  | 4-9                   | ZS413302  | 5-15                  | ZW290283  | 7-4                   |
| ED624903  | (1)-D1                | EZ663175  | 2-63x                 | MZ585900  | 5-13                  | ZS413921  | 4-6                   | ZW290294  | 7-89                  |
| ED624903  | (1)-D3                | HE563220  | 2-15                  | MZ628211  | 7-37                  | ZS414033  | 2-3                   | ZW299496  | 10-5x                 |
| EF233447  | 9-23                  | HP271978  | 2-28                  | MZ671872  | 6-5                   | ZS417137  | 2-69x                 | ZW301256  | 2-65                  |
| EF258344  | 9-24x                 | HR271980  | 2-19                  | MZ672074  | 7-67                  | ZS417150  | 7-25                  | ZW314943  | 7-58x                 |
| EF258344  | 9-26x                 | HZ225527  | 7-72x                 | MZ688318  | 5-5                   | ZS417216  | 2-22                  | ZW317913  | 2-34                  |
| EF591535  | 9-25x                 | HZ225540  | 7-70x                 | MZ692864  | 7-44                  | ZS417216  | 3-14x                 | ZW326463  | 2-41                  |
| EJ207854  | (3)-4                 | HZ248242  | 2-27                  | SA428714  | 10-25x                | ZS417216  | 7-64                  | ZW330412  | 7-26x                 |
| EJ249210  | (3)-5                 | HZ248308  | 2-13                  | SA679285  | 10-26x                | ZS417216  | 9-48x                 | ZW330423  | 7-27x                 |
| EJ249221  | (1)-J1,2              | HZ248321  | 2-9                   | SB249063  | 10-10                 | ZS421740  | 2-45                  | ZW330456  | 7-30x                 |
| EJ249232  | (1)-J3                | HZ261865  | 2-12                  | SB625004  | 7-38                  | ZS421806  | 2-8                   | ZW376391  | 7-92x                 |
| EJ249300  | (1)-4                 | HZ315090  | 7-68                  | SC249153  | 10-11                 | ZS421806  | (4)-2                 | ZW376402  | 6-16                  |
| EJ249333  | (1)-5                 | HZ317597  | 2-2                   | SC287100  | 10-12x                | ZS421806  | 7-74                  | ZW392681  | 5-14                  |
| EJ249366  | (2)-2                 | HZ317632  | 2-49                  | SK236970  | 9-16x                 | ZS422076  | 2-29                  | ZW413188  | 6-28                  |
| EJ249467  | 9-27                  | HZ544206  | 2-7                   | SK249096  | 10-14                 | ZS422076  | 6-19                  | ZW413188  | 7-13                  |
| EJ249502  | 9-40x                 | MB247904  | 7-86                  | SK259345  | 10-17                 | ZS422076  | 7-24                  | ZW413188  | 9-43x                 |
| EJ249557  | 9-18                  | MB541012  | 5-12                  | SK264892  | 10-23                 | ZS422076  | 9-17                  | ZW413190  | 7-29x                 |
| EJ249568  | 9-19x                 | MC259312  | 7-85                  | SK287278  | 10-22x                | ZS424056  | 4-2                   | ZW413267  | 7-14x                 |
| EJ249570  | 9-20x                 | MH244710  | 5-6                   | SK287280  | 10-18x                | ZS424056  | 7-20x                 | ZW413267  | 9-8                   |
| EJ258243  | 9-39x                 | MH247533  | 7-6                   | SK287291  | 10-15x                | ZS424056  | 7-32x                 | ZW413267  | 9-9x                  |
| EJ262732  | 9-28                  | MH247757  | 2-4                   | SK425158  | 10-19                 | ZS424057  | 3-17                  | ZW413278  | 7-11x                 |
| EJ262754  | 9-21x                 | MH247893  | 7-12                  | SK607127  | 10-31x                | ZS427026  | 4-4                   | ZW419646  | 10-27x                |
| EJ293927  | 9-37x                 | MH249197  | 10-8x                 | SK631056  | 10-21                 | ZS427026  | 5-9x                  | ZW419826  | 7-42                  |
| EJ295288  | 9-38x                 | MH289168  | 7-81                  | SK634410  | 10-30                 | ZS427037  | 4-8                   | ZW439547  | 7-31x                 |
| EJ297854  | 9-54x                 | MH544195  | 2-6                   | SK691288  | 10-24x                | ZS432663  | 3-16                  | ZW447208  | 5-4                   |
| EL619064  | (5)-IND901            | ML228868  | 7-50                  | SK694888  | 9-15                  | ZS432674  | 6-26                  | ZW562476  | 2-37                  |
| EM236968  | 9-53x                 | ML247994  | 2-52                  | SP237036  | 10-4x                 | ZS434250  | 9-41x                 | ZW562476  | 3-13x                 |

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| Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. |
|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|
| ZW603797  | 7-28x                 |           |                       |           |                       |           |                       |           |                       |
| ZW675033  | 7-54                  |           |                       |           |                       |           |                       |           |                       |
| ZW861344  | 7-2x                  |           |                       |           |                       |           |                       |           |                       |

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SECTION 3

**SCHEMATIC DIAGRAM**

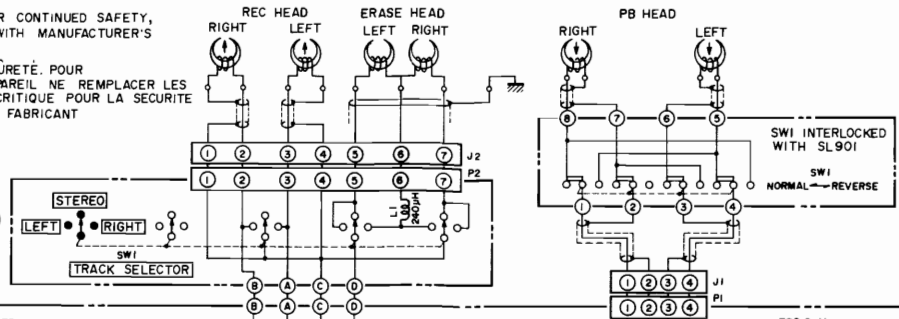
1. GX-215D NO. 1540846A SCHEMATIC DIAGRAM

GX-215D

WARNING  $\Delta$  INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS  
 AVERTISSEMENT  $\Delta$  IL INDIQUE LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRÉ DE SÛRETÉ DE L'APPAREIL, NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SÛRETÉ QUE PAR DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

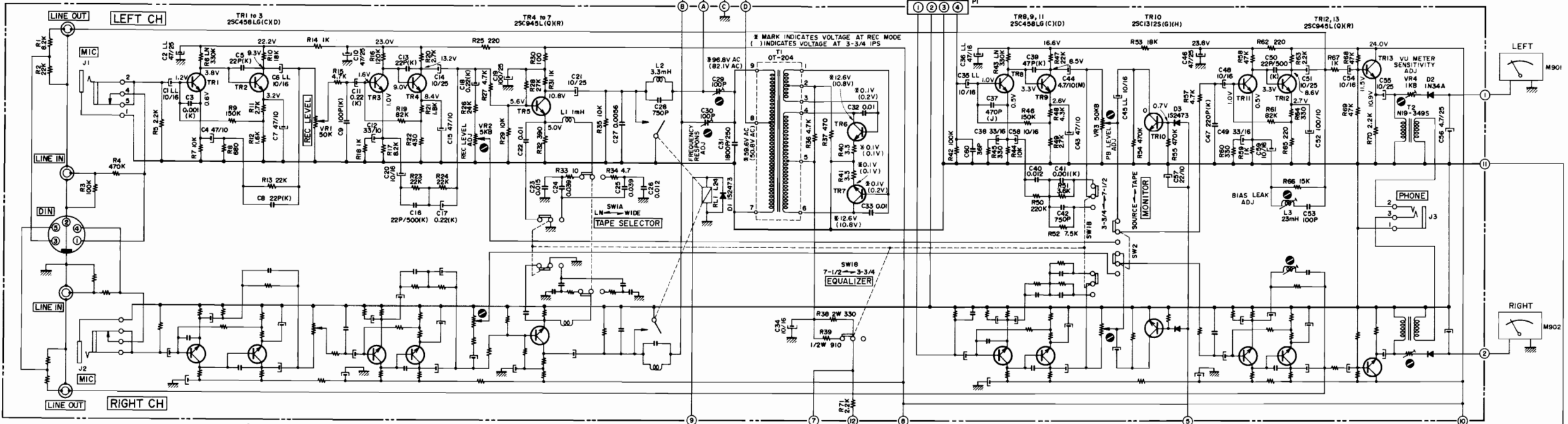


TRACK SELECTOR PC BOARD MU-5315



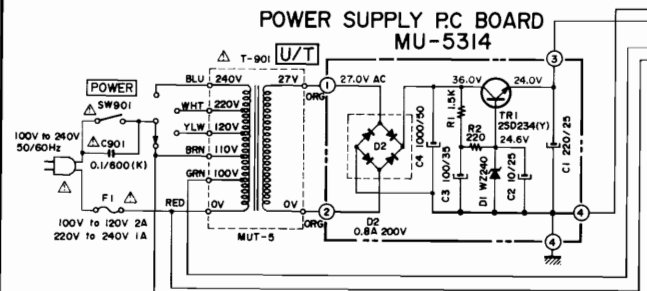
HEAD SWITCH PC BOARD MU-1320

NOTE  
 UNLESS OTHERWISE SPECIFIED  
 ALL RESISTORS IN OHMS 1/4W(J)  
 ALL CAPACITORS IN  $\mu$ F 50WV(J)  
 P =  $\mu$ F  
 LN INDICATES LOW NOISE RESISTOR  
 LL INDICATES LOW LEAKAGE CAPACITORS  
 POWER TRANSFORMER IS DIFFERENT ACCORDING TO AREA



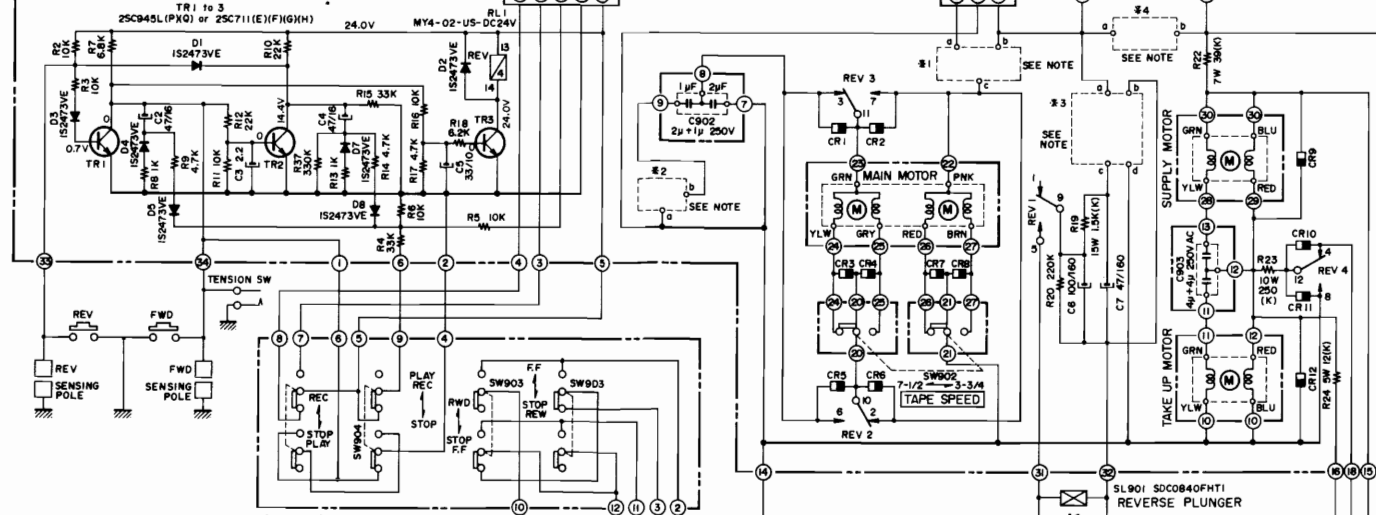
AMP PC BOARD MU-5316

LAMP PC BOARD MU-5313

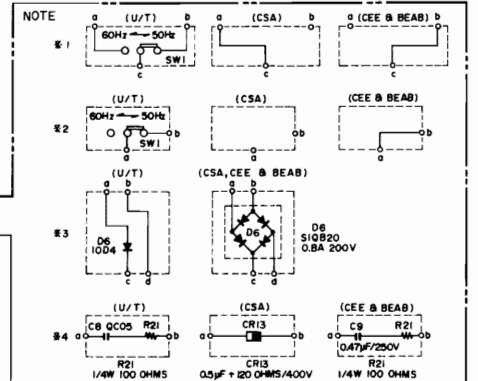


POWER SUPPLY PC BOARD MU-5314

SYSTEM CONTROL PC BOARD MU-1318



SWITCH PC BOARD MU-1319



REGARDING CR1 THROUGH CR12, SPARK QUENCHERS ARE USED FOR U/T AND CSA MODELS, AND INDEPENDENT CAPACITORS AND RESISTORS ARE USED FOR CEE AND BEAB MODELS

| U/T & CSA                     | CEE & BEAB         |
|-------------------------------|--------------------|
| CR1 0.1 $\mu$ F+120 OHMS 250V | CR25 1/4W 120 OHMS |
| CR2                           | C11                |
| CR3                           | C12                |
| CR4                           | C13                |
| CR5                           | C14                |
| CR6                           | C15                |
| CR7                           | C16                |
| CR8                           | C17                |
| CR9                           | C18                |
| CR10                          | C19                |
| CR11                          | C20                |
| CR12                          | C21                |
|                               | R26                |
|                               | R27                |
|                               | R28                |
|                               | R29                |
|                               | R30                |
|                               | R31                |
|                               | R32                |
|                               | R33                |
|                               | R34                |
|                               | R35                |
|                               | R36                |

GX-215D  
 SCHEMATIC DIAGRAM  
 No. 1540846A