

SERVICE MANUAL

PARTS LIST



AKAI STEREO TAPE RECORDER

MODEL **1731W**

ALSO APPLICABLE TO MODEL 1731L, 1731D



STEREO TAPE RECORDER

MODEL 1731W

ALSO APPLICABLE TO MODEL 1731L STEREO TAPE
RECORDER AND 1731D STEREO TAPE DECK

| | | |
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SECTION 1

SERVICE MANUAL

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I. SPECIFICATIONS

An asterisk next to a figure indicates the minimum guaranteed performance.

| | | |
|------------------------------|----------------|--|
| 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 $\pm 1\%$ (* $\pm 1.5\%$) |
| WOW AND FLUTTER | | Less than 0.12% (*0.15%) RMS at 7-1/2 ips Less than 0.15% (*0.2%) RMS at 3-3/4 ips |
| FREQUENCY RESPONSE | AKAI SRT Tape | 30 to 24,000 Hz (*40 to 24,000 Hz) ± 3 dB at 7-1/2 ips |
| | Regular Tape | 30 to 16,000 Hz (*40 to 15,000 Hz) ± 3 dB at 3-3/4 ips 30 to 22,000 Hz (*40 to 22,000 Hz) ± 3 dB at 7-1/2 ips 30 to 15,000 Hz (*40 to 14,000 Hz) ± 3 dB at 3-3/4 ips |
| SIGNAL TO NOISE RATIO | | Better than 50 dB (*48 dB) at 7-1/2 ips Better than 47 dB at 3-3/4 ips |
| HUM AND NOISE | | Less than 5 mV at minimum volume |
| DISTORTION | | Less than 1.5% (*2.5%) at 1,000 Hz "O" VU recording |
| CROSS TALK | | Better than 70 dB (*60 dB) monaural Better than 50 dB (*45dB) stereo |
| ERASE RATIO | | Better than 70 dB |
| INPUTS | Mic input | 0.8 mV (*1 mV) Impedance 30 k Ω |
| | Line input | 100 mV Impedance 100 k Ω |
| | Din input | 10 mV (*20 mV) |
| OUTPUTS | Line output | 1.228V (4 dB ± 1.5 dB) using a 250 Hz "O" VU recorded tape |
| | Din output | 0.4V |
| | Phone output | 30 mV at 8 Ω |
| | Speaker output | 20W total music power at 8 Ω 14W (*10W) continuous power at 8 Ω |
| BIAS FREQUENCY | | 103 kHz $\pm 5\%$ |
| BIAS LEAK | | Less than -20 VU |
| HIGH FREQUENCY DEVIATION | | Within 3 dB using an 8,000 Hz 3-3/4 ips recorded tape at 7-1/2 ips |
| RECORDING CAPACITY | | 60 min. stereo recording using a 1,200 ft. tape at 7-1/2 ips |
| FAST FORWARD AND REWIND TIME | | 80/100 sec., using a 1,200 ft. tape at 60/50 Hz |
| MOTOR | | 2-4 pole Hysteresis synchronous 2-speed motor type: HM2-16SX Revolution: 3,600/3,000 r.p.m. at 60/50 Hz (High speed) 1,800/1,500 r.p.m. at 60/50 Hz (Low speed) |
| HEADS | Recording Head | In-Line 4-track 2-channel recording head Type: P4-154 Gap: 1 micron Impedance: 95 Ω $\pm 15\%$ at 1,000 Hz |
| | Playback Head | In-Line 4-track 2-channel playback head Type: P4-150 Gap: 1 micron Impedance: 1,250 Ω $\pm 15\%$ at 1,000 Hz |
| | Erase Head | In-Line 4-track 2-channel erase head Type: E4-200 Gap: 0.6 mm Impedance: 200 Ω $\pm 5\%$ at 100 kHz |
| TRANSISTORS | | 6 ... 2SC458 LG (C) 2 ... 2SC971 (2) (3) (red) 2 ... 2SC871 (E) (F) 1 ... 2SC1098 (L) (M) |
| IC | | 4 ... LD-3141 2 ... STK-011 (A) 1731W/L only |
| DIODES | | 4 ... V06B 1731W/L only 2 ... 1N34A 1 ... 10DC-1 blk |
| VARISTOR | | 1 ... RD-24AM |
| POWER SUPPLY | | 100 to 240V A.C. 50/60 Hz 120V A.C. 60 Hz for CSA Model |
| POWER CONSUMPTION | | 80W (55W ... 1731D) |
| INSULATION RESISTANCE | | More than 50 M Ω |
| INSULATION DURABILITY | | 1,000V A.C. for more than 1 min. duration |
| DIMENSIONS/WEIGHT | 1731W | 428 (W) X 450 (H) X 227 (D) mm (16.9 X 17.7 X 9)"/17.2 kg (37.1 lbs.) |
| | 1731L | 436 (W) X 460 (H) X 250 (D) mm (17.1 X 18 X 9.8)"/19 kg (42 lbs.) |
| | 1731D | 418 (W) X 450 (H) X 227 (D) mm (16.4 X 17.7 X 9)"/15.6 kg (34.3 lbs.) |

NOTE: Specifications subject to change without notice.

II. MEASURING METHOD

1. TAPE SPEED DEVIATION

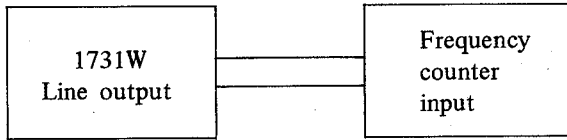


Fig. 1

As shown in Figure 1, connect a Frequency Counter to the Line Output of the recorder.

Take a frequency counter reading at the beginning, middle, and end of tape winding during playback. The maximum value of these respective readings will represent tape speed deviation.

2. WOW AND FLUTTER

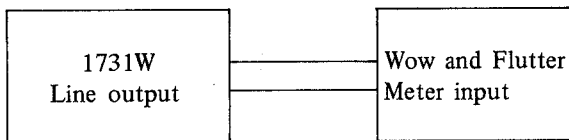


Fig. 2

Method A

As shown in Fig. 2, connect the Line Output of the recorder to the Input of a Wow and Flutter Meter. Use a 3,000 Hz pre-recorded test tape and take a wow and flutter meter reading at the beginning, middle, and end of tape winding. The maximum value of these respective readings will represent the wow and flutter.

Method B

Supply a 3,000 Hz sine wave signal from an Audio Frequency Oscillator and make a recording on a black tape at the beginning, middle, and end of tape winding. Rewind and playback tape. Measure wow and flutter with a Wow and Flutter Meter. (The wow and flutter value of Method B will be close to twice that of Method A.)

3. FREQUENCY RESPONSE

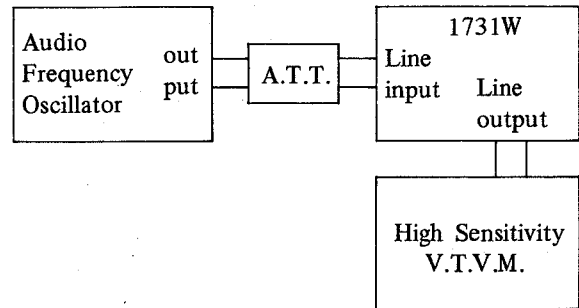


Fig. 3

For measuring frequency response, connect instruments as shown in Fig. 3 and proceed as follows:

- Supply a 1,000 Hz sine wave to the Line Input of the recorder from an Audio Frequency Oscillator through an Attenuator. Set recorder to recording mode and turn recording level volume control to maximum. Adjust Attenuator to obtain a +4 dB V.T.V.M. reading.
- Under conditions described in a. above, re-adjust Attenuator so that the Line Output is -16 dB, and record 40 to 22,000 Hz spot frequencies.
- Rewind tape and playback from the beginning. Take V.T.V.M. spot frequency readings and plot values on a graph.

NOTE: When measuring frequency response, new tape should be used.

4. SIGNAL TO NOISE RATIO

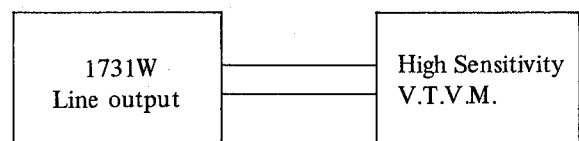


Fig. 4

As shown in Fig. 4, connect a High Sensitivity V.T.V.M. to the Line output of the recorder. Playback a 250 Hz "O" VU pre-recorded test tape and measure the output. Then remove the tape and measure the noise level under the same condition. Convert each of the measured values into decibels.

5. TOTAL HARMONIC DISTORTION FACTOR

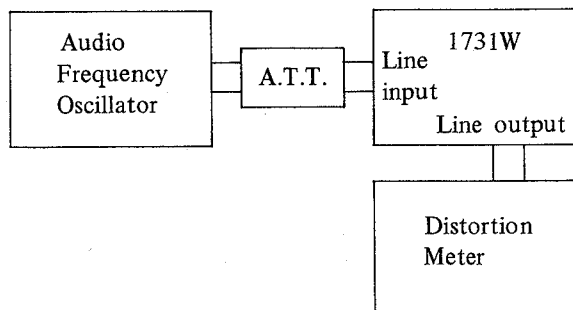


Fig. 5

Connect the measuring instruments as shown in Fig. 5 and record a 1,000 Hz sine wave signal at "0" VU. Playback the resultant signal and measure the overall distortion factor. Measure the noise level of the tape recorder without the tape. Connect the Audio Frequency Oscillator directly to the distortion meter for measurement of the distortion factor of the oscillator. The required distortion factor can be obtained from the results of the above measurement by the following formula:

$$d_0 = d - d_1 - d_2$$

Where, d_0 – Required distortion factor
 d – Overall distortion factor
 d_1 – Noise level
 d_2 – Distortion factor of the oscillator

NOTE: When measuring the distortion factor, new tape should be used.

6. CROSS TALK (Cross talk between the tracks)

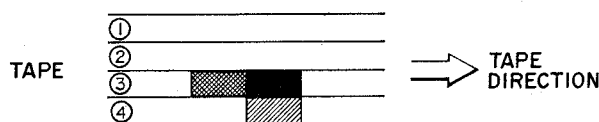


Fig. 6

As shown in Fig. 6, first record a 1,000 Hz sine wave signal on Track No. 3 at +3 VU level. Next, record under a non-input condition. Then, playback the tape on Tracks No. 3 and 4 through the B.P.F. (band pass filter sensitivity . . . 1:1) and obtain a ratio between the two from the following formula:

$$C = 20 \log \frac{E_0}{E_2 - E_1} \text{ (dB)}$$

Where, C – Desired cross talk ratio (dB)
 E_0 – 1,000 Hz signal output level
 E_2 – 1,000 Hz cross talk level
 E_1 – Non-input signal recorded level

7. ERASE RATIO

As shown in Fig. 4, connect a High Sensitivity V.T.V.M. to the Line Output of the recorder. Playback a virgin tape and take a V.T.V.M. reading of the output level. Next, record a 1,000 Hz sine wave signal at +3 dB, then playback this recorded signal and take a V.T.V.M. reading of the output level. Next, using this pre-recorded tape, record under a non-input condition and take a reading of the noise level output of the erased signal and obtain a ratio between the two from the following formula:

$$E_r = 20 \log \frac{E_0}{E_2 - E_1} \text{ (dB)}$$

Where, E_r – Desired erase ratio (dB)
 E_0 – 1,000 Hz signal output level
 E_2 – Non-input signal recorded level
 E_1 – Virgin tape noise output level

8. POWER OUTPUT

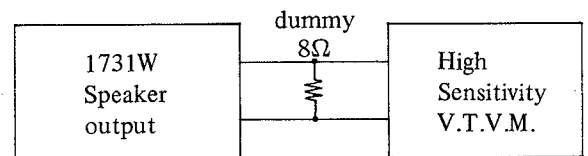


Fig. 7

As shown in Fig. 7, connect an 8Ω dummy load resistor to the speaker output of the recorder and connect this terminal to a High Sensitivity V.T.V.M. Playback a 250 Hz "0" VU pre-recorded test tape and take a V.T.V.M. reading of the output level. The resultant output can be obtained from the results of the above measurement by using the following formula:

$$P = \frac{E^2}{R} \text{ (W)}$$

Where, P – Desired power output (watts)
 E – Measured voltage (R.M.S.)
 R – 8Ω

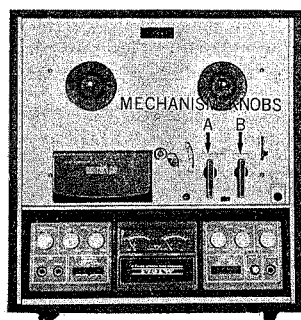
III. DISMANTLING OF UNIT

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

1



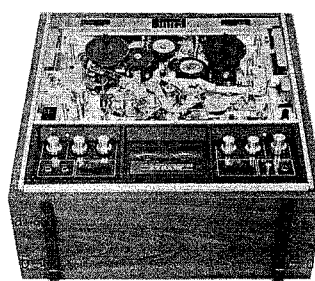
2



3



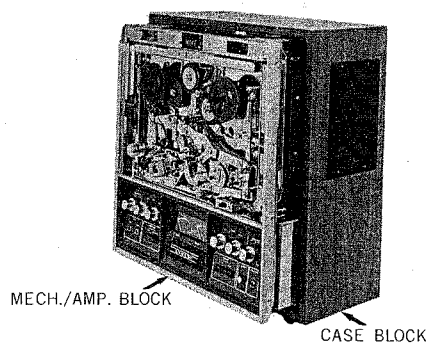
4



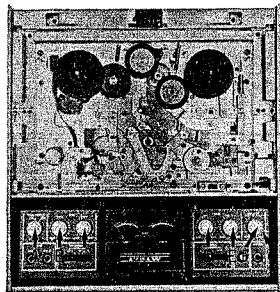
5



6

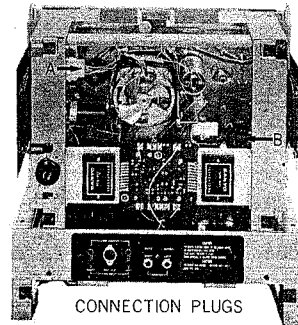


7



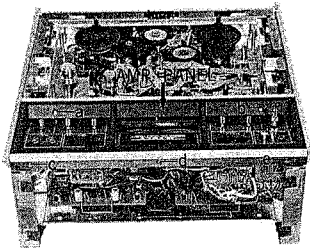
CONTROL KNOBS

10

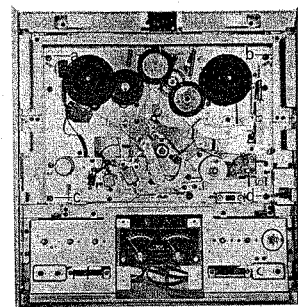


CONNECTION PLUGS

8

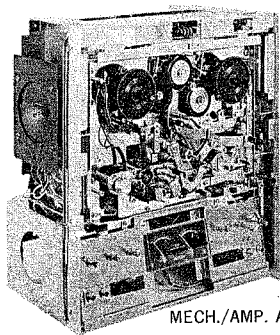


11



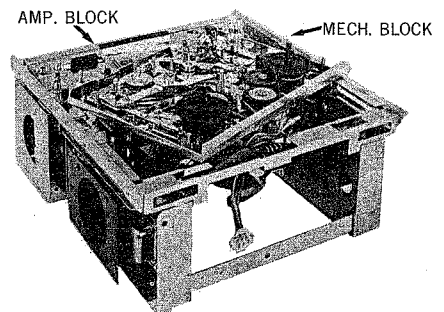
SCREWS

9



MECH./AMP. ADJUSTMENT

12



AMP. BLOCK

MECH. BLOCK

IV. OPEN REEL MECHANISM ADJUSTMENTS

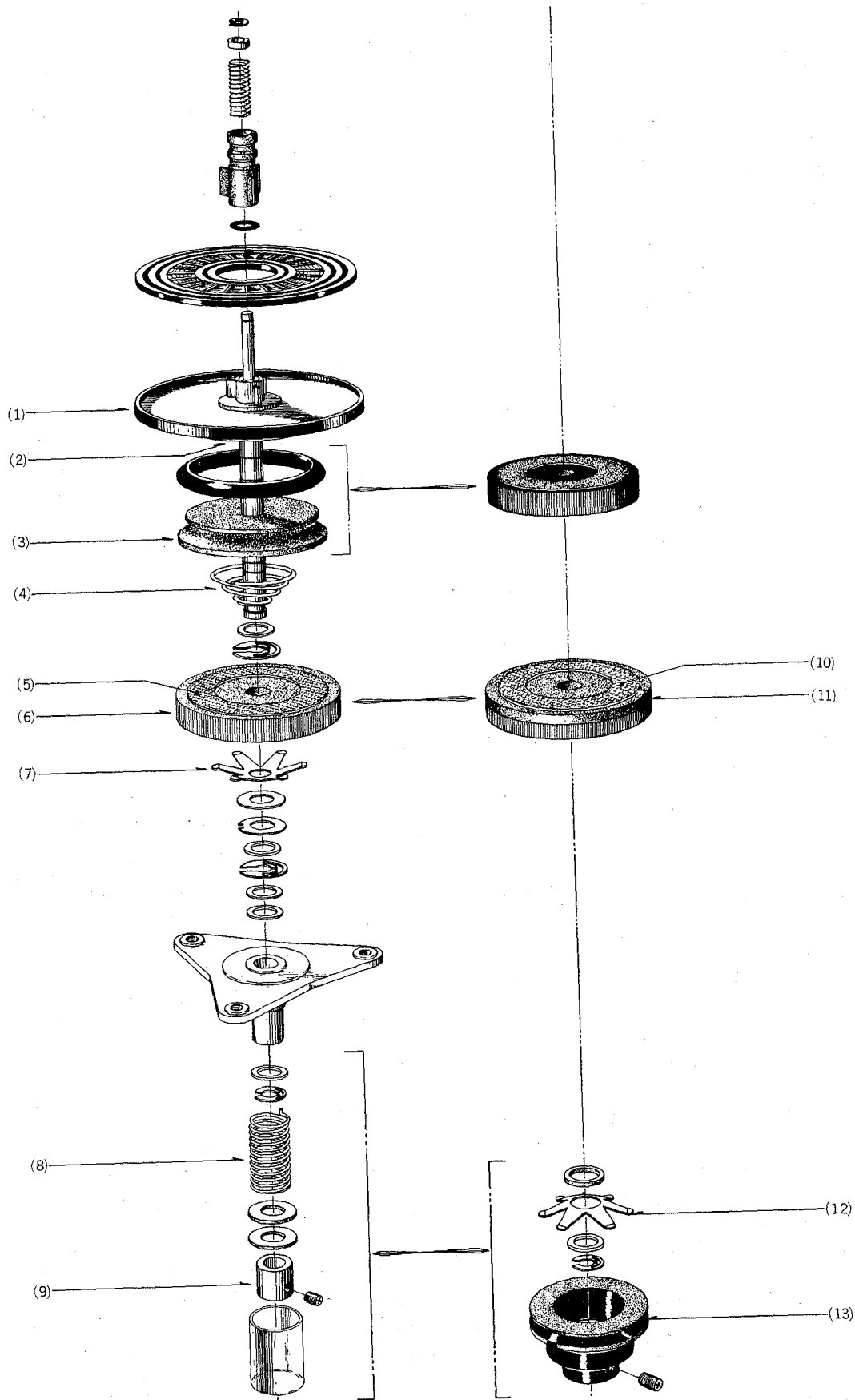


Fig. 8

1. PINCH WHEEL ADJUSTMENT

It is important that the pinch wheel shaft be kept in perfect alignment with the capstan shaft. Proper pinch wheel pressure is between 1,000 and 1,150 grams when the unit is operated at the tape speed of 7½ ips. Any deviation from this specification will result in wow and flutter. Check pinch wheel pressure with a spring scale, and if necessary, adjust the pinch wheel load spring.

2. SUPPLY REEL SHAFT ASSEMBLY ADJUSTMENT (See Fig. 8 at left)

Felt clutch material (2) is used between the lower side of the reel table base plate (1) and the rewind pulley (3) to protect recording tape from excessive tension during rewind operation. To check the amount of friction of this part, install a 5-inch reel with a 60 mm diameter tape, and gently pull the end of the tape upward with a spring scale. Adjust the conical spring (4) so that the amount of tension is kept between 400 and 500 grams. Other felt clutch material (5) is attached to the supply roller (6) to provide proper slippage during FWD and REC operation. The procedure for checking friction of this part is the same as the foregoing, and between 80 and 100 grams of tension gives best result. Adjust the spring (7) just under the supply roller (6). When the unit is set to fast forward operation, the amount of friction will decrease to from 15 to 20 grams. Check to see whether this is satisfactory. If not, adjust the spring plate (8) and the pressure of the set sleeve (9).

3. TAKE-UP REEL SHAFT ASSEMBLY ADJUSTMENT (See Fig. 8 at right)

Felt clutch material (2) is attached to the bottom side of the reel table base plate (1) so that the recording tape will not stretch during fast forward operation due to excessive tension. To check the amount of friction of this part, install a 5-inch reel with a 60 mm diameter tape, and gently pull the end of tape upward with a spring scale. Adjust the conical spring (4) so that the amount of tension at this part is kept between 400 and 500 grams. Other felt clutch material (10) is attached to the take-up roller (11). This is to provide proper slippage during FWD or REC operation. The procedure for checking friction of this part is the same as the foregoing, and between 150 and 180 grams of friction provides the best results. Adjust the spring plate (7) just under the take-up roller (11). When the unit is set to rewind operation, the amount of friction of this part will decrease to from 15 to 20 grams. Check to see whether this is satisfactory. If not, adjust the spring (12) and the pressure of the pulley (13).

V. HEAD ADJUSTMENTS

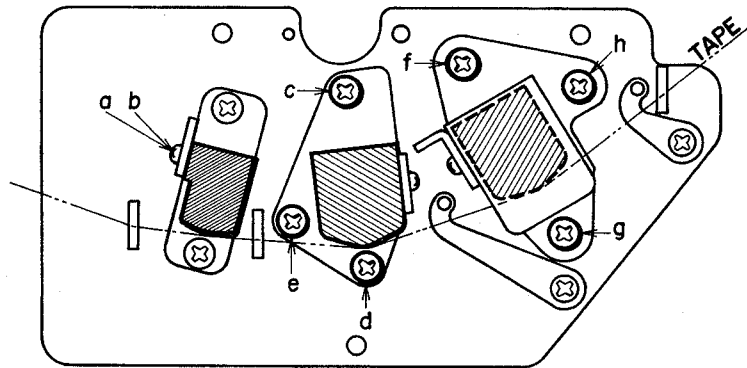


Fig. 9

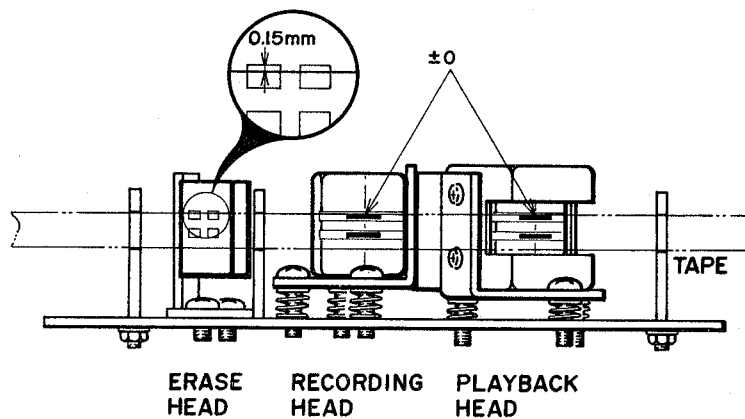


Fig. 10

Since adjustment of the Heads critically affects tape recorder performance, it is essential that Heads be carefully adjusted with precision measuring equipment and suitable recorded tape.

1. HEAD HEIGHT ADJUSTMENTS (See Figs. 9, 10)

- a. Erase Head
Adjust height control screws (a), (b) by turning to left and right so that the upper edge of the tape is 0.15 mm lower than the upper edge of the erase head core.
- b. Recording Head
Adjust screws (c), (d) by turning to left and right until the width between the upper edge of channel 1 head core and upper edge of the tape is equal.
- c. Playback Head
Adjust screws (f), (g) by turning to left and right until the width between the upper edge of channel 1 head core and the upper edge of the tape is equal.

2. HEAD SLANT ADJUSTMENT (See Figs. 9, 10)

Adjust the screws (Head Height control screw) by turning to left and right so that each head (Erase, Recording and Playback Head) contacts the tape surface at a right angle.

3. HEAD AZIMUTH ALIGNMENT ADJUSTMENTS (See Figs. 9, 10)

- a. Playback Head
Playback an Ampex Alignment test tape (8,000 Hz $3\frac{3}{4}$ ips.) at $7\frac{1}{2}$ ips. Adjust screw (h) turning to left and right until the various line outputs are maximum.
- b. Recording Head
At recording mode, supply a 15,000 Hz sine wave at a -16 dB recording level from an Audio Frequency oscillator to the line input of the 1731W, and set the monitor switch to "TAPE" position. Then adjust screw (e) by turning to left and right until the various line outputs are maximum.

4. Repeat adjustments outlined in Items 1-b to 3, above 2 or 3 times to obtain optimum adjusted condition.

VI. AMPLIFIER ADJUSTMENTS

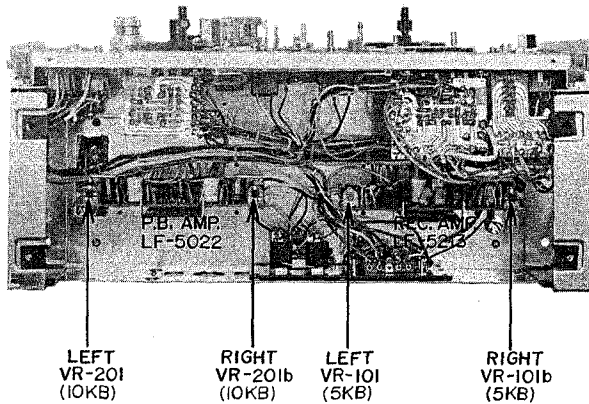


Fig. 11

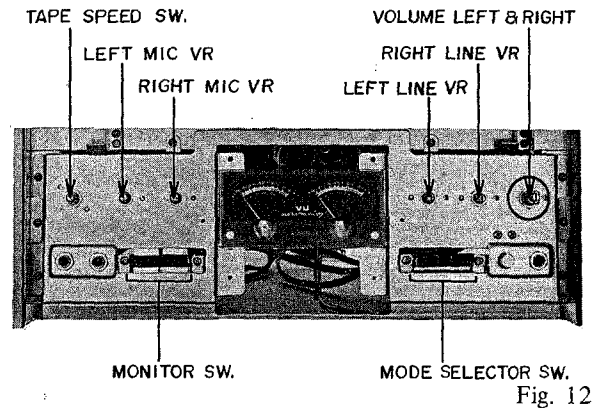


Fig. 12

1. PLAYBACK LEVEL ADJUSTMENT

(See Figs. 11, 12)

- Set the monitor switch to "TAPE" position and "TAPE SPEED" switch to 7½ ips.
- Connect a High Sensitivity V.T.V.M. to the line output.
- Playback a 250 Hz pre-recorded test tape at 7½ ips, and adjust semi-fixed resistor VR-201 and VR-201b (10k B) to obtain a 4 dB P.B. level. (VU meter indicates "O" VU)

2. RECORDING LEVEL ADJUSTMENT

(See Figs. 11, 12)

- Set the monitor switch to "TAPE" position and "TAPE SPEED" switch to 7½ ips.
- Connect an Audio Frequency Oscillator to the line input and High Sensitivity V.T.V.M. to the line output.
- Load a Scotch-111 blank tape and set recorder to "REC" mode.
- Supply a 1,000 Hz sine wave from an Audio Frequency Oscillator and adjust the line recording level control volumes (VR-1 and VR-3 10 k B) until the line output level reaches 4 dB. (VU meter indicates "O" VU)
- Set the monitor switch to "SOURCE" position.
- Adjust semi-fixed resistor VR-101 and VR-101b (5k B) to obtain 4 dB recording level. (VU meter indicates "O" VU)
- Repeat 2 times in the same way as indicated in Items d. to f. above.

O.S.C. P.C. BOARD LF-5210

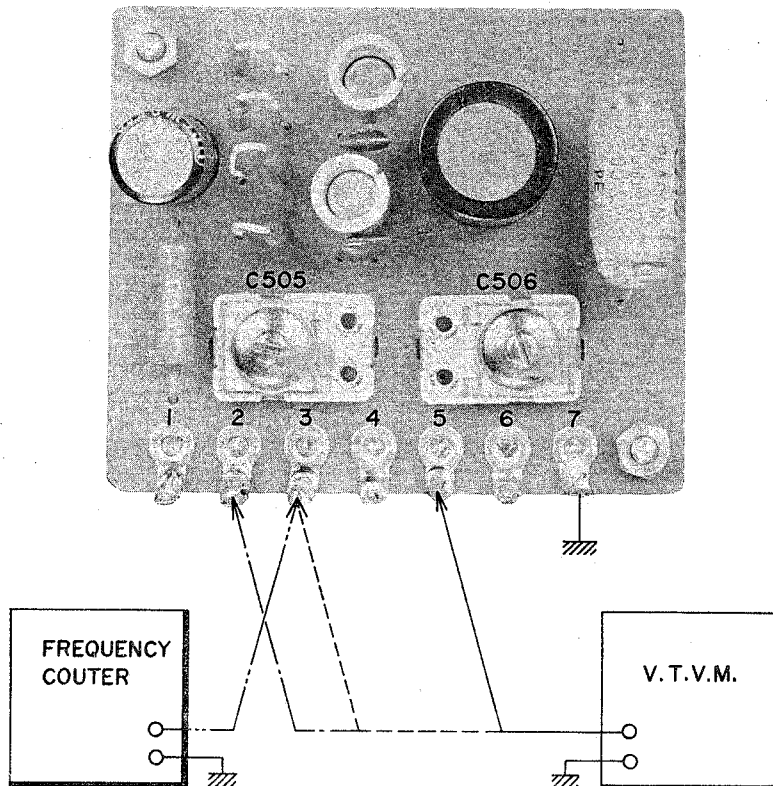


Fig. 13

3. RECORDING BIAS FREQUENCY ADJUSTMENT (See Fig. 13)

- Set the recorder to recording mode.
- Connect a Frequency counter to point (3) in Fig. 13 of the oscillator P.C. Board (LF-5210) and read the frequency indication.
- If the bias frequency is $103 \text{ kHz} \pm 5\%$, the bias frequency is correct.
- If the bias frequency is incorrect, it can be adjusted by changing the value of condenser C509 (5600 PF) of the oscillator P.C. Board (LF-5210).

4. RECORDING BIAS VOLTAGE ADJUSTMENT (FREQUENCY RESPONSE ADJUSTMENT) (See Fig. 13)

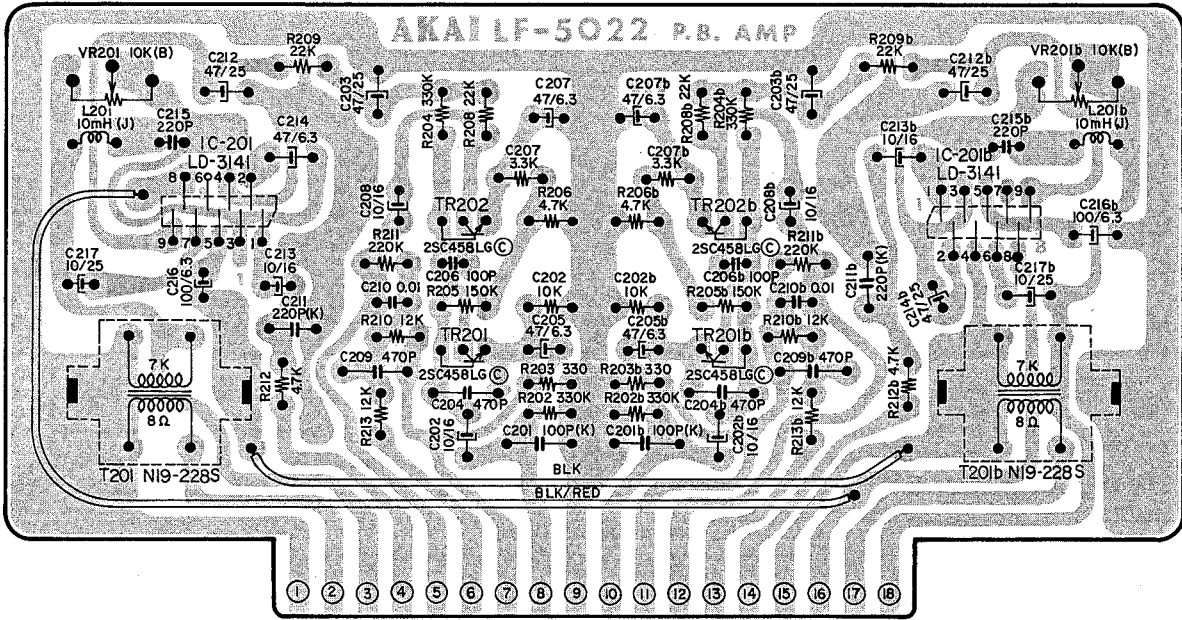
- Set the monitor switch to "TAPE" position and "TAPE SPEED" switch to $7\frac{1}{2}$ ips.
- Connect an Audio Frequency Oscillator to the line input through an Attenuator and a High Sensitivity V.T.V.M. to the line output.
- Load a blank test tape "AKAI 100L" (Fuji S-100) and set the recorder to "REC" mode.

- Turn recording level control volume VR-1 and VR-3 (10k A) to obtain 4 dB V.T.V.M. reading.
- Under conditions described in Item d. above, readjust attenuator so that the line output level is -16 dB.
- Record from 40 to 22,000 Hz spot frequencies.
- Adjust Bias Adjustment semi-fixed condenser C505 and C506 (70 PF max.) so that the outputs of 1,000 Hz and 10,000 Hz frequencies are equal.
- The bias voltage at this time is around 7V A.C.

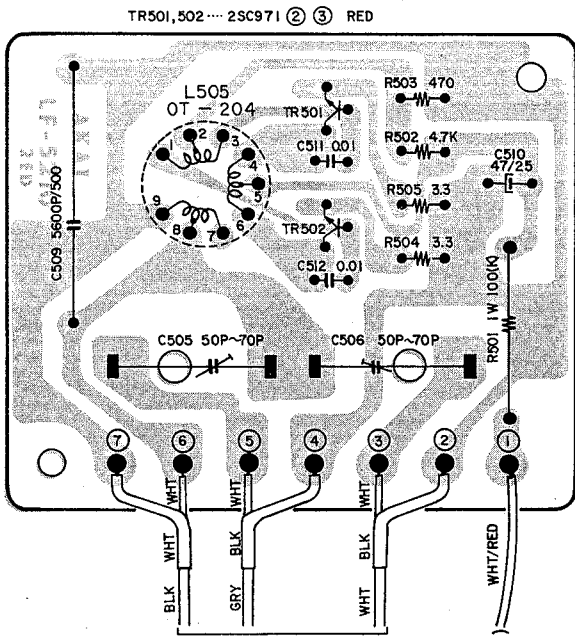
5. ERASE VOLTAGE

- Set the recorder to "REC" mode.
- Connect a V.T.V.M. to points (6) in Fig. 13 of the oscillator P.C. Board (LF-5210) and read the V.T.V.M. indication.
- The Erase Voltage is around 65V A.C.

P.B. AMP. P.C. BOARD (LF-5022)



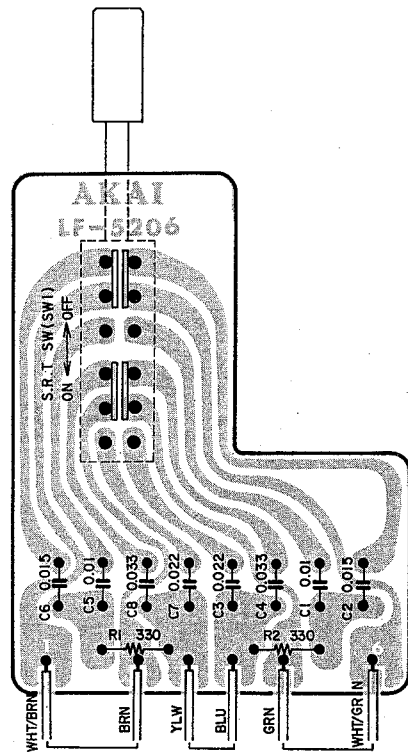
OSC. P.C. BOARD (LF-5210)



TO TRACK SELECTOR SWITCH P.C. BOARD (LF-5211)

FROM POWER SUPPLY P.C. BOARD (LF-5208)

SRT SWITCH P.C. BOARD (LF-5206)

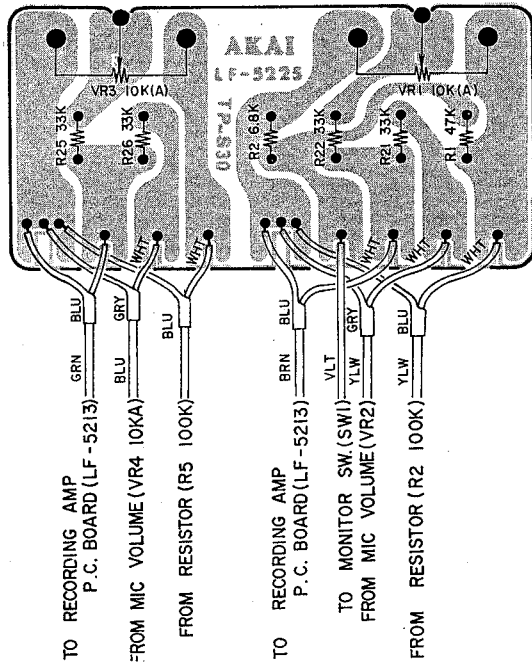


TO EQUALIZER SWITCH (SW1)

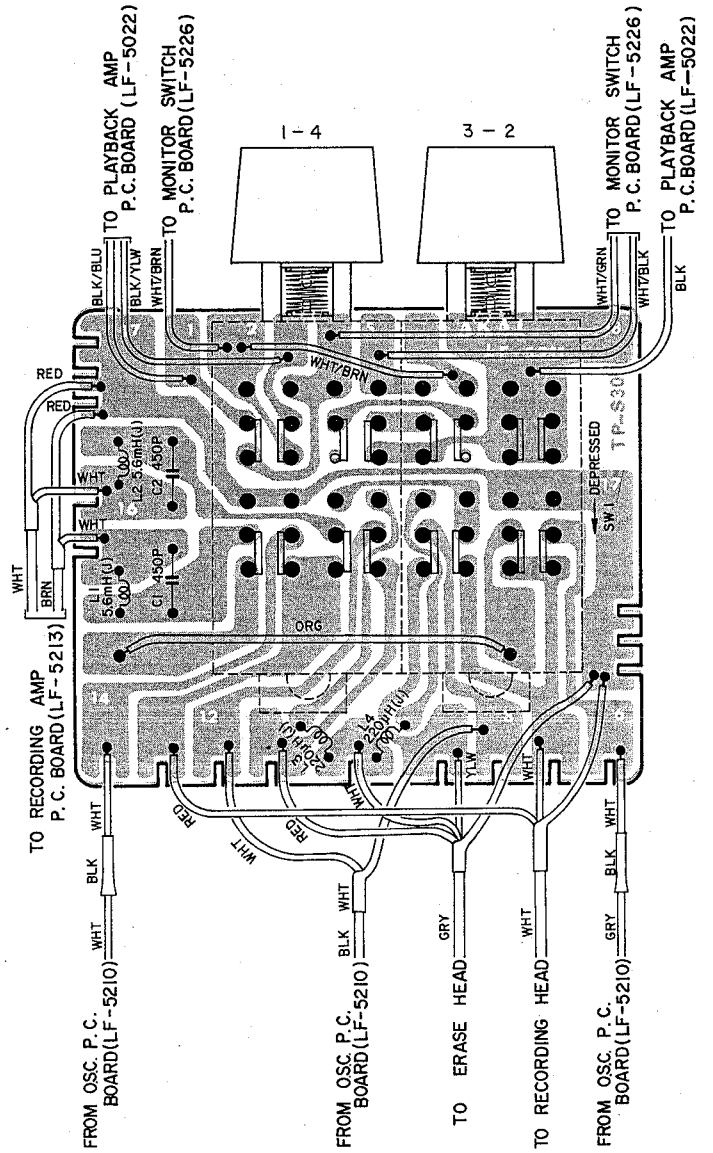
FROM RECORDING AMP P.C. BOARD (LF-5213)

TO EQUALIZER SWITCH (SW1)

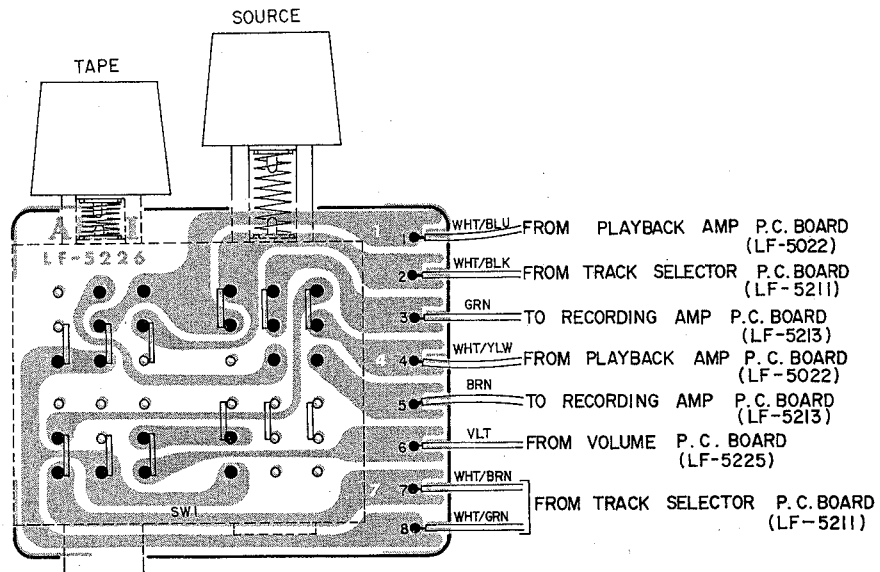
VOLUME P.C. BOARD (LF-5225)



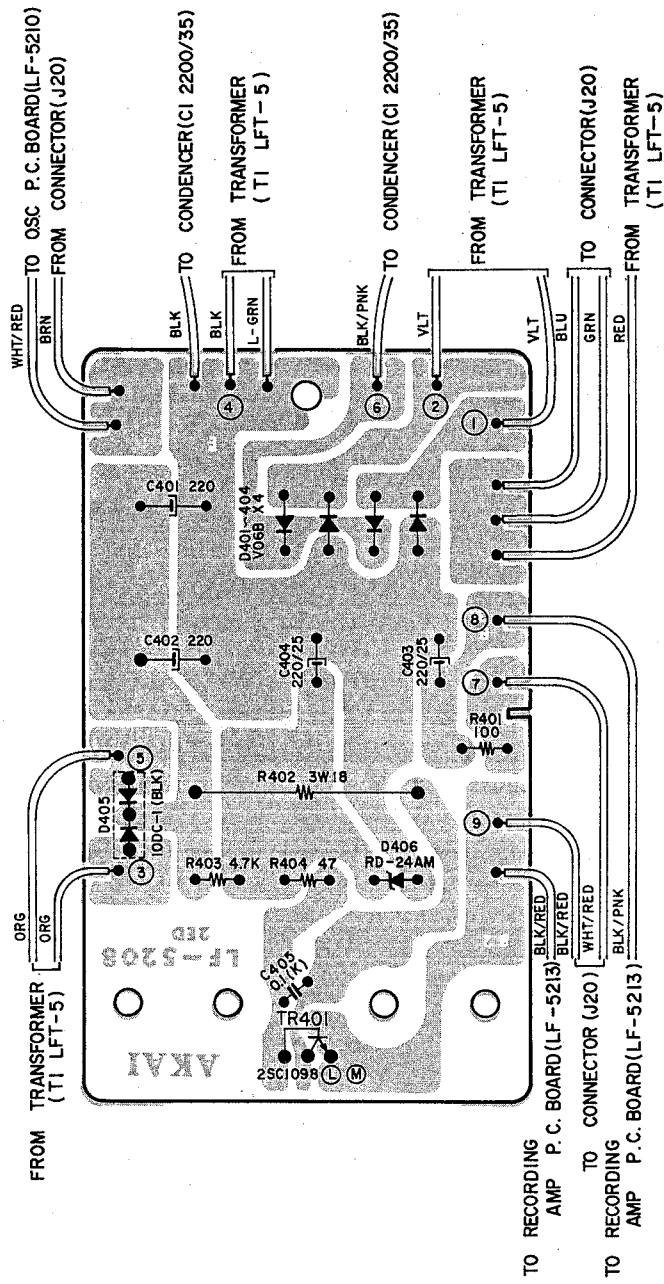
TRACK SELECTOR P.C. BOARD (LF-5211)



MONITOR SWITCH P.C. BOARD (LF-5226)



POWER SUPPLY P.C. BOARD (LF-5208)





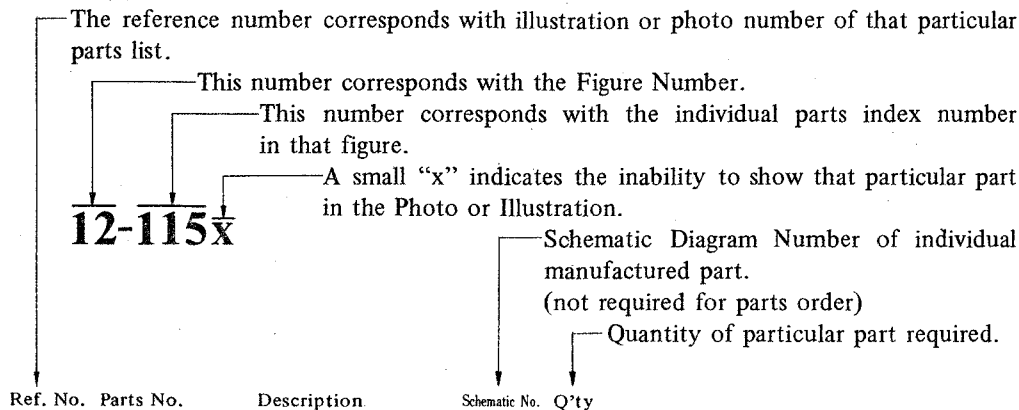
SECTION 2
PARTS LIST

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| INDEX | 42 |

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.



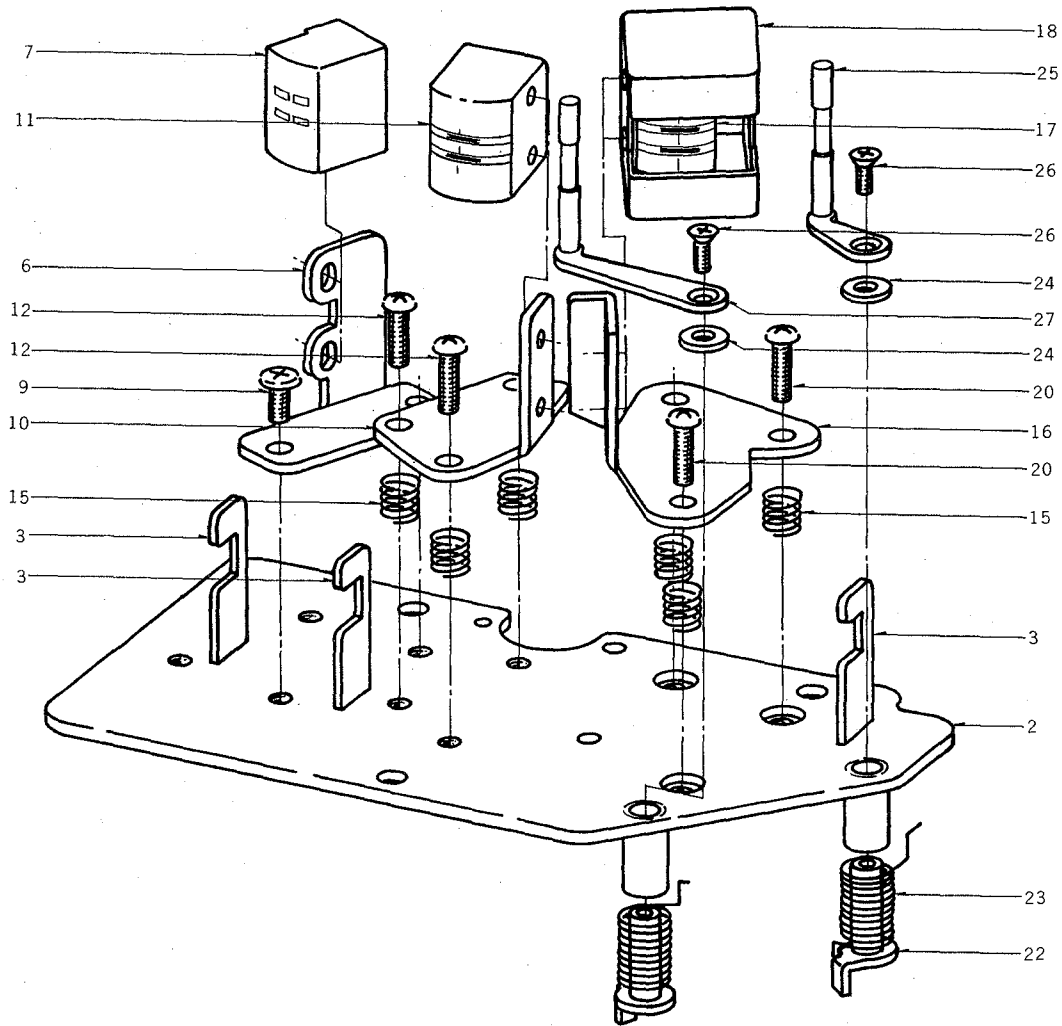
| Ref. No. | Parts No. | Description | Schematic No. | Q'ty |
|---------------------------|-----------|----------------------------|---------------|------|
| FLYWHEEL BLOCK #13 | | | | |
| 12-115x | 800425 | Flywheel Block Assy. Comp. | RDG #13 | 1 |
| 12-116 | 244506 | Flywheel Only | RD-233 | 1 |
| 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. The indications of Resistors and Capacitors in the photos of P.C. Board are being eliminated.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts List 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.

ELECTRICAL PARTS LIST TABLE

| | | | |
|---|--|---|---|
| <p>Because the indication of resistors and capacitors in the P. C. Board photos are being eliminated, please confirm parts name and shape by comparing them with the parts shown in this table.</p> | <p style="text-align: center;">1</p>  <p style="text-align: center;">Solid Resistor</p> | <p style="text-align: center;">2</p> <p style="text-align: right;">Stopper Type</p>  <p style="text-align: center;">Insulator Type</p> <p style="text-align: center;">Carbon Resistor</p> | <p style="text-align: center;">3</p>  <p style="text-align: center;">Metal Oxide Film Resistor</p> |
| <p style="text-align: center;">4</p>  <p style="text-align: center;">Cement Resistor</p> | <p style="text-align: center;">5</p>  <p style="text-align: center;">Wire-Wound Resistor</p> | <p style="text-align: center;">6</p>  <p style="text-align: center;">Thermistor</p> | <p style="text-align: center;">7</p>  <p style="text-align: center;">Enamel Resistor</p> |
| <p style="text-align: center;">1</p>  <p style="text-align: center;">MP Capacitor (Tubler Type)</p> | <p style="text-align: center;">2</p>  <p style="text-align: center;">Plastic Capacitor</p> | <p style="text-align: center;">3</p>  <p style="text-align: center;">Mylar Capacitor</p> | <p style="text-align: center;">4</p>  <p style="text-align: center;">VFM (Hi-Q) Capacitor</p> |
| <p style="text-align: center;">5</p>  <p style="text-align: center;">Mylar Capacitor</p> | <p style="text-align: center;">6</p>  <p style="text-align: center;">Tantalum Capacitor</p> | <p style="text-align: center;">7</p>  <p style="text-align: center;">Oil Capacitor (Tubler Type)</p> | <p style="text-align: center;">8</p> <p style="text-align: right;">Vertical Type</p>  <p style="text-align: center;">Tubler Type</p> <p style="text-align: center;">Styroly Capacitor</p> |
| <p style="text-align: center;">9</p>  <p style="text-align: center;">Electrolytic Capacitor (Tubler Type)</p> | <p style="text-align: center;">10</p> <p style="text-align: right;">Vertical Type</p>  <p style="text-align: center;">Tubler Type</p> <p style="text-align: center;">Electrolytic Capacitor</p> | <p style="text-align: center;">11</p>  <p style="text-align: center;">Ceramic Capacitor</p> | <p style="text-align: center;">12</p>  <p style="text-align: center;">Metalized Mylar (Paper) Capacitor</p> |
| <p style="text-align: center;">13</p>  <p style="text-align: center;">Trimner Condenser</p> | | <p style="text-align: center;">VR</p>  <p style="text-align: center;">Semi-Fixed Volume</p> | |
| <p style="text-align: center;">L</p>  <p style="text-align: center;">Ferri Inductor</p> | <p style="text-align: center;">TR</p>  <p style="text-align: center;">Transistor</p> | | |
| <p style="text-align: center;">CR</p>  <p style="text-align: center;">Spark Quencher</p> | <p style="text-align: center;">D</p>  <p style="text-align: center;">Diode (Silicon, Zener, Germanium)</p> | | |

FIG. 1 ILLUSTRATION OF HEAD BLOCK

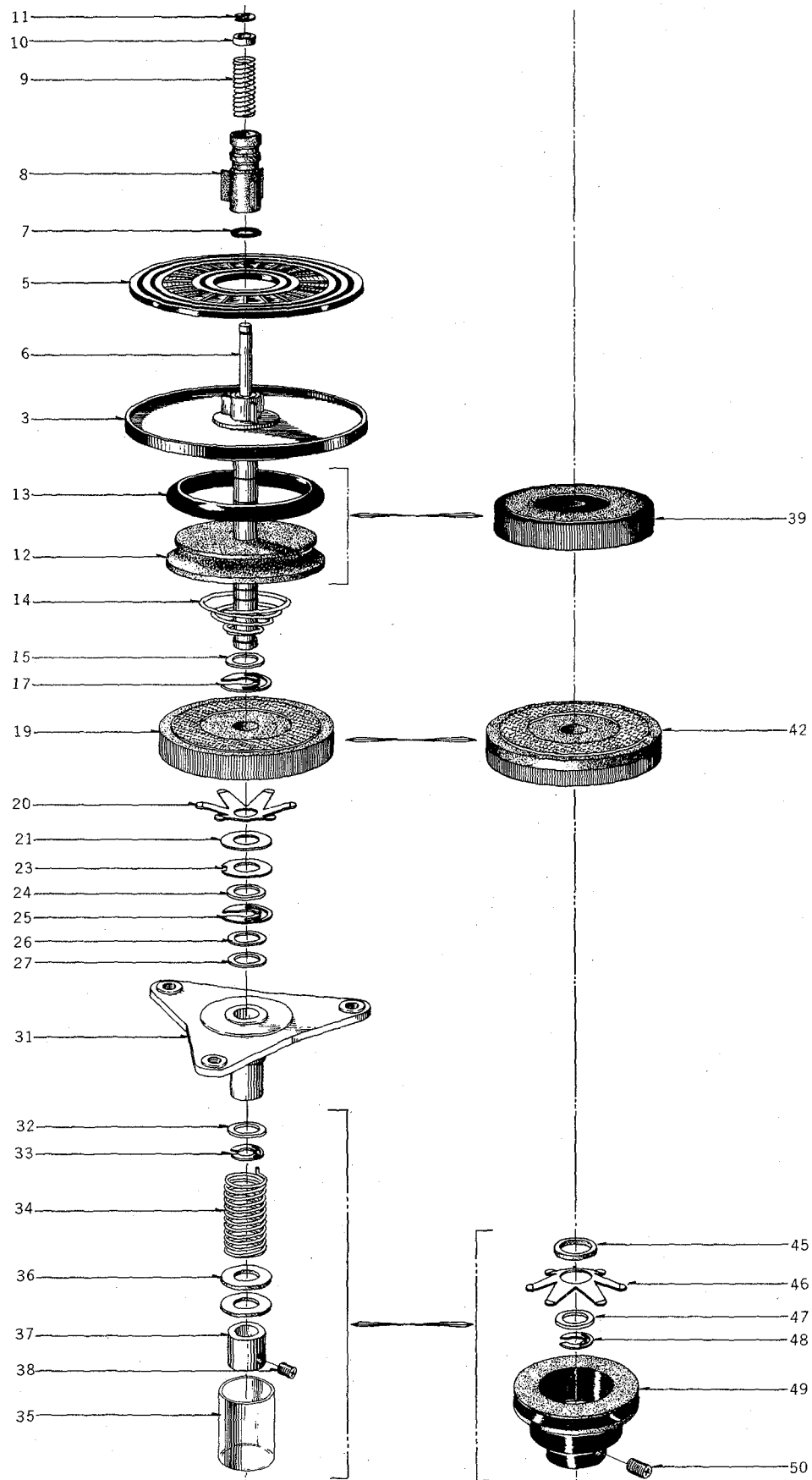


HEAD BLOCK

| Ref. No. | Parts No. | Description | Schematic No. | Q'ty | Ref. No. | Parts No. | Description | Schematic No. | Q'ty |
|----------|-----------|----------------------------|---------------|------|----------|-----------|------------------------------|---------------|------|
| 1-1x | BH475435 | Head Block Comp. | LF-2 | 1 | 1-17 | HP375131 | REC./P.B. HEAD P4-150 | | 1 |
| 1-2 | HZ410973 | Head Base, w/metal | LF-0001 | 1 | 1-18 | BC411017 | Head Shield Case | LF-0005 | 1 |
| 1-3 | HZ274162 | Tape Guide #1 | 4TR-5 | 3 | 1-19x | ZW460440 | Screw, pan head 2x4 | | 2 |
| 1-4x | ZW273756 | M3 Nut | | 3 | 1-20 | ZW425114 | Screw, round head 3x10 | | 3 |
| 1-5x | ZW273778 | M3 Earth Lug | | 1 | 1-21x | HZ393974 | I-MK Head Terminal Plate | RC-89 | 1 |
| 1-6 | HZ475233 | Erase Head Base | LF-0201 | 1 | 1-22 | HL223503 | Shift Lever B, w/shaft | M9-3 | 2 |
| 1-7 | HE384693 | ERASE HEAD E4-200 | | 1 | 1-23 | ZG312928 | Shifter Spring | LD-19 | 2 |
| 1-8x | ZW477876 | Screw, pan head 2x3 | | 2 | 1-24 | ZW336846 | Washer (SPC)D4.1x7x1.2t | | 2 |
| 1-9 | ZW323728 | Screw, binding head 3x5 | | 2 | 1-25 | HL223536 | Shift Lever C, w/pin | M9-5 | 1 |
| 1-10 | HZ410995 | Rec. Head Base | LF-0003 | 1 | 1-26 | ZW468527 | Screw, oval countersunk head | 2.3x6 | 2 |
| 1-11 | HR475446 | REC. HEAD P4-154 | | 1 | 1-27 | HL312941 | Shift Lever, w/pin | LD-15 | 1 |
| 1-12 | ZW425114 | Screw, round head 3x10 | | 3 | 1-28x | ZW413155 | Screw, binding head 3x6 | | 1 |
| 1-13x | HZ486270 | I-MK Head Terminal Plate B | LF-0203 | 1 | 1-29x | EA382713 | Head Connector P.C. Board | RD-A8 | 1 |
| 1-14x | ZW477876 | Screw, pan head 2x3 | | 2 | 1-30x | ZW323728 | Screw, binding head 3x5 | | 1 |
| 1-15 | ZG364656 | Angle Adjust Spring C | RD-57 | 6 | | | | | |
| 1-16 | HZ411006 | P.B. Head Table | LF-0004 | 1 | | | | | |

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

FIG. 2 ILLUSTRATION OF REEL TABLE BLOCK (SUM)



REEL TABLE BLOCK (SUM)

| Ref. No. | Parts No. | Description | Schematic No. | Q'ty |
|----------|-----------|---|---------------|------|
| 2-1x | BR412110 | Supply Reel Table Block (SUM) Comp. | LF | 1 |
| 2-2x | BR412121 | Take-up Reel Table Block (SUM) Comp. | LF | 1 |
| 2-3 | MT255712 | Reel Table Disk B, w/shaft A | XR-101 | 1 |
| 2-4x | MT252112 | Friction Cloth B | 900-225 | 2 |
| 2-5 | MT376110 | Reel Table Rubber CD-2 | CD-201 | 2 |
| 2-6 | MS255600 | Reel Shaft B | XR-103 | 2 |
| 2-7 | MT297663 | 3R 'O' Ring 2.9x1.65M | 3R-139 | 2 |
| 2-8 | MT255420 | Reel Retainer | 3R-102 | 2 |
| 2-9 | ZG255633 | Reel Spring | 3R-109 | 2 |
| 2-10 | MT255565 | Reel Shaft Ring | XR-177 | 2 |
| 2-11 | ZW270088 | 'E' Ring 1.9M | 6-1-9 | 2 |
| 2-12 | MR251460 | Rewind Pulley | 900-222 | 1 |
| 2-13 | MT222366 | Rubber Ring | 900-234 | 1 |
| 2-14 | ZG227553 | Spring G2 (left) | 900-230 | 1 |
| 2-15 | ZW260021 | Washer (SUP)D6.1x10x0.13t | | 2 |
| 2-16x | ZW260098 | Washer (SUP)D6.1x10x0.5t | | 2 |
| 2-17 | MT255870 | Reel Table Thrust Pin | 900-237 | 2 |
| 2-18x | MT252101 | Friction Cloth A | 900-224 | 1 |
| 2-19 | MR252066 | Take-up Roller C | 900-220 | 1 |
| 2-20 | MT255971 | Reel Table Spring Plate A | 900-227 | 1 |
| 2-21 | MT438647 | Reel Torque Adjust Thrust 7 D6.2x13x0.5t | 101022 | 2 |
| 2-22x | MT438636 | Reel Torque Adjust Thrust 6 D6.2x13x1t | 101021 | 2 |
| 2-23 | ZW231693 | Claw Thrust Washer | 900-235 | 2 |
| 2-24 | ZW260021 | Washer (SUP)D6.1x10x0.13t | | 4 |
| 2-25 | MT255870 | Reel Table Thrust Pin | 900-237 | 2 |
| 2-26 | ZW260054 | Washer (SUP)D6.1x10x0.25t | | 3 |
| 2-27 | ZW260098 | Washer (SUP)D6.1x10x0.5t | | 2 |
| 2-28x | MT438592 | Reel Torque Adjust Thrust 2 D6.1x10x0.3t | | 2 |
| 2-29x | MT438603 | Reel Torque Adjust Thrust 3 D6.1x10x0.5t | 101018 | 2 |
| 2-30x | MT438625 | Reel Torque Adjust Thrust 5 D6.1x10x1t | 101020 | 3 |
| 2-31 | MT292386 | XR Reel Metal Mt. Part, w/metal | XR-191 | 2 |
| 2-32 | MT438614 | Reel Torque Adjust Thrust 4 D6.1x10x0.8t | 101019 | 1 |
| 2-33 | ZW312693 | 'E' Ring 4M | 6-1-4 | 1 |
| 2-34 | ZG434092 | Spring F4-B | LF-2004 | 1 |
| 2-35 | MT440313 | Nylon Tube D12 | | 1 |
| 2-36 | MT438636 | Reel Torque Adjust Thrust 6 D6.2x13x1t | 101021 | 1 |
| 2-37 | MT228598 | Set Sleeve B | CD-66 | 1 |
| 2-38 | ZW434160 | Set Screw, hexagon socket 3x3(cup) | | 1 |
| 2-39 | MR252044 | Take-up Roller A | 900-218 | 1 |
| 2-40x | ZG227542 | Spring G2 (right) | 900-230 | 1 |
| 2-41x | MT255881 | Reel Table Slip Plate A (deer skin) | MH-219 | 1 |
| 2-42 | MR252077 | Take-up Roller D | M8-204 | 1 |
| 2-43x | MT255982 | Reel Table Spring Plate B | 900-228 | 1 |
| 2-44x | MT438581 | Reel Torque Adjust Thrust 1 D5.8x10.3x1t | 101016 | 1 |
| 2-45 | MZ437804 | Flywheel Thrust A D7.9x13x1t | 101024 | 1 |
| 2-46 | MT255993 | Reel Table Spring Plate C | M8-207 | 1 |
| 2-47 | ZW260065 | Washer (SUP)D6.1x10x0.35t | | 1 |
| 2-48 | ZW270000 | Retaining Pin D4 | 900-257 | 1 |
| 2-49 | MR256094 | Reel Table Pulley | 900-239 | 1 |
| 2-50 | ZW434171 | Set Screw, hexagon socket 4x7(cup) | | 1 |

MOTOR/BELT CHANGE LEVER BLOCK

| Ref. No. | Parts No. | Description | Schematic No. | Q'ty |
|--------------------------------|-----------|---|---------------|------|
| MOTOR BLOCK | | | | |
| 3-1x | BM412380 | Motor Block (HM2-16) Comp. | LF | 1 |
| 3-2 | MZ448222 | 24 Motor Cover, w/metal | 24X-781 | 1 |
| 3-3 | ZW427037 | Screw, pan head 4x50, w/washer | | 4 |
| 3-4 | MZ254316 | 24 Motor Prop B | 24X-729 | 4 |
| 3-5 | MZ254373 | Motor Mt. Plate L | 24X-733 | 1 |
| 3-6 | MZ254305 | Motor/R. Table | RC-112 | 1 |
| 3-7 | MZ254160 | Motor Prop A | 24X-730 | 2 |
| 3-8 | MZ254182 | Motor Prop B | 24X-731 | 1 |
| 3-9 | ZW424056 | Screw, pan head 4x10 | | 4 |
| 3-10 | ZW272395 | M-7 Motor Prop Set Screw | 24X-732 | 1 |
| 3-11 | ZW427026 | Screw, countersunk head 4x10 | | 2 |
| 3-12x | EJ296144 | 24 Oil-cut | 24X-735 | 2 |
| 3-13x | ZW222388 | Rubber Washer | 24X-739 | 1 |
| 3-14x | ZW259885 | Washer (PBP)D5.1x10.3x0.1t | | 1 |
| 3-15 | MR411603 | Motor Pulley, w/pin | LF-7001 | 1 |
| 3-16 | MR257984 | Knurling Pulley, w/retainer B | 24X-740 | 1 |
| 3-17 | ZW413921 | Screw, oval countersunk head 3x15 | | 1 |
| 3-18x | MZ292364 | XR Motor Shield Plate B | XR-705 | 1 |
| 3-19 | MZ316326 | Motor Out-side Shield (large) A | 10R-714 | 1 |
| 3-20x | MZ337724 | Motor Out-side Shield (large) B | 10R-716 | 1 |
| 3-21 | MZ256882 | Motor Fan D, w/boss | MH-636 | 1 |
| 3-22 | ZW476987 | Set Screw, hexagon socket 5x4 | | 1 |
| 3-23 | EC411682 | MP/C. 2+1+0.8μ 250WVAC (Lug type Uni/D.) | 24-9-53 | 1 |
| 3-24 | ZW413223 | Screw, binding head 3x5, w/washer | | 2 |
| BELT CHANGE LEVER BLOCK | | | | |
| 3-25x | BL412108 | Belt Change Lever Block (C) Comp. C | | 1 |
| 3-26 | ML411704 | Belt Change Lever C (small), w/roller B | LF-2002 | 1 |
| 3-27 | MZ248354 | Belt Guide Stop, w/metal | 4TR-221 | 1 |
| 3-28 | ZG217337 | Belt Return Spring | 4TR-224 | 1 |
| 3-29 | ZW413201 | Screw, pan head 4x8 | | 1 |
| 3-30x | ZG217394 | Belt Change Spring B | MH-125 | 1 |
| 3-31x | ZW260054 | Washer (SUP)D6.1x10x0.25t | | 1 |
| 3-32x | ZW290283 | 'U' Ring 2.85M | 6-1-1 | 1 |

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

FIG. 3 ILLUSTRATION OF MOTOR/BELT CHANGE LEVER BLOCK

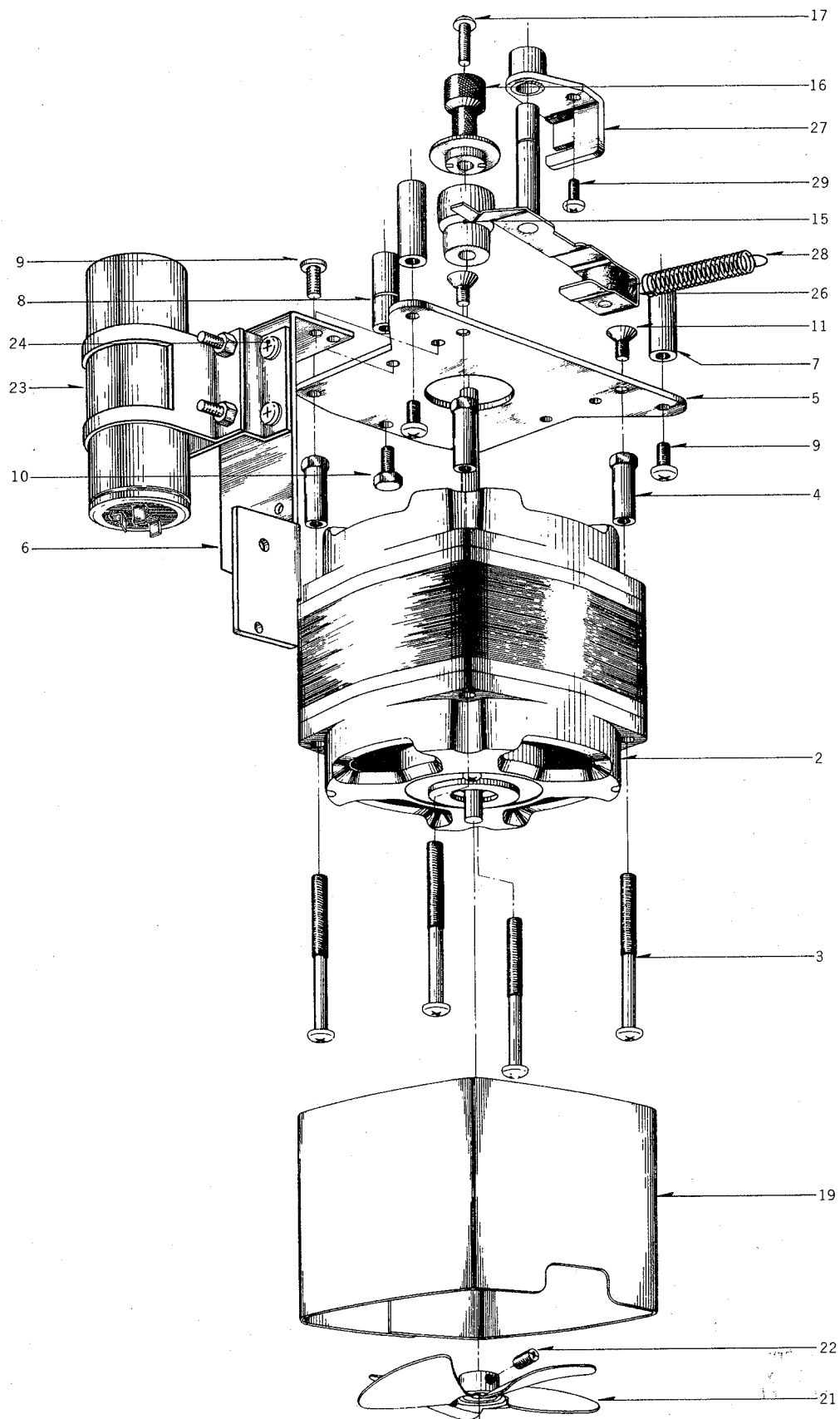
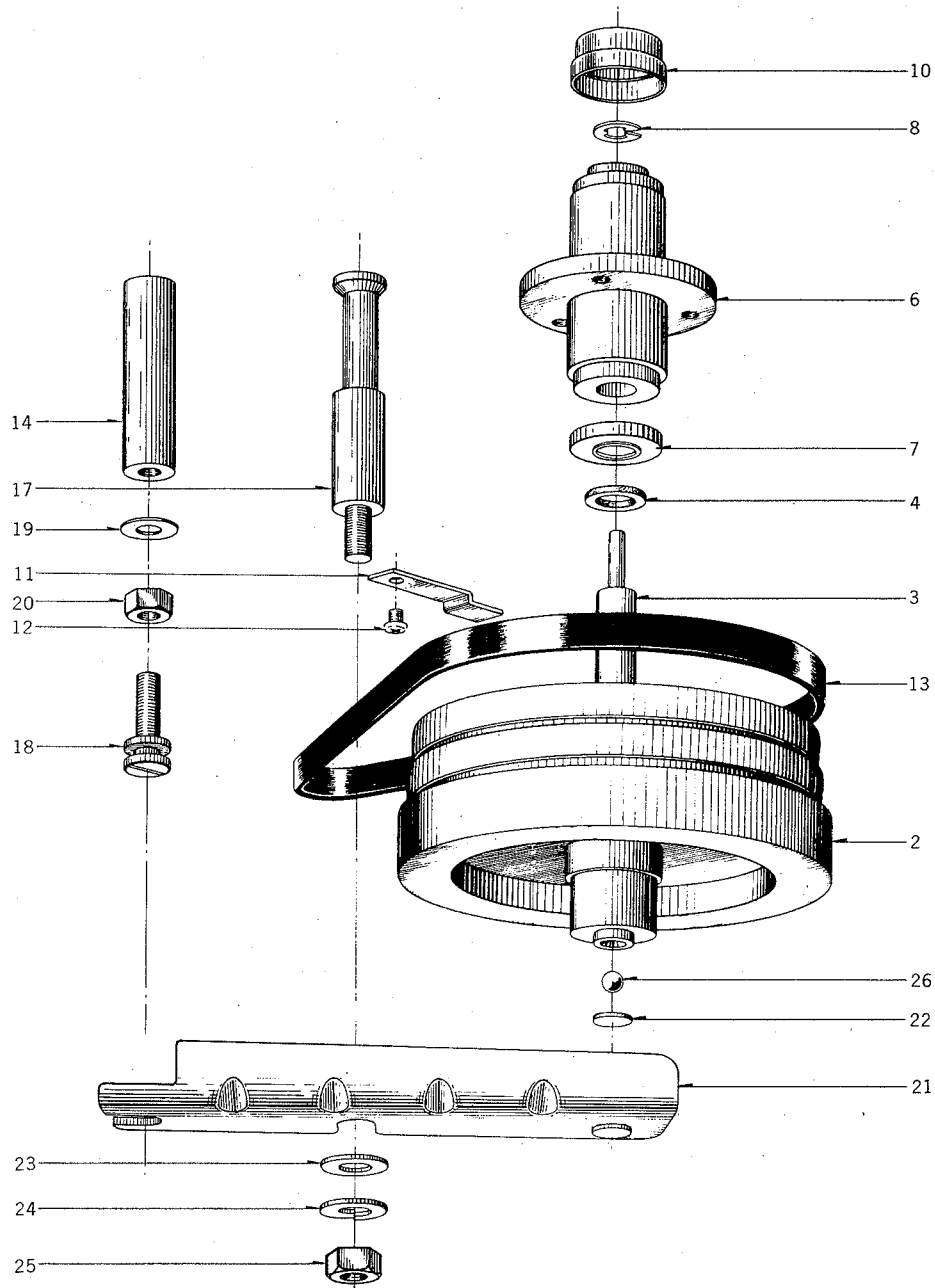


FIG. 4 ILLUSTRATION OF FLYWHEEL BLOCK

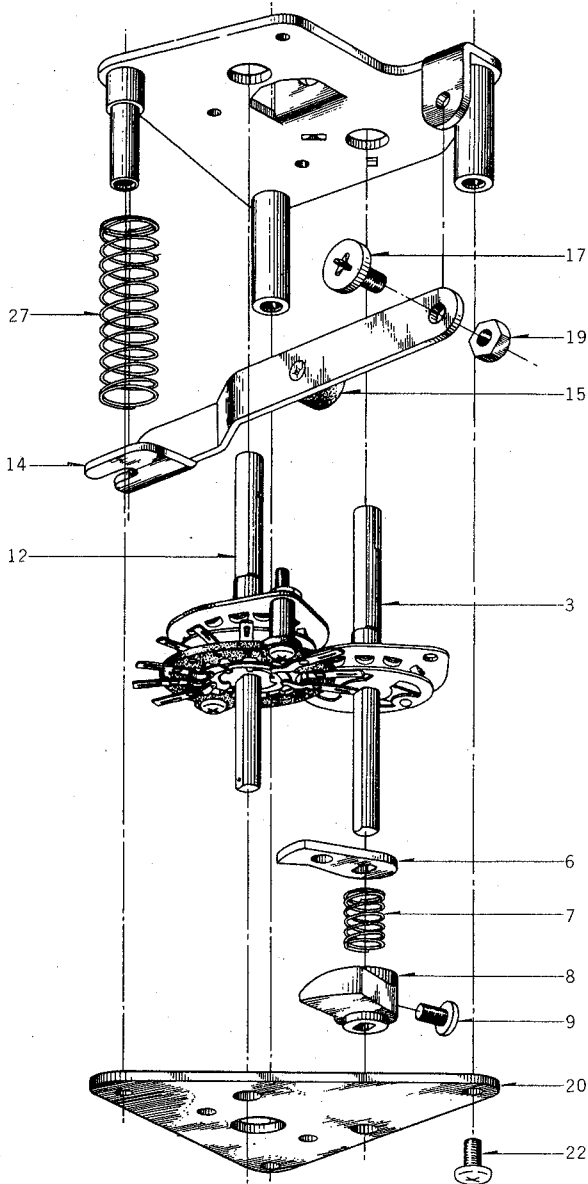


FLYWHEEL BLOCK

| Ref. No. | Parts No. | Description | Schematic No. | Q'ty | Ref. No. | Parts No. | Description | Schematic No. | Q'ty |
|----------|-----------|--|---------------|------|----------|-----------|-------------------------------|---------------|------|
| 4-1x | BF412143 | Flywheel Block Comp. | LF | 1 | 4-12 | ZW425981 | Screw, binding head 3x3 | | 1 |
| 4-2 | MZ296245 | Flywheel 24 | MH-202 | 1 | 4-13 | MB256590 | Double Face Flat Belt D110 | 100912 | 1 |
| 4-3 | MS411592 | LF Main Shaft | LF-2001 | 1 | 4-14 | MZ244631 | Flywheel Prop B | 4TR-115 | 1 |
| 4-4 | ZW447208 | Flywheel Thrust B D7.9x1 3x0.5t | 101025 | 1 | 4-15x | MZ413201 | Screw, pan head 4x8 | | 2 |
| 4-5x | ZW373577 | Set Screw, hexagon socket 5x6(flat) | | 2 | 4-16x | ZW273914 | M4 Spring Washer | | 2 |
| 4-6 | MZ296267 | Main Case B-24 Comp. | 1630-205 | 1 | 4-17 | MZ244664 | Flywheel Prop C | U-102 | 1 |
| 4-7 | MZ446635 | Thrust Cap, Main Metal B2 | LF-2006 | 1 | 4-18 | ZW244574 | Flywheel Support Adjust Screw | 4TR-114 | 1 |
| 4-8 | ZW244710 | Flywheel Fixing Pin | 900-250 | 1 | 4-19 | ZW393085 | Washer (SUP)D5.1x10.3x0.25t | | 1 |
| 4-9x | MZ244113 | Felt D12.5x16x2t | | 1 | 4-20 | ZW413278 | M5 Nut | | 1 |
| 4-10 | MZ253113 | Main Metal Cap B | MH-208 | 1 | 4-21 | MZ393221 | Flywheel Support Plate D | LS-1005 | 1 |
| 4-11 | MZ436847 | Flywheel Belt Holding Plate A | LF-1012 | 1 | 4-22 | ZW392681 | Washer, without hole D8x1t | | 1 |
| | | | | | 4-23 | ZW413998 | Washer (SPC)D6.8x12.7x1t | | 1 |
| | | | | | 4-24 | ZW393232 | 1/4 Inch Spring Washer | | 1 |
| | | | | | 4-25 | ZW413208 | Inch Nut 1/4 mountain = 20 | | 1 |
| | | | | | 4-26 | MV269965 | Steel Ball D4 | | 1 |

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

**FIG. 5 ILLUSTRATION OF
SWITCH BLOCK (SUM)**



SWITCH BLOCK (SUM)

| Ref. No. | Parts No. | Description | Schematic No. | Q'ty |
|----------|-----------|--------------------------------------|---------------|------|
| 5-1x | BS412132 | Switch Block (SUM) Comp. | LF | 1 |
| 5-2 | MZ225641 | Switch Table A, w/props | 900-201 | 1 |
| 5-3 | ES256803 | Rewind Shaft RS-1H, w/scratch | 25-8-3 | 1 |
| 5-4x | ZW202083 | Screw, binding head 3x5, w/washer | | 2 |
| 5-5x | ZW260133 | Washer (Fiber)D6.1x10x1t | | 2 |
| 5-6 | MZ217067 | Cam Trap Plate | 900-210 | 1 |
| 5-7 | ZG227586 | Spring K | 900-214 | 1 |
| 5-8 | MZ217304 | Cam C | 900-207 | 1 |
| 5-9 | ZW201778 | Screw, pan head 4x8 | | 1 |
| 5-10x | ZW434215 | Washer (Nylon)D6.1x10.3x0.3t | | 1 |
| 5-11x | ZW434193 | Washer (Nylon)D6.1x10.3x0.5t | | 1 |
| 5-12 | ES228330 | S type Play Shaft S-133HB | 25-7-3 | 1 |
| 5-13x | ZW273756 | M3 Nut | | 2 |
| 5-14 | ML257128 | Lever I, w/shaft B | 900-209 | 1 |
| 5-15 | MZ217203 | Cam Roller A | 900-153 | 1 |
| 5-16x | ZW290283 | 'U' Ring 2.85M | 6-1-1 | 1 |
| 5-17 | ZW217877 | Pause Lever Set Screw | 900-136 | 1 |
| 5-18x | ZW260166 | Washer (Nylon)D6.2x13x0.125t | | 1 |
| 5-19 | ZW413188 | M4 Nut | | 1 |
| 5-20 | MZ225720 | Switch Table B-2 | M9-308 | 1 |
| 5-21x | ZW273881 | M4 Earth Lug | | 1 |
| 5-22 | ZW413201 | Screw, pan head 4x8 | | 3 |
| 5-23x | MZ217260 | Cam A-2 | 900-205 | 1 |
| 5-24x | MZ217271 | Cam B, without Tap | 900-206 | 1 |
| 5-25x | ZW413201 | Screw, pan head 4x8 | | 2 |
| 5-26x | MV270066 | Steel Ball D8 | | 1 |
| 5-27 | ZG227485 | Spring E | 900-119 | 1 |

MECHANISM ASSEMBLY BLOCK (1)

| Ref. No. | part No. | Description | Schematic No. | Q'ty |
|----------------------------|----------|---------------------------|----------------|------|
| TAPE GUIDE BLOCK #4 | | | | |
| 6-1x | BZ300948 | Tape Guide Block #4 Comp. | LF, LE, DF, LS | 1 |
| 6-2 | MZ204311 | Tape Guide Prop #1700 | AT-16 | 1 |
| 6-3 | SZ465377 | Tape Guide Table A | LC-618 | 1 |
| 6-4 | ZW231805 | Tape Guide Washer (large) | 3A-356 | 2 |
| 6-5 | MV248117 | Bearing 635AHZZ-CIE-B32 | | 1 |
| 6-6 | SZ465388 | Tape Guide Table B | LC-619 | 1 |

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

| Ref. No. | Parts No. | Description | Schematic No. | Q'ty | Ref. No. | Parts No. | Description | Schematic No. | Q'ty |
|---------------------------------|-----------|-----------------------------------|---------------|------|----------|-----------|-------------------------------------|---------------|------|
| MECHANISM ASSEMBLY BLOCK | | | | | | | | | |
| 6-7 | MZ410905 | New Mech. Frame, w/bush, pin B | M9-301 | 1 | 6-72 | MZ217113 | Cam Stopper B | RC-129 | 1 |
| 6-8 | MZ273295 | M-9 Mech. Panel Prop | M9-302 | 4 | 6-73 | ZW217102 | Cam Stopper Insulator Base | 900-165 | 1 |
| 6-9x | ZW414033 | Screw, countersunk head 3x8 | | 4 | 6-74 | ZW413245 | Screw, pan head 4x15 | | 2 |
| 6-10 | MS257051 | Lever FA Shaft | 900-127 | 1 | 6-75 | SB258478 | Rec. Button (red) | 900-167 | 1 |
| 6-11x | ZW273914 | M4 Spring Washer | | 2 | 6-76x | ZW413256 | Washer (SPC)D3.4x7.8x0.5t | | 1 |
| 6-12x | ZW273881 | M4 Earth Lug | | 2 | 6-77x | ZW260436 | Cotter Pin 1x12 | | 1 |
| 6-13x | ZW413188 | M4 Nut | | 7 | 6-78 | ML217934 | Supply Brake Comp. | 900-113 | 1 |
| 6-14x | ML435914 | Reinforcement Metal A | LF-1010 | 1 | 6-79x | MT245215 | Brake Rubber (large) | 900-163 | 1 |
| 6-15 | HZ247511 | Head Prop C | 900-142 | 3 | 6-80x | ZW259942 | Washer (Fiber)D5.1x10.3x0.5t | | 2 |
| 6-16x | ZW413201 | Screw, pan head 4x8 | | 2 | 6-81 | ZW290283 | 'U' Ring 2.85M | 6-1-1 | 9 |
| 6-17x | ZW414044 | Screw, countersunk head 4x8 | | 1 | 6-82 | ZG290384 | UN Spring D | 1630-108 | 1 |
| 6-18 | MZ257073 | Lever FB Guide Base | M9-103 | 1 | 6-83 | ML251932 | Take-up Brake Com | 900-114 | 1 |
| 6-19x | ZW417150 | Screw, pan head 4x6 | | 2 | 6-84x | MT376457 | Brake Rubber (small) | M8-110 | 1 |
| 6-20 | ZG257095 | Lever FB Vibration Proof Spring | M8-104 | 1 | 6-85 | ZG227452 | Spring D | 900-118 | 1 |
| 6-21x | MZ410938 | Belt Guide Pin | LF-1009 | 1 | 6-86 | ML300161 | 707 Lever A, w/metal | LC-103 | 1 |
| 6-22 | MS245463 | Brake Lever Shaft | 900-129 | 2 | 6-87x | ZW260087 | Washer (Fiber)D6.1x10x0.5t | | 1 |
| 6-23x | MZ245485 | Brake Lever Pin (CSA) | MH-138 | 1 | 6-88 | ML257196 | Lever LC, w/lever E2 | LC-308 | 1 |
| 6-24x | MZ452496 | Cycle Angle (CEE) | LS-1007 | 1 | 6-89x | ZW413302 | Screw, pan head 4x5 | | 2 |
| 6-25x | ML308564 | Belt Vibration Stopper (CSA) | MH-137 | 1 | 6-90 | ML262337 | Lever C3 | M8-106 | 1 |
| 6-26 | MS260515 | A Lever Shaft | 900-126 | 1 | 6-91x | ZW259918 | Washer (Presspan) D5.1x10.3x0.25t | | 2 |
| 6-27 | ES250042 | Micro Switch V-1A U/L | 25-1-1 | 2 | 6-92 | ZG217337 | Belt Return Spring | 4TR-224 | 1 |
| 6-28 | MZ479834 | Micro Insulator S | MS-1020 | 1 | 6-93 | MZ260662 | AS Lever Base, w/prop | 4TR-236 | 1 |
| 6-29 | ZW414055 | Screw, binding head 3x30 | | 1 | 6-94 | ZW323728 | Screw, binding head 3x5 | | 3 |
| 6-30 | ZW414066 | Screw, binding head 3x25 | | 1 | 6-95 | ZW273767 | Earth Lug D3x20L | | 1 |
| 6-31 | MZ205817 | Actuator JW-560 | 21-1-5 | 1 | 6-96 | ML257040 | Lever FA, w/shaft B | 900-107 | 1 |
| 6-32x | ZW273756 | M3 Nut | | 1 | 6-97 | MZ217203 | Cam Roller A | 900-153 | 1 |
| 6-33x | ZW462835 | Washer (PBP)D4.3x11x0.2t | | 1 | 6-98 | ML295727 | 2 Speed Motor Lever F, w/shaft | M8-107 | 1 |
| 6-34x | ZW462846 | Washer (PBP)D4.3x11x0.3t | | 1 | 6-99x | ZW260087 | Washer (Fiber)D6.1x10x0.5t | | 1 |
| 6-35 | MZ410927 | Shifter Cam, w/spring | LF-1004 | 1 | 6-100 | ZG270358 | F.B Pull Spring | M8-108 | 1 |
| 6-36 | MZ312535 | Shifter Cam Collar | LD-107 | 1 | 6-101x | ZW376391 | Washer (Polyslider) D6.1x10x0.13t | | 2 |
| 6-37 | ZG208091 | Impedance Arm Spring | RD-269 | 1 | 6-102 | ML257163 | Lever K, w/shaft | 900-111 | 1 |
| 6-38x | ZW393726 | Screw, truss head 3x10 | | 1 | 6-103x | ZW260166 | Washer (Nylon) D6.2x13x0.125t | | 2 |
| 6-39 | ES375478 | Slide Switch ESD-279DU | 25-3-23 | 2 | 6-104 | ZW223233 | Fulcrum Screw A | 900-135 | 1 |
| 6-40 | MZ210071 | Auto. Switch Plate | M8-114 | 1 | 6-105 | ZG224796 | New Spring D | MH-142 | 1 |
| 6-41 | ZW440291 | Iso Screw, countersunk head 3x6 | | 2 | 6-106 | ML231423 | Middle Wheel, w/metal | 900-155 | 1 |
| 6-42 | ZW413166 | Screw, round head 3x6 | | 2 | 6-107 | ML272992 | M-9 Pinch Roller Lever | M9-105 | 1 |
| 6-43 | MZ410951 | Switch Retaining Plate | LF-1002 | 1 | 6-108 | MS272970 | M-9 Pinch Roller Shaft | M9-106 | 1 |
| 6-44x | ZW379405 | Iso Screw, binding head 3x6 | | 2 | 6-109x | ZW303491 | Washer (SUP)D4.3x11x0.8t | | 1 |
| 6-45x | ZW413155 | Screw, binding head 3x6 | | 2 | 6-110 | ZW413188 | M4 Nut | | 1 |
| 6-46x | ZW330412 | Adjust Washer (U) D4x13x0.13t | | 1 | 6-111 | MS217192 | Cam Roller Shaft A | 900-130 | 1 |
| 6-47x | ZW330423 | Adjust Washer (U) D4x13x0.25t | | 1 | 6-112 | MR217214 | Cam Roller B | 4TR-240 | 1 |
| 6-48x | ZW413190 | Adjust Washer (U) D4x13x0.8t | | 1 | 6-113 | ZG227417 | Spring A | 900-115 | 1 |
| 6-49x | MZ219576 | Cord Retainer D | M9-123 | 1 | 6-114x | ZW396437 | Washer (Polyslider) D5.1x10.3x0.25t | | 1 |
| 6-50x | MZ436050 | Belt Retainer | LF-1011 | 1 | 6-115 | ML327328 | Pause Lever (SX), w/set screw | SX-122 | 1 |
| 6-51 | ML475920 | New Spring Hanger | 900-185 | 1 | 6-116 | ZW217877 | Pause Lever Set Screw | 900-136 | 1 |
| 6-52x | ZW323728 | Screw, binding head 3x5 | | 2 | 6-117 | MZ217855 | Pause Stopper | 900-169 | 1 |
| 6-53 | ML309093 | Lever B, w/lever D | 900-103 | 1 | 6-118 | ZW323728 | Screw, binding head 3x5 | | 1 |
| 6-54 | MZ217203 | Cam Roller A | 900-153 | 1 | 6-119 | ZG217866 | Pause Lever Spring A | 900-123 | 1 |
| 6-55 | MR217214 | Cam Roller B | 4TR-240 | 1 | 6-120x | ZW259795 | Washer (SUP)D4.3x11x0.13t | | 1 |
| 6-56x | ZW290283 | 'U' Ring 2.85M | 6-1-1 | 2 | 6-121 | MZ217686 | Pause Lever Cushion | LC-102 | 1 |
| 6-57 | MG469427 | Spring B-1 | LS-2004 | 1 | 6-122 | MZ293567 | Head Lifter Cam A #1630 | 1630-104 | 1 |
| 6-58 | MZ253653 | Metal Mt. Part, w/metal | 900-174 | 1 | 6-123 | MZ293578 | Head Lifter Cam B #1630 | 1630-105 | 1 |
| 6-59x | ZW413201 | Screw, pan head 4x8 | | 1 | 6-124 | ZG312748 | Shifter Spoke | LD-108 | 1 |
| 6-60x | ZW413267 | Flange Nut M4 | | 1 | 6-125x | ZW413223 | Screw, binding head 3x5, w/washer | | 1 |
| 6-61 | ML270685 | G Lever, w/H lever | 900-109 | 1 | 6-126 | BL204658 | AS Lever #2 Comp. | | 1 |
| 6-62 | MS205560 | Idler Shaft B | 100150 | 1 | 6-127x | ZW322525 | Washer (PBP)D4.1x7x0.2t | | 1 |
| 6-63x | ZW260076 | Washer (Nylon)D6.1x10x0.5t | | 2 | 6-128 | ZG293692 | AS Lever Spring #1630 | 1630-103 | 1 |
| 6-64 | MI204423 | Idler Wheel #2 | | 2 | 6-129 | ZW290294 | 'U' Ring 2.85M | 6-1-1B | 1 |
| 6-65 | ZW376391 | Washer (Polyslider) D6.1x10x0.13t | | 2 | 6-130x | EJ411636 | 9P Mate-N-Lock Comp. | LF-1007 | 1 |
| 6-66 | ZW290283 | 'U' Ring 2.85M | 6-1-1 | 2 | 6-131x | SZ226282 | Cord Holder, Standard B | 900-180 | 1 |
| 6-67 | ZG205571 | Idler Tension Spring | MH-135 | 1 | 6-132x | MB229138 | Side Wire Band | 2-35-1 | 1 |
| 6-68 | MZ217708 | Pause Lever Retaining Metal B | 900-170 | 1 | 6-133x | EJ205975 | Cramp Terminal 1-SD | 32-1-7 | 5 |
| 6-69 | MZ327251 | G Lever Stopper (SX) | SX-110 | 1 | 6-134 | MZ217260 | Cam A-2 | 900-205 | 1 |
| 6-70x | ZW413223 | Screw, binding head 3x5, w/washer | | 1 | 6-135 | ZW413201 | Screw, pan head 4x8 | | 2 |
| 6-71x | MZ256814 | Rewind Shaft Spacer | M9-124 | 2 | 6-136 | MZ217271 | Cam B, without Tap | 900-206 | 1 |
| | | | | | 6-137 | MV270066 | Steel Ball D8 | | 1 |
| | | | | | 6-138 | ZG217394 | Belt Change Spring B | MH-125 | 1 |

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

FIG. 6 ILLUSTRATION OF MECHANISM ASSEMBLY BLOCK (I)

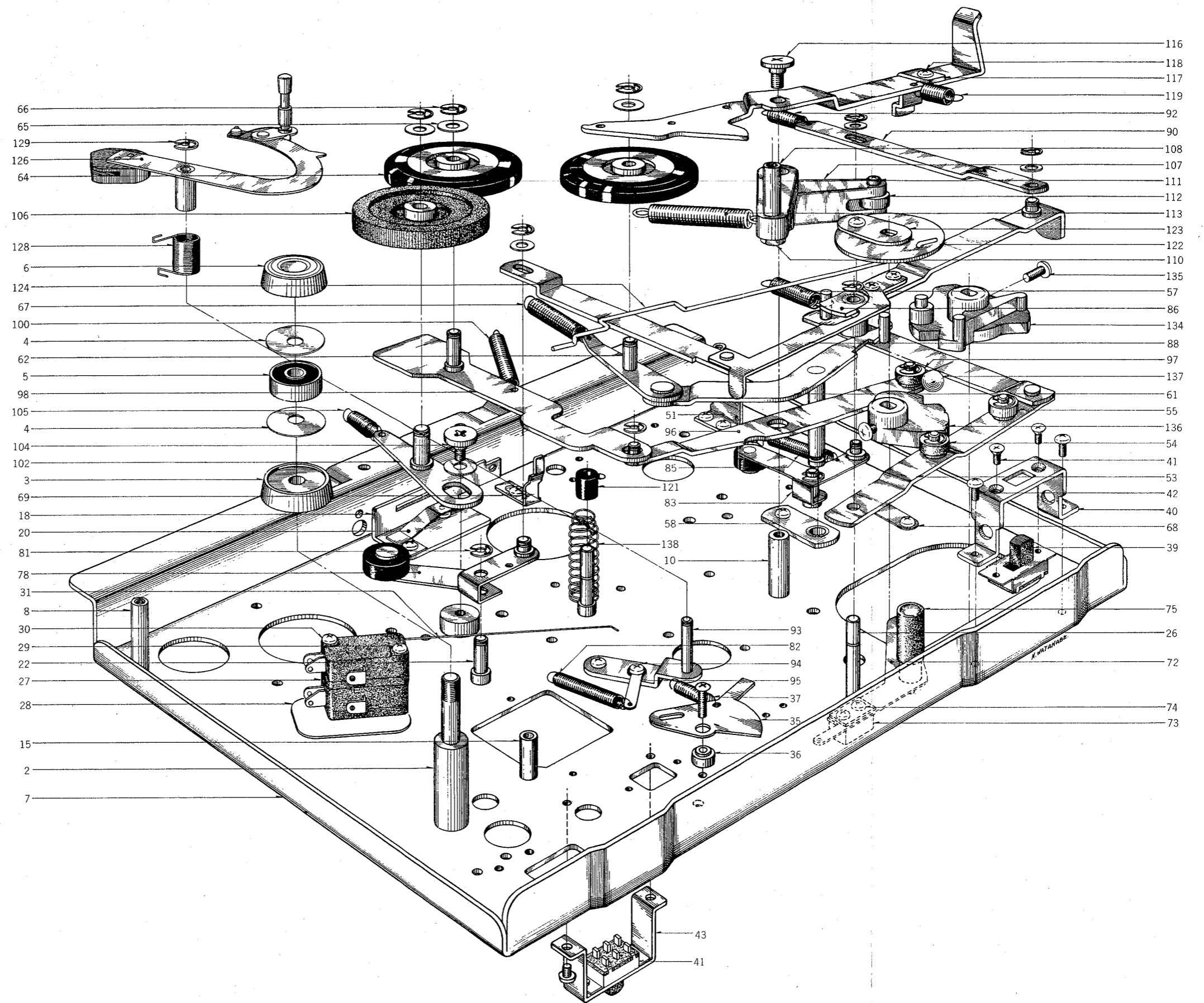
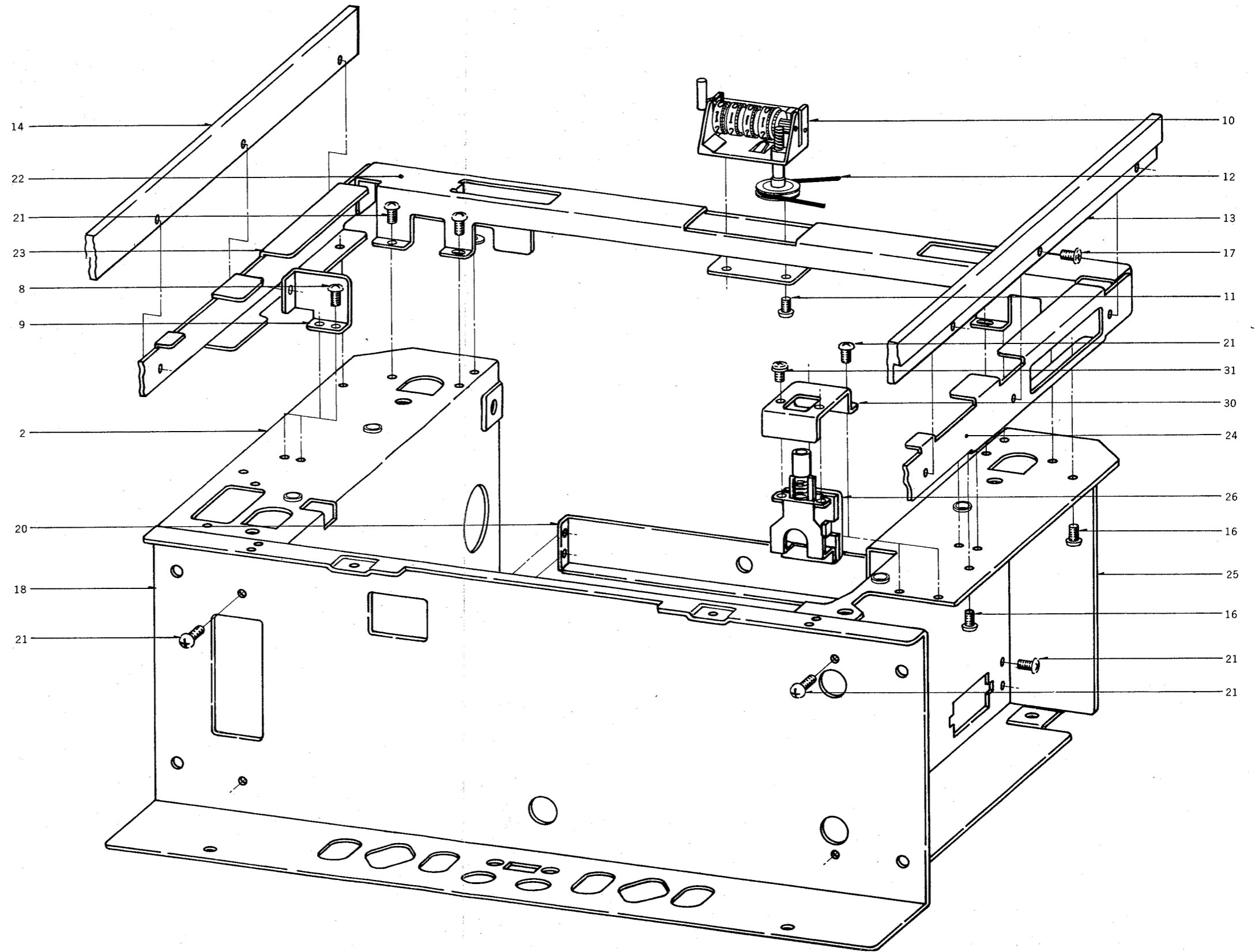


FIG. 7 ILLUSTRATION OF MECHANISM ASSEMBLY BLOCK (II)

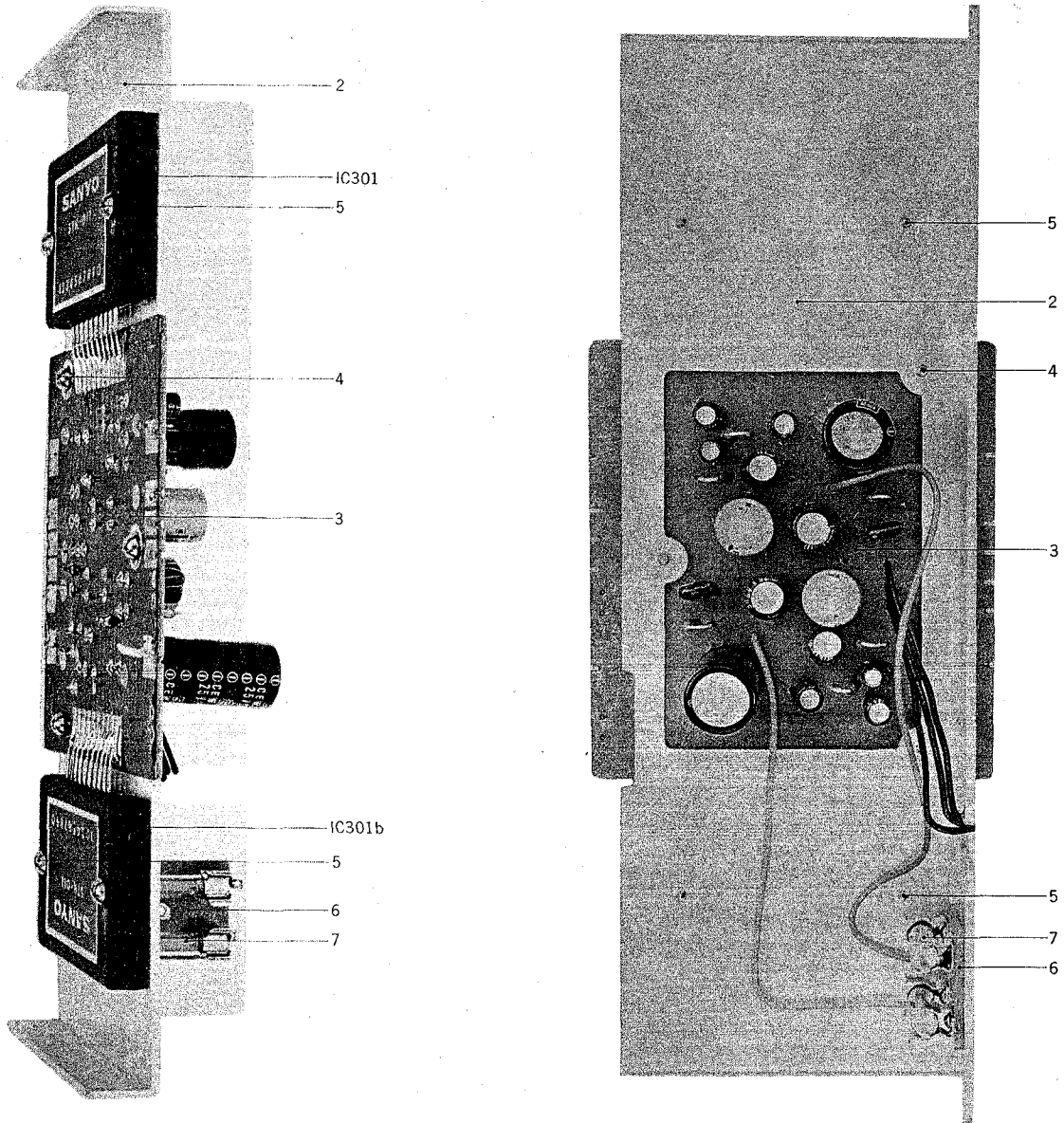


MECHANISM ASSEMBLY BLOCK (II)

| Ref. No. | Parts No. | Description | Schematic No. | Q'ty |
|---------------------------------|-----------|--|---------------|------|
| OSC. FRAME BLOCK | | | | |
| 7-1x | BZ475740 | OSC. Frame Block Comp. | LF-2 | 1 |
| 7-2 | EZ411535 | OSC. Frame, w/props | LF-5015 | 1 |
| 7-3x | MH223097 | Prop 590 | BT-590 | 2 |
| 7-4x | ZW273756 | M3 Nut | | 2 |
| 7-5x | BA475751 | OSC. P.C. Board Comp. (LF-5210) | | 1 |
| 7-6x | ZW413728 | Screw, binding head 3x6, w/washer | | 2 |
| 7-7x | EZ411546 | OSC. Shield Plate | LF-5016 | 1 |
| 7-8 | ZW200687 | Tapping Screw #2 3x6(round) | | 4 |
| 7-9 | EZ411491 | Sash Reinforcement Part | LF-5018 | 1 |
| MECHANISM ASSEMBLY BLOCK | | | | |
| 7-10 | MC456006 | Counter MP-491-23 | 9-1-3 | 1 |
| 7-11 | ZW379405 | Iso Screw, binding head 3x6 | | 2 |
| 7-12 | MB410310 | Counter Belt | LF-6037 | 1 |
| 7-13 | SP406067 | KD Sash (right) | KD-6005 | 1 |
| 7-14 | SZ435014 | Sash (left) | KD-6005 | 1 |
| 7-15x | SP436083 | Sash (L) | LF-6005 | 2 |
| 7-16 | ZW413155 | Screw, binding head 3x6 | | 10 |
| 7-17 | ZW413741 | Screw, binding head 3x8 | | 6 |
| 7-18 | EZ411322 | Amp. Chassis, w/side | LF-5001 | 1 |
| 7-19x | MZ273295 | M-9 Mech. Panel Prop | M9-302 | 4 |
| 7-20 | EZ411300 | Amp. Supporting Plate | LF-5020 | 1 |
| 7-21 | ZW447772 | Tapping Screw 3x6(BR) | | 6 |
| 7-22 | MZ411311 | Counter Mt. Plate | LF-5019 | 1 |
| 7-23 | EZ411298 | Sash Retaining Plate (left) | LF-5021 | 1 |
| 7-24 | EZ413864 | Sash Retaining Plate (right) | LF-5021 | 1 |
| 7-25 | EZ411445 | Power Supply Frame | LF-5012 | 1 |
| 7-26 | ES468426 | Push Switch UEH-12BFN | 25-5-58 | 1 |
| 7-27x | ES479395 | Push Switch TV-3 JH5 (CEE) | 25-5-62 | 1 |
| 7-28x | ER376413 | Spark Quencher U/L 0.033μ+120 500WV | 41-1-37 | 1 |
| 7-29x | SK371621 | PTA Knob (black) | ED-615 | 1 |
| 7-30 | EZ411467 | Switch Retaining Part | LF-5013 | 1 |
| 7-31 | ZW349288 | Iso Screw, binding head 3x5, w/washer | | 2 |

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

FIG. 8 PHOTO OF MAIN AMP. P.C. BOARD (LF-5214)

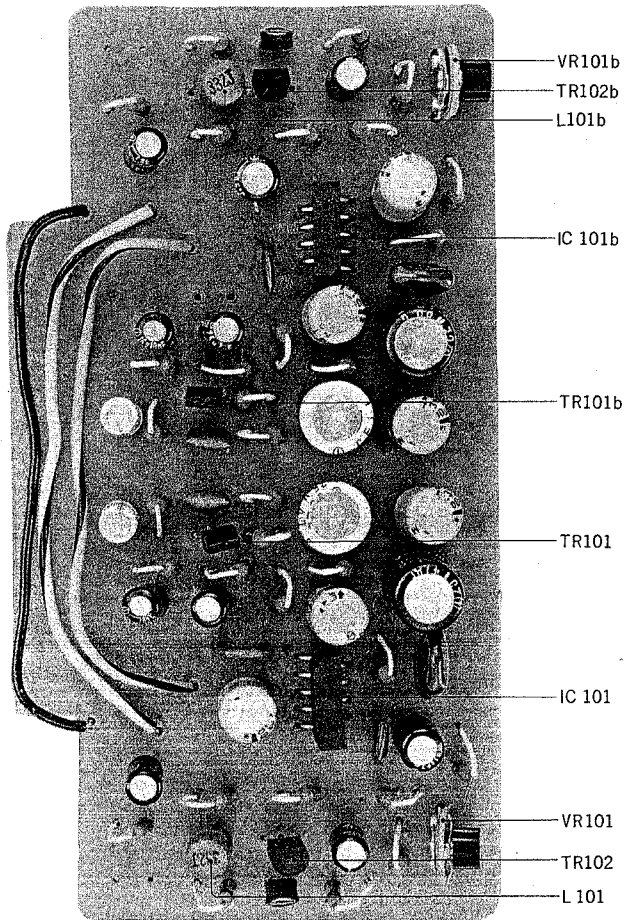


MAIN AMP./MAIN AMP. P.C. BOARD (LF-5214) BLOCK

| Symbol No. | Parts No. | Description | Q'ty | Symbol No. | Parts No. | Description | Q'ty |
|------------|---|---|------|------------|-----------|-------------------------------|------|
| | MAIN AMP. BLOCK | | | | | | |
| 8-1x | BA475762 | Main Amp. Block Comp. | 1 | 8-C303 | EC320040 | Elect. 47μF 16WV | 1 |
| 8-2 | EZ338040 | Main Chassis (LDA) | 1 | 8-C304 | EC313121 | Elect. 220μF 25WV | 1 |
| 8-3 | BA475773 | Main Amp. P.C. Board Comp. (LF-5214) | 1 | 8-C305 | EC220678 | Elect. 47μF 25WV | 1 |
| | | | | 8-C307 | EC450281 | Elect. 0.47μF 50WV | 1 |
| 8-4 | ZW447772 | Tapping Screw 3x6(BR) | 4 | 8-C308 | EC450270 | Elect. 1000μF 25WV | 1 |
| 8-IC301, b | EI372126 | I.C. STK-011(A) | 2 | 8-C309 | EC251190 | Mylar 0.056μF(K) 50WV | 1 |
| 8-5 | ZW447805 | Tapping Screw #2 3x12(BR) | 4 | 8-C310 | EC331705 | Elect. 22μF 16WV | 1 |
| 8-6 | EJ338062 | 2P Fuse Holder B | 1 | 8-C312 | EC220994 | Elect. 10μF 25WV | 1 |
| 8-7 | EF428815 | Fuse 0.9A 0.9 (F1,2) | 2 | 8-C313 | EC320040 | Elect. 47μF 16WV | 1 |
| | | | | 8-C314 | EC313121 | Elect. 220μF 25WV | 1 |
| | | | | 8-C315 | EC220678 | Elect. 47μF 25WV | 1 |
| | | | | 8-C317 | EC450281 | Elect. 0.47μF 50WV | 1 |
| | | | | 8-C318 | EC450270 | Elect. 1000μF 25WV | 1 |
| | | | | 8-C319 | EC251190 | Mylar 0.056μF(K) 50WV | 1 |
| | MAIN AMP. P.C. BOARD (LF-5214) BLOCK | | | | | | |
| 8-8x | BA475773 | Main Amp. P.C. Board Comp. (LF-5214) | 1 | | | | |
| | | Capacitor, Vertical Type | | | | Resistor, Stopper Type | |
| 8-C301 | EC331705 | Elect. 22μF 16WV | 1 | 8-R301 | ER361642 | Carbon RD1/4 47(J) | 2 |
| 8-C302 | EC220994 | Elect. 10μF 25WV | 1 | 8-R302 | ER346544 | Carbon RD1/4 3k(J) | 2 |
| | | | | 8-R303 | ER399723 | Carbon RD1/4 4.7(J) | 2 |

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

FIG. 9 PHOTO OF
REC. AMP. P.C. BOARD (LF-5213)

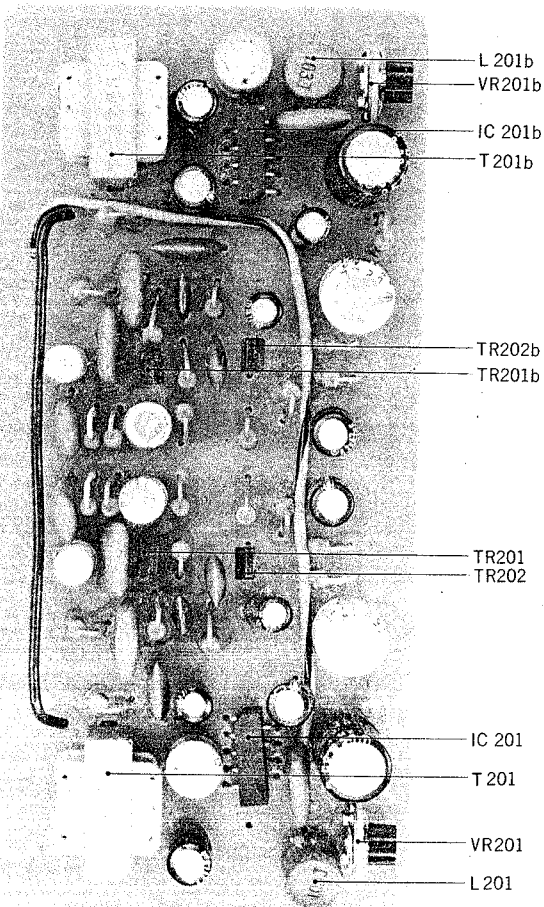


REC. AMP. P.C. BOARD (LF-5213) BLOCK

| Symbol No. | Part No. | Description | Q'ty |
|---------------------------------|----------|--------------------------------------|------|
| 9-1x | BA475694 | Rec. Amp. P.C. Board Comp. (LF-5213) | 1 |
| 9-IC101 | EI412413 | Line Amp. I.C. LD-3141 | 2 |
| 9-TR101 | ET234854 | Transistor 2SC458LG(C) | 2 |
| 9-TR102 | ET398845 | Transistor 2SC871(E)(F) | 2 |
| 9-VR101 | EV398812 | Semi-fixed Volume V10K-5 5k B | 2 |
| 9-L101 | EO243988 | Ferri Inductor FL7H 3.3MH(J) | 2 |
| Capacitor, Vertical Type | | | |
| 9-C101 | EC432810 | Elect. 10 μ F 16WV (noiseless) | 2 |
| 9-C102 | EC290531 | VFM 100PF(K) 50WV | 2 |
| 9-C103 | EC450055 | Elect. 1 μ F 25WV | 2 |
| 9-C104 | EC220364 | Elect. 100 μ F 6.3WV | 2 |
| 9-C105 | EC476965 | Elect. 47 μ F 25WV (noiseless) | 2 |
| 9-C106 | EC220678 | Elect. 47 μ F 25WV | 2 |
| 9-C107 | EC320051 | Elect. 10 μ F 16WV | 2 |
| 9-C108 | EC220364 | Elect. 100 μ F 6.3WV | 2 |
| 9-C109 | EC379170 | Mylar 0.1 μ F(J) 50WV | 2 |
| 9-C110 | EC220364 | Elect. 100 μ F 6.3WV | 2 |
| 9-C111 | EC251087 | Mylar 0.022 μ F(K) 50WV | 2 |
| 9-C112 | EC220994 | Elect. 10 μ F 25WV | 2 |
| 9-C113 | EC320051 | Elect. 10 μ F 16WV | 2 |
| 9-C115 | EC304110 | Mylar 0.0015 μ F(K) 50WV | 2 |
| 9-C117 | EC450055 | Elect. 1 μ F 25WV | 2 |
| Resistor, Stopper Type | | | |
| 9-R101 | ER357570 | Carbon RD1/4 150k(J) | 2 |
| 9-R102 | ER349907 | Carbon RD1/4 33k(J) | 2 |
| 9-R103 | ER350100 | Carbon RD1/4 68k(J) | 2 |
| 9-R104 | ER304402 | Carbon RD1/4 470(J) | 2 |
| 9-R105 | ER306887 | Carbon RD1/4 15k(J) | 2 |
| 9-R106 | ER212264 | Carbon RD1/4 22k(J) | 2 |
| 9-R108 | ER336442 | Carbon RD1/4 10k(J) | 2 |
| 9-R109 | ER350100 | Carbon RD1/4 68k(J) | 2 |
| 9-R110 | ER212264 | Carbon RD1/4 22k(J) | 2 |
| 9-R111,2 | ER212883 | Carbon RD1/4 4.7k(J) | 4 |
| 9-R113 | ER346601 | Carbon RD1/4 47k(J) | 2 |
| 9-R114 | ER336442 | Carbon RD1/4 10k(J) | 2 |
| 9-R115 | ER212883 | Carbon RD1/4 4.7k(J) | 2 |
| 9-R116 | ER211465 | Carbon RD1/4 1k(J) | 2 |
| 9-R117 | ER213120 | Carbon RD1/4 56(J) | 2 |

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

FIG. 10 PHOTO OF
P.B. AMP. P.C. BOARD (LF-5022)



P.B. AMP. P.C. BOARD (LF-5022) BLOCK

| Symbol No. | Part No. | Description | Q'ty |
|---------------------------------|----------|---|------|
| 10-1x | BA475705 | P.B. AMP. P.C. Board Comp. (LF-5022) | 1 |
| 10-IC201 | EI412413 | Line Amp. I.C. LD-3141 | 2 |
| 10-TR201,2 | ET234854 | Transistor 2SC458LG(C) | 4 |
| 10-T201 | BT247746 | Head Phone Trans. N19-228S | 2 |
| 10-VR201 | EV221826 | Semi-fixed Volume V10K-5 10k B | 2 |
| 10-L201 | EO244001 | Ferri Inductor FL9H 10MH(J) | 2 |
| Capacitor, Vertical Type | | | |
| 10-C201 | EC290531 | VFM 100PF(K) 50WV | 2 |
| 10-C202 | EC432810 | Elect. 10 μ F 16WV(noiseless) | 2 |
| 10-C203 | EC476965 | Elect. 47 μ F 25WV(noiseless) | 2 |
| 10-C204 | EC404908 | Hi-Q 470PF(K) 50WV | 2 |
| 10-C205 | EC477898 | Elect. 47 μ F 6.3WV(noiseless) | 2 |
| 10-C206 | EC290520 | VFM 100PF(J) 50WV | 2 |
| 10-C207 | EC329771 | Elect. 47 μ F 6.3WV | 2 |
| 10-C208 | EC320051 | Elect. 10 μ F 16WV | 2 |
| 10-C209 | EC337487 | Hi-Q 470PF(J) 50WV | 2 |
| 10-C210 | EC250841 | Mylar 0.01 μ F(J) 50WV | 2 |
| 10-C211 | EC290564 | VFM 220PF(K) 50WV | 2 |
| 10-C212 | EC220678 | Elect. 47 μ F 25WV | 2 |
| 10-C213 | EC320051 | Elect. 10 μ F 16WV | 2 |
| 10-C214 | EC329771 | Elect. 47 μ F 6.3WV | 2 |
| 10-C215 | EC329850 | VFM 220PF(J) 50WV | 2 |
| 10-C216 | EC220364 | Elect. 100 μ F 6.3WV | 2 |
| 10-C217 | EC220994 | Elect. 10 μ F 25WV | 2 |
| Resistor, Stopper Type | | | |
| 10-R201 | ER362485 | Carbon RD1/4 330k(J) | 2 |
| 10-R202 | ER336442 | Carbon RD1/4 10k(J) | 2 |
| 10-R203 | ER212681 | Carbon RD1/4 330(J) | 2 |
| 10-R204 | ER362485 | Carbon RD1/4 330k(J) | 2 |
| 10-R205 | ER357570 | Carbon RD1/4 150k(J) | 2 |
| 10-R206 | ER212883 | Carbon RD1/4 4.7k(J) | 2 |
| 10-R207 | ER212477 | Carbon RD1/4 3.3k(J) | 2 |
| 10-R208, 9 | ER212264 | Carbon RD1/4 22k(J) | 4 |
| 10-R210 | ER211858 | Carbon RD1/4 12k(J) | 2 |
| 10-R211 | ER380711 | Carbon RD1/4 220k(J) | 2 |
| 10-R212 | ER212883 | Carbon RD1/4 4.7k(J) | 2 |
| 10-R213 | ER211858 | Carbon RD1/4 12k(J) | 2 |

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

FIG. 11 PHOTO OF
OSC. P.C. BOARD (LF-5210)

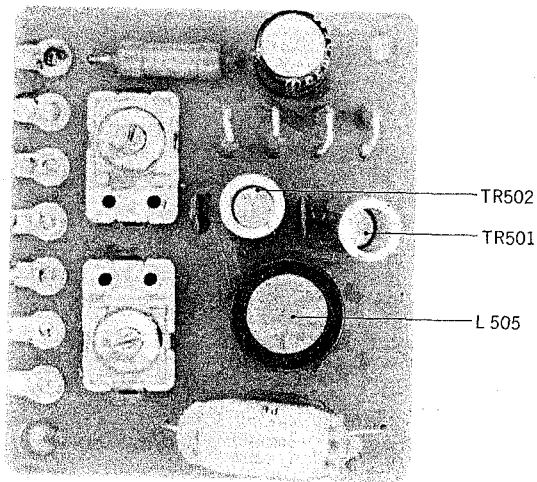
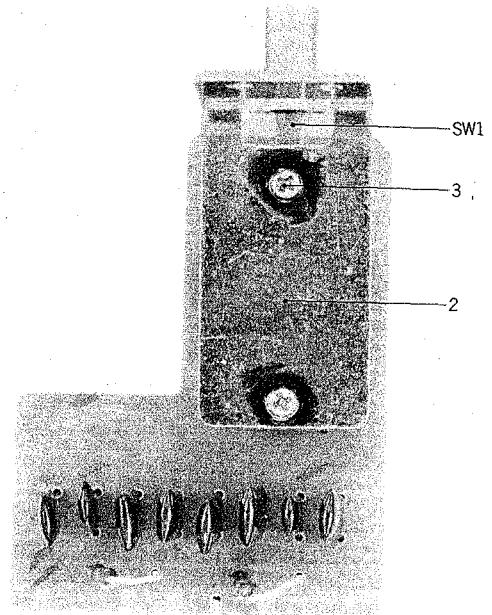


FIG. 12 PHOTO OF
SRT SWITCH P.C. BOARD (LF-5206)



OSC. P.C. BOARD (LF-5210) BLOCK

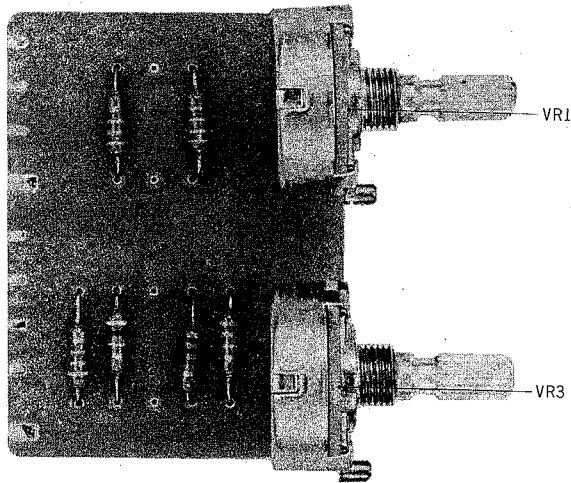
| Symbol No. | Parts No. | Description | Q'ty |
|---------------------------------|-----------|------------------------------------|------|
| 11-1x | BA475751 | OSC. P.C. Board Comp. (LF-5210) | 1 |
| 11-TR501, 2 | ET399824 | Transistor 2SC971(2)(red) | 2 |
| 11-L505 | EO383365 | OSC. Coil OT-204 | 1 |
| Capacitor, Vertical Type | | | |
| 11-C505, 6 | EC398878 | Trimmer C-1P-2 50...70PF | 2 |
| 11-C509 | EC383400 | Plastic Film 5600PF(J) 500WV | 1 |
| 11-C510 | EC220678 | Elect. 47 μ F 25WV | 1 |
| 11-C511, 2 | EC250841 | Mylar 0.01 μ F(J) 50WV | 2 |
| Resistor, Stopper Type | | | |
| 11-R501 | ER398856 | Metal Oxide Film 1W 100(K) | 1 |
| 11-R502 | ER212883 | Carbon RD1/4 4.7k(J) | 1 |
| 11-R503 | ER304402 | Carbon RD1/4 470(J) | 1 |
| 11-R504, 5 | ER315944 | Carbon RD1/4 3.3(J) | 2 |

SRT SWITCH P.C. BOARD (LF-5206) BLOCK

| Symbol No. | Parts No. | Description | Q'ty |
|---------------------------------|-----------|--|------|
| 12-1x | BA475661 | SRT Switch P.C. Board Comp. (LF-5206) | 1 |
| 12-SW1 | ES475288 | Push Switch UEG-42 | 1 |
| 12-2 | EZ475975 | SRT Switch Retaining Metal | 1 |
| 12-3 | ZW461935 | Screw, round head 2.6x4 | 2 |
| Capacitor, Vertical Type | | | |
| 12-C1 | EC250841 | Mylar 0.01 μ F(J) 50WV | 1 |
| 12-C2 | EC250975 | Mylar 0.015 μ F(J) 50WV | 1 |
| 12-C3 | EC368335 | Mylar 0.022 μ F(J) 50WV | 1 |
| 12-C4 | EC379157 | Mylar 0.033 μ F(J) 50WV | 1 |
| 12-C5 | EC250841 | Mylar 0.01 μ F(J) 50WV | 1 |
| 12-C6 | EC250975 | Mylar 0.015 μ F(J) 50WV | 1 |
| 12-C7 | EC368335 | Mylar 0.022 μ F(J) 50WV | 1 |
| 12-C8 | EC379157 | Mylar 0.033 μ F(J) 50WV | 1 |
| 12-R1, 2 | ER212681 | Carbon Resistor RD1/4 330(J) | 2 |

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

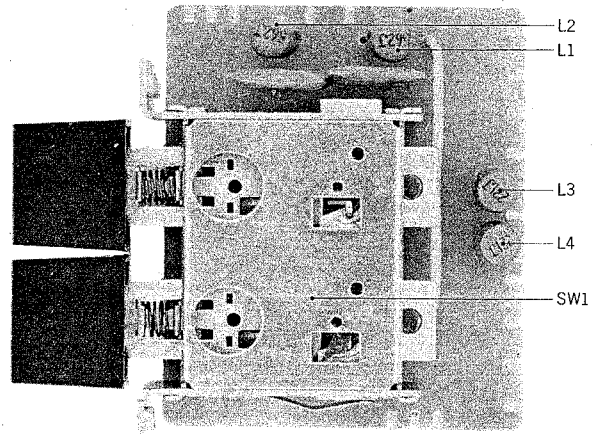
FIG. 13 PHOTO OF
VOLUME P.C. BOARD (LF-5225)



VOLUME P.C. BOARD (LF-5225) BLOCK

| Symbol No. | Parts No. | Description | Q'ty |
|------------------------|-----------|--------------------------------------|------|
| 13-1x | BA488542 | Volume P.C. Board Comp. (LF-5225) | 1 |
| 13-VR1, 3 | EV488520 | Volume V24R 10k A | 2 |
| Resistor, Stopper Type | | | |
| 13-R1 | ER346601 | Carbon RD1/4 47k(J) | 1 |
| 13-R2 | ER306360 | Carbon RD1/4 6.8k(J) | 1 |
| 13-R21, 22 | ER349907 | Carbon RD1/4 33k(J) | 2 |
| 13-R25, 26 | ER349907 | Carbon RD1/4 33k(J) | 2 |

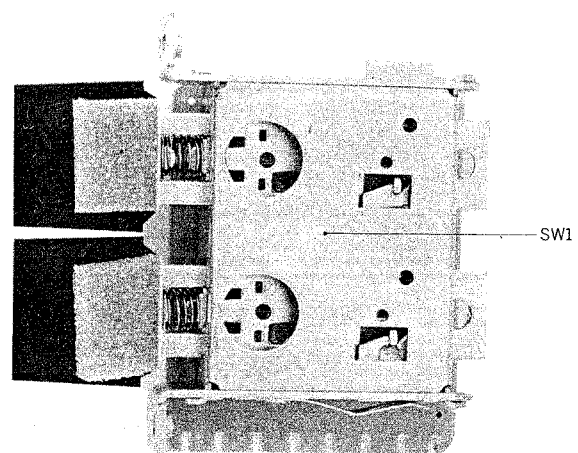
FIG. 14 PHOTO OF TRACK SELECTOR
P.C. BOARD (LF-5211)



TRACK SELECTOR
P.C. BOARD (LF-5211) BLOCK

| Symbol No. | Parts No. | Description | Q'ty |
|------------|-----------|--|------|
| 14-1x | BA475683 | Track Selector P.C. Board Comp. (LF-5211) | 1 |
| 14-SW1 | ES411805 | Push Switch UM21620C | 1 |
| 14-L1, 2 | EO321254 | Ferri Inductor FL7H 5.6MH(J) | 2 |
| 14-L3, 4 | EO346500 | Ferri Inductor FL7H 220μH(J) | 2 |
| 14-C1, 2 | EC417464 | VFM Capacitor 450PF(J) 50WV | 2 |

FIG. 15 PHOTO OF MONITOR SWITCH
P.C. BOARD (LF-5226)

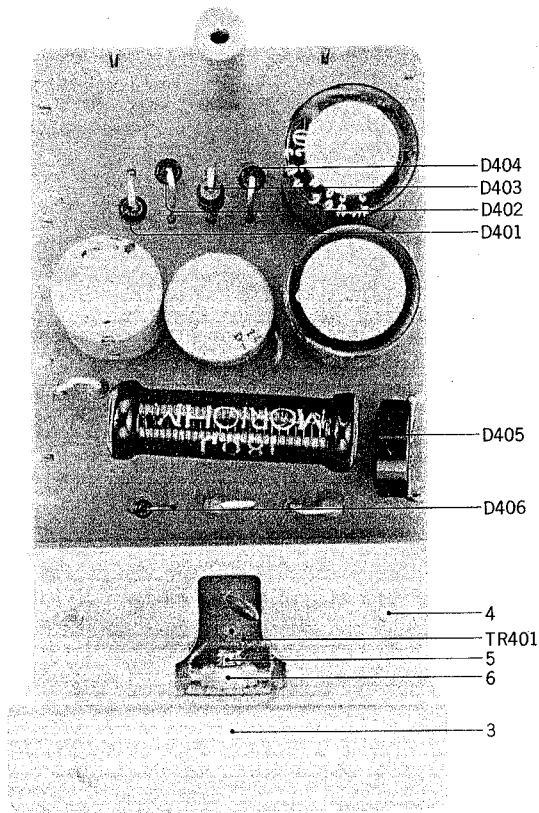


MONITOR SWITCH
P.C. BOARD (LF-5226) BLOCK

| Symbol No. | Parts No. | Description | Q'ty |
|------------|-----------|--|------|
| 15-1x | BA475672 | Monitor Switch P.C. Board Comp. (LF-5226) | 1 |
| 15-SW1 | ES245103 | Push Switch UM21220J | 1 |

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

FIG. 16 PHOTO OF POWER SUPPLY
P.C. BOARD (LF-5208)



**POWER SUPPLY P.C. BOARD
(LF-5208) BLOCK**

| Symbol No. | Parts No. | Description | Q'ty |
|--------------------------|-----------|--|------|
| 16-1x | BA475738 | Power Supply P.C. Board Comp. (LF-5208) | 1 |
| 16-2x | BA476065 | Power Supply P.C. Board Comp. (LF-5208) (Deck) | 1 |
| 16-3 | EZ475334 | Heat-sink Plate 1731 | 1 |
| 16-4 | ZW447840 | Tapping Screw #2 3x8(BR) | 2 |
| 16-TR401 | ET476886 | Transistor 2SC1098(L)(M) | 1 |
| 16-5 | ZW413741 | Screw, binding head 3x8 | 1 |
| 16-6 | ZW273756 | M3 Nut | 1 |
| 16-D401, 2 | ED375592 | Silicon Diode VO6B | 2 |
| 16-D403, 4 | ED375592 | Silicon Diode VO6B | 2 |
| 16-D405 | ED329130 | Silicon Diode 10DC-1 (black) | 1 |
| 16-D406 | ED315415 | Zener Diode RD-24A (MN) | 1 |
| 16-7x | EZ411524 | P.C. Board Prop | 1 |
| 16-8x | ZW413223 | Screw, binding head 3x5, w/washer | 1 |
| Capacitor, Vertical Type | | | |
| 16-C401, 2 | EC337533 | Elect. 220 μ F 50WV | 2 |
| 16-C403, 4 | EC313121 | Elect. 220 μ F 25WV | 2 |
| 16-C405 | EC250604 | Mylar 0.001 μ F(K) 50WV | 1 |
| Resistor, Stopper Type | | | |
| 16-R401 | ER211667 | Carbon RD1/4 100(J) | 1 |
| 16-R402 | ER413717 | Wire-wound 3WL 18(J) (L type) | 1 |
| 16-R403 | ER212883 | Carbon RD1/4 4.7k(J) | 1 |
| 16-R404 | ER361642 | Carbon RD1/4 47(J) | 1 |

AMP. ASSEMBLY BLOCK

| Ref. No. | Parts No. | Description | Schematic No. | Q'ty |
|----------------------------|-----------|---|---------------|------|
| CONTROL PANEL BLOCK | | | | |
| 17-1x | BZ475648 | Control Panel Block Comp. | LF | 1 |
| 17-2x | BZ475640 | Control Panel Block Comp. (Deck) | LF | 1 |
| 17-3 | SP411401 | Control Panel | LF-5005 | 1 |
| 17-4 | EJ433844 | Mic. Jack 2PMJ4 | 31-2-35 | 2 |
| 17-5x | ER364948 | Carbon/R. RD1/4 3.3k(J) (Insu. type) | 35-9-5 | 2 |
| 17-6 | EJ442078 | Mic. Jack 3PMJ4 | 31-2-36 | 1 |
| 17-7x | ZW272722 | M9 Toothed Lock Washer D9.3x13x0.5t | | 1 |

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

| Ref. No. | Parts No. | Description | Schematic No. | Q'ty | Ref. No. | Parts No. | Description | Schematic No. | Q'ty |
|---------------------------------|-----------|---|---------------|------|----------------------------|-----------|---|---------------|------|
| 17-8x | EZ225180 | Nylon Collar, Jack | LD-520 | 3 | 17-62x | MZ396393 | Lock Wire Tie 11M/M (D) | | 1 |
| 17-9x | ZW465592 | Fiber Washer, Jack D9.1x18x1t | | 2 | 17-63x | EZ486606 | Trans. Reinforcement Plate A (D) | LF-5221 | 1 |
| 17-10x | ZW376481 | Jack Thin Washer D9.1x11.7x0.25t | DX-509 | 2 | 17-64x | EZ486617 | Trans. Reinforcement Plate B (D) | LF-5222 | 2 |
| 17-11 | ZW391680 | E Jack Nut | 7-1-20 | 3 | 17-65x | ZW435273 | Screw, binding head 4x10 (D) | | 2 |
| 17-12 | EV411783 | Volume V24N 10k A(VJ10A) | 36-2-22 | 2 | 17-66x | SM511402 | Power Supply Name Plate (CSA, CEE) | LF-5040 | 1 |
| 17-13 | EV411772 | 2-throw Dual-axial Volume (W/F) D24F 10k Ax2 | 36-3-28 | 1 | JACK PLATE BLOCK | | | | |
| 17-14 | BA475672 | Monitor Switch P.C. Board (LF-5226) | | 1 | 17-67x | BZ475784 | Jack Plate Block Comp. | LF-2 | 1 |
| 17-15 | SK210521 | Push Button Switch Knob | RD-506 | 4 | 17-68x | BZ475795 | Jack Plate Block Comp. (Deck) | LF-2 | 1 |
| 17-16 | ZW321298 | Iso Screw, binding head 3x8 | | 2 | 17-69 | EJ476291 | Jack Plate A | LF-5201 | 1 |
| 17-17 | BA488542 | Volume P.C. Board Comp. (LF-5225) | | 1 | 17-70x | EJ476302 | Jack Plate B (D) | LF-5202 | 1 |
| 17-18 | BA475683 | Track Selector P.C. Board Comp. (LF-5211) | | 1 | 17-71 | ES227878 | Slide Switch ESS-22A-NB | 25-3-4 | 1 |
| 17-19 | EZ492017 | Cushion Plate | LF-5224 | 2 | 17-72x | ED219464 | Germanium Diode 1N34A | 45-3-1 | 2 |
| 17-20x | EZ492028 | Cushion | LF-5223 | 4 | 17-73x | EC220590 | Elect/C. 33μF 10WV | 24-12-9 | 2 |
| 17-21 | BA475661 | SRT Switch P.C. Board Comp. (LF-5206) | | 1 | 17-74x | ER213715 | Carbon/R. RD1/4 100k(J) (Insu. type) | 35-9-5 | 2 |
| 17-22 | SK475290 | SRT Knob | LF-5204 | 1 | 17-75x | ER440921 | Carbon/R. RD1/4 27k(J) (Insu. type) | 35-9-5 | 2 |
| POWER SUPPLY FRAME BLOCK | | | | | 17-76x | ER213647 | Carbon/R. RD1/4 10k(J) (Insu. type) | 35-9-5 | 2 |
| 17-23x | BZ475716 | Power Supply Frame Block Comp. | | 1 | 17-77x | ER345712 | Carbon/R. RD1/4 22k(J) (Insu. type) | 35-9-5 | 2 |
| 17-24x | BZ475727 | Power Supply Frame Block Comp. (Deck) | | 1 | 17-78x | ER364961 | Carbon/R. RD1/4 1.2k(J) (Insu. type) | 35-9-5 | 2 |
| 17-25x | BZ478901 | Power Supply Frame Block Comp. (CSA) | | 1 | 17-79x | ER329308 | Carbon/R. RD1/4 47k(J) (Insu. type) | 35-9-5 | 2 |
| 17-26x | BZ478912 | Power Supply Frame Block Comp. (CEE) | | 1 | 17-80x | ER476313 | Carbon/R. RD1/2 220(J) (Insu. type) | 35-9-9 | 2 |
| 17-27 | EZ411445 | Power Supply Frame | LF-5012 | 1 | AMP. ASSEMBLY BLOCK | | | | |
| 17-28 | BT475345 | Power Trans. LFT-5 | 38-4-168 | 1 | 17-81 | EZ411322 | Amp. Chassis, w/side | LF-5001 | 1 |
| 17-29x | BT475356 | Power Trans. LFT-6 (D) | 38-4-169 | 1 | 17-82x | MZ273295 | M-9 Mech. Panel Prop | M9-302 | 4 |
| 17-30x | BT479316 | Power Trans. LFT-3 (CSA) | 38-4-156 | 1 | 17-83x | ZW413741 | Screw, binding head 3x8 | | 8 |
| 17-31x | BT479327 | Power Trans. LFT-4 (CEE) | 38-4-157 | 1 | 17-84 | EZ475244 | Pre-amp. Harness LF-2 | 26-6-102 | 1 |
| 17-32x | ZW273914 | M4 Spring Washer | | 4 | 17-85 | ES475255 | Rotary Switch Y-142 | 25-7-28 | 1 |
| 17-33x | ZW413188 | M4 Nut | | 4 | 17-86x | EJ310871 | 18P Multi-Jack J-2 3250-018-001 | 31-4-11 | 2 |
| 17-34 | EC411862 | Elect./C. 200μF 35WV (Lug type) | 24-10-64 | 1 | 17-87x | EJ364915 | 10P Multi-Jack PBO1-10S-24E2G | 31-4-15 | 1 |
| 17-35x | ZW447772 | Tapping Screw 3x6(BR) | | 2 | 17-88x | EZ397866 | Multi Jack Mt. Angle | KD-5021 | 2 |
| 17-36 | EJ233370 | Power Plug Socket S-18010 | 40-2-3 | 1 | 17-89x | ZW202230 | Screw, round head 2.3x10 | | 2 |
| 17-37 | ZW379405 | Iso Screw, binding head 3x6 | | 4 | 17-90 | EZ411377 | Speed Change Arm | LF-5008 | 1 |
| 17-38 | EZ223817 | Frequency Change Name Plate | 3A-741 | 1 | 17-91x | EZ411388 | Speed Change Arm Adjuster | LF-5009 | 1 |
| 17-39x | EJ479338 | Fuse Holder (CEE) | 101060 | 1 | 17-92x | MS411355 | Speed Change Arm Shaft | LF-5006 | 1 |
| 17-40x | EA479340 | Fuse Terminal Plate (CSA) | 33-2-11 | 1 | 17-93x | EZ411366 | Speed Change Shaft Collar | LF-5007 | 1 |
| 17-41 | EZ382263 | Strain Relief SR-4K-4 | 2-7-12 | 1 | 17-94 | EZ294434 | 1720 Shaft Holder | LCS-6 | 1 |
| 17-42 | EZ374894 | U/L AC Cord 3M | 26-3-19 | 1 | 17-95 | ML334124 | SOS Arm, w/spring | M9-517 | 1 |
| 17-43x | EZ479351 | Cord AXJO-ER-0150 (CEE) | | 1 | 17-96x | ZW314717 | MR Graduated Screw | MR-254 | 1 |
| 17-44x | EZ246936 | Strain Relief SR-6W-1 (3 core) | 2-7-8 | 1 | 17-97x | ZW803193 | Insulator Washer (Nylon) | RD-305 | 1 |
| 17-45x | EZ315448 | Australia Cord | 26-3-11 | 1 | 17-98 | EZ205536 | Arm Holder | XR-515 | 1 |
| 17-46x | ZW273778 | M3 Earth Lug | | 1 | 17-99x | ZW413818 | Screw, round head 3x8 | | 1 |
| 17-47x | ZW447772 | Tapping Screw 3x6(BR) | | 7 | 17-100 | BZ475740 | OSC. Frame Block Comp. | LF-2 | 1 |
| 17-48x | EF338387 | Fuse ST-2 1.5A | 39-1-26 | 1 | 17-101 | EZ411300 | Amp. Supporting Plate | LF-5020 | 1 |
| 17-49x | EF277402 | Fuse ST-2 1A (D) | 39-1-26 | 1 | 17-102 | MZ411311 | Counter Mt. Plate | LF-5019 | 1 |
| 17-50 | EJ476638 | 9P Mate-N-Lock Comp. | LF-5218 | 1 | 17-103 | EZ411298 | Sash Retaining Plate (left) | LF-5021 | 1 |
| 17-51x | EJ479362 | 9P Mate-N-Lock Comp. (CSA, CEE) | LF-5218 | 1 | 17-104 | EZ413864 | Sash Retaining Plate (right) | LF-5021 | 1 |
| 17-52 | ES375478 | Slide Switch ESD-279DU | 25-3-23 | 1 | 17-105x | ZW413155 | Screw, binding head 3x6 | | 4 |
| 17-53 | BA475738 | Power Supply P.C. Board Comp. (LF-5208) | | 1 | 17-106 | BA475762 | Main Amp. Block Comp. | | 1 |
| 17-54x | BA476065 | Power Supply P.C. Board Comp. (LF-5208) (Deck) | | 1 | 17-107 | BA475694 | Rec. Amp. P.C. Board Comp. (LF-5213) | | 1 |
| 17-55 | ES468426 | Push Switch UEH-12BFN | 25-5-58 | 1 | 17-108 | BA475705 | P.B. Amp. P.C. Board Comp. (LF-5022) | | 1 |
| 17-56x | ES479395 | Push Switch TV-3 JH5 (CEE) | 25-5-62 | 1 | 17-109 | EZ475266 | P.C. Board Retainer | LF-5203 | 2 |
| 17-57x | ER376413 | Spark Quencher U/L 0.033μ+120 500WV | 41-1-37 | 1 | 17-110 | EM411737 | VU Meter VS-6E | 46-1-35 | 1 |
| 17-58 | SK371621 | PTA Knob (black) | ED-615 | 1 | 17-111x | EZ411750 | Meter Cushion 20x30x5t | LF-5034 | 2 |
| 17-59 | EZ411467 | Switch Retaining Part | LF-5013 | 1 | 17-112 | SP475187 | Back Panel C | LF-6204 | 1 |
| 17-60x | ZW349288 | Iso Screw, binding head 3x5, w/washer | | 2 | 17-113x | SP475198 | Back Panel D (D) | LF-6204 | 1 |
| 17-61 | EZ411491 | Sash Reinforcement Part | LF-5018 | 1 | 17-114 | ZW201150 | Screw, truss head 3x6 | | 3 |

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

FIG. 17 PHOTO OF AMP. ASSEMBLY BLOCK

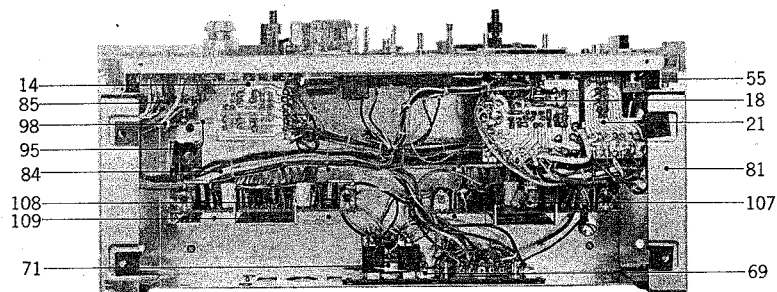
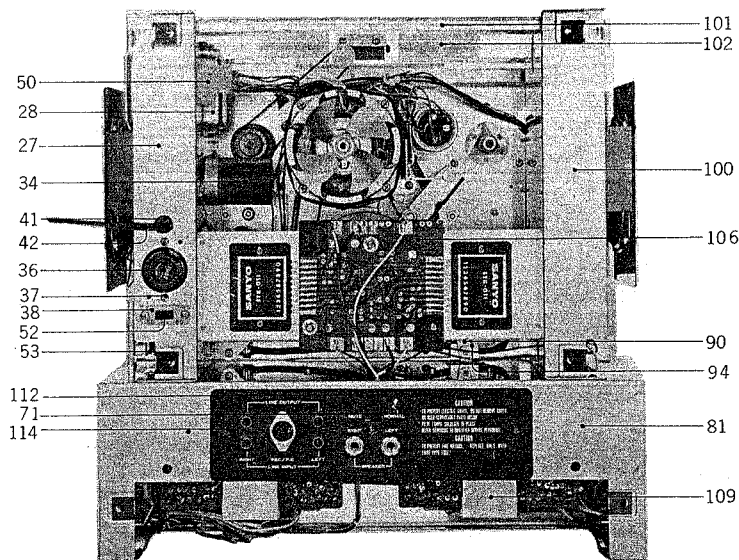
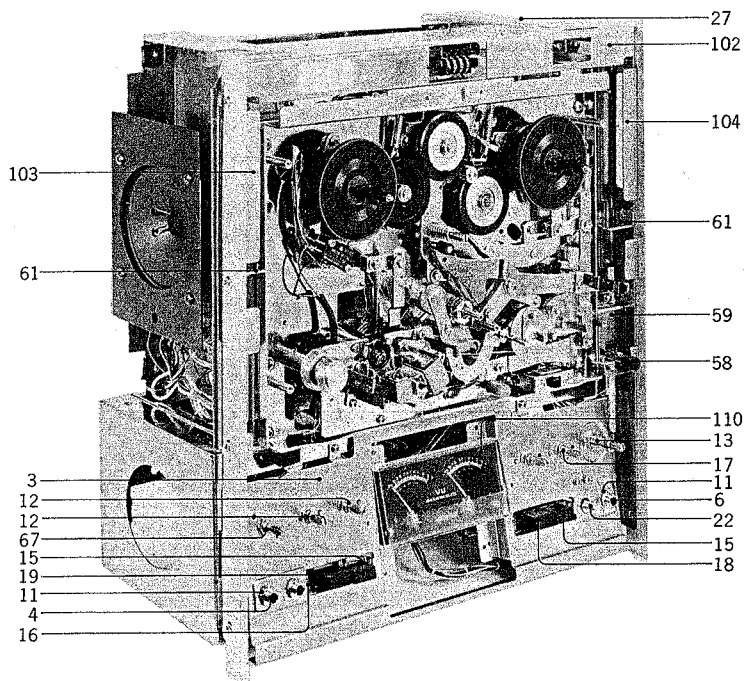
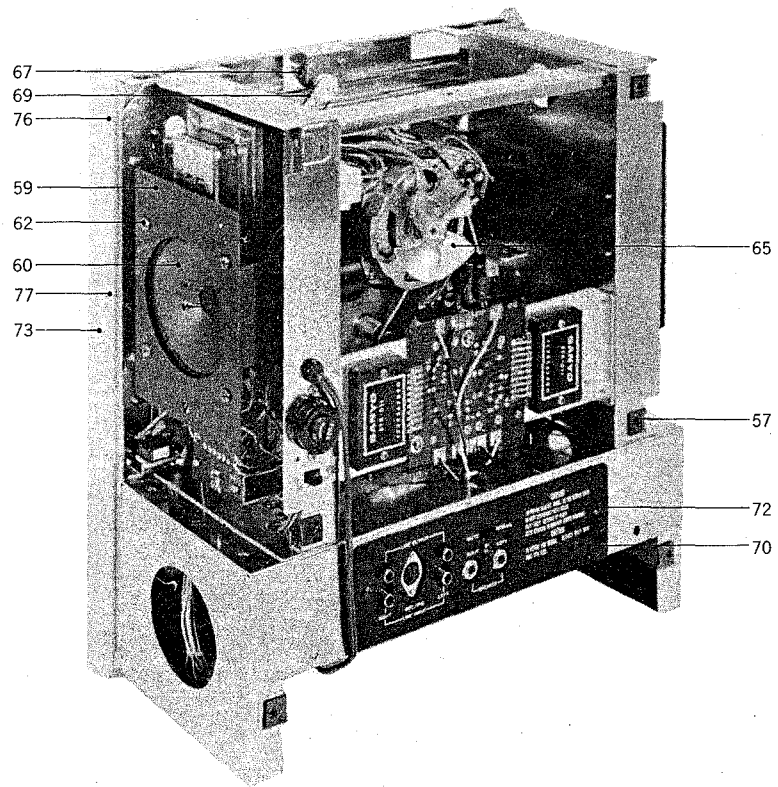
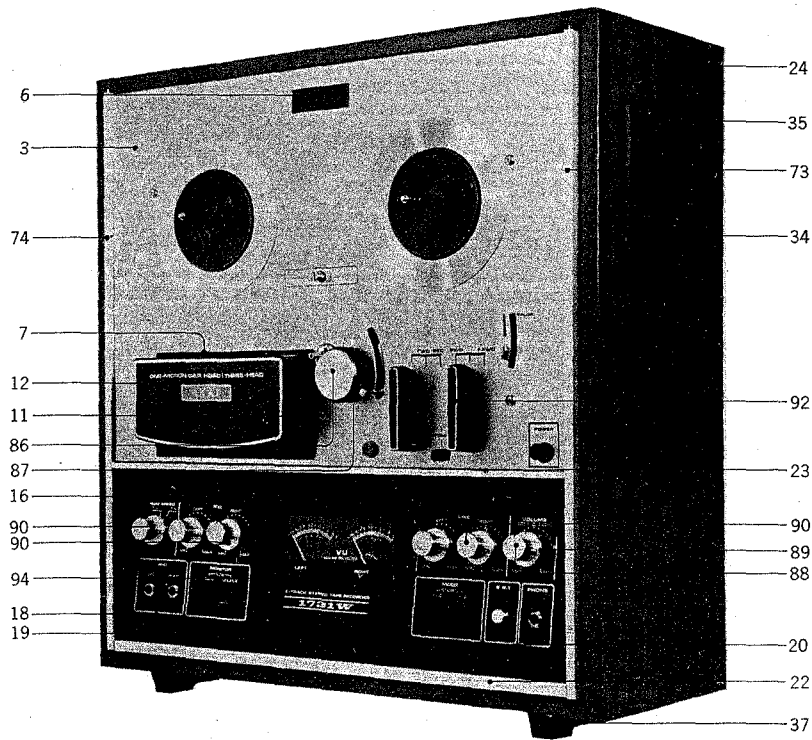


FIG. 18 PHOTO OF FINAL ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK

| Ref. No. | Parts No. | Description | Schematic No. | Q'ty | Ref. No. | Parts No. | Description | Schematic No. | Q'ty |
|--------------------------|-----------|---|---------------|------|-----------------------------|-----------|--|---------------|------|
| MECH. PANEL BLOCK | | | | | FINAL ASSEMBLY BLOCK | | | | |
| 18-1x | BZ475380 | Mech. Panel Block Comp. | LF-2 | 1 | 18-54x | VM293883 | Hinge #1700 (L) | AT-38 | 2 |
| 18-2x | BZ478923 | Mech. Panel Block Comp. (CEE, CSA) | LF-2 | 1 | 18-55x | ZW476741 | M3 Iso Flange Nut (L) | | 2 |
| 18-3 | SP474985 | Mech. Panel A, w/spin plate | LF-6209 | 1 | 18-56x | BC867161 | Leather Case Front Cover (LF-2) | | 1 |
| 18-4x | SP479283 | Mech. Panel B, w/spin plate (CEE, CSA) | LF-6209 | 1 | FINAL ASSEMBLY BLOCK | | | | |
| 18-5x | SZ410703 | Collar, Jack | LF-6041 | 2 | 18-57 | ZW290250 | U type Speed Nut M4 #1 (large) 6-3-2 | | 10 |
| 18-6 | SZ330895 | MR Counter Escutcheon | MR-646 | 1 | 18-58x | ZW290248 | U type Speed Nut M4 #1 (small) 6-3-1 | | 4 |
| 18-7 | SC410624 | Head Cover Base | LF-6018 | 1 | 18-59 | SZ410308 | Speaker Mt. Plate | LF-6002 | 2 |
| 18-8x | ZW411671 | Screw, oval countersunk head 2.3x8 | | 4 | 18-60 | SS391342 | Speaker SK-2187E | 29-5-9 | 2 |
| 18-9x | ZW273666 | M2.3 Spring Washer | | 4 | 18-61x | ER374793 | Wire-wound/R. 3WL 22(K) (L type) 35-4-7 | | 2 |
| 18-10x | ZW273688 | M2.3 Nut | | 4 | 18-62 | ZW411232 | Screw, binding head 4x10 | | 8 |
| 18-11 | SC410646 | Head Cover | LF-6019 | 1 | 18-63x | ZW413188 | M4 Nut | | 8 |
| 18-12 | SM474996 | Head Cover Panel 1731 | LF-6201 | 1 | 18-64x | ZW447772 | Tapping Screw 3x6(BR) | | 10 |
| 18-13x | ZW201150 | Screw, truss head 3x6 | | 2 | 18-65 | MZ256882 | Motor Fan D | MH-636 | 1 |
| AMP. PANEL BLOCK | | | | | 18-66x | ZW476987 | Set Screw, hexagon socket 5x4 | | 1 |
| 18-14x | BZ475391 | Amp. Panel Block Comp. | LF | 1 | 18-67 | MC456006 | Counter MP-491-23 | 9-1-13 | 1 |
| 18-15x | BZ475413 | Amp. Panel Block Comp. (Deck) | LF | 1 | 18-68x | ZW379405 | Iso Screw, binding head 3x6 | | 2 |
| 18-16 | SP475007 | Amp. Panel | LF-6006 | 1 | 18-69 | MB410310 | Counter Belt | LF-6037 | 1 |
| 18-17x | SP476897 | Amp. Panel (D) | LF-6006 | 1 | 18-70 | SP475187 | Back Panel C | LF-6204 | 1 |
| 18-18 | SM475018 | Panel Mask (large) | LF-6211 | 1 | 18-71x | SP475198 | Back Panel D (Deck) | LF-6204 | 1 |
| 18-19 | SM475020 | Panel Mask (small) | LF-6202 | 1 | 18-72 | ZW201150 | Screw, truss head 3x6 | | 3 |
| 18-20 | SM475042 | Panel Mask A (right) | LF-6212 | 1 | 18-73 | SP406067 | KD Sash (right) | KD-6005 | 1 |
| 18-21x | SM475031 | Panel Mask B (right) (D) | LF-6212 | 1 | 18-74 | SZ435014 | Sash (left) | KD-6005 | 1 |
| 18-22 | SZ410580 | Amp. Panel Sash A | LF-6013 | 1 | 18-75x | SP436083 | Sash (L) | LF-6005 | 2 |
| 18-23 | SZ410591 | Amp. Panel Sash B | LF-6014 | 1 | 18-76 | ZW413155 | Screw, binding head 3x6 | | 6 |
| CASE BLOCK | | | | | 18-77 | ZW413741 | Screw, binding head 3x8 | | 2 |
| 18-24 | BC475457 | Wood Case Block Comp. | LF-2W | 1 | 18-78x | SZ413987 | Mech. Frame Retaining Metal | LF-6055 | 1 |
| 18-25x | BC475593 | Leather Case Block Comp. | LF-2L | 1 | 18-79x | SZ410321 | Amp. Panel Retaining Metal | LF-6001 | 2 |
| 18-26x | BC492388 | Wood Case Block Comp. (Deck) | LF-2D | 1 | 18-80x | ZW447805 | Tapping Screw #2 3x12(BR) | | 2 |
| 18-27x | SE447873 | Upper Anti-warping Part | LF-4005 | 1 | 18-81x | SZ377190 | LM Rubber Foot | LM-404 | 4 |
| 18-28x | ZW201183 | Screw, truss head 3x8 | | 14 | 18-82x | SZ476875 | Cord Angle B Comp. (L) | LF-6214 | 2 |
| 18-29x | WM441505 | Anti Warping Angle | KF-4002 | 2 | 18-83x | SZ327442 | Cord Angle B (L) | SX-405 | 2 |
| 18-30x | ES325956 | RD Corner Reinforcement Angle | RD-417 | 2 | 18-84x | SZ476728 | M9 Cord Cover (L) | M9-435 | 2 |
| 18-31x | ZW448187 | Wood Screw, countersunk head 3x8 | | 4 | 18-85x | ZW476730 | Screw, truss head 3x12 (L) | | 2 |
| 18-32x | SZ382217 | Fan Grill | RD-A402 | 1 | 18-86 | SK463105 | Pinch Roller Cap, w/screw | LF-6036 | 1 |
| 18-33x | ZW324448 | Tapping Screw #1 3x10(truss) | | 3 | 18-87 | MR411647 | Pinch Roller (LF) | LF-1003 | 1 |
| 18-34 | SZ382228 | Speaker Grill | RD-A403 | 2 | 18-88 | SK475097 | Knob A Comp. | LE-6012 | 1 |
| 18-35 | ZW383872 | Screw, truss head 3x13, without groove | | 8 | 18-89 | SK488755 | Amp. Knob B Comp. | LF-6215 | 1 |
| 18-36x | ZW273756 | M3 Nut | | 8 | 18-90 | SK475154 | Amp. Knob Comp. | LF-6206 | 5 |
| 18-37 | SZ316620 | MR Square Foot | MR-402 | 2 | 18-91x | ZW260166 | Washer (Nylon) D6.2x13x0.125t | | 2 |
| 18-38x | ZW413886 | Screw, countersunk head 4x15 | | 4 | 18-92 | SK476684 | Mech. Knob | LE-6018 | 2 |
| 18-39x | ZW479294 | Washer (SPC)D4.2x10x0.8t | | 4 | 18-93x | EF304626 | Fuse ST-4 1A | 39-1-28 | 1 |
| 18-40x | SZ218856 | Case Shield | RD-410 | 1 | 18-94 | SM475053 | Name Plate 1731W | LF-6203 | 1 |
| 18-41x | VM413144 | Handle Reinforcement Metal (L) | LF-4004 | 1 | 18-95x | SM475064 | Name Plate (L) | LF-6203 | 1 |
| 18-42x | SZ293477 | Vinyl Handle #1630 (L) | | 1 | 18-96x | SM475075 | Name Plate (D) | LF-6203 | 1 |
| 18-43x | SZ324303 | Handle Metal Fitting #1630 (L) | | 2 | 18-97x | EF304626 | Fuse ST-4 1A | 39-1-28 | 1 |
| 18-44x | SZ293455 | Handle Metal Fitting Cover #1630 (L) | | 2 | 18-98x | EF338387 | Fuse ST-2 1.5A | 39-1-26 | 1 |
| 18-45x | ZW479305 | Screw, countersunk head 4x20 (L) | | 2 | 18-99x | EF277402 | Fuse ST-2 1A (D) | 39-1-26 | 1 |
| 18-46x | SZ237993 | Hooking Holder B (L) | 100737 | 2 | | | | | |
| 18-47x | SZ208271 | Holder Metal Supporting Plate (L) | CD-64 | 2 | | | | | |
| 18-48x | ZW203027 | Screw, oval countersunk head 3x16 (L) | | 2 | | | | | |
| 18-49x | ZW231715 | Claw Frame Fixing Nut (L) | 7-1-7 | 6 | | | | | |
| 18-50x | ZW203218 | Wood Screw, round head 2.7x10 (L) | | 6 | | | | | |
| 18-51x | SZ304964 | Hooking #1700 (L) | AT-37 | 2 | | | | | |
| 18-52x | ZW202375 | Screw, round head 3x10 (L) | | 7 | | | | | |
| 18-53x | ZW231704 | Claw Hinge Nut (L) | 7-1-8 | 4 | | | | | |

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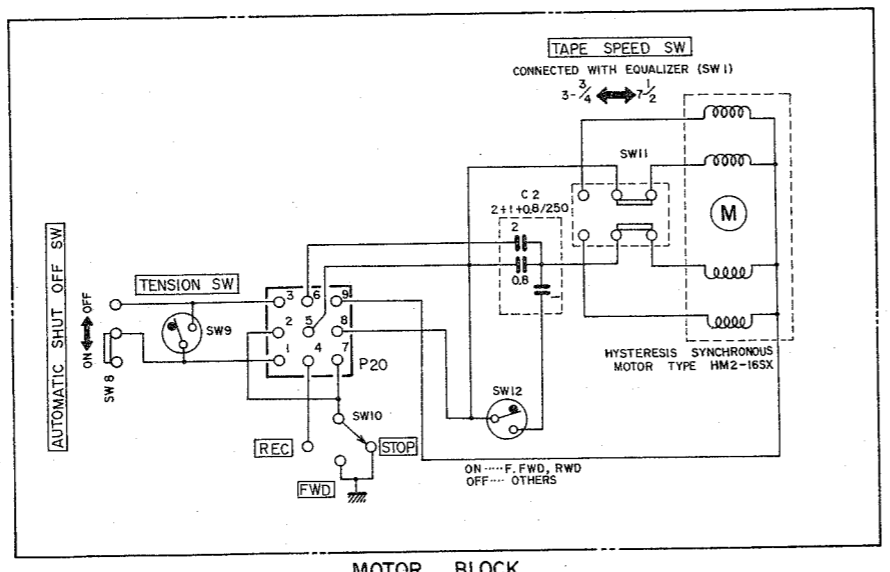
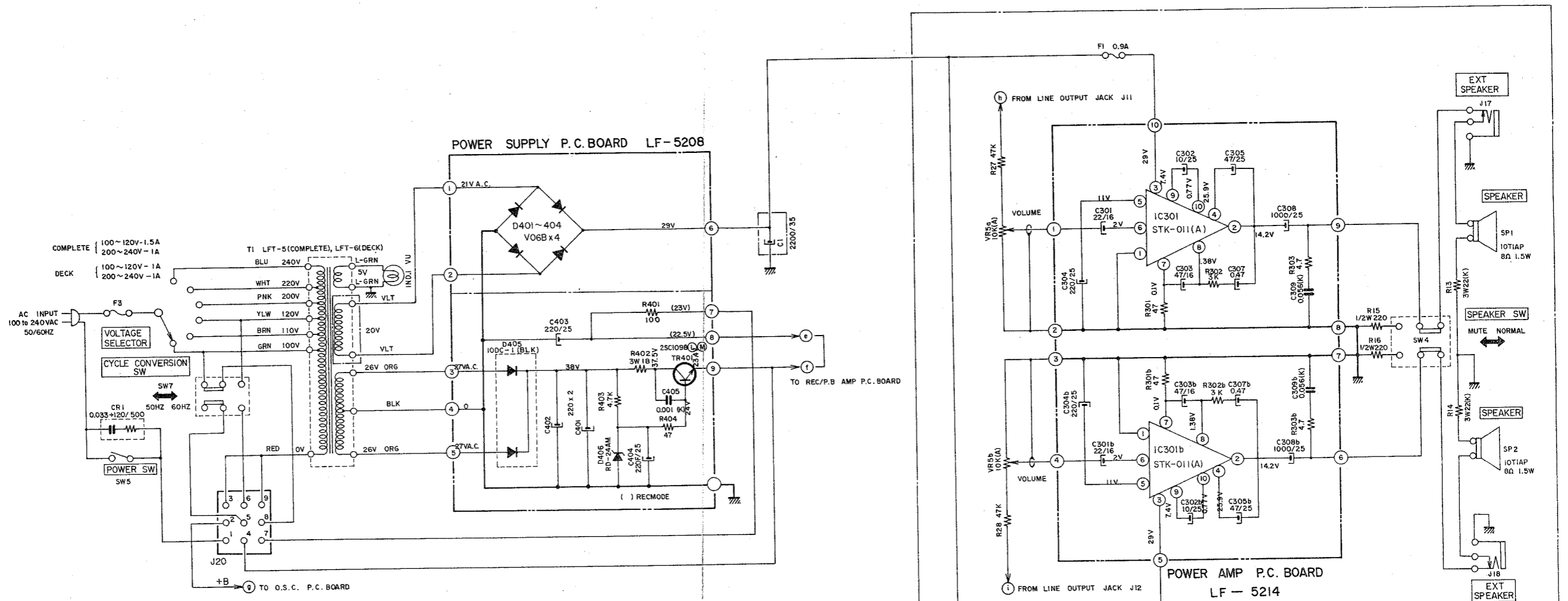
| Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. |
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SECTION 3
SCHEMATIC DIAGRAM

1731 W/L/D SCHEMATIC DIAGRAM



NOTE

UNLESS OTHERWISE SPECIFIED

ALL RESISTORS IN OHMS 1/4W.J

ALL CAPACITORS IN MFD 50W.V

— MARK INDICATES COMPLETE ONLY

⊗ MARK INDICATES LOW LEAKAGE CAPACITOR

POWER TRANSFORMER AND MOTOR BLOCK

THIS IS DIFFERENT ACCORDING TO AREA