

TC-353D

USA Model



Set using ISO screws

SPECIFICATIONS

| | | | |
|----------------------------------|---|------------------------|--|
| Power Requirements: | AC 120 V, 60 Hz, 35 W | Inputs: | MIC jack x 2 Impedance: low impedance Maximum sensitivity: 0.2 mV (-72 dB) |
| Track System: | 4 track, 2 channel stereo | | AUX IN jack x 2 Impedance: 560 k Ω Maximum sensitivity: 0.06 V (-22 dB) |
| Reel Size: | 7" (17.8 cm) maximum | Outputs: | LINE OUT jack x 2 Load impedance: 10 k Ω or more Output level: 0.775 V (0 dB) with 100 k Ω load |
| Tape Speed: | 7 1/2 ips (19 cm/s) 3 3/4 ips (9.5 cm/s) 1 7/8 ips (4.8 cm/s) | | HEADPHONE jack x 1 Load impedance: 8 Ω Output level: 30.8 mV (-28 dB) |
| Frequency Response: | <u>With SONY SLH tape</u> 25 ~ 28,000 Hz at 7 1/2 ips (19 cm/s) 30 ~ 20,000 Hz at 3 3/4 ips (9.5 cm/s) <u>With standard tape</u> 25 ~ 25,000 Hz at 7 1/2 ips (19 cm/s) 30 ~ 17,000 Hz at 3 3/4 ips (9.5 cm/s) 30 ~ 9,000 Hz at 1 7/8 ips (4.8 cm/s) | Semiconductors: | 18 transistors and 4 diodes |
| Signal-to-Noise Ratio: | 55 dB or better (with SONY SLH tape) 52 dB or better (with standard tape) | Dimensions: | 15 3/8 (W) x 7 7/8 (H) x 13 3/8" (D) (390 x 199 x 340 mm) |
| Flutter and Wow: | 0.12 % WRMS at 7 1/2 ips (19 cm/s) | Weight: | 16 lb 9 oz (7.5 kg) |
| Recording Bias Frequency: | Approx. 160 kHz | | |

SONY[®]
SERVICE MANUAL

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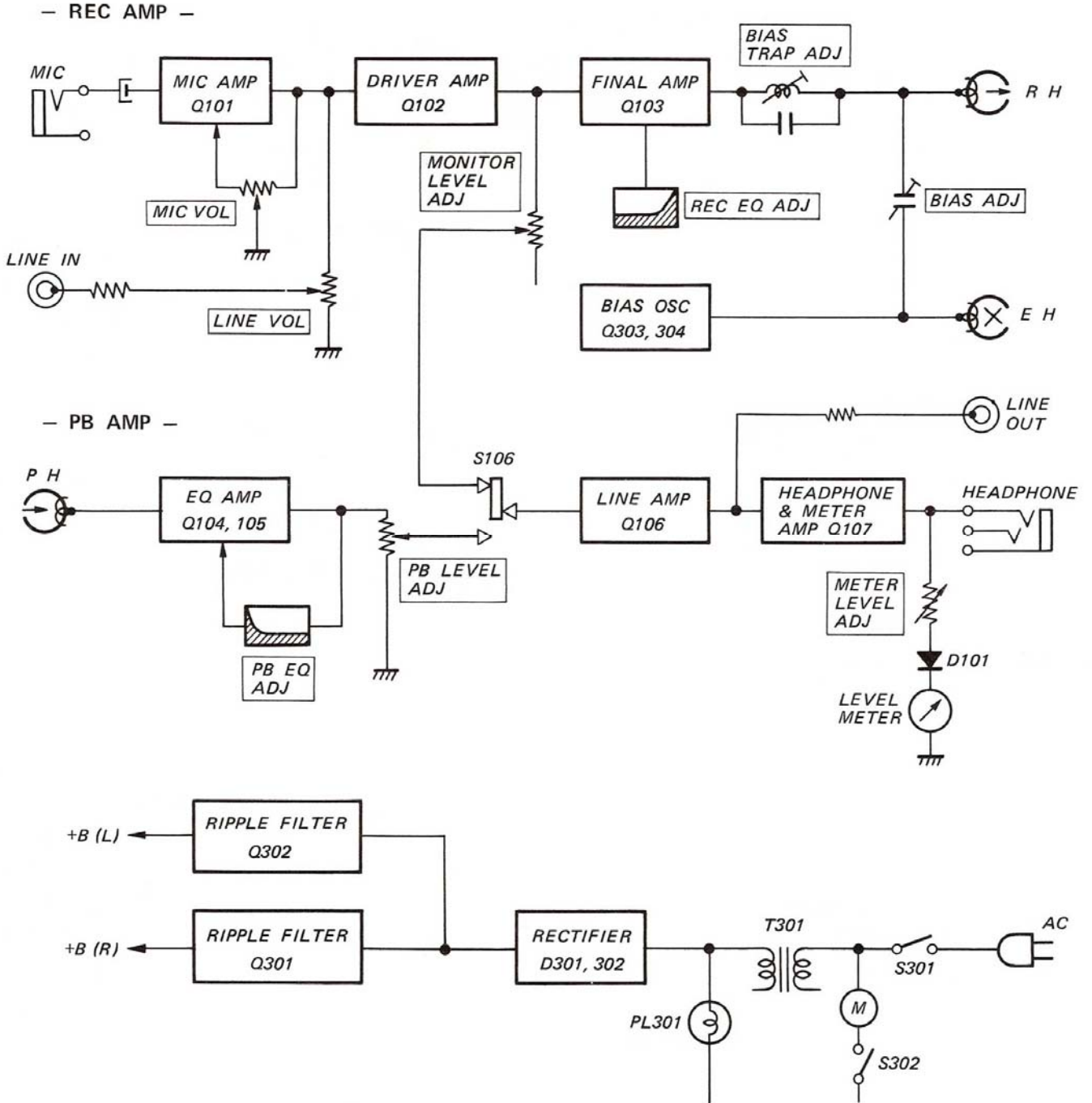
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When ordering replacement parts, you should use PART NUMBER listed on the Parts Lists or shown in the EXPLODED VIEW. The reference number should not be used for ordering purposes.

SECTION 1

OUTLINE

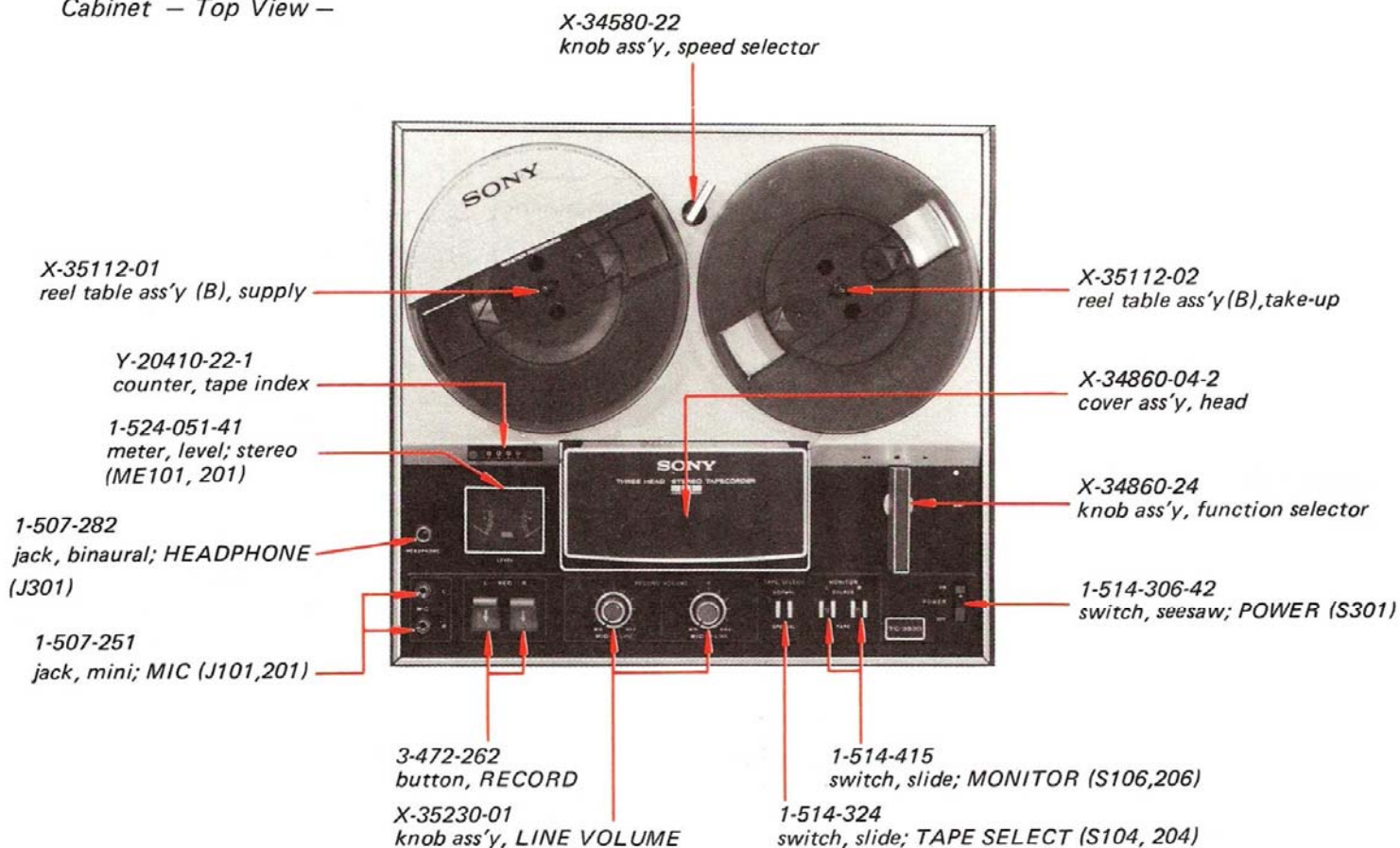
1-1. BLOCK DIAGRAM



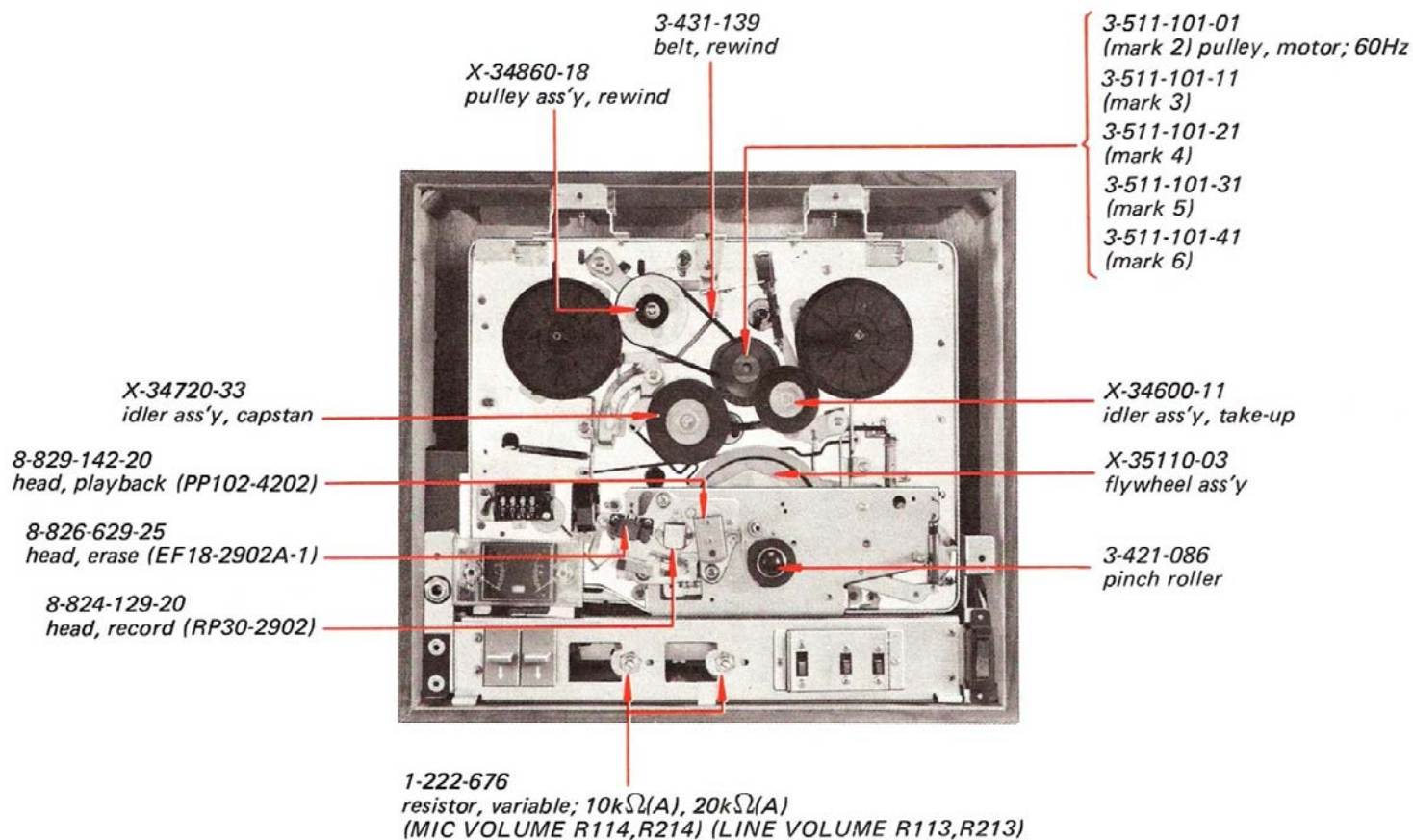
S106.....SOURCE POSITION

1-2. MAJOR PARTS LOCATION

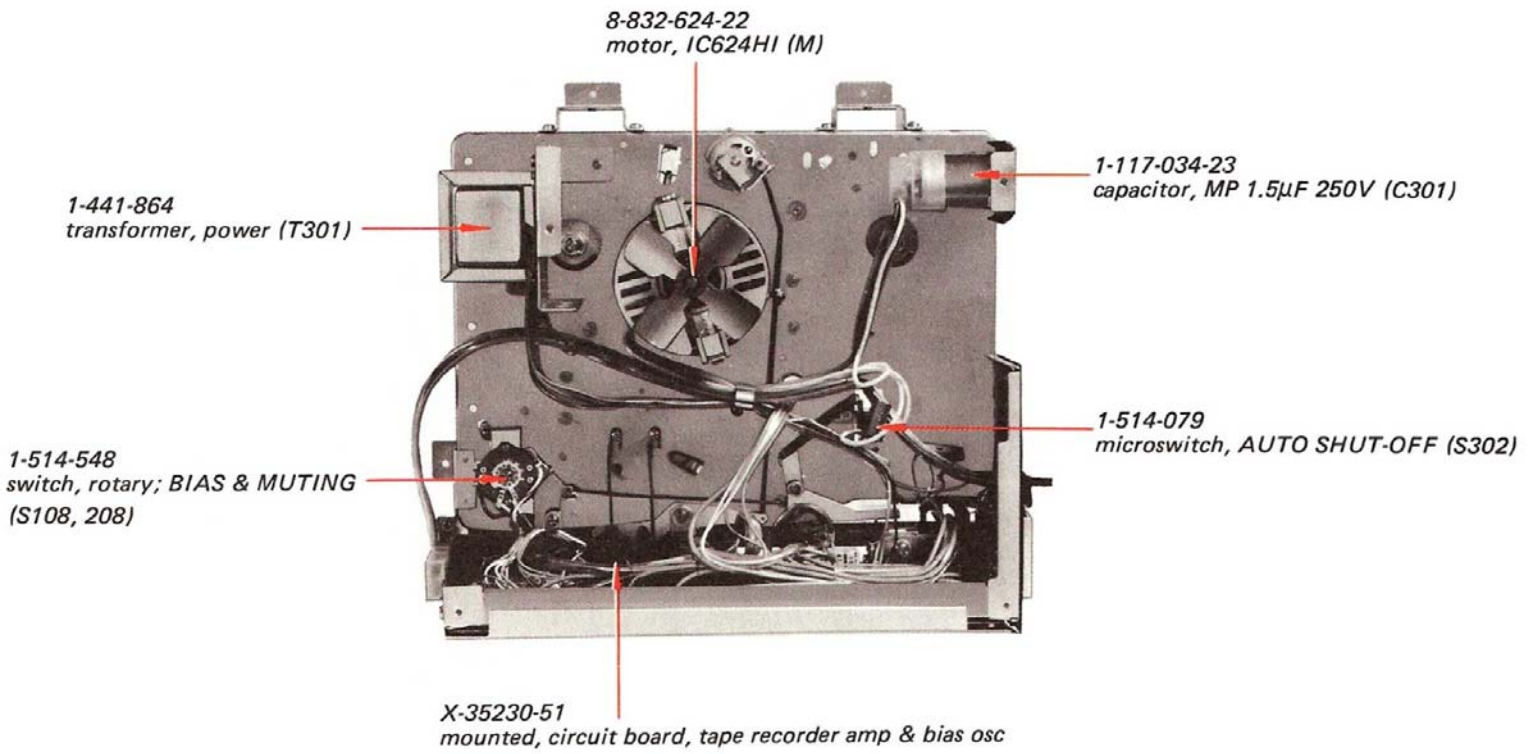
Cabinet — Top View —



Chassis — Top View —



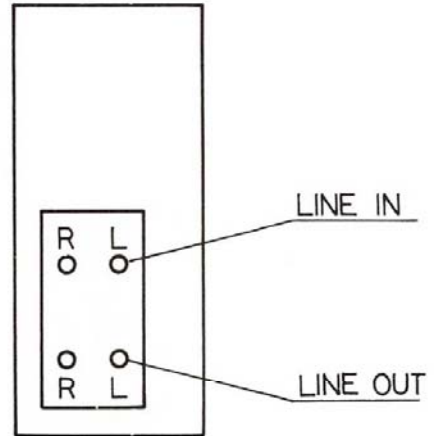
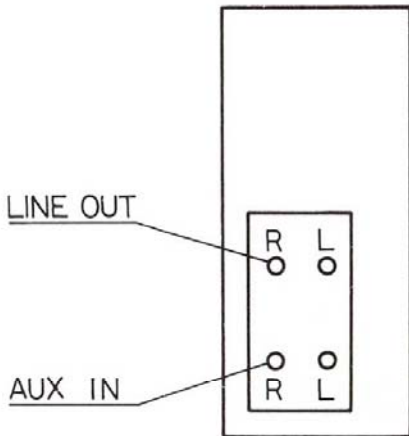
Chassis – Bottom View –



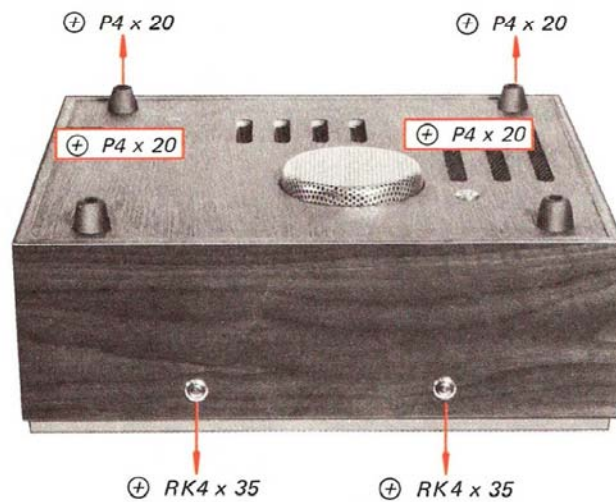
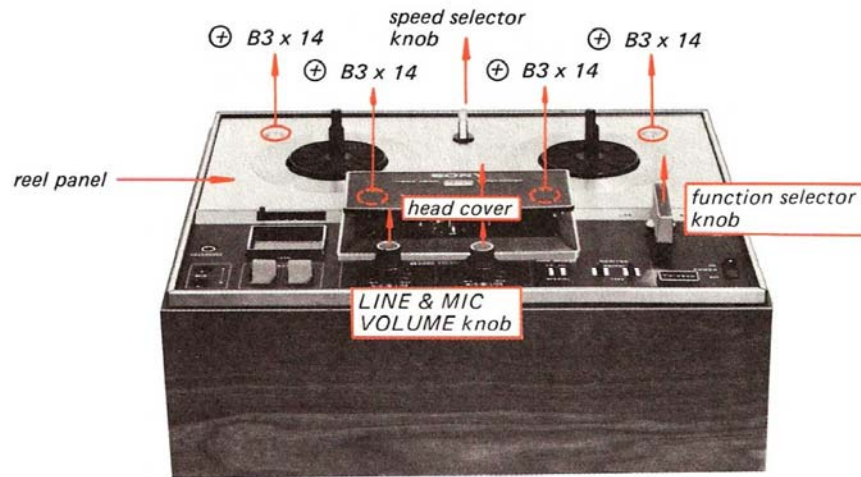
Jack Panel

Serial No. 10,001 ~ 12,999

Serial No. 13,101 and later



SECTION 2 DISASSEMBLY

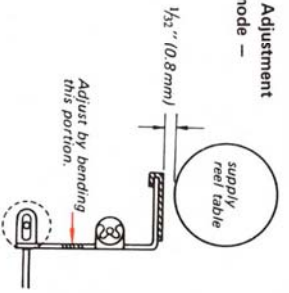


SECTION 3 ADJUSTMENT PROCEDURES

3-1. MECHANICAL ADJUSTMENTS

Brake (Supply) Adjustment

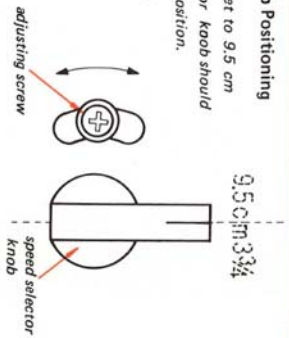
— in FF mode —



Speed Selector Knob Positioning

When tape speed is set to 9.5 cm 3 3/4", speed selector knob should point 9.5 cm 3 3/4" position.

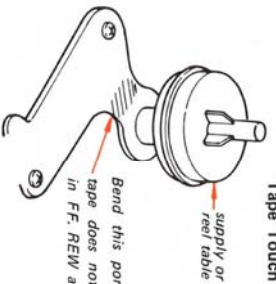
If necessary, adjust by adjusting screw.



Tape Touch Adjustment

supply or take-up reel table

Bend this portion so that the tape does not touch the reel in FF, REW and FWD modes.



Rewind Idler Adjustment

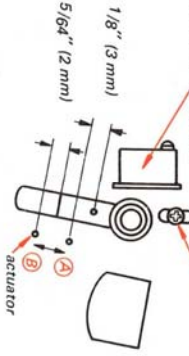
in STOP mode

supply reel
rewind idler
Adjust by bending this portion.



Actuator Adjustment

auto shut-off switch
adjusting screw

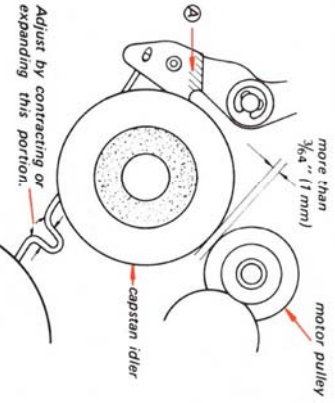


When actuator comes to ①, auto shut-off switch should be turned ON.
When actuator comes to ②, auto shut-off switch should be turned OFF.
If necessary, adjust auto shut-off switch position by adjusting screw.

Capstan Idler Position Adjustment

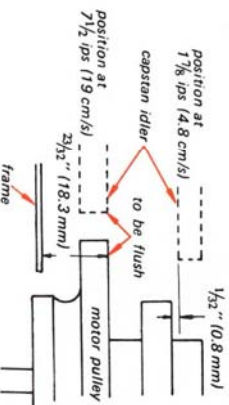
in STOP mode

1. Clearance Adjustment



2. Height Adjustment

Adjust the portion ③ shown in the figure in the item 1 by bending so that the height of capstan idler is 7 1/2 ips (19 cm/s) and 1 7/8 ips (4.8 cm/s) are as shown.



Brake (Take-up) Adjustment

in STOP mode

take-up reel table
Adjust by bending this portion.
1/2 inch (0.8 mm)



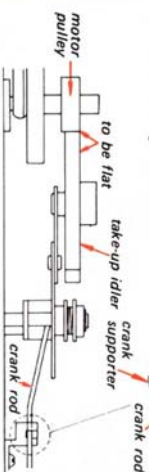
Take-up Idler Position Adjustment

— in FF and STOP modes —

1. Height Adjustment

— in FF mode —

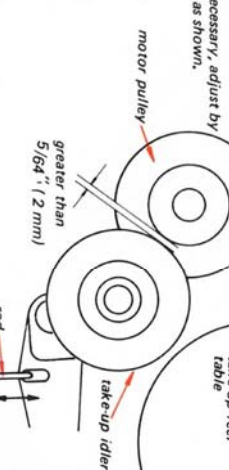
Adjust the position of the take-up idler by bending the crank supporter so that the motor pulley and the take-up idler are the same height as shown.



2. Position Check

— in STOP mode —

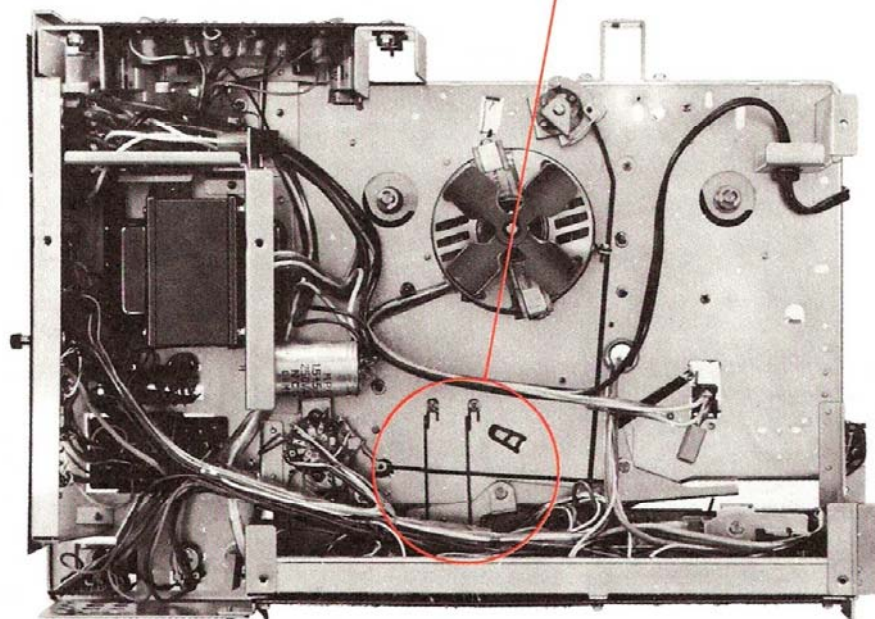
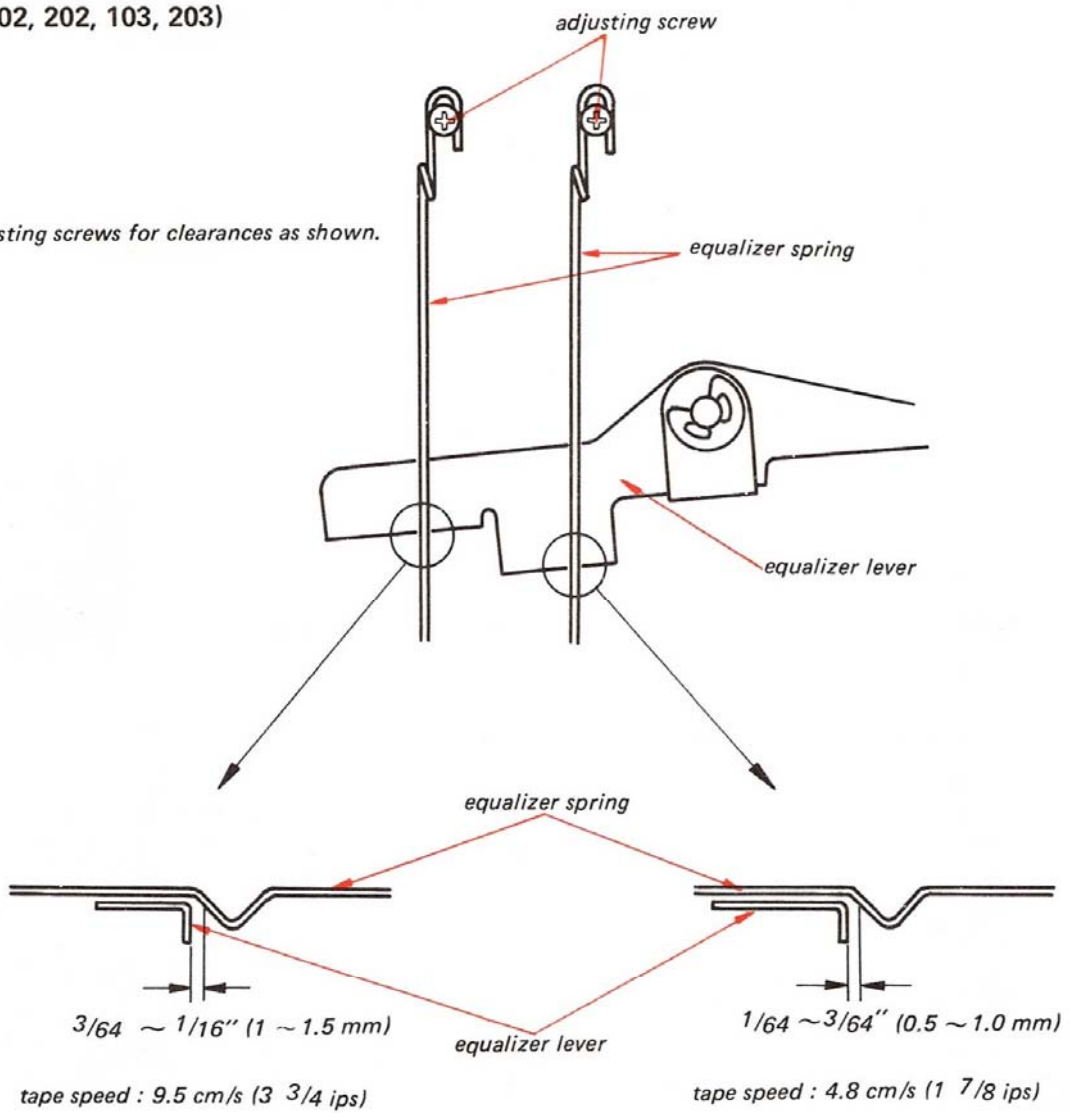
Make sure that the clearance between the motor pulley and the take-up idler is greater than 5/64 inch (2 mm).



Equalizer Switch Adjustment.

(S102, 202, 103, 203)

Adjust by adjusting screws for clearances as shown.



Wow (Flutter) Measurement

Switch Settings

TAPE SELECT Switch : NORMAL
MONITOR Switch : TAPE

Note: When measuring the wow (flutter) at the tape speed $7\frac{1}{2}$ ips (19 cm/s) and $3\frac{3}{4}$ ips (9.5 cm/s), play back the SONY alignment tapes WS-19-7 and WS-9-7 and at the tape speed of $1\frac{7}{8}$ ips (4.8 cm/s), record and play back a SONY blank tape "super 150".

at $7\frac{1}{2}$ ips (19 cm/s) and $3\frac{3}{4}$ ips (9.5 cm/s)

Measure the wow (flutter) at the tape end in both vertical and horizontal set positions.

$7\frac{1}{2}$ ips (19 cm/s) : Play back the tape WS-19-7.

$3\frac{3}{4}$ ips (9.5 cm/s) : Play back the tape WS-9-7.

at $1\frac{7}{8}$ ips (4.8 cm/s)

Deliver a 3 kHz signal of -60 dB (0.775 mV) to the MIC jack, record the signal on a SONY blank tape at the end approx. five minutes and read the wow meter.

The wow (flutter) should be approx. as follows:

| | Tape Speed | Wow (Flutter) |
|---|-------------------------------|---------------|
| in both horizontal or vertical position | $7\frac{1}{2}$ ips (19 cm/s) | 0.19% RMS |
| | $3\frac{3}{4}$ ips (9.5 cm/s) | 0.24% RMS |
| | $1\frac{7}{8}$ ips (4.8 cm/s) | 0.4% RMS |

Tape Speed Adjustment

- Step 1. Connect a frequency counter to the LINE OUT jack.
- Step 2. Play back the SONY speed check tape SPC-47 (4 kHz) at $7\frac{1}{2}$ ips (19 cm/s) tape speed in horizontal position.

Note: If the counter reading is out of the range between 3,920 and 4,080 Hz, replace the motor pulley.

| Motor Pulley | | |
|--------------|-----------------------------|--------------|
| Mark | Diameter | Part No. |
| 2 | bigger ↑ ↓ smaller | 3-511-101-01 |
| 3 | | 3-511-101-11 |
| 4 | | 3-511-101-21 |
| 5 | | 3-511-101-31 |
| 6 | | 3-511-101-41 |

Torque Measurement

Take-up torque: 300 ± 25 g.cm (4.2 ± 0.3 oz.inch)

Fast forward torque: 1200 ± 100 g.cm (16.8 ± 1.4 oz.inch)

Rewind torque: 1400 ± 100 g.cm (19.6 ± 1.4 oz.inch)

Back Tension (supply reel table) Measurement

In forward mode: 80 ~ 120 g.cm (1.1 ~ 1.7 oz.inch)

Pinch Roller Pressure Measurement

1200 ~ 1500 g (2.6 ~ 3.3 lb)

3-2. ELECTRICAL ADJUSTMENTS/ MEASUREMENTS

Preface for the Adjustment

- Before making the following adjustments, clean the record head and the playback head with a soft cloth or swab dampened with denatured alcohol, and demagnetize the heads with a head demagnetizer (SONY Model HE-2).
- The adjustments should be made in numerical order and for both R-CH and L-CH, unless otherwise noted.
- After the adjustments, apply lock paint to the parts adjusted.
- The adjustments require the test equipments as follows:
 - * Audio oscillator
 - * Attenuator 600 Ω
 - * VTVM
 - * SONY alignment tape J-19-F1
 - * Blank tape SONY Super 150
 - * Resistors 600 Ω and 100k Ω
 - * 1 kHz bandpass filter
 - * Screwdriver for adjustment
 - * SONY SLH tape
- TAPE SELECT and TAPE SPEED switches should be set as follows unless otherwise specified.

TAPE SELECT : NORMAL

TAPE SPEED : 7½ ips (19 cm/s)

- Rated input and output levels are as follows:

| | Input Level (Signal Source Impedance) | Output Level (Load Resistor) |
|---------|---|--|
| MIC | -60 dB, 0.775 mV (600 Ω) | LINE OUT 0 dB, 0.775 V (100 k Ω) |
| LINE IN | -10 dB, 0.245 V (10 k Ω) | |

- The following signals are recorded on the alignment tape:

| Tape \ Tone | 1 | 2 | 3 | 4 |
|-------------|------------------|-----------------|------------------|--|
| J-19-F1 | 10 kHz -10 dB | 400 Hz 0 dB | 400 Hz -10 dB | 10 kHz -10 dB |
| Tape \ Tone | 5 | 6 | 7 | used for |
| J-19-F-1 | 7 kHz -10 dB | 80 Hz -10 dB | 40 Hz -10 dB | Azimuth and level adjustment, Fre- quency response measurement. |

- RECORD VOLUME control should be set as follows:

- Connect a VTVM and a 100k Ω resistor in parallel with the LINE OUT jack.
- Thread the SONY alignment tape J-19-F1 and play back the 2nd tone (400 Hz) (MONITOR switch: TAPE position).
- Adjust the R150 (R250) to obtain 0 dB (0.775 V) on the VTVM.

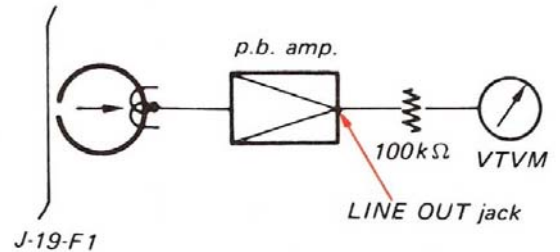


Fig. 3-2-1. RECORD VOLUME control setting

- Thread a blank tape and place the set in REC mode (MINITOR switch: TAPE position), deliver a 1 kHz signal of -60 dB (0.775 mV) to the MIC jack and adjust the RECORD VOLUME control so that the VTVM indicates 0 dB (0.775 V).

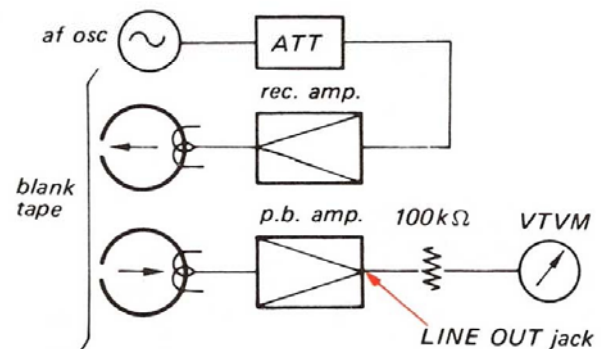


Fig. 3-2-2. RECORD VOLUME control setting

9. Input connection is as follows:

a. in case that balanced attenuator is used

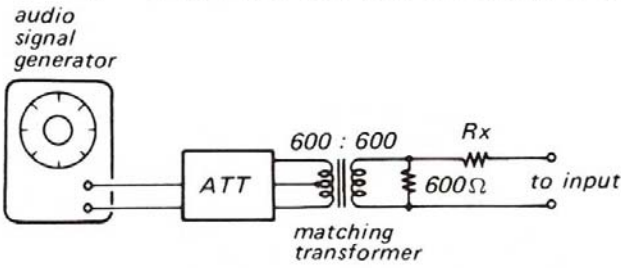


Fig. 3-2-3. Input connection

b. in case that unbalanced attenuator is used

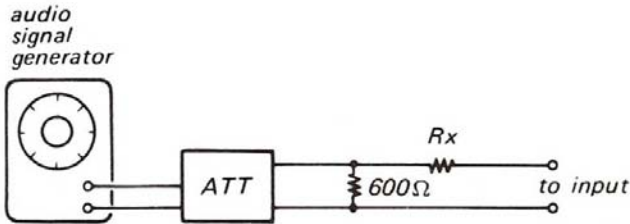


Fig. 3-2-4. Input connection

| Input | MIC | LINE IN |
|-------------|------|---------|
| Value of Rx | 300Ω | 10 kΩ |

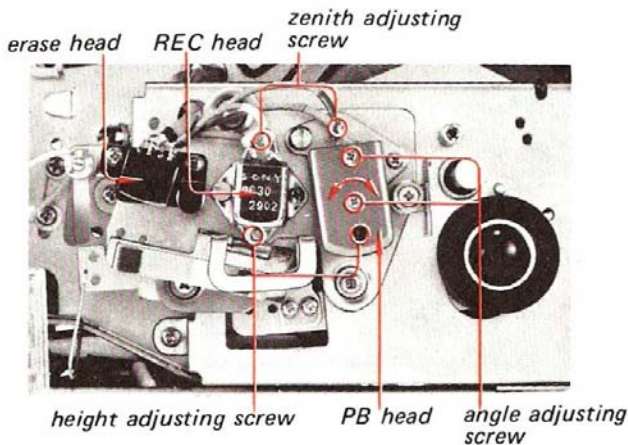


Fig. 3-2-5. Adjusting parts location for the items 2 and 3

1. Tape Path Adjustment

- Step 1. Thread a tape.
- Step 2. Loosen the lock screw and align the upper edge of the erase head core and that of the tape by turning the tape guide (L).
- Step 3. Turn the tape guide (L) clockwise by approximately 35 degrees from the position obtained in the preceding step so that the upper edge of the tape is approximately

0.05 mm lower than that edge of the erase head core.

Step 4. Fix the tape guide with the lock screw.

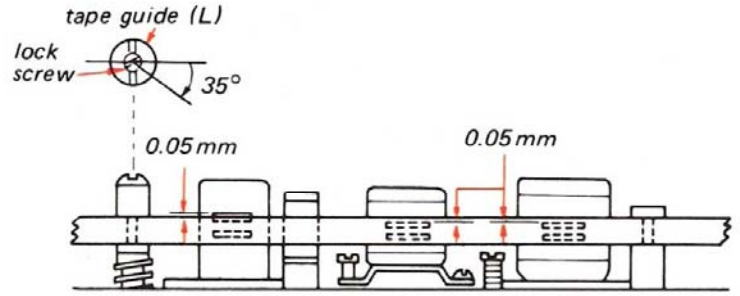


Fig. 3-2-6. Tape path adjustment

2. REC and PB Heads Preadjustments

Note: This adjustments and the following adjustment items 3 and 4 should be repeated alternately several times.

- Step 1. Make rough adjustment for items 3 and 4.
- Step 2. Align the upper edges of the REC and PB head cores and upper edge of the tape by turning the height and zenith adjusting screws. (See Fig. 3-2-5.)
- Step 3. Turn the height and zenith adjusting screws clockwise by approximately 35 degrees from the positions obtained in the preceding step 2 so that the upper edge of the tape is approximately 0.05 mm higher than that of the REC and the PB head cores.

3. Playback Head Angle Adjustment

Switch Settings:

TAPE SELECT Switch : NORMAL
 TAPE SPEED Switch : 7½ ips (19 cm/s)
 MONITOR Switch : TAPE

- Step 1. Connect a VTVM and a 100kΩ resistor in parallel with the LINE OUT jack.
- Step 2. Thread the SONY alignment tape J-19-F1 and play back the 1st tone (10kHz).
- Step 3. Loosen the angle adjusting screws to position the p.b. head for a maximum VTVM reading. (See Fig. 3-2-5)
- Step 4. Apply lock paint to the screws.

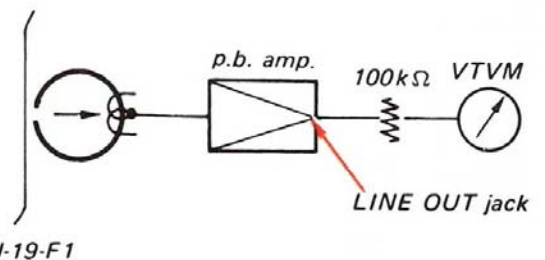


Fig. 3-2-7. Playback head angle adjustment

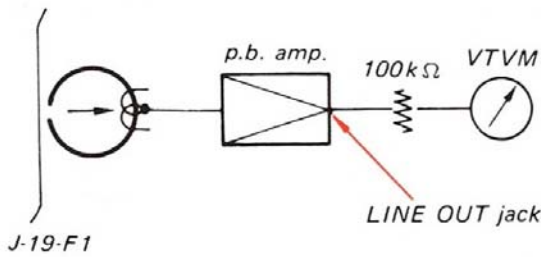


Fig. 3-2-8. Test setup for the items 4, 5 and 6

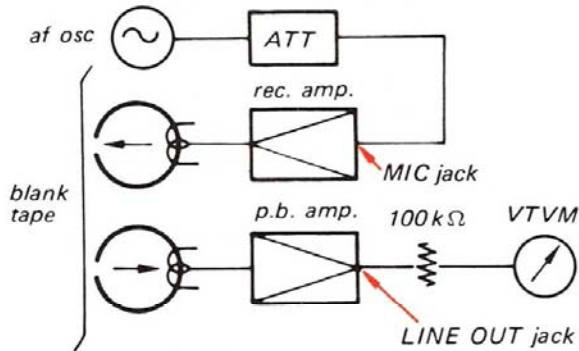


Fig. 3-2-9. Test setup for the items 8,9 and 10

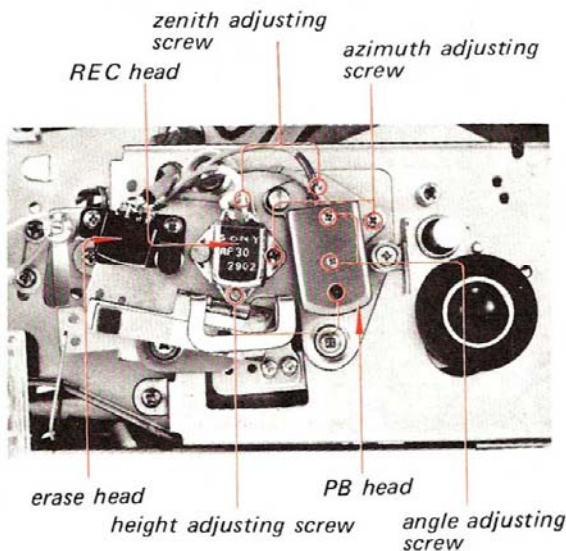


Fig. 3-2-10. Adjusting parts location for the items 4, 8 and 9

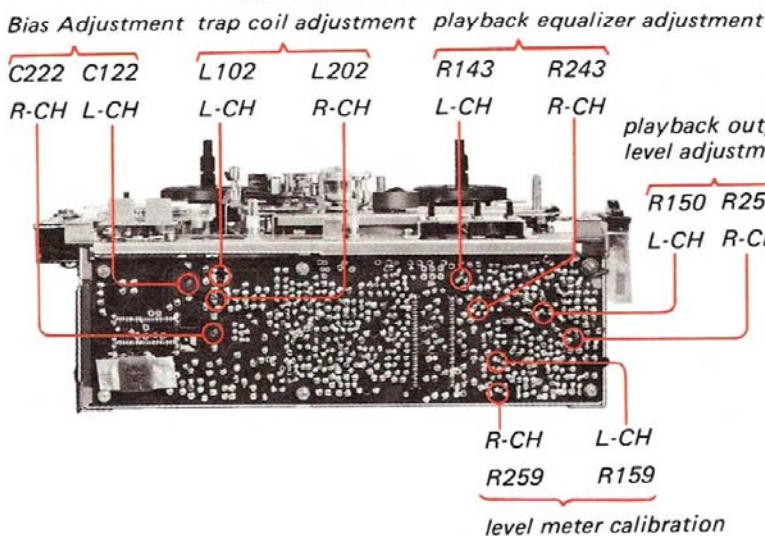


Fig. 3-2-11. Adjusting parts location for the items 5, 6, 7 and 10

4. Playback Head Azimuth Adjustment

Switch Settings:

TAPE SELECT Switch : NORMAL
 TAPE SPEED Switch : 7½ ips (19 cm/s)
 MONITOR Switch : TAPE

- Step 1. Connect a VTVM and a 100kΩ resistor in parallel with the LINE OUT jack.
- Step 2. Thread the SONY alignment tape J-19-F1 and play back the 1st tone (10 kHz).
- Step 3. Adjust the PB head azimuth adjusting screw to obtain a maximum meter reading. (See Fig. 3-2-10.)

Note: If the azimuth angles of L-CH and R-CH are not the same, set the screw midway between two screw positions.

- Step 4. Apply lock paint to the screw.

5. Playback Output Level Adjustment and Level Meter Calibration

Switch Settings:

TAPE SELECT Switch : NORMAL
 TAPE SPEED Switch : 7½ ips (19 cm/s)
 MONITOR Switch : TAPE

- Step 1. Connect a VTVM and a 100kΩ resistor in parallel with the LINE OUT jack.
- Step 2. Thread the SONY alignment tape J-19-F1 and play back the 2nd tone (400 Hz). (See Fig. 3-2-8.)
- Step 3. Adjust the R150 (R250) to obtain 0 dB (0.775V) on the VTVM. (See Fig. 3-2-11.)
- Step 4. Adjust the R159 (R259) so that the pointer of level meter stops at the figure 0 on the scale. (See Fig. 3-2-11.)

6. Playback Equalizer Adjustment

Switch Settings:

TAPE SELECT Switch : NORMAL
 TAPE SPEED Switch : 7½ ips (19 cm/s)
 MONITOR Switch : TAPE

- Step 1. Connect a VTVM and a 100kΩ resistor in parallel with the LINE OUT jack.
- Step 2. Thread the SONY alignment tape J-19-F1 and play back the 3rd tone (400 Hz) and memorize the VTVM reading.
- Step 3. Play back the 4th tone (10kHz) and adjust R143 (R243), to obtain the same VTVM reading as the step 2. (See Fig. 3-2-11.)
- Step 4. Play back the next series of tones and make

sure that each tone output level deviation with respect to the 3rd tone as a zero reference is as follows.

| J-19-F1 | Tone | 4th | 5th | 6th | 7th |
|----------------------------------|-----------|--------|------|----------|----------|
| | Frequency | 10kHz | 7kHz | 80 Hz | 40 Hz |
| Deviation from 3rd tone (400 Hz) | 0 dB | 0±2 dB | L | 3±2 dB | 4.5±2 dB |
| | | | R | 3.5±2 dB | 5±2 dB |

7. Trap Coil Adjustment

Switch Settings:

TAPE SELECT Switch : NORMAL
 TAPE SPEED Switch : 7½ ips (19 cm/s)
 RECORD VOLUME Control: MIN (fully counterclockwise)

- Step 1. Connect a VTVM across the check point and ground as shown in Fig. 3-2-12.
- Step 2. Adjust the L102 (L202) to obtain the minimum VTVM reading (less than -5 dB, 0.433 V). (See Fig. 3-2-11.)
- Step 3. Lock the cores with paint.

Note: Use a non-magnetic screwdriver.

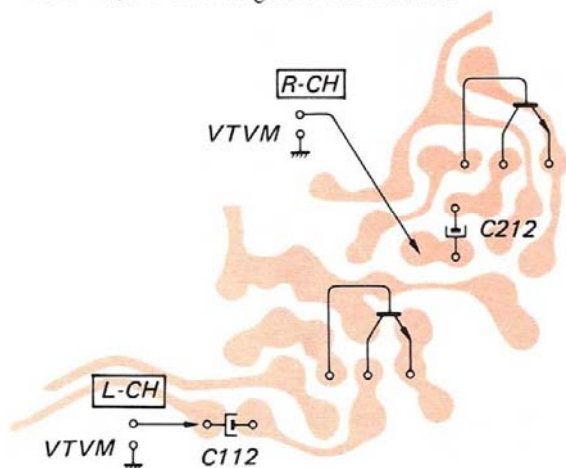


Fig. 3-2-12. Trap coil adjustment

8. Record Track Adjustment

Note: Before making this adjustment, preadjust the record head azimuth, zenith and height adjusting screws. (Refer to the tape path adjustment.)

Switch Settings:

TAPE SELECT Switch : NORMAL
 TAPE SPEED Switch : 7½ ips (19 cm/s)
 MONITOR Switch : TAPE

- Step 1. Connect a VTVM and a 100 kΩ resistor in parallel with the R-CH LINE OUT jack.
- Step 2. Deliver a 1 kHz signal of -60 dB (0.775 mV) to the MIC jack of R-CH.

- Step 3. Thread a blank tape and place the set in RECORD mode. (See Fig. 3-2-9.)
- Step 4. Adjust the record head height adjusting screw to obtain a maximum VTVM reading.
- Step 5. Turn the zenith adjusting screw by the same turns in same direction as in the step 4. (See Fig. 3-2-10.)

Note: When the adjusting screws are turned more than 1 turn, make the tape path adjustment again.

9. Record Head Azimuth Adjustment

Switch Settings:

TAPE SELECT Switch : NORMAL
 TAPE SPEED Switch : 7½ ips (19 cm/s)
 MONITOR Switch : TAPE

- Step 1. Connect a VTVM and a 100 kΩ resistor in parallel with the LINE OUT jack.
- Step 2. Deliver a 15 kHz signal of -90 dB (0.0245 mV) to the MIC jack and adjust the azimuth adjusting screw to obtain a maximum meter reading. (See Fig. 3-2-9 and 3-2-10.)

- Note:**
1. If the maximum value of L-CH and R-CH outputs can not be obtained at the same angle, adjust the screw midway between two screw positions.
 2. When the azimuth adjusting screw is turned more than 1 turn, make the record track adjustment.

10. Bias Adjustment

Switch Settings:

TAPE SELECT Switch : NORMAL
 TAPE SPEED Switch : 7½ ips (19 cm/s)
 MONITOR Switch : TAPE

- Step 1. Connect a VTVM and a 100 kΩ resistor in parallel with the LINE OUT jack.
- Step 2. Thread a blank tape and place the set in RECORD mode.
- Step 3. Deliver a 1 kHz signal of -60 dB (0.775 mV) to the MIC jack and turn the bias adjusting trimmer capacitor C122 (C222) at fully counterclockwise. (See Fig. 3-2-9 and 3-2-11.)
- Step 4. Turn the bias adjusting trimmer capacitor C122 (C222) clockwise to obtain a maximum reading on the VTVM, and then turn the capacitor clockwise until the VTVM reading drops 0.5 dB.
- Step 5. Apply lock paint to the trimmer capacitors.

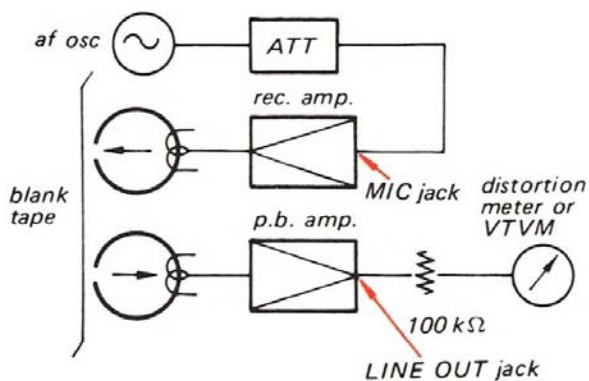


Fig. 3-2-13. Test setup for the items 11, 12, 13, 14 and 15

- Step 1. Connect a VTVM and a 100 kΩ resistor in parallel with the LINE OUT jack.
- Step 2. Thread a blank tape, place the set in RECORD mode, deliver a 1 kHz signal of -90 dB (0.0245 mV) to the MIC jack and memorize the VTVM reading. (See Fig. 3-2-13.)
- Step 3. Record a 18 kHz signal of -90 dB (0.0245 mV) continuously and playing it back, adjust L101 (L201) so that the same VTVM reading as the step 2 is obtained (See Fig. 3-2-14.)
- Step 4. Vary the input signal frequency from 10 kHz to 20 kHz and make sure that the output level deviation of the any frequency between 10 kHz and 20 kHz from the output level of 1 kHz signal is between +3 dB and -3 dB. If not, check the tape path.

13. Overall Frequency Response Measurement

Switch Settings:

- TAPE SELECT Switch : NORMAL and SPECIAL
- TAPE SPEED Switch : 7½ ips (19 cm/s)
3¾ ips (9.5 cm/s)
and 1⅞ ips (4.8 cm/s)
- MONITOR Switch : TAPE

- Step 1. Connect a VTVM and a 100 kΩ resistor in parallel with the LINE OUT jack.
- Step 2. Thread the SONY tape "super 150" (SONY SLH tape), place the set in RECORD mode, deliver a 1 kHz signal of -90 dB (0.0245 mV) to the MIC jack and memorize the VTVM reading. (See Fig. 3-2-13.)
- Step 3. Vary the input signal frequency and read the output level deviation of the each frequency from the output level of 1 kHz signal. The deviation should be as the following table.

Note: When recording the signal on the SONY tape "super 150", set the TAPE SELECT switch to NORMAL and on the SONY SLH tape, to SPECIAL.

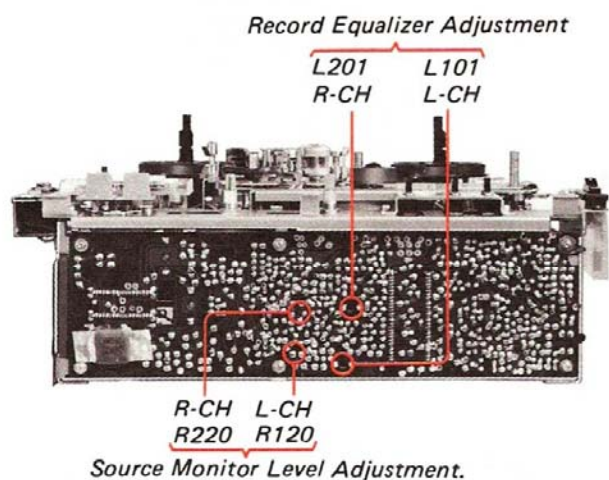


Fig. 3-2-14. Adjusting parts location for the items 11 and 12

11. Source Monitor Level Adjustment

Switch Settings:

- TAPE SELECT Switch : NORMAL
- TAPE SPEED Switch : 7½ ips (19 cm/s)
- MONITOR Switch : SOURCE step 2
TAPE step 3

- Step 1. Connect a VTVM and a 100 kΩ resistor in parallel with the LINE OUT jack.
- Step 2. Thread a blank tape and place the set in RECORD mode, deliver a 1 kHz signal of -60 dB (0.775 mV) to the MIC jack and adjust the R120 (R220) to obtain 0 dB (0.775 V) on the VTVM. (See Fig. 3-2-13 and 3-2-14.)
- Step 3. Set the MONITOR switch in TAPE position and make sure that the VTVM reads 0 dB (0.775 V). If not, repeat the step 2.

12. Record Equalizer Adjustment

Switch Settings:

- TAPE SELECT Switch : NORMAL
- TAPE SPEED Switch : 7½ ips (19 cm/s)
- MONITOR Switch : TAPE

| Tape Speed | Deviation from 1 kHz Signal | |
|-------------------|------------------------------|--|
| | Frequency | SUPER 150 SLH |
| 7½ ips (19 cm/s) | 55 Hz | 0± ³ / ₅ dB 0±3 dB |
| | 12 kHz | 0±3 dB 0±3 dB |
| | 18 kHz (20 kHz ...SLH) | 0 ⁺³ / ₋₆ dB 0 ⁺³ / ₋₆ dB |
| 3¾ ips (9.5 cm/s) | 100 Hz | 0±3 dB 0±3 dB |
| | 6 kHz | 0±3 dB 0±3 dB |
| 1⅞ ips (4.8 cm/s) | 100 Hz | 0±3 dB 0±3 dB |
| | 1 kHz | 0 ⁺³ / ₋₁₀ dB 0 ⁺³ / ₋₁₀ dB |

14. Overall Signal-to-Noise Ratio Measurement

Switch Settings:

TAPE SELECT Switch : NORMAL
 TAPE SPEED Switch : 7½ ips (19 cm/s)
 MONITOR Switch : TAPE

- Step 1. Connect a VTVM and a 100 kΩ resistor in parallel to the LINE OUT jack.
- Step 2. Place the set in RECORD mode, deliver a 1 kHz signal of -60 dB (0.775 mV) to the MIC jack and record the signal on a blank tape "SONY super 150" (completely erased). (See Fig. 3-2-13.) Memorize the LINE output level.
- Step 3. Remove the input connection, terminate the MIC jack with a 600 Ω resistor and continue the recording with no input signal. Memorize the LINE output level.

Step 4. The LINE output level difference between the two parts (overall signal-to-noise ratio) should be greater than 44 dB.

15. Erase Ratio Measurement

Switch Settings:

TAPE SELECT Switch : NORMAL
 TAPE SPEED Switch : 7½ ips (19 cm/s)
 MONITOR Switch : TAPE

- Step 1. Connect the equipments as shown in Fig. 3-2-15.
- Step 2. Deliver a 1 kHz signal of -50 dB (2.45 mV) to the MIC jack and record the signal on a blank tape. Memorize the LINE output level.
- Step 3. Disconnect the input connection of the MIC jack.
- Step 4. Rewind half of tone recorded part and erase it. Memorize the LINE output level.
- Step 5. The LINE output level difference between steps 2 and 3 should be greater than 65 dB. If not, check the tape pass and erase current.

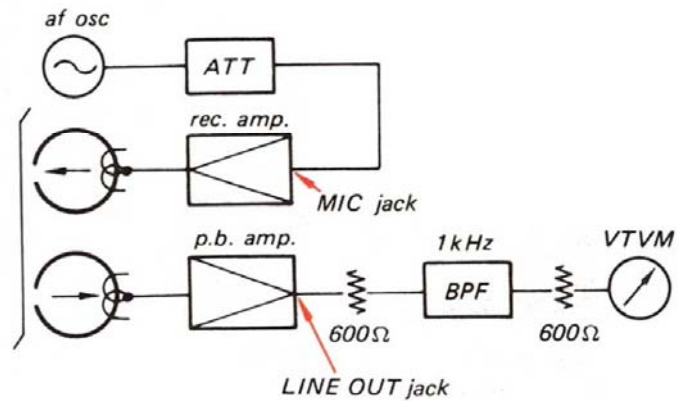
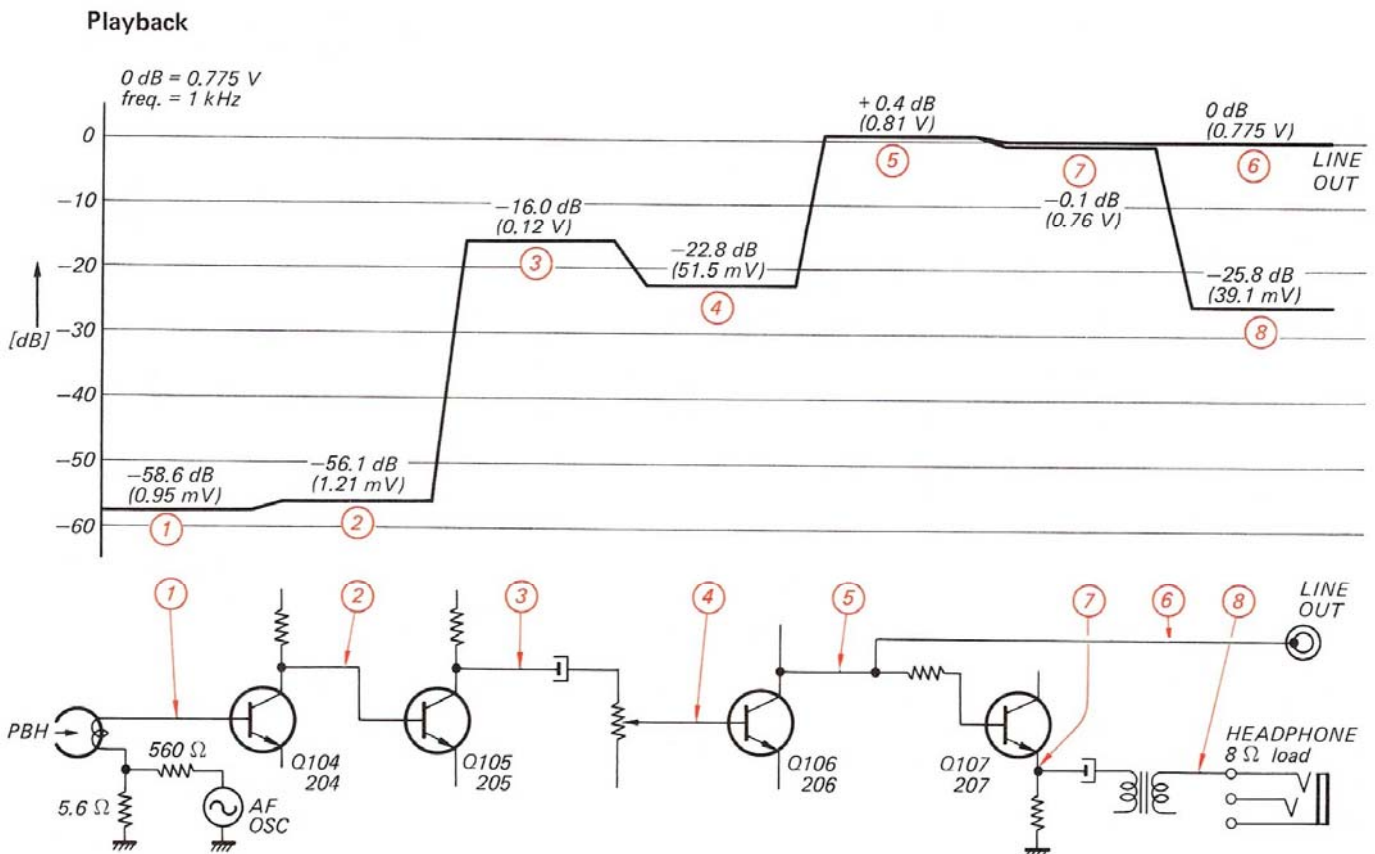
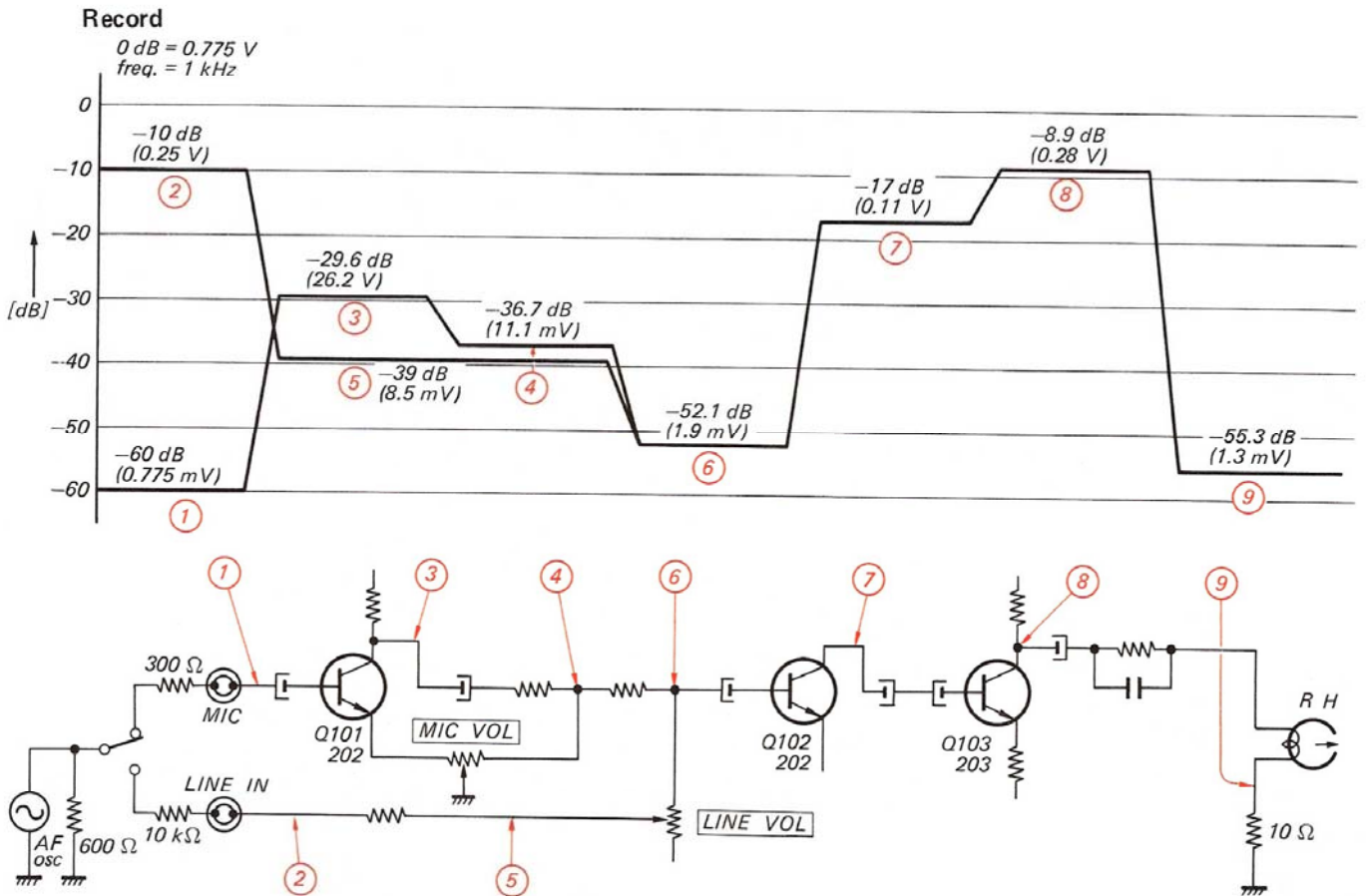


Fig. 3-2-15. Erase ratio measurement

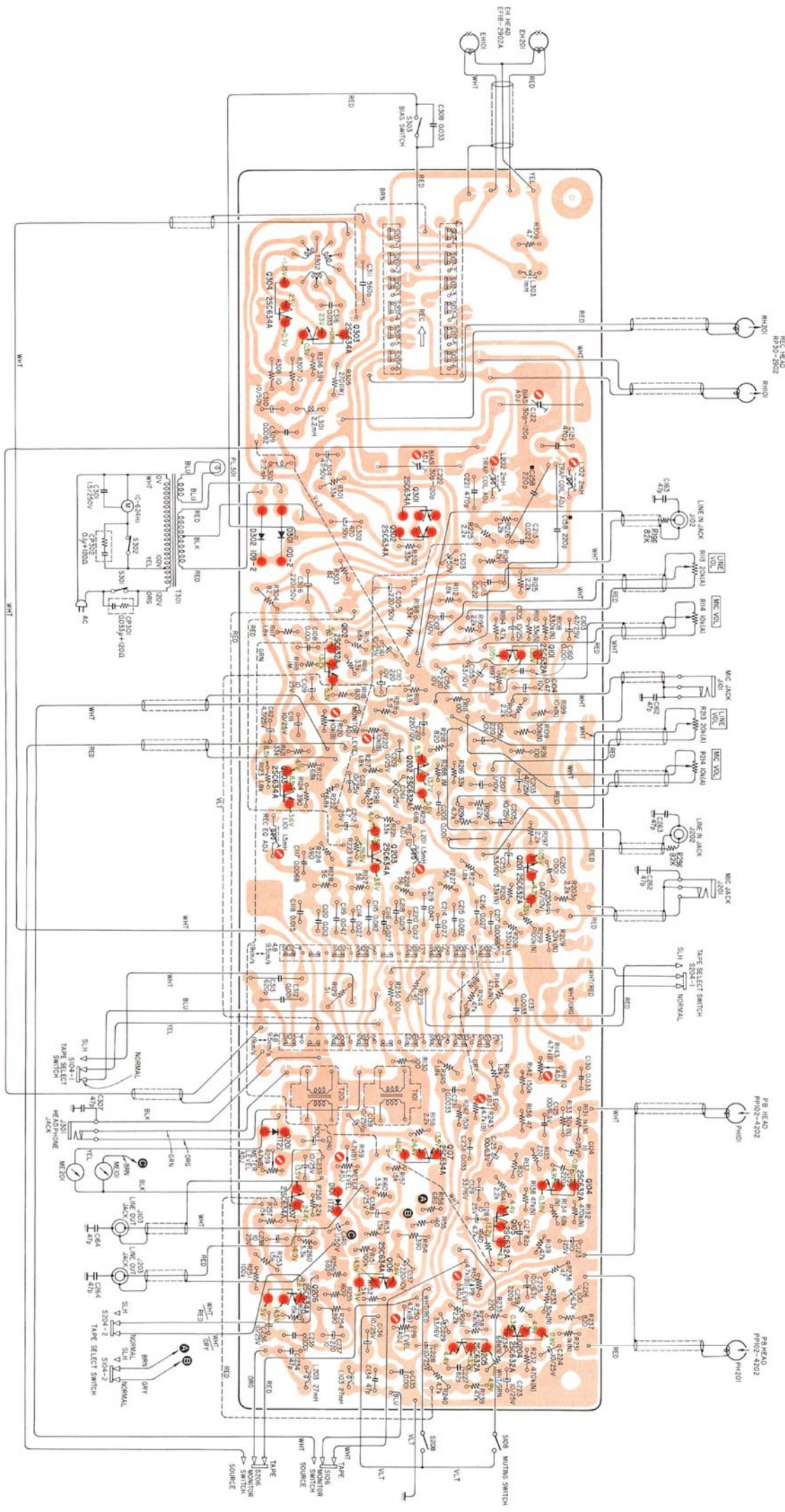
SECTION 4

DIAGRAMS

4-1. LEVEL DIAGRAM

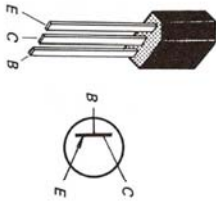


MEMO

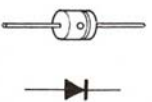


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2SC6344

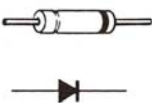
- 0101, 102, 103, 104
- 105, 106, 107
- 201, 202, 203, 204
- 205, 206, 207
- 301, 302, 303, 304



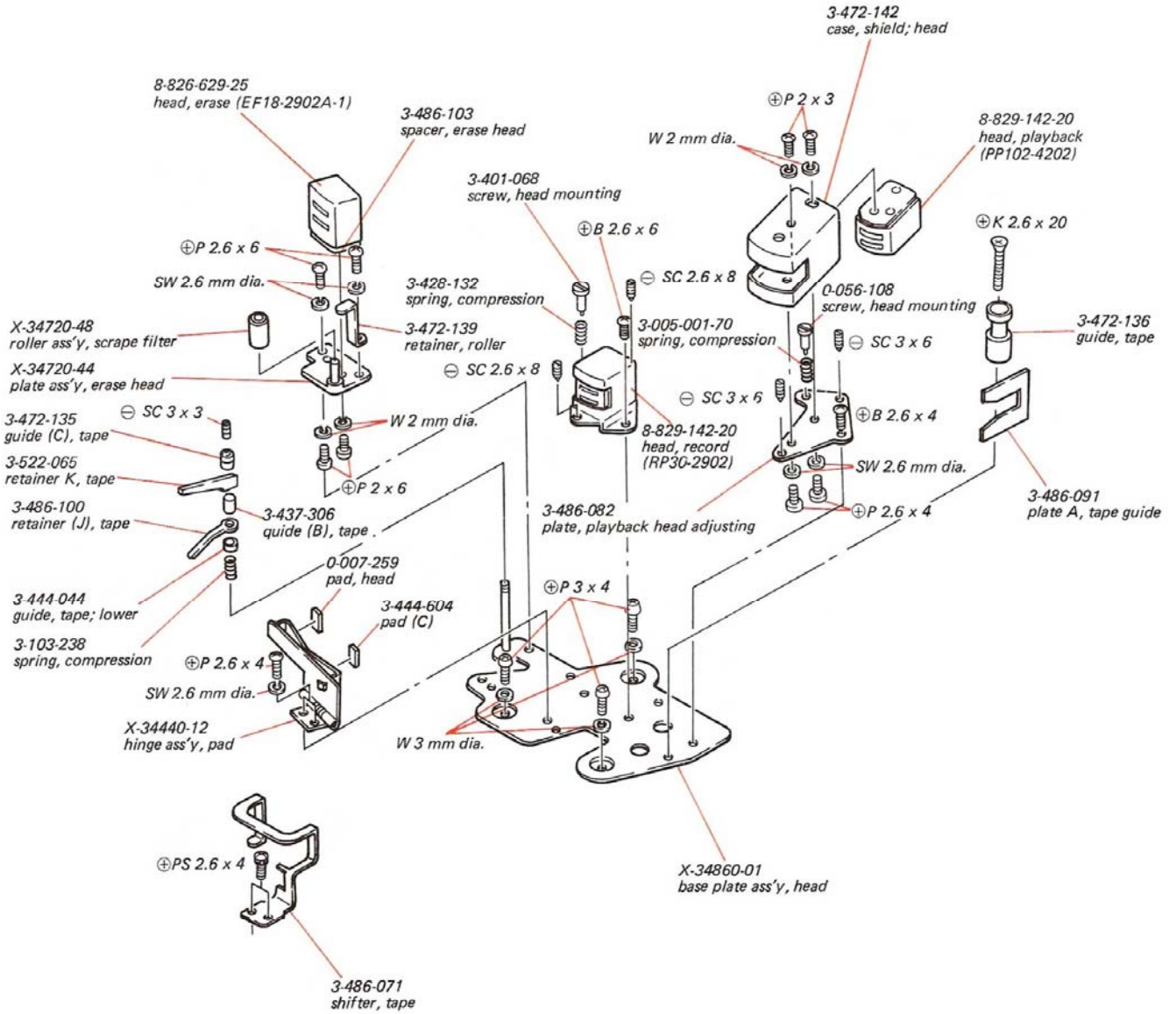
10D-2
D301, 302



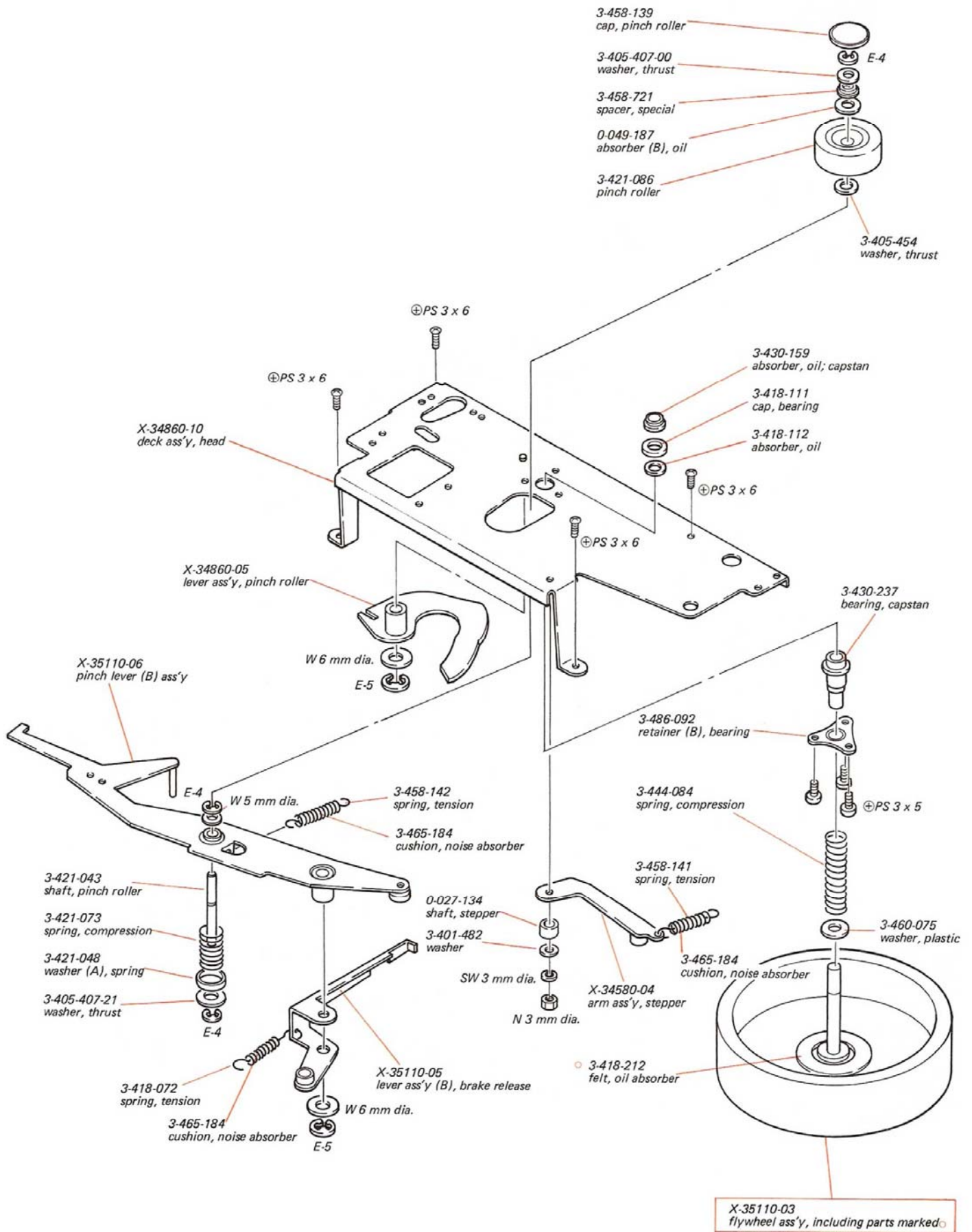
1772
D101, 201



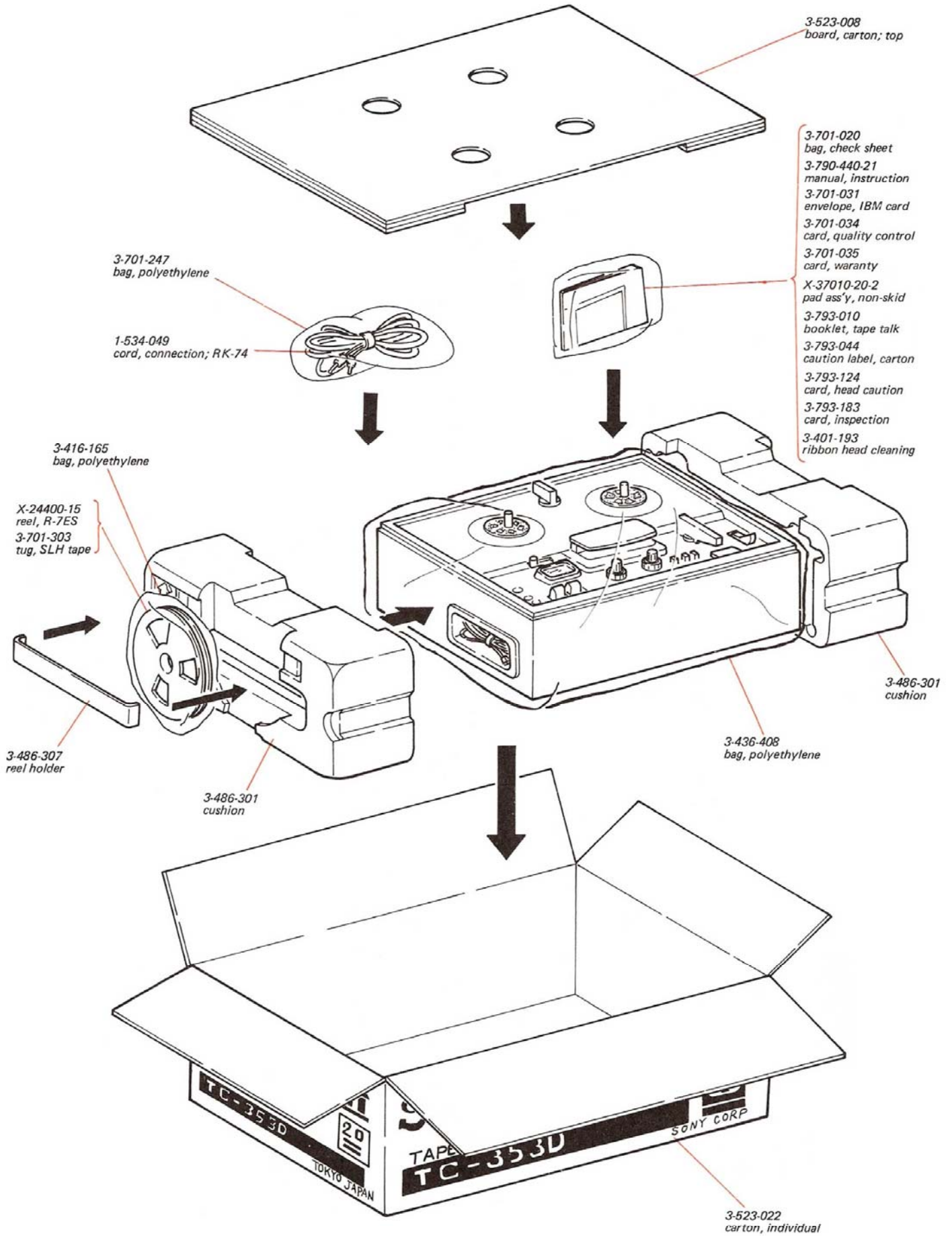
5-3. HEAD DECK – UPPER –



5-4. HEAD DECK – LOWER –



5-7. PACKING



| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u> | | <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u> | |
|---|-----------------|------------------------|--------------------------------|-----------------|-----------------|----------------------|------------------------------|
| C315 | | | | R146, 246 | | | |
| C316 | 1-105-679-51 | 0.033 | 50 V mylar | R149, 249 | | | |
| <u>RESISTORS</u> | | | | R150, 250 | 1-221-978 | 4.7 k Ω (B) | semi-fixed (PB LEVEL ADJ) |
| All resistors are 1/4W, carbon type unless otherwise noted. | | | | R151, 251 | 1-242-721-51 | 100 k Ω | |
| R101, 201 | | | | R152, 252 | 1-242-701-51 | 15 k Ω | |
| R102, 202 | | | | R153, 253 | 1-242-677-51 | 1.5 k Ω | |
| R103, 203 | 1-242-681-51 | 2.2 k Ω | | R154, 254 | 1-242-663-51 | 390 Ω | |
| R104, 204 | | | | R155, 255 | 1-242-654-51 | 160 Ω | |
| R107, 207 | | | | R156, 256 | 1-242-669-51 | 680 Ω | |
| R108, 208 | 1-242-733-71 | 330 k Ω | low noise | R157, 257 | 1-242-701-51 | 15 k Ω | |
| R109, 209 | 1-242-708-71 | 30 k Ω | low noise | R158, 258 | 1-242-681-51 | 2.2 k Ω | |
| R110, 210 | 1-242-709-71 | 33 k Ω | low noise | R159, 259 | 1-221-978 | 4.7 k Ω (B) | semi-fixed (METER LEVEL ADJ) |
| R111, 211 | 1-242-649-51 | 100 Ω | | R160, 260 | 1-242-685-51 | 3.3 k Ω | |
| R112, 212 | 1-244-697-51 | 10 k Ω | | R178, 278 | 1-244-699-51 | 12 k Ω | |
| R113, 213 | 1-222-676 | 20 k Ω (A) | | R179, 279 | | | |
| | | variable (LINE VOLUME) | | R187, 287 | | | |
| R114, 214 | 1-222-676 | 10 k Ω (A) | | R188, 288 | 1-242-745-51 | 1 M Ω | |
| | | variable (MIC VOLUME) | | R189, 289 | | | |
| R115, 215 | 1-242-717-51 | 68 k Ω | | R193, 293 | | | |
| R116, 216 | 1-242-709-51 | 33 k Ω | | R194, 294 | 1-244-689-51 | 4.7 k Ω | |
| R117, 217 | 1-242-679-51 | 1.8 k Ω | | R195, 295 | 1-242-705-51 | 22 k Ω | |
| R118, 218 | 1-242-671-51 | 820 k Ω | | R196, 296 | | 82 k Ω | |
| R119, 219 | 1-242-615-51 | 3.9 Ω | | R197, 297 | 1-242-681-51 | 2.2 k Ω | |
| R120, 220 | 1-222-701 | 10 k Ω (B) | semi-fixed (MONITOR LEVEL ADJ) | R198, 298 | 1-242-709-51 | 33 k Ω | |
| R121, 212 | 1-242-709-51 | 33 k Ω | | R199, 299 | 1-242-697-71 | 10 k Ω | low noise |
| R122, 222 | 1-242-693-51 | 6.8 k Ω | | R301 | 1-242-709-51 | 33 k Ω | |
| R123, 223 | 1-242-679-51 | 1.8 k Ω | | R302 | 1-242-709-51 | 33 k Ω | |
| R124, 224 | 1-242-663-51 | 390 Ω | | R303 | 1-242-647-51 | 82 Ω | |
| R125, 225 | 1-242-681-51 | 2.2 k Ω | | R304 | 1-242-647-51 | 82 Ω | |
| R126, 226 | 1-242-675-51 | 1.2 k Ω | | R305 | 1-209-216-21 | 270 Ω | 1W |
| R127, 227 | 1-242-643-51 | 56 Ω | | R306 | 1-242-711-51 | 39 k Ω | |
| R128, 228 | 1-242-643-51 | 56 Ω | | R307 | 1-242-625-51 | 10 Ω | |
| R129, 229 | 1-242-642-51 | 51 Ω | | R308 | 1-242-625-51 | 10 Ω | |
| R130, 230 | 1-242-649-51 | 100 Ω | | R309 | 1-242-617-51 | 4.7 Ω | |
| R131, 231 | 1-242-673-71 | 1 k Ω | low noise | <u>SWITCHES</u> | | | |
| R132, 232 | 1-242-737-71 | 470 k Ω | low noise | S101, 201 | | | |
| R133, 233 | 1-242-708-71 | 30 k Ω | low noise | S102, 202 | 1-514-813 | slide, EQUALIZER | |
| R134, 234 | 1-242-717-71 | 68 k Ω | low noise | S103, 203 | 1-514-813 | slide, EQUALIZER | |
| R135, 235 | 1-242-657-51 | 220 Ω | | S104, 204 | 1-514-324 | lead, TAPE SELECT | |
| R136, 236 | 1-242-641-51 | 47 Ω | | S105, 205 | | | |
| R137, 237 | 1-242-671-51 | 820 Ω | | S106, 206 | 1-514-415 | lead, MONITOR | |
| R138, 238 | 1-242-713-51 | 47 k Ω | low noise | S107, 207 | 1-514-856 | slide, RECORD | |
| R139, 239 | 1-242-713-51 | 47 k Ω | | S108, 208 | 1-514-548 | rotary, MUTING | |
| R140, 240 | 1-242-689-51 | 4.7 k Ω | | S109, 209 | | | |
| R141, 241 | 1-242-681-51 | 2.2 k Ω | | S110, 210 | | | |
| R142, 242 | 1-242-725-51 | 150 k Ω | | S301 | 1-514-306-42 | seesaw, POWER | |
| R143, 243 | 1-221-978 | 4.7 k Ω (B) | semi-fixed (PB EQ ADJ) | S302 | 1-514-079 | micro, AUTO SHUT-OFF | |
| R144, 244 | 1-242-713-71 | 47 k Ω | low noise | S303 | 1-514-548 | rotary, BIAS | |
| R145, 245 | 1-242-679-51 | 1.8 k Ω | | | | | |

| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u> |
|-----------------|-----------------|---------------------|
| <u>JACKS</u> | | |
| J101, 201 | 1-507-142 | mini, MIC |
| J102, 202 | 1-507-142 | 2P phono, LINE IN |
| J103, 203 | 1-507-142 | 2P phono, LINE OUT |
| J301 | 1-507-282 | binaural, HEADPHONE |

MISCELLANEOUS

| | | |
|------------|--------------|---|
| CP301 | 1-231-057-31 | encapsulated component C-R $0.033 \mu + 120 \Omega$ |
| CP302 | 1-101-534-31 | encapsulated component C-R $0.1 \mu + 120 \Omega$ |
| PL301 | 1-518-093 | lamp |
| ME101,201 | 1-524-051-41 | meter, LEVEL |
| R.H101,201 | 8-824-129-20 | head, record; $45 \Omega/1 \text{ kHz}$ (RP30 - 2902) |
| E.H101,201 | 8-826-629-25 | head, erase; $160 \Omega/160 \text{ kHz}$ (EF18 - 2902A-1) |
| P.H101,201 | 8-829-142-20 | head, playback; $1 \text{ k}\Omega/1 \text{ kHz}$ (PP102 - 4202) |
| M | 8-832-624-22 | motor (IC624H1) |
| | 1-534-538-21 | cord, ac |
| | 1-536-146 | terminal strip, 1 L1; small |

SECTION 7 HARDWARE

| <u>Part No.</u> | <u>Description</u> | <u>Part No.</u> | <u>Description</u> |
|-----------------|--------------------|------------------------|---------------------|
| SCREWS | | WASHERS | |
| 7-682-123-01 | ⊕ P 2 × 3 | 7-623-105-12 | 2φ |
| 7-682-124-01 | ⊕ P 2 × 4 | 7-623-107-12 | 2.6φ |
| 7-682-125-01 | ⊕ P 2 × 5 | 7-623-108 | 3φ |
| 7-621-259-22 | ⊕ P 2.6 × 4 | 7-623-108-12 | 3φ |
| 7-621-259-45 | ⊕ P 2.6 × 6 | 7-623-110 | 4φ |
| 7-621-259-52 | ⊕ P 2.6 × 8 | 7-623-110-12 | 4φ |
| 7-621-259-82 | ⊕ P 2.6 × 14 | 7-623-112 | 5φ |
| 7-682-144-01 | ⊕ P 3 × 3 | 7-623-113 | 6φ |
| 7-682-145-01 | ⊕ P 3 × 4 | 7-623-113-18 | 6φ |
| 7-682-146-01 | ⊕ P 3 × 5 | 7-623-205-22 | 2φ, spring |
| 7-682-147-01 | ⊕ P 3 × 6 | 7-623-207-22 | 2φ, spring |
| 7-682-148-01 | ⊕ P 3 × 8 | 7-623-208-22 | 3φ, spring |
| 7-682-149-01 | ⊕ P 3 × 10 | 7-623-210-22 | 4φ, spring |
| 7-682-150-01 | ⊕ P 3 × 12 | 7-623-308-04 | 3φ, star (internal) |
| 7-682-151-01 | ⊕ P 3 × 14 | 7-623-408-04 | 3φ, star (external) |
| 7-682-160-01 | ⊕ P 4 × 6 | | |
| 7-682-161-13 | ⊕ P 4 × 8 | | |
| 7-682-167-01 | ⊕ P 4 × 25 | | |
| 7-682-369-04 | ⊕ RK 4 × 35 | RETAINING RINGS | |
| 7-682-445-01 | ⊕ T 3 × 4 | 7-624-106-01 | E-3 |
| 7-682-447-01 | ⊕ T 3 × 6 | 7-624-108-01 | E-4 |
| 7-682-448-01 | ⊕ T 3 × 8 | 7-624-109-01 | E-5 |
| 7-682-545-01 | ⊕ B 3 × 4 | | |
| 7-682-547-03 | ⊕ B 3 × 6 | | |
| 7-682-551-03 | ⊕ B 3 × 14 | NUTS | |
| 7-682-562-13 | ⊕ B 4 × 10 | 7-684-013-01 | 3φ |
| 7-682-563-04 | ⊕ B 4 × 12 | 7-684-014-01 | 4φ |
| 7-621-560-22 | ⊕ K 2.6 × 20 | 7-684-033-01 | 3φ |
| 7-621-771-35 | ⊕ B 2.6 × 6 | 7-622-408-11 | 3φ, speed |
| 7-685-145-01 | ⊕ P 3 × 6, tapping | | |
| 7-683-140-01 | ⊖ SC 3 × 6 | LUGS | |
| 7-621-712-67 | ⊖ SC 2.6 × 8 | 3-460-077 | 3φ |
| 7-683-137-00 | ⊖ SC 3 × 3 | | |

Note: φ indicates mm dia.

Hardware Nomenclature

| | |
|--|--|
| <p>P – Pan Head Screw </p> | <p>SC – Set Screw </p> <p>E – Retaining Ring (E Washer) </p> <p style="margin-left: 20px;">W – Washer</p> <p style="margin-left: 20px;">SW – Spring Washer</p> <p style="margin-left: 20px;">LW – Lock Washer</p> <p style="margin-left: 20px;">N – Nut</p> |
| <p>PS – Pan Head Screw with Spring Washer </p> <p>K – Flat Countersunk Head Screw ... </p> <p>B – Binding Head Screw </p> <p>RK – Oval Countersunk Head Screw .. </p> <p>T – Truss Head Screw </p> <p>R – Round Head Screw </p> <p>F – Flat Fillister Head Screw </p> | <p style="text-align: center;">– Example –</p> <p>⊕ P 3x10</p> <p style="margin-left: 20px;">└─ Type of Slit</p> <p style="margin-left: 40px;">└─ Length in mm (L)</p> <p style="margin-left: 40px;">└─ Diameter in mm (D)</p> <p style="margin-left: 20px;">└─ Type of Head</p> <div style="text-align: right; margin-top: 10px;"> </div> |

SUPPLEMENT

No. 1
July, 1972

SUBJECT: PRODUCTION CHANGE OF CIRCUIT
APPLICABLE SERIAL NO.: 10,601 and later

This supplement updates the service manual to include production changes starting with serial number 10,601 and later.

File this supplement with the service manual.

CAPACITORS

On Page 31

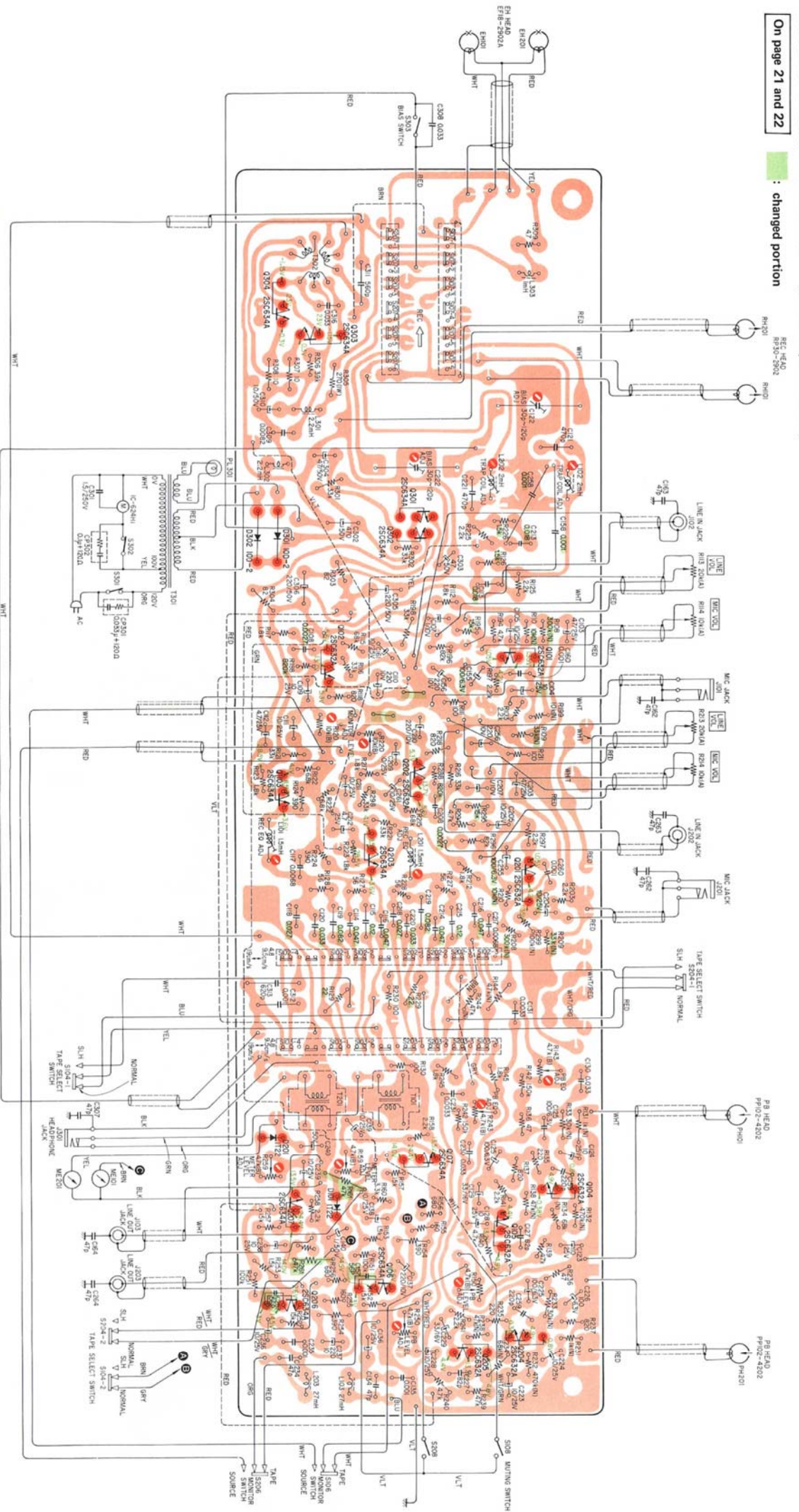
| <u>Ref. No.</u> | <u>Former</u> | | <u>New</u> | | |
|-----------------|-----------------|--------------------------------|-----------------|--------------------|--------------------|
| | <u>Part No.</u> | <u>Description</u> | <u>Part No.</u> | <u>Description</u> | |
| C104, 204 | 1-127-022-11 | 0.47 μ F 10 V electrolytic | 1-121-398-11 | 10 μ F | 25 V electrolytic |
| C108, 208 | 1-105-661-51 | 0.001 μ F 50 V mylar | 1-105-666-12 | 0.0027 μ F | 50 V mylar |
| C113, 213 | 1-105-677-51 | 0.022 μ F 50 V mylar | 1-105-676-12 | 0.018 μ F | 50 V mylar |
| C114, 214 | 1-105-678-51 | 0.027 μ F 50 V mylar | 1-105-681-12 | 0.047 μ F | 50 V mylar |
| C115, 215 | 1-105-684-51 | 0.082 μ F 50 V mylar | 1-105-686-12 | 0.12 μ F | 50 V mylar |
| C116, 216 | 1-105-678-51 | 0.027 μ F 50 V mylar | 1-105-681-12 | 0.047 μ F | 50 V mylar |
| C118, 218 | 1-105-675-51 | 0.015 μ F 50 V mylar | 1-105-678-12 | 0.027 μ F | 50 V mylar |
| C119, 219 | 1-105-681-51 | 0.047 μ F 50 V mylar | 1-105-684-12 | 0.082 μ F | 50 V mylar |
| C120, 220 | 1-105-674-51 | 0.012 μ F 50 V mylar | 1-105-679-12 | 0.033 μ F | 50 V mylar |
| C155, 255 | 1-121-402-51 | 33 μ F 10 V electrolytic | 1-121-413-11 | 100 μ F | 6.3 V electrolytic |
| C157, 257 | ----- | ----- | 1-107-125-11 | 56 PF | 50 V silvered mica |
| C158, 258 | 1-107-139-51 | 220 PF 50 V silvered mica | 1-105-661-12 | 0.001 μ F | 50 V mylar |

RESISTORS

On Page 32

| <u>Ref. No.</u> | <u>Former</u> | | <u>New</u> | |
|-----------------|-----------------|--------------------|-----------------|--------------------|
| | <u>Part No.</u> | <u>Description</u> | <u>Part No.</u> | <u>Description</u> |
| R108, 208 | 1-242-733-71 | 330 k Ω (N) | 1-242-732-09 | 300 k Ω (N) |
| R109, 209 | 1-242-708-71 | 30 k Ω (N) | 1-242-709-09 | 33 k Ω (N) |
| R110, 210 | 1-242-709-71 | 33 k Ω (N) | 1-242-697-09 | 10 k Ω (N) |
| R119, 219 | 1-242-615-51 | 3.9 Ω | ----- | ----- |
| R126, 226 | 1-242-675-51 | 1.2 k Ω | 1-242-677-11 | 1.5 k Ω |
| R129, 229 | 1-242-642-51 | 51 Ω | 1-242-633-11 | 22 Ω |
| R161, 261 | ----- | ----- | 1-242-713-11 | 47 k Ω |
| R188, 288 | 1-242-745-51 | 1 M Ω | 1-242-753-11 | 820 k Ω |
| R195, 295 | 1-242-705-51 | 22 k Ω | 1-242-701-11 | 15 k Ω |

changed portion



2SC6324A
2SC6344

0101, 102, 103, 104

105, 106, 107

201, 202, 203, 204

205, 206, 207

301, 302, 303, 304



10D-2

D301, 302



1722

D101, 201



2G0528-1

SONY CORPORATION

Printed in Japan