

MODEL C-205

SERVICE DATA

NOV./1978



MC-Service

SUPERSCOPE®
BY **marantz**®

SUPERSCOPE INC.
20525 NORDHOFF STREET CHATSWORTH,
CALIFORNIA 91311 · U.S.A.

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Using superior design and selected high grade components, SUPERSCOPE has created the ultimate in stereo sound. Only original SUPERSCOPE parts can insure that your SUPERSCOPE product will continue to perform to the specifications for which it is famous.

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Phone orders will eliminate mail delays, and we encourage the use of this method. If you order by mail, use SUPERSCOPE parts order forms which are available from our National Parts Depot located at the following address:

SUPERSCOPE NATIONAL PARTS DEPARTMENT
20525 Nordhoff Street
Chatsworth, California 91311
Phone: 1-800-423-5108
1-213-998-9333

The following information must be supplied to eliminate delays in processing your order:

1. Complete address.
2. Complete part numbers.
3. Complete description of parts.
4. Model number for which part is required (indicate SUPERSCOPE).
5. Account number (for account customers only).

Direct consumers will be provided with the current retail price quotation on available parts in order to advise them of the cost of the parts and shipping.

OVERSEAS PARTS ORDERING

Parts may also be ordered from the following overseas addresses:

CANADA

Superscope Canada, Ltd.
3710 Nashua Drive
Mississauga
Ontario, Canada L4V 1M5

AUSTRALIA

Superscope (Australasia) Pty., Ltd.
32 Cross Street (P.O. Box 604)
Brookvale 2100 N.S.W.
Australia

JAPAN

Marantz Japan, Inc.
3622 Kamitsuruma
Sagamihara Shi
Kanagawa, Japan

EUROPE

Superscope Europe, S.A.
Avenue Leopold III, 2
7120 Peronnes-Lez-Binche
Belgium

Marantz France
Rue Louis Armand 9
92600 Asnieres
Hauts-de-Seine
France

Marantz Audio U.K. Ltd.
London Road, 203
Staines
Middlesex
England

Superscopé GmbH
Max-Planck-Strasse 22
D-6072 Dreieich 1
West Germany

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

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SPECIFICATIONS

GENERAL	
Dimensions (W x H x D)	29.3 x 8.2 x 19.5 cm (11½ x 3¼ x 7 ¹¹ / ₁₆ inches)
Weight	3.6 kg (7 lbs 15 oz) with batteries 3.2 kg (7 lbs 4 oz) without batteries
Power Requirements	
DC:	Four UM-1, "D" size flashlight batteries (Rechargeable pack: Model RBD-1)
AC:	For Europe 220/110 V, 50 Hz, 7 W For USA & Canada 120 V, 60 Hz, 7 W
Number of Semiconductors	
Transistor	7
FET	1
Diode	16
IC	5
Terminals	
Input: Microphone	1
Plug Type	Mini
Input Sensitivity	0.35 mV
Impedance	10 kΩ
Aux	1
Plug Type	Mini
Input Sensitivity	80 mV
Impedance	90 kΩ
Tel. Pick	1
Plug Type	Mini
Output: Line	1
Plug Type	Mini
Output Level	700 mV
Impedance	5 kΩ
DIN (Rec./Play)	1
Plug Type	DIN
Input Sensitivity	50 mV
Input Impedance	47 kΩ
Output Level	700 mV
Output Impedance	5 kΩ
EXT. Speaker	1
Plug Type	Mini
Power Output	1200 mW
Headphone	1
Plug Type	Phone
Impedance	120 Ω
DC Jack	1
TAPE RECORDING SECTION	
Tape	PHILIPS type Compact Cassette Tape
Recording System	Half track, AC Bias
Erasing System	Half track, AC Erase
Rewind & Fast Forward Time	110 sec/C-60
Number & Type of Motor	One DC electrical

1. FEATURES

1.1 Simultaneous 3-Head Recording System

Besides erase and Record/Playback heads, the Model C-205 features a high-performance monitor head which is newly developed. Thanks to this monitor head, you can check for the recorded sound while carrying out recording. By setting TAPE/SOURCE switch to SOURCE position, you can directly monitor program source as well.

*The ordinary playback is possible, regardless of TAPE/SOURCE switch's position.

1.2 Tape Speed Control



In the playback mode of operation the tape speed can be continuously varied about $\pm 20\%$ in a linear relation to turning of the rotary variable resistor. The control is normally set at the center click position at which the tape runs at the rated speed. The tape speed is controlled with changing of the motor revolution. In the record mode of operation the tape is automatically set to keep the rated speed.

1.3 Fully Selectable Automatic Record Level and Peak Limiter

According to program source, three selections are possible—ARL, LIMITER and MANUAL.

1.4 ANC (Ambient Noise Control) System

The ANC System is developed to increase sound clarity (mainly of conversation) by cutting off unwanted audio range.

-  BPF of 6dB/oct with 2kHz at its medium value
- Normal possible to gain "flat" characteristic
-  low cut filter of 250Hz cut-off frequency

1.5 Automatic Total Mechanism Shut Off

When the tape comes to the end in any of the playback, record, fast forward and rewind modes of operation, the tape tension-controlled auto-stopper actuates to automatically release the locked pushbutton. It takes 2 to 6 seconds to release the pushbutton after the tape is wound up; note that the interval becomes longer with decrease of the power line voltage. Locked PAUSE pushbutton prevents operation of the auto-stopper.

1.6 Exclusive Telephone Pickup Jack

This is for recording telephone information by use of Telephone Pickup. As soon as the plug is inserted, the exclusive narrow band amplifier is actuated. The recovery time is also extremely shortened from 40 to 0.5 seconds, so that the telephone message even in a big level difference can be recorded clearly at proper level.

1.7 Dual Flywheel Mechanism

Applying two flywheels turning round oppositely to each other, the strength caused by wobble or others is canceled each other, and stable performance of flywheel rotation is always assured.

1.8 Cue and Review Pushbuttons

By depressing the CUE or REVIEW pushbutton, the tape can be fast forward or rewind while monitoring recorded sound. This feature is very convenient for easy reference and indexing or repeated playback. By depressing the CUE or REVIEW pushbutton with the PLAY pushbutton leaving depressed, the pinch roller is separated from the capstan, allowing the tape to be run at a high speed.

1.9 Four-Way Power Supply

The Model C-205 can be operated by four power sources: dry cells (UM-1 x 4), AC power line, external DC power supply (DCA-6, sold separately) and rechargeable battery pack (RBC-1, sold separately). To prevent the possibility of being overloaded by two or more power sources, the contacts of the AC Jack (J001) and external DC Jack (J002) automatically select only one power supply in the following priority: 1. AC power line; 2. external DC power supply; 3. dry batteries (rechargeable battery pack). Thanks to its built-in recharge circuit, even when not operated, the Model C-205 can recharge the rechargeable battery pack as long as it is connected to AC power line or external DC power supply.

1.10 One-Touch Recording

The tape recorder can be set to the recording mode just by pressing the REC button. There is no need to press the PLAY button.

1.11 Memory Rewind and Memory Replay

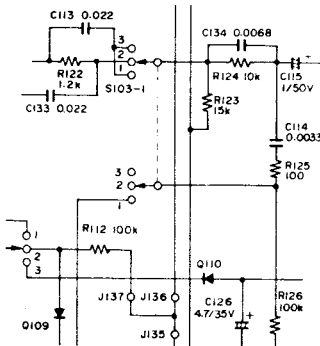
As the memory switch is turned on to obtain a rewind state, the counter registers "999", and the machine stops. (memory rewind)

Likewise as the memory switch is turned and when the "play" state is changed to the "review" state, the button is locked and the review sound is muted. Under this condition, as the counter registers "999", only the rewind button is released, returning to the "play" state again. (memory replay)

2. CIRCUIT DESCRIPTION

2-1 Ambient Noise Control (ANC)

1. High pass
2. Normal
3. Band pass



- A. Low-pass cut is effected by C113 and R123.
- B. High-pass cut is effected by C114 and R124.

2-2 Input Change-over and Recovery Time Change-over Circuit

The function under the following conditions will be explained below in the case of the circuit given above:

- A. When no plugs are inserted:
By way of the SW circuit of TEL JACK and AUX JACK and R252, current flows to FET in the incorporated microphone, and thus the incorporated microphone works. (Only in REC mode by virtue of S105-5)

- C107: coupling
- R106: dividing resistor

- B. When the plug is inserted into MIC JACK:
Although the incorporated microphone operates, passage of the signal from the microphone is interrupted at the contact of MIC JACK and is not transmitted. (Same as the existing model)

- C. When the plug is inserted into TEL JACK:
The SW circuit of TEL JACK is switched and the current routing of FET in the incorporated microphone is interrupted, thus making the incorporated microphone inoperative. Conversely, because the emitter circuit of Q101 is grounded by way of this SW circuit and SW circuit of AUX JACK and R252, the narrow

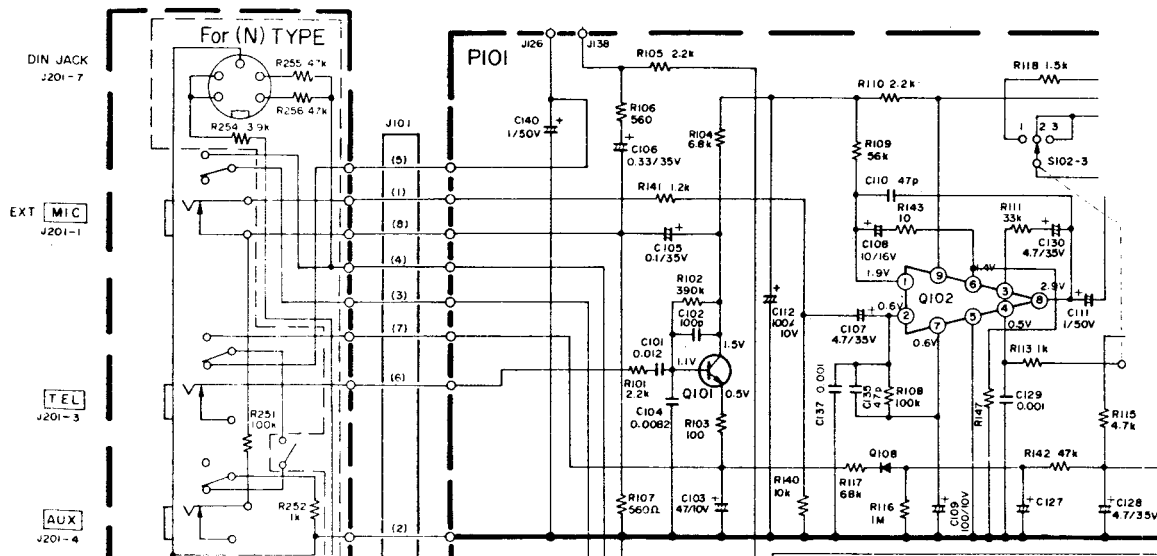
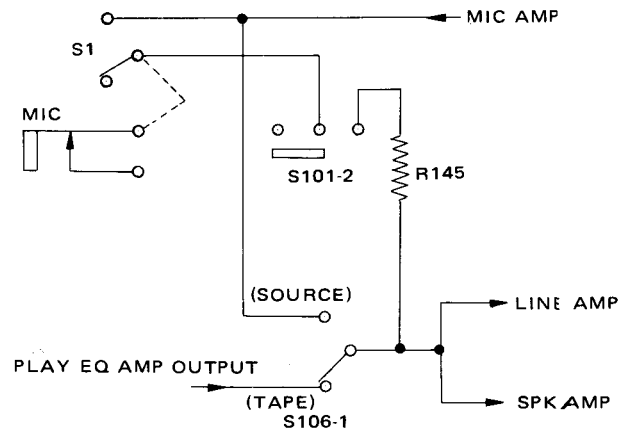
band amplifier for TEL only made up mainly of Q101 starts to function.

At the same time, the charge and discharge circuit for ARL made up of C127, R142, R116, etc. is grounded through Q108 and R117, and thus the recovery time is reduced.

D. When the plug is not inserted into AUX JACK:
Because the SW circuit of AUX JACK is switched and the current route of FET in the incorporated microphone is interrupted, the incorporated microphone becomes inoperative. AUX signal flows through R251 and is divided by R107 and fed to Q102. (The same as in the case of the existing model.)

2-3 PA/PLAY MIX

Since this unit is equipped with a PA/PLAY MIX device, by connecting a microphone to the microphone jack during reproduction, it can be used as a loud speaker. Further, play mixing can be performed together with the tape. Only when the microphone plug is inserted by means of switch S1 which is incorporated in the microphone jack, MIC AMP output is led to the common terminals of the source monitor switch S106-1. It is made to work only during reproduction as it is connected through the recording/replay switch S101-2, and its level is dependent on R145, insertion resistor.



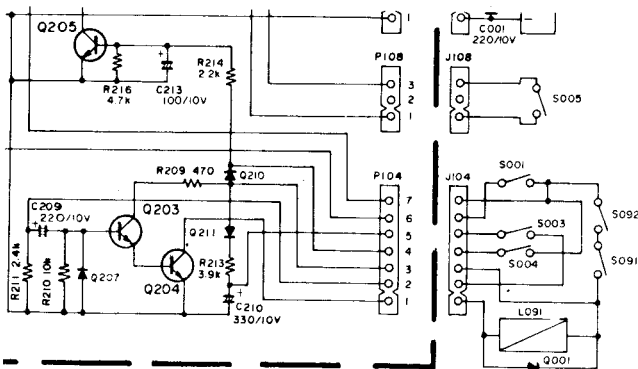
2-4 Memory Replay

Rewind is performed when the memory switch (S092) is turned on for a Play condition. (REW switch S091 is "on".)

Under the above condition, the circuit between Q204 collector and emitter is interrupted and no current is fed to the solenoid L091. In order to erase the sound applied between them, voltage is applied to the base of Q205 for effecting reproduction muting.

As the counter registers "999", the counter switch S003 turns on, the charge of C210 is fed to the base of Q203, and Q204 is turned on, thus placing the solenoid in operation. By this solenoid, the REW button is released.

By use of this muting circuit, furthermore, by the pause muting switch S004, pause muting is effected.



3. SERVICE NOTE

As can be seen from the circuit diagram, the chassis of Model C-205 consists of following units. Each unit mounted on a printed circuit board is described within the square enclosed by bold dotted line on the circuit diagram.

- Pre-Amp** mounted on P.W. Board, P101
- Power Supply** mounted on P.W. Board, P101
- Switch** mounted on P.W. Board, P101
- Terminals** mounted on P.W. Board, P201
- Headphone** mounted on P.W. Board, P301
- Batt Fuse (U, C only)** mounted on P.W. Board, P501
- AC Voltage Selector (N only)** mounted on P.W. Board, P401

4. TEST EQUIPMENT REQUIRED FOR SERVICING REPLACEMENT

For measuring checking the Model C-205, the following instruments and materials are necessary.

- Audio Oscillator (af OSC)
- Attenuator (600 Ω)
- VTVM
- Distortion Meter
- Oscilloscope
- Bandpass Filter
- Wow and Flutter Meter
- Torque Meter (Cassette Type)
- Digital Frequency Counter
- Blank Tapes (Completely erased with bulk eraser)

	Tape Selector	
	(EQ)	(Bias)
AC-211 (Normal)	120 μsec	Low
AC-511 (CrO ₂)	70 μsec	High
CS-30 (Fe-Cr)	70 μsec	Low

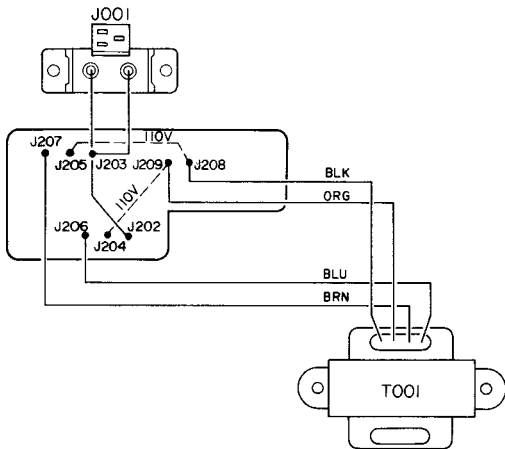
NOTE: If any doubt is noted in a measured value, used new tape.

- Test Tape (New tape)
 - MTT-111 Wow and Flutter. Tape Speed.
 - MTT-112 Measurement of output level. Signal to Noise Ratio.
 - MTT-150 Adjustment of output level.
 - MTT-116U Measurement of Frequency Response. (For Normal)
 - MTT-116K Measurement of Frequency Response (For CrO₂, Fe-Cr)
 - MTT-121 Crosstalk
 - MTT-141 Channel Separation

NOTE: No input is applied to the MIC terminal in PLAYBACK mode. Otherwise, it will be a mixed signal because of the PA circuit.

**CHANGE OF POWER TRANSFORMER
PRIMARY VOLTAGE (for Europe Model Only)**

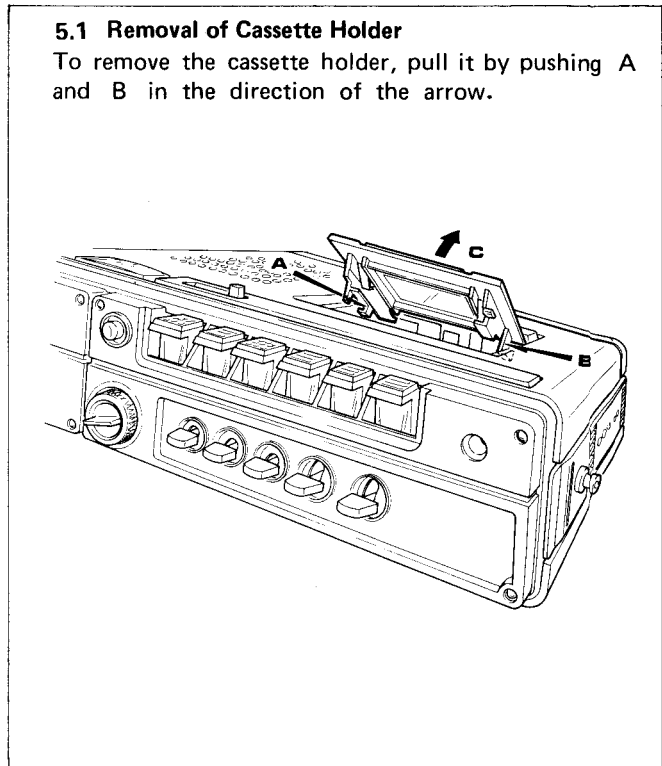
The C-205 is wired for 220V line voltage. It can be operated with 110V AC by changing the power transformer lead wire as illustrated.



**5. CASE COVER AND CHASSIS
DISASSEMBLING PROCEDURES**

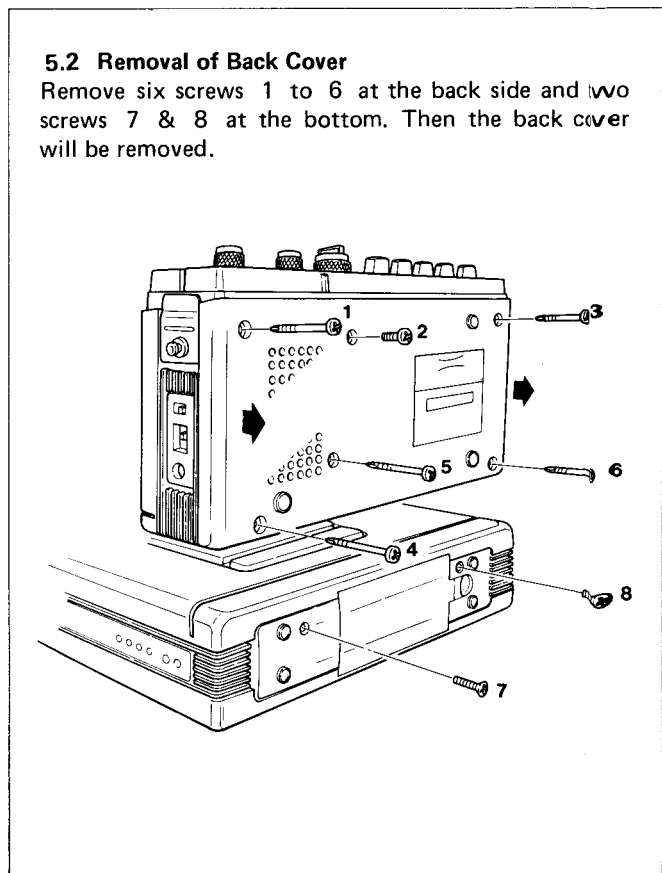
5.1 Removal of Cassette Holder

To remove the cassette holder, pull it by pushing A and B in the direction of the arrow.



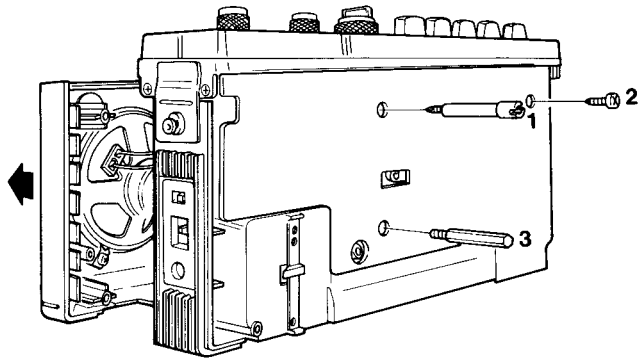
5.2 Removal of Back Cover

Remove six screws 1 to 6 at the back side and two screws 7 & 8 at the bottom. Then the back cover will be removed.



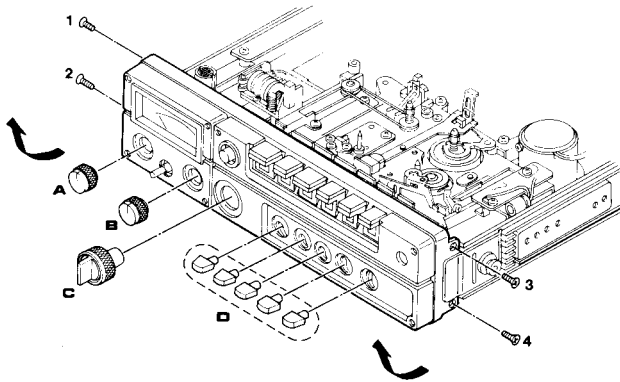
5.3 Removal of Upper Case

Remove three screws 1 to 3. Then the case will be removed in the direction of the arrow. At that time, be careful to disconnect the wires to the speaker.



5.4 Removal of Front Case

Firstly remove three knobs A, B and C and five knobs of D. Secondly remove four screws 1 to 4 of each side. Then the front case will be removed in the direction of the arrow. At that time, all functional buttons should be previously pushed down so as not to be caught by the front case when removing.

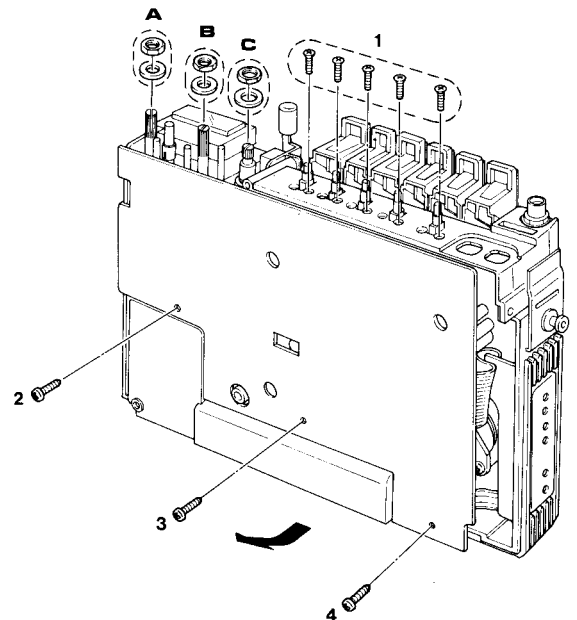
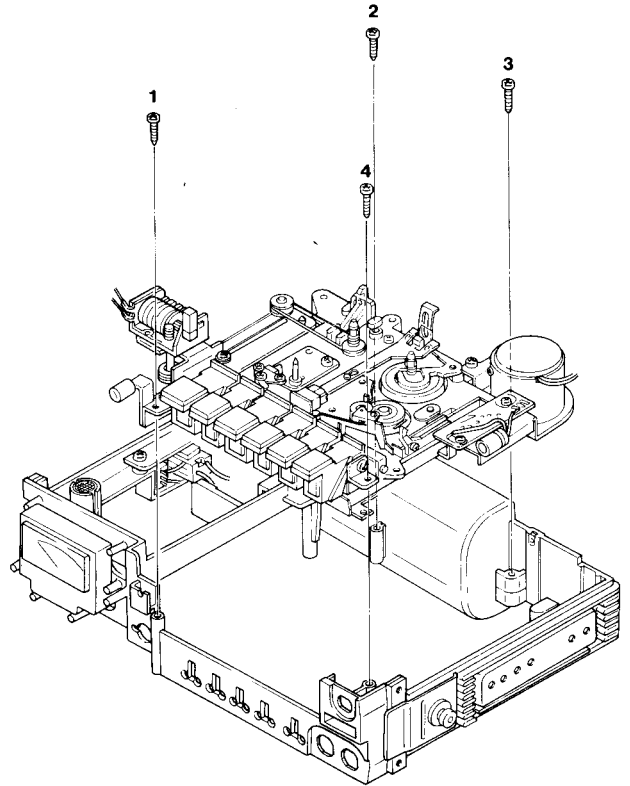


5.5 Removal of Main Board

Remove five screws of 1 and three nuts A to C in the front side. Next remove three screws 2 to 4 and take off the main board in the direction of the arrow.

5.6 Removal of Mechanism

Remove four screws 1 to 4. Then the mechanism will be removed.



6. ADJUSTMENT AND MEASUREMENT (AUDIO) INSTRUCTIONS

Precautions: Prior to any adjustment or measurement, clean the head slits with gauze containing alcohol or

6-A MECHANICAL ADJUSTMENTS

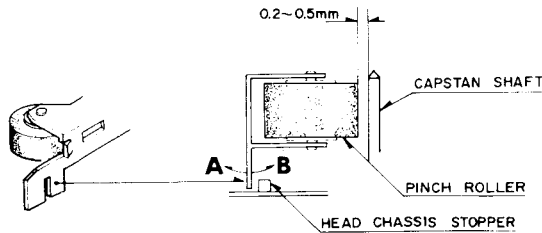
6A-1 Play Operation Check

(1) TIMING CHECK

- Depress button PLAY, and check to make sure that the take-up reel rotates first and then that the pinch roller rotates. Simultaneous rotation of these reel and roller is not acceptable.

NOTE: For this check, slowly depress the button without tape mounted regardless of locking condition.

- Slowly depress button PLAY, and the take-up reel will start rotation. At that time, check to make sure that a clearance between the pinch roller and capstan is less than 0.5 mm.



(2) TIMING ADJUSTMENT

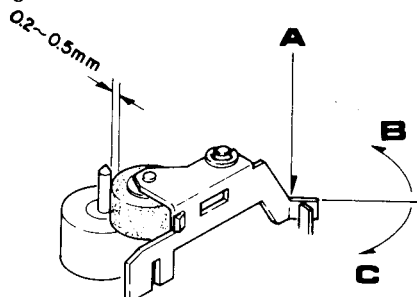
If out of specification, bend the part of the pinch roller bracket which faces the head chassis stopper. In the figure shown above, bend the part in the direction of A to decrease the clearance. To increase the clearance, bend the part in the direction of B.

NOTE: After adjustment, check to be sure that the pinch roller bracket does not contact the head chassis stopper in PLAY mode.

6A-2 Pause Timing

Depress button PLAY, slowly depress button PAUSE, and the take-up reel will pause. At that time, check to ensure that a clearance between the pinch roller and capstan ranges from 0.2 to 0.5 mm. If out of the range, adjust a bending angle of the pinch roller bracket arm (view A).

NOTE: To increase a clearance between the pinch roller and capstan, decrease the angle (in the direction of C in the figure). To decrease the clearance, increase the angle (in the direction of B).

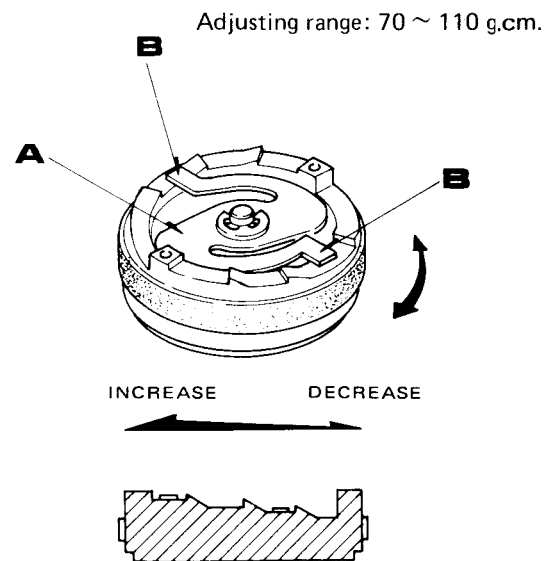


carbon tetrachloride, and fully demagnetize the heads, capstan and similar parts.

6A-3 Torque Adjustment (FF, REW)

Set the extended parts (B in the figure shown above) of the torque adjustment leaf spring (A in the figure) of the FF/REW idler on any one of three stepping parts of the idler.

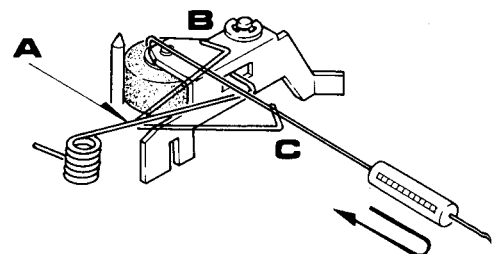
NOTE: To increase torque, set the extended parts to the stepping part of "INCREASE" and to decrease it, set those to the stepping part of "DECREASE."



6A-4 Pinch Roller Pressing Force

As shown above, measure pressing force of the pinch roller using a gauge. For measurement, proceed as follows. Pull the pinch roller off the capstan shaft as shown with the arrow, and gradually release it to the capstan. Just when the pinch roller starts rotating, read an indication of a gauge. Pressing force must range in $300\text{ g} \pm 50\text{ g}$. If out of the range, bend the pinch roller spring in the direction of B or C at section A shown above.

NOTE: To increase pressing force, bend the said spring in the direction of B, and to decrease the force, bend it in the direction of C.

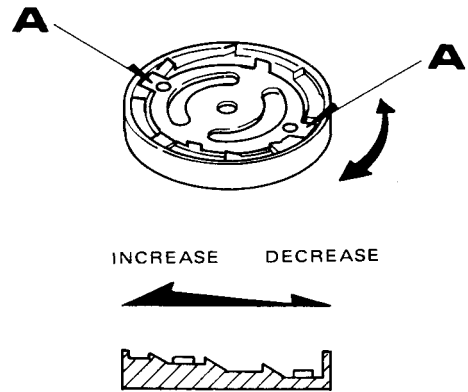


6A-5 Torque Adjustment (PLAY)

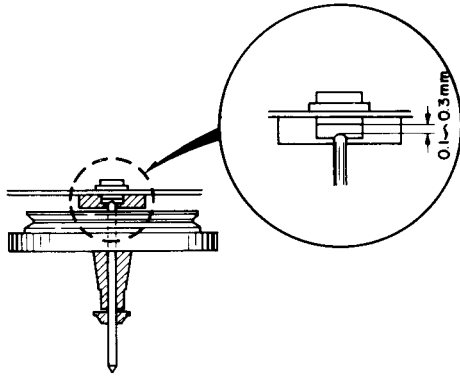
Mount the extended parts **A** (two) of the disc leaf spring on any one of the stepping parts of the idler. Adjusting range: 40 to 70 g.cm.

NOTES:

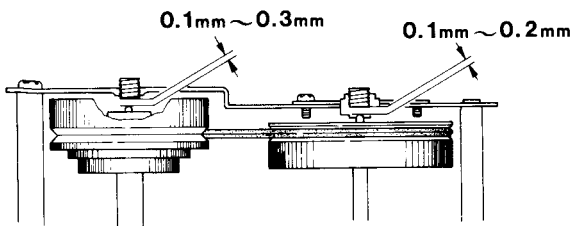
- (1) To increase torque, mount the extended parts on "INCREASE" and to decrease torque, mount them on "DECREASE."
- (2) Check the take-up clutch for slipping. When the reel base is paused, the wheel must smoothly rotate. The wheel, when irregularly rotating or stopping, is not acceptable.



6A-6 Flywheel Thrust Adjustment

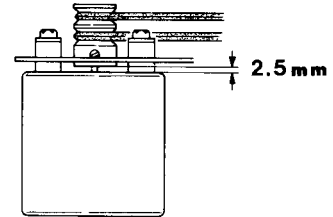


Adjust a clearance between the capstan tail end and thrust bearing to a range from 0.1 to 0.3 mm as shown. Adjust the thrust screw in the flywheel bracket using a Philips screwdriver. Since the clearance cannot be directly measured, capture a distance in an axial step of the flywheel with the sensibility. After adjustment has completed, secure the thrust screw with the screw lock.



6A-7 Installation of Motor Pulley

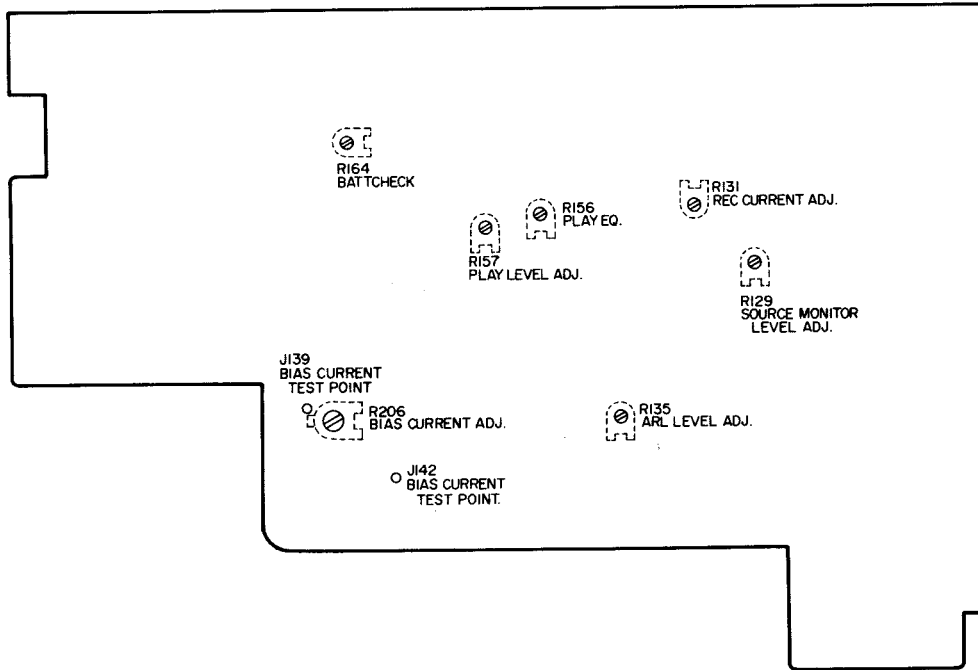
Check to ensure that a clearance between the DC motor and pulley is 3.1 mm. If out of specification, reposition the pulley as shown.



6A-8 Tape Speed Adjustment

Mount 3 kHz test tape on the set, and check to make sure that the meter pointer of a measuring instrument* (frequency counter) indicates 3000 Hz $\pm 3\%$ or less as specified. If tape speed exceeds the high limit, replace the pulley with a pulley of parts No. 4367262050. If the speed is lower than the low limit, replace it with a pulley of parts No. 4367262040.

6-B ELECTRICAL ADJUSTMENTS

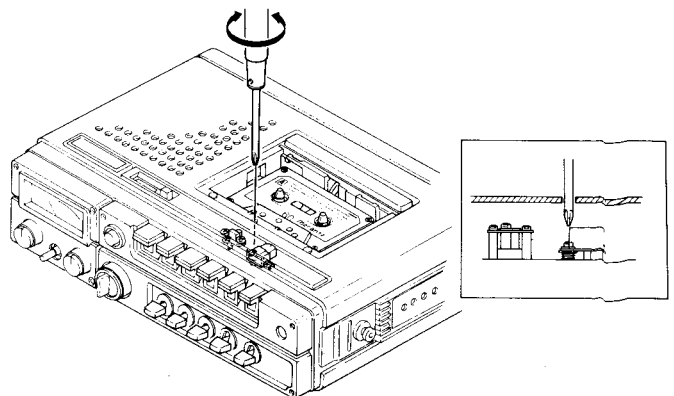
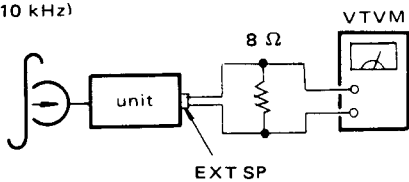


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6B-1 Azimuth Adjustment

Play back the 10 kHz or 6.3 kHz standard alignment tape. Adjust the azimuth adjusting screw 836N. After adjustment, repeatedly start and stop the tape several times to ensure no azimuth deviation.

Mode : Playback
(10 kHz)



6B-2 Meter Adjustment

SET UP

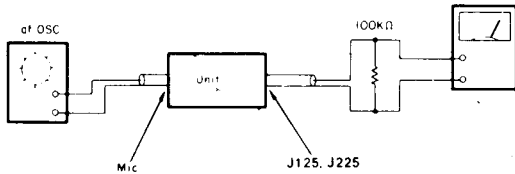
1. Power voltage: DC 4.5 V
2. Function switch position: TAPE

PROCEDURES

1. Set up the unit for the playback mode of operation.
2. Apply an external DC 4.5 V source to the DC 6 V jack. Adjust OVU so that the meter reading is OVU of scale.
3. Battery check switch: push

Mode: record

Tone 1kHz



6B-3 Head Azimuth Adjustment

SET UP

1. Power voltage:
 - 50 Hz/60 Hz voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Function selector switch position: TAPE
3. Output terminal: LINE OUT
4. Tape selector switch position: Normal
5. Load: Measuring instrument input impedance.
6. Test tape used: MTT-116U

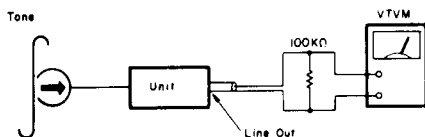
PROCEDURES

Play the 12.5 kHz portion of the test tape MTT-116U back. Adjust the head azimuth adjusting screw for maximum VTVM read.

CAUTION:

After adjustment, repeat the playback and stop setting a few times to make certain of no head azimuth deviation.

Mode: playback



6B-4 Tape Speed Adjustment
(Electrical Servo Controlled Motor only)

SET UP

1. Power voltage:
 - 50 Hz/60 Hz AC voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Function selector switch position: TAPE
3. Tone control position: (MAX)
4. Output terminal: EXT SP
5. Test tape used: MTT-111 (3 kHz tone)
6. Unit position: Horizontal
7. VARI-SPEED knob: Center

PROCEDURES

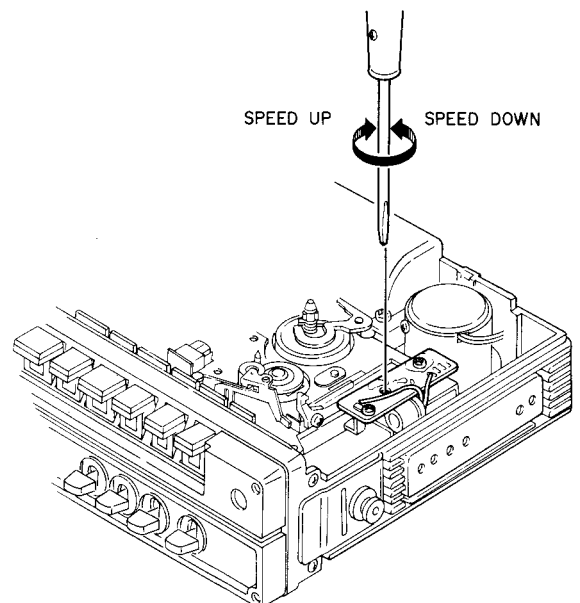
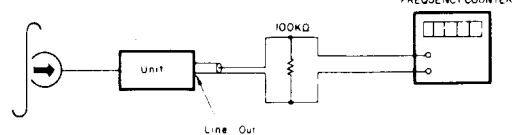
Play the mid position of the test tape MTT-111 back. Adjust the tape speed adjusting semi-fixed resistor in Governor Circuit for 2990 to 3010 Hz counter indication.

CAUTIONS:

1. For adjustment the unit should be set up in the normal operating condition.
2. Do not proceed the semi-fixed resistor more turns than needed.
3. Do not proceed with adjustment after the unit.
4. If a strong shock or similar vibration is applied to the unit after adjustment, make certain that the measured tape speed had not changed.
5. If the speed deviation occurs, perform the adjustment again.
6. Be careful that the counter may indicate a wrong value because of too low counter level.
7. Before adjustment, allow for 30 seconds or more after depressing of the PLAY pushbutton.

Mode: playback

Tone 3kHz



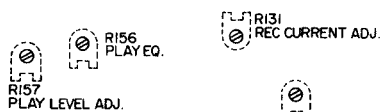
6B-5 Playback Equalizer Adjustment

SET UP

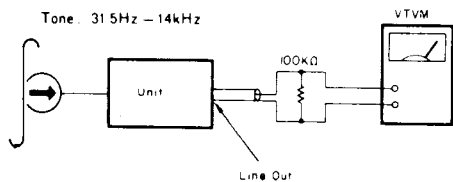
1. Power voltage:
 - 50 Hz/60 Hz voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Function selector switch position: TAPE
3. Output terminal: LINE OUT
4. Tape selector switch position: Normal
5. Load: Measuring instrument input impedance.
6. Test tape: MTT-116U

PROCEDURES

1. Play the test tape MTT-116U. Let the 315 Hz signal level be referenced as 0 dB.
2. Adjust R156 for 10 kHz frequency response of 0 to +1 dB in reference to the 315 Hz signal level.
3. Note that clockwise turning of R156 will increase the 315 Hz signal output level.



Mode: playback



6B-6 Playback Output Level Adjustment

SET UP

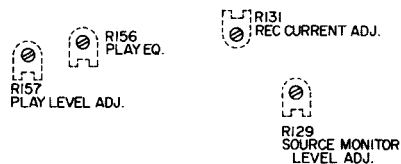
1. Power voltage:
 - 50 Hz/60 Hz voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Function selector switch position: TAPE
3. Output terminal: LINE OUT
4. Tape selector switch position: Normal
5. Load: Measuring instrument input impedance.
6. Test tape used: MTT-150

PROCEDURES

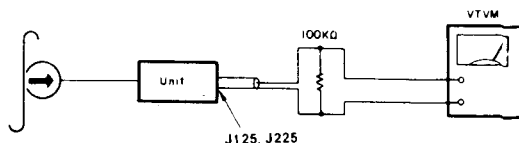
1. Play the test tape MTT-150 back.
Adjust R157 for 600 mV playback output level.
2. Register a meter indication to OVU (in priority to output).

CAUTION:

This adjustment should be performed after the one for the playback equalizer. If the playback equalizer is adjusted after the playback output adjustment, the playback output should be readjusted.



Mode: playback



MC-Service

6B-7 Recording Bias Current Adjustment (Temporal)

SET UP

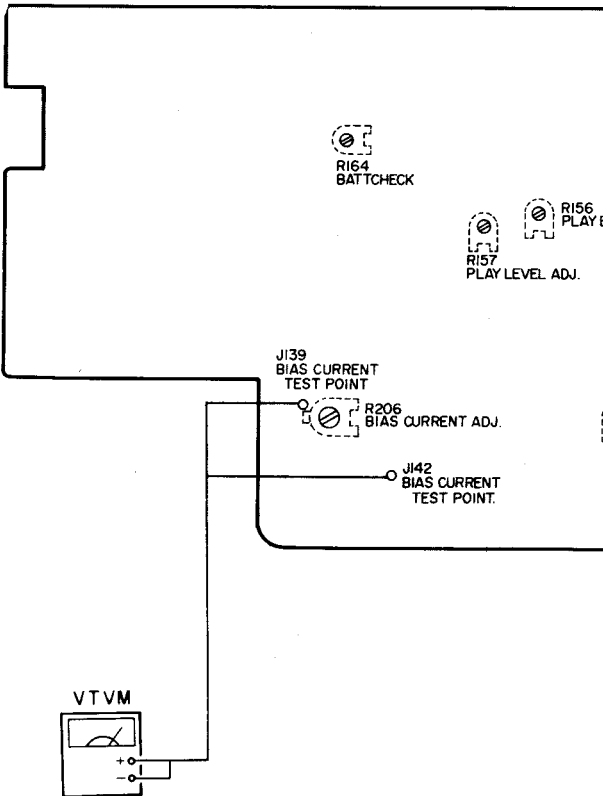
1. Power voltage:
 - 50/60 Hz AC voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Tape selector switch position: Normal
3. Load: Measuring instrument input impedance.

PROCEDURES

1. Set up the unit in recording mode of operation. Connect the VTVM to J139 and J142. Adjust the semi-fixed resistor R206 for 1.2 mV VTVM read.
2. For the unit equipped with the tape selector switch, make certain that the VTVM reads approximately 1.9 mV with it set to the CrO₂ position.

CAUTION:

The measured recording bias current may be different from the actual value. If so, fix the VTVM lead wire connected to the 10 ohm resistor for minimum VTVM read.



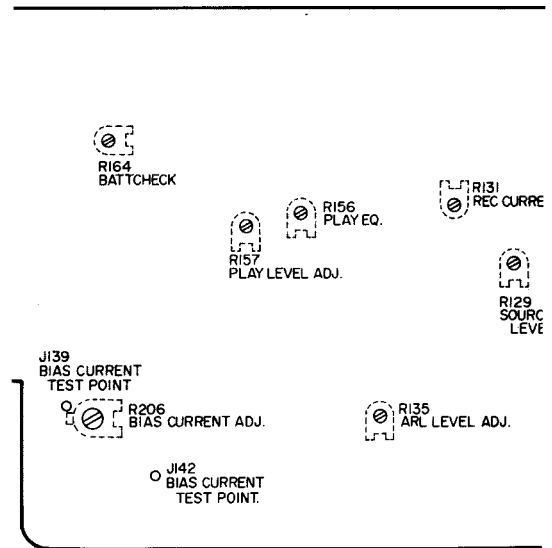
6B-8 ARL Level Adjustment

SET UP

1. Power voltage:
 - 50/60 Hz AC voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Input signal: 1 kHz -60 dB
3. Record selector position: MANUAL, OVU setting

PROCEDURES

1. Set the level to OVU with the REC selector switch set to the MANUAL position.
2. Select ARL and adjust the semi-fixed resistor R135 until the meter indicates OVU.



6B-9 Record-Playback Frequency Response Adjustment

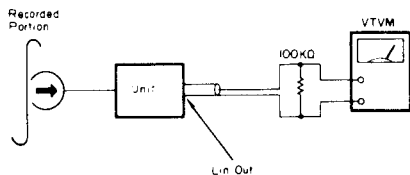
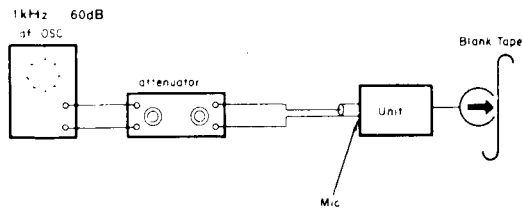
SET UP

1. Power voltage:
 - 50/60 Hz AC voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Tape selector switch position: FeCr
3. Input signal: 1 kHz, -60 dB with -20 dB referenced as 0 dB.
4. Output terminal: LINE OUT
5. Load: Measuring instrument input impedance.
6. Playback output level: Same as the recorded signal level.
7. Test tape used: CS-30

PROCEDURES

1. Connect the input signal to the MIC terminal. Set up the unit to the normal recording state.
2. In turn, reduce the input level by 20 dB with the use of the attenuator. Record the 1 kHz and 12.5 kHz tones.
3. Play the 1 kHz 20 dB down recorded tone back as 0 dB. Adjust the recording bias current until the 12.5 kHz response is within ± 3 dB as referenced to the 1 kHz, 0 dB response. Perform fine adjustment of the bias current R206 until the 12.5 kHz response is within ± 3 dB
4. If the recording current is recorded as being reduced in the above adjustment, be sure to measure the distortion.

Mode: record



MC-Service

6B-10 Record-Playback Output Level Adjustment

SET UP

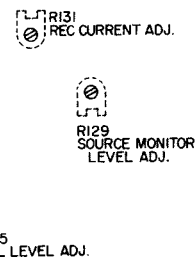
1. Power voltage:
 - 50/60 Hz AC voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Input signal: 1 kHz -60 dB
Adjust the signal to OVU using the REC control. Set the REC selector switch to the MANUAL position.
3. Tape selector switch position: Normal, CrO₂ and FeCr
4. Output terminal: LINE OUT
5. Load: Measuring instrument input impedance.
6. Test tape used: AC-211, AC-511 and CS-30

PROCEDURES

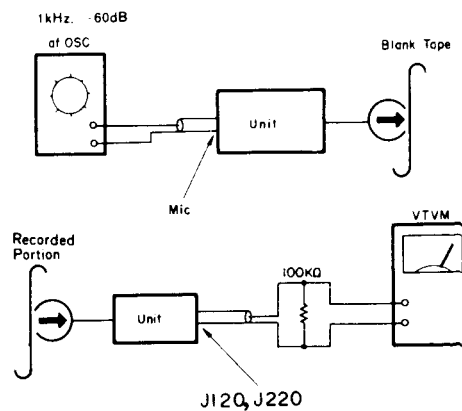
1. Connect the 1 kHz input signal to the MIC terminal. Set up the unit to the normal recording state.
2. Adjust the Rec. level semi-fixed resistor:
 - Normal position R131 and OVU 600 mV

CAUTION:

1. If the bias current is changed, be sure to perform the above adjustment.
2. Fully turn the semi-fixed resistor R129 for source monitor level adjustment to a maximum. If OVU is not achieved with the R131 turned to a maximum, adjust the R129 down to recording output.



Mode: record



6B-11 Tape Speed Measurement

SET UP

1. Power voltage: 50/60 Hz AC voltage rated for the unit to be used in a market country.
2. Output terminal: EXT. SPEAKER
3. Function switch position: TAPE
4. Tone control position: MAX
5. Test tape used: MTT-111 3 kHz tone.
6. Set position: HORIZONTAL

PROCEDURES

Play the wound-up end of the test tape MTT-111 back. Read the frequency counter indication.

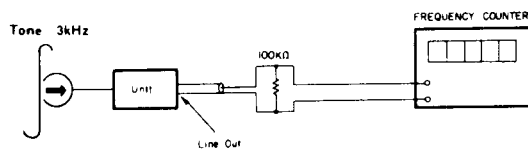
STANDARD

Tape speed: 4.8 cm/sec
 Frequency: 2910 to 3090 Hz

CAUTION:

The tape deck should be leveled as specified for this measurement.

Mode: playback



6B-13 Playback Output Level Measurement

SET UP

1. Power voltage:
 - 50/60 Hz AC voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Tape selector switch position: Normal
3. Function selector switch position: TAPE
4. Output terminal: LINE OUT
5. Load: Measuring instrument input impedance.
6. Test tape used: MTT-112

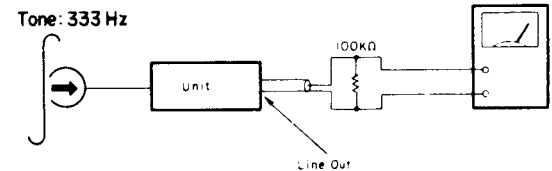
PROCEDURES

Play the tape back in the normal playback state. Read the VTVM indication.

STANDARD

700 mV ±3dB

Mode: playback



6B-12 Wow and Flutter Measurement

SET UP

1. Power voltage: 50/60 Hz AC voltage rated for the unit to be used in a market country.
2. Output terminal: EXT. SPEAKER
3. Function switch position: TAPE
4. Test tape used: MTT-111
5. Load: 8 ohm
6. Wow and flutter meter function switch position:
 - for U.S.A. & CANADA model
 - for EUROPE model

PROCEDURES

Play the test tape MTT-111 back. Read the wow and flutter meter indication.

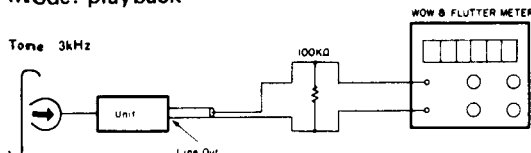
STANDARD

Less than 0.19 NAB weight (for USA & Canada)
 Less than 0.26 DIN weight (for Europe)

CAUTION:

The measurement should be performed at the wound-up end of the test tape.

Mode: playback



**6B-14 Playback Signal to Noise Ratio Measurement
SET UP**

1. Power voltage:
 - 50/60 Hz AC voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Tape selector switch position: Normal, CrO₂ and FeCr
3. Function selector switch position: TAPE
4. Output terminal: LINE OUT
5. Load: Measuring instrument input impedance.
6. Test tape used: MTT-112

PROCEDURES

1. Load the test tape MTT-112. Set up the unit to the normal playback state.
2. Read playback output as a 0 dB reference. Then playback blank tape and note the output level drop in dB.
3. Repeat the above measurement for each tape selector switch position.

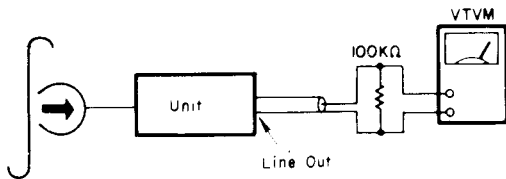
STANDARD

	Normal	CrO ₂	FeCr
w/Battery	greater than 49 dB	greater than 51 dB	greater than 51 dB
w/AC Supply	greater than 46 dB	greater than 48 dB	greater than 48 dB

CAUTIONS:

1. Arrange the unit power cord for minimum hum component.
2. Effect by induction noises should be minimized for the measurement.
3. When playing the standard reference level tape MTT-112 back, the VU meter indication is close to +0.83 dB VU and is used as the reference level for the signal to noise ratio measurement for 0 dB.
4. The measurement should be performed by using IEC A-curve filter.

Mode: playback
Tone 333Hz



6B-15 Playback Frequency Response Measurement

SET UP

1. Power voltage:
 - 50/60 Hz AC voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Tape selector switch position: Normal
3. Function selector switch position: TAPE
4. Output terminal: LINE OUT
5. Load: Measuring instrument input impedance.
6. Test tape used: MTT-116U

PROCEDURES

1. Play the test tape MTT-116U back. Let the 40 and 12.5 kHz output level be 0 dB as reference level.
2. Read the 40 and 12.5 kHz output level differences from the 315 Hz 0 dB reference level.
3. For the above measurement, use the test tape MTT-116 K for the CrO₂ and FeCr position for the 40 Hz or 12.5 kHz.

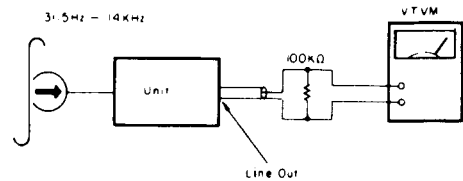
STANDARD

In reference to the 315 Hz, 0 dB signal output level,
+4 dB to -6 dB at 40 Hz
+4 dB to -6 dB at 12.5 kHz.

CAUTION:

Since the test tapes used may involve same head azimuth difference, the head azimuth should be corrected at the highest frequency of each test tape before measurement.

Mode: playback



MC-Service

6B-16 Record-Playback Output Level Measurement

SET UP

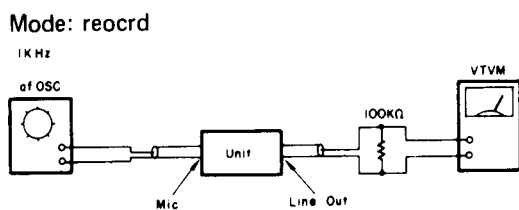
1. Power voltage:
 - 50/60 Hz AC voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Output terminal: LINE OUT
3. Tape selector switch position: Normal, CrO₂ and FeCr
4. Function switch position: SOURCE – TAPE
5. Input signal: 1 kHz -60 dB at MIC terminal
6. Recording level control position: OVU
7. Load: Measuring instrument input impedance.
8. Test tape used: AC-211, AC-511, CS-30

PROCEDURES

1. Record the 1 kHz -60 dB signal in the normal recording state (OVU at SOURCE).
2. Play the recorded signal back. Read the VU meter indication.
3. Proceed for the CrO₂ and FeCr positions each in the same manner.

STANDARDS

1. Normal position: 600 mV ±3 dB
2. CrO₂ position: 600 mV ±3 dB
3. FeCr position: 600 mV ±3 dB



6B-17 Record-Playback Harmonic Distortion Measurement

SET UP

1. Power voltage:
 - 50/60 Hz AC voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Input signal: 1 kHz -60 dB, 0VU Adjust.
3. Tape selector switch position: Normal, CrO₂ and FeCr
4. Output level: Same as the recorded signal level. (Playback)
5. Output terminal: LINE OUT
6. Load: Measuring instrument input impedance.
7. Test tape used:

AC-211	(Normal)
AC-511	(CrO ₂)
CS-30	(FeCr)

PROCEDURES

1. Record the 1 kHz signal in the normal recording state.
2. Play the recorded signal back in the normal playback state. Calibrate the harmonic distortion meter to 100% at the INPUT CONT. Adjust the adjusting knob for minimum meter pointer deflection, and read the harmonic distortion.
3. Proceed for the Normal, CrO₂ and FeCr positions each in the same manner.

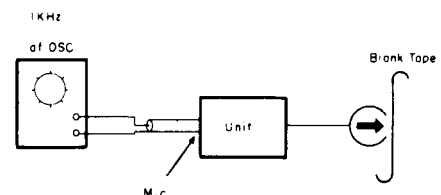
STANDARDS

- Less than 4.0% the NORMAL
- Less than 4.5% the Fe Cr
- Less than 4.5% the CrO₂

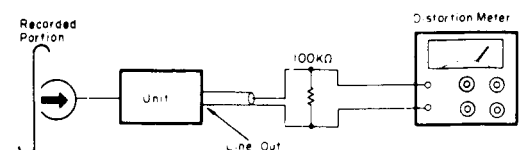
CAUTIONS:

1. Be sure to demagnetize the heads as the measured values may deviate from the accurate values.
2. Note that excessive wow and flutter also causes deviation of the measured values.

Mode: record



Mode: playback



6B-18 Record-Playback Signal-to-Noise Ratio Measurement

SET UP

1. Power voltage:
 - 50/60 Hz AC voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Input signal: 1 kHz -60 dB
Adjust the level to +0.83 dB using the REC control.
3. Tape selector switch position: Normal, CrO₂ and FeCr
4. Output level: Same as the recorded signal level. (Playback)
5. Output terminal: LINE OUT
6. Load: Measuring instrument input impedance.
7. Test tape used:

AC-211	(Normal)
AC-511	(CrO ₂)
CS-30	(FeCr)

PROCEDURES

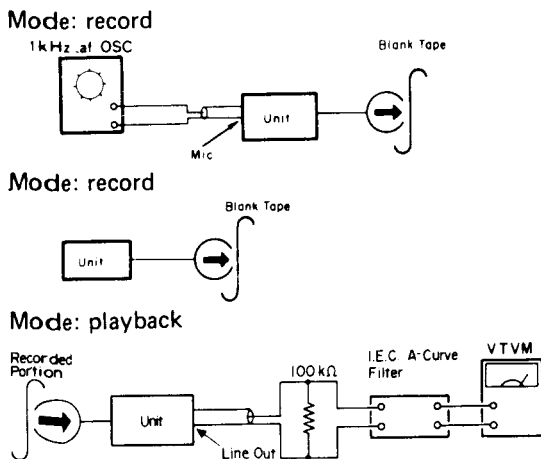
1. Record the 1 kHz signal in the normal recording state.
2. Disconnect the input signal from the microphone jack. In this state, record no signal. (Use erases plug.)
3. Play the 1 kHz signal back in the normal playback state. Let the output level be 0 dB as reference level.
4. Read difference between the recorded 0 dB reference output and no signal output levels.
5. The measurement should be performed by using IEC A-curve filter.

STANDARDS

	Normal	CrO ₂	FeCr
w/Battery	greater than 47 dB	greater than 48 dB	greater than 48 dB
w/AC Supply	greater than 43 dB	greater than 44 dB	greater than 44 dB

CAUTION:

Arrange the tape deck power cord for minimum hum component.



6B-19 Record-Playback Frequency Response Measurement

SET UP

1. Power voltage: 50/60 Hz AC voltage rated for the unit to be used in a market country.
2. Input signal: 1 kHz -60 dB
Adjust the signal level to OVU using the REC control. Also adjust signals of -20 dB (-80 dB), 50 Hz, 10 kHz and 12.5 kHz in the same manner.
3. Tape selector switch position: Normal, CrO₂ and FeCr
4. Output level: Same as the recorded signal level.
5. Output terminal: LINE OUT
6. Load: Measuring instrument input impedance.
7. Test tape used:

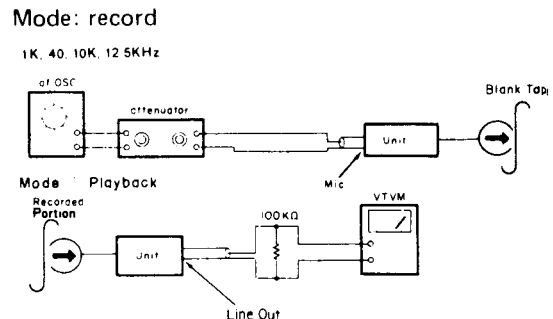
AC-211	(Normal)
AC-511	(CrO ₂)
CS-30	(FeCr)

PROCEDURES

1. Record the 1 kHz signal in the normal recording state. In turn, reduce the input level by 20 dB with an attenuator. Then, record the 1 kHz, 50 Hz, 10 kHz (Normal), and 12.5 kHz (CrO₂ FeCr) signals.
2. Play the recorded 1 kHz signal back in the normal playback state.
3. Let the 1 kHz, -20 dB down signal level be 0 dB as reference level. Read difference of the 50 Hz, 10 kHz (Normal) and 12.5 kHz (CrO₂ FeCr) signal output levels from the 1 kHz signal 0 dB reference level.

STANDARDS

1. NORMAL position.
 - +4 dB to -6 dB at 50 Hz
 - +4 dB to -6 dB at 10 kHz
 - with DOLBY switch at OFF
2. CrO₂ position.
 - +4 dB to -6 dB at 50 Hz
 - +4 dB to -6 dB at 12.5 kHz
 - with DOLBY switch at OFF
3. FeCr position.
 - +4 dB to -6 dB at 50 Hz
 - +4 dB to -6 dB at 12.5 kHz
 - with DOLBY switch at OFF



6B-20 Erasing Effect Measurement

SET UP

1. Power voltage:
 - 50/60 Hz AC voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Input signal: 100 Hz, -60 dB signal with +10 dB as OVU.
3. Tape selector switch position: Normal, CrO₂ and FeCr
4. Output level: Same as the recorded signal level. (Playback)
5. Output terminal: LINE OUT
6. Load: Measuring instrument input impedance.
7. Test tape used:

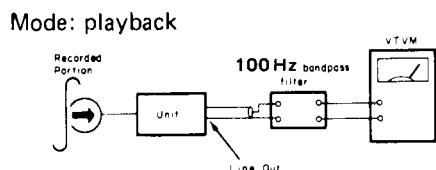
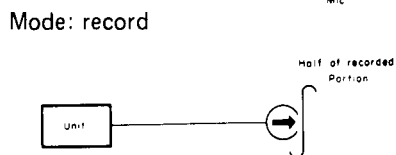
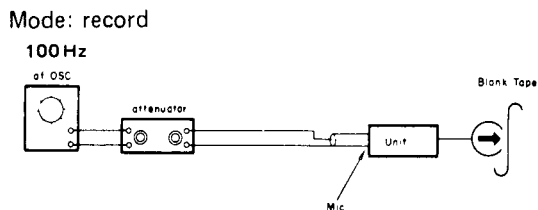
AC-211	(Normal)
AC-511	(CrO ₂)
CS-30	(FeCr)

PROCEDURES

1. Record the 1 kHz input signal in the normal recording state.
2. In turn, increase the input level by 10 dB with the attenuator, and record it.
3. Rewind a half portion of the 10 dB-up tape and record in no-signal state, or erase, on the portion with the input signal disconnected from the microphone jack (DC 4.5 V).
4. Playback in the normal playback state the input signal recorded in the normal recording state.
5. In turn, let the 10 dB-up recorded signal level be 0 dB as reference level. Read difference of the level at the erased position from the 0 dB reference level.

STANDARD

Greater than 50 dB at B.P.F.



6B-21 Leak Bias Measurement

SET UP

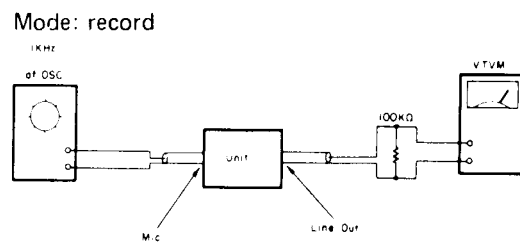
1. Power voltage:
 - 50/60 Hz AC voltage rated for the unit to be used in a market country.
 - DC 6 V
2. Input signal: 1 kHz, 60 dB signal
3. Tape selector switch position: Normal, CrO₂ and FeCr
4. Output level: Same as the recorded signal level. (Playback)
5. Output terminal: LINE OUT
6. Load: Measuring instrument input impedance.
7. Function switch position: SOURCE

PROCEDURES

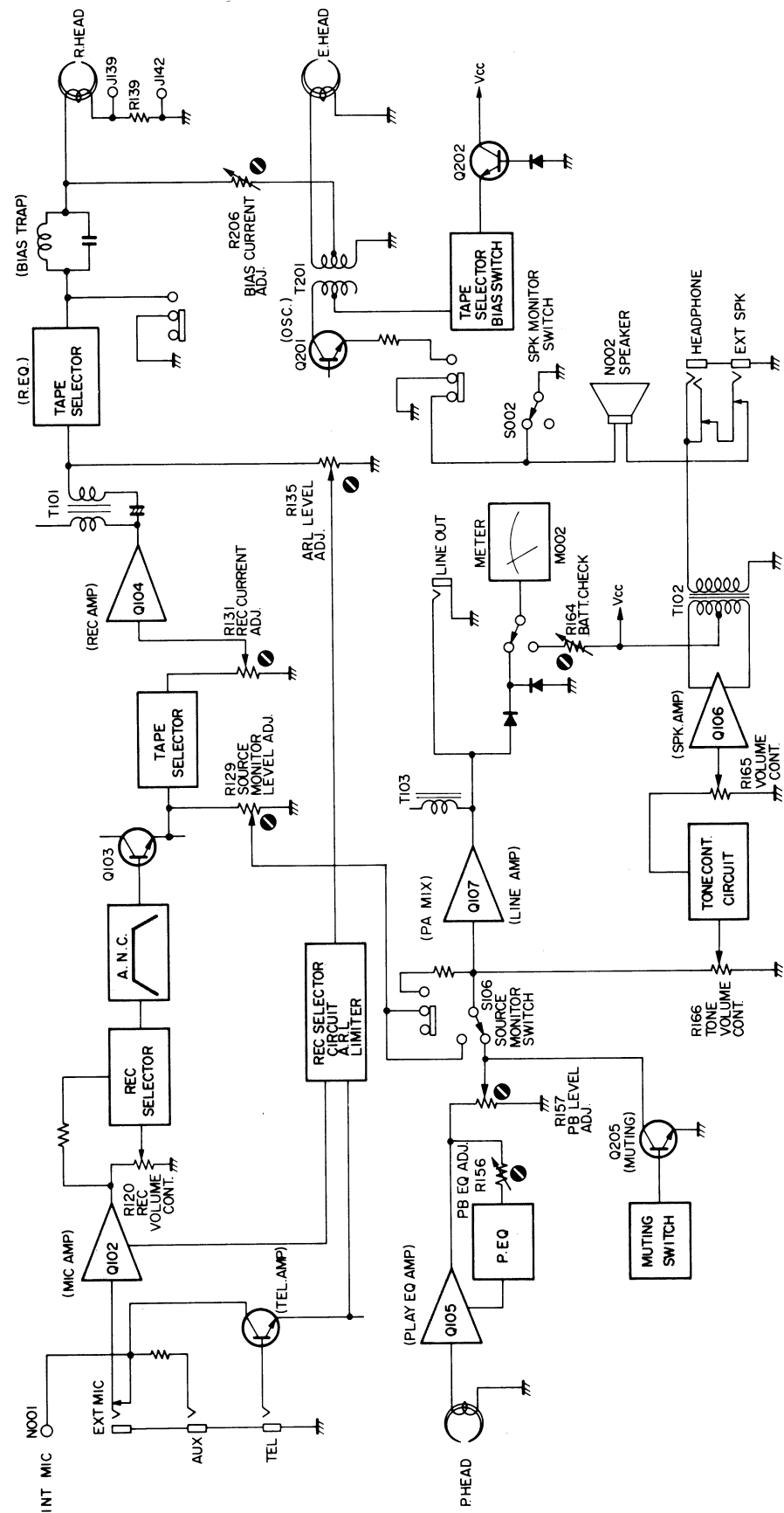
Record the 1 kHz input signal in the normal recording state. Let the monitor output level at the LINE OUT terminal be 0 dB as reference level. Read difference of the output level having the input signal disconnected from the 0 dB reference level.

STANDARD

Lower than 30 dB

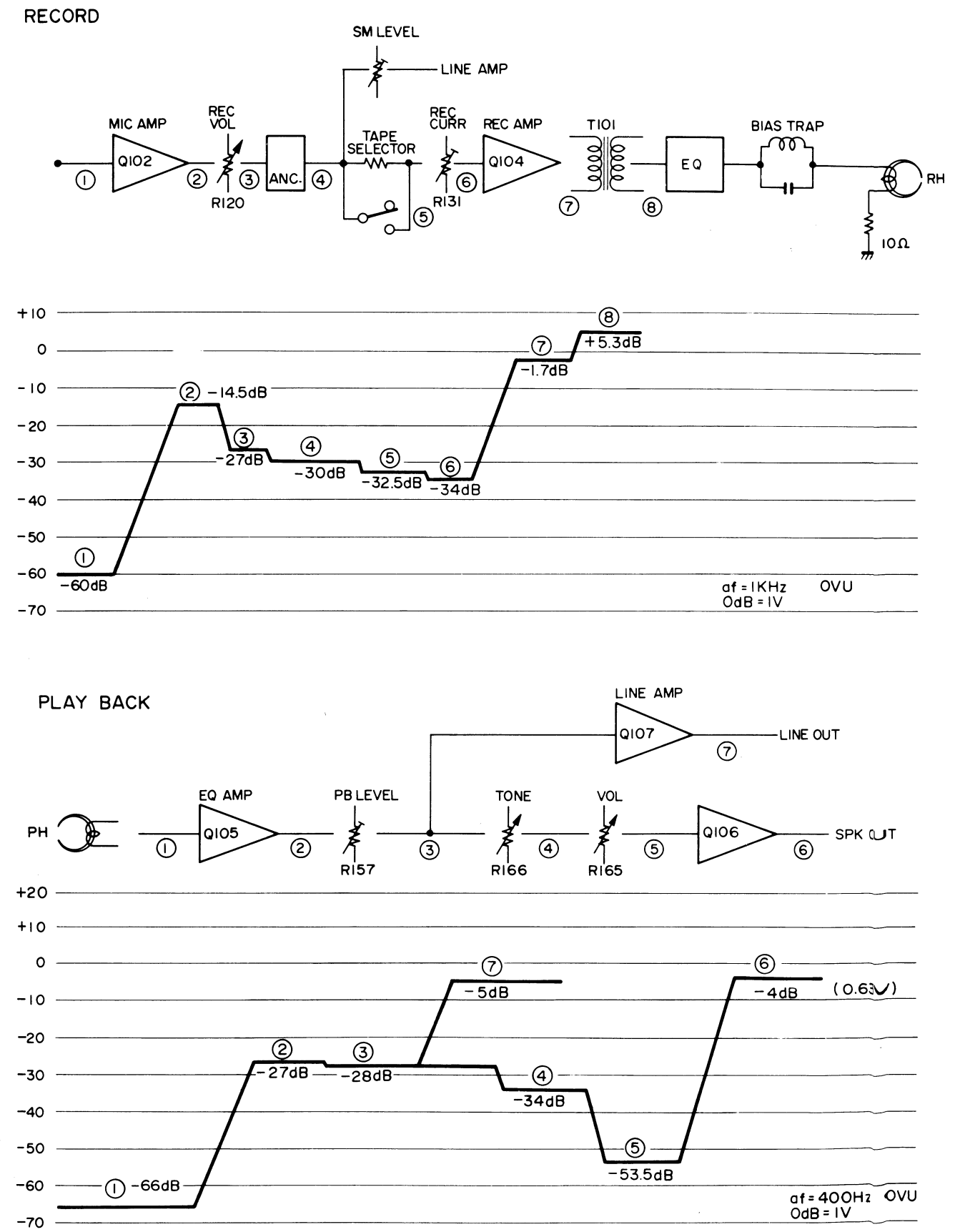


7. BLOCK DIAGRAM



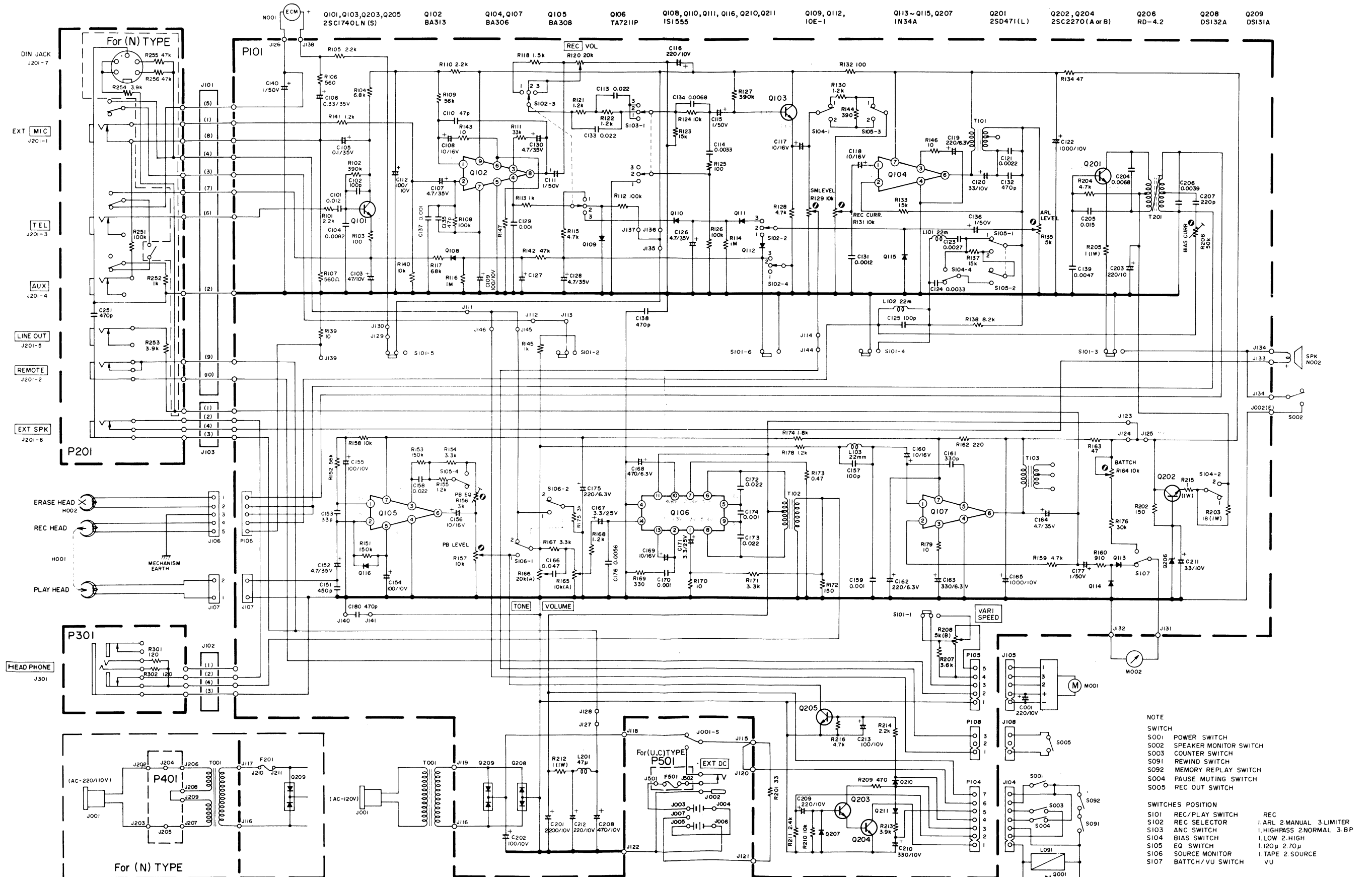
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8. LEVEL DIAGRAM



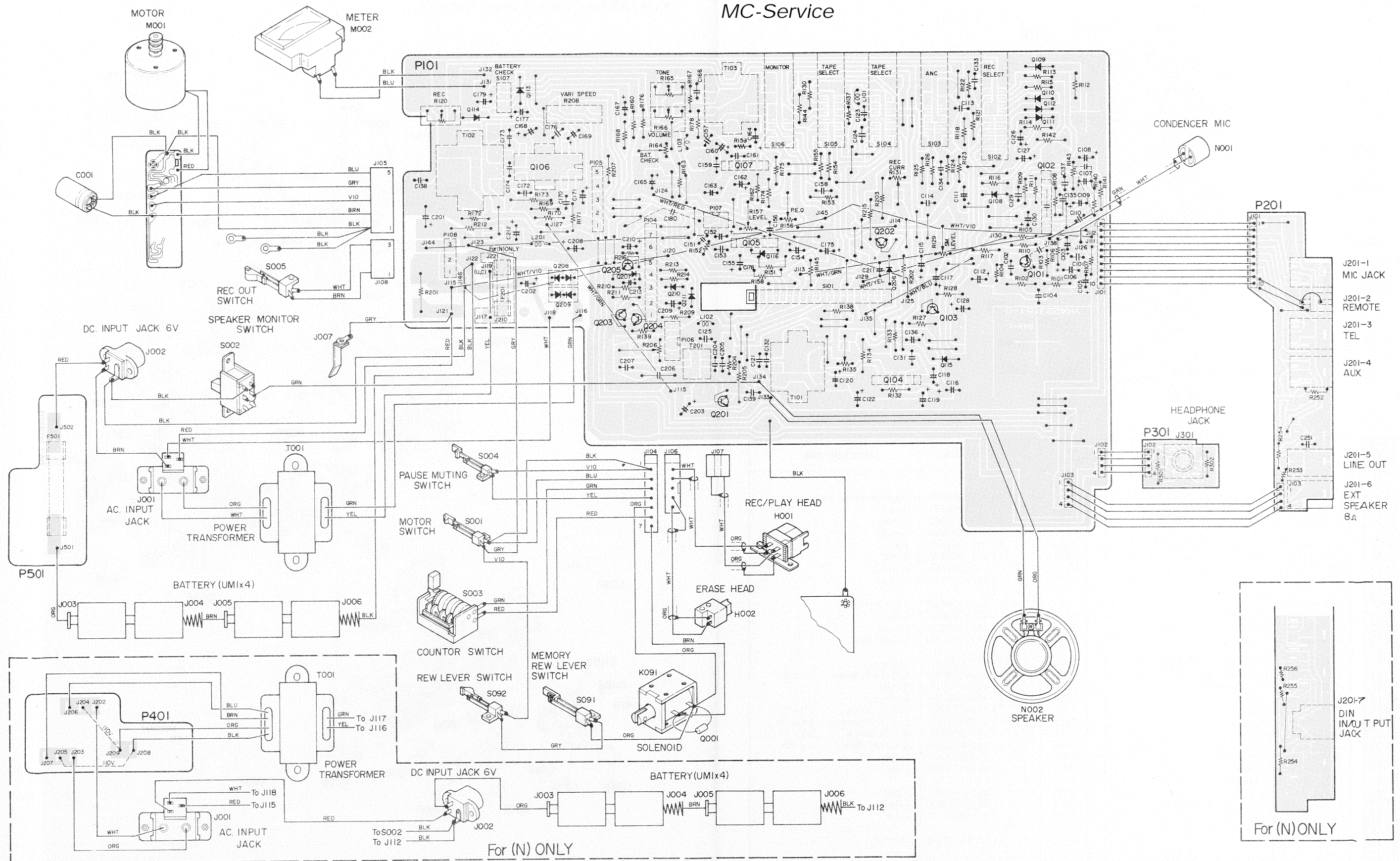
9. SCHEMATIC DIAGRAM

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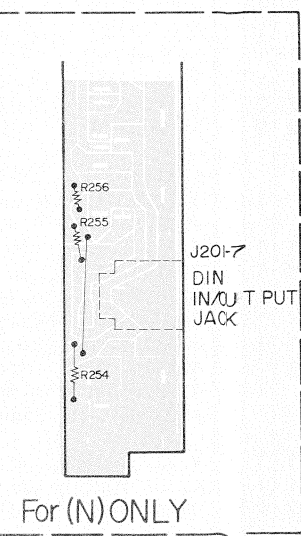


10. CIRCUIT BOARD DIAGRAM

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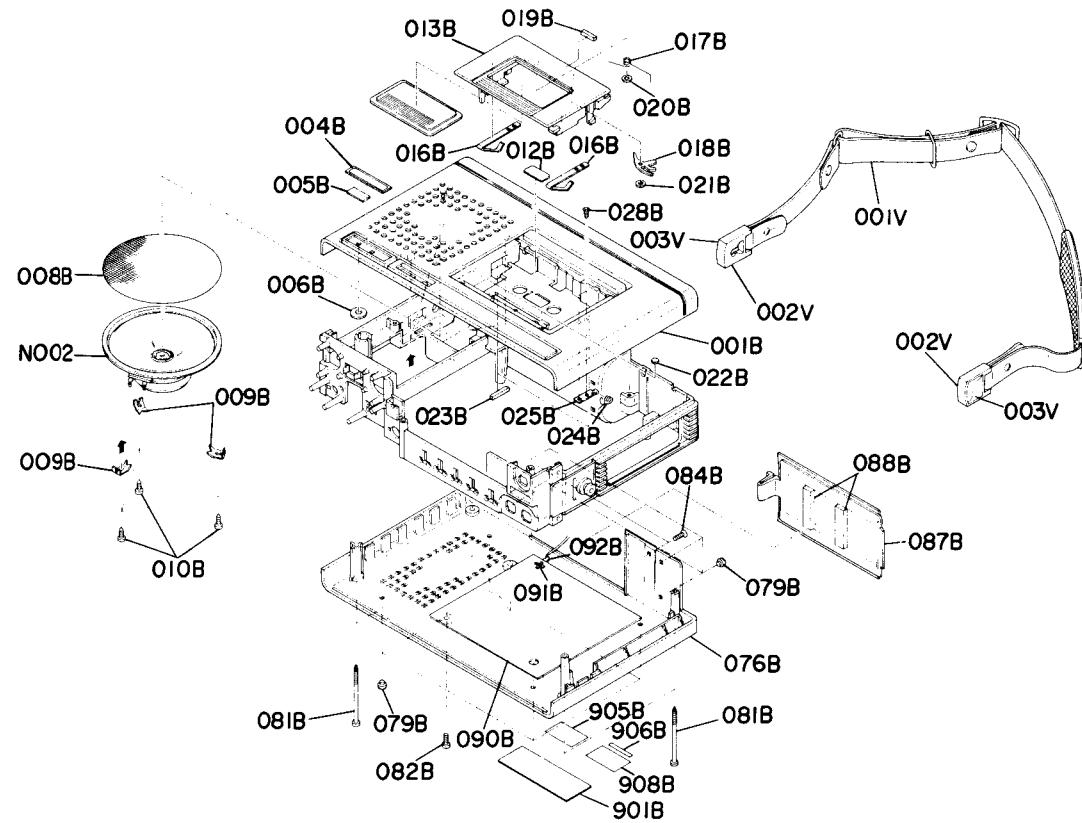


- J201-1 MIC JACK
- J201-2 REMOTE
- J201-3 TEL
- J201-4 AUX
- J201-5 LINE OUT
- J201-6 EXT SPEAKER 8Ω



11. EXPLODED VIEW AND PARTS LIST

● [C01-99] Top Case and Button Lid

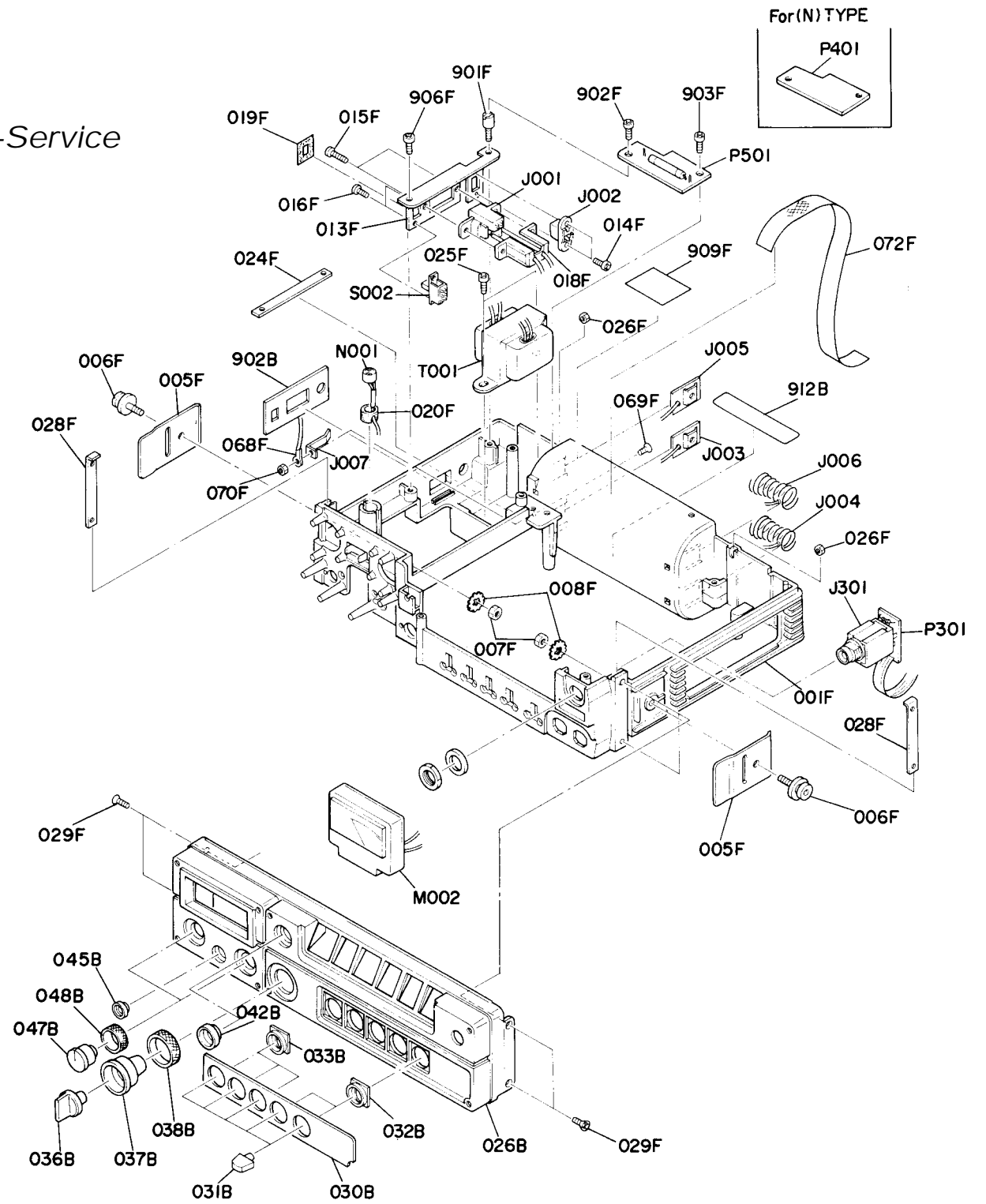


REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
*	1			4223064400	Case Assembly (A.B.C.D)
*		1		4223064410	Case Assembly (A.B.C1.D)
*			1	4223064420	Case Assembly (A.B.C2.D)
A	1	1	1	4223064430	Case Assembly, Top
001B	1	1	1	4223064013	Case
004B	1	1	1	4223063010	Escutcheon
005B	1	1	1	4223107030	Sheet
006B	1	1	1	4223107010	Sheet
008B	1	1	1	3426202022	Net
012B	1	1	1	3347274010	Reflector
022B	2	2	2	3412056062	Buffer
023B	2	2	2	3426056020	Buffer
C	1			4223257400	Lid Assembly, Bottom
C1		1		4223257410	Lid Assembly
C2			1	4223257420	Lid Assembly
076B	1	1	1	4223257010	Lid
079B	8	8	8	3441057010	Leg
090B	1	1	1	4223109010	Shield
091B	1	1	1	56483040E0	Eyelet
092B	1	1	1	62031340W0	Lug
901B	1			4223265012	Indicator
901B		1		4223265022	Indicator
901B			1	4223265030	Indicator
D	1	1	1	4223257430	Lid Assembly, Battery
087B	1	1	1	4223257020	Lid
088B	2	2	2	3411056050	Buffer

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
F	1	1	1	4223064450	Case Assembly, Cassette
013B	1	1	1	4223064503	Case
016B	2	2	2	4223115050	Spring
017B	1	1	1	4223115040	Spring
018B	1	1	1	3411354142	Lever
019B	1	1	1	3411056070	Buffer
020B	1	1	1	54020301E0	Washer
021B	1	1	1	54022601E0	Washer
G	1	1	1	4223156400	Strap Assembly
001V	1	1	1	4223156010	Strap
002V	2	2	2	3411155012	Hanger
003V	2	2	2	3411063140	Escutcheon
009B	3	3	3	4170005010	Clamper
010B	3	3	3	51280308B0	B.H. TAP. Screw B3 x 8
024B	1	1	1	4223115013	Spring
025B	1	1	1	4223160070	Bracket
028B	2	2	2	51040205S0	F.H.M. Screw F2 x 5
081B	5	5	5	51284029S0	B.H. TAP. Screw B4 x 29
082B	1	1	1	51100308S9	B.H.M. Screw B3 x 8
084B	2	2	2	51140310S9	O.C.H.M. Screw 3 x 10
905B		1		2457861040	Label
905B		1		9510911040	Label
905B	1			9511201100	Label
906B		1		9510911050	Label
908B		1		4156861010	Label
N002	1	1	1	QK01002100	Speaker

● [C02-99] Front Case and Chassis Assembled

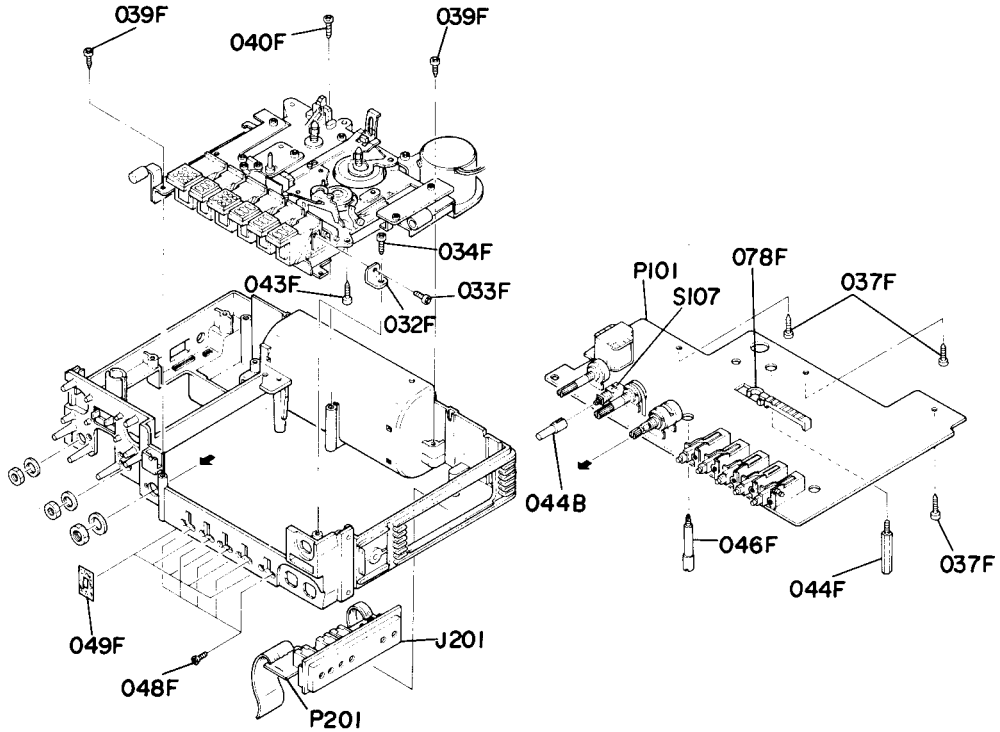
MC-Service



REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
B	1	1	1	4223064440	Case Assembly, Front
026B	1	1	1	4223064023	Case
030B	1	1	1	4223063022	Escutcheon
032B	2	2	2	4223259010	Bushing
033B	3	3	3	4223259020	Bushing
042B	1	1	1	4223353032	Ring
045B	1	1	1	4223353042	Ring
E	1	1		4223105400	Chassis Assembly
E1			1	4223105410	Chassis Assembly
001F	1	1	1	4223105010	Chassis
005F	2	2	2	4223063030	Escutcheon
006F	2	2	2	4223112010	Shaft
007F	2	2	2	53110403A9	Nut
008F	2	2	2	54080400R0	Washer
024F	1	1	1	4223160060	Bracket
028F	2	2	2	4223160030	Bracket
072F	1	1	1	3397007010	Strip
902B	1	1		4223265042	Indicator
902B			1	4223265052	Indicator
912B	1	1	1	3397861020	Label
L	1	1	1	4223154400	Knob Assembly, Volume
037B	1	1	1	4223154050	Knob
038B	1	1	1	4223353010	Ring
M	2	2	2	4223154410	Knob Assembly, Rec/Speed
047B	2	2	2	4223154062	Knob
048B	2	2	2	4223353020	Ring
031B	5	5	5	4223154010	Knob
036B	1	1	1	4223154042	Knob
013F	1	1	1	4223160010	Bracket
014F	2	2	2	51100204A0	B.H.M. Screw B2 x 4
015F	2	2	2	51102610A0	B.H.M. Screw B2.6 x 10
016F	2	2	2	51100204A0	B.H.M. Screw B2 x 4
018F	1	1	1	3370053010	Cover
019F	1	1	1	4223107040	Sheet
020F	1	1	1	4170271032	Holder
025F	2	2	2	51100306A9	B.H.M. Screw B3 x 6
026F	2	2	2	53110303A9	Hexagon Nut
029F	4	4	4	51040308A9	F.H.M. Screw F3 x 8

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
068F	1	1	1	62021030W0	Lug
069F	1	1	1	51040206S0	F.H.M. Screw F2 x 6
070F	1	1	1	53110203A0	Hexagon Nut
901F	1	1	1	4223101020	Support
902F	1	1	1	51100306A9	B.H.M. Screw B3 x 6
903F	1	1	1	51280310B0	B.H. TAP. Screw B3 x 10
906F	1	1	1	51280308B0	B.H. TAP. Screw B3 x 8
909F			1	2911861160	Label
909F	1			9510221010	Label
J001			1	YJ04000500	AC Jack
J001	1	1		YJ04000510	AC Jack
J002	1	1	1	YJ04000550	DC Jack
J003	1	1	1	YL12010710	Terminal (+)
J004	1	1	1	YL11010090	Terminal (-)
J005	1	1	1	YL12010710	Terminal (+)
J006	1	1	1	YL11010090	Terminal (-)
J007	1	1	1	YL12010720	Terminal, Rechargeable
M002	1	1	1	IM11055120	D.C. Meter
N001	1	1	1	MS50000020	Mic, Unit
S002	1	1	1	SS02020520	Slide Switch
T001	1	1		TS14101380	Power Transformer
T001			1	TS14124030	Power Transformer
P301	1	1	1	YK42231530	P.W. Board, Headphone
	1	1	1	ZZ42231530	P.W. Board Assembly
J301	1	1	1	YJ01001120	Jack, Headphone
P401			1	YK42231540	P.W. Board, Power
			1	ZZ42238540	P.W. Board Assembly
P501	1	1		YK42231550	P.W. Board, Battery Check
	1	1		ZZ42231550	P.W. Board Assembly

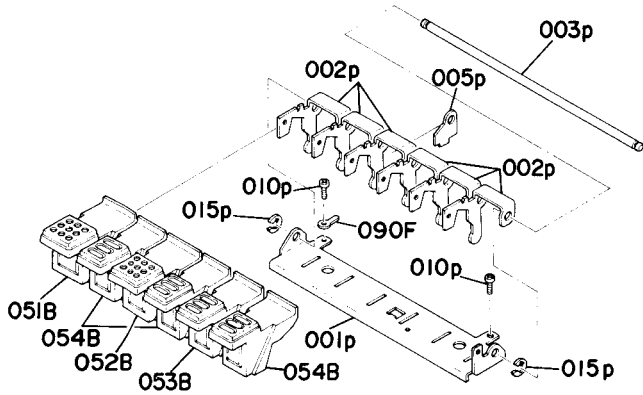
[M01-99] P.W. Board



REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
044B	1	1	1	4223154030	Knob
032F	1	1	1	4223160020	Bracket
033F	1	1	1	51060304A9	P.H.M. Screw P3 x 4
034F	1	1	1	51280310B0	B.H. TAP. Screw B3 x 8
037F	3	3	3	51280310B0	B.H. TAP. Screw B3 x 8
039F	2	2	2	51280308B0	B.H. TAP. Screw B3 x 8
040F	1	1	1	5128031080	B.H. TAP. Screw B3 x 10
043F	1	1	1	5128031080	B.H. TAP. Screw B3 x 10
044F	1	1	1	4223101030	Support
046F	1	1	1	4223101010	Support
048F	5	5	5	51040306S9	F.H.M. Screw F3 x 6

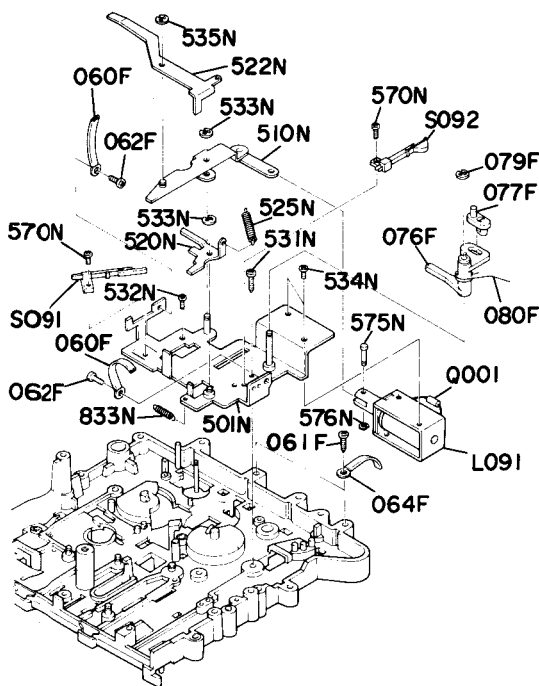
REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
049F	5	5	5	4223107020	Sheet
078F	1	1	1	4223354032	Lever
P101	1	1	1	YK42231510	P.W. Board, Rec/Play
	1	1	1	ZZ42231510	P.W. Board Assembly
S107	1	1	1	SP02020350	Push Switch
P201	1	1	1	YK42231520	P.W. Board, Jack
	1	1		ZZ42231520	P.W. Board Assembly
			1	ZZ42238520	P.W. Board Assembly

● [P01-99] Operation Levers and Buttons

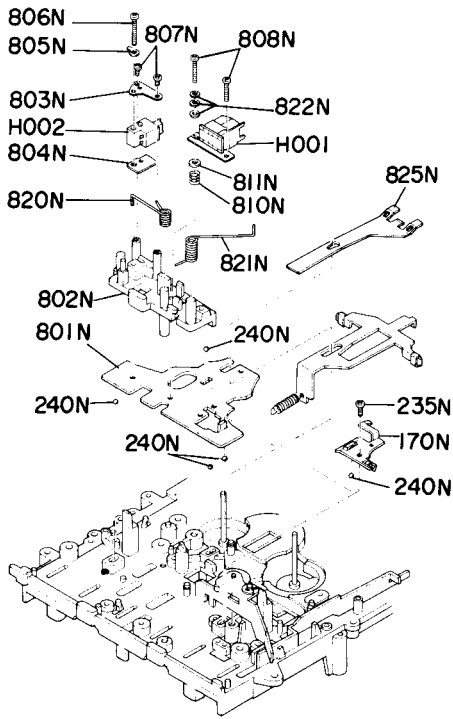


REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
H	1	1	1	4223270400	Button Assembly (Rec)
051B	1	1	1	4223270012	Button
002P	1	1	1	4382354060	Lever
I	1	1	1	4223270410	Button Assembly (Play)
052B	1	1	1	4223270022	Button
002P	1	1	1	4382354060	Lever
J	1	1	1	4223270420	Button Assembly (Stop)
053B	1	1	1	4223270032	Button
002P	1	1	1	4382354060	Lever
K	3	3	3	4223270430	Button Assembly (F.F, Rew, Pause)
054B	3	3	3	4223270042	Button
002P	3	3	3	4382354060	Lever
001P	1	1	1	4382160030	Bracket
003P	1	1	1	4382112110	Shaft
005P	1	1	1	4382104020	Retainer
010P	2	2	2	51300308B0	P.H. TAP. Screw P3 x 8
015P	2	2	2	64000400R0	RG Ring, E Type
090F	1	1	1	62031650W0	Lug

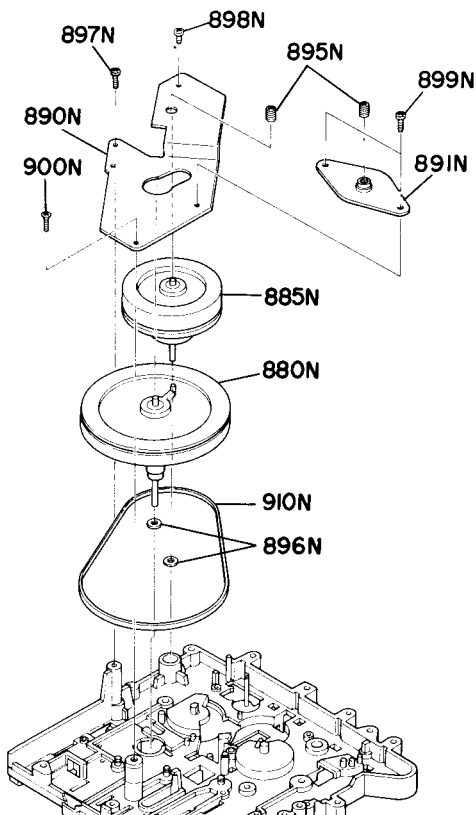
● [P02-99] Solenoid Bracket



REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
060F	2	2	2	1210005010	Clamper
061F	2	2	2	51280308B0	B.H. TAP. Screw B3 x 8
062F	2	2	2	51100305A9	B.H.M. Screw B3 x 5
064F	2	2	2	1382005030	Clamper
076F	1	1	1	4223354012	Lever
077F	1	1	1	4223354020	Lever
079F	1	1	1	64000300R0	RG Ring, E Type
080F	1	1	1	4223115023	Spring
501N	1	1	1	4382160724	Bracket
510N	1	1	1	4382354720	Lever
520N	1	1	1	4382354042	Lever
522N	1	1	1	4382354053	Lever
525N	1	1	1	4382115042	Spring
531N	1	1	1	51300308B0	P.H. TAP. Screw P3 x 8
532N	1	1	1	51062605A0	P.H.M. Screw P26 x 5
533N	2	2	2	64002500R0	RG Ring, E Type
534N	2	2	2	51062603A0	P.H.M. Screw P26 x 3
535N	1	1	1	64002500R0	RG Ring, E Type
570N	2	2	2	51060205A0	P.H.M. Screw P2 x 5
575N	1	1	1	4382112170	Shaft
576N	1	1	1	64001500R0	RG Ring, E Type
833N	1	1	1	4367115280	Spring
L091	1	1	1	ME10380020	Solenoid Coil
Q001	1	1	1	HD20023100	Diode 1C 1
S091	1	1	1	SM01010640	Mini Switch, REW
S092	1	1	1	SM01010580	Mini Switch, Memory

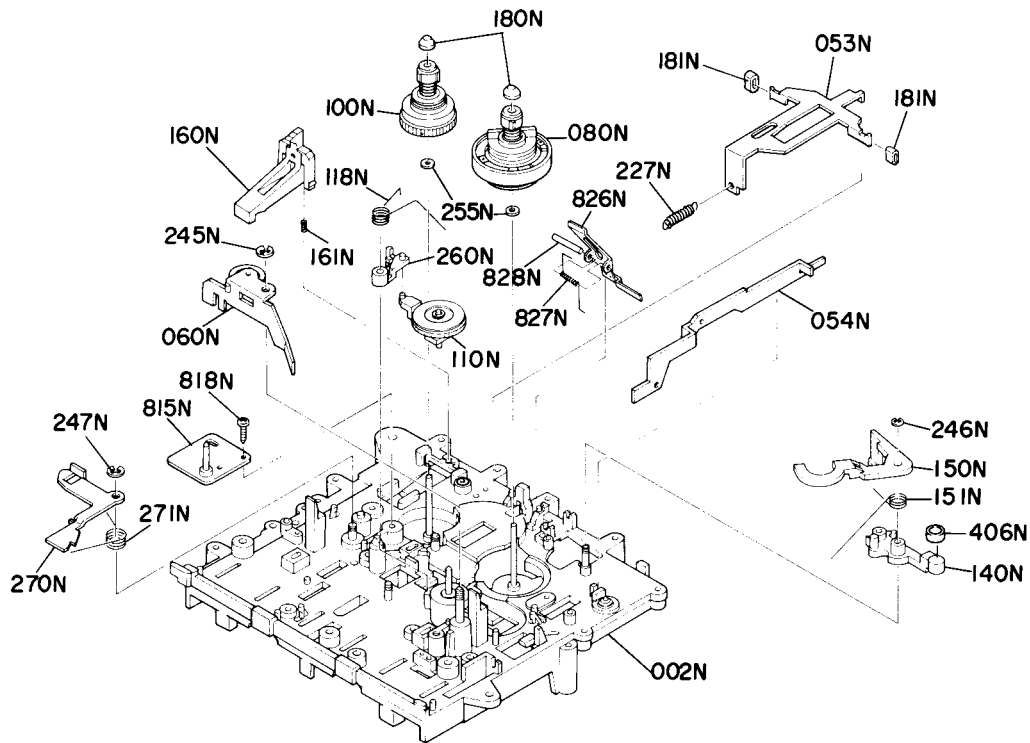


REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
170N	1	1	1	4367115170	Spring
235N	1	1	1	51300308B0	P.H. TAP. Screw P3 x 8
240N	5	5	5	61020010T0	Ball
801N	1	1	1	4383105012	Chassis
802N	1	1	1	4383160030	Bracket
803N	1	1	1	4383005010	Clamper
804N	1	1	1	4383118010	Spacer
805N	1	1	1	62261240W0	Lug
806N	1	1	1	51102618A0	B.H.M. Screw B2.6 x 18
807N	2	2	2	51382608T0	P.H. TAP. Screw P2.6 x 8
808N	2	2	2	51100210A0	B.H.M. Screw B2 x 10
810N	1	1	1	4380115090	Spring
811N	1	1	1	3444118070	Spacer
820N	1	1	1	4367115050	Spring
821N	1	1	1	4383115020	Spring
822N	3	3	3	54010200E0	Flat Washer, S
825N	1	1	1	4380115010	Spring
H001	1	1	1	LH81122010	Rec/Play Head
H002	1	1	1	LH31000460	Erase Head



REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
880N	1	1	1	4382273500	Flywheel
885N	1	1	1	4382273510	Flywheel
890N	1	1	1	4382104010	Retainer
891N	1	1	1	4382104700	Retainer
895N	2	2	2	3483164020	Adjuster
896N	2	2	2	59264702G9	Washer
897N	1	1	1	51300310B0	P.H. TAP. Screw P3 x 10
898N	1	1	1	51060306A9	P.H.M. Screw P3 x 6
899N	2	2	2	51060305A9	P.H.M. Screw P3 x 5
900N	1	1	1	51340310P0	F.H. TAP. Screw F3 x 10
910N	1	1	1	4382264012	Belt

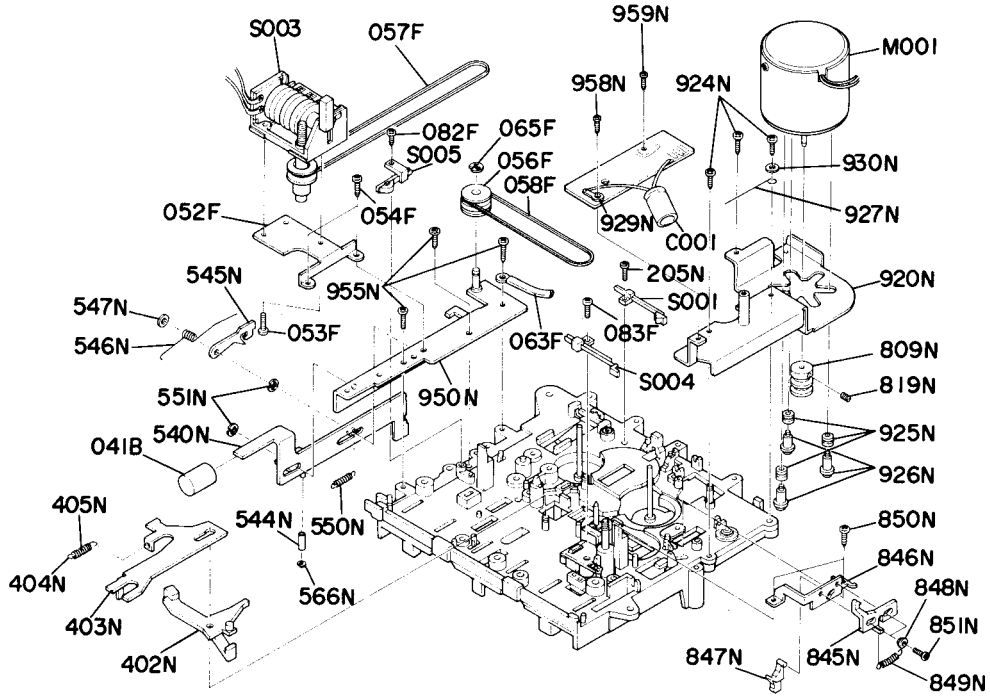
[P05-99] (1/2) Parts Assembled on the Top of the Chassis



REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
002N	1	1	1	4382105700	Chassis Assembly
053N	1	1	1	4367354090	Lever
054N	1	1	1	4367354120	Lever
060N	1	1	1	4367002700	Arm, Pinch Roller
080N	1	1	1	4367004700	Table
100N	1	1	1	4367004710	Table
110N	1	1	1	4367002730	Arm
118N	1	1	1	4367115310	Spring
140N	1	1	1	4367354770	Lever
150N	1	1	1	4367002050	Arm
151N	1	1	1	4367115130	Spring
160N	1	1	1	4367354084	Lever
161N	1	1	1	4367115070	Spring
180N	2	2	2	4367067010	Cap
181N	2	2	2	4367263010	Brake
227N	1	1	1	4367115210	Spring
245N	1	1	1	64002500R0	RG Ring, E Type
246N	1	1	1	64001500R0	RG Ring, E Type
247N	1	1	1	64000300R0	RG Ring, E Type
255N	2	2	2	59020402G9	Washer

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
260N	1	1	1	4367354110	Lever
270N	1	1	1	4380002013	Arm, Inter Lock
271N	1	1	1	4380115042	Spring
406N	1	1	1	4367055040	Collar
815N	1	1	1	4382004703	Table
818N	1	1	1	51300308B0	P.H. TAP. Screw P3 x 8
826N	1	1	1	4383115010	Spring
827N	1	1	1	4380115033	Spring
828N	1	1	1	4380112010	Shaft

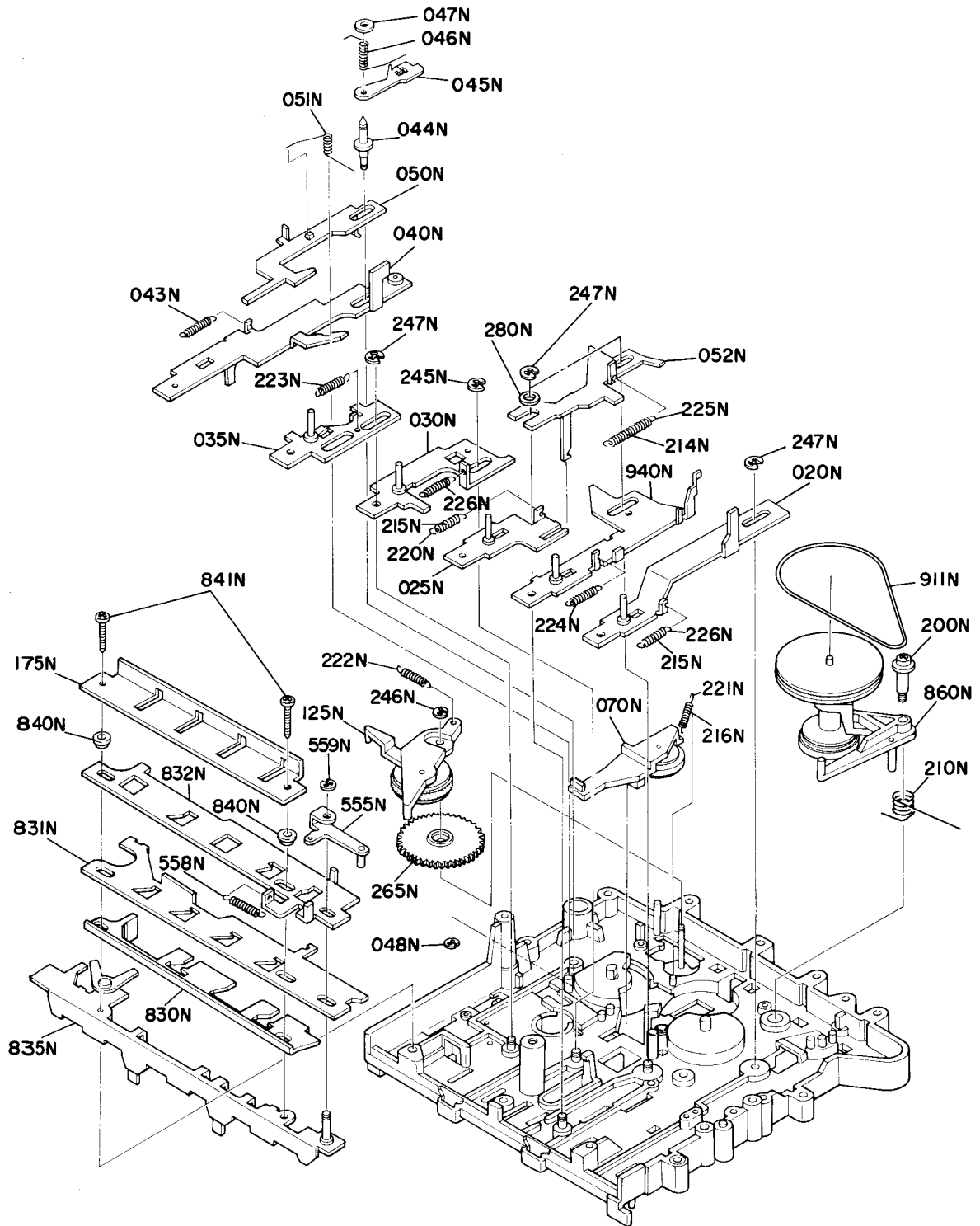
● [P05-99] Parts Assembled on the Top of the Chassis



REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
041B	1	1	1	4223154020	Knob
052F	1	1	1	4223160040	Bracket
053F	2	2	2	51100305A9	B.H.M. Screw B3 x 5
054F	2	2	2	51060305A9	P.H.M. Screw P3 x 5
056F	1	1	1	4223262010	Pulley
057F	1	1	1	4223264010	Belt
058F	1	1	1	4223264020	Belt
063F	1	1	1	1210005010	Clamper
065F	1	1	1	64000300R0	RG Ring, E Type
082F	1	1	1	51382608P0	P.H. TAP. Screw P2.6 x 8
083F	1	1	1	51382608P0	P.H. TAP. Screw P2.6 x 8
205N	1	1	1	51382608P0	P.H. TAP. Screw P2.6 x 8
402N	1	1	1	4367002090	Arm, Cue REW
403N	1	1	1	4367354150	Lever
404N	1	1	1	4367115320	Spring
405N	1	1	1	4367056050	Buffer
540N	1	1	1	4382354714	Lever
544N	1	1	1	4382055022	Collar
545N	1	1	1	4367054032	Cam
546N	1	1	1	4382115030	Spring
547N	1	1	1	59020805G9	Washer
550N	1	1	1	4382115022	Spring
551N	2	2	2	64000300R0	RG Ring, E Type
566N	1	1	1	64001500R0	RG Ring, E Type

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
809N	1	1	1	4382262012	Pulley
819N	1	1	1	51610203A0	Set Screw, F.P.
845N	1	1	1	4384258010	Hook
846N	1	1	1	4384160010	Bracket
847N	1	1	1	4384002010	Arm
848N	2	2	2	4384055020	Collar
849N	1	1	1	4384115010	Spring
850N	2	2	2	51382608P0	P.H. TAP. Screw P2.6 x 8
851N	2	2	2	51060205A0	P.H.M. Screw P2 x 5
920N	1	1	1	4382160700	Bracket
924N	3	3	3	51300308B0	P.H. TAP. Screw P3 x 8
925N	3	3	3	4383259010	Bushing
926N	3	3	3	4367112150	Shaft
927N	1	1	1	4382115080	Spring
929N	1	1	1	62261240W0	Lug
930N	1	1	1	54010300E0	Flat Washer, S
950N	1	1	1	4382160712	Bracket
955N	3	3	3	51300308B0	P.H. TAP. Screw P3 x 8
958N	1	1	1	51062605A0	P.H.M. Screw P2.6 x 5
959N	1	1	1	51062605A0	P.H.M. Screw P2.6 x 5
C001	1	1	1	EA22701090	Elect Cap. 220µF 10V
M001	1	1	1	MM10600370	D.C. Motor 6V 2200 rpm
S001	1	1	1	SM01010680	Mini Switch, Motor
S003	1	1	1	4223052010	Counter
S004	1	1	1	SM01010720	Mini Switch, Pause Muting
S005	1	1	1	SM01010512	Mini Switch, Rec/Play AMP.

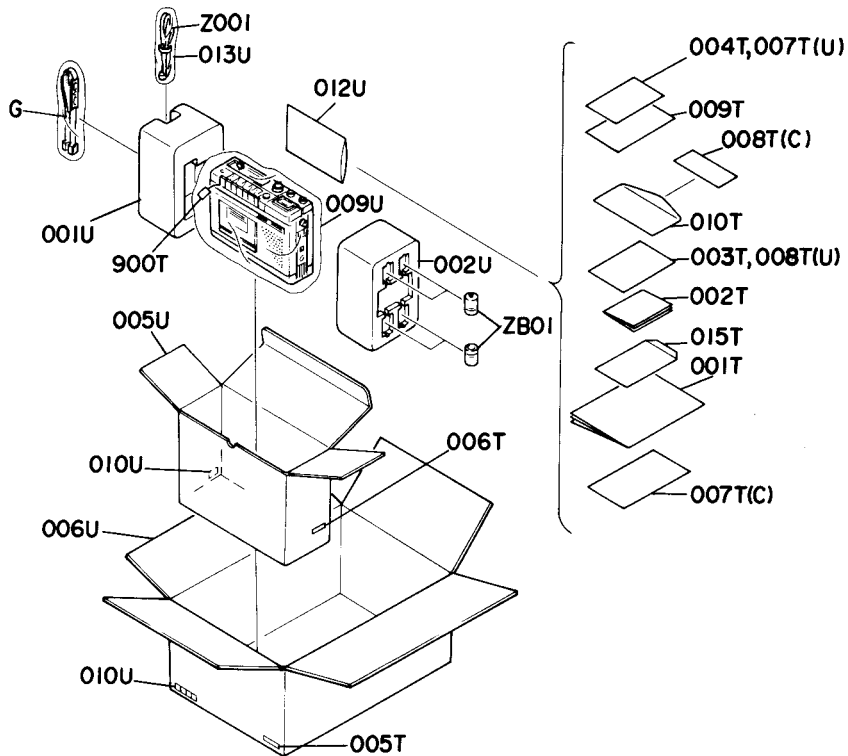
● [P06-99] Parts Assembled on the Reverse of the Chassis



REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
020N	1	1	1	4382354702	Lever, Rec.
025N	1	1	1	4380354723	Lever, Play
030N	1	1	1	4380354734	Lever, FF/CUE
035N	1	1	1	4380354743	Lever, Stop
040N	1	1	1	4380354754	Lever, Pause
043N	1	1	1	4367115210	Spring
044N	1	1	1	4367112134	Shaft
045N	1	1	1	4367054032	Cam
046N	1	1	1	4382115060	Spring
047N	1	1	1	59020805G9	Washer
048N	1	1	1	64001500R0	RG Ring, E Type
050N	1	1	1	4367354070	Lever, Eject
051N	1	1	1	4380115080	Spring
052N	1	1	1	4367354060	Lever
070N	1	1	1	4367354760	Lever, FF Idler
125N	1	1	1	4382002713	Arm
175N	1	1	1	4367051042	Guide
200N	1	1	1	4367112180	Shaft
210N	1	1	1	4382115052	Spring
214N	1	1	1	4367056040	Buffer
215N	2	2	2	4367056050	Buffer
216N	1	1	1	4367056030	Buffer
220N	1	1	1	4367115240	Spring
221N	1	1	1	4367115090	Spring
222N	1	1	1	4367115120	Spring
223N	1	1	1	4367115250	Spring

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
224N	1	1	1	4367115340	Spring
225N	1	1	1	4367115270	Spring
226N	2	2	2	4367115280	Spring
245N	1	1	1	64002500R0	RG Ring, E Type
246N	1	1	1	64001500R0	RG Ring, E Type
247N	4	4	4	64000300R0	RG Ring, E Type
265N	1	1	1	436705850-0	Gear
280N	1	1	1	59046501G9	Washer
555N	1	1	1	4382002702	Arm
558N	1	1	1	4382115010	Spring
559N	1	1	1	64002500R0	RG Ring, E Type
830N	1	1	1	4367054010	Cam
831N	1	1	1	4382054010	Cam
832N	1	1	1	4382054020	Cam
835N	1	1	1	4382051702	Guide
840N	2	2	2	4382055012	Collar
841N	2	2	2	51280314B0	B.H. TAP. Screw B3 x 14
860N	1	1	1	4382001702	Idler
911N	1	1	1	4382264022	Belt
940N	1	1	1	4382354762	Lever, REW

● [H01-99] Packing Materials



REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
001T	1			4223851010	Instructions
001T		1	1	4223851310	Instructions
002T		1		9650000050	S. Station Card
003T		1		3917854013	Guarantee Card
004T		1		3917851020	Instructions
005T		4	4	9510911040	Label
005T		4		9510911050	Label
006T		2		9510901040	Label
007T		1		2876851030	Instructions
007T		1		3369851320	Instructions
008T		1		3906854020	Guarantee Card
008T		1		9630000153	Guarantee Card
009T		1		9630000170	Guarantee Card
010T		1		2918813010	Envelope
015T		1		4183813010	Envelope
900T		1	1	9560000090	Hang Tag

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
001U	1	1	1	4223809010	Cushion
002U	1	1	1	4223809020	Cushion
005U	1		1	4223801010	Packing Case
005U		1		4223801020	Packing Case
006U	1	1	1	4223805010	Master Carton
009U	1	1	1	9012840010	Polyethy Bag
010U	2	2	2	9526019010	Serial No Card
012U	1	1	1	9011525010	Polyethy Bag
013U	1	1	1	9011020010	Polyethy Bag
Z001			1	ZC01805010	A.C. Power Coad
Z001	1	1		ZC02002040	A.C. Power Coad
ZB01	4	4		ZB01010070	Battery, UM-1

11. ELECTRICAL PARTS LIST

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
P101	1	1	1	YK42231510 ZZ42231510	P101-REC/PLAY CIRCUIT BOARD P.W. Board, Rec/Play P.W. Board Assembly
P101-CAPACITORS					
C101	1	1	1	DF16123300	Film 0.012 μ F \pm 10%
C102	1	1	1	DD15101370	Ceramic 100pF \pm 5%
C103	1	1	1	EA47601090	Elect 47 μ F 10V
C104	1	1	1	DF16822300	Film 0.0082 μ F \pm 10%
C105	1	1	1	EV10403560	Elect 0.1 μ F 35V
C106	1	1	1	EV33403560	Elect 0.33 μ F 35V
C107	1	1	1	EA47503590	Elect 4.7 μ F 35V
C108	1	1	1	EA10601690	Elect 10 μ F 16V
C109	1	1	1	EA10701090	Elect 100 μ F 10V
C110	1	1	1	DD15470370	Ceramic 47pF \pm 5%
C111	1	1	1	EA10505090	Elect 1 μ F 50V
C112	1	1	1	EA10701090	Elect 100 μ F 10V
C113	1	1	1	DF16223300	Film 0.022 μ F \pm 10%
C114	1	1	1	DF16332300	Film 0.0033 μ F \pm 10%
C115	1	1	1	EA10505090	Elect 1 μ F 50V
C116	1	1	1	EA22701090	Elect 220 μ F 10V
C117	1	1	1	EA10601690	Elect 10 μ F 16V
C118	1	1	1	EA10601690	Elect 10 μ F 16V
C119	1	1	1	EA22700690	Elect 220 μ F 6.3V
C120	1	1	1	EA33601090	Elect 33 μ F 10V
C121	1	1	1	DF16222300	Film 0.0022 μ F \pm 10%
C122	1	1	1	EA10801090	Elect 1000 μ F 10V
C123	1	1	1	DF15272300	Film 0.0027 μ F \pm 10%
C124	1	1	1	DF15332300	Film 0.0033 μ F \pm 5%
C125	1	1	1	DF55101510	Film 100pF
C126	1	1	1	EA47503590	Elect 4.7 μ F 35V
C127	1	1	1	EA10601690	Elect 10 μ F 16V
C128	1	1	1	EA47503590	Elect 4.7 μ F 35V
C129	1	1	1	DK16102370	Ceramic 0.001 μ F \pm 10%
C130	1	1	1	EA47503590	Elect 4.7 μ F 35V
C131	1	1	1	DF16122300	Film 0.0012 μ F \pm 10%
C132	1	1	1	DD15471370	Ceramic 470pF \pm 5%
C133	1	1	1	DF16223300	Film 0.022 μ F \pm 10%
C134	1	1	1	DF16682300	Film 0.0068 μ F \pm 10%
C135	1	1	1	DD15470370	Ceramic 47pF \pm 5%
C136	1	1	1	EA10505090	Elect 1 μ F 50V
C137	1	1	1	DF16102300	Film 0.001 μ F \pm 10%
C138	1	1	1	DD15471370	Ceramic 470pF \pm 5%
C139	1	1	1	DF16472300	Film 0.0047 μ F \pm 10%
C151	1	1	1	DF65451010	Film 450pF \pm 10%
C152	1	1	1	EA47503590	Elect 4.7 μ F 35V
C153	1	1	1	DD15330370	Ceramic 33pF \pm 5%
C154	1	1	1	EA10701090	Elect 100 μ F 10V
C155	1	1	1	EA10701090	Elect 100 μ F 10V
C156	1	1	1	EA10601690	Elect 10 μ F 16V
C157	1	1	1	DF55101510	Film 100pF \pm 5%
C158	1	1	1	DF15223300	Film 0.022 μ F \pm 5%
C159	1	1	1	DK16102300	Ceramic 0.001 μ F \pm 10%
C160	1	1	1	EA10601690	Elect 10 μ F 16V
C161	1	1	1	DD15331370	Ceramic 330pF \pm 5%

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
C162	1	1	1	EA22700690	Elect 220 μ F 6.3V
C163	1	1	1	EA33700690	Elect 330 μ F 6.3V
C164	1	1	1	EA47503590	Elect 4.7 μ F 35V
C165	1	1	1	EA10801090	Elect 1000 μ F 10V
C166	1	1	1	DF16473300	Film 0.047 μ F \pm 10%
C167	1	1	1	EA33502590	Elect 3.3 μ F 25V
C168	1	1	1	EA47700690	Elect 470 μ F 6.3V
C169	1	1	1	EA10601690	Elect 10 μ F 16V
C170	1	1	1	DF16102300	Film 0.001 μ F \pm 10%
C171	1	1	1	EA33502590	Elect 3.3 μ F 25V
C172	1	1	1	DF16223300	Film 0.022 μ F \pm 10%
C173	1	1	1	DF16223300	Film 0.022 μ F \pm 10%
C174	1	1	1	DF16102300	Film 0.001 μ F \pm 10%
C175	1	1	1	EA22700690	Elect 220 μ F 6.3V
C176	1	1	1	DF16562300	Film 0.0056 μ F \pm 10%
C177	1	1	1	EA10505090	Elect 1 μ F 50V
C178	1	1	1	DD15471370	Ceramic 470pF \pm 5%
C180	1	1	1	DD15471370	Ceramic 470pF \pm 5%
C201	1	1	1	EA22801090	Elect 2200 μ F 10V
C202	1	1	1	EA10701090	Elect 100 μ F 10V
C203	1	1	1	EZ22701010	Elect 220 μ F 10V
C204	1	1	1	DF15682300	Film 0.0068 μ F \pm 5%
C205	1	1	1	DF15153300	Film 0.015 μ F \pm 5%
C206	1	1	1	DF76392510	Film 0.0039 μ F \pm 10%
C207	1	1	1	DF55221510	Film 220pF \pm 5%
C208	1	1	1	EA47701090	Elect 470 μ F 10V
C209	1	1	1	EA22701090	Elect 220 μ F 10V
C210	1	1	1	EA33701090	Elect 330 μ F 10V
C211	1	1	1	EA33601090	Elect 33 μ F 10V
C212	1	1	1	EA22701090	Elect 220 μ F 10V
P101-RESISTORS (All Resistors are \pm 5% and $\frac{1}{4}$ W)					
R101	1	1	1	GD05222140	2.2K Ω
R102	1	1	1	GD05394140	390K Ω
R103	1	1	1	GD05101140	100 Ω
R104	1	1	1	GD05682140	6.8K Ω
R105	1	1	1	GD05222140	2.2K Ω
R106	1	1	1	GD05561140	560 Ω
R107	1	1	1	GD05561140	560 Ω
R108	1	1	1	GD05104140	100K Ω
R109	1	1	1	GD05563140	56K Ω
R110	1	1	1	GD05222140	2.2K Ω
R111	1	1	1	GD05333140	33K Ω
R112	1	1	1	GD05104140	100K Ω
R113	1	1	1	GD05102140	1K Ω
R114	1	1	1	GD05105140	1M Ω
R115	1	1	1	GD05472140	4.7K Ω
R116	1	1	1	GD05105140	1M Ω
R117	1	1	1	GD05683140	68K Ω
R118	1	1	1	GD05152140	1.5K Ω
R120	1	1	1	RK02030480	Variable 20K Ω , (A) Rec Level
R121	1	1	1	GD05122140	1.2K Ω

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
R122	1	1	1	GD05122140	1.2KΩ
R123	1	1	1	GD05153140	15KΩ
R124	1	1	1	GD05103140	10KΩ
R125	1	1	1	GD05101140	100Ω
R126	1	1	1	GD05104140	100KΩ
R127	1	1	1	GD05394140	390KΩ
R128	1	1	1	GD05472140	4.7KΩ
R129	1	1	1	RA01030260	Trimming, 10KΩ Monitor Level Adj.
R130	1	1	1	GD05122140	1.2KΩ
R131	1	1	1	RA01030260	Trimming, 10KΩ Rec. Level Adj.
R132	1	1	1	GD05101140	100Ω
R133	1	1	1	GD05153140	15KΩ
R134	1	1	1	GF05470140	47Ω
R135	1	1	1	RA05020160	Trimming, 5KΩ ARL
R137	1	1	1	GD05153140	15KΩ
R138	1	1	1	GD05822140	8.2KΩ
R139	1	1	1	GD05100140	10Ω
R140	1	1	1	GD05103140	10KΩ
R141	1	1	1	GD05122140	1.2KΩ
R142	1	1	1	GD05473140	47KΩ
R143	1	1	1	GD05100140	10Ω
R144	1	1	1	GD05391140	390Ω
R145	1	1	1	GD05102140	1KΩ
R146	1	1	1	GD05100140	10Ω
R151	1	1	1	GD05154140	150KΩ
R152	1	1	1	GD05563140	56KΩ
R153	1	1	1	GD05154140	150KΩ
R154	1	1	1	GD05332140	3.3KΩ
R155	1	1	1	GD05122140	1.2KΩ
R156	1	1	1	RA03020030	Trimming, 3KΩ P/B EQ Adj.
R157	1	1	1	RA01030260	Trimming, 10KΩ P/B Level Adj.
R158	1	1	1	GD05103140	10KΩ
R159	1	1	1	GD05472140	4.7KΩ
R160	1	1	1	GD05911140	910Ω
R162	1	1	1	GD05221140	220Ω
R163	1	1	1	GF05470140	47Ω
R164	1	1	1	RA01030260	Trimming, 10KΩ Batt. Level Adj.
R165	1	1	1	RD01030050	Variable, 10KΩ Volume Control
R166	1	1	1	RD01030050	Variable, 20KΩ Tone Control
R167	1	1	1	GD05332140	3.3KΩ
R168	1	1	1	GD05122140	1.2KΩ
R169	1	1	1	GD05331140	330Ω
R170	1	1	1	GD05100140	10Ω
R171	1	1	1	GD05332140	3.3KΩ
R172	1	1	1	GD05151140	150Ω
R173	1	1	1	GK05472010	0.47Ω 1W
R174	1	1	1	GD05182140	1.8KΩ
R175	1	1	1	GD05302140	3KΩ
R176	1	1	1	GD05303140	30KΩ
R178	1	1	1	GD05122140	1.2KΩ

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
R179	1	1	1	GD05240140	24Ω
R201	1	1	1	GJ05330010	33Ω 1W
R202	1	1	1	GD05151140	150Ω
R203	1	1	1	GJ05220010	22Ω 1W
R204	1	1	1	GD05472140	4.7KΩ
R205	1	1	1	GJ05010010	1Ω 1W
R206	1	1	1	RA05030220	Trimming, 50KΩ Bias Adj.
R207	1	1	1	GD05362140	3.6KΩ
R208	1	1	1	RK05020250	Variable 5KΩ, (B) Vari-speed
R209	1	1	1	GD05471140	470Ω
R210	1	1	1	GD05103140	10KΩ
R211	1	1	1	GD05242140	2.4KΩ
R212	1	1	1	GJ05010010	1Ω 1W
R213	1	1	1	GD05392140	3.9KΩ
R214	1	1	1	GD05222140	2.2KΩ
R215	1	1	1	GJ05010010	1Ω 1W
Q101	1	1	1	HT317400S0	Transistor 2SC1740LN(S)
Q102	1	1	1	HC10008210	IC BA313
Q103	1	1	1	HT317400S0	Transistor 2SC1740LN(S)
Q104	1	1	1	HC10006210	IC BA306
Q105	1	1	1	HC10007210	IC BA308
Q106	1	1	1	HC10038050	IC TA7211P
Q107	1	1	1	HC10006210	IC BA306
Q108	1	1	1	HD20011050	Diode 1S1555
Q109	1	1	1	HD20023100	Diode 10E1
Q110	1	1	1	HD20011050	Diode 1S1555
Q111	1	1	1	HD20011050	Diode 1S1555
Q112	1	1	1	HD20023100	Diode 10E1
Q113	1	1	1	HD10001010	Diode 1N34A
Q114	1	1	1	HD10001010	Diode 1N34A
Q115	1	1	1	HD10001010	Diode 1N34A
Q116	1	1	1	HD20011050	Diode 1S1555
Q201	1	1	1	HT404711L0	Transistor 2SD471(L)
Q202	1	1	1	HT322702A0	Transistor 2SC2270(A,B)
Q203	1	1	1	HT317400S0	Transistor 2SC1740LN(S)
Q204	1	1	1	HT322702A0	Transistor 2SC2270(A,B)
Q205	1	1	1	HT317400S0	Transistor 2SC1740LN(S)
Q206	1	1	1	HD30010060	Zener RD-4.3
Q207	1	1	1	HD10001010	Diode 1N34A
Q208	1	1	1	HD20009030	Diode DS132A
Q209	1	1	1	HD20007030	Diode DS131A
Q210	1	1	1	HD20011050	Diode 1S1555
Q211	1	1	1	HD20011050	Diode 1S1555

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
F201			1	FS10063800	P101-MISCELLANEOUS Fuse 250V 630mA
J101	1	1	1	YU10070010	Connective Cord 10P-70mm
J102	1	1	1	YU04200010	Connective Cord 4P-200mm
J103	1	1	1	YU04070010	Connective Cord 4P-70mm
J104	1	1	1	YJ06001060	Jack 7P
J105	1	1	1	YJ06001050	Jack 5P
J106	1	1	1	YB00300200	Connective Cord 5P
J107	1	1	1	YB00300210	Connective Cord 3P
J108	1	1	1	YJ06001040	Jack 3P
J202			8	YP10001530	Plug
J209					
J210			1	YJ08000200	Jack
J211			1	YJ08000200	Jack
L101	1	1	1	LC22260500	Choke Coil 22mH
L102	1	1	1	LC22260500	Choke Coil 22mH
L103	1	1	1	LC22260060	Choke Coil 22mH
L201			1	LC14730010	Choke Coil 47mH
P104	1	1	1	YP06001060	Plug 7P
P105	1	1	1	YP06001050	Plug 5P
P106	1	1	1	YP10001960	Plug 5P
P107	1	1	1	YP10001920	Plug 3P
P108	1	1	1	YP06001040	Plug 3P
S101	1	1	1	SS06020440	Slide Switch Muting Rec/Play
S102	1	1	1	SC04030050	Switch Rec Select
S103	1	1	1	SC02030080	Switch A.N.C.
S104	1	1	1	SC04020120	Switch Bias
S105	1	1	1	SC04020120	Switch EQ
S106	1	1	1	SC02020270	Switch Tape-Source
S107	1	1	1	SP02020350	Push Switch Battery Check
T101	1	1	1	TO12406070	Transformer Rec
T102	1	1	1	TO12808080	Transformer Output
T103	1	1	1	TO12406070	Transformer Line

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
P201	1	1	1	YK42231520	P201-JACK CIRCUIT BOARD P.W. Board, Jack
	1	1		ZZ42231520	P.W. Board Assembly
			1	ZZ42238520	P.W. Board Assembly
C251	1	1	1	DD15471370	Ceramic Cap. 470pF ±5%
R251	1	1	1	GD05104140	P201-RESISTORS (All Resistors are ±5% and ¼W) 100KΩ
R252	1	1	1	GD05102140	1KΩ
R253	1	1	1	GD05392140	3.9KΩ
R254			1	GD05392140	3.9KΩ
R255			1	GD05473140	47KΩ
R256			1	GD05473140	47KΩ
J201	1	1		BY01060020	Jack Board
J201			1	BY01070020	Jack Board
P301	1	1	1	YK42231530	P301-HEADPHONE CIRCUIT BOARD P.W. Board, Headphone
	1	1	1	ZZ42231530	P.W. Board Assembly
R301	1	1	1	GD05121140	Resistor 120Ω ±5% ¼W
R302	1	1	1	GD05121140	Resistor 120Ω ±5% ¼W
J301	1	1	1	YJ01001120	Jack, Headphone
P401			1	YK42231540	P.W. Board, Power
			1	ZZ42238540	P.W. Board Assembly
P501	1	1		YK42231550	P501-BATTERY CHECK CIRCUIT BOARD P.W. Board, Battery Check
	1	1		ZZ42231550	P.W. Board Assembly
F501	1	1		FS20250910	Fuse 250V 2.5A

(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction