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REVISION 1 (1991)
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SERVICE MANUAL PMD221/201

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model PMD221/201

Stereo Cassette Recorder

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Parts for your MARANTZS equipment are generally available to our National Marantz Subsidiary or Agent.

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Parts can be ordered either by mail or by telex. In both cases, correct part number has to be specified. If you order by mail, fulfil MARANTZ order forms.

MARANTZ INTERNATIONAL
Quality & Service Dept.
80, Rue des Deux Gares,
B-1070 Brussels
Belgium
Phone: 02/525.70.22 or 525.70.23
Telefax: 02/525.6160

MARANTZ PROFESSIONAL PRODUCTS
700 N. Commerce St.
Aurora, IL 60504
708-820-4800

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

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

PARTS ORDERING:

Parts may be ordered from the following addresses:

AUSTRIA
HORNPHON
Vertriebsgesellschaft GmbH
Wienerbergstrasse 1
A 1101 Wien
Austria
Telex: 132.332

AUSTRALIA
MARANTZ AUSTRALIA
PTY., Ltd.
19 Chard Road
Brookvale, NSW 2100
Australia
Telex: 24121

BELGIUM
SVD DIVISION MARANTZ
Industrialaan 1
1720 Groot-Bijgaarden
Belgium
Telex: 24466

CHILE
MARANTZ
DIVISION OF PHILIPS S.A.
Av. Santa Maria, 0760
Casilla 2687
Santiago
Telex: 240.239

DENMARK
MARANTZ
DIVISION OF PHILIPS
SERVICE A/S
Prags Boulevard 80
Postbox 1919
DK-2300 København S
Denmark
Telex: 31201

FINLAND
MARANTZ
DIVISION OF OY PHILIPS Ab
Kaivokatu 8
00100 Helsinki
Finland
Telex: 124811

FRANCE
MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France
Telex: 611651

GERMANY
MARANTZ GERMANY GmbH
Max-Planck-Strasse 22
6072 Dreieich 1
Germany
Telex: 529821

THE NETHERLANDS
Elpro b.v.
De Limiet 3
4131 NR Vianen
The Netherlands
Telex: 47679

NORWAY
MARANTZ
DIVISION OF PHILIPS A/S
Sandstuveien 40
Oslo 6
Norway
Telex: 72640

GREAT BRITAIN
MARANTZ AUDIO U.K. Ltd
Unit 15/16
Saxon Way Industrial Estate
Moor Lane
Harmondsworth UB7 0LW
Great Britain
Telex: 935196

GREECE
SHERTON ELECTRONICS S.A.
P.O. Box 21025
Hippocrates Street 188
Athens 11471
Greece
Telex: 216.795

JAPAN
MARANTZ JAPAN, Inc.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

KUWAIT
AL ALAMIAH ELECTRONICS
Ussama Building
Fahd al Saleem Street
P.O. Box 23781
Safat-Kuwait
Telex: 22694

ITALY
MARANTZ ITALIANA S.P.A.
Via Chiese, 74
20126 Milano
Italy

SAUDI ARABIA
AL ALAMIAH ELECTRONICS
P.O. Box 5954
University Street
Riyadh 11432
Saudi Arabia
Telex: 201530

SOUTH AFRICA
MARANTZ
DIVISION OF PHILIPS S.A.
Rainer House
Ove Street, 10
Doornfontein
Johannesburg
Telex: 483.456

SPAIN
PHONO S.A.
Ignacio Iglesias 10
Badalona (Barcelona)
Spain Telex: 59355

SWEDEN
MARANTZ
DIVISION OF PHILIPS
Försäljning AB
Tegeluddsvägen 1
S-115 84 Stockholm
Sweden
Telex: 14060

SWITZERLAND
DYNVOX ELECTRONICS
Route de Villars 105
1701 Fribourg
Switzerland
Telex: 942377

TURKEY
DOGRUOL Ltd.
I.M.C.
6 Block N° 6310
Unkapani
Istanbul
Turkey
Telex: 22085

MALTA
CACHIA & GALEA
Republic Street, 68D
Valetta
Telex: 1682

U.S.A.
MARANTZ PROFESSIONAL PRODUCTS
National Service Department
700 N. Commerce St.
Aurora, IL 60504

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.

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

NOTE-FOR U.S.A. ONLY

Parts for your MARANTZ stereo are generally available within 72 hours throughout the nation via a toll-free line to our National Parts Depot in California. The sales professionals who take your call immediately refer to their own desk top computer terminal and can quickly determine the availability and price information you require. If, for some reason, your order should exceed our available stock, we usually can instantly provide an alternate replacement part or current delivery information. When the order is placed and confirmed, the computer simultaneously generates "hard copy" orders at the distribution center. As hard copies come directly from the computer to the national parts depot, your requested stock is assembled and prepared for shipment and placed on the first available carrier for delivery to you.

Phone orders will eliminate mail delays, and we encourage the use of this method. If you order by mail, use MARANTZ parts order forms which are available from MARANTZ NATIONAL PARTS DEPARTMENT.

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How to use this service manual

- The "Common parts" which Marantz Japan, Inc. has established are eliminated from this service manual.
- These "Common parts" are applied to all models in the service manuals arranged and issued by MJI.
- To indicate clearly the common parts in the schematic diagram, a line is drawn above or under the Ref. Desig. No. of applicable parts.
- "Common parts" can be supplied from the Marantz service center as ever.
In case of ordering, please establish the parts number of 10 figures following the procedure mentioned in this service manual "How to establish the parts number for common parts".

(NOTE)

When you order parts to the Marantz parts center, please take notice of the following points.

- 1) Please correctly write the parts number of 10 figures following the rule.
- 2) Since ordering parts by the Ref. Desig. No. or ratings indicated in the schematic diagram does not satisfy the above conditions, the Marantz parts supply system does not work properly.
As this case is apt to cause a trouble, please pay attention to it.



MODEL PMD221/201 STEREO CASSETTE RECORDER



PMD221



PMD201

INTRODUCTION

This service manual are prepared for use by Authorized Warranty Station and contains service information for Marantz Stereo Cassette Recorder.

Servicing information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of the operation of the Cassette Recorder.

The parts list furnishes information by which replacement parts may be ordered from the Marantz Company. A simple description is included for parts which can be usually obtained through local suppliers.

1. SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or front Panel of product and controls and chassis button.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.

Ref. UL Standard NO. 1270. Para 66. 3. D (Mandatory Test after servicing Electrical Appliances, effective 7-1-83).

2. P.W. BOARDS

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

1. Rec/Play Amp Mounted on PW. Board PJ00
2. Switch Board Mounted on PW. Board PS00
3. LED Mounted on PW. Board PL00
4. Mecha Control Mounted on PW. Board PM00
5. Speed Switch Mounted on PW. Board PS01
6. Memory Switch (PMD221 only) Mounted on PW. Board PM01

3. TEST EQUIPMENT REQUIRED FOR SERVICING

For measuring or checking your Cassette Deck, the following instruments and materials are necessary:

- VTVM
- Audio Oscillator (AF OSC)
- Attenuator (600 Ω)
- Oscilloscope
- Bandpass Filter (1 kHz)
- IEC A-Curve Filter
- Wow and Flutter Meter
- Torque Meter (Cassette Type)
- Digital Frequency Counter
- Distortion Meter
- Blank Tapes (Completely erased with bulk eraser)
 - TDK AC-212 (Normal)
 - TDK AC-512 (Special/CrO₂)
 - TDK AC-712 (Metal)

NOTE:

If any doubt is noted in a measured value, use new tape.

- Test Tapes (New Tape)

TCC-111•MTT-111	Wow and Flutter, Tape Speed
TCC-140•MTT-112B	Signal-to-Noise Ratio
TCC-130•MTT-150	Adjustment of Output Level
TCC-161•MTT-256	Frequency Response (for Normal)
TCC-261•MTT-356	Frequency Response (for Special/CrO ₂ and Metal)
TCC-192•MTT-121	Cross Talk
TCC-194•MTT-141	Channel Separation
(A-BEX)•(TEAC)	

4. MECHANISM AND CIRCUIT DESCRIPTION

4.1 Muting System

The muting circuit is provided to reduce the pops noise when generates on the Line Out at power ON/OFF.

1) When power is turned on

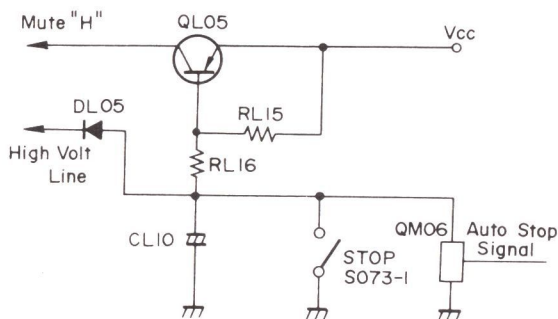
As the emitter voltage of QL05 is higher than the base voltage during the charge current flows to CL10 through RL15 & RL16, QL05 is ON and it sends the muting voltage.

CL10 has been charged up, both the base and the emitter voltages of QL05 are equal. QL05 is OFF and the muting is released.

2) When the STOP button is depressed

When the stop switch S073-1 is ON, the base current flows through. Also discharging CL10, QL05 is ON instantly, the muting system operates to reduce the pops noise at power ON/OFF. QM06 provides to discharge CL10 on AUTO STOP.

As the muting time is in proportional to capacitance of CL10, it is preset by matching the threshold time of TAPE EQ Amp. DL05 provides to discharge CL10 on FF and REW.



4.2 Auto Play and Automatic Rewind Stop (PMD221 only)

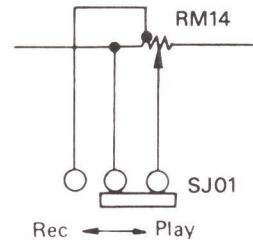
With SS01 set to ON during PLAY, the rewind button will lock when pressed. When counter reaches 999, the rewind lock releases and the PLAY operation resumes. In this condition, both CUE and REVIEW buttons do not operate and both buttons are locked. Also, when the FF button is pressed and locked in place, the lock releases when the counter reaches "900" and the PLAY mode is entered. When the tape has finished winding in both modes before the counter reaches the respective positions, the AUTO STOP function and all buttons are released. Also when the REWIND button alone is locked, the tape rewinds and rewind stops when the counter reaches "999". The same applies for fast forward operation which stops at "900". When the counter is between "900" and "999", both REWIND and FF buttons do not lock.

4.3 Auto Stop

The AUTO STOP function which detects the end of the tape is carried out by hole IC (QM07). The signal from QM07 is added to the pin ④ of QM08, while the auto stop duration is designated inside QM08. The time it takes for the auto stop function to activate after the tape stops, is determined in CM08. At this time $TE = 75 \times CM08 (\mu F)mSec$, while $TW = 30 \times CM07 (\mu F)mSec$ as long as the auto stop function is operating. When it does not shut off the first time, TE--TW--TE--TW is repeated until it shuts off.

4.4 Pitch Control

The pitch control is used to vary the tape speed for playback operation. During recording, it is automatically set to the RM14 center position by SJ01.

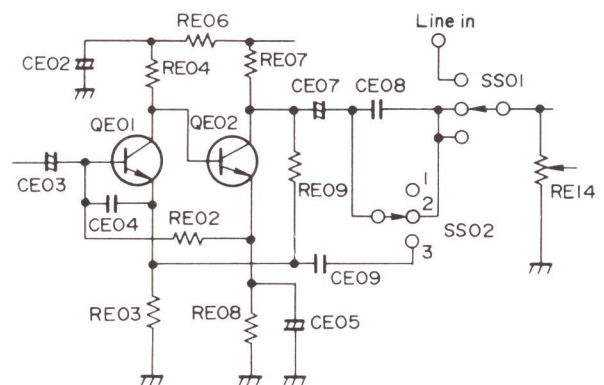


4.5 Ambient Noise Control (ANC)

ANC changes the bandwidth of the signals with the Mic Amp.

1. High pass
2. Normal
3. Band pass

CE08 and RE14 determine the Low Frequency cut. The NF volume of CE09 determines the High Frequency cut.

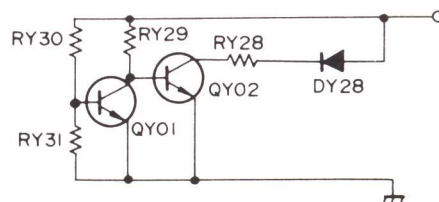


4.6 Low Battery Indicator

This circuit illuminates the LED when the supply voltage level is attenuated.

The dividing ratio for RY30 and RY31 determines the voltage at which the light is illuminated.

LED (DY28) is lit up when the base voltage of QY01 is less than about 0.6V.



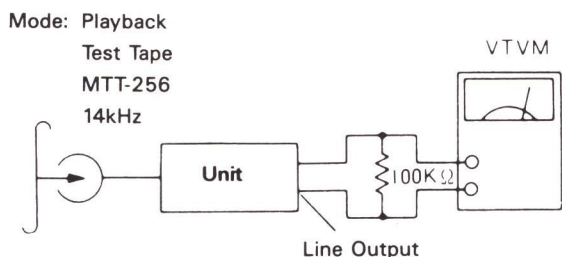
5. ELECTRICAL ADJUSTMENTS

Precautions for Adjustment and Measurement

1. Before playing back the test tape, thoroughly demagnetize the heads, capstan and similar metal parts using an eraser, as the test tape-recorded tone is easily erased.
2. Do not place the test tape on any measuring instrument.
3. Do not put the test tape near a place where the eraser is used.
4. Method of Demagnetization: Turn the eraser power switch on at a position far away from the heads. Bring the eraser close to the heads, capstan and other parts to be demagnetized, and move it up and down four or five times to demagnetize. Slowly separate the eraser far away from the parts, and turn the power switch off.
5. Do not use any magnetized adjusting tool. If necessary, demagnetize with a bulk eraser from time to time in the course of each adjustment.
6. Do not turn semi-fixed resistor or coil more than needed.
7. Measure speed and wow and flutter in the normal operating state.
8. Do not apply locking bond excessively.

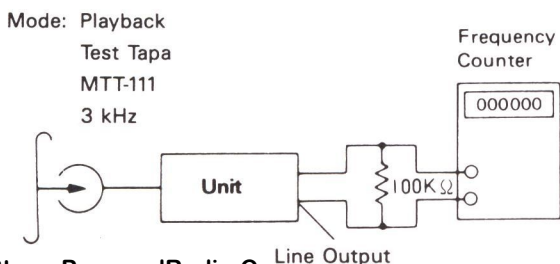
5.1 Head Azimuth Adjustment

1. Play the test tape MTT256 back. Adjust the head azimuth adjusting screw for maximum VTVM reading.
2. After adjustment, repeat the playback and stop settings several times to confirm no azimuth deviation.
3. After adjustment, lock the screws with bond.



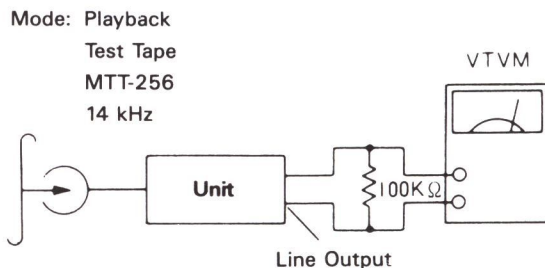
5.2 Tape Speed Adjustment

1. Play the 3kHz signal of the test tape MTT-111 back.
2. Adjust the adjusting resistor (RM04) on the PM00 PW. Board so that counter readings are between 2990 – 3010Hz.
3. Then, adjust the Speed Selector Switch to LOW PLAY, and play MTT-111 back.
4. Adjust the adjusting resistor (RM15) on the PJ00 PW. Board so that the counter readings are between 2900 – 3010 Hz.



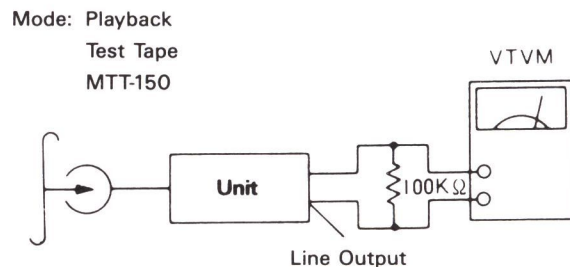
5.3 Playback Equalizer Measurement

1. Adjust the tape selector switch to NORMAL.
2. Play the 315Hz signal of the test tape MTT-256 back. The VTVM at 0dB.
3. Play the 12.5kHz signal of the test tape back. Confirm a frequency response of 0 to 2dB in reference to the 315Hz signal level. Then, play the 12,5kHz signal back. Set the tape selector to CrO₂, Metal. Confirm the 12.5kHz signal readings at - 4.5dB, ± 1dB.



5.4 Playback Level Adjustment

1. Adjust the Tape Selector Switch to NORMAL and turn the NR switch OFF.
2. Play the test tape MTT-150 back. Adjust RJ16 so that the voltage of Line output is 580mV.



5.5 Level Meter Adjustment

1. Adjust the Tape Selector Switch to NORMAL.
2. Play the test tape MTT-150 back. Adjust RX01 at 0dB Level Meter reading.

5.6 Playback Noise Measurement

1. Set the selector switch to NORMAL.
2. Play back the blank tape and make sure that the noise volume is below 2mV when the REC LEVEL Knob is set to both maximum and minimum.

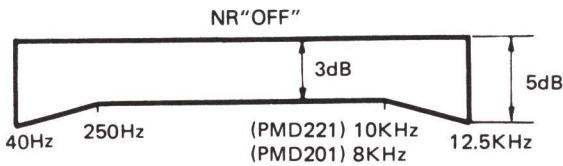
NOTES:

1. Perform measurements when the power hum is at a minimum.
2. Perform measurements under conditions where induction noise will not affect measurements.

5.7 Record/Playback Frequency Response and Recording Level Adjustment

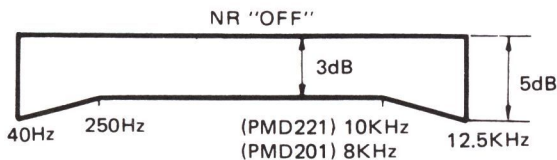
[NORMAL]

1. Set the tape selector switch to NORMAL.
2. Insert the AC-212 test tape in the cassette holder and set the recording conditions. (Set the monitor switch to SOURCE) and attenuate from 1kHz, 580mV to -25dB on Line Out. (The direction included in parenthesis is applicable only for the PMD221.)
3. Rewind and play the tape back, then set RL12 so that the level of 1kHz is brought within ± 0.5 dB.
4. When playing the tape back, set RK01 so that the level of 1kHz is the same as that on the Rec Monitor. Change the Monitor Switch to TAPE SOURCE, and set RK01 so that the level of 1kHz is the same as that before.
5. After making these adjustments, record and play back at 1kHz, 10kHz, 12.5kHz. Make sure results comply with the following diagram.



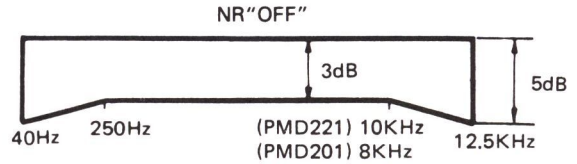
[CrO₂]

1. Set the tape selector switch to CrO₂.
2. Insert the AC-512 test tape in the cassette holder and set the recording conditions. Attenuate from 580mV to -25dB on Line Out with the attenuator and record at 1kHz, 10kHz, and 12.5kHz on an unrecorded section of the tape.
3. Record and playback at 1kHz, 10kHz, and 12.5kHz. Make sure results comply with the following diagram.



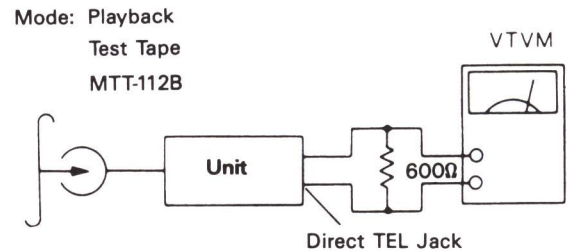
[METAL]

1. Adjust the Tape Selector Switch to METAL.
2. Load the test tape AC-712 into cassette holder. Perform measurements as with CrO₂, and make sure they conform with the Chart.



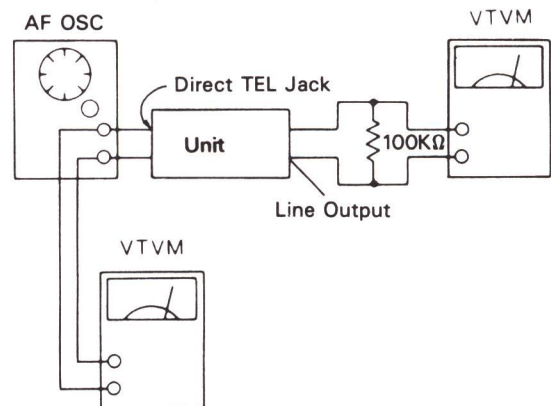
5.8 Direct Telephone Output Measurement

1. Play the test Tape MTT-112B back.
2. Perform measurements of the output voltage on the Direct TEL Jack, when the Monitor volume is at the maximum setting.



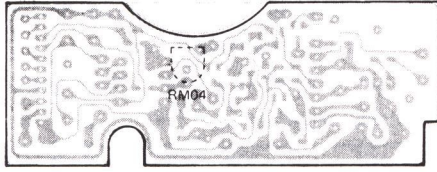
5.9 Direct Telephone Input Measurement

1. Set the recording conditions, and adjust the Monitor Switch to SOURCE.
2. Set the Rec Level to maximum, the Rec Mode to MANUAL.
3. Add a 1kHz signal to Direct TEL Jack, and set the input signal to attenuate from 580mV to -3dB on Line Output.

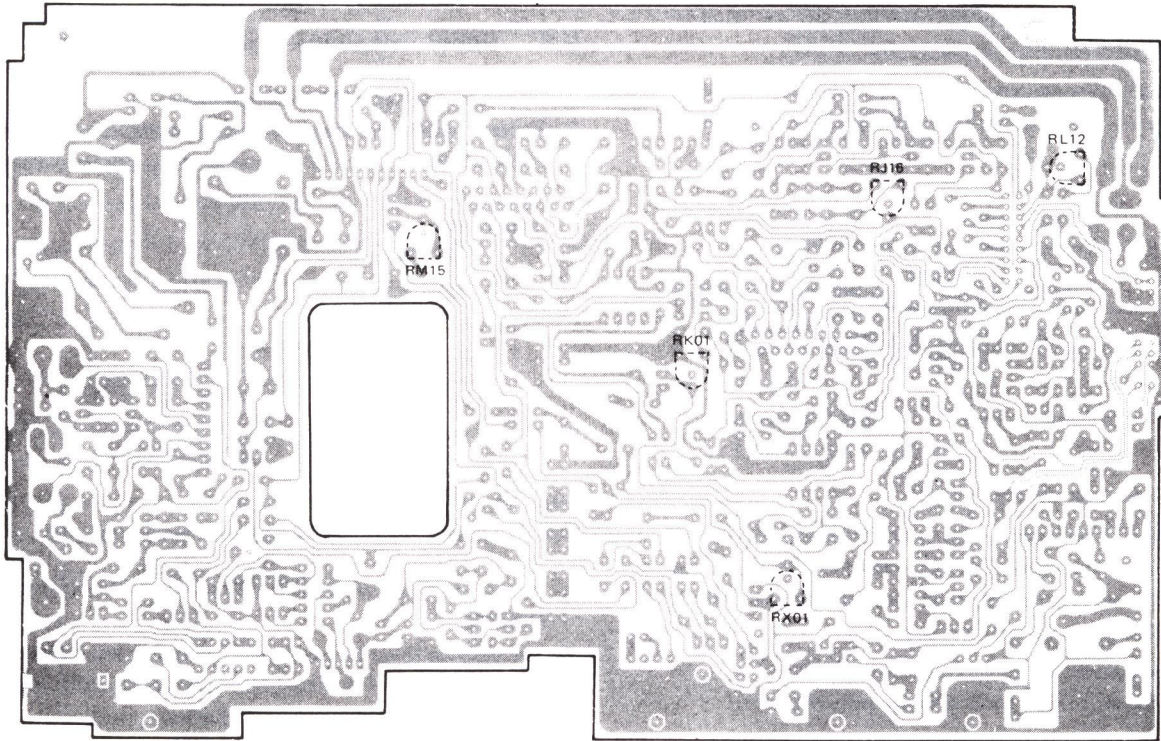


5.10 Alignment Points

PM00



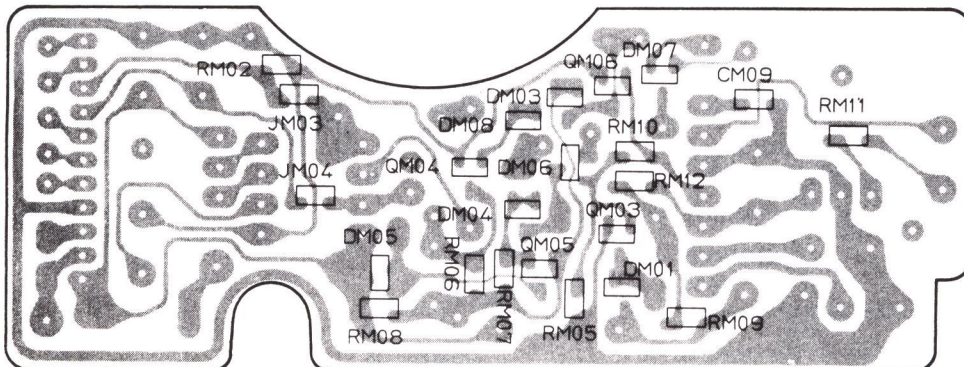
PJ00



6. DIAGRAMS

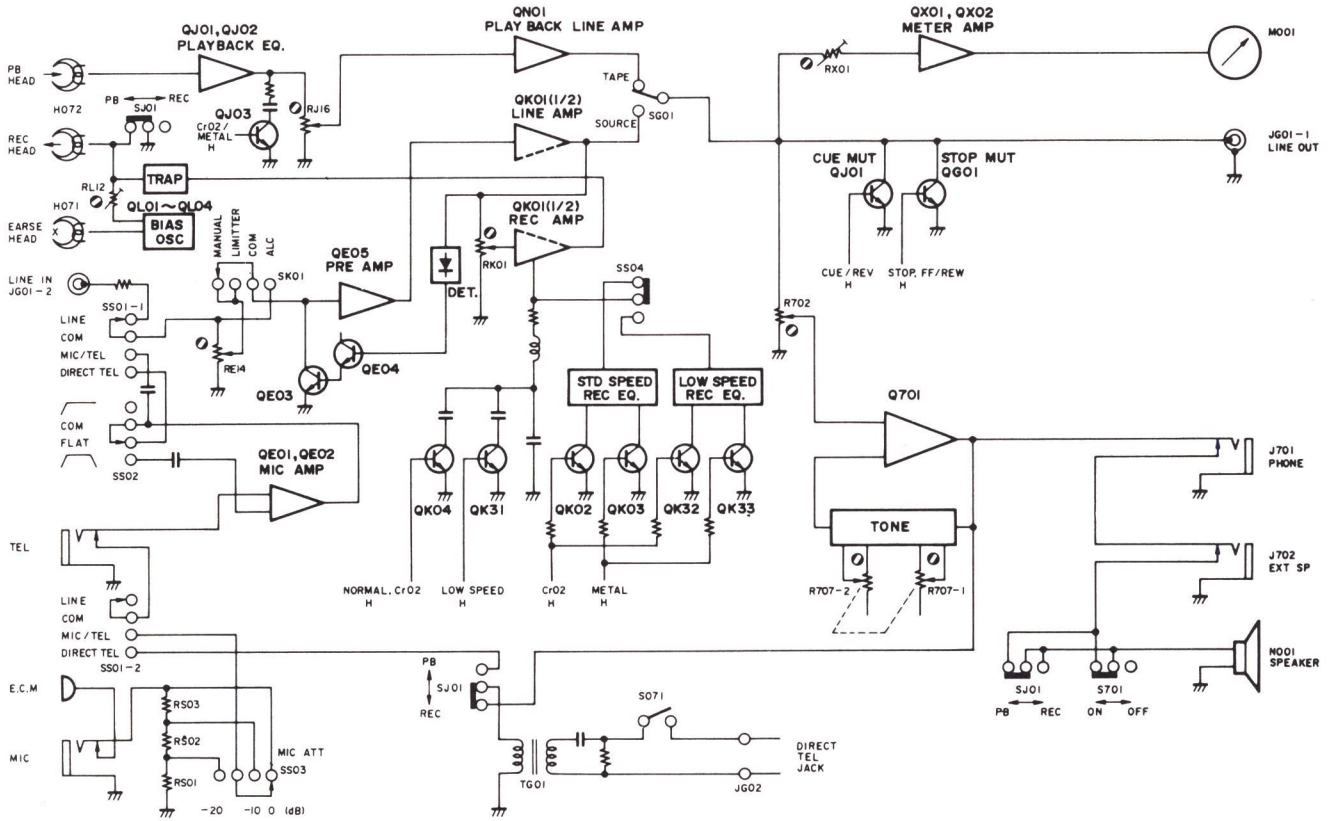
6.1 Chip Parts Component Locations

PM00

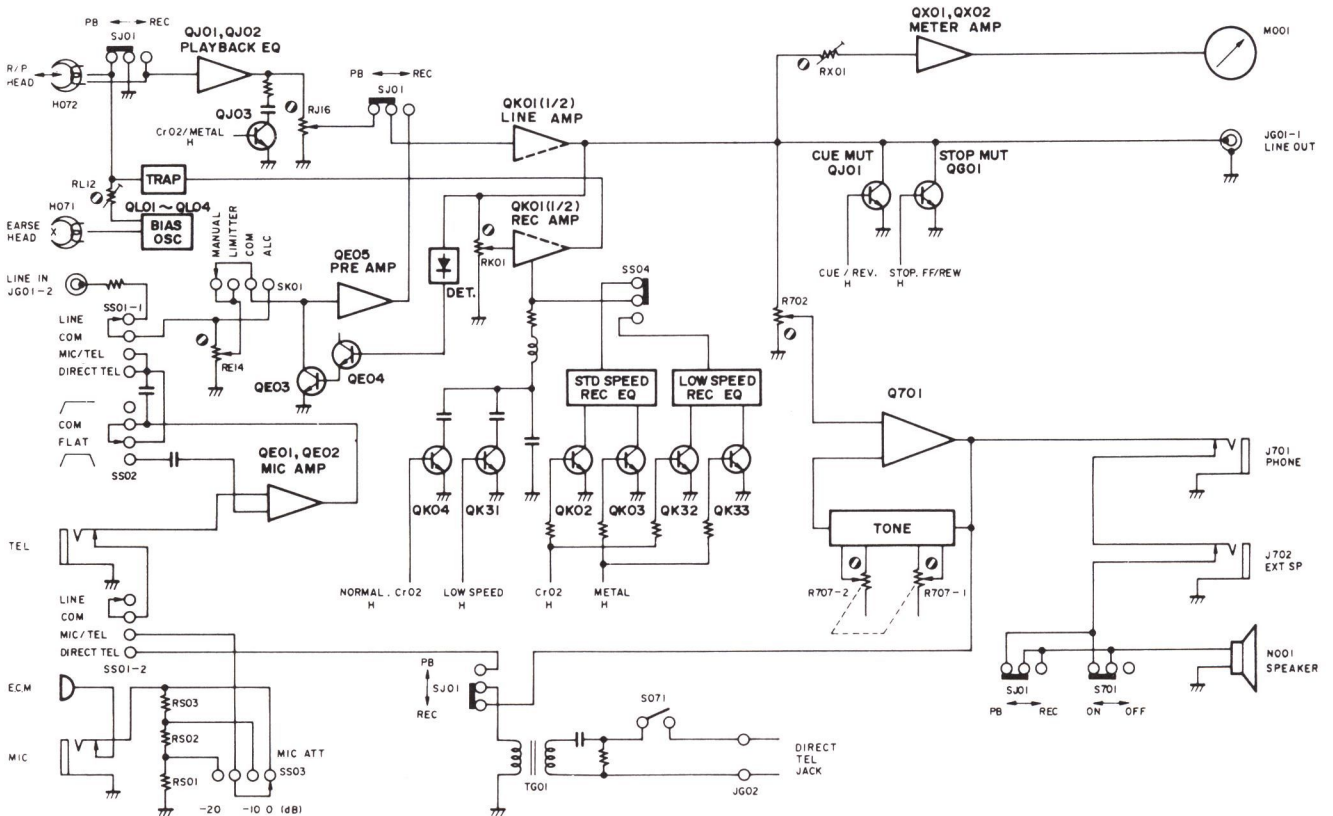


6.2 Block Diagrams

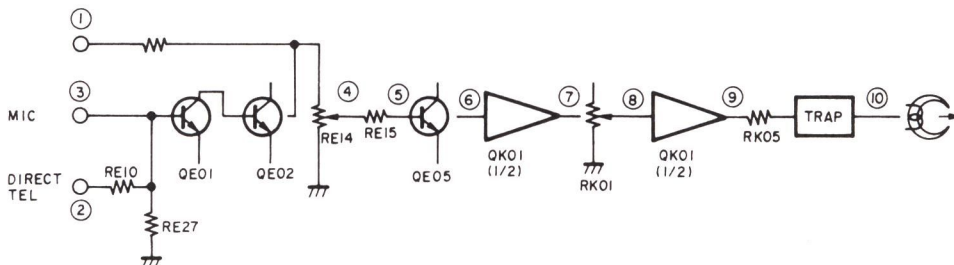
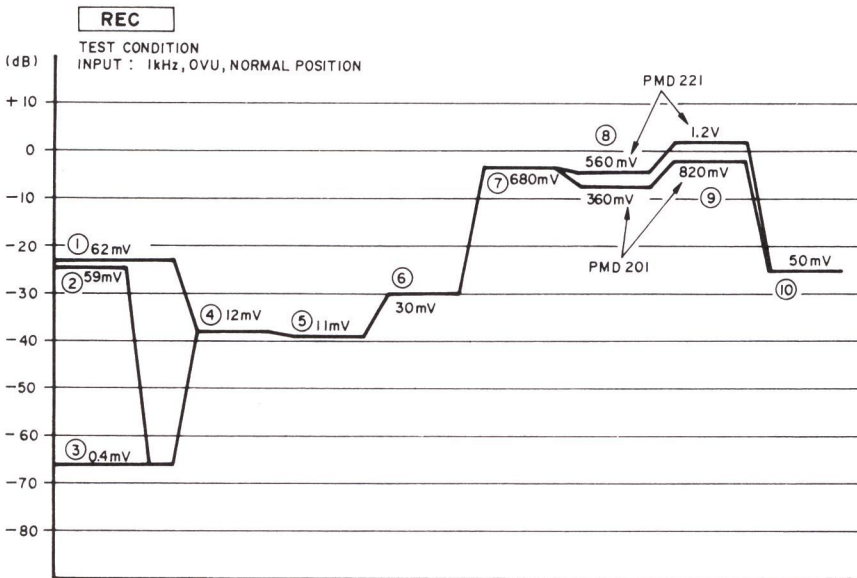
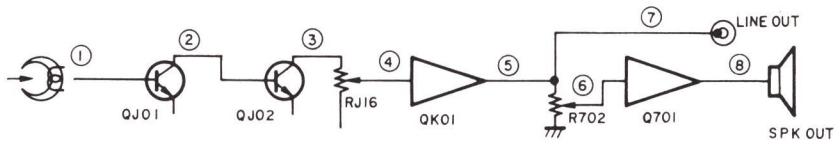
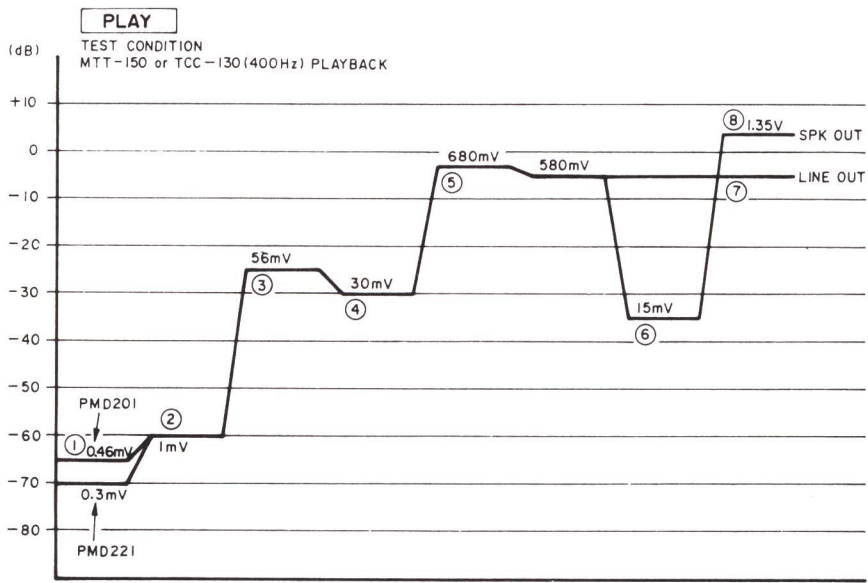
(PMD221)

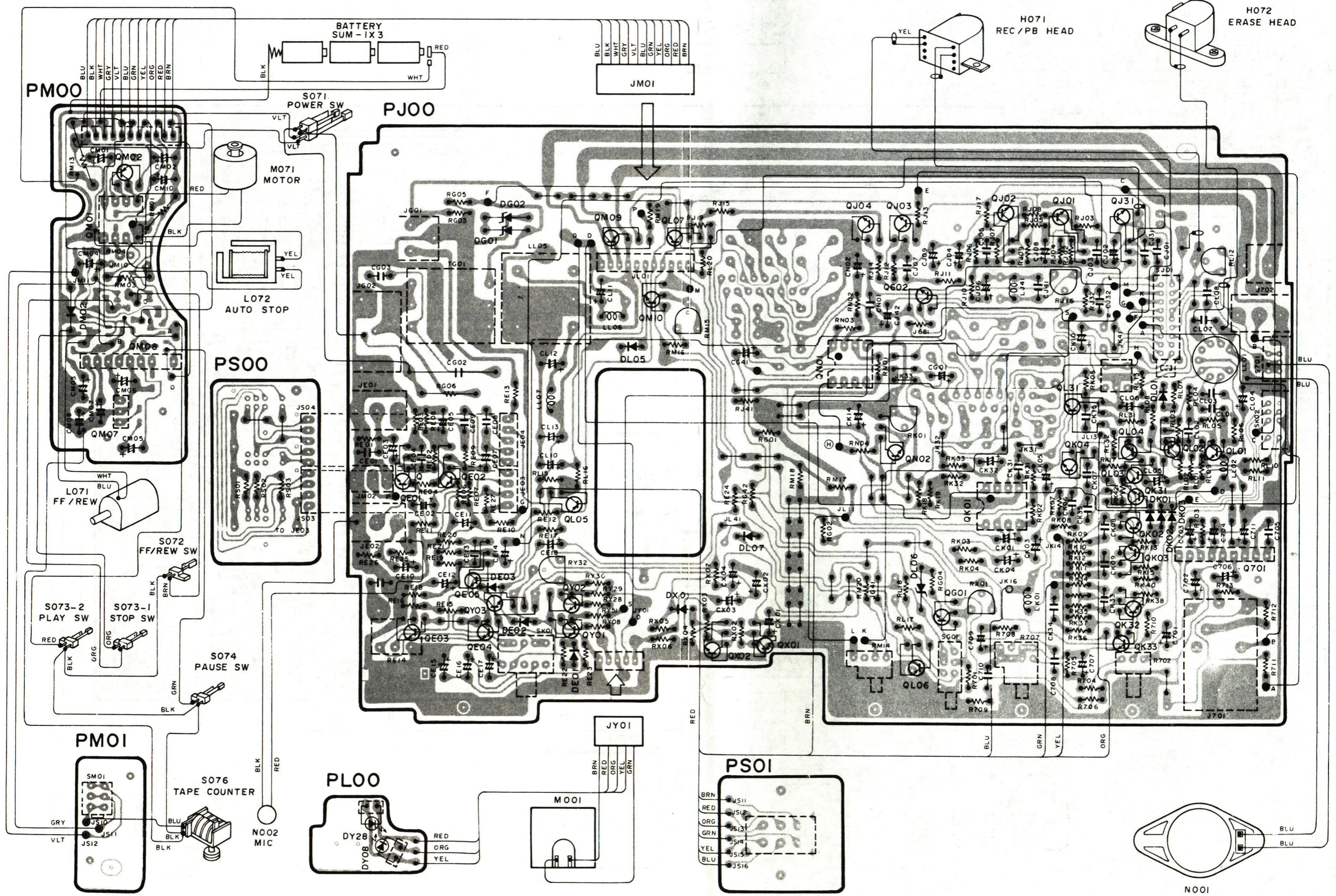


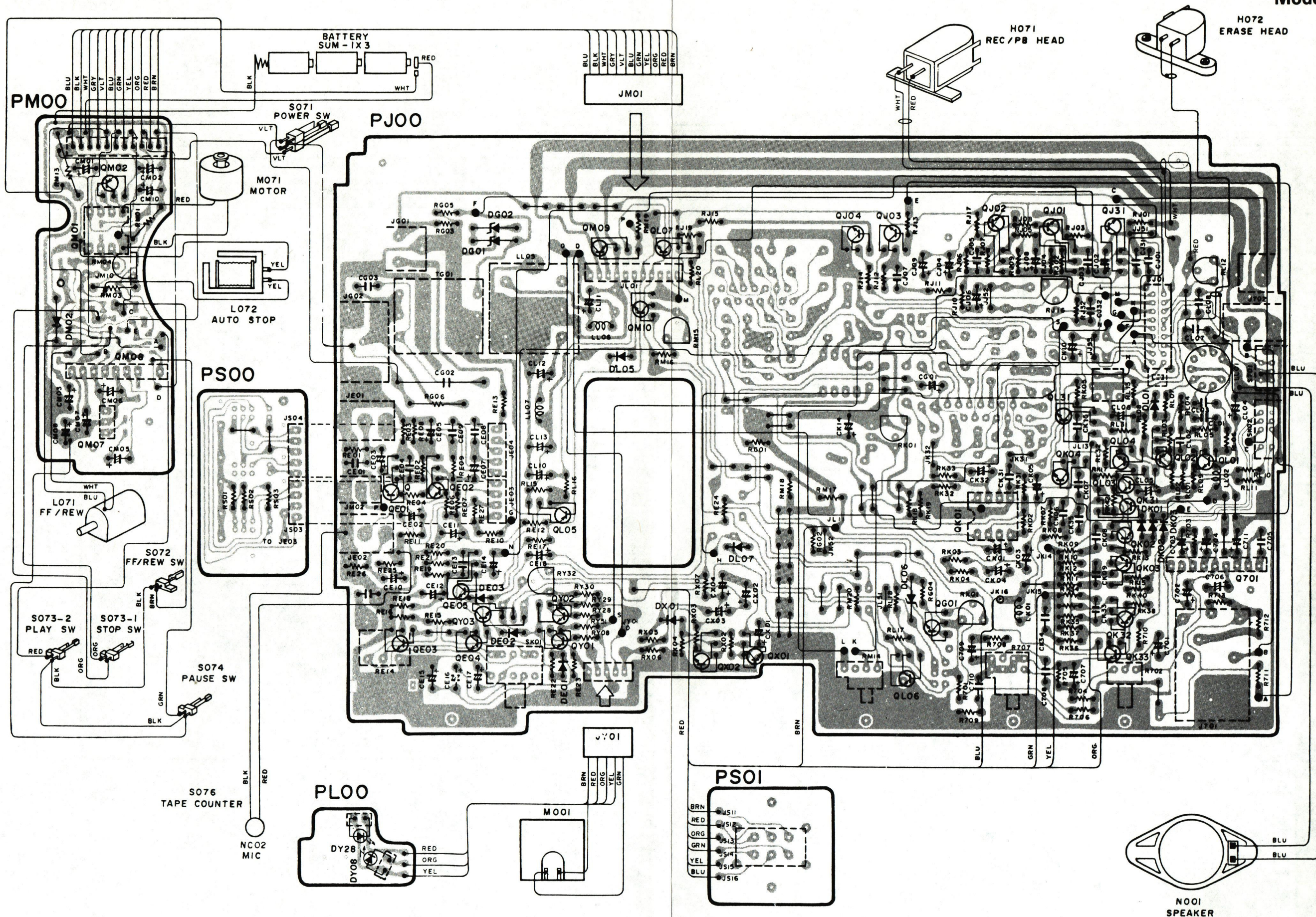
(PMD201)



6.3 Level Diagram PMD201/221







REF. DESIG.	PART NO.	DESCRIPTION	REF. DESIG.	PART NO.	DESCRIPTION
001M	153T105500	Chassis Ass'y, Main	124M	153T105550	Chassis Ass'y, Reel
020M	153T010090	Screw	137M	153T256050	Hub, Take-Up & S Reel Cap
021M	59020402G0	Washer	138M	59020405G0	Washer, Under Reel Cap
023M	153T354500	Lever, Stop Lever Ass'y	139M	153T058010	Gear, Take-Up Reel Gear Ass'y
028M	251T115100	Spring, S/F Select Cam	140M	59020402G0	Washer, Under Clutch
029M	153T115170	Spring, Stop Lever			
031M	153T354020	Lever, REC	141M	153T058020	Gear, Supply Reel Gear Ass'y
032M	153T115210	Spring, REC Lever	142M	59020402G0	Washer, Under Supply Reel Ass'y
033M	153T125010	Joint, Leaf Spring REC Switch	143M	242T058110	Gear, FF
034M	254T010200	Screw	144M	59020402G0	Washer, Under FF Gear
			145M	254T012220	Washer, FF Gear
035M	64001500L0	RG Ring, REC Lever	146M	242T262100	Pulley, FWD Idler
037M	251T354010	Lever, FWD	147M	59163202G0	Washer, Under FWD Idler
038M	251T115220	Spring, Head Base	148M	153T118130	Spacer, FWD Idler
039M	251T115110	Spring, FWD Lever	149M	242T262110	Center Pulley Ass'y
040M	64001500L0	RG Ring, FWD Lever	150M	153T118120	Spacer, Under C Clutch
042M	251T354020	Lever, REW			
043M	251T115130	Spring, REW Lever	151M	153T118130	Spacer, C Pulley Ass'y
045M	254T354030	Lever, FF	152M	242T002100	Arm, Shut OFF
046M	242T115160	Spring, FF Lever	153M	254T012230	Washer, Shut OFF Arm
048M	153T354510	Lever Ass'y, Pause	154M	153T115040	Spring, Shut OFF Arm
			155M	153T262020	Pulley, Counter
052M	153T002040	Arm, Pause Lock Cam	158M	254T010200	Screw, Reel Chassis Ass'y
053M	153T115060	Spring, Pause Lock Cam	160M	153T115020	Spring, Leaf
054M	153T115140	Spring, Pause Lever	161M	254T010200	Screw
055M	64001500L0	RG Ring, Pause Lever	165M	153T105520	Chassis Ass'y, Sub Fly
056M	64000200L0	RG Ring, Pause Lever	173M	153T121010	Link, Auto Stop
057M	64001500L0	RG Ring, Pause Cam			
059M	153T354040	Lever, Link Button	174M	59050805G0	Washer, Auto Stop Link
060M	51400205P0	B.H. Tapped Screw B2x5	175M	64000400L0	RG Ring, Auto Stop Link
061M	51380205P0	P.H. Tapped Screw P2x5	176M	153T115030	Spring, Auto Stop Solenoid
063M	153T054010	Cam, Lock Plate	177M	51442604A0	L. Washer Screw L2.6x4
			178M	195T160090	Bracket, Motor
064M	153T115160	Spring, Lock Plate	179M	195T262240	Pulley, Motor
065M	64001500L0	RG Ring, Lock Plate	180M	254T010250	Screw, Motor
066M	153T054500	Cam, QMS Lock Plate Ass'y	181M	51442604A0	L. Washer Screw L2.6x4
070M	64001500L0	RG Ring, E	182M	51302605B0	P.H. Tapped Screw P2.6x5
071M	251T115140	Spring, QMS Lock Plate	183M	254T259200	Bushing, Motor
072M	64000200L0	RG Ring, Lock Plate			
075M	251T002100	Arm, REC Inter Lock Plate	185M	153T010110	Screw, Sub Fly Chassis
076M	251T115150	Spring, REC Inter Lock	186M	254T010210	Screw, Sub Fly Chassis
077M	153T010120	Screw, Hook Spring	190M	153T160040	Bracket, Left Side
081M	153T115250	Spring, REC Safety	191M	254T010210	Screw, L-Side Bracket
			192M	153T010110	Screw, L-Side Bracket
083M	51841703B0	F.H.M. Screw F1.7x3	195M	153T271500	Button Frame Ass'y
085M	153T010140	Screw, F/R Switch	198M	153T112130	Shaft, Button
089M	154T105510	Head Base Ass'y	199M	153T270010	Button, Stop
093M	154T115190	Spring, Pinch Roller (PMD221)	200M	153T270020	Button, FWD
093M	153T115190	Spring, Pinch Roller (PMD201)	201M	153T270030	Button, REW & FF
094M	154T115020	Spring, Azimuth (PMD221)			
094M	242T115190	Spring, Azimuth (PMD201)	202M	153T270040	Button, Pause
096M	154T010190	Screw, Azimuth	203M	153T270050	Button, REC
097M	51060203S0	P.H.M. Screw P2x3	205M	64000200L0	RG Ring, Button Shaft
098M	305H005030	Clamper, Head Wires	206M	51100203S0	B.H.M. Screw B2x3
			209M	153T160010	Bracket, QMS Magnet
099M	51100205S0	B.H.M. Screw B2x5	210M	51041703S0	F.H.M. Screw F1.7x3
100M	153T012010	Washer, Pinch Roller Spring (PMD221)	212M	153T010130	Screw
103M	64001500L0	RG Ring, Head Base	213M	51040208A0	F.H.M. Screw F2x8
106M	153T002010	Arm, Pause	214M	53111703A0	Hexagon Nut, QMS Bracket
107M	153T002590	Arm Ass'y, Pinch Roller	215M	251T005110	Clamper, Under Nut
111M	64001500L0	RG Ring, Pinch Arm			
113M	242T354160	Lever, Switch & CUE/REV	218M	153T264020	Belt, Counter
114M	64001500L0	RG Ring, Switch C/R Lever	219M	153T273010	Flywheel Ass'y, Main
116M	254T258010	Hook, Eject Hook Lever	220M	153T273020	Flywheel Ass'y, Sub
117M	251T115170	Spring, Hook Lever	221M	59163202G0	Washer, Under Flywheels
			222M	153T118110	Spacer, Oil Fence
118M	64001500L0	RG Ring, Hook Lever	223M	242T264120	Belt, Drive
120M	153T115010	Spring, Cassette Back	228M	153T160030	Bracket, Fly Back Retainer
121M	254T010200	Screw, Cassette Back Spring	229M	153T264010	Belt, Main (PMD221)
122M	251T005100	Clamper, Take-Up Idler	229M	153T104010	Retainer (PMD201)
123M	254T010200	Screw, Take-Up Idler	230M	153T164010	Adjuster

REF. DESIG.	PART NO.	DESCRIPTION
231M	254T010210	Screw
233M	153T010130	Screw, Pause Switch
234M	51042604A0	F.H.M. Screw F2.6x4
235M	51442604A0	L. Washer Screw L2.6x4
237M	153T053010	Cover, Mecha
238M	254T010200	Screw, Mecha Cover
239M	153T104010	Retainer (PMD221)
239M	153T264010	Belt, Main (PMD201)
500M	153T109010	Shield (PMD201)
H071	LH82162030	REC/Play Head (PMD221)
H071	LH41601040	REC/Play Head (PMD201)
H072	LH31000570	Erase Head
L071	ME00140040	Solenoid Coil, QMS Auto REW
L072	ME10180010	Solenoid Coil, Auto Stop
M071	MM00450020	D.C. Motor
S071	SM02010180	Mini Switch, Motor
S072	SM01011140	Mini Switch, F/R
S073	SM01011210	Mini Switch, Play/Stop
S074	SM01011210	Mini Switch, Pause
S076	153T052010	Counter (PMD221)
S076	195T052010	Counter (PMD201)

8. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES

RESISTOR

- R*****(1) GD05□□□140, Carbon film fixed resistor, ± 5%, 1/4W
R***(2) GD05□□□160, Carbon film fixed resistor, ± 5%, 1/6W

① — Resistance value

Examples

① Resistance value

0.1Ω ... 001 100Ω ... 100 1kΩ ... 102 100kΩ ... 104
 0.5Ω ... 005 18Ω ... 180 2.7kΩ ... 272 680kΩ ... 684
 1Ω ... 010 100Ω ... 101 10kΩ ... 103 1MΩ ... 105
 6.8Ω ... 068 390Ω ... 391 22kΩ ... 223 2.2MΩ ... 225

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C*** : CERAMIC CAP.

- (1) DD1□□□□370, Ceramic condenser
 Disc type
 Temp. coeff. P350 ~ N1000, 50V

① ②
 Capacity value
 Tolerance

Examples

① Tolerance (Capacity deviation)

± 0.25pF ... 0
 ± 0.5pF ... 1
 ± 5% ... 5

* Tolerance of COMMON PARTS handled here are as follows:

0.5pF ~ 5pF ... ± 0.25pF
 6pF ~ 10pF ... ± 0.5pF
 12pF ~ 560pF ... ± 5%

② Capacity value

0.5pF ... 005 3pF ... 030 100pF ... 101
 1pF ... 010 10pF ... 100 220pF ... 221
 1.5pF ... 015 47pF ... 470 560pF ... 561

C*** : CERAMIC CAP.

- (1) DK16□□□□300, High dielectric constant ceramic condenser
 Disc type
 Temp. chara. 2B4, 50V

①
 Capacity value

Examples

① Capacity value

100pF ... 101 1000pF ... 102 10000pF ... 103
 470pF ... 471 2200pF ... 222

C*** : ELECTROLY CAP. (≠), FILM CAP. (≡)

- (1) EA□□□□□10, Electrolytic condenser
 One-way lead type, Tolerance ± 20%

① ②
 Dielectric strength
 Capacity value

Examples

① Capacity value

0.1μF ... 104 4.7μF ... 475 100μF ... 107
 0.33μF ... 334 10μF ... 106 330μF ... 337
 1μF ... 105 22μF ... 226 1000μF ... 108
 2200μF ... 228

② Working voltage

6.3V ... 006 25V ... 025
 10V ... 010 35V ... 035
 16V ... 016 50V ... 050

- (2) DF15□□□□350, Plastic film condenser
 One-way type, Mylar ± 5% 50V

①
 Capacity value

Examples

① Capacity value

0.001μF (1000pF) ... 102 0.015μF ... 153
 0.0018μF ... 182 0.1μF ... 104
 0.01μF ... 103 0.56μF ... 564
 1μF ... 105

REF. DESIG.	PART NO.	DESCRIPTION
PJ00	YK195T1510 ZZ196T1510 ZZ195T1510	PJ00-REC/PLAY AMP CIRCUIT BOARD P.W. Board R/P Amp P.W. Board Assembly (PMD221) P.W. Board Assembly (PMD201)
C705 CG02 CLO7 CJ41	DD15101300 DF16474530 DF15123550 DD15151300	PJ00-CAPACITORS Ceramic 100 pF ± 5% (PMD201) Film 0.47 μF ± 10% Film 0.012 μF ± 5% Ceramic 150 pF ± 5%
R702 R707	RK01030520 RM01030270	PJ00-RESISTORS 10kΩ (A) Variable 10kΩ (W) Variable
RE14 RG06 RJ16	RK02030670 GG05471120 RA02230600	20kΩ (B) Variable 470Ω ± 5% 1/2W 22kΩ (B) Trimming
RK01	RA02230600	22kΩ (B) Trimming
RL12	RA01040600	100kΩ (B) Trimming
RM14 RM15	RK05010060 RA01020600	500Ω (B) Variable 1kΩ (B) Trimming
RX01	RA01040600	100kΩ (B) Trimming
RY32	RA02230600	22kΩ (B) Trimming
DE01 DE02 DE03	HD20015210 HD20015210 HD20015210	PJ00-SEMICONDUCTORS Diode 1SS133 Diode 1SS133 Diode 1SS133
DG01 DG02	HD30021060 HD30021060	Zener RD5.IE-B2 Zener RD5.IE-B2
DK01 DK02 DK03	HD20015210 HD20015210 HD20015210	Diode 1SS133 Diode 1SS133 Diode 1SS133
DL01 DL05 DL06 DL07	HD20015210 HD20015210 HD30002020 HD20015210	Diode 1SS133 Diode 1SS133 Zener 3.9V Diode 1SS133
DM09	HD30042060	Zener RD 7.5EB3
DX01	HD20015210	Diode 1SS133
Q701	HC10055210	IC BA527
QE01 QE02 QE03 QE04 QE05	HT327841U0 HT327841U0 HT327841U0 HT327841U0 HT327841U0	Transistor 2SC2784 U Transistor 2SC2784 U Transistor 2SC2784 U Transistor 2SC2784 U Transistor 2SC2784 U
QG01	HT333122B0	Transistor 2SC3312 S.T
QJ01 QJ02 QJ03 QJ04	HT327841U0 HT327841U0 HT333122B0 HT333122B0	Transistor 2SC2784 U Transistor 2SC2784 U Transistor 2SC3312 S.T Transistor 2SC3312 S.T
QJ31	HT333122B0	Transistor 2SC3312 S.T
QK01 QK02 QK03 QK04	HC10017090 HT333122B0 HT333122B0 HT333122B0	IC 4558 DD Transistor 2SC3312 S.T Transistor 2SC3312 S.T Transistor 2SC3312 S.T

REF. DESIG.	PART NO.	DESCRIPTION
QK31	HT333122B0	Transistor 2SC3312 S.T
QK32	HT333122B0	Transistor 2SC3312 S.T
QK33	HT333122B0	Transistor 2SC3312 S.T
QL01	HT404711L0	Transistor 2SD471 L
QL02	HT404711L0	Transistor 2SD471 L
QL03	HT404711L0	Transistor 2SD471 L
QL04	HT333122B0	Transistor 2SC3312 S.T
QL05	HT113092B0	Transistor 2SA1309 S.T
QL06	HT113092B0	Transistor 2SA1309 S.T
QL07	HT113092B0	Transistor 2SA1309 S.T
QL31	HT333122B0	Transistor 2SC3312 S.T
QM09	HT333122B0	Transistor 2SC3312 R or S
QM10	HT333122B0	Transistor 2SC3312 R or S
QM11	HT30002000	Transistor 2SC2784, 2SC3312 etc.
QN01	HC10017090	IC 4558 DD (PMD221)
QN02	HT30002000	Transistor 2SC2784, 2SC3312 etc. (PMD221)
QX01	HT333122B0	Transistor 2SC3312 S.T
QX02	HT333122B0	Transistor 2SC3312 S.T
QY01	HT333122B0	Transistor 2SC3312 S.T
QY02	HT30002000	Transistor 2SC2784, 2SC3312 etc.
QY03	HT30002000	Transistor 2SC2784, 2SC3312 etc.
PJ00-MISCELLANEOUS		
J701	YJ01002090	Jack Headphone
J702	YJ01002160	Jack Ext SP
JE01	YJ01002160	Jack Tel Pick up
JE02	YJ01002160	Jack Mic
JE03	YU04080260	Jumper Lead
JE04	YU05080260	Jumper Lead
JG01	YT02020280	Terminal Pin Jack 2P
JG02	YJ01002430	Jack Direct Tel
JL01	YJ06003110	Jack Connector
JL02	YJ04000840	Jack DC IN
JM02	YJ01002440	Jack Remote
JY01	YJ06003250	Jack Connector
LJ41	LC22260700	Choke Coil 22mH
LK01	LC25650700	Choke Coil 5.6mH
LK02	LC24760520	Choke Coil Bias Trap 85kHz
LL01	TC10150070	Osc Transf. Bias Osc Coil
LL02	LC14730040	Choke Coil 47 μ H
LL05	TC10200090	Osc Transf. DC-DC Converter
LL06	LC14730040	Choke Coil 47 μ H
LL07	LC21050700	Choke Coil 1mH
S701	SS02020740	Slide Switch Speaker ON/OFF
SG01	SP02020730	Push Switch Tape/Source Select (PMD221)
SJ01	SS06020570	Slide Switch Rec/Play
SK01	SR02030130	Rotary Switch Rec Mode
SK02	SS02030230	Slide Switch Tape Select
TG01	T012414010	Output Transf. Direct

REF. DESIG.	PART NO.	DESCRIPTION
PL00	YK195T1540 ZZ195T1540	PL00-LED CIRCUIT BOARD P.W. Board LED P.W. Board Assembly
DY08	HI10056020	PL00-MISCELLANEOUS LED Rec Ind.
DY28	HI10025020	LED Batt Ind.
PM00	WC195T0210 ZZ196T0210 ZZ195T0210	PM00-MECHA CONTROL CIRCUIT BOARD P.W. Board Mecha Control P.W. Board Assembly (PMD221) P.W. Board Assembly (PMD201)
CM09	DK46102300	PM00-CAPACITOR Ceramic 1000pF \pm 10% Chip
JM03	RI05000180	PM00-RESISTORS (All Resistors are \pm 5% & 1/8W) Resistor 0 Ω 1/8W Chip
JM04	RI05000180	Resistor 0 Ω 1/8W Chip
RM01	NB50052390	0.5 Ω 1/2W
RM02	RI05022180	2.2 Ω Chip
RM03	NB51032200	10k Ω 1/2W
RM04	RA03320600	3.3k Ω (B) Trimming
RM05	RI05473180	47k Ω Chip
RM06	RI05473180	47k Ω Chip (PMD221)
RM06	RI05000180	0 Ω Chip (PMD201)
RM07	RI05473180	47k Ω Chip
RM08	RI05472180	4.7k Ω Chip
RM09	RI05681180	680 Ω Chip
RM10	RI05472180	4.7k Ω
RM11	RI05473180	47k Ω
RM12	RI05681180	680 Ω
RM13	GA05047010	4.7 Ω 1W
PM00-SEMICONDUCTORS		
DM01	HZ20001020	Diode Chip
DM02	HD20003000	Diode 1SR35-200
DM03	HZ20001020	Diode Chip
DM04	HZ20001020	Diode Chip
DM05	HZ20001020	Diode Chip
DM06	HZ20001020	Diode Chip
DM07	HZ20001020	Diode Chip
DM08	HZ30003020	Zener MA30
QM01	HC10037020	IC AN6612
QM02	HT108811Q0	Transistor 2SA881
QM03	HX413282A0	Transistor 2SD1328 R.S Chip
QM04	BA20002210	Semicon. Comp DTC-124E K
QM05	HX413282A0	Transistor 2SD1328 R.S Chip
QM06	BA20002210	Semicon. Comp DTC-124E K
QM07	HC10024020	IC DN6864
QM08	HC10039210	IC BA668
JM01	YB00080120	PM00-MISCELLANEOUS Connective Cord
PM01	WC195T0220 ZZ196T0220	PM01-MEMORY SWITCH CIRCUIT BOARD (PMD221, ONLY) P.W. Board Memory SW P.W. Board Assembly
SM01	SP02020840	Push Switch Memory Rew

REF. DESIG.	PART NO.	DESCRIPTION
PS00	YK195T1520 ZZ195T1520	PS00-INPUT SELECT CIRCUIT BOARD P.W. Board Switch Input P.W. Board Assembly
SS01 SS02 SS03	SS02030290 SS02030290 SS02030290	PS00-MISCELLANEOUS Slide Switch Input Select Slide Switch Anc Select Slide Switch Mic Att.
PS01	YK195T1530 ZZ195T1530	PS01-TAPE SPEED SELECT CIRCUIT BOARD P.W. Board Speed Switch P.W. Board Assembly
SS04	SS02020760	Slide Switch Tape Speed

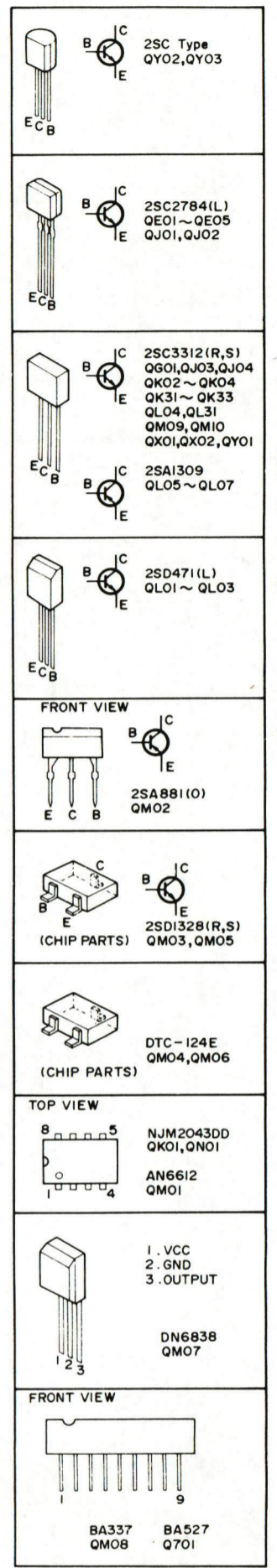
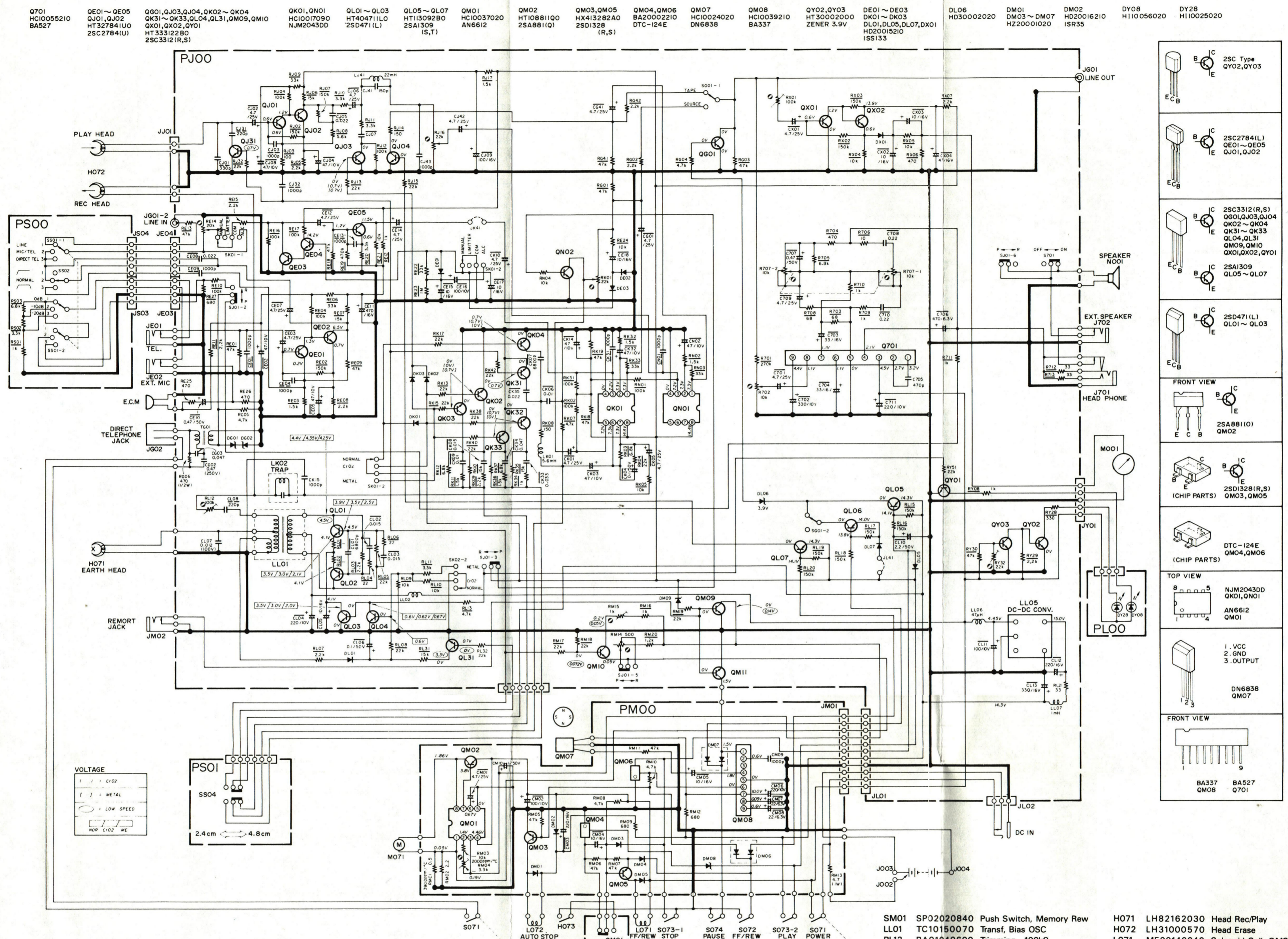
(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction



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Kind of Common Parts

- RESISTOR**
- R*** (1) GD05 --- 140, Carbon film fixed resistor, ±5% 1/4W
 - R*** (2) GD05 --- 160, Carbon film fixed resistor, ±5% 1/6W
- C*** : CERAMIC CAP.**
- (1) DD1 --- 370, Ceramic condenser, disc type (titan condenser) Temp. coeff. P350 ~ N1000 50V
- C*** : CERAMIC CAP.**
- (1) DK16 --- 300, High dielectric constant ceramic condenser, disc type (titan variable) Temp. chara. 2B4 50V

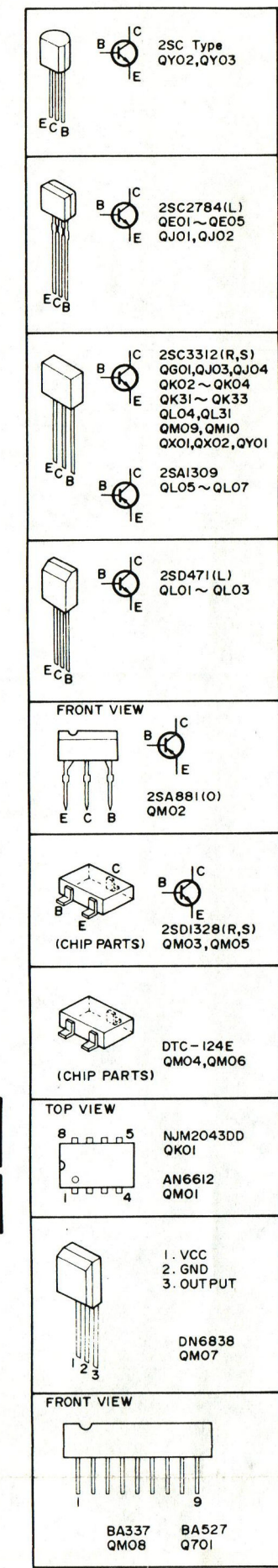
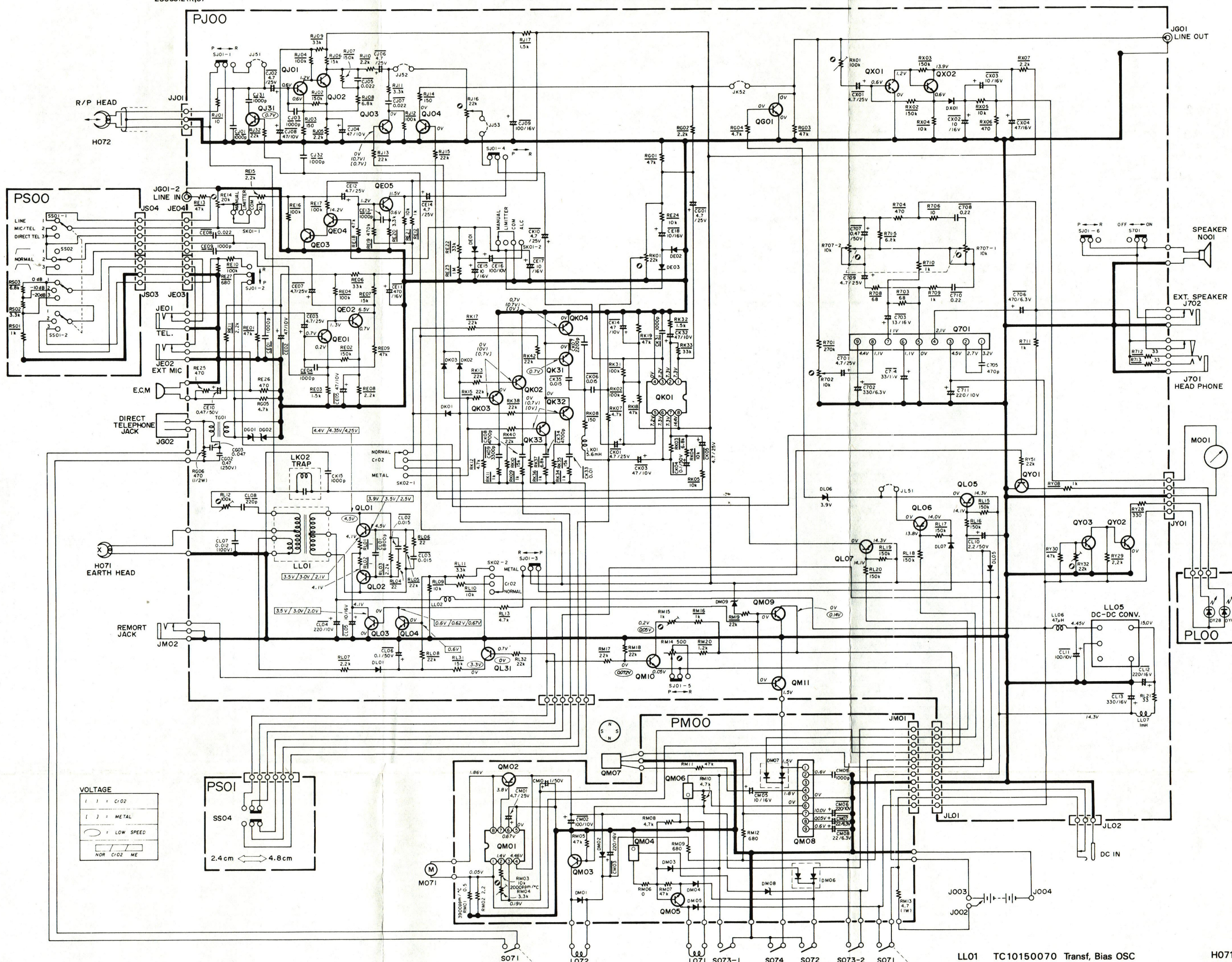
- E*** : ELECTROLYTIC CAP. (≡) / FILM CAP. (≡)**
- (1) EA --- 10, Electrolytic condenser, one-way lead type, tolerance ±20%
 - (2) DF15 --- 350, Plastic film condenser, one-way type, Mylar, ±5% 50V

* In case of ordering the common parts, please establish the correct parts number of 10 figures by the procedure "ASSIGNMENT OF COMMON PARTS CODES"

If You Didn't Get This From My Site, Then It Was Stolen From...
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- SM01 SP02020840 Push Switch, Memory Rew
- LL01 TC10150070 Transf, Bias OSC
- RL12 RA01040600 Trimming 100kΩ
- L071 ME00140040 Solenoid Coil, QMS Auto Rew
- L072 ME10180010 Solenoid Coil, Auto Stop
- M071 MM00450020 D.C. Motor
- MO01 IM31040030 V.U. Meter
- NO01 QJ72478010 Speaker 4Ω
- NO02 MS50000150 MC Unit
- S071 SM02010180 Mini Switch, Motor
- S072 SM01011140 Mini Switch, F/R
- S073 SM01011210 Mini Switch, Play
- S074 SM01011210 Mini Switch, Pause
- S076 153T052010 Counter
- 218M 153T264020 Belt Counter
- 223M 242T264120 Belt Drive
- 229M 153T264010 Main Belt
- 107M 153T002590 Arm Ass'y Roller, Pinch
- 219M 153T273010 Main Flywheel
- 220M 153T273020 Sub Flywheel

Q701 HC10055210 BA527
 QE01~QE05 QJ01,QJ02 HT32784IU0 25C2784IU
 QG01,QJ03,QJ04,QK02~QK04 QK31~QK33,QL04,QL31,QM09,QM10 QX01,QX02,QY01 HT33312280 25C3312(R,S)
 QK01 HC10017090 NJM2043DD
 QL01~QL03 HT140471LLO 25D471(L)
 QL05~QL07 HT1309280 25A1309 (S,T)
 QM01 HC10037020 AN6612
 QM02 HT10881100 25A881(Q)
 QM03,QM05 HX413282AO 25D1328 (R,S)
 QM04,QM06 BA20002210 DTC-124E
 QM07 HC10024020 DN6838
 QM08 HC10039210 BA337
 QY02,QY03 HT30002000
 DE01~DE03 DK01~DK03 DL01,DL05,DL07,DX01 HD20015210 ISS131
 DL06 HD30002020 ZENER 3.9V
 DM01 DM03~DM07 HZ20001020
 DM02 HD20016210 ISR35
 DY08 H110056020
 DY28 H110025020



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- Kind of Common Parts**
- RESISTOR**
 R*** (1) GD05 --- 140, Carbon film fixed resistor, ±5% 1/4W
 R*** (2) GD05 --- 160, Carbon film fixed resistor, ±5% 1/6W
- C*** : CERAMIC CAP.**
 (1) DD1 --- 370, Ceramic condenser, disc type (titan condenser) Temp. coeff. P350 ~ N1000 50V
- C*** : CERAMIC CAP.**
 (1) DK16 --- 300, High dielectric constant ceramic condenser, disc type (titan variable) Temp. chara. 2B4 50V

- ELECTROLY CAP. (⚡) / FILM CAP. (≡)**
 (1) EA --- 10, Electrolytic condenser, one-way lead type, tolerance ±20%
 (2) DF15 --- 350, Plastic film condenser, one-way type, Mylar, ±5% 50V

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*In case of ordering the common parts, please establish the correct parts number of 10 figures by the procedure "ASSIGNMENT OF COMMON PARTS CODES"

- | | | | | | |
|------|------------|------------------------------|------|------------|-----------------------------|
| LL01 | TC10150070 | Transf, Bias OSC | H071 | LH41601040 | Head Rec/Play |
| RL12 | RA01040600 | Trimming 100kΩ | H072 | LH31000570 | Head Erase |
| RE14 | RK02030670 | Variable 20kΩ | L071 | ME00140040 | Solenoid Coil, QMS Auto Rew |
| RJ16 | RA02230600 | Trimming 22kΩ | L072 | ME10180010 | Solenoid Coil, Auto Stop |
| RK01 | RA02230600 | Trimming 22kΩ | M071 | MM00450020 | DC. Motor |
| RX01 | RA01040600 | Trimming 100kΩ | M001 | IM31040030 | V.U. Meter |
| RY32 | RA02230600 | Trimming 22kΩ | N001 | QJ72478010 | Speaker 4Ω |
| R702 | RK01030520 | Variable 10kΩ | N002 | MS50000150 | MIC Unit |
| R707 | RM01030270 | Variable 10kΩ | S071 | SM02010180 | Mini Switch, Motor |
| SJ01 | SS06020570 | Slide Switch, Rec/Play | S072 | SM01011140 | Mini Switch, F/R |
| SK01 | SR02030130 | Rotary Switch, Rec Mode | S073 | SM01011210 | Mini Switch, Play |
| S701 | SS02030230 | Slide Switch, Tape Selector | S074 | SM01011210 | Mini Switch, Pause |
| SG01 | SS02020740 | Slide Switch, Speaker ON/OFF | S076 | 195T052010 | Counter |
| TG01 | T012414010 | Output Transf. | 107M | 153T002590 | Arm Ass'y Roller, Pinch |
| SS01 | SS02030290 | Slide Switch, Input Selector | 218M | 153T264020 | Belt Counter |
| SS02 | SS02030290 | Slide Switch, ANC Selector | 219M | 153T273010 | Main Flywheel |
| SS03 | SS02030290 | Slide Switch, MIC ATT. | 220M | 153T273020 | Sub Flywheel |
| SS04 | SS02020760 | Slide Switch, Tape Speed | 223M | 242T264120 | Belt Drive |
| | | | 239M | 153T264010 | Main Belt |

Components and wiring are subject to change for modification without notice.

Service Manual

PMD 221
PMD 201

Portable cassette Recorder

REVISION



This service manual was issued in September 1991 and contains the latest Schematic Diagrams, Wiring Diagrams and Parts List.

As for service information other than that included in this service manual, please refer to the Original Service Manual (196T855010) of PMD221/201.

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model PMD 221/201

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Parts for your MARANTZ equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS:

Parts can be ordered either by mail or by telex. In both cases, correct part number has to be specified. The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

PARTS ORDERING

Parts may be ordered at the following addresses:

AUSTRIA HORNYPHON Vertriebsgesellschaft GmbH Wienerbergstrasse 1 A 1101 Wien Austria Telex: 132.332	FINLAND MARANTZ DIVISION OF OY PHILIPS Ab Kaivokatu 8 00100 Helsinki Finland Telex: 124811	GREAT BRITAIN MARANTZ AUDIO U.K. Ltd Unit 15/16 Saxon Way Industrial Estate Moor Lane Harmondsworth UB7 0LW Great Britain Telex: 935196	SAUDI ARABIA AL ALAMIAH ELECTRONICS P.O.Box 5954 University Street Riyadh 11432 Saudi Arabia Telex: 401530	SWITZERLAND MARANTZ Technischer Service Duenstrasse 3 3186 Düringen Switzerland
BELGIUM SVD DIVISION MARANTZ Industrialaan 1 1720 Groot-Bijgaarden Belgium Telex: 24466	FRANCE MARANTZ FRANCE 4 Rue Bernard Palissy 92600 Asnières France Telex: 611651	GREECE SHERTON ELECTRONICS S.A. P.O.Box 21025 Hippocrates Street 188 Athens 11471 Greece Telex: 216.795	SOUTH AFRICA MARANTZ DIVISION OF PHILIPS S.A. Main Road Martindale P.O. Box. 58088 Newville 21114 South Africa	TURKEY DOGRUOL Ltd. I.M.C. 6 Blok N°6310 Unkapani Istanbul Turkey Telex: 22085
CHILE MARANTZ DIVISION OF PHILIPS S.A. AV. Santa Maria, 0760 Casilla 2687 Santiago Telex: 240.239	GERMANY MARANTZ GERMANY GmbH Alexanderstrasse 1 2000 Hamburg Germany	JAPAN MARANTZ JAPAN, Inc. 35-1, 7-chome, Sagamiono Sagamihara-shi, Kanagawa Japan	SPAIN PHONO S.A. Ignacio Iglesias 10 Badalona (Barcelona) Spain Telex: 59355	MALTA CACHIA & GALEA Republic Street, 68D Valetta Telex: 1682
DENMARK MARANTZ DIVISION OF PHILIPS SERVICE A/S Prags Boulevard 80 Postbox 1919 DK-2300 København S Denmark Telex: 31201	THE NETHERLANDS Elpro Marantz Wint Hontlaan 28 3526 KV Utrecht The Netherlands Telex: 4748	KUWAIT AL ALAMIAH ELECTRONICS Ussama Building Fahd al Saleem Street P.O.Box 23781 Safat-Kuwait Telex: 22694	SWEDEN MARANTZ DIVISION OF PHILIPS Försäljning AB Tegeluddsvägen 1 S-115 84 Stockholm Sweden Telex: 14060	PORTUGAL MARANTZ Divisao philips S.A. service Outurela-carnaxide 2795 LinDA-A-VELHA Telex: 43906
	NORWAY MARANTZ DIVISION OF PHILIPS A/S Sandstuveien 40 0680 Oslo 6 Norway Telex: 72640	ITALY MARANTZ ITALIANA S.P.A. Via Chiese, 74 20126 Milano Italy		CANADA NORESKO 50 Wingold Avenue Toronto, Ontario Canada M6B 1P7

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.

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES

RESISTOR

R*** (1) GD05□□□140, Carbon film fixed resistor, ± 5%, 1/4W
 R*** (2) GD05□□□160, Carbon film fixed resistor, ± 5%, 1/6W

① — Resistance value

Examples

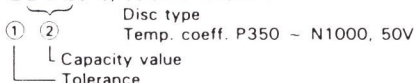
① Resistance value

0.1Ω ... 001 100Ω ... 100 1kΩ ... 102 100kΩ ... 104
 0.5Ω ... 005 18Ω ... 180 2.7kΩ ... 272 680kΩ ... 684
 1Ω ... 010 100Ω ... 101 10kΩ ... 103 1MΩ ... 105
 6.8Ω ... 068 390Ω ... 391 22kΩ ... 223 2.2MΩ ... 225

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C*** : CERAMIC CAP.

(1) DD1□□□□370, Ceramic condenser



Examples

① Tolerance (Capacity deviation)

± 0.25pF ... 0
 ± 0.5pF ... 1
 ± 5% ... 5

* Tolerance of COMMON PARTS handled here are as follows:

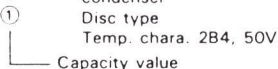
0.5pF ~ 5pF ... ± 0.25pF
 6pF ~ 10pF ... ± 0.5pF
 12pF ~ 560pF ... ± 5%

② Capacity value

0.5pF ... 005 3pF ... 030 100pF ... 101
 1pF ... 010 10pF ... 100 220pF ... 221
 1.5pF ... 015 47pF ... 470 560pF ... 561

C*** : CERAMIC CAP.

(1) DK16□□□□300, High dielectric constant ceramic condenser



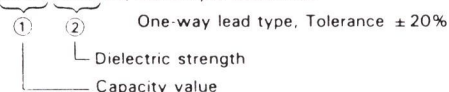
Examples

① Capacity value

100pF ... 101 1000pF ... 102 10000pF ... 103
 470pF ... 471 2200pF ... 222

C*** : ELECTROLY CAP. (Φ), FILM CAP. (⊕)

(1) EA□□□□□10, Electrolytic condenser



Examples

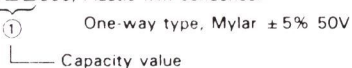
① Capacity value

0.1μF ... 104 4.7μF ... 475 100μF ... 107
 0.33μF ... 334 10μF ... 106 330μF ... 337
 1μF ... 105 22μF ... 226 1000μF ... 108
 2200μF ... 228

② Working voltage

6.3V ... 006 25V ... 025
 10V ... 010 35V ... 035
 16V ... 016 50V ... 050

(2) DF15□□□□350, Plastic film condenser



Examples

① Capacity value

0.001μF (1000pF) ... 102 0.015μF ... 153
 0.0018μF ... 182 0.1μF ... 104
 0.01μF ... 103 0.56μF ... 564
 1μF ... 105

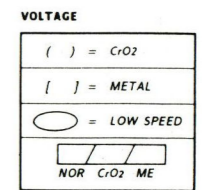
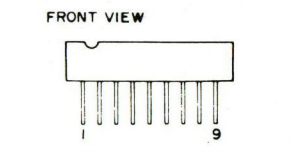
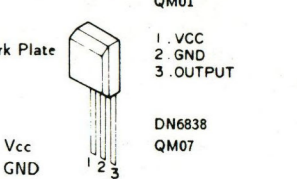
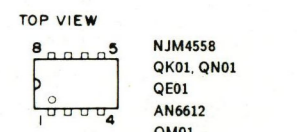
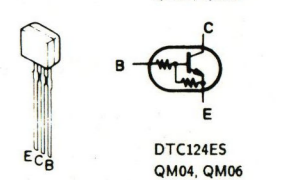
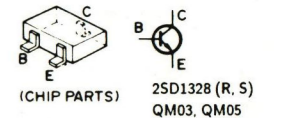
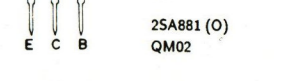
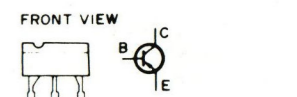
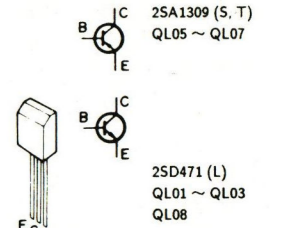
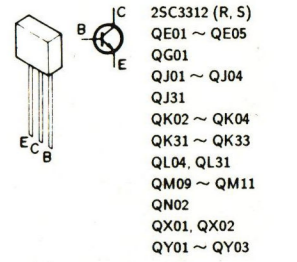
REF. DESIG.	PART NO.	DESCRIPTION
		PJ00 - REC/PLAY AMP CIRCUIT BOARD
		PJ00 - CAPACITORS
C701	EJ47405010	Elect 0.47μF 50V
C707	EJ47405010	Elect 0.47μF 50V
C709	EJ47502510	Elect 4.7 μF 25V
CE03	EJ47502510	Elect 4.7 μF 25V
CE07	EJ47502510	Elect 4.7 μF 25V
CE10	EJ47405010	Elect 0.47μF 50V
CE12	EJ47502510	Elect 4.7 μF 25V
CE14	EJ47502510	Elect 4.7 μF 25V
CE15	EJ10601610	Elect 10 μF 16V
CE17	EJ10601610	Elect 10 μF 16V
CE18	EJ10601610	Elect 10 μF 16V
CG01	EJ22505010	Elect 2.2 μF 50V
CG02	DF16474530	Film 0.47 μF 250V
CG41	EJ22505010	Elect 2.2 μF 50V (PMD221)
CJ01	DD15101300	Ceramic 100 PF 50V (PMD221)
CJ02	EJ47502510	Elect 4.7 μF 25V
CJ04	EJ10601610	Elect 10 μF 16V
CJ06	EJ47502510	Elect 4.7 μF 25V
CJ41	DD15151300	Ceramic 150PF 50V (PMD221)
CJ42	EJ47502510	Elect 4.7 μF 25V (PMD221)
CK01	EJ47502510	Elect 4.7 μF 25V
CK04	EJ10405010	Elect 0.1 μF 50V
CK05	EJ47502510	Elect 4.7 μF 25V
CK10	EJ47502510	Elect 4.7 μF 25V
CL05	EJ10601610	Elect 10 μF 16V
CL06	EJ10405010	Elect 0.1 μF 50V
CL07	DF15123550	Film 0.012 μF 100V
CL10	EJ47502510	Elect 4.7 μF 25V
CX01	EJ47502510	Elect 4.7 μF 25V
CX02	EJ10601610	Elect 10 μF 16V
CX03	EJ10601610	Elect 10 μF 16V
		PJ00 - RESISTORS
R702	RK01030520	10KΩ (A) Variable
R707	RM01030270	10KΩ (W) Variable
RE14	RK02030670	20KΩ (A) Variable
RG06	GG05471120	470Ω 1/2W
RJ16	RA02230600	22KΩ (B) Trimming
RK01	RA02230600	22KΩ (B) Trimming
RL12	RA01040600	100KΩ (B) Trimming
RM14	RK05010060	500Ω (B) Variable
RM15	RA01020600	1KΩ (B) Trimming
RX01	RA01040600	100Ω (B) Trimming
RY32	RA02230600	22KΩ (B) Trimming

REF. DESIG.	PART NO.	DESCRIPTION
		PJ00 - SEMICONDUCTORS
DE01	HD20002000	Diode 1SS176, MA165, 1SS254
DE02	HD20002000	Diode 1SS176, MA165, 1SS254
DE03	HD20002000	Diode 1SS176, MA165, 1SS254
DG01	HD30070060	Zener RD5.1J-B2
DG02	HD30070060	Zener RD5.1J-B2
DK01	HD20002000	Diode 1SS176, MA165, 1SS254
DK02	HD20002000	Diode 1SS176, MA165, 1SS254
DK03	HD20002000	Diode 1SS176, MA165, 1SS254
DL01	HD20002000	Diode 1SS176, MA165, 1SS254
DL05	HD20002000	Diode 1SS176, MA165, 1SS254
DL06	HD30069060	Zener RD4.7J-B2
DL07	HD20002000	Diode 1SS176, MA165, 1SS254
DM09	HD30071060	Zener RD7.5J-B2
DX01	HD20002000	Diode 1SS176, MA165, 1SS254
Q701	HC10055210	IC BA527
QE01	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QE02	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QE03	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QE04	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QE05	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QG01	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QJ01	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QJ02	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QJ03	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QJ04	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QJ31	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QK01	HC10008090	IC NJM4558DD
QK02	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QK03	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QK04	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QK31	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QK32	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QK33	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QL01	HT404711L0	Transistor 2SD471(L)
QL02	HT404711L0	Transistor 2SD471(L)
QL03	HT404711L0	Transistor 2SD471(L)
QL04	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QL05	HT113092B0	Transistor 2SA1309(S,T)
QL06	HT113092B0	Transistor 2SA1309(S,T)
QL07	HT113092B0	Transistor 2SA1309(S,T)
QL08	HT404711L0	Transistor 2SD471(L)
QL31	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QM09	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QM10	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QM11	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QN01	HC10008090	IC NJM4558DD (PMD221)
QN02	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S) (PMD221)

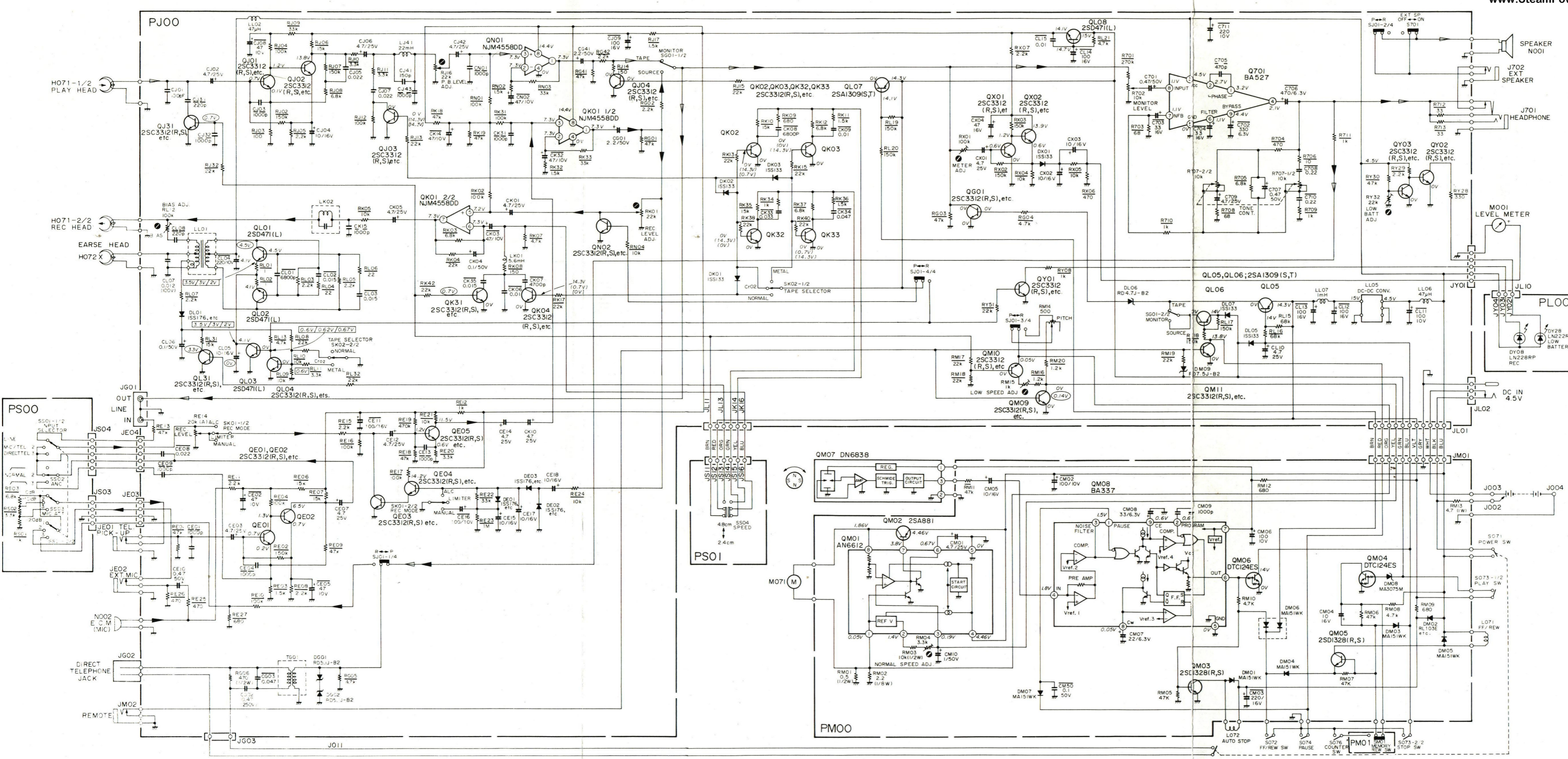
REF. DESIG.	PART NO.	DESCRIPTION
QX01	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QX02	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QY01	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QY02	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
QY03	HT30002000	Transistor 2SC3312(R,S) 2SC1740SLN(R,S)
		PJ00 - MISCELLANEOUS
J701	YJ01002560	Jack, Headphone
J702	YJ01002160	Jack, Ext SP
JE01	YJ01002160	Jack, Tel Pick Up
JE02	YJ01002160	Jack, Mic
JE03	YU04080260	Jumper Lead
JE04	YU05080260	Jumper Lead
JG01	YT02020280	Terminal, 2P
JG02	YJ01002430	Jack, Direct Tel
JG03	YJ06003020	Jack, 2P
JL01	YJ06003110	Jack
JL02	YJ04000840	Jack, DC IN
JM02	YJ01002440	Jack, Remote
JY01	YJ06003250	Jack
LJ41	LC22260710	Choke Coil, 22 mH (PMD221)
LK01	LC25650710	Choke Coil, 5.6 mH
LK02	LC24760520	Choke Coil, Bias Trap 85kHz
LL01	TC10150070	Osc Transf., Bias Osc
LL02	LC14730040	Choke Coil, 47 μ H
LL05	TC10200090	Osc Transf., DC-DC Converter
LL06	LC14730040	Choke Coil, 47 μ H
LL07	LC21050710	Choke Coil, 1 mH
S701	SS02020740	Slide Switch, Speaker On/Off
SG01	SP02020730	Push Switch, Tape/Source Select (PMD221)
SJ01	SS06020570	Slide Switch, Rec/Play
SK01	SR02030130	Rotary Switch, Rec Mode
SK02	SS02030230	Slide Switch, Tape Select
TG01	TO12414010	Output Transf., Direct Tel In/Out
DY08	HI10056020	
DY28	HI10025020	
JL10	YB00140240	Connective Cord
		PL00 - LED CIRCUIT BOARD
		L.E.D. LN228RP
		L.E.D. LN222RP
		PM00 - MECHA CONTROL CIRCUIT BOARD
		PM00 - CAPACITORS
CM01	EJ47502510	Elect 4.7 μ F 25V
CM04	EJ10601610	Elect 10 μ F 16V (PMD221)
CM05	EJ10601610	Elect 10 μ F 16V
CM06	EJ10701010	Elect 100 μ F 10V
CM07	EJ22600610	Elect 22 μ F 6.3V
CM08	EJ33600610	Elect 33 μ F 6.3V
CM09	DK46102300	Ceramic 1000 PF 50V

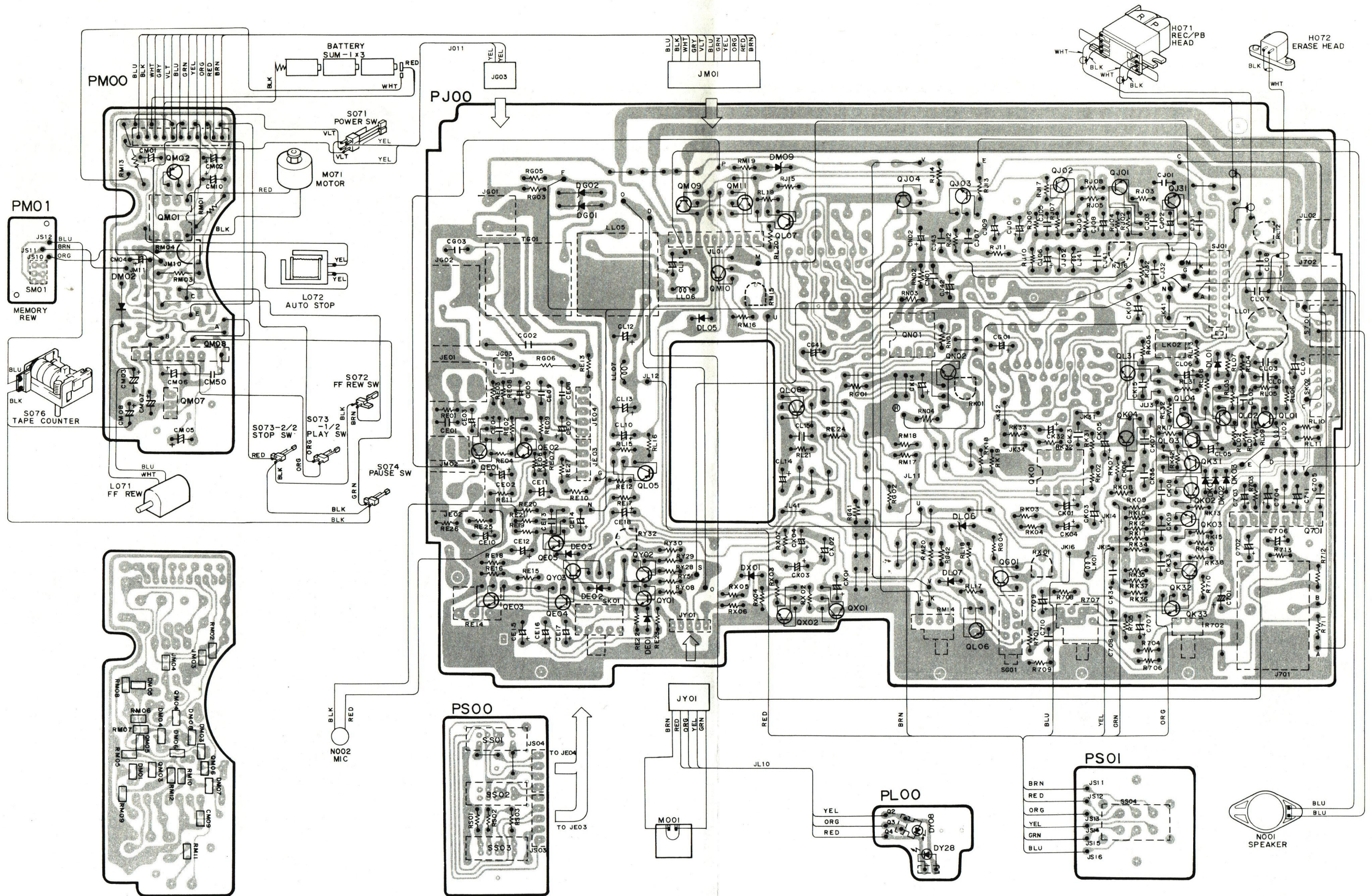
REF. DESIG.	PART NO.	DESCRIPTION
CM10	EJ10505010	Elect 1 μ F 50V
		PM00 - RESISTORS (All Resistors are \pm 5% & 1/8W)
JM03	RI05000180	Resistor 0 Ω Chip
JM04	RI05000180	Resistor 0 Ω Chip
RM01	NB50052390	0.5 Ω 1/2W
RM02	RI05022180	2.2 Ω Chip
RM03	NB51032200	10K Ω 1/2W
RM04	RA03320600	3.3K Ω Trimming
RM05	RI05473180	47K Ω Chip
RM06	RI05473180	47K Ω Chip (PMD221)
	RI05000180	0 Ω Chip (PMD201)
RM07	RI05473180	47K Ω Chip
RM08	RI05472180	4.7k Ω Chip
RM09	RI05681180	680 Ω Chip
RM10	RI05472180	4.7k Ω Chip
RM11	RI05473180	47k Ω Chip
RM12	RI05681180	680 Ω Chip
RM13	GA05047010	4.7 Ω 1W
		PM00 - SEMICONDUCTORS
DM01	HZ20001020	Diode Chip MA151WK
DM02	HD20003000	Diode RL103E, DSF10C
DM03	HZ20001020	Diode Chip MA151WK
DM04	HZ20001020	Diode Chip MA151WK
DM05	HZ20001020	Diode Chip MA151WK
DM06	HZ20001020	Diode Chip MA151WK
DM07	HZ20001020	Diode Chip MA151WK
DM08	HZ30003020	Diode Chip MA3075-M
QM01	HC10037020	IC AN6612
QM02	HT108811Q0	Transistor 2SA881(Q)
QM03	HX413282A0	Transistor Chip 2SD1328(R,S)
QM04	BA2000221R	Semicon. Comp DTC124ES
QM05	HX413282A0	Transistor Chip 2SD1328(R,S)
QM06	BA2000221R	Semicon. Comp DTC124ES
QM07	HC10024020	IC DN6838
QM08	HC10039210	IC BA337
		PM00 - MISCELLANEOUS
JM01	YB00080120	Connective Cord, 11P
		PM01 - MEMORY SWITCH CIRCUIT BOARD (PMD221, ONLY)
SM01	SP02020840	Push Switch, Memory Rew
		PS00 - INPUT SELECT CIRCUIT BOARD
SS01	SS02030290	Slide Switch, Input Select
SS02	SS02030290	Slide Switch, Anc Select
SS03	SS02030290	Slide Switch, Mic Att.
		PS01 - TAPE SPEED SELECT CIRCUIT BOARD
SS04	SS02020760	Slide Switch, Tape Speed Select

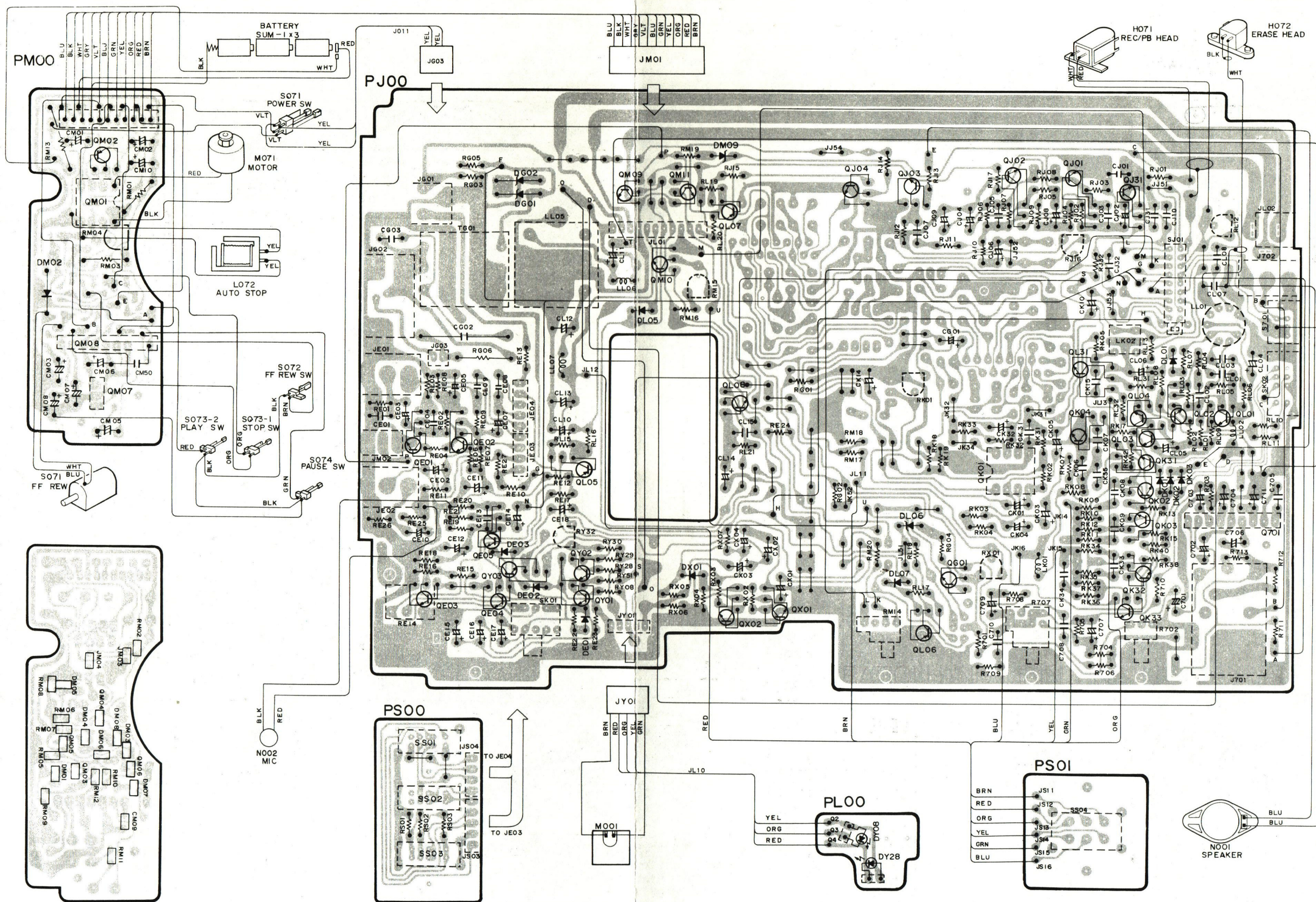
If You Didn't Get This From My Site,
Then It Was Stolen From...
www.SteamPoweredRadio.Com



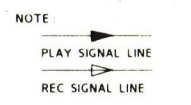
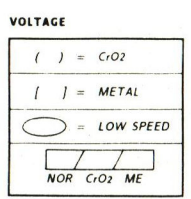
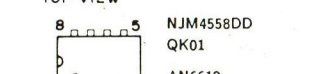
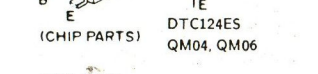
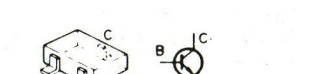
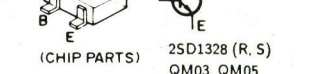
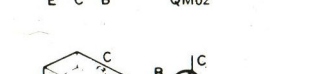
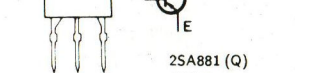
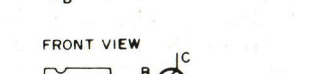
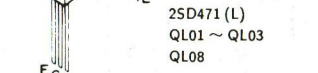
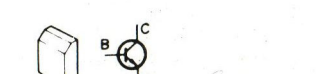
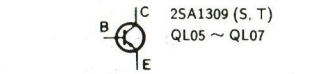
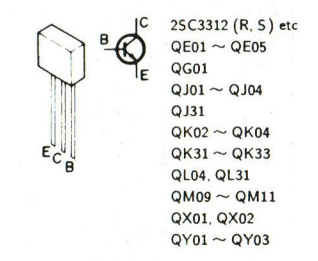
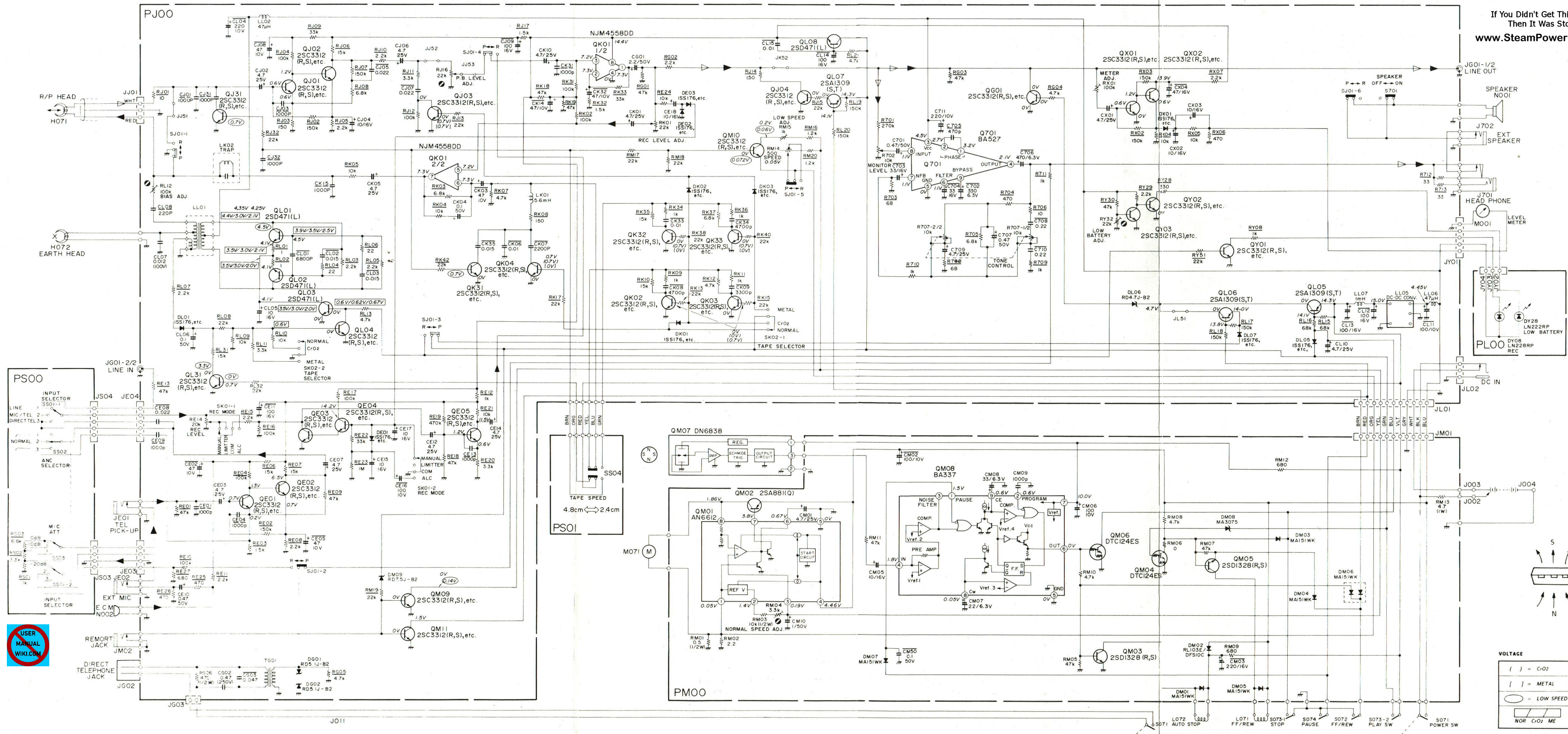
NOTE
PLAY SIGNAL LINE
REC SIGNAL LINE







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EXPLODED VIEW PARTS LIST

REF. DESIG.	PART NO.	DESCRIPTION
001B	153T064060	Case(A), Top
002B	196T248010	Front Panel (PMD221)
	196T248110	Front Panel (PMD201)
003B	153T257010	Lid Battery
005B	153T257030	Lid (C) Cassette
006B	196T053010	Cover (A), Top (PMD221)
	106T053110	Cover (A), Top (PMD201)
007B	153T053100	Cover (B), Bottom (PMD221)
	153T053110	Cover (B), Bottom (PMD201)
008B	196T861010	Label, Case(A)
010B	196T270010	Button, Memory REW (PMD221)
011B	196T154110	Knob, REC Level
012B	153T154030	Knob, Level, Tone, Pitch, REC Mode
013B	153T154040	Knob, Monitor (PMD221)
015B	196T265010	Indicator, Front (PMD221)
	196T265110	Indicator, Front (PMD201)
016B	196T265020	Indicator, Jack Board (PMD221)
017B	51300312U0	P.H. Tapped Screw P3x12
018B	196T303010	Mask, Indicator
026B	153T153500	Hinge Ass'y (A)
029B	64002500R0	RG Ring, E
030B	153T115090	Spring
031B	153T153020	Hinge (B)
032B	153T112380	Shaft (B)
033B	153T104500	Retainer Ass'y
036B	153T104040	Retainer (C)
039B	196T107010	Sheet
040B	153T055010	Collar
041B	153T120010	Insulator
043B	51302606U0	P.H. Tapped Screw P2.6x6
044B	51840204S0	F.H.M. Screw F2x4
045B	51572606U0	P. Tapped Screw P2.6x6
047B	51500206U0	F.H.M. Screw F2x6
048B	51572604U0	P. Tapped Screw P2.6x6
049B	51842604S0	F.H.M. Screw F2.6x4
050B	51500208U0	F.H.M. Screw F2x8
051B	153T251010	Badge
056B	51572606U0	P. Tapped Screw P2.6x6
058B	51580318U0	F. Tapped Screw F3x18
060B	51572608U0	P. Tapped Screw F2.6x8
061B	51300306B0	P.H. Tapped Screw P3x6
064B	153T057000	Leg, Cover (B)
001F	196T104010	Retainer
002F	153T160050	Bracket (A)
003F	153T160060	Bracket (B)
004F	196T160030	Bracket (C)
005F	153T160080	Bracket (D)
006F	153T104050	Retainer (D)
008F	153T104170	Retainer (F)
009F	153T113010	Stud
010F	153T129010	Terminal (+)
011F	153T129020	Terminal
012F	YL11010090	Terminal (-)
014F	51062605A0	P.H.M. Screw P2.6x5
015F	51302608B0	P.H. Tapped Screw P2.6x8
016F	51572606B0	P. Tapped Screw P2.6x6
017F	51300308B0	P.H. Tapped Screw P3x8
018F	51592605B0	P. Tapped Screw P2.6x5
019F	51300306B0	P.H. Tapped Screw P3x6
020F	251T274010	Reflector
022F	51300308B0	P.H. Tapped Screw P3x8

REF. DESIG.	PART NO.	DESCRIPTION
023F	153T115100	Spring
024F	51300306B0	P.H. Tapped Screw P3x6
026F	153T055030	Collar
027F	4220005020	Clamper
032F	3411056050	Buffer
037F	196T160020	Bracket (PMD221)
038F	51572606B0	P. Tapped Screw P2.6x6 (PMD221)
039F	51572606B0	P. Tapped Screw P2.6x6
040F	51572606B0	P. Tapped Screw P2.6x6
041F	196T160050	Bracket (PMD221)
042F	51572605B0	P. Tapped Screw P2.6x5 (PMD221)
043F	51060303A0	P.H.M. Screw P3x3 (PMD221)
044F	305H056010	Buffer
045F	196T056010	Buffer
046F	196T257010	Lid, Speaker Hole
A001	196T304500	Mechanism Assembly (PMD221)
	195T304500	Mechanism Assembly (PMD201)
J011	YB00160180	Connective Cord, 2P JG03 to S071
M001	IM31040030	V.U.Meter
N001	QJ72478010	Speaker, 4Ω
N002	MS50000150	Mic.Unit, ECM
PACKING MATERIALS		
001S	196T809010	Cushion (A)
002S	196T809020	Cushion (B)
003S	196T801010	Packing Case (PMD221)
	195T801010	Packing Case (PMD201)
004S	9013025010	Polyethylene Bag
005S	196T803010	Partitioner
010S	157H107010	Sheet
001T	196T851210	User Manual
003T	157K854010	Warranty Card
004T	039J854010	Warranty Card
005T	9510901220	Serial No. Label
006T	2112265010	Serial No. Label
001V	153T156010	Strap
ZA01	AA12005020	A.C.Adaptor

REF. DESIG.	PART NO.	DESCRIPTION
001M	153T105500	Chassis Ass'y, Main
020M	153T010090	Screw
021M	59020402G0	Washer
023M	153T354500	Lever, Stop Lever Ass'y
028M	251T11510R	Spring, S/E Select Cam
029M	153T115170	Spring, Stop Lever
031M	153T354020	Lever, REC
032M	153T115210	Spring, REC Lever
033M	153T125010	Joint, Leaf Spring REC Switch
034M	254T010200	Screw
035M	64001500L0	RG Ring, REC Lever
037M	251T35401R	Lever, FWD
038M	251T115220	Spring, Head Base
039M	251T11511R	Spring, FWD Lever
040M	64001500L0	RG Ring, FWD Lever
042M	251T35402R	Lever, REW
043M	251T11513R	Spring, REW Lever
045M	254T35403R	Lever, FF
046M	242T11516R	Spring, FF Lever
048M	153T354510	Lever Ass'y, PAUSE
052M	153T002040	Arm, Pause Lock Cam
053M	153T115060	Spring, Pause Lock Cam
054M	153T115140	Spring, Pause Lever
055M	64001500L0	RG Ring, Pause Lever
056M	64000200L0	RG Ring, Pause Lever
057M	64001500L0	RG Ring, Pause Cam
059M	153T354040	Lever, Link Button
060M	51400205P0	B.H. Tapped Screw B2x5
061M	51380205P0	P.H. Tapped Screw P2x5
063M	153T054010	Cam, Lock Plate
064M	153T115160	Spring, Lock Plate
065M	64001500L0	RG Ring, Lock Plate
066M	153T054500	Cam, QMS Lock Plate Ass'y
070M	64001500L0	RG Ring, E
071M	251T11514R	Spring, QMS Lock Plate
072M	64000200L0	RG Ring, Lock Plate
075M	251T00210R	Arm, REC Inter Lock Plate
076M	251T11515R	Spring, REC Inter Lock
077M	153T010120	Screw, Hook Spring
081M	153T115250	Spring, REC Safty
083M	51841703B0	F.H.M. Screw F1.7x3
085M	153T010140	Screw, F/R Switch
089M	154T105510	Head Base Ass'y
093M	154T115190	Spring, Pinch Roller (PMD221)
	153T115190	Spring, Pinch Roller (PMD201)
094M	154T115020	Spring, Azimuth (PMD221)
	242T11519R	Spring, Azimuth (PMD201)
096M	154T010190	Screw, Azimuth Special
097M	51060203S0	P.H.M. Screw P2x3
098M	305H005030	Clamper, Head Wires
099M	51100205S0	B.H.M. Screw B2x5
100M	153T012010	Washer, Clamp Pinch Roller Spring (PMD221)
103M	64001500L0	RG Ring, Head Base
106M	153T002010	Arm, Pause
107M	153T002590	Arm Ass'y, Pinch Roller
111M	64001500L0	RG Ring, Pinch Roller Arm
113M	242T35416R	Lever, Switch and CUE/REV
114M	64001500L0	RG Ring, Switch C/R Lever
116M	254T258010	Hook, Eject Hook Lever
117M	251T11517R	Spring, Hook Lever
118M	64001500L0	RG Ring, Hook Lever
120M	153T115010	Spring, Cassette Back

REF. DESIG.	PART NO.	DESCRIPTION
121M	254T010200	Screw, Cassette Back Spring
122M	251T00510R	Clamper, Take-up Idler
123M	254T010200	Screw, Take-up Idler
124M	153T105550	Chassis Ass'y, Reel
137M	153T256050	Hub, Take-up and Reel Cap
138M	59020405G0	Washer, Under Reel Caps
139M	153T058010	Gear, Take-up Reel Gear Ass'y
140M	59020402G0	Washer, Under Clutch
141M	153T058020	Gear, Supply Reel Gear Ass'y
142M	59020402G0	Washer, Under Supply Reel Ass'y
143M	242T05811R	Gear, FF
144M	59020402G0	Washer, Under FF Gear
145M	254T012220	Washer, FF Gear
146M	242T26210R	Pulley, FWD Idler
147M	59163202G0	Washer, Under FWD Idler
148M	153T118130	Spacer, FWD Idler
149M	242T26211R	Center Pulley Ass'y
150M	153T118120	Spacer, Under Clutch
151M	153T118130	Spacer, Pulley Ass'y
152M	242T00210R	Arm, Shut Off
153M	254T012230	Washer, Shut Off Arm
154M	153T115040	Spring, Shut Off Arm
155M	153T262020	Pulley, Counter
158M	254T010200	Screw, Reel Chassis Ass'y
160M	153T115020	Spring, Leaf
161M	254T010200	Screw
165M	153T105520	Chassis Ass'y, Sub Flywheel
173M	153T121010	Link, Auto Stop
174M	59050805G0	Washer, Auto Stop Link
175M	64000400LR	RG Ring, Auto Stop Link
176M	153T115030	Spring, Auto Stop Solenoid
177M	51442604A0	L.Washer Screw L2.6x4
178M	195T160090	Bracket, Motor
179M	195T262240	Pulley, Motor
180M	254T010250	Screw, Motor
181M	51442604A0	L.Washer Screw L2.6x4
182M	51302605B0	P.H. Tapped Screw P2.6x5
183M	254T259200	Bushing, Motor
185M	153T010110	Screw, Sub Flywheel Chassis
186M	254T010210	Screw, Sub Flywheel Chassis
190M	153T160040	Bracket, Left Side
191M	254T010210	Screw, L-Side Bracket
192M	153T010110	Screw, L-Side Bracket
195M	153T271500	Button, Frame Ass'y
198M	153T112130	Shaft, Button
199M	153T270010	Button, Stop
200M	153T270020	Button, FWD
201M	153T270030	Button, REW and FF
202M	153T270040	Button, Pause
203M	153T270050	Button, REC
205M	64000200L0	RG Ring, Button Shaft
206M	51100203S0	B.H.M. Screw B2x3
209M	153T160010	Bracket, QMS Magnet
210M	510417035R	F.H.M. Screw F1.7x3
212M	153T010130	Screw
213M	51040208A0	F.H.M. Screw F2x8
214M	53111703A0	Hexagon Nut, QMS Bracket
215M	251T00511R	Clamper, Under Nut
218M	153T264020	Belt, Counter
219M	153T273110	Flywheel Ass'y, Main

REF. DESIG.	PART NO.	DESCRIPTION
220M	153T273020	Flywheel Ass'y, Sub
221M	59163202G0	Washer, Under Flywheels
222M	153T118110	Spacer, Oil Fence
223M	242T26412R	Belt, Drive
228M	153T160030	Bracket, Flywheel Back Retainer
229M	153T264010	Belt, Main (PMD221)
230M	153T164010	Adjuster
231M	254T010210	Screw
233M	153T010130	Screw, Pause Switch
234M	51042604A0	F.H.M. Screw F2.6x4
235M	51442604A0	L.Washer Screw L2.6x4
237M	153T053010	Cover, Mecha
238M	254T010200	Screw, Mecha Cover
239M	153T104010	Retainer (PMD221)
	153T264010	Belt, Main (PMD201)
500M	153T109010	Shield
H071	LH82162030	REC/Play Head (PMD221)
	LH41601040	REC/Play Head (PMD201)
H072	LH31000570	Erase Head
M071	MM00450020	D.C. Motor
L071	ME0014004R	Solenoid Coil, QMS Auto REW
L072	ME10180010	Solenoid Coil, Auto Stop
S071	SM02010180	Mini Switch, Motor
S072	SM0101114R	Mini Switch, F/R
S073	SM0101121R	Mini Switch, PLAY/STOP
S074	SM0101121R	Mini Switch, Pause
S076	153T052010	Counter (PMD221)
	195T052010	Counter (PMD201)

Service Manual

PMD 221U
PMD 201U

Portable cassette Recorder

REVISION #2



This service manual was issued in July 1994 and contains the latest Schematic Diagrams, Wiring Diagrams and Parts List.

As for service information other than that included in this service manual, please refer to the Original Service Manual (196T855010) of PMD221/201.

marantz®

model PMD221/201

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First issue: 1994/7

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Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

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Parts can ordered either by mail or by telex. In both cases, the correct part number has to be specified.

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

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed, otherwise such part order will be considered as null and void.

SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.

Ref. UL Standard NO.1492.

MARANTZ EUROPE B.V.

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5600 JB EINDHOVEN
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FAX : +31 - 40 - 735578

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FAX : 708 - 307 - 2687

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FAX : 514 - 457 - 5524

日本マランツ株式会社

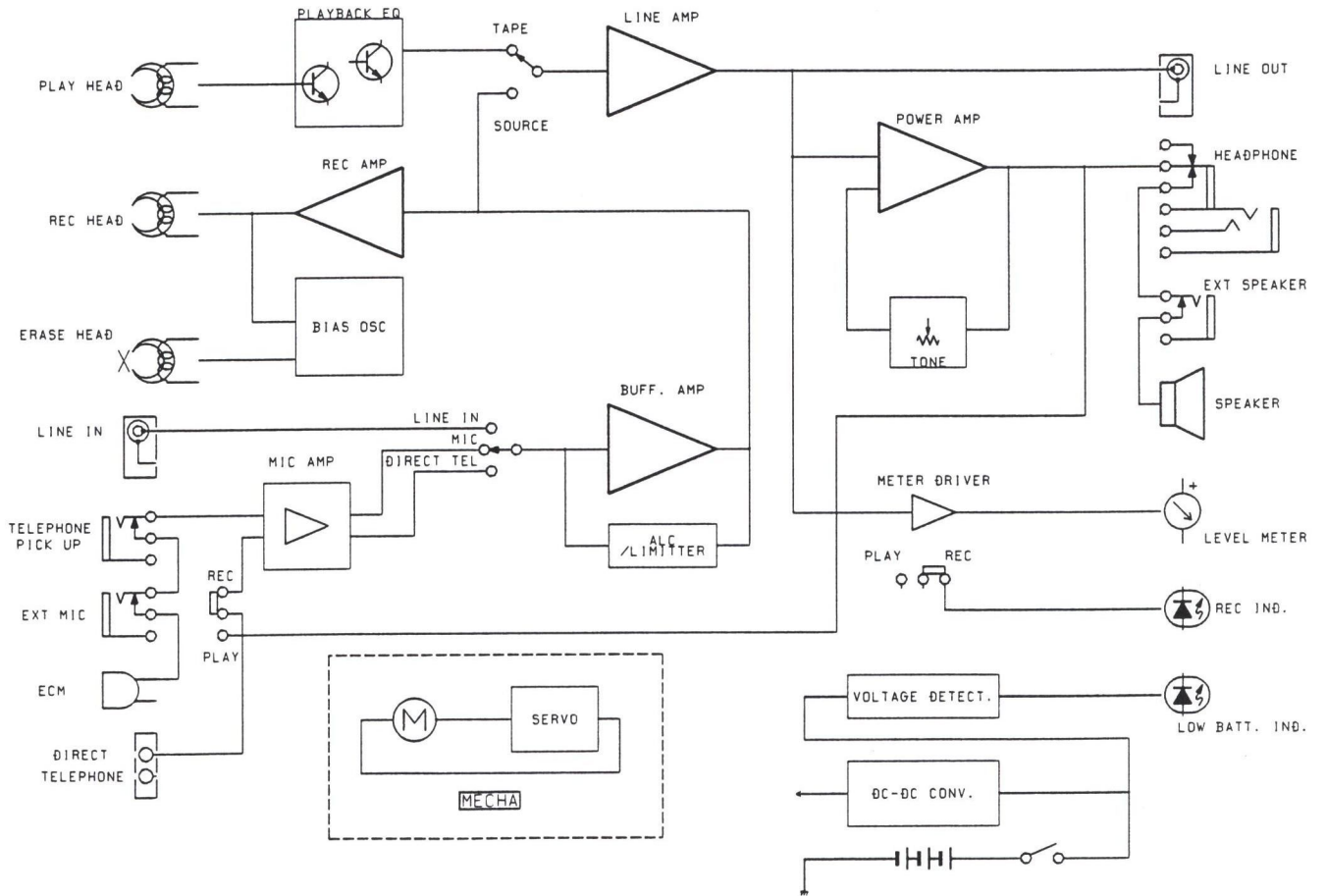
本社 〒228 神奈川県相模原市相模大野7丁目35番1号
営業本部 〒150 東京都渋谷区恵比寿南1丁目11番9号

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

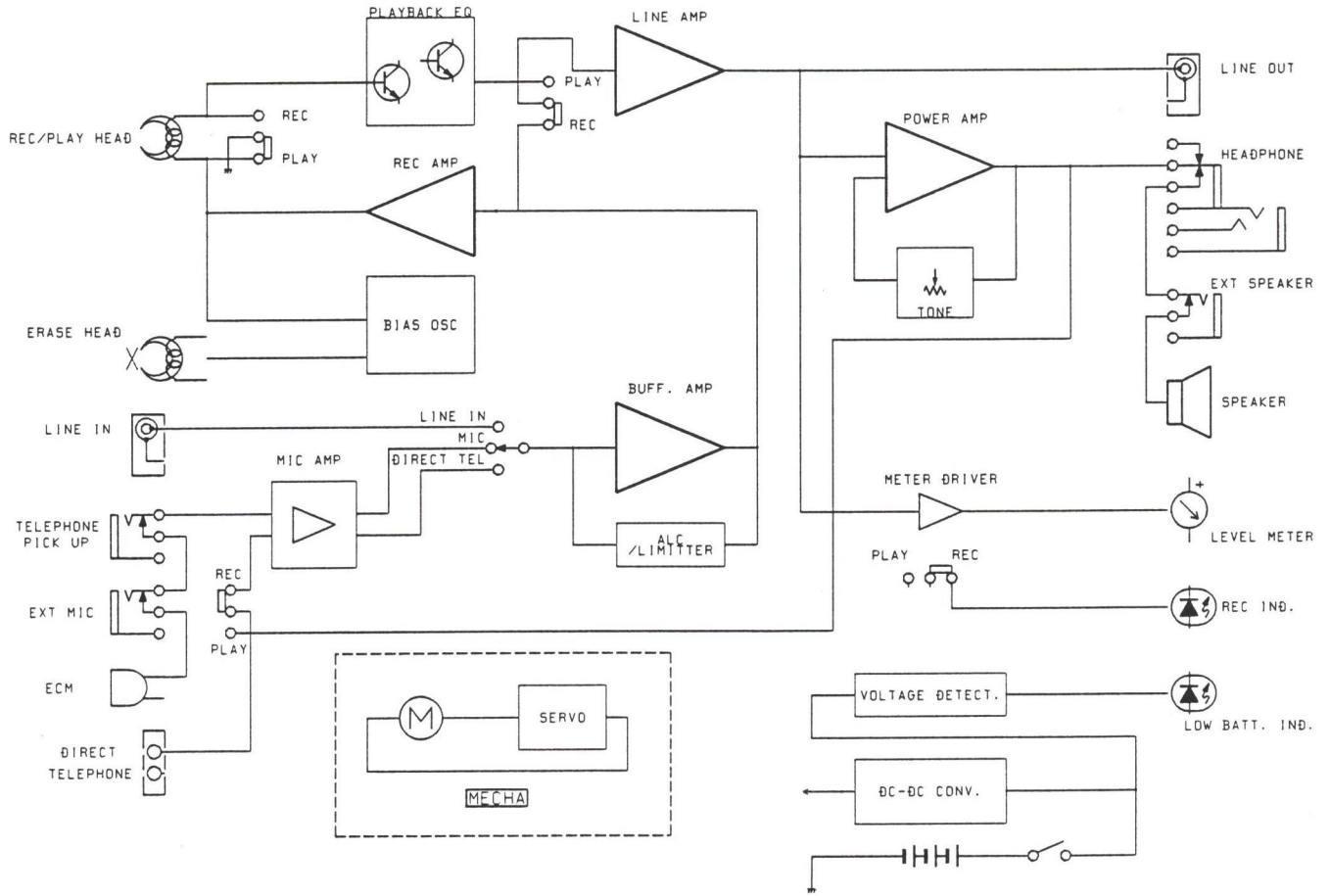
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1. BLOCK DIAGRAM

PMD 221

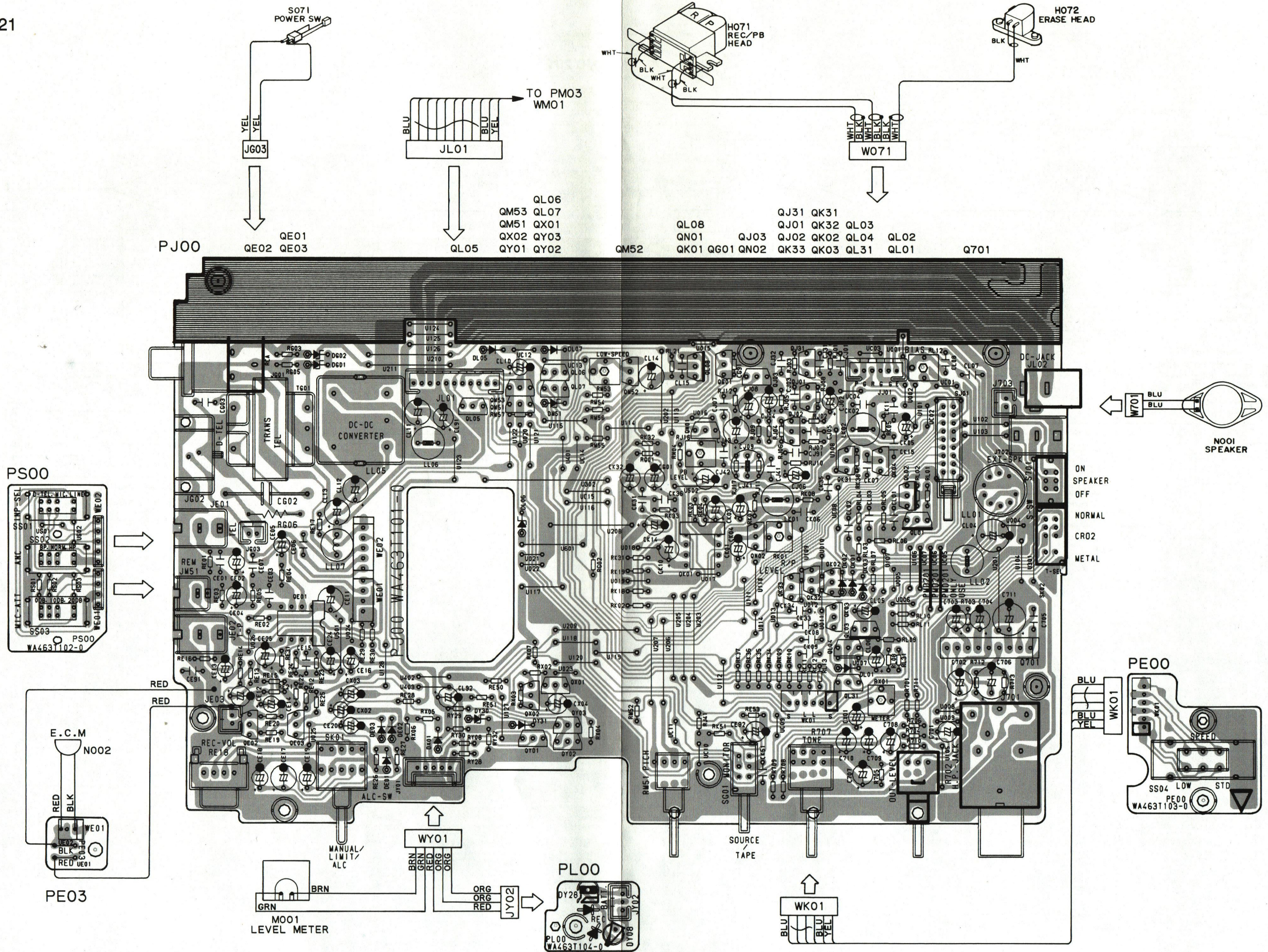


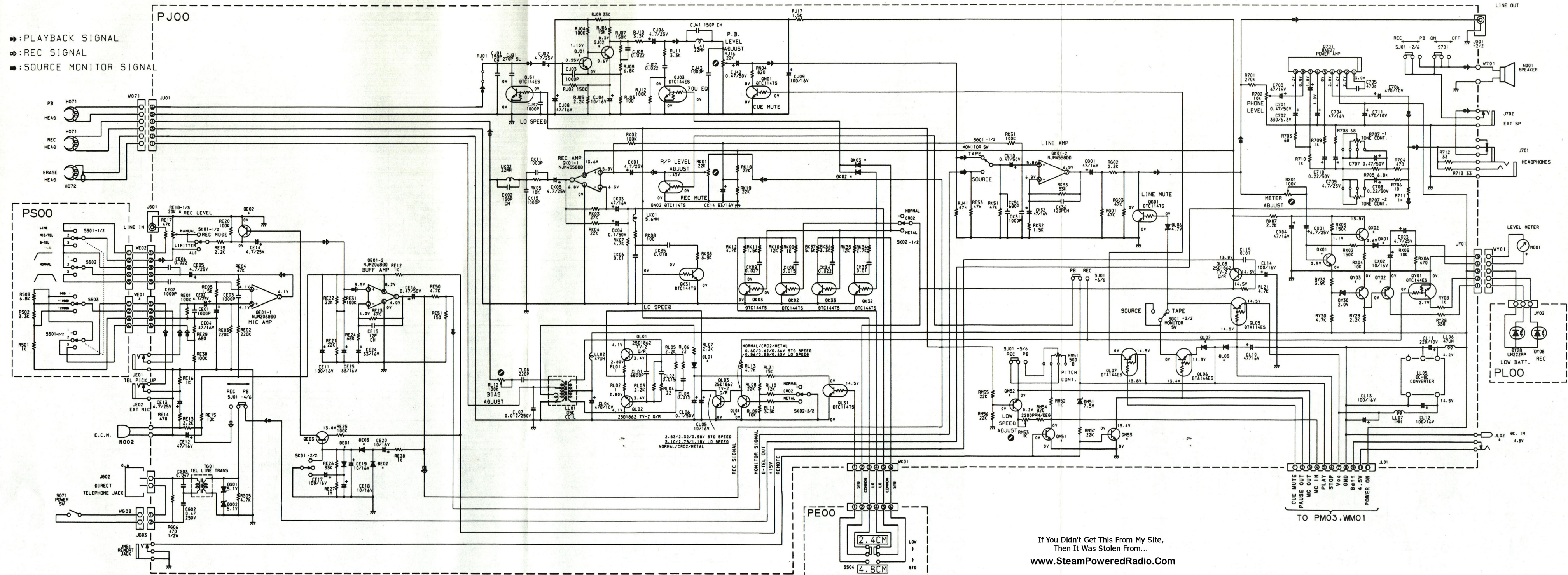
PMD 201




2. PARTS LOCATION AND SCHEMATIC DIAGRAM

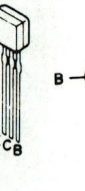
PMD 221




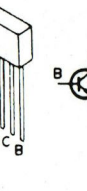


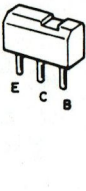
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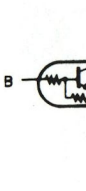
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QK31 ~ QK33
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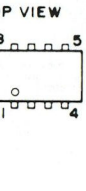
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QN02
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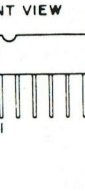
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QL05
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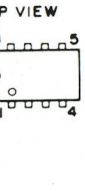
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QL04,
QM51 ~ QM53
QX01, QX02,
QY02, QY03
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QL01 ~ QL03,
QL08
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DTA144ES
QL06,
QL07
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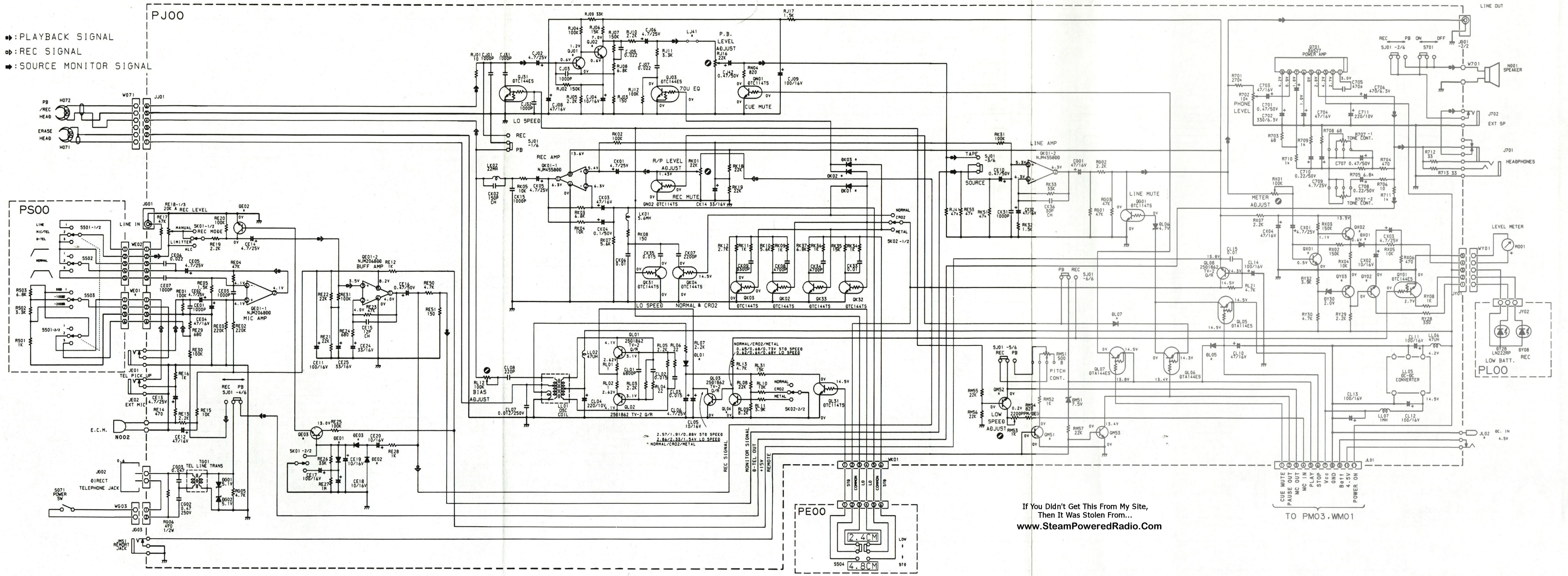
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TOP VIEW
NJM2068DD
QE01
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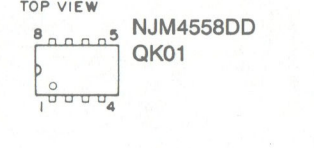
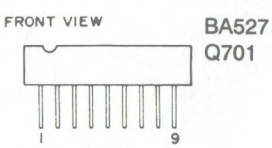
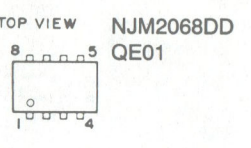
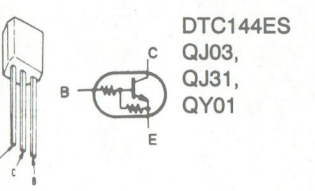
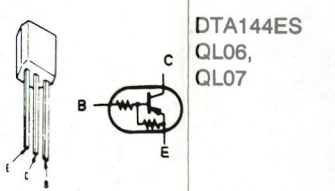
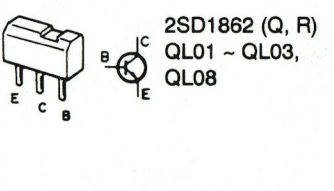
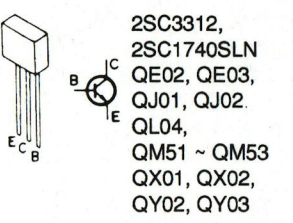
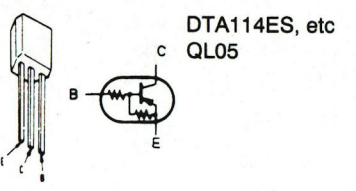
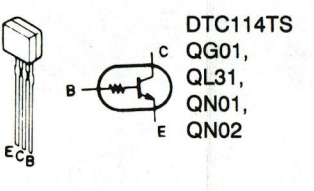
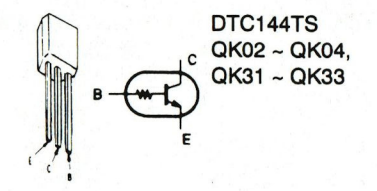
FRONT VIEW
BA527
Q701
- 

TOP VIEW
NJM4558DD
QK01

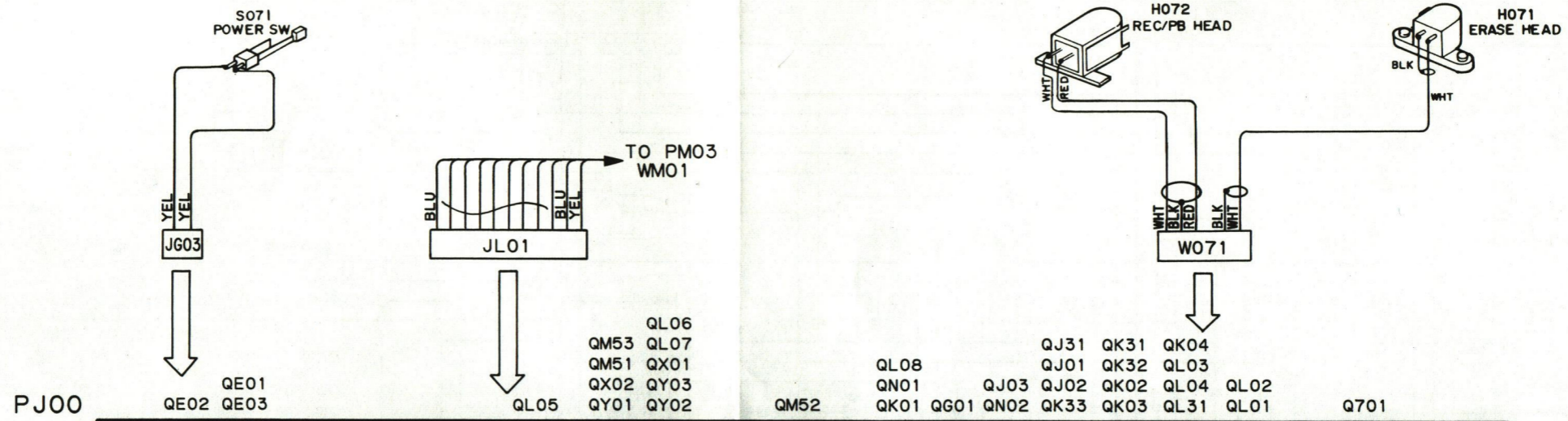
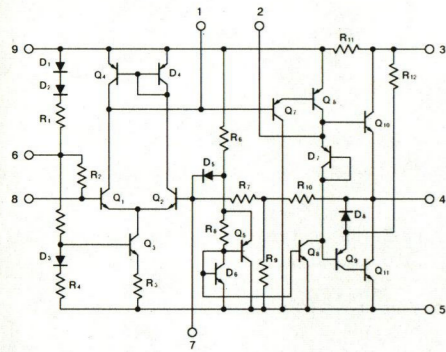
▶:PLAYBACK SIGNAL
◻:REC SIGNAL
◻:SOURCE MONITOR SIGNAL



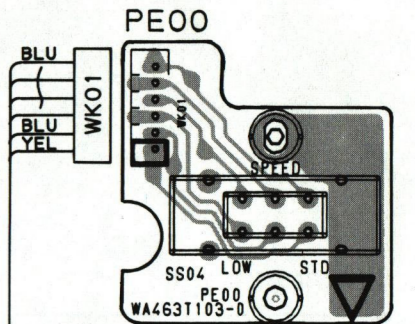
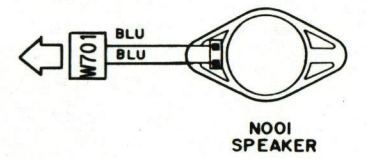
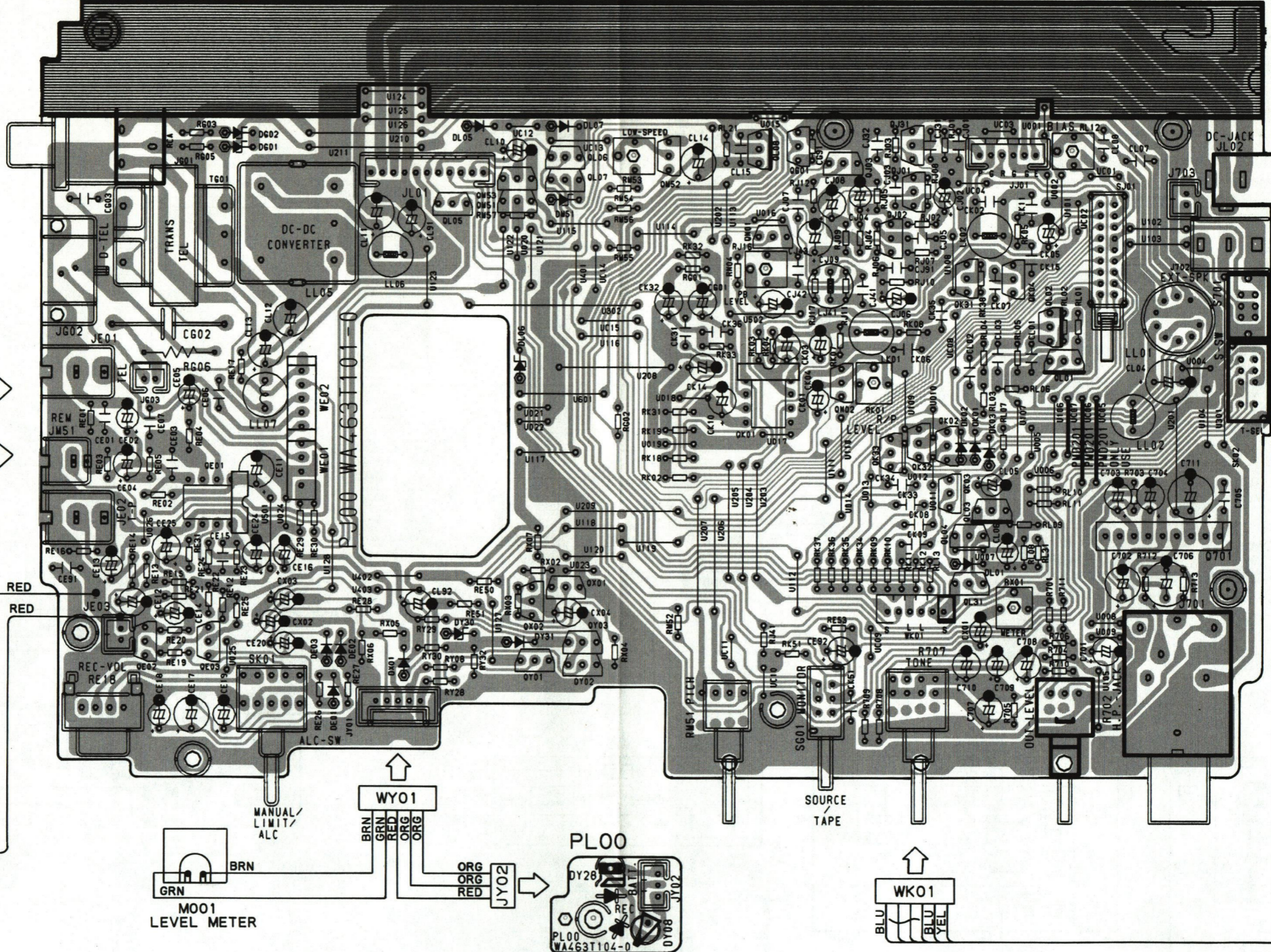
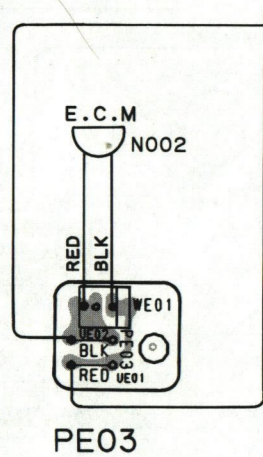
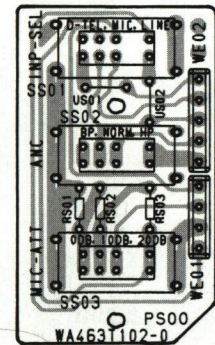
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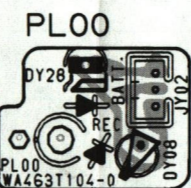
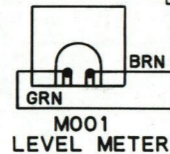
Q701 BA527



PS00



PE03



3. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

R*** : 1) GD05 x x x 140, Carbon film fixed resistor, ± 5% 1/4W
 R*** : 2) GD05 x x x 160, Carbon film fixed resistor, ± 5% 1/6W

① — Resistance value

Examples :

① Resistance value
 0.1Ω...001 10Ω...100 1kΩ...102 100kΩ...104
 0.5Ω...005 18Ω...180 2.7kΩ...272 680kΩ...684
 1Ω...010 100Ω...101 10kΩ...103 1MΩ...105
 6.8Ω...068 390Ω...391 22kΩ...223 4.7MΩ...475

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C*** : CERAMIC CAP.

1) DD1 x x x 370, Ceramic capacitor
 Disc type
 Temp.coef.P350~N1000.50V
 ① Capacity value
 ② Tolerance

Examples

① Tolerance (Capacity deviation)
 ± 0.25pF...0
 ± 0.5pF...1
 ± 5%...5

* Tolerance of COMMON PARTS handled here are as follows :

0.5pF~5pF...± 0.25pF
 6pF~10pF...± 0.5pF
 12pF~560pF...± 5%

② Capacity value

0.5pF...005 3pF...030 100pF...101
 1pF...010 10pF...100 220pF...221
 1.5pF...015 47pF...470 560pF...561

C*** : CERAMIC CAP.

1) DK16 x x x 300, High dielectric constant ceramic capacitor
 Disc type
 Temp.chara. 2B4, 50V
 ① Capacity value

Examples

② Capacity value
 100pF...101 1000pF...102 10000pF...103
 470pF...471 2200pF...222

C*** : ELECTROLY CAP. (⏏), FILM CAP. (⏏)

1) EA x x x x x 10, Electrolytic capacitor
 One-way lead type, Tolerance ± 20%
 ① Working voltage
 ② Capacity value

Examples

① Capacity value
 0.1μF...104 4.7μF...475 100μF...107
 0.33μF...334 10μF...106 330μF...337
 1μF...105 22μF...226 1100μF...118
 2200μF...228

② Working voltage

6.3V...006 25V...025
 10V...010 35V...035
 16V...016 50V...050

2) DF15 x x x 350 } Plastic film capacitor
 DF15 x x x 310 } One-way type, Mylar ± 5% 50V
 DF16 x x x 310 } Plastic film capacitor
 One-way type, Mylar ± 10% 50V

① Capacity value

Examples

① Capacity value
 0.001μF(1000pF)...102 0.1μF...104
 0.0018μF...182 0.56μF...564
 0.01μF...103 1μF...105
 0.015μF...153

NOTE : 1) The above CODES (R***, R***, C***, C*** and (C***) are omitted on the schematic diagram in some case.

2) On the occasion, be confirmed the common parts on the parts list.

3) Refer to "Common Parts List" for the other common parts(RI05, DD4, DK4).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows :

1. KOA Corporation

Part No.	Type No.	Description
NH05 x x x 140	RF25S x x x x Ω J	(± 5% 1/4W)
NH05 x x x 120	RF50S x x x x Ω J	(± 5% 1/2W)
NH85 x x x 110	RF73B2A x x x x Ω J	(± 5% 1/10W)
NH95 x x x 140	RF73B2E x x x x Ω J	(± 5% 1/4W)

* Resistance value Resistance value (0.1-10kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No.	Type No.	Description
NF05 x x x 140	ERD-2FCJ x x x	(± 5% 1/4W)
RF05 x x x 140		
NF02 x x x 140	ERD-2FCG x x x	(± 2% 1/4W)
RF02 x x x 140		

* Resistance value * Resistance value

Examples :

* Resistance value
 0.1Ω...001 10Ω...100 1kΩ...102 100kΩ...104
 0.5Ω...005 18Ω...180 2.7kΩ...272 680kΩ...684
 1Ω...010 100Ω...101 10kΩ...103 1MΩ...105
 6.8Ω...068 390Ω...391 22kΩ...223 4.7MΩ...475

ABBREVIATION AND MARKS

1	ANT. : ANTENNA	2	BATT. : BATTERY
3	CAP. : CAPACITOR	4	CER. : CERAMIC
5	CONN. : CONNECTING	6	DIG. : DIGITAL
7	HP : HEADPHONE	8	MIC. : MICROPHONE
9	μ-PRO : MICROPROCESSOR	10	REC. : RECORDING
11	RES. : RESISTOR	12	SPK : SPEAKER
13	SW : SWITCH	14	TRANSF. : TRANSFORMER
15	TRIM. : TRIMMING	16	TRS. : TRANSISTOR
17	VAR. : VARIABLE	18	X'TAL : CRYSTAL
19		20	
21		22	
23		24	
25		26	
27		28	
29		30	

NOTE ON SAFETY :

Symbol ▲ Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol ▲. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

FOR PMD221 AND PMD201

(VERS: VERSION, U: U.S.A., F: Japan, K: Far East, /XX: Europe)

POS. NO	VERS COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (FOR U/K/F)	POS. NO	VERS COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (FOR U/K/F)
			PJ00 - R/P AMP CIRCUIT BOARD						
			PJ00 - CAPACITORS						
C703		4822 124 23056	ELECT 47 μ F 16V	EJ47601610	DX01		4822 130 33305	DIODE 1SS176, MA165, 1SS254	HD20002000
C704		4822 124 23056	ELECT 47 μ F 16V	EJ47601610	Q701		4822 209 62229	IC BA527	HC10055210
C709		4822 124 21899	ELECT 4.7 μ F 25V	EJ47502510	QE01		4822 209 73064	IC NJM-2068-DD MIC	HC10053090
CE02		4822 124 21899	ELECT 4.7 μ F 25V	EJ47502510	QE02		4822 130 43313	TRS. 2SC3312 (R,S), ETC	HT30002000
CE05		4822 124 21899	ELECT 4.7 μ F 25V	EJ47502510	QE03		4822 130 43313	TRS. 2SC3312 (R,S), ETC	HT30002000
CE13		4822 124 21899	ELECT 4.7 μ F 25V	EJ47502510	QG01		4822 130 61189	TRS. DIG. DTC114TS	BA20017210
CE14		4822 124 21899	ELECT 4.7 μ F 25V	EJ47502510	QL01		4822 130 61441	TRS. 2SD1862 TV-2 NPN Q,R	HT418622A0
CE15		4822 122 31056	CER. 12 pF 50V \pm 5%	DD15120300	QL03		4822 130 61441	TRS. 2SD1862 TV-2 NPN Q,R	HT418622A0
CE16		4822 124 23054	ELECT 0.47 μ F 50V	EJ47405010	QL04		4822 130 43313	TRS. 2SC3312 (R,S), ETC	HT30002000
CE18		4822 124 21894	ELECT 10 μ F 16V	EJ10601610	QL05		4822 130 61227	TRS. DIG. DTA114ES	BA10007210
CE20					QL06		4822 130 42682	TRS. DIG. DTA144ES	BA10010210
CG02		4822 121 43655	FILM 0.47 μ F 250V K \pm 10%	DF16474530	QL07		4822 130 42682	TRS. DIG. DTA144ES	BA10010210
CK10		4822 124 23054	ELECT 0.47 μ F 50V	EJ47405010	QL08		4822 130 61441	TRS. 2SD1862 RIPL FIL.	HT418622A0
CK36		- - -	CER. 120 pF 50V \pm 5% (PMD221)	DD15121300	QL31		4822 130 61189	TRS. DIG. DTC114TS	BA20017210
		4822 122 40534	CER. 30 pF 50V \pm 5% (PMD201)	DD15300300	QM51		4822 130 43313	TRS. 2SC3312 (R,S), ETC	HT30002000
CL05		4822 124 21894	ELECT 10 μ F 16V	EJ10601610	QM53				
CL06		- - -	ELECT 0.1 μ F 50V (PMD221)	EJ10405010	QX01		4822 130 43313	TRS. 2SC3312 (R,S), ETC	HT30002000
		4822 124 21899	ELECT 4.7 μ F 25V (PMD201)	EJ47502510	QX02		4822 130 43313	TRS. 2SC3312 (R,S), ETC	HT30002000
CL07		4822 121 43774	FILM 0.012 μ F \pm 10%	DF76123530	QY01		4822 130 42594	TRS. DIG. DTC144ES	BA20012210
CL10		4822 124 23056	ELECT 47 μ F 16V	EJ47601610	QY02		4822 130 43313	TRS. 2SC3312 (R,S), ETC	HT30002000
CX01		4822 124 21899	ELECT 4.7 μ F 25V	EJ47502510	QY03		4822 130 43313	TRS. 2SC3312 (R,S), ETC	HT30002000
CX02		4822 124 21894	ELECT 10 μ F 16V	EJ10601610					
CX03		4822 124 21899	ELECT 4.7 μ F 25V	EJ47502510					
C***			PJ00 - CAPACITORS (COMMON) High Dielectric Constant Ceramic Capacitor, \pm 10% 50: C705, CE01, CE03, CE07, CK31, CL08		R702		4822 100 30096	PJ00 - RESISTORS VAR. RES. 10K Ω A MON VOL	RK01030520
C***			Electrolytic Capacitor, \pm 20 % : C701-C702, C706, C707, C708, C710, C711, CE04, CE11, CE12, CE17, CE24, CE25, CG01, CK32, CL04, CL11-CL14, CX04		R707		4822 100 30099	VAR. RES. 10K Ω W TONE PO AMP	RM01030270
C***			Plastic Film Capacitor, 5% 50V: CE06, CG03, CL01-CL03, CL15		RE18		4822 101 30856	VAR. RES. RK11K112 20(A) REC. VOL	RK02030970
			PJ00 - SEMICONDUCTORS		RG06		4822 050 24701	RES. 470 Ω \pm 5% 1/2W J D-TEL OUT	GG05471120
DE01		4822 130 33305	DIODE 1SS176, MA165, 1SS254	HD20002000	RL12		4822 100 11471	TRIM. RES. 100K Ω RH0634C15R TYPE ALPS	RA01040780
DE03					RM51		4822 100 30098	VAR. RES. 500 Ω B VARI SPEED	RK05010060
DG01		4822 130 80317	ZENER DIODE 5.1V	HD30511000	RM53		4822 100 11386	TRIM. RES. 1K Ω RH0634C13R LO-SPD ADJ	RA01020780
DG02		4822 130 80317	ZENER DIODE 5.1V	HD30511000	RM54		4822 100 12188	KANON-RES.ER 820 Ω 1/6W J 2200PPM/DEG	NB58216220
DL01		4822 130 33305	DIODE 1SS176, MA165, 1SS254	HD20002000	RX01		4822 100 11471	TRIM. RES. 100K Ω RH0634C15R	RA01040780
DL05		4822 130 33305	DIODE 1SS176, MA165, 1SS254	HD20002000	R***				
DL06		4822 130 33759	ZENER DIODE 4.7V	HD30471000				PJ00 - RESISTORS (COMMON) Carbon Film Fixed Resistor, \pm 5% 1/6 W: R701, R703-R706, R708-R713, RE01-RE05, RE12-RE17, RE19-RE31, RE50, RE51, RE53, RG01, RG02, RG03, RG05, RK31-RK33, RK51, RL01-RL11, RL13, RL21, RL31, RM52, RM55-RM57, RX02-RX07, RY08, RY28-RY30, RY32	
DL07		4822 130 33305	DIODE 1SS176, MA165, 1SS254	HD20002000					
DM51		4822 130 80272	ZENER DIODE 7.5V	HD30751000					

(VERS: VERSION, U: U.S.A., F: Japan, K: Far East, /XX: Europe)

POS. NO	VERS COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (FOR U/K/F)	POS. NO	VERS COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (FOR U/K/F)
J701		4822 267 31175	PJ00 - MISCELLANEOUS JACK HP JACK	YJ01002560	QM02		4822 130 61439	TRS. 2SB1237 (R)	HT212371C0
J702		4822 267 31172	JACK EXT SP OUT	YJ01002160	QM03		4822 130 61892	TRS. 2SD2144S U OR V	HT421442A0
J703		4822 267 31035	JACK UP CONN. 2P SPK. WIRE	YJ06010590	QM04		4822 130 42594	TRS. DIG. DTC144ES/UN4213	BA20002000
JE01		4822 267 31172	JACK TEL PICK JACK	YJ01002160	QM05		4822 130 61892	TRS. 2SD2144S U OR V	HT421442A0
JE02		4822 267 31172	JACK MIC JACK	YJ01002160	QM06		4822 130 42594	TRS. DIG. DTC144ES/UN4213	BA20002000
JG01		4822 267 30604	TERMINAL PIN JACK 2P LINE IN/OUT	YT02020280	QM07		4822 209 82278	IC DN6864	HC10024020
JG02		4822 267 31173	JACK DIRECT TEL JACK	YJ01002430	QM08		4822 209 83699	IC BA668	HC10039210
JG03		4822 265 10111	JACK 2P CONECTOR MAIN TO POWER-SW	YJ06003020	RM01		4822 116 30443	PM03 - RESISTORS KANON-RES.ER 0.68 Ω 1/4W J 3900PPM/C	NB50064390
JL02		4822 265 10085	JACK DC JACK EXT DC IN	YJ04000840	RM03		4822 116 30444	KANON-RES.ER 6.8K Ω 1/4W J 900PPM/C	NB56824090
JM51		4822 267 31174	JACK REMORT JACK	YJ01002440	RM04		4822 100 20681	TRIM. RES. 2.2KΩ RH0638CJ3R TYPE ALPS	RA022220780
LL01		4822 157 62205	OSC TRANSF.	TC10150070	RM13		4822 116 60423	METAL RES. 4.7 Ω ±5% 1W BATT. CHARG	NK05047010
LL02		4822 157 53801	CHOKE COIL 47 μH 0.47 Ω	LC14730070	R***			PM03 - RESISTORS (COMMON) Carbon Film Fixed Resistor, ±5% 1/6 W: RM02, RM05-RM12, RM14	
LL05		4822 146 10145	OSC TRANSF. DC-DC CONVERTER	TC10200090	JM02		4822 267 31203	PM03 - MISCELLANEOUS JACK PH CONN. 2PIN TO PO-SW	YJ06006220
LL06		4822 157 53801	CHOKE COIL 47 μH 0.47 Ω	LC14730070	R***			PS00 - INPUT MOD SW CIRCUIT BOARD PS00 - RESISTORS (COMMON) Carbon Film Fixed Resistor, ±5% 1/6 W: RS01-RS03	
LL07		4822 157 62204	CHOKE COIL 1 mH	LC21050710	SS01		4822 277 21389	PS00 - MISCELLANEOUS SLIDE SW	SS02030290
S701		4822 277 30749	SLIDE SW SP ON/OFF 2-2	SS02020740	SS02			PE00 - SPEED SW CIRCUIT BOARD PE00 - MISCELLANEOUS SLIDE SW, TAPE SPEED SELECT 2-2	SS02020760
SK01		4822 273 10207	ROTARY SW ROTARY SW 2-3 SBM1023	SR02030130	SS04		4822 277 30751		
TG01		4822 140 10387	OUTPUT TRANSF. DIRECT TEL IN/OUT TRANS	TO12414010					
DY08		4822 130 81358	PL00 - LED IND. CIRCUIT BOARD PL00 - SEMICONDUCTORS L.E.D. LED REC. IND	HI10056020					
DY28		4822 130 33173	L.E.D. LED BATT IND	HI10025020					
DY30		4822 130 82609	ZENER DIODE MTZJ2.0B	HD30201000					
CM01		4822 124 21899	PM03 - MECHA. CONTROL CIRCUIT BOARD PM03 - CAPACITORS ELECT 4.7 μF 25V	EJ47502510					
CM05		4822 124 21894	ELECT 10 μF 16V	EJ10601610					
CM07		4822 124 23055	ELECT 22 μF 10V	EJ22601010					
CM08		4822 124 41245	ELECT 33 μF 10V	EJ33601010					
CM10		4822 124 23054	ELECT 0.47UF 50V	EJ47405010					
CM11		4822 122 40586	CER. 10000pF ±20%	DA17103110					
C***			PM03 - CAPACITORS (COMMON) Electrolytic Capacitor, ±20% : CM02, CM03, CM06						
DM01			PM03 - SEMICONDUCTORS						
DM07		4822 130 33305	DIODE 1SS176, MA165, 1SS254	HD20002000					
DM08		4822 130 80272	ZENER DIODE 7.5V	HD30751000					
DM09		4822 130 33305	DIODE 1SS176, MA165, 1SS254	HD20002000					
QM01		4822 209 83693	IC AN6612	HC10037020					

FOR PMD221 ONLY

(VERS: VERSION, U: U.S.A., F: Japan, K: Far East, /XX: Europe)

POS. NO	VERS COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (FOR U/K/F)	POS. NO	VERS COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (FOR U/K/F)
			PJ00 - R/P AMP CIRCUIT BOARD		QN01			TRS. DIG. DTC114TS	BA20017210
			PJ00 - CAPACITORS		QN02			TRS. DIG. DTC114TS	BA20017210
CJ01			CER. 150pF J ±5%	DD15151300					
CJ02			ELECT 4.7 μF 25V	EJ47502510					
CJ04			ELECT 10 μF 16V	EJ10601610					
CJ06			ELECT 4.7 μF 25V	EJ47502510	RJ16			PJ00 - RESISTORS	RA02230780
CJ41			CER. 150pF 50V J ±5%	DD15151300				TRIM. RES. 22KΩRH0634CJ4R TYPE ALPS	
CK01			ELECT 4.7 μF 25V	EJ47502510	RK01			TRIM. RES. 22KΩRH0634CJ4R REC. LEVEL	RA02230780
CK02			CER. 150pF J ±5%	DD15151300					
CK04			ELECT 0.1 μF 50V	EJ10405010					
CK05			ELECT 4.7 μF 25V	EJ47502510	RK05			PJ00 - RESISTORS (COMMON)	
CM04			ELECT 10 μF 16V	EJ10601610				Carbon Film Fixed Resistor, ±5% 1/6 W: RJ02-RJ12, RJ17, RJ41, RK02- RK05, RK07-RK12, RK18, RK19, RK34-RK38, RN04	
CJ03			PJ00 - CAPACITORS (COMMON)						
			High Dielectric Constant Ceramic Capacitor, ± 10% 50: CJ03, CJ32, CJ43, CK15		SG01			PJ00 - MISCELLANEOUS	SP02020730
CJ31			Ceramic Capacitor, ± 5% 50V: CJ31		SJ01			PUSH SW, T/S SELECT	
CJ42			Electrolytic Capacitor, ±20 % : CE16, CJ08, CJ09, CJ42, CK03, CK10, CK14		SK02			SLIDE SW, R/P SW 6-2 SHORT	SS06020570
			Plastic Film Capacitor, 5% 50V: CJ05, CJ07, CK06, CK08, CK09, CK11, CK33-CK35					SLIDE SW, TAPE SELECT 2-3	SS02030230
			PJ00 - SEMICONDUCTORS		SM01			PM01 - MEMORY SW CIRCUIT BOARD	
DK01			DIODE 1SS176, MA165, 1SS254	HD20002000				PM01 - MISCELLANEOUS	
I								PUSH SW, SPH-2A	SP02020840
DK03									
JJ01			PLUG UP CONN. 6P HEAD WIRE	YP06006660	H071			REC/PB HEAD (NOT SAME AS OLD ONE)	LH82132050
LJ41			CHOKO COIL TL-8 223J	LC22260710					
LK01			CHOKO COIL 5.6 MH J	LC25650710					
LK02			CHOKO COIL TL-8 223J	LC22260710					
QJ01			TRS. 2SC3312 (R,S), ETC	HT30002000					
QJ02			TRS. 2SC3312 (R,S), ETC	HT30002000					
QJ03			TRS. DIG. DTC144ES	BA20012210					
QJ31			TRS. DIG. DTC144ES	BA20012210					
QK01			IC NJM4558DD	HC10008090					
QK02			TRS. DIG. DTC144TS	BA20016210					
QK03			TRS. DIG. DTC144TS	BA20016210					
QK31									
I			TRS. DIG. DTC144TS	BA20016210					
QK33									

FOR PMD201 ONLY

(VERS: VERSION, U: U.S.A., F: Japan, K: Far East, /XX: Europe)

POS. NO	VERS COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (FOR U/K/F)	POS. NO	VERS COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (FOR U/K/F)
			PJ00 - R/P AMP CIRCUIT BOARD		RK01		4822 100 11352	TRIM. RES. 22KΩ RH0634CJ4R	RA02230780
			PJ00 - CAPACITORS					PJ00 - RESISTORS (COMMON)	
CJ02		4822 124 21899	ELECT 4.7 μF 25V	EJ47502510				Carbon Film Fixed Resistor, ±5% 1/6 W:	
CJ04		4822 124 21894	ELECT 10 μF 16V	EJ10601610				RJ01-RJ12, RJ17, RJ41, RK02-	
CJ06		4822 124 21899	ELECT 4.7 μF 25V	EJ47502510				RK05, RK07-RK12, RK18, RK19,	
CJ42		4822 124 23054	ELECT 0.47 μF 50V	EJ47405010				RK34-RK37, RN04	
CK01		4822 124 21899	ELECT 4.7 μF 25V	EJ47502510				PJ00 - MISCELLANEOUS	
CK02		4822 122 10367	CER. 150pF J ±5%	DD15151300	SJ01		4822 277 21391	SLIDE SW R/P SW 6-2 SHORT	SS06020570
CK04		4822 124 41604	ELECT 0.1 μF 50V	EJ10405010					
CK05		4822 124 21899	ELECT 4.7 μF 25V	EJ47502510	SK02		4822 277 21388	SLIDE SW TAPE SELECT 2-3	SS02030230
			PJ00 - CAPACITORS (COMMON)						
C***			High Dielectric Constant Ceramic Capacitor, ±10% 50:						
			CJ01, CJ03, CJ31, CJ32, CK15,						
			Electrolytic Capacitor, ±20 % :						
C***			CJ08, CJ09, CK03, CK14, CJ08, CJ09, CK03, CK14						
			Plastic Film Capacitor, 5% 50V:						
			CJ05, CJ07, CK06-CK09, CK33-CK35, CJ05, CJ07, CK06-CK09, CK33-CK35						
			PJ00 - SEMICONDUCTORS						
DK01		4822 130 33305	DIODE 1SS176, MA165, 1SS254	HD20002000					
DK03									
JJ01		4822 265 30671	PLUG UP CONN. 6P HEAD WIRE	YP06006660					
LK01		4822 157 62213	CHOKO COIL 5.6 MH J	LC25650710					
LK02		4822 157 53521	CHOKO COIL TL-8 223J	LC22260710					
QJ01		4822 130 43313	TRS. 2SC3312 (R,S), ETC	HT30002000					
QJ02		4822 130 43313	TRS. 2SC3312 (R,S), ETC	HT30002000					
QJ03		4822 130 42594	TRS. DIG. DTC144ES	BA20012210					
QJ31		4822 130 42594	TRS. DIG. DTC144ES	BA20012210					
QK01		4822 209 83631	IC NJM4558DD	HC10008090					
QK02									
QK03		4822 130 61188	TRS. DIG. DTC144TS	BA20016210					
QK31									
QK33		4822 130 61188	TRS. DIG. DTC144TS	BA20016210					
QN01		4822 130 61189	TRS. DIG. DTC114TS	BA20017210					
QN02		4822 130 61189	TRS. DIG. DTC114TS	BA20017210					
			PJ00 - RESISTORS						
RJ16		4822 100 11352	TRIM. RES. 22KΩRH0634CJ4R TYPE ALPS	RA02230780					