

## MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound. 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.

### ORDERING PARTS:

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

MARANTZ S.A.  
EUROPEAN PARTS DEPARTMENT  
2, Avenue Léopold III  
B-7120 PERONNES-lez-BINCHE  
BELGIUM  
TWX: 57589 SEPLT B



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

818

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:

#### EUROPE

**MARANTZ S.A.**  
European Parts Department  
2, Avenue Léopold III  
B-7120 Péronnes-lez-Binche  
Belgium

**MARANTZ S.A.**  
326 Avenue Louise Bte 32  
1050 Bruxelles  
Belgium

**MARANTZ AUDIO U.K. LTD**  
Unit 15/16  
Saxon Way Industrial Estate  
Moor Lane  
Harmondsworth UB7 0LW  
Great Britain

**MARANTZ AUSTRIA Ge.M.B.H.**  
25 Franz Lisztgasse  
2380 Perchtoldsdorf  
Austria

**MARANTZ BELGIUM**  
45 Rue Auguste Van Zande  
1080 Brussels  
Belgium

**MARANTZ DENMARK**  
Bregnerødvej 132b  
3460 Birkerød  
Denmark

**MARANTZ FRANCE**  
4 Rue Bernard Palissy  
92600 Asnières  
France

**MARANTZ GERMANY  
G.M.B.H.**  
Max Planckstrasse 22  
6072 Dreieich 1  
Germany

**MARANTZ ITALIANA S.p.A.**  
Via Monte Napoleone 10  
20121 Milano  
Italy

**MARANTZ NEDERLAND B.V.**  
Wagenmakersweg 3  
3449 HV Woerden  
Netherlands

#### AUSTRALIA

**MARANTZ SVENSKA A.B.**  
Svartviksvägen 56  
Träneberg  
Bromma  
Sweden

**MARANTZ AUSTRALIA PTY**  
19 Chard Road  
Brookvale, NSW 2100  
Australia

#### U.S.A.

**MARANTZ COMPANY, INC.**  
National Service Dept.  
P.O. Box 577  
Chatsworth, CA 91311  
U.S.A.

#### JAPAN

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

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.

**marantz®**

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

[www.SteamPoweredRadio.Com](http://www.SteamPoweredRadio.Com)

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# MODEL PMD420/CP230 STEREO CASSETTE RECORDER



## INTRODUCTION

This service manual is 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 P.W. Board P100
2. Bias OSC . . . . . mounted on P.W. Board P200
3. Mic Switch . . . . . mounted on P.W. Board P300
4. L.E.D. . . . . . mounted on P.W. Board P400
5. Rec/Play Sub . . . . . mounted on P.W. Board P500
6. Mecha Control . . . . . mounted on P.W. Board P600
7. Control Switch . . . . . mounted on P.W. Board P700
8. Light . . . . . mounted on P.W. Board P800
9. Mic Mode . . . . . mounted on P.W. Board P900

### 3. TEST EQUIPMENT REQUIRED FOR SERVICING

For measuring or checking your Cassette Recorder, the following instruments and materials are necessary.

- VTVM
- Audio Oscillator (AF OSC)
- Attenuator (600  $\Omega$ )
- 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/CrO<sub>2</sub>)
  - TDK AC-712 (Metal)

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

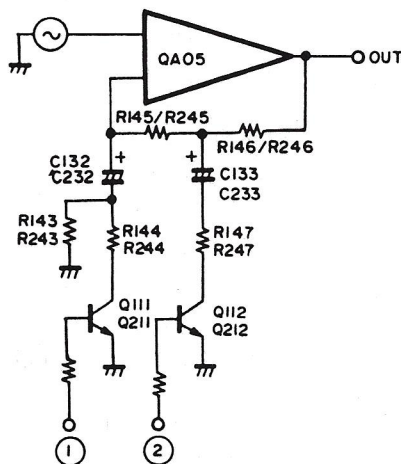
- Test Tapes (New Tape)
  - MTT-111 Wow and Flutter, Tape Speed
  - MTT-112 Measurements of Output Level
  - MTT-112B Signal-to-Noise Ratio
  - MTT-150 Adjustment of Output Level
  - MTT-256 Frequency Response (for Normal)
  - MTT-356 Frequency Response (for Special/CrO<sub>2</sub>, Fe-C<sub>2</sub> and Metal)
  - MTT-121 Cross Talk
  - MTT-141 Channel Separation

## 4. MECHANISM AND CIRCUIT DESCRIPTION

### 4.1 MIC AMP and Attenuator

The basic circuit for the mic amp is a low noise, positive-phase amplifier utilizing OP Amp. It is used in place of an attenuator to modulate the amplifier gain without the need for an attenuator between the input signal. Gain adjustment takes place inside the NF loop of the amplifier. When 0dB is occurring, a HIGH signal enters by way of ① and ② at Q111, Q211, Q112 and Q212 and maximum gain is achieved.

At -15dB the level becomes HIGH only at ① setting both Q111 and Q211 to ON, with maximum gain at -15dB. At -30dB, the level at both ① and ② simultaneously becomes LOW, with maximum gain at -30dB. With this system, compared to when the attenuator is on, the input noise is fixed and lowering of the signal-to-noise ratio, which occurs when the attenuator is ON, is prevented.



### 4.2 Auto PLAY and Automatic Rewind Stop

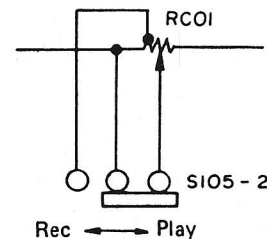
With SC03 set to ON during PLAY, the rewind button will lock when pressed. When counter reaches 999, the rewind lock releases and the PLAY operation resumes. In this condition, both CUE and REVIEW buttons do not operate and both buttons are locked. Also, when the FF button is pressed and locked in place, 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 (QM20). The signal from QM20 is added to the pin ④ of QM19, while the auto stop duration is designated inside QM19. The time it takes for the auto stop function to activate after the tape stops, is determined in CM08. At this time TE is  $TE = 75 \times CM08 (\mu F) mSec$ , while TW is  $TW = 30 \times CM07 (\mu F) mSec$  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 RC01 center position by S105-2.



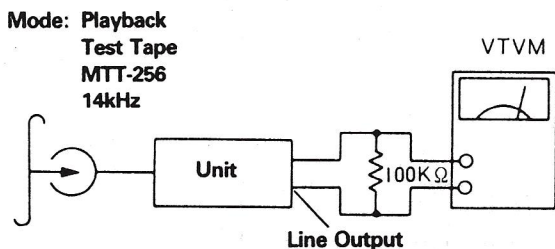
## 5. ELECTRICAL ADJUSTMENTS

### 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.
9. Check the line voltage and the output of low frequency oscillator 2 – 3 times a day to see if they are set as specified.

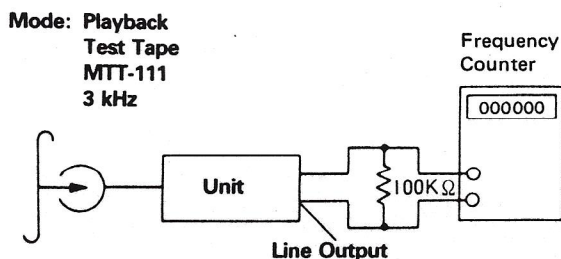
### 5.1 Head Azimuth Adjustment

1. Play the test tape MTT256 back. Adjust the head azimuth adjusting screw for maximum VTVM reading.
2. If the peak levels of the left and right channels are different set the screws to obtain the mechanical center between the peaks.
3. After adjustment, repeat the playback and stop settings several times to confirm no azimuth deviation.
4. After adjustment, lock the screws with bond.



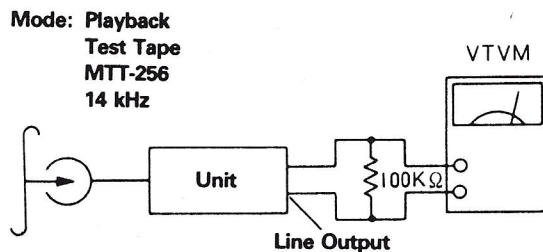
### 5.2 Tape Speed Adjustment

1. Play the 3kHz signal of the test tape MTT-111 back.
2. Adjust the adjusting resistor (RM05) on the P600 P.W. Board so that counter readings are between 2990 – 3010Hz.



### 5.3 Playback Equalizer Adjustment

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 1dB in reference to the 315Hz signal level. Then, play the 12.5kHz signal back. Set the tape selector to CrO<sub>2</sub>, Metal. Confirm the 12.5kHz signal readings at - 4.5dB, ±1dB.

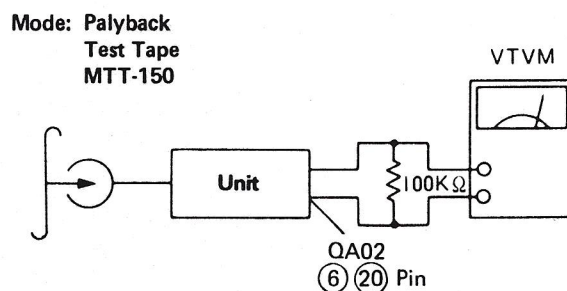


### 5.4 Playback Level Adjustment

1. Adjust the Tape Selector Switch to NORMAL and turn the NR switch OFF.
2. Play the test tape MTT-150 back. Adjust R110(L) and R210(R) so that the voltage of QA02 ⑥ pin and ⑳ pin is 100mV. In this operation, make sure the voltage of LINE OUT reads 550mV + 1dB.

#### NOTES:

1. Proceed both for the right and left channels in the same way.
2. For details refer to "Playback equalizer adjustment".



### 5.5 Level Meter Adjustment

1. Adjust the Tape Selector Switch to NORMAL and turn the NR switch OFF.
2. Play the test tape MTT-150 back. Adjust R128(L) and R228(R) at +3dB Level Meter reading.

## 5.6 Playback Noise Measurement

1. Set the selector switch to NORMAL and NR switch to OFF.
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.

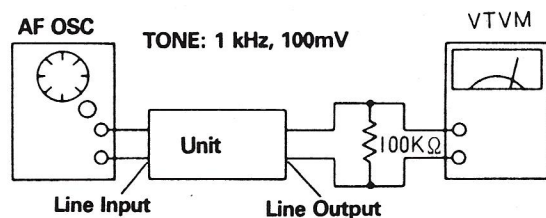
### NOTES:

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

## 5.7 MPX Filter Measurement

1. Adjust the Tape Selector Switch to NORMAL.
2. Put the blank tape in the cassette holder, and set the recording conditions. (Dolby NR "ON", MPX "ON" positions)
3. Add a 1kHz -20dB signal to LINE IN. Adjust the Rec. Volume knob to 0dB Level Meter reading.
4. Set the input signal at 19kHz  $\pm$ 10Hz. Adjust T101 (L) and T201 (R) to the minimum level.

Mode: record



## 5.8 Record/Playback Level Adjustment

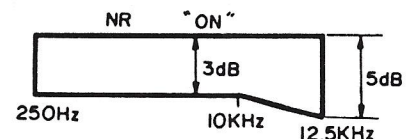
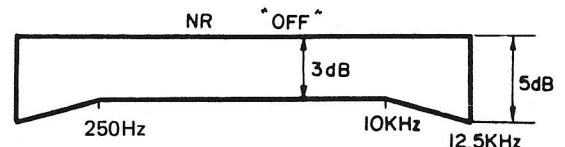
1. Set the tape selector switch to NORMAL.
2. Insert the AC-212 test tape in the cassette holder and set the specified recording condition (LINE OUT: 350mV).
3. Adjust R119(L) and R219(R) to the same level as the monitoring level when the tape is played back after rewinding.
4. As for CrO<sub>2</sub>/METAL tapes, make measurements with the AC-512 and AC-711 test tapes as described above.

## 5.9 Record/Playback Frequency Response Adjustment

[NORMAL]

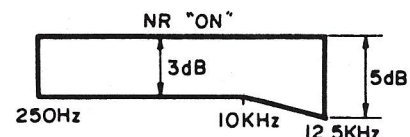
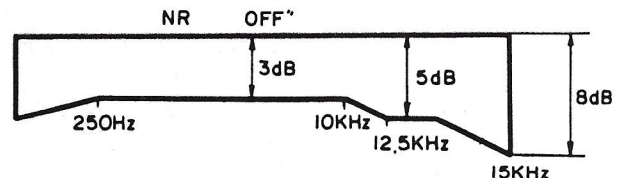
1. Set the tape selector switch to NORMAL. (with Dolby NR "ON" and MPX "OFF")

2. Insert the AC-212 test tape in the cassette holder and set the recording conditions. Attenuate from 550mV to 25dB on Line Out with the attenuator and record at 1KHz and 10KHz on an unrecorded section of the tape.
3. Rewind the tape and adjust CB01(L) and CB02(R) so that the level for 1KHz and 10KHz is brought within  $\pm$ 0.5dB for playback.
4. After making these adjustment, record and playback at 1KHz, 10KHz and 12.5KHz. Make sure results comply with the following diagram.

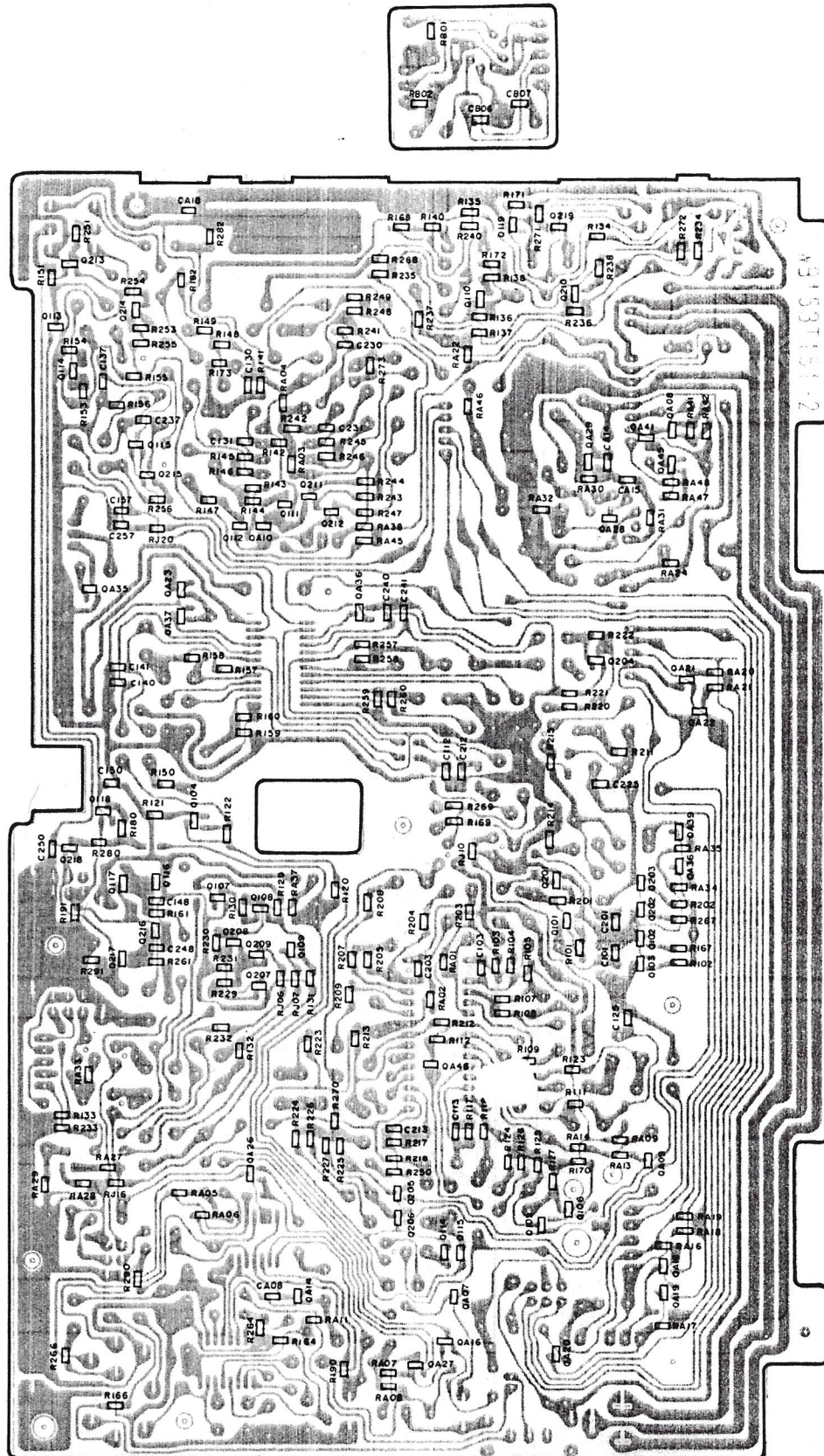


[CrO<sub>2</sub>]

1. Set the tape selector switch to CrO<sub>2</sub>.
2. Insert the AC-512 test tape in the cassette holder and set the recording conditions. Attenuate from 550mV to 25dB on Line Out with the attenuator and record at 1kHz, 10kHz, 12.5kHz and 15kHz on an unrecorded section of the tape.
3. Rewind the tape and adjust CB01(L) and CB02(R) so that the level for 1kHz and 10kHz is brought within  $\pm$ 0.5dB for playback.
4. After making these adjustments, record and playback at 1kHz, 10kHz, 12.5kHz and 15kHz. Make sure results comply with the following diagram.



## 6.2 Chip Component Locations

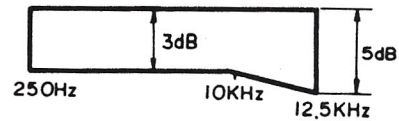
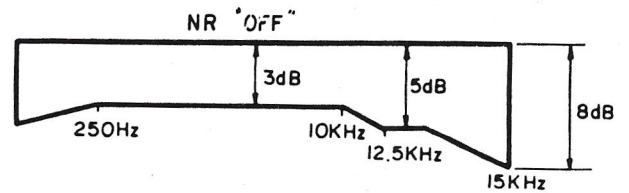


[METAL]

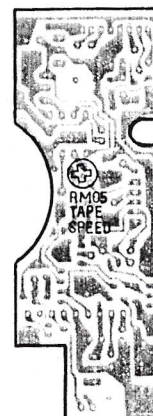
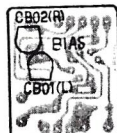
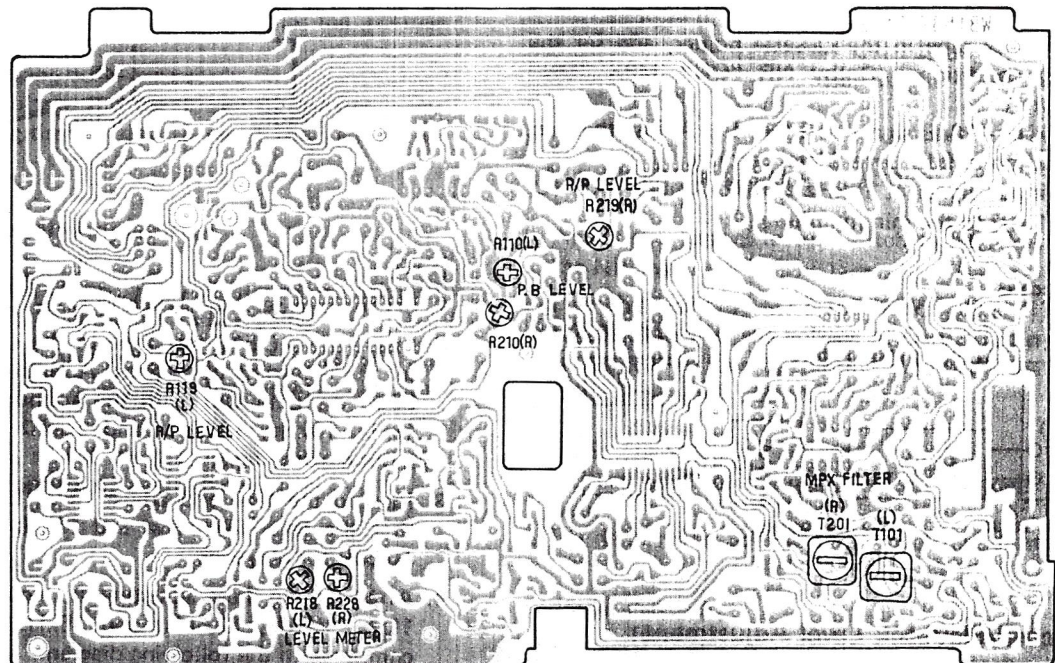
1. Adjust the Tape Selector Switch to METAL.
2. Load the test tape AC-711 into cassette holder. Perform measurements as with CrO<sub>2</sub>, and make sure they conform with the Chart in right.

NOTE:

Adjustment points for NORMAL, CrO<sub>2</sub>, METAL are common with CB01(L) and CB02(R).



### 5.10 Alignment Points

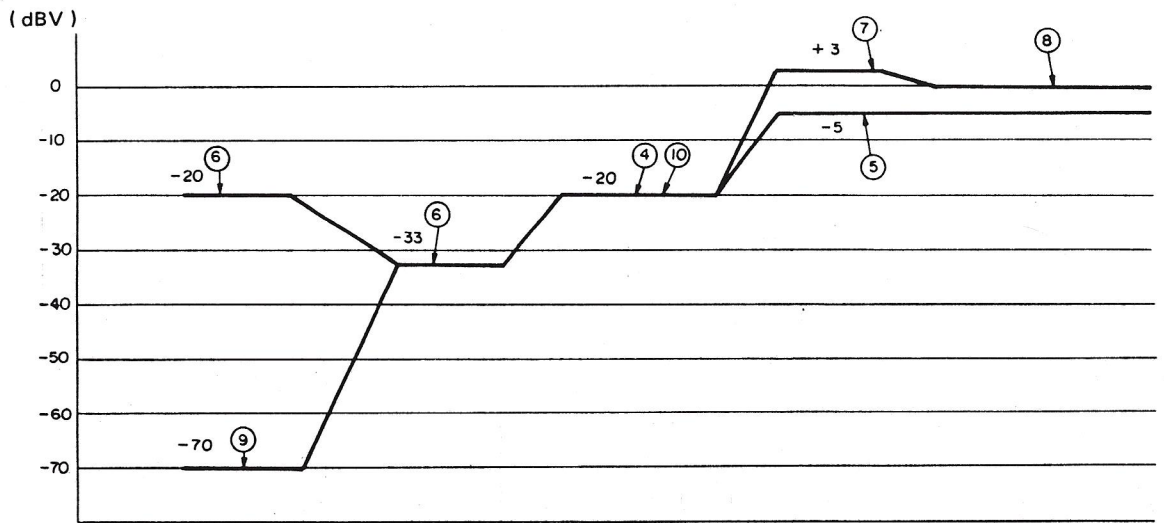
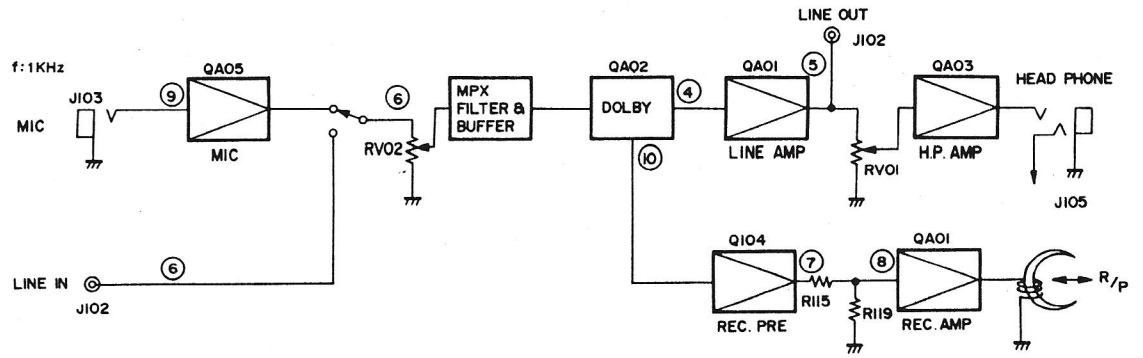




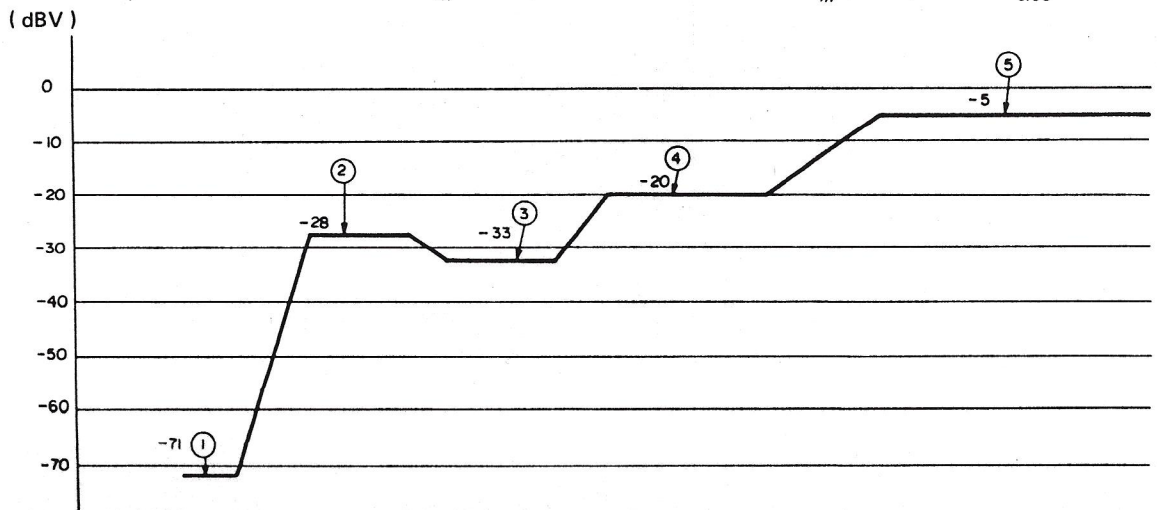
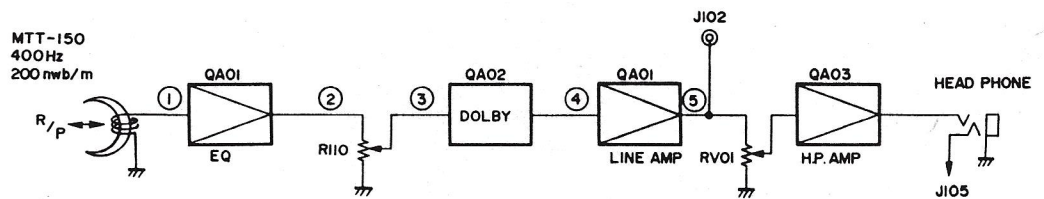
## 6. DIAGRAMS

### 6.1 Block/Level Diagrams

[RECORDING MODE]

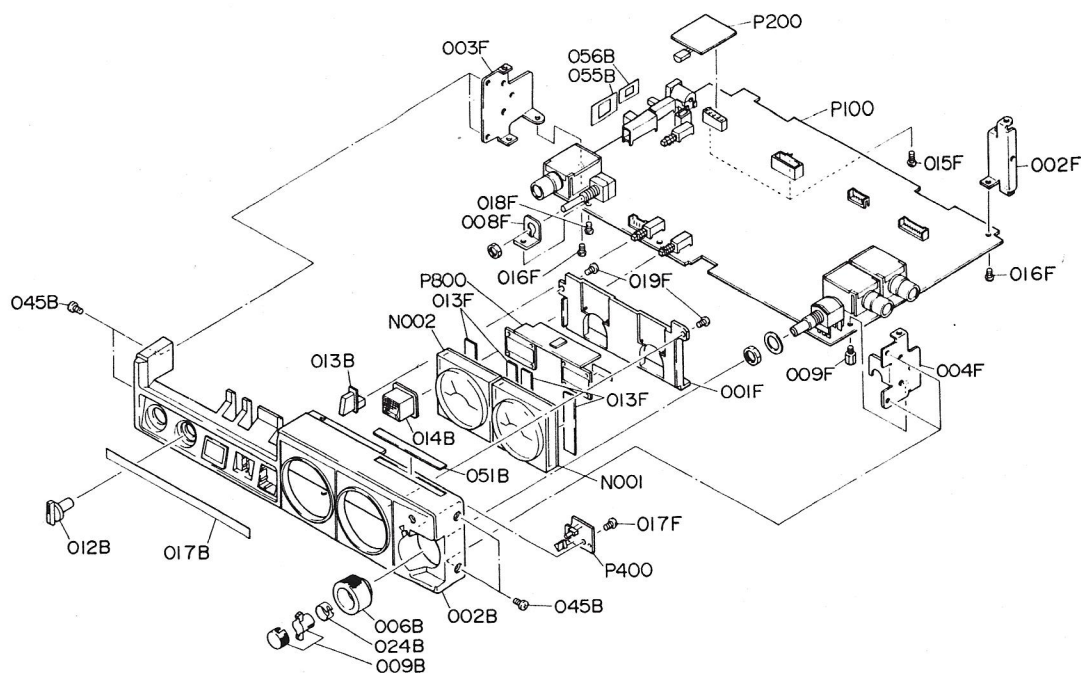


[PLAYBACK MODE]



## 7. EXPLODED VIEW AND PARTS LIST

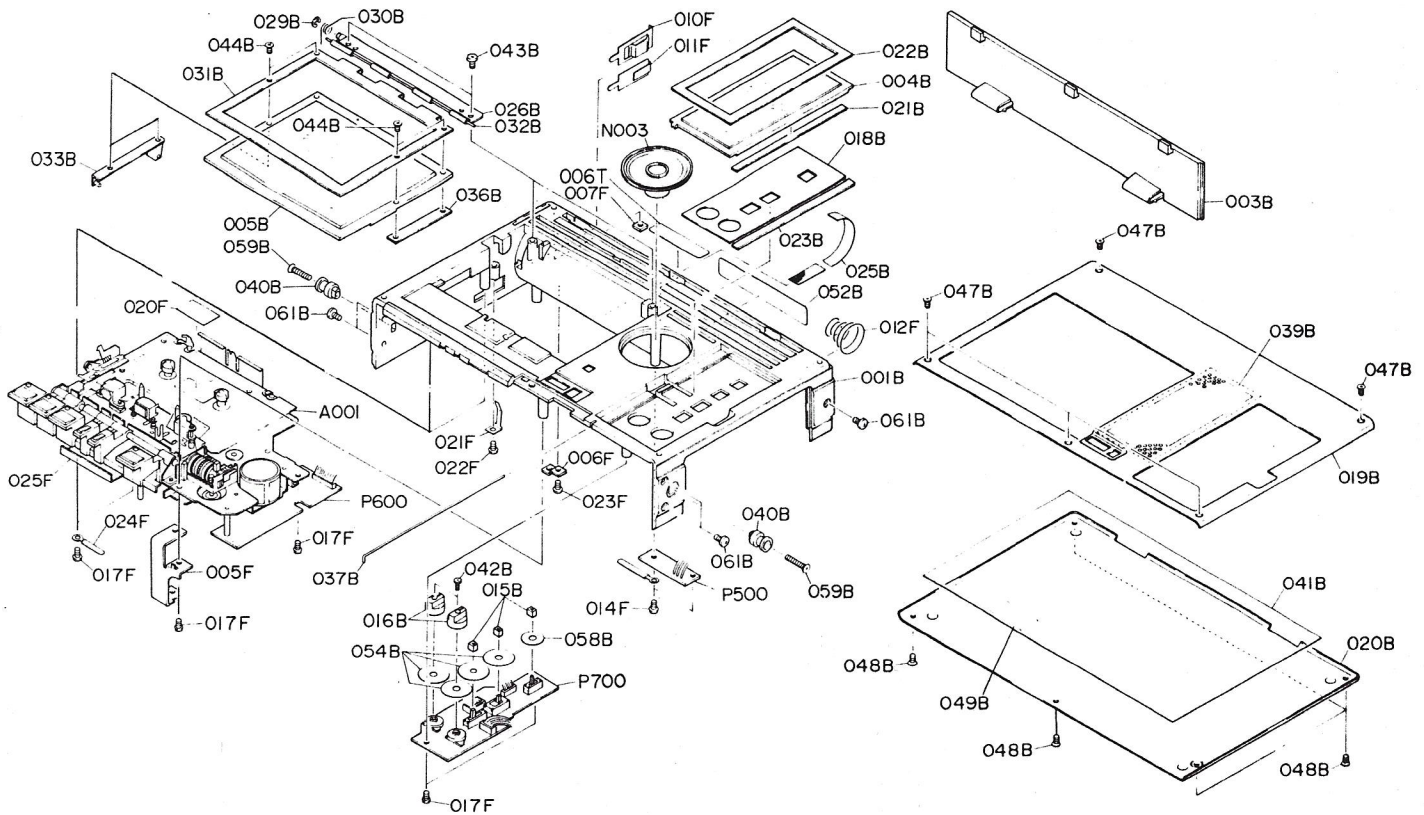
### [C01-99] FRONT PANEL AND GENERAL PARTS



- (U):for USA
- (N):for Europe
- (A):for Australia
- (P):for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P				U	N	A	P		
002B	1	1	1	1	153T064020	Case Front	018F	1	1	1	1	51572604B0	P. Tapped Screw P2.6×4
006B	1	1	1	1	153T154500	Knob Rec Volume (L) (K)	019F	3	3	3	3	51300306B0	P.H. Tapped Screw P3×6
009B	1	1	1	1	153T154510	Knob Rec Volume (R) (K)	N001	1	1	1	1	iM31040010	V.U. Meter Left
012B	1	1	1	1	153T154030	Knob Monitor Volume	N002	1	1	1	1	iM31040020	V.U. Meter Right
013B	1	1	1	1	153T154040	Knob Batt/Light							
014B	1	1	1	1	153T154050	Knob Limiter							
017B	1	1	1	1	153T265010	Indicator Front Case							
024B	1	1	1	1	153T005010	Clamper Rec Volume (R)							
045B	4	4	4	4	51102606S0	B.H.M. Screw							
051B	1	1	1	1	153T251010	Badge (MARANTZ)							
055B	1	1	1	1	153T303030	Mask (A)							
056B	1	1	1	1	153T303040	Mask (B)							
001F	1	1	1	1	153T104020	Retainer Level Meter							
002F	1	1	1	1	153T160050	Bracket Top Case							
003F	1	1	1	1	153T160060	Bracket Top Case (L)							
004F	1	1	1	1	153T160070	Bracket Top Case (R)							
008F	1	1	1	1	153T104070	Retainer P.W.B + Volume							
009F	1	1	1	1	153T113010	Stud P.W.B.							
013F	4	4	4	4	153T118010	Spacer							
015F	2	2	2	2	51302608B0	P.H. Tapped Screw P2.6×8							
016F	3	3	3	3	51572606B0	P. Tapped Screw P2.6×6							
017F	1	1	1	1	51300308B0	P.H. Tapped Screw P3×8							

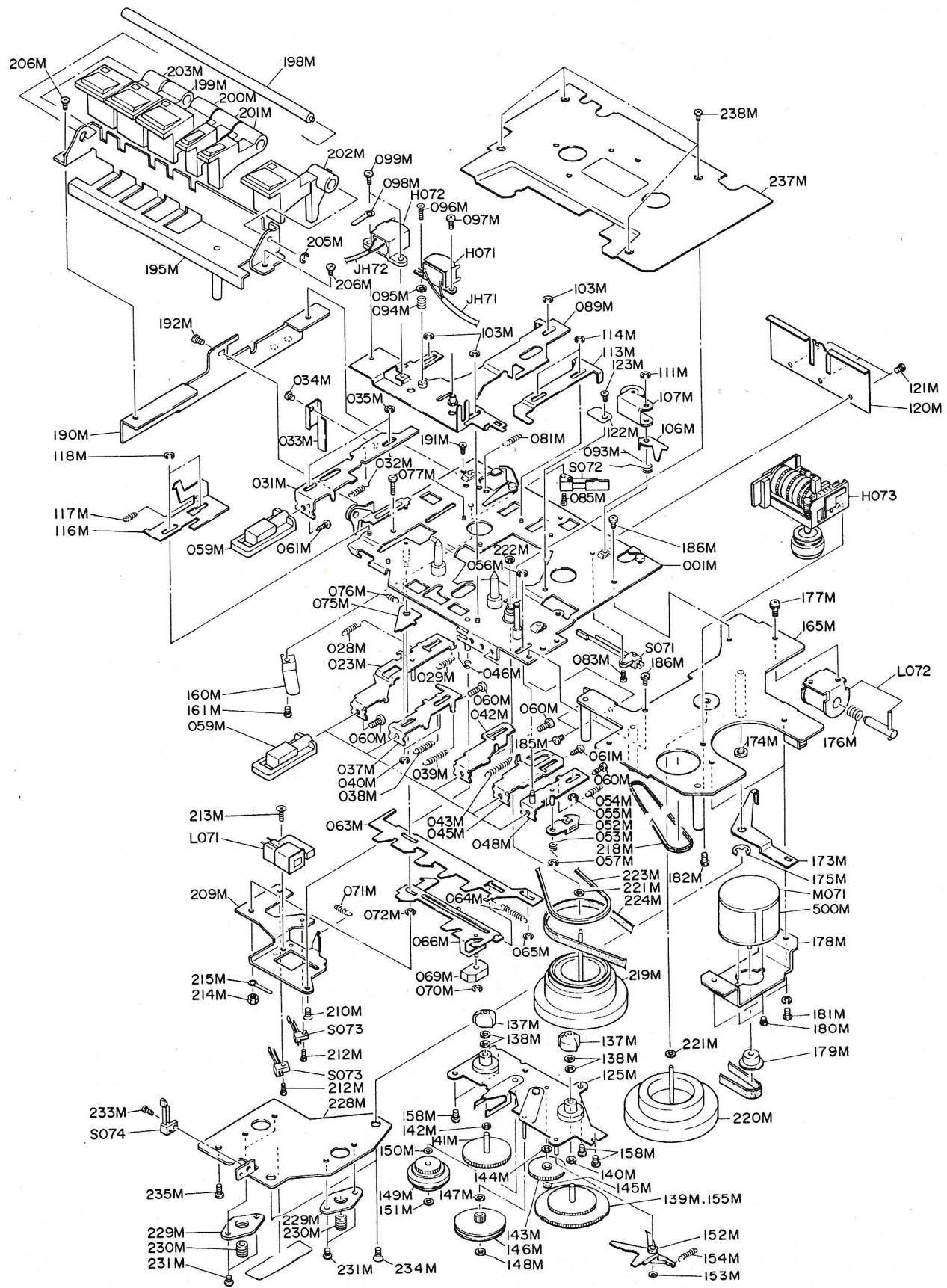
[C02-99] MAIN CASE AND GENERAL PARTS



- (U):for USA
- (A):for Australia
- (N):for Europe
- (P):for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P				U	N	A	P		
001B	1	1	1	1	153T064010	Case Top	048B	3	3	3	3	51842605S0	F.H.M. Screw F2.6×5
003B	1	1	1	1	153T257010	Lid Battery	049B	1	1	1	1	4581861010	Label
004B	1	1	1	1	153T257020	Lid Control	052B	1	1	1	1	153T861010	Label
005B	1	1	1	1	153T257030	Lid Cassette	054B	4	4	4	4	153T303020	Mask (A)
015B	3	3	3	3	153T154060	Knob Slide Switch	058B	1	1	1	1	153T303060	Mask (B)
016B	2	2	2	2	153T154070	Knob Pitch/Bias Fine	059B	2	2	2	2	51040318S9	F.H.M. Screw F3×1.8
018B	1	1	1	1	153T265020	Indicator Control	061B	5	5	5	5	51102606S0	B.H.M. Screw B2.6×6
019B	1	1	1	1	153T053090	Cover Top	005F	1	1	1	1	153T160080	Bracket Mecha + Top Case
019B	1	1	1	1	153T053030	Cover Top	006F	1	1	1	1	153T104050	Retainer Top Case
020B	1	1	1	1	153T053080	Cover Bottom	007F	1	1	1	1	153T104060	Retainer Top Cover
020B	1	1	1	1	153T053020	Cover Bottom	010F	1	1	1	1	153T129010	Terminal + Battery
021B	1	1	1	1	153T305010	Magnet Top Case	011F	1	1	1	1	153T129020	Terminal + Battery
022B	1	1	1	1	153T063010	Escutcheon Control Cover	012F	1	1	1	1	YL11010090	Terminal - Battery
023B	1	1	1	1	153T060010	Clinger Control Cover	014F	1	1	1	1	51062605A0	P.H.M. Screw P2.6×5
025B	1	1	1	1	153T007010	Strip	017F	6	6	6	6	5130030880	P.H.Tapped Screw P3×8
026B	1	1	1	1	153T153500	Hinge (K)	020F	1	1	1	1	251T274010	Reflector
029B	1	1	1	1	64002500R0	RG Ring, E	021F	1	1	1	1	153T115100	Spring
030B	1	1	1	1	153T115090	Spring	022F	1	1	1	1	5130030680	P.H.Tapped Screw P3×6
031B	1	1	1	1	153T153020	Hinge Cassette Cover	023F	2	2	2	2	5130030880	P.H. Tapped Screw P3×8
032B	1	1	1	1	153T112380	Shaft	024F	2	2	2	2	4220005030	Clamper
033B	1	1	1	1	153T104500	Retainer (K)	025F	1	1	1	1	153T303080	Mask
036B	1	1	1	1	153T104040	Retainer	006T	1				2112265010	Indicator Serial No.
037B	1	1	1	1	153T112370	Shaft Control Cover	006T		1	1	1	2112265110	Indicator Serial No.
039B	1	1	1	1	153T107010	Shaft Top Cover	A001	1	1	1	1	153T304500	Mechanism Ass'y
040B	2	2	2	2	153T055010	Collar Top Case	N003	1	1	1	1	QK00408030	Speaker 8Ω
041B	1	1	1	1	153T120010	Insulator Bottom Case							
042B	2	2	2	2	51061704S0	P.H.M. Screw P1.7×4							
043B	2	2	2	2	51302606U0	P.H.M. Screw P2.6×6							
044B	4	4	4	4	51840204S0	F.H.M. Screw F2×4							
047B	5	5	5	5	51842607S0	F.H.M. Screw F2.6×7							

[P01-99] PARTS ASSEMBLED ON THE CHASSIS



- (U):for USA
- (N):for Europe
- (A):for Australia
- (P):for PX

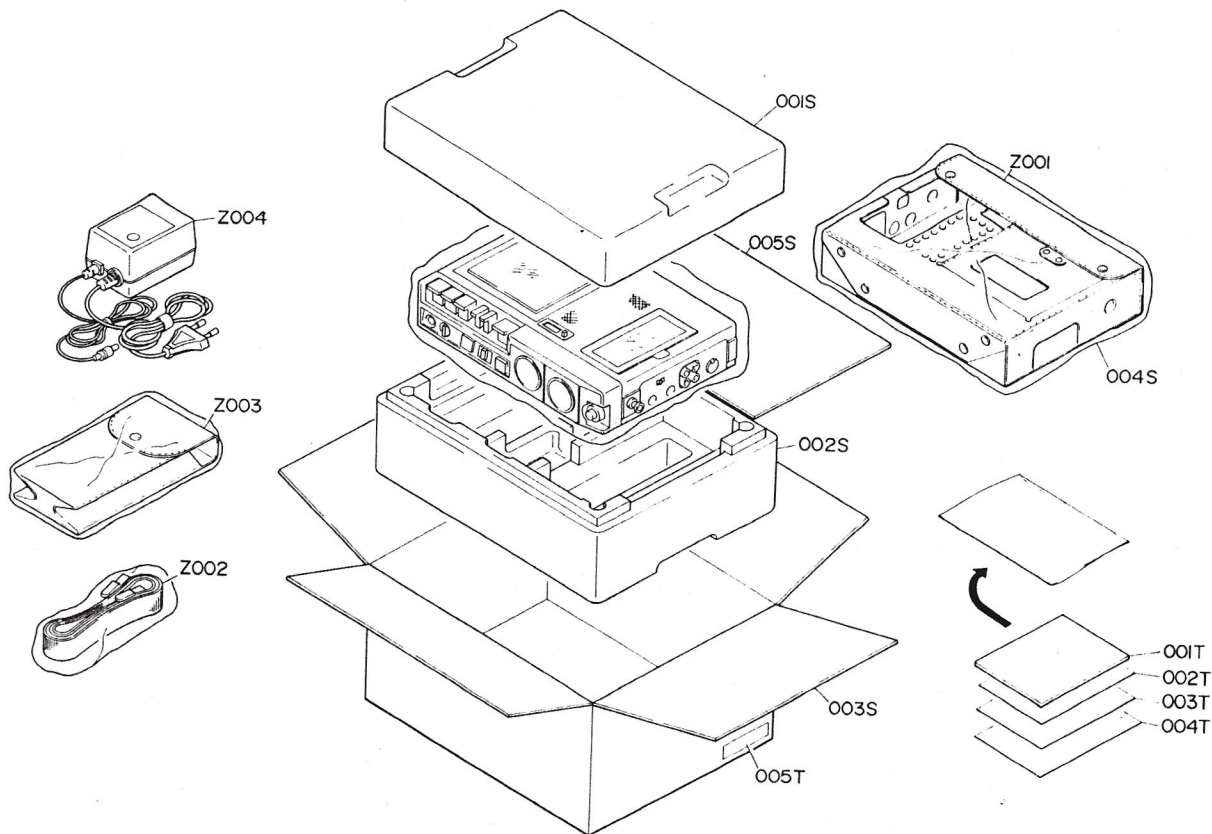
REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P				U	N	A	P		
						<b>PARTS ASSEMBLED ON THE CHASSIS</b>							
001M	1	1	1	1	153T105500	Main Chassiss (K)	121M	3	3	3	3	51821702S0	P.H.M. Screw P1.7×2
023M	1	1	1	1	153T354500	Lever Stop (K)	122M	1	1	1	1	251T00510R	Clamper Take Up Lever
028M	1	1	1	1	251T11510R	Spring Stop Eject	123M	1	1	1	1	51821702S0	P.H.M. Screw P1.7×2
029M	1	1	1	1	242T11512R	Spring Stop Lever	125M	1	1	1	1	153T105530	Chassis Reel Base (K)
031M	1	1	1	1	153T354020	Lever Rec	137M	2	2	2	2	242T00410R	Table Reel Cap
032M	1	1	1	1	242T11512R	Spring Rec Lever	138M	4	4	4	4	59020405G9	Washer Under Reel Cap
033M	1	1	1	1	153T125010	Joint Spring Rec Switch	139M	1	1	1	1	153T058010	Gear Take Up Clutch w/Shaft
034M	1	1	1	1	51821702S0	P.H.M. Screw P1.7×2	140M	1	1	1	1	59020402G0	Washer Under Take Up Clutch
035M	1	1	1	1	64001500LR	RG Ring, E Rec Lever	141M	1	1	1	1	153T058020	Gear Supply Gear w/Shaft
037M	1	1	1	1	251T35401R	Lever Play	142M	1	1	1	1	59020402G9	Washer Under Supply
038M	1	1	1	1	251T11511R	Spring Play Lever	143M	1	1	1	1	242T05811R	Gear FF
039M	1	1	1	1	251T11512R	Spring Play Lever Head Plate	144M	1	1	1	1	59020402G9	Washer Under FF Gear
040M	2	2	2	2	64001500LR	RG Ring Play Lever	145M	1	1	1	1	251T11411R	Stopper
042M	1	1	1	1	251T35402R	Lever REW	146M	1	1	1	1	242T26210R	Pulley Take Up
043M	1	1	1	1	251T11513R	Spring REW Lever	147M	1	1	1	1	59163202G9	Washer Take Up Pulley
045M	1	1	1	1	251T35403R	Lever FF	148M	1	1	1	1	59123502G9	Washer Take Up Pulley
046M	1	1	1	1	242T11516R	Spring FF	149M	1	1	1	1	242T26211R	Pulley FF/REW Idler
048M	1	1	1	1	153T354510	Lever Pause (K)	150M	1	1	1	1	59163202G9	Washer Under FF/REW Idler
052M	1	1	1	1	153T002040	Arm Pause	151M	1	1	1	1	59123202G9	Washer FF/REW Idler
053M	1	1	1	1	153T115060	Spring Pause Arm	152M	1	1	1	1	242T00210R	Arm Auto Stop
054M	1	1	1	1	153T115070	Spring Pause Lever	153M	1	1	1	1	251T11412R	Stopper Auto Arm
055M	1	1	1	1	64001500LR	RG Ring Pause Lever	154M	1	1	1	1	153T115040	Spring Auto Stop Arm
056M	1	1	1	1	64000200LR	RG Ring Pause Lever	158M	4	4	4	4	51821702S0	P.H.M. Screw P1.7×2
057M	1	1	1	1	64001500LR	RG Ring Pause Arm	160M	1	1	1	1	153T115020	Spring Back Tension
059M	6	6	6	6	153T354040	Lever Button Joint	161M	1	1	1	1	51821702S0	P.H.M. Screw P1.7×2
060M	4	4	4	4	51401705PR	B.H.Tapped Screw B1.7×5	165M	1	1	1	1	153T105520	Chassis Sub (K)
061M	2	2	2	2	51381705PR	P.H.Tapped Screw P1.7×5	173M	1	1	1	1	153T121010	Link Play Auto Stop
063M	1	1	1	1	153T054010	Cam Play/Rec Lock	174M	1	1	1	1	59050805G9	Washer Auto Stop Link
064M	1	1	1	1	153T115150	Spring Play/Rec Lock Cam	175M	1	1	1	1	64000400LR	RG Ring
065M	1	1	1	1	64001500LR	RG Ring Play/Rec Lock Cam	176M	1	1	1	1	153T115030	Spring Solenoid Coil
066M	1	1	1	1	153T054500	Cam FF/REW Lock Cam (K)	177M	1	1	1	1	51822603S0	P.H.M. Screw P2.6×2
069M	1	1	1	1	251T06010R	Clinger Magnet Coil	178M	1	1	1	1	153T160020	Bracket Motor
070M	1	1	1	1	64001500LR	RE Ring Clinger	179M	1	1	1	1	153T262010	Pulley Motor
071M	1	1	1	1	251T11514R	Spring FF/REW Lock Cam	180M	2	2	2	2	51821725SR	P.H.M. Screw P1.7×2.5
072M	1	1	1	1	64000200LR	RG Ring Cam	181M	2	2	2	2	51442604A0	L. Washer
075M	1	1	1	1	251T00210R	Arm Anti After Rec	182M	2	2	2	2	51302604B0	P.H. Tapped Screw P2.6×4
076M	1	1	1	1	251T11515R	Spring Anti After Rec	185M	2	2	2	2	51821703S0	P.H.M. Screw P1.7×3
077M	1	1	1	1	518217050R	P.H.M.Screw P1.7×5	186M	2	2	2	2	51820203S0	P.H.M. Screw P2×3
080M	1	1	1	1	242T11518R	Spring Cue/Rev Arm	190M	1	1	1	1	153T160040	Bracket Button Holder
081M	1	1	1	1	242T11512R	Spring Rec Safty Arm	191M	1	1	1	1	51820203S0	P.H.M. Screw P2×3
083M	1	1	1	1	51821703S0	P.H.M. Screw P1.7×3	192M	1	1	1	1	51821703S0	P.H.M. Screw P1.7×3
085M	1	1	1	1	51820235SR	P.H.M. Screw P2×3.5	195M	1	1	1	1	153T271500	Holder Button (K)
089M	1	1	1	1	153T105510	Chassis Head Plate (K)	198M	1	1	1	1	153T112130	Shaft Button
093M	1	1	1	1	153T115050	Spring Pinch Roller	199M	1	1	1	1	153T270010	Button Stop/Eject
094M	1	1	1	1	242T11519R	Spring Azimuth	200M	1	1	1	1	153T270020	Button Play
095M	1	1	1	1	54020201S0	Flat Washer, P.	201M	2	2	2	2	153T270030	Button FF and REW
096M	1	1	1	1	51100205S0	B.H.M.Screw B2×5	202M	1	1	1	1	153T270040	Button Pause
097M	1	1	1	1	51100203S0	B.H.M.Screw B2×3	203M	1	1	1	1	153T270050	Button Rec
098M	1	1	1	1	251T00511R	Clamper Head Wire	205M	1	1	1	1	64000200LR	RG Ring
099M	2	2	2	2	51100245S0	B.H.M.Screw B2×4.5	206M	2	2	2	2	51820203S0	P.H.M. Screw P2×3
103M	3	3	3	3	64001500LR	RG Ring Head Plate	209M	1	1	1	1	153T160010	Bracket Coil and Switch Bracket
106M	1	1	1	1	153T002010	Arm Pause	210M	1	1	1	1	51040208A0	F.H.M. Screw F2×8
107M	1	1	1	1	153T255500	Pinch Roller (K)	212M	2	2	2	2	51821404SR	P.H.M. Screw P1.4×4
111M	1	1	1	1	64001500LR	RG Ring	213M	1	1	1	1	51041703SR	F.H.M. Screw F1.7×3
113M	1	1	1	1	242T35416R	Lever Cue/Review Lever	214M	1	1	1	1	53111703ER	Hexagon Nut
114M	2	2	2	2	64001500LR	RG Ring	215M	1	1	1	1	251T00511R	Clamper
116M	1	1	1	1	251T258010	Hook Cassette Door	218M	1	1	1	1	153T264020	Belt Counter
117M	1	1	1	1	251T11517R	Spring Hook	219M	1	1	1	1	153T273010	Flywheel Main
118M	2	2	2	2	64001500LR	RG Ring	220M	1	1	1	1	153T273020	Flywheel Dummy
120M	1	1	1	1	153T115010	Spring Cassette Back	221M	2	2	2	2	59163202G9	Washer Under Flywheel

- (U):for USA
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REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P				U	N	A	P		
222M	1	1	1	1	59143502GR	Washer Oil Defence							
223M	1	1	1	1	242T26412R	Belt							
224M	1	1	1	1	153T264010	Belt Main							
228M	1	1	1	1	153T160030	Bracket Flywheel							
229M	2	2	2	2	153T104010	Retainer							
230M	2	2	2	2	153T164010	Adjuster Flywheel Thrust							
231M	4	4	4	4	51820203SR	P.H.M. Screw P2×3							
233M	1	1	1	1	51821404SR	P.H.M. Screw P1.4×5							
234M	2	2	2	2	51042604S0	F.H.M. Screw F2.6×4							
235M	1	1	1	1	51442604A0	L. Washer							
237M	1	1	1	1	153T053010	Cover Mecha							
238M	4	4	4	4	51821702SR	P.H.M.Screw P1.7×2							
500M	1	1	1	1	153T109010	Shield Motor							
H071	1	1	1	1	LH42851160	Rec. Play Head							
H072	1	1	1	1	LH31000570	Erase Head							
H073	1	1	1	1	153T052010	Counter							
L071	1	1	1	1	ME0014004R	Solenoid Coil Auto REW							
L072	1	1	1	1	ME10180010	Solenoid Coil Auto Stop							
M071	1	1	1	1	MM00450020	Motor							
S071	1	1	1	1	SM0101097R	Switch Motor							
S072	1	1	1	1	SM0101114R	Switch FF/REW							
S073	2	2	2	2	SM0101115R	Switch Play and Stop							
S074	1	1	1	1	SM0101115R	Switch Pause							

16.96

[H01-99] PACKING MATERIALS



- (U):for USA
- (N):for Europe
- (A):for Australia
- (P):for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P				U	N	A	P		
001S	1	1	1	1	153T809010	Cushion Top	Z001	1	1	1	1	153T831010	Carrying Case
002S	1	1	1	1	153T809020	Cushion Bottom	Z002	1	1	1	1	153T156010	Strap
003S	1				153T801020	Packing Case	Z003	1	1	1	1	153T831020	Carrying Case
004S	1	1	1	1	153T801010	Packing Case	Z004	1				AA12005010	A.C. Adaptor 4.5V 0.7A
005S	1	1	1	1	9013025010	Polyethy Bag	Z004		1			AA90005010	A.C. Adaptor 4.5V 0.7A
					153T803010	Partitioner	Z004			1		AA90005020	A.C. Adaptor 4.5V 0.7A
							Z004				1	AA90005030	A.C. Adaptor 4.5V 0.7A
001T	1				153T851210	User's Manual							
001T		1	1	1	153T851310	User's Manual							
002T	1				153T851220	User's Manual Spec Flysheet							
002T		1	1	1	153T851320	User's Manual Spec Flysheet							
003T	1				2818854020	Warranty Card							
003T		1			153T856010	Circuit Diagram							
003T			1		9631000090	Warranty Card							
003T				1	416H854010	Warranty Card							
004T	1				180T854010	Warranty Card							
005T	2				9526019020	Serial No. Card							
005T		4			9526019060	Serial No. Card							
005T			4		9526019030	Serial No. Card							
005T				2	9526019050	Serial No. Card							

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## 8. ELECTRICAL PARTS LIST

- (U):for USA
- (N):for Europe
- (A):for Australia
- (P):for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P				U	N	A	P		
P100	1	1	1	1	WB153T1510 ZZ153T1510	P100-Rec/Play Amp Circuit Board P.W. Board Rec/Play Amp P.W. Board Assembly	C152	1	1	1	1	EJ47502510	Elect 4.7μF 25V
	1	1	1	1			C153	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C101	1	1	1	1	DD45471300	Ceramic 470pF ± 5%	C154	1	1	1	1	EJ47600610	Elect 47μF 6.3V
C102	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C155	1	1	1	1	DK16102300	Ceramic 1000pF ± 10%
C103	1	1	1	1	DD45101300	Ceramic 100pF ± 5%	C157	1	1	1	1	DK46102300	Ceramic 100pF ± 10%
C104	1	1	1	1	EJ10700610	Elect 100μF 6.3V	C158	1	1	1	1	DF15122310	Film 1200pF ± 5%
C105	1	1	1	1	DF15273310	Film 0.027μF ± 5%	C159	1	1	1	1	DF15224350	Film 0.22μF ± 5%
C106	1	1	1	1	EJ10505010	Elect 1μF 50V	C161	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C107	1	1	1	1	DF15223310	Film 0.022μF ± 5%	C201	1	1	1	1	DD45471300	Ceramic 470pF ± 5%
C108	1	1	1	1	EJ10505010	Elect 1μF 50V	C202	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C109	1	1	1	1	DF15102310	Film 1000pF ± 5%	C203	1	1	1	1	DD45101300	Ceramic 100pF ± 5%
C110	1	1	1	1	EJ22405010	Elect 0.22μF 50V	C204	1	1	1	1	EJ10700610	Elect 100μF 6.3V
C111	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C205	1	1	1	1	DF15273310	Film 0.027μF ± 5%
C112	1	1	1	1	DK46102300	Ceramic 1000pF ± 10%	C206	1	1	1	1	EJ10505010	Elect 1μF 50V
C113	1	1	1	1	DD45470300	Ceramic 47pF ± 5%	C207	1	1	1	1	DF15223310	Film 0.022μF ± 5%
C114	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C208	1	1	1	1	EJ10505010	Elect 1μF 50V
C115	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C209	1	1	1	1	DF15102310	Film 1000pF ± 5%
C116	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C210	1	1	1	1	EJ22405010	Elect 0.22μF 50V
C117	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C211	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C118	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C212	1	1	1	1	DK46102300	Ceramic 1000pF ± 10%
C119	1	1	1	1	DF15123310	Film 0.012μF ± 5%	C213	1	1	1	1	DD45470300	Ceramic 47pF ± 5%
C120	1	1	1	1	DF15103310	Film 0.01μF ± 5%	C214	1	1	1	1	EJ10505010	Elect 1μF 50V
C121	1	1	1	1	DF15153310	Film 0.015μF ± 5%	C215	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C122	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C216	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C123	1	1	1	1	EJ10601610	Elect 10μF 16V	C217	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C124	1	1	1	1	EJ10601610	Elect 10μF 16V	C218	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C125	1	1	1	1	DD45101300	Ceramic 100pF ± 5%	C219	1	1	1	1	DF15123310	Film 0.012μF ± 5%
C126	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C220	1	1	1	1	DF15103310	Film 0.01μF ± 5%
C128	1	1	1	1	EJ10505010	Elect 1μF 50V	C221	1	1	1	1	DF15153310	Film 0.015μF ± 5%
C129	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C222	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C130	1	1	1	1	DK46102300	Ceramic 1000pF ± 10%	C223	1	1	1	1	EJ10601610	Elect 10μF 16V
C131	1	1	1	1	DD45101300	Ceramic 100pF ± 5%	C224	1	1	1	1	EJ10601610	Elect 10μF 16V
C132	1	1	1	1	EJ47600610	Elect 47μF 6.3V	C225	1	1	1	1	DD45101300	Ceramic 100pF ± 5%
C133	1	1	1	1	EJ47600610	Elect 47μF 6.3V	C226	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C134	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C228	1	1	1	1	EJ10505010	Elect 1μF 50V
C135	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C229	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C136	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C230	1	1	1	1	DK46102300	Ceramic 1000pF ± 10%
C137	1	1	1	1	DK46562300	Ceramic 5600pF ± 10%	C231	1	1	1	1	DD45101300	Ceramic 1000pF ± 5%
C138	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C232	1	1	1	1	EJ47600610	Elect 47μF 6.3V
C139	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C233	1	1	1	1	EJ47600610	Elect 47μF 6.3V
C140	1	1	1	1	DK46102300	Ceramic 1000pF ± 10%	C234	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C141	1	1	1	1	DK46102300	Ceramic 1000pF ± 10%	C235	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C142	1	1	1	1	DF15333310	Film 0.033μF ± 5%	C236	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C143	1	1	1	1	DF15472310	Film 4700pF ± 5%	C237	1	1	1	1	DK46562300	Ceramic 5600pF ± 10%
C144	1	1	1	1	EJ47502510	Elect 4.7μF 25V	C238	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C145	1	1	1	1	DF15103310	Film 0.01μF ± 5%	C239	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C146	1	1	1	1	DF15333310	Film 0.033μF ± 5%	C240	1	1	1	1	DK46102300	Ceramic 1000pF ± 10%
C147	1	1	1	1	DF15104350	Film 0.1μF ± 5%	C241	1	1	1	1	DK46102300	Ceramic 1000pF ± 10%
C148	1	1	1	1	DK46102300	Ceramic 1000pF ± 10%	C242	1	1	1	1	DF15333310	Film 0.033μF ± 5%
C149	1	1	1	1	EJ10601610	Elect 10μF 16V	C243	1	1	1	1	DF15472310	Film 4700pF ± 5%
C150	1	1	1	1	DK46102300	Ceramic 1000pF ± 10%	C244	1	1	1	1	EJ47502510	Elect 4.7μF 25V
C151	1	1	1	1	EJ22405010	Elect 0.22μF 50V	C245	1	1	1	1	DF15103310	Film 0.01μF ± 5%
							C246	1	1	1	1	DF15333310	Film 0.033μF ± 5%
							C247	1	1	1	1	DF15104350	Film 0.1μF ± 5%
							C248	1	1	1	1	DK46102300	Ceramic 1000pF ± 10%
							C249	1	1	1	1	EJ10601610	Elect 10μF 16V
							C250	1	1	1	1	DK46102300	Ceramic 1000pF ± 10%
							C251	1	1	1	1	EJ22405010	Elect 0.22μF 50V
							C252	1	1	1	1	EJ47502510	Elect 4.7μF 25V
							C253	1	1	1	1	EJ47502510	Elect 4.7μF 25V



- (U):for USA
- (N):for Europe
- (A):for Australia
- (P):for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
C254	1	1	1	1	EJ47600610	Elect 47 $\mu$ F 6.3V
C255	1	1	1	1	DF16102300	Ceramic 1000pF $\pm$ 10%
C257	1	1	1	1	DK46102300	Ceramic 1000pF $\pm$ 10%
C258	1	1	1	1	DF15122300	Film 1200pF $\pm$ 5%
C259	1	1	1	1	DF15224350	Film 0.22 $\mu$ F $\pm$ 5%
C261	1	1	1	1	EJ47502510	Elect 4.7 $\mu$ F 25V
CA01	1	1	1	1	EJ33601010	Elect 33 $\mu$ F 10V
CA02	1	1	1	1	EJ47601010	Elect 47 $\mu$ F 10V
CA03	1	1	1	1	EA10701030	Elect 100 $\mu$ F 10V
CA04	1	1	1	1	EJ22700410	Elect 220 $\mu$ F 4V
CA05	1	1	1	1	EJ10700610	Elect 100 $\mu$ F 6.3V
CA06	1	1	1	1	EJ47601010	Elect 100 $\mu$ F 10V
CA07	1	1	1	1	EJ47601610	Elect 47 $\mu$ F 16V
CA08	1	1	1	1	DK46102300	Ceramic 1000pF $\pm$ 10%
CA09	1	1	1	1	EJ47601610	Elect 47 $\mu$ F 16V
CA10	1	1	1	1	EJ10700610	Elect 100 $\mu$ F 6.3V
CA11	1	1	1	1	EA10701030	Elect 100 $\mu$ F 10V
CA12	1	1	1	1	EJ10700610	Elect 100 $\mu$ F 6.3V
△ CA13	1	1	1	1	EJ47502510	Elect 4.7 $\mu$ F 25V
CA14	1	1	1	1	DK46222300	Ceramic 0.022 $\mu$ F $\pm$ 10%
CA15	1	1	1	1	DK46222300	Ceramic 0.022 $\mu$ F $\pm$ 10%
△ CA16	1	1	1	1	EA22701630	Elect 220 $\mu$ F 16V
△ CA17	1	1	1	1	EA10801630	Elect 1000 $\mu$ F 16V
CA18	1	1	1	1	DK46103300	Ceramic 0.01 $\mu$ F $\pm$ 10%
CA19	1	1	1	1	EJ10700610	Elect 100 $\mu$ F 6.3V
CA20	1	1	1	1	EJ33600610	Elect 33 $\mu$ F 6.3V
CA22	1	1	1	1	EA47701630	Elect 470 $\mu$ F 16V
CA23	1	1	1	1	EJ47601610	Elect 47 $\mu$ F 16V
CA24	1	1	1	1	EJ47502510	Elect 4.7 $\mu$ F 25V
CA26	1	1	1	1	EA33700630	Elect 330 $\mu$ F 6.3V
CA27	1	1	1	1	EJ47502510	Elect 4.7 $\mu$ F 25V
CA30	1	1	1	1	EA47601030	Elect 47 $\mu$ F 10V
CA31	1	1	1	1	DK16102300	Ceramic 1000pF $\pm$ 10%
CA50	1	1	1	1	EJ47502510	Elect 4.7 $\mu$ F 25V
<b>P100-RESISTORS</b> (All Resistors are $\pm$ 5% & 1/8W Chip.)						
R101	1	1	1	1	Ri05103180	10k $\Omega$
R102	1	1	1	1	Ri05103180	10k $\Omega$
R103	1	1	1	1	Ri05154180	150k $\Omega$
R104	1	1	1	1	Ri05101180	100 $\Omega$
R105	1	1	1	1	Ri05154180	150k $\Omega$
R107	1	1	1	1	Ri05562180	5.6k $\Omega$
R108	1	1	1	1	Ri05332180	3.3k $\Omega$
R109	1	1	1	1	Ri05332180	3.3k $\Omega$
R110	1	1	1	1	RA01030490	10k $\Omega$ (B) Trimming
R111	1	1	1	1	Ri05103180	10k $\Omega$
R112	1	1	1	1	Ri05562180	5.6k $\Omega$
R113	1	1	1	1	Ri05152180	1.5k $\Omega$
R114	1	1	1	1	Ri01532180	15k $\Omega$
R115	1	1	1	1	Ri05222180	2.2k $\Omega$
R117	1	1	1	1	Ri05473180	47k $\Omega$
R118	1	1	1	1	Ri05152180	1.5k $\Omega$
R119	1	1	1	1	RA01030490	10k $\Omega$ (B) Trimming
R120	1	1	1	1	Ri05103180	10k $\Omega$
R121	1	1	1	1	Ri05102180	1k $\Omega$
R122	1	1	1	1	Ri05824180	820k $\Omega$

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
R123	1	1	1	1	Ri05101180	100 $\Omega$
R124	1	1	1	1	Ri05472180	4.7k $\Omega$
R125	1	1	1	1	Ri05682180	6.8k $\Omega$
R126	1	1	1	1	Ri05682180	6.8k $\Omega$
R127	1	1	1	1	Ri05392180	3.9k $\Omega$
R128	1	1	1	1	RA01040300	100k $\Omega$ (B) Trimming
R129	1	1	1	1	Ri05154180	150k $\Omega$
R130	1	1	1	1	Ri05154180	150k $\Omega$
R131	1	1	1	1	Ri05103180	10k $\Omega$
R132	1	1	1	1	Ri05103180	10k $\Omega$
R133	1	1	1	1	Ri05561180	560 $\Omega$
R134	1	1	1	1	Ri05102180	1k $\Omega$
R135	1	1	1	1	Ri05274180	270k $\Omega$
R136	1	1	1	1	Ri05225180	2.2M $\Omega$
R137	1	1	1	1	Ri05103180	10k $\Omega$
R138	1	1	1	1	Ri05331180	330 $\Omega$
R140	1	1	1	1	Ri05823180	82k $\Omega$
R141	1	1	1	1	Ri05822180	8.2k $\Omega$
R142	1	1	1	1	Ri05104180	100k $\Omega$
R143	1	1	1	1	Ri05222180	2.2k $\Omega$
R144	1	1	1	1	Ri05331180	330 $\Omega$
R145	1	1	1	1	Ri05222180	2.2k $\Omega$
R146	1	1	1	1	Ri05392180	3.9k $\Omega$
R147	1	1	1	1	Ri05331180	330 $\Omega$
R148	1	1	1	1	Ri05103180	10k $\Omega$
R149	1	1	1	1	Ri05152180	1.5k $\Omega$
R150	1	1	1	1	Ri05682180	6.8k $\Omega$
R151	1	1	1	1	Ri05152180	1.5k $\Omega$
R153	1	1	1	1	Ri05824180	820k $\Omega$
R154	1	1	1	1	Ri05561180	560 $\Omega$
R155	1	1	1	1	Ri05272180	2.7k $\Omega$
R156	1	1	1	1	Ri05472180	4.7k $\Omega$
R157	1	1	1	1	Ri05332180	3.3k $\Omega$
R158	1	1	1	1	Ri05473180	47k $\Omega$
R159	1	1	1	1	Ri05224180	220k $\Omega$
R160	1	1	1	1	Ri05824180	820k $\Omega$
R161	1	1	1	1	Ri05103180	10k $\Omega$
R162	1	1	1	1	GD05333140	33k $\Omega$ 1/4W
R163	1	1	1	1	GD05152140	1.5k $\Omega$ 1/4W
R164	1	1	1	1	Ri05561180	560 $\Omega$
R166	1	1	1	1	Ri05220180	22 $\Omega$
R167	1	1	1	1	Ri05103180	10k $\Omega$
R168	1	1	1	1	Ri05273180	27k $\Omega$
R169	1	1	1	1	Ri05101180	100 $\Omega$
R170	1	1	1	1	Ri05473180	47k $\Omega$
R171	1	1	1	1	Ri05392180	3.9k $\Omega$
R172	1	1	1	1	Ri05824180	820k $\Omega$
R173	1	1	1	1	Ri05222180	2.2k $\Omega$
R180	1	1	1	1	Ri05472180	4.7k $\Omega$
R182	1	1	1	1	Ri05473180	47k $\Omega$
R190	1	1	1	1	Ri05103180	10k $\Omega$
R191	1	1	1	1	Ri05824180	820k $\Omega$
R201	1	1	1	1	Ri05103180	10k $\Omega$
R202	1	1	1	1	Ri05103180	10k $\Omega$
R203	1	1	1	1	Ri05154180	150k $\Omega$
R204	1	1	1	1	Ri05101180	100 $\Omega$
R205	1	1	1	1	Ri05154180	150k $\Omega$
R207	1	1	1	1	Ri05562180	5.6k $\Omega$
R208	1	1	1	1	Ri05332180	3.3k $\Omega$
R209	1	1	1	1	Ri05332180	3.3k $\Omega$

- (U):for USA
- (N):for Europe
- (A):for Australia
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REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	
	U	N	A	P				U	N	A	P			
R210	1	1	1	1	RA01030490	10kΩ (B) Trimming	R271	1	1	1	1	Ri05392180	3.9kΩ	
R211	1	1	1	1	Ri05103180	10kΩ	R272	1	1	1	1	Ri05824180	820kΩ	
R212	1	1	1	1	Ri05562180	5.6kΩ	R273	1	1	1	1	Ri05222180	2.2kΩ	
R213	1	1	1	1	Ri05152180	1.5kΩ								
R214	1	1	1	1	Ri05153180	15kΩ	R280	1	1	1	1	Ri05472180	4.7kΩ	
R215	1	1	1	1	Ri05222180	2.2kΩ	R282	1	1	1	1	Ri05473180	47kΩ	
R217	1	1	1	1	Ri05473180	47kΩ	R290	1	1	1	1	Ri05103180	10kΩ	
R218	1	1	1	1	Ri05152180	1.5kΩ	R291	1	1	1	1	Ri05824180	820kΩ	
R219	1	1	1	1	RA01030490	10kΩ (B) Trimming								
R220	1	1	1	1	Ri05102180	1kΩ	RA01	1	1	1	1	Ri05224180	220kΩ	
							RA02	1	1	1	1	Ri05273180	27kΩ	
R221	1	1	1	1	Ri05102180	1kΩ	RA03	1	1	1	1	Ri05104180	100kΩ	
R222	1	1	1	1	Ri05824180	820kΩ	RA04	1	1	1	1	Ri05104180	100kΩ	
R223	1	1	1	1	Ri05101180	100Ω	RA05	1	1	1	1	Ri05104180	100kΩ	
R224	1	1	1	1	Ri05472180	4.7kΩ	RA06	1	1	1	1	Ri05104180	100kΩ	
R225	1	1	1	1	Ri05682180	6.8kΩ	RA07	1	1	1	1	Ri05104180	100kΩ	
R226	1	1	1	1	Ri05682180	6.8kΩ	RA08	1	1	1	1	Ri05104180	100kΩ	
R227	1	1	1	1	Ri05392180	3.9kΩ	RA09	1	1	1	1	Ri04103180	10kΩ	
R228	1	1	1	1	RA01040300	100kΩ (B) Trimming	RA 11	1	1	1	1	Ri05273180	27kΩ	
R229	1	1	1	1	Ri05154180	150kΩ								
R230	1	1	1	1	Ri05154180	150kΩ	RA 12	1	1	1	1	Ri05153180	15kΩ	
							RA 13	1	1	1	1	Ri05562180	5.6kΩ	
R231	1	1	1	1	Ri05103180	10kΩ	RA 14	1	1	1	1	Ri05273180	27kΩ	
R232	1	1	1	1	Ri05103180	10kΩ	RA 16	1	1	1	1	Ri05561180	560Ω	
R233	1	1	1	1	Ri05561180	560Ω	RA 17	1	1	1	1	Ri05272180	2.7kΩ	
R234	1	1	1	1	Ri05102180	1kΩ	RA 18	1	1	1	1	Ri05472180	4.7kΩ	
R235	1	1	1	1	Ri05274180	270kΩ	RA 19	1	1	1	1	Ri05393180	39kΩ	
R236	1	1	1	1	Ri05225180	2.2MΩ	RA 20	1	1	1	1	Ri05682180	6.8kΩ	
R237	1	1	1	1	Ri05103180	10kΩ	RA 21	1	1	1	1	Ri05222180	2.2kΩ	
R238	1	1	1	1	Ri05331180	330Ω	RA 22	1	1	1	1	Ri05822180	8.2kΩ	
R240	1	1	1	1	Ri05823180	82kΩ								
R241	1	1	1	1	Ri05822180	8.2kΩ	RA 24	1	1	1	1	Ri05331180	330Ω	
							RA 25	1	1	1	1	RA01040300	100kΩ (B) Trimming	
R242	1	1	1	1	Ri05104180	100kΩ	RA 27	1	1	1	1	Ri05103180	10kΩ	
R243	1	1	1	1	Ri05222180	2.2kΩ	RA 28	1	1	1	1	Ri05103180	10kΩ	
R244	1	1	1	1	Ri05331180	330Ω	RA 29	1	1	1	1	Ri05473180	47kΩ	
R245	1	1	1	1	Ri05222180	2.2kΩ	RA 30	1	1	1	1	Ri05332180	3.3kΩ	
R246	1	1	1	1	Ri05392180	3.9kΩ	RA 31	1	1	1	1	Ri05470180	47Ω	
R247	1	1	1	1	Ri05331180	330Ω	RA 32	1	1	1	1	Ri05102180	1kΩ	
R248	1	1	1	1	Ri05103180	10kΩ	RA 33	1	1	1	1	Ri05103180	10kΩ	
R249	1	1	1	1	Ri05473180	47kΩ	RA 34	1	1	1	1	Ri05104180	100kΩ	
R250	1	1	1	1	Ri05682180	6.8kΩ								
R251	1	1	1	1	Ri05152180	1.5kΩ	RA 35	1	1	1	1	Ri05104180	100kΩ	
							RA 36	1	1	1	1	Ri05331180	330Ω	
R253	1	1	1	1	Ri05824180	820kΩ	RA 37	1	1	1	1	Ri05222180	2.2kΩ	
R254	1	1	1	1	Ri05561180	560Ω	RA 38	1	1	1	1	Ri05101180	47Ω	
R255	1	1	1	1	Ri05272180	2.7kΩ	RA 39	1	1	1	1	GD05470140	47Ω 1/4W	
R256	1	1	1	1	Ri05472180	4.7kΩ	RA 40	1	1	1	1	GD05470140	47Ω 1/4W	
R257	1	1	1	1	Ri05332180	3.3kΩ	RA 41	1	1	1	1	Ri05473180	47kΩ	
R258	1	1	1	1	Ri05473180	47kΩ	RA 42	1	1	1	1	Ri05473180	47kΩ	
R259	1	1	1	1	Ri05224180	220kΩ	RA 45	1	1	1	1	Ri05103180	10kΩ	
R260	1	1	1	1	Ri05824180	820kΩ	RA 46	1	1	1	1	Ri05047180	4.7Ω	
R261	1	1	1	1	Ri05103180	10kΩ								
R262	1	1	1	1	GD05333140	33kΩ 1/4W	RA 47	1	1	1	1	Ri05473180	47kΩ	
							RA 48	1	1	1	1	Ri05473180	47kΩ	
R263	1	1	1	1	GD05152140	1.5kΩ 1/4W								
R264	1	1	1	1	Ri05561180	560Ω	RV01	1	1	1	1	RM01030240	10kΩ (B) Variable	
R266	1	1	1	1	Ri05220180	22Ω	RV02	1	1	1	1	RD05030190	50kΩ (B) Variable	
R267	1	1	1	1	Ri05103180	10kΩ								
R268	1	1	1	1	Ri05273180	27kΩ								
R269	1	1	1	1	Ri05101180	100Ω								
R270	1	1	1	1	Ri05473180	47kΩ								

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REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
<b>P100-SEMICONDUCTORS</b>						
Q101	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q102	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q103	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q104	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q105	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
Q106	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
Q107	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q108	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q109	1	1	1	1	HZ20001020	Diode MA151WK Chip
Q110	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q111	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
Q112	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
Q113	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q114	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q115	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
Q116	1	1	1	1	HZ20001020	Diode MA151WK Chip
Q117	1	1	1	1	HZ20001020	Diode MA151WK Chip
Q118	1	1	1	1	HZ20001020	Diode MA151WK Chip
Q119	1	1	1	1	HX413281R0	Transistor 2SD1328 (R) Chip
Q201	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q202	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q203	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q204	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q205	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
Q206	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
Q207	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q208	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q209	1	1	1	1	HZ20001020	Diode MA151WK Chip
Q210	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q211	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
Q212	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
Q213	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q214	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
Q215	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
Q216	1	1	1	1	HZ20001020	Diode MA151WK Chip
Q217	1	1	1	1	HZ20001020	Diode MA151WK Chip
Q218	1	1	1	1	HZ20001020	Diode MA151WK Chip
Q219	1	1	1	1	HX413281R0	Transistor 2SD1328 (R)
QA01	1	1	1	1	HC10053010	IC HA12051
QA02	1	1	1	1	HC10040210	IC BA1102F
QA03	1	1	1	1	HC10038210	IC BA5208F
QA04	1	1	1	1	HC406600Z0	IC 4066
QA05	1	1	1	1	HC10017090	IC NJM2043DD
QA07	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
QA08	1	1	1	1	HX111621A0	Transistor 2SA1162 Chip
QA09	1	1	1	1	HZ20001020	Diode MA151WK Chip
QA10	1	1	1	1	HZ20001020	Diode MA151WK Chip
QA16	1	1	1	1	HZ20001020	Diode MA151WK Chip
△ QA17	1	1	1	1	HT313831D0	Transistor 2SC1383 (S)
QA18	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
QA19	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
QA20	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
QA21	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
QA22	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
QA23	1	1	1	1	BA20002210	Transistor DTC124 SMT Chip
QA24	1	1	1	1	HT318462B0	Transistor 2SC1846 (R,S)
QA25	1	1	1	1	HD30002020	Zener MA1039
QA26	1	1	1	1	HZ20001020	Diode MA151WK Chip

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
QA27	1	1	1	1	HZ20001020	Diode MA151WK Chip
QA28	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
QA29	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
△ QA30	1	1	1	1	HT318462B0	Transistor 2SC1846 (F,R)
△ QA31	1	1	1	1	HD20001000	Diode 1S1555
△ QA32	1	1	1	1	HD30050060	Zener RD15EB3
QA33	1	1	1	1	HZ20001020	Diode MA151WK Chip
QA35	1	1	1	1	HX327121A0	Transistor 2SC2712 (G) Chip
QA36	1	1	1	1	BA20002210	Transistor DTC124 (S) Chip
QA37	1	1	1	1	BA20002210	Transistor DTC124 (S) Chip
QA38	1	1	1	1	HX111621A0	Transistor 2SA1162 Chip
QA39	1	1	1	1	HX111621A0	Transistor 2SA1162 Chip
QA40	1	1	1	1	HD20001000	Diode 1S1555
QA41	1	1	1	1	HZ20001020	Diode MA151WK Chip
QA45	1	1	1	1	HX111621A0	Transistor 2SA1162 (G) Chip
QA46	1	1	1	1	HZ20001020	Diode MA151WK Chip
<b>P100-MISCELLANEOUS</b>						
J101	1	1	1	1	YP06002420	Plug (6P) R/P Head
J102	1	1	1	1	BY01130010	Jack DIN/RCA
J103	1	1	1	1	YJ01002280	Jack Left Mic
J104	1	1	1	1	YJ01002280	Jack Right Mic
J105	1	1	1	1	YJ01002280	Jack Head Phone
J106	1	1	1	1	YP06002370	Plug (2P) Erase Head
J107	1	1	1	1	YJ06002550	Jack (5P) OSC
J108	1	1	1	1	YJ04000840	Jack DC
J109	1	1	1	1	YJ06003050	Jack (5P) SW-1
J110	1	1	1	1	YJ06003050	Jack (5P) SW-2
J111	1	1	1	1	YJ06003030	Jack (3P) Power
J112	1	1	1	1	YJ06003080	Jack (8P) MECHA PWB
J113	1	1	1	1	YJ06003020	Jack (2P) SP
J114	1	1	1	1	YJ06003050	Jack (5P) Meter
J115	1	1	1	1	YU03090260	Jumper L=90
L101	1	1	1	1	LC25650700	Choke Coil 5.6mH
L102	1	1	1	1	LC22260700	Choke Coil 22mH
L201	1	1	1	1	LC25650700	Choke Coil 5.6mH
L202	1	1	1	1	LC22260700	Choke Coil 22mH
LA01	1	1	1	1	LC14730040	Choke Coil 47μH
LA02	1	1	1	1	LC21050700	Choke Coil 1μH
S101	1	1	1	1	SPO2020730	Push Switch Limiter
S102	1	1	1	1	SPO2020740	Push Switch BATT Check
S103	1	1	1	1	SS01030040	Slide Switch MONI mode
S104	1	1	1	1	SS01020490	Slide Switch SP. MONI
S105	1	1	1	1	SPO2020740	Push Switch R/P SW
T101	1	1	1	1	LS10440060	MPX Coil Dolby NR
T201	1	1	1	1	LS10440060	MPX Coil Dolby NR
△ TA01	1	1	1	1	TC10100080	OSC Transf.

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REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P				U	N	A	P		
						<b>P200-Bias OSC Circuit Board</b>						<b>P600-Mecha Control Circuit Board</b>	
P200	1	1	1	1	WB153T1520	P.W. Board Bias OSC	P600	1	1	1	1	WC153T2310	P.W. Board Mecha Control
	1	1	1	1	ZZ153T1520	P.W. Board Assembly		1	1	1	1	ZZ153T2310	P.W. Board Assembly
						<b>P200-CAPACITORS</b>						<b>P600-CAPACITORS</b>	
CB01	1	1	1	1	CT15000030	50pF Trimming	CM01	1	1	1	1	EJ22505010	Elect 2.2µF 50V
CB02	1	1	1	1	CT15000030	50pF Trimming	CM02	1	1	1	1	EJ10701030	Elect 100µF 10V
CB03	1	1	1	1	DF15562310	Film 5600pF ±5%	CM03	1	1	1	1	EA22701630	Elect 220µF 16V
CB04	1	1	1	1	DF15153310	Film 0.015µF ±5%	CM04	1	1	1	1	EJ10601610	Elect 10µF 16V
CB05	1	1	1	1	DF15103550	Film 0.01µF ±5%	CM05	1	1	1	1	DK46102300	Ceramic 0.001µF ±10% Chip
CB06	1	1	1	1	DD45150300	Ceramic 15pF ±5% Chip	CM06	1	1	1	1	EJ10701010	Elect 100µF 10V
CB07	1	1	1	1	DD45150300	Ceramic 15pF ±5% Chip	CM07	1	1	1	1	EJ22601610	Elect 22µF 16V
						<b>P200-RESISTORS</b>	CM08	1	1	1	1	EJ22601610	Elect 22µF 16V
						(All Resistors are ±5% 1/8W Chip)	CM09	1	1	1	1	EJ10601610	Elect 10µF 16V
RB01	1	1	1	1	Ri05333180	33kΩ						<b>P600-RESISTORS</b>	
RB02	1	1	1	1	Ri05047180	4.7Ω						(All Resistors are ±5% 1/8W Chip)	
						<b>P200-SEMICONDUCTORS</b>	RM01	1	1	1	1	NB50052390	0.5Ω 1/4W 3900PPM Kanon
QB01	1	1	1	1	HT313831D0	Transistor 2SC1383 (S)	RM02	1	1	1	1	NB51032200	10kΩ 1/4W 2000PPM Kanon
						<b>P200-MISCELLANEOUS</b>	RM03	1	1	1	1	Ri05027180	2.7Ω
JB01	1	1	1	1	YP06003260	Plug (5P)	RM04	1	1	1	1	Ri05821180	820Ω
TB01	1	1	1	1	TC10100070	Bias OSC Coil	RM05	1	1	1	1	RA01020330	1kΩ (B) Trimming
						<b>P300-Mic Switch Circuit Board</b>	RM10	1	1	1	1	Ri05473180	47kΩ
P300	1	1	1	1	WB153T1530	P.W. Board Mic Switch	RM11	1	1	1	1	Ri05472180	4.7kΩ
	1	1	1	1	ZZ153T1530	P.W. Board Assembly	RM12	1	1	1	1	Ri05473180	47kΩ
						<b>P300-MISCELLANEOUS</b>	RM13	1	1	1	1	Ri05821180	820Ω
SS01	1	1	1	1	SS01030050	Slide Switch	RM14	1	1	1	1	Ri05473180	47kΩ
						<b>P400-L.E.D. Circuit Board</b>	RM15	1	1	1	1	Ri05472180	4.7kΩ
P400	1	1	1	1	WB153T1540	P.W. Board L.E.D.	RM16	1	1	1	1	Ri05101180	100Ω
	1	1	1	1	ZZ153T1540	P.W. Board Assembly	RM17	1	1	1	1	Ri05821180	820Ω
						<b>P400-SEMICONDUCTORS</b>						<b>P600-SEMICONDUCTORS</b>	
QR01	1	1	1	1	Hi10056020	L.E.D. LN228RP	QM01	1	1	1	1	HC10037020	IC AN6612
QR02	1	1	1	1	Hi10025020	L.E.D. LN228RP	QM02	1	1	1	1	HT10966100	Transistor 2SA966 (O)
						<b>P500-Rec/Play Sub Circuit Board</b>	QM09	1	1	1	1	HZ20001020	Diode MA151WK Chip
P500	1	1	1	1	WB153T1550	P.W. Board Rec/Play Sub Circuit	QM10	1	1	1	1	HD20015030	Diode DS135D
	1	1	1	1	ZZ153T1550	P.W. Board Assembly	QM11	1	1	1	1	HX413281R0	Transistor 2SD1328 (R)
						<b>P500-RESISTORS</b>	QM12	1	1	1	1	BA20002210	Transistor DTC124 SMT
Δ RP01	1	1	1	1	GJ05100010	1Ω 1W ±5%	QM13	1	1	1	1	HZ20001020	Diode MA151WK Chip
						<b>P500-MISCELLANEOUS</b>	QM14	1	1	1	1	BA20002210	Transistor DTC124 SMT
JP01	1	1	1	1	YB00060080	Connective Cord (2P)	QM15	1	1	1	1	HX413281R0	Transistor 2SD1328
							QM16	1	1	1	1	HZ20001020	Diode MA151WK Chip
							QM17	1	1	1	1	HZ20001020	Diode MA151WK Chip
							QM18	1	1	1	1	HZ20001020	Diode MA151WK Chip
							QM19	1	1	1	1	HC10039210	IC BA337
							QM20	1	1	1	1	HC10024020	IC DN6838
							QM22	1	1	1	1	HZ20001020	Diode MA151WK Chip
							QM23	1	1	1	1	HZ20001020	Diode MA151WK Chip
												<b>P600-MISCELLANEOUS</b>	
							JM01	1	1	1	1	YB00070080	Connective Cord (8P)
							JM02	1	1	1	1	YB00050120	Connective Cord (5P)

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REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
P700	1	1	1	1	WC153T2320 ZZ153T2320	P700-Control Switch Circuit Board P.W. Board Control Switch P.W. Board Assembly
<b>P700-RESISTORS</b>						
RC01	1	1	1	1	RB02020020	2kΩ (B) Variable
RC02	1	1	1	1	RB02020020	2kΩ (B) Variable
RC03	1	1	1	1	Ri05562180	5.6kΩ ± 5% 1/8W
RC04	1	1	1	1	Ri05152180	1.5kΩ ± 5% 1/8W
<b>P700-MISCELLANEOUS</b>						
JC01	1	1	1	1	YB00100900	Connective Cord (5P) L=100
JC02	1	1	1	1	YB00150430	Connective Cord (5P) L=150
JC03	1	1	1	1	YJ06003250	Jack (5P)
SC01	1	1	1	1	SS01030030	Slide Switch
SC02	1	1	1	1	SS02030250	Slide Switch
SC03	1	1	1	1	SS01020470	Slide Switch

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
P800	1	1	1	1	WC153T2330 ZZ153T2330	P800-Light Circuit Board P.W. Board Light P.W. Board Assembly
<b>P800-CAPACITORS</b>						
CL01	1	1	1	1	EJ10601610	Elect 10μF 16V
<b>P800-RESISTORS</b> (All Resistors are ±5% 1/8W Chip)						
RL01	1	1	1	1	Ri05330180	33Ω
RL02	1	1	1	1	Ri05330180	33Ω
RL03	1	1	1	1	Ri05221180	220Ω
RL04	1	1	1	1	Ri05105180	1MΩ
RL05	1	1	1	1	Ri05105180	1MΩ
RL06	1	1	1	1	Ri05103180	10kΩ
RL07	1	1	1	1	Ri05473180	47kΩ
<b>P800-SEMICONDUCTORS</b>						
QL01	1	1	1	1	Hi10017210	L.E.D. LD-7021MT
QL02	1	1	1	1	Hi10017210	L.E.D. LD-7021MT
QL03	1	1	1	1	HC401100Z0	IC 4066
QL04	1	1	1	1	HX327121A0	Transistor 2SC2712 (G)
JL01	1	1	1	1	YB00140150	Connective Cord (5P)
<b>P900-Mic Mode Circuit Board</b>						
P900	1	1	1	1	WB153T1560 ZZ153T1560	P.W. Board Mic Mode P.W. Board Assembly
S110	1	1	1	1	SS02020740	Slide Switch

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

**NOTE ON SAFETY:**  
 Symbol Δ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol Δ. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

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REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
P700	1	1	1	1	WC153T2320 ZZ153T2320	P700-Control Switch Circuit Board P.W. Board Control Switch P.W. Board Assembly
<b>P700-RESISTORS</b>						
RC01	1	1	1	1	RBO2020020	2kΩ (B) Variable
RC02	1	1	1	1	RBO2020020	2kΩ (B) Variable
RC03	1	1	1	1	Ri05562180	5.6kΩ ±5% 1/8W
RC04	1	1	1	1	Ri05152180	1.5kΩ ±5% 1/8W
<b>P700-MISCELLANEOUS</b>						
JC01	1	1	1	1	YB00100900	Connective Cord (5P) L=100
JC02	1	1	1	1	YB00150430	Connective Cord (5P) L=150
JC03	1	1	1	1	YJ06003250	Jack (5P)
SC01	1	1	1	1	SS01030030	Slide Switch
SC02	1	1	1	1	SS02030250	Slide Switch
SC03	1	1	1	1	SS01020470	Slide Switch

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
P800	1	1	1	1	WC153T2330 ZZ153T2330	P800-Light Circuit Board P.W. Board Light P.W. Board Assembly
<b>P800-CAPACITORS</b>						
CL01	1	1	1	1	EJ10601610	Elect 10μF 16V
<b>P800-RESISTORS</b> (All Resistors are ±5% 1/8W Chip)						
RL01	1	1	1	1	Ri05330180	33Ω
RL02	1	1	1	1	Ri05330180	33Ω
RL03	1	1	1	1	Ri05221180	220Ω
RL04	1	1	1	1	Ri05105180	1MΩ
RL05	1	1	1	1	Ri05105180	1MΩ
RL06	1	1	1	1	Ri05103180	10kΩ
RL07	1	1	1	1	Ri05473180	47kΩ
<b>P800-SEMICONDUCTORS</b>						
QL01	1	1	1	1	Hi10017210	L.E.D. LD-7021MT
QL02	1	1	1	1	Hi10017210	L.E.D. LD-7021MT
QL03	1	1	1	1	HC401100Z0	IC 4066
QL04	1	1	1	1	HX327121A0	Transistor 2SC2712 (G)
JL01	1	1	1	1	YB00140150	Connective Cord (5P)
<b>P900-Mic Mode Circuit Board</b>						
P900	1	1	1	1	WB153T1560 ZZ153T1560	P.W. Board Mic Mode P.W. Board Assembly
S110	1	1	1	1	SS02020740	Slide Switch

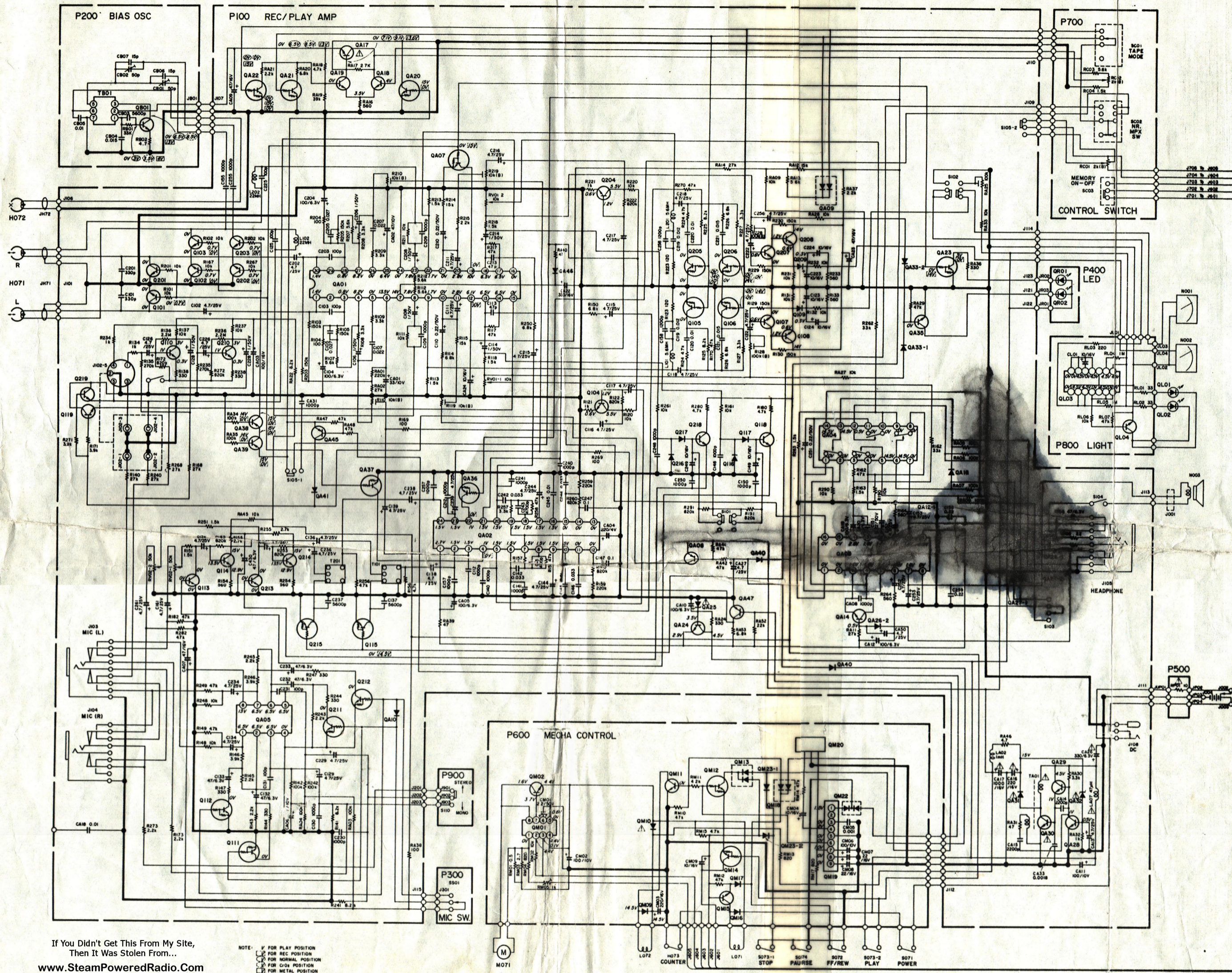
(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction

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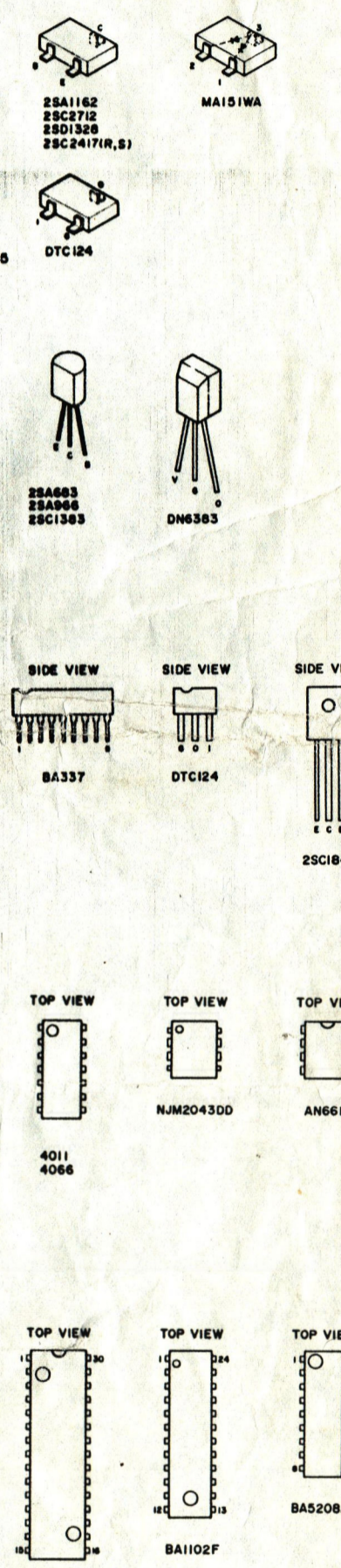
## 9. TECHNICAL SPECIFICATIONS

Tape Drive System	Single Capstan Drive
Cartridge	Philips type compact cassette
Track System	Compatible Stereo 4-track 2-channel
Tape Speed	4.75 cm/sec.
Heads	2 Head System
Composition Hi-B Permalloy	Rec/Play: Super Hard Metal Alloy
	Erase: Duel Gap Ferrite
Motor	DC Servo Motor
Overall Frequency Response at -20dB	
Normal Tape	30 Hz ~ 16 kHz
CrO <sub>2</sub> Tape	20 Hz ~ 18 kHz
Metal Tape	20 Hz ~ 20 kHz
Signal-to-Noise Ratio: with A-Curve Filter to 3%: Distortion (K3)	
Dolby B (ON)	65 dB
Dolby (OFF)	54 dB
Wow and Flutter	
DIN WTD	0.25%
Outputs	
Line Level/Impedance	500 mV/3 k ohms
Headphone Level/Impedance	100 mV/8 ohms
Input (Level at 0 VU)	
Line Sensitivity/Impedance	100 mV/50 k ohms
DIN Sensitivity/Impedance	10 mV/10 k ohms
Mic Sensitivity/Impedance	0.32 mV/10 k ohms
Fast Rewind Time	110 sec. (C-60)
Fast Forward Time	110 sec. (C-60)
Power Requirements	3 UM-1 "D" size Rechargeable Model RB430 AC Adapter 110-120V, 220-240V, AC 50, 60 Hz
Power Consumption	AC230V · 6.5W/DC4.5V · 3.5W
Dimensions	
Panel Width	227 mm
Panel Height	50 mm
Depth	165 mm
Weight	1.2 kg

Specifications and appearance are subject to change for modification without notice.



- Q101 ~ Q104, Q107, Q108, Q110, Q113, Q114, Q118
- Q201 ~ Q204, Q207, Q208, Q210, Q218
- Q213, Q214, Q206, Q213 ~ Q215
- QA18, QA19, QA28, QA29, QA34
- QA35, Q104
- HX 327121A0
- ZSC2712 (G)
  
- Q105, Q106, Q111, Q112, Q115
- Q205, Q206, Q211, Q212, Q215
- QA07, QA20 ~ QA23, QA36, QA37
- QM12, QM14, QM21
- BA 20002210
- DTC124 SMT
  
- Q109, Q116, Q117, Q209
- Q216, Q217, QA09, QA10
- QA16, QA25, QA27, QA33, QA41
- QM09, QM13, QM16
- HZ20001020
- MA181WA0
  
- QA01
- HC10083010
- HA12081
  
- QA08
- HC20042810
- BA1102F
  
- QA05
- HC20032810
- BA5208F
  
- QA04
- HC40460020
- 4066
  
- QA06
- HC10017090
- NJM204300
  
- QA09, QA38, QA39, QA45
- HX111821A0
- ZSA1162
  
- QA17, Q801
- HT31631D0
- ZSC1363B
  
- QA28
- HD30002020
- MA1038
  
- QA24, QA30
- HT318482B0
- ZSC18461F (R)
  
- QA31, QA40
- HD30001000
- 181955
  
- QA32
- HD30005000
- RD15183
  
- QL03
- HC40110020
- 4011
  
- QM01
- HC037020
- AN662
  
- QA02
- HT10964100
- ZSA090101
  
- QM10
- HD20010300
- DB1380
  
- Q119, Q219
- QM11, QM15
- HX413281R0
- ZSD132B
  
- QM19
- HC10039210
- 8A337
  
- QM20
- HC10044020
- DN6636
  
- Q801
- H110086020
- LA228RP
  
- Q802
- H110028020
- LA228RP
  
- QL01, QL02
- H1001910
- LD-7021MT
  
- QA47
- HX324172B2
- ZSC2417 (R,S)



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[www.SteamPoweredRadio.Com](http://www.SteamPoweredRadio.Com)

NOTE:   
 △ FOR PLAY POSITION  
 ○ FOR REC POSITION  
 □ FOR NORMAL POSITION  
 ⊕ FOR GND POSITION  
 ⊖ FOR METAL POSITION

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