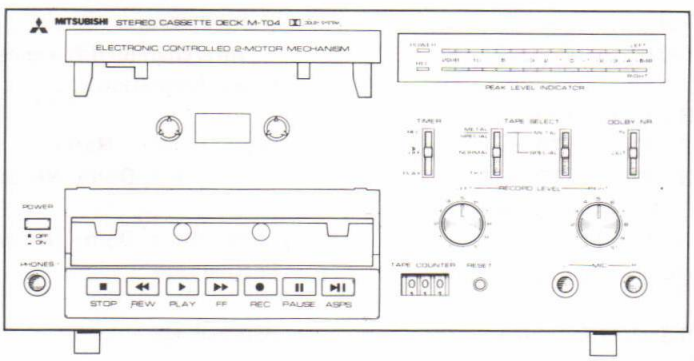
MITSUBISHI AUDIO SYSTEMS

SERVICE MANUAL

METAL ALLOY TAPE COMPATIBLE STEREO CASSETTE DECK

MODEL M-T04



CONTENTS

MITSUBISHI ELECTRIC CORPORATION

SPECIFICATIONS

Noise Reduction System	Dolby noise reduction system
Power consumption	30W
Tracks	4-track, 2-channel stereo
Magnetic Heads	
Record/Playback	Sendust alloy
Erase	Ferrite
Motors	DC servo motor 1 DC governed motor 1
Recommended types of tape	C-30, C-45, C-60 and C-90 Normal, Special, Fe-Cr, Metal
Tape speed	4.75 cm/sec (1-7/8 IPS)
Frequency Response	
Normal position	30Hz to 14kHz (40Hz to 12.5kHz ±3dB)
Metal, Fe-Cr and Special position	30Hz to 16kHz (40Hz to 14kHz±3dB)
Playback Equalization	
Normal position	3,180μsec/120μsec
Fe-Cr position	3,180μsec/ 70μsec
Special position	3,180μsec/ 70μsec
Metal position	3,180μsec/ 70μsec
Recording System	AC bias (85kHz)
Erasing System	AC erasing (85kHz)
Input Level and Impedance	
MIC	0.3mV/1.8k ohms
Line INPUT	90mV/50k ohms
Output Level and Impedance	
Line OUTPUT	440mV/22k ohms
HEADPHONES	0.8mW/8 ohms
Semiconductors employed	Transistors 69, Diodes 88, ICs 9
External dimensions (W x H x D)	270 x 140 x 246 mm (10-5/8 x 5-1/2 x 9-11/16")
Weight	6.4 kg (14-1/8 lbs)

Specifications of this unit are aubject to change without notice for improvement.
"DOLBY" and the double D symbol " DD " are trademarks of DOLBY Laboratories.

MECHANICAL PERFORMANCES

Tape speed	3,000Hz±60Hz
Tape speed fluctuation width	Within 30Hz
Wow and Flutter	0.06% (Wrms) ±0.18% (Wp-p, DIN)
FF/REW time	Within 85 sec (C-60)
Counting range of counter	445 ±20 (C-60)
Pressing force of pinch roller	330g ±50g

ELECTRICAL PERFORMANCES

Maximum output level	−7dB(V) ± 1dB	
Minimum input level	LINE IN	−21dB(V) ± 3dB
	MIC	−70dB(B) ± 3dB
Specified output level		
PB system	LINE OUT	− 7dB(V) ± 1dB
	HEADPHONES	−22dB(V) ± 2dB
General system	LINE OUT	− 7dB(V) $^{+1}_{-2}$ dB
Interchannel level difference		
PLAY system	400Hz	Within 1dB
	40Hz ~ 6.3kHz	Within 3dB
General system	400Hz	Within 1dB
	40Hz ~ 6.3kHz	Within 3dB
Minimum input level	LINE IN	Within 2dB
	MIC	Within 2dB
Level meter indicator		
PB system	0dB ± 1dB	
Interchannel difference	Within 1dB	
Level fluctuation	400Hz	Within 1dB
	40Hz ~ 6.3kHz	Within 2dB
Signal to Noise Ratio		
Weighted, Dolby NR out	56dB (RMS) 52dB (DIN)	
Weighted, Dolby NR in	64dB (RMS)	
Erasing rate	60dB, or more, cross erasure, within 2dB	
Bias leakage	LINE IN	−40dB(V), or less
	MIC	−40dB(V), or less
Crosstalk		
Interchannel	1kHz, 30dB, or more 500Hz ~ 6.3kHz, 25dB, or more	
Intertrack	125Hz, 40dB, or more 1kHz, 60dB, or more 500Hz ~ 6.3kHz, 45dB, or more	

ISASSEMBLY INSTRUCTIONS

- Refer to the Exploded View on Page 21, 22.
- When disassembling the set, be careful not to let any lubricant deposit on the rotary transmission sections. If any lubricant has deposited by mistake, thoroughly clean the desposited section with alcohol.
- Use caution not to let any foreign matter deposit on the disassembled parts, especially those mechanical parts lubricated with oil, or grease.
- In assembly, do not use screws other than those specified as it will cause cracking of molded parts, failure of fixing, or damaging of screw thread. So be sure to use only specified screws.
- Take care not to scratch or mark the front panel or meter surfaces.
- All small parts such as screws and controls should be kept together in a small container so that they won't get lost.
- Some set screws of the mechanical section are locked with screw lock paint to prevent them from loosening. When removing such screws, apply 1 or 2 drops of thinner-type solvent to the screw lock section. Wait several minutes, and after confirming that the screw lock paint has softened, unscrew the screw using a screw driver that matches the screw head. (Since the solvent will affect the plastic sections, use caution not to let any adhere.)
- **For assembly, reverse the order of the disassembly procedures and assembly the set properly.**

1. Removal of Top Cover

Remove the 4 screws (1) shown in the drawing. The cover may then be lifted upwards.

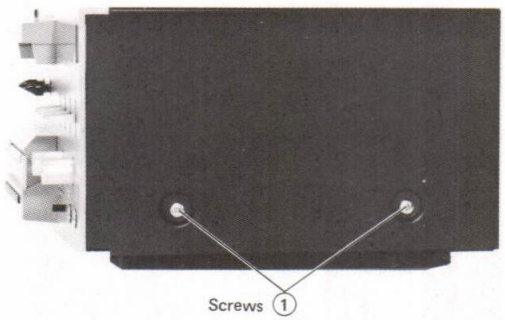


Fig. 1

2. Removal of Bottom Cover

To remove, unscrew the 4 screws (1) shown in the drawing.

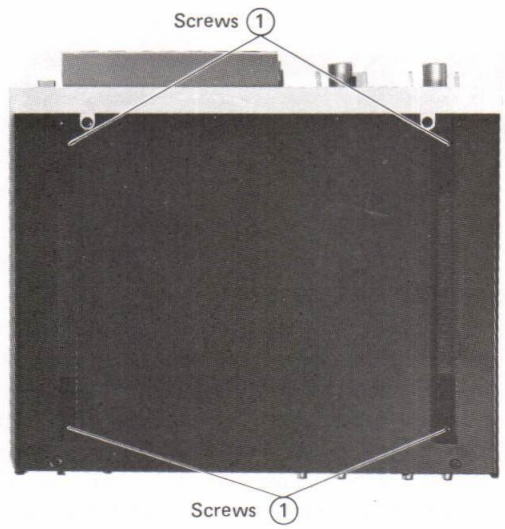
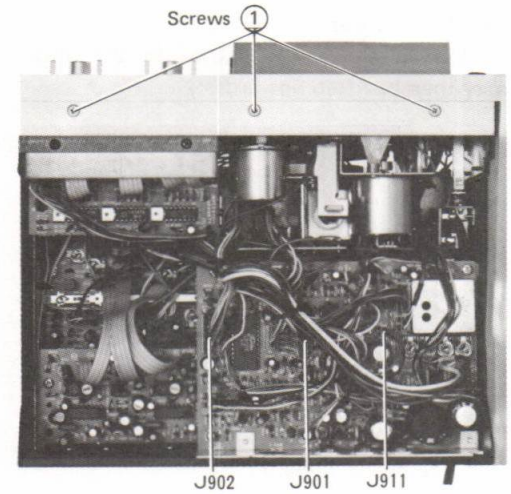


Fig. 2

3. Removal of Front Panel

(1) Following the instructions of step "1.2", remove top and bottom covers.
(2) Pull off 4 lever switch knobs.
(3) Pull off the 2 REC level knobs.
(4) Pull out the plugs (J901, J902, J911) from the three points shown in Fig. 3.
(5) Unscrew the 6 screws (1) & (2) shown in Fig. 3.
(6) Pull out the wires of the plugs removed in step "4" downward.



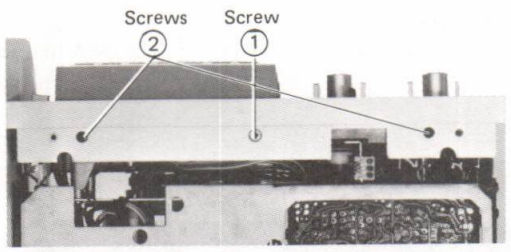


Fig. 3

4. Dismounting of Mechanical Assembly

(NOTE) When the mechanical assembly is to be checked in its condition dismounted from the cabinet body, this can be achieved by connecting the wiring from the mechanical assembly and that from the push-button section first, and then moving the circular magnet located below the tape counter on the cabinet-side with the finger tips. This will activate the hall I.C., allowing operation of the mechanical section during servicing.

(1) Following the instructions of step "3", remove the front panel.

(2) Gaining access from the bottom, disengage the counter belt that is engaged from the mechanical section over to the counter on the body-side.

(3) Disconnect at the terminal, the red lead wire that leads out from the solenoid for recording that is connected to terminal (826) on the p. c. board provided at the rear surface of the mechanical assembly.

(4) To disconnect the wiring loom from the mechanical assembly, first pull out the loom and then pull out the 5 plugs (J101, J201, J905, J908) from their locations as showing in Fig. 4 and the Table.

The matching jacks and plugs are marked with the same number.

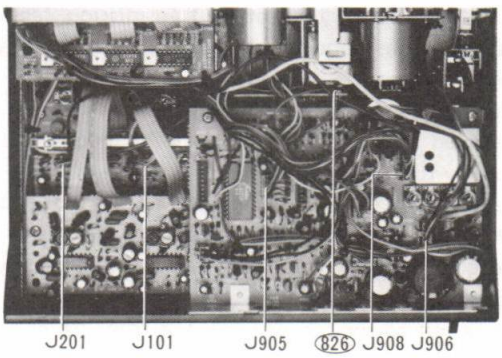


Fig. 4

Identification of Plug Section			
Plug No.	Colour of shield wire	Colour of tube of plug center	Circuit to be connected
P101	Grey	White	Record head → L-ch amplifie
P201	Grey	Red	Record head → R-ch amplifie
P908	Grey	Black	Erase head → Bias oscillato

(5) Unscrew the 2 screws (1) and 4 screws (2) as shown i Fig. 5. The mechanical section can be drawn out by mo ing the its front panel leftward.

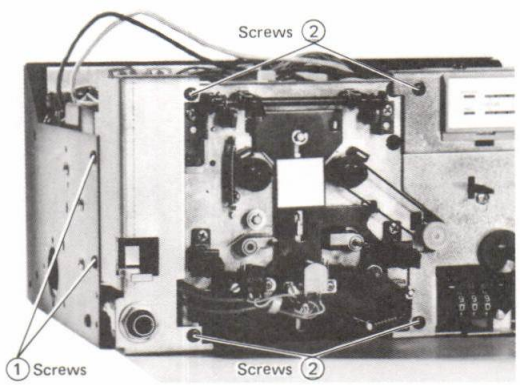


Fig. 5

5. Removal of Rear Panel of Mechanical Assembly

(1) To remove mechanical control p.c. board, unscrew the screws (1) shown in Fig. 6.

(2) When rear panel is to be disassembled together with board assembly.

(a) Disengage the spring shown in Fig. 7 at point [A] .

(b) Disengage the springs at points [B] and [C] show in Fig. 6. Disconnect the wiring loom at points [and [E]

(c) Unscrew the 4 screws (2) shown in Fig. 6.
(d) Disengage the motor belt. Now the rear panel of the mechanical assembly can be removed.

this, such parts as the main motor, fly-wheel and FF lley can be disassembled also.

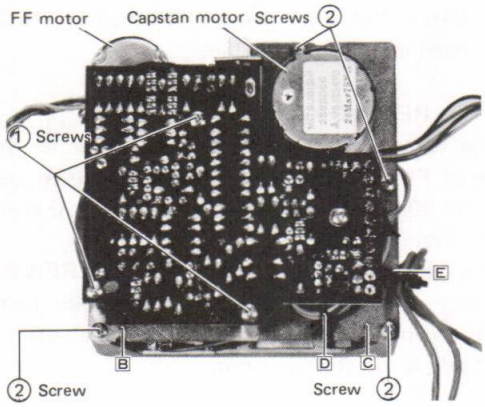


Fig. 6

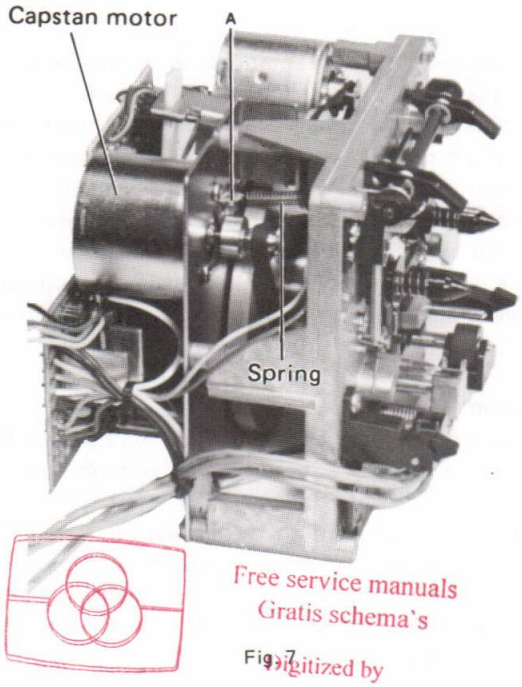


Fig. 7

DJUSTMENT OF MECHANICAL SECTION

The following items are to be checked and confirmed before performing adjustments.

Wow-flutter . . . . . 0.16%, or less (Play method)
FF and REW time . . . . . Within 85 sec (C-60)
Counting range of counter . . . . . 445 ± 20 (C-60)
End stop operating time . . . . . Within 5 sec
Tape speed rise time at PAUSE activation . . Within 0.2 sec
Tape speed droping time at
PAUSE activation . . . . . Within 0.2 sec
Pinch roller pressure. . . . . 300g ± 50g
Take up force
PLAY take-up force . . . . . 40 ~ 60 gcm
FF take-up force . . . . . 90 ~ 150 gcm
REW take-up force . . . . . 90 ~ 150 gcm

Wow-Flutter Adjustment

Refer also to the Disassembly Instructions and Disassembly Diagrams.

When the value measured by the wow measurer (Play method based on use of Test Tape MTT-111) is found to be larger than RMS by 0.20%, clean the following sections that affect tape travel with a clean cloth soaked with alcohol. Wow-flutter improves sometimes just by wiping off deposited foreign matter.

Capstan shaft, pinch rollers (Must revolve lightly in STOP mode), heads, and tape guide section of heads.

Motor pulley, belt for fly-wheel drive, outer-edge surfaces of fly-wheel, pulley assembly, outer-edge surfaces of pulley for (PLAY), outer-edge surface that contacts the pulley below the take-up side reel.

- Check whether the two belts for driving counter of right reel base are engaged in a twisted manner or not. Further, check whether the counter relay pulley turns smoothly or not and for any deposit of foreign matter inside the bolt groove.

2. Is pinch roller pressure correct?
With the set in the PLAY mode, the pressing force is measured by placing the measuring section of the tension gauge at right angles to the direction formed by joining the pinch lever shaft and pinch roller shaft with a straight line as shown in Fig. 8.
Apply force increasing it gradually and check whether the force that causes the direction of tape travel to change is within the range of 300g ± 50g.

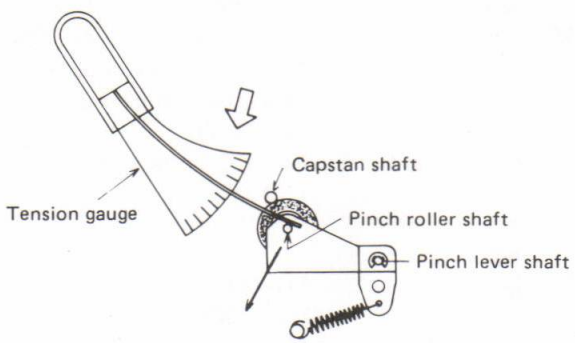


Fig. 8

3. Is the take up for correct?
   Using the cassette tape for rotational torque measurements, measure the take-up force with the set in the PLAY mode. Confirm that it is within 40 ~ 60g/cm. (Back tension force should be 4g/cm). If the take-up force and back tension force are not correct, inspect the components located underneath the mechanical assembly base of the reel base.
4. If wow-flutter fails to improve even when inspections up this stage has been completed, replace such sections as the pinch lever assembly, capstan motor, fly-wheel and main belt.

■ **Replacement of REC/PLAY Head**

Using caution not to change the angle of the erase head, replace the REC/PLAY head. Play the high frequency (10kHz) test tape (the 10kHz portion of the MTT-115C) and adjust the head azimuth by turning the screw on the side where a spring is incorporated at the position where the output of both the R-ch and L-ch becomes maximum. After completing adjustment, fix the 2 screws in place using screw lock paint.

■ **Replacement of ERASE Head**

When the erase head has been replaced, the PLAY output should be adjusted (with the use of the 10kHz test ta referred to in step 2) so that it will be maximum for bo the left and right, by turning the screw located on side that incorporates the spring of the fitting screw On completion of adjustment, secure the two scre with screw lock paint.

(NOTE) Before this adjustment, adjustment of REC/PLA head must be completed.

■ **When FF or REW is Defective.**

1. Using the torque cassette, check to see whether the ta up force of FF, or REW is within 90 ~ 150g/cm, or not it is below 90g/cm, replace belt (FF,REW), or reel mo with a new one.
2. When the take-up force is correct but FF, or REW does r take place, or when it takes an abnormally long tir check to see if the back tension of the reel shaft on feed-out side is too strong or not.

■ **To Adjust Head Azimuth without Removing Front Panel**

The head azimuth can be adjusted by removing the 2 asse bly screws Ⓑ of component Ⓐ (lower left side) shown the Exploded View of Cabinet (P.22), using a allen dri (Opposite sides 2 mm). When you have turned the scre lock it again with screw lock paint.

ADJUSTMENT OF ELECTRICAL SECTION

1. Instruments Required for Measurement

1) Low frequency oscillator . . . . . 20Hz ~ 20kHz
2) Variable resistance attenuator . . . . . 0 ~ 90dB, 0.1 or 0.5dB step
3) AC voltmeter . . . . . Capable of measuring 20Hz ~ 100kHz or more, input impedances of 100kΩ or more, −60dB(V).
4) Tester . . . . . For DC voltage measurement (20KΩV)
5) Frequency counter
6) Oscilloscope
7) Test Tape MT-111
   MCT-400L
   MCT-606SA (Blank)
   MCT-701MT (Blank)

2. Connection Instructions (Given for one channel)

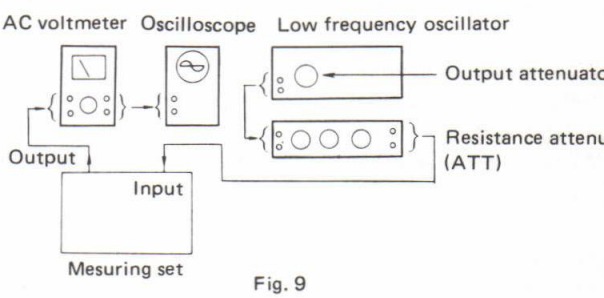


Fig. 9

Measurement should be started after setting the ATT 0dB and adjusting the output attenuator for the l frequency oscillator so that the measuring set input v be 1V. During adjustment, lower it to the value of t signal indicated by the ATT if necessary.

3. Arrangement of Adjustment Points

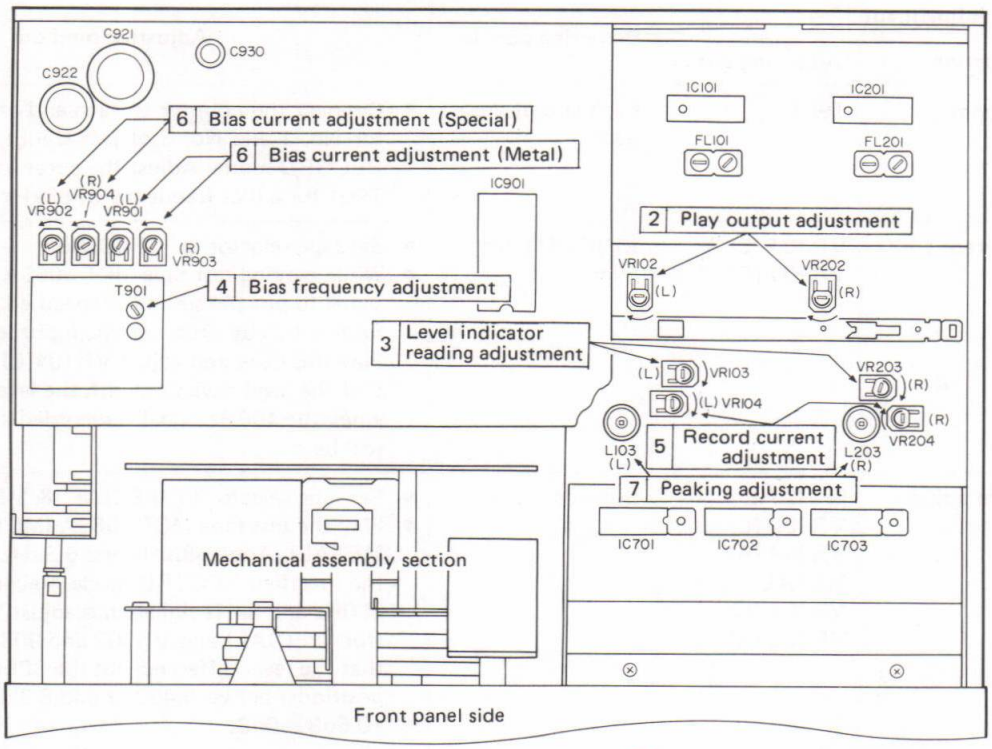
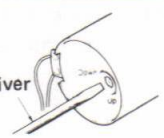


Fig. 10

4. Adjusting Instructions

- Unless otherwise specified, the switches, etc. should be set to the following positions.
  - Tape selector to NORMAL
  - DOLBY NR to OUT
- Do not apply input signals.
- Clean the tape transport path before starting adjustments.

1 PLAY System

Adjustment			Detecting position	Adjusting method
NO.	Description	Adjusting point		
1	**Motor speed adjustment**	Motor adjusting hole	Connect counter to output terminal	• While playing test tape MTT-111 (3kHz), adjust the motor adjusting hole (using a minus screwdriver) for a counter reading of 3,000Hz $^{+10}_{-0}$ Hz. 
2	**Play output adjustment**	VRs 102(L) & 202(R)	Between ⊖ side of C118 (L) & C218 (R) and earth	• While playing the test tape MCT-400L, adjust VR 102 and 202 so that the ⊖ side of capacitors C118 and 218 will be 580mV ± 25dB.
3	**Level indicator adjustment**	VRs 103 (L) & 203 (R)	LEDs of level indicator	• While playing test tape MCT-400L, adjust VR103 and 203 so that the 0dB LED lights up. For adjusting instruction, see NOTE.

■ RECORD System

Adjustment			Detecting position	Adjusting method
NO.	Description	Adjusting point		
4	**Bias frequency**	T901	Each end of erase head	• Connect the counter to each end of the erase head (or No. 1 and No. 3 of jack J908), put the set in RECORD mode. Adjust the cores of transformer T901 for a bias frequency of 85kHz.
5	**Record current adjustment**	VR104 (L) & VR204 (R)	LINE OUT terminal	• Set tape selector to "SPECIAL" • While playing test tape MCT-606SA, apply a 400Hz signal to put the set in the specified RECORD mode* Follow this by dropping the input level by −30dB. Play this back and adjust VR104(L) and 204(R) so that the level deviation with the level monitored when the 400Hz signal is recorded and played back will be nil.
6	**Bias current adjustment**	SPECIAL VR902 (L) VR904 (R) METAL VR901 (L) VR903 (R)	Same as above	• Set tape selector to SPECIAL (& METAL). • Play the test tape MCT-606SA (MCT-701MT for METAL). Apply 400Hz and 6.3kHz and put set into the specified RECORD mode. Record and play the 400Hz and 3kHz signals and adjust VR902 and 904 (for SPECIAL) and VR902 and 903 (for METAL) so that the level difference (at the SPECIAL and METAL positions) between 400Hz and 6.3kHz will be within +0.5dB, -0dB.
7	**Peaking adjustment**	L103 (L) L104 (R)	Same as above	• Use test tape MCT-606SA (Tape selector position: SPECIAL) • Put the deck into the specified RECORD mode and record the two signals, 400Hz and 12.5kHz. • Play the two recorded signals and adjust L103 and 203 for a level deviation between 12.5kHz and 400Hz of within +5dB, -0dB.

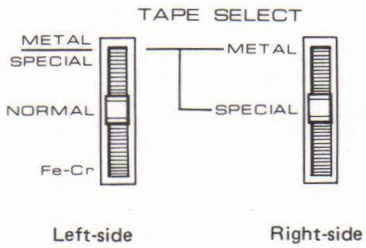
* **What is the specified RECORD mode?** ..... This is the condition gained (when the deck is put in the RECORD mode) b adjusting the RECORD LEVEL control knob so that the rated output level will be obtained at the output terminal when th 400Hz rated input level signal is applied to LINE IN.

Rated input of M-T04 ..... LINE IN ..... −10dB (50KΩ)
Rated output of M-T04 ..... LINE OUT ..... − 7dB (22KΩ)
0dB (V) = 1V

NOTE: First turn down the preset control to minimum. Then turn the VR gradually so that the red LEDs, from the lowest up t the highest will all light up one by one.
Then gradually turn down, putting out the red LEDs one by one, finally setting it at 0dB (green).

APE SELECTOR

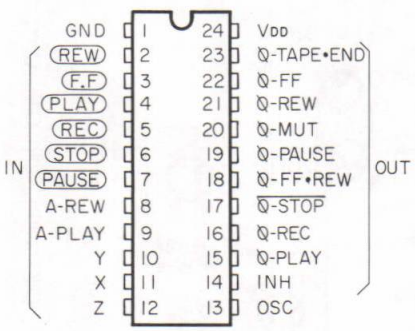
eferring to the following chart, the switch should be set to he proper position in order to enable low-distortion recording nd playback by bringing out the full potentials of the tape haracteristics.



Representative Type of Tape		Position of left-side switch	Position of right-side switch
Manufacturer	Type		
TDK	D, AD, OD	NORMAL	
	SA	METAL / SPECIAL	SPECIAL
	MA-R, MA	METAL / SPECIAL	METAL
MAXELL	UL, UD, XL I	NORMAL	
	XL II	METAL / SPECIAL	SPECIAL
	MX	METAL / SPECIAL	METAL
SONY	BHF, AHF	NORMAL	
	JHF	METAL / SPECIAL	SPECIAL
	DUAD	Fe-Cr	
	METALLIC	METAL / SPECIAL	METAL
FUJI	RANGE-2, 4, 6	NORMAL	
	RANGE-4X	METAL / SPECIAL	SPECIAL
	SUPER RANGE	METAL / SPECIAL	METAL
SCOTCH	LH, CRYSTAL, MASTER	NORMAL	
	CLASSIC	Fe-Cr	
	METAFINE	METAL / SPECIAL	METAL
BASF	LH, LN, SUPER LH I	NORMAL	
	FCR	Fe-Cr	

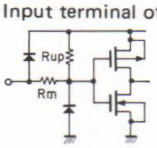
C TC9121P

. Terminal Connection Diagram

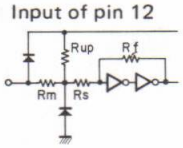


2. Equivalent circuits of each input and output

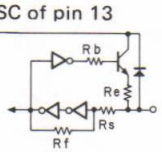
a. Input terminal of pins 2 ~ 11



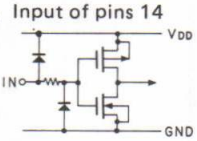
b. Input of pin 12



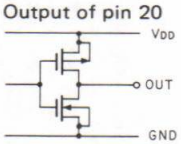
c. OSC of pin 13



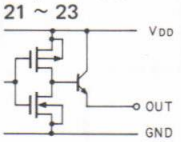
d. Input of pins 14



e. Output of pin 20



f. Output of pins 15 ~ 19 and 21 ~ 23



INPUT/OUTPUT Truth Table

○ denotes H-level output

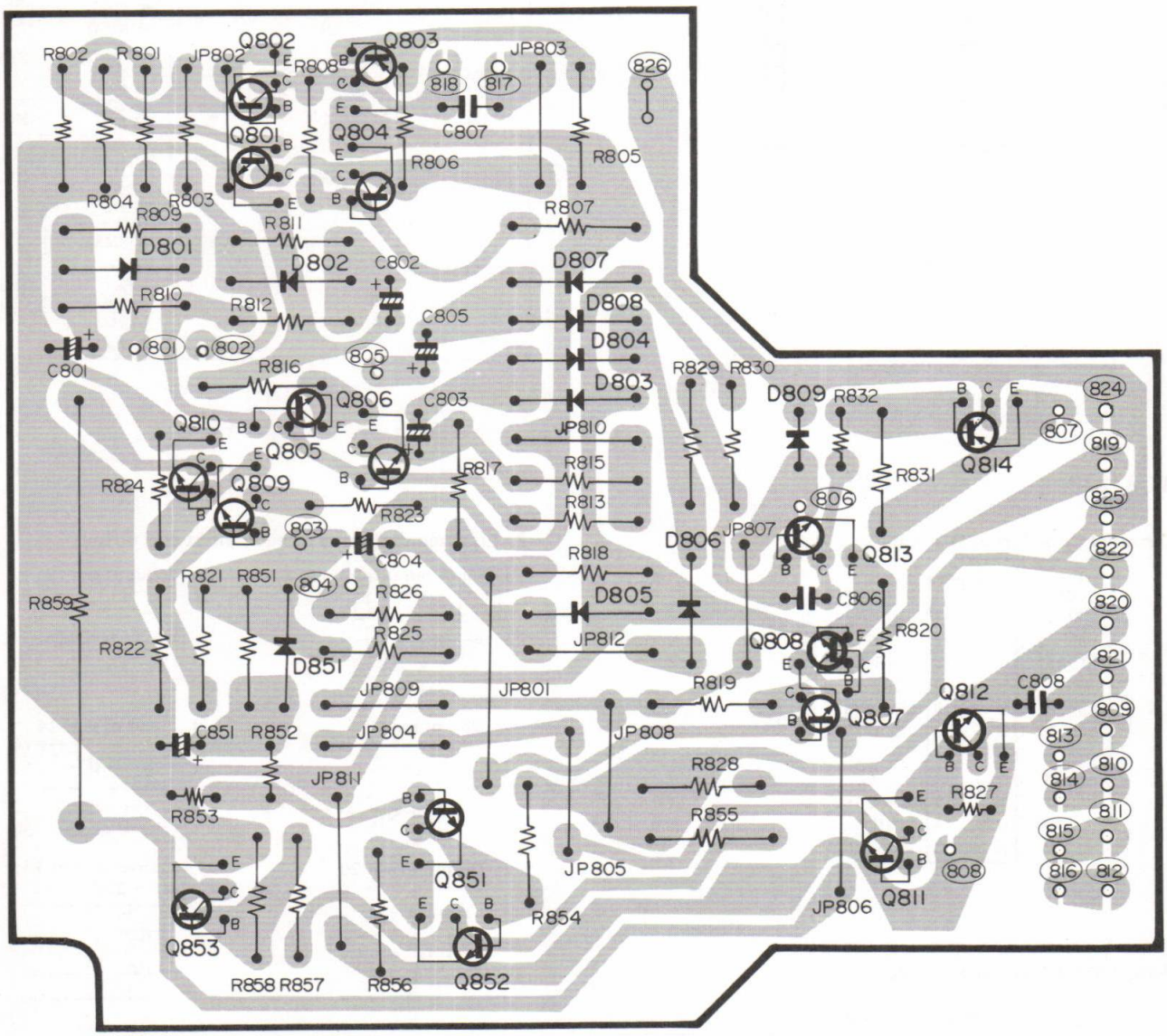
"L" input / Output	STOP	FF	REW	PLAY	REC / PLAY	PAUSE: STOP→	PAUSE: PLAY→	PAUSE: REC/PLAY→
Q-PLAY				○	○			
Q-REC					○			○
Q-STOP		○	○	○	○	○	○	○
Q-FF·REW		○	○					
Q-PAUSE						○	○	○
Q-MUT	○	○	○			○		
Q-REW			○					
Q-FF		○						
Q-TAPE•END	○	○	○	○	○	○	○	○
Name of MODE	STOP	FF	REW	PLAY	REC / PLAY	PAUSE	PLAY / PAUSE	REC / PAUSE

NOTE: The Q-TAPE END output will turn off during operation only when a Z-signal is fed in. It will return to however, following any subsequent INPUT key operation.

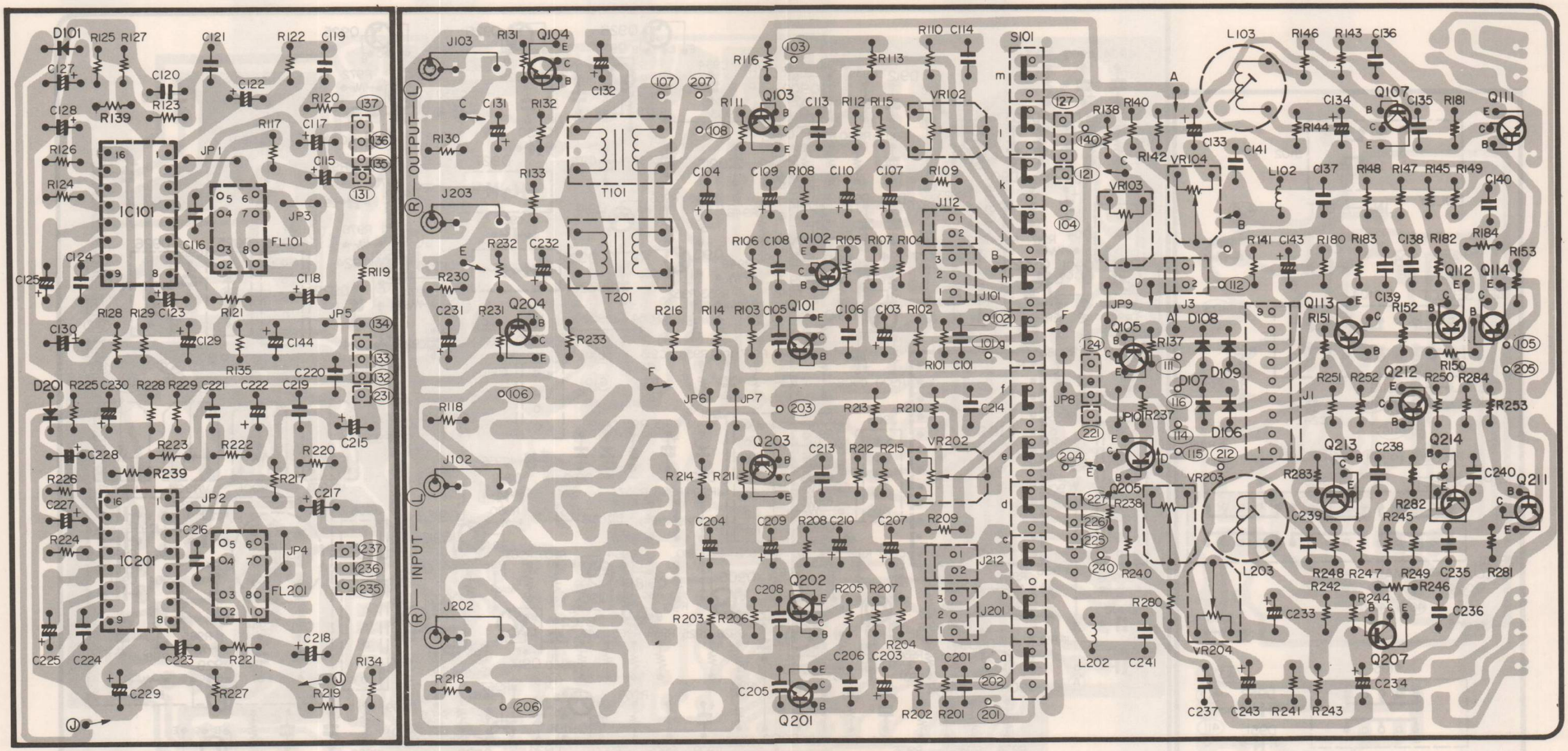
* When the 1NH terminal is set to the "L" level, all output terminals, excepting Q-MUTE, Q-TAPE END will turn OFF regardless of the OUTPUT MODE. Subsequently, when the 1NH terminal is reset to the "H" level, all outputs will restore their former conditions. Inputs are received as usual even during 1NH.

PRINTED CIRCUIT BOARDS

MECHANICAL DRIVE P.C. BOARD

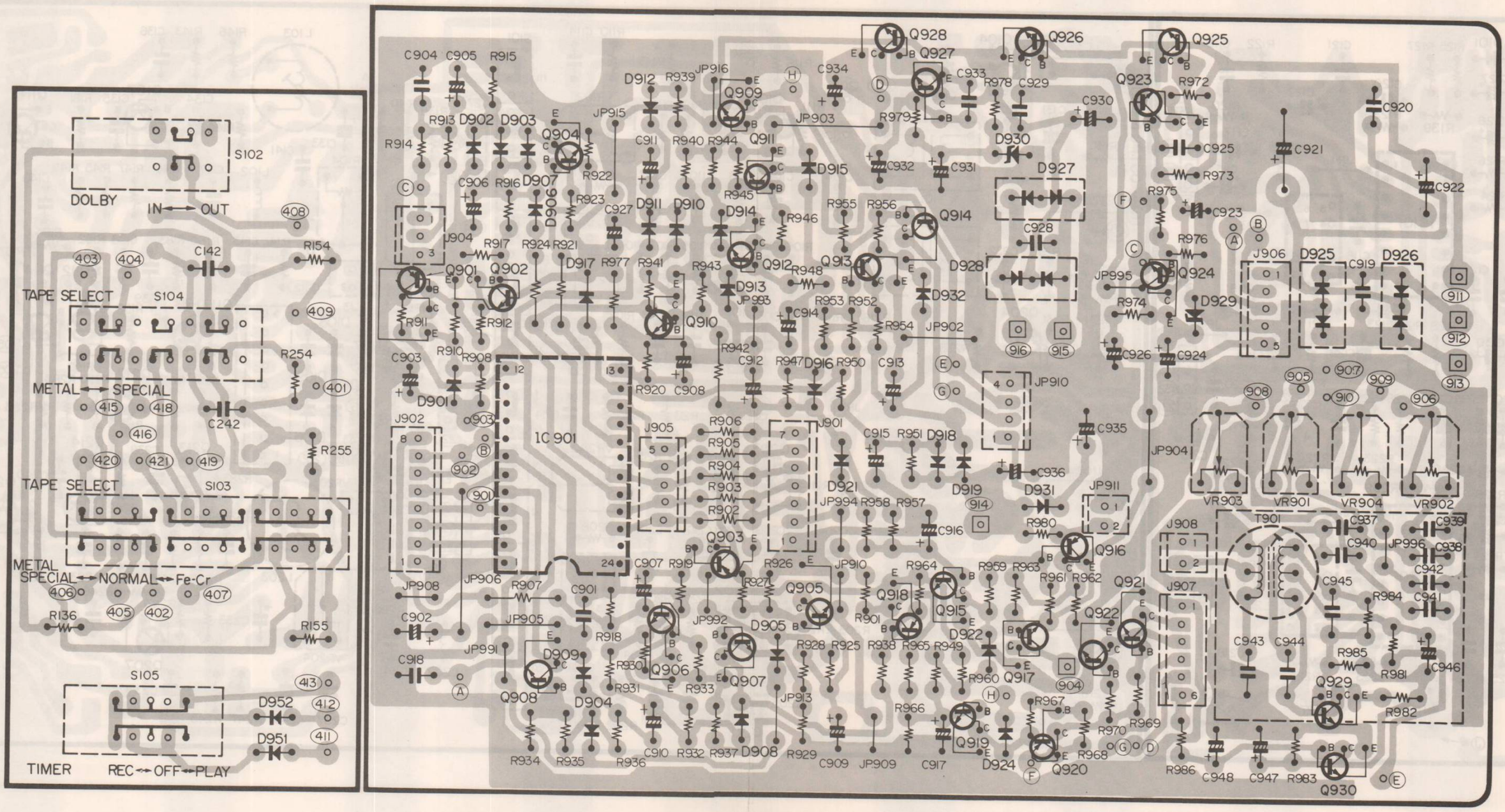


RECORD/PLAY P.C. BOARD

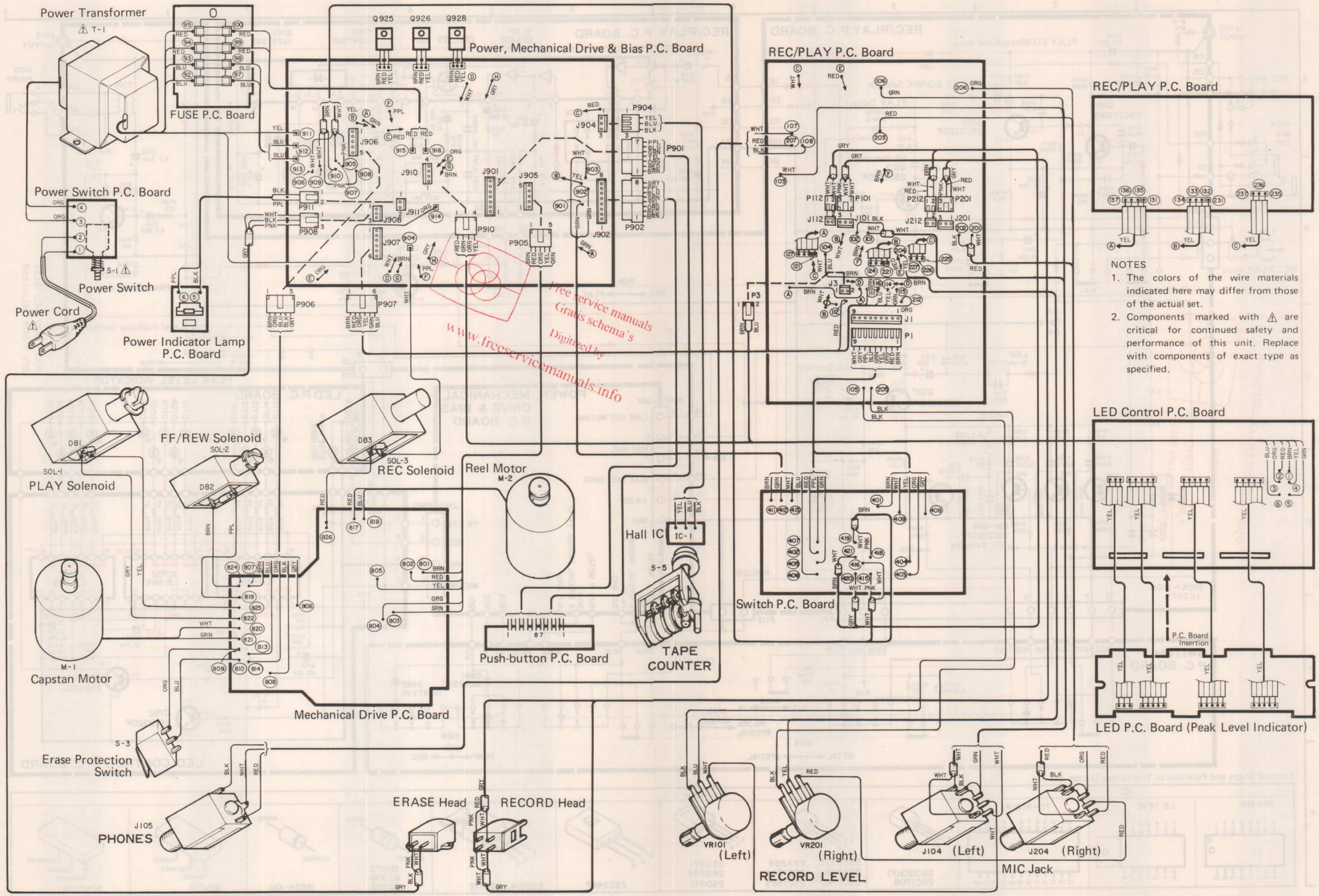


SWITCH P.C. BOARD

POWER, MECHANICAL DRIVE & BIAS P.C. BOARD



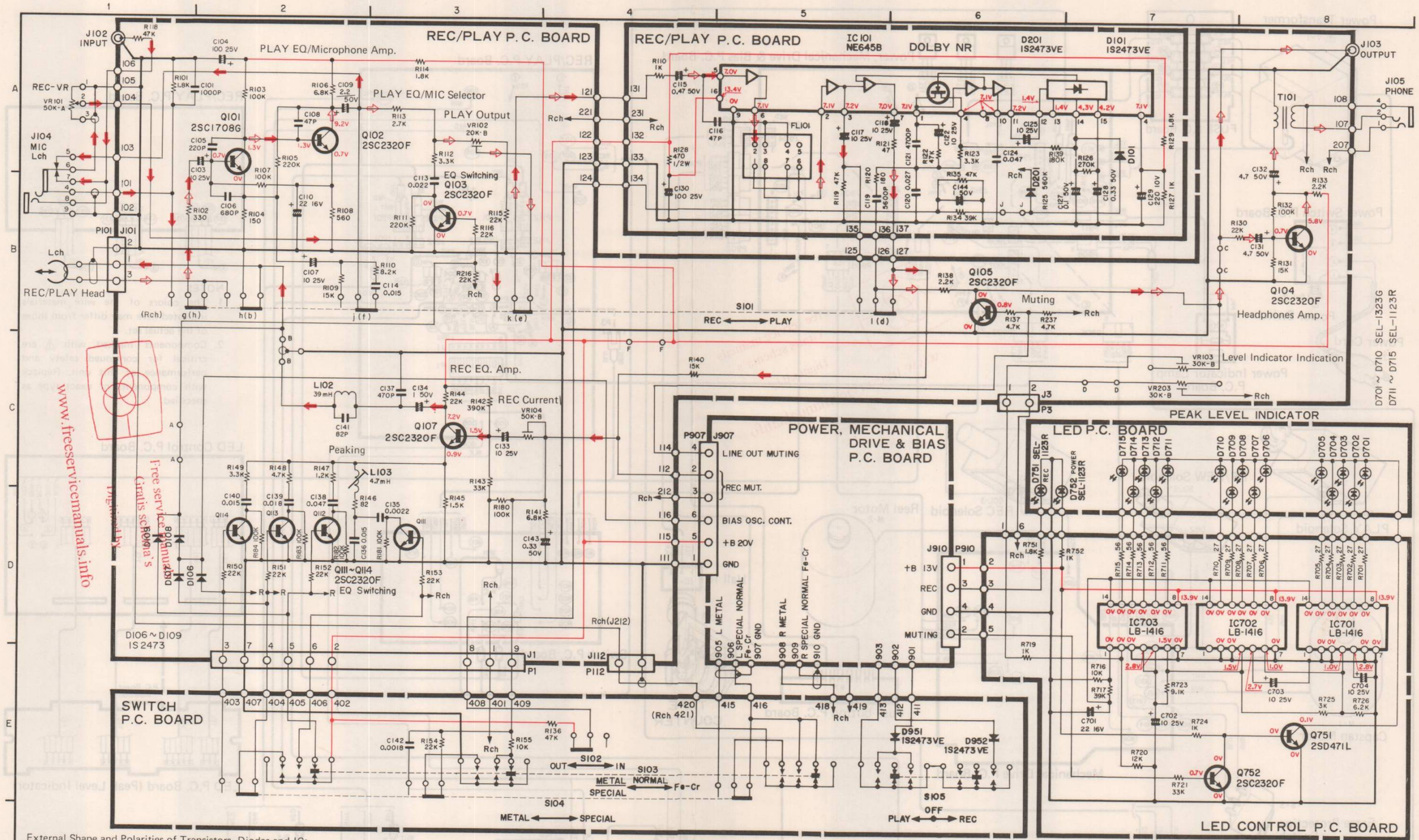
WIRING



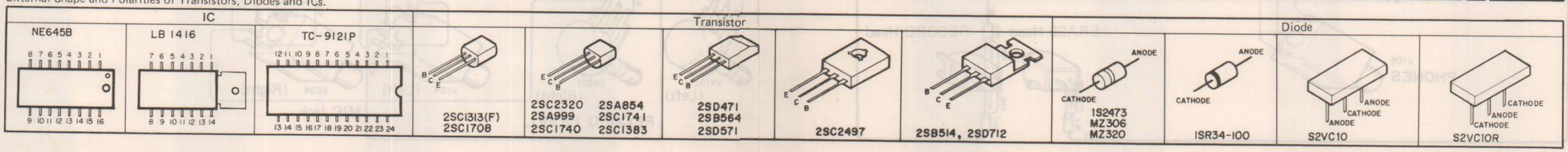
NOTES

1. The colors of the wire materials indicated here may differ from those of the actual set.
2. Components marked with ⚠ are critical for continued safety and performance of this unit. Replace with components of exact type as specified.

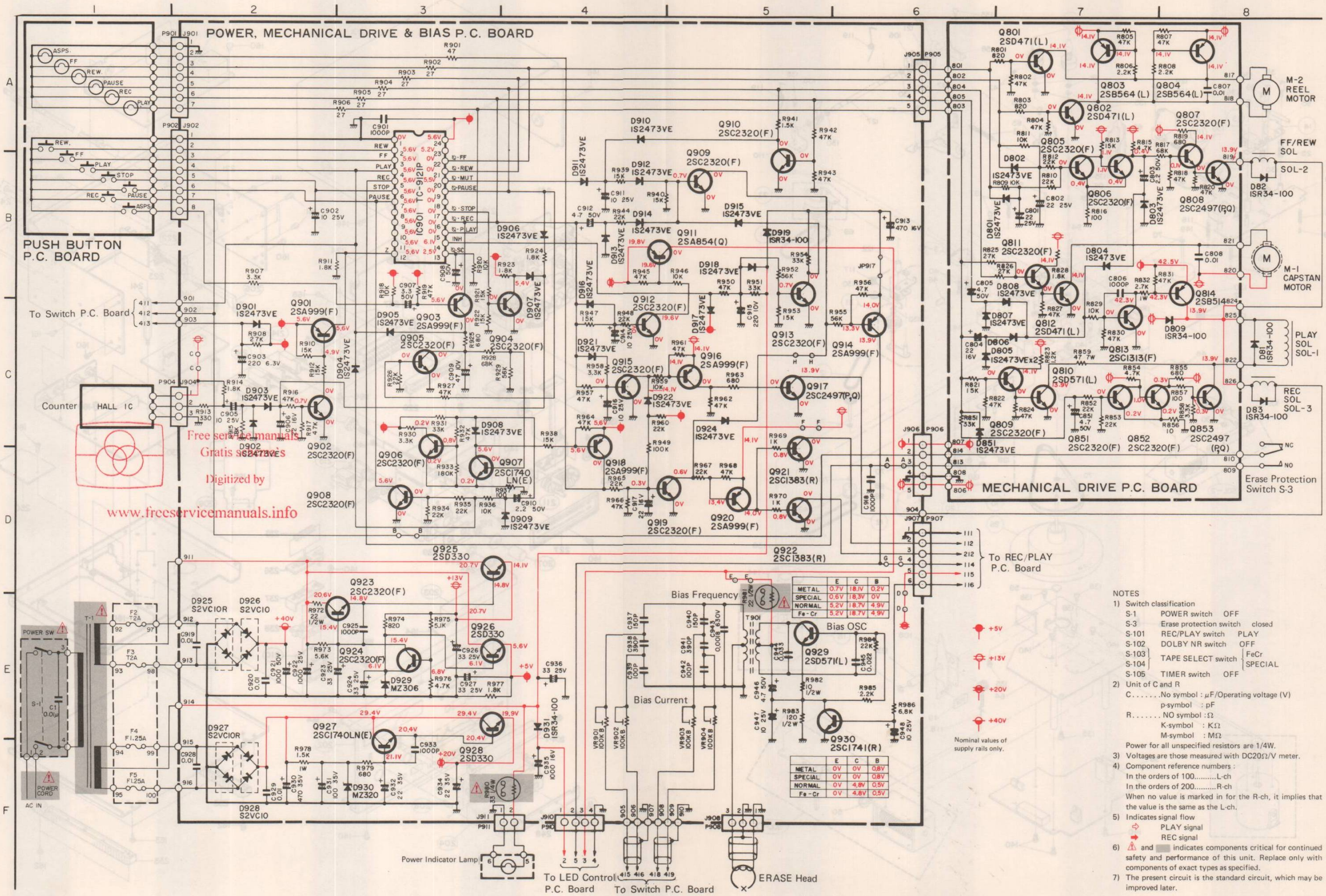
SCHEMATIC DIAGRAM (1/2)



External Shape and Polarities of Transistors, Diodes and ICs.



SCHEMATIC DIAGRAM (2/2)

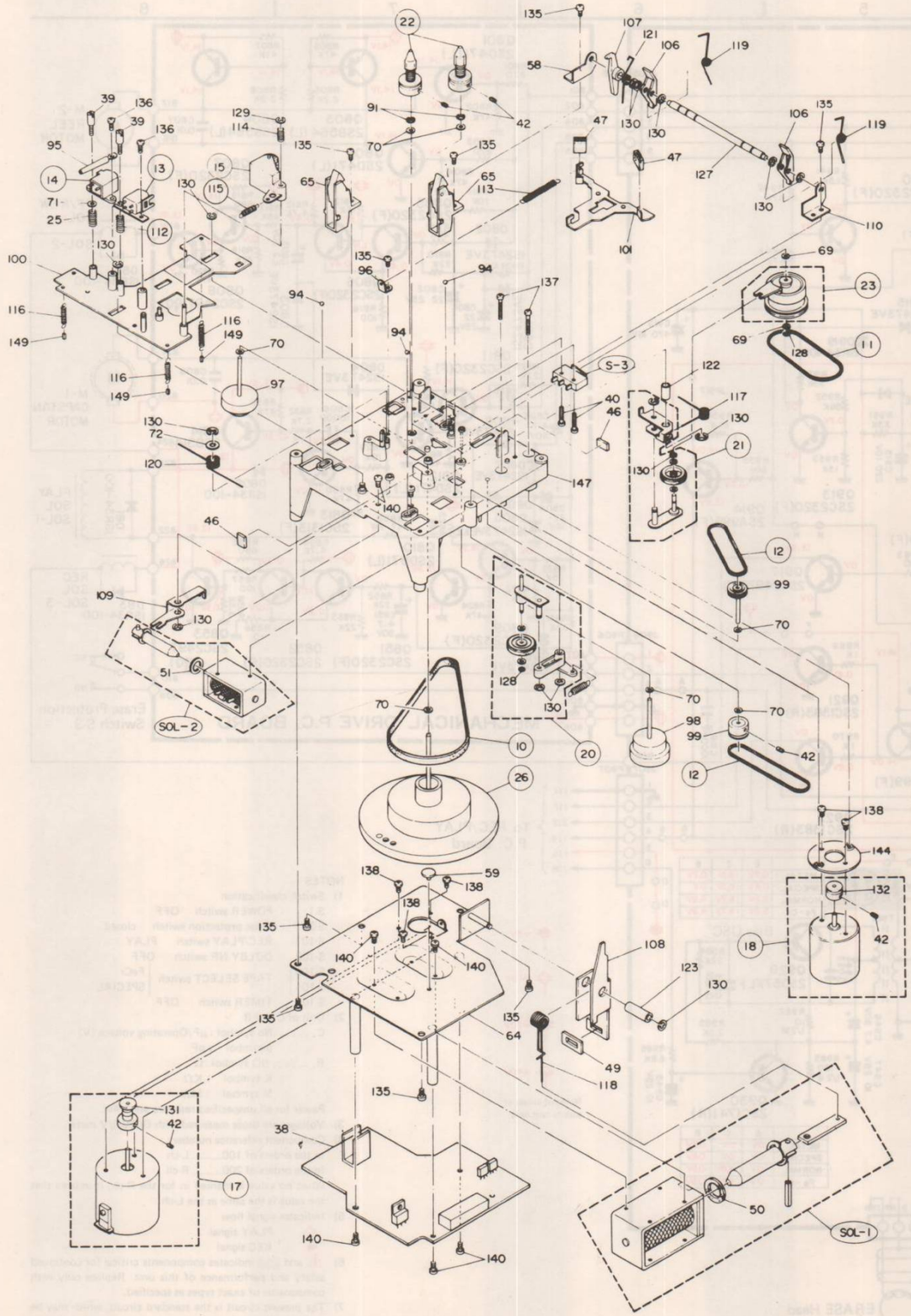


NOTES

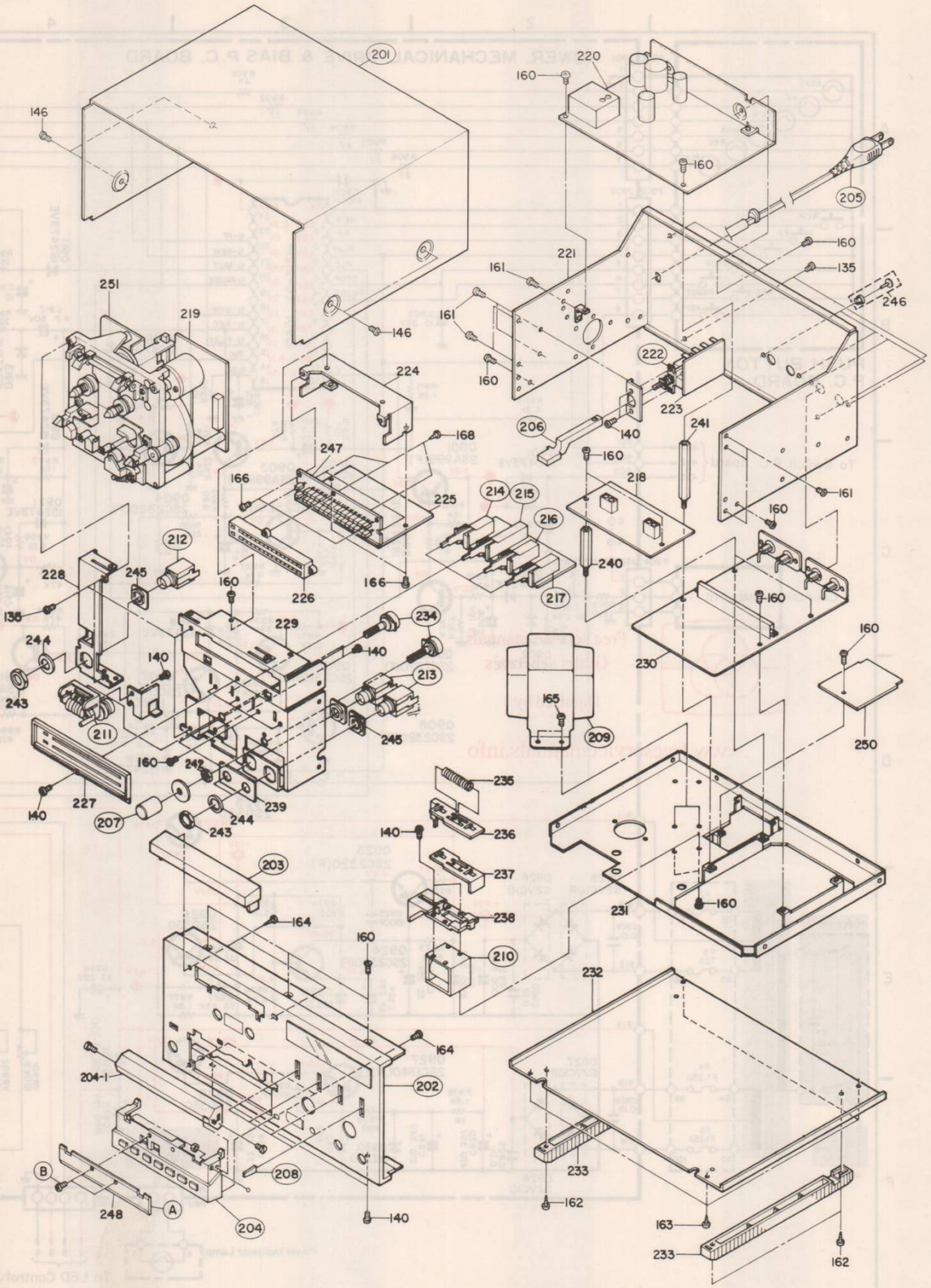
1) Switch classification
   - S-1 POWER switch OFF
   - S-3 Erase protection switch closed
   - S-101 REC/PLAY switch PLAY
   - S-102 DOLBY NR switch OFF
   - S-103, S-104 TAPE SELECT switch FeCr / SPECIAL
   - S-105 TIMER switch OFF
2) Unit of C and R
   - C.....No symbol : μF/Operating voltage (V)
     p-symbol : pF
   - R..... NO symbol : Ω
     K-symbol : KΩ
     M-symbol : MΩ

   Power for all unspecified resistors are 1/4W.
3) Voltages are those measured with DC20Ω/V meter.
4) Component reference numbers :
   In the orders of 100.....L-ch
   In the orders of 200.....R-ch
   When no value is marked in for the R-ch, it implies that the value is the same as the L-ch.
5) Indicates signal flow
   - ⇨ PLAY signal
   - ➡ REC signal
6) ⚠ and ▩ indicates components critical for continued safety and performance of this unit. Replace only with components of exact types as specified.
7) The present circuit is the standard circuit, which may be improved later.

EXPLODED VIEW OF MECHANISM



EXPLODED VIEW OF CABINET



PARTS LIST

NOTE: ⚠ and ▭ marks components on Parts list are for performance of this unit, replace them, uses safety critical components or designed component as specified.

Symbol No.	Part No.	Description
10	M05162550	BELT (Fly Wheel)
11	M05147551	BELT (FF/Rew)
12	M05147550	BELT (Counter)
13	M05176830	HEAD-R/P
14	M05176831	HEAD-E
15	M05184540	PULLEY-ASSY (Pinch Roller)
17	M05205500	MOTOR (Fly Wheel)
18	M05205501	MOTOR (FF/Rew)
20		PULLEY-ASSY (Play)
21		PULLEY-ASSY (FF Idler)
22	M05180525	REEL REST-ASSY
23		PULLEY-ASSY (FF)
25	M05184563	SPRING-W (Head-E)
26		FLY WHEEL
27		SOLENOID (Play)
28		SOLENOID (FF/Rew)
38		PCB-ASSY (Mecha. Drive)
39		POST
40		SCREW M2 x 8
42	M05184610	SCREW M2.6 x 6
43		SCREW M2.6 x 3
46		CUSHION-GUM (2t)
47		CUSHION-GUM (Brake)
49		CUSHION-GUM (Play Lever)
50		WASHER-GUM (Play Sol.)
51		WASHER-GUM (FF Sol.)
58		HOLDER-L
59		HOLDER (Fly Wheel)
64		HOLDER (Play Sol.)
65	M05184531	LEVER-ASSY
69		WASHER (PL 0.25t x 2.1 x 4)
70		WASHER (PL 0.25t x 2.6 x 4.7)
71		WASHER (0.5t x 2.8 x 6.5)
72		WASHER (PL0.8t x 4.5 x 8.8)
91		E-RING E = 2
94		STEEL BALL
95		LUG TERMINAL (Clamp)
96		LUG TERMINAL (Spring)
97		PULLEY-ASSY (Supply)
98		PULLEY-ASSY (Take Up)
99		PULLEY-ASSY (Counter)
100		BASE
101		LIN(Brake)
102		PULLEY
106	M05184532	LEVER (Cassette Push)
107	M05184530	LEVER (Erase Protection)
108		LEVER (Play Sol.)
109		LEVER (FF)
110		HOLDER
112	M05184562	SPRING-W (Head-R/P)

Symbol No.	Part No.	Description
113		SPRING-W (Brake)
114		SPRING (Pinch Lever)
115	M05184561	SPRING-W (Pinch Roller)
116		SPRING-W (Main Plate)
117		SPRING-W (FF idler)
118		SPRING-W (Play Lever)
119	M05184564	SPRING-W (Cassette Push)
120		SPRING-W (Brake)
121	M05184560	SPRING-W (Erase Protection)
122		COLLAR-METAL (FF Lever)
123		COLLAR-METAL (Play Lever)
127		POST
128		E-RING E = 1.5
129		E-RING E = 2.5
130		E-RING E = 3
131	M05184545	PULLEY (Main Motor)
132	M05184541	PULLEY (FF)
135		T-SCREW (T2-3 x 6)
136		SCREW-B (M2 x 6)
137		SCREW-B (M2.6 x 16)
138		SCREW-B (M2.6 x 3)
140		SCREW-B (M3 x 5)
144		HOLDER-F (FF Motor)
147		BASE (Mechanism)
149		HOLD PLAIN
160		SCREW-B (M3 x 6)
161		T-SCREW (T3-3 x 6)
162		T-SCREW (T2-3 x 10)
163		T-SCREW (T2-3 x 8)
164		T-SCREW (T1-3 x 12)
165		SCREW-B (M4 x 6)
166		SCREW-B (M2.6 x 5)
167		T-SCREW (T2-3 x 12)
168		T-SCREW (T1-2.6 x 8)
201	U561B064H11	CASE (Cabinet-Top)
202	U712C188G02	PANEL ASSY (Front)
203		CASSETTE COVER
204	M05147117	OPERATION BUTTON ASSY
205	M05205700	POWER CORD-ASSY ⚠
206	U704D443H02	KNOB (Power)
207	M05205120	KNOB-ASSY (Record Level)
208	U704D535H04	KNOB (Tape Select, Timer Dolby NR)
209	M05205410	POWER TRANSFORMER ⚠
210	M05147390	SOLENOID

Symbol No.	Part No.	Description
211	M05184404	COUNTER with Hall IC
212	M05104441	JACK (Phones)
213	M05130447	JACK (MIC)
214	M05147430	LEVER SWITCH (Timer)
215	M05184430	LEVER SWITCH (Tape Select)
216	M05176431	LEVER SWITCH (Tape Select)
217	M05164230	LEVER SWITCH (Dolby NR)
218		PCB
219	U924C081G04	MECHANISM Drive P.C.B.
220	U241B694G01	PCB (Power Supply, Mechanism Drive PCB)
221	U582A019H03	PANEL-BACK (Cabinet Back)
222		SWITCH (Power)
223		PCB
224		HOLDER
225	U241C612G01	PCB (Peak Level Indicator PCB)
	U241C611G01	PCB (LED Control PCB)
226		HOLDER
227		ORNAMENT
228		HOLDER
229		FRONT SHASSIS
230	U241B693G01	PCB (Rec/Play PCB)
231		CHASSIS BASE
232	U580B049H11	BASE (Cabinet Bottom)
233	U771D079G01	LEG-ASSY
234		VARIABLE RESISTOR
235		SPRING
236		LINK
237		LINK
238		HOLDER
239		SHADE
240		POST
241		POST
242		NUT M7
243		NUT M2
244		WASHER
245		PUSH MOLD
246		RIVET
247		P.C.B. (Peak Level)
250		PCB (Fuse)
251		MECHANISM-ASSY
	PACKING	
300	U813B074H04	CUSHION-MOLD
301	U831C047H01	PACKING BAG
302	U800B069H10	PACKING BOX
	U871C008H23	INSTRUCTION BOOK
303	M07215901	WARRANTY CARD STRAPS

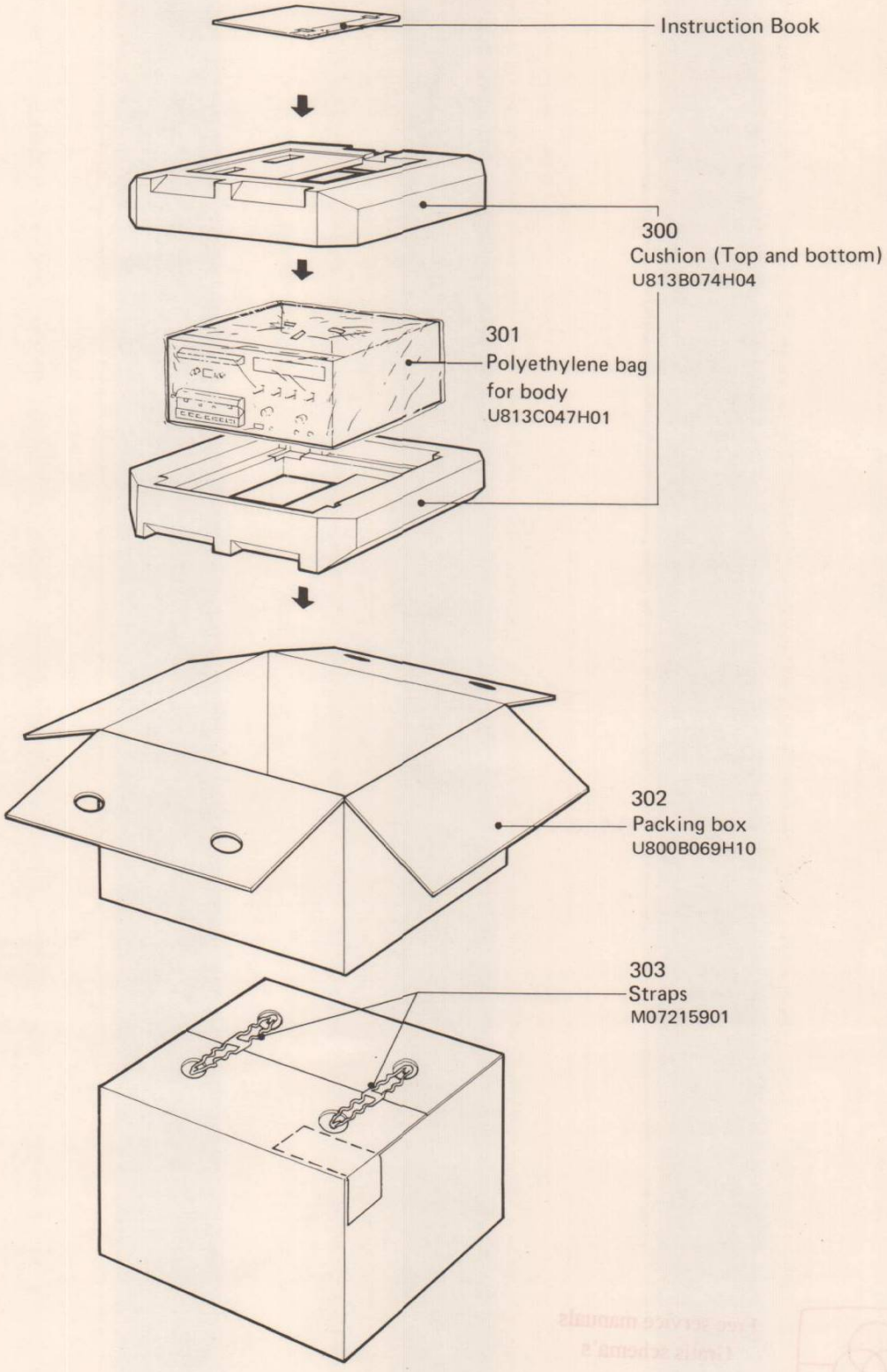
Symbol No.	Part No.	Description
	DIODES	
D 81	M07391320	1SR34-100
D 82	M07391320	1SR34-100
D 83	M07391320	1SR34-100
D101	M07060320	1S2473VE
D106	M07060320	1S2473VE
D107	M07060320	1S2473VE
D108	M07060320	1S2473VE
D109	M07060320	1S2473VE
D201	M07060320	1S2473VE
D701	M07447320	LE-DIODE SEL-1323G
D702	M07447320	LE-DIODE SEL-1323G
D703	M07447320	LE-DIODE SEL-1323G
D704	M07447320	LE-DIODE SEL-1323G
D705	M07447320	LE-DIODE SEL-1323G
D706	M07447320	LE-DIODE SEL-1323G
D707	M07447320	LE-DIODE SEL-1323G
D708	M07447320	LE-DIODE SEL-1323G
D709	M07447320	LE-DIODE SEL-1323G
D710	M07447320	LE-DIODE SEL-1323G
D711	M05176321	LE-DIODE SEL-1123R
D712	M05176321	LE-DIODE SEL-1123R
D713	M05176321	LE-DIODE SEL-1123R
D714	M05176321	LE-DIODE SEL-1123R
D715	M05176321	LE-DIODE SEL-1123R
D751	M05176321	LE-DIODE SEL-1123R
D752	M05176321	LE-DIODE SEL-1123R
D801	M07060320	1S2473VE
D802	M07060320	1S2473VE
D803	M07060320	1S2473VE
D804	M07060320	1S2473VE
D805	M07060320	1S2473VE
D806	M07060320	1S2473VE
D807	M07060320	1S2473VE
D808	M07060320	1S2473VE
D809	M07391320	1SR34-100
D851	M07060320	1S2473VE
D901	M07060320	1S2473VE
D902	M07060320	1S2473VE
D903	M07060320	1S2473VE
D904	M07060320	1S2473VE
D905	M07060320	1S2473VE
D906	M07060320	1S2473VE
D907	M07060320	1S2473VE
D908	M07060320	1S2473VE

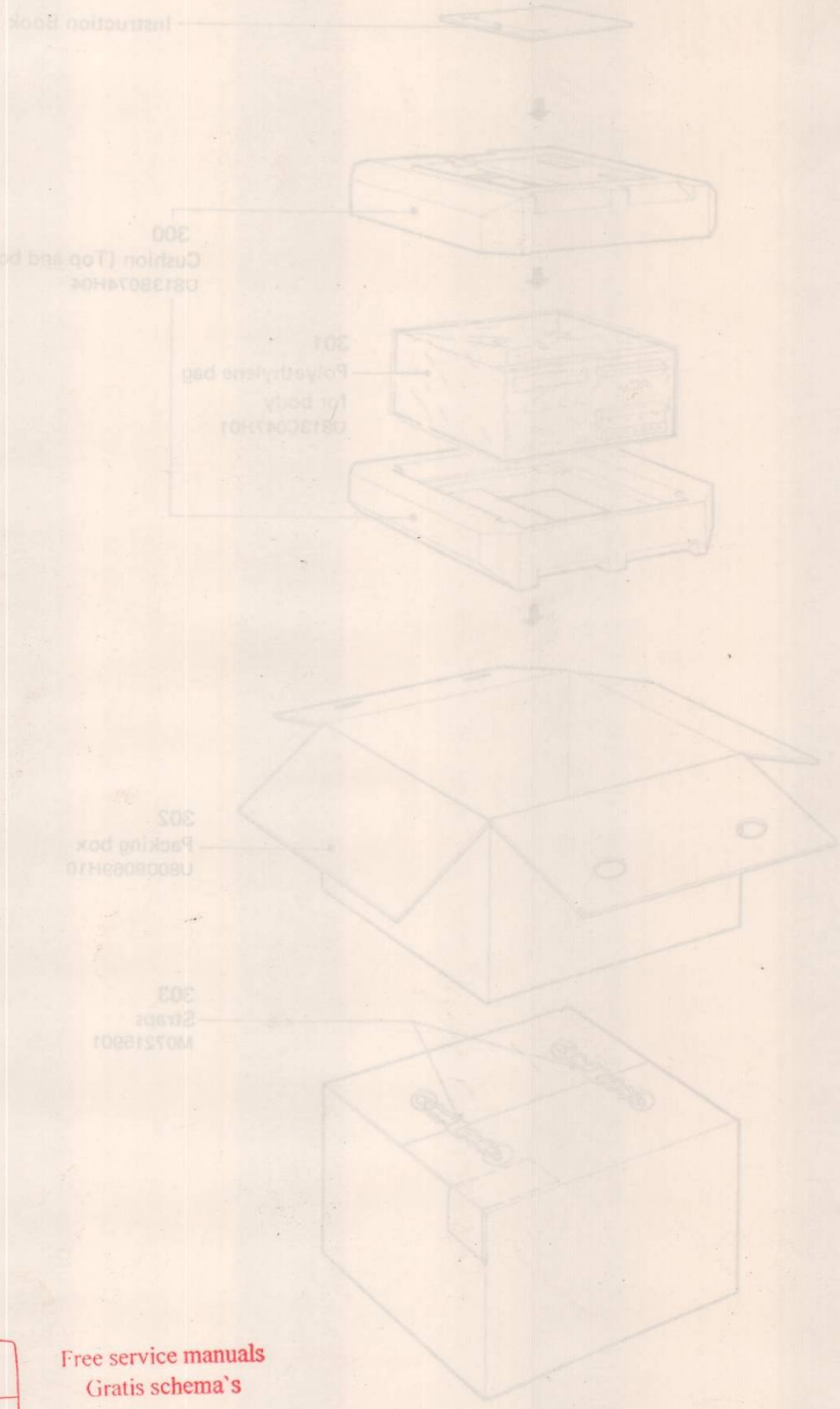
Symbol No.	Part No.	Description
D909	M07060320	1S2473VE
D910	M07060320	1S2473VE
D911	M07060320	1S2473VE
D912	M07060320	1S2473VE
D913	M07060320	1S2473VE
D914	M07060320	1S2473VE
D915	M07060320	1S2473VE
D916	M07060320	1S2473VE
D917	M07060320	1S2473VE
D918	M07060320	1S2473VE
D919	M07391320	1SR34-100
D921	M07060320	1S2473VE
D922	M07060320	1S2473VE
D924	M07060320	1S2473VE
D925	M05163322	S2VC10R
D926	M05163321	S2VC10
D927	M05163322	S2VC10R
D928	M05163321	S2VC10
D929	M05129320	MZ306
D930	M07140320	MZ320
D931	M07391320	1SR34-100
D932	M07060320	1S2473VE
D951	M07060320	1S2473VE
D952	M07060320	1S2473VE
ICs		
IC101	M04162343	NE645B
IC701	M05157343	LB1416
IC702	M05157343	LB1416
IC703	M05157343	LB1416
IC901	M05147344	TC-9121P
TRANSISTORS		
Q101	M07113310	2SC1708G
Q102	M07390303	2SC2320F
Q103	M07390303	2SC2320F
Q104	M07390303	2SC2320F
Q105	M07390303	2SC2320F
Q107	M07390303	2SC2320F
Q111	M07390303	2SC2320F
Q112	M07390303	2SC2320F
Q113	M07390303	2SC2320F
Q114	M07390303	2SC2320F
Q751	M05147311	2SD471
Q752	M07390303	2SC2320F

Symbol No.	Part No.	Description
Q801	M05147311	2SD471
Q802	M05147311	2SD471
Q803	M05147312	2SB564
Q804	M05147312	2SB564
Q805	M07390303	2SC2320F
Q806	M07390303	2SC2320F
Q807	M07390303	2SC2320F
Q808	M05147313	2SC2497
Q809	M07390303	2SC2320F
Q810	M07228303	2SD571
Q811	M07390303	2SC2320F
Q812	M05147311	2SD471
Q813	M07071303	2SC1313
Q814	M04120303	2SB514
Q851	M07390303	2SC2320F
Q852	M07390303	2SC2320F
Q853	M05147313	2SC2497
Q901	M07390304	2SA999
Q902	M07390303	2SC2320F
Q903	M07390304	2SA999
Q904	M07390303	2SC2320F
Q905	M07390303	2SC2320F
Q906	M07390303	2SC2320F
Q907	M07387303	2SC1740LN
Q908	M07390303	2SC2320F
Q909	M07390303	2SC2320F
Q910	M07390303	2SC2320F
Q911	M07137308	2SA854
Q912	M07390303	2SC2320F
Q913	M07390303	2SC2320F
Q914	M07390304	2SA999
Q915	M07390303	2SC2320F
Q916	M07390304	2SA999
Q917	M05147313	2SC2497
Q918	M07390304	2SA999
Q919	M07390303	2SC2320F
Q920	M07390304	2SA999
Q921	M05124311	2SC1383
Q922	M05124311	2SC1383
Q923	M07390303	2SC2320F
Q924	M07390303	2SC2320F
Q925	M05205310	2SD330
Q926	M05205310	2SD330
Q927	M07387303	2SC1740LN
Q928	M05205310	2SD330
Q929	M07228303	2SD571
Q930	M07141303	2SC1741

Symbol No.	Part No.	Description
ELECTRICAL PARTS		
C1	M07470360	C-PAPER-450V 103M ⚠
C943	M05184370	C-PP-630
R860	M05184365	R-METAL 2W68-J
R980	M05176420	R-FUSE 1/4W 33-J ⚠
R981	M07139411	R-FUSE 1/2W 22-J ⚠
VR101	M05130350	VR-STD-A50K 25 (Rec. Level)
VR102	M05175360	VR-SEMI-B20K (Play Out)
VR103	M05184360	VR-SEMI-B30K (Level Ind. Adj.)
VR104	M05175361	VR-SEMI-B50K (Record Sensiting)
VR901	M05175362	VR-SEMI-B100K (Bias)
VR902	M05175362	VR-SEMI-B100K (Bias)
VR903	M05175362	VR-SEMI-B100K (Bias)
VR904	M05175362	VR-SEMI-B100K (Bias)
F2	M07325492	FUSE 2A ⚠
F3	M07325492	FUSE 2A ⚠
F4	M05168490	FUSE 1.5A ⚠
F5	M05168490	FUSE 1.5A ⚠
FL101	M05184480	MPX FILTER
L102	M05175420	COIL 39mH
L103	M05110420	COIL 4.7mH
T101	M05175411	TRANS-AUDIO
T901	M05184420	COIL-OSC
PL1	M05162490	LAMP (Tape Balance)
	M05147492	LAMP 5V-20mA (Mechanism Operation Button)
S1	M05113430	SW-PUSH (Power) ⚠
S3	M05129431	SW-MICR (Anti Recording)
S101	M05157430	SW-SLIDE (Rec/Play)
S102	M05162430	SW-LEVER (Dolby NR)
S103	M05184430	SW-LEVER (Tape Select)
S104	M05176431	SW-LEVER (Tape Select)
S105	M05147430	SW-LEVER (Timer)
	M05147117	SW-PUSH (Mechanism Operation)
SOL1	M05147391	SOLENOID (Play)
SOL2	M05147392	SOLENOID (FF/Rew)
SOL3	M05147390	SOLENOID (Rec)

PACKAGING INSTRUCTION





MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE MITSUBISHI DENKI BLDG MARUNOUCHI TOKYO 100 TELEX J24532 CABLE MELCO TOKYO

M-T04-WG
SM-00
PRINTED IN JAP