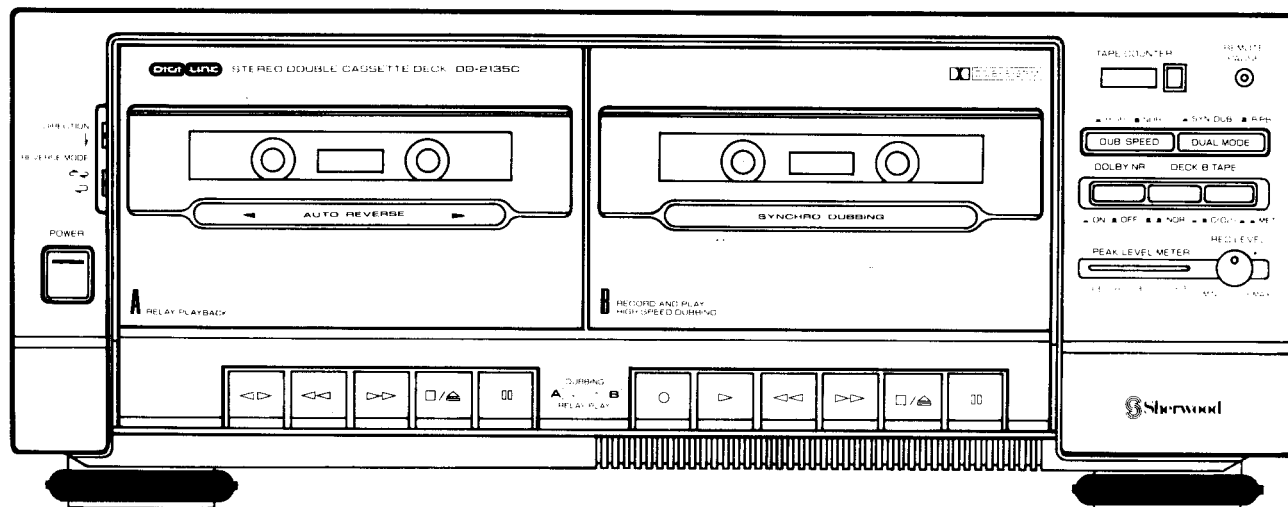


SERVICE MANUAL

DD-2135C

STEREO DOUBLE CASSETTE DECK



■ CONTENTS

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 **Sherwood**

Safety Precaution

WARNING

Service should not be attempted by anyone unfamiliar with the necessary precautions on this player. The following precautions are necessary during servicing.

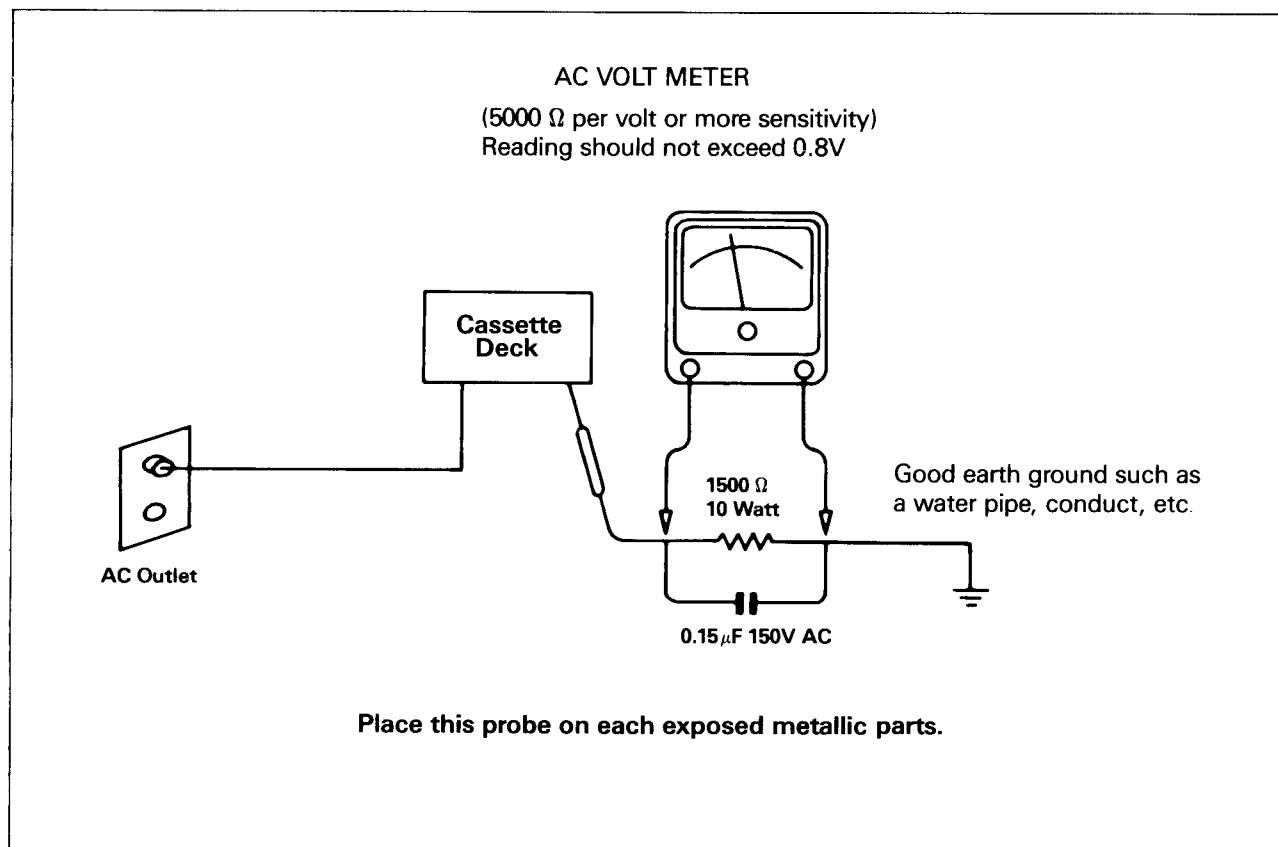
1. Many electrical and mechanical parts in this player have special characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements: electrical components having such features are identified by a Δ in the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully.

The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

2. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such

as terminals, screwheads, metal overlays, etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet. (Do not use a line isolation transformer during this check.) Use an AC volt-meter having 5000 Ω per volt or more sensitivity in the following manner: Connect a 1500 Ω 10 watt resistor paralleled by a 0.15 F, 150V AC capacitor, between a known good earth ground (water pipe, conduct, etc) and the exposed metallic parts, one at a time. Measure The AC voltage across the combination of 1500 Ω resistor and 0.15 F capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3volts RMS. This corresponds to 0.2mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



Track Configuration
4-track 2-channel & Rotary Reverse type head stereo double Cassette Deck

Motor

Electronic governor high torque DC motor×2

Mechanism

1 Motor, 2-solenoid mechanism×2

Tape speed (FWD/REV)

1-7/8 ips (4.76cm/sec) $\pm$ 1.0%

Heads

Rotary Reverse head (Recording/Playback head×1, Erasing head×1)

Rotary Reverse head (Playback head×1)

Wow and flutter (WRMS)

No more than 0.1% (JIS)

No more than 0.15% (DIN)

Fast Winding Time

Approx. 120 seconds with C-60 cassette tape $\pm 0.15\%$

Frequency Response at -20dB Rec/PB *Dolby NR off

Normal tape: 35-14,500Hz ± 3 dB

CrO₂ tape: 35-15,000Hz $\pm$ 3dB

Metal tape: 35-16,000Hz $\pm$ 3dB

Singal to noise ratio Rec/PB at Ref. 400Hz (K3 is 3%)

Dolby NR B (Weighted): 64dB at CrO₂ tape

Dolby NR off (Weighted): 55dB at CrO2 tape

Third harmonic distortion

Less than 1.8% at 1 kHz, 0dB Rec/PB

Channel separation at 1 kHz, 0dB Rec/PB

More than 37dB

Input sensitivity/impedance

Line 70mV/47kΩ

Output level/Impedance

Line 500mV/1.2kΩ

Power consumption: 12 Watts

Power requirements:

(A): 120V 50Hz for USA/Canadian version

(B): 120/220V 60/50Hz for multi-voltage version (switchable)

(C): 220V 50Hz for general European version

(D): 220V 50Hz for Germanian & Italian version

(E): 240V 50Hz for British & Australian version

(F): 220V 50Hz for Swiss & Scandinavian version

Dimensions:

350(W) × 121(H) × 280(D) mm,

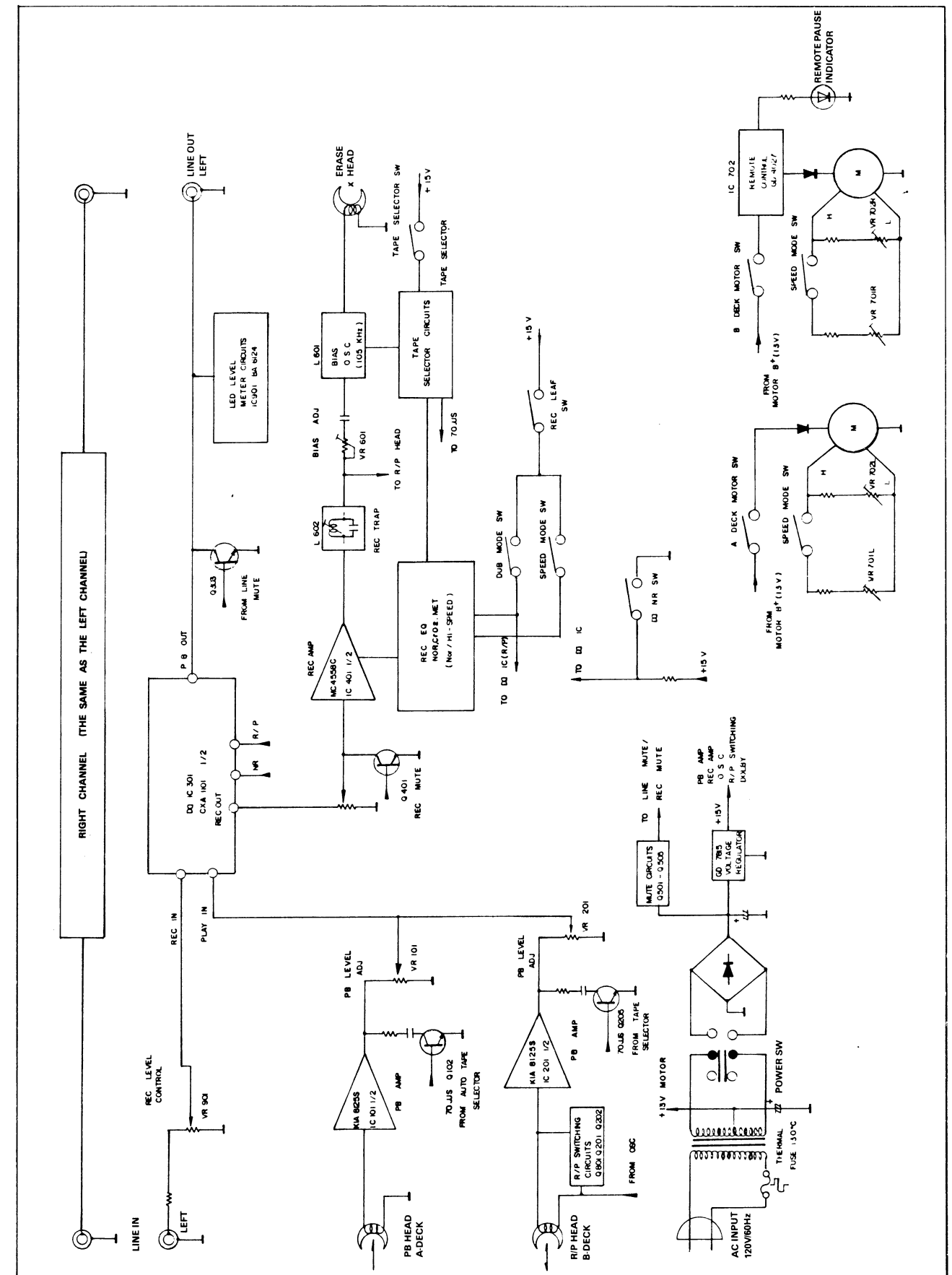
13.7(W) × 4.8(H) × 11(D) inches

Weight (Net): 4kg, (9lbs, 6.4 oz)

Note: Specifications and design subject to change without notice for improvements. Component and subject to modification to insure best operation under differing local conditions. This manual is based American (A) standard, and provides information on regional circuit modification through use of altern schematic diagrams, and information on regional component variations use of parts list.

* Dolby Noise Reduction manufactured under license from Dolby Laboratories Licensing Corporation.

Block Diagram



Alignment Procedures

1. Before Measurements and Adjustment

The following general conditions apply to the electrical measurements and adjustments unless especially stated otherwise.

- Dolby NR switch off.
- Volume control: Recording level VR901 max.
- Use 500mV (200mwb/m) for 0 dB as the standard level of the unit.

— Test tape

- TCC-154 ____ Azimuth (12.5kHz, -20dB)
- TCC-122 ____ Tape speed (3kHz, -10dB)
- TCC-130 ____ Playback level (Dolby NR ref. tape 400Hz, 0dB)
- TCC-184 ____ Playback frequency response

— Reference Tape

- Normal ____ TDK AD-60
- CrO2 ____ TDK SA-60
- Metal ____ TDK MA-X60

2. Instrument required

- Audio frequency oscillator
- ACVM or dual channel, mV-meter
- Wow/Flutter meter
- Oscilloscope

Playback section

Adjustments	Test tape	Mode	Apply signal to	Measure on	Read on	Adjust with	Adjust to	
Head Azimuth	TCC-154 12.5kHz (A.BEX)	FWD play (A & B Deck)		Line output	ACmV-meter Oscilloscope	Head adjusting screw (lefts side)	Max. ^{*a} • Lissajous’ figure become a straight line with an angle 45 degrees	
		Head adjusting screw (right side)						
Playback Speed at normal	TCC-112 3kHz –10dB (A.BEX)	Play (A & B Deck)			Wow and Flutter Meter	A Deck VR701L & B Deck VR701R	3000Hz ± 15Hz ^{*b}	
						A Deck VR702L & B Deck VR702R	6000Hz – 15Hz	
	Playback Speed at Hi-speed				TCC-112 3kHz –10dB (A.BEX)	ACmV-meter	A Deck VR101L/R B Deck VR201L/R	500mV
						ACmV-meter		See graph Fig. 3 freq. response
Playback Level	TCC-130 400Hz 0dB (A.BEX)							
Playback frequency responce	TCC-184B 12.5kHz, 1kHz, 60Hz (A.BEX)							

Recording section

Adjustments	Test tape	Mode	Apply signal to	Measure on	Read on	Adjust with	Adjust to
Bias OSC Frequency	XA-X60 (TDK)	Rec / Pause		White color lead wire of CNT601	Frequency Counter	L601	105kHz ± 400Hz
105kHz trap suppression	MA-X60 (TDK)			TP601L/R	ACmV-meter Oscilloscope	L602L/R	Minimize the reading on ACVM

Adjustments	Test tape	Mode	Apply signal to	Measure on	Read on	Adjust with	Adjust to
Target value Bias	Metal MA-X60			TP2L/R		VR603	90mV
	CrO2					VR602	52mV
	Normal					VR601L/R	40mV
Recording Level	AD-60 (TDK)		400Hz to Line	Line out		VR401L/R	About 7mV *c
Bias	MA-X60 SA-60	Rec / Pause	400Hz to Line	Line out	ACmV-meter	See Target Value Bias	If it necessary repeat bias adjustment *d
	AD-60 (TDK)		4 kHz-6.3 kHz 10kHz-12kHz 14kHz-16kHz to Line in		Recording number of Frequency with the same input voltage and play them back.		
Level Meter	Arbitrary Tape	Rec / Pause	400Hz to Line in	Dolby level Point	ACmV-meter Oscilloscope	VR901	
19 kHz suppression				Line input	ACmW-meter	LF Generator	70mV
			19 kHz to Line in	Line output	ACmV-meter Oscilloscope	L301L/R	Minimize the reading on ACVM

Note:

- ^{*a}. Prior to any measurement or adjustment with the tape running, heads and tape guides should be degaussed and cleand. Reference below the figure.
- ^{*b}. The maximum permissibie speed variation ± 0.5%. Moreover the Wow and Flutter can be read. This value should not be exceed 0.2%.
- ^{*c}. The voltage on Line out should read 500mV ± 20mV. If this is not the case reduce the LF signal (bias disabled) by as many dB's as the reading was too low or too high by means of VR401L/R.
- ^{*d}. When the channel is adjusted, this may slightly affect the adjustment of the other channel. If the adjustment is correct, the frequency response curve will be similar to curve b in figure 4, distortion below 3%.

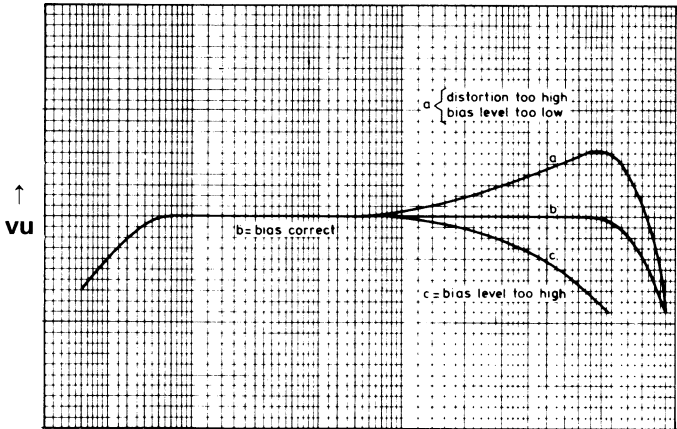


Fig. 2 Frequency → f

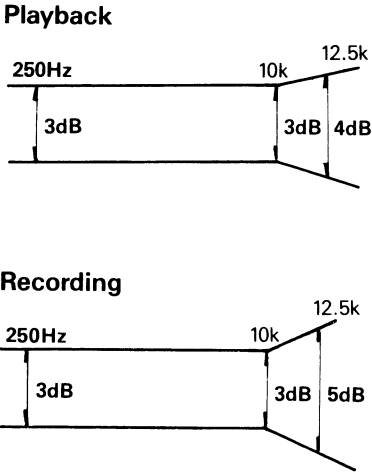
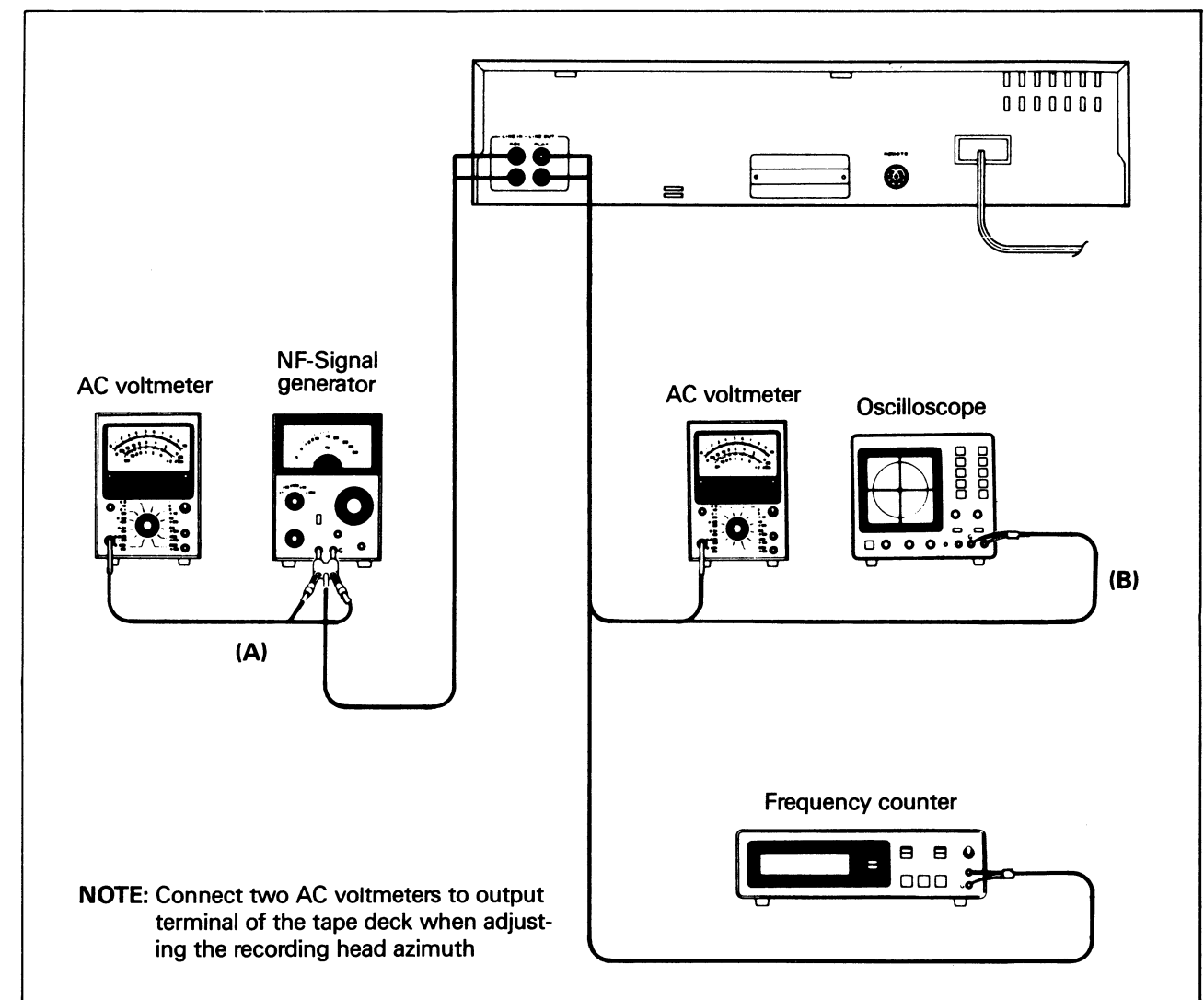
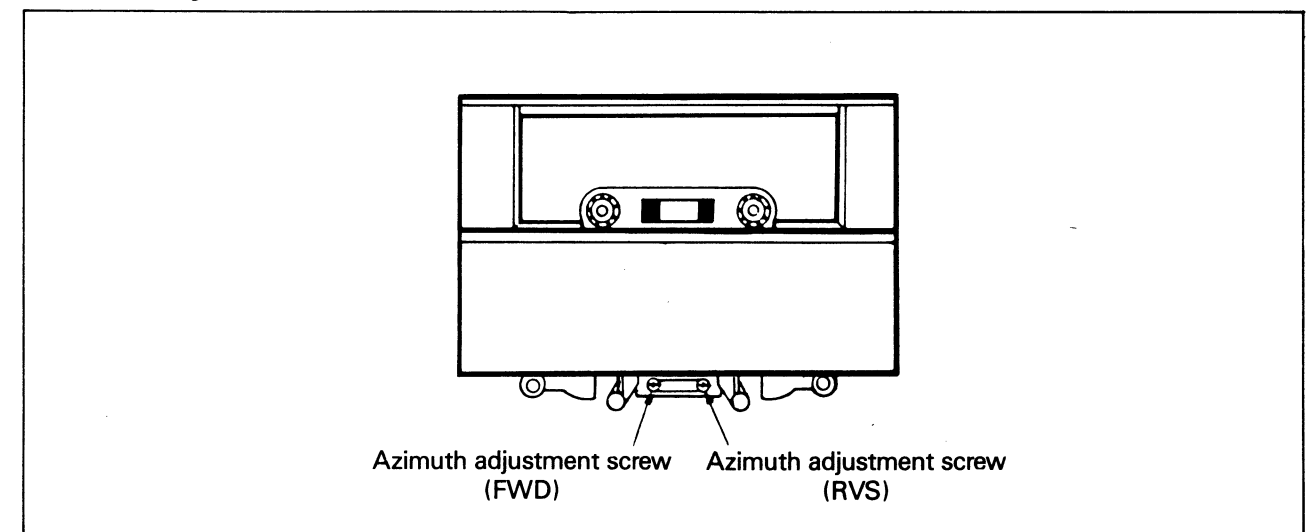


Fig. 1 Allowable Playback/Recording Frequency Response Zone



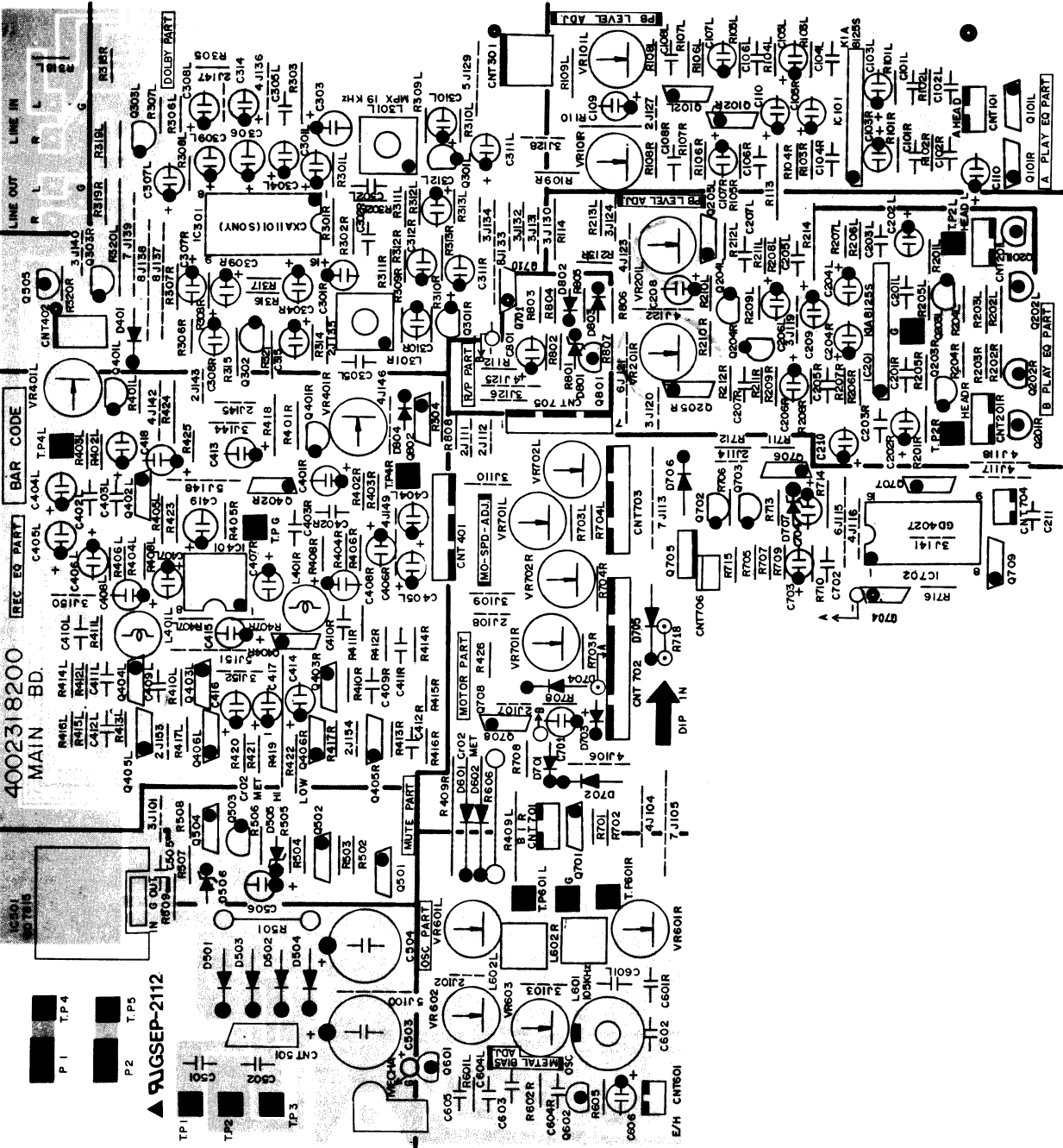
Azimuth Adjustment Point



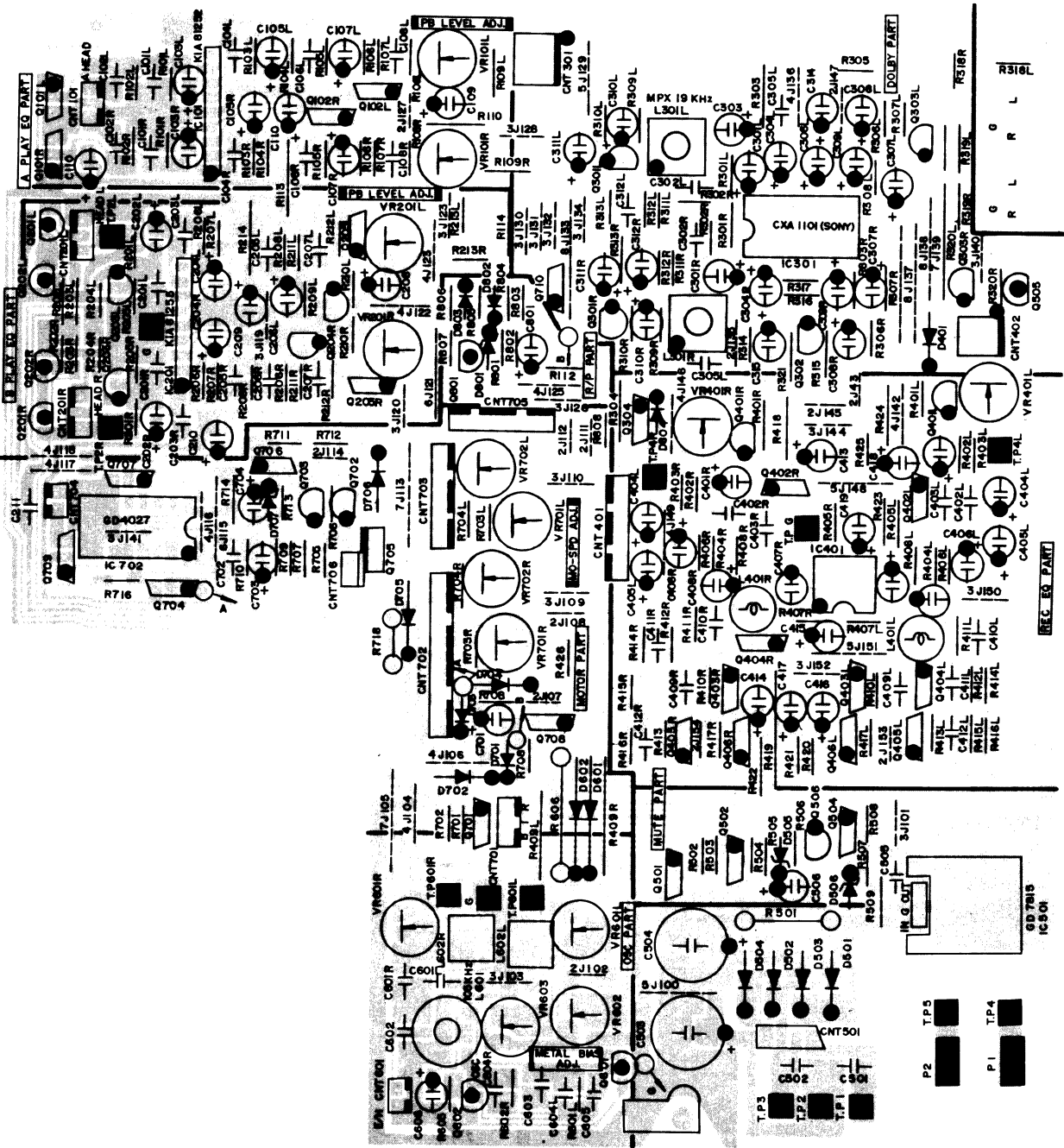
P.C. Boards (Top & Bottom Views)

MAIN P.C. BOARD 4002318200

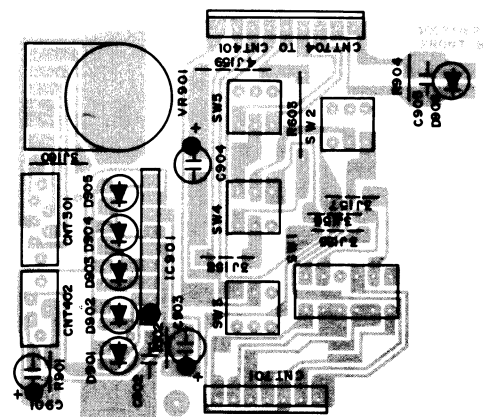
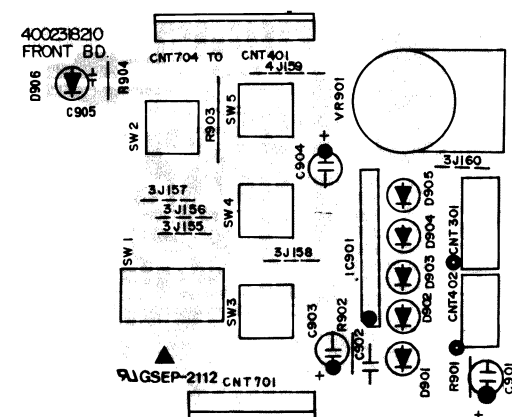
(TOP VIEW)



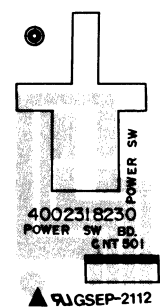
(BOTTOM VIEW)



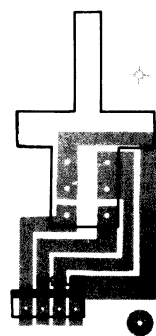
(TOP VIEW)



(TOP VIEW)



(BOTTOM VIEW)



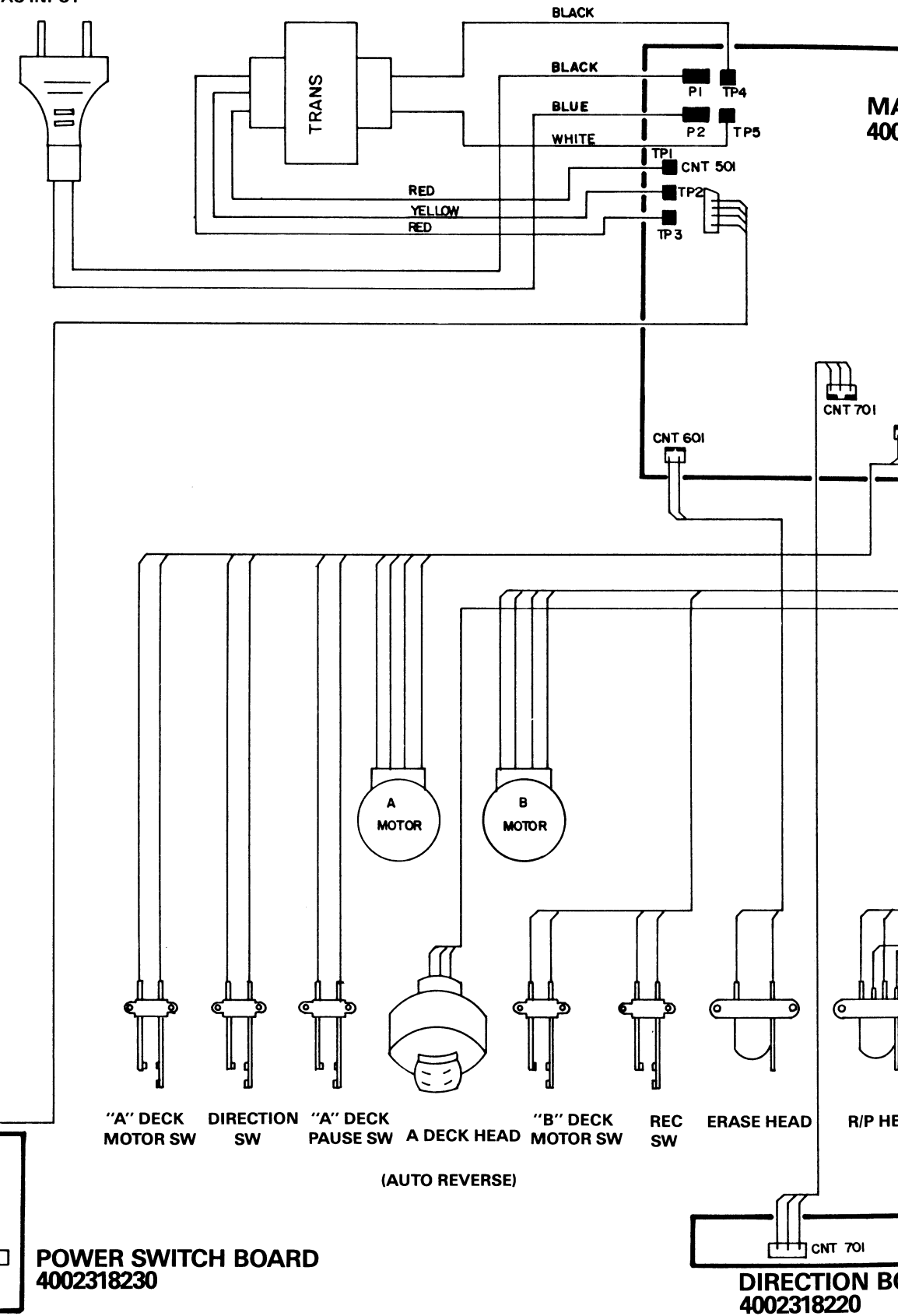
(TOP VIEW)



(BOTTOM VIEW)



AC INPUT



POWER SWITCH BOARD
4002318230

(AUTO REVERSE)

DIRECTION BO
4002318220

AC INPUT

TRANS

BLACK

BLUE

WHITE

RED

YELLOW

RED

P1

P2

TP1

TP2

TP3

TP4

TP5

CNT 501

CNT 601

CNT 701

CNT 702

CNT 703

CNT 704

CNT 705

CNT 706

CNT 401

CNT 402

CNT 301

CNT 101

CNT 201R

CNT 201L

"A" DECK MOTOR SW

DIRECTION SW

"A" DECK PAUSE SW

A DECK HEAD

"B" DECK MOTOR SW

REC SW

ERASE HEAD

R/P HEAD

(AUTO REVERSE)

POWER SWITCH BOARD 4002318230

MAIN BOARD 4002318200

REMOTE CONTROL DATA TO AMP

FRONT BOARD 4002318210

CNT 501

CNT 701

CNT 705

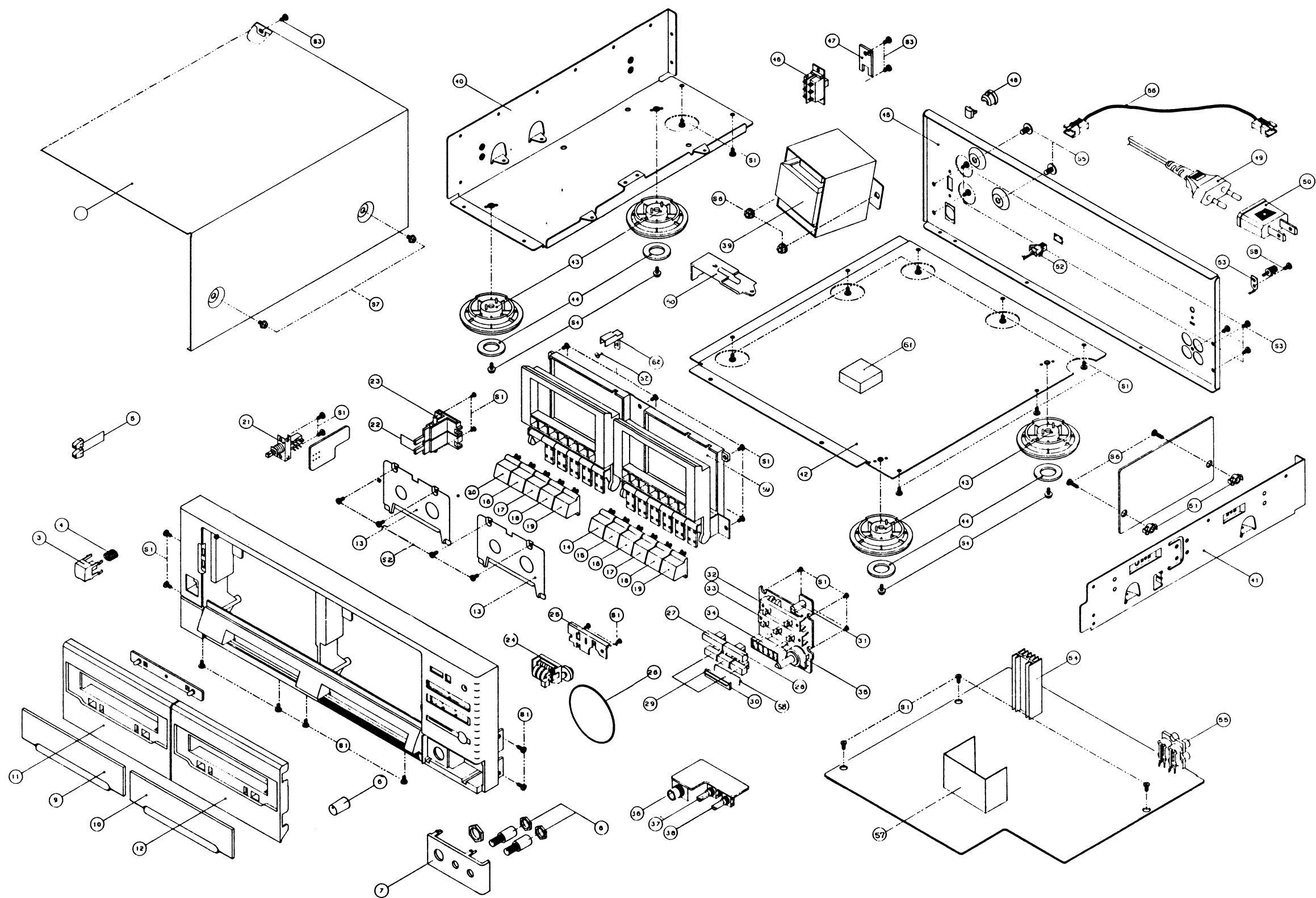
CNT 704 TO CNT 401

CNT 402

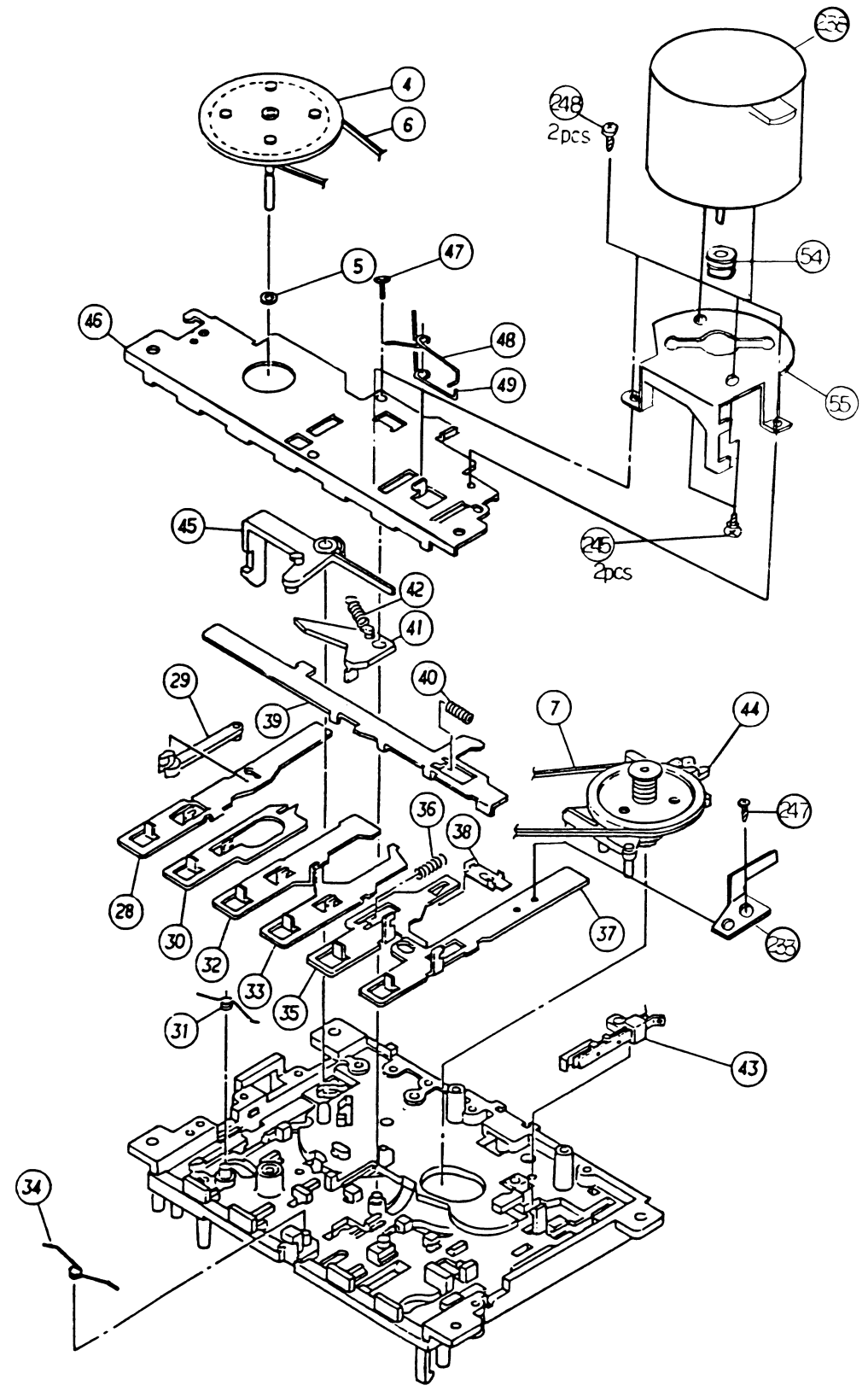
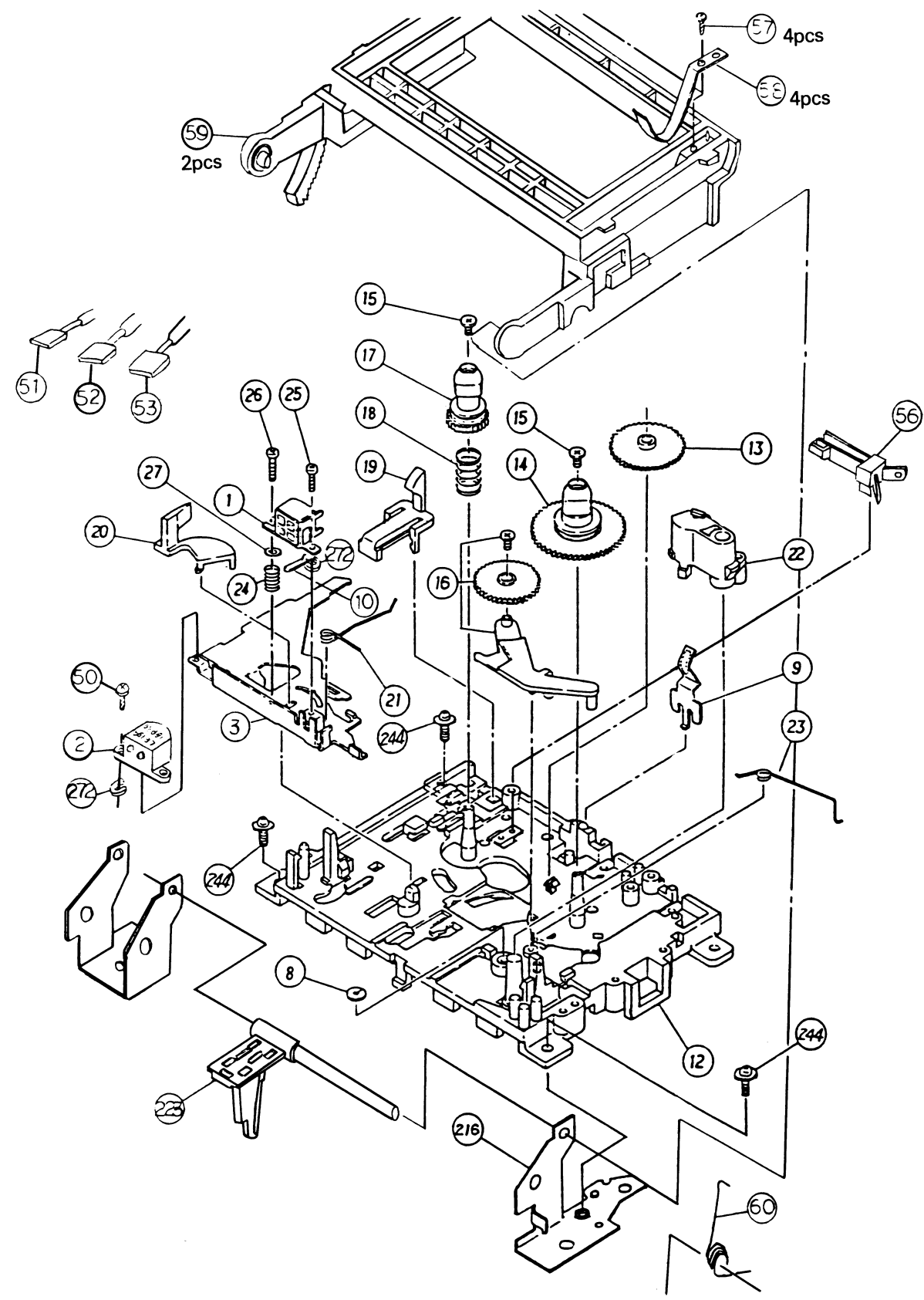
CNT 301

VERSION	POWER TRANSFORMER	
	PART NO	REMARK
A	2828042007	AC 120V 60Hz
B	2828045801	AC 120V/220V 60/ 50Hz
C, D, F	2828045201	AC 220V 50Hz
E	2828048201	AC 240V 50Hz

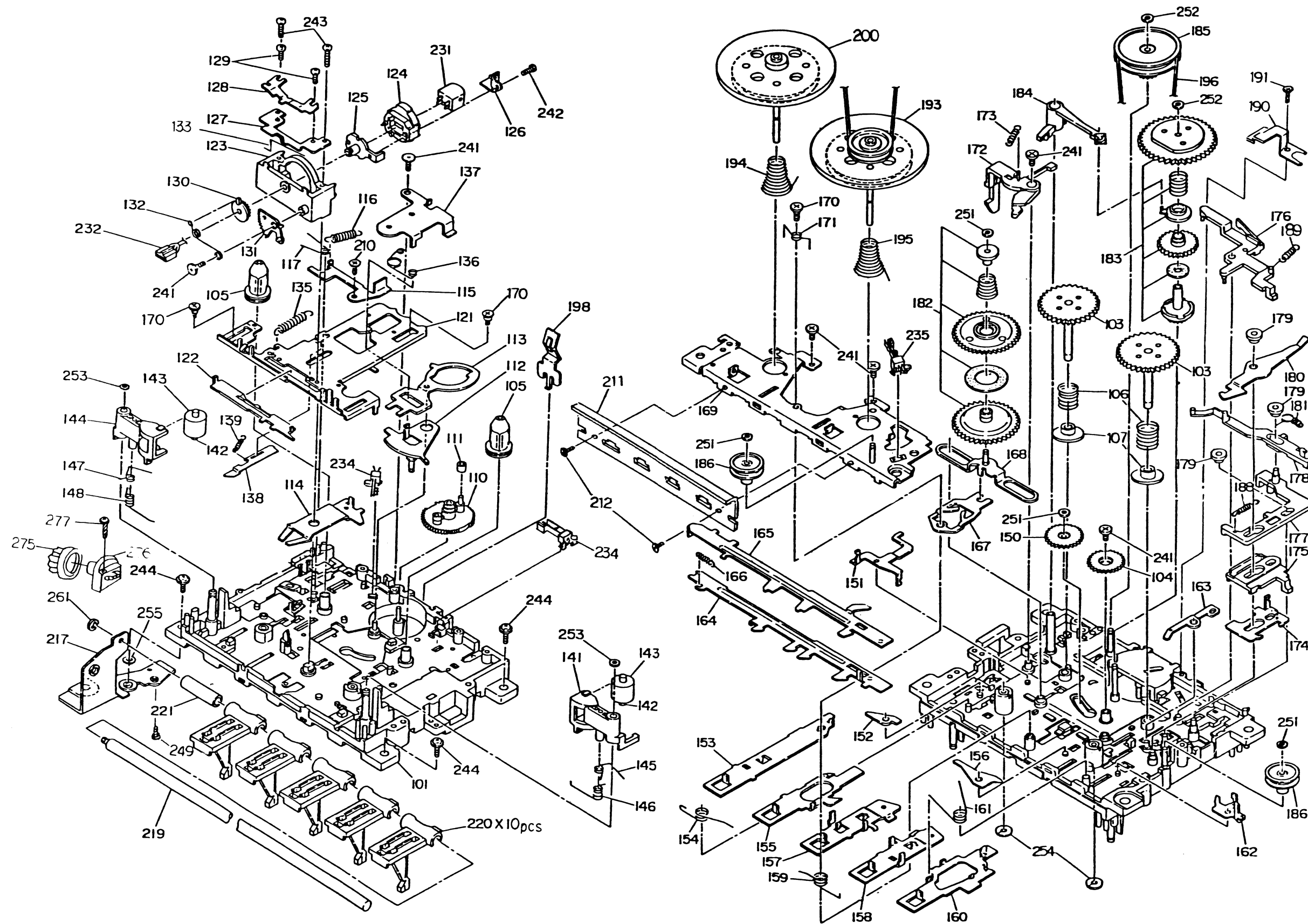
Exploded View (Cabinet & Chassis)



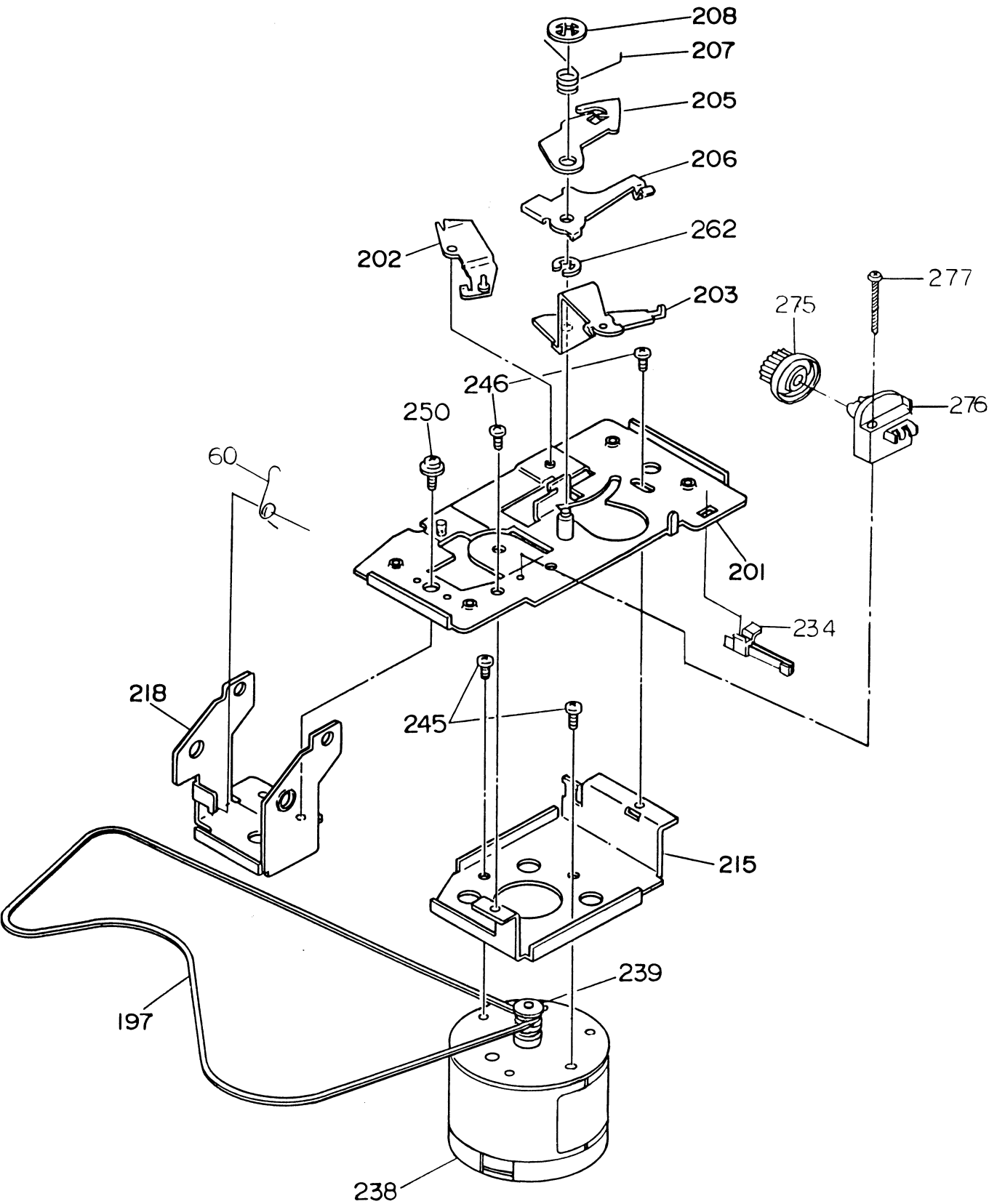
Exploded View (Deck Mechanism Ass'y I)



Exploded View (Deck Mechanism Ass'y II)



Exploded View (Deck Mechanism Ass'y III)



Electrical Parts List

PRODUCT SAFETY NOTICE: Products marked with $\triangle$ have special characteristics important to safety. If you replace any of these components, carefully read the product safety notice of this manual. Don't degraded the safety of the product through improper servicing.
Resistors & Capacitors tolerance, D: $\pm 5\%$, J: $\pm 0.5\%$, K: $\pm 10\%$, M: $\pm 20\%$, Z: $+80\%$, -20% .

Ref. No.	Part No.	Description	Remark
Main Board 4002318200			
Capacitors			
C101L/R	3579471130	Ceramic 470pF 50V J	
C102L/R	3579331130	Ceramic 330pF 50V J	
C103L/R	3479210971	Electric SA 1 μ F 50V M	
C104L/R	3579221130	Ceramic 220pF 50V J	
C105L/R	3479233031	Electric SA 33 μ F 16V M	
C106L/R	3679822120	Mylar 0.0082 μ F 100V J	
C107L/R	3479247971	Electric SA 4.7 μ F 50V M	
C108L/R	3679153120	Mylar 0.015 μ F 100V J	
C109	3479210061	Electric SA 10 μ F 35V M	
C110/C111	3479247031	Electric SA 47 μ F 16V M	
C201L/R	3579821130	Ceramic 820pF 50V J	
C202L/R	3479210971	Electric SA 1 μ F 50V M	
C203L/R	3579221130	Ceramic 220pF 50V J	
C204L/R	3479233031	Electric SA 33 μ F 16V M	
C205L/R	3679822120	Mylar 0.0082 μ F 100V J	
C206L/R	3479247971	Electric SA 4.7 μ F 50V M	
C207L/R	3679153120	Mylar 0.015 μ F 100V J	
C208	3479233031	Electric SA 33 μ F 16V M	
C209/C210	3479247031	Electric SA 47 μ F 16V M	
C211	3579102530	Ceramic 1000pF 50V Z	
C301L/R	3479247971	Electric SA 4.7 μ F 50V M	
C302L/R	3679392120	Mylar 0.0039 μ F 100V J	
C303	3409210131	Electric SA 100 μ F 16V M	
C304L/R	3479247971	Electric SA 4.7 μ F 50V M	
C305L/R	3579561130	Ceramic 560pF 50V J	
C306	3409210131	Electric SA 100 μ F 16V M	
C307L/R	3479247971	Electric SA 4.7 μ F 50V M	
C308L/R	3479268871	Electric SA 0.68 μ F 50V M	
C309L/R	3479247971	Electric SA 4.7 μ F 50V M	
C310L/R	3479247971	Electric SA 4.7 μ F 50V M	
C311L/R	3479210971	Electric SA 1 μ F 50V M	
C312L/R	3479233031	Electric SA 33 μ F 16V M	
C313	-	Not used !	
C314/C315	3479210061	Electric SA 10 μ F 35V M	
C401L/R	3479210971	Electric SA 1 μ F 50V M	
C402L/R	3679223120	Mylar 0.022 μ F 100V J	
C403L/R	3679682120	Mylar 0.068 μ F 100V J	
C404L/R	3479247871	Electric SA 0.47 μ F 50V M	
C405L/R	3479247871	Electric SA 0.47 μ F 50V M	
C406L/R	3479233031	Electric SA 33 μ F 16V M	
C407L/R	3479233031	Electric SA 33 μ F 16V M	
C408L/R	3479247971	Electric SA 4.7 μ F 50V M	
C409L/R	3679223120	Mylar 0.022 μ F 100V J	
C410L/R	3679153120	Mylar 0.015 μ F 100V J	
C411L/R	3679153120	Mylar 0.015 μ F 100V J	
C412L/R	3679182120	Mylar 0.0018 μ F 100V J	
C413-C418	3479210061	Electric SA 10 μ F 35V M	
C419	3409210131	Electric SA 100 μ F 16V M	
C501/C502	3579104534	Ceramic 0.1 μ F 50V Z	
C503	3409247149	Electric SA 470 μ F 25V M	
C504	3409247169	Electric SA 470 μ F 35V M	
C505	3579104534	Ceramic 0.1 μ F 50V J	

Ref. No.	Part No.	Description	Remark
C506	3409210131	Electric SA 100 μ F 16V M	
C601L/R	3579471130	Mylar 470pF 100V J	
C602	3609272130	Mylar 0.0027 μ F 160V J	
C603	3679103120	Mylar 0.01 μ F 100V M	
C604L/R	3679562120	Mylar 0.0056 μ F 100V M	
C605	3679103120	Mylar 0.01 μ F 100V M	
C606	3479210061	Electric SA 10 μ F 35V M	
C701	3479247971	Electric SA 4.7 μ F 50V M	
C702	3579221130	Ceramic 220pF 50V J	
C703	3479210871	Electric SA 0.1 μ F 50V M	
C704	3479247031	Electric SA 47 μ F 16V M	
C801	3479210061	Electric SA 10 μ F 35V M	
Connectors			
CNT101	4428516210	Plug 3P	
CNT201L/R	3328517610	Plug 3P	
CNT301	4428525260	Wire Trap 5P	
CNT401	4428518010	Plug 7P	
CNT402	4428525240	Wire Trap 3P	
CNT501	4428505610	Plug 4P	
CNT601	4428517510	Plug 2P	
CNT701	4428517610	Plug 3P	
CNT702	4428518410	Plug 11P	
CNT703	4428518010	Plug 7P	
CNT704	4428517510	Plug 2P	
CNT705	4428518010	Plug 7P	
CNT706	4358502304	Ass'y 2P, W/Commandor	
Coils			
L301L/R	2658301140	19KHz, MPX Filter	
L401L/R	2648601310	Inductor 4.5mH	
L601	2638601150	105kHz, Bias OSC	
L602L/R	2658501080	105 kHz, Record Trap.	
Diodes			
D401	2058306101	1N4148, Switching	
D501-D504	2058100600	1N4002, Rectifier	
D505	2058599100	DZ 3.3BM Zener	
D506	2058599116	DZ 12BM Zener	
D601/D602	2058306101	1N4148, Switching	
D701-D703	2058306101	1N4148, Switching	
D704	2058100600	1N4002, Rectifier	
D705	2058306101	1N4148, Switching	
D706	2058100600	1N4002, Rectifier	
D707	2058599103	DZ 5.1BM Zener	
D801	2058599100	DZ 3.3BM Zener	
D802-D804	2058306101	1N4148, Switching	
ICs			
IC101/IC201	2168006104	KIA 8125S, Dual OP Amp	

Ref. No.	Part No.	Description	Remark
IC301 IC401 IC501 IC701	2168022115 2168000114 2168601105 2138009100	CXA1101, Dolby HC4558C, Dual OP Amp GD7815 GD4027	
Resistors: All resistors are 1/5W carbon film ± 5% tolerance, unless otherwise specified. M. is metal film, M.O. is metal oxide and C. is cement type.			
R101L/R R102L/R R103L/R R104L/R R105L/R R106L/R R107L/R R108L/R R109L/R R110 R111 R112 R113 R114	3069104970 3069104970 3069121970 3069183970 30693394970 3069332970 3069472970 3069104970 3069333970 3069472970 . 3069472970 3069561970 3069122970	100kΩ 100kΩ 120Ω 18kΩ 390kΩ 3.3kΩ 4.7kΩ 100kΩ 33kΩ 4.7kΩ Not used ! 4.7kΩ 560Ω 1.2kΩ	
R201L/R R202L/R R203L/R R204L/R R205L/R R206L/R R207L/R R208L/R R209L/R R210L/R R211L/R R212L/R R213L/R R214	3069101970 3069332970 3069472970 3069102970 3069104970 3069121970 3069183970 3069394970 3069332970 3069103970 3069472970 3069104970 3069333970 3069102970	100Ω 3.3kΩ 4.7kΩ 1kΩ 100kΩ 120Ω 18kΩ 390kΩ 3.3kΩ 10kΩ 4.7kΩ 100kΩ 33kΩ 1kΩ	
R301L/R R302L/R R303 R304 R305 R306L/R R307L/R R308L/R R309L/R R310L/R R311L/R R312L/R R313L/R R314 R315 R316 R317 R318L/R R319L/R R320L/R R321	3069473970 3069562970 3069121970 3069102970 3069473970 3069102970 3069103970 3069102970 3069242970 3069472970 3069224970 3069224970 3069102970 3069433970 3069103970 3069472970 3069562970 3069223970 3069473970 3069332970 3069103970	47kΩ 5.6kΩ 120Ω 1kΩ 47kΩ 1kΩ 10kΩ 1kΩ 2.4kΩ 4.7kΩ 220kΩ 220kΩ 1kΩ 43kΩ 10kΩ 4.7kΩ 5.6kΩ 22kΩ 47kΩ 3.3kΩ 10kΩ	
R401L/R R402L/R R403L/R	3069103970 3069392970 3069182970	10kΩ 3.9kΩ 1.8kΩ	

Ref. No.	Part No.	Description	Remark
R404L/R R405L/R R406L/R R407L/R R408L/R R409L/R R410L/R R411L/R R412L/R R413L/R R414L/R R415L/R R416L/R R417L/R R418-R422 R423 R424/ R425 R426	3069222970 3069473970 3069392970 3069104970 3069123970 3069472970 3069151970 3069151970 3069151970 3069104970 3069822970 3069150970 3069562970 3069104970 3069472970 3069561970 3069103970 3069472970	2.2kΩ 47kΩ 3.9kΩ 100kΩ 12kΩ 4.7kΩ 150Ω 150Ω 150Ω 100kΩ 8.2kΩ 150Ω 5.6kΩ 100kΩ 4.7kΩ 560Ω 10kΩ 4.7kΩ	
R501 R502 R503 R504 R505 R506 R507/ R508 R509	3039100472 3069223970 3069103970 3069104970 3069332970 3069104970 3069472970 3069102970	M.O., 10Ω 1W 22kΩ 10kΩ 100kΩ 3.3kΩ 10kΩ 4.7kΩ 1kΩ	
R601L/R R602-R604 R605 R606	3069333970 . 3069100970 3039271472	33kΩ Not used ! 10Ω 270Ω 1W	
R701/ R702 R703L/R R704L/R R705 R706 R707/ R708 R709 R710 R711 R712 R713/ R714 R715 R716 R717 R718	3069102970 3069102970 3069154970 3069103970 3069472970 3069103970 3069472970 3069223970 3069472970 3069103970 3069102970 3069473970 3069102970 3069103970 3069103970 3069103970	1kΩ 1kΩ 150kΩ 10kΩ 4.7kΩ 10kΩ 4.7kΩ 22kΩ 4.7kΩ 10kΩ 1kΩ 47kΩ 1kΩ 10kΩ 10kΩ	
R801 R802 R803 R804 R805 R806 R807 R808	3069101970 3069223970 3069273970 3069472970 3069223970 3069101970 3069102970 3069103970	100Ω 22kΩ 27kΩ 4.7kΩ 22kΩ 100Ω 1kΩ 10kΩ	
VR101L/R VR201L/R VR401L/R VR601L/R VR602 VR603	3248322320 3248322320 3248322320 3248104320 3248102320 3248102320	Semi 22K (B) Semi 22K (B) Semi 22K (B) Semi 100K (B) Semi 1K (B) Semi 1K (B)	

Ref. No.	Part No.	Description	Remark
VR701L/R VR702L/R	3248322220 3248102320	Semi 2.2K (B) Semi 1K (B)	
Transistors			
Q101L/R Q102L/R	2208622106 2208622106	NPN DTC114YS NPN DTC114YS	
Q201L/R Q202L/R Q203L/R Q204L/R Q205L/R	2008606113 2008606113 2008606112 2008606112 2208622106	MPS A05 MPS A05 2SD 1302S 2SD 1302S DTC 114YS	
Q301L/R Q302 Q303L/R	2208606104 2208606104 2008606112	KTC 1815Y KTC 1815Y 2SD 1302S	
Q401L/R Q402L/R Q403L/R Q404L/R Q405L/R Q406L/R	2028606104 2028622106 2028622106 2028622106 2208622106 2208622106	KTC 1815Y DTC 114YS DTC 114YS DTC 114YS DTC 114YS DTC 114YS	
Q501 Q502 Q503 Q504 Q505	2208622106 2208622106 2208606104 2208622106 2008206112	DTC 114YS DTC 114YS KTC 1815Y DTC 114YS MPS A55	
Q601	2008606113	MPS A05	
Q701 Q702 Q703 Q704 Q705 Q706-Q708 Q709	2208622106 2208606104 2208606104 2208622106 2028406124 2208622106 2208622108	DTC 114YS KTC 1815Y KTC 1815Y DTC 114YS B 1336 DTC 114YS DTC 114TS	
Q801 Q802	2208206112 2208622106	MPS A55 DTC 114YS	
Others			
P1-P2 TP2L/R TP4L/R TP601L/R	4225001410 4225000315 4225000315 4225000315	Solder Terminal Pin Wrapping Pin Wrapping Pin Wrapping	

Front Board 4002318210						
Capacitors						
C901 C902 C903 C904	3479247971 3579104534 3479210061 3479233031	Electric SA Ceramic Electric SA Electric SA	4.7μF 0.1μF 10μF 33μF	50V 50V 35V 16V	M Z M M	
Connectors						
CNT301 (CNT301)	4119205246 4428525390	Slat Wire 5P Connector Wafer 5P				

Ref. No.	Part No.	Description	Remark
CNT402 (CNT402) CNT401 to CNT704 CNT705	4119203306 4428525370 4358509301 4358507263	Slat Wire 3P Wafer 3P Ass'y 9P to Main B'D CNT401 Ass'y 7P to Main B'D CNT704 Ass'y 2P Ass'y 7P	
IC			
IC901	2168022114	BA 6124, LED Driver.	
LEDs			
D901-D903 D904/ D905 D906	2308220330 2308220127 2308060304	SLH 34 MC, Green SLR 34 URC, Red KLG 226 EGN, Green	
Resistors			
R901/ R902 R903	3069103970 3069472970	10kΩ 4.7kΩ	

Direction Board 4002318220			
Connector			
CNT701	4358503406	Ass'y 3P to Main Board	
LEDs			
D708/ D709	2308220324	SLR 40 MG3 , Green	

Power Switch Board 4002318230			
Connector			
CNT501	4355029540	Ass'y 4P to Main Board	

Ref. No.	Part No.	Description	Remark
VR701L/R	3248322220	Semi 2.2K (B)	
VR702L/R	3248102320	Semi 1K (B)	
Transistors			
Q101L/R	2208622106	NPN DTC114YS	
Q102L/R	2208622106	NPN DTC114YS	
Q201L/R	2008606113	MPS A05	
Q202L/R	2008606113	MPS A05	
Q203L/R	2008606112	2SD 1302S	
Q204L/R	2008606112	2SD 1302S	
Q205L/R	2208622106	DTC 114YS	
Q301L/R	2208606104	KTC 1815Y	
Q302	2208606104	KTC 1815Y	
Q303L/R	2008606112	2SD 1302S	
Q401L/R	2028606104	KTC 1815Y	
Q402L/R	2028622106	DTC 114YS	
Q403L/R	2028622106	DTC 114YS	
Q404L/R	2028622106	DTC 114YS	
Q405L/R	2208622106	DTC 114YS	
Q406L/R	2208622106	DTC 114YS	
Q501	2208622106	DTC 114YS	
Q502	2208622106	DTC 114YS	
Q503	2208606104	KTC 1815Y	
Q504	2208622106	DTC 114YS	
Q505	2008206112	MPS A55	
Q601	2008606113	MPS A05	
Q701	2208622106	DTC 114YS	
Q702	2208606104	KTC 1815Y	
Q703	2208606104	KTC 1815Y	
Q704	2208622106	DTC 114YS	
Q705	2028406124	B 1336	
Q706-Q708	2208622106	DTC 114YS	
Q709	2208622108	DTC 114TS	
Q801	2208206112	MPS A55	
Q802	2208622106	DTC 114YS	
Others			
P1-P2	4225001410	Solder Terminal	
TP2L/R	4225000315	Pin Wrapping	
TP4L/R	4225000315	Pin Wrapping	
TP601L/R	4225000315	Pin Wrapping	

Front Board 4002318210						
Capacitors						
C901	3479247971	Electric SA	4.7μF	50V	M	
C902	3579104534	Ceramic	0.1μF	50V	Z	
C903	3479210061	Electric SA	10μF	35V	M	
C904	3479233031	Electric SA	33μF	16V	M	
Connectors						
CNT301	4119205246	Slat Wire 5P				
(CNT301)	4428525390	Connector Wafer 5P				

Ref. No.	Part No.	Description	Remark
CNT402	4119203306	Slat Wire 3P	
(CNT402)	4428525370	Wafer 3P	
CNT401 to CNT704	4358509301	Ass'y 9P to Main B'D CNT401 Ass'y 7P to Main B'D CNT704 Ass'y 2P Ass'y 7P	
CNT705	4358507263		
IC			
IC901	2168022114	BA 6124, LED Driver.	
LEDs			
D901-D903	2308220330	SLH 34 MC, Green	
D904/D905	2308220127	SLR 34 URC, Red	
D906	2308060304	KLG 226 EGN, Green	
Resistors			
R901/R902	3069103970	10kΩ	
R903	3069472970	4.7kΩ	

Direction Board 4002318220			
Connector			
CNT701	4358503406	Ass'y 3P to Main Board	
LEDs			
D708/D709	2308220324	SLR 40 MG3 , Green	

Power Switch Board 4002318230			
Connector			
CNT501	4355029540	Ass'y 4P to Main Board	

Mechanical Parts List (Cabinet & Chassis)

No.	Part No.	Description	Q'ty	Remark
1	046122019711	Top Cover, Dark Gray	1	
2	048501015314	Panel Front, Dark Gray	1	
3	048545064411	Knob Power, Dark Gray	1	
4	6555008710	Spring Power, Main	1	
5	048545064911	Slide Knob, Dark Gray	2	
6	048545065011	Rotary Knob, REC., Dark Gray	1	
7	048583003012	Front Cover, Dark Gray	1	
8	.	Not used !		
9	048553010711	Door Window, A Deck, Dark Gray	1	
10	048553010712	Door Window, B Deck, Dark Gray	1	
11	048562001617	Deck Door, A Deck, Dark Gray	1	
12	048562001612	Deck Door, B Deck, Dark Gray	1	
13	048685003723	Cover Mechanism	2	
14	048543023811	Deck Knob, REC B Deck, Dark Gray	1	
15	048543023812	Deck Knob, Play, Dark Gray	1	
16	048543023813	Deck Knob, REW, Dark Gray	2	
17	048543023814	Deck Knob, F.F, Dark Gray	2	
18	048543023815	Deck Knob, Stop/E.J, Dark Gray	2	
19	048543023816	Deck Knob, Puaue, Dark Gray	2	
20	048543023817	Deck Knob, Auto/Play, Dark Gray	1	
21	4628055410	Power Switch,	1	
22	6305005010	Auto Shaft for Auto Reverse Black	2	
23	7005005610	Shaft Sus	1	
24	5318001210	Tape Counter, Black	1	
25	6505095310	Bracket Counter	1	
26	7165000650	Belt Counter	1	
27	048545064711	Knob, 2Key: Speed only, Dark Gray	1	
28	048545064715	Knob, 2Key: Mode only, Dark Gray	1	
29	8545064810	Knob, 3Key Tape Selector Dolby on/off	3	
30	048555026111	LED Window, Smog Arcryl.	1	
31	6705008320	LED Spacer	1	
32	4628055210	Push Switch, 2Key, Speed/Mode on/off	1	
33	4628047910	Push Switch, 3Key, W/2P	1	
34	6043007610	LED Holder	1	
35	3208056410	Rotary VR, REC.	1	
36-39	.	Not used !		
40	6122619910	Frame Side, Leff	1	
41	6122620020	Frame Side, Right	1	
42	6122414710	Cover Bottom	1	
43	046035102111	Base Foot, Gold	4	
44	6725002510	Cushion Felt, Black	4	
45	046102026826	Chassis Back, Black	1	A
	046102026836	Casssis Back, Black	1	B
	046102026846	Casssis Back, Black	1	C
	046102026856	Casssis Back, Black	1	D
	046102026866	Casssis Back, Black	1	E
	046102026876	Casssis Back, Black	1	F
46	4618000410	Voltage Selector	1	
47	6515000630	Voltage Holder	1	
48	6518000111	Stopper Cord, Black	1	
49	4308003910	AC Cord Power, Black	1	
50/51	.	Not used !		
52	4358502304D	Connector Ass'y, 2P Remocon Ass'y	1	
53	.	Not used !		
54	7505206230	Heat sink Regulator TR	1	
55	4438103110	RCA Jack, 4P, Play/Record	1	
56	4355023110	Ass'y Counter, 2P, Accessory Ass'y	2	
57	6165135710	Sheild Fence	1	
58	8535030210	Diffuser	1	
59	5708009910	Pigeon LW-402	1	
60	6505096910	PCB Bracket	1	
61	6715017320	Sponge	1	
62	4648500610	Switch Left	1	

No.	Part No.	Description	Q'ty	Remark
Screws				
S1	8109230081	#2BTC 3×8 ZNY	34	
S2	8119126063	#1PTC 2.6×6 ZNB	5	
S3	8119230082	#2PTC 3×8 ZNB	8	
S4	8159230081	#2WPTC 3×8 ZNY	4	
S5	8159440083	WSAM4×8 ZNB	6	
S6	.	Not used !		
S7	8209540011	Nut Flange M4 ZNY	2	
S8	8119240061	#2PTC 4×6 ZNY	1	

Mechanical Parts List (Deck Mechanism Ass'y)

No.	Part Code	Description	Q'ty	Remark
1	MS15RBA2N1K	R/P Head	1	
2	LE15ACIK	E Head	1	
3	PBC1257	Head Base B	1	
4	(PBE03625)	Flywheel Ass'y W		
4-1	PBE17099K	Flywheel Ring	1	
4-2	PBE17100	Capatan Shaft	1	
4-3	PBE1886	Flywheel W	1	
5	PGWP21X040013	P. Washer	1	
6	PBE5246	Belt	1	
7	PBE5239	Belt	1	
8	PGWN16X060040S	N. Washer	1	
9	PBE17000	Cassette Spring	1	
10	PBE3084	Lug Plate	1	
11	.	Not used !		
12	(PBD01085)	Base Ass'y		
12-1	PBB1146K	Base	1	
12-2	PBE17296	Capstan Metal	2	
13	PBE16640	F Gear	1	
14	(PBE03163)	T. Reel Ass'y		
14-1	PBE17170	Felt Buff	1	
14-2	PBE16627	T. Reel Base	1	
14-3	PBE17263	Reel Power	1	
14-4	PBE6606	C Spring	1	
14-5	PBE17551	T Reel Gear	1	
15	PBE17014	Bush B	2	
16	(PBE03167)	Idler Arm Ass'y		
16-1	PBD1874	Idler Arm	1	
16-2	PBE16641	Idler Gear	1	
16-3	PBE14927	Bush	1	
17	PBE16646	S. Reel	1	
18	PBE6602	S. Reel Spring	1	
19	PBE16643	Inter Lock Arm	1	
20	PBE16647	Tape Sensor	1	
21	PBE6911	Pinch Spring	1	
22	(PBE03501)	Pinch Arm Ass'y		
22-1	PBD10653	Pinch Arm	1	
22-2	PBE17174	Pinch Roller	1	
22-3	PBE17256	Roller Shaft	1	
23	PBE6610	Earth Spring	1	
24	PBE6604	Azimuth Spring	1	
25	PGSP10A2003K	D. Screw	1	
26	PGSN10A2008K	N. Screw	1	
27	PGWF22A050020	F. Washer	1	
28	PBE16681	Pause Lever	1	
29	PBE16625	Pause Arm	1	
30	PBE16680	S/E Lever	1	
31	PBE6614	Pause/SE Spring	1	
32	PBE16679	FF Lever	1	
33	PBE16678	REW Lever	1	
34	PBE6607	FF/REW Spring	1	
35	PBE16686	Play Lever	1	
36	PBE6865	Head Base Spring	1	
37	PBE16676	Rec Lever	1	
38	PBE17083	Rec Stop Lever	1	
39	PBD1873	Function Lever	1	
40	PBE6671	Function Spring	1	
41	PBE16619	S Arm	1	
42	PBE6831	Auto Stop Spring	1	
43	MSW1342NCV	Main Switch	1	
44	(PBD0942)	Power Arm Ass'y	1	
44-1	PBE17098	Shaft	1	
44-2	PBE17101	Felt Pulley	1	
44-3	PBE17095	Power Gear W	1	
44-4	PBE17096	Power Pulley W	1	

No.	Part Code	Description	Q'ty	Remark
44-5	PBE17094	SPR Stopper	1	
44-6	PBD1887	Power Arm W	1	
44-7	PBE17552	Friction Felt	1	
44-8	PBE6679	Spring	1	
44-9	PGWP75X110013	P Washer	1	
45	PBE16644	Eject Lever	1	
46	171113132	Holder Lever	1	
47	PBE17112	Bush C	1	
48	PBE6687	Spring	1	
49	PBE6618	REC Lever Spring	1	
50	PGSD20A2006K	D. Screw	1	
51	170724525	Ass'y Wire	1	
52	170724526	Ass'y Wire	1	
53	170724527	Ass'y Wire	1	
54	PBE16668	Motor Pulley	1	
55	PBE17173	Motor Bracket	1	
56	.	Not used !		
57	PGST20A2005K	T. Screw	4	
58	PBE14715	Keep Plate	4	
59	172642134	Cassette Case	2	
60	010824086	Spring	2	
101	(170933137)	Ass'y Mecha Chassis	1	
101-1	172101058	Mecha Chassis	1	
101-2	033004022	Pinch Arm Shaft	2	
101-3	PBE17296	Capstan Metal	2	
101-4	172624221	Capstan Metal	2	
101-5	033004024	Pulley Shaft	1	
101-6	033004033	T Pulley Shaft	1	
101-7	033004019	Pulley Shaft	1	
102	.	Not used !		
103	172223056	Gear Reel	2	
104	172224043	Gear FWD	1	
105	172284038	CAP Reel	2	
106	010814116	Spring	2	
107	172294004	Bush Reel D	2	
108/109	.	Not used !		
110	170934090	Ass'y Reverse Gear	1	
111	PBE17199	Coller B	1	
112	170934094	Ass'y Idler Plate	1	
113	171393029	Plate Reverse A	1	
114	171393027	Plate Reverse B	1	
115	171394020	Plate MO Joint	1	
116	010804041	Spring	1	
117	010824037	Spring	1	
121	171122035	Chassis Head	1	
122	171593034	Plate Slide	1	
123	172192057	Holder Head	1	
	(172192548)			
124	172393336	Holder Head F	1	
125	170934084	Ass'y Head Holder A	1	
126	171194015	Plate Head SP	1	
127	171194262	Plate Azimuth	1	
128	171604017	Plate Azimuth SP	1	
	(171604545)			
129	033004036	Screw Azimuth	2	
130	172224037	Gear Head A	1	
131	172214040	Gear Head B	1	
132	010824043	Spring	1	
133	(010824211)	Spring	1	
134	.	Not used !		
135	010804121	Spring	1	
136	010824044	Spring	1	

No.	Part Code	Description	Q'ty	Remark
137	171193026	Holder Gear	1	
138	171194171	Lever Gear Stop	1	
139	010804150	Spring	1	
140	.	Not used !		
141	172313054	Arm Pinch R	1	
142	PBE17256	Shaft	2	
143	170274002	Roller Pinch	2	
144	172313055	Arm Pinch L	1	
145	010824029	Spring	1	
146	010824123	Spring	1	
147	010824030	Spring	1	
148	010824026	Spring	1	
149	.	Not used !		
150	172224042	Gear Idler	1	
151	171393012	Plate Sensor Stop	1	
152	171394003	Arm Pause	1	
153	171553011	Lever Pause	1	
154	010824036	Spring	1	
155	171543030	Lever Stop	1	
156	171394149	Arm CUE Stop	1	
157	171533032	Lever FF	1	
158	171523031	Lever REW	1	
159	010824034	Spring	1	
160	171513148	Lever Play B	1	
161	010824033	Spring	1	
162	171394014	Plate Switch A	1	
163	171394001	Plate Switch B	1	
164	171592008	Plate Function A	1	
165	171592009	Plate Function B	1	
166	010804042	Spring	1	
167	171394016	Lever FF Idler	1	
168	170934095	Ass'y FF Idler Plate	1	
169	(170933096)	Ass'y Lever Holder	1	
169-1	171112036	Lever Holder	1	
169-2	033004097	Pulley Shaft	1	
170	PBE17614	Screw	3	
171	010824028	Spring	1	
172	172392050	Lever Eject	1	
173	010804074	Spring	1	
174	171594021	Plate MO	1	
175	172594039	Lever MO	1	
176	172393051	Lever DR	1	
177	172593047	Lever Sensor	1	
178	172593052	Lever Sensor B	1	
179	PBE17192	Bush	3	
180	171393102	Lever Cancel	1	
181	010804046	Spring	1	
182	170934059	Ass'y FF Tension	1	
183	170933063	Ass'y Tension	1	
184	172393072	Arm Sensor Stop	1	
185	172234044	Pulley Drive	1	
186	172234046	Pulley	2	
187	.	Not used !		
188	010804040	Spring	1	
189	010804154	Spring	1	
190-192	.	Not used !		
193	.	Ass'y Flywheel	1	
193-1	033254029	Capstan Shaft	1	
193-2	172203048	Flywheel	1	
193-3	PBE17099K	Flywheel Ring	1	
193-4	172234045	Pulley	1	
194	010814069	Spring	1	
195	010814068	Spring	1	
196	PBE5277	Belt	1	

No.	Part Code	Description	Q'ty	Remark
197	020834002	Belt	1	
198	171604019	Cassette Spring	1	
199	.	Not used !		
200	.	Ass'y Flywheel	1	
200-1	033254103	Capstan Shaft	1	
200-2	172203220	Flywheel	1	
200-3	PBE17099K	Flywheel Ring	1	
200-4	172194319	Bush	1	
201	(170933098)	Ass'y Connect Plate	1	
201-1	171193024	Plate Connect	1	
201-2	PBE17078	Shaft B	1	
202	170934133	Ass'y Pause Arm	1	
203	PBD10556	Lever Connect	1	
204	.	Not used !		
205	PBE17066	Plate Lock	1	
206	PBE17068	Plate Cancel	1	
207	PBE6688	Spring	1	
208	PGRS30P	Ring CS	1	
209	.	Not used !		
210	033004051	Screw Bush	1	
211	171194100	Holder	1	
212	PGSD10A1703	D Screw	2	
213/214	.	Not used !		
215	171193013	Holder Motor	1	
216	171193023	Holder Button R	1	
217	171193092	Holder Button D	1	
218	171193141	Holder Button	1	
219	033004027	Shaft	1	
220	172714140	Lever Button	10	
221	172004211	Spacer	1	
222	.	Not used !		
223	172714210	Lever Button R	1	
231	MS15PG0252K	Head R/P	1	
232	000724004	Ass'y Wire, 400mm	1	
233	171394251	Plate Rec	1	
234	04MSW1541ACV	Switch Leaf	3	
235	04MSW1716CV	Switch Leaf	1	
236/237	.	Not used !		
238	EG530KD2BK	Motor	2	
239	033264129	Pulley Motor	1	
240	.	Not used !		
241	PBE14927	Screw Bush	6	
242	PGSP10A1407	Screw	1	
243	PGSD10A2016	Screw	2	
244	PGSD15A2606K	Screw	6	
245	PGSP11A2604K	Screw	4	
246	PGSD10A2605K	Screw	2	
247	PGSD10A2005K	Screw	1	
248	PGSD10A2004K	Screw	2	
249	PGSL10A2606K	Screw	1	
250	PGSD15A2604K	Screw	1	
251	PGWP13X030025S	Washer	4	
252	PGWP16X040025S	Washer	2	
253	PGWP26X0502025S	Washer	2	
254	PGWN16X060040S	Washer	2	
255	PGWF35A070050	Washer	1	
261	PGRE20A	Ring E	1	
262	PGRE30A	Ring E	1	
263/264	.	Not used !		
265	171604482	Plate Spring DR	1	
266	033004137	Screw	1	
267-271	.	Not used !		

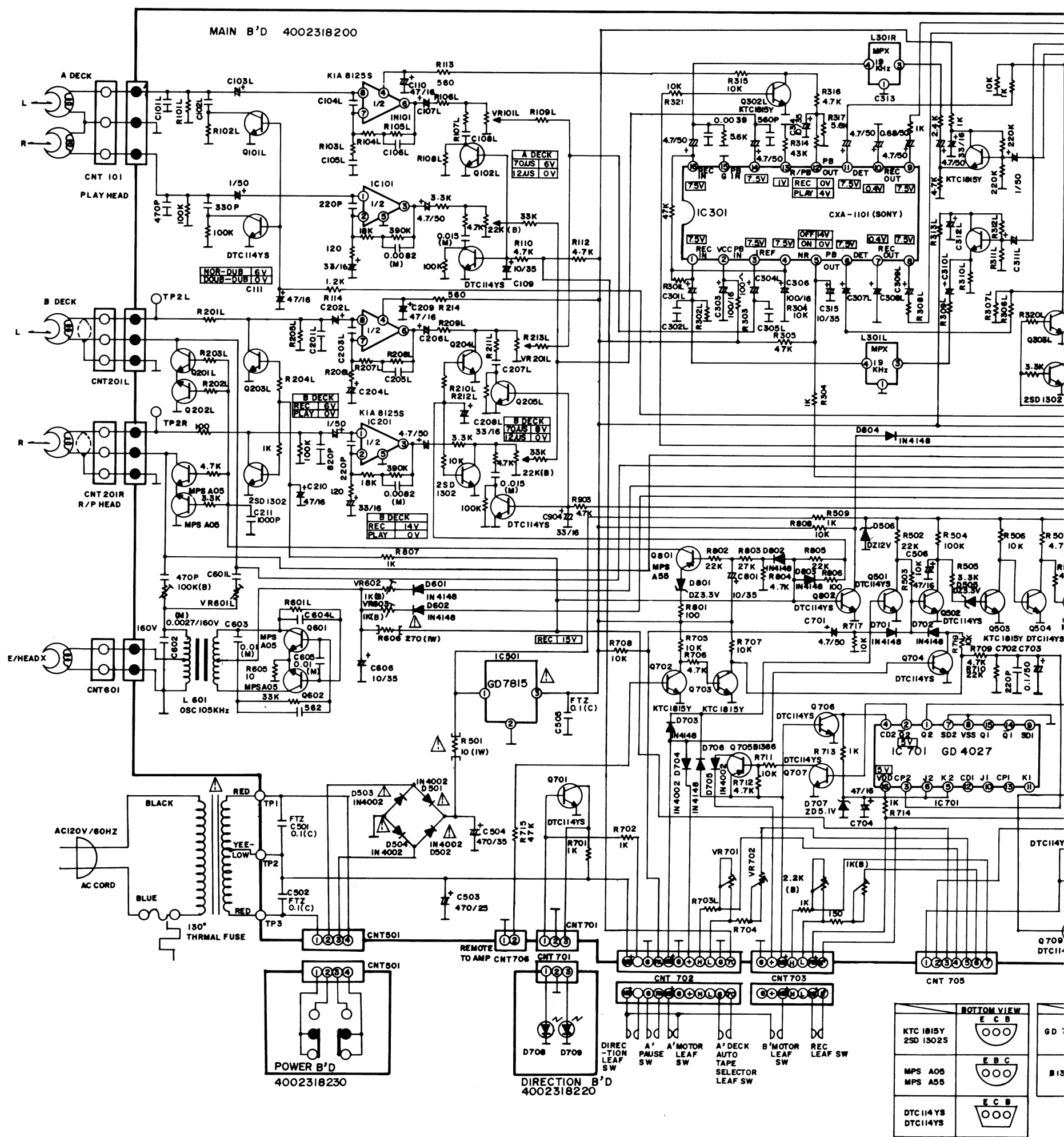
No.	Part Code	Description	Q'ty	Remark
272	PBE17501	Spacer C	2	
273/274	.	Not used !		
275	172194172	Holder Gear	2	
276	172234145	Cear Dumper	2	
277	PGSD20A2012K	Screw	2	

A

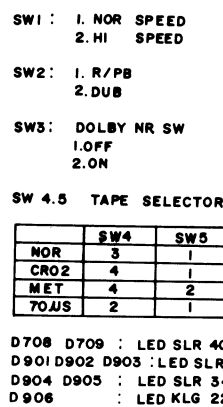
B

C

D

Schematic Diagram
DD-2135C

G



	SW4	SW5
NOR	3	1
CRO2	4	1
MET	4	2
TOUS	2	1

D708 D709 : LED SLR 40 MG3 (GREEN)
D901 D902 D903 : LED SLR 34 MC (GREEN)
D904 D905 : LED SLR 34 VRC (RED)
D906 : LED KLG 226 EGN (GREEN)

