

T3

22579
22580

TOSHIBA

STEREO CASSETTE DECK

PC-G22/G22K



SPECIFICATIONS

Heads:	Record/playback AP head Erase AF (2-gap ferrite) head	Total Distortion:	0.9% (400 Hz, 0 dB chrome position tape)
Drive System:	Single-motor, light-touch control system	Bias Frequency:	85 kHz
Motors:	DC servo motor	Input Terminals:	MIC: 0.5mV (600 ohm – 10k ohm) LINE: 70mV (50k ohm)
Tape Speed:	4.8 cm/sec.	Output Terminals:	LINE: 360mV (50k ohm) Headphones: 0.1mW (8 ohm)
Wow & Flutter:	0.055% W. RMS, ±0.2% DIN	Power Supply:	AC 220V ~, 50 Hz (TE, FR) AC 240V ~, 50 Hz (TU, AY) AC 120V ~, 50/60 Hz (TA, TC) AC 110 – 127/220 – 240V ~, 50/60 Hz (VF)
Fast Forward and Rewind Time:	Approx. 100 sec. (C-60 tape)	Power Consumption:	11W
Frequency Response:	30 ~ 16000 Hz with metal tape and –20 dB input 30 ~ 15000 Hz with chrome position tape and –20 dB input 30 ~ 14000 Hz with normal tape and –20 dB input	Major Dimensions:	420(W) x 112(H) x 278(D) mm (including front panel knobs and rubber supports)
S/N Ratio:	56 dB (peak level, WTD, chrome position tape)	Weight:	3.5 kg

Specifications are subject to change without notice.

G22-TE, TU, AY, VF, FR/G22K-TA, TC
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1. OPERATING CONTROLS

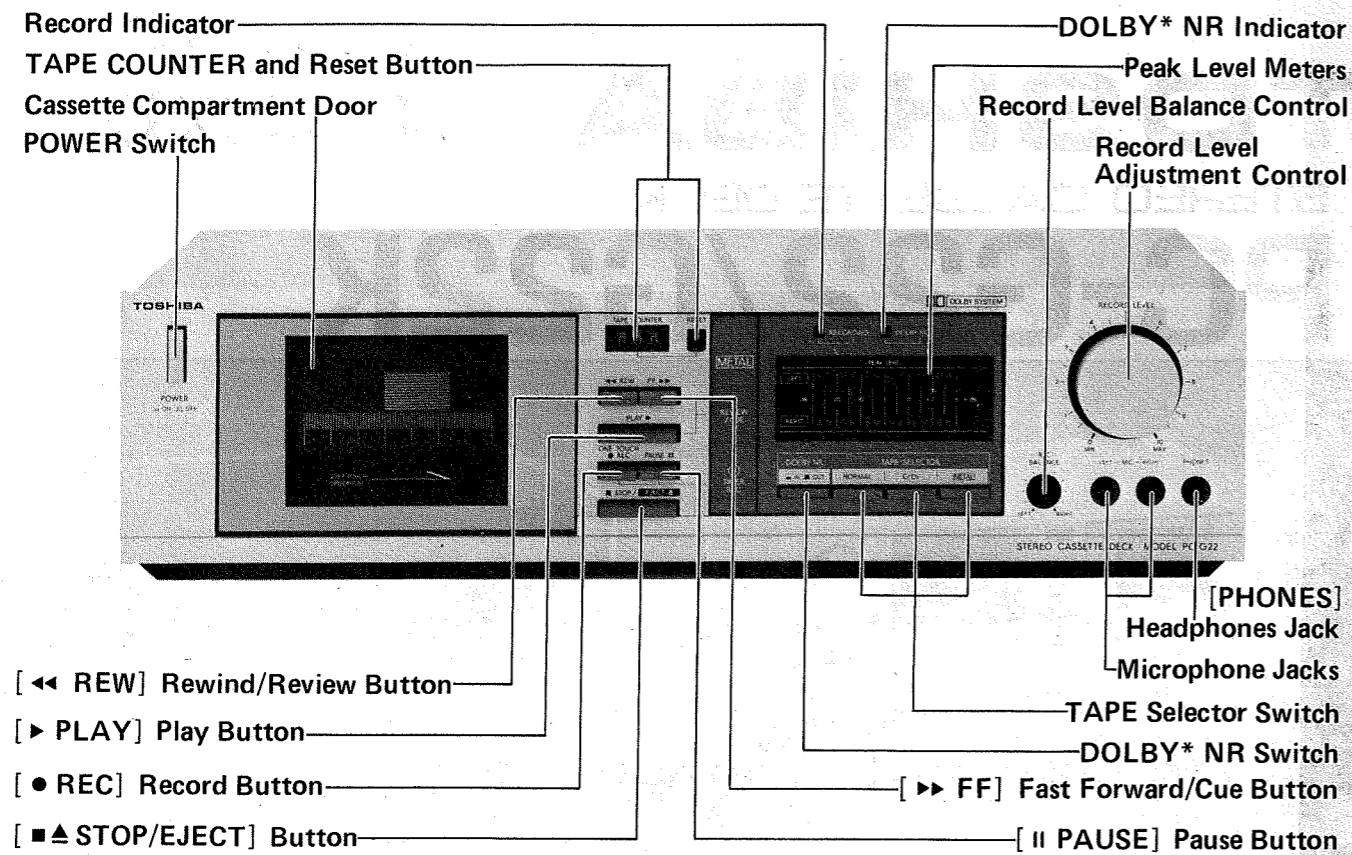


Figure 1

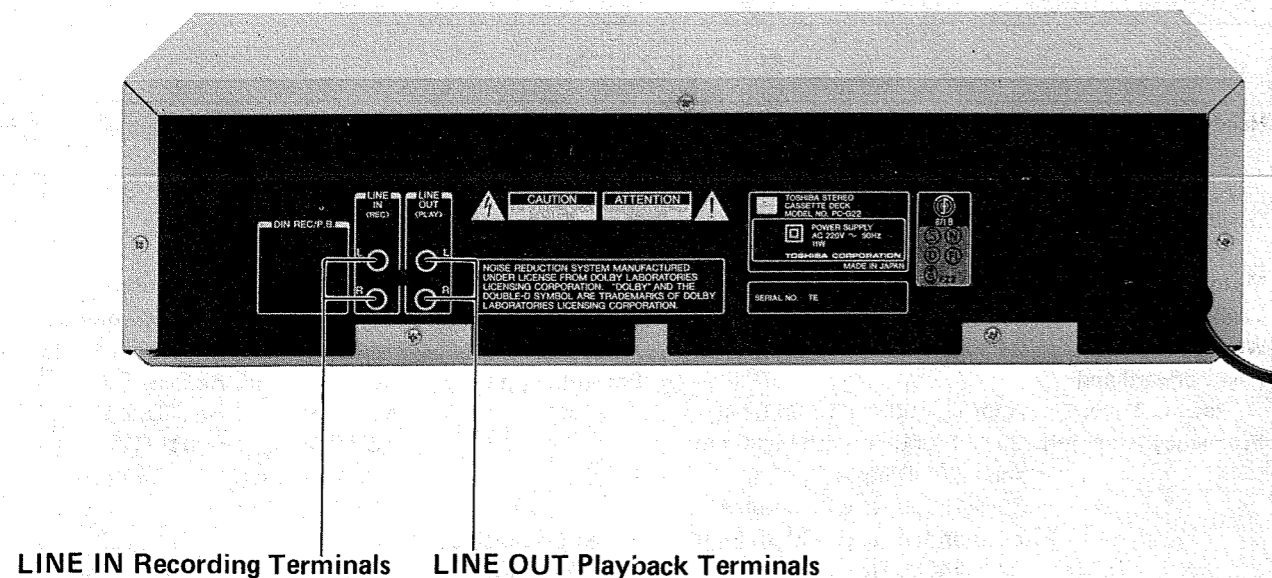


Figure 2

2. DISASSEMBLY INSTRUCTIONS

TOP COVER REMOVAL

1. Remove two screws (A) (3φ x 8mm) from each side of top cover and three screws (B) (3φ x 8mm) from rear side of unit, then the top cover can be removed from the unit. (See Figure 3, 4 and 5)

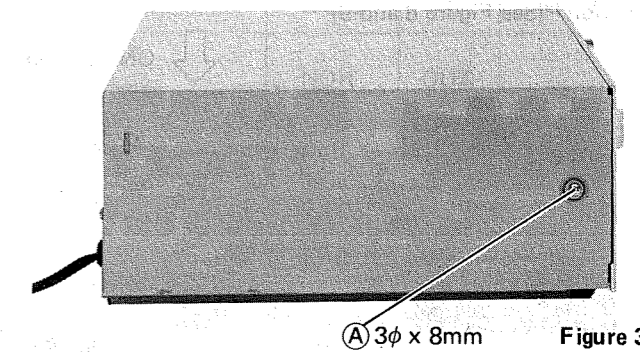


Figure 3

BOTTOM PLATE REMOVAL

1. Remove the top cover (Figure 3, 4 and 5).
2. Remove two screw (E) (3φ x 8mm) and (F) (3φ x 16mm). (See Figure 6)
3. Remove two screws (C) (3φ x 8mm) then the bottom plate can be removed from the unit. (See Figure 5)

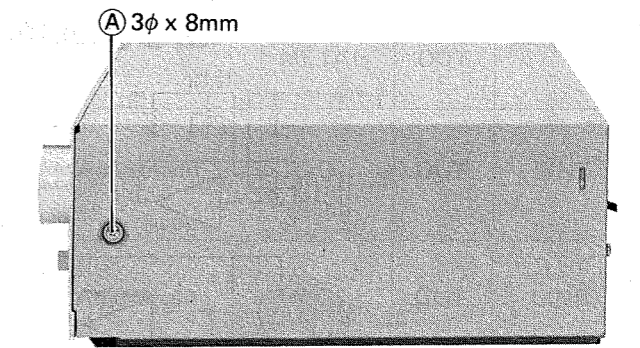


Figure 4

FRONT PANEL ASSEMBLY REMOVAL (with Mechanism Assmly)

1. Remove the top cover, (See Figure 3, 4 and 5)
2. Pull out the REC BALANCE knob from front panel.
3. Remove two screws (E) (3φ x 8mm) and (F) (3φ x 16mm). (See Figure 6)
4. Remove one screw (D) (3φ x 8mm) then the front panel assembly can be removed from the unit. (See Figure 6)

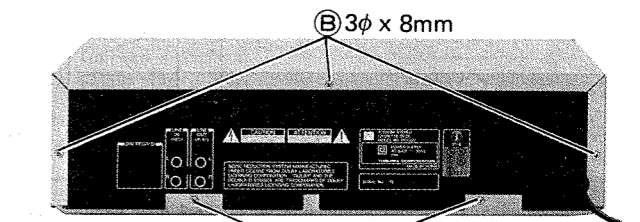


Figure 5

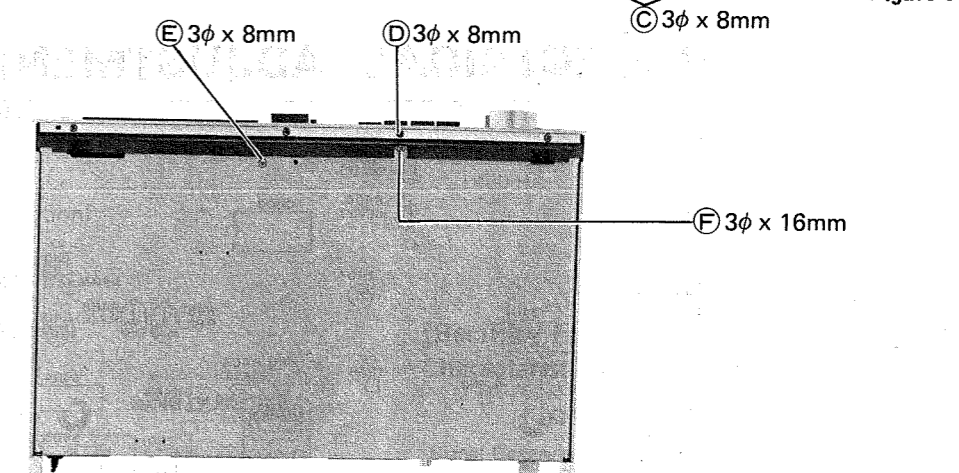


Figure 6

MECHANISM ASSEMBLY REMOVAL

1. Remove the front panel.
2. Remove four screws (G) (3φ x 18mm) then the mechanism assembly can be removed from the front panel assembly. (See Figure 7)

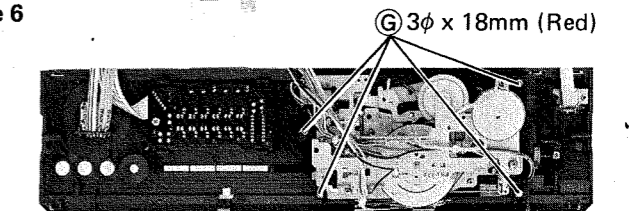
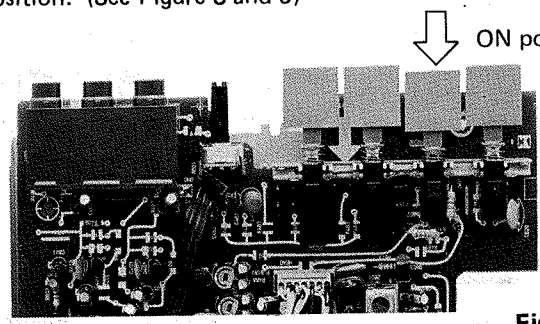


Figure 7

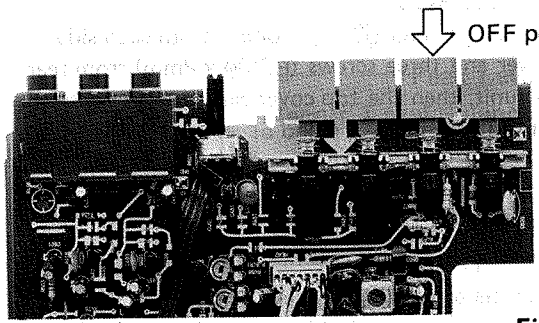
SWITCH KNOBS REMOVAL

When removing the switch knobs, do not keep the switch to the ON position, for the switch will break, but to the OFF position. (See Figure 8 and 9)



NG

Figure 8



OK

Figure 9

3. BLOCK DIAGRAM

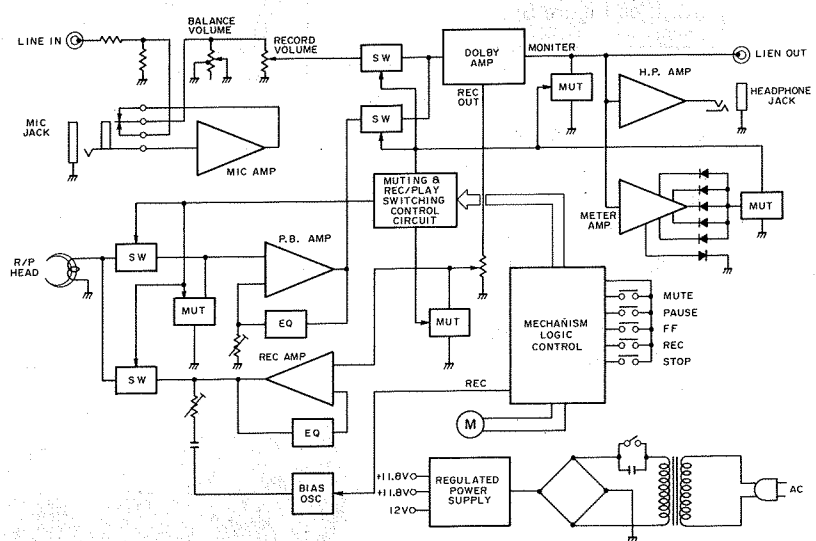


Figure 10

4. ELECTRICAL ADJUSTMENTS

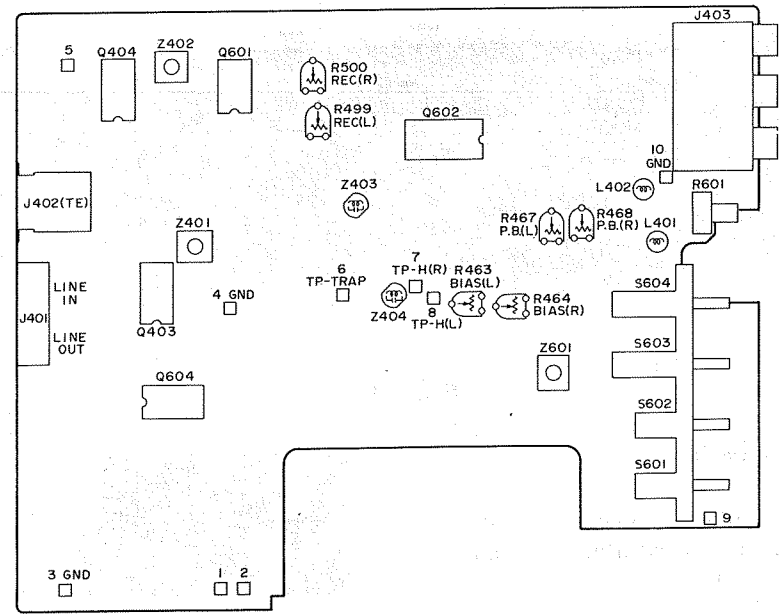


Figure 11

No.	Adjustment Item	Test Value	Test Tape	Volume Control REC	Switch Position			Adjustable Parts	Test Point	Input Frequency (ATT)	Remarks
					TAPE	NR	INPUT				
1	Head Aximuth Adjustment	Maximum	MTT-114		NOR	OUT		Adjusting Screw	LINE OUT	—	Apply a lock paint after adjustment.
2	Tape Speed	3000 ±30 Hz	MTT-111		NOR	OUT		Internal Semi-fixed VR of Motor	LINE OUT	—	Take-up beginning of tape.
3	Playback Sensitivity Adjustment	500 ± 10 mV	MTT-150		NOR	OUT		R467, 468	LINE OUT	—	
4	Bias Osc Adjustment	85 kHz	—		METAL	OUT		Z601	TP-TRAP	—	REC/PAUSE
5	Line Input Sensitivity Adjustment	350 ±10 mV	—	Adjustment	CrO ₂	OUT	LINE	REC-VR R602 BAL-VR R601	LINE OUT	-20 dB	Do not vary REC-VR after adjustment.
6	R/P Frequency Adjustment	0 ± 1 dB	AC-512	Adjustment	CrO ₂	OUT	LINE	R463, 464	LINE OUT	400 Hz 10 kHz -40 dB	Variation of 10 kHz to 400 Hz.
7	R/P Sensitivity Adjustment	Monitor Output	AC-512	Adjustment	CrO ₂	OUT	LINE	R499, 500	LINE OUT	400 Hz -20 dB	Monitor Output. 350 mV, (Reference Value)

Measurement Condition

- Power Supply: TE: 220V, TU/AY = 240V, VF = 110 - 127/220 - 240V, TA, TC = 120V
- Input: 0 dB 1V rms • LINE IN (Input Impedance): 600 ohms
- LINE OUT (Load Impedance): 47K ohm • Test Point Load Impedance: Non Load.

TAPE HEAD HEIGHT ADJUSTMENT

1. Confirm the head height as follows.
Set the head azimuth adjustment screws so that the head becomes horizontal by measuring with the eyes and confirm that the mirror cassette (C-09C) or C-90 cassette (cut off the shaded portions to remodel as shown in Figure 17) is not curled on play mode.



Figure 17

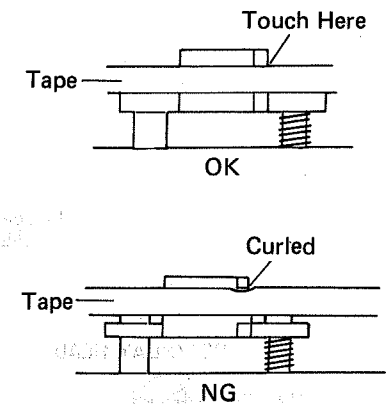


Figure 18

TEST EQUIPMENTS

1. VTVM (Vacuum Tube Voltmeter)
2. Signal Generator
3. Resistance Attenuator
4. Screwdriver
5. Test Tapes:
MTT-111 (Speed 3 kHz -5 dB)
MTT-114 (Azimuth 10 kHz)
MTT-150 (Dolby 400 Hz Modulation)
AC-512 (Chrome Tape)
6. Frequency Counter

(Playback Sensitivity Adjustment)

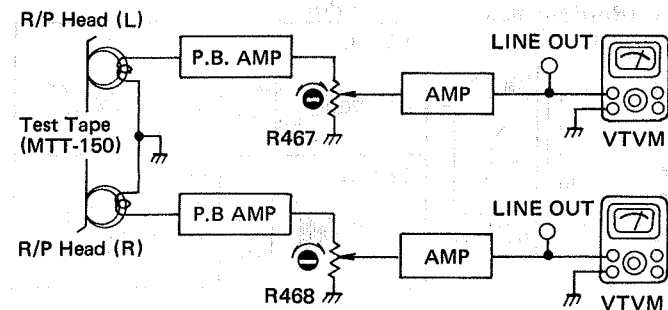


Figure 12

(Line Input Adjustment)

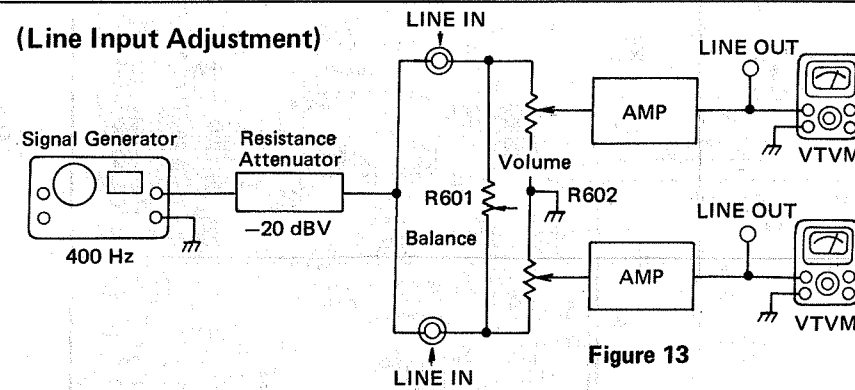


Figure 13

(Rec/Play Frequency Characteristic Adjustment)

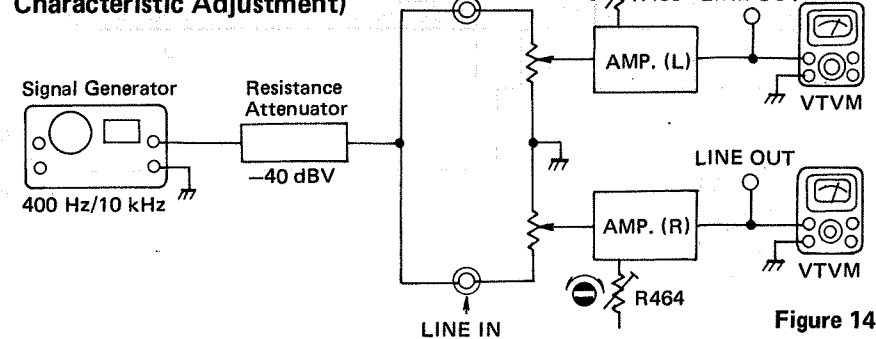


Figure 14

(Rec/Play Sensitivity Adjustment)

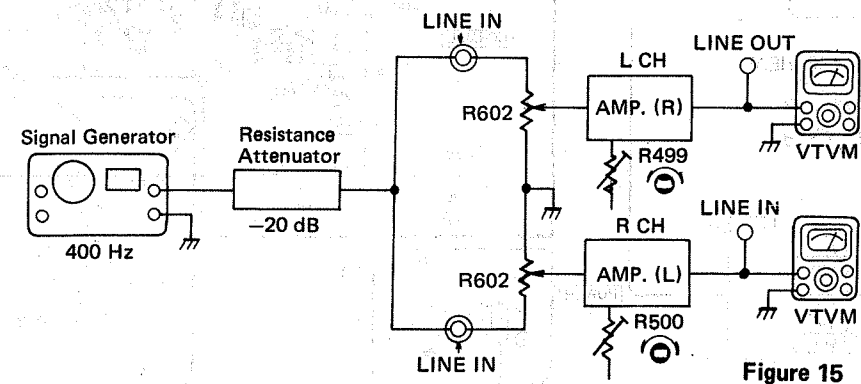


Figure 15

(Bias Oscillator Adjustment)

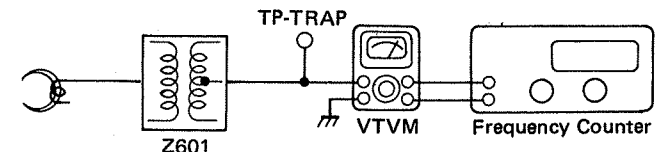


Figure 16

5. P.C. BOARD PARTS LOCATIONS

Q604

1	Rec 7.2V, Play 7.8V, Others 0V
2	Rec 0.6V, Play 1.9V, Others 0V
3	FF/Rew(Cue/Review) 0.4V, Rec 5V, Others 4V
4	0V
5	Rec 0V, Others 8.7V
6	Rec 9.2V, Others 0V
7	Rec 7.8V, Others 0V
8	0V
9	Rec 0V, Others 12.0V
10	Rec 0V, Others 12.0V
11	Rec 11.0V, Others 0V
12	12.0V
13	Rec/Play 0V, Others 11.5V
14	Play 0V, Others 12.0V
15	Rec/Play 0V, Others 11.5V
16	12.0V

Q401
Q402

E	0V
C	5.5V
B	0.6V

Q601

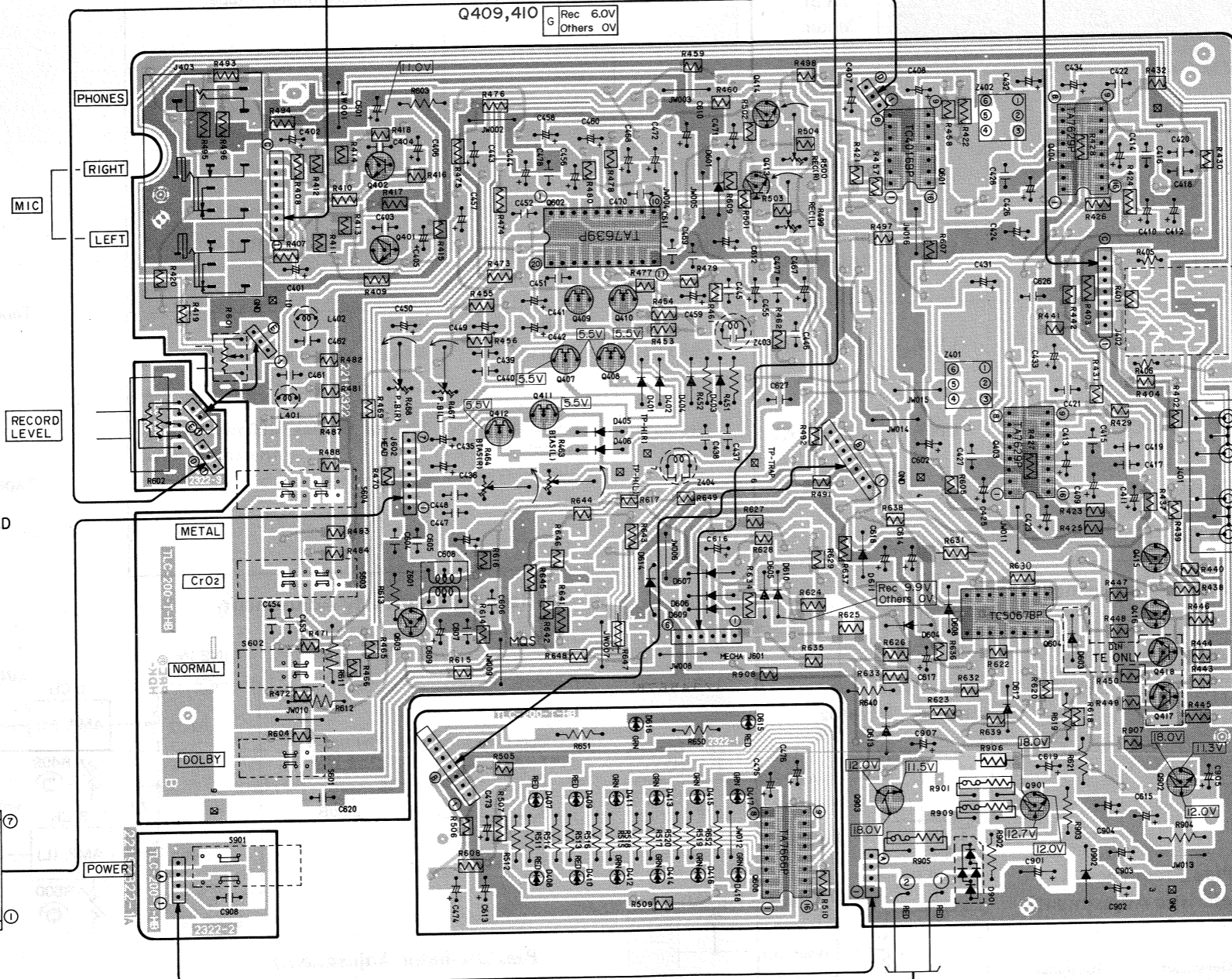
1	2	3	4	5	6	7	8
5.5V	Rec 4.8V Others 5.5V	Rec 4.8V Others 5.5V	4.8V	Rec 11.0V Others 0V	Rec 11.0V Others 0V	0V	4.8V
9	10	11	12	13	14	15	16
Rec 4.8V Others 5.5V	Rec 4.8V Others 5.5V	5.5V	Rec 0V Others 11.8V	Rec 0V Others 11.8V	11.3V		

Q602

1	4.8V
2	5.6V
3	5.8V
4	11.3V
5	5.6V
6	5.8V
7	5.9V
8	5.6V
9	6.2V
10	11.3V
11	0V
12	6.2V
13	5.6V
14	5.9V
15	5.8V
16	5.6V
17	5.7V
18	5.8V
19	5.6V
20	4.8V

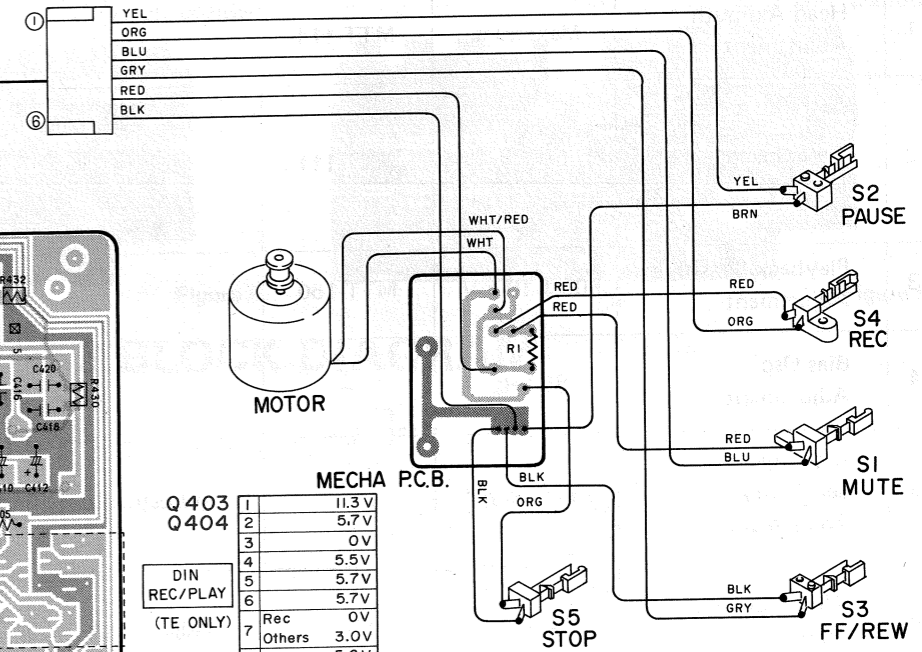
Q603

	Play	N	Rec	C	M
E	0V	0.2V	0.2V	0.3V	
C	12.0V	5.1V	7.0V	12.0V	
B	0V	0.4V	0.3V	0V	



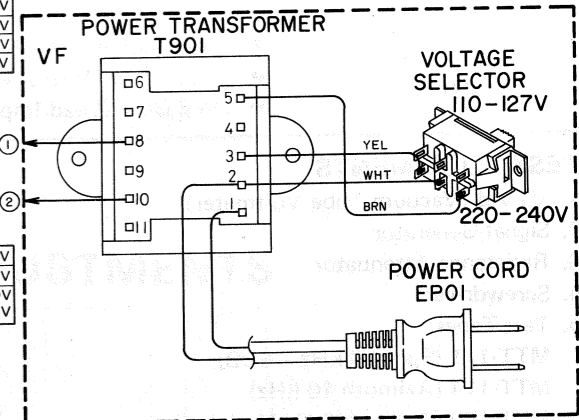
Q608

1		1.4V			11.3V	9
2		1.4V	OFF	9.9V	ON	0.6V
3	OFF	9.9V	ON	0.6V	OFF	9.9V
4	OFF	9.9V	ON	0.6V	OFF	9.9V
5	OFF	9.9V	ON	0.6V	OFF	9.9V
6	OFF	9.9V	ON	0.6V	OFF	9.9V
7	OFF	9.9V	ON	0.6V	OFF	9.9V
8	OFF	9.9V	ON	0.6V	OFF	9.9V
		OV			1.4V	15
					1.4V	16



Q403
Q404

1	11.3V
2	5.7V
3	0V
4	5.5V
5	5.7V
6	5.7V
7	Rec 0V Others 3.0V
8	5.6V
9	5.6V
10	5.7V
11	Dolby ON 5.1V Others 10.5V
12	5.8V
13	5.9V
14	5.7V
15	6.0V
16	9.4V



Q413
Q414

E	5.5V
C	5.5V
B	Rec 0V Others 6.4V

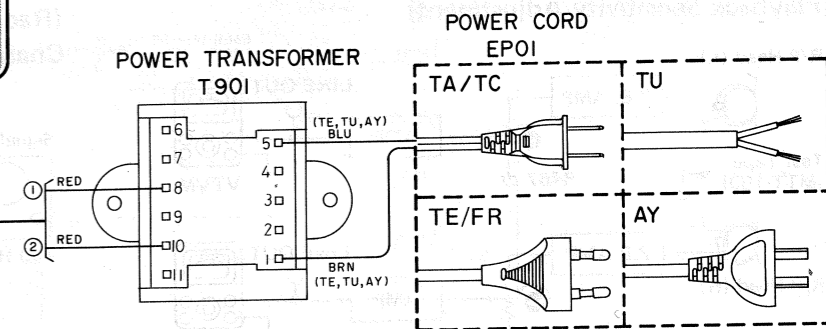
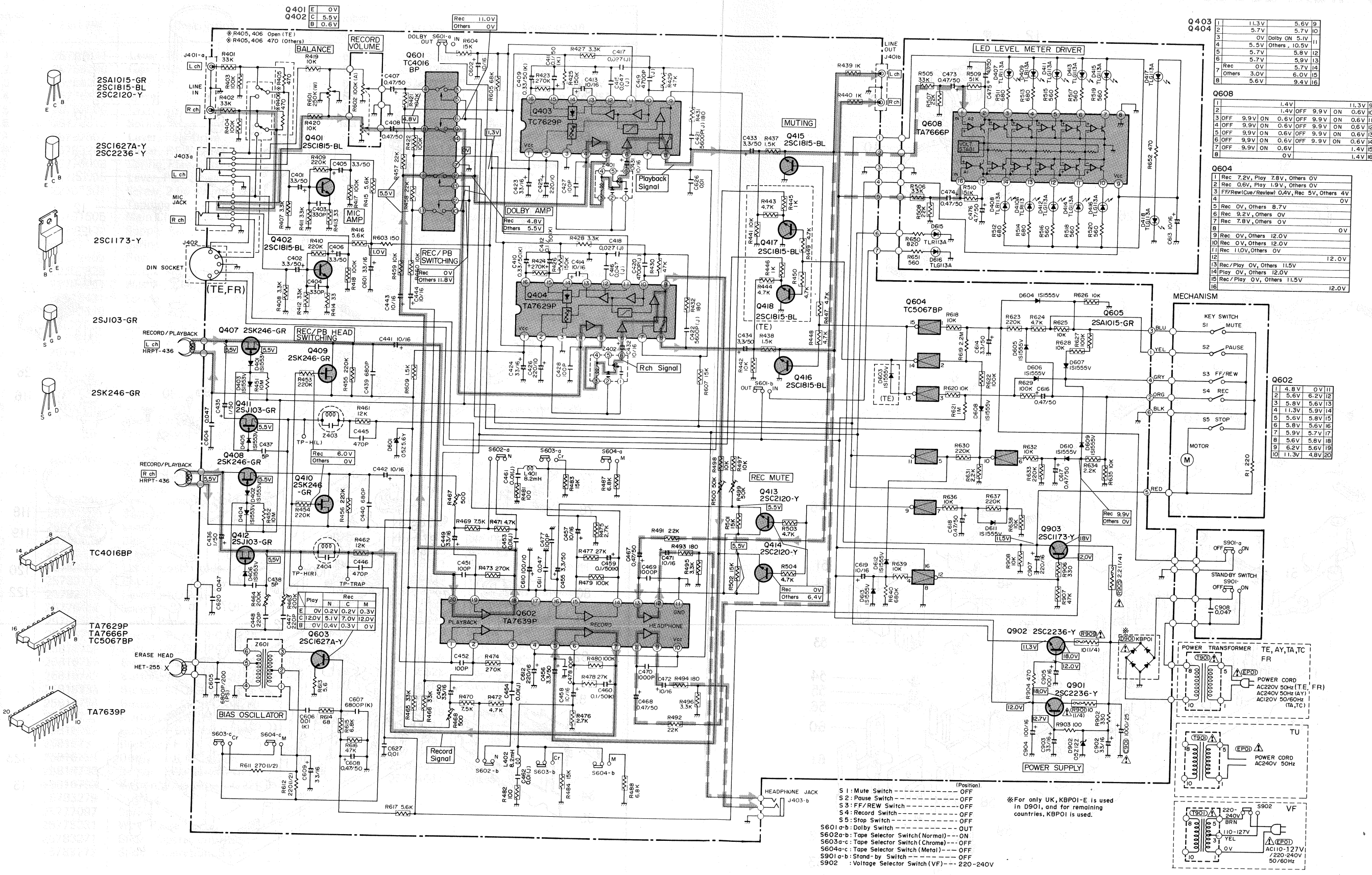


Figure 19

CAUTION: The Δ mark, the symbol No. circled with oval in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

6. SCHEMATIC DIAGRAM



Q403

1	11.3V	5.6V	9	
2	5.7V	5.7V	10	
3	0V	Dolby ON	5.1V	11
4	5.5V	Others	10.5V	12
5	5.7V	Others	5.8V	13
6	5.7V	Others	5.9V	14
7	Rec	0V	5.7V	15
8	Others	3.0V	6.0V	16
		5.6V	9.4V	16

Q608

1	1.4V	11.3V	9						
2	1.4V	OFF	9.9V	ON	0.6V	10			
3	OFF	9.9V	ON	0.6V	OFF	9.9V	ON	0.6V	11
4	OFF	9.9V	ON	0.6V	OFF	9.9V	ON	0.6V	12
5	OFF	9.9V	ON	0.6V	OFF	9.9V	ON	0.6V	13
6	OFF	9.9V	ON	0.6V	OFF	9.9V	ON	0.6V	14
7	OFF	9.9V	ON	0.6V	OFF	9.9V	ON	0.6V	15
8				0V				1.4V	16

Q604

1	Rec	7.2V	Play	7.8V	Others	0V	
2	Rec	0.6V	Play	1.9V	Others	0V	
3	FF/Rew	Cue/Review	0.4V	Rec	5V	Others	4V
4							0V
5	Rec	0V	Others	8.7V			
6	Rec	9.2V	Others	0V			
7	Rec	7.8V	Others	0V			
8							0V
9	Rec	0V	Others	12.0V			
10	Rec	0V	Others	12.0V			
11	Rec	11.0V	Others	0V			
12							12.0V
13	Rec	Play	0V	Others	11.5V		
14	Play	0V	Others	12.0V			
15	Rec	Play	0V	Others	11.5V		
16							12.0V

Q602

1	4.8V	0V	11
2	5.6V	6.2V	12
3	5.9V	5.5V	13
4	11.3V	5.9V	14
5	5.6V	5.8V	15
6	5.8V	5.6V	16
7	5.9V	5.7V	17
8	5.6V	5.8V	18
9	6.2V	5.6V	19
10	11.3V	4.8V	20

- S 1: Mute Switch ----- (Position)
 S 2: Pause Switch ----- OFF
 S 3: FF/REW Switch ----- OFF
 S 4: Record Switch ----- OFF
 S 5: Stop Switch ----- OFF
- S601-a-b: Dolby Switch ----- OUT
 S602-a-b: Tape Selector Switch (Normal) ----- ON
 S603-a-c: Tape Selector Switch (Chrome) ----- OFF
 S604-a-c: Tape Selector Switch (Metal) ----- OFF
 S901-a-b: Stand-by Switch ----- OFF
 S902 : Voltage Selector Switch (VF) ----- 220-240V
- *For only UK, KBP01-E is used in D901, and for remaining countries, KBP01 is used.

Figure 20 CAUTION: The Δ mark, the symbol No. circled with oval in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

7-1. EXPLODED VIEW MECHANISM (UPPER)

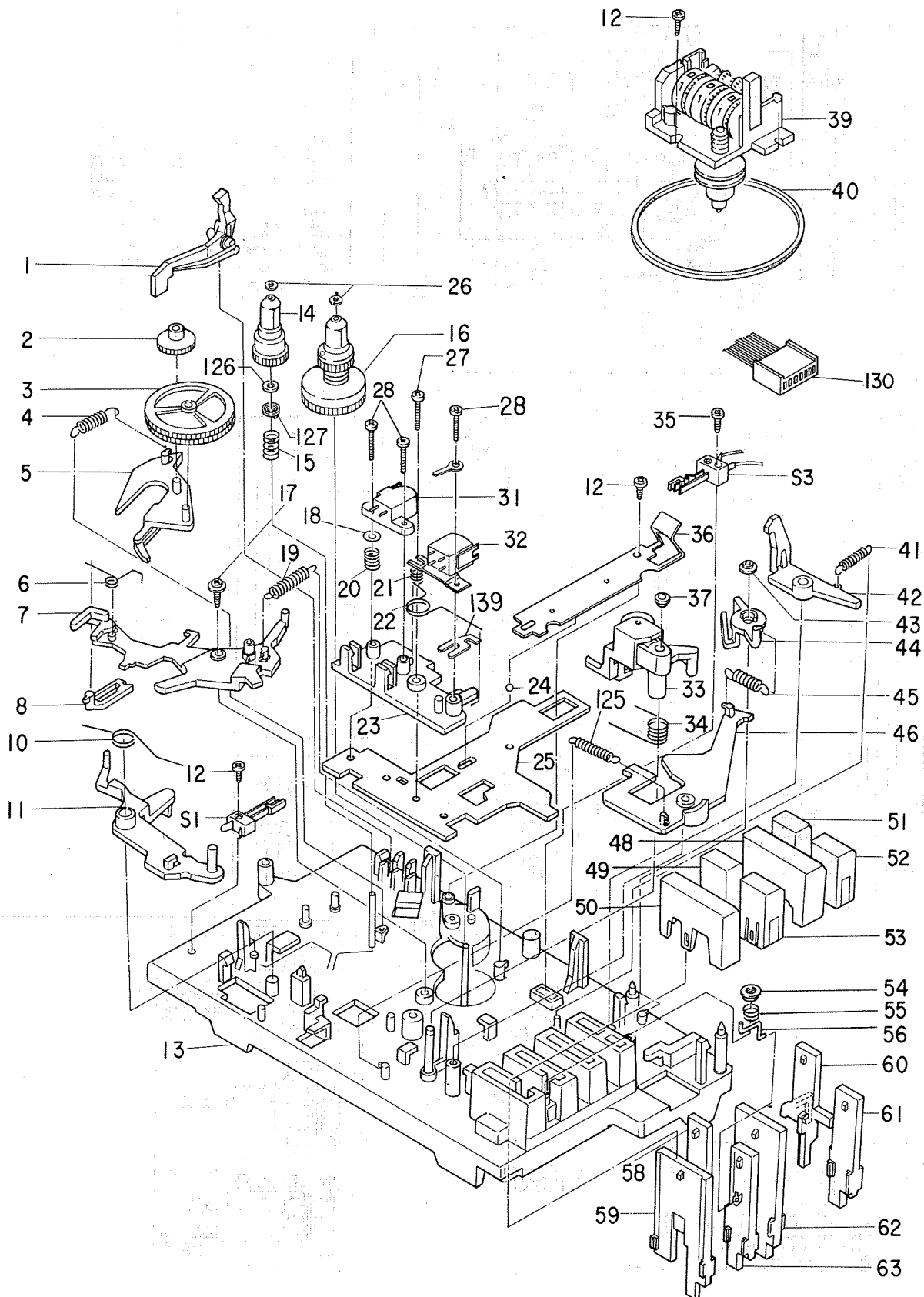


Figure 21

NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

7-2. EXPLODED VIEW MECHANISM (LOWER)

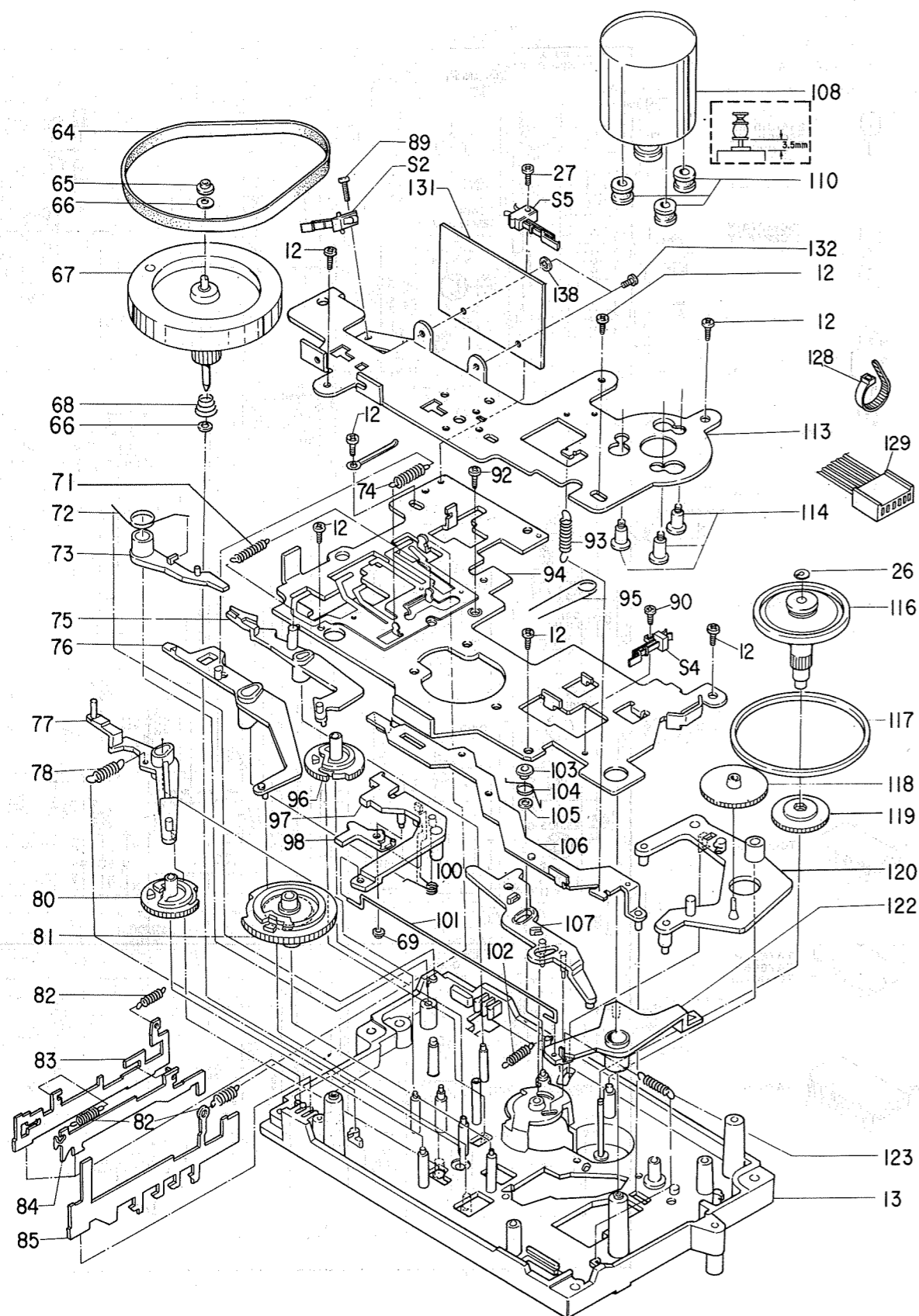


Figure 22

NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

7-3. MECHANISM PARTS LIST

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
1	25782511	Lever, Record Lock	60	25783269	Slider, Operation, REW
2	25756280	Gear, REW	61	25783268	Slider, Operation, FF
3	25756279	Tear, FF	62	25783267	Slider, Operation, PLAY
4	25776432	Spring	63	25783270	Slider, Operation, PAUSE
5	25782509	Lever, Fast Gear	64	25755527	Belt, Drive
6	25778013	Spring, REW	65	25725340	Holder
7	25782507	Lever, Fast Drive	66	25766089	Washer
8	25783266	Slider, REW Drive	67	25717517	Flywheel Ass'y
10	25778008	Spring, Play Lever	68	25777108	Spring, Flywheel
11	25782505	Lever, Play Drive	69	25783199	Washer
12	22707301	Screw, 2.6φ x 8mm, BID Tapping	71	25776564	Spring
13	25791505	Main Chassis Ass'y	72	25778012	Spring, ASO Lever
14	25754402	Supply Reel, Drum	73	25782521	ASO Lever
15	25777177	Spring	74	25776437	Spring
16	25712409	Reel Plate Ass'y, REW	75	25782514	Lever, Operation, FF
17	22707825	Screw, 2.6φ x 6mm, TPAN	76	25782513	Lever, Operation, PLAY
18	22703281	Washer, 2.6φ	77	25782515	Lever, Operation, PAUSE
19	25776431	Spring	78	25776420	Spring
20	25772579	Spring, Erase Head	80	25756282	Cam Gear, PAUSE
21	25777056	Spring, Azimuth	81	25756281	Cam Gear, PLAY
22	25778007	Spring, Head Slider	82	25776417	Spring
23	25783265	Head Mount	83	25741924	Switch Slider
24	25757129	Steel Ball, 2φ	84	25741925	Eject Slider
26	25766050	Washer	85	25741923	Lock Slider
27	22707322	Screw, 2φ x 10mm, DTBID	89	22707169	Screw, 2.6φ x 10mm, BID
28	22707669	Screw, 2φ x 12mm, DTBID	90	22707426	Screw, 2φ x 5mm, DTBID
31	22218255	Head, Erase, HET255	92	22707299	Screw, 2φ x 8mm, BID Tapping
32	22217436	Head, Playback, HRPT-436	93	25776445	Spring
33	25717516	Pressure Roller Ass'y	94	25734472	Sub Plate Ass'y
34	25778006	Spring	95	25778014	Spring, REW Slider
35	22707303	Screw, 2.6φ x 10mm, BID Tapping	96	25756283	Cam Gear, FF
36	25779240	Spring, Cassette Holder	97	25782516	Lever, Operation, STOP
37	25783260	Bushing	98	25782522	Lever, Play STOP
39	25873284	Counter	100	25778015	Spring
40	25755529	Belt, Counter	102	25776419	Spring
41	25776436	Spring	103	25783226	Bushing
42	25782512	Lever, Lock Holder	104	25778011	Spring, Detector Lever
43	25783195	Bushing	105	25766073	Washer, ASO
44	25782510	Lever, ASO Pause	107	25782520	Lever, ASO Detector
45	25776418	Spring	108	25791637	Motor Ass'y
46	25782506	Lever, Pause Drive	110	25761238	Cushion, Motor
48	25816730	Button, PLAY (PC-G22)	114	22707429	Screw, 2.6φ x 1.8mm x 4.9mm
48	25816750	Button, PLAY (PC-G22K)	116	25713559	Pulley Ass'y, Center
49	25816734	Button, REC (PC-G22)	117	25755528	Belt, Center Pulley
49	25816742	Button, REC (PC-G22K)	118	25756284	Gear, Take-up
50	25816735	Button, STOP (PC-G22)	119	25756285	Gear, Fast
50	25816754	Button, STOP (PC-G22K)	120	25782519	Lever, Take-up
51	25816732	Button, REW (PC-G22)	122	25782517	Lever, REC Bias
51	25816752	Button, REW (PC-G22K)	123	25776561	Spring
52	25816731	Button, FF (PC-G22)	125	25776431	Spring
52	25816751	Button, FF (PC-G22K)	126	25764597	Washer
53	25816733	Button, PAUSE (PC-G22)	127	25754441	Spacer, Back Tension
53	25816753	Button, PAUSE (PC-G22K)			
54	25783279	Bushing			
55	25777097	Spring			
56	25775231	Wire, Pause Lock			
58	25783271	Slider, Operation, REC			
59	25783272	Slider, Operation, STOP			

8-1. EXPLODED VIEW CABINET

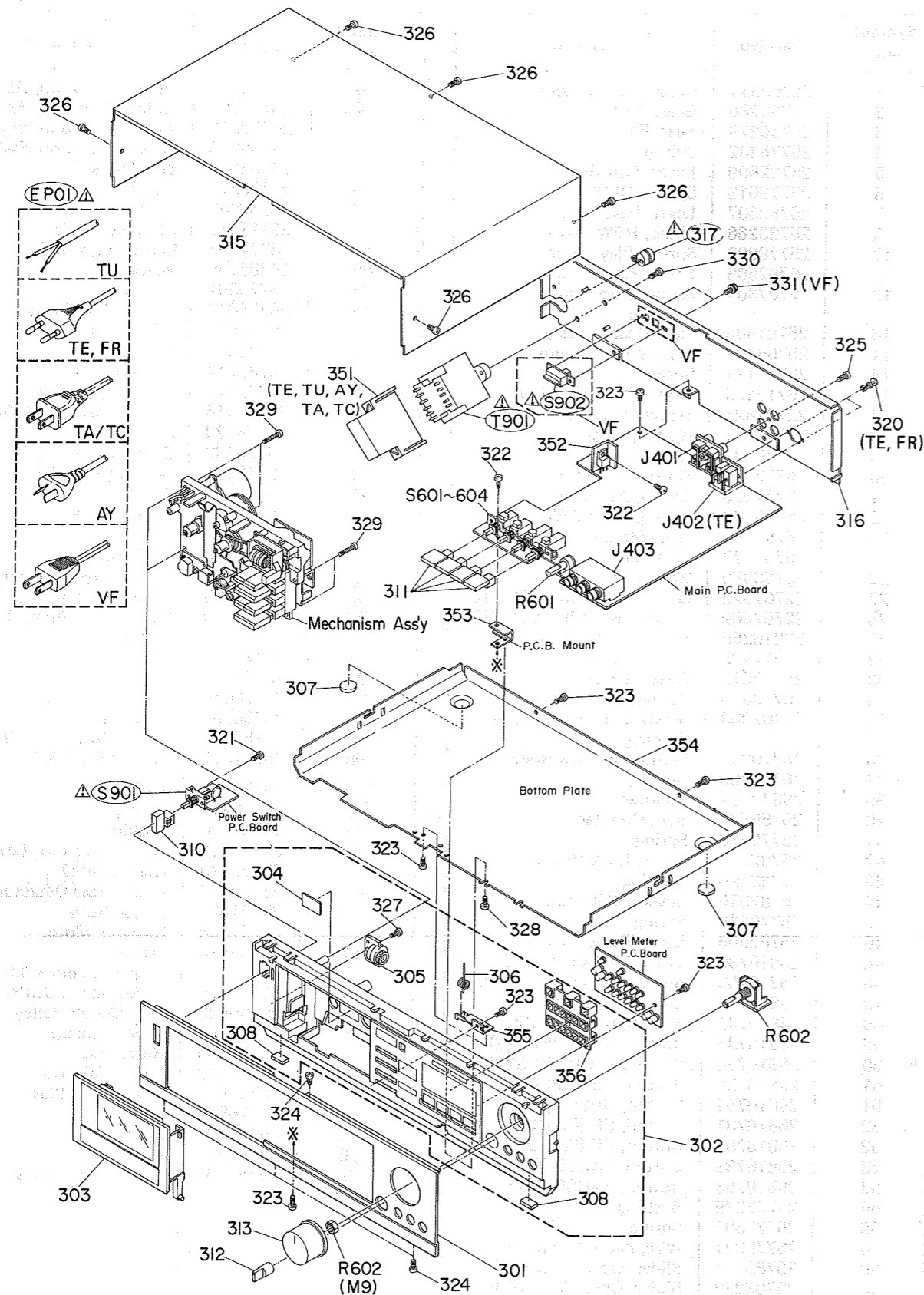


Figure 23

8-2. CABINET PARTS LIST

Symbol No.	Part No.	Description
301	25829546	Front Panel (TE, TU, AY, VF)
301	25829545	Front Panel (TA, TC)
301	25829547	Front Panel (FR)
302	25819592	Front Panel Ass'y (TC)
302	25819591	Front Panel Ass'y (TA)
302	25819593	Front Panel Ass'y (TE, TU, AY, VF)
302	25819594	Front Panel Ass'y (FR)
303	25832935	Cassette Holder (TA, TC)
303	25832936	Cassette Holder (TE, TU, AY, VF)
303	25832945	Cassette Holder (FR)
304	25808372	Reflector
305	25881493	Damper Ass'y
306	25775234	Spring, Eject
307	25762424	Foot
308	22758390	Cushion, Foot
309	25779231	Spring, Cassette Holder Knob Ass'y, Power (TE, TU, AY, FR, VF)
310	22824454	Knob Ass'y, Power (TE, TU, AY, FR, VF)
310	22824465	Knob Ass'y, Power (TA, TC)
311	25837999	Knob, Dolby Tape Selector (TE, TU, AY, FR, VF)
311	25886121	Knob, Push (TA, TC)
312	25886009	Knob, REC Balance (TE, TU, AY, FR, VF)
312	25886124	Knob, REC Balance (TA, TC)
313	25837997	Knob, REC Level (TE, TU, AY, FR, VF)
313	25886334	Knob, REC Level (TA, TC)
315	25864241	Top Cover (TE, TU, AY, FR, VF)
315	25864328	Top Cover (TA, TC)
316	25864355	Jack Plate (TE)
316	25864356	Jack Plate (TU, AY)
316	25864357	Jack Plate (VF)
316	25864354	Jack Plate (TA, TC)
316	25864360	Jack Plate (FR)
317	25845528	Cord Bush
320	22705022	Plastic Rivet, 3φ x 5.5mm (TE, FR)
321	22707461	Screw, 2.6φ x 8mm, BID Tapping
322	22707066	Screw, 3φ x 6mm, BID Tapping
323	22707842	Screw, 3φ x 8mm, BID Tapping
324	22707826	Screw, 3φ x 10mm, BID Tapping (TE, TU, AY, FR, VF)

Symbol No.	Part No.	Description
325	22707165	Screw, 3φ x 10mm, BID Tapping
326	22707886	Screw, 3φ x 10mm, BID Tapping (TE, TU, AY, FR, FV)
327	22707802	Screw, 3φ x 12mm, BID Tapping
328	22707835	Screw, 3φ x 16mm, BID Tapping
329	22707843	Screw, 3φ x 16mm, BID Tapping
330	22708046	Screw, 4φ x 12mm, BID Tapping
331	22707456	Screw, 3φ x 8mm, FLDT (VF)
332	22707885	Screw, 3φ x 8mm, BID Tapping
333	22707911	Screw, 3φ x 8mm, BID Tapping (TA, TC)

NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

9. PARTS LIST

CAUTION:
The Δ mark, the symbol No. circled with oval in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

Symbol No.	Part No.	Description
TRANSISTORS, IC'S & DIODES		
Q401, 402	A6317480	Transistor, 2SC1815NEW-BL
Q403, 404	B0356150	IC, TA7629P
Q407, 408, 409, 410	A6044630	Transistor, 2SK246-GR Δ
Q411, 412	A6040910	Transistor, 2SJ103-GR Δ
Q413, 414	A6321240	Transistor, 2SC2120-Y Δ
Q415, 416	A6317480	Transistor, 2SC1815NEW-BL Δ
Q417, 418	A6317480	Transistor, 2SC1815NEW-BL (TE, FR) Δ
Q601	B0470162	IC, TC4016BP
Q602	B0356360	IC, TA7639P
Q603	A6314470	Transistor, 2SC1627A-Y
Q604	B0480672	IC, TC5067BP
Q608	B0356660	IC, TA7666P
Q901, 902	A6325540	Transistor, 2SC2236-Y
Q903	A677164A	Transistor, 2SC1173-Y Δ
D401, 402, 403, 404, 405, 406	A7246601	Diode, 1S1553V
D407, 408, 409, 410	A8600607	Diode, TLR113A, LED, RED
D411, 412, 413, 414, 415, 416, 417, 418	A8605677	Diode, TLG113A-F-E/F
D601	A7110017	Diode, 05Z5.6-Y-Y/Z Δ
D613, 604, 605, 606, 607, 608, 609, 610, 611, 612	A7246703	Diode, 1S1555V Δ
D603	A7246703	Diode, 1S1555V (TE, FR) Δ
D615	A8600607	Diode, TLR113A Δ
D616	A8605677	Diode, TLG113A-F-E/F Δ
Δ D901	22115737	Diode, KBP01 (TA, TC, TU, AY, FR, VF) Δ
Δ D901	22115875	Diode, KBP01-E (TE) Δ
D902	A7110412	Diode, 05Z12Z-Y/Z

Symbol No.	Part No.	Description
ELECTRICAL PARTS		
L401, 402	22232278	Coil, Choke, 8.2mH
T901	22224115	Transformer, Power (TE, FR) Δ
T901	22224157	Transformer, Power (TU, AY) Δ
T901	22224158	Transformer, Power (VF) Δ
T901	22224155	Transformer, Power (TA) Δ
T901	22224156	Transformer, Power (TC) Δ
S1	22196062	Leaf Switch, Mute
S2, 3	22195983	Leaf Switch, Pause/FF, REW
S4	22196068	Leaf Switch, REC
S5	22196008	Leaf Switch, Stop
S601a-b	22196286	Push Switch, Dolby
S602a-b	22196286	Push Switch, Normal
S603a-c	22196286	Push Switch, Chrome
S604a-c	22196286	Push Switch, Metal
S901a-b	22196058	Push Switch, Stand-by
Δ S902	22196111	Slide Switch, Voltage (VF) Δ
J401a-b	22163887	Jack, US4P, Line IN/OUT
J402	22167908	DIN Socket, 5P (TE, FR)
J403a-b	22163948	Jack, 6 ϕ , Microphone/Headphone
Z401, 402	22153278	Dolby Filter
Z403, 404	22153229	Coil, Bias Trap
Z601	22235231	Coil, Bias Oscillator
Δ EP01	22176642	Power Cord (TE, FR) Δ
Δ EP01	22176641	Power Cord (TU) Δ
Δ EP01	22176643	Power Cord (AY) Δ
Δ EP01	22176646	Power Cord (VF) Δ
Δ EP01	22176644	Power Cord (TA, TC) Δ

Symbol No.	Part No.	Description
CAPACITORS		
D = $\pm 0.5\text{pF}$, J = $\pm 5\%$, K = $\pm 10\%$, Z = $-20 + 80\%$		
ABBREVIATIONS: EL = Electrolytic, CD, = Ceramic Disc, MY = Mylar, PS = Polystyrene		
C401, 402	22488339	EL, 3.3mfd, 50V
C403, 404	22349331	CD, 330pF, 50V, K
C405, 406	22488339	EL, 3.3mfd, 50V
C407, 408	22488478	EL, 0.47mfd, 50V
C409, 410	22480006	EL, 0.33mfd, 50V, K
C411, 412	22480003	EL, 0.1mfd, 50V, K
C413, 414	22485100	EL, 10mfd, 16V
C415, 416	22371473	MY, 0.047mfd, 50V, J
C417, 418	22371273	MY, 0.027mfd, 50V, J
C419, 420	22371472	MY, 4700pF, 50V, J
C421, 422	22371562	MY, 5600pF, 50V, J
C423, 424	22485330	EL, 33mfd, 16V
C425, 426	22483221	EL, 220mfd, 10V
C427, 428	22362101	CD, 100pF, 50V, K
C431, 432	22485100	EL, 10mfd, 16V
C433, 434	22488339	EL, 3.3mfd, 50V
C435, 436	22488109	EL, 1mfd, 50V
C437, 438	22361509	CD, 5pF, 50V, D
C439, 440	22349681	CD, 680pF, 50V, K
C441, 442	22485100	EL, 10mfd, 16V
C443, 444	22485100	EL, 10mfd, 16V
C445, 446	22349471	CD, 470pF, 50V, K
C447, 448	22349221	CD, 220pF, 50V, K
C449, 450	22485330	EL, 33mfd, 16V
C451, 452	22362101	CD, 100pF, 50V, K
C453, 454	22371103	MY, 0.01mfd, 50V, J
C455, 456	22488339	EL, 3.3mfd, 50V
C457, 458	22485100	EL, 10mfd, 16V
C459, 460	22480003	EL, 0.1mfd, 50V, K
C461, 462	22371103	MY, 0.01mfd, 50V, J
C467, 468	22488478	EL, 0.47mfd, 40V
C469, 470	22349102	CD, 1000pF, 50V, K
C471, 472	22485100	EL, 10mfd, 16V
C473, 474	22488478	EL, 0.47mfd, 50V
C475, 476	22488479	EL, 4.7mfd, 50V
C477, 478	22362101	CD, 100pF, 50V, K
C601	22485330	EL, 33mfd, 16V
C602	22485100	EL, 10mfd, 16V
C604	22342473	CD, 0.047mfd, 50V, Z
C605	22380271	PS, 6800pF, 200V, J
C606	22372103	MY, 0.01mfd, 50V, K
C607	22372682	MY, 6800pF, 50V, K
C608	22488478	EL, 0.47mfd, 50V
C609	22485330	EL, 33mfd, 16V
C610	22483101	EL, 100mfd, 10V
C611	22342473	CD, 0.047mfd, 50V, Z
C612	22485221	EL, 220mfd, 16V

Symbol No.	Part No.	Description
C613	22485100	EL, 10mfd, 16V
C614	22488339	EL, 3.3mfd, 50V
C616	22488478	EL, 0.47mfd, 50V
C617	22488478	EL, 0.47mfd, 50V
C618	22488478	EL, 0.47mfd, 50V
C619	22485100	EL, 10mfd, 16V
C620	22342473	CD, 0.047mfd, 50V, Z
C626	22342103	CD, 0.01mfd, 50V, Z
C627	22342103	CD, 0.01mfd, 50V, Z
Δ C901	22486102	EL, 1000mfd, 25V Δ
C902	22485330	EL, 33mfd, 16V
C903	22485330	EL, 33mfd, 16V
C904	22485101	EL, 100mfd, 16V
C905	22485101	EL, 100mfd, 16V
C907	22485221	EL, 200mfd, 16V
C908	22342473	CD, 0.047mfd, 50V, Z
RESISTORS		
All resistors are carbon film, 1/4W, $\pm 5\%$ unless otherwise noted, PRC = Printed Resistor Circuit.		
1K ohm = 1000 ohm, 1M = 1000K ohm		
R1	22555221	220 ohm
R401, 402	22555333	33K ohm (PRC)
R403, 404	22555104	100K ohm (PRC)
R405, 406	22555471	470 ohm (TU, AY, TA, TC, VF)
R407, 408	22555332	3.3K ohm (PRC)
R409, 410	22555224	220K ohm (PRC)
R411, 412	22555333	33K ohm (PRC)
R413, 414	22555330	33 ohm (PRC)
R415, 416	22555562	5.6K ohm (PRC)
R417, 418	22555104	100K ohm (PRC)
R419, 420	22555103	10K ohm (PRC)
R421, 422	22555104	100K ohm (PRC)
R423, 424	22555274	270K ohm (PRC)
R425, 426	22555154	150K ohm (PRC)
R427, 428	22555332	3.3K ohm (PRC)
R429, 430	22555473	47K ohm (PRC)
R431, 432	22555181	180 ohm (PRC)
R437, 438	22555152	1.5K ohm (PRC)
R439, 440	22555102	1K ohm (PRC)
R441, 442	22555103	10K ohm (PRC)
R443, 444	22555472	4.7K ohm (PRC) (TE)
R445, 446	22555102	1K ohm (PRC) (TE)
R447, 448	22555472	4.7K ohm (PRC)
R449, 450	22555472	4.7K ohm (PRC) (TE)
R451, 452	22545106	10M ohm
R457, 458	22555223	22K ohm (PRC)
R459, 460	22555103	10K ohm (PRC)
R461, 462	22555123	12K ohm (PRC)

Symbol No.	Part No.	Description
R463, 464	22658605	200K ohm, Semi-fixed Variable
R465, 466	22555333	33K ohm (PRC)
R467, 468	22658601	500 ohm, Semi-fixed Variable
R469, 470	22555682	7.5K ohm (PRC)
R471, 472	22555472	4.7K ohm (PRC)
R473, 474	22555274	270K ohm (PRC)
R475, 476	22555272	2.7K ohm (PRC)
R477, 478	22555273	27K ohm (PRC)
R479, 480	22555273	27K ohm (PRC)
R481, 482	22555101	100 ohm (PRC)
R483, 484	22555153	15K ohm (PRC)
R487, 488	22555682	6.8K ohm (PRC)
R491, 492	22555223	22K ohm (PRC)
R493, 494	22555181	180 ohm (PRC)
R495, 496	22555332	3.3K ohm (PRC)
R497, 498	22555103	10K ohm (PRC)
R499, 500	22658603	50K ohm, Semi-fixed Variable
R501, 502	22555153	15K ohm (PRC)
R503, 504	22555472	4.7K ohm (PRC)
R505, 506	22555333	33K ohm (PRC)
R507, 508	22555223	22K ohm (PRC)
R509, 510	22555563	51K ohm (PRC)
R511, 512	22545681	680 ohm (PRC)
R513, 514	22545681	680 ohm
R515, 516	22545561	560 ohm
R517, 518	22545561	560 ohm
R519, 520	22545561	560 ohm
R601	22620054	250K ohm, Variable, REC Balance
R602	22651588	100K ohm, Variable, REC Lever
R603	22545151	150 ohm
R604	22555153	15K ohm (PRC)
R605	22555683	68K ohm (PRC)
R607	22555153	15K ohm (PRC)
R609	22555152	1.5K ohm (PRC)
R611	22547271	270 ohm, 1/2W
R612	22547221	220 ohm, 1/2W
R613	22545569	5.6 ohm
R614	22555680	68 ohm (PRC)
R615	22555682	6.8K ohm (PRC)
R616	22555473	47K ohm (PRC)
R617	22555562	5.6K ohm (PRC)
R618	22555103	10K ohm (PRC)
R619	22545225	2.2M ohm
R620	22555103	10K ohm (PRC)
R621	22545105	1M ohm
R622	22555104	100K ohm (PRC)
R623	22555224	220K ohm (PRC)

Symbol No.	Part No.	Description
R624	22555472	4.7K ohm (PRC)
R625	22555103	10K ohm (PRC)
R626	22555103	10K ohm (PRC)
R627	22555104	100K ohm (PRC)
R629	22555104	100K ohm (PRC)
R630	22555224	220K ohm (PRC)
R631	22555222	2.2K ohm (PRC)
R632	22555103	10K ohm (PRC)
R633	22555224	220K ohm (PRC)
R634	22555222	2.2K ohm (PRC)
R635	22555103	10K ohm (PRC)
R636	22555103	10K ohm (PRC)
R637	22555224	220K ohm (PRC)
R638	22555103	10K ohm (PRC)
R639	22555103	10K ohm (PRC)
R640	22545684	680K ohm
R650	22545821	820 ohm
R651	22545561	560 ohm
R652	22545471	470 ohm
△ R901	22500278	10 ohm, Fusible
R902	22545331	330 ohm
R903	22545101	100 ohm
R904	22545471	470 ohm
△ R905	22500167	2.2 ohm, Fusible
R906	22555331	330 ohm (PRC)
R907	22555473	47K ohm (PRC)
R908	22555103	10K ohm (PRC)
△ R909	22500278	10 ohm, Fusible
ACCESSORIES		
AC01	22904107	Owner's Manual (TE)
AC01	22904108	Owner's Manual (TU, AY)
AC01	22904109	Owner's Manual (VF)
AC01	22904105	Owner's Manual (TA)
AC01	22904106	Owner's Manual (TC)
AC01	22904128	Owner's Manual (FR)
AC02	22164775	Connector Cord
AC03	22990374	Head Cleaner
AC04	22164300	Adapter, AC Plug (VF)