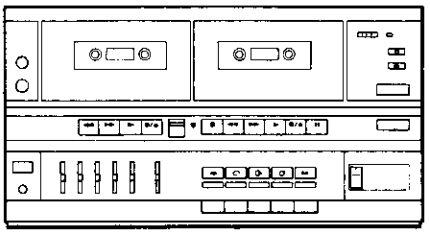
PIONEER®
The future of sound and vision.

108.

Service Manual



ORDER NO.
ARP1336

STEREO DOUBLE CASSETTE TAPE DECK AMPLIFIER

DC-X77Z

MODEL DC-X77Z COMES IN FIVE VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Power requirement	Export destination
HB	AC220V, 240V (switchable)*	United Kingdom
HE	AC220V, 240V (switchable)*	European Continent
SD	AC110V, 120-127V, 220V, 240V (switchable)	General market
HEZ	AC220V, 240V (switchable)*	West Germany
YP	AC240V only	Australia

*Change the primary wiring, please refer to page 52.

- **This service manual is applicable to the HB, HE and SD types.**
- **As to the HE and SD types, please refer to pages 51.**
- **As to the other types, please refer to additional service manual.**
- Ce manual d'instruction se refèr au mode de réglage, en français.
- Este manual de servicio trata del métode ajuste escrito en español.

CONTENTS

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1. SPECIFICATIONS

Continuous Average Power Output is 27 Watts* per channel, min., at 8 ohms from 40 Hertz to 20,000 Hertz, with no more than 0.3% total harmonic distortion.

**Measured pursuant to the Federal Trade Commission's Trade Regulation rules on Power Output Claims for Amplifiers.*

Continuous Power Output
- 40 to 20,000 Hz ..... 27 W + 27 W (T.H.D. 0.3% 8 ohms)
- 1 kHz (DIN) ..... 33 W + 33 W (T.H.D. 1% 8 ohms)
- 1 kHz (DIN music power) ..... 50 W + 50 W (T.H.D. 1% 8 ohms)

Graphic equalizer frequency band ..... 100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, ±7 dB

Hum and Noise (IHF, short-circuited, A network)
- PHONO ..... 72 dB

Hum and Noise (DIN continuous Power/50 mW)
- PHONO ..... 68 dB/60 dB

Total Harmonic Distortion (40 Hz to 20,000 Hz, 8 ohms)
- 15 Watts per channel power output ..... No more than 0.2%

Tape Deck Section

Systems ..... 4 track, 2-channel stereo

Heads ..... Recording/playback head x 1
Playback head x 1
Erasing head x 1

Motor ..... DC servo 2 speed motor x 2

Wow and Flutter ..... No more than 0.13% (WRMS)

Fast Winding Time ..... Approzimately 105 seconds (C-60 tape)

Frequency Response
- –20 dB recording:
  - Normal tape ..... 35 Hz to 14,000 Hz
  - CrO_2 ..... 35 Hz to 15,000 Hz

Signal-to-Noise Ratio
- Dolby NR OFF ..... 56 dB

Noise Reduction Effect
- Dolby B type NR ON ..... More than 10 dB (at 5 kHz)

Furnished Parts

Operating Instructions 1

Turntable legs parts 2

Miscellaneous

Power requirements

European model ..... AC 220 V, 50/60 Hz

U.K. model ..... AC 240 V, 50/60 Hz

Australian model ..... AC 240 V, 50 Hz

Other destination models
..... AC 110/120-127/220/240 V (switchable) 50/60 Hz

Power Consumption

European model ..... 210 W

U.K. model ..... 210 W

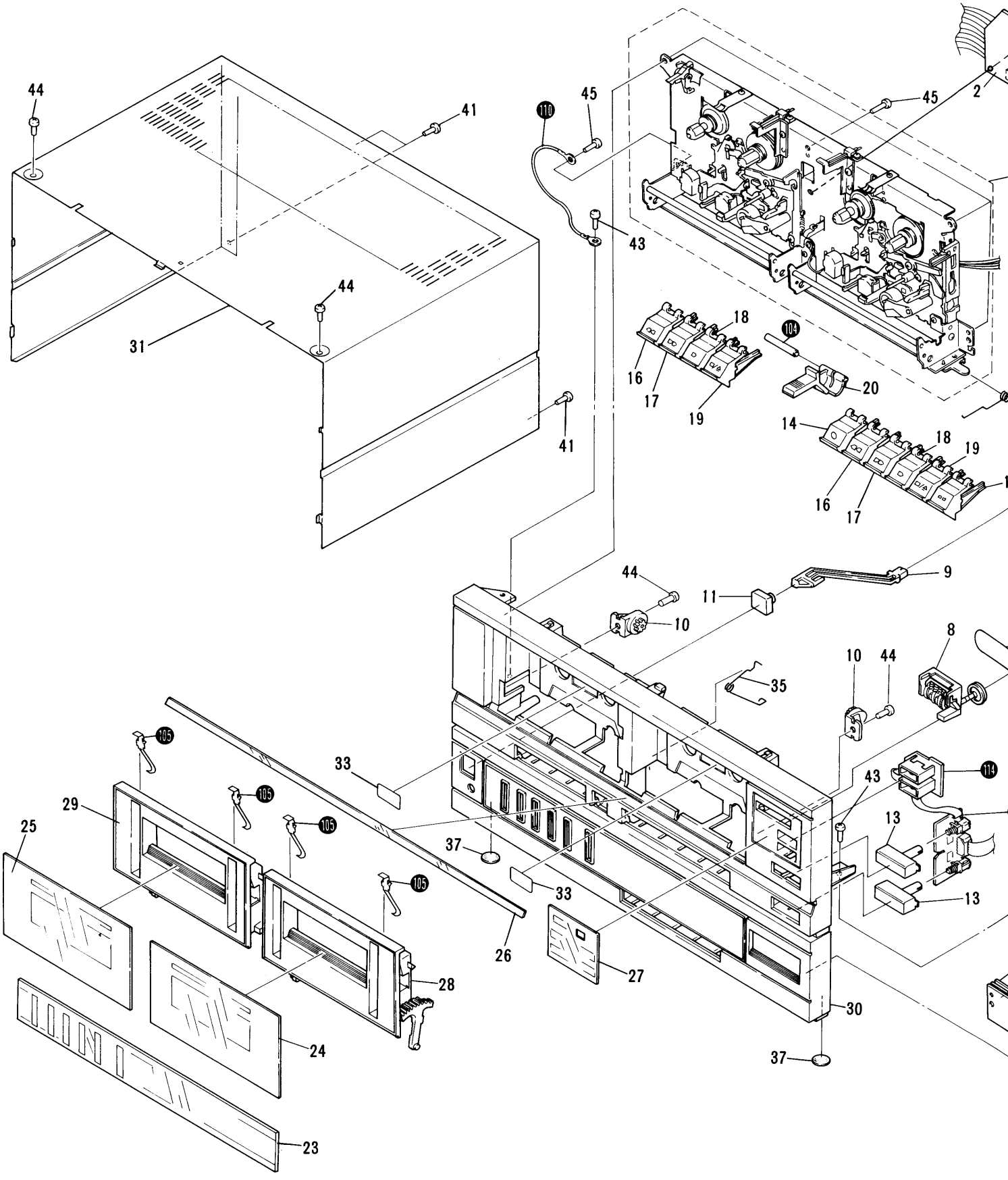
Other destination models ..... 210 W

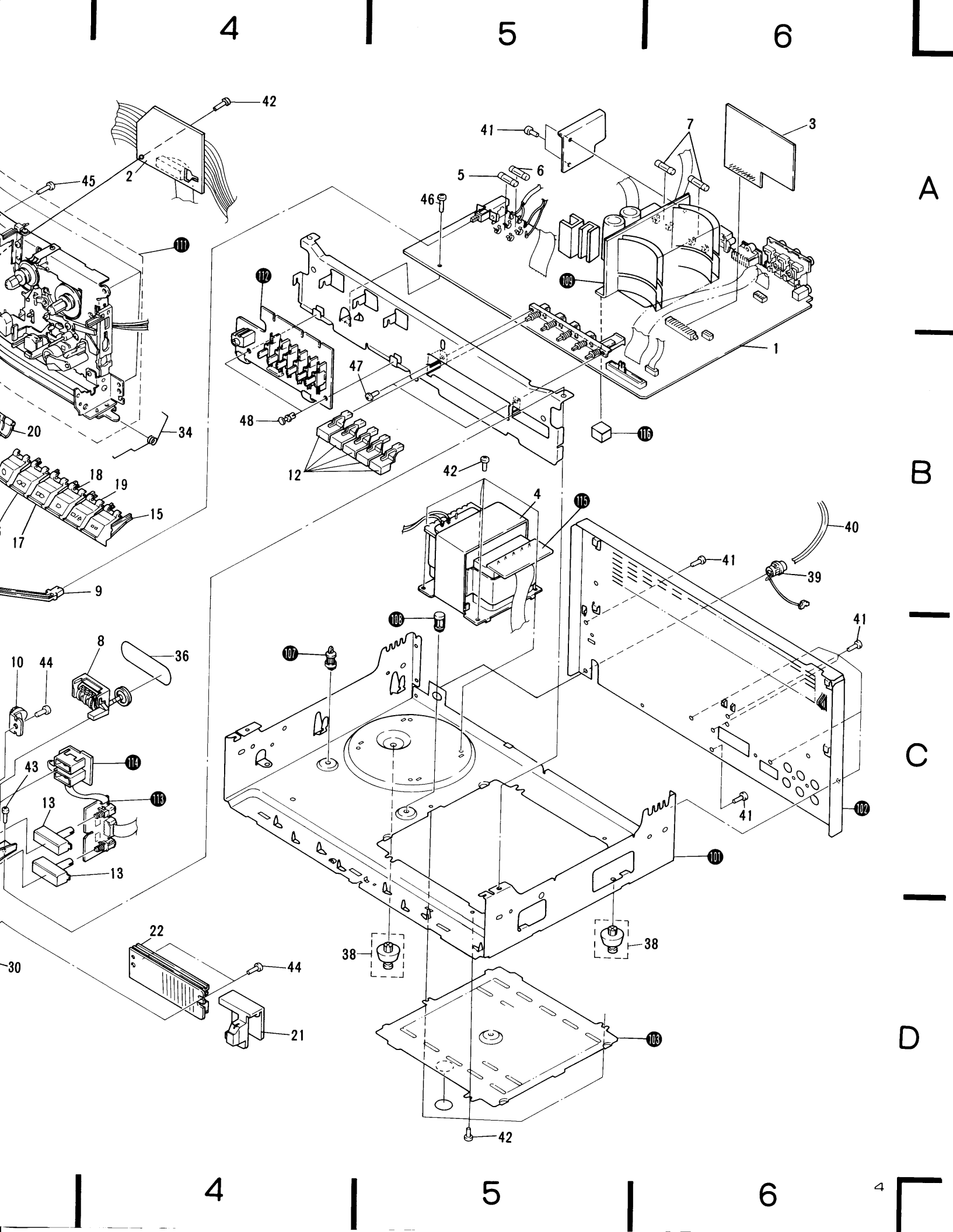
Dimensions ..... 360(W) × 190(H) × 283(D) mm
14-3/16(W) × 7-1/2(H) × 11-1/8(D) in

Weight (without package) ..... 6.8 kg (15 lb)

Specifications and design subject to possible modifications without notice due to improvement.

2. EXPLODED VIEWS AND PARTS LIST

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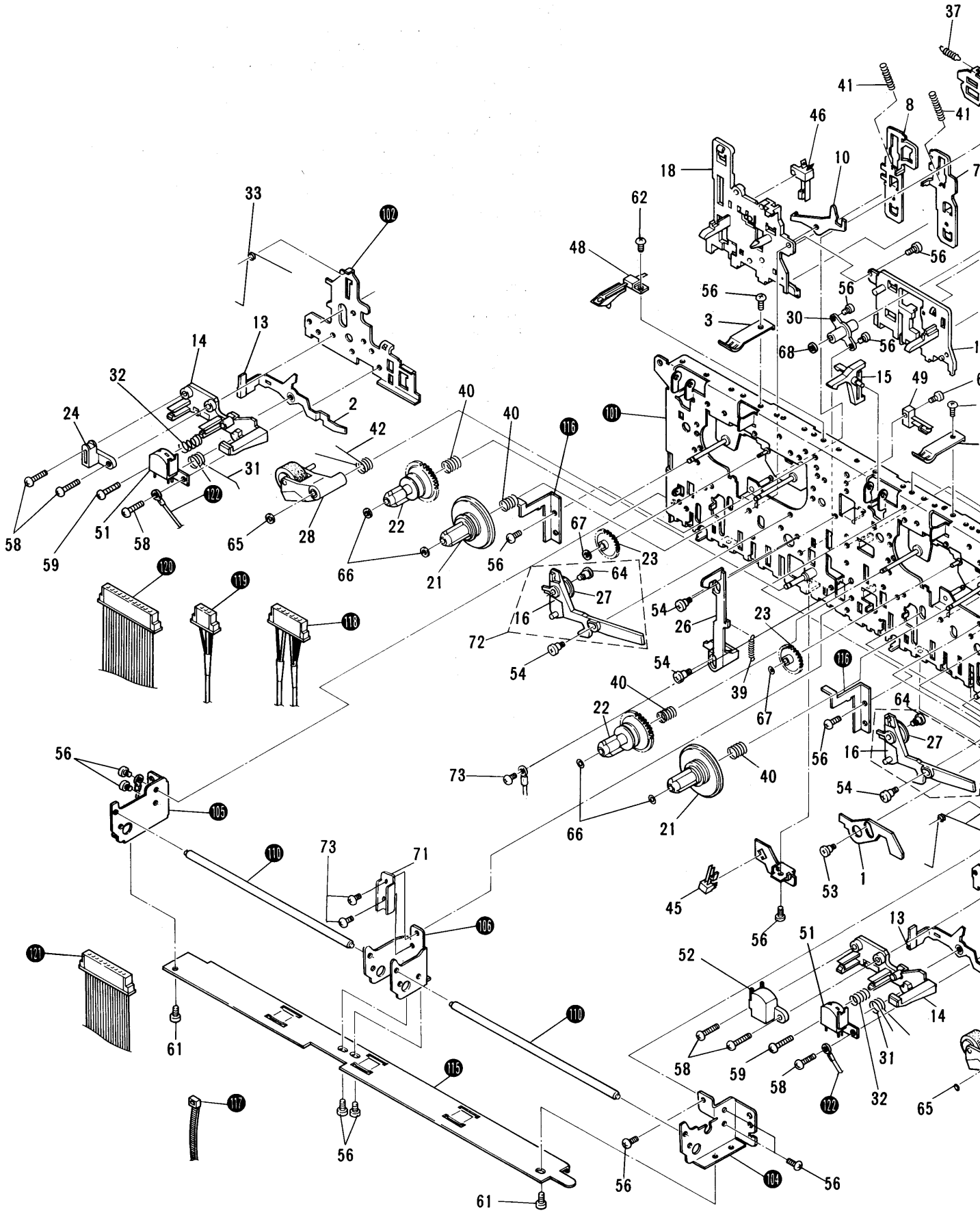
NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification should be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts marked by " ⊙ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Parts List of Exterir

Mark	No.	Part No.	Description
	1	AWZ1289	Main assembly
	2	AWZ1309	Mechanism control assembly
	3	AWZ1310	REC Amp assembly
⚠ ★	4	ATS1070	Power transformer
		(ATS1065)	(T1. AC220V/240V)
⚠ ★★	5	AEK-507	Fuse (FU1,T800mA)
⚠ ★★	6	AEK-510	Fuse (FU3,T1.6A)
⚠ ★★	7	AEK-511	Fuse (FU4, FU5, T2A)
	8	AAW1003	Counter
	9	AMR1124	Power joint
	10	AXA1004	Damper assembly
	11	AAD1003	Knob (POWER)
	12	AAD1115	Knob (FUNCTION)
	13	AAD1116	Knob (DOLBY NR)
	14	AAE1038	Knob (REC)
	15	AAE1039	Knob (PAUSE)
	16	AAE1040	Knob (FAST RWD)
	17	AAE1041	Knob (FAST FWD)
	18	AAE1042	Knob (PLAY)
	19	AAE1043	Knob (STOP/EJECT)
	20	AAE1044	Knob (SYNC)
	21	AAE1045	Knob (VOLUME)
	22	AAK1190	Volume base
	23	AAK1191	Amp panel
	24	AAK1192	Door panel R
	25	AAK1193	Door panel L
	26	AAK1194	Deck panel A
	27	AAK1195	Deck panel B
	28	AAN1035	Door R
	29	AAN1036	Door L
	30	AMB1136	Front panel
	31	ANE1002	Bonnet case
	32	.....	.....
	33	AAX1054	Fluorescent sheet
	34	ABH1025	Door spring R
	35	ABH1026	Door spring L
★★	36	AEB-310	Counter belt
	37	AEB1012	Non slip
	38	AEC-847	Leg assembly
⚠	39	AEC-882	Strain relief
⚠	40	ADG-051	AC power cord

Mark	No.	Part No.	Description
	41	BBZ30P080FZK	Screw
	42	VBZ30P060FMC	Screw
	43	VBZ30P080FMC	Screw
	44	VPZ30P080FZK	Screw
	45	VPZ30P100FMC	Screw
	46	BBT30P080FMC	Screw
	47	VMZ30P060FMC	Screw
	48	AEC-194	Nylon revet
	101		Chassis
	102		Rear panel
	103		Bottom plate
	104		SYNC shaft
	105		Keep plate
	106		.....
	107		P.C.B Holder
	108		P.C.B Support
	109		Heat sink
	110		Earth lead
	111		Cassette mechanism unit
	112		Graphic EQ assembly
	113		Switch assembly
	114		LED assembly
	115		Connect assembly
	116		Cushion rubber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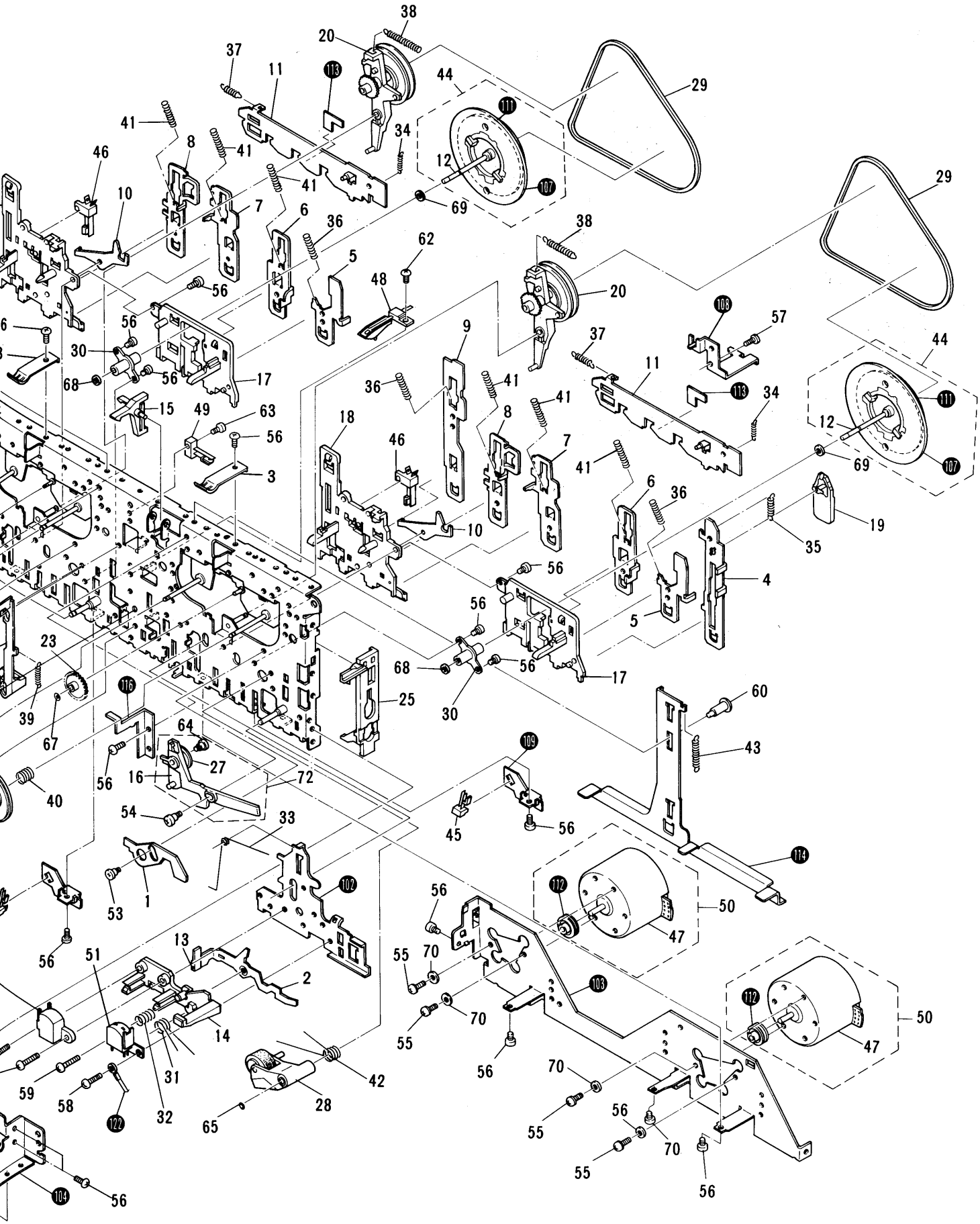
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Mechanism unit

Mark	No.	Part No.	Description
	1	AZN1273	Pause arm
	2	AZN1274	AS arm
	3	AZN1241	Pack spring
	4	AZN1275	Pause lever
	5	AZN1276	Stop lever
	6	AZN1277	Play lever
	7	AZN1278	FF lever
	8	AZN1279	REW lever
	9	AZN1280	REC lever
	10	AZN1281	REW arm (S)
	11	AZN1282	Lock cam(A) assembly
	12	AZN1242	Capstan shaft
	13	AZN1243	Sensor cap
	14	AZN1244	Head base
	15	AZN1245	REC sensor
	16	AZN1246	Idler arm
	17	AZN1247	Lever base (A)
	18	AZN1248	Lever base (B)
	19	AZN1249	Pause cam
	20	AZN1250	Clutch arm assembly (R)
	21	AZN1251	T reel assembly
	22	AZN1252	S reel
	23	AZN1253	FF gear
	24	AZN1254	Tape guide
	25	AZN1255	Eject lever (F)
	26	AZN1256	Eject lever (W)
★★	27	AZN1257	Idler
	28	AZN1258	P roller arm assembly
★★	29	AZN1259	Belt
	30	AZN1260	Housing assembly
	31	AZN1261	Head chassis spring
	32	AZN1262	Head spring
	33	AZN1263	Idler arm spring
	34	AZN1264	Auto arm spring
	35	AZN1265	Pause lever spring
	36	AZN1266	Lever spring (A)
	37	AZN1267	Cam spring
	38	AZN1268	Clutch arm spring
	39	AZN1269	Eject spring
	40	AZN1270	Back tension spring
	41	AZN1271	Lever spring
	42	AZN1272	P roller arm spring
	43	AZN1283	Dubbing spring
	44	AZN1284	Flywheel assembly
★★	45	AZS1029	Leaf switch (POWER)
★★	46	AZS1030	Leaf switch (PLAY MUTE)
★★	47	AZX1011	Motor
★★	48	AZS1031	Leaf switch (CrO2)
★★	49	AZS1032	Leaf switch (REC)
★★	50	AZX1012	Motor assembly
★★	51	AZP1012	RP head
★★	52	AZP1013	E head
	53	AZB1061	Screw (A)
	54	AZB1062	Screw (P)
	55	AZB1063	Sems Screw
	56	AZB1064	Tap tite screw
	57	AZB1065	Tap tite screw
	58	AZB1066	Binding screw
	59	AZB1067	Washer head screw
	60	AZB1068	Screw (C)
	61	AZB1069	Tap tite screw
	62	AZB1070	Tap tite screw
	63	AZB1071	Tap tite screw
	64	AZB1072	Bush
	65	AZB1073	Polyslider washer
	66	AZB1074	Polyslider washer
	67	AZB1075	Polyslider washer
	68	AZB1076	Polyslider washer
	69	AZB1077	Polyslider washer
	70	AZB1078	Plain washer (L)
	71	ANG1113	Mecha braket
	72	ANZ1359	Idler arm assembly
	73	AZB1108	Tap tite screw
	101		Chassis (W) assembly
	102		Head chassis
	103		Motor bracket (FW)
	104		Button bracket (RF)
	105		Button bracket (LW)
	106		Button bracket (C)
	107		Flywheel weight
	108		Sub bracket
	109		SW bracket (F)
	110		Button shaft (W)
	111		Flywheel
	112		Motor pulley
	113		Insulator seat
	114		Dubbing Lever
	115		MD plate
	116		SW guard
	117		Nylon band
	118		5P head wire assembly
	119		3P head wire assembly
	120		12P wire assembly
	121		10P wire assembly
	122		Earth wire

3. MECHANICAL SECTION OPERATION OUTLINE

The operation outline of this unit is as follows:

1. Operation selection system..... There is no power assist mechanism
2. Driving system..... 1 motor belt drive
3. Head..... Fixed head
4. Auto-stop system..... REC+PLAY and PLAY auto-stop
5. Operation system..... Lever lock system
6. EJECT system..... STOP→EJECT system

The following will describe operations according to their respective modes.

3-1. STOP MODE

The head chassis assembly and the respective operation levers come down to their specified positions and become into stop mode when the respective switches are OFF.

3-2. PLAY MODE

(1) When PLAY lever is pressed, the lock cam moves to the left direction and the power supply switch is turned ON. At the same time, the head chassis assembly which is linked to the play lever is pushed up to the specified position with the head chassis spring and the PLAY muting switch being turned ON. In addition, the PLAY lever is locked with the lock cam.

(2) At the same time, the head chassis, while rising, pushes up the pinch pressure contact spring within the pinch roller arm to pressure contact the pinch roller to the capstan and commences tape running.

(3) At the same time, the PLAY idler is also pushed up causing the take-up reel table to rotate and to begin take-up of tape and becomes into PLAY mode.

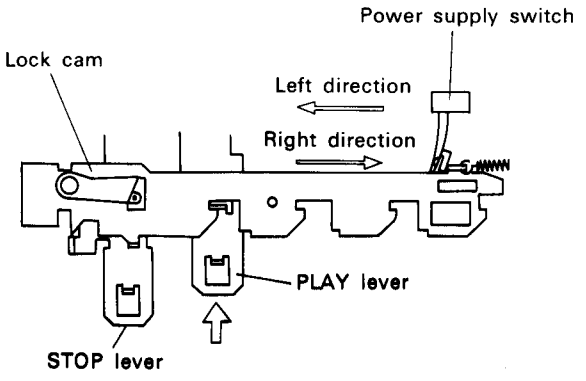


Fig. 3-1. PLAY mode diagram (motor installing side)

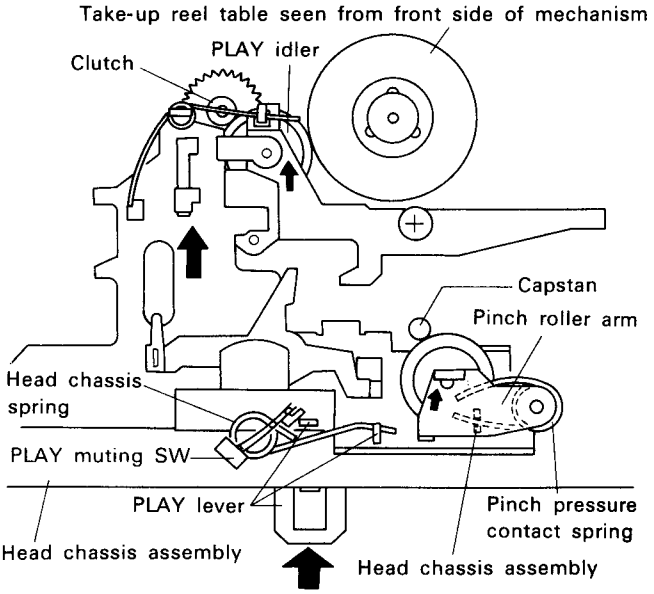


Fig. 3-2. PLAY mode diagram

3-3. PLAY→STOP OPERATION

Mechanically, it operates in reverse of the aforementioned PLAY mode. (See Figs. 3-1 and 3-2.)

(1) When STOP lever is pressed, the lock cam moves in the left direction and releases the PLAY lever. At the same time, the PLAY muting switch and power supply switch are turned OFF.

(2) At the same time, the PLAY idler is pushed down while the head chassis comes down, and the take-up reel table stops as also the take-up of tape.

(3) At the same time, release the pressure contact of the pinch roller and capstan by pushing up the pinch pressure contact spring and stop the tape running.

3-4. PLAY→PAUSE mode→PAUSE release

• PAUSE mode

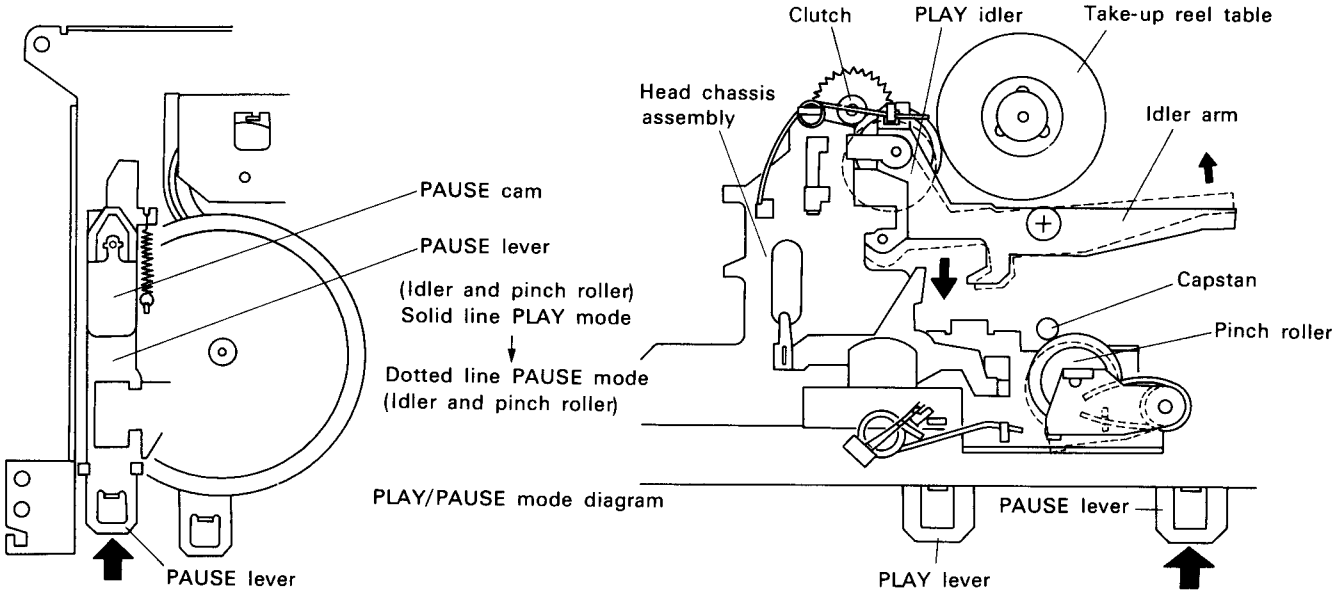
(1) When the PAUSE lever is pressed in PLAY mode, the PAUSE lever pushes down the head chassis assembly (linked to pinch roller) which is linked to the PLAY idler and PAUSE arm. At the same time, the PLAY idler and pinch roller are pressed down. And with PAUSE cam, it is locked at the PAUSE position and becomes into PAUSE mode.

• PAUSE position

- Head comes down 1.7 mm at center value from the PLAY position
- Pinch roller does not contact with the capstan.
- PLAY idler does not contact with the reel table.
- Play muting switch and power supply switch are in ON mode.
- Clearance of pinch roller : 1.7 mm at center
- Clearance of play idler : 1.7 mm at center

- **PAUSE release**

(2) Next, when the PAUSE lever is pressed again, the PAUSE cam is released in the movement reverse to (1). The PLAY idler and pinch roller then return to the PLAY mode and tape running recommences.



(a) (Motor installing side)

(b) (Front side)

Fig. 3-3. PLAY→PAUSE→PAUSE release

3-5. REC DETECTION OPERATION AND REC OPERATION

1. REC detection operation

REC sensor detects the existence or otherwise of erroneous erasure prevention claw of cassette half.
When there is claw, recording may be performed (REC lever can be pressed.)
When there is no claw, recording cannot be performed (REC lever cannot be pressed.)

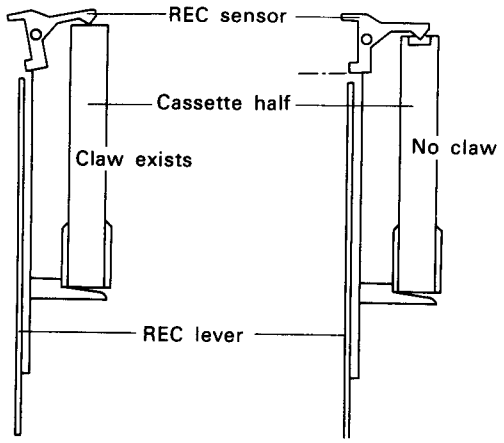


Fig. 3-4. REC detection operation

2. REC operation (Be sure to press REC lever and PLAY lever simultaneously)

When REC lever is pressed, the REC switch is turned ON. The others are the same operation as PLAY mode and thereby tape running is started, and becomes into REC mode.

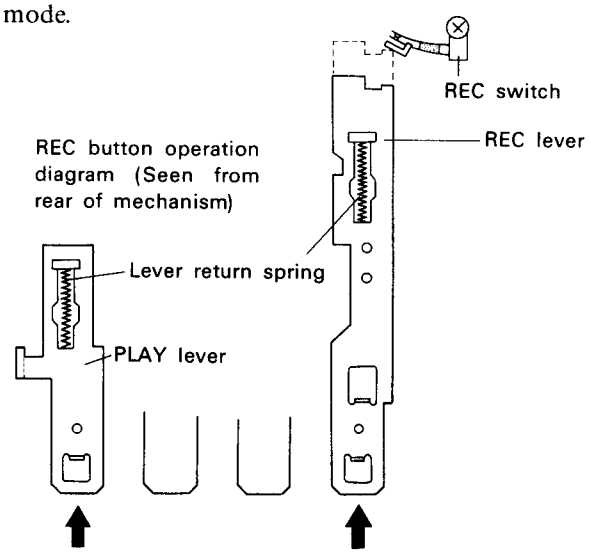


Fig. 3-5. REC operation (REC installing side)

3-6. REC → PAUSE → PAUSE RELEASE

Function same to the description in item 5 (PLAY → PAUSE → PAUSE RELEASE) except for the followings.

(1) REC → PAUSE
REC SW and PLAY SW keep REC condition.

(2) PAUSE → PAUSE RELEASE
REC function starts again.

3-7. REC→STOP OPERATION

(1) When STOP lever is pressed and the locks of REC lever and PLAY lever are released, the PLAY lever and REC lever are returned by the return spring, and the REC switch and PLAY muting switch are turned OFF.

(2) The other operations are the same as PLAY→STOP operation

3-8. FF/REW OPERATION

• FF operation

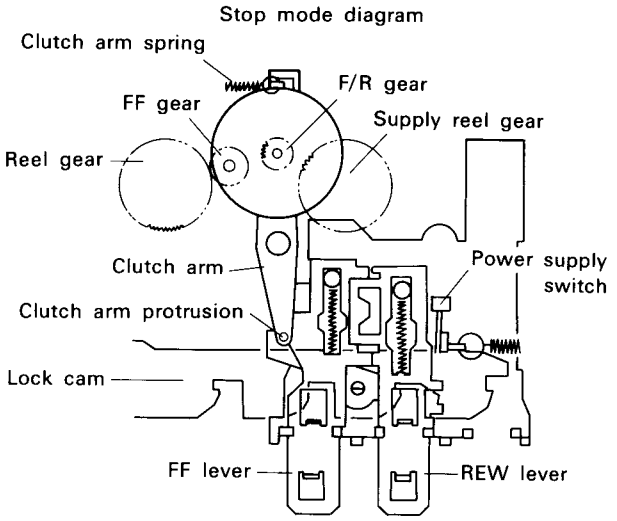
(1) When the FF lever is pressed, lock cam moves in left direction, the power supply switch is turned ON and is locked with the lock cam.

(2) At the same time, the protrusion of clutch arm becomes in free state due to the shape of FF lever. F/R gear is moved by nearing it to the FF gear and engages the F/R gear with FF gear (reel gear). Then the reel begins to rotate and becomes into FF operation.

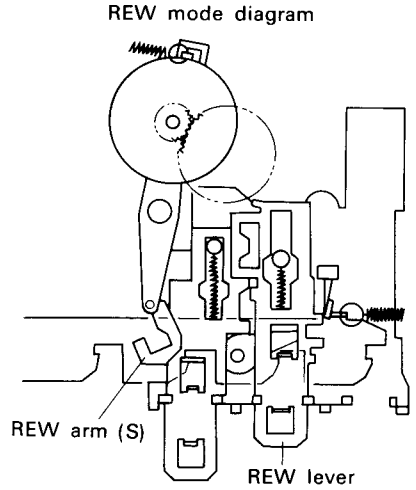
• REW operation

(1) Lock cam moves in the left direction when the REW lever is pressed, the power supply switch is turned ON and is locked with the lock cam.

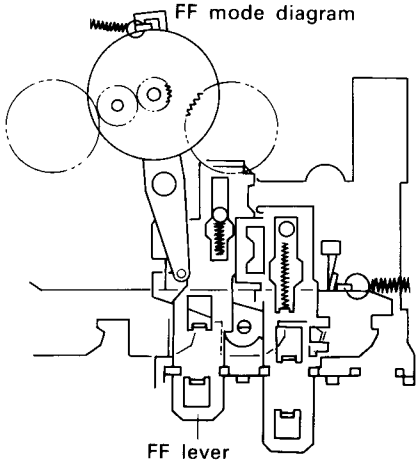
(2) At the same time, when the REW arm (S), which is linked to the REW lever, pushes in to the left direction the protrusion of the clutch arm. Then the F/R gear is simultane-ously moved in the direction nearing the supply reel gear and engages the F/R gear with the supply reel gear. Then the reel begins to rotate and becomes into REW operation.



(a) STOP mode



(b) REW mode



(c) FF mode

Fig. 3-6. FF/REW operation (Motor installing side) (Seen from rear of mechanism)

3-9. AUTO STOP OPERATION

After the tape has been taken up by the recording and playback operations, the auto sensor detects them. Then the linking parts release the lock cam and the operations become into STOP mode.

(1) Auto sensor becomes lowered by the tape tension of the tape end.
(2) At the same time, the auto arm is pushed up by the AS arm.
(3) At the same time, the auto arm contacts the claw of flywheel, the lock cam shifts toward releasing of lever, and releases PLAY lever and REC lever.
(4) Thereafter, they perform the same operations as REC→STOP and PLAY→STOP.

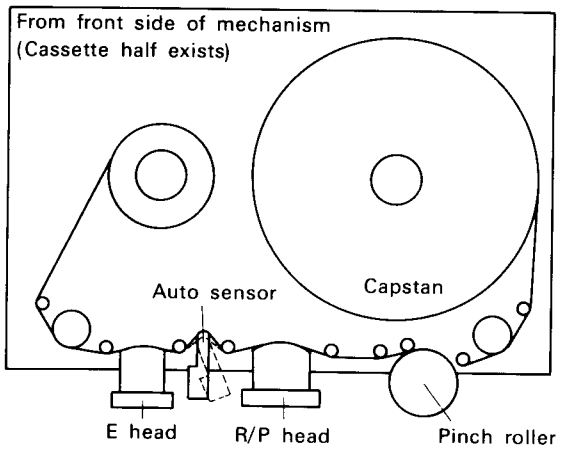


Fig. 3-7. AUTO STOP linkage diagram (Recording and playback)
(Cassette half exists)

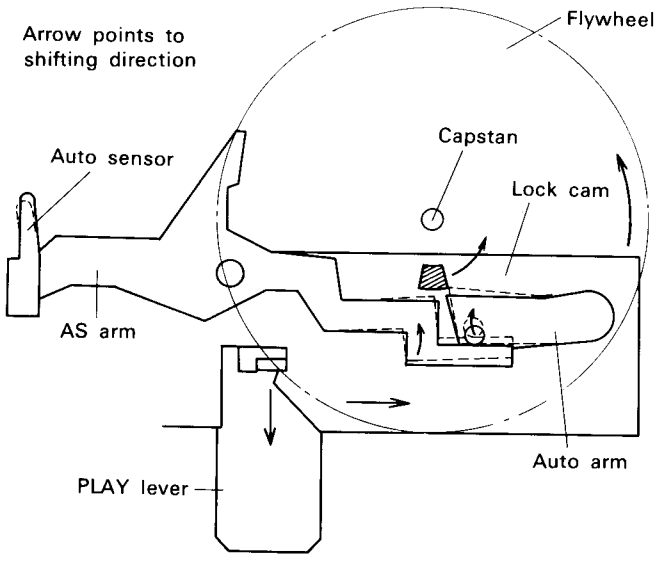
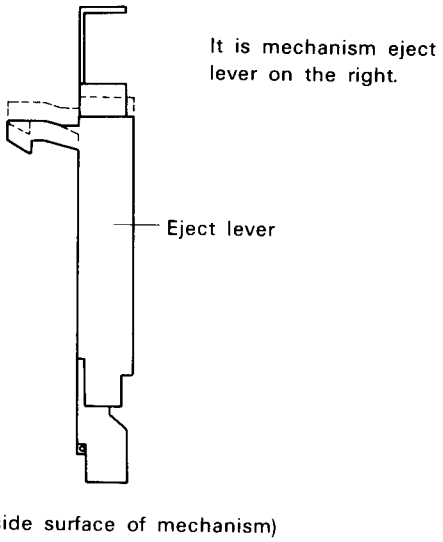


Fig. 3-8. AUTO STOP linkage diagram (Recording and playback)
(Partial sections of auto arm, flywheel and AS arm cannot be seen)

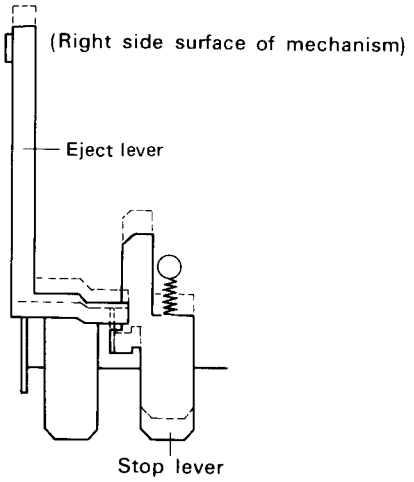
3-10. STOP→EJECT MECHANISM

In case PLAY, REC, FF and REW lever are locked, always go through STOP mode before entering EJECT operation.

Solid line denotes STOP mode
Dotted lines denote during EJECT operation



(A) Right side surface



(B) Motor installing side

Fig. 3-9. STOP→EJECT mechanism

3-11. ONE TOUCH DUBBING OPERATION

(1) STOP→One touch dubbing operation

Since the PLAY levers of P mechanism and R/P mechanism, and REC lever are interlinked, it is possible to set the P mechanism into PLAY mode and R/P mechanism into REC mode by pressing only the dubbing lever.

Moreover, differing from other levers, the dubbing lever returns to the stop position without locking after completion of the operation.

(2) Dubbing→STOP operation

After completion of playback of P mechanism and after completion of recording of R/P mechanism, AUTO STOP function of the individual mechanisms becomes possible only upon take up completion of the tape.

Moreover, when suspending the dubbing operation in the course of operation, press the STOP levers of respective mechanisms.

Thereafter, the operations are same as PLAY→STOP and REC→STOP operations.

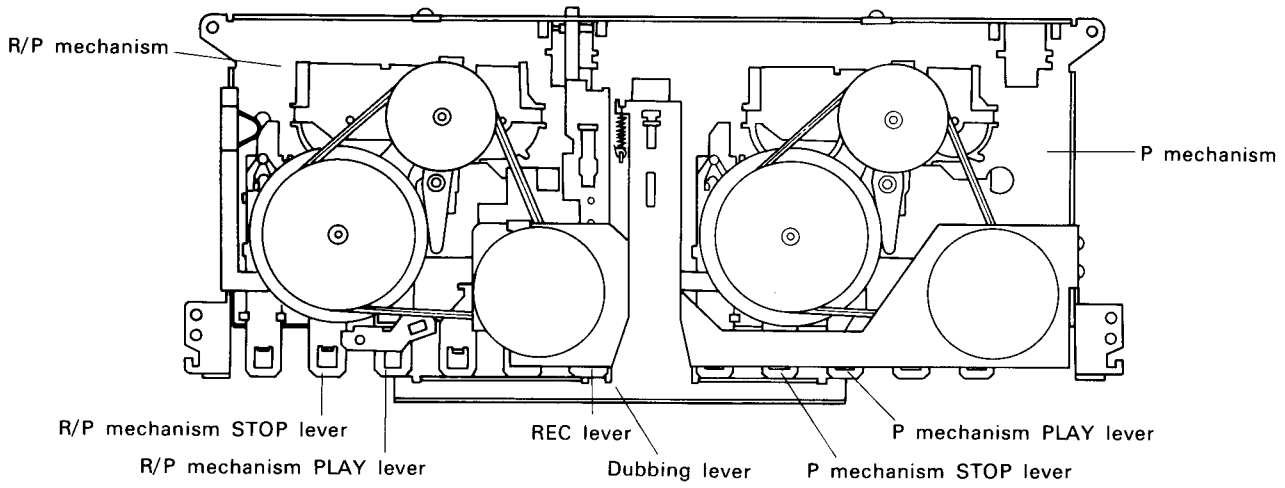


Fig. 3-10. One touch dubbing operation (1)
(Motor installing side)

One touch dubbing operation diagram
Solid line denotes STOP mode.
Dotted lines denote during one touch dubbing operation

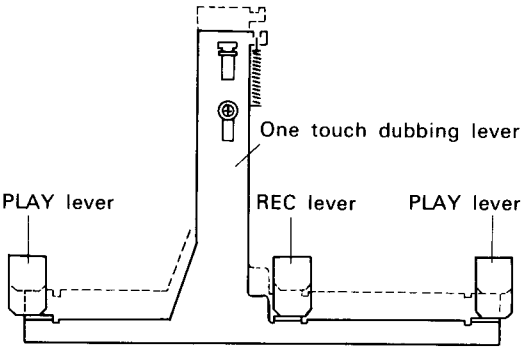
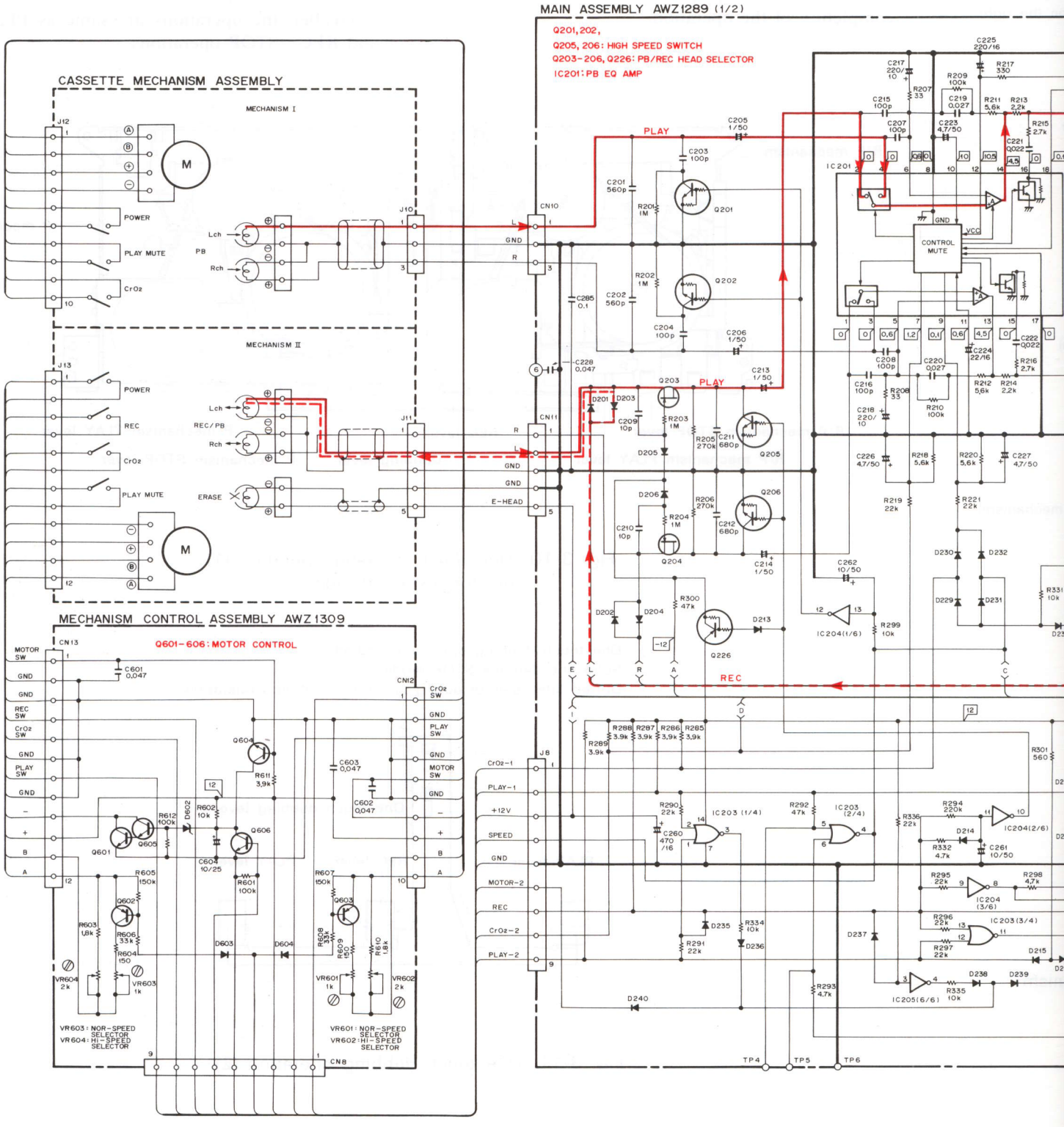
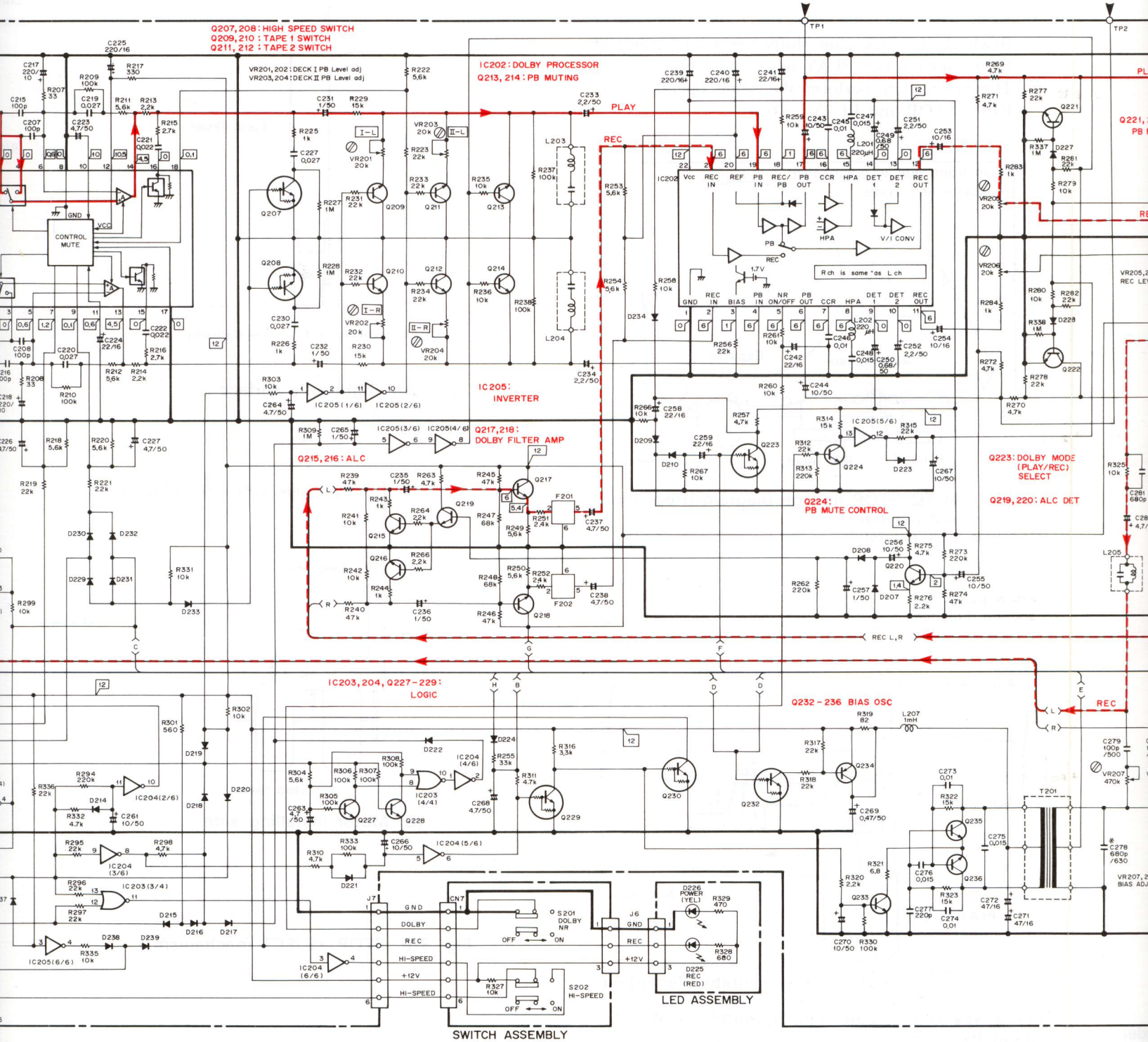
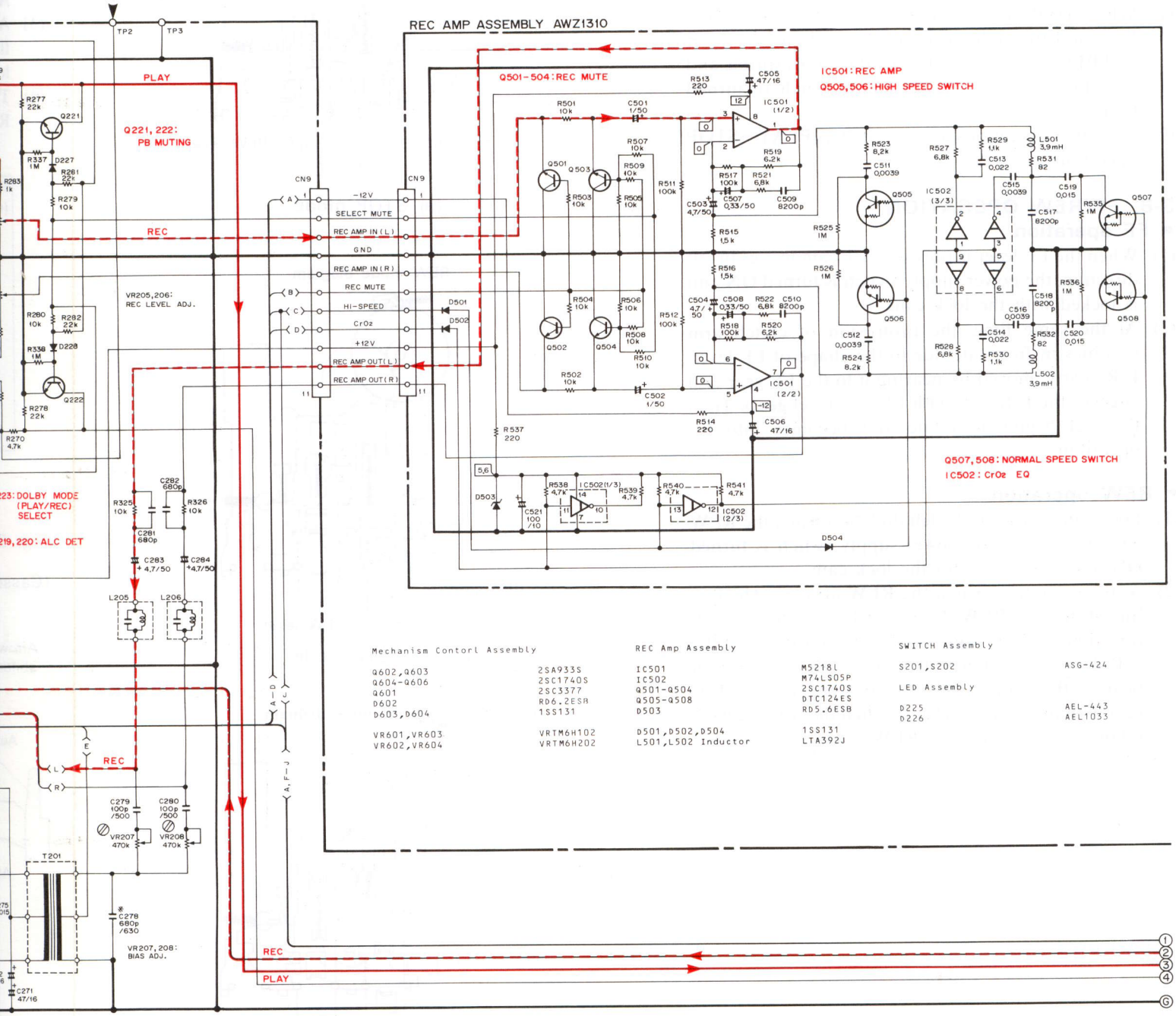


Fig. 3-11. One touch dubbing operation (2)

4. SCHEMATIC DIAGRAM




Q207,208 : HIGH SPEED SWITCH
Q209,210 : TAPE 1 SWITCH
Q211,212 : TAPE 2 SWITCH
VR201,202 : DECK I PB Level adj
VR203,204 : DECK II PB Level adj
IC202 : DOLBY PROCESSOR
Q213,214 : PB MUTING
PLAY
REC
IC205 : INVERTER
Q217,218 : DOLBY FILTER AMP
Q215,216 : ALC
Q223 : DOLBY MODE (PLAY/REC) SELECT
Q219,220 : ALC DET
Q224 : PB MUTE CONTROL
IC203,204,Q227-229 : LOGIC
Q232-236 BIAS OSC
CONTROL MUTE
Rch is same as Lch
REC L,R
SWITCH ASSEMBLY
LED ASSEMBLY
S201 DOLBY NR
S202 HI-SPEED
D225 REC (RED)
D226 POWER (YEL)



Mechanism Contorl Assembly

Q602,Q603	2SA933S	VR601,VR603	VRTM6H102
Q604-Q606	2SC1740S	VR602,VR604	VRTM6H202
Q601	2SC3377		
D602	RD6.2ESB		
D603,D604	1SS131		

REC Amp Assembly

IC501	M5218L	D501,D502,D504	1SS131
IC502	M74LS05P	L501,L502 Inductor	LTA392J
Q501-Q504	2SC1740S		
Q505-Q508	DTC124ES		
D503	RD5.6ESB		

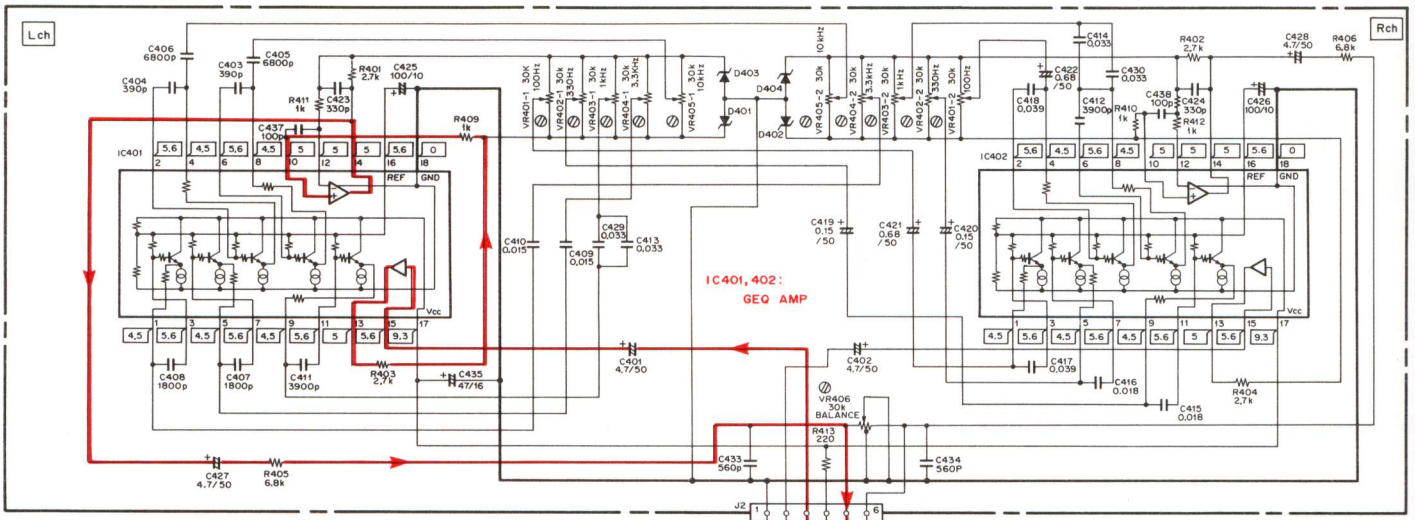
SWITCH Assembly

S201,S202	ASG-424

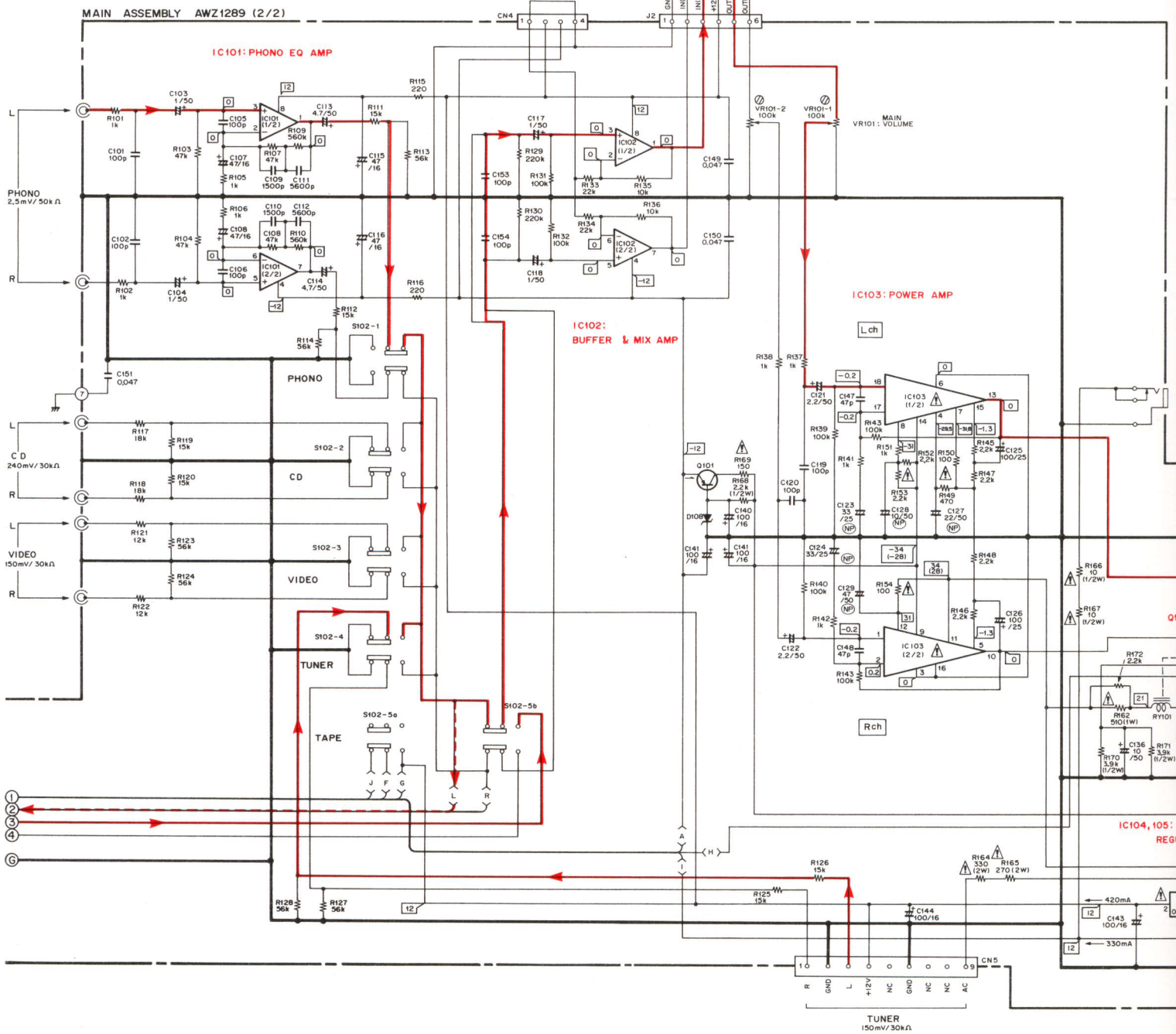
LED Assembly

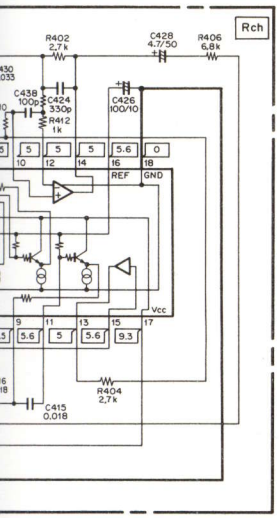
D225	AEL-443
D226	AEL1033

GRAPHIC EQ ASSEMBLY (1/2)



MAIN ASSEMBLY AWZ1289 (2/2)





Main Assembly

IC201	BA3416BL
IC202	HA12086NT
IC101,IC102	M5218P
IC103	STK4141
IC203	TC4001BP
IC204,IC205	TC4069UBP
IC104	uPC78M12H
IC105	uPC7812H
Q226	DTA124ES
Q201,Q202,Q205-Q208,Q223, Q229,Q231,Q232	DTC124ES
Q230	DTC143ES
Q234	2SA933S
Q101	2SB834
Q102,Q103,Q209-Q216,Q219-Q222,Q224,Q227,Q228,Q233	2SC1740S
Q217,Q218	2SC1740SLN
Q104,Q235,Q236	2SC3377
Q203,Q204	2SK373
D110	HZS15L
D108	RD13EB
D102-D107	S5566
D109,D201-D210,D213-D224, D227-D240	1SS131
D101	4D4B44
S101	ASG1005 (ASG1007)
RY101	ASR1005 (ASR-111)
S102	SUJ8L22224L
F201,F202	ATF-210
L101,L102	ATH-133
L205,L206	ATM-037
L203,L204	ATM1001
T201	ATX-035
L201,L202	LAU221K
L207	LTA102J
C278	ACE-134
C145,C146	ACG1002
C135	ACG1005
C137,C138	ACH-249
VR101	ACU1002
VR201-VR206	VRTM6V203
VR207,VR208	VRTM6V504

Graphic EQ Assembly

IC401,IC402	BA3812L
VR401-VR405	ACU1011
D401-D404	RD10ESB

1. RESISTORS:
Indicated in Ω, 1/4W, 1/6W and 1/8W, ±5% tolerance unless otherwise noted k; kΩ, M; MΩ, (F); ±1%, (G); ±2%, (K); ±10%, (M); ±20% tolerance
2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p; pF. Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE, CURRENT:
V: Signal voltage at 30 W + 30 W, 8Ω output (1 kHz)
: DC voltage (V) at no input signal Value in ( ) is DC voltage at rated power.
⇦ mA; DC current at no input signal
mV: Signal voltage at FM 400 Hz ± 75 kHz DEV.
4. OTHERS:
: Signal route.
: Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.
The underlined indicates the switch position.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.
5. SWITCHES:

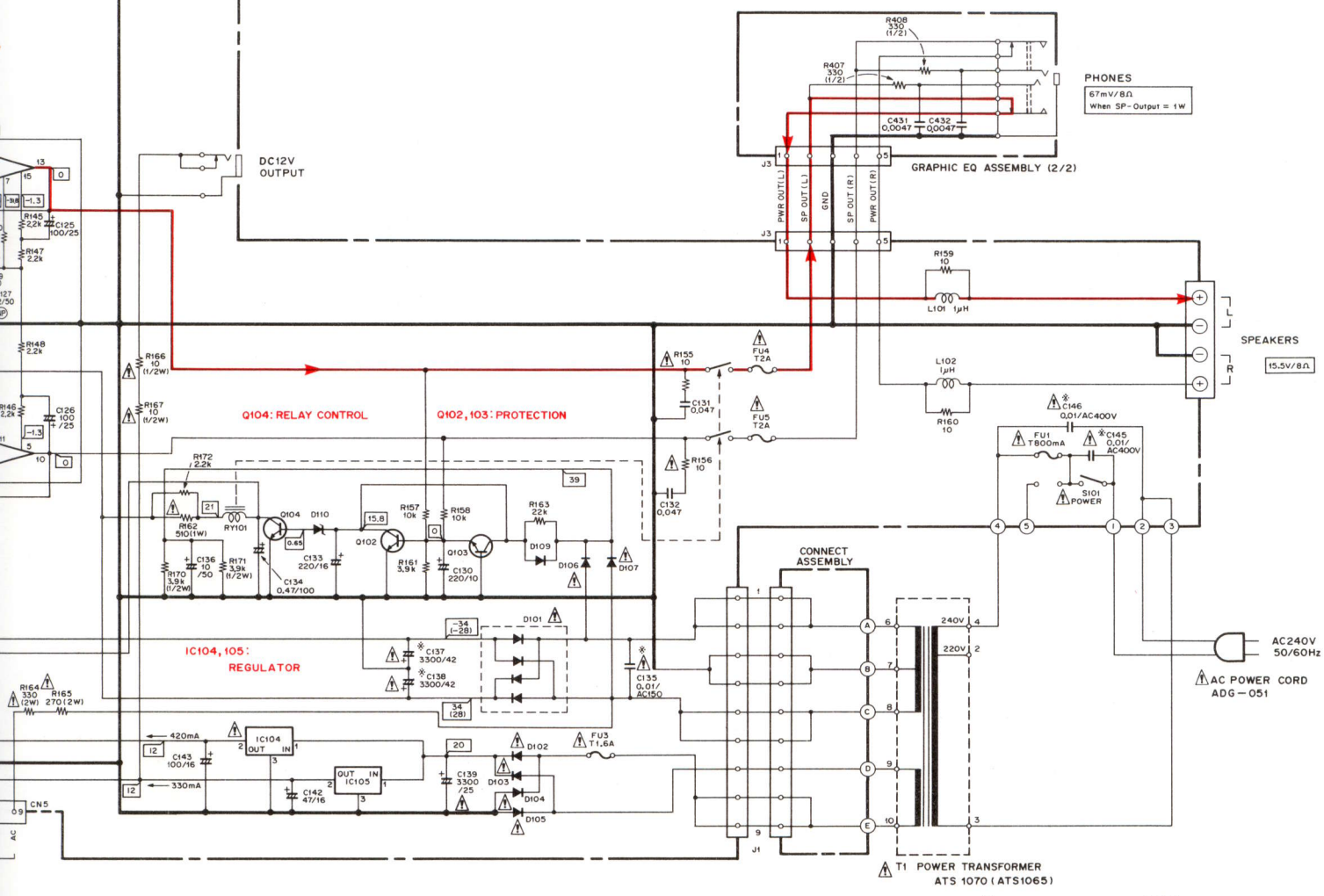
THE UNDERLINED INDICATES THE SWITCH POSITION

Main Assembly

S101	POWER	ON-OFF
S102-1	PHONO	ON-OFF
S102-2	CD	ON-OFF
S102-3	VIDEO	ON-OFF
S102-4	TUNER	ON-OFF
S102-5	TAPE	ON-OFF

Switch Assembly

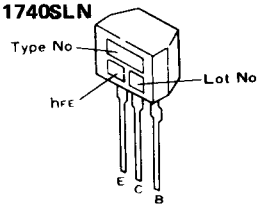
S201	DOLBY NR	ON-OFF
S202	Hi-SPEED	ON-OFF



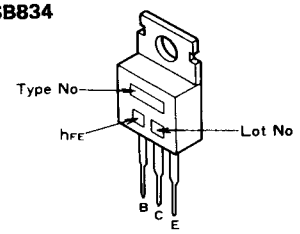
NOTE:
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.

External Appearance of Transistor and ICs

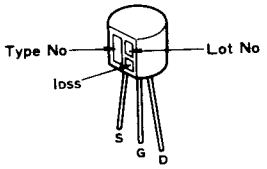
2SA933S
2SC1740S
2SC1740SLN



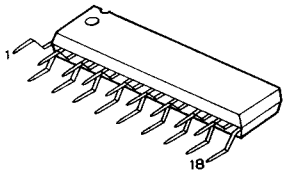
2SB834



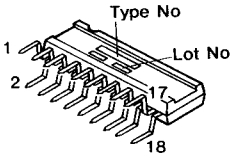
2SK373



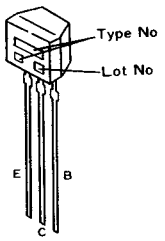
BA3812L



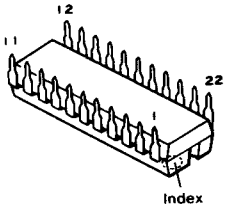
BA3416BL



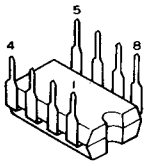
DTA124ES
DTC124ES
DTC143ES



HA12086NT

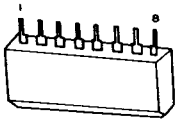


M5218P

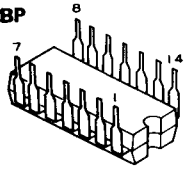


A

M5218L

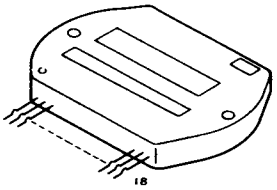


M74LS05P
TC4001BP
TC4069UBP

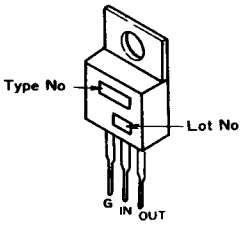


B

STK4141

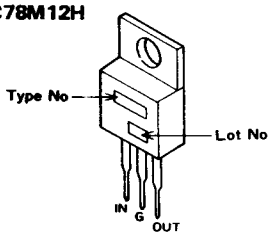


μPC7812H

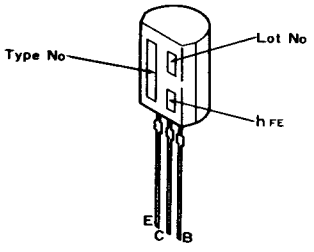


C

μPC78M12H

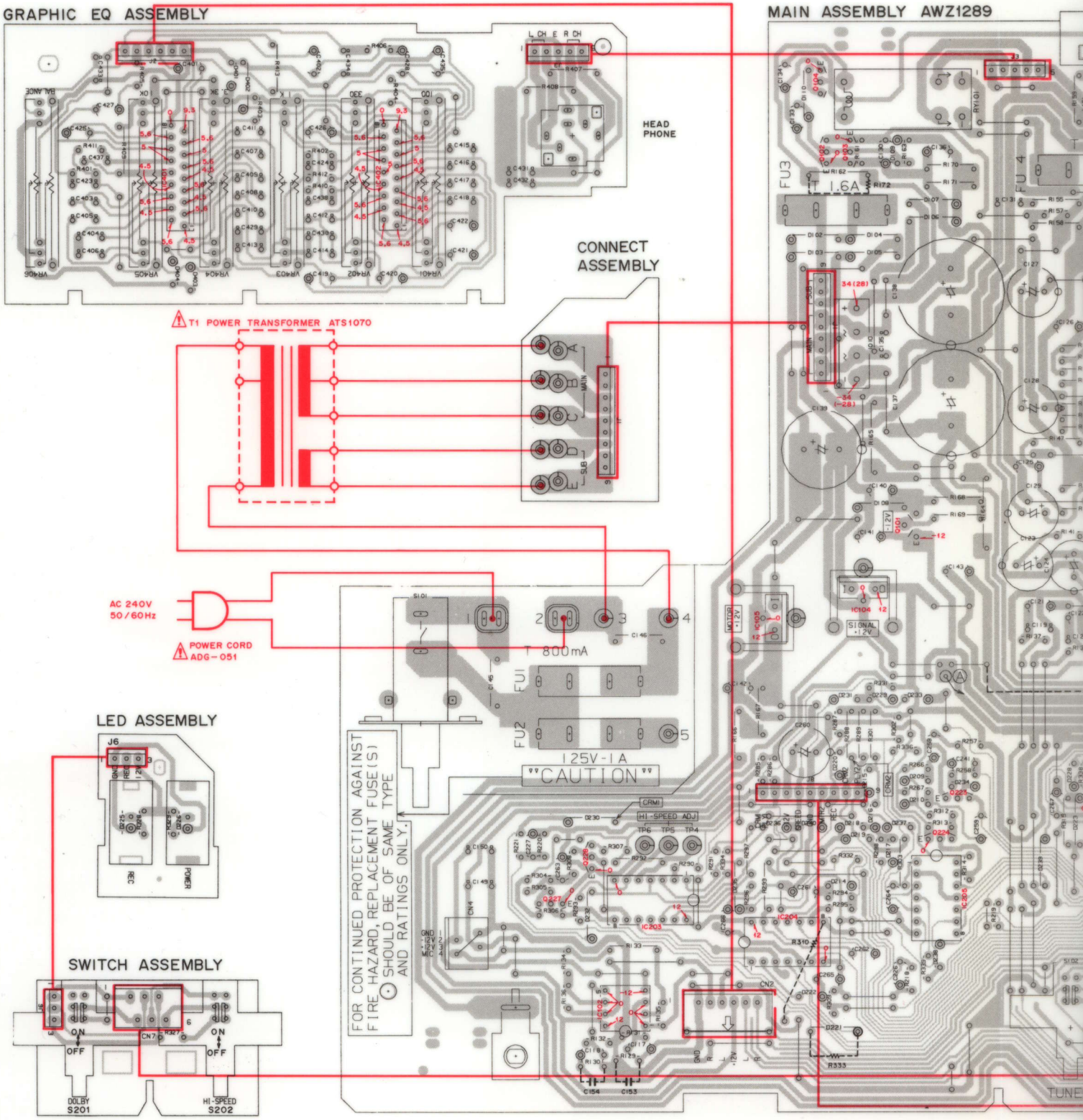


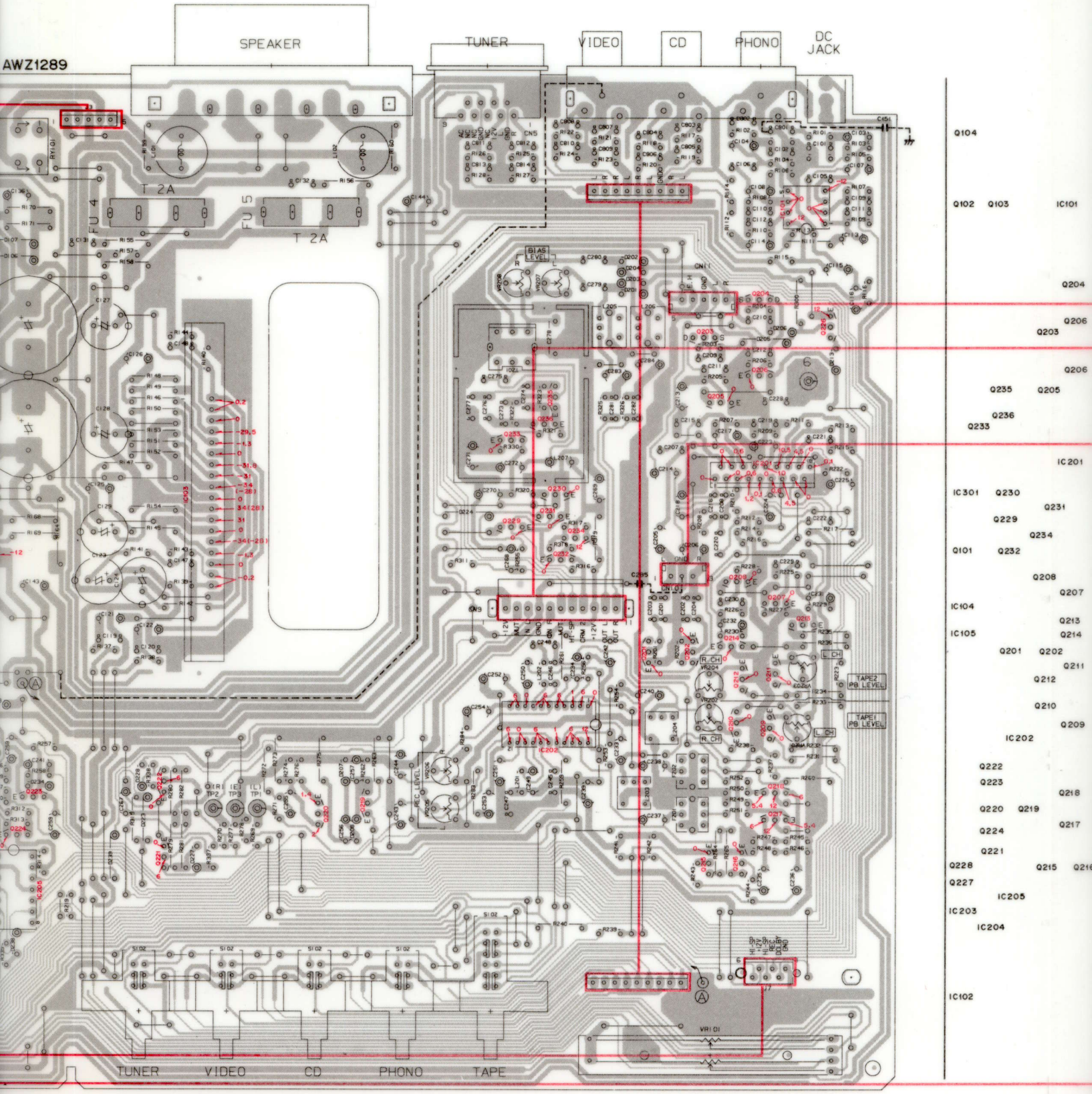
2SC3377



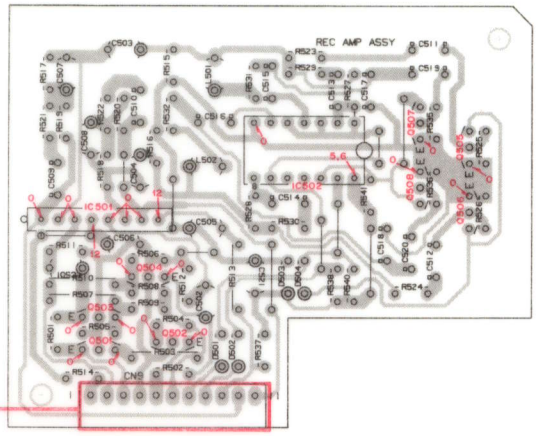
D

5. P.C.BOARDS CONNECTION DIAGRAM

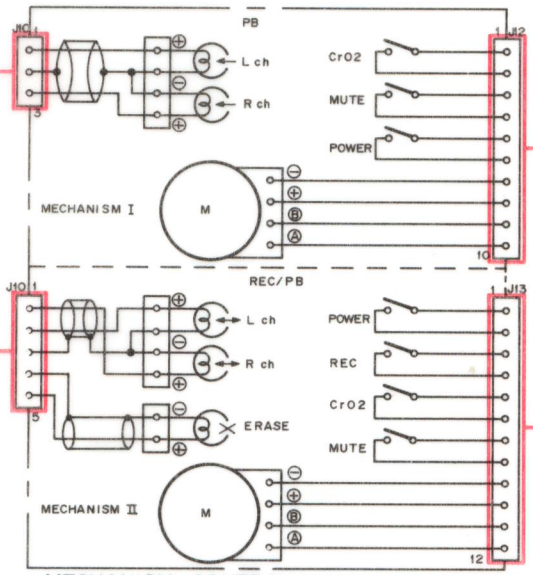



AWZ1289
SPEAKER
TUNER
VIDEO
CD
PHONO
DC JACK
T 2A
T 2A
BIAS LEVEL
TAPE2 PB LEVEL
TAPE1 PB LEVEL
REC LEVEL
TUNER
VIDEO
CD
PHONO
TAPE
Q104
Q102 Q103 IC101
Q204
Q206
Q203
Q206
Q235 Q205
Q236
Q233
IC201
IC301 Q230
Q231
Q229
Q234
Q101 Q232
Q208
Q207
IC104
Q213
IC105 Q214
Q201 Q202
Q211
Q212
Q210
Q209
IC202
Q222
Q223
Q218
Q220 Q219
Q217
Q224
Q221
Q228 Q215
Q227
IC205
IC203
IC204
IC102

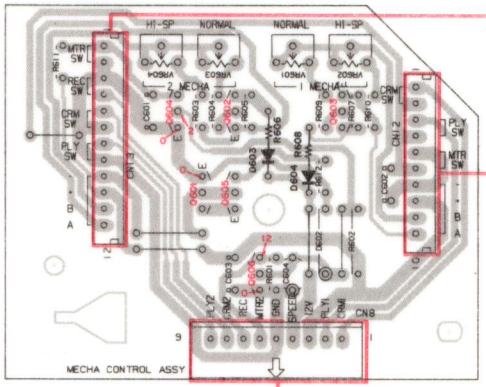
REC AMP ASSEMBLY AWZ1310



CASSETTE MECHANISM ASSEMBLY



MECHANISM CONTROL ASSEMBLY AWZ1309



Q104
Q102 Q103 IC101
Q204
Q206
Q203
Q206
Q235 Q205
Q236
Q233
IC201
IC301 Q230
Q231
Q229
Q234
Q101 Q232
Q208
Q207
IC104
Q213
IC105 Q214
Q201 Q202
Q211
Q212
Q210
Q209
IC202
Q222
Q223
Q218
Q220 Q219
Q217
Q224
Q221
Q228 Q215 Q216
Q227
IC205
IC203
IC204
IC102

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 (E)	or	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ⊖ (double circles) shows negative terminal.
4. The diode terminal marked with ⊖ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

6. ELECTRICAL PARTS LIST

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	*56 × 10¹*	*561*	*RD1/4PS 5 6 1 J*
47kΩ	*47 × 10³*	*473*	*RD1/4PS 4 7 3 J*
0.5Ω	*0R5*		*RN2H 0 R 5 K*
1Ω	*010*		*RS1P 0 1 0 K*

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	*562 × 10¹*	*5621*	*RN1/4SR 5 6 2 1 F*

Miscellaneous Parts

P.C.BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	Main assembly	AWZ1289
	Mechanism control assembly	AWZ1309
	REC Amp assembly	AWZ1310
	Graphic EQ assembly	
	Switch assembly	
	LED assembly	
	Connect assembly	

OTHERS

Mark	Symbol & Description	Part No.
⚠ ★	T1 Power transformer (AC220V/240V)	ATS1070 (ATS1065)
⚠ ★★	FU1 Fuse (T800mA)	AEK-507
⚠ ★★	FU3 Fuse (T1.6A)	AEK-510
⚠ ★★	FU4, FU5 Fuse (T2A)	AEK-511
⚠	AC Power cord	ADG-051

Main Assembly (AWZ1289)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC201	BA3416BL
★★	IC202	HA12086NT
★★	IC101, IC102	M5218P
⚠ ★★	IC103	STK4141
★★	IC203	TC4001BP
★★	IC204, IC205	TC4069UBP
★★	IC104	μPC78M12H
★★	IC105	μPC7812H
★★	Q226	DTA124ES
★★	Q201, Q202, Q205—Q208, Q223, Q229—Q232	DTC124ES
★★	Q230	DTC143ES
★★	Q234	2SA933S
★★	Q101	2SB834
★★	Q102, Q103, Q209—Q216, Q219—Q222, Q224, Q227, Q228, Q233	2SC1740S
★★	Q217, Q218	2SC1740SLN
★★	Q104, Q235, Q236	2SC3377
★★	Q203, Q204	2SK373
★	D110	HZS15L
★	D108	RD13EB
⚠ ★	D102—D107	S5566
★	D109, D201—D210, D213—D224, D227—D240	1SS131
⚠ ★	D101	4D4B44

SWITCHS & RELAY

Mark	Symbol & Description	Part No.
⚠ ★★	S101 Push switch (POWER)	ASG1005 (ASG1007)
★★	RY101 Relay	ASR1005 (ASR-111)
★★	S102 Push switch (PHONO, CD, VIDEO, TUNER, TAPE)	SUJ8L22224L

COILS, TRANSFORMER AND FILTERS

Mark	Symbol & Description	Part No.
	F201, F202 DOLBY Filter	ATF-210
	L101, L102 AF choke coil	ATH-133
	L205, L206 Trap coil	ATM-037
	L203, L204 Trap coil	ATM1001
	T201 Bias OSC transformer	ATX-035
	L201, L202 Inductor	LAU221K
	L207 Inductor	LTA102J

CAPACITORS

Mark	Symbol & Description	Part No.
	C278 (680PF/630V)	ACE-134
⚠	C145, C146 (0.01μF/AC125V)	ACG1002
	C135 (0.01μF/AC150V)	ACG1005
	C137, C138 (3300μF/42V)	ACH-249
	C209, C210	CCCSL100D50
	C101, C102, C105, C106, C119, C120, C203, C204, C207, C208, C215, C216, C153, C154	CCCSL101J50
	C279, C280	CCCSL101K500
	C277	CCCSL221J50
	C147, C148	CCCSL470J50
	C128	CEANP100M50
	C127	CEANP220M50
	C123, C124	CEANP330M25
	C129	CEANP470M50
	C134	CEASR47M100
	C269	CEASR47M50
	C249, C250	CEASR68M50
	C117, C118, C213, C214, C235, C236, C257, C265	CEAS010M50
	C136, C243, C244, C255, C256, C261, C262, C266, C267, C270	CEAS100M50
	C140, C141, C143, C144	CEAS101M16
	C125, C126	CEAS101M25
	C121, C122, C233, C234, C251, C252	CEAS2R2M50
	C224, C241, C242, C258, C259	CEAS220M16
	C130	CEAS221M10
	C133, C217, C218, C225, C239, C240	CEAS221M16
	C139	CEHAQ332M25
	C113, C114, C223, C226, C227, C237, C238, C263, C264, C268, C283, C284	CEAS4R7M50
	C107, C108, C115, C116, C142, C271, C272	CEAS470M16
	C260	CEAS471M16
	C109, C110	CKCYB152K50
	C201, C202	CKCYB561K50
	C111, C112	CKCYB562K50
	C211, C212, C281, C282	CKCYB681K50
	C131, C132, C151	CKCYF473Z50
	C149, C150, C228	CKCYX473M25
	C245, C246, C273, C274	CQMA103K50
	C285	CKCYX104M25
	C247, C248, C275, C276	CQMA153K50
	C221, C222	CQMA223K50
	C219, C220, C229, C230	CQMA273K50
	C103, C104, C205, C206, C231, C232	CEJA010M50
	C253, C254	CEJA100M16

RESISTORS

Mark	Symbol & Description	Part No.
★	VR101 (100kX2)	ACU1002
⚠	R166, R167	RD1/2PMFL100J
	R168, R170, R171	RD1/2PM□□□J
⚠	R149, R150, R152—R154	RD1/4PMFL□□□J
⚠	R155, R156, R169	RD1/4PMF□□□J
	R145—R148, R151, R159, R160, R319	RD1/4PM□□□J
	R162	RS1LMF511J
	R164, R165	RS2LMF□□□J
★	VR201—VR206(20k Semi fixed)	VRTM6V203
★	VR207, VR208(500k Semi fixed)	VRTM6V504
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Jack 6P (PHONO, CD, VIDEO)	AKB-095
	Terminal 4P (SPEAKER)	AKE-109
	Jack (DC120V OUTPUT)	AKN-034

Mechanism Control Assembly (AWZ1309)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	Q602, Q603	2SA933S
★★	Q604—Q606	2SC1740S
★★	Q601	2SC3377
★	D602	RD6.2ESB
★	D603, D604	1SS131

CAPACITORS

Mark	Symbol & Description	Part No.
	C604	CEAS100M25
	C601—C603	CKCYX473M25

RESISTORS

Mark	Symbol & Description	Part No.
★	VR601, VR603 (1k Semi fixed)	VRTM6H102
★	VR602, VR604 (2k Semi fixed)	VRTM6H202
	Other resistors	RD1/8PM□□□J

REC Amp Assembly (AWZ1310)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC501	M5218L
★★	IC502	M74LS05P
★★	Q501—Q504	2SC1740S
★★	Q505—Q508	DTC124ES
★	D503	RD5.6ESB
★	D501, D502, D504	1SS131

COIL

Mark	Symbol & Description	Part No.
	L501, L502 Inductor	LTA392J

CAPACITORS

Mark	Symbol & Description	Part No.
	C507, C508	CEASR33M50
	C501, C502	CEAS010M50
	C521	CEAS101M10
	C503, C504	CEAS4R7M50
	C505, C506	CEAS470M16
	C519, C520	CQMA153J50
	C513, C514	CQMA223J50
	C511, C512, C515, C516	CQMA392J50
	C509, C510, C517, C518	CQMA822J50

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM□□□J

Graphic EQ Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC401, IC402	BA3812L
	D401—D404	RD10ESB

CAPACITORS

Mark	Symbol & Description	Part No.
	C419, C420	CEJAR15M50
	C421, C422	CEJAR68M50
	C425, C426	CEJA101M10
	C401, C402, C427, C428	CEJA4R7M50
	C435	CEJA470M16
	C423, C424	CKCYB331K50
	C403, C404	CKCYB391K50
	C433, C434	CKCYB561K50
	C431, C432	CKCYF472Z50
	C409, C410	CQMA153K50
	C407, C408	CQMA182K50
	C415, C416	CQMA183K50
	C413, C414, C429, C430	CQMA333K50
	C411, C412	CQMA392K50
	C417, C418	CQMA393K50
	C405, C406	CQMA682K50
	C437, C438	CCCSL101K50

RESISTORS

Mark	Symbol & Description	Part No.
★	VR401—VR405 (30kX2)	ACU1011
★	VR406 (30k)	ACU1013
	R407, R408	RD1/2PM331J
	Other resistors	RD1/8PM□□□J

OTHER

Mark	Symbol & Description	Part No.
	Jack (PHONES)	AKN1007

Switch Assembly

Mark	Symbol & Description	Part No.
★★	S201, S202 Push switch (DOLBY NR, Hi-SPEED)	ASG-424

RESISTOR

Mark	Symbol & Description	Part No.
	R327	RD1/8PM103J

LED Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D225	AEL-443
★	D226	AEL1033

RESISTORS

Mark	Symbol & Description	Part No.
	R329	RD1/8PM471J
	R328	RD1/8PM681J

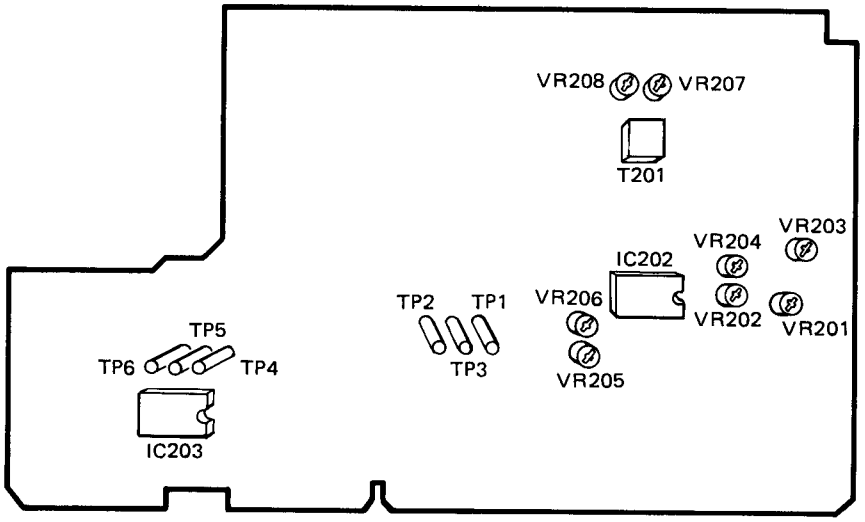
Connect Assembly

No supply part inside.

7. ADJUSTMENTS

Tape speed adjustment

1. Connect the frequency countr to the TP1 terminal (Dolby TP: L-ch) on the complex assembly.
2. Turn the tape switch on.
3. Mount the test tape STD-301 onto deck I.
4. Short-circuit between terminals TP4, TP5 and TP6 on the tape assembly and put the deck I into play mode.
   (STD-301 is play backed in double speed.)
5. Adjust with VR602 so that the playback signal frequency of deck I become 6020Hz ±20Hz.
6. Release the short-circuit between terminals TP4, TP5 and TP6.
7. Put the deck I into play mode and adjust with VR601 so that the playback signal frequency becomes 3010Hz ±10Hz.
   (Note 1: Be sure not to turn VR602 while performing the normal speed adjustment.)
8. At this point, be sure to confirm that the wow and flutter are within 0.3% both in the double and normal speeds.
9. Mount the test tape STD-301 onto deck II.
10. Short-circuit between terminals TP4, TP5 and TP6 on the tape assembly and put the deck II into play mode.
    (STD-301 is play backed in double speed.)
11. Adjust with VR604 so that the playback signal frequency of deck II becomes ±20Hz against that of deck I.
12. Release the short-circuit between terminals TP4, TP5 and TP6.
13. Put the deck II into play mode and adjust with VR603 so that the playback signal frequency of deck II becomes ±10Hz against that of deck I.
    (Note: Be sure not to turn VR604 while performing the normal speed adjustment.)
14. At this point, be sure to confirm that the wow and flutter are within 0.3% both in the double and normal speeds.



(Note) Short-circuit between TP4 and TP5 during tape speed (double speed) adjustment.

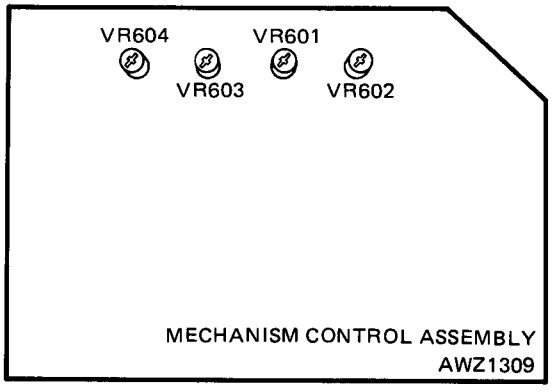


Fig. 7-1 Adjustment Point

Electrical system adjustment

Prior to the electrical system adjustment, be sure to confirm the following itesm.

1. The mechanical adjustment should be completed.
2. Perform cleaning of the head and the demagnetization of head with the head eraser.
3. The level during measurement is determined at 0dBv = 1V.
4. The specified tape should be used for adjustment. Since the test tape has A side and B side, use the A side with label.
   STD-331B: For playback system adjustment
   STD-608A: Normal blank tape
   STD-620: CrO_2 blank tape
5. Prepare the following measuring instruments. AC millivoltmeter, low frequency oscillatore, attenuator, and oscilloscope.
6. For the adjustment, perform both L and R channels unless otherwise specified.
7. Turn the Dolby NR switch to off unless otherwise specified.
8. Prior to the adjustment, be sure to perform aging of the set for several minutes. Especially prior to entering the adjustment of the recording and playback frequency characteristics, aging should be performed in REC/PLAY mode for 3 to 5 minutes.
9. The adjustment should be performed in accordance with the adjustment order. If the order is not kept, it may cause the failure of the complete adjustment which induces the inferior function of the unit.

Deck I

1. Head azimuth adjustment
2. Playback level adjustment

Deck II

1. Head azimuth adjustment
2. Playback level adjustment
3. Adjustment of recording and playback frequency characteristics
4. Adjustment of recording level

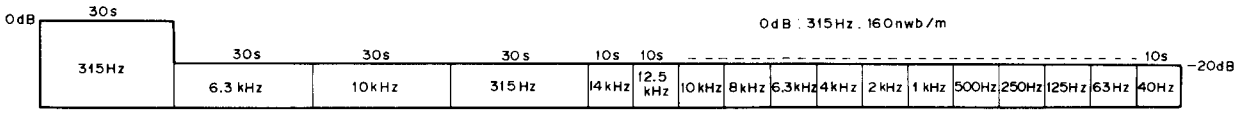


Fig. 7-2 Test tape STD-331B

Adjustment of Deck I

*This deck is provided with an auto-tape-selector mechanism.

1. Head azimuth adjustment

Procedure	Tape selector (AUTO)	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remark
1	NORM	PLAY	Play back 10kHz/−20dB on test tape STD-331B	Head azimuth adjusting screw (Fig. 7-3)	TP1 (L) TP2 (R)	Maximum playback signal level	After completion, lock the screw

2. Playback level adjustment * Perform this adjustment precisely since this adjustment is Dolby level setting during playback.

Procedure	Tape selector (AUTO)	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remark
1	NORM	PLAY	Play back 315Hz/0dB on test tape STD-331B	VR202 (R) VR201 (L)	TP1 (L) TP2 (R)	−13.5 dBv ±0.5 dB	

Adjustment of Deck II

*This deck is provided with an auto-tape-selector mechanism.

1. Head azimuth adjustment

Procedure	Tape selector (AUTO)	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remark
1	NORM	PLAY	Play back 315Hz/0dB on test tape STD-331B	Head azimuth adjusting screw (Fig. 7-3)	TP1 (L) TP2 (R)	Maximum playback signal level	After completion, lock the screw.

2. Playback level adjustment * Perform this adjustment precisely since this adjustment is Dolby level setting during playback.

Procedure	Tape selector (AUTO)	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remark
1	NORM	PLAY	Play back 315Hz/0dB on test tape STD-331B	VR204 (R) VR203 (L)	TP1 (L) TP2 (R)	−13.5 dBv ±0.5 dB	

3. Adjustment of recording and playback frequency characteristics * This adjustment is performed in order to adjust the recording bias. Therefore, caution should be exercised not to worsen the distortion ratio due to under bias.

Procedure	Tape selector (AUTO)	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remark
1	NORM	REC	STD-608A and put into REC mode.	Bias oscillator frequency T201	Between Ⓐ and Ⓑ in Fig. 7-2	Confirm that the oscillation frequency 105 kHz ±1 kHz.	When it is not within the standard, put it into the standard by adjusting T201.
2	NORM	REC	Apply the signal of 315Hz to the CD terminal and turn the CD switch on.	Input signal level	TP1 (L) TP2 (R)	−33.5 dBv ±0.5 dB	
3	NORM	PEC/PLAY	Record and play back 315Hz and 10kHz on test tape STD-608	VR208 (R) VR207 (L)	TP1 (L) TP2 (R)	Repeat recording and playback, and compensate so that the playback level of 10kHz against 315Hz becomes 0±0.5dB.	

* Select the test tape, tape selector, and Dolby NR switch and satisfy the frequency characteristic zone as shown in Figs. 7-5 and 7-8.

4. Recording level adjustment * Set the graphic equalizer and balance volume to the center and the mike mixing volume to the source side.

Procedure	Tape selector (AUTO)	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remark
1	NORM	REC	Apply the signal of 315Hz to the CD terminal and turn the CD switch on.	Input signal level	TP1 (L) TP2 (R)	−13.5 dBv	
2	NORM	REC/PLAY	Record and play back 315Hz to the test tape STD-608A.	VR206 (R) VR205 (L)	TP1 (L) TP2 (R)	Repeat recording and playback, and compensate so that the playback level of 315Hz becomes −13.5 dBv (±0.5 dB).	
3	CrO_2	REC/PLAY	Record and play back 315Hz to the test tape STD-620.		TP1 (L) TP2 (R)	Confirm that the playback level of 315Hz becomes −13.5 dBv (±1.0 dB).	

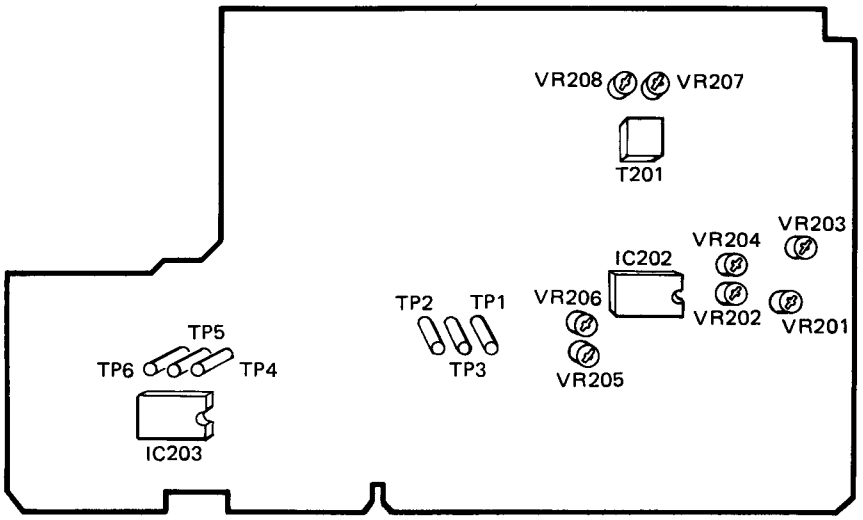


Fig. 7-3 Arrangement diagram of adjusting parts

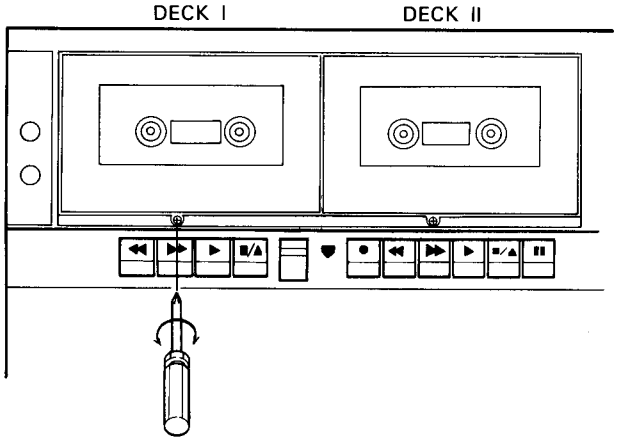


Fig. 7-4 Head azimuth adjustment

Test tape	STD-331B
DOLBY NR switch position	OFF

- The right channel is corrected by −0.5 at 125 Hz and −1 dB at 63 Hz to compensate for edge effect.

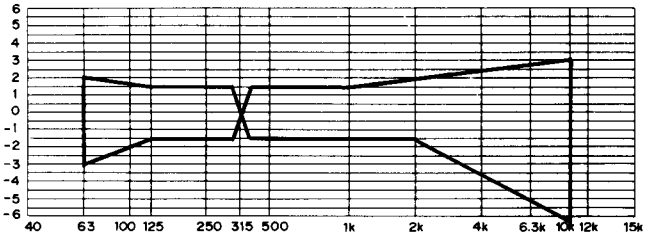


Fig. 7-5 Playback frequency response tolerance zone

Test tape	STD-608A	Test tape	STD-608A
DOLBY NR switch	OFF	DOLBY NR switch	ON

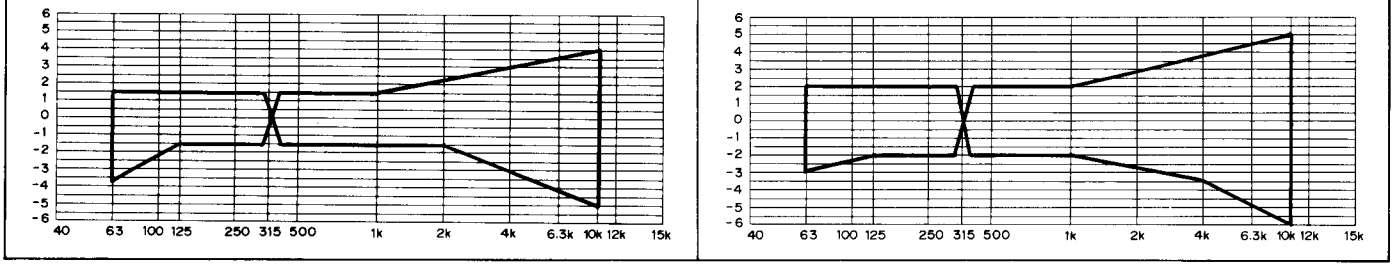


Fig. 7-6 Recording & playback frequency response tolerance zone (NORM)

Test tape	STD-620	Test tape	STD-620
DOLBY NR switch	OFF	DOLBY NR switch	ON

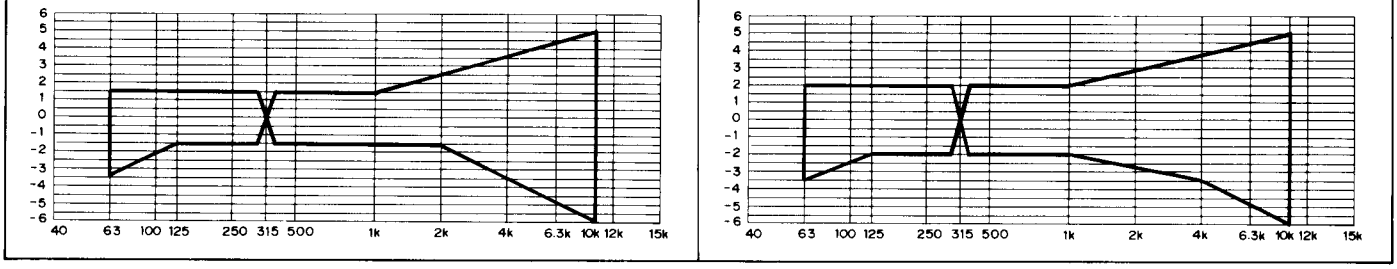


Fig. 7-7 Recording & playback frequency response tolerance zone (CrO2)

Test tape	STD-608A	Test tape	STD-608A (HIGH SPEED COPY)
DOLBY NR switch	OFF	DOLBY NR switch	OFF

Test tape	STD-620	Test tape	STD-620 (HIGH SPEED COPY)
DOLBY NR switch	OFF	DOLBY NR switch	OFF

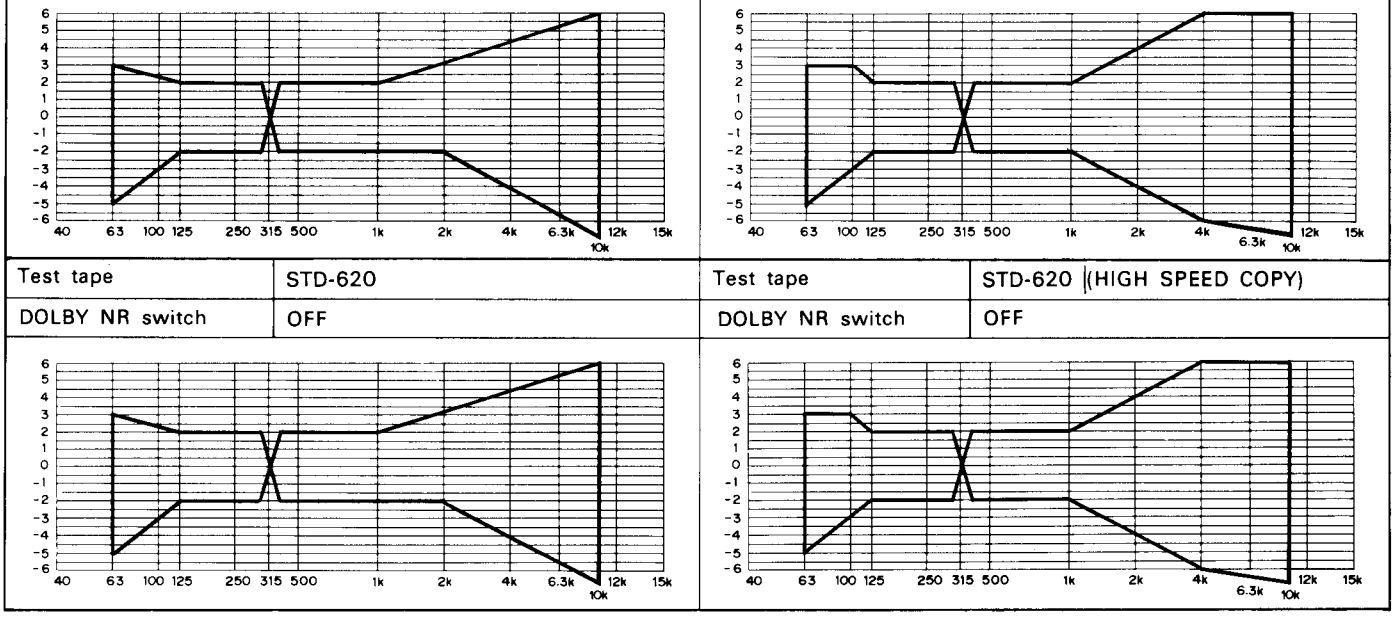
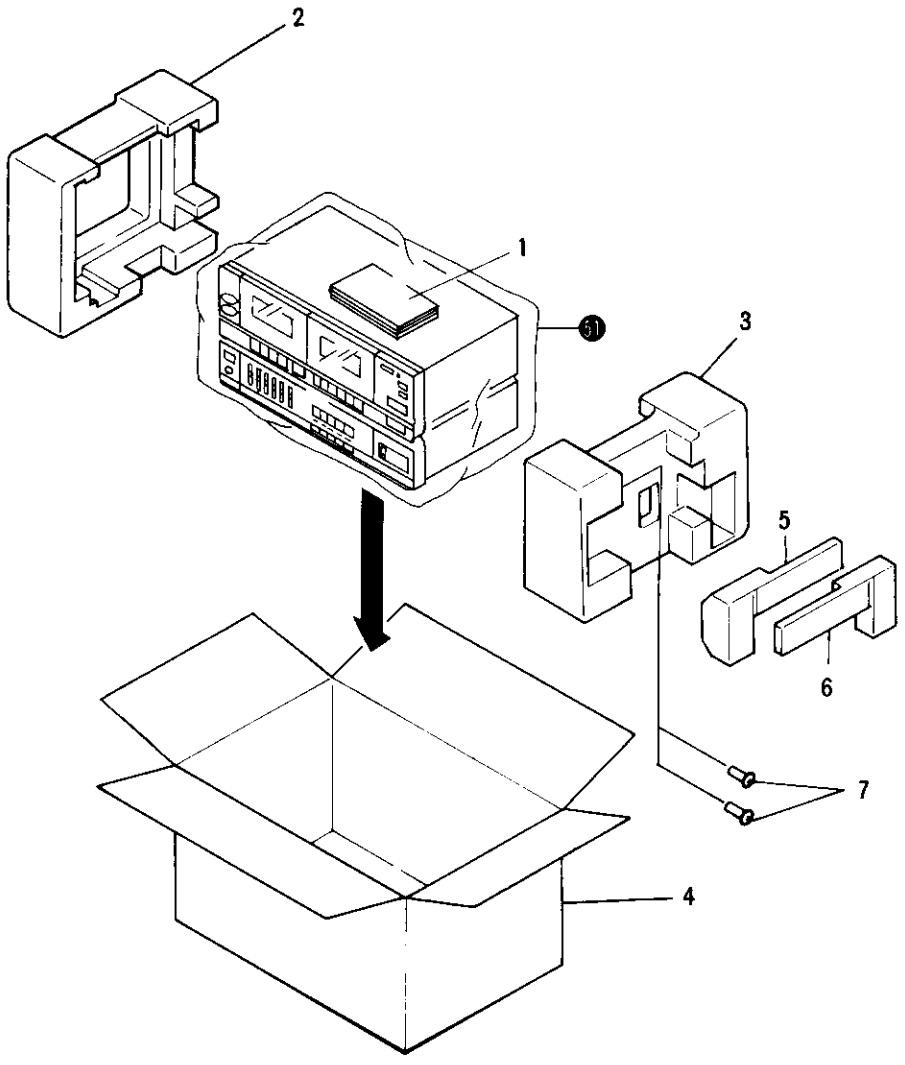


Fig. 7-8 Copy mode recording & playback frequency response (for reference purposes)

8. PACKING

Parts List of Packing

Mark	No.	Part No.	Description
	1	ARB1050	Operating instructions (English)
	2	AHA1062	Side pad L
	3	AHA1063	Side pad R
	4	AHD1173	Packing case
	5	AMR1060	Player stand L
	6	AMR1061	Player stand R
	7	ABA1003	Screw
	51		Packing sheet



9. FOR HE AND SD TYPES

CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	*56 × 10¹*	*561*	*RD1/4PS 5 6 1 J*
47kΩ	*47 × 10³*	*473*	*RD1/4PS 4 7 3 J*
0.5Ω	*0R5*		*RN2H 0 R 5 K*
1Ω	*010*		*RS1P 0 1 0 K*

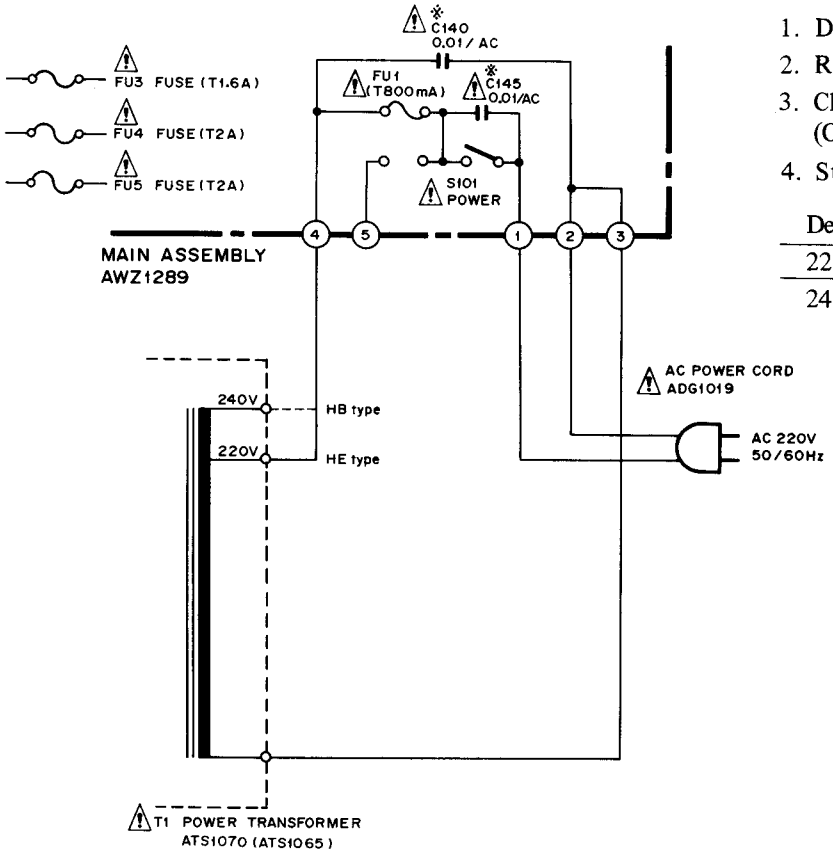
Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	*562 × 10¹*	*5621*	*RN1/4SR 5 6 2 1 F*

The DC-X77Z/HE and SD types are the same as the DC-X77/HB type with the exception of the following sections.

Mark	Symbol & Description	Parts No. DC-X77Z HB type	Parts No. DC-X77Z HE type	Parts No. DC-X77Z SD type	Remarks
	MIC Amp Assembly	.....	.....		
	T1 Power transformer				
⚠ ★	(AC220/240V)	ATS1070 (ATS1065)	ATS1070 (ATS1065)	.....	
⚠ ★	(AC110/120—127/220/240V)	.....	.....	ATS1066 (ATS1064)	
⚠	AC power cord	ADG-051	ADG1019	ADG1016	
⚠ ★★	S1 Voltage selector switch				
⚠ ★★	(AC110/120-127/220/240V)	.....	.....	AKX-507	
⚠ ★★	F1 Fuse (T800mA)	AEK-507	AEK-031	.....	
★★	(1A)	.....	.....	AEK-119	
⚠ ★★	F3 Fuse (T1.6A)	AEK-510	AEK-405	.....	
⚠ ★★	(1.6A)	.....	.....	AEK-121	
⚠ ★★	F4,F5 Fuse (T2A)	AEK-511	AEK-017	.....	
⚠ ★★	(2.5A)	.....	.....	AEK-123	
⚠ ★★	F2 Fuse (1A)	.....	.....	AEK-119	
	Operating instructions (English)	ARB1050	.....	ARB1050	
	(English/German/French/Italian)	.....	ARE1044	.....	
	(German)	.....	.....	ARC1032	
	Terminal (GND)	.....			
	Knob (MIC MIXING)	.....	.....	AAB1016	
	M.M stay	.....	.....		
	Front panel	AMB1136	AMB1136	AMB1137	
	Nylon rivet	.....	.....	AEC-525	
	Packing case	AHD1173	AHD1173	AHD1212	

Schematic diagram for HE type



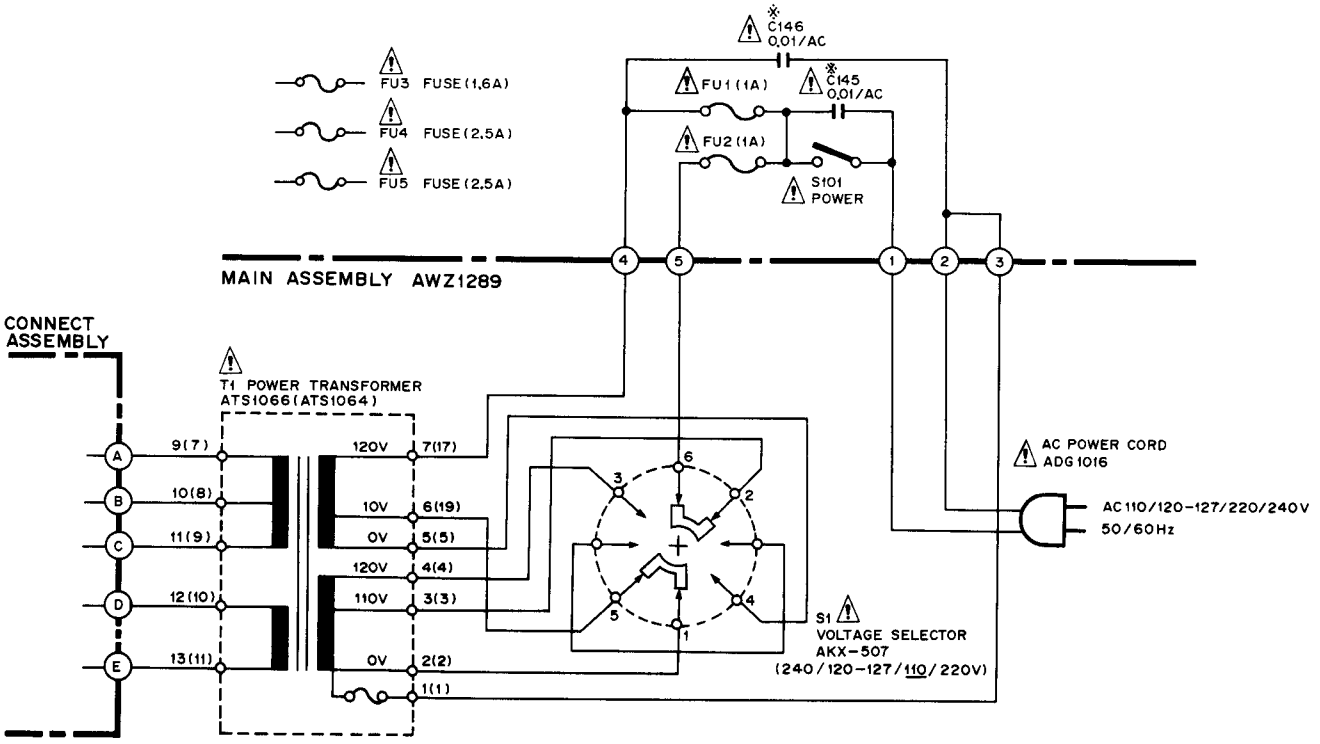
Line Voltage Selection (For HE and HB types)

Line voltage can be changed with following steps.

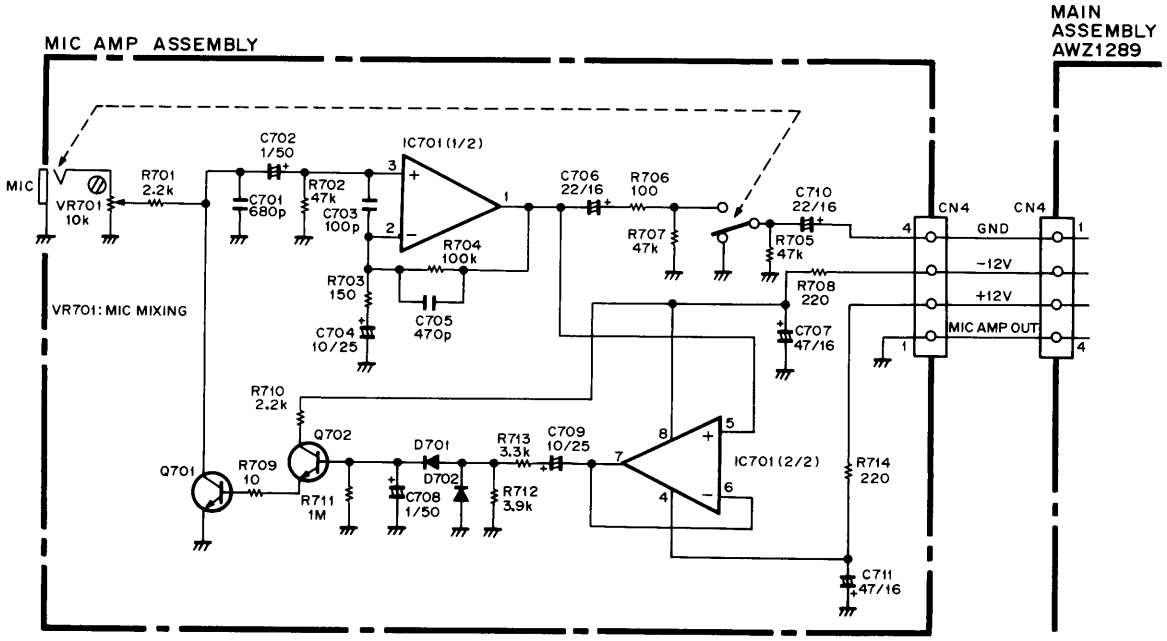
1. Disconnect the AC Power cord.
2. Remove the Bonnet case.
3. Change the connection of the primary lead wires. (Connect as shown in Fig.)
4. Stick the line voltage label on the rear panel.

Description	Part No.
220V label	AAX-193
240V label	AAX-192

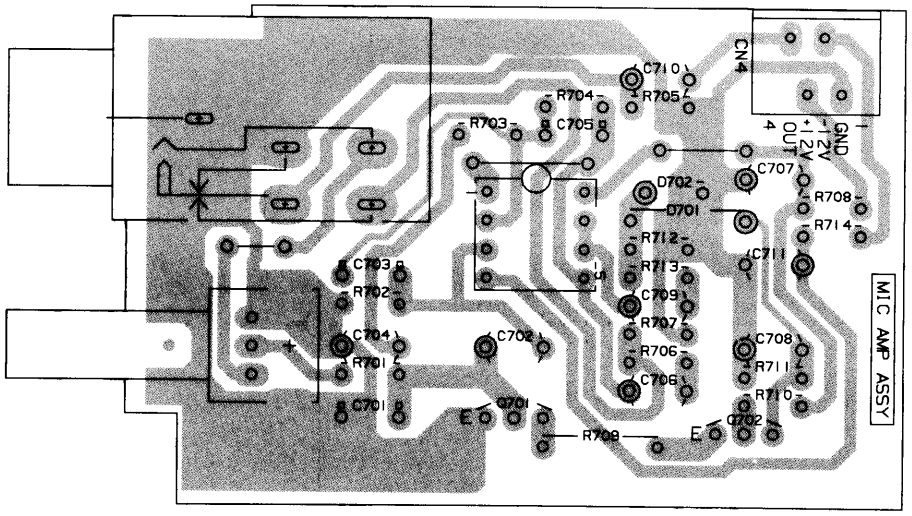
Schematic diagram for SD type



Schematic diagram of MIC AMP Assembly (SD type only)



P.C. Boards Patterns of MIC AMP Assembly (SD type only)



Parts list of MIC Amp Assembly (SD type only)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC701	M5218PF
★★	Q701, Q702	2SC1740S
★	D701, D702	1SS131

CAPACITORS

Mark	Symbol & Description	Part No.
	C703	CCCSL101J50
	C702, C708	CEAS010M50
	C704, C709	CEAS100M25
	C706, C710	CEAS220M16
	C707, C711	CEAS470M16
	C705	CKCYB471K50
	C701	CKCYB681K50

RESISTORS

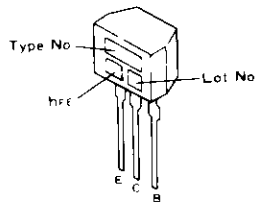
Mark	Symbol & Description	Part No.
★	VR701	ACS-012
	Other resistors	RD1/8PM□□□J

OTHER

Mark	Symbol & Description	Part No.
	Jack (MIC)	AKN1005

External Appearance of Transistor and ICs

2SC1740S



M5218PF