

HITACHI SERVICE MANUAL

TY

No. 594 EF

TRK-3D80

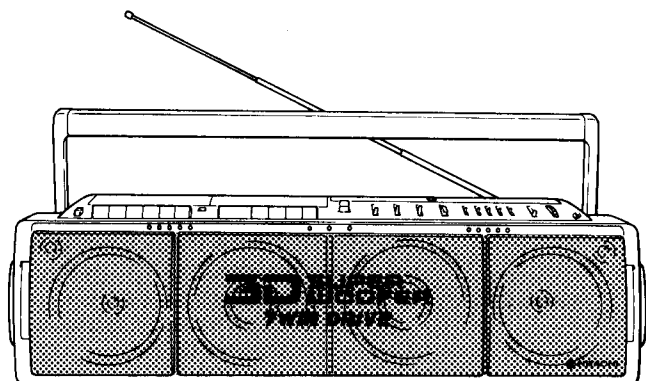
[H, HC, E, E(BS), W, W(UN), AU]

for E, E(BS)

TN-21SW-1416 chassis

except E, E(BS)

TN-521ZHW-160 chassis



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SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers. Critical parts are marked with $\triangle$ in the circuit diagram and printed wiring board.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

SPECIFICATIONS

● RADIO SECTION

Circuit System:	FM/SW/MW/LW-4bands superheterodyne [for E, E(BS)]
	FM/SW2/SW1/MW(AM)-4bands superheterodyne [except E, E(BS)]
Tuning Range:	FM: 88 to 108 MHz [except E, E(BS)]
	FM: 87.5 to 108 MHz [for E, E(BS)]
	SW: 6 to 18 MHz [for E, E(BS)]
	SW2: 7 to 22 MHz [except E, E(BS)]
	SW1: 2.3 to 7 MHz [except E, E(BS)]
	MW(AM): 530 to 1,605 kHz
	LW: 150 to 285 kHz [for E, E(BS)]

Intermediate Frequency:

FM: 10.7 MHz
SW/MW/LW: 465 kHz [for E, E(BS)]
SW2/SW1/MW(AM): 455 kHz [except E, E(BS)]
FM: 13 dB (pra.)
5 dB (max.)
SW: 30 dB (pra.) [for E, E(BS)]
15 dB (max.) [for E, E(BS)]

Sensitivity:

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

HIGH PERFORMANCE PORTABLE CREATIVE SOUND SYSTEM

July 1988

YOKOHAMA WORKS

SW2: 30 dB (pra.) [except E, E(BS)]
 20 dB (max.) [except E, E(BS)]
 SW1: 48 dB (pra.) [except E, E(BS)]
 35 dB (max.) [except E, E(BS)]
 MW(AM): 50 dB (pra.)
 35 dB (max.)
 LW: 55 dB (pra.) [for E, E(BS)]
 40 dB (max.) [for E, E(BS)]
 Antennas:
 (Aerials) FM/SW/SW2: Rod antenna
 SW1/MW(AM)/LW: Built in ferrite antenna

● TAPE RECORDER SECTION

Tape: Cassette tape
 Track System: 4tracks 2channels stereo
 Tape Speed: 4.75 cm/sec.
 Recording System: AC bias (TAPE2)
 Erasing System: Magnet erase (TAPE2)
 Erasing Ratio: 60 dB
 Frequency Response: Normal: 50 to 12,000 Hz
 CrO₂: 50 to 13,000 Hz
 45 dB
 Signal to Noise Ratio: 0.25% (W-RMS)
 Wow and Flutter: 0.25% (W-RMS)
 Cross Talk: Between tracks: 60 dB [for E, E(BS)]
 55 dB [except E, E(BS)]
 Between channels: 30 dB
 Input sensitivity and impedance: CD/Line-in: 650 mV, 25 k Ω
 Output road impedance: Headphones: 8 to 300 Ω
 Distortion: 3%
 Motor: DC micro motor
 Head: Permalloy

● GENERAL SECTION

Semiconductors: ICs: 8
 Transistors: 23 [except E, E(BS)]
 24 [for E, E(BS)]
 Diodes: 28 [except W, W(UN)]
 29 [for W, W(UN)]
 LEDs: 14
 Varicap: 1
 AC: 120V, 60 Hz [for H, HC]
 AC: 220V, 50 Hz [for E]
 AC: 240V, 50 Hz [for E(BS), AU]
 AC: 110 – 127V/200 – 220V/230 – 250V,
 50/60 Hz [for W, W(UN)]
 DC: 12V [IEC R20 ("D" CELL) x 8 or
 equipment]
 Car: Use 12V car battery adaptor [for W,
 W(UN)]
Battery life: During playback: 9.5 hours
 During recording: 13.5 hours
 3D switch ON (EIAJ)
Power Consumption: 27W
Power Output: 80W P.M.P. (AC operation) [for E, E(BS)]
 100W P.M.P. (AC operation)
 [for W, W(UN), AU]
 3W x 2 + 4W x 2 (10% T.H.D. DC operation)
 12cm, 4 Ω (x 2)
 16cm, 4 Ω (x 2)
Speakers: 650 (W) x 200 (H) x 242 (D) mm
 6.6 kg (with batteries)
Dimensions:
Weight:
 Specifications are subject to change without notice for performance improve-
 ment.

PRÉCAUTIONS DE SÉCURITÉ

Les précautions suivantes doivent être observées chaque fois qu'une réparation doit être faite.

1. Etant donné que de nombreux composants de l'appareil possèdent des caractéristiques relatives à la sécurité, utiliser uniquement des pièces de rechange d'origine Hitachi pour effectuer un remplacement. Ceci se rapporte notamment aux pièces critiques du bloc d'alimentation qui ne doivent en aucun cas être remplacées par celles d'autres fabricants. Les pièces critiques sont accompagnés du symbole $\triangle$ dans le plan de circuit et sur le plan de base.
2. Avant de retourner l'appareil répare au client le technicien doit procéder à un essai complet pour s'assurer qu'il ne présente aucun danger de chocs électriques.

CARACTÉRISTIQUES TECHNIQUES

● SECTION RADIO

Système de circuit: 4 gammes d'ondes FM/OC/PO/GO
 à superhétérodyne [pour E, E(BS)]
 4 gammes d'ondes FM/OC2/OC1/PO(AM)
 à superhétérodyne [sauf E, E(BS)]
Gammes d'accord: FM: De 88 à 108 MHz [sauf E, E(BS)]
 FM: De 87,5 à 108 MHz [pour E, E(BS)]
 OC: De 6 à 18 MHz [pour E, E(BS)]
 OC2: De 7 à 22 MHz [sauf E, E(BS)]
 OC1: De 2,3 à 7 MHz [sauf E, E(BS)]
 PO(AM): De 530 à 1605 kHz
 GO: De 150 à 285 kHz [pour E, E(BS)]
Fréquence intermédiaire: FM: 10.7 MHz
 OC/PO/GO: 465 kHz [pour E, E(BS)]
 OC2/OC1/PO(AM): 455 kHz [sauf E, E(BS)]
Sensibilité: FM: 13 dB (utile)
 5 dB (max.)
 OC: 30 dB (utile) [pour E, E(BS)]
 15 dB (max.) [pour E, E(BS)]
 OC2: 30 dB (utile) [sauf E, E(BS)]
 20 dB (max.) [sauf E, E(BS)]
 OC1: 48 dB (utile) [sauf E, E(BS)]
 35 dB (max.) [sauf E, E(BS)]
 PO(AM): 50 dB (utile)
 35 dB (max.)
 GO: 55 dB (utile) [pour E, E(BS)]
 40 dB (max.) [pour E, E(BS)]
 FM/OC/OC2: antenne télescopique (aérien)
 OC1/PO(AM)/GO: antenne à noyau de ferrite
 incorporée (aérien)
Antennes:
 (aériens)
SECTION LECTEUR-ENREGISTREUR DE CASSETTE
Bande: En cassette
Système de piste: 4 pistes, 2 canaux stéréo
Vitesse de défilement: 4,75 cm/s
Système d'enregistrement: Polarisation c.a. (TAPE2)
Système d'effacement: Aimant (TAPE2)

Système de fréquence en lecture:	Normal: De 50 à 12000 Hz CrO ₂ : De 50 à 13000 Hz
Rapport signal-bruit:	45 dB
Pleurage et scintillement:	0,25% (watts eff.)
Diaphonie:	Entre les pistes: 60 dB [pour E, E(BS)] 55 dB [sauf E, E(BS)] Entre les canaux: 30 dB

Impédance et sensibilité d'entrée: CD/entrée ligne: 650 mV, 25 k Ω

Impédance de charge

de sortie: De 8 à 300 Ω (casque)

Distortion: 3%

Moteur: Micro moteur CC

Tête: Permalloy

● CARACTÉRISTIQUES GÉNÉRALES

Semi conducteurs:	Circuits intégrés: 8 Transistors: 23 [sauf E, E(BS)] 24 [pour E, E(BS)] Diodes: 28 [sauf W, W(UN)] 29 [pour W, W(UN)] Diodes électroluminescentes: 14 Condensateur variable: 1
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Alimentation:	Secteur alternatif: 120V, 60 Hz [pour H, HC] 220V, 50 Hz [pour E] 240V, 50 Hz [pour E(BS), AU] 110 – 127V/200 – 220V /230 – 250V, 50/60 Hz [pour W, W(UN)] Courant continu: 12V [IEC R20 (pile "D") x 8 ou l'équivalent]
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Voiture: utiliser un adaptateur pour batterie 12V [pour W, W(UN)]

Autonomie des piles:

Lors de la reproduction: 9,5 heures

Lors de l'enregistrement: 13,5 heures

Commutateur 3D ON (EIAJ)

Consommation

électrique:

27W

Niveau de sortie:

80W PMP (fonctionnement sur le secteur)
[pour E, E(BS)]

100W PMP (fonctionnement sur le secteur)
[pour W, W(UN), AU]

3W x 2 + 4W x 2 (C.C. à 10% D.H.T.)

Haut-parleurs:

12 cm, 4 Ω (x 2)

16 cm, 4 Ω (x 2)

Dimensions:

650 (L) x 200 (H) x 242 (D) mm

Poids:

6.6 kg (piles comprises)

Les caractéristiques techniques peuvent être modifiées sans préavis pour améliorations des performances.

DISASSEMBLY

1. Front case (Fig. 1, 5, 6)

Remove the battery lid. Remove eight screws ① and pull out in the direction of arrow ③. Remove one connector ④ on the MA P.W.B. and one connector ⑤ on the PA P.W.B..

*See Fig. 5 for connector ④ and Fig. 6 for connector ⑤.

2. Top panel (Fig. 1)

Remove the band select knob, volume knob, function select knob, dubbing speed select knob and tape select knob. Open the cassette lid, remove three screws ②, and pull the top panel off in the direction of arrow ⑥.

3. Cassette lid (Fig. 2)

Once the top panel has removed, press sections ⑦ and ⑧ in the direction of the arrow. While pressing the stopper, pull the cassette lid off in the direction of arrow ⑨.

*Follow the same procedure for both TAPE 1 and TAPE 2.

4. LR P.W.B. (Fig. 3)

Once the front case has been removed, remove one screw ③ and two tabs.

5. LC P.W.B. (Fig. 3)

Once the front case has been removed, remove one screw ④ and two tabs.

6. LL P.W.B. (Fig. 4)

Once the front case has been removed, remove one screw ⑤ and two tabs.

7. VO P.W.B. (Fig. 4)

Pull off in the direction of arrow ⑩.

8. PS P.W.B. (Fig. 4)

Pull off in the direction of arrow ⑪.

9. SS P.W.B. (Fig. 4)

Pull off in the direction of arrow ⑫.

10. OS P.W.B. (Fig. 4)

Pull off in the direction of arrow ⑬.

11. Handle (Fig. 4)

Press the stopper in the direction of the arrow and pull the handle off in the direction of arrow ⑭.

*Follow the same procedure for both left and right sides.

12. MA P.W.B. (Fig. 5)

Remove five screws ⑥ and two connectors ④.

13. Cassette chassis (Fig. 6)

Remove six screws ⑦ and one connector ⑤ on the PA P.W.B..

14. PH P.W.B. (Fig. 6)

Remove one screw ⑧.

15. PA P.W.B. (Fig. 6)

Remove two screws ⑨ and pull the PA P.W.B. off in the direction of arrow ⑩.

DÉMONTAGE

1. Boîtier avant (Fig. 1, 5, 6)

Déposer le couvercle du logement des piles. Enlever huit vis ① et tirer dans la direction de la flèche (a). Enlever un connecteur (A) sur la plaquette de circuits imprimés MA et un connecteur sur la plaquette (B) de circuits imprimés PA.

*Voir la Fig. 5 pour le connecteur (A) et la Fig. 6 pour le connecteur (B).

2. Panneau supérieur (Fig. 1)

Déposer le bouton de sélection de gamme, le bouton de volume, le bouton de sélection de fonction, le bouton de sélection de vitesse de copie et le bouton de sélection de bande. Ouvrir la porte du compartiment cassette, enlever trois vis ② et dégager le panneau supérieur dans la direction de la flèche (b).

3. Porte du compartiment cassette (Fig. 2)

Une fois le panneau supérieur enlevé, appuyer sur les sections (A) et (B) dans la direction de la flèche. Tout en appuyant sur le dispositif d'arrêt, dégager la porte du compartiment cassette dans la direction de la flèche (c).

*Suivre les mêmes procédures pour la platine 1 et la platine 2.

4. Plaquette de circuits imprimés LR (Fig. 3)

Une fois le boîtier avant déposé, enlever une vis ③ et deux agrafes.

5. Plaquette de circuits imprimés LC (Fig. 3)

Une fois le boîtier avant déposé, enlever une vis ④ et deux agrafes.

6. Plaquette de circuits imprimés LL (Fig. 4)

Une fois le boîtier avant déposé, enlever une vis ⑤ et deux agrafes.

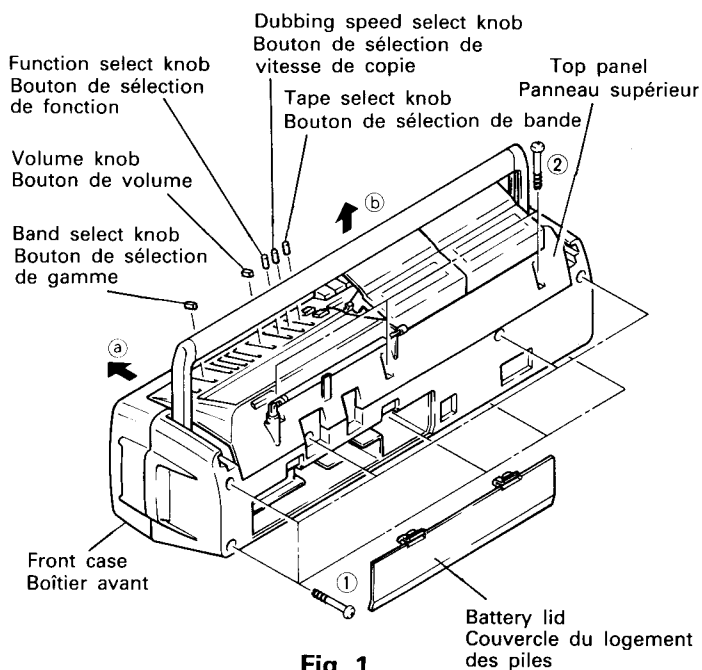


Fig. 1

7. Plaquette de circuits imprimés VO (Fig. 4)

Tirer dans la direction de la flèche (d).

8. Plaquette de circuits imprimés PS (Fig. 4)

Tirer dans la direction de la flèche (e).

9. Plaquette de circuits imprimés SS (Fig. 4)

Tirer dans la direction de la flèche (f).

10. Plaquette de circuits imprimés OS (Fig. 4)

Tirer dans la direction de la flèche (g).

11. Poignée (Fig. 4)

Appuyer sur le dispositif d'arrêt dans la direction de la flèche et dégager la poignée dans la direction de la flèche (h).

*Suivre les mêmes procédures pour le côté de droite et le côté de gauche.

12. Plaquette de circuits imprimés MA (Fig. 5)

Enlever cinq vis ⑥ et deux connecteurs (C).

13. Châssis de cassette (Fig. 6)

Enlever six vis ⑦ et un connecteur (D) sur la plaquette de circuits imprimés PA.

14. Plaquette de circuits imprimés PH (Fig. 6)

Enlever une vis ⑧.

15. Plaquette de circuits imprimés PA (Fig. 6)

Enlever deux vis ⑨ et dégager la plaquette de circuits imprimés PA dans la direction de la flèche (i).

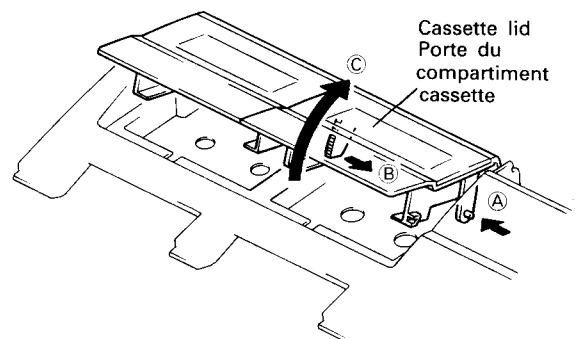


Fig. 2

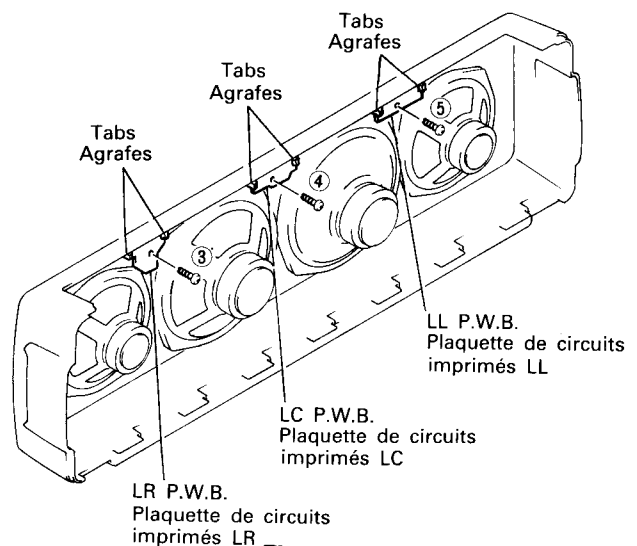


Fig. 3

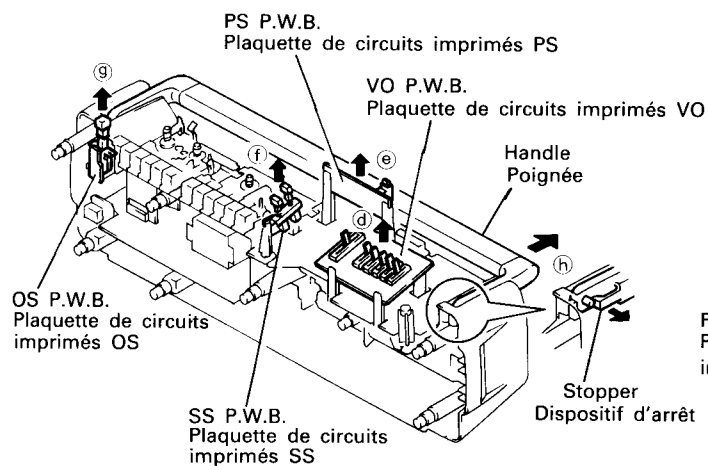


Fig. 4

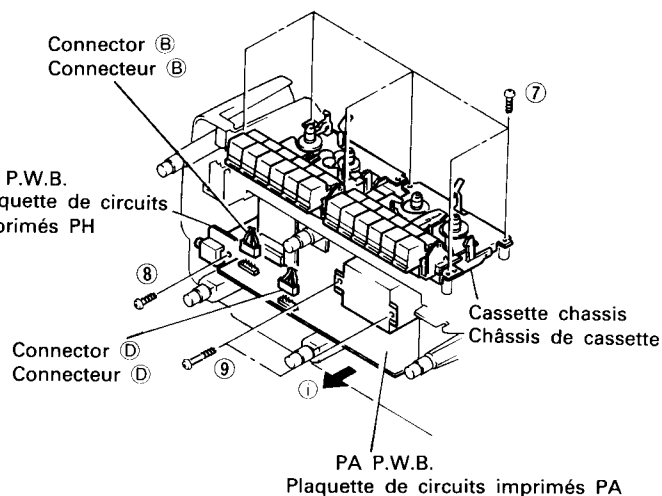


Fig. 6

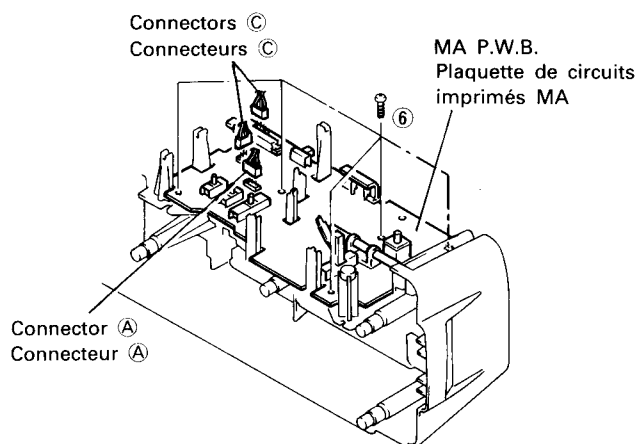


Fig. 5

DIAL CORD STRINGING

Pull the pulley as far as it will go in the clockwise direction and set the pointer to the aligned position.

CHEMINEMENT DU CORDON D'ACCORD

Tirer la poulie à fond dans le sens des aiguilles d'une montre et régler l'index sur la position alignée.

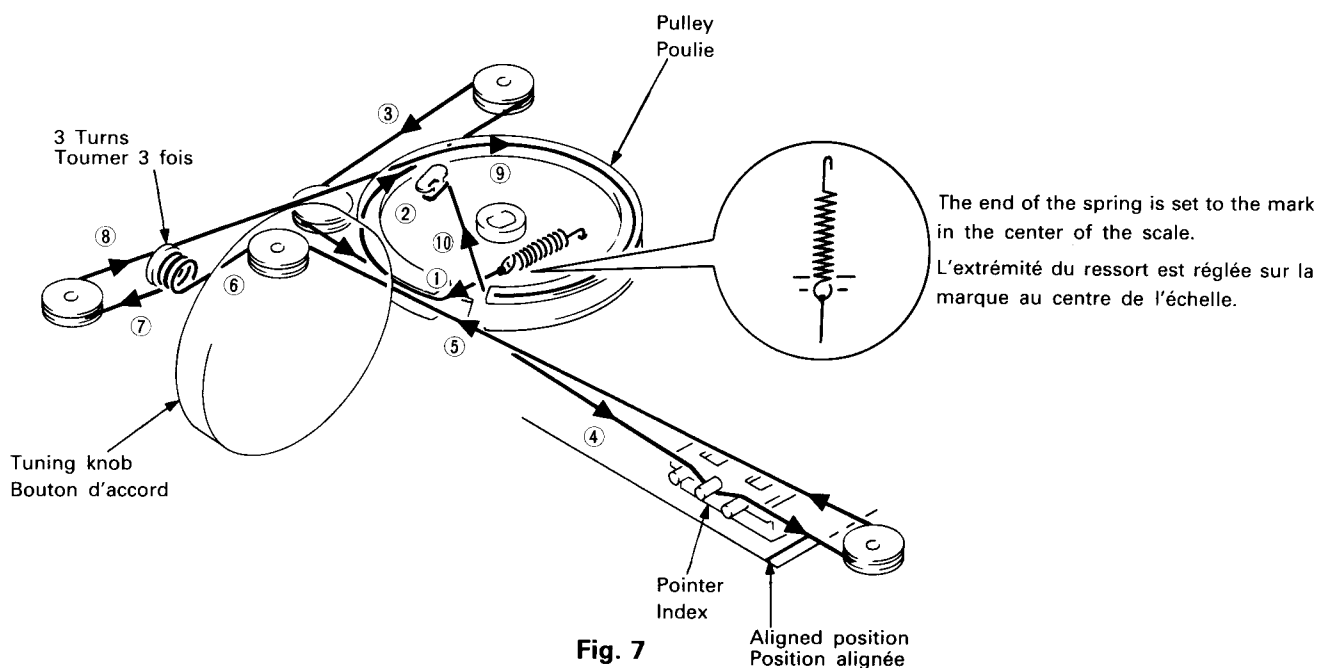


Fig. 7

- Adjustment points
[for E, E(BS)]

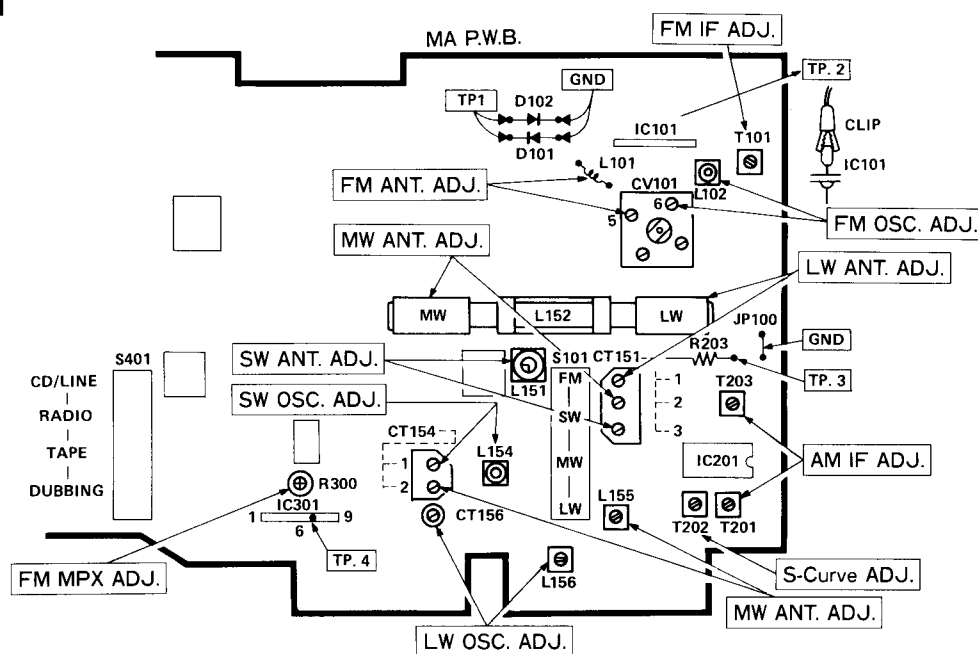


Fig. 9

(1)-2 AM Section for E, E(BS) (FM/SW/MW/LW 4-bands)

Step		Adjustment Item	Measuring Instrument and Connection			Genescope, or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
			Measuring Instrument	Input Terminal	Output Terminal				
1	(1)	AM IF	• Genescope (465 kHz)	Ferrite antenna (Note 3)	TP.3	465 kHz	Highest	T201 T203	(Note 1)
	(2)					Repeat step (1)			
2	(1)	SW OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.)	TP.1 (through SW dummy antenna) (Note 2)	TP.3	5.8 MHz	Lowest	L154	Max.
	(2)					18.5 MHz	Highest	CT154-1	
	(3)					Repeat steps (1) and (2)			
3	(1)	SW ANT. (Tracking)	• VTVM • Oscilloscope			6.5 MHz	6.5 MHz	L151	Max.
	(2)					16 MHz	16 MHz	CT151-3	
	(3)					Repeat steps (1) and (2)			
4	(1)	MW OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.)	Ferrite antenna (Note 3)	TP.3	515 kHz	Lowest	L155	Max.
	(2)					1,650 kHz	Highest	CT154-2	
	(3)					Repeat steps (1) and (2)			
5	(1)	MW ANT. (Tracking)	• VTVM • Oscilloscope			600 kHz	600 kHz	L152 (MW)	Max.
	(2)					1,400 kHz	1,400 kHz	CT151-2	
	(3)					Repeat steps (1) and (2)			
6	(1)	LW OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.)	Ferrite antenna (Note 3)	TP.3	145 kHz	Lowest	L156	Max.
	(2)					290 kHz	Highest	CT156	
	(3)					Repeat steps (1) and (2)			
7	(1)	LW ANT. (Tracking)	• VTVM • Oscilloscope (RIF switch:B)			160 kHz	160 kHz	L152 (LW)	Max.
	(2)					270 kHz	270 kHz	CT151-1	
	(3)					Repeat steps (1) and (2)			

(2)-1 FM Section

*() For W. Germany and Italy

Step		Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
			Measuring Instrument	Input Terminal	Output Terminal				
1	(1)	FM IF	Turn T202 fully counterclockwise			10.7 MHz	Highest	T101	(Note 4)
	(2)	S-Curve	• Genescope (10.7 MHz)	TP.2	TP.3			T202	(Note 5)
2	(1)	FM OSC (Covering)	• FM signal generator (400 Hz, 30% dev.) • Oscilloscope • VTVM	TP.1 (through FM dummy antenna (Note 6))	TP.3	87 MHz *(87.5 MHz)	Lowest	L102	Max.
	(2)					109 MHz *(108 MHz)	Highest	CV101-6	
	(3)					Repeat steps (1) and (2)			
3	(1)	FM ANT. (Tracking)							90 MHz
	(2)		106 MHz	106 MHz	CV101-5				
	(3)		Repeat steps (1) and (2)						
4	(1)	FM MPX (Multiplex)	• Frequency counter	Connect a 10 μ F/25V electrolytic capacitor between the NO. 1 pin of IC301 and GND	TP.4 (No. 6 pin) of IC301				—

Note:

1. Feed in a weak signal from the genescope. Adjust T201, T203 for maximum gain and the waveform of Fig. 10.

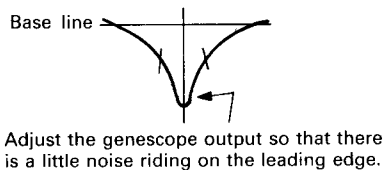


Fig. 10

2. SW dummy antenna shows Fig. 11.

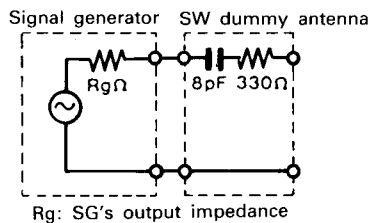


Fig. 11

3. Connect AM signal generator to loop antenna, bring near to ferrite antenna.
4. Feed in a weak signal to TP2 from the genescope. Adjust T101 for maximum gain and the waveform indicated in Fig. 12. If the center of the waveform cannot be lined up on the marker, adjust the right/left balance.

Adjust the genescope output so that there is a little noise riding on the leading edge.



Fig. 12

5. Use the T202 core to form the S-curve shown in Fig. 13. Adjust the symmetry of A and B about point C for linearity.

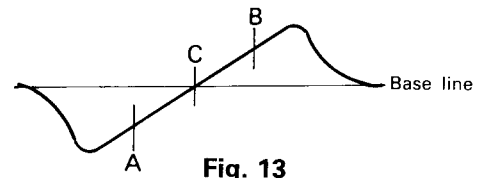


Fig. 13

6. FM dummy antenna shows Fig. 14.

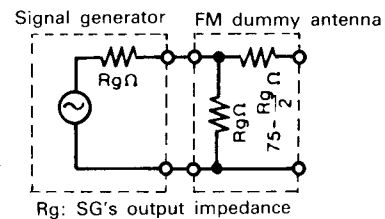


Fig. 14

7. Connect the frequency counter to the No. 6 pin of IC301 and connect a 330k ohm resistor parallel with the frequency counter.

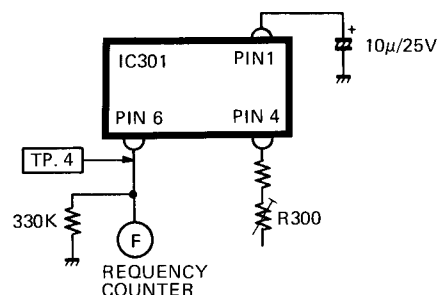


Fig. 15

2. TAPE RECORDER SECTION

Perform the following adjustments in the sequence stated after cleaning the head, pressure roller, and capstan with a head cleaning stick moistened in alcohol. (Note 1)

Step	Adjustment Item	Measuring Instrument and Connection			Check Tape	Mode	Adjust	Reading
		Measuring Instrument	Input Terminal	Output Terminal				
1	Tape speed (Note 3)	• Frequency counter	—	Headphones Jack	Tape speed adjustment tape (3kHz)	Playback (TAPE 2)	R661	3kHz $\pm$ 20Hz (Note 2)
2	Head azimuth	• VTVM	—	Headphones Jack	Head azimuth adjustment tape (10kHz)	Playback	Azimuth adjusting screw. (Fig. 16)	Output max. (Note 4)

Note:

- Adjust within 30 sec. after heat-running for more than 20 minutes.
- Should be confirm at TAPE 1 both in the FORWARD and REVERSE directions if the reading is outside the range of adjustment value, make readjustment so that the reading would be 2,975 to 3,030 Hz both in the FORWARD and REVERSE directions. (Forward and reverse switching cannot be performed with E or E(BS). Use this control for one-way operation.)
- High speed adjustment is not necessary.
- When the maximum values of both channels are different, adjust to the maximum value of the L channel. In

this case, the difference between the maximum values of both channels should be within 2 dB.

(Should be confirm REVERSE direction at TAPE 1. When adjusting TAPE 1, forward and reverse switching cannot be performed with E or E(BS). Use this control for one-way operation.)

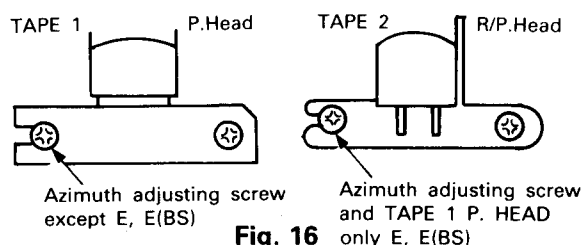


Fig. 16

3. Cassette Chassis Inspection

No.	Inspection item	Reference value	Remarks
1	Playback torque	TN-521: 27 to 60 g·cm	
		TN-21: 30 to 60 g·cm	
2	FF/REW torque	TN-521: 55 to 120 g·cm	
		TN-21: 55 to 120 g·cm	
3	Supply back-tension	TN-521: 1.8 to 5.0 g·cm	
		TN-21: 1 to 4 g·cm	
4	Tape drive force	TN-521: Over 50 g (TAPE 1) Over 100 g (TAPE 2)	
		TN-21: Over 100 g	

LUBRICATION

Apply one or two drops of pan motor oil or sonic slider oil to rotating parts. Coat sliding parts with Molycoat (EL-10M). Lubricate once a year or every 1,000 hours of operation. Do not let oil contact belts or idlers.

MAINTENANCE

■ Clean cabinet and panels when dirty

Clean off dirt on the surfaces with a dry cloth. Never use thinners, benzene or alcohol since these will damage the surface finish.

Rotating parts	Metal to metal	Pan motor oil (10W-40)
	Plastics to metal	Sonic slider oil (#1600)
Sliding parts	(Note)	Molycoat (EL-10M)
	Plastics to plastics Plastics to metal	
Spring vibration prevention		Floyl (GB-TS-1)

NOTE:

When front frame and slide knob are replaced, coat both contacting parts lightly with white grease.

RÉGLAGE

1. SECTION RADIO

- **Points de réglage**
[sauf E, E(BS)]

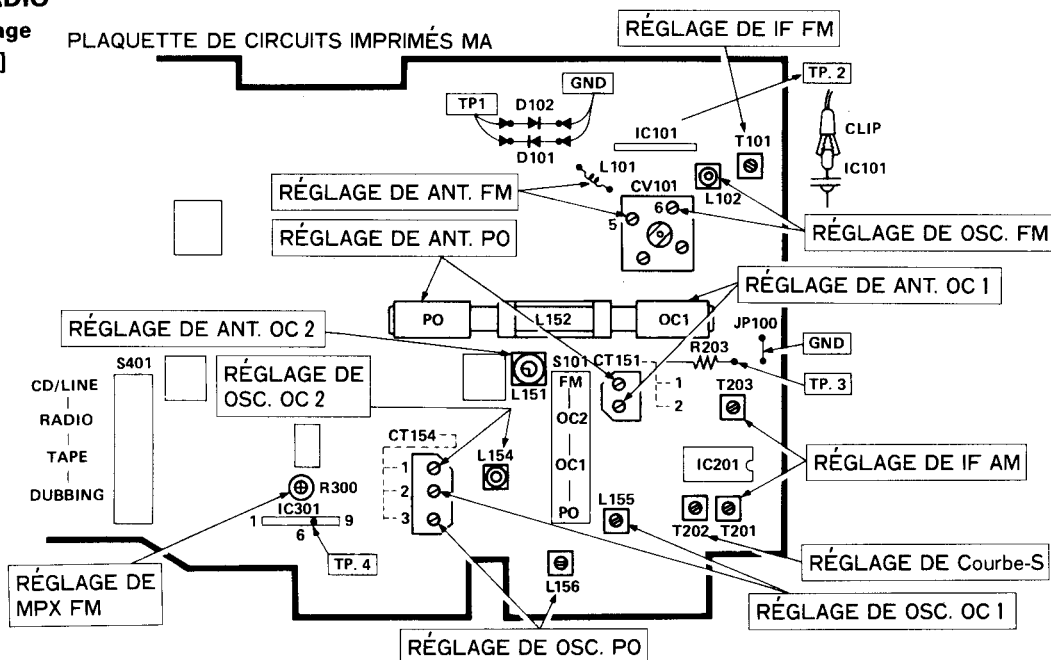


Fig. 8

(1)-1 Section AM sauf E, E(BS) (FM/OC2/OC1/PO 4 gammes)

Etape		Objet de réglage	Instrument de mesure et branchements			Généscope ou fréquence du générateur de signal	Position de l'aiguille du cadran	Réglage	Lecture
			Instrument de mesure	Borne d'entrée	Borne de sortie				
1	(1)	IF AM	• Généscope (455 kHz)	Antenne noyau en ferrite (Remarque 3)	TP.3	455 kHz	La plus haute	T201 T203	(Remarque 1)
	(2)					Répéter étape (1)			
2	(1)	OSC. OC2 (couverture)	• Générateur de signal AM (400 Hz, mod. 30%)	TP.1 (par le biais d'une antenne OC fictive) (Remarque 2)	TP.3	6,7 MHz	La plus basse	L154	Max.
	(2)					23 MHz	La plus haute	CT154-1	
	(3)					Répéter les étapes (1) et (2)			
3	(1)	ANT. OC2 (poursuite)	• VTVM • Oscilloscope			8 MHz	8 MHz	L151	Max.
4	(1)	OSC. OC1 (couverture)	• Générateur de signal AM (400 Hz, mod. 30%)	Antenne noyau en ferrite (Remarque 3)	TP.3	2,2 MHz	La plus basse	L155	Max.
	(2)					7,3 MHz	La plus haute	CT154-2	
	(3)					Répéter les étapes (1) et (2)			
5	(1)	ANT. OC1 (poursuite)	• VTVM • Oscilloscope			2,7 MHz	2,7 MHz	L152 (OC1)	Max.
	(2)					6,3 MHz	6,3 MHz	CT151-2	
	(3)					Répéter les étapes (1) et (2)			
6	(1)	OSC. PO (couverture)	• Générateur de signal AM (400 Hz, mod. 30%)	Antenne noyau en ferrite (Remarque 3)	TP.3	515 kHz	La plus basse	L156	Max.
	(2)					1650 kHz	La plus haute	CT154-3	
	(3)					Répéter les étapes (1) et (2)			
7	(1)	ANT. PO (poursuite)	• VTVM • Oscilloscope			600 kHz	600 kHz	L152 (PO)	Max.
	(2)					1400 kHz	1400 kHz	CT151-1	
	(3)					Répéter les étapes (1) et (2)			

Fig. 9

- 11 -

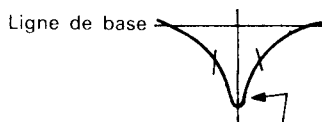
(2)-1 Section FM

*() pour la RFA et Italie.

Etape		Objet du réglage	Instrument de mesure et branchement			Généscope ou fréquence du générateur de signal	Position de l'aiguille du cadran	Réglage	Lecture
			Instrument de mesure	Borne d'entrée	Borne de sortie				
1	(1)	IF FM	Tourner T202 à fond dans le sens des aiguilles d'une montre.			10,7 MHz	La plus haute	T101	(Remarque 4)
	(2)	Courbe-S	• Généscope (10,7 MHz)	TP.2	TP.3			T202	(Remarque 5)
2	(1)	OSC. FM (couverture)	• Générateur de signal FM (400 Hz, dév. 30%) • Oscilloscope • VTVM	TP.1 (par le biais d'une antenne FM fictive) (Remarque 6)	TP.3	* 87 MHz (87,5 MHz)	La plus basse	L102	Max.
	(2)					* 109 MHz (108 MHz)	La plus haute	CV101-6	
	(3)					Répéter les étapes (1) et (2)			
3	(1)	ANT. FM (poursuite)	• Oscilloscope • VTVM	TP.1 (par le biais d'une antenne FM fictive) (Remarque 6)	TP.3	90 MHz	90 MHz	L101	Max.
	(2)					106 MHz	106 MHz	CV101-5	
	(3)					Répéter les étapes (1) et (2)			
4	(1)	MPX FM (Multiplex)	• Fréquencemètre	Brancher un condensateur électrolytique de 10µF/25V entre la broche n° 1 du IC301 et la masse (GND).	TP. 4 (Broche n° 6 du IC301)	—	—	R300	38 kHz ± 50 Hz (Remarque 7)

Remarque:

- Appliquer un signal faible du généscope. Régler T201 et T203 afin d'obtenir un gain maximum et la forme d'onde de la Fig. 10.



Régler la sortie du généscope de façon à ce qu'il y ait un peu de bruit au niveau du front d'onde.

Fig. 10

- Antenne OC fictive

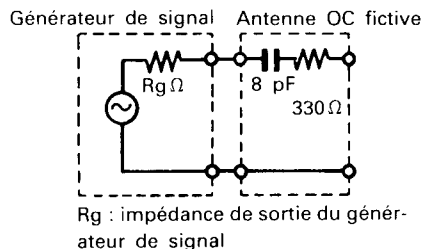


Fig. 11

- Relier le générateur de signal AM à l'antenne-cadre. La rapprocher de l'antenne noyau en ferrite.
- Appliquer un signal faible du généscope sur TP2. Régler T101 afin d'obtenir un gain maximum et la forme d'onde de la Fig. 12. Si le centre de la forme d'onde ne peut pas être aligné sur le marqueur, régler la balance droite/gauche.

Régler la sortie du généscope de façon à ce qu'il y ait un peu de bruit au niveau du front d'onde.

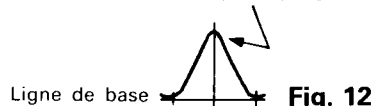


Fig. 12

- Utiliser le noyau de T202 pour former la courbe-S indiquée sur la Fig. 13. Régler la symétrie de A et B au niveau du point C pour la linéarité.

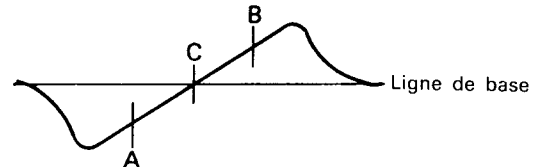


Fig. 13

- Antenne FM fictive

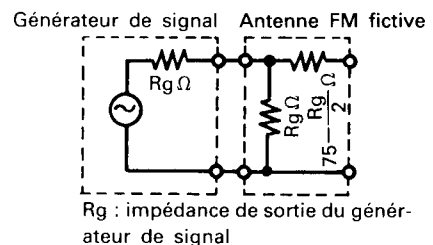


Fig. 14

- Relier le fréquencemètre sur la broche n°6 du IC301 et brancher une résistance de 330 kΩ en parallèle avec le fréquencemètre.

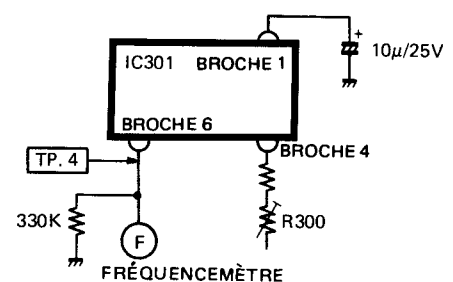


Fig. 15

2. SECTION LECTEUR-ENREGISTREUR DE CASSETTE

Effectuer les réglages suivants dans l'ordre indiqué après avoir nettoyé la tête, le galet-presseur et le cabestan avec un coton-tige imbibé d'alcool. (Remarque 1)

Etape	Objet de réglage	Instrument de mesure et branchements			Band de vérification	Mode	Réglage	Lecture
		Instrument de mesure	Borne d'entrée	Borne de sortie				
1	Vitesse de défilement (Remarque 3)	• Fréquence-mètre	—	Jack casque	Bande de réglage de vitesse de défilement (3 kHz)	Reproduction (Platine 2)	R611	3 kHz $\pm$ 20 Hz (Remarque 2)
2	Azimuth de tête	• VTVM	—	Jack casque	Bande de réglage d'azimuth de tête (10 kHz)	Reproduction	Vis de réglage d'azimuth Fig. 16	Sortie max. (Remarque 4)

Remarque :

- Régler dans une plage de 30 sec. après une mise sous tension de 20 minutes au moins.
- Vérifier la Platine 1 à la fois dans les directions FORWARD (avant) et REVERSE (arrière). Si la lecture est en dehors de la plage des valeurs de réglage, faire le réglage de façon à ce que la lecture soit entre 2975 et 3030 Hz dans les directions FORWARD (avant) et REVERSE (arrière). (Il n'est pas possible d'effectuer la commutation du sens de défilement FORWARD(avant) / REVERSE(arrière) avec E ou E(BS). Utiliser cette commande pour le fonctionnement dans un seul sens de défilement.)
- Le réglage à haute vitesse n'est pas nécessaire.
- Si les valeurs maximales des deux canaux différent, régler sur la valeur maximale du canal de gauche (L). Dans ce cas, la différence entre les valeurs maximales des deux canaux doit être comprise dans une plage de 2 dB.

(Vérifier dans la direction REVERSE (arrière) sur la Platine 1. Si vous réglez et Platine 1, Il n'est pas possible d'effectuer la commutation du sens de défilement FORWARD (avant)/REVERSE (arrière) avec E ou E(BS). Utiliser cette commande pour le fonctionnement dans un seul sens de défilement.)

Tête de reproduction Platine 1 Tête de reproduction/lecture Platine 2

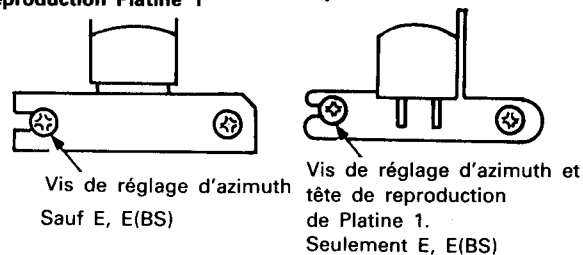


Fig. 16

3. Réglage du châssis de cassette

No.	Point d'inspection	Valeur de référence	Observation
1	Couple en lecture	TN-521: De 27 à 60 g·cm	
		TN-21: De 30 à 60 g·cm	
2	Couple avance rapide /rebobinage	TN-521: De 55 à 120 g·cm	
		TN-21: De 55 à 120 g·cm	
3	Tension bobine débitrice	TN-521: De 1,8 à 5,0 g·cm	
		TN-21: De 1 à 4 g·cm	
4	Force de défilement de band	TN-521: Plus de 50 g (TAPE 1) Plus de 100 g (TAPE 2)	
		TN-21: Plus de 100 g	

LUBRIFICATION

Appliquer une ou deux gouttes d'huile moteur ou d'huile Sonic pour curseur, sur les membres rotatifs. De la graisse Molycoat (EL-10M) est appliquée sur les membres coulissants.

Lubrifier une fois par an ou toutes les 1 000 heures de fonctionnement.

Veiller à ne pas appliquer d'huile sur les courroies ou les galets.

Membres rotatifs	Entre les parties métalliques	Huile moteur (10W-40)
	Entre le moulage et les parties métalliques	Huile Sonic pour curseur (#1600)
Membres coulissants	(Remarque) Entre moulures Entre moulures et pièces métalliques	Molycoat (EL-10M)
Prévention de vibration de ressort		Floyl (GB-TS-1)

Remarque:

Lorsque le châssis avant et le bouton curseur doivent être remplacés, appliquer une couche légère de graisse blanche sur les parties de contact.

ENTRETIEN

■ Nettoyage du coffret et des panneaux lorsqu'ils sont sales

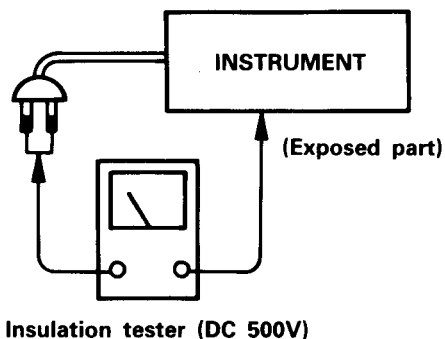
Enlever la poussière des surfaces de l'appareil avec un chiffon sec. Ne jamais utiliser de solvants, de benzine ou d'alcool car ils abîmeraient le fini des surfaces.

Check that exposed parts are acceptably insulated from the supply circuit before returning the instrument repaired to the customer.

● Checking method

Operate switch is set to ON.

Next, measure the resistance value between the both poles of attachment cup (Power supply plug) and the exposed parts (Parts such as Knob, Cover, etc. where the customer is easy to touch.) and check that the resistance value is 500 kohms or more.



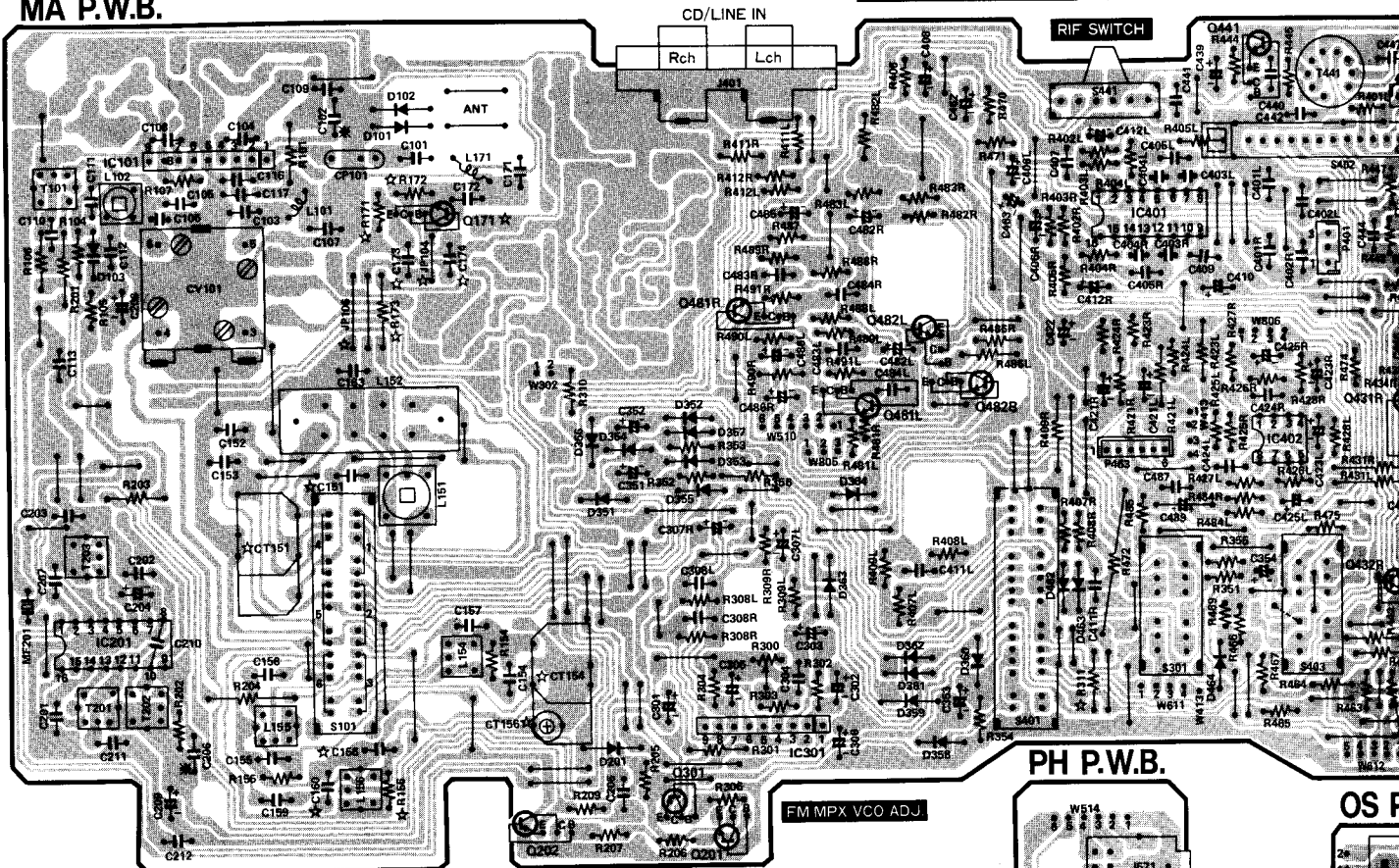
PRINTED WIRING BOARD · PLAN DE BASE

※ : Axial lead cylindrical ceramic capacitor
※ : Condensateur céramique clindrique à



S402 REC/PLAY SELECT SWITCH
S301 FM MODE, DUBBING SPEED SELECT SWITCH
S401 FUNCTION SELECT SWITCH
S101 BAND SELECT SWITCH

MA P.W.B.



S602 VOLTAGE SELECT SWITCH

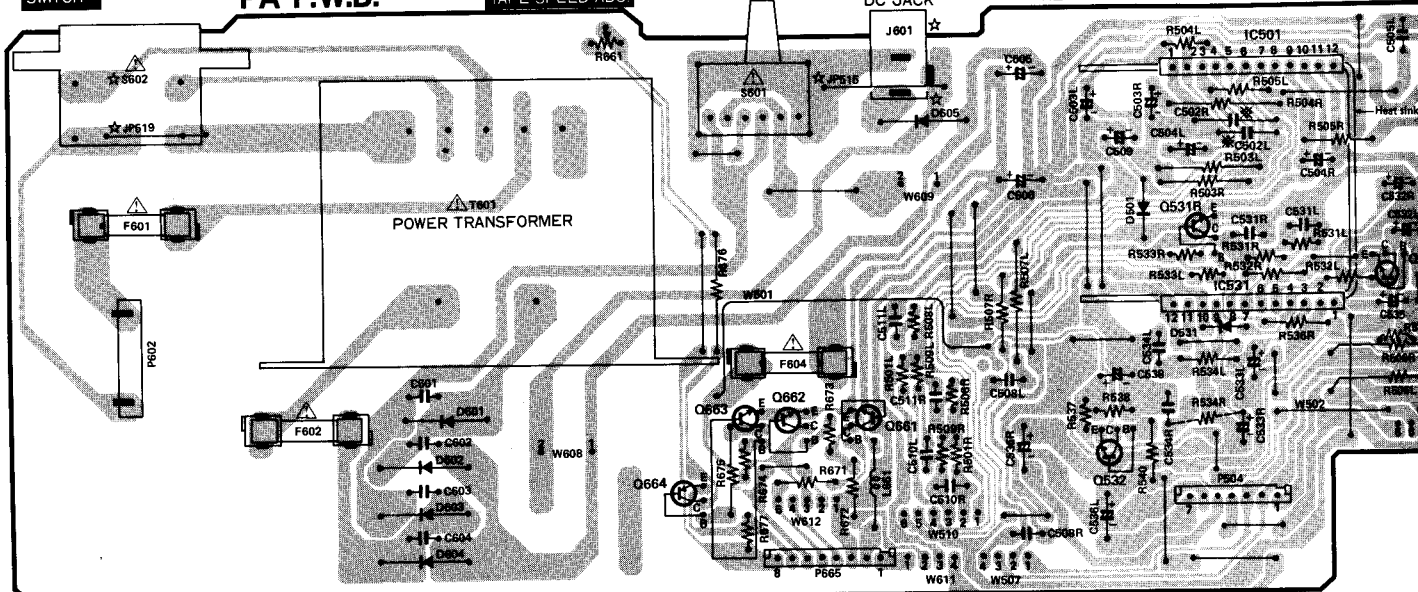
PA P.W.B.

TAPE SPEED ADJ.

S601 AC/DC SELECT SWITCH

DC JACK

HEADPHONES JACK

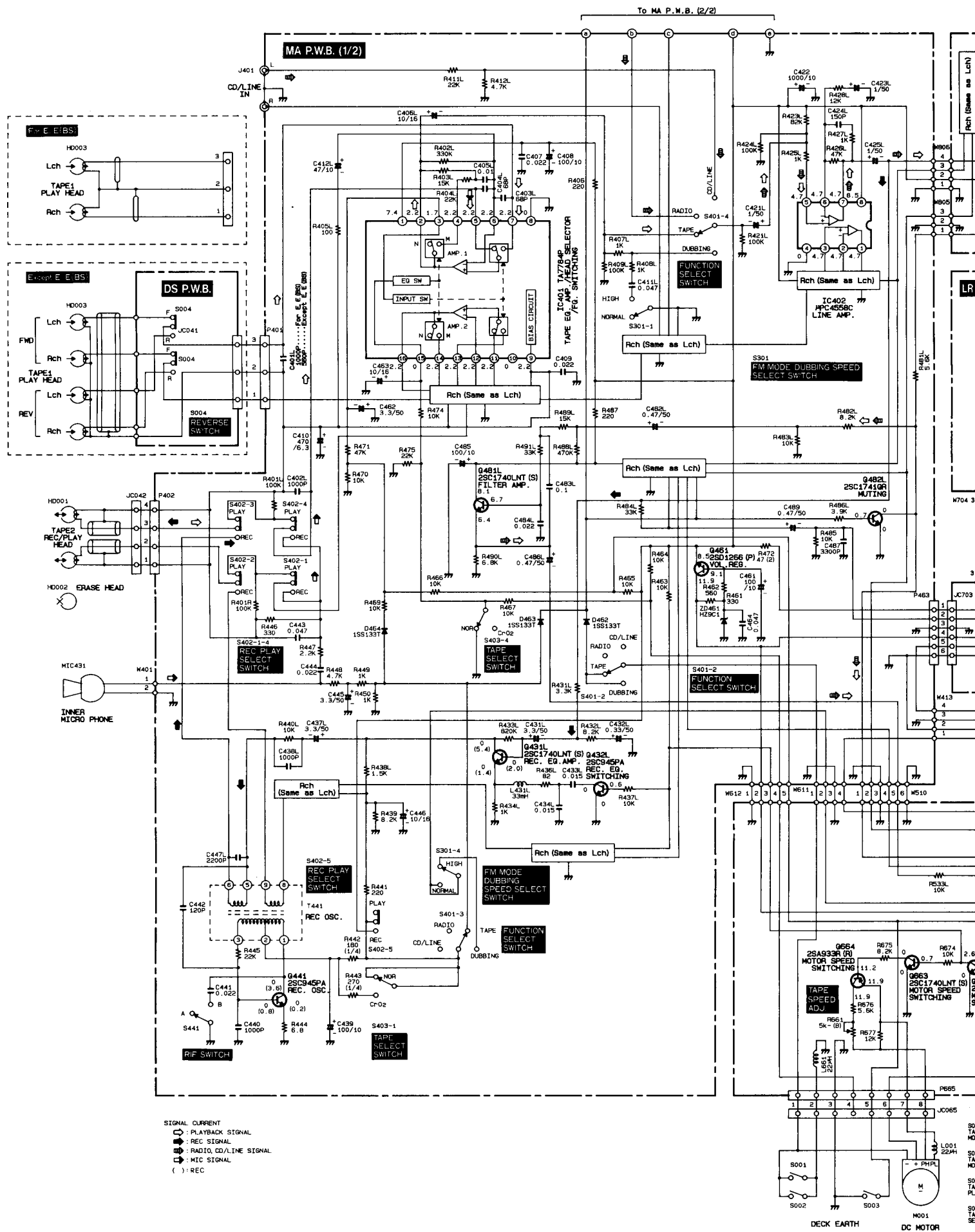


☆ SYMBOL	E, E(BS)	H, HC	AU	W, W(U)	☆ SYMBOL	E, E(BS)	H, HC	AU	W, W(U)
CT151					J601	—	—	—	USE
CT154					Q171	USE	—	—	USE
C151	USE	—	—	—	R156	—	USE	USE	USE
C156	—	USE	USE	USE	R171	USE	—	—	—
C160	USE	—	—	—	R172	USE	—	—	—
C173	USE	—	—	—	R173	USE	—	—	—
C174	USE	—	—	—	R311	Jumper	USE	USE	USE
D605	—	—	—	—	S602	—	—	—	USE
JP104	—	USE	USE	USE	CT156	USE	—	—	—
JP106	USE	—	—	—	JP519	USE	USE	USE	—
					JP515	USE	USE	USE	—

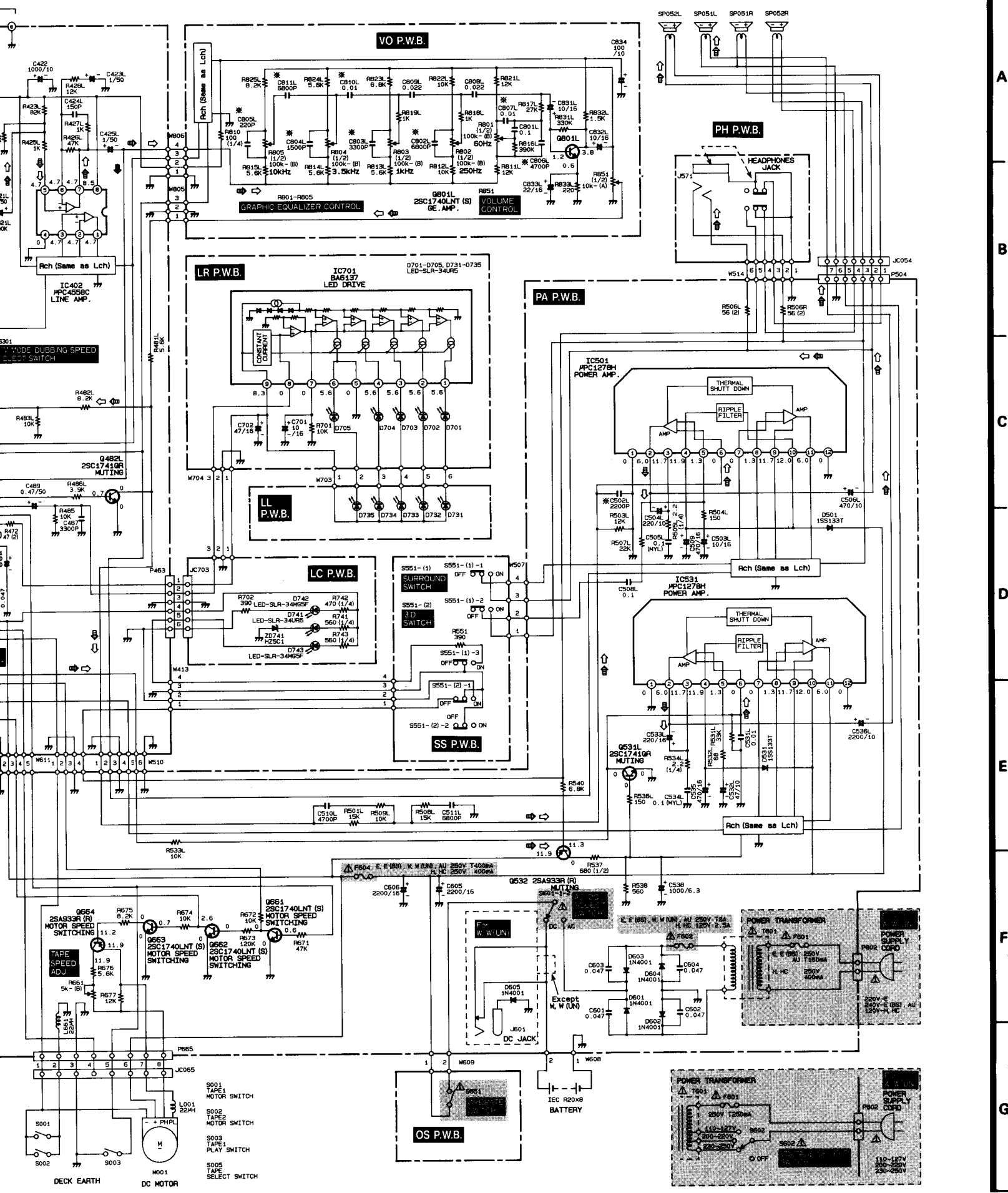
	E	C	B		E	C
Q171	0 [0.2]	0 [7.8]	0 [0.9]	Q482LR	0	0
Q201	0	0 [7.9]	0 [0.7]	Q531LR	0	0
Q202	6.9 (6.5)	6.9 (0.0)	6.2 (7.9)	Q532	11.9	0
Q301	8.5	8.5 (7.8)	7.8 (7.9)	Q661	0	0
Q431LR	0 [1.4]	0 [5.4]	0 [2.0]	Q662	0	2.6
Q432LR	0	0	0.6	Q663	0	0
Q441	0 [0.2]	0 [3.6]	0 [0.8]	Q664	11.9	11.4
Q461	8.5	11.9	9.1	Q801LR	0.6	3.8
Q481LR	6.4	8.1	6.7			

() FM [] SW for E(E)

※ : Axial lead cylindrical ceramic capacitor.
※ : Condensateur céramique clindrique à conducteur axial.



capacitor.
que à conducteur axial.



A

B

C

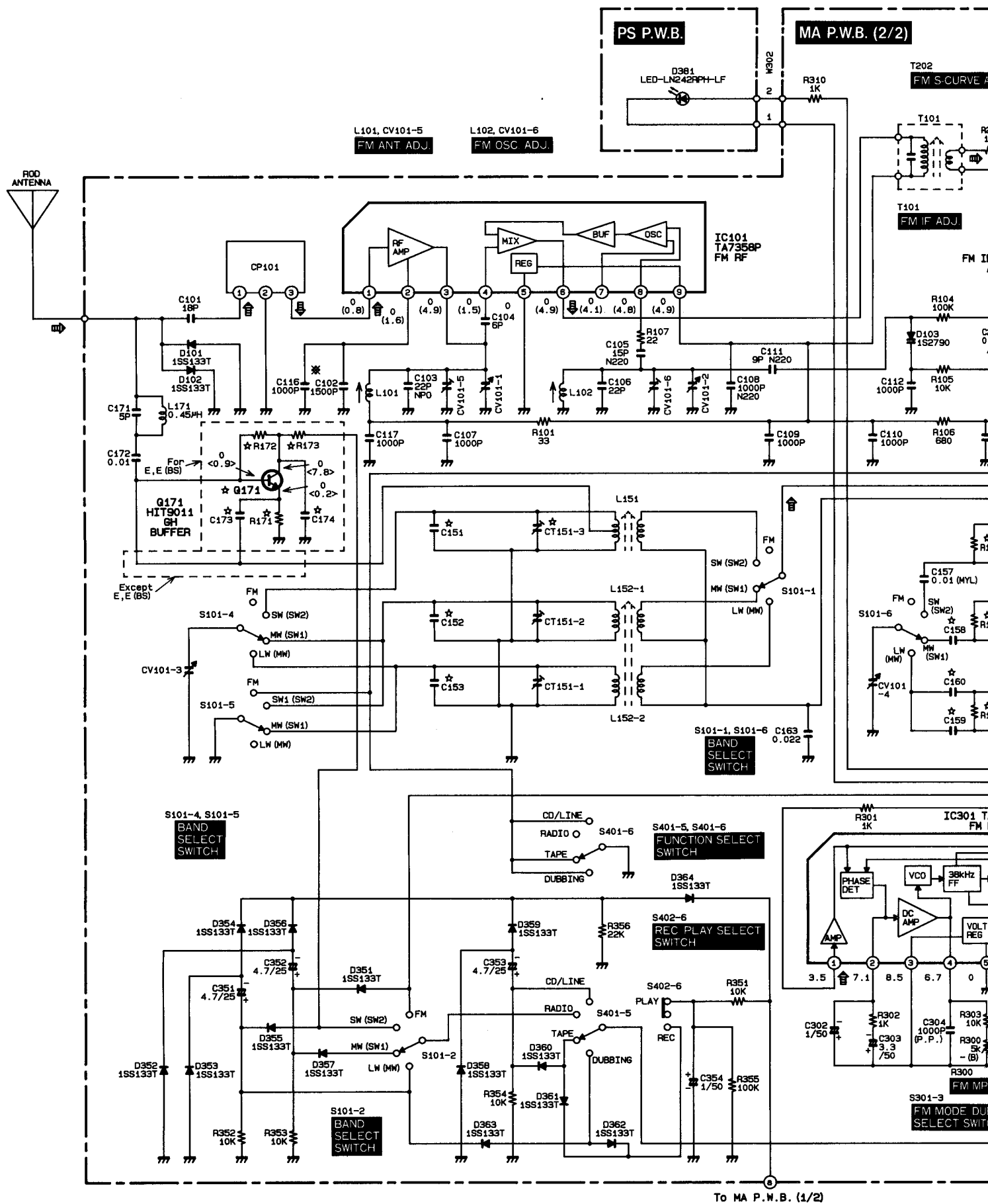
D

E

F

G

★No.	C151	C152	C153	C154	C155	C156	C158	C159	C160	C173	C174	R154	R155	R156
E.E (BS)	12P	10P	82P	22P NPO	18P	—	360P (P.P.)	180P (STY)	120P	0.01	0.022	18K	18K	—
except E.E (BS)	—	6P	10P	15P N750	8P	12P	1500P (P.P.)	360P (P.P.)	—	—	—	22K	15K	15K



To MA P.W.B. (1/2)

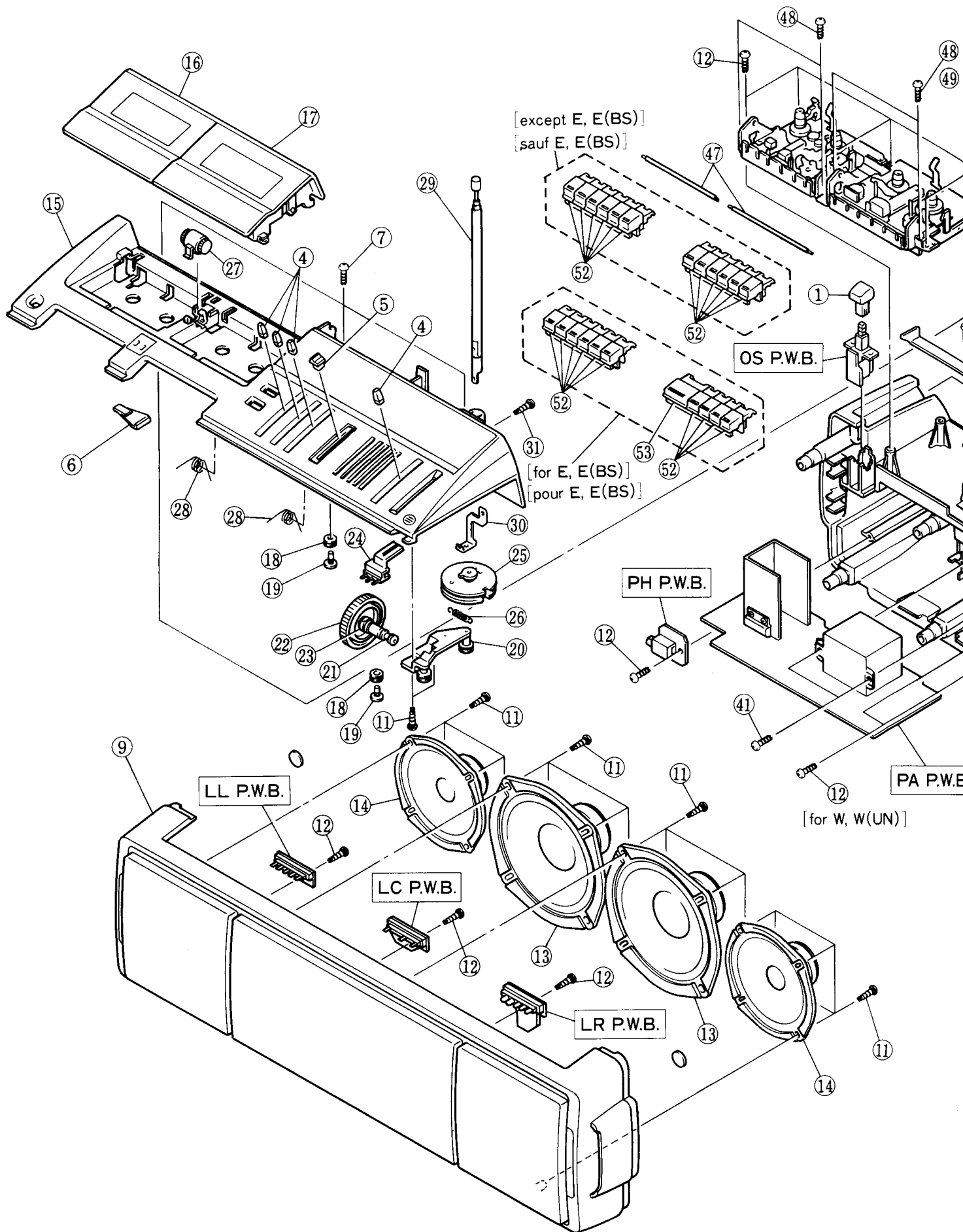
R174	R154	R155	R156	R171	R172	R173	R311	Q171	CT151-3	CT154-3, CT156
022	18K	18K	_____	100	330K	390	Jumper	Use	Use	CT156
	22K	15K	15K	_____	_____	_____	1K	_____	_____	CT154-3



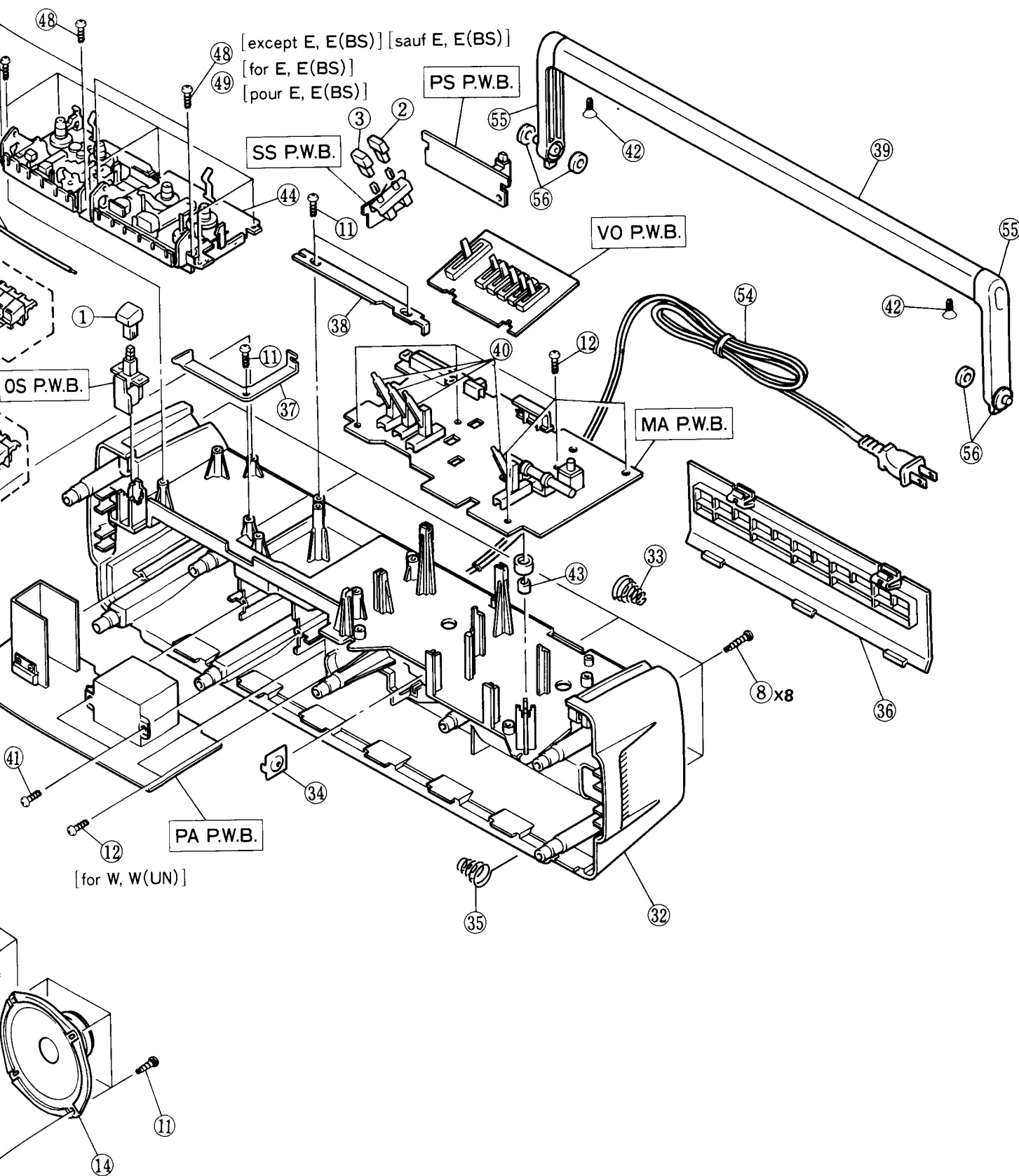
EXPLODED VIEW (Cabinet)

VUE EXPLOSEE (Coffret)

- Nos. are reference Nos. of parts list.
- Ces numéros correspondent à la liste des pièces.



ist.
iste des pièces.

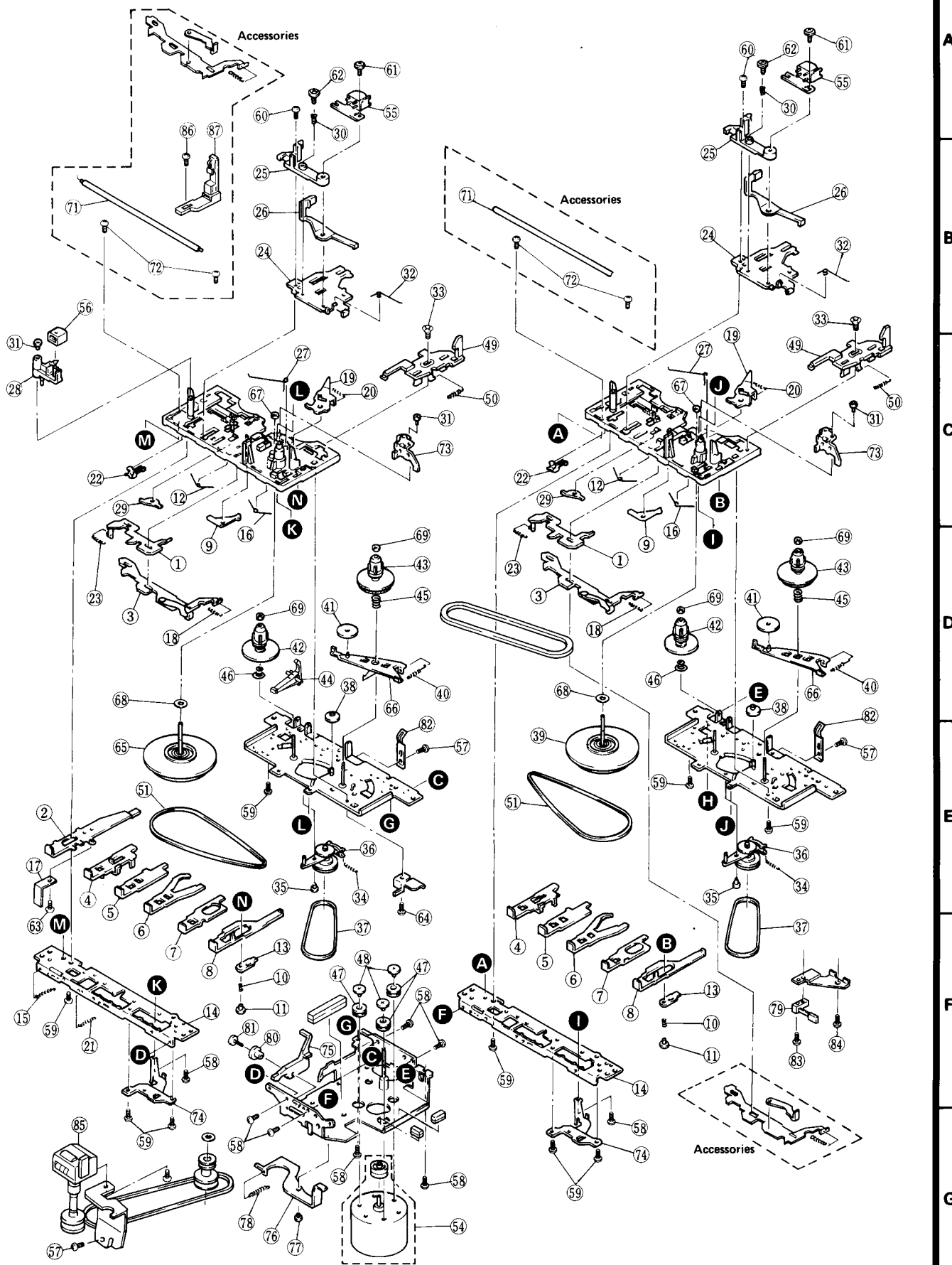


EXPLODED VIEW VUE EXPLOSEE [for E, E(BS)] (Cassette Chasis) (Châssis de Cassette) [pour E, E(BS)]

TRK-3D80

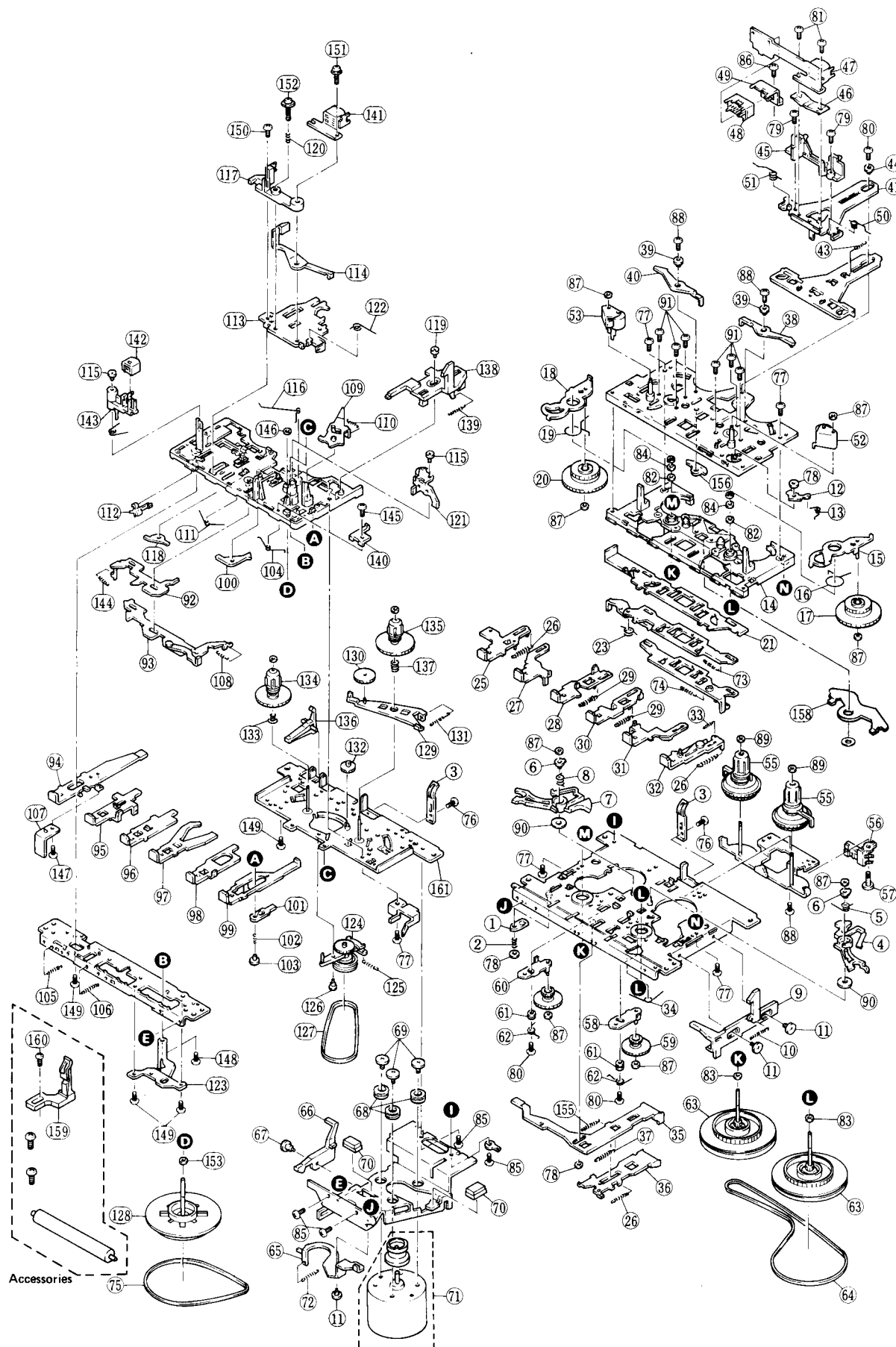
TRK-3D80

- Nos. are reference Nos. of parts list.
- Ces numéros correspondent à la liste des pièces.



EXPLODED VIEW VUE EXPLOSEE [except E, E(BS)] (Cassette Chassis) (Châssis de Cassette) [sauf E, E(BS)]

- Nos. are reference Nos. of parts list.
- Ces numéros correspondent à la liste des pièces.



REPLACEMENT PARTS LIST TABLEAU DES PIÈCES

CC: Cylindrical ceramic MO: Metal oxide
CD: Ceramic discal MF: Mylar film
CF: Carbon film ST: Styrol
EL: Electrolytic PP: Polypro-pylene

TRK-3D80

SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION
CAPACITORS								
C101	0208666	CD 18PF ±5% 50V	C208	02528052	EL 0.47 µF 50V	C489	02528052	EL 0.47 µF 50V
C102	0240051	CC 1500PF +20% 16V	C209	02523312	EL 100 µF 10V	C502LR	0240053	CC 2200PF ±20% 16V
C103	0246448	CD 22PF ±5% 50V	C210	0209175	CD 0.047 µF ±80% 50V	C503LR	02525212	EL 10 µF 16V
C104	0248646	CD 6PF +0.25PF 50V	C211	0244173	CD 0.022 µF ±80% 50V	C504LR	02523322	EL 220 µF 10V
C105	0248034	CD 15PF ±5% 50V	C212	0244173	CD 0.022 µF ±80% 50V	C505LR	02760112	MF 0.1 µF 50V
C106	0248038	CD 22PF ±5% 50V	C301	02528012	EL 0.1 µF 50V	C506LR	0252335	EL 470 µF 10V
C107	02441012	CD 1000PF ±10% 50V	C302	02528112	EL 1 µF 50V	C508LR	0240224	CD 0.1 µF +10% 25V
C108	02441012	CD 1000PF +10% 50V	C303	02528132	EL 3.3 µF 50V	C509	02525352	EL 470 µF 10V
C109	02441012	CD 1000PF ±10% 50V	C304	0268446	PP 1000PF ±5% 100V	C510LR	0244109	CD 4700PF ±10% 50V
C110	02441012	CD 1000PF +10% 50V	C305	02528112	EL 1 µF 50V	C511LR	0209736	CD 6800PF +10% 50V
C111	0248019	CD 9PF ±0.5PF 50V	C306	02523412	EL 1000 µF 10V	C531LR	0209761	CD 0.01 µF ±20% 25V
C112	02441012	CD 1000PF ±10% 50V	C307LR	02525212	EL 10 µF 16V	C532LR	02523252	EL 47 µF 10V
C113	0209175	CD 0.047 µF ±80% 50V	C308LR	0240216	CD 0.022 µF ±10% 25V	C533LR	02525322	EL 220 µF 16V
C116	02441012	CD 1000PF ±10% 50V	C351	02526152	EL 4.7 µF 25V	C534LR	02760112	MF 0.1 µF ±10% 50V
C117	02441012	CD 1000PF ±10% 50V	C352	02526152	EL 4.7 µF 25V	C535	02525352	EL 470 µF 16V
C151	0208662	CD 12PF ±5% 50V	C353	02526152	EL 4.7 µF 25V	C536LR	02523422	EL 2200 µF 10V
C152	0208646	CD 6PF +0.5PF 50V	C354	02528112	EL 1 µF 50V	C538	0252241	EL 1000 µF 6.3V
		[for E, E(BS)]	C401LR	0209724	CD 560PF +10% 50V	C601	0209175	CD 0.047 µF ±80% 50V
C152	0208650	CD 10PF +0.5PF 50V	0209731	CD 1000PF ±10% 50V	[except E, E(BS)]	C602	0209175	CD 0.047 µF ±80% 50V
		[for E, E(BS)]				C603	0209175	CD 0.047 µF ±80% 50V
C153	0208650	CD 10PF ±0.5PF 50V	C402LR	0209731	CD 1000PF ±10% 50V	C604	0209175	CD 0.047 µF ±80% 50V
		[except E, E(BS)]	C403LR	0248680	CD 68PF +5% 50V	C605	02525422	EL 2200 µF 16V
C154	0246448	CD 22PF +5% 50V	C404LR	0248680	CD 68PF ±5% 50V	C606	02525422	EL 2200 µF 16V
		[for E, E(BS)]	C405LR	0240212	CD 0.01 µF ±10% 25V	C701	02525212	EL 10 µF 16V
C154	0248494	CD 15PF +5% 50V	C406LR	02525212	EL 10 µF 16V	C702	02525252	EL 47 µF 16V
		[except E, E(BS)]	C407	0244173	CD 0.022 µF ±80% 50V	C801LR	0240224	CD 0.1 µF ±10% 25V
C155	0208648	CD 8PF ±0.5PF 50V	C408	02523312	EL 100 µF 10V	C802LR	0240059	CC 6800PF ±30% 16V
		[except E, E(BS)]	C409	0244173	CD 0.022 µF ±80% 50V	C803LR	0240055	CC 3300PF +20% 16V
C156	0208666	CD 18PF ±5% 50V	C410	02522352	EL 470 µF 6.3V	C804LR	0240051	CC 1500PF ±20% 16V
		[for E, E(BS)]	C411LR	0240220	CD 0.047 µF ±10% 25V	C805LR	0240037	CC 220PF +10% 50V
C156	0208662	CD 12PF ±5% 50V	C412LR	02523252	EL 47 µF 10V	C806LR	0240057	CC 4700PF +30% 16V
		[except E, E(BS)]	C421LR	02528112	EL 1 µF 50V	C807LR	0240061	CC 0.01 µF ±30% 16V
C157	02750112	MF 0.01 µF ±10% 50V	C422	02523412	EL 1000 µF 10V	C808LR	0240216	CD 0.022 µF ±10% 25V
C158	0268321	PP 360PF ±5% 100V	C423LR	02528112	EL 1 µF 50V	C809LR	0240216	CD 0.022 µF ±10% 25V
		[for E, E(BS)]	C424LR	0248688	CD 150PF ±5% 50V	C810LR	0240061	CC 0.01 µF ±30% 16V
C159	0268442	PP 1500PF ±5% 100V	C425LR	02528112	EL 1 µF 50V	C811LR	0240059	CC 6800PF ±30% 16V
		[except E, E(BS)]	C431LR	02528132	EL 3.3 µF 50V	C831LR	02522512	EL 10 µF 16V
C159	0268321	PP 360PF +5% 100V	C432LR	02528032	EL 0.33 µF 50V	C832LR	02522512	EL 10 µF 16V
		[except E, E(BS)]	C433LR	0240214	CD 0.015 µF ±10% 25V	C833LR	02522772	EL 22 µF 16V
C160	0208686	CD 120PF ±5% 50V	C434LR	0240214	CD 0.015 µF +10% 25V	C834	02522642	EL 100 µF 10V
		[for E, E(BS)]	C437LR	02528132	EL 3.3 µF 50V	RESISTORS		
C163	0244173	CD 0.022 µF ±80% 50V	C438LR	0209731	CD 1000PF ±10% 50V	R101	0113579	CF 33Ω ±5% SRD1/6P
C171	0208635	CD 5PF ±0.25PF 50V	C439	02523312	EL 100 µF 10V	R104	0113663	CF 100KΩ ±5% SRD1/6P
C172	0244171	CD 0.01 µF ±80% 50V	C440	0209731	CD 1000PF ±10% 50V	R105	0113639	CF 10KΩ ±5% SRD1/6P
C173	0244171	CD 0.01 µF ±80% 50V	C441	0240216	CD 0.022 µF ±10% 25V	R106	0113611	CF 680Ω ±5% SRD1/6P
C174	0244173	CD 0.022 µF ±80% 50V	C442	0208686	CD 120PF ±5% 50V	R107	0113575	CF 22Ω ±5% SRD1/6P
		[for E, E(BS)]	C443	0240220	CD 0.047 µF ±10% 25V	R154	0113645	CF 18KΩ ±5% SRD1/6P
C201	0244171	CD 0.01 µF ±80% 50V	C444	0240216	CD 0.022 µF ±10% 25V	R155	0113647	CF 22KΩ ±5% SRD1/6P
C202	0244175	CD 0.047 µF ±80% 50V	C445	02528132	EL 3.3 µF 50V			[except E, E(BS)]
C203	0244173	CD 0.022 µF ±80% 50V	C446	02525212	EL 10 µF 16V	R155	0113645	CF 18KΩ ±5% SRD1/6P
C204	02523222	EL 22 µF 10V	C447LR	0209733	CD 2200PF ±10% 50V			[for E, E(BS)]
C205	0240220	CD 0.047 µF ±10% 25V	C461	02523312	EL 100 µF 10V	R156	0113643	CF 15KΩ ±5% SRD1/6P
C206	0240041	CC 470PF ±10% 50V	C462	02528132	EL 3.3 µF 50V			[except E, E(BS)]
C207	0240220	CD 0.047 µF ±10% 25V	C463	02525212	EL 10 µF 16V	R171	0113591	CF 100Ω ±5% SRD1/6P
			C464	0244175	CD 0.047 µF ±80% 50V	R172	0113675	CF 330KΩ ±5% SRD1/6P
			C482LR	02528052	EL 0.47 µF 50V			[for E, E(BS)]
			C483LR	0240224	CD 0.1 µF +10% 25V			
			C484LR	0240216	CD 0.022 µF ±10% 25V			
			C485	02523312	EL 100 µF 10V			
			C486LR	02528052	EL 0.47 µF 50V			
			C487	0209734	CD 3300PF ±10% 50V			

SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION
R173	0113605	CF 390Ω ±5% SRD1/6P [for E, E(BS)]	R449	0113615	CF 1KΩ ±5% SRD1/6P	R816LR	0113677	CF 390KΩ ±5% SRD1/6P
R201	0113591	CF 100Ω ±5% SRD1/6P	R450	0113615	CF 1KΩ ±5% SRD1/6P	R817LR	0113649	CF 27KΩ ±5% SRD1/6P
R202	0113643	CF 15KΩ ±5% SRD1/6P	R461	0113603	CF 330Ω ±5% SRD1/6P	R818LR	0113615	CF 1KΩ ±5% SRD1/6P
R203	0113663	CF 100KΩ ±5% SRD1/6P	R462	0113609	CF 560Ω ±5% SRD1/6P	R819LR	0113615	CF 1KΩ ±5% SRD1/6P
R204	0113583	CF 47Ω ±5% SRD1/6P	R463	0113639	CF 10KΩ ±5% SRD1/6P	R821LR	0113641	CF 12KΩ ±5% SRD1/6P
R205	0113639	CF 10KΩ ±5% SRD1/6P	R464	0113639	CF 10KΩ ±5% SRD1/6P	R822LR	0113639	CF 10KΩ ±5% SRD1/6P
R206	0113639	CF 10KΩ ±5% SRD1/6P	R465	0113639	CF 10KΩ ±5% SRD1/6P	R823LR	0113635	CF 6.8KΩ ±5% SRD1/6P
R207	0113639	CF 10KΩ ±5% SRD1/6P	R466	0113639	CF 10KΩ ±5% SRD1/6P	R824LR	0113633	CF 5.6KΩ ±5% SRD1/6P
R209	0113599	CF 220Ω ±5% SRD1/6P	R467	0113639	CF 10KΩ ±5% SRD1/6P	R825LR	0113637	CF 8.2KΩ ±5% SRD1/6P
			R469	0113639	CF 10KΩ ±5% SRD1/6P	R831LR	0113675	CF 330KΩ ±5% SRD1/6P
R301	0113615	CF 1KΩ ±5% SRD1/6P	R470	0113639	CF 10KΩ ±5% SRD1/6P	R832LR	0113619	CF 1.5KΩ ±5% SRD1/6P
R302	0113615	CF 1KΩ ±5% SRD1/6P	R471	0113655	CF 47KΩ ±5% SRD1/6P	R833LR	0113599	CF 220Ω ±5% SRD1/6P
R303	0113639	CF 10KΩ ±5% SRD1/6P	R472	1119509	MO 47Ω ±10% RS2B	ICs & TRANSISTORS		
R304	0113671	CF 220KΩ ±5% SRD1/6P	R474	0113639	CF 10KΩ ±5% SRD1/6P	IC101	2398201	TA7358P
R306	0113639	CF 10KΩ ±5% SRD1/6P	R475	0113647	CF 22KΩ ±5% SRD1/6P	IC201	2389511	TA7640AP
R308LR	0113627	CF 3.3KΩ ±5% SRD1/6P	R481LR	0113633	CF 5.6KΩ ±5% SRD1/6P	IC301	23010412	TA7343AP
R309LR	0113645	CF 18KΩ ±5% SRD1/6P	R482LR	0113637	CF 8.2KΩ ±5% SRD1/6P	IC401	23011912	TA7784P
R310	0113615	CF 1KΩ ±5% SRD1/6P	R483LR	0113639	CF 10KΩ ±5% SRD1/6P	IC402	23008312	μ PC4558C
R311	0113615	CF 1KΩ ±5% SRD1/6P [except E, E(BS)]	R484LR	0113651	CF 33KΩ ±5% SRD1/6P	IC501	2389521	μ PC1278H
			R485	0113639	CF 10KΩ ±5% SRD1/6P	IC531	2389521	μ PC1278H
R351	0113639	CF 10KΩ ±5% SRD1/6P	R486LR	0113629	CF 3.9KΩ ±5% SRD1/6P	IC701	23696122	BA6137
R352	0113639	CF 10KΩ ±5% SRD1/6P	R487	0113599	CF 220Ω ±5% SRD1/6P	Q171	2319083	HIT9011GH [for E, E(BS)]
R353	0113639	CF 10KΩ ±5% SRD1/6P	R488LR	0113679	CF 470KΩ ±5% SRD1/6P			
R354	0113639	CF 10KΩ ±5% SRD1/6P	R489LR	0113643	CF 15KΩ ±5% SRD1/6P	Q201	2329453	2SC945PA
R355	0113663	CF 100KΩ ±5% SRD1/6P	R490LR	0113635	CF 6.8KΩ ±5% SRD1/6P	Q202	2329582	2SA933R(R)
R356	0113647	CF 22KΩ ±5% SRD1/6P	R491LR	0113651	CF 33KΩ ±5% SRD1/6P	Q301	2329582	2SA933R(R)
R401LR	0113663	CF 100KΩ ±5% SRD1/6P	R501LR	0113643	CF 15KΩ ±5% SRD1/6P	Q431LR	2328652	2SC1740LNT(S)
R402LR	0113675	CF 330KΩ ±5% SRD1/6P	R503LR	0113641	CF 12KΩ ±5% SRD1/6P	Q432LR	2329453	2SC945PA
R403LR	0113643	CF 15KΩ ±5% SRD1/6P	R504LR	0113595	CF 150Ω ±5% SRD1/6P	Q441	2329453	2SC945PA
R404LR	0113647	CF 22KΩ ±5% SRD1/6P	R505LR	0129509	CF 2.2Ω ±5% SRD1/4P	Q461	2317803	2SD1266(P)
						Q481LR	2328652	2SC1740LNT(S)
R405LR	0113591	CF 100Ω ±5% SRD1/6P	R506LR	1119510	MO 56Ω ±10% RS2B	Q482LR	2329316	2SC1741QR
R406	0113599	CF 220Ω ±5% SRD1/6P	R507LR	0113647	CF 22KΩ ±5% SRD1/6P	Q531LR	2329316	2SC1741QR
R407LR	0113615	CF 1KΩ ±5% SRD1/6P	R508LR	0113643	CF 15KΩ ±5% SRD1/6P			
R408LR	0113615	CF 1KΩ ±5% SRD1/6P	R509LR	0113639	CF 10KΩ ±5% SRD1/6P	Q532	2329582	2SA933R(R)
R409LR	0113663	CF 100KΩ ±5% SRD1/6P	R531LR	0113651	CF 33KΩ ±5% SRD1/6P	Q661	2328652	2SC1740LNT(S)
R411LR	0113647	CF 22KΩ ±5% SRD1/6P	R532LR	0113587	CF 68Ω ±5% SRD1/6P	Q662	2328652	2SC1740LNT(S)
R412LR	0113631	CF 4.7KΩ ±5% SRD1/6P	R533LR	0113639	CF 10KΩ ±5% SRD1/6P	Q663	2328652	2SC1740LNT(S)
R421LR	0113663	CF 100KΩ ±5% SRD1/6P	R534LR	0129509	CF 2.2Ω ±5% SRD1/4P	Q664	2329582	2SA933R(R)
R423LR	0113661	CF 82KΩ ±5% SRD1/6P	R536LR	0113595	CF 150Ω ±5% SRD1/6P	Q801LR	2328652	2SC1740LNT(S)
R424LR	0113663	CF 100KΩ ±5% SRD1/6P	R537	0113297	CF 680Ω ±5% SRD1/2P			
						DIODES		
R425LR	0113615	CF 1KΩ ±5% SRD1/6P	R538	0113609	CF 560Ω ±5% SRD1/6P	D101	2397421	1SS133T
R426LR	0113655	CF 47KΩ ±5% SRD1/6P	R540	0113635	CF 6.8KΩ ±5% SRD1/6P	D102	2397421	1SS133T
R427LR	0113615	CF 1KΩ ±5% SRD1/6P	R551	0113605	CF 390Ω ±5% SRD1/6P	D103	23380312	1S2790
R428LR	0113641	CF 12KΩ ±5% SRD1/6P	R671	0113655	CF 47KΩ ±5% SRD1/6P	D201	2397421	1SS133T
R431LR	0113627	CF 3.3KΩ ±5% SRD1/6P	R672	0113639	CF 10KΩ ±5% SRD1/6P	D351	2397421	1SS133T
R432LR	0113637	CF 8.2KΩ ±5% SRD1/6P	R673	0113665	CF 120KΩ ±5% SRD1/6P	D352	2397421	1SS133T
R433LR	01136852	CF 820KΩ ±5% SRD1/6P	R674	0113639	CF 10KΩ ±5% SRD1/6P	D353	2397421	1SS133T
R434LR	0113615	CF 1KΩ ±5% SRD1/6P	R675	0113637	CF 8.2KΩ ±5% SRD1/6P	D354	2397421	1SS133T
R436LR	0113589	CF 82Ω ±5% SRD1/6P	R676	0113633	CF 5.6KΩ ±5% SRD1/6P	D355	2397421	1SS133T
R437LR	0113639	CF 10KΩ ±5% SRD1/6P	R677	0113641	CF 12KΩ ±5% SRD1/6P	D356	2397421	1SS133T
R438LR	0113619	CF 1.5KΩ ±5% SRD1/6P	R701	0113639	CF 10KΩ ±5% SRD1/6P	D357	2397421	1SS133T
R439	0113637	CF 8.2KΩ ±5% SRD1/6P	R702	0113605	CF 390Ω ±5% SRD1/6P	D358	2397421	1SS133T
R440LR	0113639	CF 10KΩ ±5% SRD1/6P	R741	0129579	CF 560Ω ±5% SRD1/4P	D359	2397421	1SS133T
R441	0113599	CF 220Ω ±5% SRD1/6P	R742	0129577	CF 470Ω ±5% SRD1/4P	D360	2397421	1SS133T
R442	0129567	CF 180Ω ±5% SRD1/4P	R743	0129579	CF 560Ω ±5% SRD1/4P	D361	2397421	1SS133T
R443	0129571	CF 270Ω ±5% SRD1/4P	R810	0129561	CF 100Ω ±5% SRD1/4P	D362	2397421	1SS133T
R444	0113563	CF 6.8Ω ±5% SRD1/6P	R811LR	0113641	CF 12KΩ ±5% SRD1/6P	D363	2397421	1SS133T
R445	0113647	CF 22KΩ ±5% SRD1/6P	R812LR	0113639	CF 10KΩ ±5% SRD1/6P	D364	2397421	1SS133T
R446	0113603	CF 330Ω ±5% SRD1/6P	R813LR	0113633	CF 5.6KΩ ±5% SRD1/6P	D462	2397421	1SS133T
R447	0113623	CF 2.2KΩ ±5% SRD1/6P	R814LR	0113633	CF 5.6KΩ ±5% SRD1/6P			
R448	0113631	CF 4.7KΩ ±5% SRD1/6P	R815LR	0113633	CF 5.6KΩ ±5% SRD1/6P			

SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION
D463	2397421	1SS133T	L171	2137684	Choke coil	J401 J571 J601	3950522	LED holder
D464	2397421	1SS133T	L431LR	2227991	Choke coil		2678201	2P Pin jack
D501	2397421	1SS133T	L661	2227352	Choke coil		2678781	Stereo jack
D531	2397421	1SS133T	T101	2154962	FM IF transformer		2678881	DC jack [for W, W(UN)]
D601	2398062	1N4001	T201	2154952	AM IF transformer			
D602	2398062	1N4001	T202	2154964	FM IF transformer			
D603	2398062	1N4001	T203	2154951	AM IF transformer			
D604	2398062	1N4001	T441	2137651	REC OSC transformer			
D605	2398062	1N4001 [for W, W(UN)]	△T601	2267481	Power transformer [for E]			
ZD461	23375272	HZ9C1	△	2267482	Power transformer [for E(BS), AU]			
ZD741	23375872	HZ5C1	△	2267483	Power transformer [for H, HC]			
D381	2397611	LN242RPH-LF	△	2267484	Power transformer [for W, W(UN)]			
D701	23390312	SLR-34UR5	MISCELLANEOUS					
D702	23390312	SLR-34UR5	CP101	2137191	FM band pass filter			
D703	23390312	SLR-34UR5	CT151	0283130	Capacitor semi variable [for E, E(BS)]			
D704	23390312	SLR-34UR5		0283557	Trimmer [except E, E(BS)]			
D705	23390312	SLR-34UR5	CT154	0283557	Trimmer [for E, E(BS)]			
D731	23390312	SLR-34UR5		0283130	Capacitor semi variable [except E, E(BS)]			
D732	23390312	SLR-34UR5	CT156	0282148	Capacitor semi variable [for E, E(BS)]			
D733	23390312	SLR-34UR5						
D734	23390312	SLR-34UR5	CV101	0282441	Capacitor variable			
D735	23390312	SLR-34UR5	△F601	2727727	Fuse T250mA 250V [for W, W(UN)]			
D741	23390312	SLR-34UR5	△	2728034	Fuse 400mA 250V [for H, HC]			
D742	23390342	SLR-34MG5F	△	2727728	Fuse T160mA 250V [for E, E(BS), AU]			
D743	23390342	SLR-34MG5F	△F602	2727964	Fuse 2.5A 125V [for H, HC]			
VARIABLE RESISTORS			△	2728076	Fuse T2A [except H, HC]			
R300	0189331	5kΩ-(B) (FM MPX ADJ.)	△F604	2728034	Fuse 400mA 250V [for H, HC]			
R661	0158924	5kΩ-(B) (TAPE SPEED ADJ.)	△	2727721	Fuse T400mA 250V [except H, HC]			
R801	0189284	100kΩ-(B) (G.E. CONTROL)	P602	2689463	2P terminal			
R802	0189284	100kΩ-(B) (G.E. CONTROL)	MF201	2135321	Ceramic filter			
R803	0189284	100kΩ-(B) (G.E. CONTROL)	S101	2628531	Lever switch (BAND SELECT)			
R804	0189284	100kΩ-(B) (G.E. CONTROL)	S301	2629369	Lever switch (FM MODE/DUBBING SPEED SELECT)			
R805	0189284	100kΩ-(B) (G.E. CONTROL)	S401	2628531	Lever switch (FUNCTION SELECT)			
R851	0189131	10kΩ-(A) (VOLUME CONTROL)	S402	2628523	Slide switch (REC/PLAY SELECT)			
COILS & TRANSFORMERS			S403	2629369	Lever switch (TAPE SELECT)			
L001	2227352	Peaking coil	S441	2629261	Slide switch (RIF)			
L101	2137683	FM RF coil	S551	2600240	Push switch (SURROUND/3D)			
L102	2135274	FM RF coil	△S601	2628671	Slide switch (AC/DC SELECT)			
L151	2137662	SW ANT coil [for E, E(BS)]	△S602	2628294	Rotary switch (VOLTAGE SELECT) [for W, W(UN)]			
	2137821	SW ANT coil [except E, E(BS)]	△S651	2639869	AC switch (OPERATE)			
L152	2757994	Ferrite antenna [for E, E(BS)]		4567410	3φ x 4 DT screw (IC501, 531)			
	2757982	Ferrite antenna [except E, E(BS)]		3809041	LED holder			
L154	2137671	SW OSC coil [for E, E(BS)]						
	2137672	SW OSC coil [except E, E(BS)]						
L155	2137631	MW OSC coil [for E, E(BS)]						
	2137633	SW OSC coil [except E, E(BS)]						
L156	2137642	LW OSC coil [for E, E(BS)]						
	2137631	MW OSC coil [except E, E(BS)]						

SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION
CABINET						CASSETTE CHASSIS [for E, E(BS)]		
1	3808871	Button (P)	41	4578976	3 ϕ x 20 BT screw	1	48189922	Switch plate
2	3808881	Button (SD)	42	4577832	3 ϕ x 10 BT screw	2	4823651	REC button lever
3	3808882	Button (SD)	43	2737381	Microphone	3	4839371	PAUSE button actuator assy
4	3808891	SW knob	44	2589243	TN-21W mecha	4	4823661	PLAY button lever
5	3808901	VOL. knob		2589252	TN-521Z mecha	5	4823671	RWD button lever
6	3808911	REV piece			[except E, E(BS)]	6	4823681	FF button lever
7	4577816	BT screw (3 ϕ x 20)	47	48195382	Button lever shaft	7	4823691	STOP button lever
8	3691425	3 ϕ x 25 BT screw	48	48190722	2 ϕ x 7 screw	8	4823701	PAUSE button lever
9	4005891	Front case assy	49	48196182	2 ϕ x 9 screw	9	48189902	RWD lever
11	4578972	3 ϕ x 10 BT screw			[for E, E(BS)]	10	48191322	PAUSE lever spring
12	8699410	3 ϕ x 10 BT screw	52	3809021	Cassette button	11	48191332	PAUSE stopper
13	2404121	Speaker 16	53	3809031	Cassette button (PL)	12	48202142	Button lever spring
14	2404111	Speaker 12	 54	2702945	Power supply cord	13	4833451	PAUSE lever
15	4005911	Top panel assy			[for HC]	14	48202152	Sub chassis
		[for E, E(BS)]	 2706241	Power supply cord	[for H]	15	48190072	Button lever spring
	4005912	Top panel assy	 2706251	Power supply cord	[for AU]	16	48191002	Button lever spring
		[for W, W(UN), AU]	 2706264	Power supply cord	[for W, W(UN)]	17	4833452	Record plate
	4005913	Top panel assy				18	48190082	Actuator spring
		[for H, HC]	 2707709	Power supply cord	[for E]	19	48190092	Auto lever
16	4005881	Cassette lid assy	 2717902	Power supply cord	[for E(BS)]	20	48190002	Auto lever spring
17	4005882	Cassette lid assy				21	48202172	PLAY button lever spring
		[for E, E(BS)]	55	3808991	Handle arm	22	48261012	Leaf switch
	4005883	Cassette lid assy	56	3809001	Handle piece	23	48202182	Switch actuator spring
		[except E, E(BS)]	for ACCESSORIES			24	48202192	Head panel
18	3934271	8 roller	 26679222	Siemens plug		25	48190142	Head base
19	4577661	Roller pin			[for W, W(UN)]	26	4832412	Sensing plate assy
20	4005901	TUN holder assy				27	48202212	Head panel arm spring
21	3808971	Tuning shaft				28	48190182	MG arm
22	3295294	Tuning knob				29	48190062	PR stopper
23	3340312	Ring spring				30	48190172	Spring
24	3977801	Pointer				31	48325222	Screw
25	3348702	Pulley				32	48202232	Pressure roller arm spring
26	3340321	Spring M				33	48190452	Screw
27	3907261	Damper				34	48202252	RF pulley arm spring
28	3368932	EJ spring				35	48202262	RF arm collar screw
29	2757901	ROD. antenna				36	4850591	RF pulley arm assy
30	4469401	R antenna bracket				37	48202272	Belt
31	4567433	3 ϕ x 10 DT bind screw				38	4839379	FF gear
32	4005921	Rear case assy				39	4850592	Flywheel assy
		[for E]				40	48190202	TG plate spring
	4005922	Rear case assy				41	4839378	Take up roller gear
		[for E(BS)]				42	4842431	Supply reel assy
	4005923	Rear case assy				43	4839381	Take up reel assy
		[for W]				44	4832421	Record safety lever
	4005924	Rear case assy				45	4839382	Back tension spring
		[for W(UN)]				46	4839379	Back tension spring
	4005925	Rear case assy				47	4819039	Motor rubber
		[for AU]				48	48195332	Motor collar screw
	4005926	Rear case assy				49	48190432	Eject slide lever
		[for H]				50	48190442	Eject slide lever spring
	4005927	Rear case assy				51	4833457	Belt
		[for HC]				54	4850598	Motor assy
33	3369849	Spring A				55	2555671	Record playback head
34	4436666	Terminal				56	4848051	Erase head
35	3369781	Battery spring				57	48190632	Tapping screw (2 ϕ x 3)
36	3973524	Battery lid assy				58	48190682	Tapping screw (2 ϕ x 4)
37	4476681	REC lever				59	48196072	Bind tapping screw (2 ϕ x 5)
38	4476691	REC lever				60	48196112	Screw (2 ϕ x 6)
39	3808981	Handle						
40	3809011	SW arm						

SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION
61	48190602	Screw (2 ϕ x 7)	35	4853683	Relay plate	99	4823701	PAUSE button lever
62	48196002	Azimuth screw	36	4853684	FF SW Plate	100	48189902	RWD lever
63	48191862	Screw (2 ϕ x 3)	37	4853685	R.C. spring	101	4833451	PAUSE lever
64	48191912	Tapping screw (2 ϕ x 6)	38	4853686	Auto control arm (F)	102	48191322	PAUSE lever spring
65	4839375	Flywheel assy	39	4853687	Control collar	103	48191332	PAUSE stopper
66	4850093	T gear plate assy	40	4853688	Auto control arm (R)	104	48191002	Button lever spring
67	48190782	Washer (1.55 ϕ x 3.8 x 0.5)	41	4853689	Head panel	105	48190072	Button lever spring
68	4832432	Washer (2.05 ϕ x 4 x 0.5)	43	4853691	R.C. plate spring	106	48202172	PLAY button lever spring
69	4848953	Washer (1.2 ϕ x 3.7 x 0.4)	44	4853692	H.P. collar	107	4842422	Record spring board
71	48192322	Button lever shaft	45	4853693	Tape guide	108	48190082	Actuator spring
72	48190722	Screw (2 ϕ x 7)	46	4853694	Head spring plate	109	48190092	Auto lever
73	4839372	Pinch roller arm assy	47	2557632	P. head	110	48190002	Auto lever spring
74	4831610	Metal guide	48	4842401	Slide switch	111	48202142	Button lever spring
75	4833463	Lever	49	4853696	Switch bracket	112	48191082	Leaf switch
76	4833464	Lever	50	4853697	Pinch roller spring (F)	113	48202192	Head panel
77	4833465	Special screw	51	4853698	Pinch roller spring (R)	114	4842423	Sensing plate assy
78	4833467	Spring	52	4853699	Pinch roller (F) assy	115	4832522	Screw
79	4850596	Leaf switch	53	4853690	Pinch roller (R) assy	116	48202212	Head panel spring
80	4833460	Collar (B)	55	4853702	Reel assy	117	48190142	Head base
81	4833472	Tapping screw (2 ϕ x 6)	56	4853703	Leaf switch	118	48190062	PR stopper
82	4819036	Pack spring	57	48191952	Tapping screw (2 ϕ x 5)	119	48190452	Screw
83	4850594	Camera screw (1.7 ϕ x 3)	58	4853704	FF gear arm (F) assy	120	48190172	Spring
84	48191952	Tapping screw (2 ϕ x 5)	59	4853705	FF gear	121	4839372	Pinch roller arm assy
85	2789577	Counter	60	4853706	FF gear arm (R) assy	122	4842424	Pinch roller spring
86	4853736	C tight screw (2 ϕ x 5)	61	4853707	FF gear arm collar	123	4831610	Metal guide
87	4856341	Leaf switch	62	4853708	FF gear arm spring (F)	124	4853728	RF pulley arm assy
CASSETTE CHASSIS [except E, E(BS)]			63	4853709	Flywheel assy	125	48202252	RF pulley arm spring
1	48191312	PAUSE lever	64	4853700	Main belt	126	48202262	RF arm collar screw
2	48191322	PAUSE lever spring	65	4853712	P. kick lever	127	48202272	Belt
3	4842395	Pack spring plate	66	4833463	Lever	128	4850092	Flywheel
4	4853652	Auto lever (F)	67	4833466	Special screw	129	4842429	T gear plate assy
5	4853653	Auto lever spring (F)	68	4842404	Motor rubber	130	4839378	Take up roller gear
6	4853654	Spring stopper	69	48195332	Motor collar screw	131	48190202	TG plate spring
7	4853655	Auto lever (R)	70	4853713	Anti vibration felt	132	4839379	FF gear
8	4853656	Auto lever spring (R)	71	4856672	Motor pulley assy	133	4842420	Back tension spring
9	4853657	Eject slide lever	72	4853715	P. kick lever spring	134	4842431	Supply reel assy
10	4853658	Eject slide lever spring	73	4853716	Lock actuator spring	135	4853729	Take up reel assy
11	4833465	Special screw	74	4853717	SW actuator spring	136	4832421	Record safety lever
12	4853650	Turn over arm	75	4853718	Main belt	137	4839382	Back tension spring
13	4853661	Turn over spring	76	4853719	C tapping screw (2 ϕ x 3)	138	48190432	Eject slide lever
14	4853662	Button base ass'y	77	48191912	Tapping screw (2 ϕ x 6)	139	48190442	Eject slide lever spring
15	4853663	T gear arm (F) assy	78	4842443	Washer (2.1 ϕ x 5 x 0.5)	140	4842433	Bracket
16	4853664	T gear arm (F) spring	79	4853710	Screw (2 ϕ x 6)	141	2555671	Record playback head
17	4853665	T cam gear (F)	80	4853721	Tapping screw (1.7 ϕ x 4)	142	4848051	Erase head
18	4853666	T gear arm (R) assy	81	4853722	Screw (2 ϕ x 4.5)	143	48190182	MG arm
19	4853667	T gear arm (R) spring	82	4842414	Washer (2 ϕ x 3.5 x 0.3)	144	48202182	Switch actuator spring
20	4853668	T cam gear (R)	83	4842430	Washer (2.1 ϕ x 3 x 0.3)	145	4842434	Camera tapping screw (2 ϕ x 3.5)
21	4853669	Slide plate	84	4853723	Washer (1.45 ϕ x 4 x 0.5)	146	48190782	Washer
23	4853671	Lock release spring	85	48190682	Tapping screw (2 ϕ x 4)	147	48191862	Screw (2 ϕ x 3)
25	4853673	Mode button lever (S)	86	4842412	Tapping screw (1.7 ϕ x 2.5)	148	48190682	Tapping screw (2 ϕ x 4)
26	4853674	Button lever spring	87	4842444	Washer (1.2 ϕ x 3 x 0.25)	149	48196072	Bind tapping screw (2 ϕ x 5)
27	4853675	PLAY button lever	88	4853724	Tapping screw (1.7 ϕ x 3)	150	48196112	Screw (2 ϕ x 6)
28	4853676	FF button lever R (S)	89	48190772	Washer (1.2 ϕ x 3 x 0.4)	151	48190602	Screw (2 ϕ x 7)
29	4853677	FF button lever spring	90	4853725	Washer (3 ϕ x 8.5 x 0.13)	152	48196002	Azimuth screw
30	4853678	FF button lever F (S)	91	4853726	Tapping screw (1.7 ϕ x 8)	153	4832431	Washer (2.05 ϕ x 4 x 0.5)
31	4853679	STOP button lever (S)	92	4853727	Switch actuator	155	4853732	Button lever spring (P)
32	4853670	Program button lever (S)	93	4839371	Push button actuator assy	156	4853733	RC arm
33	4853681	Pull arm spring	94	4823651	REC button lever	158	4853734	Control arm
34	4853682	STOP button lever spring	95	4823661	PLAY button lever	159	4856341	Leaf switch
			96	4823671	RWD button lever	160	4853736	C tight screw (2 ϕ x 5)
			97	4823681	FF button lever	161	4842428	Reel base assy
			98	4823691	STOP button lever			



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