

# HITACHI

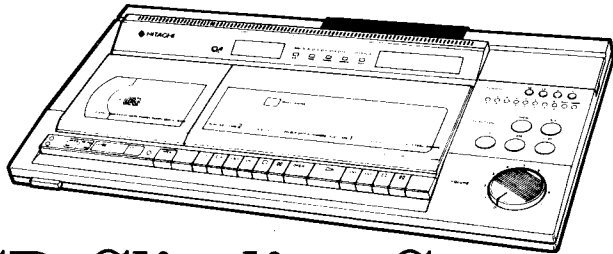
## SERVICE MANUAL

TY

No. 552 EF

### MX-W30

(US,CS,ES,VS,BK,SA,KS,ZS,EW)



## CD Slimline System

except BK

TAPE1: TN-21H-981 (PLAY)

TAPE2: TN-21H-980 (REC/PLAY)

for BK

TAPE1: TN-21H-581 (PLAY)

TAPE2: TN-21H-580 (REC/PLAY)

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#### CAUTION

#### DANGER

Invisible laser radiation when open and interlocks failed or defeated. AVOID DIRECT EXPOSURE TO BEAM.

#### GEFAHR

Unsichtbare Laser-Strahlung wenn Interlock (Blockierung) funktionsuntüchtig oder abgeschaltet.

UNMITTELBAREN KONTAKT MIT DEM STRAHL UNBEDIGT VERMEIDEN.

#### DANGER

Faire très attention aux radiations émises par le faisceau laser invisible au défaillance du verrouillage. NE JAMAIS S'EXPOSER DIRECTEMENT AU FAISCEAU.

#### VARNING

När apparaten öppnats och skyddsanordningen eller satts ur funktion förekommer osynlig laser strålning. UNDVIK DIREKT BESTRÅLNING.

#### ADVARSEL

Når apparatet åbnes og beskyttelsesanordningen ikke virker eller sættes un af funktion, forekommer der usynlig laserstråling. UNDGÅ DIREKTE BESTRÅLING.

#### ADVERSEL

Når denne delen er åpen som følge av at låsen er utkoplet eller ikke fungerer, eksisterer det usynlig laserstråling. UNNGÅ Å BLI UTSATT FOR DIREKTE BESTRÅLING!

#### VAROITUS

Laite lähettää näkymätöntä lasersäteilyä, kun se avataan ja kun sisäiset turvalukot eivät toimi. VARO JOUTUMASTA ALTTIIKSI SÄTEILYLLE.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

## STEREO CASSETTE RECEIVER/COMPACT DISC PLAYER

May 1987

TOYOKAWA WORKS

**6. FL Meter P.W.B. (Fig. 5)**

Remove two screws ⑦ and eight connectors ③.

**7. Cassette Chassis (Fig. 6)**

Remove eight screws ⑧ and four connectors.

**8. CD Function Switch P.W.B. (Fig. 7)**

Remove one screw ⑨ then, after removing the CD Operating Button, remove three screws ⑩.

**9. Power Switch P.W.B. (Fig. 8)**

Remove one screw ⑪.

**10. Laser/Open Switch P.W.B. (Fig. 8)**

Remove two screws ⑫, one screw ⑬ and two connectors ④.

**11. CD Unit Mechanism (Fig. 8)**

Remove three screws ⑭, two connectors ⑤ and the flexible P.W.B..

**12. PX P.W.B. (Fig. 8, 9, 10)**

After removing the Laser/Open Switch P.W.B., the P.W.B. Holder and the CD Unit Mechanism (Fig. 8), remove two screws ⑮, two connectors ⑥ and pull off in the direction of the arrows.

**13. Main P.W.B. (Fig. 10)**

Remove twelve screws ⑯ and five screws ⑰.

**DÉMONTAGE****1. Boîtier supérieur (Fig. 1, 2)**

Enlever dix vis ① et sept vis ②. (Fig. 1) Enlever l'interrupteur d'alimentation et le bouton de volume. Ouvrir la porte CD et la porte de cassette en appuyant sur le touche d'ouverture de porte CD et la touche d'ouverture de la porte de cassette. Puis, enlever le boîtier supérieur en le soulevant vers le haut. (Fig. 2)

**2. Porte CD (Fig. 2, 3)**

Enlever deux vis ③ et la rondelle. Puis, appuyer sur les parties A, B dans la direction des flèches (Fig. 2) tout en enlevant l'élément d'arrêt que s'enlève en le tirant vers le haut. Alors, le ressort d'ouverture de porte CD et le fil métallique d'ouverture de port CD pourront également s'enlever.

**3. Porte de cassette (Fig. 2, 3)**

Enlever deux vis ④ et deux vis ⑤, ainsi que les éléments d'amortissement et d'arrêt L et R. Puis, appuyer sur les parties C, D dans la direction de la flèche tout en enlevant l'élément d'arrêt en le tirant vers le haut. Alors, le ressort d'ouverture de porte de cassette et le fil métallique d'ouverture de porte de cassette pourront également s'enlever.

**4. Bride de fixation (Fig. 4) (Pour ne pas casser la pince ① de la porte CD.)**

- (1) Tirer la bride vers le haut et, tout en tirant le bas de la bride vers vous, appuyer sur la pince ① dans la direction de la flèche ① et dégager la pince ① dans la direction ②. (Veiller à ne pas appuyer trop fort sur la pince ① pour ne pas la casser.)
- (2) Une fois que la bride a été passée au travers de la section pince ③, la bride est poussée vers le bas et se dégage. (Si la bride revient lorsque l'on appuie dessus légèrement dans la direction ④, cela signifie qu'elle n'est pas passée au travers de la section pince ③. Si tel est le cas, recommencer les procédures (1) et (2).
- (3) Pour insérer la bride, recommencer les procédures (1) et (2) à l'envers. Lorsque l'on appuie légèrement sur la pince ① dans la direction de la flèche ①, la bride peut être insérée.

**5. Plaquette des commutateurs de fonction (Fig. 5)**

Enlever une vis ⑥, quatre connecteurs ① et trois connecteurs ②. (Connecteurs ② sont sauf BK.)

**6. Plaquette du compteur FL (Fig. 5)**

Enlever deux vis ⑦ et huit connecteurs ③.

**7. Châssis de cassette (Fig. 6)**

Enlever huit vis ⑧ et quatre connecteurs

**8. Plaquette de commutateurs de fonction CD (Fig. 7)**

Enlever une vis ⑨ puis, après avoir enlevé les touches de fonctionnement CD, enlever trois vis ⑩.

**9. Plaquette de l'interrupteur d'alimentation (Fig. 8)**

Enlever une vis ⑪.

**10. Plaquette du commutateur laser/ouvrir (Fig. 8)**

Enlever deux vis ⑫, une vis ⑬ et deux connecteurs ④.

**11. Mécanisme d'unité CD (Fig. 8)**

Enlever trois vis ⑭, deux connecteurs ⑤ et la plaquette flexible.

**12. Plaquette PX (Fig. 8, 9, 10)**

Après avoir enlevé la plaquette laser/ouvrir, le support de plaque de base et le mécanisme d'unité CD (Fig. 8), enlever deux vis ⑮, deux connecteurs ⑥ et tirer dans la direction des flèches.

**13. Plaquette principale (Fig. 10)**

Enlever douze vis ⑯ et cinq vis ⑰.

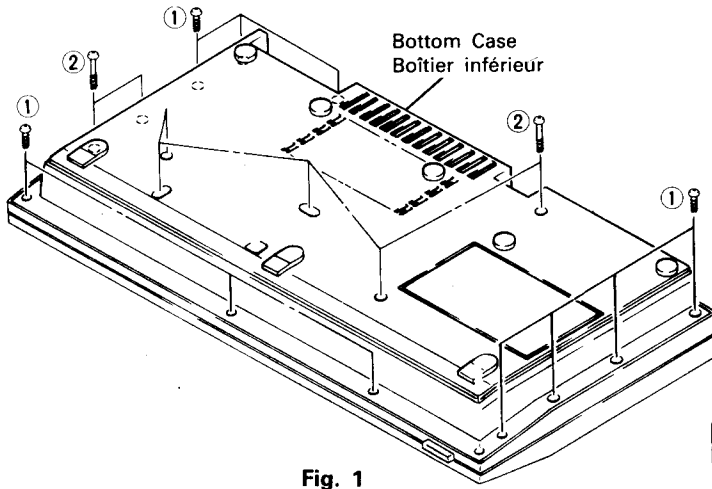


Fig. 1

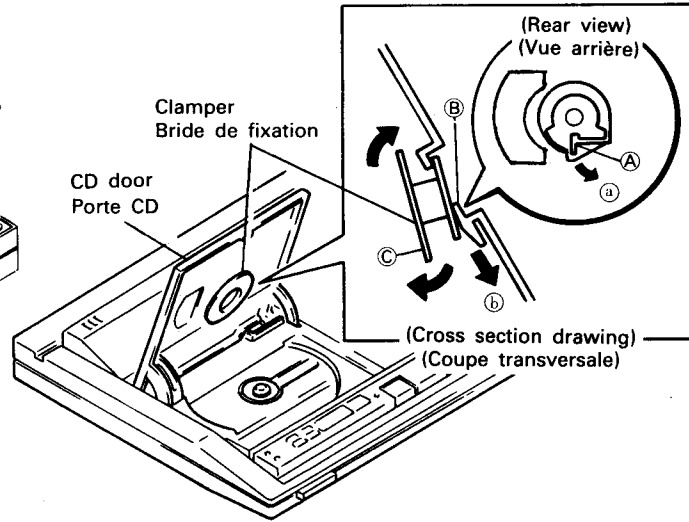


Fig. 4

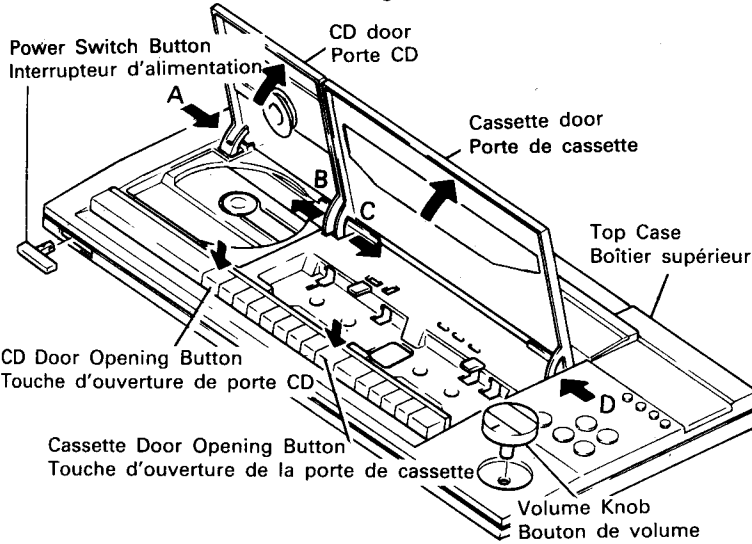


Fig. 2

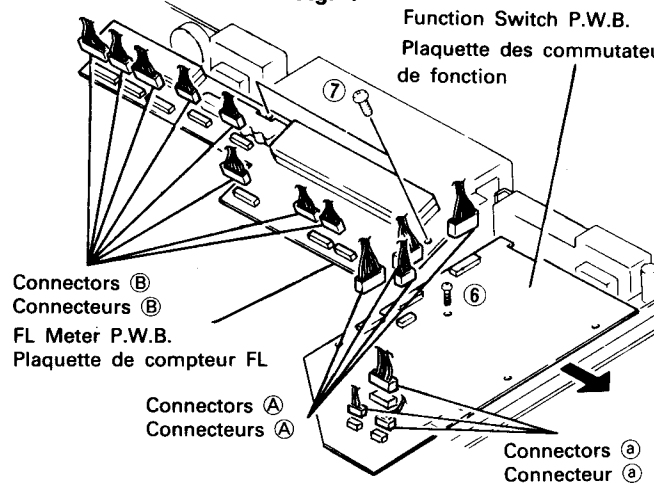


Fig. 5

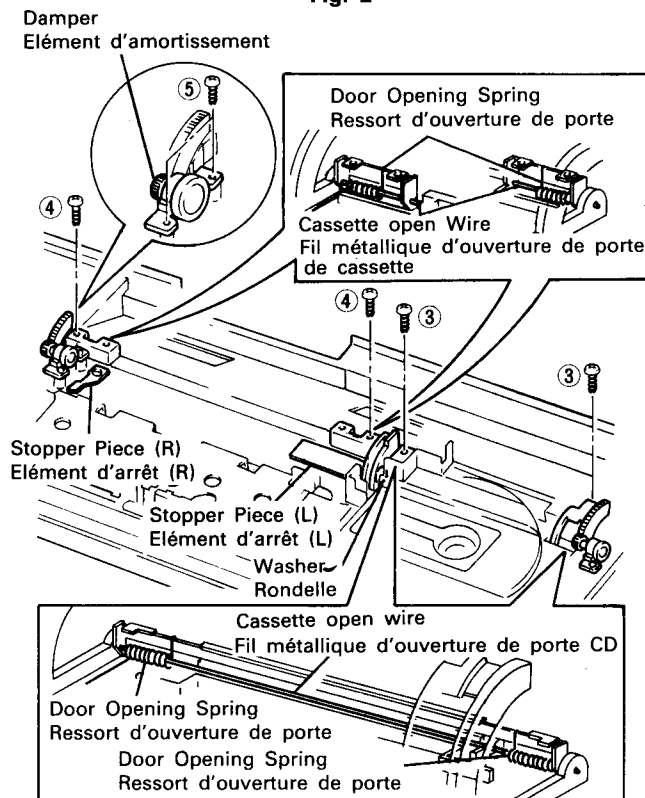


Fig. 3

(Back side of Top case)  
(Arrière du boîtier supérieur)

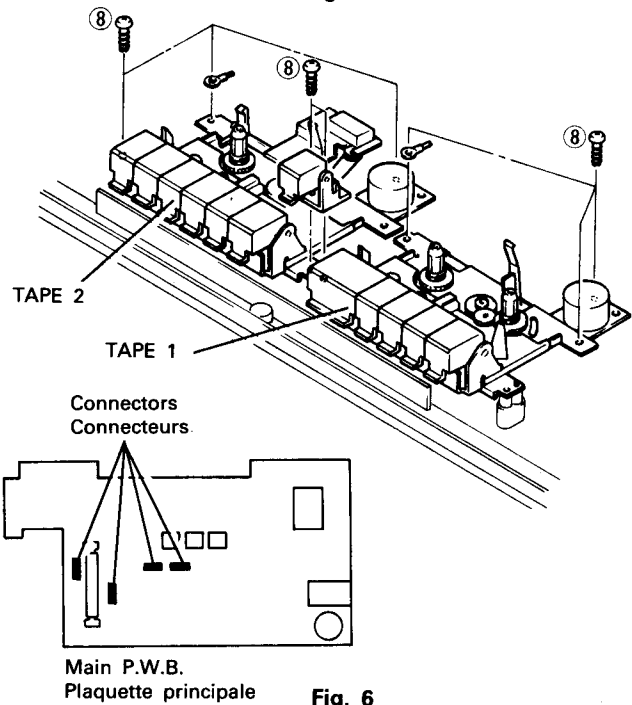
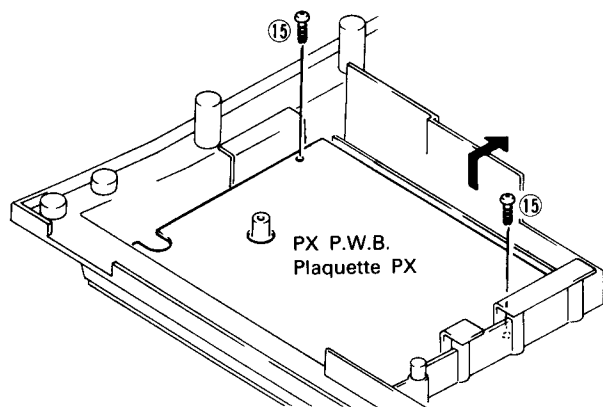
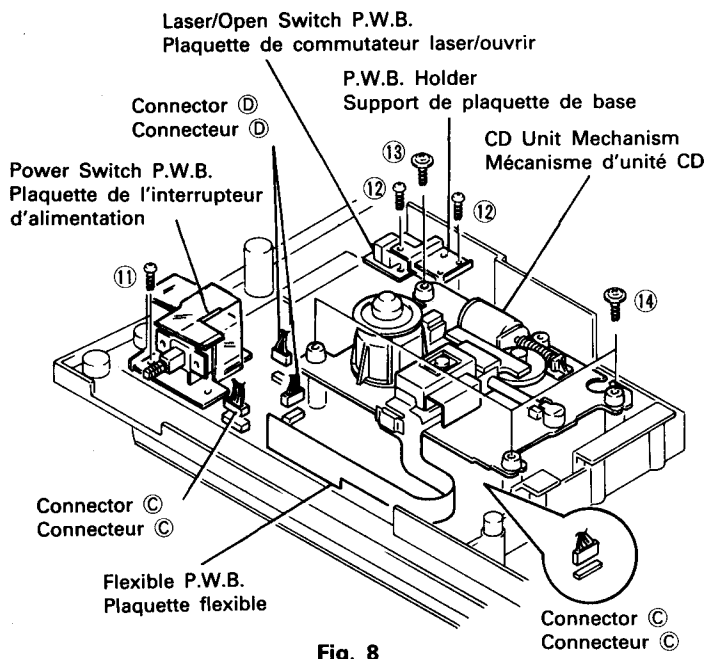
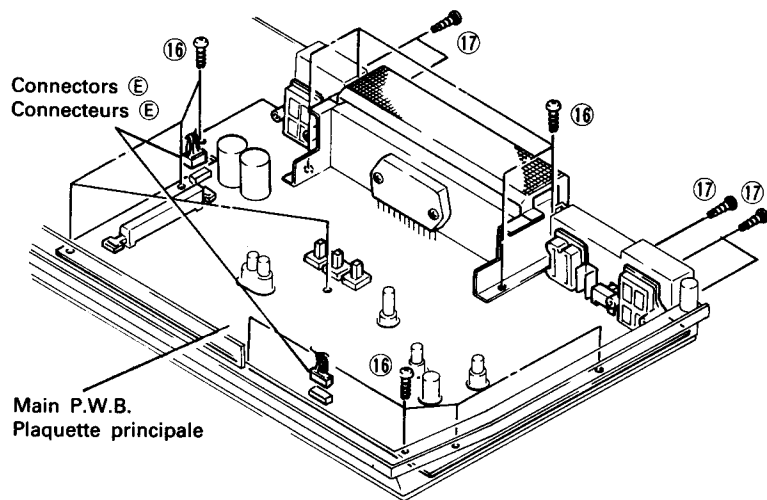
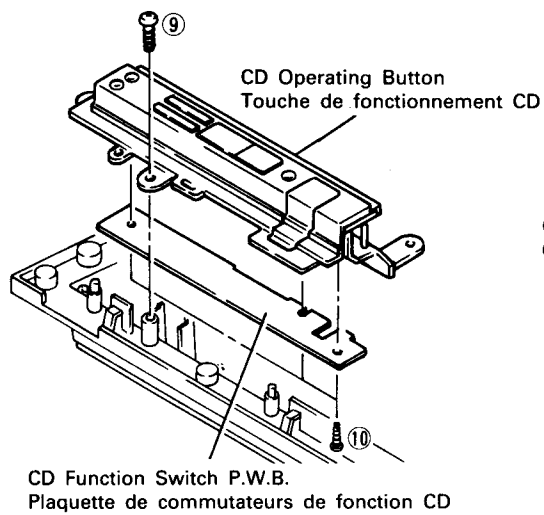


Fig. 6



#### 14. Checking the Object Lens. (Fig. 11)

Make sure that no dust or grime gets on the object lens of the lens actuator. After a long period of use it is possible for this lens to get dirty or dusty. In such a case try to clean the front surface of the lens with a cotton applicator.

#### 15. Laser Malfunction Check

The laser normally operates on a current of 40 — 80mA. If the laser circuit is measured and shows a current of 100 mA or more it may be assumed that the laser is defective.

#### 16. Things to Keep In Mind During Servicing (Fig. 12)

##### (1) Regarding the Semiconductor Laser

The semiconductor laser is extremely sensitive to electrostatic disruption and surge current. Be very careful not to allow the hand or any tools ever to come into contact with the terminals of either the laser or the flexible P.W.B..

Furthermore, the Current-Light Intensity Characteristic once a certain amperage threshold is exceeded, rises sharply (as can be seen in Fig. 12). This current threshold is slightly different for each laser unit. Consequently, during operations such as the replacement of the Unit Mechanism Assembly, when setting the intensity of the laser be sure to turn the Semi-variable Resistor R905 as far to the right as it will go to set it off once, and then raise the current to the level which is specified.

##### (2) Handling of the Unit Mechanism Assembly (Fig. 13)

When handling the Pickup Mechanism Assembly and the Unit Mechanism Assembly use a Ground Ring of the kind pictured in Fig. 13.

(A ground wire can be made with ordinary lead wire.)

##### (3) Precautions During Replacement of Parts.

- 1) Protective sheets (against static electricity) are stuck to the service parts of the Unit Mechanism. Never remove these sheets under any circumstances until assembly is completed.
- 2) If high temperature is applied to the motor lead wire terminal, for example by soldering, this may cause damage to the motor.
- 3) Make sure that screws are set in tightly. If screws are loose, this may lead to defective disc tracking performance.
- 4) When installing the DC Motor Assembly, (Slide Motor) be careful not to damage the worm gear. Such damage will become a source of noise. After installation, check the play between the worm gear and the transmission gear. If there is no play move the DC Motor Assembly outward.

5) The DC Motor (D2) and the Turntable are replaced in the following manner:

- (1) Lift the turntable off perpendicularly to the Unit Plate.
- (2) When attaching the turntable, adjust the height using the Height Adjustment Jig (Fig. 15). At this time avoid placing undue lateral stress on the shaft of the DC Motor (D2).
- (3) During the overhauling of the DC Motor (D2), do not apply excessive force in the direction B. If the C portion of the Unit Plate is deformed this could cause eye-pattern deterioration. (Fig. 16)

NOTE: Once the Turntable has been Removed, Do Not Use It Again.

##### 6) Lead Bar Check

If the lead bar is loose interference with the disc tracking function may result. Therefore check to make sure that the lead bar does not move in the direction indicated by D. If it is found to move, correct position of the Bar Plate (B) by bending in direction E with pliers, then reassemble. (Fig. 17)

7) Since the Flexible P.W.B. can be cut easily make sure not to use excessive force when servicing the Unit Mechanism Assembly (replacing parts). Ground the flexible P.W.B. after it is removed by clamping it with a metal clamp or similar metal object. (Fig. 18)

#### 17. Safety Devices (Fig. 19)

This equipment has a safety device built in to the disc cover which automatically cuts off laser light as soon as the cover is opened. Be careful not to stick pins or other foreign objects into this area. If laser light comes out accidentally, this is very dangerous.

#### 14. Vérification de la lentille optique (Fig. 11)

S'assurer qu'il n'y a pas de poussière ou de saletés sur l'actionneur de lentille de la lentille optique. Après une longue durée d'utilisation, il est possible que la lentille soit sale. Si tel est le cas, nettoyer la surface de la lentille à l'aide d'un coton-tige.

#### 15. Vérification du fonctionnement du laser

Le laser fonctionne normalement sur un courant de 40 – 80 mA. Si le circuit laser est mesuré et indique un courant de 100 mA ou plus, on peut en déduire que le laser ne fonctionne pas correctement.

#### 16. Points importants lors de l'entretien (Fig. 12)

##### (1) En ce qui concerne le laser à semiconducteur

Le laser à semiconducteur est très sensible aux perturbations électrostatiques et au courant de choc. Bien veiller à ce que ni vos mains ni aucun outil ne viennent en contact avec les bornes du laser ou de la plaquette flexible.

De plus, les caractéristiques d'intensité courant-lumière augmentent considérablement, une fois un certain seuil d'ampérage atteint (comme indiqué sur la Fig. 12). Ce seuil de courant varie légèrement selon l'unité laser. En conséquence, lors d'opérations telles que le remplacement de l'ensemble du mécanisme d'unité, au moment du réglage de l'intensité du laser, bien veiller à tourner la résistance semivariable R905 à fond à droite, puis augmenter le courant au niveau spécifié.

##### (2) Maniement de l'ensemble du mécanisme de l'unité (Fig. 13)

Lors du maniement de l'ensemble du mécanisme de la tête de lecture et de l'ensemble du mécanisme de l'unité, utiliser une bague de mise à la terre du type de celui illustré sur la Fig. 13.

(Un fil de masse peut être fait avec du fil conducteur ordinaire.)

##### (3) Précautions lors du remplacement de pièces

- 1) Des films protecteurs sont collés aux pièces d'entretien du mécanisme de l'unité. Ne jamais enlever ces films jusqu'à ce que l'assemblage soit terminé.
- 2) Si une température élevée est appliquée sur la borne du fil conducteur de moteur - par exemple, par soudage - cela peut provoquer des dommages au moteur.
- 3) Veiller à ce que les vis soit bien serrées. Si les vis ne sont pas bien serrées, cela peut provoquer des erreurs de lecture de piste du disque.
- 4) Lors de la pose de l'ensemble moteur CC, veiller à ne pas endommager la vis sans fin, car cela pourrait être source de bruit. Après la pose, vérifier le jeu entre la vis sans fin et l'engrenage de transmission. S'il n'y a pas de jeu, déplacer l'ensemble moteur CC vers l'extérieur.

5) Le moteur CC (D2) et le plateau d'entraînement sont remplacés de la manière suivante:

- (1) Dégager le plateau d'entraînement de la plaquette de l'unité en le soulevant perpendiculairement.
- (2) Lors de la pose du plateau d'entraînement, régler la hauteur à l'aide du gabarit de réglage de hauteur (Fig. 15). Éviter d'appliquer un effort latéral excessif sur l'axe du moteur CC (D2).
- (3) Lors du changement du moteur CC (D2), ne pas appliquer de force excessive dans la direction B. Si la partie C de la plaquette de l'unité est déformée, cela peut provoquer une détérioration de l'oculaire I (Fig. 16).

Note: ne pas réutiliser un plateau d'entraînement qui a été enlevé une fois.

##### 6) Vérification de la barre d'avance

Si la barre d'avance est lâche, cela peut affecter la lecture de piste du disque. Il faut donc vérifier que la barre ne se déplace pas dans la direction indiquée par D. Si tel est le cas, corriger la position de la plaquette de barre (B) en la courbant à l'aide de pinces dans la direction E, puis procéder au remontage (Fig. 17)

7) Étant donné que la plaquette flexible être facilement cassée, veiller à ne pas appliquer de force excessive lors de la réparation de l'ensemble du mécanisme de l'unité. Relier à la terre la plaquette flexible - après avoir enlevée - à l'aide d'une pince métallique ou d'un objet métallique similaire (Fig. 18).

#### 17. Dispositifs de sécurité (Fig. 19)

Cet appareil est équipé d'un dispositif de sécurité qui coupe automatiquement le rayon laser dès l'ouverture de la porte du disque. Veiller à ne pas insérer d'objets métalliques pointus ou autres objets à cet endroit. Il y a un risque de danger en cas de sortie accidentelle du rayon laser.

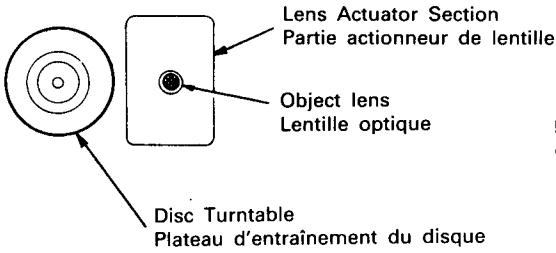


Fig. 11

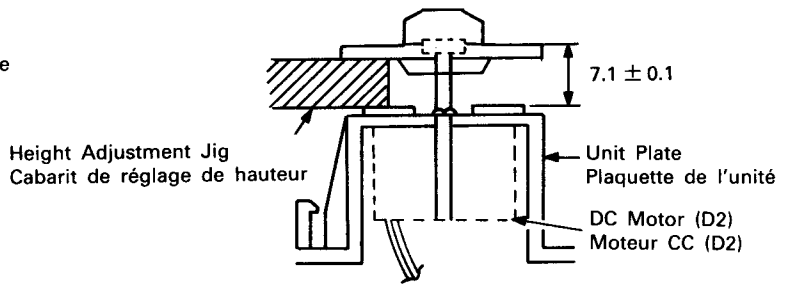


Fig. 15

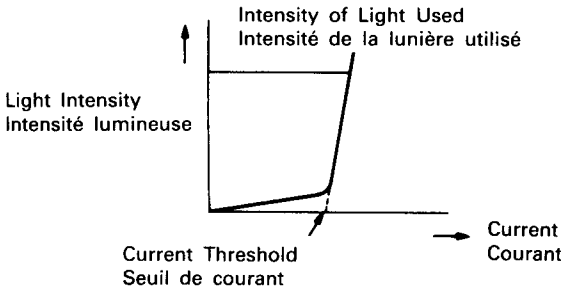


Fig. 12

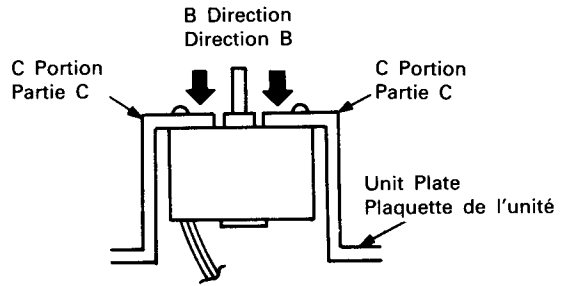


Fig. 16

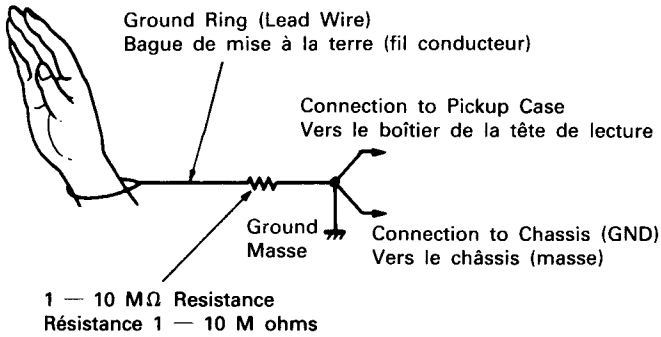


Fig. 13

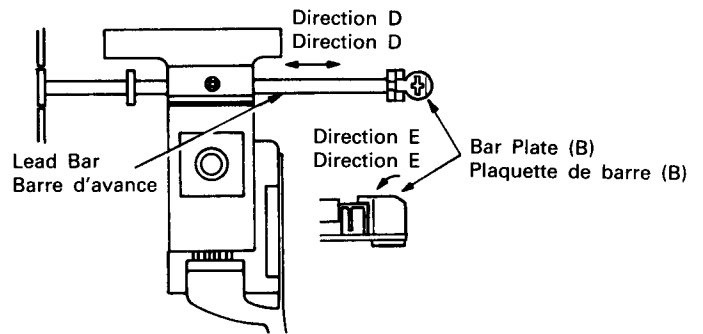


Fig. 17

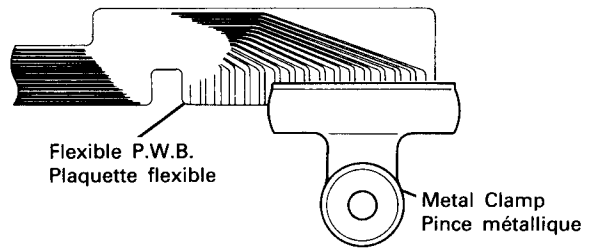


Fig. 18

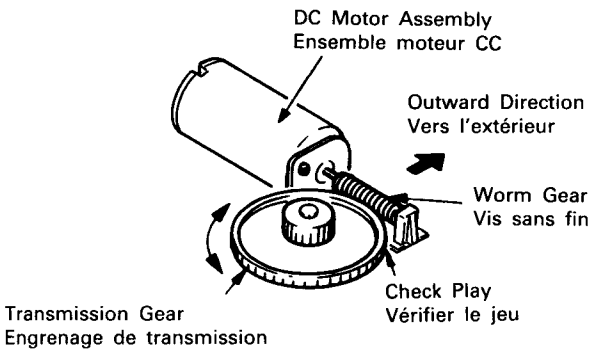


Fig. 14

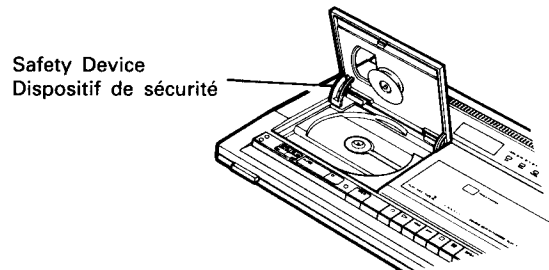


Fig. 19

# GENERAL ADJUSTMENT INSTRUCTIONS

## ● RADIO SECTION

These adjustments are made after the Top Case and the Function Switch P.W.B. have been removed.

● **Adjustment points** Perform adjustment at least 3 minutes after the power has been switched on.

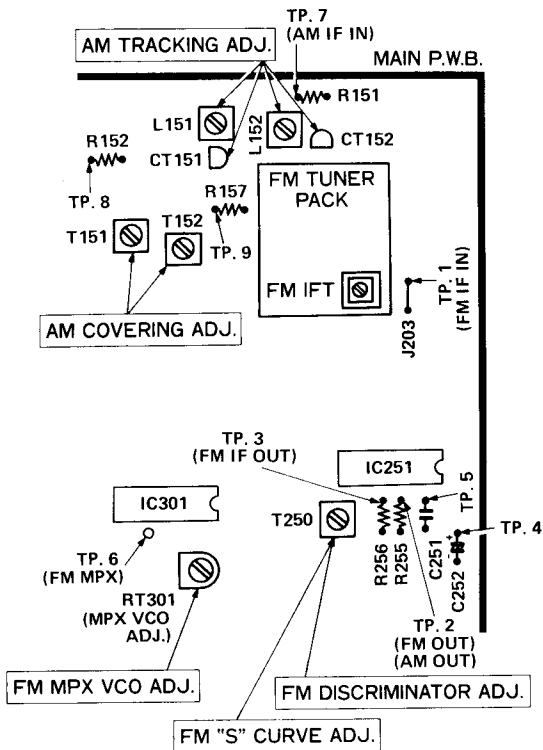


Fig. 20

## FM TUNER ADJUSTMENT

FUNCTION: FM

FM MODE: MONO

- Sweep Generator
- Signal Generator
- Oscilloscope
- DC Null Meter
- VTVM
- Frequency Counter
- Dist.
- Distortion Meter

| Sequence | Connection    |   | Setting             |        | Adjust for |            |                 |
|----------|---------------|---|---------------------|--------|------------|------------|-----------------|
|          | Input         | Output  | Tuning              | Signal | Adjust     | Indication |                 |
| 1        | IF Amp.       | TP. 1<br>100k 0.1 μ                             | TP. 3<br>100k 0.1 μ | —      | 10.7 MHz   | FM IFT     | (Note 1)        |
| 2        | "S" curve     | TP. 1<br>100k 0.1 μ                             | TP. 2<br>100k 0.1 μ | —      | 10.7 MHz   | T250       | (Note 2)        |
| 3        | Discriminator | FM antenna<br>60dB<br>400H, 22.5kHz Dev.        | SPEAKERS terminal   | 98 MHz | 98 MHz     | T250       | (Note 3)        |
| 4        | MPX VCO       | Antenna terminal<br>(75 ohms)<br>60 dB Non Mod. | TP. 6<br>100k       | —      | —          | RT301      | 19 kHz ± 100 Hz |



Note 1: Apply low-input signals from a sweep generator (with a small amount of noise superimposed on IF waveform as in Fig. 21), and adjust the waveform until it becomes maximum and symmetrical.

Note 2: Cause and S curve to appear on the screen by FM IFT as shown in Fig. 22, and adjust it until points A and B are positioned symmetrically, and the A-B line becomes liner.

Note 3: Connect a DC null meter TP. 4 and TP. 5 then make adjustment until it reads  $0 \pm 30\text{mV}$ .

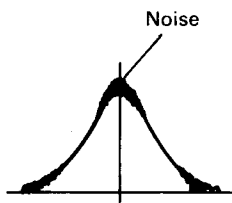


Fig. 21

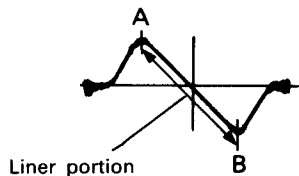


Fig. 22

## AM TUNER ADJUSTMENT

FUNCTION: AM

MODULATION: 400Hz 30% Mod. 74dB  $\mu$ /m

| Sequence | Connection |                         | Setting                  |  | Adjust for   |                                |  |
|----------|------------|-------------------------|--------------------------|--|--|--------------------------------|--|
|          | Input      | Output                  | Tuning                   | Signal   | Adjust   | Indication                     |  |
| 1        | IF AMP.    | TP. 7<br>100k 0.1 $\mu$ | TP. 2<br>100k 0.1 $\mu$  | —  | 450kHz   | —                              | (Note 4)   |
| 2        | Covering   | Loop antenna            | TP. 8 (MW)<br>TP. 9 (LW) | (MW) 530kHz (for US, CS)<br>522kHz (except US, CS)<br>(LW) 146kHz              | —  | (MW) T151<br>(LW) T152         | 1.3V $\pm$ 0.1V (for US, CS)<br>1.2V $\pm$ 0.1V (except US, CS) (Note 5)<br>1.2V $\pm$ 0.1V (Note 5) |
| 3        | Tracking   | 400Hz 30% Mod.          | Audio output             | (MW) 603kHz or 600kHz<br>(LW) 164kHz<br>(MW) 1404kHz or 1400kHz<br>(LW) 335kHz | (MW) 603kHz or 600kHz<br>(LW) 164kHz<br>(MW) 1404kHz or 1400kHz<br>(LW) 335kHz | L151<br>L152<br>CT151<br>CT152 | V max. (Note 5)  |

Note 4: Check the waveform shown in Fig. 23 is obtained.

Note 5: At first, set the input level to 74 dB  $\mu$ /m. As the adjustment advances, reduce the input level to and allowable minimum level (approx. 60 dB), and repeat the adjustment until the maximum output is obtained at the specified frequency.

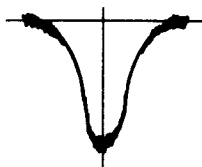


Fig. 23

# INSTRUCTIONS GÉNÉRALES DE RÉGLAGE

## SECTION RADIO

Ces réglages s'effectuent après que le boîtier supérieur et la plaquette de commutateurs de fonction ont été enlevés.

● **Emplacement de réglage** Commencer le réglage au moins trois minutes après mise sous tension.

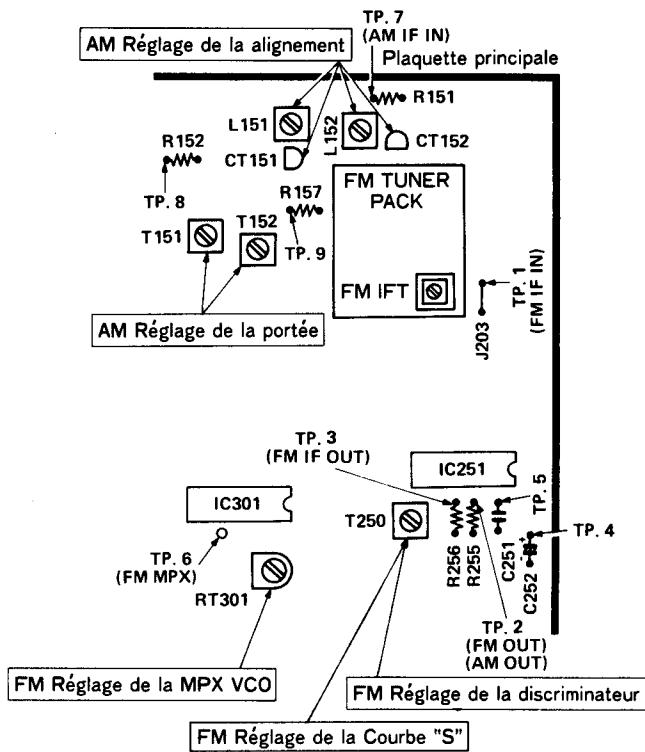


Fig. 24

## REGLAGE DE TUNER FM

FONCTION: FM

FM MODE: NOMO



Générateur de balayage



Générateur de signaux



Oscilloscope



Indicateur zero C.C.



Voltmètre électronique



Fréquence-mètre



Distorsionmètre

| Order |  | Connexion                                 |                     | Montage             |          | Réglage pour |                 |
|-------|--|---|---------------------|---------------------|----------|--------------|-----------------|
|       |  | Entree                                    | Sortie              | Indicateur d'accord | Signal   | Réglage      | Indication      |
| 1     | Amplificateur de fréquence intermédiaire | TP. 1<br>                                 | TP. 3<br>           | —                   | 10,7 MHz | FM IFT       | (Remarque 1)    |
| 2     | Courbe "S"                               | TP. 1<br>                                 | TP. 2<br>           | —                   | 10,7 MHz | T250         | (Remarque 2)    |
| 3     | Discriminateur                           | Antenne FM<br>                            | Borne haut-parleurs | 98 MHz              | 98 MHz   | T250         | (Remarque 3)    |
| 4     | MPX VCO                                  | Borne antenne (75 ohms)<br>60 dB non mod. | TP. 6<br>           | —                   | —        | RT301        | 19 kHz ± 100 Hz |

- Remarque 1: Appliquer des signaux à faible entrée provenant d'un générateur de balayage (avec une petite quantité de bruit surimposésur une forme d'onde IF, comme indiqué sur la Fig. 25) et régler la forme d'onde jusqu'à ce qu'elle soit maximale et symétrique.
- Remarque 2: Provoquer l'apparition d'une courbe S sur l'écran par FM IFT, comme indiqué sur la Fig. 26, et la régler jusqu'à ce que les points A et B soient positionnés symétriquement et que la ligne A-B soit linéaire.
- Remarque 3: Appliquer un compteur de zéro CC sur TP. 4 et TP. 5, puis régler jusqu'à ce qu'il lise  $0 \pm 30$  mV

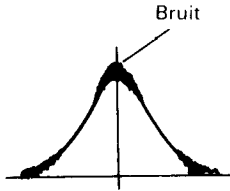


Fig. 25

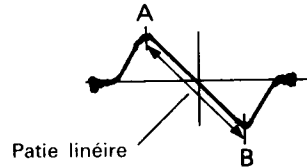


Fig. 26

## REGLAGE DE TUNER AM

FONCTION: AM

MODULATION: 400Hz 30% Mod. 74dB  $\mu$  / m

| Order | Connexion  |   | Montage  |  | Réglage pour   |  |
|-------|--|---|--|--|--|--|
|       | Entrée   | Sortie                                  | Indicateur d'accord  | Signal   | Réglage  | Indication   |
| 1     | <b>Amplificateur de fréquence Intermédiaire</b><br>TP. 7<br><br>100k 0,1 $\mu$ | TP. 2<br><br>100k 0,1 $\mu$             | —  | 450kHz   | —  | (Remarque 4)   |
| 2     | Antenne en carton<br><br>400Hz 30% Mod.  | TP. 8 (MW)<br>TP. 9 (LW)<br>            | (MW) 530kHz (pour US, CS)<br>522kHz (sauf US, CS)<br>(LW) 146kHz | —  | (MW) T151<br>(LW) T152   | 1,3V $\pm$ 0,1V (pour US, CS)<br>1,2V $\pm$ 0,1 V (sauf US, SC) (Remarque 5)<br>1,2V $\pm$ 0,1V (Remarque 5) |
| 3     |  | <b>Alignement</b><br><br>400Hz 30% Mod. | Sortie audio<br>   | (MW) 603kHz or 600kHz<br>(LW) 164kHz<br>(MW) 1404kHz or 1400kHz<br>(LW) 335kHz | (MW) 603kHz or 600kHz<br>(LW) 164kHz<br>(MW) 1404kHz or 1400kHz<br>(LW) 335kHz | L151<br>L152<br>CT151<br>CT152   |

- Remarque 4: Vérifier que la forme d'onde indiquée sur la Fig. 27 soit obtenue.
- Remarque 5: D'abord, régler le niveau d'entrée sur 74 dB  $\mu$  / m. Au fur et à mesure du réglage, réduire le niveau d'entrée jusqu'au niveau minimum permissible (environ 60 dB) et répéter le réglage jusqu'à ce que la sortie maximale soit obtenue à la fréquence spécifiée.

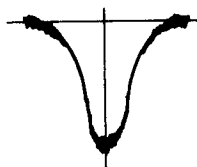


Fig. 27

# TAPE DECK SECTION

## ● Adjustment points

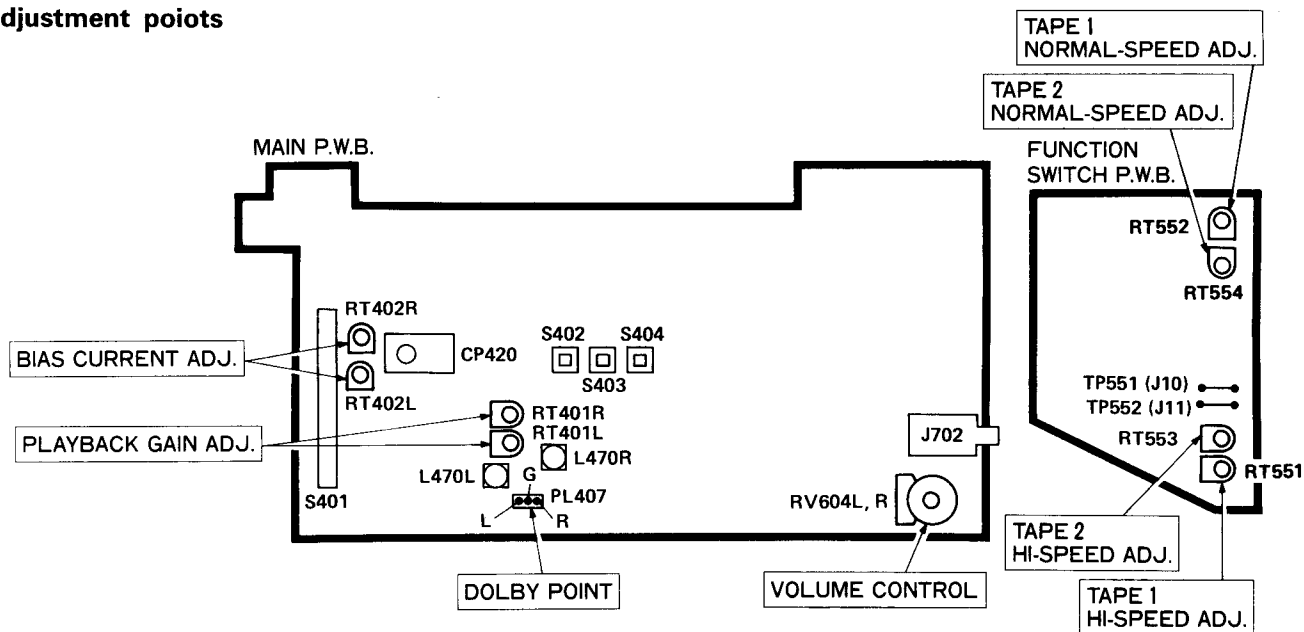


Fig. 28

### ● Instruments to be used

1. Audio oscillator
2. Electronic voltmeter
3. Attenuator
4. Frequency counter

### ● Jigs, Test and Check Tapes

1. Head mounting jig
2. 400 Hz, Dolby alignment tape
3. 10 kHz, azimuth alignment tape
4. 3,000 Hz, tape speed alignment tape
5. Mirror tape (for tape running check)
6. NORMAL tape (MAXELL UD I 90)  
CHROME tape (MAXELL UD II 90)

### ● Positions of Knobs

Match the positions of switches and knobs to those shown in the table following unless otherwise specified.

|                             |          |
|-----------------------------|----------|
| REC level control (RV605LR) | MAX      |
| Tape select switch (S402)   | (Note 1) |
| RIF switch (S403)           | A        |
| Dolby NR switch (S404)      | OFF      |

Note 1: Set tape select switch as shown below according to the tape being used.

| Tape used    | Tape select switches |
|--------------|----------------------|
| No tape used | NORMAL               |
| Test tape    | NORMAL               |
| NORMAL tape  | NORMAL               |
| CHROME tape  | CrO <sub>2</sub>     |

Open the cassette lid and then clean the heads, pressure rollers and capstans using alcohol, then perform adjustment according to the following procedure.

### 1. Tape Speed Adjustment

\*Be sure to make adjustment in order of Normal-speed to High-speed. (For BK, Normal-speed only)

#### 1) Normal-speed

| Tape                      | Adjustment value | Adjustment point   |
|---------------------------|------------------|--|
| Tape speed Alignment tape | 3,000Hz ±1.0%    | <ul style="list-style-type: none"> <li>• except BK</li> <li>RT552 (TAPE 1)</li> <li>RT554 (TAPE 2)</li> <li>• for BK</li> <li>Semi-variable resistor inside motor</li> </ul> |

#### Adjustment procedure

Connect the frequency counter to the SPEAKERS terminals apply heat-run for 20 minutes or more. Then, playback alignment tape for TAPE 1 and TAPE 2, and adjust the tape speed to the middle of the tape so that the speed of TAPE 1 and TAPE 2 are equal.

#### 2) High-speed (except BK)

| Tape                      | Adjustment value | Adjustment point                 |
|---------------------------|------------------|----------------------------------|
| Tape speed Alignment tape | 6,000 Hz ±1.0%   | RT551 (TAPE 1)<br>RT553 (TAPE 2) |

#### Adjustment procedure

With the shorting across TP551 and TP552, and playback alignment tape for TAPE 1 and TAPE 2 and adjust their speed.

### 2. Azimuth Adjustment of Recording/Playback Head

| Tape                   | Adjustment value | Adjustment point         |
|------------------------|------------------|--------------------------|
| Azimuth alignment tape | Maximum output   | Azimuth adjustment screw |

### Adjustment procedure

Adjustment is made by connecting an electronic voltmeter to the SPEAKERS terminals and playback the azimuth alignment tape. If there is a difference in the highest volume of the two channels, adjustment should be made to the left channel.

At this time check to see if the difference between channels is less than 2 dB. If it is greater, readjust again. After adjustment has been made apply screw lock.

### 3. Playback Gain Adjustment

| Tape                 | Adjustment value | Adjustment point |
|----------------------|------------------|------------------|
| Dolby alignment tape | 580 mV           | RT401LR          |

#### Adjustment procedure

Connect the electronic voltmeter to the PL407, playback the Dolby alignment tape. Adjust so that the reading of the electronic voltmeter indicates adjustment value.

(The difference in levels between TAPE1 and TAPE2 should be no greater than 2 dB.)

### 4. Bias current Adjustment and Checking the Output Level of Recording and Playback

Set RT402L, R in the center position and record at the recording level shown in the table below to adjust for each tape, then check the playback level.

| Order | Tape        | Tape select switches | Recording level |                  |                  | Playback level      |                  | Adjustment procedure |
|-------|-------------|----------------------|-----------------|------------------|------------------|---------------------|------------------|----------------------|
|       |             |                      | Frequency (Hz)  | Level            | Adjustment point | Level               | Adjustment point |                      |
| 1     | NORMAL tape | NORMAL               | 400/10K         | 580 mV<br>-25 dB | ATT              | Within $\pm 1.5$ dB | RT402LR          | (1)                  |
| 2     | NORMAL tape | NORMAL               | 400             | 580 mV<br>-10 dB | ATT              | Within $\pm 2$ dB   | Check            | (2)                  |
| 3     | NORMAL tape | NORMAL               | 400/10K         | 580 mV<br>-25 dB | ATT              | Within $\pm 1.5$ dB | Check            | (1)                  |
| 4     | CHROME tape | CrO <sub>2</sub>     | 400/10K         | 580 mV<br>-25 dB | ATT              | Within $\pm 3$ dB   | Check            | (1)                  |

#### Adjustment procedure

##### (1) Adjustment of Bias current

- 1) Connect an electronic voltmeter to the PL407 and, to the AUX IN terminals attach a audio oscillator by means of an attenuator. Set on "recording" and with the voltmeter set at 580 mV check the output of the audio oscillator. Next, check the attenuator and set to 580 mV - 25 dB. (Frequency: 400 Hz)
- 2) After recording at this setting next, set the audio oscillator to 10 kHz and record again.
- 3) Put the recording unit on "playback", take a reading of the output and check to ascertain if the difference in output between the two frequencies is within the range of  $\pm 1.5$  dB.
- 4) If the difference in output is not within the  $\pm 1.5$  dB range, make the appropriate adjustment of the RT402LR and then, once again as before, repeat the recording /playback test making sure the output is in the  $\pm 1.5$  dB range.

**Note)** When using CHROME tape during checking, if the range gets outside of the specified  $\pm 3$  dB, readjust using NORMAL tape.

##### (2) Checking the Output Level of Recording and Playback

- 1) Connect an electronic voltmeter to the PL407 and a audio oscillator to the AUX IN terminals. Inputting a signal of 400 Hz set on recording mode and record, adjusting the output of the audio oscillator so that the voltmeter indicates 580 mV - 10 dB.
- 2) Set on "playback" and check to see if the output is  $-10$  dB  $\pm 2$  dB.

### 5. Cassette Chassis Checking and Adjustment

| No. | Inspection Item                      | Reference Value   | Remarks                          |
|-----|--------------------------------------|-------------------|----------------------------------|
| 1   | Pressure roller compression strength | 300 - 500 g       | (Note 1) Tension gage            |
| 2   | Playback torque                      | 30 - 60 g·cm      | Cassettepack system Torque meter |
| 3   | FF/REW torque                        | more than 55 g·cm | Cassettepack system Torque meter |
| 4   | Supply back-tension                  | 2.0 - 6.0 g·cm    | Cassettepack system Torque meter |
| 5   | Axial play of flywheel               | 0.05 - 0.5 mm     |                                  |

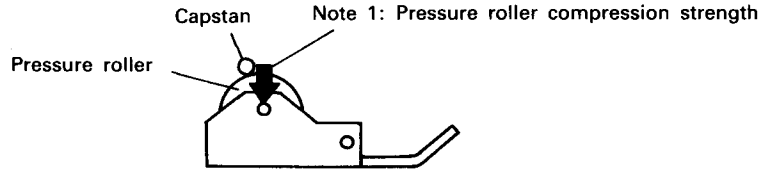


Fig. 29

## SECTION PLATINE-CASSETTE

### ● Emplacements de réglage

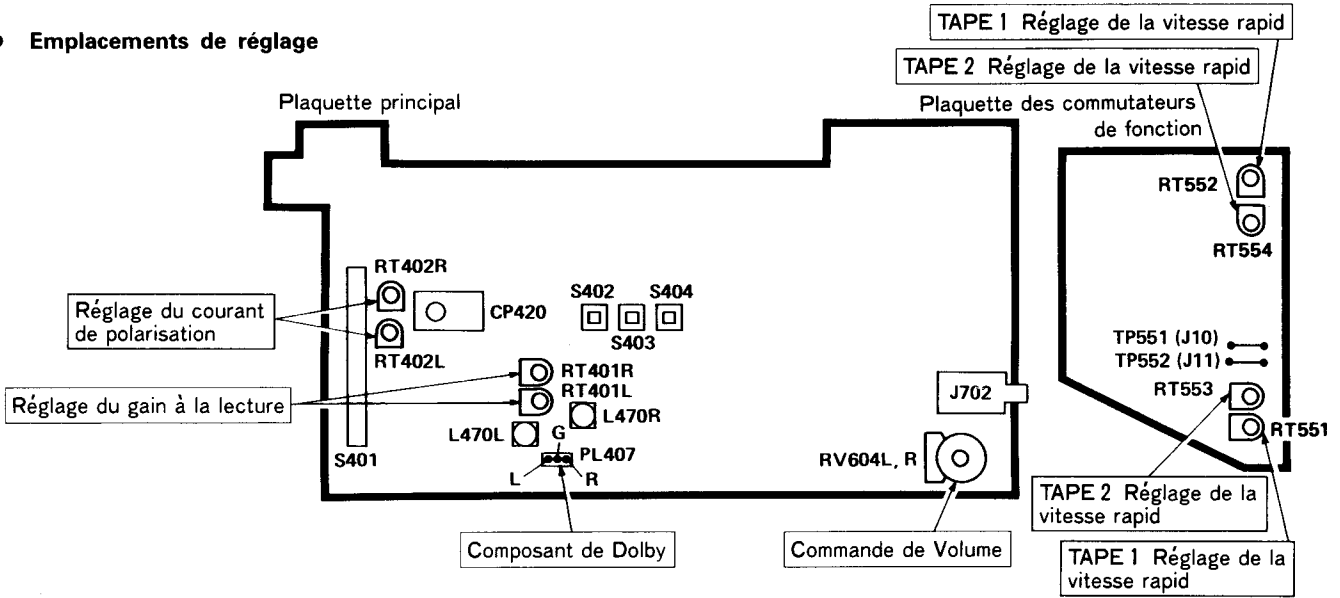


Fig. 30

### ● Instrument à utiliser

1. Oscillateur audio
2. Voltmètre électronique
3. Atténuateur
4. Fréquencemètre

### ● Calibres, et bandes d'essai et de vérification

1. Calibre de montage de tête
2. Bande d'étalonnage Dolby, 400 Hz
3. Bande d'étalonnage d'azimuth, 10 kHz
4. Bande d'étalonnage de la vitesse de la bande, 3000 Hz
5. Bande de la miroir (pour contrôle de défilement de la bande)
6. Bande Normal (MAXELL UD I 90)  
Bande Chrome (MAXELL UD II 90)

### ● Positions des boutons

A moins d'indication contraire, régler les commutateurs et boutons sur les positions indiquées ci-après.

|   |              |
|---|--------------|
| Commande de niveau d'enregistrement (RV605LR) | MAX          |
| Sélecteur de bande (S402)                     | (Remarque 1) |
| Commutateur RIF (S403)                        | A            |
| Commutateur Dolby NR (S404)                   | OFF          |

**Remarque 1:** Régler le sélecteur de la bande comme indiqué ci-après, selon le type de la bande utilisé.

| Bande              | Sélecteur de bande |
|--------------------|--------------------|
| Bande non utilisée | NORMAL             |
| Bande d'essai      | NORMAL             |
| Bande Normal       | NORMAL             |
| Bande Chrome       | CrO <sub>2</sub>   |

Ouvrir le couvercle du logement de la cassette. Puis nettoyer les têtes, le galet presseur et le cabestan avec de l'alcool. Procéder ensuite au réglage suivant.

### 1. Réglage de la vitesse de défilement de la bande

\*Effectuer les réglages dans l'ordre vitesse normale et vitesse rapide. (Pour BK, seule vitesse normale)

#### 1) Vitesse normale

| Bande  | Valeur d'étalonnage | Composant de réglage  |
|--|---------------------|---|
| Bande d'étalonnage de la vitesse de la bande | 3000 Hz ± 1,0%      | <ul style="list-style-type: none"> <li>• sauf BK RT552 (TAPÉ 1) RT554 (TAPÉ 2)</li> <li>• pour BK Volume semi-fixe à l'intérieur du moteur</li> </ul> |

**Méthode de réglage**

Raccorder le fréquencemètre aux bornes de SPEAKERS (haut-parleur) et assure un préchauffage de la platine pendant au moins 20 minutes.

Ensuite reproduire la bande d'étalonnage TAPE 1 et TAPE 2 puis caler la vitesse de la bande en milieu de la bande pour que la vitesse soit indentique dans TAPE 1 et TAPE 2.

**2) Vitesse rapide (sauf BK)**

| Bande  | Valeur d'étalonnage | Composant de réglage             |
|--|---------------------|----------------------------------|
| Bande d'étalonnage de la vitesse de la bande | 6000 Hz $\pm$ 1,0%  | RT551 (TAPE 1)<br>RT553 (TAPE 2) |

**Méthode de réglage**

Après avoir la jonction entre TP551 et TP552, reproduire la bande de d'étalonnage TAPE 1 et TAPE 2 et caler leur vitesse de défilement.

**2. Réglage d'azimut de la tête d'enregistrement/reproduction**

| Bande                       | Valeur d'étalonnage | Composant de réglage    |
|-----------------------------|---------------------|-------------------------|
| Bande d'étalonnage d'azimut | Sortie maximale     | Vis de réglage d'azimut |

**4. Réglage du courant de polarisation et Vérification du niveau de sortie d'enregistrement et de reproduction**

Régler RT402L, R à leur position central, et enregistrer au niveau d'enregistrement indiqué sur le tableau ci-dessous de manière à régler chaque. Puis vérifier le niveau de lecture.

| Ordre des réglages | Band          | Sélecteurs de bande | Niveau d'enregistrement |                  |                      | Niveau de lecture        |                      | Réglage proprement |
|--------------------|---------------|---------------------|-------------------------|------------------|----------------------|--------------------------|----------------------|--------------------|
|                    |               |                     | Fréquence (Hz)          | Niveau           | Composant de réglage | Niveau                   | Composant de réglage |                    |
| 1                  | Bande normale | NORMAL              | 400/10K                 | 580 mV<br>-25 dB | ATT                  | En moins de $\pm$ 1,5 dB | RT402LR              | (1)                |
| 2                  | Bande normale | NORMAL              | 400                     | 580 mV<br>-10 dB | ATT                  | En moins de $\pm$ 2 dB   | Vérification         | (2)                |
| 3                  | Bande normale | NORMAL              | 400/10K                 | 580 dB<br>-25 dB | ATT                  | En moins de $\pm$ 1,5 dB | Vérification         | (1)                |
| 4                  | Bande chrome  | CrO <sub>2</sub>    | 400/10K                 | 580 dB<br>-25 dB | ATT                  | En moins de $\pm$ 3 dB   | Vérification         | (1)                |

**Méthode de réglage****(1) Réglage du courant de polarisation**

- 1) Brancher un voltmètre électronique sur PL407 et un oscillateur audio aux bornes AUX IN à l'aide d'un atténuateur. Passer en mode "enregistrement" et, avec le voltmètre réglé sur 580 mV, vérifier la sortie de l'oscillateur audio. Puis, vérifier l'atténuateur et le régler sur 580 mV - 25 dB. (Fréquence: 400 Hz)
- 2) Après avoir enregistré dans ces conditions de réglage, régler l'oscillateur audio sur 10 kHz et enregistrer de nouveau.
- 3) Mettre l'appareil en mode de "reproduction", faire une lecture de la sortie et vérifier que la différence de sortie

**Méthode de réglage**

Le réglage s'effectue en reliant un voltmètre électronique aux bornes de SPEAKERS (haut-parleur) et en lisant la bande d'étalonnage d'azimut. S'il y a une différence au volume le plus élevé des deux canaux, le réglage doit être fait sur le canal gauche. Vérifier alors que la différence entre les canaux est inférieure à 2 dB. Si elle est supérieure, régler de nouveau. Après la fin du réglage, appliquer le verrouillage de vis.

**3. Réglage du gain à la reproduction**

| Bande                       | Valeur d'étalonnage | Composant de réglage |
|-----------------------------|---------------------|----------------------|
| Bande d'étalonnage de Dolby | 580 mV              | RT401L, R            |

Brancher le voltmètre électronique sur le PL407, lire la bande d'étalonnage de Dolby. Régler de façon à ce que la lecture du voltmètre électronique indique la valeur de réglage. (La différence de niveau entre la TAPE1 et la TAPE2 doit être dans une plage de 2 dB.)

entre les deux fréquences soit comprise dans une plage de  $\pm$  1,5 dB.

- 4) Si la différence de sortie n'est pas dans cette plage de  $\pm$  1,5 dB, faire les réglages appropriés sur le RT402LR, puis, comme précédemment, recommencer le test d'enregistrement/reproduction, en veillant à ce que la sortie soit dans la plage de  $\pm$  1,5 dB.

**Note:** Si vous utilisez des bandes au chrome lors de la vérification, et si la plage dépasse les  $\pm$  3 dB spécifiés, refaire les réglages à l'aide d'une bande normale.

**(2) Vérification du niveau de sortie d'enregistrement et de reproduction.**

1) Brancher un voltmètre électronique sur PL407 et une oscillateur audio aux bornes AUX IN. Appliquer un signal de 400 Hz, passer en mode d'enregistrement et

enregistrer tout en réglant la sortie de l'oscillateur audio de façon à ce que la voltmètre indique 580 mV – 10 dB.

2) Passer en mode de "reproduction" et vérifier que la sortie soit de – 10 dB ± 2 dB.

**5. Inspection et réglage du châssis de cassette**

| No. | Point d'inspection                      | Valeur de référence | Observation                         |
|-----|---|---------------------|-------------------------------------|
| 1   | Valeur de compression de galet presseur | De 300 à 500 g      | (Remarque 1) Dynamomètre de Tension |
| 2   | Couple en lecture                       | De 30 à 60 g·cm     | Cassette de couple d'entrafnement   |
| 3   | Couple avance rapid/rebobinage          | Plus de 55 g·cm     | Cassette de couple d'entrafnement   |
| 4   | Tension bobine débitriée                | De 2,0 à 6,0 g·cm   | Cassette de couple d'entrafnement   |
| 5   | Jeu axial sur volant                    | De 0,05 à 0,5 mm    |                                     |

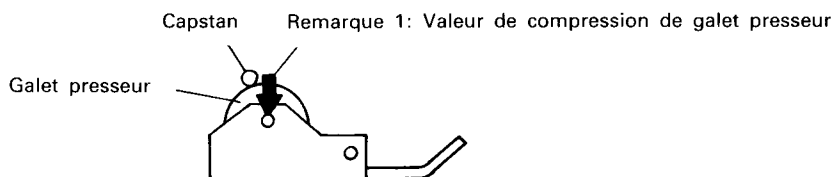


Fig. 31

**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 1000 hours of operation. Do not let oil contact belts or idlers.

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

**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 1000 heures de fonctionnement.

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

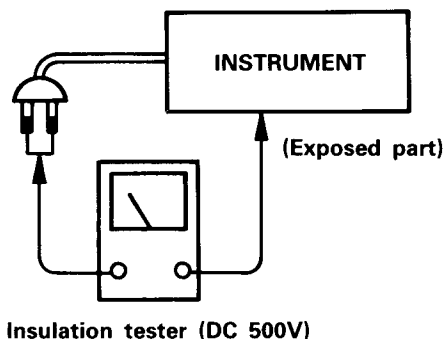
|                                    |   |                                  |
|------------------------------------|---|----------------------------------|
| Membres rotatifs                   | Entre les parties métalliques               | Huile moteur (10W-40)            |
|                       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

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

● **Checking method**

Power switch is set to ON.

Next, measure the resistance value between the both poles of attachment cup (Power supply plug) and the AUX IN terminals and check that the resistance value is 500 kohms or more.





## ● CD PLAYER SECTION

Method of Adjustment for CD Player (Fig. 32, 33)

1. The CD Operating Button and the Power Switch P.W.B. are removed first. (See P.6, Fig. 7/ Fig. 8)
2. Remove two screws (A) and pull out the Lead Wire at the bottom of the chassis (which connects to the CD Function Switch P.W.B.). (Fig. 32a)
3. Remove two screws (B) and one screw (C) and then remove the Laser/Open Switch P.W.B. together with the P.W.B. Holder (Fig. 32a)
4. Remove four screws (D) and set the PX P.W.B. On the Cassette Chassis Main Base and the hubs of the Bottom Case. (Fig. 32b)
5. After removing the Barlock and three screws (E), rest the Unit Mechanism on the Cassette Button and then carry out the Adjustment. (Before placing the Unit Mechanism on the Cassette Button spread some thick paper or similar material between them as insulation). (Fig. 32b/ Fig. 33)
6. After the adjustment is completed, set the Lead Wire in place under the Barlock as it was prior to the adjustment.

## ● SECTION LECTEUR CD

Méthode de réglage du lecteur CD (Fig. 32, 33)

1. Enlever tout d'abord la touche de fonctionnement CD et la plaquette de l'interrupteur d'alimentation. (Voir la fig. 7 et la fig. 8 en page 6)
2. Enlever deux vis (A) et le fil conducteur situé au fond du châssis (relié à la plaquette commutateurs de fonction CD). (Fig. 32a)
3. Enlever deux vis (B) et une vis (C), puis enlever la plaquette de commutateur laser/ouvrir conjointment au support de plaquette. (Fig. 32a)
4. Enlever quatre vis (D) et placer la plaquette PX sur la plaquette principale du châssis de cassette, ainsi que les supports de maintien du boîtier inférieur. (Fig. 32b)
5. Après avoir enlevé le maintien de barre et les trois vis (E), poser le mécanisme de l'unité sur les touches de cassette et effectuer le réglage. (Avant de placer le mécanisme de l'unité sur les touches de cassette, intercaler du papier épais ou une feuille isolante en tant qu'isolation.) (Fig. 32b/ Fig. 33)
6. Après la fin du réglage, mettre le fil conducteur en place sous le maintien de barre, dans la position qui était celle avant la réglage.

Laser/Open Switch P.W.B.

Plaquette de commutateur laser/ouvrir

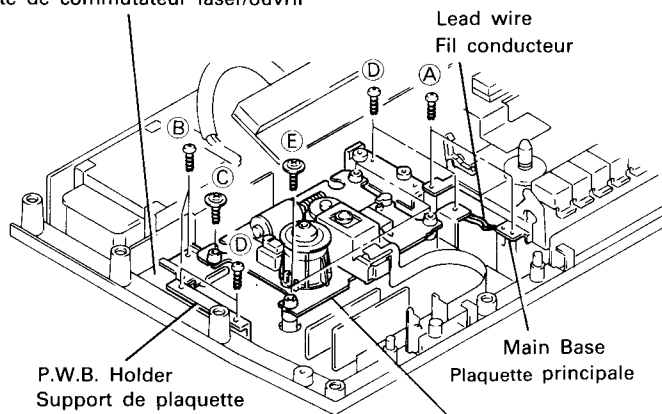


Fig. 32a

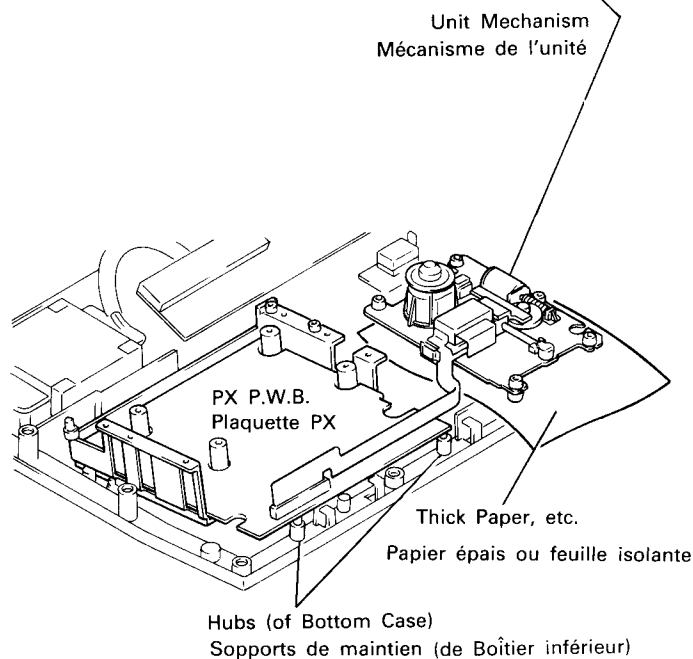


Fig. 32b

Unit Mechanism  
Mécanisme de l'unité

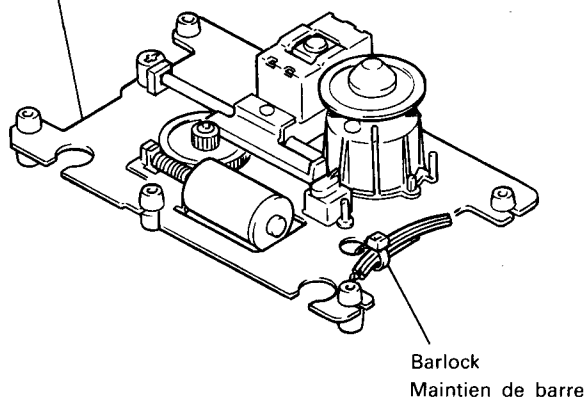


Fig. 33

### Adjustment procedure

Whenever any of the operations listed below are carried out, then, without fail, make sure to perform the circuit adjustments described in section 1 – 4 below.

- (1) Replacement of parts and Overhaul in the Unit Mechanism Assembly
- (2) Replacement of parts in the Pickup Unit
- (3) Replacement of parts in the CD power supply circuit

### CD PLAYER CIRCUIT ADJUSTMENT

**Note)** If the adjustment is being made following the replacement of parts in the Pickup Unit, preset the Variable Resistors as shown in the table below.

#### ● Presetting

| Adjustment            | Circuit Number | Preset Position |
|-----------------------|----------------|-----------------|
| Laser Diode Output    | R905           | Center          |
| Tracking Servo Offset | R914           | Center          |
| Focus Servo Offset    | R908           | Center          |

Adjustments should be made in the following sequence:

### PX P.W.B.

#### ● Location of adjustments

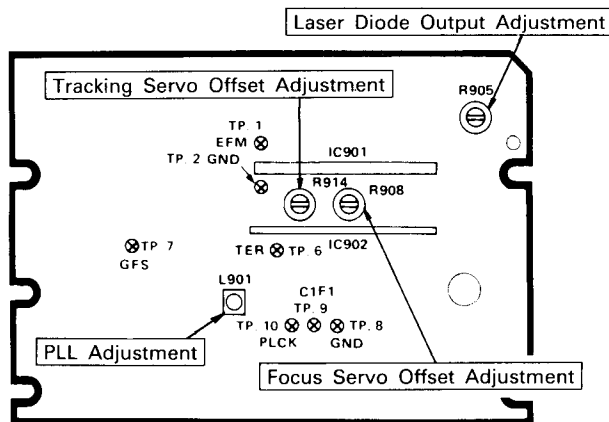


Fig. 34 a

#### 1. Laser Diode Output Adjustment

**Note)** Do not perform this adjustment except when the Pickup Mechanism, Laser Circuit or the CD Power Circuit has undergone replacement of parts.

##### (1) Instrument to be used

Oscilloscope

##### (2) Adjusting Procedure

- 1) Connect the oscilloscope to TP. 1 (EFM) and TP. 2 (GND) (Fig. 35a).
- 2) Load a disc into the player, clamber in, set the Laser /Open Switch to "ON" and take a reading of the EFM signal with the oscilloscope.

**Note)** When the Laser/Open switch is "ON" never peek into the lens. This is very dangerous.

### How to Read the EFM Signal Wave Form and Procedure for Connecting the Oscilloscope

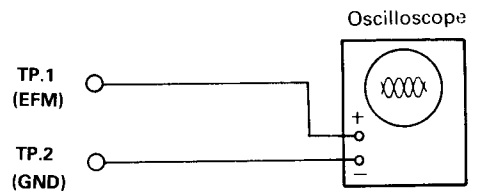


Fig. 35 a

- 3) Adjust the R905 so that the amplitude of the EFM signal in the oscilloscope reaches a level of  $1.3 \text{ V} \pm 40 \text{ mV}$ .

**Note)** However, if the signal level is within the range of 1.1 – 1.5 V, it is normal and no adjustment is necessary.

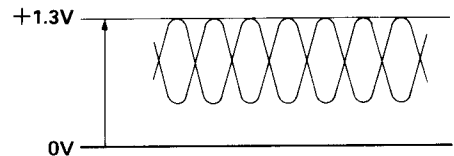


Fig. 36 a

#### 2. Focus Servo Offset Adjustment

##### (1) Instruments to be used

Oscilloscope  
DC Voltmeter

##### (2) Adjustment Procedure

- 1) Set the player to "Stop" mode.
- 2) Connect the oscilloscope to TP. 1 (EFM) and TP. 2 (GND).
- 3) Connect the DC Voltmeter as shown in Fig. 37a.
- 4) Load a disc in the player, clamber in, set the Laser/Open Switch to "ON" and take a reading of the EFM signal with the oscilloscope.
- 5) Adjust R908 so that the EFM signal reaches its maximum amplitude.
- 6) After making the adjustment, use the DC voltmeter to check that the center voltage of the R908 is within the 2 – 3 V range.
- 7) If the center voltage is not within the specified range, readjust as follows:  
Less than 2V: Set to 2V  
More than 3V: Set to 3V

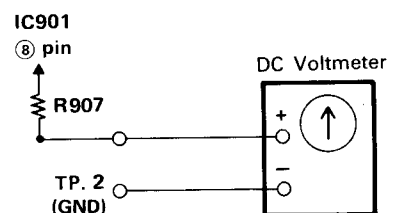


Fig. 37 a

### 3. Tracking Servo Offset Adjustment

**(1) Instrument to be used**

DC Voltmeter

**(2) Adjustment Procedure**

- 1) Steps 1 and 2 are post adjustment procedures.
- 2) While in the "Stop" mode, connect the DC voltmeter to TP. 6 (TER). (Fig. 38a)
- 3) Adjust R914 so that the DC voltmeter indicates  $+ 10 \text{ mV} \pm 2 \text{ mV}$ .

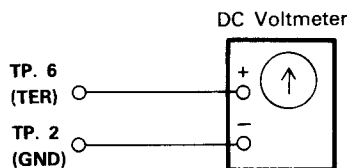


Fig. 38 a

### 4. Adjusting the PLL

**Note)** Do not make any adjustments except when parts have been replaced in the PLL Block or in the CD Power Circuit.

**(1) Instruments to be used**

Frequency Counter  
Oscilloscope

**(2) Preparations**

Connect the instruments as shown in Fig. 40a.

**(3) Adjustment Procedure**

- 1) With the set in the "Stop" mode preset L901 so that the frequency at TP. 10 (PLCK) is  $4,500 \pm 50 \text{ Hz}$ .

- 2) Put the set in "Play" mode. Turn L901 clockwise (in the direction of the core) until the level of TP. 7 (GFS) becomes "Low". Then turn L901 counterclockwise (in the direction away from the core) and find the position where the level goes to "High".
- 3) Put the set in "Stop" mode and read the frequency ( $f_1$ ) of TP. 10 (PLCK).
- 4) Put the set in "Play" mode and turn L901 counterclockwise until the level of TP. 7 (GFS) goes to "Low". Then, reverse the procedure. Turn L901 clockwise and find the position where the level goes to "High".
- 5) Put the set in "Stop" mode and read the frequency ( $f_2$ ) at TP. 10 (PLCK).
- 6) Adjust L901 so that the frequency at TP. 10 (PLCK) is  $(f_1 + f_2) \times 1/2$ .

**(4) Operation Check**

After making adjustments 1) through 6), above, put the set into "Play" mode. Check that the frequency at TP. 10 (PLCK) is  $4,321.8 \text{ kHz} \pm 400 \text{ Hz}$ . Check to see that the wave form at TP. 7 (GFS) is as shown in Fig. 39a. The level at TP. 7 (GFS) may occasionally go to "Low".

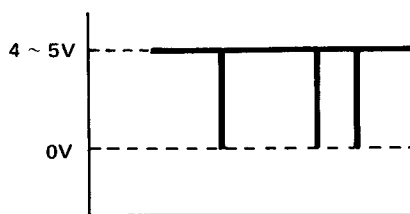


Fig. 39 a

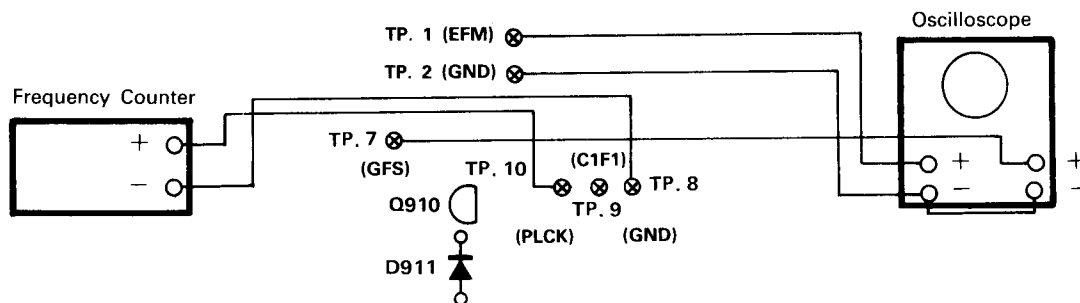


Fig. 40 a

### 5. Inspecting the Actuator (Fig. 41a)

Check the resistance of the Actuator Coils. If the values are as follows the condition is normal:

Focus Coil .....  $30 \Omega$  (Ohms)  
Tracking Coil .....  $10 \Omega$  (Ohms)

If any coil is open or short circuited, the actuator may be defective. Check that the lens moves with a 1.5V dry cell.

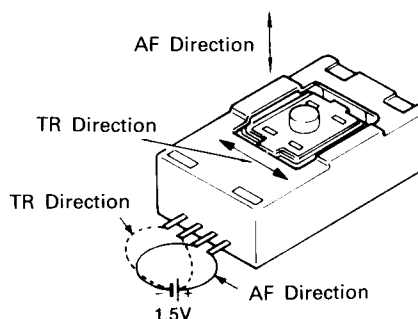


Fig. 41 a

**Méthode de réglage**

Lorsqu'une quelconque des opérations ci-dessous est effectuée, veiller à faire les réglages de circuit décrits aux sections 1-4 ci-dessous.

- (1) Remplacement et démontage des pièces de l'ensemble du mécanisme de l'unité.
- (2) Remplacement des pièces dans l'unité de tête de lecture.
- (3) Remplacement des pièces dans le circuit d'alimentation CD.

**Réglage du circuit du lecteur CD**

**Note:** Si le réglage est fait après le remplacement des pièces de l'unité de tête de lecture, pré-régler la résistance variable comme indiqué sur la table ci-dessous.

● **Préréglage**

| Réglage                                 | Numéro du circuit | Position de pré-réglage |
|---|-------------------|-------------------------|
| Sortie de diode laser                   | R905              | Centre                  |
| Décentrage du servo de lecture de piste | R914              | Centre                  |
| Décentrage du servo de focalisation     | R908              | Centre                  |

Les réglages doivent être effectués dans l'ordre suivant.

**Plaquette PX**

● **Emplacements de réglage**

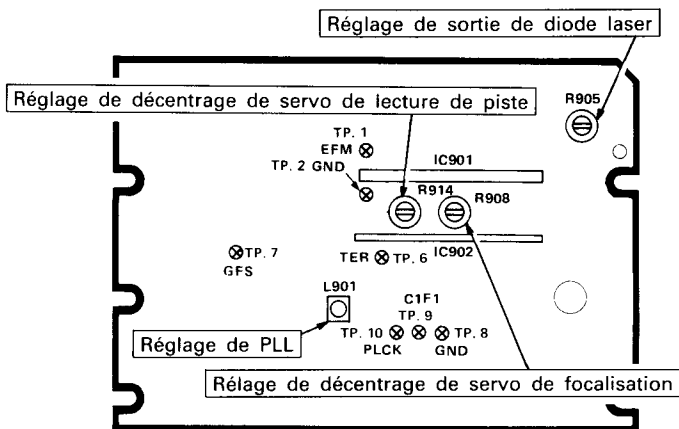


Fig. 34 b

**1. Réglage de sortie de diode laser**

**Note:** De pas faire ce réglage sauf lorsque les pièces du mécanisme de tête de lecture, du circuit laser ou du circuit d'alimentation CD ont été remplacées.

(1) **Instrument à utiliser**

Oscilloscope

(2) **Procédure de réglage**

- 1) Brancher l'oscilloscope sur TP. 1 (EFM) et TP. 2 (GND) (Fig. 35b)
- 2) Mettre un disque dans le lecteur, bride de fixation, mettre le commutateur laser/ouvrir sur "ON" et faire une lecture d'un signal EFM à l'aide de l'oscilloscope.

**Note:** Lorsque le commutateur laser/ouvrir est sur "ON", ne jamais regarder dans la lentille, C'est très dangereux.

**Comment lire la forme d'onde du signal EFM et comment brancher l'oscilloscope**

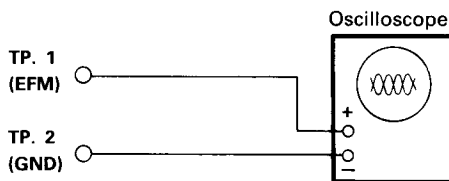


Fig. 35 b

- 3) Régler R905 de façon à ce que l'amplitude du signal EFM de l'oscilloscope atteigne un niveau de  $1,3\text{ V} \pm 40\text{ mV}$ .

**Note:** Néanmoins, si le niveau de signal est dans la plage de  $1,1\text{ V} - 1,5\text{ V}$ , c'est normal et aucun autre réglage ne s'impose.

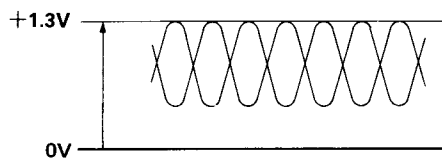


Fig. 36 b

**2. Réglage du décalage du servo de focalisation**

(1) **Instruments à utiliser**

Oscilloscope  
Voltmètre CC

(2) **Procédure de réglage**

- 1) Mettre le lecteur en mode "arrêt".
- 2) Brancher l'oscilloscope sur TP. 1 (EFM) et TP. 2 (GND).
- 3) Brancher le voltmètre comme indiqué sur la Fig. 37b.
- 4) Mettre un disque dans le lecteur, bride de fixation, mettre le commutateur laser/ouvrir sur "ON" et faire une lecture d'un signal EFM à l'aide de l'oscilloscope.
- 5) Régler R908 de façon à ce que le signal EFM atteigne son amplitude maximale.
- 6) Après avoir fait le réglage, utiliser le voltmètre CC pour vérifier que la tension centrale de R908 est dans la plage  $2 - 3\text{ V}$ .
- 7) Si la tension centrale n'est pas dans la plage spécifiée, rerégler comme indiqué ci-dessous:  
Moins de 2 V: régler sur 2 V.  
Plus de 3 V: régler sur 3 V.

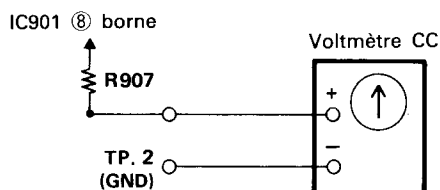


Fig. 37 b

**3. Réglage du décalage du servo de lecture de piste**

**(1) Instrument à utiliser**

Voltmètre CC

**(2) Procédure de réglage**

- 1) Les étapes de réglage 1 et 2 s'effectuent après le réglage.
- 2) Tout en étant en mode "arrêt", brancher le voltmètre CC sur TP. 6 (TER). (Fig. 38b)
- 3) Régler R914 de façon à ce que le voltmètre CC indique  $+ 10 \text{ mV} \pm 2 \text{ mV}$ .

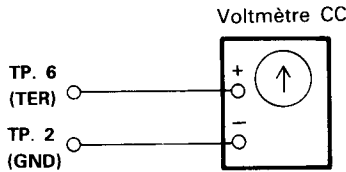


Fig. 38 b

**4. Réglage de PLL**

**Note:** Ne faire aucun réglage, sauf lorsque les pièces ont été remplacées dans le bloc PLL ou dans le circuit d'alimentation CD.

**(1) Instruments à utiliser**

Fréquencemètre  
Oscilloscope

**(2) Préparation**

Brancher les instruments comme indiqué sur la Fig. 40b.

**(3) Procédure de réglage**

- 1) Avec l'appareil dans le mode "arrêt", prérégler L901 de façon à ce que la fréquence au niveau de TP. 10 (PLCK) soit de  $4500 \pm 50 \text{ Hz}$ .

- 2) Mettre l'appareil dans le mode "reproduction". Tourner L901 dans le sens des aiguilles d'une montre (dans la direction du noyau) jusqu'à ce que le niveau de TP. 7 (GFS) soit "bas". Puis, tourner L901 dans le sens inverse des aiguilles d'une montre (dans la direction opposée du noyau), et trouver la position pour laquelle le niveau passe à "haut".
- 3) Mettre l'appareil dans le mode "arrêt" et lire la fréquence (f1) au niveau de TP. 10 (PLCK).
- 4) Mettre l'appareil en mode "reproduction" et tourner L901 dans le sens inverse des aiguilles d'une montre jusqu'à ce que le niveau TP. 7 (GFS) passe à "bas". Puis, inverser la procédure. Tourner L901 dans le sens des aiguilles d'une montre et trouver la position pour laquelle le niveau passe sur "haut".
- 5) Mettre l'appareil en mode "arrêt" et lire la fréquence (f2) au niveau de TP. 10 (PLCK).
- 6) Régler L901 de façon à ce que la fréquence au niveau de TP. 10 (PLCK) soit  $(f1 + f2) \times 1/2$ .

**(4) Vérification du fonctionnement**

Après avoir fait les réglages 1) à 6) ci-dessus, mettre l'appareil en mode "reproduction". Vérifier que la fréquence au niveau de TP. 10 (PLCK) soit de  $4321,8 \pm 400 \text{ Hz}$ .

Vérifier que la forme d'onde au niveau de TP. 7 (GFS) soit comme indiquée sur la Fig. 39b.

Il se peut que le niveau au niveau de TP. 7 (GFS) passe parfois sur "bas".

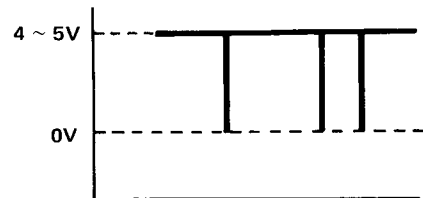


Fig. 39 b

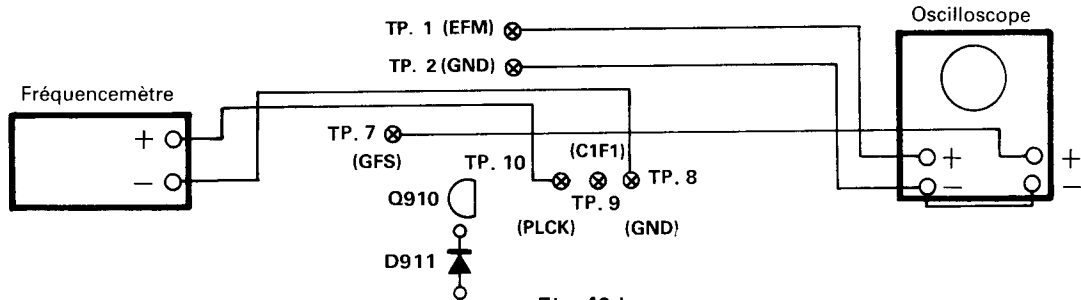


Fig. 40 b

**5. Vérification de l'actionneur (Fig. 41b)**

Vérifier le niveau de résistance des bobines de l'actionneur. Si les valeurs sont comme indiqué ci-dessous, le fonctionnement est correct.

Bobine de focalisation ..... 30 (ohms)  
Bobine de lecture de piste ..... 10 (ohms)

Si une bobine quelconque est, il se peut que l'actionneur soit défectueux. Vérifier que la lentille se déplace avec une pile sèche de 1, 5 V.

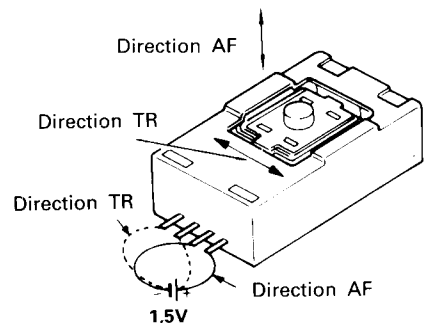


Fig. 41 b

**WARNING LABEL · ETIQUETTE D'AVERTISSEMENT**

CAUTION-INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS FAILED OR DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.

AVOID EXPOSURE - LASER RADIATION IS EMITTED FROM THIS APERTURE.

For Europe and Australia, etc.  
Pour l'Europe et l'Australie, etc.

ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.

For Sweden, Denmark, Norway, Finland, and Switzerland  
Pour Suède, Danemark, Norvège, Finlande, et Suisse

**EXPLANATORY LABEL ON REAR-SIDE  
ETIQUETTE EXPLICATIVE DU PANNEAU ARRIÈRE**

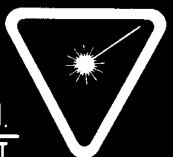
**CLASS 1  
LASER PRODUCT**

For Europe and Australia, etc.  
Pour l'Europe et l'Australie, etc.

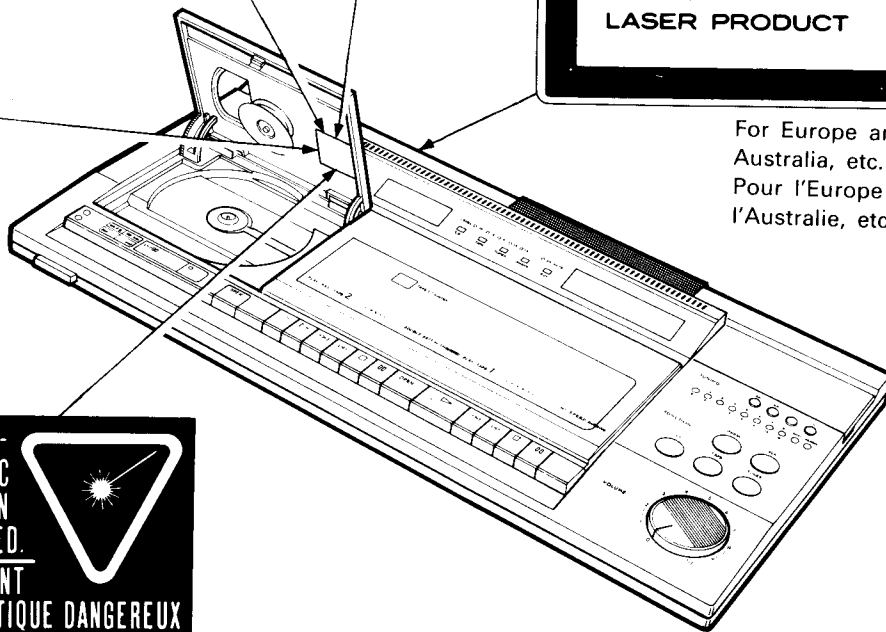
**DANGER**  
Invisible laser radiation when open and inter lock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM.

For U.S.A  
Pour les Etats Unis

**CAUTION: HAZARDOUS LASER AND ELECTROMAGNETIC RADIATION WHEN OPEN AND INTERLOCK DEFEATED.**  
**ATTENTION: RAYONNEMENT LASER ET ELECTROMAGNETIQUE DANGEREUX SI OUVERT AVEC L'ENCLENCHEMENT DE SECURITE ANNULÉ.**



For Canada  
Pour le Canada



THIS LASER COMPACT DISC PLAYER FUNCTIONS BY HELP OF INVISIBLE LASERLIGHT AND IS EQUIPPED WITH SAFETY-SWITCHES TO AVOID EXPOSURE WHEN DOOR IS OPEN AND SAFETY INTERLOCKS ARE DEFEATED. IT IS DANGEROUS TO SET SAFETY SWITCHES OUT OF FUNCTION. THERE ARE NO USER'S SERVICEABLE PARTS INSIDE THE UNIT, LEAVE ALL SERVICE TO QUALIFIED SERVICE PERSONNEL.

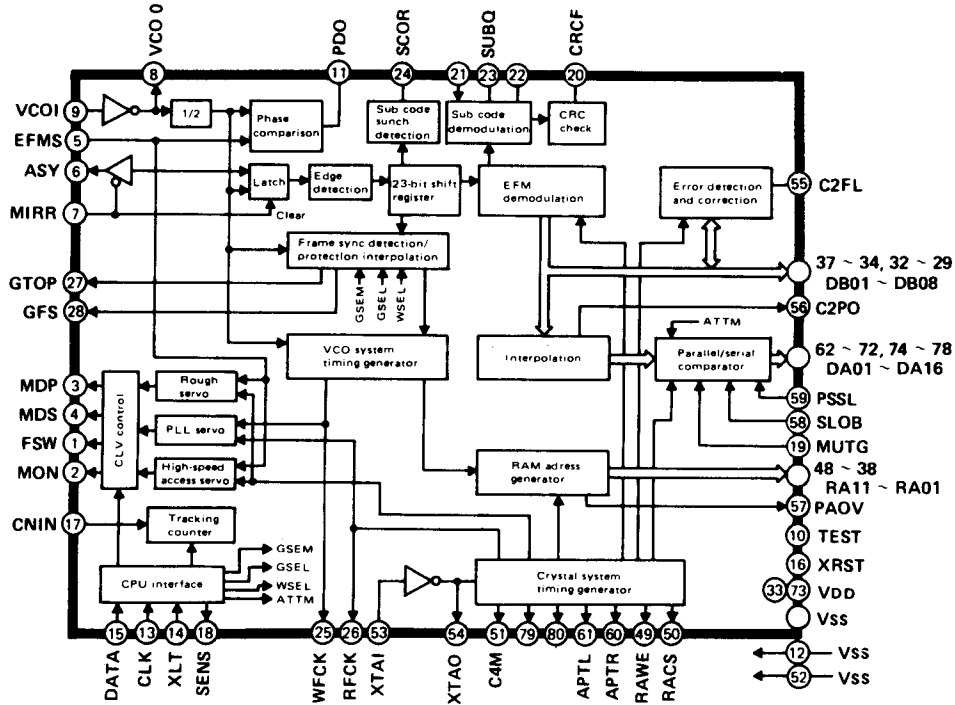
CE LECTEUR DE DISQUE COMPACT FAIT APPEL A UN RAYON LASER INVISIBLE ET IL EST DOTE D'INTERRUPTEURS DE SECURITE PERMETTANT D'EVITER TOUTE EXPOSITION AU RAYON LORSQU'ON OUVRE LA PORTE ET QUE LES VERROUILLAGES DE SECURITE SONT DEBLOQUES. IL EST DANGEREUX DE MANIPULER LES INTERRUPTEURS DE SECURITE DE L'APPAREIL QUAND CE DERNIER N'EST PAS EN SERVICE. L'APPAREIL NE RENFERME AUCUNE PIECE QUI PUISSE ETRE REPARÉE PAR L'UTILISATEUR. ON CONFIERA DONC TOUTS TRAVAUX DE REPARATION A UN PERSONNEL QUALIFIÉ.

Inside of the set is a laser component emitting a laser radiation over the limit for laser class 1.

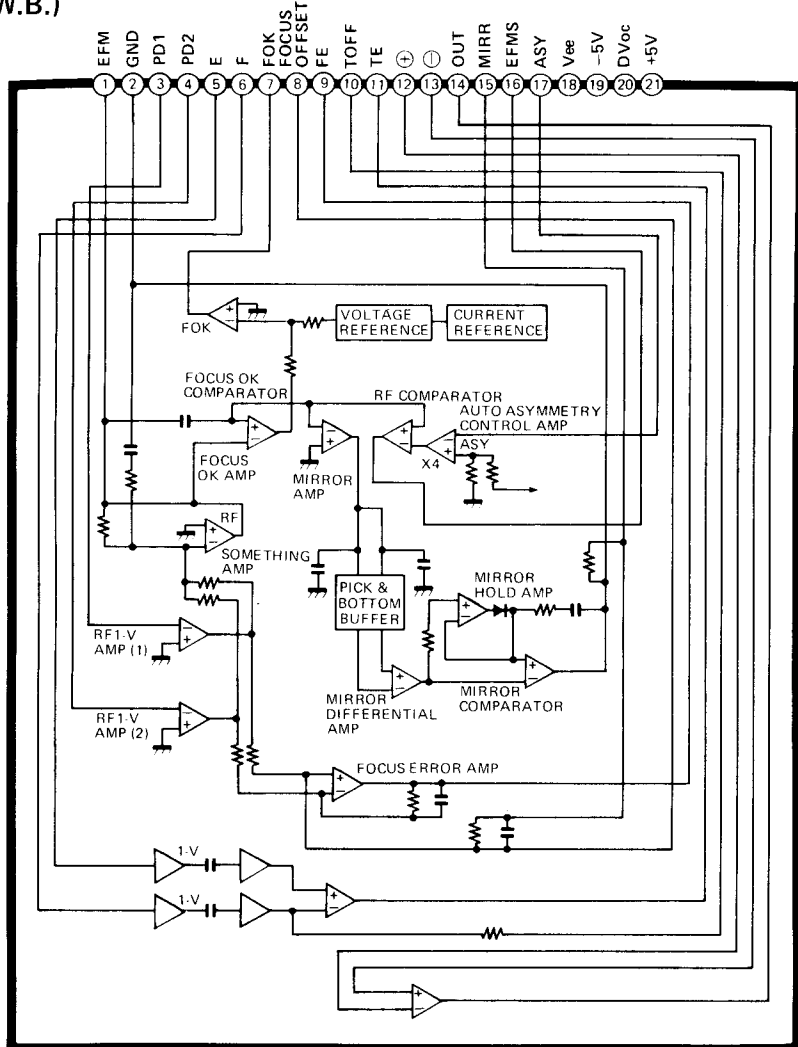
Inuti apparaten finns en laserkomponent som avger laserstrålning över gränsen för laser klass 1.

**IC INTERNAL BLOCK DIAGRAM · SCHÉMA FONCTIONNEL INTERE IC**

IC906 CX23035 (PX P.W.B.)  
DIGITAL SIGNAL IC



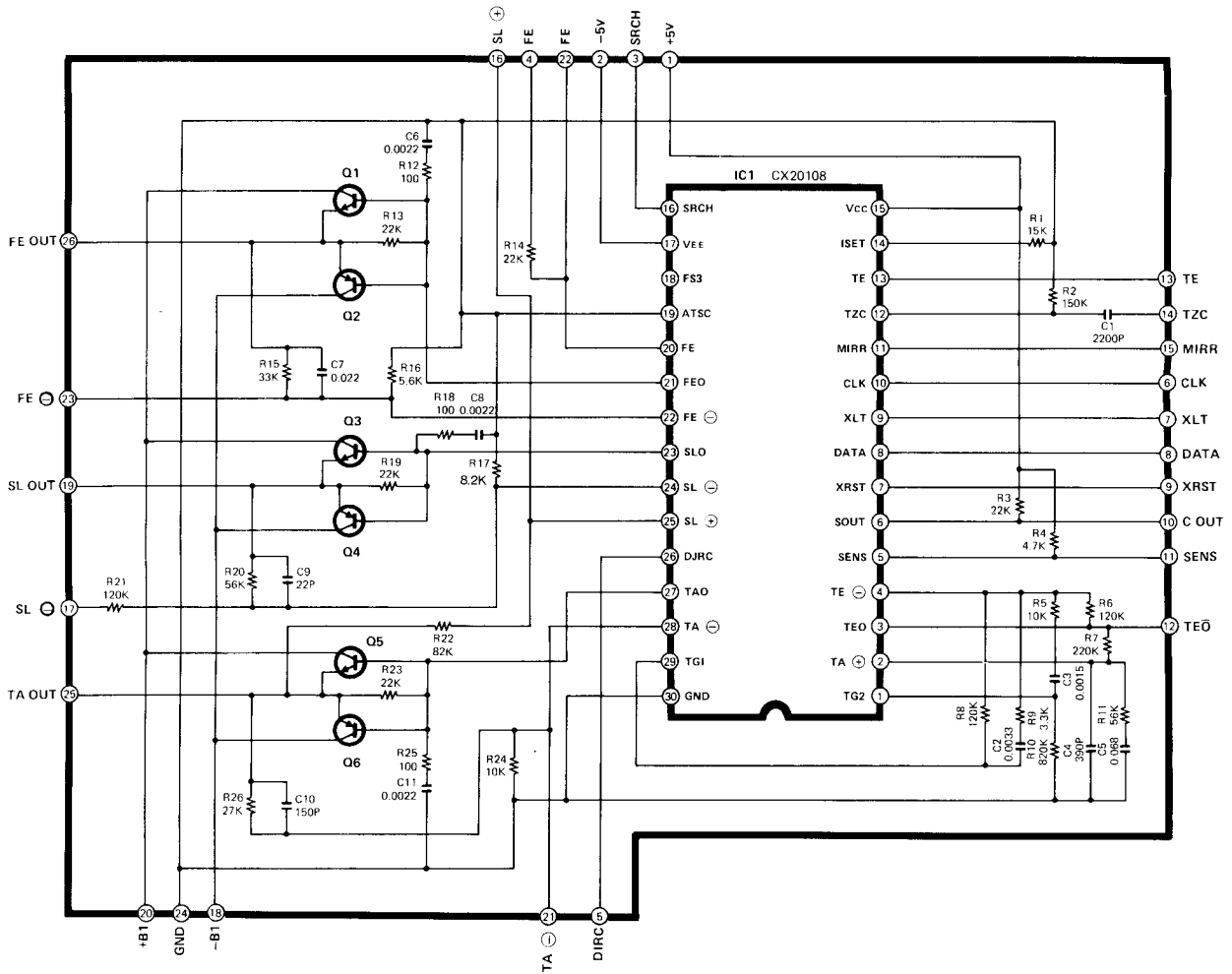
IC901 TM5050 (PX P.W.B.)  
PRE-AMP MODULE







IC902 TM5060C (PX P.W.B.)  
SERVO IC



**DIFFERENCE FOR DESTINATION** (for MAIN P.W.B.)  
**DIFFÉRENCE EN FONCTION DU PAYS DE** (pour la plaquette principale)  
**DESTINATION**

| ☆No.               | US, EW       | CS           | KS           | SA           | ES, VS           | BK           | ZS  |
|--------------------|--------------|--------------|--------------|--------------|------------------|--------------|-----|
| C102-107           | —            | —            | —            | —            | —                | —            | USE |
| C156, 157          | —            | —            | —            | —            | USE              | USE          | —   |
| C159-162           | —            | —            | —            | —            | USE              | USE          | —   |
| C313LR             | —            | —            | —            | —            | —                | —            | USE |
| C431LR             | —            | —            | —            | —            | —                | USE          | —   |
| C435               | —            | —            | —            | —            | —                | —            | USE |
| C437LR             | USE          | USE          | USE          | USE          | USE              | —            | USE |
| C480LR             | USE          | USE          | USE          | USE          | USE              | —            | USE |
| C510LR             | —            | —            | —            | —            | —                | —            | USE |
| C512, 513          | —            | —            | —            | —            | —                | —            | USE |
| C703LR             | USE          | USE          | USE          | USE          | USE              | USE          | —   |
| C711LR             | —            | —            | —            | —            | —                | —            | USE |
| C712, 713          | —            | —            | —            | —            | —                | —            | USE |
| C714               | Jumper (21)  | Jumper (21)  | Jumper (21)  | Jumper (21)  | Jumper (21)      | Jumper (21)  | USE |
| C715LR             | —            | —            | —            | —            | —                | —            | USE |
| C716               | —            | —            | —            | —            | —                | —            | USE |
| C756LR             | —            | —            | —            | —            | —                | —            | USE |
| C825, 826          | —            | —            | —            | —            | —                | —            | USE |
| C831-837           | —            | —            | —            | —            | —                | —            | USE |
| R1                 | US only      | USE          | —            | —            | —                | —            | —   |
| R102               | Jumper (240) | Jumper (240) | Jumper (240) | Jumper (240) | Jumper (240)     | Jumper (240) | USE |
| R103               | —            | —            | —            | —            | —                | —            | USE |
| R105 - 107         | —            | —            | —            | —            | —                | —            | USE |
| R157, 158          | —            | —            | —            | —            | USE              | USE          | —   |
| R160 - 164         | —            | —            | —            | —            | USE              | USE          | —   |
| R322               | —            | —            | —            | —            | USE              | USE          | —   |
| R383, 384          | USE          | —            | —            | —            | —                | —            | —   |
| R425LR             | USE          | USE          | USE          | USE          | USE              | —            | USE |
| R433, 434          | USE          | USE          | USE          | USE          | USE              | —            | USE |
| R477LR             | USE          | USE          | USE          | USE          | USE              | —            | USE |
| R720LR             | A            | A            | A            | A            | A                | A            | B   |
| Q101, 102          | —            | —            | —            | —            | —                | —            | USE |
| Q151-154           | —            | —            | —            | —            | USE              | USE          | —   |
| Q422LR, 423, 472LR | USE          | USE          | USE          | USE          | USE              | —            | USE |
| D103, 104          | —            | —            | —            | —            | —                | —            | USE |
| D152-155, 158      | —            | —            | —            | —            | USE              | USE          | —   |
| L152               | —            | —            | —            | —            | USE              | USE          | —   |
| T152               | —            | —            | —            | —            | USE              | USE          | —   |
| JK102              | —            | —            | USE          | —            | USE              | USE          | USE |
| CT152              | —            | —            | —            | —            | USE              | USE          | —   |
| CP101              | —            | —            | —            | —            | —                | —            | USE |
| CP251              | —            | —            | —            | —            | VS: USE<br>ES: — | —            | USE |
| MF202              | —            | —            | —            | —            | —                | —            | USE |
| F801               | USE          | —            | —            | —            | —                | —            | —   |
| S370               | USE          | —            | —            | —            | —                | —            | —   |
| Jumper (189)       | —            | —            | —            | —            | USE              | USE          | —   |
| Jumper (193)       | USE          | USE          | USE          | USE          | —                | —            | USE |
| Jumper (194)       | USE          | USE          | USE          | USE          | —                | —            | USE |
| Jumper (236)       | USE          | USE          | USE          | USE          | —                | —            | USE |
| Jumper (198)       | —            | —            | —            | —            | —                | —            | USE |
| Jumper (200)       | —            | —            | —            | —            | —                | —            | USE |
| Jumper (201)       | USE          | USE          | USE          | USE          | USE              | USE          | —   |

| ☆No.         | US, EW | CS  | KS  | SA  | ES, VS  | BK  | ZS  |
|--------------|--------|-----|-----|-----|---------|-----|-----|
| Jumper (33)  | USE    | USE | USE | USE | USE     | USE | —   |
| Jumper (191) | —      | USE | USE | USE | USE     | USE | USE |
| Jumper (255) | —      | —   | USE | USE | USE     | USE | USE |
| Jumper (229) | USE    | USE | USE | USE | VS: —   | —   | —   |
|              |        |     |     |     | ES: USE |     |     |
| Jumper (410) | —      | —   | —   | —   | —       | USE | —   |
| Jumper (411) | —      | —   | —   | —   | —       | USE | —   |
| WIRE H       | —      | —   | —   | —   | —       | —   | USE |
| WIRE J       | —      | —   | —   | —   | —       | —   | USE |
| WIRE K       | —      | —   | —   | —   | —       | —   | USE |
| WIRE L       | —      | —   | —   | —   | —       | —   | USE |
| WIRE g       | USE    | USE | USE | USE | USE     | —   | USE |

(for CIRCUIT DIAGRAM) (pour le schéma des circuits)

| ☆No.   | US            | CS            | EW            | KS            | SA            | ES, VS           | BK               | ZS               |
|--------|---------------|---------------|---------------|---------------|---------------|------------------|------------------|------------------|
| C102   | —             | —             | —             | —             | —             | —                | —                | 0.22 $\mu$ F/50V |
| C103   | —             | —             | —             | —             | —             | —                | —                | 1 $\mu$ F/50V    |
| C104   | —             | —             | —             | —             | —             | —                | —                | 0.022 $\mu$ F    |
| C105   | —             | —             | —             | —             | —             | —                | —                | 39PF             |
| C106   | —             | —             | —             | —             | —             | —                | —                | 39PF             |
| C107   | —             | —             | —             | —             | —             | —                | —                | 0.022 $\mu$ F    |
| C154   | 15PF          | 15PF          | 15PF          | 15PF          | 15PF          | 12PF             | 12PF             | 15PF             |
| C156   | —             | —             | —             | —             | —             | 0.047 $\mu$ F    | 0.047 $\mu$ F    | —                |
| C157   | —             | —             | —             | —             | —             | 27PF             | 27PF             | —                |
| C159   | —             | —             | —             | —             | —             | 270PF            | 270PF            | —                |
| C160   | —             | —             | —             | —             | —             | 1 $\mu$ F        | 1 $\mu$ F        | —                |
| C161   | —             | —             | —             | —             | —             | 110PF            | 110PF            | —                |
| C162   | —             | —             | —             | —             | —             | 0.022 $\mu$ F    | 0.022 $\mu$ F    | —                |
| C307LR | 0.022 $\mu$ F | 0.022 $\mu$ F | 0.018 $\mu$ F | 0.018 $\mu$ F | 0.018 $\mu$ F | 0.018 $\mu$ F    | 0.018 $\mu$ F    | 0.018 $\mu$ F    |
| C313LR | —             | —             | —             | —             | —             | —                | —                | 2200PF           |
| C353   | 0.022 $\mu$ F | 0.022 $\mu$ F | 0.022 $\mu$ F | 0.022 $\mu$ F | 0.022 $\mu$ F | 0.022 $\mu$ F    | 0.022 $\mu$ F    | 4700PF           |
| C354   | —             | —             | —             | —             | —             | 0.22 $\mu$ F/50V | 0.22 $\mu$ F/50V | —                |
| C355   | —             | —             | —             | —             | —             | 1 $\mu$ F/50V    | 1 $\mu$ F/50V    | —                |
| C356   | —             | —             | —             | —             | —             | 0.68 $\mu$ F     | 0.68 $\mu$ F     | —                |
| C431LR | —             | —             | —             | —             | —             | —                | 0.027 $\mu$ F    | —                |
| C435   | —             | —             | —             | —             | —             | —                | —                | 470PF            |
| C437LR | 0.027 $\mu$ F | 0.027 $\mu$ F | 0.027 $\mu$ F | 0.027 $\mu$ F | 0.027 $\mu$ F | 0.027 $\mu$ F    | —                | 0.027 $\mu$ F    |
| C480LR | 1200PF        | 1200PF        | 1200PF        | 1200PF        | 1200PF        | 1200PF           | —                | 1200PF           |
| C501LR | 150PF         | 150PF         | 150PF         | 150PF         | 150PF         | 150PF            | 150PF            | 1000PF           |
| C510LR | —             | —             | —             | —             | —             | —                | —                | 560PF            |
| C512   | —             | —             | —             | —             | —             | —                | —                | 0.022 $\mu$ F    |
| C513   | —             | —             | —             | —             | —             | —                | —                | 0.022 $\mu$ F    |
| C700LR | 330PF         | 330PF         | 330PF         | 330PF         | 330PF         | 330PF            | 330PF            | 82PF             |
| C703LR | 3.3PF         | 3.3PF         | 3.3PF         | 3.3PF         | 3.3PF         | 3.3PF            | 3.3PF            | —                |
| C711LR | —             | —             | —             | —             | —             | —                | —                | 1000PF           |
| C712   | —             | —             | —             | —             | —             | —                | —                | 0.047 $\mu$ F    |
| C713   | —             | —             | —             | —             | —             | —                | —                | 0.1 $\mu$ F      |
| C714   | —             | —             | —             | —             | —             | —                | —                | 0.047 $\mu$ F    |
| C715LR | —             | —             | —             | —             | —             | —                | —                | 0.022 $\mu$ F    |
| C716   | —             | —             | —             | —             | —             | —                | —                | 0.047 $\mu$ F    |
| C756LR | —             | —             | —             | —             | —             | —                | —                | 0.022 $\mu$ F    |
| C825   | —             | —             | —             | —             | —             | —                | —                | 0.01 $\mu$ F     |
| C826   | —             | —             | —             | —             | —             | —                | —                | 0.01 $\mu$ F     |
| C831   | —             | —             | —             | —             | —             | —                | —                | 0.01 $\mu$ F     |
| C832   | —             | —             | —             | —             | —             | —                | —                | 0.01 $\mu$ F     |
| C833   | —             | —             | —             | —             | —             | —                | —                | 0.022 $\mu$ F    |
| C834   | —             | —             | —             | —             | —             | —                | —                | 0.01 $\mu$ F     |

| ☆No.                  | US              | CS              | EW              | KS              | SA              | ES, VS          | BK              | ZS            |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|
| C835                  | —               | —               | —               | —               | —               | —               | —               | 0.01 μF       |
| C836                  | —               | —               | —               | —               | —               | —               | —               | 0.01 μF       |
| C837                  | —               | —               | —               | —               | —               | —               | —               | 0.022 μF      |
| R1                    | 2.7MΩ           | 2.7MΩ           | —               | —               | —               | —               | —               | —             |
| R102                  | Jumper<br>(240) | Jumper<br>(240) | Jumper<br>(240) | Jumper<br>(240) | Jumper<br>(240) | Jumper<br>(240) | Jumper<br>(240) | 100KΩ         |
| R103                  | —               | —               | —               | —               | —               | —               | —               | 100KΩ         |
| R105                  | —               | —               | —               | —               | —               | —               | —               | 10KΩ          |
| R106                  | —               | —               | —               | —               | —               | —               | —               | 100KΩ         |
| R107                  | —               | —               | —               | —               | —               | —               | —               | 2.7KΩ         |
| R151                  | 1KΩ<br>(1/6W)   | 1KΩ<br>(1/2W)   | 1KΩ<br>(1/6W)   | 1KΩ<br>(1/6W)   | 1KΩ<br>(1/6W)   | 1KΩ<br>(1/6W)   | 1KΩ<br>(1/6W)   | 1KΩ<br>(1/6W) |
| R157                  | —               | —               | —               | —               | —               | 10KΩ            | 10KΩ            | —             |
| R158                  | —               | —               | —               | —               | —               | 10KΩ            | 10KΩ            | —             |
| R160                  | —               | —               | —               | —               | —               | 220KΩ           | 220KΩ           | —             |
| R161                  | —               | —               | —               | —               | —               | 1.5KΩ           | 1.5KΩ           | —             |
| R162                  | —               | —               | —               | —               | —               | 100KΩ           | 100KΩ           | —             |
| R163                  | —               | —               | —               | —               | —               | 4.7KΩ           | 4.7KΩ           | —             |
| R164                  | —               | —               | —               | —               | —               | 100KΩ           | 100KΩ           | —             |
| R208                  | 2.2KΩ           | 2.2KΩ           | 2.2KΩ           | 2.2KΩ           | 2.2KΩ           | 2.2KΩ           | 2.2KΩ           | 1KΩ           |
| R253                  | 1KΩ             | 1KΩ             | 1.8KΩ           | 1.8KΩ           | 1.8KΩ           | 1.8KΩ           | 1.8KΩ           | 1.8KΩ         |
| R322                  | —               | —               | —               | —               | —               | 10KΩ            | 10KΩ            | —             |
| R355                  | —               | —               | —               | —               | —               | 6.8KΩ           | 6.8KΩ           | —             |
| R356                  | —               | —               | —               | —               | —               | 6.8KΩ           | 6.8KΩ           | —             |
| R357                  | —               | —               | —               | —               | —               | 10KΩ            | 10KΩ            | —             |
| R358                  | —               | —               | —               | —               | —               | 1KΩ             | 1KΩ             | —             |
| R378                  | 47KΩ            | 100KΩ           | 47KΩ            | 100KΩ           | 100KΩ           | 100KΩ           | 100KΩ           | 100KΩ         |
| (MAIN P.W.B.)<br>R383 | 47KΩ            | —               | 47KΩ            | —               | —               | —               | —               | —             |
| R384                  | 47KΩ            | —               | 47KΩ            | —               | —               | —               | —               | —             |
| R425LR                | 1KΩ             | 1KΩ             | 1KΩ             | 1KΩ             | 1KΩ             | 1KΩ             | —               | 1KΩ           |
| R433                  | 2.2KΩ           | 2.2KΩ           | 2.2KΩ           | 2.2KΩ           | 2.2KΩ           | 2.2KΩ           | —               | 2.2KΩ         |
| R434                  | 5.6KΩ           | 5.6KΩ           | 5.6KΩ           | 5.6KΩ           | 5.6KΩ           | 5.6KΩ           | —               | 5.6KΩ         |
| R477LR                | 1KΩ             | 1KΩ             | 1KΩ             | 1KΩ             | 1KΩ             | 1KΩ             | —               | 1KΩ           |
| R501LR                | 560Ω            | 560Ω            | 560Ω            | 560Ω            | 560Ω            | 560Ω            | 560Ω            | 2.2KΩ         |
| R551                  | 1.8KΩ           | 1.8KΩ           | 1.8KΩ           | 1.8KΩ           | 1.8KΩ           | 1.8KΩ           | —               | 1.8KΩ         |
| R552                  | 150Ω            | 150Ω            | 150Ω            | 150Ω            | 150Ω            | 150Ω            | —               | 150Ω          |
| R553                  | 1.8KΩ           | 1.8KΩ           | 1.8KΩ           | 1.8KΩ           | 1.8KΩ           | 1.8KΩ           | —               | 1.8KΩ         |
| R554                  | 150Ω            | 150Ω            | 150Ω            | 150Ω            | 150Ω            | 150Ω            | —               | 150Ω          |
| R555                  | 120KΩ           | 120KΩ           | 120KΩ           | 120KΩ           | 120KΩ           | 120KΩ           | —               | 120KΩ         |
| R556                  | 120KΩ           | 120KΩ           | 120KΩ           | 120KΩ           | 120KΩ           | 120KΩ           | —               | 120KΩ         |
| R557                  | 5.6KΩ           | 5.6KΩ           | 5.6KΩ           | 5.6KΩ           | 5.6KΩ           | 5.6KΩ           | —               | 5.6KΩ         |
| R558                  | 10KΩ            | 10KΩ            | 10KΩ            | 10KΩ            | 10KΩ            | 10KΩ            | —               | 10KΩ          |
| R559                  | 3.9KΩ           | 3.9KΩ           | 3.9KΩ           | 3.9KΩ           | 3.9KΩ           | 3.9KΩ           | —               | 3.9KΩ         |
| R560                  | 4.7KΩ           | 4.7KΩ           | 4.7KΩ           | 4.7KΩ           | 4.7KΩ           | 4.7KΩ           | —               | 4.7KΩ         |
| Q101                  | —               | —               | —               | —               | —               | —               | —               | 2SC1740LN(S)  |
| Q102                  | —               | —               | —               | —               | —               | —               | —               | 2SK104        |
| Q151                  | —               | —               | —               | —               | —               | 2SC1740LN(S)    | 2SC1740LN(S)    | —             |
| Q152                  | —               | —               | —               | —               | —               | 2SC1740LN(S)    | 2SC1740LN(S)    | —             |
| Q153                  | —               | —               | —               | —               | —               | 2SA933(R)       | 2SA933(R)       | —             |
| Q154                  | —               | —               | —               | —               | —               | 2SA933(R)       | 2SA933(R)       | —             |
| Q353                  | —               | —               | —               | —               | —               | 2SC2603EFB      | 2SC2603EFB      | —             |
| Q354                  | —               | —               | —               | —               | —               | 2SC2603EFB      | 2SC2603EFB      | —             |
| Q422LR                | 2SC2603EFB      | 2SC2603EFB      | 2SC2603EFB      | 2SC2603EFB      | 2SC2603EFB      | 2SC2603EFB      | —               | 2SC2603EFB    |
| Q423                  | 2SC2603EFB      | 2SC2603EFB      | 2SC2603EFB      | 2SC2603EFB      | 2SC2603EFB      | 2SC2603EFB      | —               | 2SC2603EFB    |
| Q472LR                | 2SC2603EFB      | 2SC2603EFB      | 2SC2603EFB      | 2SC2603EFB      | 2SC2603EFB      | 2SC2603EFB      | —               | 2SC2603EFB    |
| Q551                  | 2SA844P(C)      | 2SA844P(C)      | 2SA844P(C)      | 2SA844P(C)      | 2SA844P(C)      | 2SA844P(C)      | —               | 2SA844P(C)    |
| Q552                  | 2SA844P(C)      | 2SA844P(C)      | 2SA844P(C)      | 2SA844P(C)      | 2SA844P(C)      | 2SA844P(C)      | —               | 2SA844P(C)    |

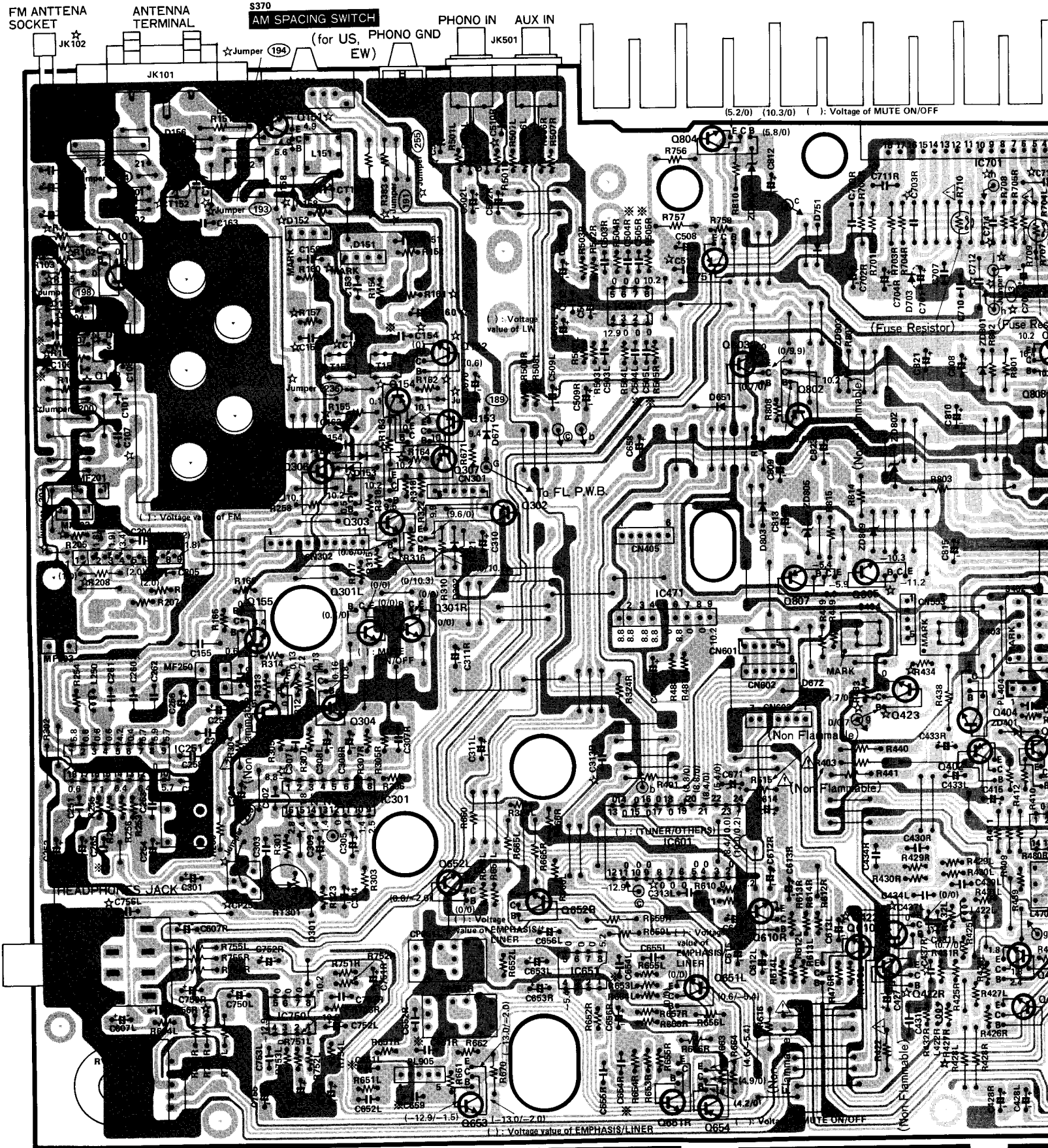
| ☆No.             | US         | CS         | EW         | KS         | SA         | ES, VS     | BK      | ZS         |
|------------------|------------|------------|------------|------------|------------|------------|---------|------------|
| Q553             | 2SC2603EFB | 2SC2603EFB | 2SC2603EFB | 2SC2603EFB | 2SC2603EFB | 2SC2603EFB | —       | 2SC2603EFB |
| Q554             | 2SC2603EFB | 2SC2603EFB | 2SC2603EFB | 2SC2603EFB | 2SC2603EFB | 2SC2603EFB | —       | 2SC2603EFB |
| D103             | —          | —          | —          | —          | —          | —          | —       | 1K60R      |
| D104             | —          | —          | —          | —          | —          | —          | —       | 1K60R      |
| D152             | —          | —          | —          | —          | —          | KV1260     | KV1260  | —          |
| D153             | —          | —          | —          | —          | —          | 1S2473     | 1S2473  | —          |
| D154             | —          | —          | —          | —          | —          | 1S2473     | 1S2473  | —          |
| D155             | —          | —          | —          | —          | —          | 1S2473     | 1S2473  | —          |
| D158             | —          | —          | —          | —          | —          | 1S2473     | 1S2473  | —          |
| D357             | —          | —          | 1SS133T    | 1SS133T    | 1SS133T    | 1SS133T    | 1SS133T | 1SS133T    |
| D551             | 1S2473     | 1S2473     | 1S2473     | 1S2473     | 1S2473     | 1S2473     | —       | 1S2473     |
| D552             | 1S2473     | 1S2473     | 1S2473     | 1S2473     | 1S2473     | 1S2473     | —       | 1S2473     |
| D553             | 1S2473     | 1S2473     | 1S2473     | 1S2473     | 1S2473     | 1S2473     | —       | 1S2473     |
| D554             | 1S2473     | 1S2473     | 1S2473     | 1S2473     | 1S2473     | 1S2473     | —       | 1S2473     |
| RT551            | 2kΩ-(B)    | 2kΩ-(B)    | 2kΩ-(B)    | 2kΩ-(B)    | 2kΩ-(B)    | 2kΩ-(B)    | —       | 2kΩ-(B)    |
| RT552            | 1kΩ-(B)    | 1kΩ-(B)    | 1kΩ-(B)    | 1kΩ-(B)    | 1kΩ-(B)    | 1kΩ-(B)    | —       | 1kΩ-(B)    |
| RT553            | 2kΩ-(B)    | 2kΩ-(B)    | 2kΩ-(B)    | 2kΩ-(B)    | 2kΩ-(B)    | 2kΩ-(B)    | —       | 2kΩ-(B)    |
| RT554            | 1kΩ-(B)    | 1kΩ-(B)    | 1kΩ-(B)    | 1kΩ-(B)    | 1kΩ-(B)    | 1kΩ-(B)    | —       | 1kΩ-(B)    |
| L152             | —          | —          | —          | —          | —          | USE        | USE     | —          |
| T152             | —          | —          | —          | —          | —          | USE        | USE     | —          |
| JK102            | —          | —          | —          | USE        | —          | USE        | USE     | USE        |
| CT152            | —          | —          | —          | —          | —          | USE        | USE     | —          |
| CP101            | —          | —          | —          | —          | —          | —          | —       | USE        |
| CP251            | —          | —          | —          | —          | —          | VS: USE    | —       | USE        |
|                  |            |            |            |            |            | ES: —      |         |            |
| MF202            | —          | —          | —          | —          | —          | —          | —       | USE        |
| F801             | 2A125V     | —          | 2A125V     | —          | —          | —          | —       | —          |
| F802             | 4A125V     | 4A125V     | 4A125V     | T4A        | T4A        | T4A        | T4A     | T4A        |
| F803             | 1A125V     | 1A125V     | 1A125V     | T800mA     | T800mA     | T800mA     | T800mA  | T800mA     |
| F804             | 1A125V     | 1A125V     | 1A125V     | T800mA     | T800mA     | T800mA     | T800mA  | T800mA     |
| S363             | —          | —          | —          | —          | —          | USE        | USE     | —          |
| S370             | USE        | —          | USE        | —          | —          | —          | —       | —          |
| Jumper<br>②②⑨    | USE        | USE        | USE        | USE        | USE        | USE        | USE     | —          |
| Jumper<br>①⑨④    | USE        | USE        | USE        | USE        | USE        | —          | —       | USE        |
| Jumper<br>②④④    | USE        | USE        | USE        | USE        | USE        | USE        | USE     | —          |
| Jumper<br>②①①    | USE        | USE        | USE        | USE        | USE        | USE        | USE     | —          |
| Jumper<br>①⑨①    | —          | USE        | —          | USE        | USE        | USE        | USE     | USE        |
| EF/REW<br>SWITCH | USE        | USE        | USE        | USE        | USE        | USE        | —       | USE        |

|   |   |  |  |                               |                 |   |   |  |
|---|---|--|--|-------------------------------|-----------------|---|---|--|
| <p>M5218P<br/>NJM072<br/>NJM2068DD<br/>NJM4558D<br/>NJM4558DM<br/>μPC457PC<br/>μPB553AC</p> | <p>BU4066B</p>                                      | <p>BA6251<br/>BA 1330<br/>HD14053B</p> | <p>AN6873N<br/>AN7273<br/>HA 12045</p> | <p>HM6116FP-4<br/>TC9152P</p> | <p>CX20133</p>  | <p>μPD1704C-531</p>   | <p>AN278<br/>BA6124</p>   |  |
|   |   |  |  |                               |                 |   |   |  |
| <p>STK4141-2</p>  | <p>TM5050</p>                                       | <p>TM5060C</p>                         | <p>BA3416BL</p>                        | <p>HD614042FD91</p>           | <p>CX23035</p>  | <p>2SA844(C)<br/>2SA933(R)<br/>2SC1740LN(S)<br/>2SD1468(R)<br/>2SD1468(R)</p> | <p>1K34A<br/>1K60R<br/>1S2076<br/>1S2473<br/>1SS133T<br/>1S2076A<br/>HZ-3A2<br/>HZ-5C-1<br/>HZ-6B<br/>HZ6B-2<br/>HZ11B2<br/>HZ-12A-2<br/>HZ-12A-3<br/>HZ-24-2</p> |  |
|   |   |  |  |                               |                 |   | <p>1K34A<br/>1K60R<br/>1S2076<br/>1S2473<br/>1SS133T<br/>1S2076A<br/>HZ-3A2<br/>HZ-5C-1<br/>HZ-6B<br/>HZ6B-2<br/>HZ11B2<br/>HZ-12A-2<br/>HZ-12A-3<br/>HZ-24-2</p> |  |
| <p>2SC2603EFB</p>   | <p>2SB514AL(D/E)<br/>2SD330(D/E)<br/>2SD880(GR)</p> | <p>2SB941(P)<br/>2SD1266(P)</p>        | <p>2SB562B</p>                         | <p>2SK104(F)</p>              | <p>2SK163-L</p> | <p>ERB12-01</p>   | <p>1K34A<br/>1K60R<br/>1S2076<br/>1S2473<br/>1SS133T<br/>1S2076A<br/>HZ-3A2<br/>HZ-5C-1<br/>HZ-6B<br/>HZ6B-2<br/>HZ11B2<br/>HZ-12A-2<br/>HZ-12A-3<br/>HZ-24-2</p> |  |
|   |   |  |  |                               |                 |   | <p>1K34A<br/>1K60R<br/>1S2076<br/>1S2473<br/>1SS133T<br/>1S2076A<br/>HZ-3A2<br/>HZ-5C-1<br/>HZ-6B<br/>HZ6B-2<br/>HZ11B2<br/>HZ-12A-2<br/>HZ-12A-3<br/>HZ-24-2</p> |  |
| <p>S4VB20</p>   | <p>KV1260</p>                                       |  |  |                               |                 |   |   |  |
|   |   |  |  |                               |                 |   |   |  |

# PRINTED WIRING BOARD PLAN DE BASE

※ Axial lead cylindrical ceramic capacitor. The circuit symbol ( ) is used for this component.

※ Condensateur céramique cylindrique à conducteur axial. Le symbol de circuit ( ) est utilisé pour ce composant.



VOLUME CONTROL

RT301 FM MPX VCO ADJ

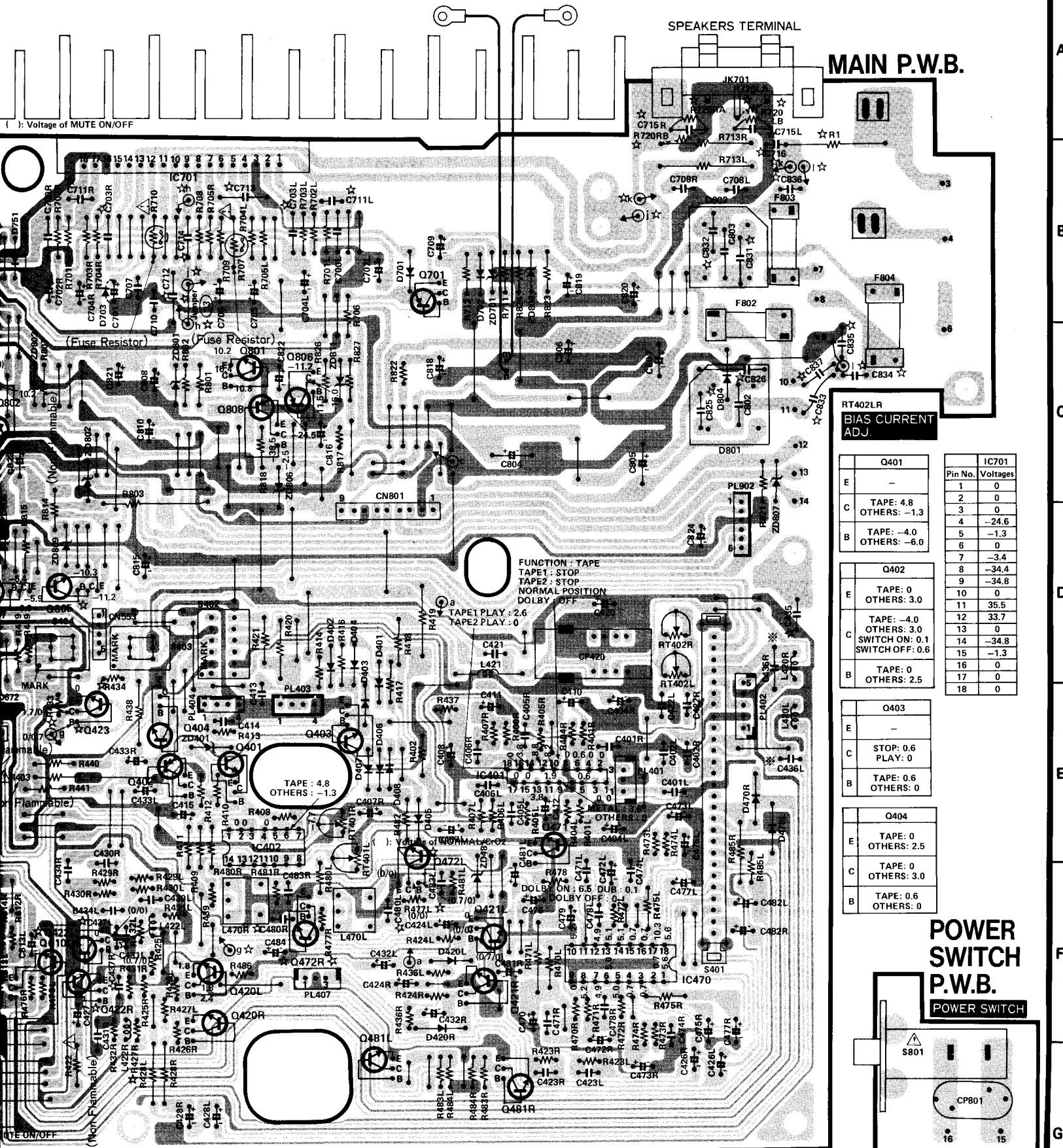
S402 TAPE SELECT SWITCH

S403 RIF/DUBBING SPEED SELECT SWITCH

S404 DOLBY

The circuit symbol ( ☆ ) means difference for destination.

ducteur axial. Le symbol de circuit ( ☆ ) signifie gwil sagit des différence pour destination. (Refer to the table in page 28, 29)



**MAIN P.W.B.**

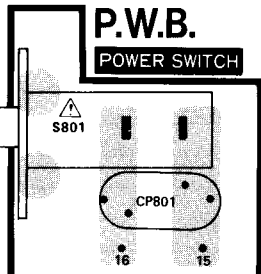
**RT402LR  
BIAS CURRENT  
ADJ.**

| Q401 |                            | IC701   |          |
|------|----------------------------|---------|----------|
|      |                            | Pin No. | Voltages |
| E    | -                          | 1       | 0        |
| C    | TAPE: 4.8<br>OTHERS: -1.3  | 2       | 0        |
| B    | TAPE: -4.0<br>OTHERS: -6.0 | 3       | 0        |
|      |                            | 4       | -24.6    |
|      |                            | 5       | -1.3     |
|      |                            | 6       | 0        |
|      |                            | 7       | -3.4     |
|      |                            | 8       | -34.4    |
|      |                            | 9       | -34.8    |
| E    | TAPE: 0<br>OTHERS: 3.0     | 10      | 0        |
| C    | TAPE: -4.0<br>OTHERS: 3.0  | 11      | 35.5     |
| B    | TAPE: 0<br>OTHERS: 2.5     | 12      | 33.7     |
|      |                            | 13      | 0        |
|      |                            | 14      | -34.8    |
|      |                            | 15      | -1.3     |
|      |                            | 16      | 0        |
|      |                            | 17      | 0        |
|      |                            | 18      | 0        |

| Q402 |                        |
|------|------------------------|
| E    | -                      |
| C    | STOP: 0.6<br>PLAY: 0   |
| B    | TAPE: 0.6<br>OTHERS: 0 |

| Q403 |                        |
|------|------------------------|
| E    | -                      |
| C    | TAPE: 0<br>OTHERS: 3.0 |
| B    | TAPE: 0.6<br>OTHERS: 0 |

**POWER  
SWITCH  
P.W.B.**



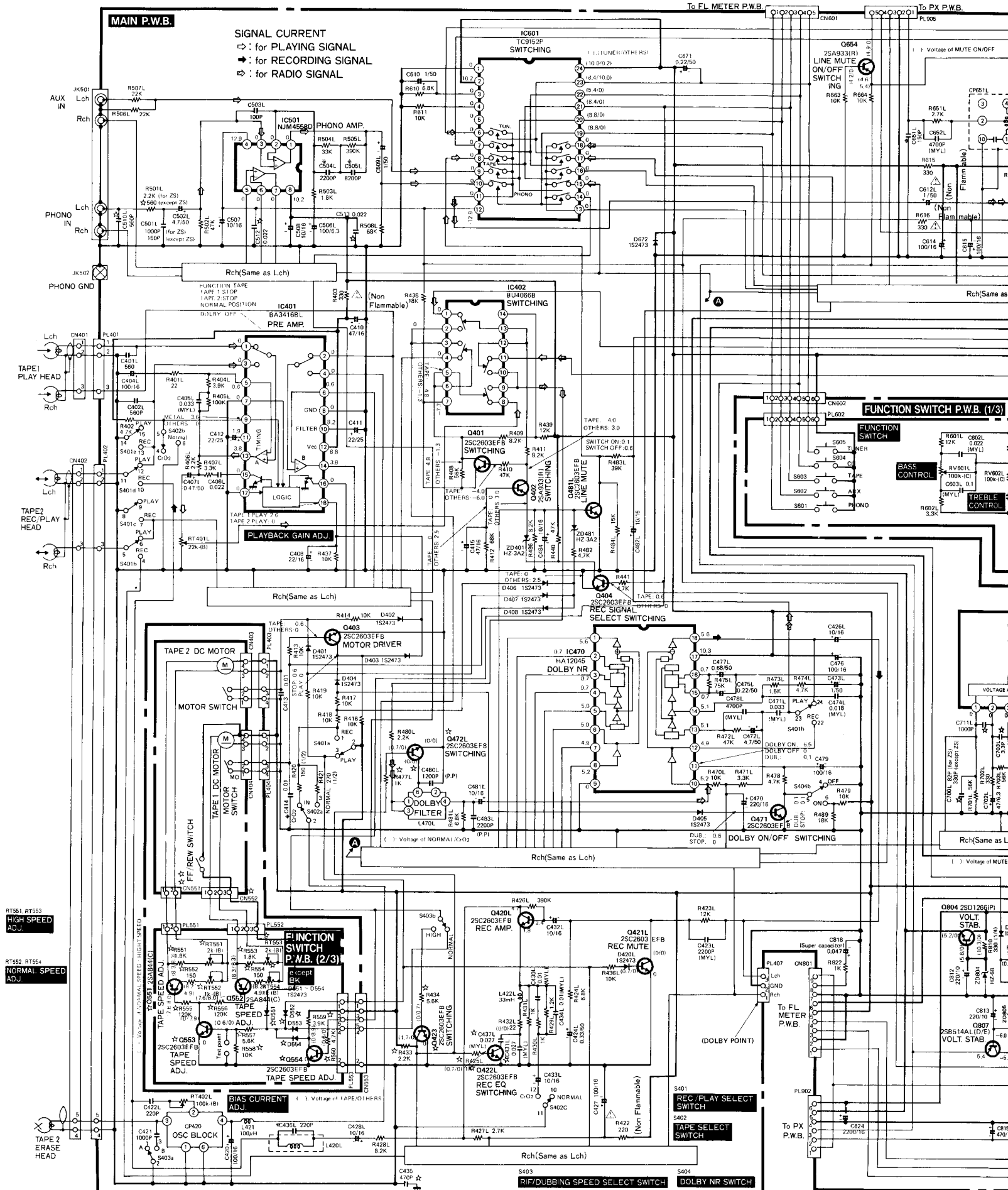
- S404 DOLBY NR SWITCH
- RT401LR PLAYBACK GAIN ADJ.
- S401 REC/PLAY SELECT SWITCH



# CIRCUIT DIAGRAM PLAN DE CIRCUIT

※ : + B, — B  
 ※ Axial lead cylindrical ceramic capacitor.  
 ※ Condensateur céramique cylindrique à conducteur axial.

The circuit symbol (☆) means difference  
 Le symbole de circuit (☆) signifie différent



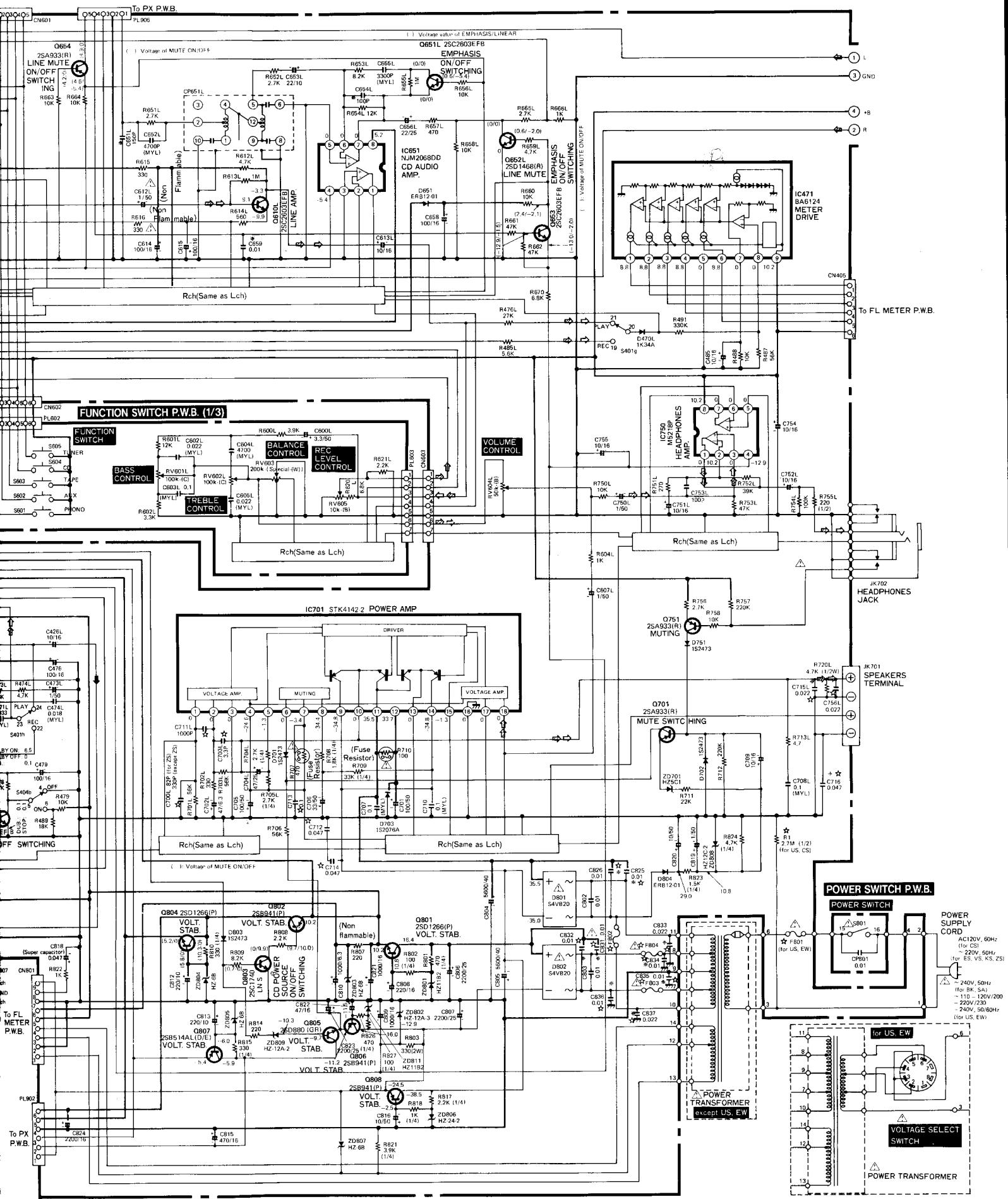
RT561, RT553  
**HIGH SPEED  
 ADJ.**

RT552, RT554  
**NORMAL SPEED  
 ADJ.**

TAPE 2  
**ERASE  
 HEAD**

Circuit symbol (☆) means difference for destination.  
Symbole de circuit (☆) signifie qu'il s'agit des différences pour destination.

(Refer to the table in page 30, 31)



A  
B  
C  
D  
E  
F  
G

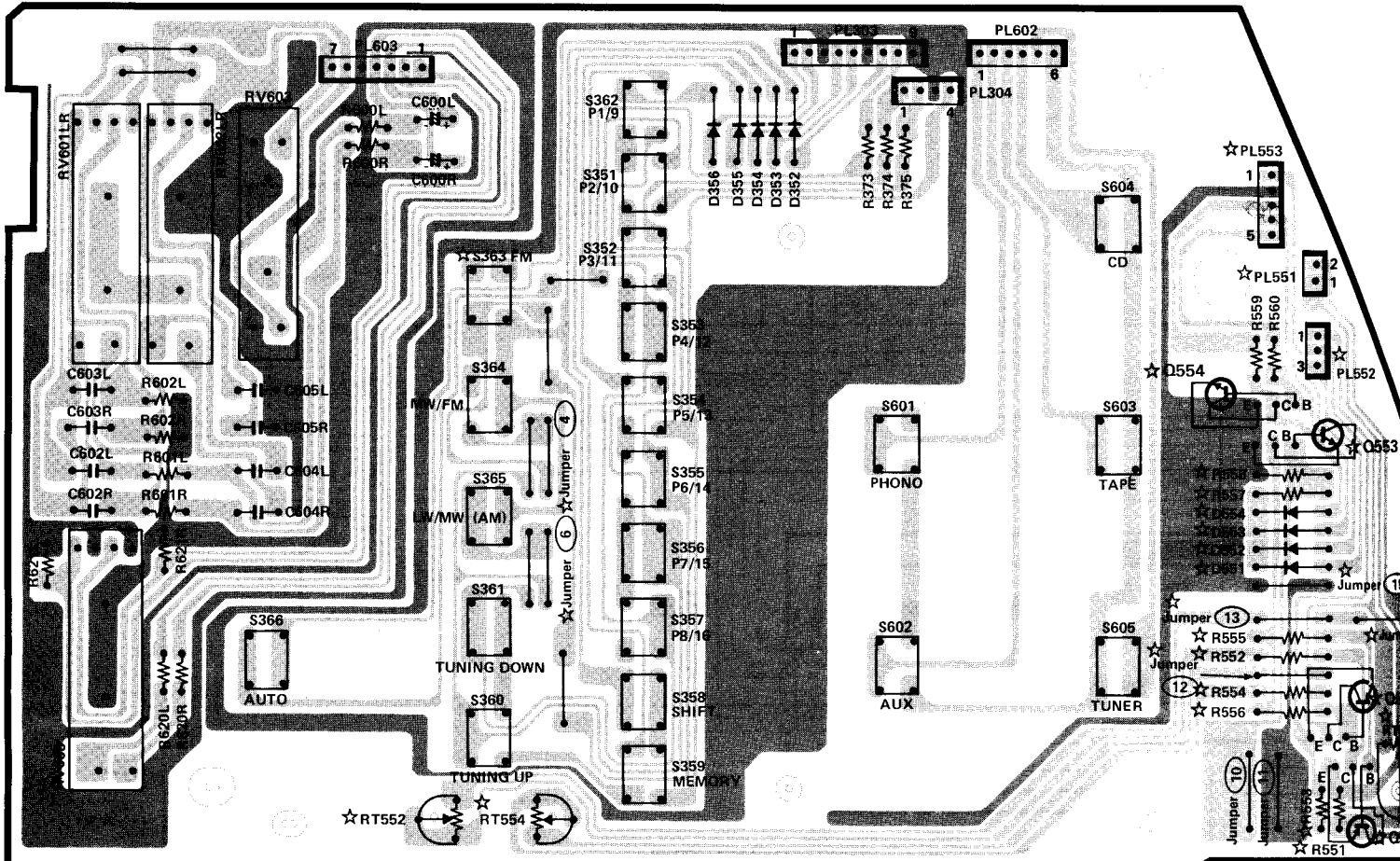
# PRINTED WIRING BOARD PLAN DE BASE

( [Solid Box] : Earth, [Dotted Box] : Others )

※ Axial lead cylindrical ceramic capacitor.

※ Condensateur céramique cylindrique à conducteur axial. The circuit symbol Le symbol de circuit

## FUNCTION SWITCH P.W.B.



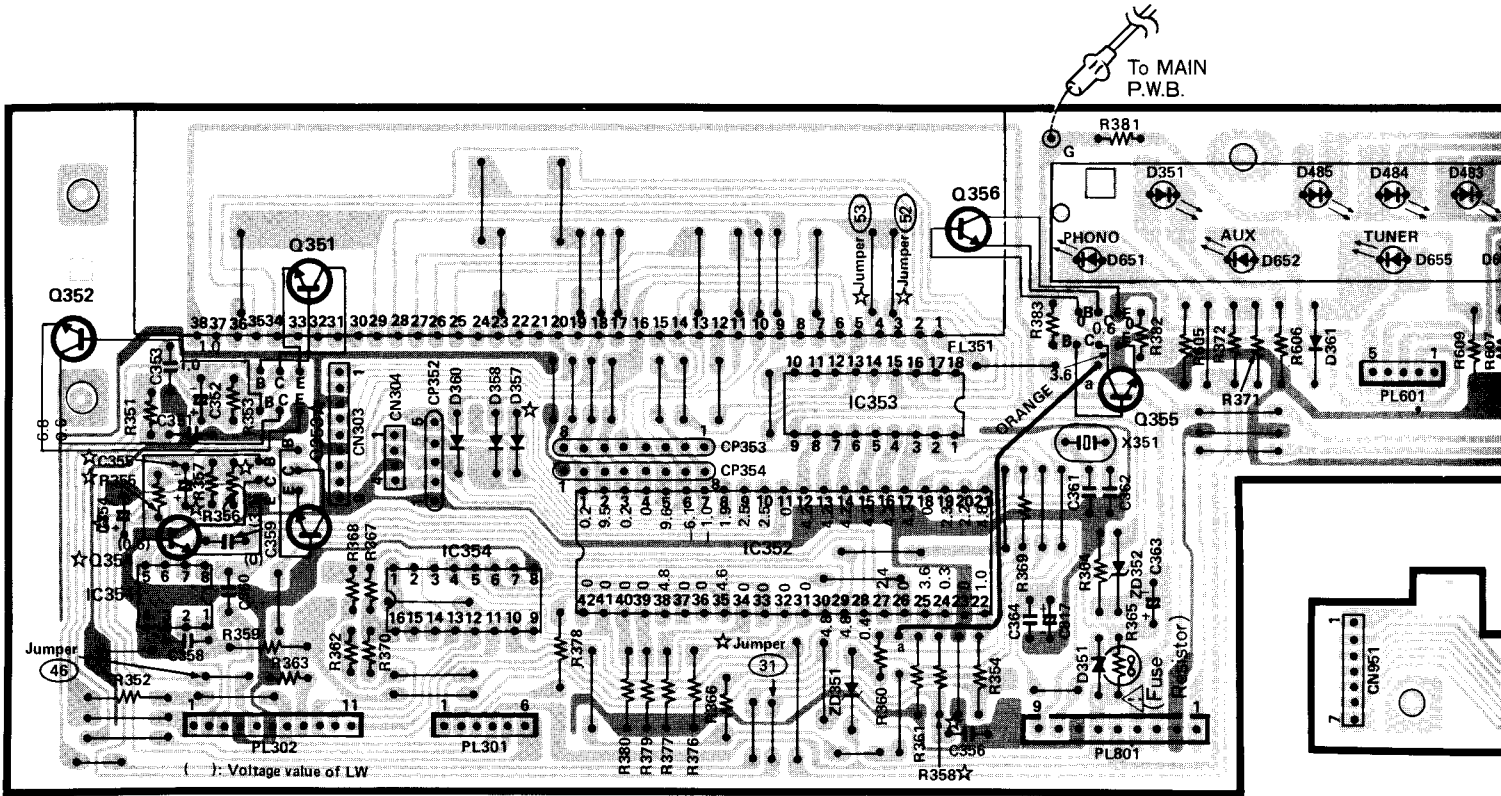
RV605LR  
REC LEVEL CONTROL

RV601LR  
BASS CONTROL

RV602LR  
TREBLE CONTROL

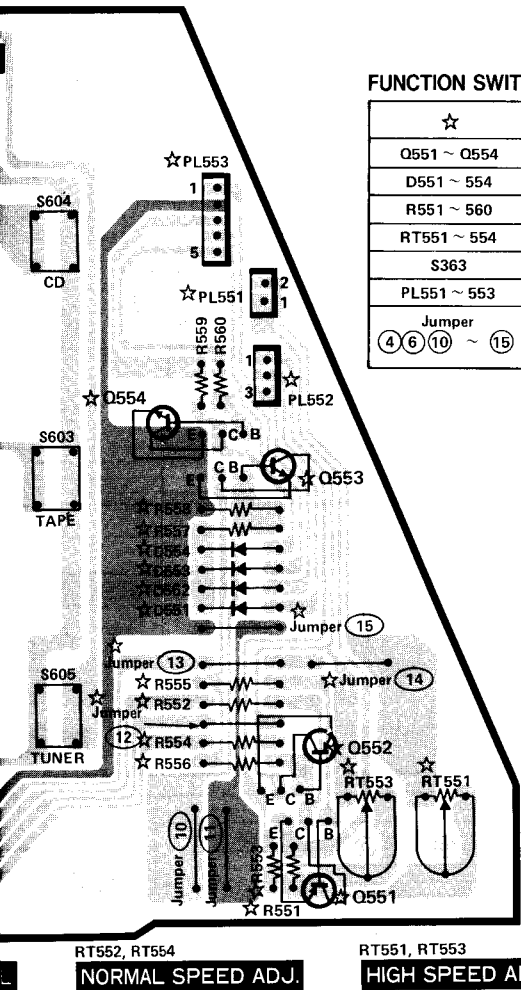
RV603  
BALANCE CONTROL

RT552, RT554  
NORMAL SPEED ADJ.



( ): Voltage value of LW

The circuit symbol (☆) means difference for destination.  
 acteur axial. Le symbol de circuit (☆) signifie gwil sagit des différence pour destination. (Refer to the table in page 28, 29)



**FUNCTION SWITCH P.W.B.**

| ☆                          | ES, VS | BK  | KS, ZS, SA, US, CS, EW |
|----------------------------|--------|-----|------------------------|
| Q551 ~ Q554                | USE    | -   | USE                    |
| D551 ~ 554                 | USE    | -   | USE                    |
| R551 ~ 560                 | USE    | -   | USE                    |
| RT551 ~ 554                | USE    | -   | USE                    |
| S363                       | USE    | USE | -                      |
| PL551 ~ 553                | USE    | -   | USE                    |
| Jumper (4) (6) (10) ~ (15) | USE    | -   | USE                    |

**FL METER P.W.B.**

| ☆           | ES, VS, BK | KS, SA, EW | US, CS | ZS  |
|-------------|------------|------------|--------|-----|
| Q353, 354   | USE        | -          | -      | -   |
| D357        | USE        | USE        | -      | USE |
| C354 ~ 356  | USE        | -          | -      | -   |
| R355 ~ 358  | USE        | -          | -      | -   |
| Jumper (31) | USE        | -          | -      | -   |
| Jumper (46) | USE        | -          | -      | -   |
| Jumper (52) | USE        | -          | -      | -   |
| Jumper (53) | -          | USE        | USE    | USE |

| Q551, Q552 |                          |
|------------|--------------------------|
| E          | NORMAL: 8.3<br>HIGH: 8.3 |
| C          | NORMAL: 8.2<br>HIGH: 4.9 |
| B          | NORMAL: 7.9<br>HIGH: 8.0 |

| Q553 |                        |
|------|------------------------|
| E    | 0                      |
| C    | NORMAL: 0<br>HIGH: 7.9 |
| B    | NORMAL: 0.6<br>HIGH: 0 |

| Q554 |                        |
|------|------------------------|
| E    | 0                      |
| C    | TAPE: 0<br>OTHERS: 8.9 |
| B    | TAPE: 0.6<br>OTHERS: 0 |

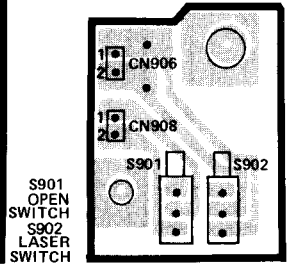
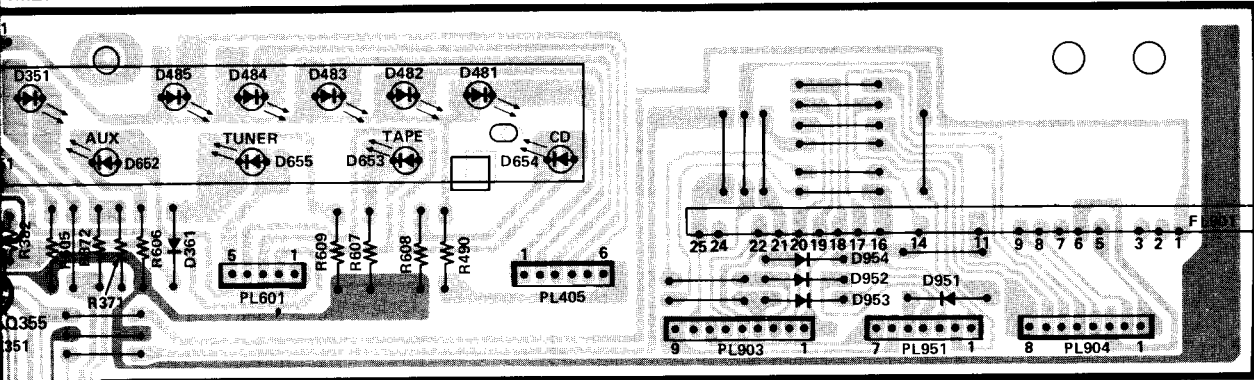
RT552, RT554  
**NORMAL SPEED ADJ.**

RT551, RT553  
**HIGH SPEED ADJ.**

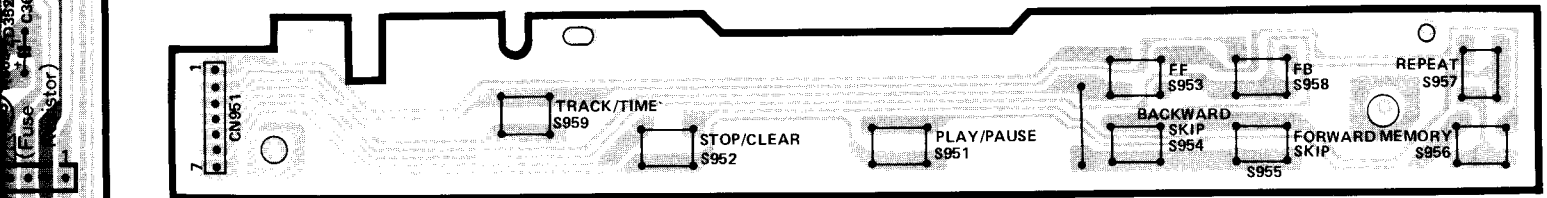
To MAIN P.W.B.

**FL METER P.W.B.**

**LASER/OPEN SWITCH P.W.B.**



**CD FUNCTION SWITCH P.W.B.**

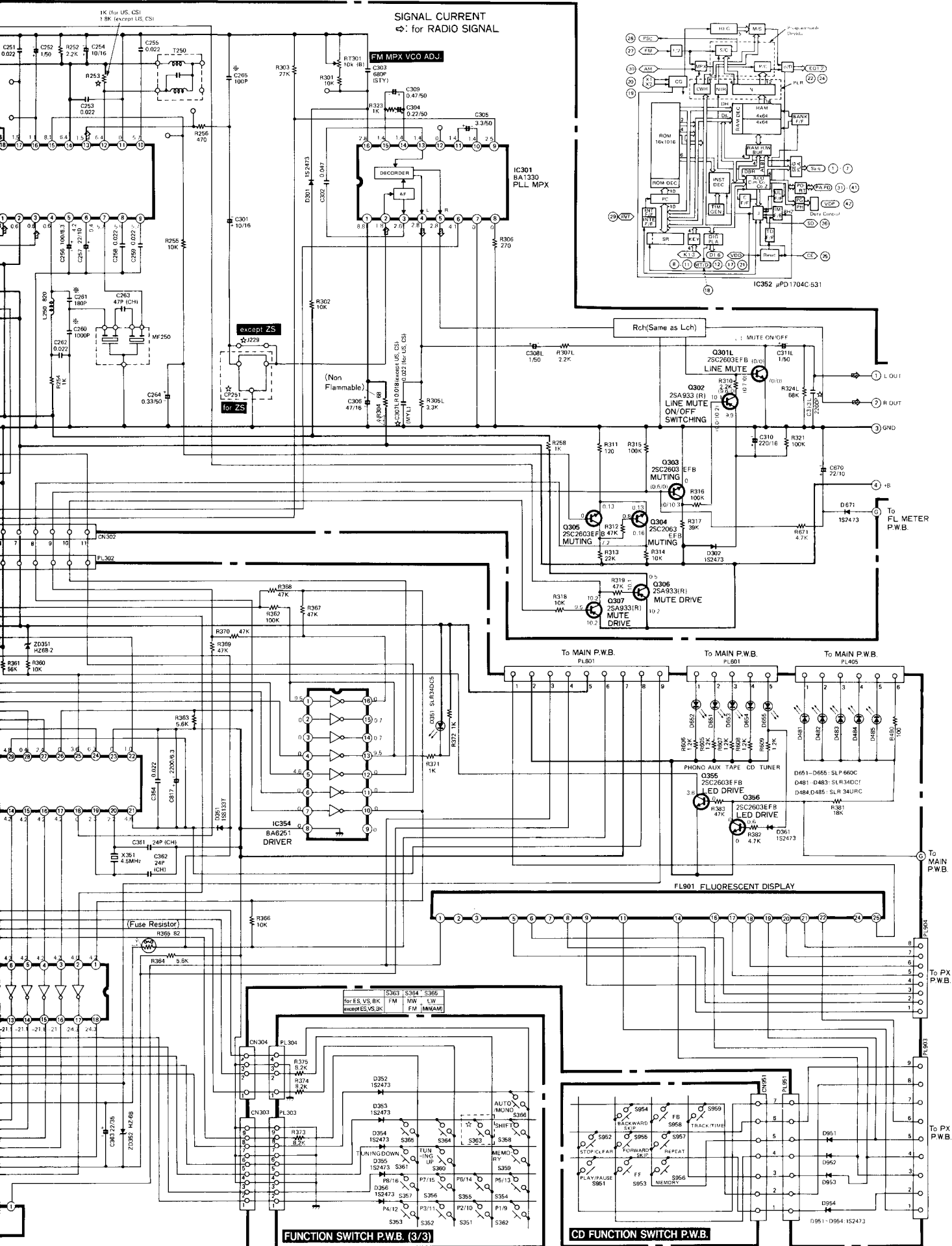




lead cylindrical ceramic capacitor.

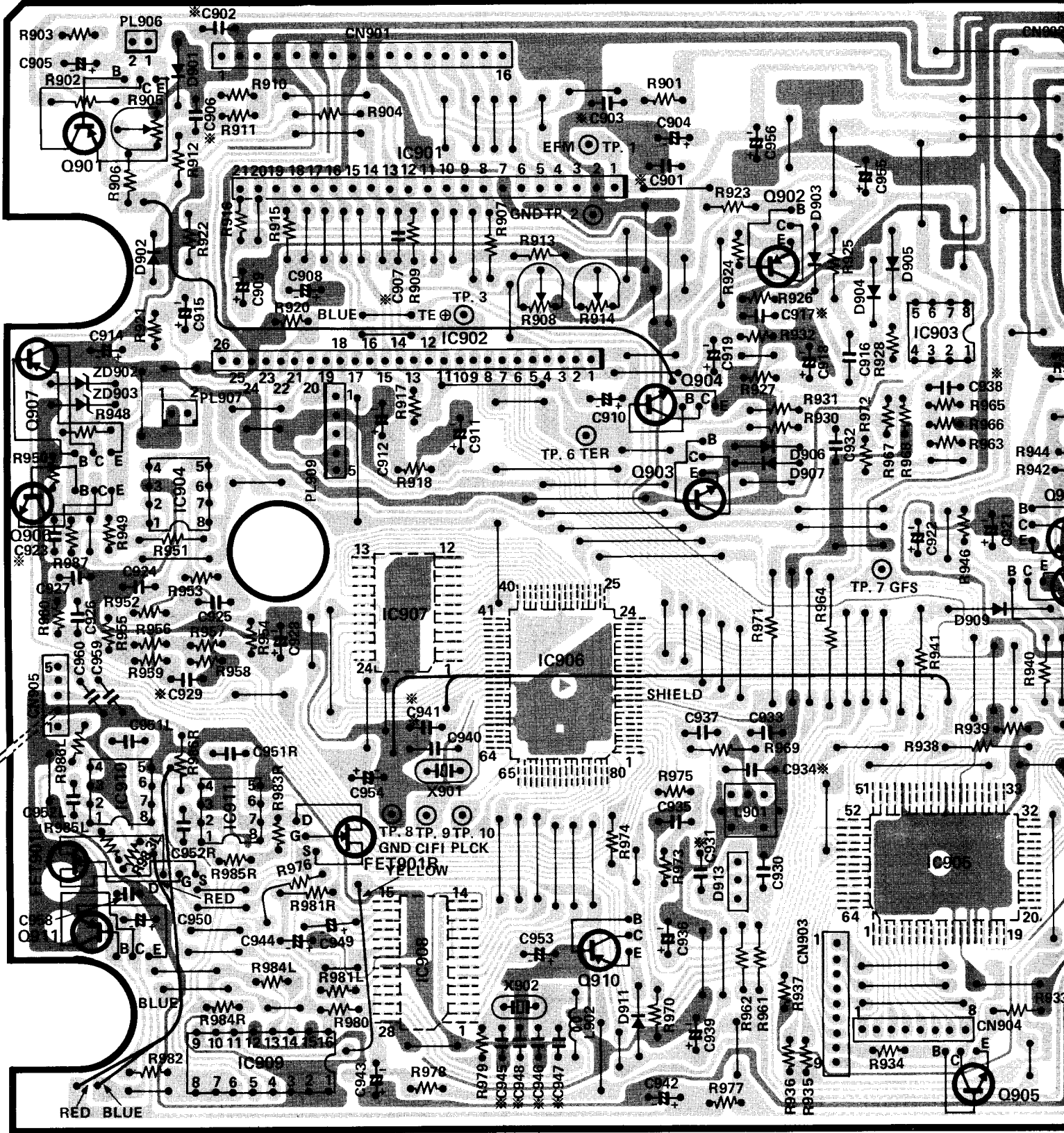
capaciteur céramique cylindrique à conducteur axial.

(Refer to the table in page 30, 31)



A  
B  
C  
D  
E  
F  
G

PX P.W.B.



R905  
**LASER DIODE  
OUTPUT ADJ.**

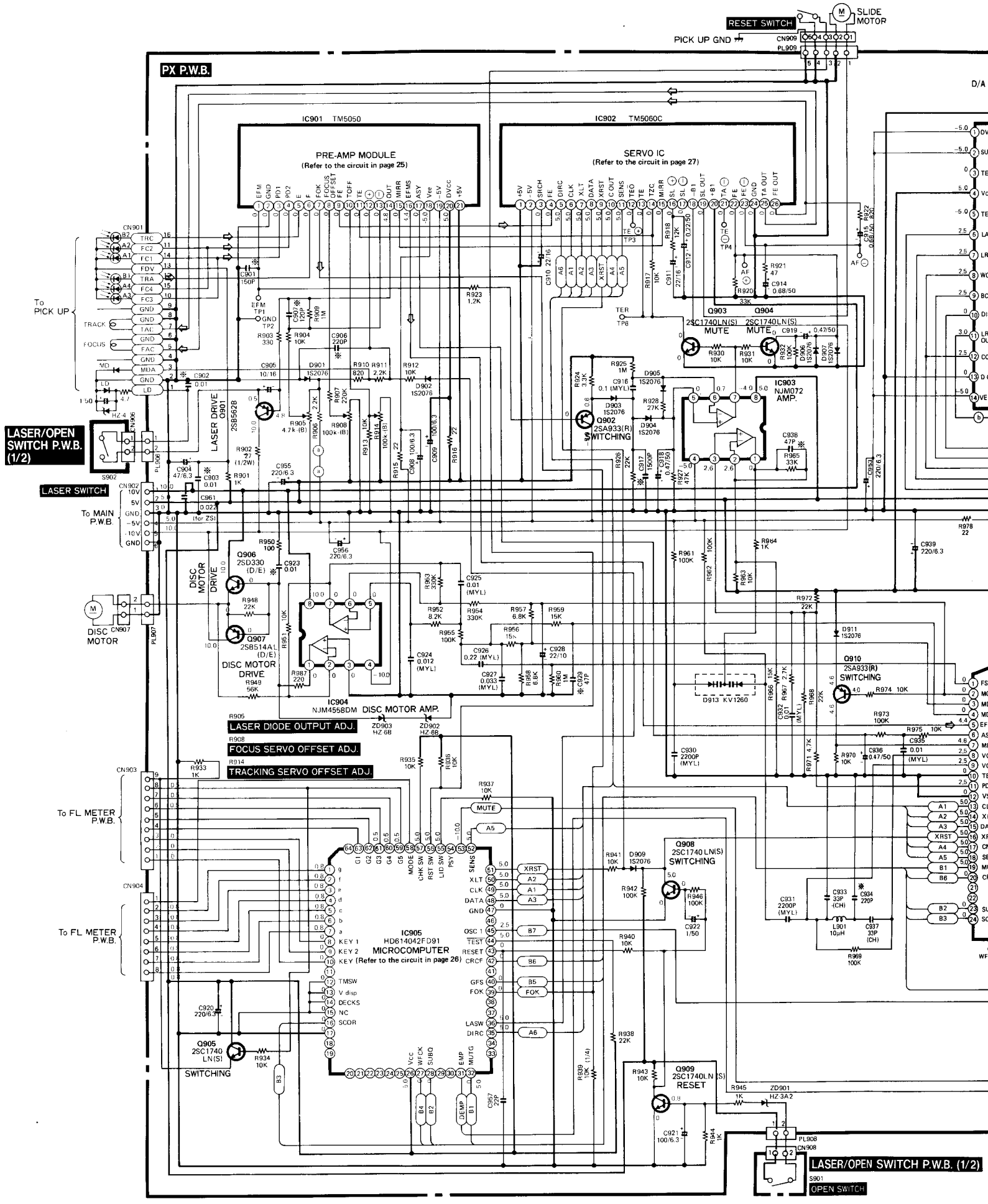
R908  
**FOCUS SERVO  
OFFSET ADJ.**

R914  
**TRACKING SERVO  
OFFSET ADJ.**

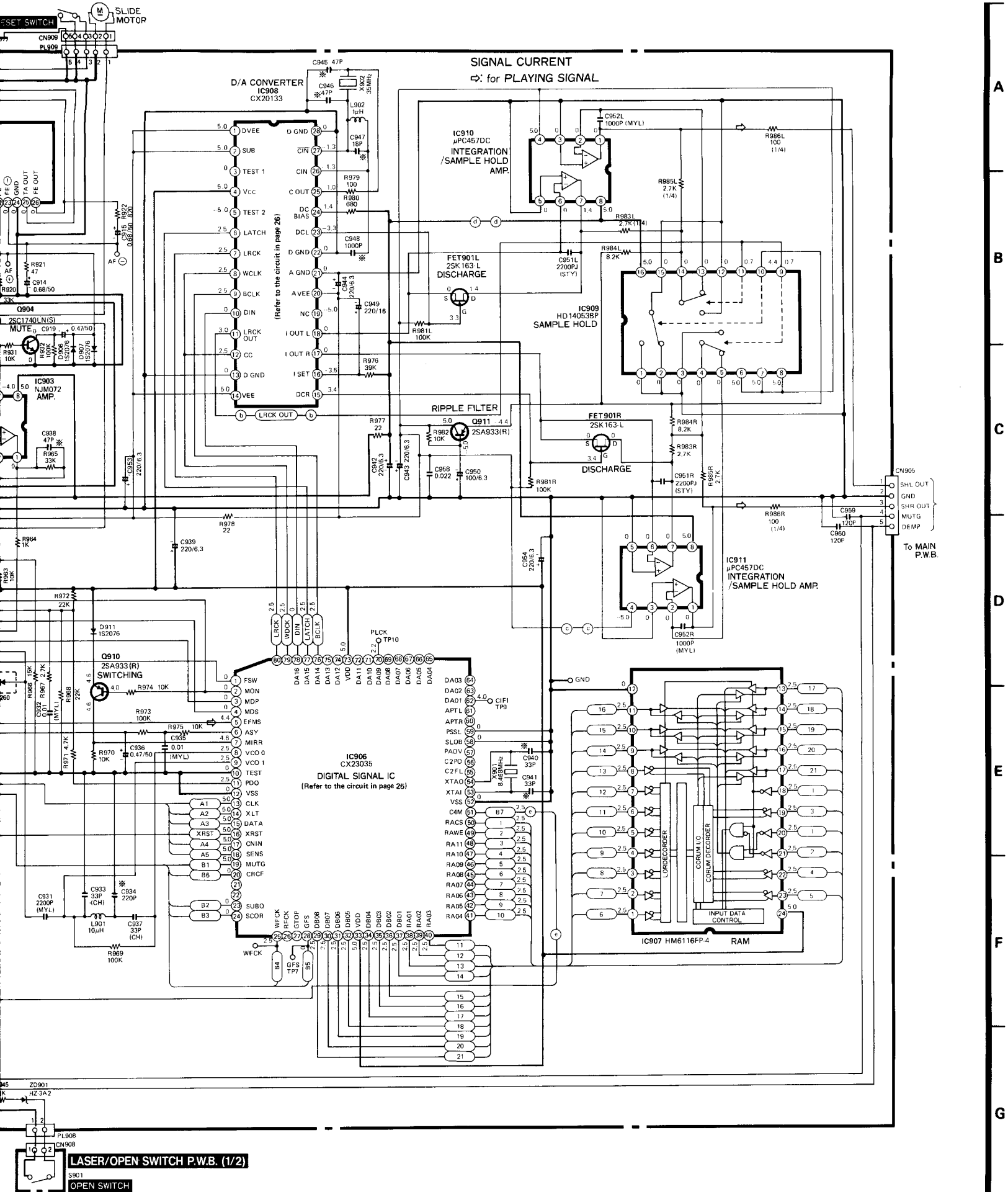
|   | Q901  | Q902 | Q903 | Q904 | Q906 | Q907  | Q908 |
|---|-------|------|------|------|------|-------|------|
| E | 0.5   | 0.6  | 0    | 0    | 0    | 0     | 0    |
| C | -10.0 | -5.0 | 0    | 0    | 10.0 | -10.0 | 5.0  |
| B | 4.8   | 0    |      |      | 0    | 0     | 0    |



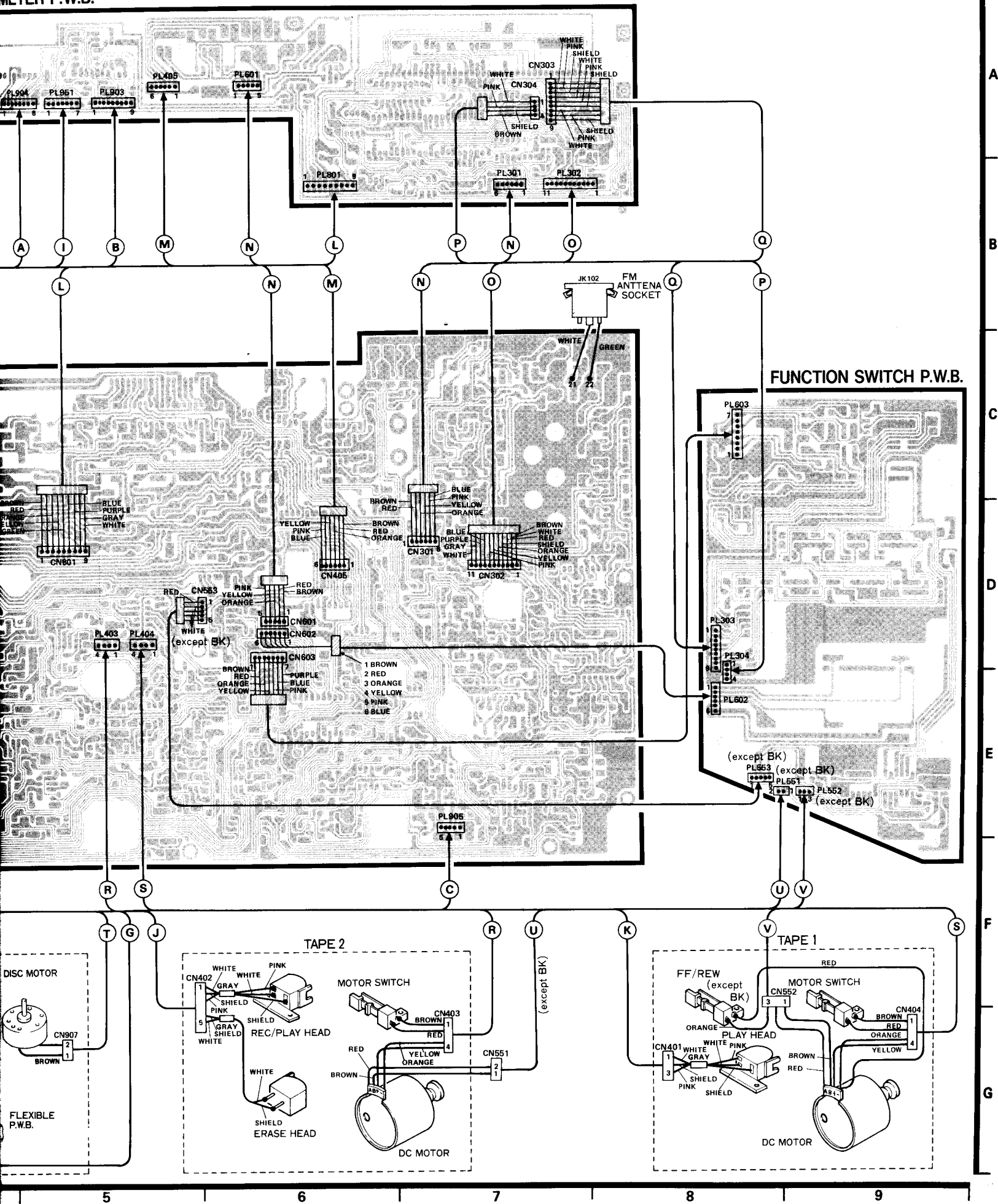




- \* Axial lead cylindrical ceramic capacitor.
- \* Condensateur céramique cylindrique à conducteur axial.





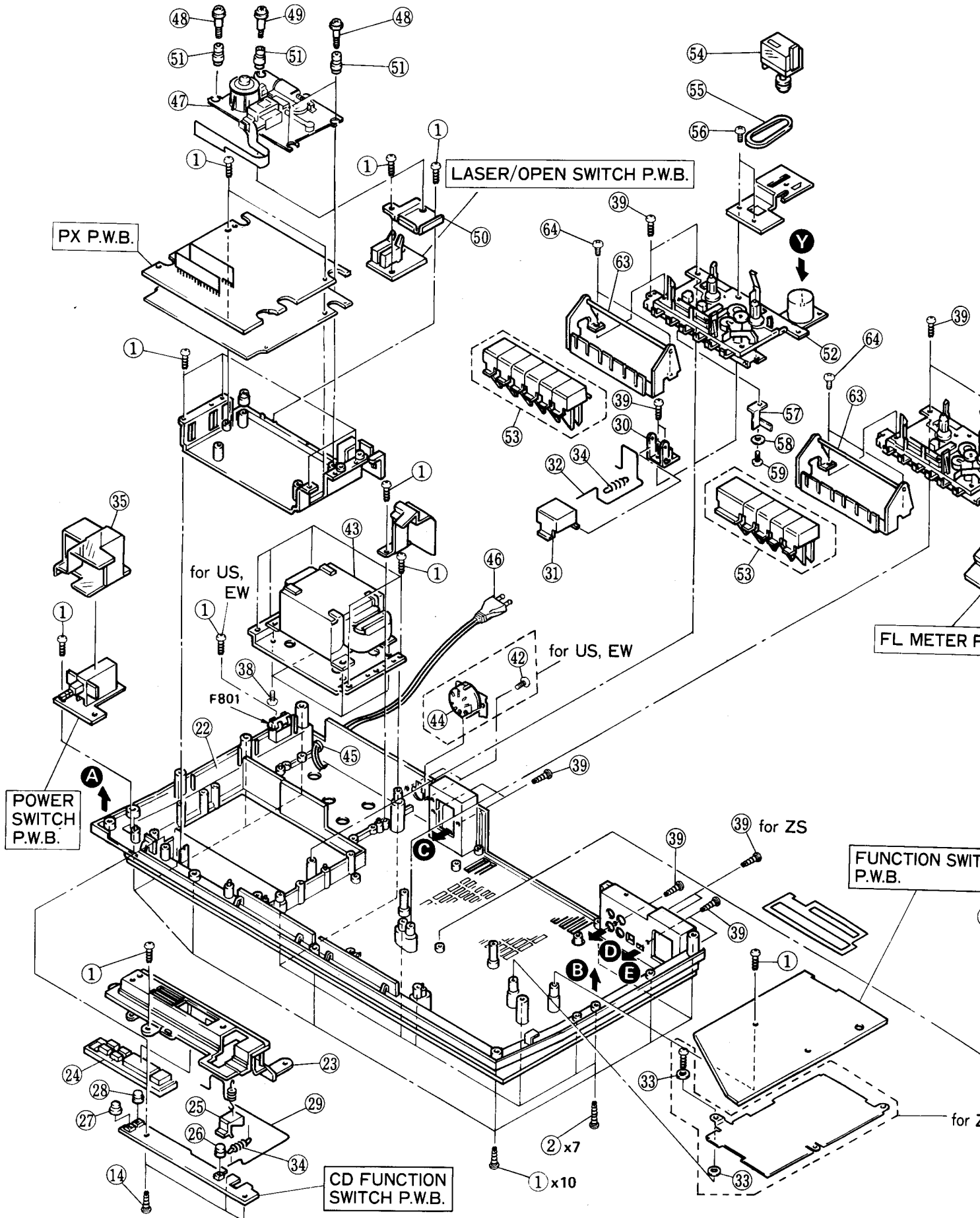




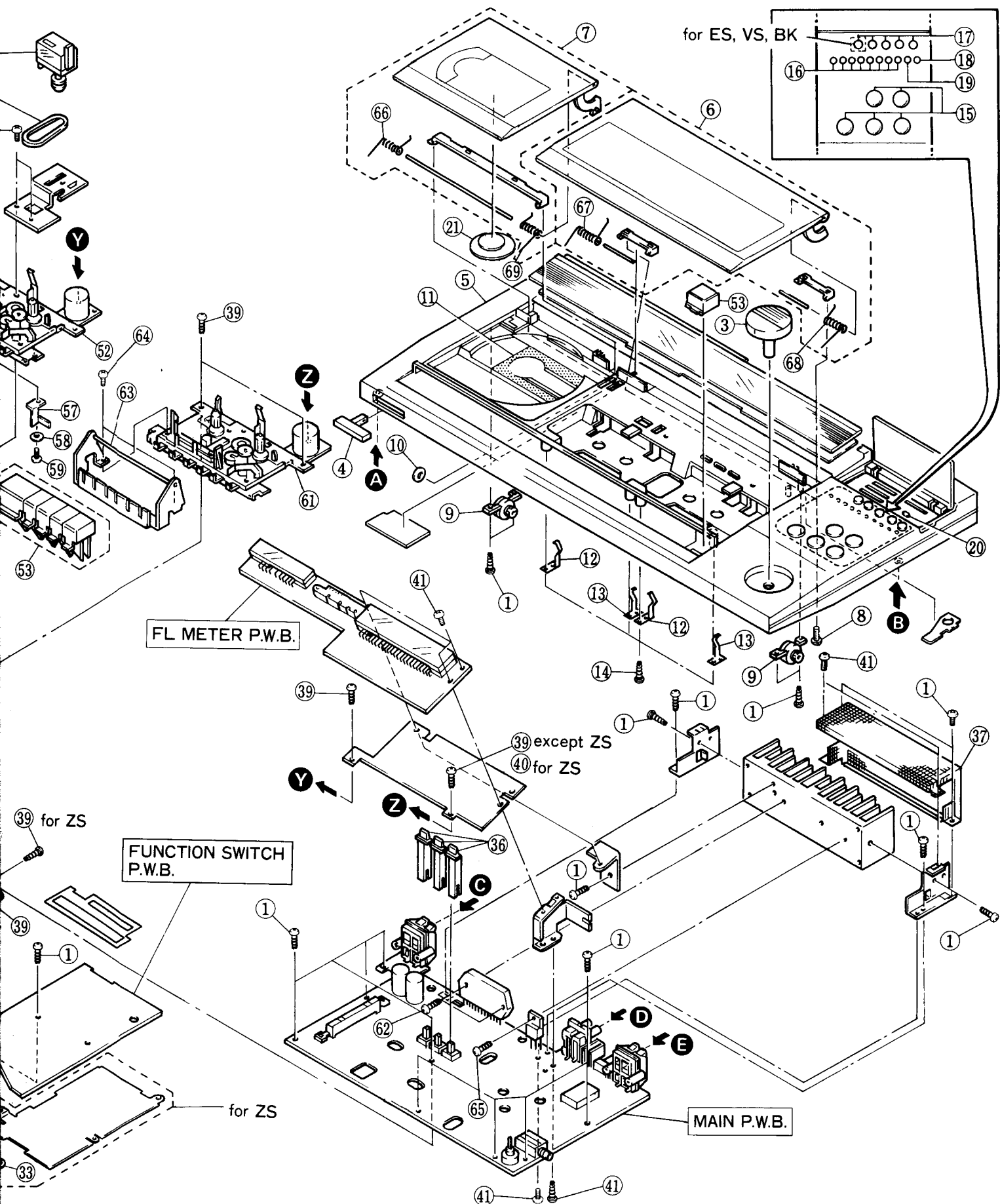


**EXPLODED VIEW · VUE EXPLOSEE**  
**(Cabinet) (Coffret)**

- Nos. are reference Nos. of parts list.
- Ces numeros correspondent a la liste des pieces.



of parts list.  
 d'après la liste des pièces.





# EXPLODED VIEW

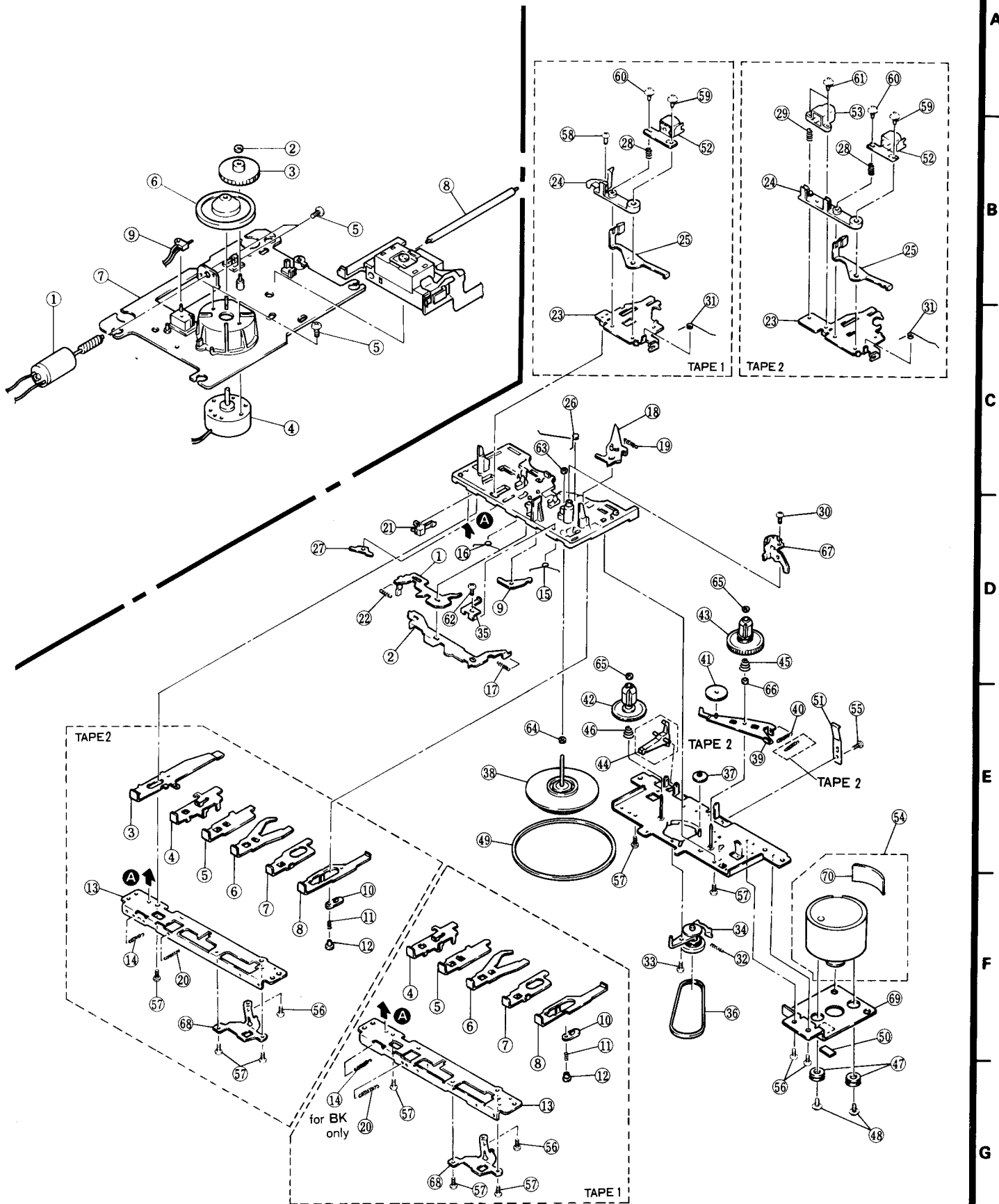
(Cassette Chassis) (Unit mechanism)

# VUE EXPLOSEE

(Chassis de Cassette)(Mecanisme de barre)

● Nos. are reference Nos. of parts list.

● Ces numeros correspondent a la liste des pieces.



# REPLACEMENT PARTS LIST

## TABLEAU DES PIÈCES

CC: Cylindrical ceramic EL: Electrolytic NF: Non flammable  
 CD: Ceramic discal FR: Fuse resistor PP: Polypropylene  
 CF: Carbon film MO: Metal oxide ST: Styrol  
 CO: Composition MF: Mylar film

| SYMBOL No.        | PART No. | DESCRIPTION  | SYMBOL No. | PART No. | DESCRIPTION   | SYMBOL No. | PART No. | DESCRIPTION   |
|-------------------|----------|--|------------|----------|---|------------|----------|---|
| <b>CAPACITORS</b> |          |  |            |          |   |            |          |   |
| C101              | 02441732 | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%                     | C307LR     | 02750132 | MF 0.022 $\mu$ F $\pm$ 10%<br>50V<br>(for US, CS)     | C472LR     | 0252462  | EL 4.7 $\mu$ F $\pm$ 20%<br>50V                       |
| C102              | 0252455  | EL 0.22 $\mu$ F $\pm$ 20%                              | C308L      | 1252459  | EL 1 $\mu$ F $\pm$ 20%<br>50V                         | C473LR     | 1252252  | EL 1 $\mu$ F $\pm$ 20%<br>50V                         |
| C103              | 0252459  | EL 1 $\mu$ F $\pm$ 20%<br>(for ZS)                     | C308R      | 0252459  | EL 1 $\mu$ F $\pm$ 20%<br>50V                         | C474LR     | 1275232  | MF 0.018 $\mu$ F $\pm$ 5%<br>50V                      |
| C104              | 02441732 | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>(for ZS)         | C309       | 0252457  | EL 0.47 $\mu$ F $\pm$ 20%<br>50V                      | C475LR     | 0252455  | EL 0.22 $\mu$ F $\pm$ 20%<br>50V                      |
| C105              | 0230626  | CC 39PF $\pm$ 5%<br>(for ZS)                           | C310       | 1252427  | EL 220 $\mu$ F $\pm$ 20%<br>16V                       | C476       | 1252265  | EL 100 $\mu$ F $\pm$ 20%<br>16V                       |
| C106              | 0230626  | CC 39PF $\pm$ 5%<br>(for ZS)                           | C311LR     | 0252459  | EL 1 $\mu$ F $\pm$ 20%<br>50V                         | C477LR     | 1252458  | EL 0.68 $\mu$ F $\pm$ 20%<br>50V                      |
| C107              | 0209173  | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>(for ZS)         | C313LR     | 0209733  | CD 2200PF $\pm$ 10%<br>50V<br>(for ZS)                | C478LR     | 1274215  | MF 4700PF $\pm$ 5%<br>50V                             |
| C108              | 02760112 | MF 0.1 $\mu$ F $\pm$ 10%<br>50V                        | C351       | 1244173  | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V             | C479       | 1252265  | EL 100 $\mu$ F $\pm$ 20%<br>16V                       |
| C151              | 02750152 | MF 0.047 $\mu$ F $\pm$ 10%<br>50V                      | C352       | 1252271  | EL 4.7 $\mu$ F $\pm$ 20%<br>50V                       | C480LR     | 0268441  | PP 1200PF $\pm$ 5%<br>100V<br>(except BK)             |
| C153              | 1279326  | PP 510PF $\pm$ 2%<br>100V                              | C353       | 0249735  | CD 4700PF $\pm$ 10%<br>50V<br>(for ZS)                | C481LR     | 1252251  | EL 10 $\mu$ F $\pm$ 20%<br>16V                        |
| C154              | 0230654  | CC 12PF $\pm$ 5%<br>(for ES, VS, BK)                   | C353       | 1275013  | MF 0.022 $\mu$ F $\pm$ 10%<br>50V<br>(except ZS)      | C482LR     | 1252251  | EL 10 $\mu$ F $\pm$ 20%<br>16V                        |
| C154              | 0230656  | CC 15PF $\pm$ 5%<br>(except ES, VS, BK)                | C354       | 1252269  | EL 0.22 $\mu$ F $\pm$ 20%<br>50V<br>(for ES, VS, BK)  | C483LR     | 0279331  | PP 2200PF $\pm$ 5%<br>100V                            |
| C155              | 0230616  | CC 15PF $\pm$ 5%<br>50V                                | C355       | 1252252  | EL 1 $\mu$ F $\pm$ 20%<br>50V<br>(for ES, VS, BK)     | C484       | 0252422  | EL 10 $\mu$ F $\pm$ 20%<br>16V                        |
| C156              | 02750152 | MF 0.047 $\mu$ F $\pm$ 10%<br>(for ES, VS, BK)         | C356       | 1275016  | MF 0.068 $\mu$ F $\pm$ 10%<br>50V<br>(for ES, VS, BK) | C485       | 1252251  | EL 10 $\mu$ F $\pm$ 20%<br>16V                        |
| C157              | 1246450  | MF 27PF $\pm$ 5%<br>(for ES, VS, BK)                   | C358       | 1275013  | MF 0.022 $\mu$ F $\pm$ 10%<br>50V                     | C501LR     | 02097312 | CD 1000PF $\pm$ 10%<br>50V<br>(for ZS)                |
| C159              | 0228321  | ST 270PF $\pm$ 5%<br>(for ES, VS, BK)                  | C359       | 1244173  | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V             | C501LR     | 1248688  | CD 150PF $\pm$ 5%<br>50V<br>(except ZS)               |
| C160              | 0252459  | EL 1 $\mu$ F $\pm$ 20%<br>(for ES, VS, BK)             | C360       | 1244173  | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V             | C502L      | 0252462  | EL 4.7 $\mu$ F $\pm$ 20%<br>50V                       |
| C161              | 1246465  | CD 110PF $\pm$ 5%<br>(for ES, VS, BK)                  | C361       | 1246449  | CD 24PF $\pm$ 5%<br>50V                               | C502R      | 1252462  | EL 4.7 $\mu$ F $\pm$ 20%<br>50V                       |
| C162              | 02441732 | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>(for ES, VS, BK) | C362       | 1246449  | CD 24PF $\pm$ 5%<br>50V                               | C503LR     | 1248684  | CD 100PF $\pm$ 5%<br>50V                              |
| C163              | 02441732 | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V              | C363       | 1252722  | EL 22 $\mu$ F $\pm$ 20%<br>35V                        | C504LR     | 0240053  | CC 2200PF $\pm$ 20%<br>16V                            |
| C202              | 02441732 | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V              | C364       | 1244173  | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V             | C505LR     | 0240060  | CC 8200PF $\pm$ 20%<br>16V                            |
| C204              | 02441732 | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V              | C401LR     | 02097242 | CD 560PF $\pm$ 10%<br>50V                             | C506LR     | 0252402  | EL 100 $\mu$ F $\pm$ 20%<br>6.3V                      |
| C205              | 02441712 | CD 0.01 $\mu$ F $\pm$ 80%<br>-20%<br>50V               | C402LR     | 02097242 | CD 560PF $\pm$ 10%<br>50V                             | C507       | 0252422  | EL 10 $\mu$ F $\pm$ 20%<br>16V                        |
| C251              | 02441732 | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V              | C404LR     | 0252426  | EL 100 $\mu$ F $\pm$ 20%<br>16V                       | C508       | 0252422  | EL 10 $\mu$ F $\pm$ 20%<br>16V                        |
| C252              | 1252459  | EL 1 $\mu$ F $\pm$ 20%<br>50V                          | C405LR     | 02750142 | MF 0.033 $\mu$ F $\pm$ 10%<br>50V                     | C509LR     | 0252459  | EL 1 $\mu$ F $\pm$ 20%<br>50V                         |
| C253              | 02441732 | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V              | C406LR     | 02441732 | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V             | C510LR     | 0249724  | CD 560PF $\pm$ 10%<br>50V<br>(for ZS)                 |
| C254              | 0252422  | EL 10 $\mu$ F $\pm$ 20%<br>16V                         | C408       | 1252277  | EL 22 $\mu$ F $\pm$ 20%<br>16V                        | C512       | 1239405  | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V<br>(for ZS) |
| C255              | 02441732 | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V              | C410       | 1252255  | EL 47 $\mu$ F $\pm$ 20%<br>16V                        | C513       | 0209173  | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V<br>(for ZS) |
| C256              | 0252402  | EL 100 $\mu$ F $\pm$ 20%<br>6.3V                       | C411       | 1252272  | EL 22 $\mu$ F $\pm$ 20%<br>25V                        | C600LR     | 0252461  | EL 3.3 $\mu$ F $\pm$ 20%<br>50V                       |
| C257              | 0252411  | EL 22 $\mu$ F $\pm$ 20%<br>10V                         | C412       | 1252272  | EL 22 $\mu$ F $\pm$ 20%<br>25V                        | C602LR     | 02750132 | MF 0.022 $\mu$ F $\pm$ 10%<br>50V                     |
| C258              | 02441732 | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V              | C413       | 02441712 | CD 0.01 $\mu$ F $\pm$ 80%<br>-20%<br>50V              | C603LR     | 02760112 | MF 0.1 $\mu$ F $\pm$ 10%<br>50V                       |
| C259              | 02441732 | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V              | C414       | 0240061  | CC 0.01 $\mu$ F $\pm$ 30%<br>16V                      | C604LR     | 02740152 | MF 4700PF $\pm$ 10%<br>50V                            |
| C260              | 0240045  | CC 1000PF $\pm$ 10%<br>50V                             | C415       | 1252255  | EL 47 $\mu$ F $\pm$ 20%<br>16V                        | C605LR     | 02750132 | MF 0.022 $\mu$ F $\pm$ 10%<br>50V                     |
| C261              | 0240036  | CC 180PF $\pm$ 10%<br>50V                              | C420       | 0252426  | EL 100 $\mu$ F $\pm$ 20%<br>16V                       | C607LR     | 0252459  | EL 1 $\mu$ F $\pm$ 20%<br>50V                         |
| C262              | 02441732 | CD 0.022 $\mu$ F $\pm$ 80%<br>-20%<br>50V              | C421       | 02097312 | CD 1000PF $\pm$ 10%<br>50V                            | C610       | 1252252  | EL 1 $\mu$ F $\pm$ 20%<br>50V                         |
| C263              | 1246456  | CD 47PF $\pm$ 5%<br>50V                                | C422LR     | 0208692  | CD 220PF $\pm$ 5%<br>50V                              | C612LR     | 1252252  | EL 1 $\mu$ F $\pm$ 20%<br>50V                         |
| C264              | 0252456  | EL 0.33 $\mu$ F $\pm$ 20%<br>50V                       | C423LR     | 0274013  | MF 2200PF $\pm$ 10%<br>50V                            | C613LR     | 1252251  | EL 10 $\mu$ F $\pm$ 20%<br>16V                        |
| C265              | 0240033  | CC 100PF $\pm$ 10%<br>50V                              | C424LR     | 1252268  | EL 0.33 $\mu$ F $\pm$ 20%<br>50V                      | C614       | 1252265  | EL 100 $\mu$ F $\pm$ 20%<br>16V                       |
| C301              | 0252422  | EL 10 $\mu$ F $\pm$ 20%<br>16V                         | C426LR     | 1252251  | EL 10 $\mu$ F $\pm$ 20%<br>16V                        | C615       | 1252265  | EL 100 $\mu$ F $\pm$ 20%<br>16V                       |
| C302              | 1244185  | CD 0.047 $\mu$ F $\pm$ 80%<br>-20%<br>50V              | C427       | 1252265  | EL 100 $\mu$ F $\pm$ 20%<br>16V                       | C651LR     | 0240035  | CC 150PF $\pm$ 10%<br>50V                             |
| C303              | 02684482 | ST 680PF $\pm$ 5%<br>100V                              | C428LR     | 1252251  | EL 10 $\mu$ F $\pm$ 20%<br>16V                        | C652LR     | 02740152 | MF 4700PF $\pm$ 10%<br>50V                            |
| C304              | 0252455  | EL 0.22 $\mu$ F $\pm$ 20%<br>50V                       | C430LR     | 02750112 | MF 0.01 $\mu$ F $\pm$ 10%<br>50V                      | C653LR     | 0252411  | EL 22 $\mu$ F $\pm$ 20%<br>10V                        |
| C305              | 0252461  | EL 3.3 $\mu$ F $\pm$ 20%<br>50V                        | C431LR     | 0275033  | MF 0.027 $\mu$ F $\pm$ 10%<br>50V<br>(for BK)         | C654LR     | 0240033  | CC 100PF $\pm$ 10%<br>50V                             |
| C306              | 1252425  | EL 47 $\mu$ F $\pm$ 20%<br>16V                         | C432LR     | 1252251  | EL 10 $\mu$ F $\pm$ 20%<br>16V                        | C655LR     | 02740142 | MF 3300PF $\pm$ 10%<br>50V                            |
| C307LR            | 02750322 | MF 0.018 $\mu$ F $\pm$ 10%<br>(except US, CS)          | C433LR     | 1252251  | EL 10 $\mu$ F $\pm$ 20%<br>16V                        | C656LR     | 1252272  | EL 22 $\mu$ F $\pm$ 20%<br>25V                        |
|                   |          |  | C434LR     | 02750112 | MF 0.01 $\mu$ F $\pm$ 10%<br>50V                      | C658       | 0252426  | EL 100 $\mu$ F $\pm$ 20%<br>16V                       |
|                   |          |  | C435       | 0240041  | CC 470PF $\pm$ 10%<br>50V<br>(for ZS)                 | C659       | 0240061  | CC 0.01 $\mu$ F $\pm$ 30%<br>16V                      |
|                   |          |  | C436LR     | 0240037  | CC 220PF $\pm$ 10%<br>50V                             | C670       | 0252411  | EL 22 $\mu$ F $\pm$ 20%<br>10V                        |
|                   |          |  | C437LR     | 0275033  | MF 0.027 $\mu$ F $\pm$ 10%<br>50V<br>(except BK)      | C671       | 1252455  | EL 0.22 $\mu$ F $\pm$ 20%<br>50V                      |
|                   |          |  | C470       | 0252427  | EL 220 $\mu$ F $\pm$ 20%<br>16V                       | C700LR     | 0240039  | CC 330PF $\pm$ 10%<br>50V<br>(except ZS)              |
|                   |          |  | C471LR     | 02750142 | MF 0.033 $\mu$ F $\pm$ 10%<br>50V                     | C700LR     | 0230034  | CC 82PF $\pm$ 5%<br>50V<br>(for ZS)                   |
|                   |          |  |            |          |   | C701       | 1252467  | EL 100 $\mu$ F $\pm$ 20%<br>50V                       |
|                   |          |  |            |          |   | C702L      | 0252401  | EL 47 $\mu$ F $\pm$ 20%<br>6.3V                       |

| SYMBOL No.  | PART No. | DESCRIPTION                   | SYMBOL No. | PART No.    | DESCRIPTION | SYMBOL No.                  | PART No. | DESCRIPTION      | SYMBOL No. | PART No.                    | DESCRIPTION |
|-------------|----------|-------------------------------|------------|-------------|-------------|-----------------------------|----------|------------------|------------|-----------------------------|-------------|
| C702R       | 1252401  | EL 47 $\mu$ F $\pm 20\%$      | 6.3V       | C832        | 02441712    | CD 0.01 $\mu$ F $\pm 80\%$  | 50V      | C951LR           | 0228343    | ST 2200PF $\pm 5\%$         | 50V         |
| C703LR      | 0230606  | CC 3.3PF $\pm 10\%$           | 50V        | (except ZS) | (for ZS)    | (for ZS)                    |          | C952L            | 02740112   | MF 1000PF $\pm 10\%$        | 50V         |
| C704L       | 0252436  | EL 47 $\mu$ F $\pm 20\%$      | 25V        | C833        | 02441732    | CD 0.022 $\mu$ F $\pm 80\%$ | 50V      | C952R            | 1274011    | MF 1000PF $\pm 10\%$        | 50V         |
| C704R       | 1252436  | EL 47 $\mu$ F $\pm 20\%$      | 25V        | (for ZS)    | (for ZS)    | (for ZS)                    |          | C953             | 0252403    | EL 220 $\mu$ F $\pm 20\%$   | 6.3V        |
| C705        | 1252467  | EL 100 $\mu$ F $\pm 20\%$     | 50V        | C834        | 0209737     | CD 0.01 $\mu$ F $\pm 10\%$  | 50V      | C954             | 1252403    | EL 220 $\mu$ F $\pm 20\%$   | 6.3V        |
| C706        | 1252465  | EL 33 $\mu$ F $\pm 20\%$      | 50V        | (for ZS)    | (for ZS)    | (for ZS)                    |          | C955             | 0252403    | EL 220 $\mu$ F $\pm 20\%$   | 6.3V        |
| C707        | 02760112 | MF 0.1 $\mu$ F $\pm 10\%$     | 50V        | C835        | 1239404     | CD 0.01 $\mu$ F $\pm 80\%$  | 50V      | C956             | 0252403    | EL 220 $\mu$ F $\pm 20\%$   | 6.3V        |
| C708LR      | 02760112 | MF 0.1 $\mu$ F $\pm 10\%$     | 50V        | (for ZS)    | (for ZS)    | (for ZS)                    |          | C957             | 02486682   | CD 22PF $\pm 5\%$           | 50V         |
| C709        | 0252422  | EL 10 $\mu$ F $\pm 20\%$      | 16V        | C836        | 0209737     | CD 0.01 $\mu$ F $\pm 10\%$  | 50V      | C958             | 02441732   | CD 0.022 $\mu$ F $\pm 80\%$ | 50V         |
| C710        | 02760112 | MF 0.1 $\mu$ F $\pm 10\%$     | 50V        | (for ZS)    | (for ZS)    | (for ZS)                    |          | C959             | 02486682   | CD 120PF $\pm 5\%$          | 50V         |
| (except ZS) |          |                               |            | C837        | 02441732    | CD 0.022 $\mu$ F $\pm 80\%$ | 50V      | C960             | 02486682   | CD 120PF $\pm 5\%$          | 50V         |
| C710        | 1276011  | MF 0.1 $\mu$ F $\pm 10\%$     | 50V        | (for ZS)    | (for ZS)    | (for ZS)                    |          | C961             | 02441732   | CD 0.022 $\mu$ F $\pm 80\%$ | 50V         |
| (for ZS)    |          |                               |            | C901        | 0240035     | CC 150PF $\pm 10\%$         | 50V      | RESISTORS        |            |                             |             |
| C711LR      | 02097312 | CD 1000PF $\pm 10\%$          | 50V        | C902        | 0240061     | CC 0.01 $\mu$ F $\pm 30\%$  | 16V      | R1               | 0139005    | CO 2.7M $\Omega$ $\pm 10\%$ | RC1/2GF     |
| (for ZS)    |          |                               |            | C903        | 0240061     | CC 0.01 $\mu$ F $\pm 30\%$  | 16V      | R101             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
| C712        | 0244175  | CD 0.047 $\mu$ F $\pm 80\%$   | 50V        | C904        | 02522252    | EL 47 $\mu$ F $\pm 20\%$    | 6.3V     | R102             | 0113663    | CF 100K $\Omega$ $\pm 5\%$  | SRD1/6P     |
| (for ZS)    |          |                               |            | C905        | 1252521     | EL 10 $\mu$ F $\pm 20\%$    | 16V      | (for ZS)         |            |                             |             |
| C713        | 0244181  | CD 0.1 $\mu$ F $\pm 80\%$     | 50V        | C906        | 0240037     | CC 220PF $\pm 10\%$         | 50V      | R103             | 0113663    | CF 100K $\Omega$ $\pm 5\%$  | SRD1/6P     |
| (for ZS)    |          |                               |            | C907        | 0240034     | CC 120PF $\pm 10\%$         | 50V      | (for ZS)         |            |                             |             |
| C714        | 0244175  | CD 0.047 $\mu$ F $\pm 80\%$   | 50V        | C908        | 0252402     | EL 100 $\mu$ F $\pm 20\%$   | 6.3V     | R104             | 0113591    | CF 100 $\Omega$ $\pm 5\%$   | SRD1/6P     |
| (for ZS)    |          |                               |            | C909        | 0252402     | EL 100 $\mu$ F $\pm 20\%$   | 6.3V     | (for ZS)         |            |                             |             |
| C715LR      | 1239405  | CD 0.022 $\mu$ F $\pm 80\%$   | 50V        | C910        | 02525222    | EL 22 $\mu$ F $\pm 20\%$    | 16V      | R105             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
| (for ZS)    |          |                               |            | C911        | 02525222    | EL 22 $\mu$ F $\pm 20\%$    | 16V      | (for ZS)         |            |                             |             |
| C716        | 0244175  | CD 0.047 $\mu$ F $\pm 80\%$   | 50V        | C912        | 0252802     | EL 0.22 $\mu$ F $\pm 20\%$  | 50V      | R106             | 0113663    | CF 100K $\Omega$ $\pm 5\%$  | SRD1/6P     |
| (for ZS)    |          |                               |            | C914        | 02528072    | EL 0.68 $\mu$ F $\pm 20\%$  | 50V      | (for ZS)         |            |                             |             |
| C750LR      | 0252459  | EL 1 $\mu$ F $\pm 20\%$       | 50V        | C915        | 02528072    | EL 0.68 $\mu$ F $\pm 20\%$  | 50V      | R107             | 0113625    | CF 2.7K $\Omega$ $\pm 5\%$  | SRD1/6P     |
| C751L       | 1252422  | EL 10 $\mu$ F $\pm 20\%$      | 16V        | C916        | 02760112    | MF 0.1 $\mu$ F $\pm 10\%$   | 50V      | (for ZS)         |            |                             |             |
| C751R       | 0252422  | EL 10 $\mu$ F $\pm 20\%$      | 16V        | C917        | 0240051     | CC 1500PF $\pm 20\%$        | 16V      | R108             | 0113625    | CF 2.7K $\Omega$ $\pm 5\%$  | SRD1/6P     |
| C752LR      | 0252422  | EL 10 $\mu$ F $\pm 20\%$      | 16V        | C918        | 02528052    | EL 0.47 $\mu$ F $\pm 20\%$  | 50V      | (for ZS)         |            |                             |             |
| C753LR      | 1248684  | CD 100PF $\pm 5\%$            | 50V        | C919        | 02528052    | EL 0.47 $\mu$ F $\pm 20\%$  | 50V      | R109             | 0113625    | CF 2.7K $\Omega$ $\pm 5\%$  | SRD1/6P     |
| C754        | 0252422  | EL 10 $\mu$ F $\pm 20\%$      | 16V        | C920        | 0252403     | EL 220 $\mu$ F $\pm 20\%$   | 6.3V     | R110             | 0113625    | CF 2.7K $\Omega$ $\pm 5\%$  | SRD1/6P     |
| C755        | 1252422  | EL 10 $\mu$ F $\pm 20\%$      | 16V        | C921        | 1252402     | EL 100 $\mu$ F $\pm 20\%$   | 6.3V     | (for ZS)         |            |                             |             |
| C756LR      | 0209173  | CD 0.022 $\mu$ F $\pm 80\%$   | 50V        | C922        | 02528112    | EL 1 $\mu$ F $\pm 20\%$     | 50V      | R111             | 0113625    | CF 2.7K $\Omega$ $\pm 5\%$  | SRD1/6P     |
| (for ZS)    |          |                               |            | C923        | 0240061     | CC 0.01 $\mu$ F $\pm 30\%$  | 16V      | R112             | 0113625    | CF 2.7K $\Omega$ $\pm 5\%$  | SRD1/6P     |
| C802        | 0245408  | CD 0.01 $\mu$ F $\pm 20\%$    | 500V       | C924        | 0275031     | MF 0.012 $\mu$ F $\pm 10\%$ | 50V      | R113             | 0113625    | CF 2.7K $\Omega$ $\pm 5\%$  | SRD1/6P     |
| C803        | 0245408  | CD 0.01 $\mu$ F $\pm 20\%$    | 500V       | C925        | 1275011     | MF 0.01 $\mu$ F $\pm 10\%$  | 50V      | (for ZS)         |            |                             |             |
| C804        | 0259933  | EL 5600 $\mu$ F $\pm 20\%$    | 40V        | C926        | 1276013     | MF 0.22 $\mu$ F $\pm 10\%$  | 50V      | R114             | 0113625    | CF 2.7K $\Omega$ $\pm 5\%$  | SRD1/6P     |
| C805        | 0259933  | EL 5600 $\mu$ F $\pm 20\%$    | 40V        | C927        | 1275014     | MF 0.033 $\mu$ F $\pm 10\%$ | 50V      | (for ZS)         |            |                             |             |
| C806        | 0259840  | EL 2200 $\mu$ F $\pm 20\%$    | 25V        | C928        | 02523222    | EL 22 $\mu$ F $\pm 20\%$    | 10V      | R115             | 0113615    | CF 1K $\Omega$ $\pm 5\%$    | SRD1/6P     |
| C807        | 0259840  | EL 2200 $\mu$ F $\pm 20\%$    | 25V        | C929        | 0230628     | CC 47PF $\pm 5\%$           | 50V      | (except CS)      |            |                             |             |
| C808        | 0252427  | EL 220 $\mu$ F $\pm 20\%$     | 16V        | C930        | 02740132    | MF 2200PF $\pm 10\%$        | 50V      | R116             | 0134373    | CO 1K $\Omega$ $\pm 10\%$   | RC1/2GF     |
| C809        | 0252541  | EL 1000 $\mu$ F $\pm 20\%$    | 16V        | C931        | 02740132    | MF 2200PF $\pm 10\%$        | 50V      | (for CS)         |            |                             |             |
| C810        | 1252406  | EL 1000 $\mu$ F $\pm 20\%$    | 6.3V       | C932        | 02750112    | MF 0.01 $\mu$ F $\pm 10\%$  | 50V      | R117             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
| C812        | 0252415  | EL 220 $\mu$ F $\pm 20\%$     | 10V        | C933        | 1246452     | CD 33PF $\pm 5\%$           | 50V      | (for ZS)         |            |                             |             |
| C813        | 0252415  | EL 220 $\mu$ F $\pm 20\%$     | 10V        | C934        | 0240037     | CC 220PF $\pm 10\%$         | 50V      | R118             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
| C815        | 1252429  | EL 470 $\mu$ F $\pm 20\%$     | 16V        | C935        | 02750112    | MF 0.01 $\mu$ F $\pm 10\%$  | 50V      | (for ZS)         |            |                             |             |
| C816        | 0252463  | EL 10 $\mu$ F $\pm 20\%$      | 50V        | C936        | 1252805     | EL 0.47 $\mu$ F $\pm 20\%$  | 50V      | R119             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
| C817        | 0252407  | EL 2200 $\mu$ F $\pm 20\%$    | 6.3V       | C937        | 1246452     | CD 33PF $\pm 5\%$           | 50V      | (for ES, VS, BK) |            |                             |             |
| C818        | 0259891  | Super capacitor 0.047 $\mu$ F |            | C938        | 0230628     | CC 47PF $\pm 5\%$           | 50V      | R120             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
| C819        | 0252459  | EL 1 $\mu$ F $\pm 20\%$       | 50V        | C939        | 1252403     | EL 220 $\mu$ F $\pm 20\%$   | 6.3V     | (for ES, VS, BK) |            |                             |             |
| C820        | 0252463  | EL 10 $\mu$ F $\pm 20\%$      | 50V        | C940        | 0230624     | CC 33PF $\pm 5\%$           | 50V      | R121             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
| C821        | 1252430  | EL 1000 $\mu$ F $\pm 20\%$    | 16V        | C941        | 0230624     | CC 33PF $\pm 5\%$           | 50V      | (for ES, VS, BK) |            |                             |             |
| C822        | 02525252 | EL 47 $\mu$ F $\pm 20\%$      | 16V        | C942        | 1252403     | EL 220 $\mu$ F $\pm 20\%$   | 6.3V     | R122             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
| C823        | 1259840  | EL 2200 $\mu$ F $\pm 20\%$    | 25V        | C943        | 1252403     | EL 220 $\mu$ F $\pm 20\%$   | 6.3V     | (for ES, VS, BK) |            |                             |             |
| C824        | 1252431  | EL 2200 $\mu$ F $\pm 20\%$    | 16V        | C944        | 0252403     | EL 220 $\mu$ F $\pm 20\%$   | 6.3V     | R123             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
| C825        | 02441712 | CD 0.01 $\mu$ F $\pm 80\%$    | 50V        | C945        | 0230628     | CC 47PF $\pm 5\%$           | 50V      | (for ES, VS, BK) |            |                             |             |
| (for ZS)    |          |                               |            | C946        | 0230628     | CC 47PF $\pm 5\%$           | 50V      | R124             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
| C826        | 02441712 | CD 0.01 $\mu$ F $\pm 80\%$    | 50V        | C947        | 0230618     | CC 18PF $\pm 5\%$           | 50V      | (for ZS)         |            |                             |             |
| (for ZS)    |          |                               |            | C948        | 0240045     | CC 1000PF $\pm 10\%$        | 50V      | R125             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
| C831        | 02441712 | CD 0.01 $\mu$ F $\pm 80\%$    | 50V        | C949        | 1252427     | EL 220 $\mu$ F $\pm 20\%$   | 16V      | (for ZS)         |            |                             |             |
| (for ZS)    |          |                               |            | C950        | 1252402     | EL 100 $\mu$ F $\pm 20\%$   | 6.3V     | R126             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R127             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R128             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R129             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R130             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R131             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R132             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R133             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R134             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R135             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R136             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R137             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R138             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R139             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R140             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R141             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R142             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R143             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R144             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R145             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R146             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R147             | 0113639    | CF 10K $\Omega$ $\pm 5\%$   | SRD1/6P     |
|             |          |                               |            |             |             |                             |          | R1               |            |                             |             |

| DESCRIPTION      | SYMBOL No. | PART No. | DESCRIPTION                              | SYMBOL No. | PART No. | DESCRIPTION                                      | SYMBOL No. | PART No. | DESCRIPTION                         |
|------------------|------------|----------|--|------------|----------|--|------------|----------|-------------------------------------|
| ±5% 50V          | R253       | 0113621  | CF 1.8KΩ ±5% SRD1/6P<br>(except US, CS)  | R378       | 0113663  | CF 100KΩ ±5% SRD1/6P<br>(except US, EW)          | R475LR     | 0129652  | CF 75KΩ ±5% SRD1/6P                 |
| ±10% 50V         | R253       | 0113615  | CF 1KΩ ±5% SRD1/6P<br>(for US, CS)       | R378       | 0113655  | CF 47KΩ ±5% SRD1/6P<br>(for US, EW)              | R476LR     | 0113649  | CF 27KΩ ±5% SRD1/6P                 |
| ±10% 50V         | R254       | 0113615  | CF 1KΩ ±5% SRD1/6P                       | R379       | 0113663  | CF 100KΩ ±5% SRD1/6P                             | R477LR     | 0113615  | CF 1KΩ ±5% SRD1/6P<br>(except BK)   |
| ±20% 6.3V        | R255       | 0113639  | CF 10KΩ ±5% SRD1/6P                      | R380       | 0113663  | CF 100KΩ ±5% SRD1/6P                             | R478       | 0113631  | CF 4.7KΩ ±5% SRD1/6P                |
| ±20% 6.3V        | R256       | 0113607  | CF 470Ω ±5% SRD1/6P                      | R381       | 0113645  | CF 18KΩ ±5% SRD1/6P                              | R479       | 0113639  | CF 10KΩ ±5% SRD1/6P                 |
| ±5% 50V          | R258       | 0113615  | CF 1KΩ ±5% SRD1/6P                       | R382       | 0113631  | CF 4.7KΩ ±5% SRD1/6P                             | R480LR     | 0113623  | CF 2.2KΩ ±5% SRD1/6P                |
| +80%<br>-20% 50V | R301       | 0113639  | CF 10KΩ ±5% SRD1/6P                      | R383       | 0113655  | CF 47KΩ ±5% SRD1/6P<br>[FL PWB]                  | R481LR     | 0113635  | CF 6.8KΩ ±5% SRD1/6P                |
| ±5% 50V          | R302       | 0113639  | CF 10KΩ ±5% SRD1/6P                      | R383       | 0113655  | CF 47KΩ ±5% SRD1/6P<br>(for US, CS, EW) [MA PWB] | R482       | 0113631  | CF 4.7KΩ ±5% SRD1/6P                |
| ±5% 50V          | R303       | 0113649  | CF 27KΩ ±5% SRD1/6P                      | R384       | 0113655  | CF 47KΩ ±5% SRD1/6P<br>(for US, EW)              | R483LR     | 0113653  | CF 39KΩ ±5% SRD1/6P                 |
| ±10% RC1/2GF     | △R304      | 1123619  | NF 68Ω ±5% SRD1/4P                       | R401LR     | 0113575  | CF 22Ω ±5% SRD1/6P                               | R484LR     | 0113643  | CF 15KΩ ±5% SRD1/6P                 |
| ±5% SRD1/6P      | R305LR     | 0113627  | CF 3.3KΩ ±5% SRD1/6P                     | R402       | 0113631  | CF 4.7KΩ ±5% SRD1/6P                             | R485LR     | 0113633  | CF 5.6KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | R306       | 0113601  | CF 270Ω ±5% SRD1/6P                      | △R403      | 1123627  | NF 330Ω ±5% SRD1/4P                              | R486       | 0113637  | CF 8.2KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | R307LR     | 0113623  | CF 2.2KΩ ±5% SRD1/6P                     | R404LR     | 0113629  | CF 3.9KΩ ±5% SRD1/6P                             | R487       | 0113657  | CF 56KΩ ±5% SRD1/6P                 |
| ±5% SRD1/6P      | R310       | 0113623  | CF 2.2KΩ ±5% SRD1/6P                     | R405LR     | 0113663  | CF 100KΩ ±5% SRD1/6P                             | R488       | 0113639  | CF 10KΩ ±5% SRD1/6P                 |
| ±5% SRD1/6P      | R311       | 0113593  | CF 120Ω ±5% SRD1/6P                      | R406LR     | 0113623  | CF 2.2KΩ ±5% SRD1/6P                             | R489       | 0113645  | CF 18KΩ ±5% SRD1/6P                 |
| ±5% SRD1/6P      | R312       | 0113655  | CF 47KΩ ±5% SRD1/6P                      | R407LR     | 0113627  | CF 3.3KΩ ±5% SRD1/6P                             | R490       | 0113591  | CF 100Ω ±5% SRD1/6P                 |
| ±5% SRD1/6P      | R313       | 0113647  | CF 22KΩ ±5% SRD1/6P                      | R408       | 0113657  | CF 56KΩ ±5% SRD1/6P                              | R491       | 0113675  | CF 330KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | R314       | 0113639  | CF 10KΩ ±5% SRD1/6P                      | R409       | 0113637  | CF 8.2KΩ ±5% SRD1/6P                             | R501LR     | 0113609  | CF 560Ω ±5% SRD1/6P<br>(except ZS)  |
| ±5% SRD1/6P      | R315       | 0113663  | CF 100KΩ ±5% SRD1/6P                     | R410       | 0113655  | CF 47KΩ ±5% SRD1/6P                              | R502LR     | 0113655  | CF 47KΩ ±5% SRD1/6P<br>(for ZS)     |
| ±5% SRD1/6P      | R316       | 0113663  | CF 100KΩ ±5% SRD1/6P                     | R411       | 0113637  | CF 8.2KΩ ±5% SRD1/6P                             | R503LR     | 0113621  | CF 1.8KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | R317       | 0113653  | CF 39KΩ ±5% SRD1/6P                      | R412       | 0113659  | CF 68KΩ ±5% SRD1/6P                              | R504LR     | 0113651  | CF 33KΩ ±5% SRD1/6P                 |
| ±5% SRD1/6P      | R318       | 0113639  | CF 10KΩ ±5% SRD1/6P                      | R413       | 0113639  | CF 10KΩ ±5% SRD1/6P                              | R505LR     | 0113677  | CF 390KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | R319       | 0113655  | CF 47KΩ ±5% SRD1/6P                      | R414       | 0113639  | CF 10KΩ ±5% SRD1/6P                              | R506LR     | 0113647  | CF 22KΩ ±5% SRD1/6P                 |
| ±5% SRD1/6P      | R321       | 0113663  | CF 100KΩ ±5% SRD1/6P                     | R416       | 0113639  | CF 10KΩ ±5% SRD1/6P                              | R507LR     | 0113647  | CF 22KΩ ±5% SRD1/6P                 |
| ±5% SRD1/6P      | R322       | 0113639  | CF 10KΩ ±5% SRD1/6P<br>(for ES, VS, BK)  | R417       | 0113639  | CF 10KΩ ±5% SRD1/6P                              | R508LR     | 0113659  | CF 68KΩ ±5% SRD1/6P                 |
| ±5% SRD1/6P      | R323       | 0113615  | CF 1KΩ ±5% SRD1/6P                       | R418       | 0113639  | CF 10KΩ ±5% SRD1/6P                              | R551       | 0113621  | CF 1.8KΩ ±5% SRD1/6P<br>(except BK) |
| ±5% SRD1/6P      | R324LR     | 0113659  | CF 68KΩ ±5% SRD1/6P                      | R419       | 0113639  | CF 10KΩ ±5% SRD1/6P                              | R552       | 0113595  | CF 150Ω ±5% SRD1/6P<br>(except BK)  |
| ±10% RC1/2GF     | R351       | 0113623  | CF 2.2KΩ ±5% SRD1/6P                     | R420       | 01132892 | CF 150Ω ±5% SRD1/2P                              | R553       | 0113621  | CF 1.8KΩ ±5% SRD1/6P<br>(except BK) |
| ±5% SRD1/6P      | R352       | 0113635  | CF 6.8KΩ ±5% SRD1/6P                     | R421       | 01132922 | CF 270Ω ±5% SRD1/2P                              | R554       | 0113595  | CF 150Ω ±5% SRD1/6P<br>(except BK)  |
| ±5% SRD1/6P      | R353       | 0113611  | CF 680Ω ±5% SRD1/6P                      | △R422      | 1123625  | NF 220Ω ±5% SRD1/4P                              | R555       | 0113665  | CF 120KΩ ±5% SRD1/6P<br>(except BK) |
| ±5% SRD1/6P      | R354       | 0113623  | CF 2.2KΩ ±5% SRD1/6P                     | R423LR     | 0113641  | CF 12KΩ ±5% SRD1/6P                              | R556       | 0113665  | CF 120KΩ ±5% SRD1/6P<br>(except BK) |
| ±5% SRD1/6P      | R355       | 0113635  | CF 6.8KΩ ±5% SRD1/6P<br>(for ES, VS, BK) | R424LR     | 0113635  | CF 6.8KΩ ±5% SRD1/6P                             | R557       | 0113633  | CF 5.6KΩ ±5% SRD1/6P<br>(except BK) |
| ±5% SRD1/6P      | R356       | 0113635  | CF 6.8KΩ ±5% SRD1/6P<br>(for ES, VS, BK) | R425LR     | 0113615  | CF 1KΩ ±5% SRD1/6P<br>(except BK)                | R558       | 0113639  | CF 10KΩ ±5% SRD1/6P<br>(except BK)  |
| ±5% SRD1/6P      | R357       | 0113639  | CF 10KΩ ±5% SRD1/6P<br>(for ES, VS, BK)  | R426LR     | 0113677  | CF 390KΩ ±5% SRD1/6P                             | R559       | 0113629  | CF 3.9KΩ ±5% SRD1/6P<br>(except BK) |
| ±5% SRD1/6P      | R358       | 0113615  | CF 1KΩ ±5% SRD1/6P<br>(for ES, VS, BK)   | R427LR     | 0113625  | CF 2.7KΩ ±5% SRD1/6P                             | R560       | 0113631  | CF 4.7KΩ ±5% SRD1/6P<br>(except BK) |
| ±5% SRD1/6P      | R359       | 0113587  | CF 68Ω ±5% SRD1/6P                       | R428LR     | 0113637  | CF 8.2KΩ ±5% SRD1/6P                             | R600LR     | 0113629  | CF 3.9KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | R360       | 0113639  | CF 10KΩ ±5% SRD1/6P                      | R429LR     | 0113617  | CF 1.2KΩ ±5% SRD1/6P                             | R601LR     | 0113641  | CF 12KΩ ±5% SRD1/6P                 |
| ±5% SRD1/6P      | R361       | 0113657  | CF 56KΩ ±5% SRD1/6P                      | R430LR     | 0113615  | CF 1KΩ ±5% SRD1/6P                               | R602LR     | 0113627  | CF 3.3KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | R362       | 0113663  | CF 100KΩ ±5% SRD1/6P                     | R431LR     | 0113615  | CF 1KΩ ±5% SRD1/6P                               | R604LR     | 0113615  | CF 1KΩ ±5% SRD1/6P                  |
| ±5% SRD1/6P      | R363       | 0113633  | CF 5.6KΩ ±5% SRD1/6P                     | R432LR     | 0113575  | CF 22KΩ ±5% SRD1/6P                              | R605       | 0113617  | CF 1.2KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | R364       | 0113633  | CF 5.6KΩ ±5% SRD1/6P                     | R433       | 0113623  | CF 2.2KΩ ±5% SRD1/6P<br>(except BK)              | R606       | 0113617  | CF 1.2KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | △R365      | 1110612  | FR 82Ω ±5% RN1/4B                        | R434       | 0113633  | CF 5.6KΩ ±5% SRD1/6P<br>(except BK)              | R607       | 0113617  | CF 1.2KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | R366       | 0113639  | CF 10KΩ ±5% SRD1/6P                      | R436LR     | 0113639  | CF 10KΩ ±5% SRD1/6P                              | R608       | 0113617  | CF 1.2KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | R367       | 0113655  | CF 47KΩ ±5% SRD1/6P                      | R437       | 0113639  | CF 10KΩ ±5% SRD1/6P                              | R609       | 0113617  | CF 1.2KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | R368       | 0113655  | CF 47KΩ ±5% SRD1/6P                      | R438       | 0113645  | CF 18KΩ ±5% SRD1/6P                              | R610       | 0113635  | CF 6.8KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | R369       | 0113655  | CF 47KΩ ±5% SRD1/6P                      | R439       | 0113641  | CF 12KΩ ±5% SRD1/6P                              | R611       | 0113639  | CF 10KΩ ±5% SRD1/6P                 |
| ±5% SRD1/6P      | R370       | 0113655  | CF 47KΩ ±5% SRD1/6P                      | R440       | 0113655  | CF 47KΩ ±5% SRD1/6P                              | R612LR     | 0113631  | CF 4.7KΩ ±5% SRD1/6P                |
| ±5% SRD1/6P      | R371       | 0113615  | CF 1KΩ ±5% SRD1/6P                       | R441       | 0113631  | CF 4.7KΩ ±5% SRD1/6P                             |            |          |                                     |
| ±5% SRD1/6P      | R372       | 0113615  | CF 1KΩ ±5% SRD1/6P                       | R470LR     | 0113639  | CF 10KΩ ±5% SRD1/6P                              |            |          |                                     |
| ±5% SRD1/6P      | R373       | 0113637  | CF 8.2KΩ ±5% SRD1/6P                     | R471LR     | 0113627  | CF 3.3KΩ ±5% SRD1/6P                             |            |          |                                     |
| ±5% SRD1/6P      | R374       | 0113637  | CF 8.2KΩ ±5% SRD1/6P                     | R472LR     | 0113655  | CF 47KΩ ±5% SRD1/6P                              |            |          |                                     |
| ±5% SRD1/6P      | R375       | 0113637  | CF 8.2KΩ ±5% SRD1/6P                     | R473LR     | 0113619  | CF 1.5KΩ ±5% SRD1/6P                             |            |          |                                     |
| ±5% SRD1/2P      | R376       | 0113663  | CF 100KΩ ±5% SRD1/6P                     | R474LR     | 0113631  | CF 4.7KΩ ±5% SRD1/6P                             |            |          |                                     |
| ±5% SRD1/6P      | R377       | 0113663  | CF 100KΩ ±5% SRD1/6P                     |            |          |  |            |          |                                     |

| SYMBOL No.    | PART No. | DESCRIPTION |               |            | SYMBOL No. | PART No. | DESCRIPTION |    |               | SYMBOL No. | PART No. | DESCRIPTION       |          |                   | SYMBOL No.    | PART No.  | DESCRIPTION |        |        |
|---------------|----------|-------------|---------------|------------|------------|----------|-------------|----|---------------|------------|----------|-------------------|----------|-------------------|---------------|-----------|-------------|--------|--------|
| R613LR        | 01136872 | CF          | 1M $\Omega$   | $\pm 5\%$  | SRD1/6P    | R824     | 1129617     | CF | 4.7K $\Omega$ | $\pm 5\%$  | SRD1/4P  | R965              | 0113651  | CF                | 33K $\Omega$  | $\pm 5\%$ | SRD1/6P     | Q152   | 232865 |
| R614LR        | 0113609  | CF          | 560 $\Omega$  | $\pm 5\%$  | SRD1/6P    | R826     | 0129577     | CF | 470 $\Omega$  | $\pm 5\%$  | SRD1/4P  | R966              | 0113643  | CF                | 15K $\Omega$  | $\pm 5\%$ | SRD1/6P     | Q153   | 232958 |
| $\Delta$ R615 | 1123627  | NF          | 330 $\Omega$  | $\pm 5\%$  | SRD1/4P    | R827     | 0129561     | CF | 100 $\Omega$  | $\pm 5\%$  | SRD1/4P  | R967              | 0113625  | CF                | 2.7K $\Omega$ | $\pm 5\%$ | SRD1/6P     | Q154   | 232958 |
| $\Delta$ R616 | 1123627  | NF          | 330 $\Omega$  | $\pm 5\%$  | SRD1/4P    | R901     | 0113615     | CF | 1K $\Omega$   | $\pm 5\%$  | SRD1/6P  | R968              | 0113647  | CF                | 22K $\Omega$  | $\pm 5\%$ | SRD1/6P     | Q155   | 232865 |
| R620LR        | 0113635  | CF          | 6.8K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R902     | 01132222    | CF | 27 $\Omega$   | $\pm 5\%$  | SRD1/2P  | R969              | 0113663  | CF                | 100K $\Omega$ | $\pm 5\%$ | SRD1/6P     | Q301LR | 232955 |
| R621LR        | 0113623  | CF          | 2.2K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R903     | 0113603     | CF | 330 $\Omega$  | $\pm 5\%$  | SRD1/6P  | R970              | 0113639  | CF                | 10K $\Omega$  | $\pm 5\%$ | SRD1/6P     | Q302   | 232958 |
| R651LR        | 0113625  | CF          | 2.7K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R904     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | R971              | 0113631  | CF                | 4.7K $\Omega$ | $\pm 5\%$ | SRD1/6P     | Q303   | 232955 |
| R652LR        | 0113625  | CF          | 2.7K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R906     | 0113623     | CF | 2.2K $\Omega$ | $\pm 5\%$  | SRD1/6P  | R972              | 0113647  | CF                | 22K $\Omega$  | $\pm 5\%$ | SRD1/6P     | Q304   | 232955 |
| R653LR        | 0113637  | CF          | 8.2K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R907     | 0113671     | CF | 220K $\Omega$ | $\pm 5\%$  | SRD1/6P  | R973              | 0113663  | CF                | 100K $\Omega$ | $\pm 5\%$ | SRD1/6P     | Q305   | 232955 |
| R654LR        | 0113641  | CF          | 12K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R909     | 01136872    | CF | 1M $\Omega$   | $\pm 5\%$  | SRD1/6P  | R974              | 0113639  | CF                | 10K $\Omega$  | $\pm 5\%$ | SRD1/6P     | Q306   | 232958 |
| R655LR        | 01136872 | CF          | 1M $\Omega$   | $\pm 5\%$  | SRD1/6P    | R910     | 0113613     | CF | 820 $\Omega$  | $\pm 5\%$  | SRD1/6P  | R975              | 0113639  | CF                | 10K $\Omega$  | $\pm 5\%$ | SRD1/6P     | Q307   | 232958 |
| R656LR        | 0113639  | CF          | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R911     | 0113623     | CF | 2.2K $\Omega$ | $\pm 5\%$  | SRD1/6P  | R976              | 0129908  | CF                | 39K $\Omega$  | $\pm 5\%$ | SRD1/4P     | Q351   | 232955 |
| R657LR        | 0113607  | CF          | 470 $\Omega$  | $\pm 5\%$  | SRD1/6P    | R912     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | R977              | 0113575  | CF                | 22 $\Omega$   | $\pm 5\%$ | SRD1/6P     | Q352   | 232955 |
| R658LR        | 0113639  | CF          | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R913     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | R978              | 0113575  | CF                | 22 $\Omega$   | $\pm 5\%$ | SRD1/6P     | Q353   | 232955 |
| R659LR        | 0113631  | CF          | 4.7K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R915     | 0113575     | CF | 22 $\Omega$   | $\pm 5\%$  | SRD1/6P  | R979              | 0113591  | CF                | 100 $\Omega$  | $\pm 5\%$ | SRD1/6P     | Q354   | 232955 |
| R660          | 0113639  | CF          | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R916     | 0113575     | CF | 22 $\Omega$   | $\pm 5\%$  | SRD1/6P  | R980              | 0113611  | CF                | 680 $\Omega$  | $\pm 5\%$ | SRD1/6P     | Q355   | 232955 |
| R661          | 0113655  | CF          | 47K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R917     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | R981LR            | 0113663  | CF                | 100K $\Omega$ | $\pm 5\%$ | SRD1/6P     | Q401   | 232955 |
| R662          | 0113655  | CF          | 47K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R918     | 0113641     | CF | 12K $\Omega$  | $\pm 5\%$  | SRD1/6P  | R982              | 0113639  | CF                | 10K $\Omega$  | $\pm 5\%$ | SRD1/6P     | Q402   | 232958 |
| R663          | 0113639  | CF          | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R920     | 0113651     | CF | 33K $\Omega$  | $\pm 5\%$  | SRD1/6P  | R983L             | 0129880  | CF                | 2.7K $\Omega$ | $\pm 5\%$ | SRD1/4P     | Q403   | 232955 |
| R664          | 0113639  | CF          | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R921     | 0113573     | CF | 47 $\Omega$   | $\pm 5\%$  | SRD1/6P  | R983R             | 0113625  | CF                | 2.7K $\Omega$ | $\pm 5\%$ | SRD1/6P     | Q404   | 232955 |
| R665LR        | 0113625  | CF          | 2.7K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R922     | 0113613     | CF | 820 $\Omega$  | $\pm 5\%$  | SRD1/6P  | R984LR            | 0113637  | CF                | 8.2K $\Omega$ | $\pm 5\%$ | SRD1/6P     | Q420LR | 232955 |
| R666LR        | 0113615  | CF          | 1K $\Omega$   | $\pm 5\%$  | SRD1/6P    | R923     | 0113617     | CF | 1.2K $\Omega$ | $\pm 5\%$  | SRD1/6P  | R985L             | 0129880  | CF                | 2.7K $\Omega$ | $\pm 5\%$ | SRD1/4P     | Q421LR | 232955 |
| R670          | 0113635  | CF          | 6.8K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R924     | 0113627     | CF | 3.3K $\Omega$ | $\pm 5\%$  | SRD1/6P  | R985R             | 0113625  | CF                | 2.7K $\Omega$ | $\pm 5\%$ | SRD1/6P     | Q422LR | 232955 |
| R671          | 0113631  | CF          | 4.7K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R925     | 01136872    | CF | 1M $\Omega$   | $\pm 5\%$  | SRD1/6P  | R986LR            | 0129846  | CF                | 100 $\Omega$  | $\pm 5\%$ | SRD1/4P     | Q423   | 232955 |
| R701LR        | 0113657  | CF          | 56K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R926     | 0113647     | CF | 22K $\Omega$  | $\pm 5\%$  | SRD1/6P  | R987              | 0113599  | CF                | 220 $\Omega$  | $\pm 5\%$ | SRD1/6P     | Q471   | 232955 |
| R702LR        | 0113603  | CF          | 330 $\Omega$  | $\pm 5\%$  | SRD1/6P    | R927     | 0113655     | CF | 47K $\Omega$  | $\pm 5\%$  | SRD1/6P  | ICs & TRANSISTORS |          |                   |               |           |             |        |        |
| R703LR        | 0113657  | CF          | 56K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R928     | 0113649     | CF | 27K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC201             | 23684312 | AN278             | Q472LR        | 232955    |             |        |        |
| R704LR        | 0129611  | CF          | 2.7K $\Omega$ | $\pm 5\%$  | SRD1/4P    | R930     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC251             | 2387321  | AN7273            | Q481LR        | 232955    |             |        |        |
| R705LR        | 0129611  | CF          | 2.7K $\Omega$ | $\pm 5\%$  | SRD1/4P    | R931     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC301             | 2368354  | BA1330            | Q551          | 232808    |             |        |        |
| R706          | 0113657  | CF          | 56K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R932     | 0113663     | CF | 100K $\Omega$ | $\pm 5\%$  | SRD1/6P  | IC351             | 23687412 | $\mu$ PB553AC     | Q552          | 232808    |             |        |        |
| $\Delta$ R707 | 1110629  | FR          | 470 $\Omega$  | $\pm 5\%$  | RN1/4B     | R933     | 0113615     | CF | 1K $\Omega$   | $\pm 5\%$  | SRD1/6P  | IC352             | 2369722  | $\mu$ PD1704C-531 | Q553          | 232955    |             |        |        |
| R708          | 1129607  | CF          | 1.8K $\Omega$ | $\pm 5\%$  | SRD1/4P    | R934     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC353             | 2387421  | AN6873N           | Q554          | 232955    |             |        |        |
| R709          | 1129643  | CF          | 33K $\Omega$  | $\pm 5\%$  | SRD1/4P    | R935     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC354             | 2387611  | BA6251            | Q610LR        | 232955    |             |        |        |
| $\Delta$ R710 | 1110621  | FR          | 100 $\Omega$  | $\pm 5\%$  | RN1/4B     | R936     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC401             | 2301052  | BA3416BL          | Q651LR        | 232955    |             |        |        |
| R711          | 0113647  | CF          | 22K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R937     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC402             | 2388901  | BU4066B           | Q652LR        | 231791    |             |        |        |
| R712          | 0113671  | CF          | 220K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R938     | 0113647     | CF | 22K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC470             | 2387402  | HA12045           | Q653          | 232955    |             |        |        |
| R713LR        | 1119139  | ME          | 4.7 $\Omega$  | $\pm 10\%$ | RN2B       | R939     | 0129894     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/4P  | IC471             | 23696112 | BA6124            | Q654          | 232955    |             |        |        |
| R720LR        | 01133732 | CF          | 4.7K $\Omega$ | $\pm 5\%$  | SRD1/2P    | R940     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC501             | 2367221  | NJM4558D          | Q701          | 232955    |             |        |        |
| R750LR        | 0113639  | CF          | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R941     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC601             | 2387564  | TC9152P           | Q751          | 232955    |             |        |        |
| R751LR        | 0113601  | CF          | 270 $\Omega$  | $\pm 5\%$  | SRD1/6P    | R942     | 0113663     | CF | 100K $\Omega$ | $\pm 5\%$  | SRD1/6P  | IC651             | 2300761  | NJM2068DD         | Q801          | 231788    |             |        |        |
| R752LR        | 0113653  | CF          | 39K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R943     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC701             | 2301161  | STK4142-2         | Q802          | 231788    |             |        |        |
| R753LR        | 0113655  | CF          | 47K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R944     | 0113615     | CF | 1K $\Omega$   | $\pm 5\%$  | SRD1/6P  | IC750             | 2387301  | M5218P            | Q803          | 232865    |             |        |        |
| R754LR        | 0113663  | CF          | 100K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R945     | 0113615     | CF | 1K $\Omega$   | $\pm 5\%$  | SRD1/6P  | IC901             | 2377631  | TM5050            | Q804          | 231788    |             |        |        |
| R755LR        | 01132912 | CF          | 220 $\Omega$  | $\pm 5\%$  | SRD1/2P    | R946     | 0113663     | CF | 100K $\Omega$ | $\pm 5\%$  | SRD1/6P  | IC902             | 2377673  | TM5060C           | Q805          | 231788    |             |        |        |
| R756          | 0113625  | CF          | 2.7K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R948     | 0113647     | CF | 22K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC903             | 23002212 | NJM072            | Q806          | 231788    |             |        |        |
| R757          | 0113671  | CF          | 220K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R949     | 0113657     | CF | 56K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC904             | 2367222  | NJM4558DM         | Q807          | 232896    |             |        |        |
| R758          | 0113639  | CF          | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P    | R950     | 0113591     | CF | 100 $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC905             | 2389300  | HD614042FD91      | Q808          | 231788    |             |        |        |
| R801          | 0129577  | CF          | 470 $\Omega$  | $\pm 5\%$  | SRD1/4P    | R951     | 0113639     | CF | 10K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC906             | 23001912 | CX23035           | Q809          | 232955    |             |        |        |
| R802          | 0129561  | CF          | 100 $\Omega$  | $\pm 5\%$  | SRD1/4P    | R952     | 0113637     | CF | 8.2K $\Omega$ | $\pm 5\%$  | SRD1/6P  | IC907             | 2387441  | HM6116FP-4        | Q901          | 232795    |             |        |        |
| R803          | 1119527  | MO          | 330 $\Omega$  | $\pm 10\%$ | RS2B       | R953     | 0113675     | CF | 330K $\Omega$ | $\pm 5\%$  | SRD1/6P  | IC908             | 2300591  | CX20133           | Q902          | 232955    |             |        |        |
| $\Delta$ R807 | 1123625  | NF          | 220 $\Omega$  | $\pm 5\%$  | SRD1/4P    | R954     | 0113675     | CF | 330K $\Omega$ | $\pm 5\%$  | SRD1/6P  | IC909             | 2387481  | HD14053B          | Q903          | 232865    |             |        |        |
| R808          | 0113623  | CF          | 2.2K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R955     | 0113663     | CF | 100K $\Omega$ | $\pm 5\%$  | SRD1/6P  | IC910             | 2301291  | $\mu$ PC457DC     | Q904          | 232865    |             |        |        |
| R809          | 0113637  | CF          | 8.2K $\Omega$ | $\pm 5\%$  | SRD1/6P    | R956     | 0113643     | CF | 15K $\Omega$  | $\pm 5\%$  | SRD1/6P  | IC911             | 2301291  | $\mu$ PC457DC     | Q905          | 232865    |             |        |        |
| R810          | 0129573  | CF          | 330 $\Omega$  | $\pm 5\%$  | SRD1/4P    | R957     | 0113635     | CF | 6.8K $\Omega$ | $\pm 5\%$  | SRD1/6P  | FET901LR          | 2329721  | 2SK163-L          | Q906          | 232865    |             |        |        |
| R814          | 0113599  | CF          | 220 $\Omega$  | $\pm 5\%$  | SRD1/6P    | R958     | 0113635     | CF | 6.8K $\Omega$ | $\pm 5\%$  | SRD1/6P  | Q101              | 2328652  |                   |               |           |             |        |        |

| SYMBOL No. | PART No. | DESCRIPTION                      | SYMBOL No.    | PART No. | DESCRIPTION             | SYMBOL No.         | PART No. | DESCRIPTION  |
|------------|----------|----------------------------------|---------------|----------|-------------------------|--------------------|----------|--|
| Q152       | 2328652  | 2SC1740LN(S)<br>(for ES, VS, BK) | Q906          | 2317739  | 2SD330(D/E)             | D905               | 2337011  | 1S2076   |
| Q153       | 2329582  | 2SA933(R)<br>(for ES, VS, BK)    | Q907          | 2328969  | 2SB514AL(D/E)           | D906               | 2337011  | 1S2076   |
| Q154       | 2329582  | 2SA933(R)<br>(for ES, VS, BK)    | Q908          | 2328652  | 2SC1740LN(S)            | D907               | 2337011  | 1S2076   |
| Q155       | 2328652  | 2SC1740LN(S)                     | Q909          | 2328652  | 2SC1740LN(S)            | D909               | 2337011  | 1S2076   |
| Q301LR     | 2329553  | 2SC2603EFB                       | Q910          | 2329582  | 2SA933(R)               | D911               | 2337011  | 1S2076   |
| Q302       | 2329582  | 2SA933(R)                        | Q911          | 2329582  | 2SA933(R)               | D913               | 2397321  | KV1260   |
| Q303       | 2329553  | 2SC2603EFB                       | DIODES        |          |                         | D951               | 2337601  | 1S2473   |
| Q304       | 2329553  | 2SC2603EFB                       | D101          | 2337601  | 1S2473                  | D952               | 2337601  | 1S2473   |
| Q305       | 2329553  | 2SC2603EFB                       | D102          | 2337601  | 1S2473                  | D953               | 2337601  | 1S2473   |
| Q306       | 2329582  | 2SA933(R)                        | D103          | 2337931  | 1K60R (for ZS)          | D954               | 2337601  | 1S2473   |
| Q307       | 2329582  | 2SA933(R)                        | D104          | 2337931  | 1K60R (for ZS)          | ZD351              | 2337515  | HZ6B-2   |
| Q351       | 2329553  | 2SC2603EFB                       | D151          | 2397321  | KV1260                  | ZD352              | 2337122  | HZ-6B  |
| Q352       | 2329553  | 2SC2603EFB                       | D152          | 2397321  | KV1260 (for ES, VS, BK) | ZD401              | 2337612  | HZ-3A2   |
| Q353       | 2329553  | 2SC2603EFB<br>(for ES, VS, BK)   | D153          | 2337601  | 1S2473 (for ES, VS, BK) | ZD481              | 2337612  | HZ-3A2   |
| Q354       | 2329553  | 2SC2603EFB<br>(for ES, VS, BK)   | D154          | 2337601  | 1S2473 (for ES, VS, BK) | ZD701              | 2337587  | HZ5C1  |
| Q355       | 2329553  | 2SC2603EFB                       | D155          | 2337601  | 1S2473 (for ES, VS, BK) | ZD801              | 2337555  | HZ11B2   |
| Q356       | 2329553  | 2SC2603EFB                       | D156          | 2337601  | 1S2473                  | ZD802              | 2337563  | HZ-12A-3   |
| Q401       | 2329553  | 2SC2603EFB                       | D157          | 2337601  | 1S2473                  | ZD803              | 2337122  | HZ-6B  |
| Q402       | 2329582  | 2SA933(R)                        | D158          | 2337601  | 1S2473 (for ES, VS, BK) | ZD804              | 2337122  | HZ-6B  |
| Q403       | 2329553  | 2SC2603EFB                       | D301          | 2337601  | 1S2473                  | ZD805              | 2337122  | HZ-6B  |
| Q404       | 2329553  | 2SC2603EFB                       | D302          | 2337601  | 1S2473                  | ZD806              | 23371882 | HZ-24-2  |
| Q420LR     | 2329553  | 2SC2603EFB                       | D301          | 2337601  | 1S2473                  | ZD807              | 2337122  | HZ-6B  |
| Q421LR     | 2329553  | 2SC2603EFB                       | D302          | 2337601  | 1S2473                  | ZD808              | 2337568  | HZ12C-2  |
| Q422LR     | 2329553  | 2SC2603EFB (except BK)           | D351          | 2397421  | 1SS133T                 | ZD809              | 2337562  | HZ-12A-2   |
| Q423       | 2329553  | 2SC2603EFB (except BK)           | D352          | 2337601  | 1S2473                  | ZD811              | 2337555  | HZ11B2   |
| Q471       | 2329553  | 2SC2603EFB                       | D353          | 2337601  | 1S2473                  | ZD901              | 2337612  | HZ-3A2   |
| Q472LR     | 2329553  | 2SC2603EFB (except BK)           | D354          | 2337601  | 1S2473                  | ZD902              | 2337122  | HZ-6B  |
| Q481LR     | 2329553  | 2SC2603EFB                       | D355          | 2337601  | 1S2473                  | ZD903              | 2337122  | HZ-6B  |
| Q551       | 2328081  | 2SA844(C)<br>(except BK)         | D356          | 2337601  | 1S2473                  | D351               | 2398422  | SLR-34DC5  |
| Q552       | 2328081  | 2SA844(C)<br>(except BK)         | D357          | 2397421  | 1SS133T (except US, CS) | D481               | 2398422  | SLR-34DC5  |
| Q553       | 2329553  | 2SC2603EFB<br>(except BK)        | D358          | 2397421  | 1SS133T                 | D482               | 2398422  | SLR-34DC5  |
| Q554       | 2329553  | 2SC2603EFB<br>(except BK)        | D360          | 2397421  | 1SS133T                 | D483               | 2398422  | SLR-34DC5  |
| Q610LR     | 2329553  | 2SC2603EFB                       | D361          | 2337601  | 1S2473                  | D484               | 2339032  | SLR-34URC  |
| Q651LR     | 2329553  | 2SC2603EFB                       | D401          | 2337601  | 1S2473                  | D485               | 2339032  | SLR-34URC  |
| Q652LR     | 2317971  | 2SD1468(R)                       | D402          | 2337601  | 1S2473                  | D651               | 2339104  | SLP-660C   |
| Q653       | 2329553  | 2SC2603EFB                       | D403          | 2337601  | 1S2473                  | D652               | 2339104  | SLP-660C   |
| Q654       | 2329582  | 2SA933(R)                        | D404          | 2337601  | 1S2473                  | D653               | 2339104  | SLP-660C   |
| Q701       | 2329582  | 2SA933(R)                        | D405          | 2337601  | 1S2473                  | D654               | 2339104  | SLP-660C   |
| Q751       | 2329582  | 2SA933(R)                        | D406          | 2337601  | 1S2473                  | D655               | 2339104  | SLP-660C   |
| Q801       | 2317803  | 2SD1266(P)                       | D407          | 2337601  | 1S2473                  | VARIABLE RESISTORS |          |  |
| Q802       | 2317883  | 2SB941(P)                        | D408          | 2337601  | 1S2473                  | RT301              | 0158971  | 10k $\Omega$ -(B)<br>(FM MPX VCO ADJ.)                 |
| Q803       | 2328652  | 2SC1740LN(S)                     | D420LR        | 2337601  | 1S2473                  | RT401LR            | 0158975  | 22k $\Omega$ -(B)<br>(PLAYBACK GAIN ADJ.)              |
| Q804       | 2317803  | 2SD1266(P)                       | D470LR        | 2337921  | 1K34A                   | RT402LR            | 0158973  | 100k $\Omega$ -(B)<br>(BIAS CURRENT ADJ.)              |
| Q805       | 2317823  | 2SD880(GR)                       | D551          | 2337601  | 1S2473 (except BK)      | RT551              | 0158953  | 2k $\Omega$ -(B)<br>(HIGH SPEED ADJ.)<br>(except BK)   |
| Q806       | 2317883  | 2SB941(P)                        | D552          | 2337601  | 1S2473 (except BK)      | RT552              | 0158974  | 1k $\Omega$ -(B)<br>(NORMAL SPEED ADJ.)<br>(except BK) |
| Q807       | 2328969  | 2SB514AL(D/E)                    | D553          | 2337601  | 1S2473 (except BK)      | RT553              | 0158953  | 2k $\Omega$ -(B)<br>(HIGH SPEED ADJ.)<br>(except BK)   |
| Q808       | 2317883  | 2SB941(P)                        | D554          | 2337601  | 1S2473 (except BK)      | RT554              | 0158974  | 1k $\Omega$ -(B)<br>(NORMAL SPEED ADJ.)<br>(except BK) |
| Q901       | 2327992  | 2SB562B                          | D651          | 2337762  | ERB12-01                | R905               | 0158977  | 4.7k $\Omega$ -(B)<br>(LASER DIODE OUTPUT ADJ.)        |
| Q902       | 2329582  | 2SA933(R)                        | D671          | 2337601  | 1S2473                  | R908               | 0158973  | 100k $\Omega$ -(B)<br>(FOCUS SERVO OFFSET ADJ.)        |
| Q903       | 2328652  | 2SC1740LN(S)                     | D672          | 2337601  | 1S2473                  |                    |          |  |
| Q904       | 2328652  | 2SC1740LN(S)                     | D701          | 2337601  | 1S2473                  |                    |          |  |
| Q905       | 2328652  | 2SC1740LN(S)                     | D702          | 2337601  | 1S2473                  |                    |          |  |
|            |          |                                  | D703          | 2337151  | 1S2076A                 |                    |          |  |
|            |          |                                  | D751          | 2337601  | 1S2473                  |                    |          |  |
|            |          |                                  | $\Delta$ D801 | 2337461  | S4VB20                  |                    |          |  |
|            |          |                                  | $\Delta$ D802 | 2337461  | S4VB20                  |                    |          |  |
|            |          |                                  | D803          | 2337601  | 1S2473                  |                    |          |  |
|            |          |                                  | D804          | 2337762  | ERB12-01                |                    |          |  |
|            |          |                                  | D901          | 2337011  | 1S2076                  |                    |          |  |
|            |          |                                  | D902          | 2337011  | 1S2076                  |                    |          |  |
|            |          |                                  | D903          | 2337011  | 1S2076                  |                    |          |  |
|            |          |                                  | D904          | 2337011  | 1S2076                  |                    |          |  |

| SYMBOL No.                      | PART No. | DESCRIPTION   | SYMBOL No.    | PART No. | DESCRIPTION                                     |
|---------------------------------|----------|---|---------------|----------|---|
| R914                            | 0158973  | 100k $\Omega$ -(B)<br>(TRACKING SERVO OFFSET<br>ADJ.) | $\Delta$ F801 | 2727893  | Fuse 2A 125V (for US, EW)                       |
| RV601LR                         | 0189274  | 100k $\Omega$ -(C) (BASS CONTROL)                     | $\Delta$ F802 | 2727748  | Fuse T4A (for BK)                               |
| RV602LR                         | 0189274  | 100k $\Omega$ -(C)<br>(TREBLE CONTROL)                | $\Delta$ F802 | 2727582  | Fuse T4A<br>(for ES, VS, KS, ZS, SA)            |
| RV603                           | 0189263  | 200k $\Omega$ -(Special W)<br>(BALANCE CONTROL)       | $\Delta$ F802 | 2727894  | Fuse 4A 125V (for US, CS, EW)                   |
| RV604LR                         | 0158673  | 50k $\Omega$ -(B)<br>(VOLUME CONTROL)                 | $\Delta$ F803 | 2727198  | Fuse T800mA<br>(for ES, VS, KS, ZS, SA)         |
| RV605                           | 0189272  | 10k $\Omega$ -(B)<br>(REC LEVEL CONTROL)              | $\Delta$ F803 | 2727741  | Fuse T800mA (for BK)                            |
|                                 |          |   | $\Delta$ F803 | 2727895  | Fuse 1A 125V (for US, CS, EW)                   |
|                                 |          |   | $\Delta$ F804 | 2727741  | Fuse T800mA (for BK)                            |
| <b>COILS &amp; TRANSFORMERS</b> |          |   | $\Delta$ F804 | 2727895  | Fuse 1A 125V (for US, CS, EW)                   |
| L151                            | 2136503  | MW antenna coil                                       | $\Delta$ F804 | 2727198  | Fuse T800mA<br>(for ES, VS, KS, ZS, SA)         |
| L152                            | 2136504  | LW antenna coil<br>(for ES, VS, BK)                   | S351          | 2639682  | Tact switch (P2/10)                             |
| L250                            | 2227889  | Peaking coil  | S352          | 2639682  | Tact switch (P3/11)                             |
| L420LR                          | 2228004  | Choke coil  | S353          | 2639682  | Tact switch (P4/12)                             |
| L421                            | 2227353  | Choke coil  | S354          | 2639682  | Tact switch (P5/13)                             |
| L422LR                          | 2227991  | Choke coil  | S355          | 2639682  | Tact switch (P6/14)                             |
| L470LR                          | 2137921  | Dolby filter  | S356          | 2639682  | Tact switch (P7/15)                             |
| L901                            | 2137231  | Choke coil  | S357          | 2639682  | Tact switch (P8/16)                             |
| L902                            | 2227907  | Choke coil  | S358          | 2639682  | Tact switch (SHIFT)                             |
| T151                            | 2136493  | AM OSC coil   | S359          | 2639682  | Tact switch (MEMORY)                            |
| T152                            | 2136494  | LW OSC coil<br>(for ES, VS, BK)                       | S360          | 2639682  | Tact switch (TUNING UP)                         |
| T250                            | 2155173  | FM disci coil   | S361          | 2639682  | Tact switch (TUNING DOWN)                       |
|                                 |          |   | S362          | 2639682  | Tact switch (P1/9)                              |
|                                 |          |   | S363          | 2639682  | Tact switch (FM)<br>(for ES, VS, BK)            |
|                                 |          |   | S364          | 2639682  | Tact switch (MW/FM)                             |
|                                 |          |   | S365          | 2639682  | Tact switch (LW/MW(AM))                         |
| <b>MISCELLANEOUS</b>            |          |   | S366          | 2639682  | Tact switch (AUTO/MONO)                         |
| JK101                           | 2689382  | 4P terminal   | S370          | 2627931  | Slide switch (SPACING)<br>(for US, EW)          |
| JK102                           | 2677911  | FM antenna socket<br>(for ES, VS, BK, KS)             | S401          | 2628491  | Slide switch<br>(REC/PLAY SELECT)               |
| JK102                           | 2658391  | DIN ANT. socket<br>(for ZS)                           | S402          | 2600047  | 1 key push switch<br>(TAPE SELECT)              |
| JK501                           | 2678348  | 4P US pin jack  | S403          | 2600049  | 1 key push switch<br>(RIF/DUBBING SPEED SELECT) |
| JK701                           | 2689381  | Speakers terminal                                     | S404          | 2600049  | 1 key push switch<br>(DOLBY NR)                 |
| JK702                           | 2677593  | Headphones jack                                       |               |          |   |
| CT151                           | 0283127  | Trimmer capacitor 20PF                                | S601          | 2639682  | Tact switch (PHONO)                             |
| CT152                           | 0283127  | Trimmer capacitor 20PF<br>(for ES, VS, BK)            | S602          | 2639682  | Tact switch (AUX)                               |
| CP101                           | 2136941  | Band pass filter (for ZS)                             | S603          | 2639682  | Tact switch (TAPE)                              |
| CP251                           | 2136312  | Anti birdie filter<br>(for VS, ZS)                    | S604          | 2639682  | Tact switch (CD)                                |
| CP352                           | 0189032  | Resistor array (100K $\Omega$ x 4)                    | S605          | 2639682  | Tact switch (TUNER)                             |
| CP353                           | 0241892  | Capacitor array (330PF x 7)                           | $\Delta$ S801 | 2600151  | Push switch (POWER)                             |
| CP354                           | 0189014  | Resistor array (100K $\Omega$ x 7)                    | S901          | 2639152  | Push switch (OPEN)                              |
| CP420                           | 2137071  | Coil  | S902          | 2639152  | Push switch (LASER)                             |
| CP651LR                         | 2137221  | Low pass filter                                       | S951          | 2639682  | Tact switch (PLAY/PAUSE)                        |
| CP801                           | 1243901  | CD 0.01 $\mu$ F $\pm$ 100% 400V                       | S952          | 2639682  | Tact switch (STOP/CLEAR)                        |
| MD101                           | 2425461  | Tuner pack (except ZS)                                |               |          |   |
| MD101                           | 2425561  | Tuner pack (for ZS)                                   | S953          | 2639682  | Tact switch (FF)                                |
| FL351                           | 2789302  | Fluorescent display tube                              | S954          | 2639682  | Tact switch (BACKWARD SKIP)                     |
| FL901                           | 2789811  | Fluorescent display tube                              | S955          | 2639682  | Tact switch (FORWARD SKIP)                      |
| MF201                           | 2135002  | Ceramic filter  | S956          | 2639682  | Tact switch (MEMORY)                            |
| MF202                           | 2135002  | Ceramic filter (for ZS)                               | S957          | 2639682  | Tact switch (REPEAT)                            |
| MF203                           | 2135002  | Ceramic filter  | S958          | 2639682  | Tact switch (FB)                                |
| MF250                           | 2155152  | AM ceramic filter                                     | S959          | 2639682  | Tact switch (TRACK/TIME)                        |
| X351                            | 2789161  | Crystal oscillator                                    |               |          |   |
| X901                            | 2780221  | Crystal oscillator                                    |               |          |   |
| X902                            | 2780222  | Crystal oscillator                                    |               |          |   |

| SYMBOL No.      | PART No. | DESCRIPTION                                       | SYMBOL No. | PART No. | DESCRIPTION                          | SYMBOL No.  | PART No.        | DESCRIPTION                               |   |
|-----------------|----------|---|------------|----------|--------------------------------------|---|-----------------|---|---|
| CABINET CHASSIS |          |   |            |          |                                      |   |                 |   |   |
| 1               | 86914102 | BT bind head screw (3 φ x 10)                     |            | 4043954  | Bottom case assy (BLACK)<br>[for KS] | △45   | 3913006         | Bushing<br>[except EW]                    |   |
| 2               | 86914252 | BT bind head screw (3 φ x 25)                     |            | 4043994  | Bottom case assy (WHITE)<br>[for KS] | △   | 00437932        | Bushing<br>[for EW]                       |   |
| 3               | 3307401  | Volume knob (BLACK)                               |            | 4043955  | Bottom case assy (BLACK)<br>[for ZS] | △46   | 2712101         | Power supply cord<br>[for ES, VS, KS, ZS] |   |
|                 | 3307402  | Volume knob (WHITE)                               |            | 4043995  | Bottom case assy (WHITE)<br>[for ZS] | △   | 2749582         | Power supply cord<br>[for BK]             |   |
| 4               | 3307371  | Button (BLACK)                                    |            | 4043956  | Bottom case assy (BLACK)<br>[for US] | △   | 2749622         | Power supply cord<br>[for SA]             |   |
|                 | 3307372  | Button (WHITE)                                    |            | 4043996  | Bottom case assy (WHITE)<br>[for US] | △   | 2712311         | Power supply cord<br>[for US, CS]         |   |
| 5               | 4043931  | Top case assy (BLACK)<br>[for ES, VS]             |            | 4043957  | Bottom case assy (BLACK)<br>[for CS] | △   | 2718113         | Power supply cord<br>[for EW]             |   |
|                 | 4043971  | Top case assy (WHITE)<br>[for ES, VS]             |            | 4043997  | Bottom case assy (WHITE)<br>[for CS] | 47  | 4042681         | Unit mechanism assy                       |   |
|                 | 4043932  | Top case assy (BLACK)<br>[for KS, ZS, SA, CS, EW] |            | 4043958  | Bottom case assy (BLACK)<br>[for EW] | 48  | 4594961         | Frote screw                               |   |
|                 | 4043972  | Top case assy (WHITE)<br>[for KS, ZS, SA, CS, EW] |            | 4043998  | Bottom case assy (WHITE)<br>[for EW] | 49  | 4584941         | Screw                                     |   |
|                 | 4043933  | Top case assy (BLACK)<br>[for US]                 |            | 23       | 3802263                              | Button decoration piece<br>(BLACK)                                      | 50              | 4469171                                   | Holder                                  |
|                 | 4043973  | Top case assy (WHITE)<br>[for US]                 |            | 3802264  | Button decoration piece<br>(WHITE)   | 51  | 4691991         | Rubber                                    |   |
|                 | 4043934  | Top case assy (BLACK)<br>[for BK]                 |            | 24       | 3307433                              | Operation button (BLACK)  | 52              | 2589231                                   | Mechanism assy (TN-21)<br>[except BK]   |
|                 | 4043974  | Top case assy (WHITE)<br>[for BK]                 |            | 25       | 3307434                              | Operation button (WHITE)  |                 | 2588951                                   | Mechanism assy (TN-21)<br>[for BK]      |
| 6               | 4848921  | Cassette door assy                                |            | 26       | 3307456                              | Button (BLACK)  | 53              | 3307343                                   | Deck button (BLACK)                     |
| 7               | 4848931  | CD door assy                                      |            | 27       | 3307411                              | Button (WHITE)  |                 | 3307344                                   | Deck button (WHITE)                     |
| 8               | 4567412  | DT bind head screw (3 φ x 8)                      |            | 28       | 3307412                              | Push button (SHIFT)   | 54              | 2789692                                   | MH counter                              |
| 9               | 3908591  | Damper  |            | 29       | 3307413                              | Push button (MEMORY)  | 55              | 4686548                                   | Counter belt                            |
| 10              | 3907811  | Washer  |            | 30       | 3307414                              | Push button (REPEAT)  | 56              | 4582511                                   | DT screw (2 φ x 4)                      |
| 11              | 4469185  | PU cover  |            | 31       | 3368891                              | CD open wire  | 57              | 4469311                                   | REC spring                              |
| 12              | 4469262  | Spring (L)  |            | 32       | 3802282                              | Open button holder  | 58              | 8813112                                   | Washer                                  |
| 13              | 4469252  | Spring (R)  |            | 33       | 3807424                              | Button (BLACK)  | 59              | 8741103                                   | Bind screw (2 φ x 3)                    |
|                 |          |   |            | 34       | 3807425                              | Button (WHITE)  | 60              | 3368353                                   | Spring                                  |
| 14              | 86913082 | Bind tapping screw (2.6 φ x 8)                    |            | 35       | 3368901                              | Cassette open wire  | 61              | 2588232                                   | Mechanism assy (TN-21)<br>[except BK]   |
| 15              | 3307443  | Function button (BLACK)                           |            | 36       | 4702154                              | Washer<br>[for ZS]  |                 | 2588952                                   | Mechanism assy (TN-21)<br>[for BK]      |
|                 | 3307444  | Function button (WHITE)                           |            | 37       | 3368872                              | Spring  | 62              | 8691418                                   | BT screw (3 φ x 18)<br>(IC701)          |
| 16              | 3307391  | Station button                                    |            | 38       | 3907541                              | Switch cover  | 63              | 4819232                                   | Button lever shaft                      |
| 17              | 3307355  | Tuning button (BLACK)<br>[for ES, VS, BK]         |            | 39       | 3307381                              | Push button   | 64              | 4819072                                   | Screw (2 φ x 7)<br>(button holder)      |
|                 | 3307356  | Tuning button (WHITE)<br>[for ES, VS, BK]         |            | 40       | 4469222                              | Net (BLACK)   |                 |   |   |
|                 | 3307357  | Tuning button (BLACK)<br>[except ES, VS, BK]      |            | 41       | 4469223                              | Net (WHITE)   | 65              | 86914142                                  | BT bind head screw (3 φ x 14)<br>(Q804) |
|                 | 3307358  | Tuning button (WHITE)<br>[except ES, VS, BK]      |            | 42       | 4567422                              | DT bind head screw (4 φ x 8)<br>(power transformer)                     | 66              | 3391901                                   | Spring                                  |
| 18              | 3307392  | Station button                                    |            | 39       | 86994102                             | BT bind head screw (3 φ x 10)   | 67              | 3391902                                   | Spring                                  |
| 19              | 3307393  | Station button                                    |            | 40       | 8699414                              | BT bind head screw (3 φ x 14)<br>[for ZS]                               | 68              | 3391903                                   | Spring                                  |
| 20              | 3307361  | Auto button                                       |            | 41       | 4567411                              | DT bind head screw (3 φ x 6)  | 69              | 3391904                                   | Spring                                  |
| 21              | 3805331  | Clamper   |            | 42       | 4567432                              | DT bind head screw (3 φ x 8)<br>[for US, EW]<br>(voltage select switch) | for ACCESSORIES |   |   |
| 22              | 4043951  | Bottom case assy (BLACK)<br>[for ES]              |            | △43      | 2249631                              | Power transformer<br>[for ES, VS, KS, ZS]                               | △               | 2667922                                   | Siemens plug<br>[for EW]                |
|                 | 4043991  | Bottom case assy (WHITE)<br>[for ES]              |            | △        | 2249632                              | Power transformer<br>[for BK, SA]                                       |                 | 2757528                                   | FM antenna                              |
|                 | 4043952  | Bottom case assy (BLACK)<br>[for VS]              |            | △        | 2249633                              | Power transformer<br>[for CS]   |                 | 4023261                                   | AM loop antenna assy                    |
|                 | 4043992  | Bottom case assy (WHITE)<br>[for VS]              |            | △        | 2249634                              | Power transformer<br>[for US, EW]                                       |                 | 3802462                                   | Spacer assy                             |
|                 | 4043953  | Bottom case assy (BLACK)<br>[for BK, SA]          |            | △44      | 2618053                              | Voltage select switch<br>[for US, EW]                                   |                 |   |   |
|                 | 4043993  | Bottom case assy (WHITE)<br>[for BS, SA]          |            |          |                                      |   |                 |   |   |



| SYMBOL No.              | PART No. | DESCRIPTION  | SYMBOL No.            | PART No. | DESCRIPTION  |
|-------------------------|----------|--|-----------------------|----------|--|
| <b>CASSETTE CHASSIS</b> |          |  | 43                    | 4839381  | Take up reel assy (except BK)  |
| 1                       | 4818992  | Switch plate   |                       | 4819034  | Take up reel assy (for BK)   |
| 2                       | 4832521  | Push button actuator                                     | 44                    | 4832421  | Record safety lever (for TAPE 2)   |
| 3                       | 4823651  | REC button lever (for TAPE 2)                            | 45                    | 4839382  | Back tension spring (except BK)  |
| 4                       | 4823661  | PLAY button lever  |                       | 4819037  | Spring (for BK)  |
| 5                       | 4823671  | RWD button lever   | 46                    | 4839379  | Back tension spring (except BK)  |
| 6                       | 4823681  | FF button lever  |                       | 4819032  | Spring (for BK)  |
| 7                       | 4823691  | STOP button lever  | 47                    | 4819039  | Motor rubber   |
| 8                       | 4823701  | PAUSE button lever                                       | 48                    | 4819533  | Motor collar screw   |
| 9                       | 4818990  | RWD lever  | 49                    | 4832532  | Main belt  |
| 10                      | 4819131  | PAUSE lever  | 50                    | 4820241  | Mat  |
| 11                      | 4819132  | PAUSE lever spring                                       | 51                    | 4820242  | Pack spring  |
| 12                      | 4819133  | PAUSE stopper  | 52                    | 4819050  | R/P head (for TAPE 2)  |
| 13                      | 4820215  | Sub chassis  |                       | 4819587  | P head (for TAPE 1)  |
| 14                      | 4819007  | Button spring  | 53                    | 4819541  | Erase head (for TAPE 2)  |
| 15                      | 4819100  | Button lever spring                                      | 54                    | 4832404  | Motor assy (except BK)   |
| 16                      | 4831613  | Button lever spring (except BK)                          |                       | 4832402  | Motor assy (for BK)  |
|                         | 4820214  | Button lever spring (for BK)                             | 55                    | 4819063  | Tapping screw (2 $\phi$ x 3) (pack spring)                                   |
| 17                      | 4819008  | Actuator spring  | 56                    | 4819068  | Tapping screw (2 $\phi$ x 4) (motor bracket, metal guide)                    |
| 18                      | 4819009  | Auto lever   | 57                    | 4819607  | Bind tapping screw (2 $\phi$ x 5) (metal guide, sub chassis, reel base assy) |
| 19                      | 4819000  | Auto lever spring  | 58                    | 4819611  | Screw (2 $\phi$ x 6) (head base) (for TAPE 1)                                |
| 20                      | 4820217  | PLAY button lever spring                                 | 59                    | 4819060  | Screw (2 $\phi$ x 7) (P head, R/P head)                                      |
| 21                      | 4848951  | Leaf switch (except BK)                                  | 60                    | 4819600  | Azimuth screw (P head, R/P head)   |
|                         | 4826101  | Leaf switch (for BK)                                     | 61                    | 4819544  | Cap screw (2 $\phi$ x 8) (for TAPE 2) (erase head)                           |
| 22                      | 4820218  | Switch actuator spring                                   | 62                    | 4842434  | Camera tapping screw (2 $\phi$ x 3.5) (except BK) (bracket)                  |
| 23                      | 4820219  | Head panel (for TAPE 1)                                  | 63                    | 4819078  | Washer (1.55 $\phi$ x 3.8 x 0.5)   |
|                         | 4831614  | Head panel (for TAPE 2)                                  | 64                    | 4832432  | Washer (2.05 $\phi$ x 4 x 0.5)   |
| 24                      | 4819014  | Head base (for TAPE 1)                                   | 65                    | 4848953  | Washer (1.2 $\phi$ x 3.7 x 0.4) (except BK)                                  |
|                         | 4819528  | Head base (for TAPE 2)                                   |                       | 4819077  | Washer (1.2 $\phi$ x 3 x 0.4) (for BK)                                       |
| 25                      | 4832412  | Sensing plate assy                                       | 66                    | 4848081  | Callar (except BK)   |
| 26                      | 4820221  | Head panel spring  | 67                    | 4839372  | Pinch roller arm assy (except BK)  |
| 27                      | 4819006  | PR stopper   |                       | 4820222  | Pressure roller arm assy (for BK)  |
| 28                      | 4819017  | Spring   | 68                    | 4831610  | Metal guide  |
| 29                      | 4819529  | E.H spring (for TAPE 2)                                  | 69                    | 4832531  | Motor bracket  |
| 30                      | 4832522  | Screw (pressure roller arm)                              | 70                    | 4746405  | Motor sheet  |
| 31                      | 4848082  | Pinch roller spring (except BK for TAPE 1)               | <b>UNIT MECHANISM</b> |          |  |
|                         | 4820223  | Pressure roller arm spring (except BK for TAPE 2/for BK) | 1                     | 4040622  | DC motor assy  |
| 32                      | 4820225  | RF pulley arm spring                                     | 2                     | 4418005  | PS washer  |
| 33                      | 4820226  | RF arm collar screw (RF pulley arm) (except BK)          | 3                     | 3976432  | Send gear  |
|                         | 4832414  | RF arm collar screw (RF pulley arm) (for BK)             | 4                     | 2523973  | DC motor (D2)  |
| 34                      | 4833453  | Pulley arm assy (except BK)                              | 5                     | 8711103  | Pan head screw (2 $\phi$ x 3) (DC motor assy, DC motor)                      |
|                         | 4832413  | RF pulley arm (for BK)                                   | 6                     | 3805291  | Turn table   |
| 35                      | 4842433  | Bracket (except BK)                                      | 7                     | 4468942  | Unite plate assy   |
| 36                      | 4820227  | Belt   | 8                     | 4594723  | Guide bar  |
| 37                      | 4832417  | FF gear  | 9                     | 2780071  | Micro switch   |
| 38                      | 4820231  | Flywheel assy  |                       |          |  |
| 39                      | 4839377  | Take up gear plate assy (except BK)                      |                       |          |  |
|                         | 4832415  | Take up gear plate assy (for BK)                         |                       |          |  |
| 40                      | 4819020  | TG plate spring  |                       |          |  |
| 41                      | 4839378  | Take up roller gear (except BK)                          |                       |          |  |
|                         | 4832416  | Take up roller gear (for BK)                             |                       |          |  |
| 42                      | 4842431  | Supply reel assy (except BK)                             |                       |          |  |
|                         | 4819033  | Supply reel assy   |                       |          |  |



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