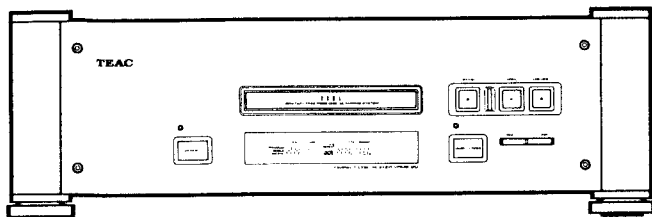


TEAC®



SERVICE MANUAL

VRDS-20

Compact Disc Player



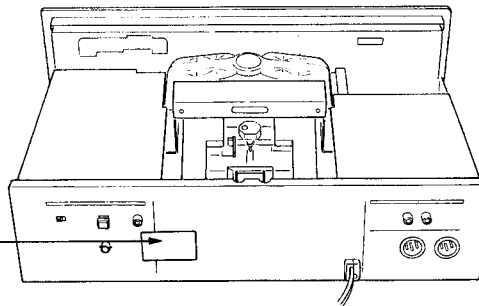
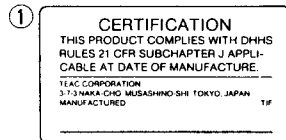
1 SAFETY INFORMATION

SAFETY INFORMATION

This product has been designed and manufactured according to FDA regulations "title 21, CFR, chapter 1, subchapter J, based on the Radiation Control for Health and Safety Act of 1968", and is classified as class 1 laser product. There is not hazardous invisible laser radiation during operation because invisible laser radiation emitted inside of this product is completely confined in the protective housings. The label required in this regulation is shown ①.

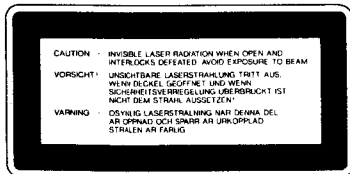
CAUTION

- If you remove the above-mentioned housings under the operating state of the product, there is a possibility of human access to the invisible laser radiation emitted from the optical pickup.
Pay careful attention, not to let the invisible laser beam enter into your eyes.
- If you find a troubled state of the laser diode, change to the specified new optical pickup.
- If you find a troubled state of safety interlock parts, change to the same type parts described in parts list.

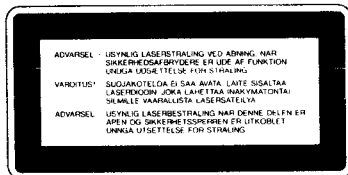


Optical pickup: Type : KSS-151A
Manufacturer : SONY Corporation
Laser output : Less than 0.2 mW on the objective lens
Wavelength : 760 – 800 nm

• CAUTION • ACHTUNG • OBSERVERA • ADVARSEL



②



① THIS LABEL IS ATTACHED TO THE PLACE AS ILLUSTRATED TO INFORM THAT THE APPARATUS CONTAINS A LASER COMPONENT.

① DIESE AUFKLEBEMARKE IST AN DEM IN DER ABBILDUNG GEZEIGTEN ORT ANGEBRACHT UM DARAUF HINZUWEISEN, DASS IM INNERN DES GERÄTS EINE LASER-KOMPONENTE BEFINDET.

① PÅSKRIFTEN SITTER PÅ APPARATEN SOM VISAS SOM UPPMANING OM ATT APPARATEN OMFATTAR EN INBYGGD LASERKOMPONENT.

① DETTE MÆRKAT ER ANBRAGT SOM VIST I ILLUSTRATIONEN FOR AT ADVARE BRUGEREN OM AT APPARATET INDEHOLDER EN LASERKOMPONENT.

② DETTE MÆRKAT ER SOM VIST PÅ ILLUSTRATIONEN ANBRAGT PÅ INDERSIDEN AF TOPDÆKSLET FOR AT ADVARE BRUGEREN OM AT YDERLIGERE FREMTRÆNGEN VIL VÆRE FORBUNDET MED FARE FOR AT UDSÆTTE SIG FOR LASERSTRÅLING.

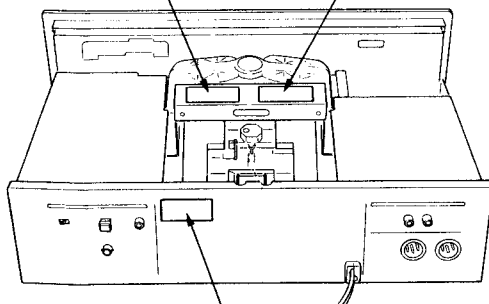
ADVARSEL - BETJENING AF ANDRE KONTROLLER OG REGULATORER ELLER BENYTTELSE AF ANDRE FREMGANGSMÅDER END BESKREVET HERI ER FORBUNDET MED FARE FOR UDSÆTTELSE FOR LASERSTRÅLING.

VARNING: APPARATEN INNEHÅLLER LASER KOMPONENT MED STRÅLNING ÖVERSTIGANDE KLAS 1

"ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSABFØYDERE ER UDE AF FUNKTION. UNNGÅ UDSÆTTELSE FOR STRÅLING"

"VAROITUS! SUOJAKOTILOA EI SAA AVATA. LAITE SISÄLTÄÄ LASERDIODIN, JOKA LÄHETTÄÄ (NÄKYMÄTÖNTÄ) SILMILLE VAARALLISTA LASERSÄTEILYÄ."

ADVARSEL: USYNLIG LASERSTRÅLING NÅR DENNA DELEN ER ÅPEN OG SIKKERHETSSPERREN ER UTKOBLET. UNNGÅ UTSETTELSE FOR STRÅLING.



①

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

2 SPECIFICATIONS

仕 様

AUDIO

Number of Channels	2
Frequency Response	1 - 20,000Hz $\pm$ 0.3dB (RCA) 20 - 20,000Hz $\pm$ 0.5dB (XLR)
Signal to Noise Ratio	Better than 110dB (1kHz)
Dynamic Range	Better than 99dB (1kHz)
Harmonic Distortion	0.0013% (1kHz)
Wow and Flutter	Unmeasurable (Quartz accuracy)
Channel Separation	Better than 110dB (1kHz)
Output Analog	2.2Vrms (RCA) 2.3Vrms (XLR)
Digital	0.5Vp-p/75 Ω (Coaxial) -15dBm -- 21dBm (Optical ; TOS) -12.5dBm -- 15dBm (Optical ; ST)
D/A Converter	Bitstream Conversion
Digital Filter	8-times oversampling 20-bit digital filter
Analog Filter	3rd order Butterworth filter

PICK UP

Type	Optical 3-Beam laser pickup
Objective Lens	2-dimensional parallel drive
Laser Type	GaAlAs type semiconductor laser
Wave Length	780nm

SIGNAL FORMAT

Sampling Frequency	44.1kHz
Quantization Bit	16-bit linear/channel
Channel Bit Rate	4.3218Mb/sec
Channel Modulation Code	EFM (Eight to Fourteen Modulation)
Error Correction	CIRC (Cross Interleave Reed Solomon Code)

GENERAL

Power Requirements	120/230V AC, 50-60Hz (U.S.A./Canada/General Export Model) 230V AC, 50Hz (Europe Model) 240V AC, 50Hz (U.K. Model)
Power Consumption	22 watts
Dimensions (W $\times$ H $\times$ D)	500 $\times$ 146 $\times$ 331mm (19-11/16" $\times$ 5-3/4" $\times$ 13-1/16")
Weight (net)	13.8kg (30-7/16 lbs)
Standard Accessories	Wireless Remote Control Unit (RC-481 ; for Gold finish version / RC-495 ; for Black finish version), Battery (SUM-3, "AA", "R6" type) $\times$ 2, Lock Plate, Foot Base $\times$ 4

〈オーディオ〉

オーディオチャンネル数	2チャンネル
周波数特性	1~20,000Hz $\pm$ 0.3dB (RCA) 20~20,000Hz $\pm$ 0.5dB (XLR)
SN比	110dB以上 (EIAJ)
ダイナミックレンジ	99dB以上 (EIAJ)
高調波歪率	0.0013%以下 (EIAJ)
ワウ・フラッター	測定限界値以下 (水晶発振精度)
チャンネルセパレーション	110dB以上 (EIAJ)
アナログ出力	2.2Vrms (RCA) 2.3Vrms (XLR)
デジタル出力	0.5Vp-p/75 Ω (COAXIAL) -15~-21dBm (OPTICAL TOS) -12.5~-15dBm (OPTICAL ST)
D/Aコンバーター	ビットストリーム
デジタルフィルター	8倍オーバーサンプリング 20ビットデジタルフィルター
アナログフィルター	3次バターワースフィルター

〈ピックアップ〉

方式	対物レンズ駆動、光学式3ビーム
対物レンズ駆動方式	2次元平行駆動
光源	半導体レーザー
波長	780nm

〈信号フォーマット〉

標準化周波数	44.1kHz
量子化ビット数	16ビット・リニア/チャンネル
伝送レート	4.3218Mb/sec
変調方式	EFM
エラー訂正方式	CIRC

〈一般〉

電源	100V AC 50-60Hz
消費電力	18W
外形寸法	500 $\times$ 146 $\times$ 331mm (W $\times$ H $\times$ D)
重量	13.8kg

付属品

- ワイヤレスリモコン RC-481
- 乾電池(単3、SUM-3) $\times$ 2
- ロックプレート
- フットベース $\times$ 4
- 取扱説明書

*仕様および外観は、改善のため予告なく変更することがあります。

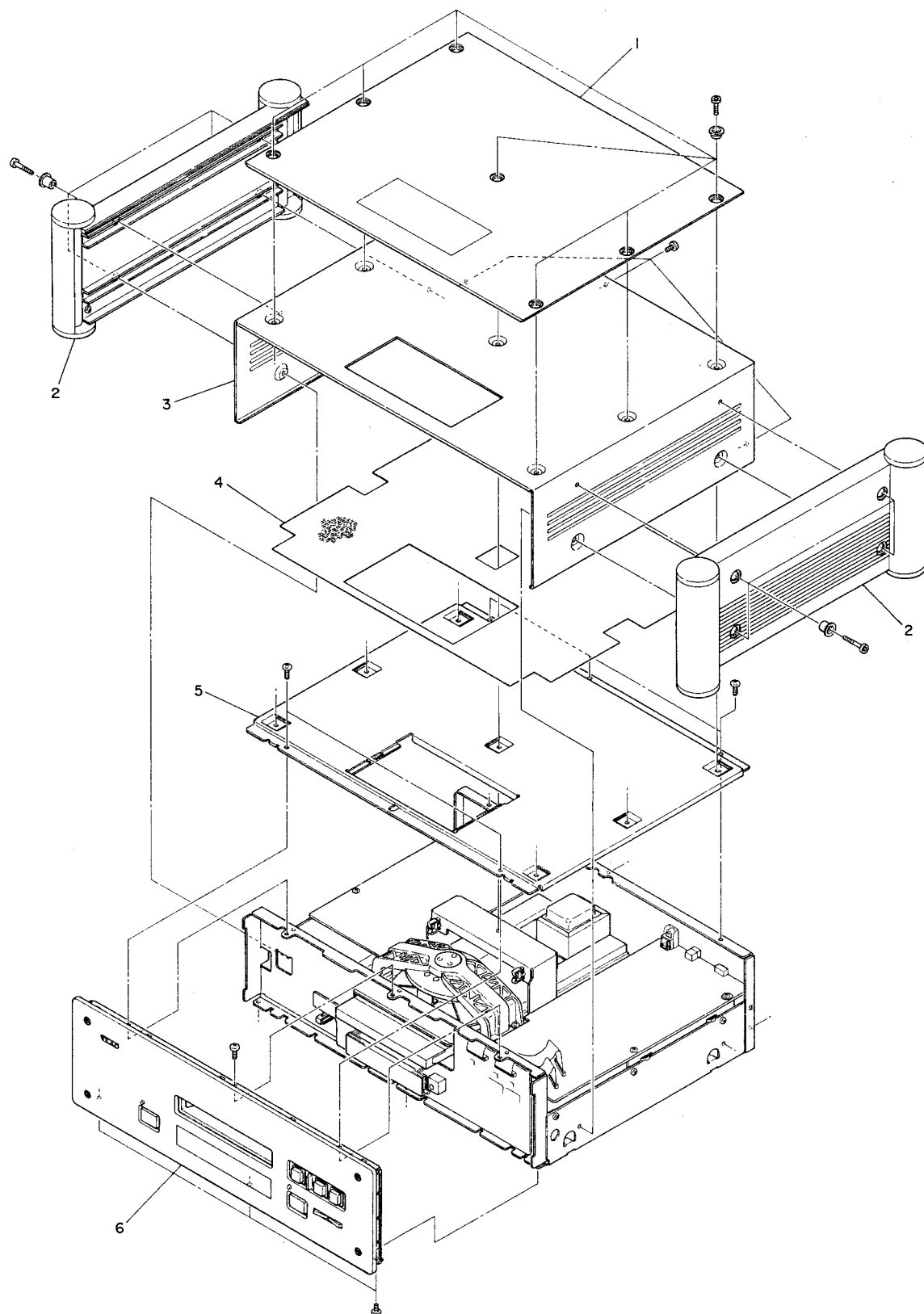
●Improvements may result in specification or feature changes without notice.

3 CASE AND FRONT PANEL REMOVAL

外装部品の外し方

Disassemble in number-order

番号順に外してください



4 ADJUSTMENT AND CHECKS

調整と確認

1. Replacement of the pickup assembly

- Before removing the pickup assembly be sure to solder -bridge where indicated in the inset (Fig. 4-1) to prevent the laser diode from being electrostatically damaged. After replacing the pickup assembly, be sure to unsolder the antistatic bridge. Or else the laser diode does not function.
- Before servicing the pickup assembly be sure to prevent electrostatic-inducer destruction by grounding not only test equipment in use but also yourself as shown in Fig. 4-2.
- * Electrostatic charge drastically shortens the operating life of the laser diode or possibly results in its destruction.
- During the transportation, mounting and dismounting of the assembly, support with your fingers at points A and B as shown in Fig. 4-3. Be particularly careful not to touch the actuator, photosensor and LD plate and do not apply force to them.
- Don't touch the plated portion of the flat cable end directly with fingers.
- Use care not to break the flat cable.
- Soldering must be done quickly at less than 30W, 320°C.
- Don't disassemble the pickup ass'y.
- Don't apply shock to the pickup ass'y.
- Don't place the assembly in a place subject to excessive dust, heat or moisture.

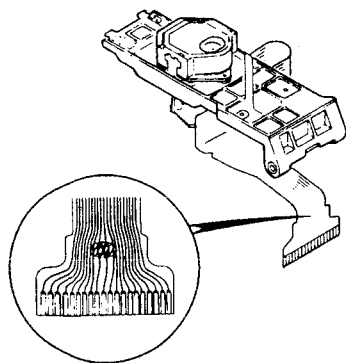


Fig. 4-1

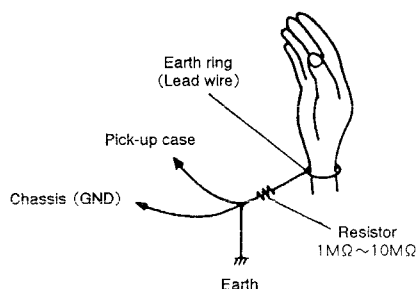


Fig. 4-2

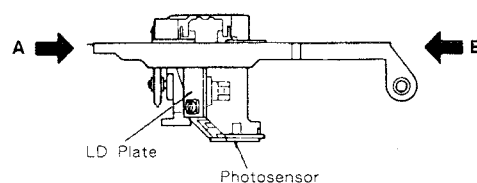


Fig. 4-3

1. ピックアップ ASSY の交換

- ピックアップ ASSY を外すときは、レーザーダイオードの静電破壊防止のため、必ず斜線部分 (Fig. 4-1) を半田ブリッジしてから作業をしてください。また、取り付けの場合も取り付け後に半田ブリッジを外してください。半田ブリッジをしたままではレーザーダイオードは動作しません。
- ピックアップ ASSY を取り扱う場合は、測定器などに確実なアースを取ると共に、人体アースを行ない、静電破壊を十分防止してください。(Fig. 4-2)
- * レーザーダイオードは、静電気が加わると寿命が著しく低下したり、または破損しますので十分注意してください。
- 取り付け、取り外し、持ち運びの際は、Fig. 4-3 の A 部と B 部で支えてください。特にアクチュエーター、光検出部、LD プレート部は、手を触れたり力を加えたりしないでください。
- フラットケーブル先端のメッキ部分には直接指を触れないでください。
- フラットケーブルは折れやすいので十分注意をして作業してください。
- 半田ゴテは 30W、320℃ 以下を使用し、すばやく処理してください。
- ピックアップ ASSY 本体の調整および分解などはしないでください。
- ピックアップ ASSY に落下・衝撃は加えないでください。
- ゴミ・ホコリなどの発生する場所、高温・多湿の場所は避けてください。

2. Objective

- Laser beams are similar to infrared rays. Don't look at the beams directly and keep your eyes at least 30cm away from them.
- Don't touch the objective with fingers.
- If objective becomes dirty, playback will deteriorate. To clean the objective, moisten a good cleaning tissue, such as made by KODAK, in isopropyl alcohol and wipe the objective gently. Wipe off and excess fluid with a dry cleaning tissue.

2. 対物レンズについて

- レーザー光は近赤外線のため目視は困難です。目の安全のため、目をレンズから 30cm 以上離してください。
- レンズには手を触れないでください。
- レンズに汚れが付くと再生能力が低下しますので、次のように清掃してください。
レンズクリーニングペーパー (KODAK 社製など) に、イソプロピルアルコール (I.P.A) を浸して清掃をし、液が残らないように必ず拭きとってください。

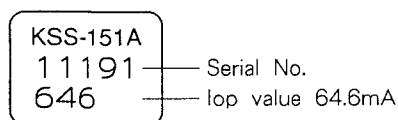
3. Laser diode check

[Iop (Intensity Optimum) check]

Connect a DC voltmeter to both ends of **R407** on SERVO PCB. Measure the DC voltage while playing a disc to check that the measured value does not exceed the Iop value indicated on the pickup by **10mA**. [$I = \text{measured value} / 22$] If the measured value is higher than that indicated, the pickup may be damaged.

* Pay special attention that parts are not damaged by static electricity.

● How to read numbers on sticker attached to the pickup
(Example)



3. レーザーダイオードの破損チェック

[Iop (Intensity Optimum) 値確認]

(ピックアップ交換時には必ず実行のこと)

DC ボルトメーターをSERVO PCBの**R407**の両端に接続する。PLAY 中の直流電圧を測定し、その電圧から電流換算した値 [$I = \text{測定電圧} / 22$] がピックアップに表示してある Iop 値より **10mA** 以上増加していないことを確認する。増加の場合は、破損している可能性がある。

* 静電破壊に十分注意すること。

● ピックアップ添付シールの読み方
(例)

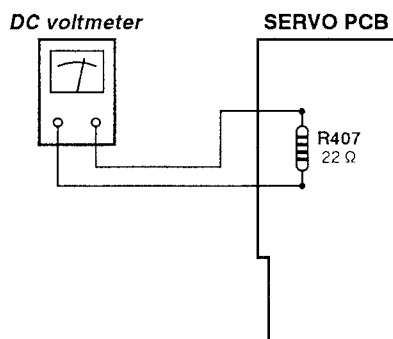
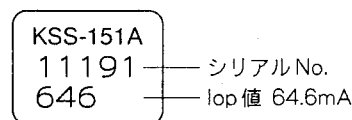


Fig. 4-4

4. Anti-shock bracket

To protect the laser pickup mechanism from shocks and movement during transit, it is secured by a special anti-shock bracket. Before starting operation, be sure to release this bracket, which is accessed from the bottom.

4. 防振装置について

本機は輸送時の振動からピックアップを守るため、防振装置で固定してあります。本機を動作させる場合は、必ず防振装置を解除してください。

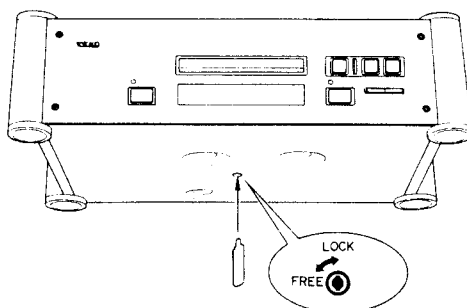


Fig. 4-5

4-1 SERVO ADJUSTMENT

4-1 サーボ調整

TEST DISC : YEDS-18 or MCD-111 (Except 4-1-6 and 4-1-7)

テストディスク : YEDS-18またはMCD-111 (4-1-6および4-1-7を除く)

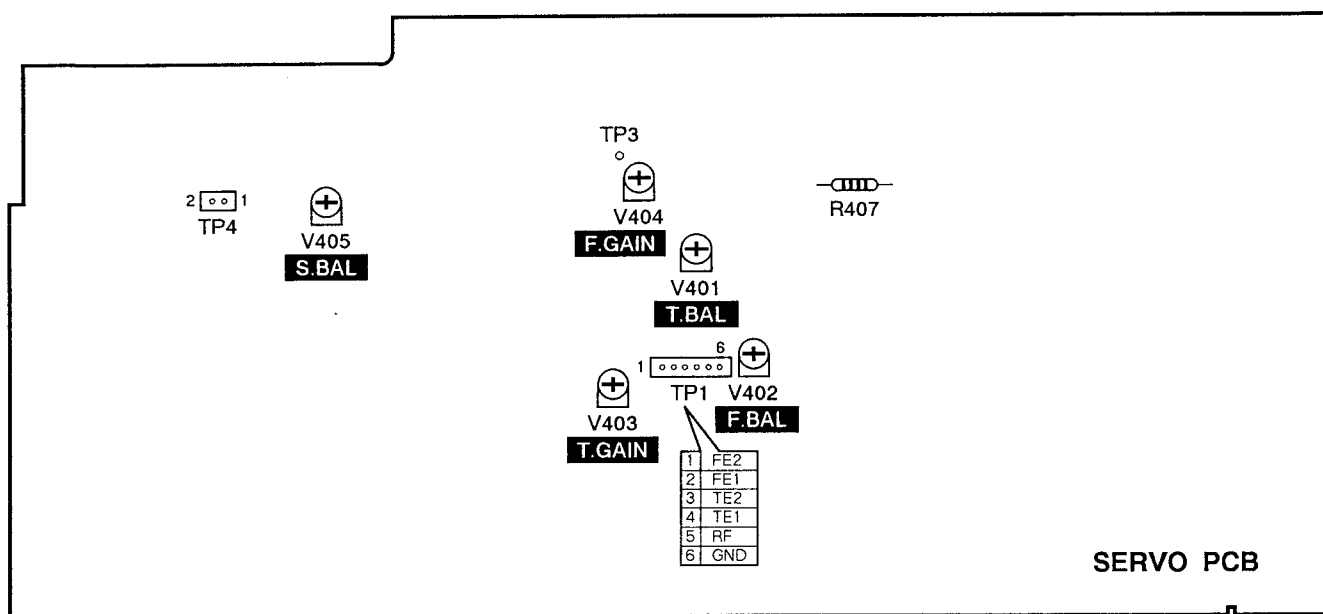
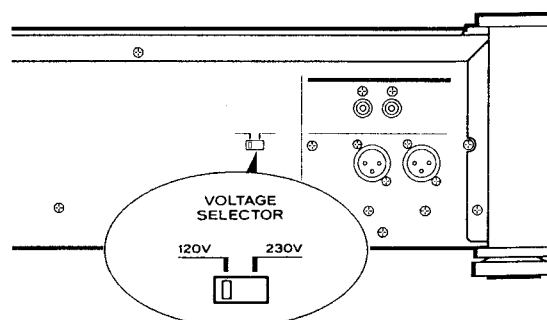


Fig. 4-6

VOLTAGE CONVERSION

Be sure to remove the power cord from the AC outlet before repositioning the voltage converter switch.

1. Locate the voltage selector on the rear panel.
2. Using a flat-bladed screwdriver, set to the appropriate 230 V or 120 V position according to your area.



4-1-1 Checking the pickup actuator operation

Before loading the disc, turn the power ON and check that the pickup actuator moves up and down three times. (If the pickup is not at inside on the disc, perform the above operation after moving the pickup to the inside.)

4-1-1 ピックアップアクチュエーター動作チェック

電源ON時ピックアップアクチュエーターが3回上下動すること。(ピックアップが最内周にないときは、最内周に移動後上記動作すること。) ディスクは装着しない。

4-1-2 Sled balance adjustment

1. Adjust **V405 (S.BAL)** for 0V potential between **TP4 pin 1** and **TP4 pin 2 (GND)**.

4-1-2 スレッドバランス調整

1. **TP4の1番ピンとTP4の2番ピン(GND)間の電位差が0VになるようにV405 (S.BAL)を調整する。**

4-1-3 Tracking balance adjustment

1. Connect the oscilloscope between **TP1 pin 4 (TE1)** and **TP1 pin 6 (GND)**, and press the **SEARCH (◀◀ or ▶▶)** button.
2. Adjust **V401 (T.BAL)** so that the upper and lower amplitudes of the tracking error signal waveform become equal above and below 0V.

4-1-3 トラッキングバランス調整

1. **TP1の4番ピン(TE1)とTP1の6番ピン(GND)間にオシロスコープを接続し、SEARCHボタン(◀◀または▶▶)を押す。**
2. **トラッキングエラー信号の波形が0Vを中心に振れるようV401 (T.BAL)を調整する。**

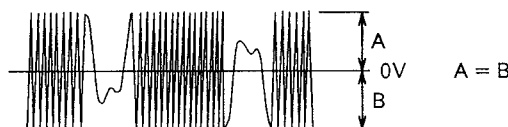


Fig. 4-7

4-1-4 Focus balance adjustment

1. Connect the oscilloscope between **TP1 pin 5 (RF)** and **TP1 pin 6 (GND)**.
2. In the play mode, and adjust **V402 (F.BAL)** so that the waveform on the oscilloscope becomes maximum.

4-1-4 フォーカスバランス調整

1. **TP1の5番ピン(RF)とTP1の6番ピン(GND)間にオシロスコープを接続する。**
2. **PLAY状態でオシロスコープの波形が最大になるようV402 (F.BAL)を調整する。**

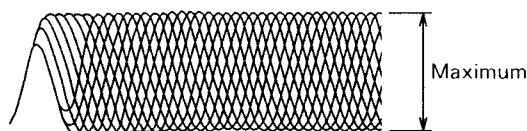


Fig. 4-8

4-1-5 Focus offset check

1. After adjusting the focus balance, stop the player. Check for an offset voltage of **50mV or less** at **TP3**. If reading values are out of spec, adjust **V402 (F.BAL)** again.

4-1-5 フォーカスオフセット確認

1. **フォーカスバランス調整後STOP状態にしてTP3のオフセット電圧が50mV以下であることを確認する。もし規格に入らない場合は再度V402 (F.BAL)を調整する。**

4-1-6 Focus gain adjustment (Use YEDS-18)

1. Apply **1.16kHz/3.5Vp-p** to **TP1 pin 1 (FE2)** from an external OSC via 100k Ω resistor.
2. Adjust **V404 (F.GAIN)** so that phase at **TP1 pin 2 (FE1)** is 90° with respect to that of the external OSC during playback.

4-1-6 フォーカスゲイン調整 (YEDS-18使用)

1. 外部OSCより100k Ω の抵抗を経由して**1.16kHz/3.5Vp-p**の信号を**TP1の1番ピン(FE2)**に入力する。
2. プレイ状態で**TP1の2番ピン(FE1)**と外部OSCとの位相が 90° になるように**V404 (F.GAIN)**を調整する。

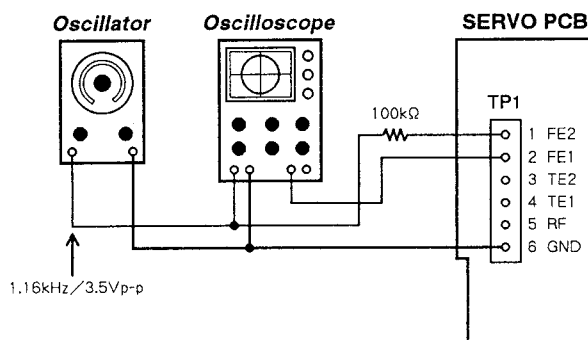


Fig. 4-9

4-1-7 Tracking gain adjustment (Use YEDS-18)

1. Apply **1.7kHz/4Vp-p** to **TP1 pin 3 (TE2)** from an external OSC via 100k Ω resistor.
2. Adjust **V403 (T.GAIN)** so that phase at **TP1 pin 4 (TE1)** is 90° with respect to that of the external OSC during playback.

4-1-7 トラッキングゲイン調整 (YEDS-18使用)

1. 外部OSCより100k Ω の抵抗を経由して**1.70kHz/4Vp-p**の信号を**TP1の3番ピン(TE2)**に入力する。
2. プレイ状態で**TP1の4番ピン(TE1)**と外部OSCとの位相が 90° になるように**V403 (T.GAIN)**を調整する。

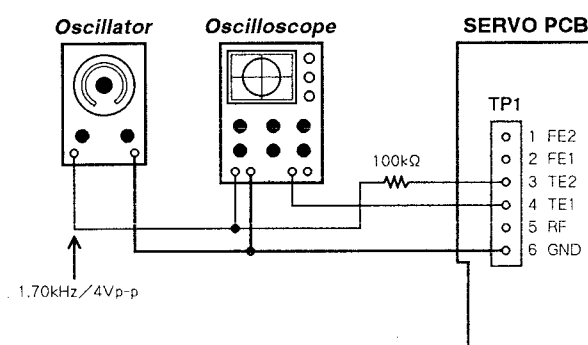


Fig. 4-10

4-2 AUDIO ADJUSTMENT オーディオ調整

ITEM 項 目	DISC: YEDS-18 (MCD-111)		SPECIFICATIONS 規 格	REMARKS 備 考
	TRACK No. トラック	FREQUENCY 周波数		
1. Output level 出力レベル	2	1kHz	2.2 ± 0.3Vrms (UNBAL) 2.3 ± 0.3Vrms (BAL)	load impedance : 負荷インピーダンス : 50k Ω (UNBAL) 600 Ω (BAL)
2. Channel level difference チャンネルレベル差	2	1kHz	1.0dB or less	
3. DC offset adjustment DCオフセット調整	17	1kHz	0 ± 5mV (UNBAL)	Adjust V151 (Lch), V251 (Rch) on AUDIO PCB so that the offset voltage becomes 0mV. オフセット電圧が0mVに なるようAUDIO PCBの V151(Lch), V251 (Rch) を調整する。
4. Harmonic distortion 高調波歪率	2	1kHz	0.004 % or less	400Hz HPF in 20kHz LPF in
5. Frequency response 周波数特性	3~6	20Hz~20kHz	Within ± 1.0dB	reference level: 1kHz
6. S/N ratio S/N比	7		100dB or better	DIN AUDIO (Use SHIBASOKU 725 or equivalent)
7. Channel separation チャンネル セパレーション	8, 10	1kHz	95dB or better	DIN AUDIO
8. Emphasis effect エンファシス効果	13	16kHz	- 9.0 ± 1.0dB (YEDS-18) - 20 ± 1.0dB (MCD-111)	reference level: 1kHz

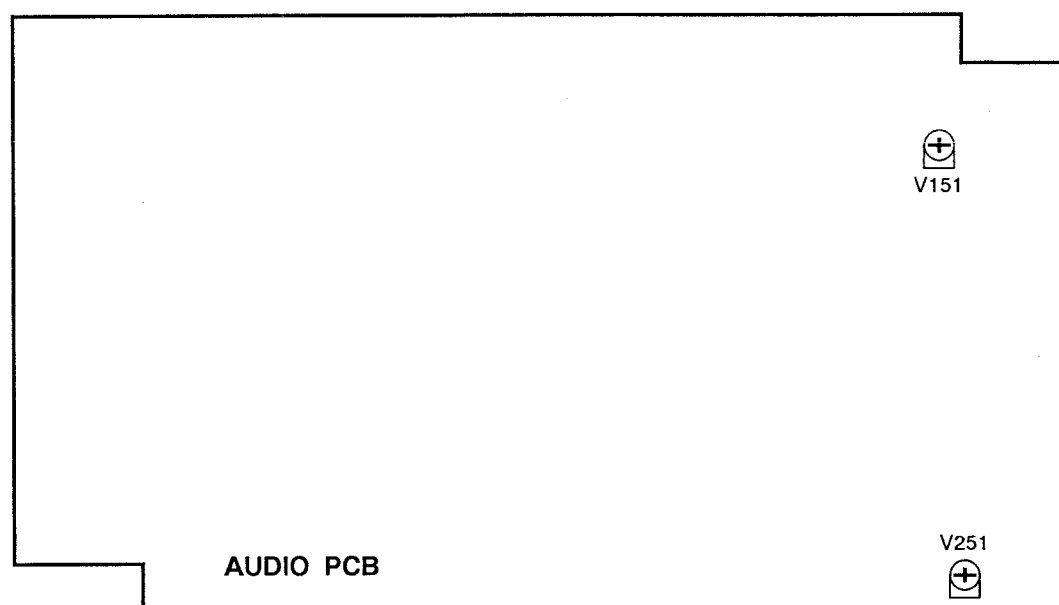
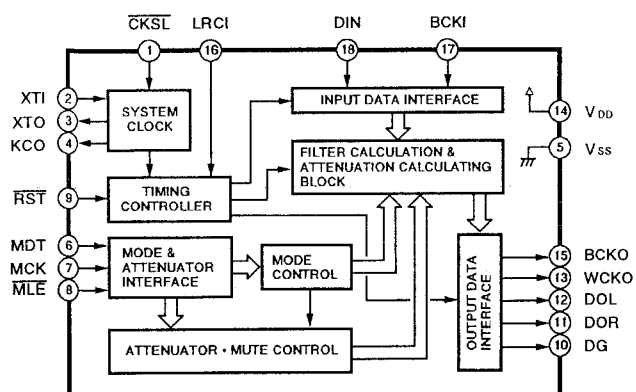


Fig. 4-11

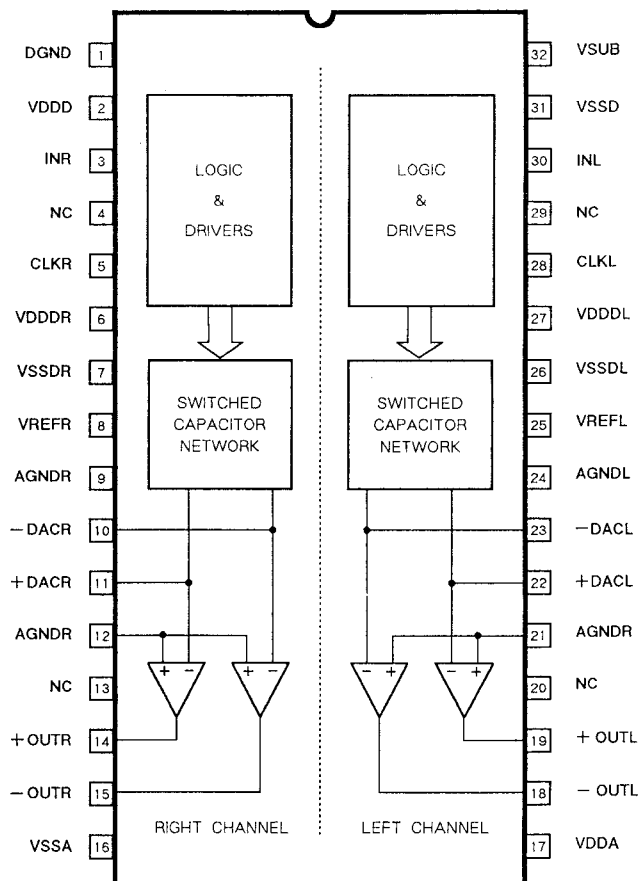
5 IC BLOCK DIAGRAMS

ICブロックダイアグラム

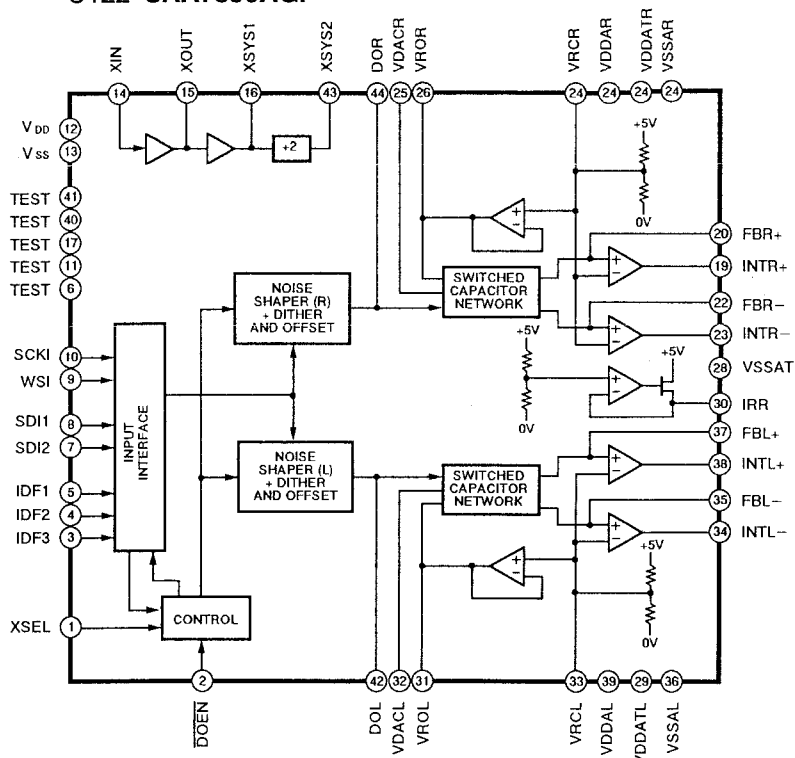
U121 SM5840AP



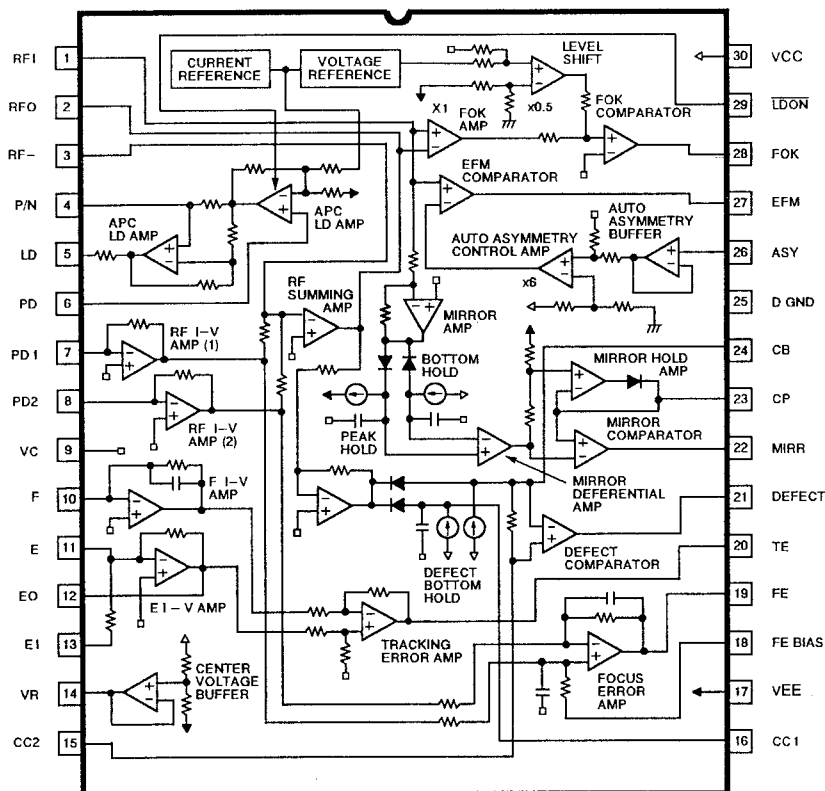
U151, 251 TDA1547



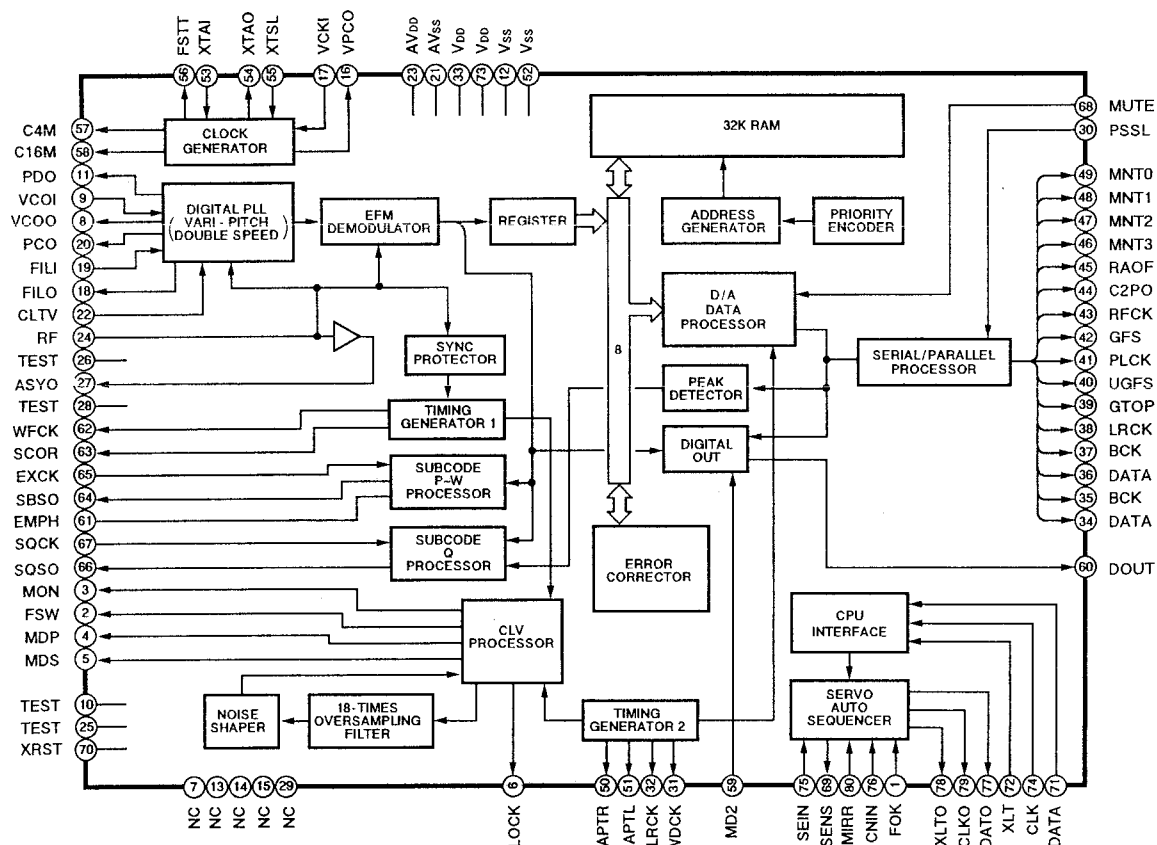
U122 SAA7350AGP



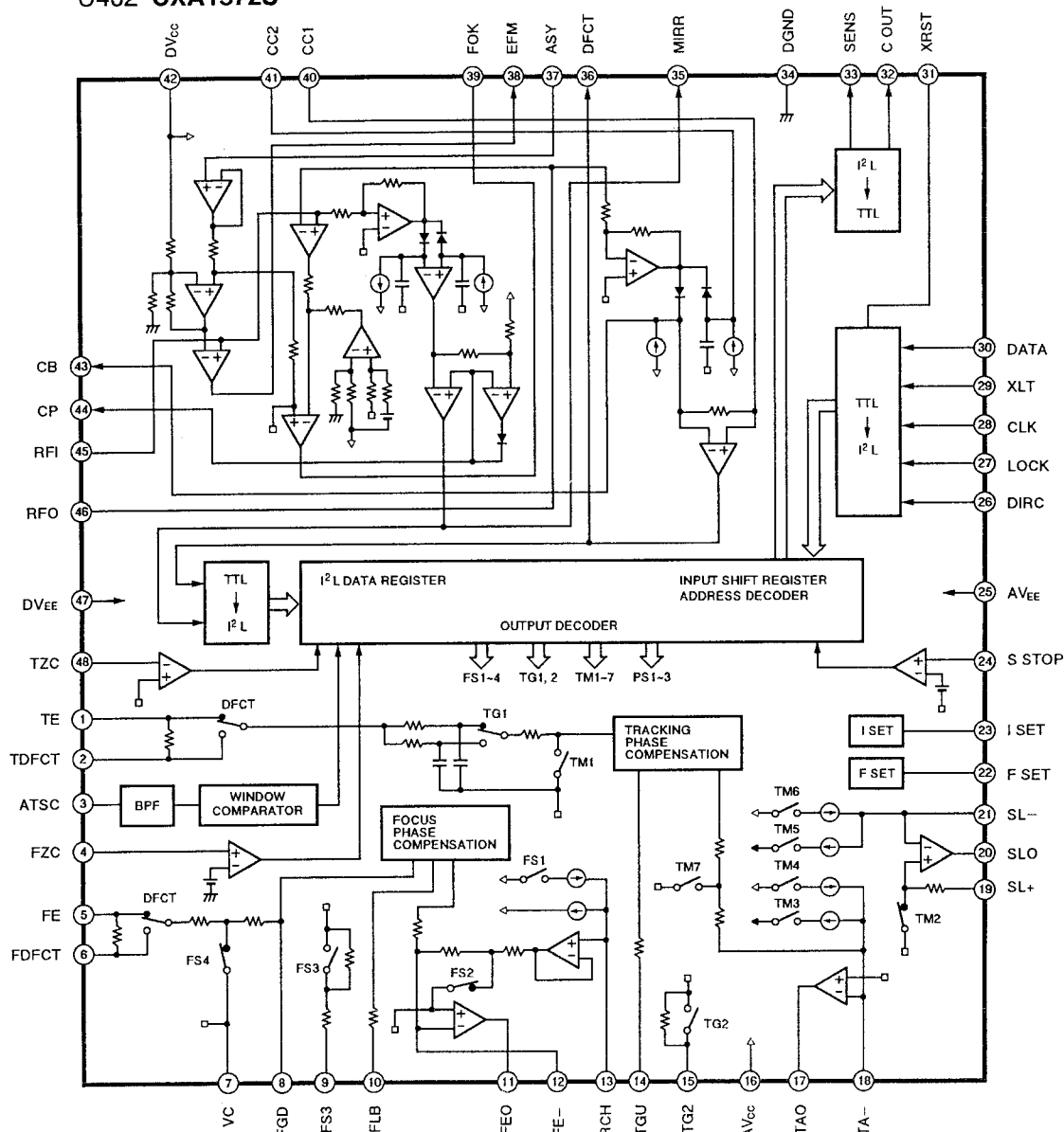
U401 CXA1081S



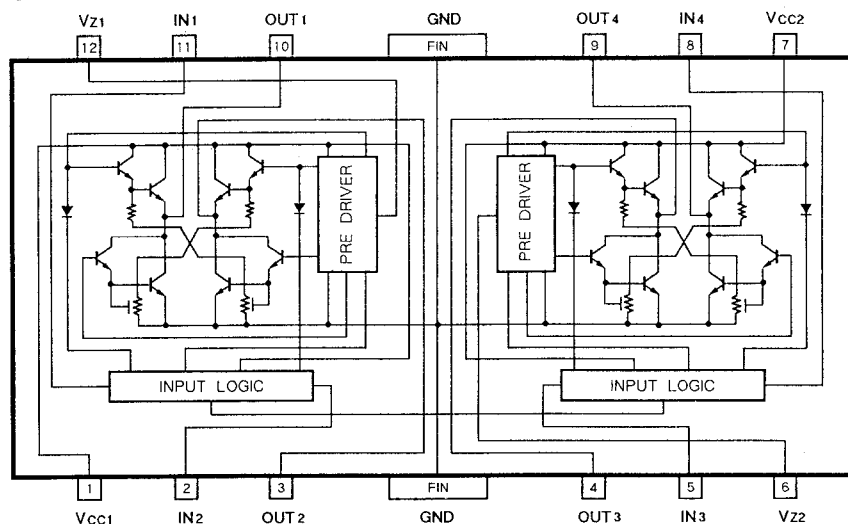
U403 CXD2500AQ



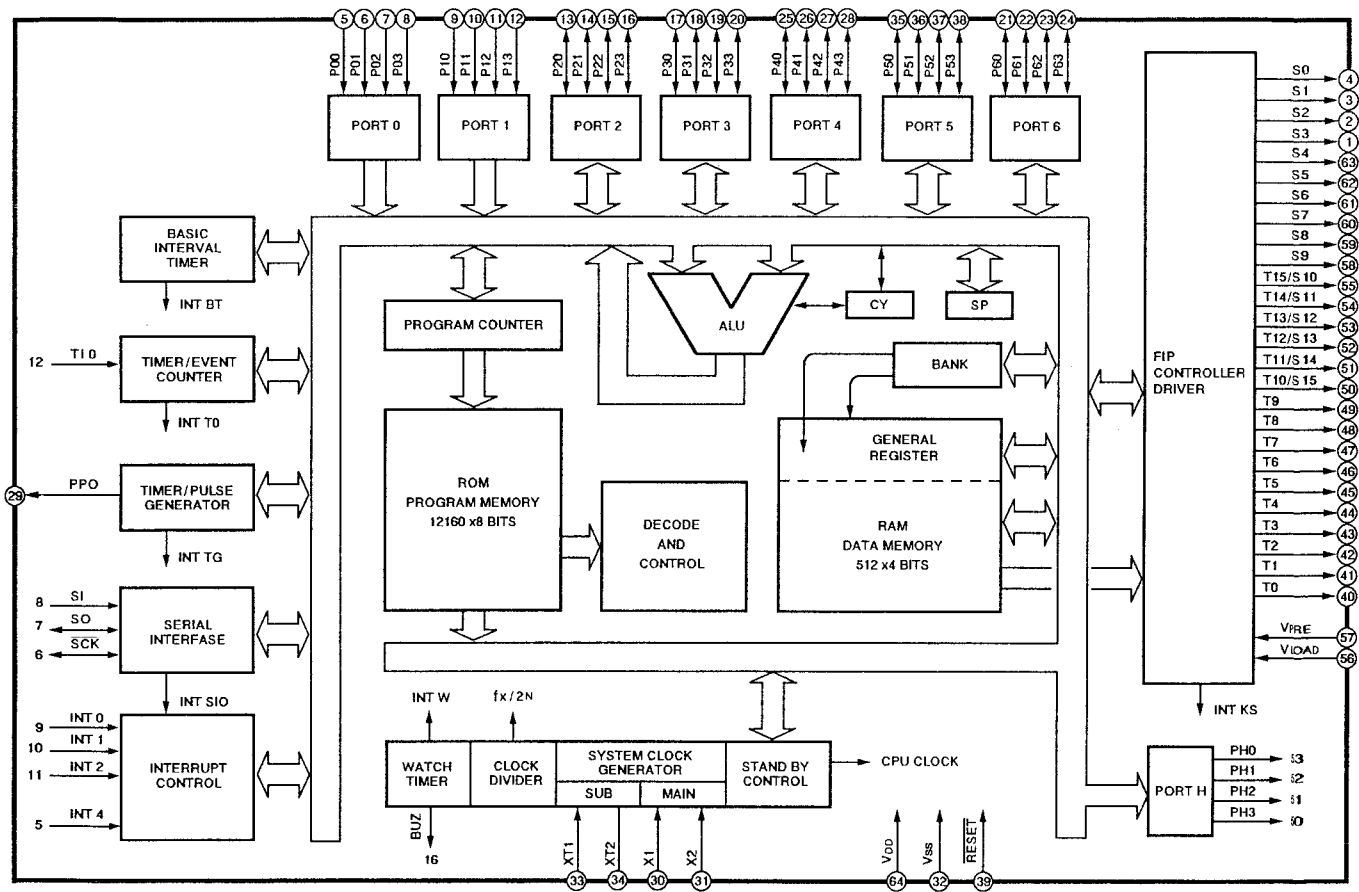
U402 CXA1372S



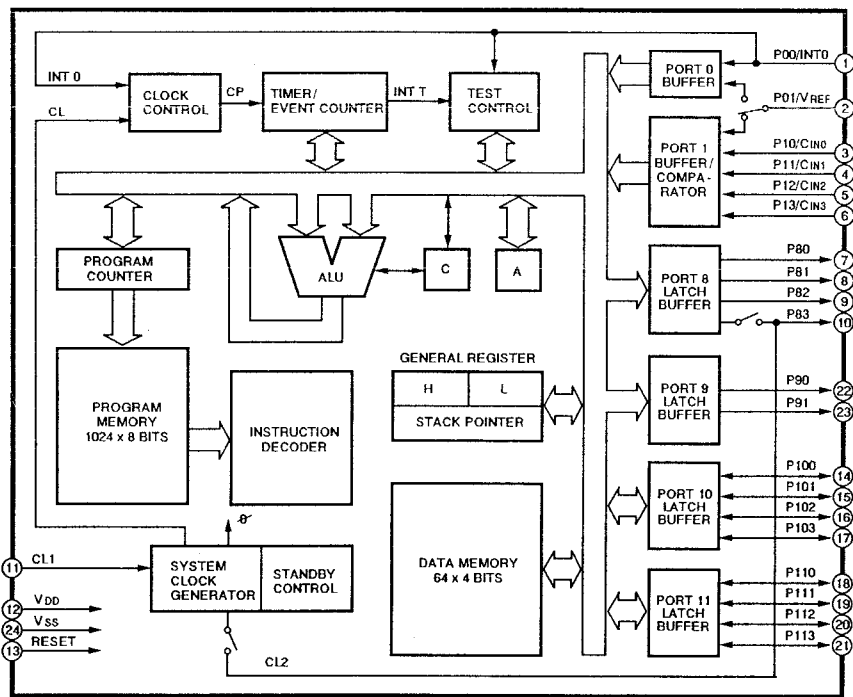
U410 LB1649



U491 uPD75212ACW



U501 uPD7566CS



PARTS LIST SECTION

NOTES

- PC boards shown are viewed from parts side.
- Parts marked with * require longer delivery time.
- The parts with no reference number or no parts number in the exploded views are not supplied.
- As regards the resistors and capacitors, refer to the circuit diagrams contained in this manual.
- Δ Parts marked with this sign are safety critical components. They must be replaced with identical components - refer to the appropriate parts list and ensure exact replacement.
- Parts of [] mark can be used only with the version designated.
[J]: JAPAN [ETC]: GENERAL EXPORT, U. S. A. and CANADA
[GE]: GENERAL EXPORT [E]: EUROPE [UK]: U. K.

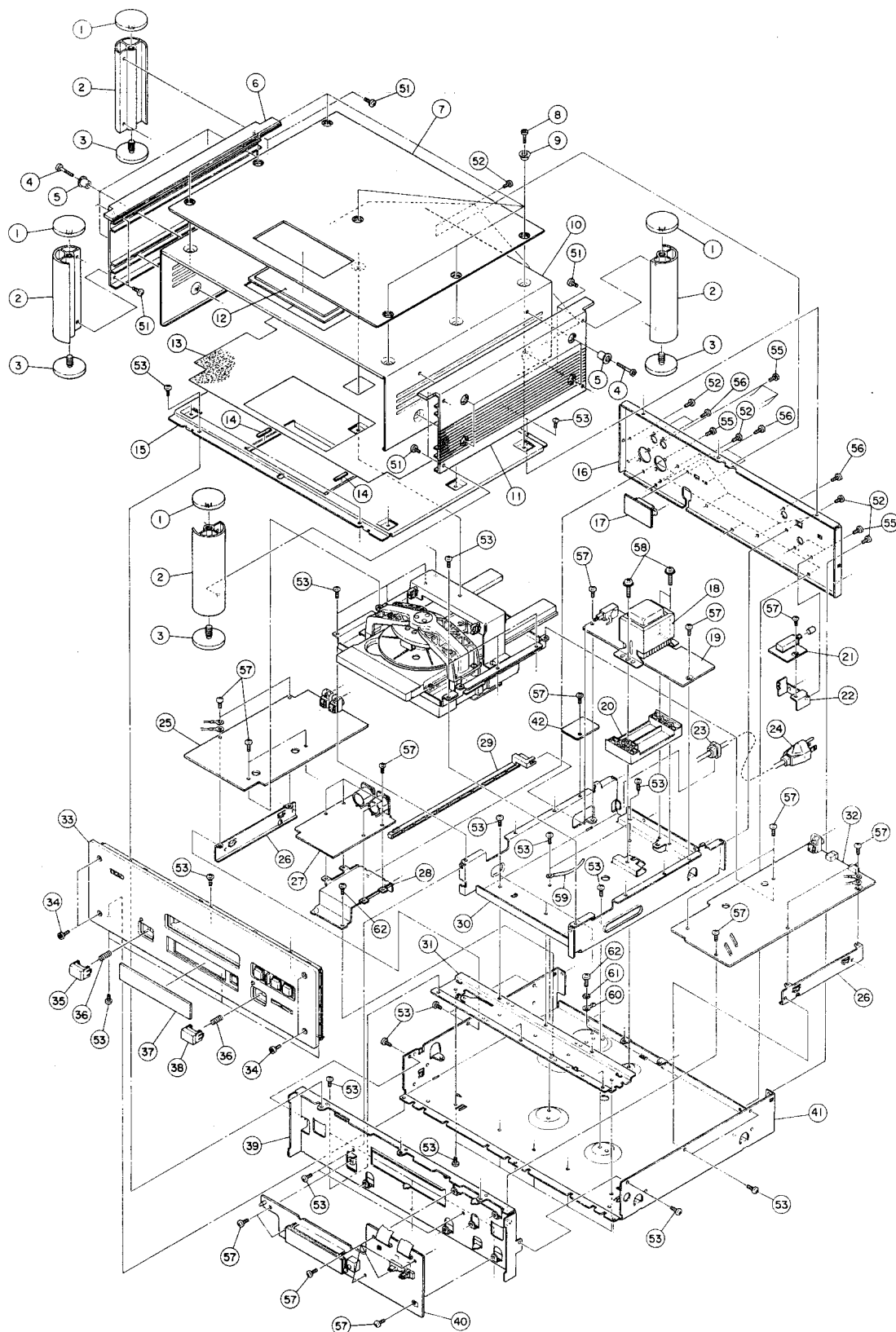
注 意

- プリント基板図は部品面が示されています。
- *印の部品は納期が若干かかります。あらかじめご了承ください。
- 分解図に部番のない部品及び品番のない部品は供給しません。
- 標準の抵抗、コンデンサーは省略してあります。回路図を参照してください。
- Δ 印は安全重要部品です。交換する時は必ずティアック指定の部品を使用してください。
- 仕向先
[J]: JAPAN [ETC]: GENERAL EXPORT, U. S. A. and CANADA
[GE]: GENERAL EXPORT [E]: EUROPE [UK]: U. K.

6 EXPLODED VIEWS AND PARTS LIST

分解図とパーツリスト

EXPLODED VIEW-1

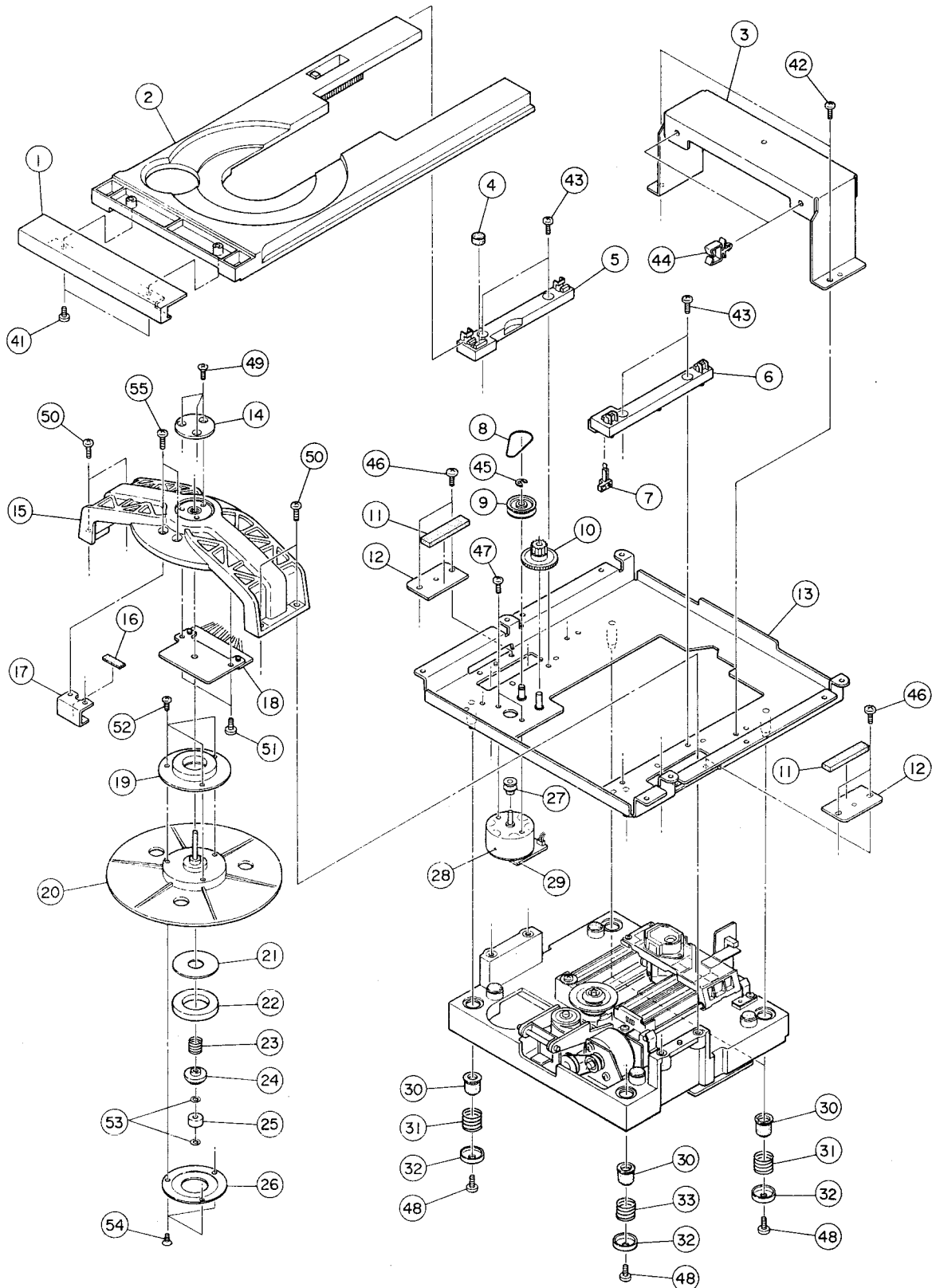


EXPLODED VIEW-1

REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
I- 1	*5801565400	CAP [J,GE]	
	*5801574600	CAP (B) [ETC,E,UK]	
I- 2	*5801565300	STAND [J,GE]	
	*5801574300	STAND (B) [ETC,E,UK]	
I- 3	*5801565500	BOTTOM CAP [J,GE]	
	*5801574700	BOTTOM CAP (B) [ETC,E,UK]	
I- 4	*5801564400	BOLT, HEXAGON SOCKET (L) [J,GE]	
	*5801574500	BOLT, HEXAGON SOCKET (L) BLK [ETC,E,UK]	
I- 5	*5801567000	COLLAR (L) [J,GE]	
	*5801574200	COLLAR (L) BLK [ETC,E,UK]	
I- 6	*5801565100	SIDE PANEL (L)	
I- 7	*5801565000	TOP PANEL [J,GE]	
	*5801566500	TOP PANEL (B) [ETC,E,UK]	
I- 8	*5801564300	BOLT, HEXAGON SOCKET (S) [J,GE]	
	*5801574400	BOLT, HEXAGON SOCKET (S) BLK [ETC,E,UK]	
I- 9	*5801565800	COLLAR (S) [J,GE]	
	*5801574100	COLLAR (S) BLK [ETC,E,UK]	
I-10	*5801564500	BONNET (20)	
I-11	*5801565200	SIDE PANEL (R)	
I-12	*5801564600	TOP WINDOW	
I-13	*5801587100	BONNET CUSHION	
I-14	*5801096900	RUBBER SHEET	
I-15	*5801563900	TOP CHASSIS (CU)	
I-16	*5801564000	REAR PANEL (CU) [J,E,UK]	
	*5801566600	REAR PANEL (CU-EX) [ETC,GE]	
I-17	*5200345600	VOLTAGE SELECTOR PCB ASSY [ETC,GE]	Refer to pages 24 and 26
I-18	△ 5320063300	POWER TRANSFORMER	
I-19	*5200360400	POWER PCB ASSY [J]	Refer to pages 24 and 26
	*5200360430	POWER PCB ASSY [ETC,GE]	Refer to pages 24 and 26
	*5200360440	POWER PCB ASSY [E]	Refer to pages 24 and 26
	*5200360450	POWER PCB ASSY [UK]	Refer to pages 24 and 26
I-20	*5801406000	TRANS BASE	
I-21	*5200358600	ST LINK PCB ASSY	
I-22	*5801563100	MOUNTING PLATE (ST)	Refer to pages 24 and 26
I-23	△ 5317003400	BUSHING, 2271 [GE]	
	△ 5317005600	BUSHING, 2272 [J,ETC,E,UK]	
I-24	△ 5350018400	AC CORD [J]	
	△ 5350010700	AC CORD, SPT-2 [GE]	
	△ 5350012200	AC CORD, 3P [ETC]	
	△ 5128089000	AC CORD, CLASS I [E]	
	△ 5350018700	AC CORD, BS [UK]	
I-25	*5200359000	AUDIO PCB ASSY	Refer to pages 24 and 25
I-26	*5801563500	PCB ANGLE (CU)	
I-27	*5200358500	BALANCED AMP PCB ASSY	Refer to pages 24 and 25
I-28	*5801565900	MOUNTING PLATE (XLR)	
I-29	*5801532801	JOINT ROD	
I-30	*5801563700	CENTER CHASSIS (CU)	
I-31	*5801563600	CHASSIS ANGLE (CU)	
I-32	*5200358900	SERVO PCB ASSY	Refer to pages 22 and 23
I-33	*5801564100	FRONT PANEL (20) ASSY [J,GE]	
	*5801566300	FRONT PANEL (20-B) ASSY [ETC,E,UK]	
I-34	*5801532500	BOLT, HEXAGON SOCKET B [J,GE]	
	*5801539500	BOLT, HEXAGON SOCKET B (BLK) [ETC,E,UK]	
I-35	*5801531000	BUTTON CAP (P) ASSY [J,GE]	
	*5801539600	BUTTON CAP (P) BLK ASSY [ETC,E,UK]	
I-36	*5801070200	POWER SPRING	
I-37	*5801532700	FL COVER	
I-38	*5801531100	BUTTON CAP (O/C) ASSY [J,GE]	
	*5801539700	BUTTON CAP (O/C) BLK ASSY [ETC,E,UK]	
I-39	*5801563800	FRONT CHASSIS (CU)	
I-40	*5200345400	KEY PCB ASSY	Refer to pages 22 and 23
I-41	-----	MAIN CHASSIS (CU)	
I-42	*5200364300	MUTE PCB ASSY	Refer to pages 24 and 26

(Continued on page 26)

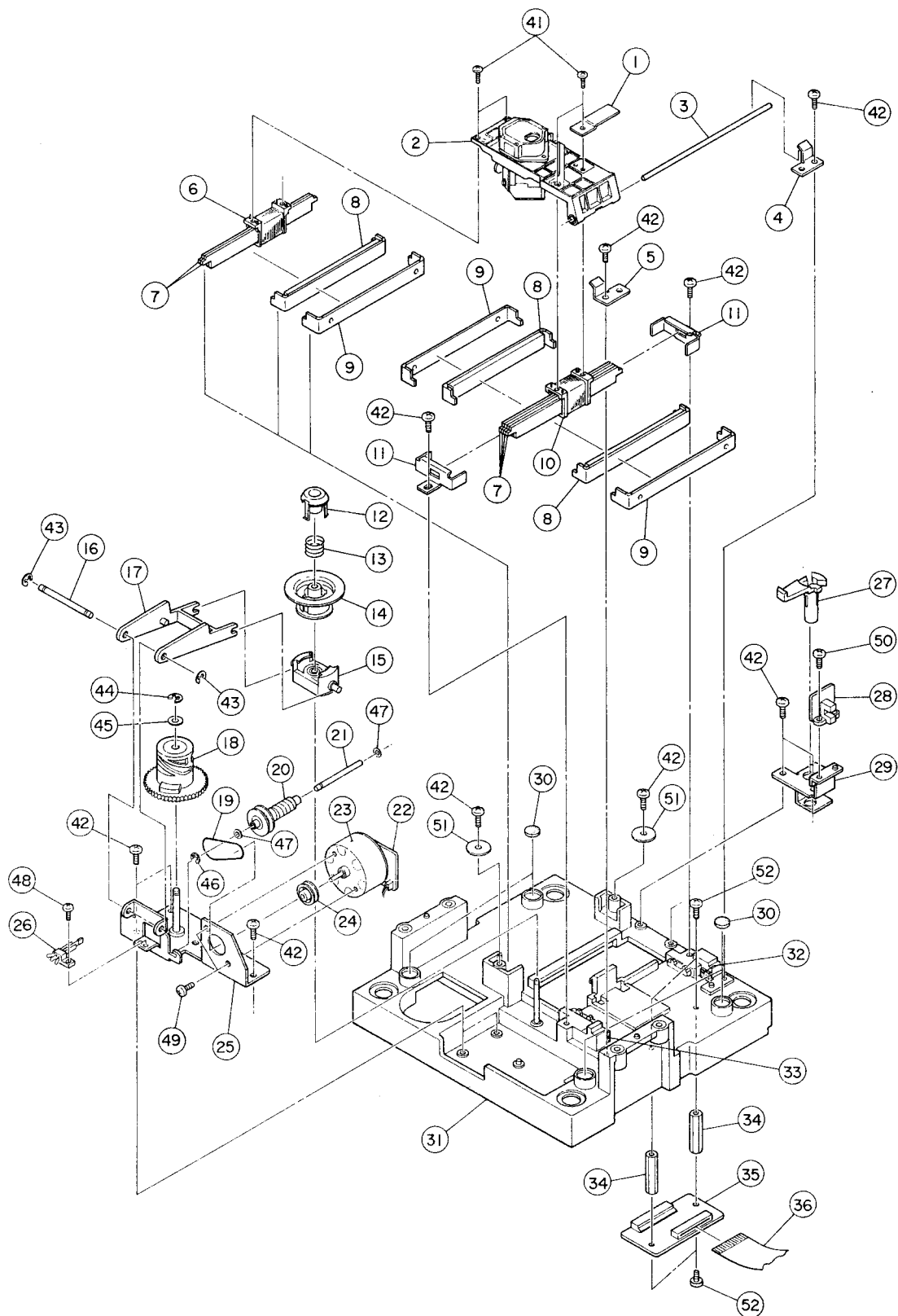
EXPLODED VIEW-2



EXPLODED VIEW-2

REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
2- 1	*5801532300	TRAY PANEL	Refer to pages 22 and 23
2- 2	*5801512600	TRAY (C)	
2- 3	*5801564700	TOP ANGLE (CU)	
2- 4	*5801132601	CUSHION	
2- 5	*5801203100	GUIDE (L)	
2- 6	*5801203001	GUIDE (R)	
2- 7	5301754000	SW, LEAF LSC-1220-1AU	
2- 8	5800979500	LOADING BELT	
2- 9	5800979400	GEAR (B)	
2-10	5800979300	GEAR (A)	
2-11	*5801497100	CUSHION	
2-12	*5801497000	STOPPER	
2-13	*5801564800	MECH BASE CHASSIS (CU) ASSY	
2-14	*5801535300	SPINDLE SUPPORT (G)	
2-15	*5801506800	HOUSING ASSY	
2-16	*5801096900	RUBBER SHEET	
2-17	*5801513200	ROTOR STOPPER	
2-18	*5801057510	COIL SUPPORT ASSY	
2-19	*5801117100	ROTOR MAGNET ASSY	
2-20	*5801507100	TURN TABLE ASSY	
2-21	*5801057000	CLAMPER YOKE	
2-22	*5801493500	MAGNET	
2-23	*5801096300	PRESSURE SPRING (C)	
2-24	*5801167701	CENTER CAP	
2-25	*5801056900	CENTER RING	
2-26	*5801057200	MAGNET HOLDER	
2-27	5800979200	MOTOR PULLEY	
2-28	5370009200	DC MOTOR, RF-500TB	
2-29	*5200344900	T-MOTOR PCB ASSY	
2-30	*5800846500	RUBBER BUSH	
2-31	*5800875001	FROATING SPRING C	
2-32	*5800846700	SPRING SUPPORT	
2-33	*5801086601	FLOATING SPRING A	
2-41	5783543008	SCREW, BIND P-TITE M3X8 (NI BLK)	
2-42	5783783006	SCREW, BIND B-TITE M3X6 (CU)	
2-43	5783693008	SCREW, BIND S-TITE M3X8 (NI BLK)	
2-44	*5786772000	CABLE CLAMP, WS-IN	
2-45	5786003000	E-RING, E-3 (JIS)	
2-46	5783693006	SCREW, BIND S-TITE M3X6 (NI BLK)	
2-47	5780002603	SCREW, BIND M2.6X3	
2-48	5780023006	SCREW, BIND M3X6 (NI BLK)	
2-49	5783663010	SCREW, FLAT B-TITE M3X10 (NI BLK)	
2-50	5780023008	SCREW, BIND M3X8 (NI BLK)	
2-51	5783533008	SCREW, BIND B-TITE M3X8 (NI BLK)	
2-52	5780022004	SCREW, BIND M2X4 (NI BLK)	
2-53	5785342200	WASHER, POLY 2.6X5X0.25T	
2-54	5780212004	SCREW, FLAT M2X4 (NI)	
2-55	5780023010	SCREW, BIND M3X10 (NI BLK)	

EXPLODED VIEW-3



EXPLODED VIEW-3

REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
3- 1	5801164700	SHUTTER	
3- 2	5347009800	LASER PICK UP ASSY, KSS-151A	
3- 3	5801058900	GUIDE SHAFT	
3- 4	5801059100	SHAFT HOLDER (R)	
3- 5	5801059000	SHAFT HOLDER (F)	
3- 6	5801078300	COIL (S)	
3- 7	5801059400	YOKE (C)	
3- 8	*5801097400	YOKE (B) ASSY	
3- 9	5801059200	YOKE (A)	
3-10	5801078200	COIL (D)	
3-11	5801059600	YOKE HOLDER	
3-12	5801167800	GUIDE RING	
3-13	5801096200	PRESSURE SPRING (G)	
3-14	5801165700	CLAMPER	
3-15	5801201100	HOLDER	
3-16	5801201800	SHAFT (B)	
3-17	5801201500	LIFT ARM	
3-18	5801202700	CYLINDER CAM	
3-19	5800979500	LOADING BELT	
3-20	5800669800	WORM ASSY	
3-21	5801201700	SHAFT (A)	
3-22	*5200345000	C-MOTOR PCB ASSY	Refer to pages 22 and 23
3-23	5370009200	DC MOTOR, RF-500TB	
3-24	5801170200	MOTOR PULLEY	
3-25	*5801521500	CLAMPER BASE (B)	
3-26	5301754000	SW, LEAF LSC-1220-1AU	
3-27	5801164901	PU LOCK ARM	
3-28	*5200345100	SENSOR PCB ASSY	Refer to pages 24 and 25
3-29	5801164800	LOCK ARM BRACKET	
3-30	*5801095900	RUBBER WASHER	
3-31	*5801203505	MECH BASE	
3-32	5801288300	STOPPER (B)	
3-33	5801288200	STOPPER (A)	
3-34	5730042300	SPACER, L=25	
3-35	*5200344800	JOINT PCB ASSY	Refer to pages 22 and 23
3-36	*5355243700	FLAT CABLE A, 20P	
3-41	5783011704	SCREW, PAN B-TITE M1.7X4	
3-42	5783533008	SCREW, BIND B-TITE M3X8 (NI BLK)	
3-43	5786002000	E-RING, E-2 (JIS)	
3-44	5786003000	E-RING, E-3 (JIS)	
3-45	5785314100	WASHER, POLY 4X8X0.5T	
3-46	5786001500	E-RING, E-1.5 (JIS)	
3-47	5785302400	WASHER, POLY 2.1X5X0.25T	
3-48	5780132004	SCREW, PAN SEMS-A M2X4	
3-49	5780002603	SCREW, BIND M2.6X3	
3-50	5783033008	SCREW, BIND S-TITE M3X8	
3-51	5785022900	WASHER, FLAT 3X12X1.0T	
3-52	5780003006	SCREW, BIND M3X6	

7 PC BOARDS AND PARTS LIST

基板図とパーツリスト

C-MOTOR PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200345000	C-MOTOR PCB ASSY
	*5210345001	C-MOTOR PCB

T-MOTOR PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200344900	T-MOTOR PCB ASSY
	*5210344901	T-MOTOR PCB

JOINT PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200344800	JOINT PCB ASSY
	*5210344801	JOINT PCB
P491	5336366000	CONNECTOR SOCKET
P492	5336300000	CONNECTOR SOCKET

KEY PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200345400	KEY PCB ASSY
	*5210345401	KEY PCB
	5555590000	EARTH PLATE A
	*5801529700	LED HOLDER
	*5801158000	LED SPACER, L=6
	5347009100	FL DISPLAY, FIPI0YMB
	*5801532100	FL GUIDE
	*5801180900	FL CUSHION
D501,502	5224012920	DIODE, 1S2473
D503,504	5224017820	DIODE, MA165P-TA5
D505-508	5225028000	LED, SLV-31DC3F (ORG)
D509,510	5225028800	LED, SLR-34DC3F (ORG)
P501	5336299800	CONNECTOR SOCKET
P502	5336299900	CONNECTOR SOCKET
S501-506	5302108600	SW, TACT
U501	5220812900	IC, UPD7566CS-085
U502	5292210300	REMOTE MODULE
U504-508	5232255620	TR, DTC114ES
W501	5355243800	FLAT CABLE B, 19P
W502	5355243900	FLAT CABLE C, 18P
X501	5347006500	OSC, CERAMIC CSB700A

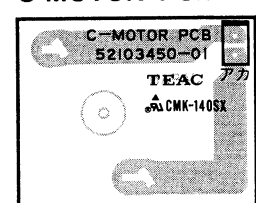
SERVO PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200358900	SERVO PCB ASSY
	*5210344701	SERVO PCB
	*5801385900	EARTH PLATE
	5555590000	EARTH PLATE A
	*5800990100	HEAT SINK
	5730018100	COATING CLIP, CP-1S
	*5347023000	SHIELD SHEET (CU) A
	*5347026000	SHIELD SHEET (CU) 55X15
	*5347027200	SHIELD SHEET (CU) 10X30

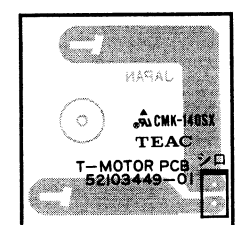
SERVO PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
C1	△ 5260428110	C, ELECT 4700UF/16V
C2	△ 5260427610	C, ELECT 3300UF/16V
D1	△ 5228010800	SILICON STACK, S2VB10
D11-13	5224017820	DIODE, MA165P-TA5
D2	5224016420	DIODE, S5688G
D401,402	5224017820	DIODE, MA165P-TA5
L401	5286033520	COIL, CHOKE 4.7UH
L51	14727479	INDUCTOR FERRITE BEADS
L52	5286033820	COIL, CHOKE 8.2UH
L53	5286033320	COIL, CHOKE 3.3UH
P401	5336297000	CONNECTOR SOCKET
P402	5336127000	CONNECTOR PLUG (WHT)
P403	5336305200	CONNECTOR PLUG (RED)
P404	5336303200	CONNECTOR PLUG (WHT)
P405	5336305300	CONNECTOR PLUG (RED)
P406	5336303300	CONNECTOR PLUG (WHT)
P407	5336303400	CONNECTOR PLUG (WHT)
P408	5336296800	CONNECTOR SOCKET
P409	5336296900	CONNECTOR SOCKET
P410	5336303700	CONNECTOR PLUG (WHT)
P412	5336250200	CONNECTOR PLUG (WHT)
P413	5330512700	PIN JACK, IP
P414	5336249200	CONNECTOR PLUG (WHT)
P415	5336251200	CONNECTOR PLUG (RED)
Q1	5230509100	TR, 2SB562C
Q11	5230781120	TR, 2SC1740SLN
Q401	5230509100	TR, 2SB562C
Q403,405	5231756200	TR, 2SD882Q/P
Q404,406	5230508900	TR, 2SB772P
S401	5300918300	SW, SLIDE SSSFI 1-2A
TP1	13150492	CONNECTOR
TP2,TP4	13150488	CONNECTOR
TP3	5544750000	COMBINATION PIN
U1	△ 13447943	IC, NJM78M05FA
U11	5220040700	IC, UPD74HC04C
U2	△ 13447961	IC, NJM79M05FA
U401	5220441400	IC, CXA1081S
U402	5220447500	IC, CXA1372S
U403	5220099600	IC, CXD2500Q
U404	5220442500	IC, LA6500
U405	5220447600	IC, TA8410AK
U406,407	5220440600	IC, NJM4565L
U409	5220440600	IC, NJM4565L
U410	5220430200	IC, LB1649
U491	5220829900	IC, UPD75212ACW-A49
U493	5232255620	TR, DTC114ES
U494	5220052000	IC, TC74HC32AP
U51	5220041200	IC, UPD74HC00C
U52	5220057500	IC, M74HC6004P
U53	5292209800	OPTICAL MODULE, GPIF31T
V401	5280021500	VR, SEMI-FIXED 22KB
V402,405	5280021100	VR, SEMI-FIXED 4.7KB
V403,404	5280021500	VR, SEMI-FIXED 22KB
X491	5347017700	OSC, EFO-GC4194A4
X51	5347010900	OSC, CRYSTAL 16.9344MHZ
Z1	5224592821	DIODE, ZENER RD33ESB1
Z2	5224585621	DIODE, ZENER RD6.2ESB1
Z403,404	5224585621	DIODE, ZENER RD6.2ESB1
Z405	5224587221	DIODE, ZENER RD9.1ESB1

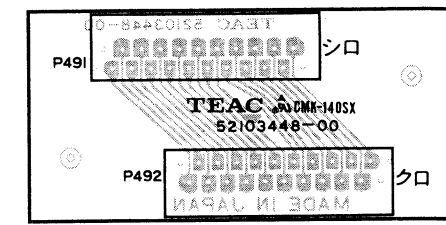
C-MOTOR PCB



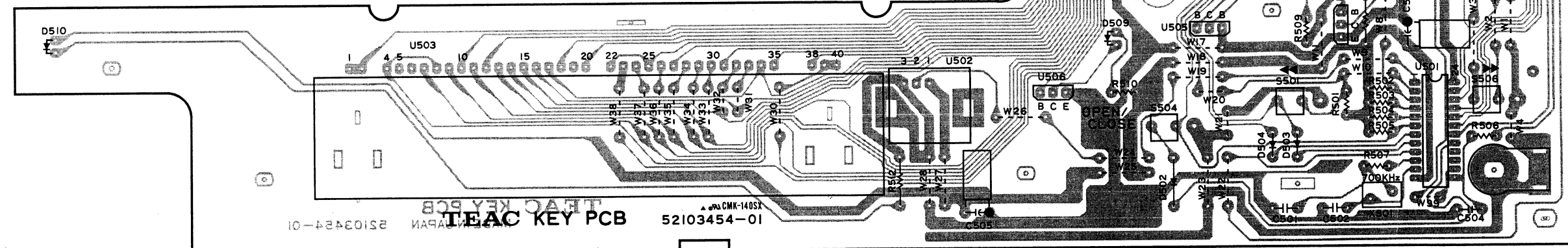
T-MOTOR PCB



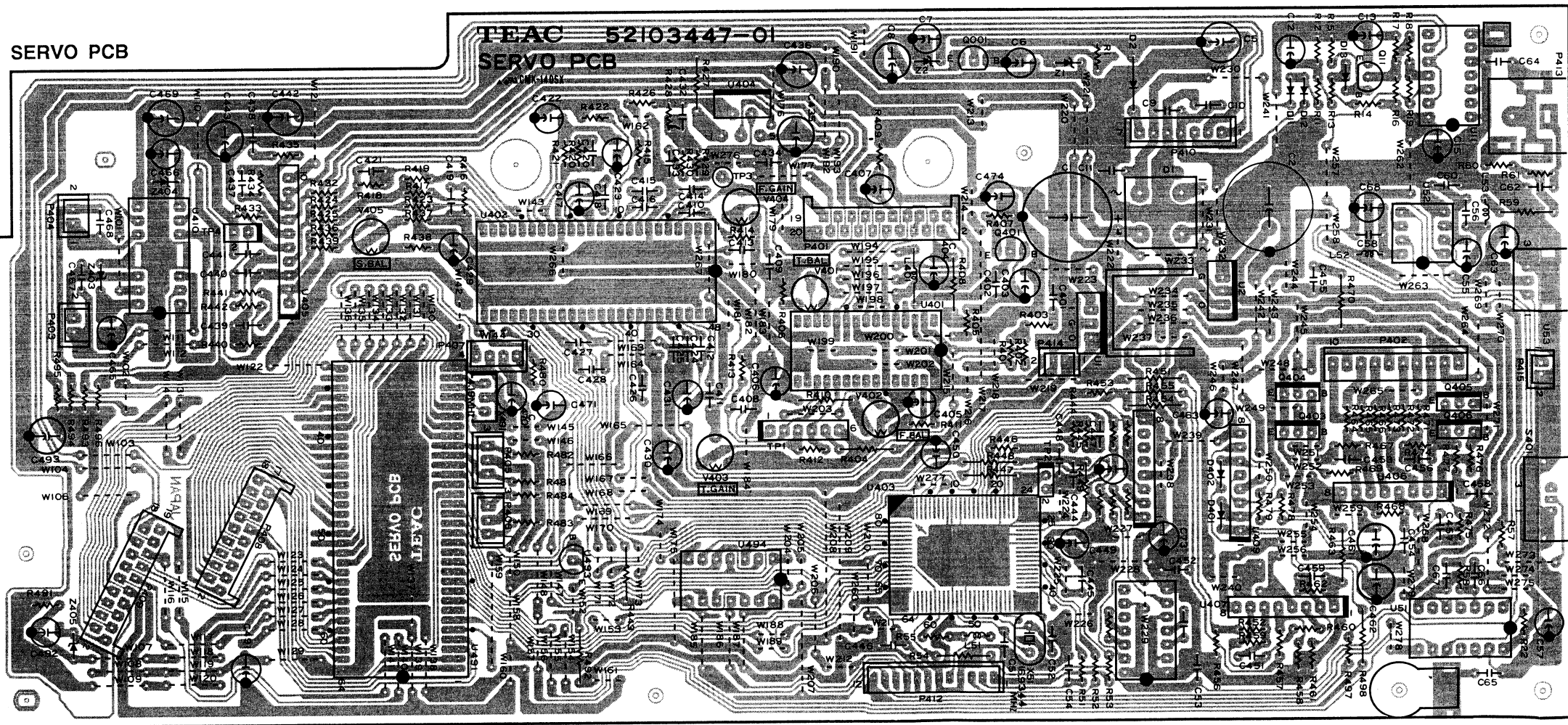
JOINT PCB



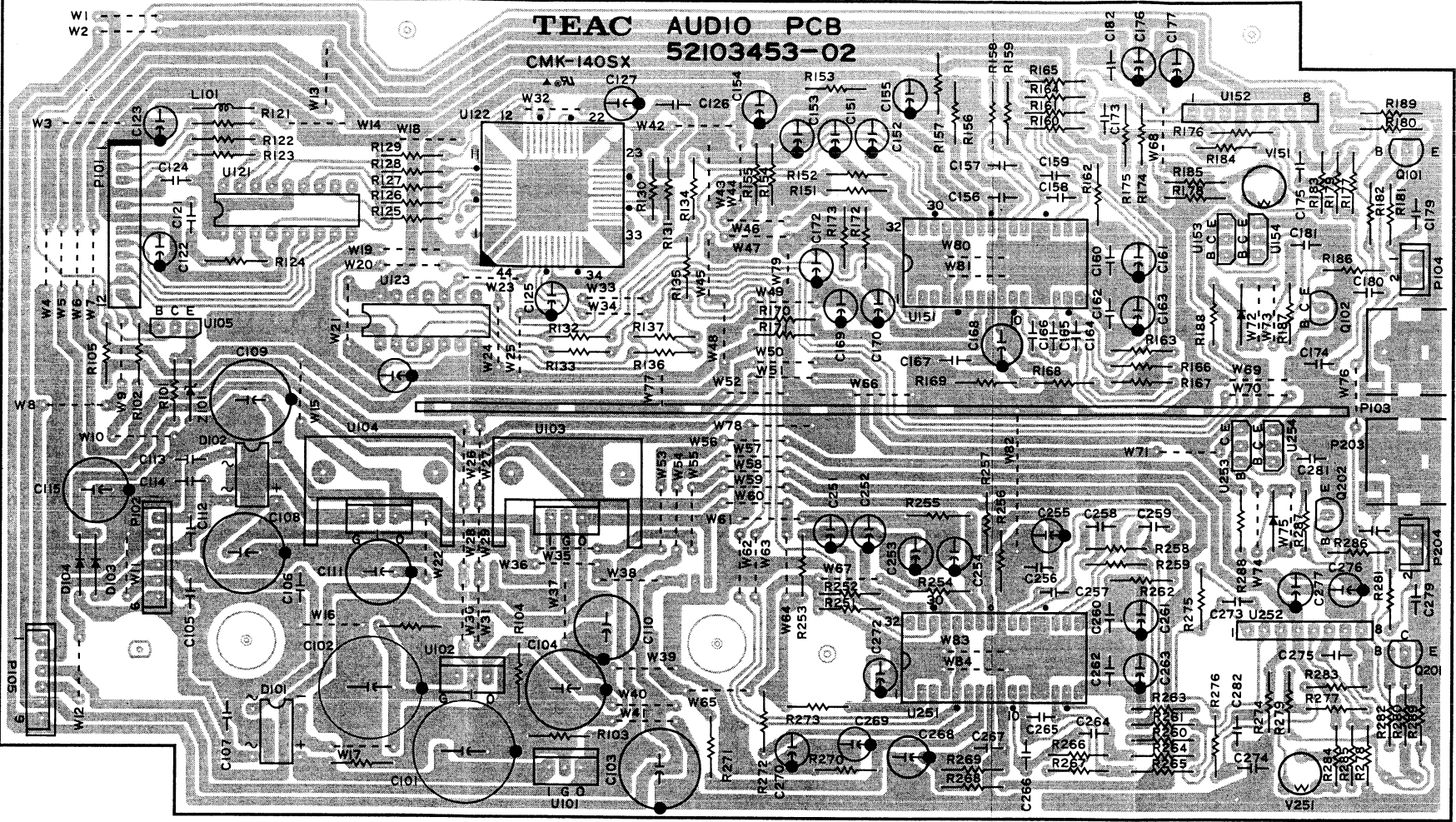
KEY PCB



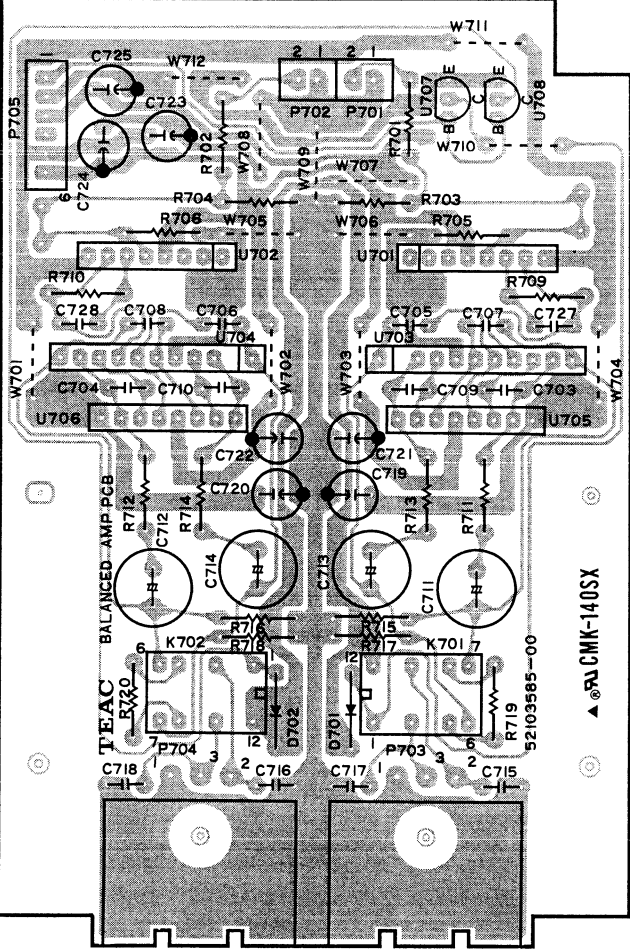
SERVO PCB



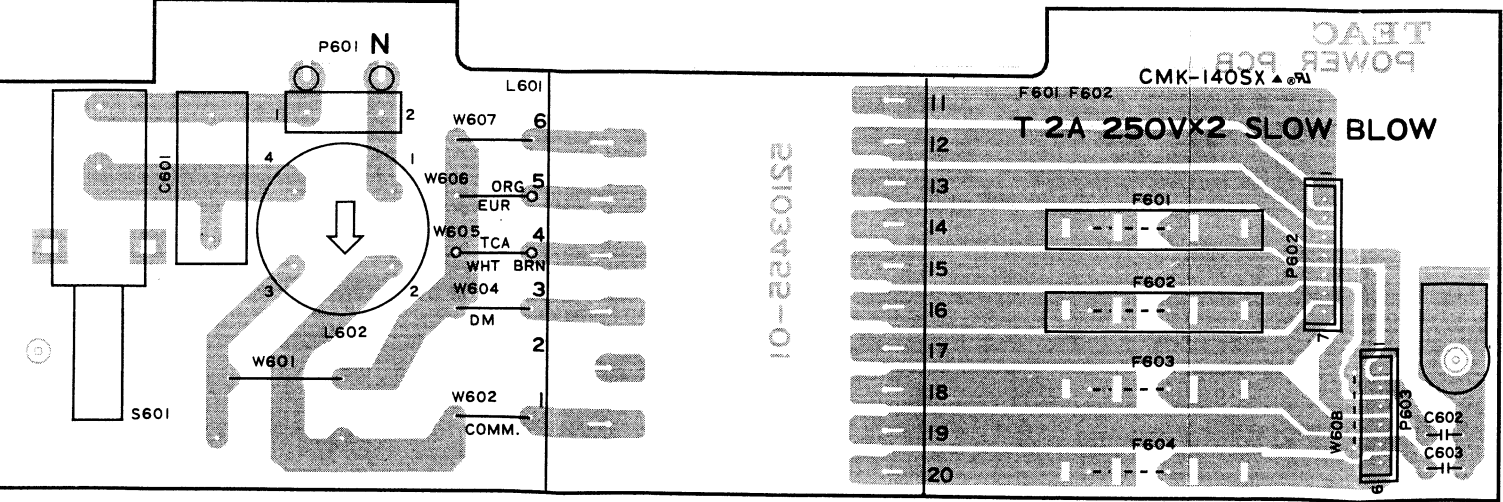
AUDIO PCB



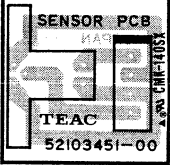
BALANCED AMP PCB



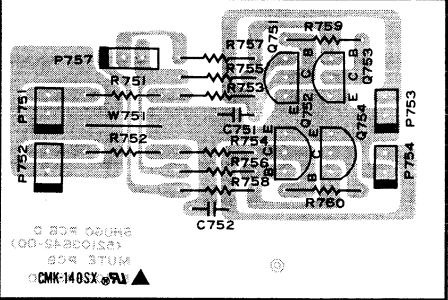
POWER PCB



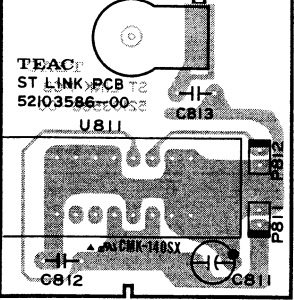
SENSOR PCB



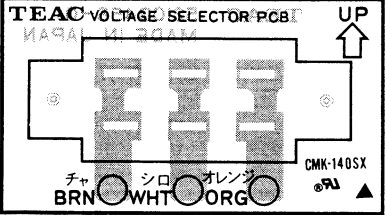
MUTE PCB

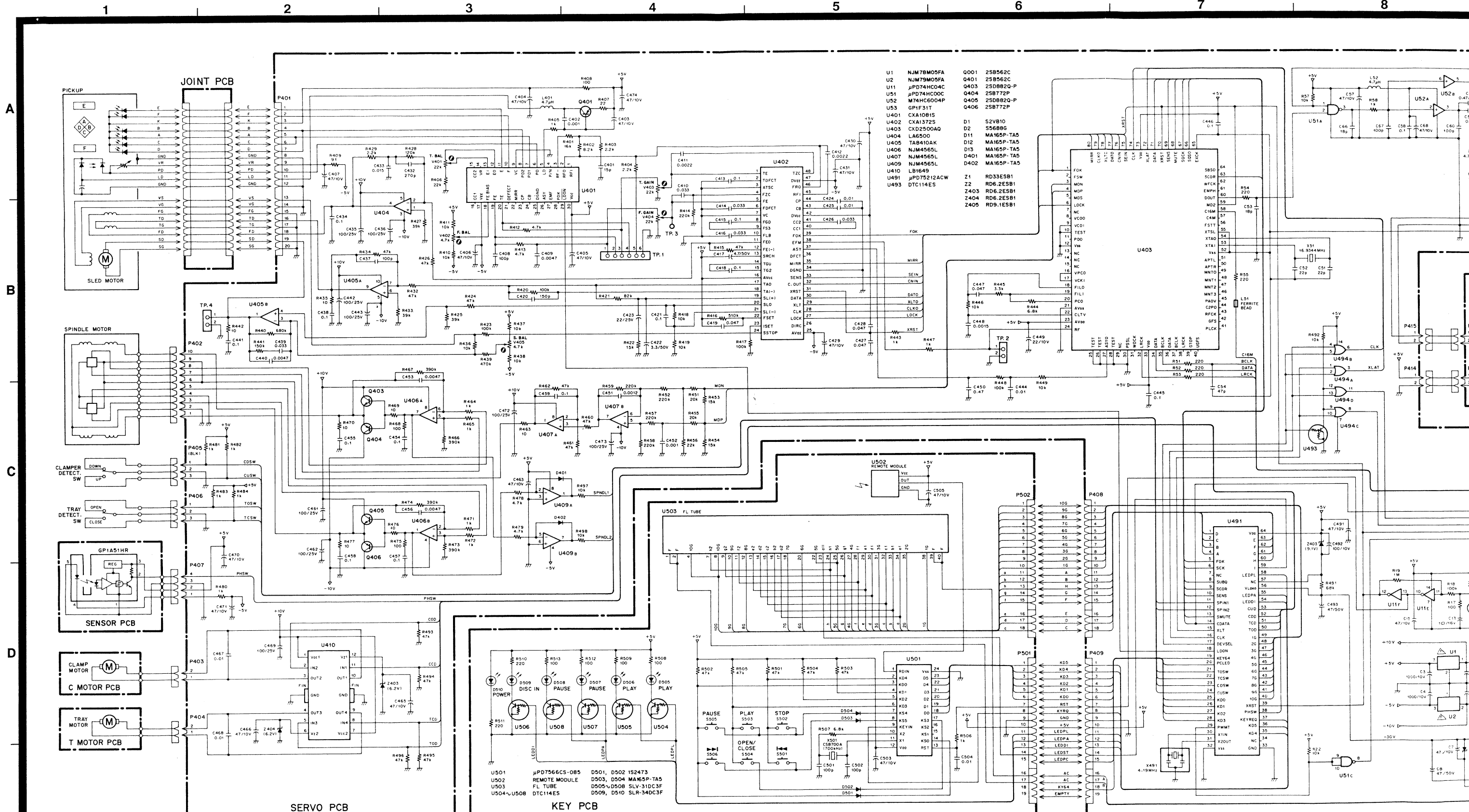


ST LINK PCB



VOLTAGE SELECTOR PCB





E

INSTRUCTIONS FOR SERVICE PERSONNEL
 BEFORE RETURNING APPLIANCE TO THE CUSTOMER, MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT.

NOTES:
 1. Resistor values are in ohms (k=kilo-ohms, M=megohms).
 2. Capacitor values are in microfarads (p=picofarads).
 3. △ Parts marked with this sign are safety critical components. They must always be replaced with identical components-refer to the appropriate parts list and ensure exact replacement.

注意
 1. 抵抗の単位はΩ (k=kΩ, M=MΩ) です。
 2. コンデンサの単位はμF (p=pF) です。
 3. △マークのある部品は安全規格重要部品です。交換するときは必ずティアック指定の部品を使用してください。

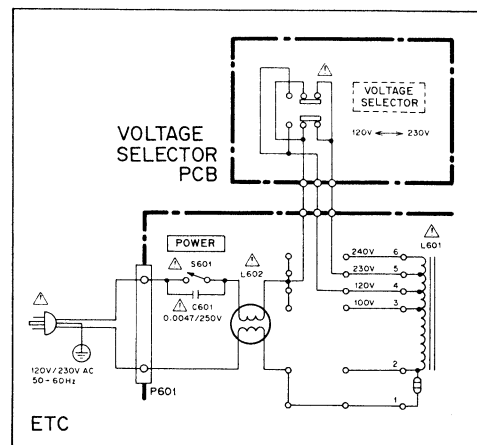


1. 抵抗の単位は Ω ($k = k\Omega$, $M = M\Omega$) です。
2. コンデンサの単位は μF ($p = pF$) です。
3. Δ マークのある部品は安全規格重要部品です。
交換するときは必ずティアック指定の部品を使用してください。

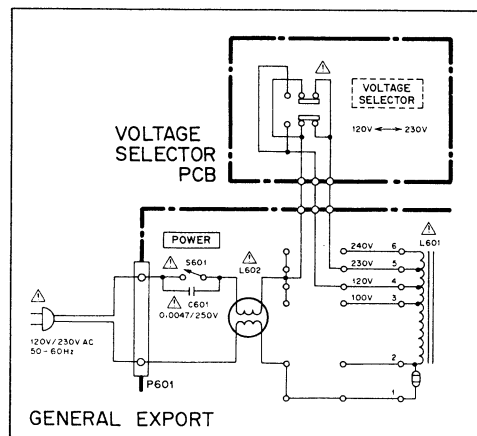
1 st Issue; March 1993

TEAC SCHEMATIC DIAGRAM VRDS-20

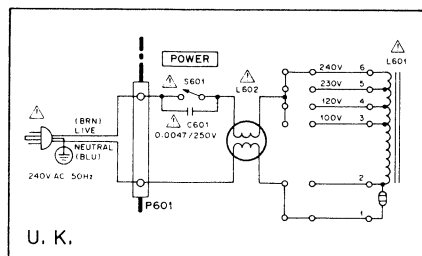
A



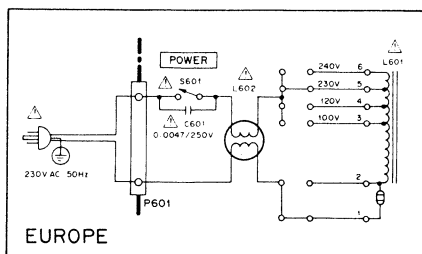
B



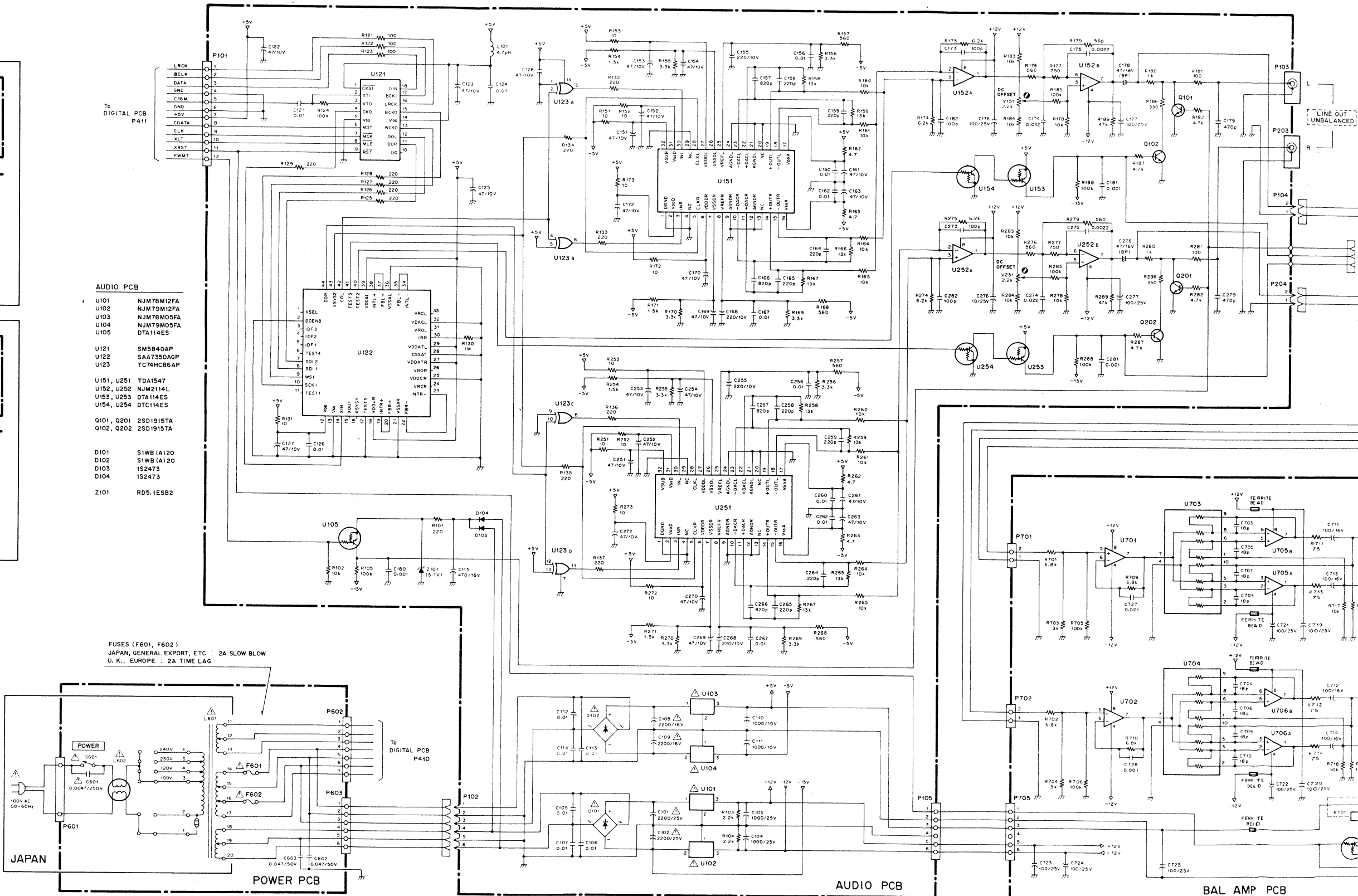
C



D



E



INSTRUCTIONS FOR SERVICE PERSONNEL

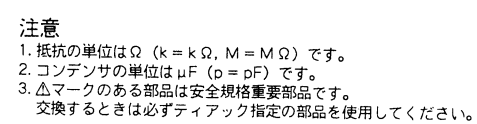
BEFORE RETURNING APPLIANCE TO THE CUSTOMER, MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT.

NOTES:

1. Resistor values are in ohms (k=kilo-ohms, M=megohms).
2. Capacitor values are in microfarads (p=picofarads).
3. Δ Parts marked with this sign are safety critical components. They must always be replaced with identical components-refer to the appropriate parts list and ensure exact replacement.

注意

1. 抵抗の単位は Ω (k=k Ω , M=M Ω) です。
2. コンデンサの単位は μF (p=pF) です。
3. Δ マークのある部品は安全規格重要部品です。交換するときは必ずテック指定の部品を使用してください。



VRDS-20

Compact Disc Player

1 st Issue; March 1993

AUDIO PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200359000	AUDIO PCB ASSY
	*5210345302	AUDIO PCB
	*5801385900	EARTH PLATE
	*5801433600	BUSS BAR, L142 N8 OFC 0.8
	5730039200	HEAT SINK
	*5347026200	SHIELD SHEET (CU) 19X5
	*5347026100	SHIELD SHEET (CU) 27X8
	*5347027200	SHIELD SHEET (CU) 10X30
C101,102	△ 5260427110	C, ELECT 2200UF/25V
C108,109	△ 5260427010	C, ELECT 2200UF/16V
D101,102	△ 5228010700	SILICON STACK, SIWB(A)20
D103,104	5224012920	DIODE, 1S2473
L101	5286033520	COIL, CHOK 4.7UH
P102	5336303600	CONNECTOR PLUG (WHT)
P103	5330513700	PIN JACK, IP
P104	5336303200	CONNECTOR PLUG (WHT)
P105	5336305600	CONNECTOR PLUG (RED)
P203	5330513800	PIN JACK, IP
P204	5336305200	CONNECTOR PLUG (RED)
Q101,201	5231762520	TR, 2SD1915TA
Q102,202	5231762520	TR, 2SD1915TA
R101	5241620620	R, METAL 220 F MRS25
R102	5241624620	R, METAL 10K F MRS25
R103,104	5241623020	R, METAL 2.2K F MRS25
R105	5241627020	R, METAL 100K F MRS25
R121-123	5241619820	R, METAL 100 F MRS25
R124	5241627020	R, METAL 100K F MRS25
R125-129	5241620620	R, METAL 220 F MRS25
R130	5241629420	R, METAL 1.0M F MRS25
R131	5241617420	R, METAL 10 F MRS25
R132-137	5241620620	R, METAL 220 F MRS25
R151,251	5241617420	R, METAL 10 F MRS25
R152,252	5241617420	R, METAL 10 F MRS25
R153,253	5241617420	R, METAL 10 F MRS25
R154,254	5241622620	R, METAL 1.5K F MRS25
R155,255	5241623420	R, METAL 3.3K F MRS25
R156,256	5241623420	R, METAL 3.3K F MRS25
R157,257	5241621620	R, METAL 560 F MRS25
R158,258	5241624920	R, METAL 13K F MRS25
R159,259	5241624920	R, METAL 13K F MRS25
R160,260	5241624620	R, METAL 10K F MRS25
R161,261	5241624620	R, METAL 10K F MRS25
R162,262	5241616620	R, METAL 4.7 F MRS25
R163,263	5241616620	R, METAL 4.7 F MRS25
R164,264	5241624620	R, METAL 10K F MRS25
R165,265	5241624620	R, METAL 10K F MRS25
R166,266	5241624920	R, METAL 13K F MRS25
R167,267	5241624920	R, METAL 13K F MRS25
R168,268	5241621620	R, METAL 560 F MRS25
R169,269	5241623420	R, METAL 3.3K F MRS25
R170,270	5241623420	R, METAL 3.3K F MRS25
R171,271	5241622620	R, METAL 1.5K F MRS25
R172,272	5241617420	R, METAL 10 F MRS25
R173,273	5241617420	R, METAL 10 F MRS25
R174,274	5241624120	R, METAL 6.2K F MRS25
R175,275	5241624120	R, METAL 6.2K F MRS25
R176,276	5241621620	R, METAL 560 F MRS25
R177,277	5241621920	R, METAL 750 F MRS25
R178,278	5241624620	R, METAL 10K F MRS25
R179,279	5241621620	R, METAL 560 F MRS25

AUDIO PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
R180,280	5241622220	R, METAL 1.0K F MRS25
R181,281	5241619820	R, METAL 100 F MRS25
R182,282	5241623820	R, METAL 4.7K F MRS25
R183,283	5241624620	R, METAL 10K F MRS25
R184,284	5241624620	R, METAL 10K F MRS25
R185,285	5241627020	R, METAL 100K F MRS25
R186,286	5241621020	R, METAL 330 F MRS25
R187,287	5241623820	R, METAL 4.7K F MRS25
R188,288	5241627020	R, METAL 100K F MRS25
R189,289	5241626220	R, METAL 47K F MRS25
U101	△ 13447947	IC, NJM78M12FA
U102	△ 13447965	IC, NJM79M12FA
U103	△ 13447943	IC, NJM78M05FA
U104	△ 13447961	IC, NJM79M05FA
U105	5232254720	TR, DTA114ES
U121	5220099800	IC, SM5840AP
U122	5220110700	IC, SAA7350AGP
U123	5220052200	IC, TC74HC86AP
U151,251	5220100800	IC, TDA1547
U152,252	5220448100	IC, NJM2114L
U153,253	5232254720	TR, DTA114ES
U154,254	5232255620	TR, DTC114ES
V151,251	5280181302	VR, SEMI-FIXED 2.2KB
Z101	5224584921	DIODE, ZENER RD5.1ESB2

BALANCED AMP PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200358500	BALANCED AMP PCB ASSY
	*5210358500	BALANCED AMP PCB
D701,702	5224016420	DIODE, S5688G
K701,702	5290014400	RELAY, DF2-DC5V
P703,704	5334078800	CANON CONNECTOR,XLM-3-32PCV
R701,702	5241624220	R, METAL 6.8K F MRS25
R703,704	5241623320	R, METAL 3.0K F MRS25
R705,706	5241627020	R, METAL 100K F MRS25
R709,710	5241624220	R, METAL 6.8K F MRS25
R711-714	5241619520	R, METAL 75 F MRS25
R715-718	5241624620	R, METAL 10K F MRS25
R719,720	5241621820	R, METAL 680 F MRS25
U701,702	5220448100	IC, NJM2114L
U703,704	5242127700	R, ARRAY RMNZ8 618
U705,706	5220448100	IC, NJM2114L
U707,708	5232255620	TR, DTC114ES
W701-704	14727479	INDUCTOR FERRITE BEADS
W707	14727479	INDUCTOR FERRITE BEADS

SENSOR PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200345100	SENSOR PCB ASSY
	*5210345100	SENSOR PCB
	5228014100	PHOTO INTERRUPTER, GP1A51HR

POWER PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200360400	POWER PCB ASSY [J]
	*5200360430	POWER PCB ASSY [ETC,GE]
	*5200360440	POWER PCB ASSY [E]
	*5200360450	POWER PCB ASSY [UK]
	*5210345501	POWER PCB
	5332015800	FUSE HOLDER
	5555590000	EARTH PLATE A
C601	△ 5267704100	SPARK KILLER,0.0047UF/250V
F601,602	△ 5307050200	FUSE,2A SLOW BLOW [J,ETC,GE]
F601,602	△ 5307053100	FUSE,2A TIME LAG [E,UK]
L602	△ 5292806300	NOISE FILTER
P601	5327007200	TERMINAL, 2P [E,UK]
S601	△ 5300054700	SW, PUSH SDDLDI I-I

ST LINK PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200358600	ST LINK PCB ASSY
	*5210358600	ST LINK PCB
	5555590000	EARTH PLATE A
U811	5292210800	OPTICAL MODULE, ODL50(2)

MUTE PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200364300	MUTE PCB ASSY
	*5210364300	MUTE PCB
Q751-754	5231762520	TR, 2SD1915TA
R751,752	5241622220	R, METAL 1.0K F MRS25
R753,754	5241619820	R, METAL 100 F MRS25
R755,756	5241624620	R, METAL 10K F MRS25
R757,758	5241621020	R, METAL 330 F MRS25
R759,760	5241624620	R, METAL 10K F MRS25
P753	5336303200	CONNECTOR PLUG (WHT)
P754	5336305200	CONNECTOR PLUG (RED)
P755	5336303300	CONNECTOR PLUG (WHT)

VOLTAGE SELECTOR PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200345600	VOLTAGE SELECTOR PCB ASSY [ETC,GE]
	*5210345601	VOLTAGE SELECTOR PCB
△ 5300918600		VOLTAGE SELECTOR, SDKGA4

EXPLODED VIEW-1 (Continued from page 17)

REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
I-51	5780004008	SCREW, BIND M4X8	
I-52	5783533006	SCREW, BIND B-TITE M3X6 (NI BLK)	
I-53	5783783006	SCREW, BIND B-TITE M3X6 (CU)	
I-54		Not used	
I-55	5780023006	SCREW, BIND M3X6 (NI BLK)	
I-56	5783543008	SCREW, BIND P-TITE M3X8 (NI BLK)	
I-57	5783723006	SCREW, BIND B-TITE M3X6	
I-58	5783244020	SCREW, BIND S-TITE SEMS-F M4X20	
I-59	5786713000	HARNESS CLIP, 3.0X9.1X50	
I-60	5786700600	EARTH LUG [ETC,E,UK]	
I-61	5785124000	WASHER, TOOTHED LOCK [ETC,E,UK]	
I-62	5783034006	SCREW, BIND S-TITE M4X6	

INCLUDED ACCESSORIES

REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
	*5700140100	OWNER'S MANUAL [J]	
	*5700140200	OWNER'S MANUAL [EXCEPT J]	
	*5744084300	REMOTE CONTROL UNIT, RC-481 [J,GE]	
	*5744085100	REMOTE CONTROL UNIT, RC-495 [ETC,E,UK]	
	5347006900	BATTERY [J]	
	5347007000	BATTERY [EXCEPT J]	
	*5801579400	FOOT BASE (G) [J,GE]	
	*5801574800	FOOT BASE (B) [ETC,E,UK]	
	*5801543100	LOCK PLATE	

APPENDIX

付 録

MCD-111

TNO	INDEX	CONTENTS				EMPHASIS	TIME	PURPOSE
1	1	Piano Sonata No. 15				OFF	3' 22"	General
2	1	1kHz	Sine Wave	0dB	L&R	OFF	56"	Reference
3	1	20Hz	Sine Wave	0dB	L&R	OFF	56"	Frequency Response THD vs Frequency Modulation Noise
4	1	100Hz	Sine Wave	0dB	L&R	OFF	56"	
5	1	10kHz	Sine Wave	0dB	L&R	OFF	56"	
6	1	20kHz	Sine Wave	0dB	L&R	OFF	56"	
7	1	Infinity Zero		-∞ dB	L&R	OFF	56"	S/N
8	1	1kHz	Sine Wave	0dB	L	OFF	56"	Channel Separation
9	1	10kHz	Sine Wave	0dB	L	OFF	56"	
10	1	1kHz	Sine Wave	0dB	R	OFF	56"	
11	1	10kHz	Sine Wave	0dB	R	OFF	56"	
12	1	5kHz	Sine Wave	-20dB	L&R	ON	56"	De emphasis
13	1	16kHz	Sine Wave	-20dB	L&R	ON	56"	
14	1	100Hz	Sine Wave	-20dB	L&R	OFF	56"	Tone Control Frequency Response
15	1	1kHz	Sine Wave	-20dB	L&R	OFF	56"	
16	1	10Hz	Sine Wave	-20dB	L&R	OFF	56"	
17	1	1kHz	Sine Wave	-60dB	L&R	OFF	56"	Dynamic Range
18	1	Brilliant Grand Waltz				ON	4' 42"	General
19	1	For Elise				OFF	1' 00"	INDEX
	2	"				OFF	1' 00"	
	3	"				OFF	2' 39"	
	4	Hungarian Rhapsody No. 2				OFF	1' 00"	
	5	"				OFF	1' 00"	
	6	"				OFF	3' 04"	
	7	Moonlight Sonata				OFF	1' 00"	
	8	"				OFF	1' 00"	
	9	"				OFF	2' 45"	
	10	Pavane for the Deceased Princess				OFF	1' 00"	
	11	"				OFF	1' 00"	
	12	"				OFF	3' 32"	
	13	The Marriage of Figaro Overture				OFF	1' 00"	
	14	"				OFF	1' 00"	
	15	"				OFF	3' 46"	
	16	Nutcracker Suite " Miniature Overture "				OFF	1' 00"	
	17	"				OFF	1' 00"	
	18	"				OFF	2' 15"	
	19	Nutcracker Suite " Waltz of the Flowers "				OFF	1' 00"	
	20	"				OFF	5' 25"	
20	1	Aria on G String				OFF	4' 29"	General
21	1	1kHz	Sine Wave	-10dB	L&R	OFF	10"	Access
22	1	Jesus, Joy of Man's Desiring				OFF	3' 02"	Access
		TOTAL TIME (including Pause Time)					68' 23"	

MEMO