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# Service Manual

Quartz Direct Drive Automatic Turntable System

## SL-QL5/(K)

[E], [EK], [XL], [EG], [EB],  
[EH], [EF], [Ei], [EC], [XA],  
[XM], [PA], [PE], [PC]



**TAP** is the standard mark for the "P-mount" plug-in-connector system. Products carrying this mark are inter-changeable and compatible with each other.

### Areas

- \* [E] is available in Switzerland and Scandinavia.
- \* [EK] is available in United Kingdom.
- \* [XL] is available in Australia.
- \* [EG] is available in F.R. Germany.
- \* [EB] is available in Belgium.
- \* [EH] is available in Holland.
- \* [EF] is available in France.
- \* [Ei] is available in Italy.
- \* [EC] is available in Czechoslovakia.
- \* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- \* [XM] is available in Central South America.
- \* [PA] is available in far East PX.
- \* [PE] is available in European Military.
- \* [PC] is available in European Audio Club.

\*The colors of this model include silver and black.

\*The black type model is provided with (K) in the Service Manual.

Please use this manual together with the service manual for Model No. SL-QL5, Order No. DAD84030069C1.

English

## Specifications

Specifications are subject to change without notice for further improvement.  
Weight and dimensions shown are approximate.

### ■ General

**Power supply:** For United Kingdom: 240 V AC, 50 Hz For continental Europe: 220 V AC, 50 Hz For others: ~110-120/220-240 V, 50 or 60 Hz

**Power consumption:** 10 W

**Dimensions: (W×H×D)**  
43 × 8.8 × 35 cm  
(16-59/64" × 3-1/2" × 13-25/32")  
43 × 38.5 × 35 cm  
16-59/64" × 15-23/64" × 13-25/32"  
(Maximum height when dust cover is open.)

**Weight:** 5.1 kg (11.2 lb.)

### ■ Turntable section

**Type:** Direct drive  
Fully Automatic turntable  
Auto start/Auto lead-in  
Auto return  
Auto stop  
Repeat play  
Auto speed select  
Manual speed selection possible  
Auto size select  
Record presence detection

**Drive method:** Direct drive  
**Motor:** Brushless DC motor  
**Drive control method:** Quartz-phase-locked control  
**Turntable platter:** Aluminum die-cast

Diameter 30 cm (12")  
**Turntable speeds:** 33-1/3 rpm and 45 rpm  
Auto speed select  
(Manual selection possible)

**Wow and flutter:** 0.012% WRMS\*  
0.025% WRMS (JIS C5521)  
±0.035% peak  
(IEC 98A Weighted)

\* Measured by obtaining signal from built-in frequency generator of motor assembly.

**Rumble:** -56 dB (IEC 98A Unweighted)  
-78 dB (IEC 98A Weighted)

### ■ Tonearm section

**Type:** Dynamic balanced type  
Linear tracking tonearm  
4-pivot gimbal suspension  
**Effective length:** 10.5 cm (4-1/8")  
**Tracking error angle:** Within ±0.1°  
**Effective mass:** 9 g (including cartridge)  
**Resonance frequency:** 12 Hz

# Technics

Matsushita Electric Trading Co., Ltd.  
P.O. Box 288, Central Osaka Japan

Panasonic Tokyo  
Matsushita Electric Industrial Co., Ltd.  
1-2, 1-chome, Shibakoen, Minato-ku, Tokyo 105 Japan

<b>Tonearm drive motor:</b>	DC motor	(7 mV at 1kHz, 10 cm/s. zero to peak 45° velocity [DIN 45 500])
<b>Phono cable capacitance:</b>	150 pF	22 dB at 1 kHz
<b>■ Cartridge section</b>		Within 1.8 dB at 1 kHz
<b>Type:</b>	Moving magnet stereo cartridge EPC-P28S (For [PA], [PE] and [PC] areas) EPC-P30S (For others)	<b>Recommended load impedance:</b> 47 kΩ~100 kΩ
<b>Magnet circuit:</b>	All laminated core	<b>Compliance (dynamic):</b> 12×10 <sup>-6</sup> cm/dyne at 100 Hz
<b>Frequency response</b>	10 Hz~40 kHz 20 Hz~10 kHz ±1 dB	<b>Stylus pressure range:</b> 1.25 ± 0.25 g (12.5 ± 2.5 mN)
<b>Output voltage:</b>	2.5 mV at 1kHz, 5 cm/s. zero to peak lateral velocity	<b>Weight:</b> 6 g (cartridge only)
		<b>Replacement stylus:</b> EPS-28ES (For [PA], [PE] and [PC] areas) EPS-30ES (For others) (Elliptical stylus)

- The power supply for this unit varies depending upon the areas. Also, the parts used for power supply are different. So, refer to the circuit diagram and the replacement parts list.
- ★ 220V (50/60 Hz) for Continental Europe.
- ★ 240V (50/60 Hz) for United Kingdom and Australia.
- ★ 110V-120V/220V-240V (50/60 Hz) for other areas.
- ★ [EK], [XA], [XM], [PA], [PE] and [PC] areas are provided with voltage selector.

Deutsch

## TECHNISCHE DATEN

Änderungen der technischen Daten vorbehalten.  
Die angegebenen Gewichts- und Abmessungsdaten sind circa Werte.

### ■ Allgemeine Daten

<b>Stromversorgung:</b>	~220V, 50 Hz Wechselstrom
<b>Leistungsaufnahme:</b>	10 W
<b>Abmessungen:</b> (B×H×T)	43 × 8,8 × 35 cm 43 × 38,5 × 35 cm Maximale Höhe bei vollständig geöffnetem Gehäuseoberteil)
<b>Gewicht:</b>	5,1 kg

### ■ Plattenspieler

<b>Typ:</b>	Direktantriebener automatischer Plattenspieler Auto-Start/Auto-Zuführung Rückführautomatik Stopp-Automatik Wiederhol-Betrieb Automatische Drehzahlwahl Manuelle Drehzahlwahl möglich Automatische Plattengrößewahl Plattenpräsenz-Registrierung
<b>Antrieb:</b>	Direktantrieb
<b>Motor:</b>	Kollektorloser Gleichstrommotor
<b>Antriebsregel-Methode:</b>	Quarz-Steuerung QPL
<b>Plattenteller:</b>	Aluminium-Druckguß Durchmesser 30 cm
<b>Plattenteller-Drehzahlen:</b>	33-1/3 und 45 U/min Automatische Drehzahlwahl (manuelle Wahl möglich)
<b>Gleichlaufschwankungen:</b>	0,012% WRMS* 0,025% WRMS (JIS C5521) ±0,035% Spitze (IEC 98A bewertet)

\* Gemessen anhand von Signalen vom eingebauten Frequenzgenerator des Motorbauteils.

<b>Rumpel-Fremdspannungsabstand:</b>	-56 dB (IEC 98A unbewertet)
<b>Rumpel-Geräuschspannungsabstand:</b>	-78 dB (IEC 98A bewertet)

### ■ Tonarm

<b>Typ:</b>	Dynamisch ausbalancierter Tangential-Tonarm mit Kardanaufhängung mit 4-Punkt-Drehlager
<b>Effektive Länge:</b>	10,5 cm
<b>Spurfehlwinkel:</b>	Innerhalb ±0,1°
<b>Effektive Masse:</b>	9 g (einschließlich Tonabnehmer)
<b>Resonanzfrequenz:</b>	12 Hz
<b>Tonarm-Antriebsmotor:</b>	Gleichstrommotor
<b>Phonokabel-Kapazität:</b>	150 pF

### ■ Tonabnehmer

<b>Typ:</b>	Stereo-Magnet-Tonabnehmer mit Ganzlamellenkern
<b>Magnetkreis:</b>	10 Hz bis 40 kHz
<b>Frequenzgang:</b>	20 Hz bis 10 kHz ±1 dB
<b>Ausgangsspannung:</b>	2,5 mV bei 1 kHz 5 cm/s. Null-zu-Spitze, lateral [7 mV bei 1 kHz 10 cm/s. Null-zu-Spitze, 45° (DIN 45 500)]
<b>Kanaltrennung:</b>	22 dB bei 1 kHz
<b>Kanalabweichung:</b>	Innerhalb 1,8 dB bei 1 kHz
<b>Empfohlene Endimpedanz:</b>	47 kΩ ~ 100 kΩ
<b>Nachgiebigkeit (dynamisch):</b>	12 × 10 <sup>-6</sup> cm/dyn bei 100 Hz
<b>Auflagekraft-Einstellbereich:</b>	1,25 ±0,25 g (12,5 ±2,5 mN)
<b>Gewicht:</b>	6 g (nur Tonabnehmer)
<b>Ersatznadel:</b>	EPS-30ES (Elliptische Nadel)

**CARACTERISTIQUES**

Les spécifications sont susceptibles d'être modifiées sans préavis.  
Le poids et les dimensions donnés sont approximatifs.

**■ Généralités**

<b>Alimentation:</b>	220V C.A., 50 Hz
<b>Consommation:</b>	10 W
<b>Dimensions:</b>	43 × 8,8 × 35 cm
<b>(L×H×P)</b>	43 × 38,5 × 35 cm (Hauteur maximum lorsque le couvercle protège-poussière est ouvert.)
<b>Poids:</b>	5,1 kg

**■ Platine de lecture**

<b>Type:</b>	Entraînement direct Platine entièrement automatique Départ automatique/Entrée automatique Retour automatique Arrêt automatique Audition répétée Sélection de vitesse automatique Sélection automatique du diamètre Sélection de vitesse manuelle possible Détection de la présence d'un disque
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**Système d'entraînement:**

Entraînement direct

**Moteur:**

Moteur C.C. sans balai

**Système de commande d'entraînement:**

Réglage d'accrochage de phase par quartz

**Plateau de lecture:**Aluminium moulé sous pression  
Diamètre 30 cm**Vitesses de la platine:**33-1/3 et 45 t/p.m.  
Sélecteur de vitesse automatique  
(Sélection manuelle possible)**Pleurage et****scintillement:**0,012% de valeur efficace\*  
0,025% de valeur de efficace  
(JIS C5521)  
±% de crête  
(IEC 98A Pondéré)

\* Mesuré par l'obtention d'un signal provenant du générateur de fréquences incorporé de l'ensemble du moteur.

**■ Bras de lecture**

<b>Type:</b>	Bras de lecture d'alignement linéaire de type à équilibre dynamique avec suspension à la cardan sur 4 pivots
<b>Longueur effective:</b>	105 mm
<b>Angle d'erreur de piste:</b>	En deçà de $\pm 0,1^\circ$
<b>Masse réelle:</b>	9 g (y compris la cellule pick-up)
<b>Fréquence de résonance:</b>	12 Hz
<b>Moteur d'entraînement du bras de lecture:</b>	Moteur C.C.
<b>Capacité du câble phono:</b>	150 pF

**■ Cellule pick-up**

<b>Type:</b>	Cellule pick-up stéréo à aimant mobile
<b>Circuit magnétique:</b>	Noyau entièrement feuilleté
<b>Réponse en fréquence:</b>	10 Hz à 40 kHz 20 Hz à 10 kHz $\pm 1$ dB
<b>Tension de sortie:</b>	2,5 mV à 1 kHz; 5 cm/s. zéro à vitesse latérale de crête (7 mV à 1 kHz; 10 cm/s., zéro à vitesse 45° de crête [DIN 45 000])
<b>Séparation des canaux:</b>	22 dB à 1 kHz
<b>Équilibrage des canaux:</b>	En deçà de 1,8 dB à 1 kHz
<b>Impédance de charge recommandée:</b>	47 k $\Omega$ ~100 k $\Omega$
<b>Elasticité (dynamique):</b>	$12 \times 10^{-6}$ cm/dyne à 100 Hz
<b>Plage de la force verticale d'appui:</b>	1,25 $\pm$ 0,25 g (12,5 $\pm$ 2,5 mN)
<b>Poids:</b>	6 g (cellule seule)
<b>Remplacement de la pointe de lecture:</b>	EPS-30ES (Pointe de lecture ellipsoïdale.)

**Ronflement:**-56 dB (IEC 98A Non pondéré)  
-78 dB (IEC 98A Pondéré)



# ESPECIFICACIONES

Las especificaciones quedan sujetas a cambios sin aviso previo.  
Los pesos y las dimensiones indicados son aproximativos.

## ■ En general

<b>Alimentación de corriente:</b>	~220V, 50 Hz
<b>Consumo de corriente:</b>	10 W
<b>Dimensiones:</b>	43 × 8,8 × 35 cm
<b>(Ancho×Alto×Prof.)</b>	43 × 38,5 × 35 cm (Altura máxima cuando la parte de arriba (tapa contra el polvo) está abierta.)
<b>Peso:</b>	5,1 kg

## ■ Sección del plato giratorio

<b>Tipo:</b>	Accionamiento directo Plato giratorio automático Arranque automático/ Comienzo automático Retorno automática Parada automática Ejecución repetida Selección automática de la velocidad Es posible seleccionar la velocidad a mano Selección automática del tamaño Detección de presencia de disco
<b>Método de accionamiento:</b>	Accionamiento directo
<b>Motor:</b>	Motor de corriente continua sin escobillas
<b>Método de control de accionamiento:</b>	Control enclavado de fase de cuarzo
<b>Platillo del plato giratorio:</b>	Aluminio fundido 30 cm de diámetro
<b>Velocidades del plato giratorio:</b>	33-1/3 y 45 rpm Selección automática de la velocidad (También posibilidad de seleccionar a mano)
<b>Ululaciones y trémolo:</b>	0,012% WRMS* 0,025% WRMS (JIS C5521) ±0,035% cresta (IEC 98A Ponderado)

\* Medido obteniendo una señal proveniente del generador de frecuencias incorporado del conjunto del motor.

<b>Ruido de rodadura:</b>	-56 dB (IEC 98A No ponderado) -78 dB (IEC 98A Ponderado)
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## ■ Sección del brazo sonoro

<b>Tipo:</b>	Brazo sonoro de seguimiento lineal de tipo con equilibrio dinámico con suspensión cardánica de 4 pivotes 10,5 cm
<b>Longitud efectiva:</b>	
<b>Angulo de error de seguimiento:</b>	Inferior a 0,1° aproxim.
<b>Masa efectiva:</b>	9 g (incluyendo el cartucho)
<b>Frecuencia de resonancia:</b>	12 Hz
<b>Motor de accionamiento del brazo sonoro:</b>	Motor de corriente continua
<b>Capitancia del cable del fonógrafo:</b>	150 pF

## ■ Sección del cartucho

<b>Tipo:</b>	Cartucho estereofónico de imán móvil
<b>Circuito magnético:</b>	Núcleo totalmente laminado
<b>Respuesta de frecuencia:</b>	10 Hz a 40 kHz 20 Hz a 10 kHz ±1 dB
<b>Voltaje de salida:</b>	2,5 mV a 1 kHz Velocidad lateral de cero a cresta de 5 cm/s (7 mV a 1 kHz. Velocidad de 45° de cero a cresta de 10 cm/s [DIN 45 000])
<b>Separación de canales:</b>	22 dB a 1 kHz
<b>Equilibrio de canales:</b>	Inferior a 1,8 dB a 1 kHz
<b>Impedancia de carga recomendada:</b>	47 kΩ a 100 kΩ
<b>Elasticidad (dinámica):</b>	12 × 10 <sup>-6</sup> cm/dina a 100Hz
<b>Radio de presión de la aguja:</b>	1,25 ±0,25 g (12,5 ±2,5 mN)
<b>Peso:</b>	6 g (cartucho solamente)
<b>Aguja de recambio:</b>	EPS-30ES (Aguja elíptica)

# MEASUREMENTS AND ADJUSTMENTS English

## ● Instruments used

1. Oscilloscope
2. DC voltmeter
3. 30cm record
4. Screwdriver

Step	Item	Preparations	Parts adjusted	Procedure
1	Start position	<ol style="list-style-type: none"> <li>1. Put 30cm record on turntable mat and close upper cabinet.</li> <li>2. Turn the power switch on.</li> <li>3. Push the "Start" switch.</li> </ol>	Start position adjusting screw. (Fig. 21)	<ol style="list-style-type: none"> <li>1. Turn the start position adjusting screw. If it descends between tunes, turn the screw clockwise. If it descends outside the disc, turn the screw counterclockwise.</li> </ol>
2	Clock frequency	<ol style="list-style-type: none"> <li>1. Connect lead wire with clip to IC 301 pin ⑦ and pin ⑳ of operation circuit board.</li> <li>2. Connect oscilloscope to IC 301 pin ⑥.</li> </ol>	VR 301 (Fig. 22)	<ol style="list-style-type: none"> <li>1. Set power switch to "on".</li> <li>2. Adjust VR 301 so that the cycle output waveform is <math>30 \mu\text{sec} \pm 1 \mu\text{sec}</math>. (Fig. 23)</li> </ol>
3	Tonearm offset angle	<ol style="list-style-type: none"> <li>1. Open the upper cabinet and hold the cabinet switch with tape.</li> <li>2. Close the upper cabinet.</li> </ol>	Adjusting screw (Fig. 24)	<ol style="list-style-type: none"> <li>1. Turn the power switch on and push the start switch to shift the tonearm inward.</li> <li>2. Open the upper cabinet.</li> <li>3. Turn the adjusting screw so that the arm center matches the V-groove of the lift bar.</li> </ol>
4	Servo gain and offset voltage	<ol style="list-style-type: none"> <li>1. Open the upper cabinet and hold the cabinet switch with the tape.</li> <li>2. Close the upper cabinet.</li> <li>3. Connect the DC voltmeter to CN301 terminal ③ and ground terminal.</li> <li>4. Remove the Label of the tonearm cover.</li> </ol>	VR501 (Servo gain) P.C.B. (Offset voltage) (Fig. 25)	<ol style="list-style-type: none"> <li>1. Turn the power switch on and push the start switch to shift the tonearm inward.</li> <li>2. Open the upper cabinet.</li> <li>3. Completely shift the tonearm to the right. Then, adjust VR501 so that the voltage is 3.6V. (Servo gain)</li> <li>4. Set the tonearm to the center and make sure that the output voltage is 1.8V.</li> <li>5. If the voltage is not 1.8V, loosen the printed circuit board screw and move the board to the right or left with a screwdriver so that the output voltage becomes 1.8V. After the adjustment, tighten the printed circuit board screw. (Offset adjustment)</li> </ol>

# MESSUNGEN UND JUSTIERUNGEN Deutsch

## ● Zu verwendende Instrumente

1. Oszilloskop
2. Gleichstrom-Voltmeter
3. 30 cm—Schallplatte
4. Schraubendreher

Schritt	Gegenstand	Vorbereitungen für die Justierung	Zu justierende Teile	Justiermethode
1	Startposition	<ol style="list-style-type: none"> <li>1. 30 cm-Platte auflegen und Plattenspieler-Gehäuseoberteil schließen.</li> <li>2. Den Ein/Aus-Schalter einschalten.</li> <li>3. Den Startschalter drücken.</li> </ol>	Absenkpositions Justierschraube (Abb. 21)	<ol style="list-style-type: none"> <li>1. Die Absenkpositions-Justierschraube drehen. Wenn er zwischen Musikstücken abgesenkt wird, die Schraube im Uhrzeigersinn drehen.</li> <li>2. Wenn er außerhalb der Platte abgesenkt wird, die Schraube entgegen dem Uhrzeigersinn drehen.</li> </ol>
2	Taktgeberfrequenz	<ol style="list-style-type: none"> <li>1) Anschlußdraht mit Klemmen an IC301, Stift ⑦ und Stift ⑳ der Hauptleiterplatte anschließen.</li> <li>2) Oszilloskop an IC301, Stift ⑥ anschließen.</li> </ol>	VR301 (Abb. 22)	<ol style="list-style-type: none"> <li>1) Netzschalter auf "on" stellen.</li> <li>2) VR301 so justieren, daß Ausgangswellenformperiode <math>30 \mu\text{s} \pm 1 \mu\text{s}</math> beträgt. (Abb. 23)</li> </ol>

Schritt	Gegenstand	Vorbereitungen für die Justierung	Zu justierende Teile	Justiermethode
3	Tonarm-Spurfehlwinkel	<ol style="list-style-type: none"> <li>Das Gehäuseoberteil öffnen und den Gehäuseschalter mit Klebband in der gedrückten Stellung arretieren.</li> <li>Das Gehäuseoberteil schließen.</li> </ol>	Justierschraube (Abb. 24)	<ol style="list-style-type: none"> <li>Den Ein/Aus-Schalter einschalten und den Startschalter zum Bewegen den Tonarms nach innen drücken.</li> <li>Das Gehäuseoberteil öffnen.</li> <li>Die Justierschraube so weit drehen, daß die Tonarmmitte mit der V-Kerbe der Liftstange übereinstimmt.</li> </ol>
4	Servo-Verstärkung und Offsetspannung	<ol style="list-style-type: none"> <li>Das Gehäuseoberteil öffnen und den Gehäuseschalter mit Klebband in der gedrückten Stellung arretieren.</li> <li>Das Gehäuseoberteil schließen.</li> <li>Das Gleichstromvoltmeter an CN301 Anschluß 3 und den Erdungsanschluß anschließen.</li> <li>Das Etikett der Tonarmabdeckung entfernen.</li> </ol>	VR501 (Servo-Verstärkung) Leiterplatte (Offsetspannung) (Abb. 25)	<ol style="list-style-type: none"> <li>Den Ein/Aus-Schalter einschalten und den Startschalter drücken, um den Tonarm nach innen zu bewegen.</li> <li>Das Gehäuseoberteil öffnen.</li> <li>Den Tonarm vollständig gegen rechts bewegen. VR501 dann so abgleichen, daß die Spannung 3,6V beträgt. (Servo-Verstärkung)</li> <li>Den Tonarm zur Mitte hin stellen und überprüfen, daß die Ausgangsspannung 1,8V beträgt.</li> <li>Falls die Spannung nicht 1,8V beträgt, die Schraube der Leiterplatte lösen und die Platte mit einem Schraubendreher nach links oder rechts bewegen, bis die Ausgangsspannung 1,8V beträgt. Nach der Justierung ist die Befestigungsschraube der Leiterplatte wieder festzudrehen. (Offset-Justierung)</li> </ol>

## MESURAGES ET RÉGLAGES Français

### ● Instruments et appareils utilisés

- Oscilloscope
- Voltmètre à C.C.
- Disque de 30 cm
- Tournevis

Etape	Articles	Préparatifs pour le réglage	Portion du réglage	Méthode de mise au point
1	Position de démarrage	<ol style="list-style-type: none"> <li>Ouvrir le boîtier supérieur et placer un disque.</li> <li>Mettre en circuit l'interrupteur d'alimentation.</li> <li>Appuyer sur la touche "Start" (mise en marche).</li> </ol>	Vis d'ajustement de la position descendante. (Fig. 21)	<ol style="list-style-type: none"> <li>Tourner la vis d'ajustement de la position descendante. Si elle descend entre les plages, tourner la vis dans le sens des aiguilles d'une montre. Si elle descend à l'extérieur du disque, tourner la vis dans le sens inverse des aiguilles d'une montre.</li> </ol>
2	Fréquence des impulsions de rythme	<ol style="list-style-type: none"> <li>Connecter le fil de jonction à pince à la broche ⑦ et à la broche ⑳ IC301 de la plaquette à circuits imprimés du montage principal.</li> <li>Brancher un oscilloscope à la broche ⑥ de IC301.</li> </ol>	VR301 (Fig. 22)	<ol style="list-style-type: none"> <li>Régler l'interrupteur d'alimentation sur "on" (marche).</li> <li>Ajuster VR301 de telle sorte que la période de forme d'onde de sortie soit de <math>30\mu s \pm 1\mu s</math>. (Fig. 23)</li> </ol>
3	Angle de décalage du bras de lecture	<ol style="list-style-type: none"> <li>Ouvrir le boîtier supérieur et maintenir appuyée la touche du boîtier avec une bande adhésive.</li> <li>Refermer le boîtier supérieur.</li> </ol>	Vis de réglage (Fig. 24)	<ol style="list-style-type: none"> <li>Mettre en circuit l'interrupteur d'alimentation et appuyer sur la touche de mise en marche pour faire déplacer le bras de lecture vers l'intérieur.</li> <li>Ouvrir le boîtier supérieur.</li> <li>Tourner la vis de réglage de façon à ce que le centre du bras coïncide avec la rainure en V de la tige d'élévation.</li> </ol>



Etape	Artiele	Préparatifs pour le réglage	Portion du réglage	Méthode de mise au point
4	Amplification servo-mécanique et tension d'écart de réglage	<ol style="list-style-type: none"> <li>Ouvrir le boîtier supérieur et maintenir appuyée la touche du boîtier avec une bande adhésive.</li> <li>Refermer le boîtier supérieur.</li> <li>Raccorder le voltmètre à C.C. à la borne 3 de CN301 et à la borne de mise à la terre.</li> <li>Retirer l'étiquette adhésive de la coiffe protectrice du bras de lecture.</li> </ol>	VR501 (Amplification servo-mécanique) Plaquette à circuits imprimés (Tension d'écart de réglage) (Fig. 25)	<ol style="list-style-type: none"> <li>Mettre en circuit l'interrupteur d'alimentation et appuyer sur la touche de mise marche pour faire déplacer le bras de lecture vers l'intérieur.</li> <li>Ouvrir le boîtier supérieur.</li> <li>Déplacer complètement le bras de lecture vers la droite. Puis, ajuster VR501 de telle sorte que la tension soit de 3,6V. (Amplification servo-mécanique.)</li> <li>Régler le bras de lecture au centre et s'assurer que la tension de sortie soit de 1,8V.</li> <li>Si la tension n'est pas de 1,8V, desserrer la vis de la plaquette à circuits imprimés et déplacer la plaquette vers la droite ou vers la gauche avec un tournevis, de telle sorte que la tension de sortie soit de 1,8V. Après la mise au point, resserrer la vis de la plaquette à circuits imprimés. (Ajustement de l'écart de réglage)</li> </ol>

## I MEDICIONES Y AJUSTE Español

### ● Instrumentos usados

- Osciloscopio
- Voltímetro de CC
- Disco de 30 cm
- Destornillador

Paso	Punto tratado	Preparativos para el ajuste	Porción a ajustar	Manera de hacer el ajuste
1	Posición de arranque	<ol style="list-style-type: none"> <li>Abrir el gabinete superior y colocar el disco.</li> <li>Poner el interruptor de la corriente.</li> <li>Empujar el interruptor de arranque ("Start").</li> </ol>	Tornillo de ajuste de la posición de descenso (Fig. 21)	<ol style="list-style-type: none"> <li>Hacer girar el tornillo de ajuste de la posición de descenso. Si se cae en medio del disco, girar el tornillo hacia la derecha. Si se cae fuera del disco, girar el tornillo hacia la izquierda.</li> </ol>
2	Frecuencia de reloj	<ol style="list-style-type: none"> <li>Conectar pata número ⑦ a pata número ②⑦ de IC301 con cable adicional. (Corto circuito)</li> <li>Conectar osciloscopio a pata número ⑥ de IC301.</li> </ol>	VR301 (Fig. 22)	<ol style="list-style-type: none"> <li>Poner interruptor de corriente en "on".</li> <li>Ajustar onda de salida sea <math>30\mu s \pm 1\mu s</math> con VR301. (Fig. 23)</li> </ol>
3	Angulo de descentramiento del brazo sonoro	<ol style="list-style-type: none"> <li>Abrir el gabinete superior y sujetar el interruptor del mismo con cinta.</li> <li>Cerrar el gabinete superior.</li> </ol>	Tornillo de ajuste (Fig. 24)	<ol style="list-style-type: none"> <li>Poner interruptor de la corriente y apretar el interruptor de arranque para hacer el brazo sonoro se mueva hacia adentro.</li> <li>Abrir el gabinete superior.</li> <li>Girar el tornillo de ajuste de manera tal que el centro del brazo concuerde con la ranura en V de la barra de elevación.</li> </ol>
4	Ganancia del servomecanismo y tensión de desnivel	<ol style="list-style-type: none"> <li>Abrir el gabinete superior y sujetar el interruptor del mismo con cinta.</li> <li>Cerrar el gabinete superior.</li> <li>Conectar el voltímetro de corriente continua al borne 3 de CN301 a al borne de conexión a tierra.</li> <li>Quitar la etiqueta de la tapa del brazo sonoro.</li> </ol>	VR501 (Ganancia del servomecanismo) P.C.B. (Tablero de circuito impreso) (Tensión de desnivel) (Fig. 25)	<ol style="list-style-type: none"> <li>Poner interruptor de la corriente y apretar el interruptor de arranque para hacer que el brazo sonoro se desplace hacia adentro.</li> <li>Abrir el gabinete superior.</li> <li>Desplazar el brazo sonoro completamente hacia la derecha. A continuación, regular VR501 de manera tal que la tensión resulte de 3,6V. (Ganancia del servomecanismo)</li> <li>Colocar el brazo sonoro en el centro y asegurarse de que la tensión de salida sea de 1,8V.</li> <li>Si la tensión no corresponde a 1,8V, aflojar el tornillo del tablero de circuito impreso y mover el tablero hacia la derecha o hacia la izquierda usando un destornillador de manera que la tensión de salida resulte de 1,8V. Acabado de regular, volver a apretar el tornillo del tablero de circuito impreso. (Ajuste de desnivel)</li> </ol>



# ■ ADJUSTMENT POINTS

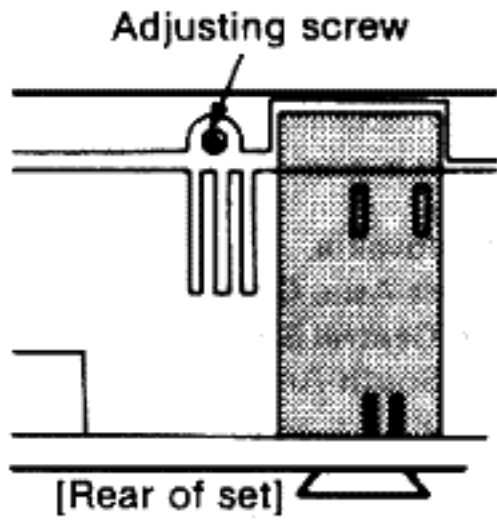


Fig. 21  
Abb. 21

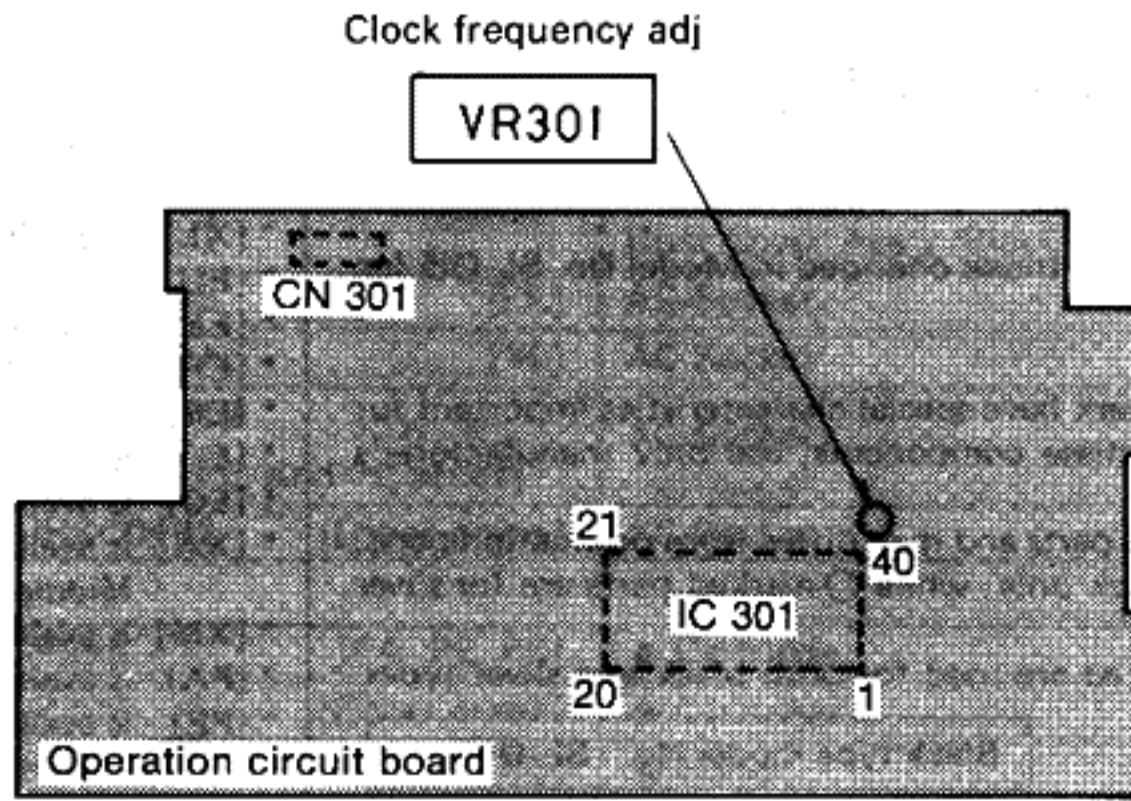


Fig. 22  
Abb. 22

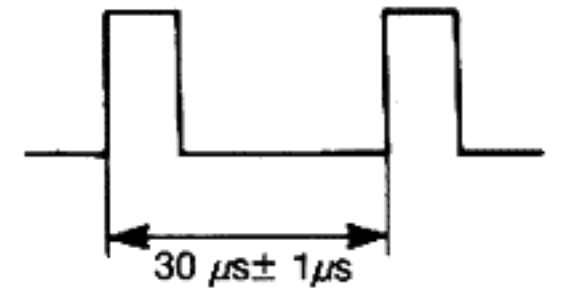


Fig. 23  
Abb. 23

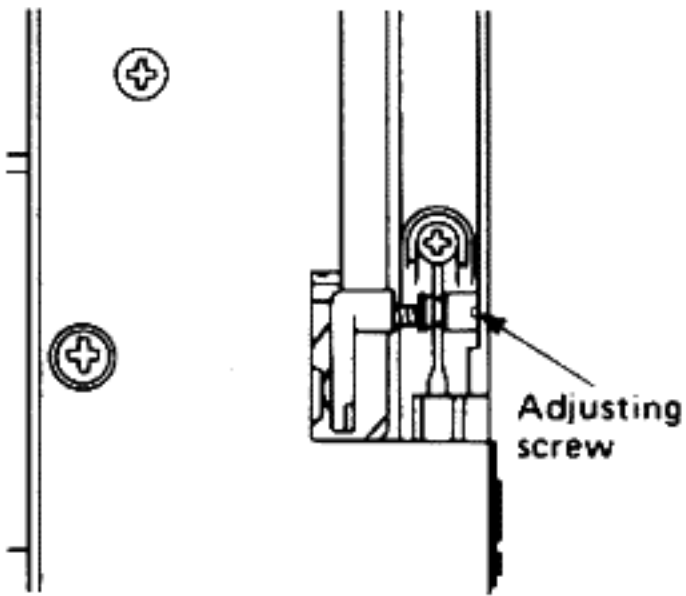


Fig 24  
Abb. 24

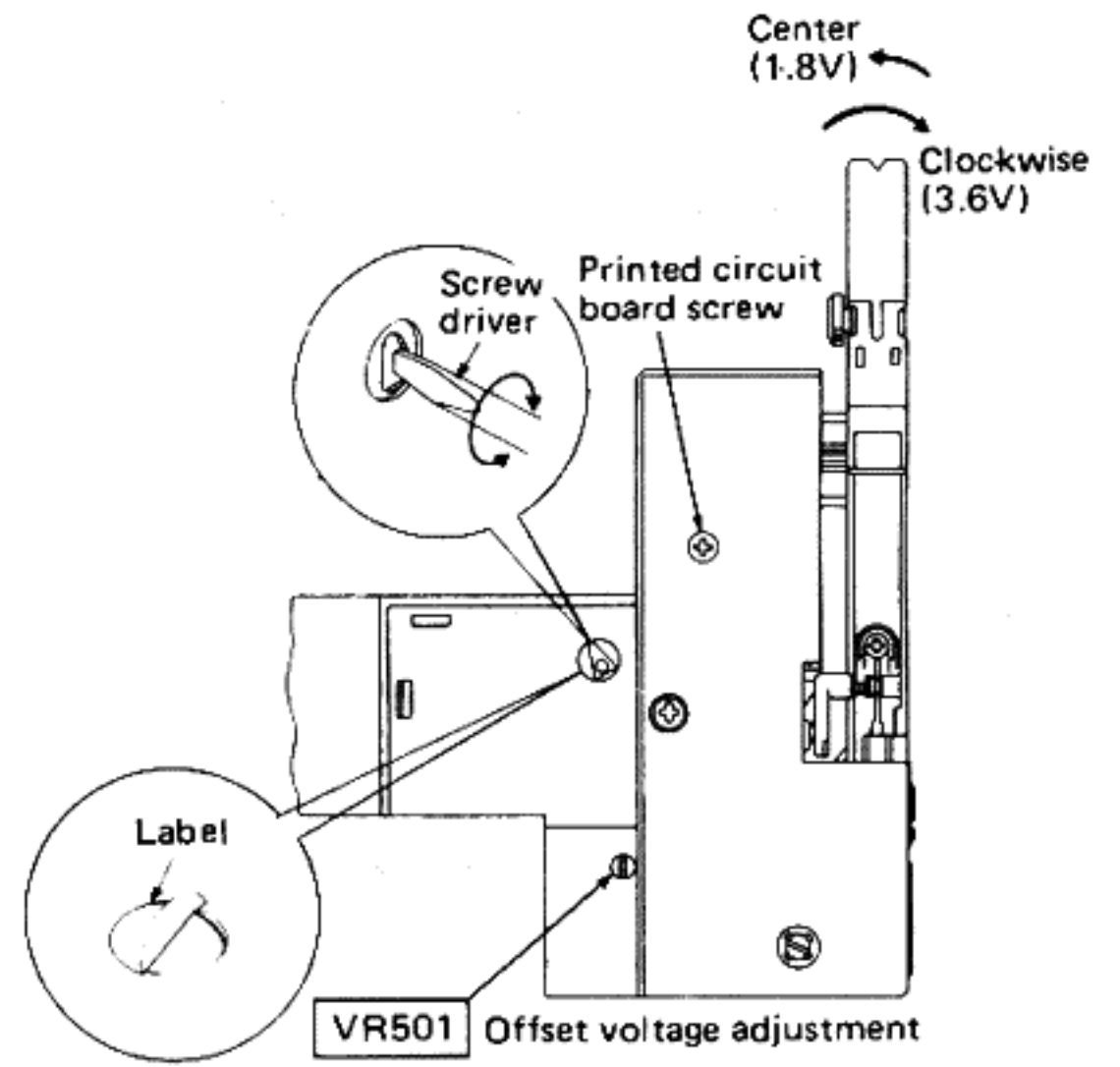



Fig. 25  
Abb. 25

# CHANGES

## ■ REPLACEMENT PARTS LIST








### Notes:

1. Mentioned in this parts list are only those changed in Model No. SL-Q15 for destination [M] area.
2. Important safety notice:  
Components identified by  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "S" mark is service standard parts and may differ from production parts.
4. (K)-marked parts are used for black only, while (O)-marked parts are for silver type only.
5. Parts other than (K)- and (O)-marked are used for both black and silver types.

Black type model No. : SL-Q15

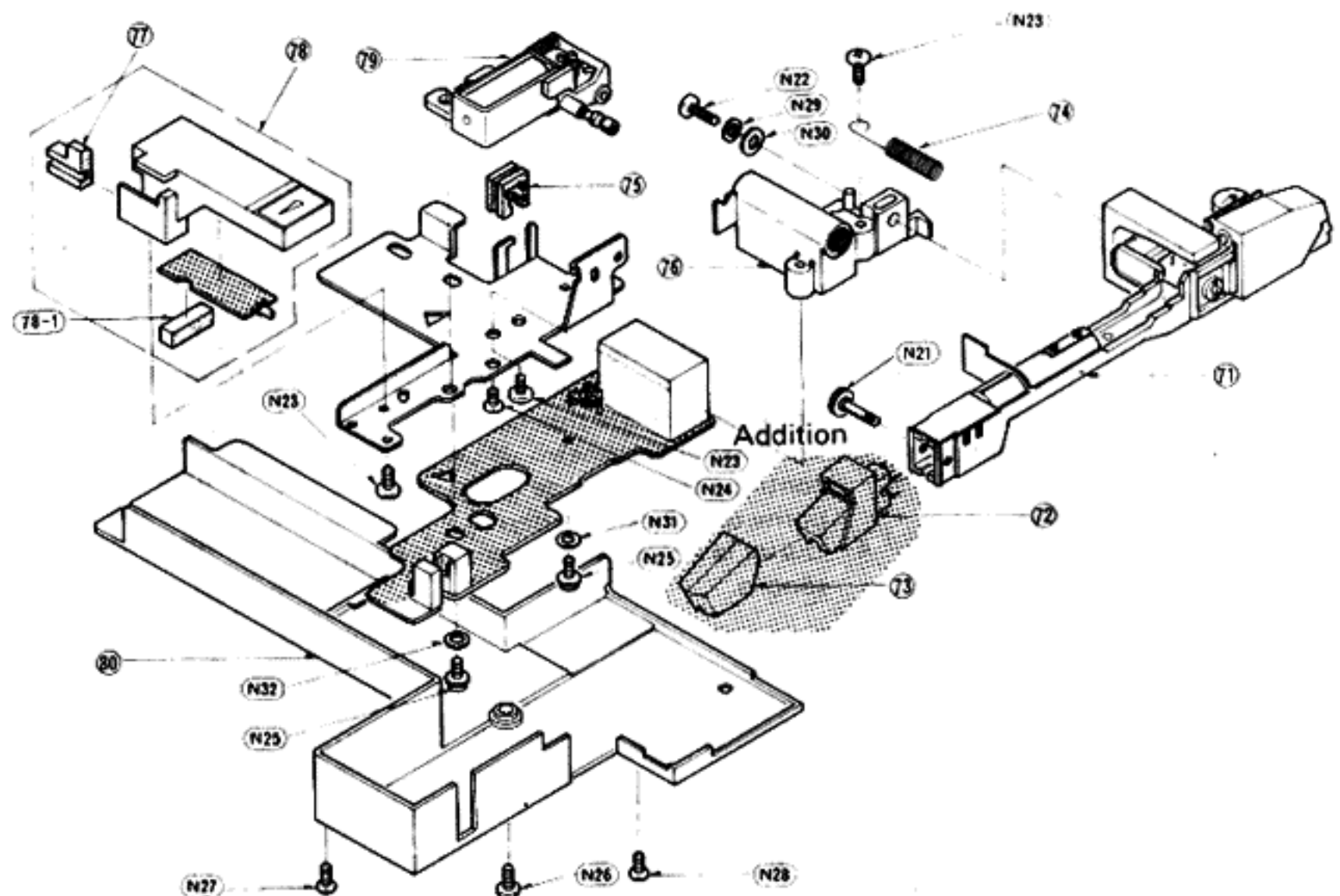
### Areas

- \* [E] is available in Switzerland and Scandinavia.
- \* [EK] is available in United Kingdom.
- \* [XL] is available in Australia.
- \* [EG] is available in F.R. Germany.
- \* [EB] is available in Belgium.
- \* [EH] is available in Holland.
- \* [EF] is available in France.
- \* [Ei] is available in Italy.
- \* [EC] is available in Czechoslovakia.
- \* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- \* [XM] is available in Central South America.
- \* [PA] is available in far East PX.
- \* [PE] is available in European Military.
- \* [PC] is available in European Audio Club.

Ref. No.	Change of Part No.		Part Name & Description	Per Set (Pcs.)	Remarks
	SL-Q15 [M]	→ SL-Q15/(K)			
<b>SWITCH</b>					
S901	Addition	SFDSHXW225-2 [EK, XA, XM, PA, PE, and PC areas]	Voltage Selector	1	
<b>POWER TRANSFORMER</b>					
T1	SLT48DTL3A	SLT57DT7E [EK, XA, XM, PA, PE, and PC areas]	Power Source	1	
		SLT48DTE13E [XL]	Power Source	1	
		SLT48DT10E [Other areas]	Power Source	1	
<b>FUSES</b>					
F1	Addition	XBA2C02T1B [EK, XA, XM, PA, PE, and PC areas]	250V, T200mA	1	
		XBA2C05T1B [Other areas]	250V, T500mA	1	
F2	Addition	XBA2C06T1B [EK, XA, XM, PA, PE, and PC areas]	250V, T630mA	1	
<b>CABINET and CHASSIS PARTS</b>					
6	SFNNQL5M01	SFNNQL5G02 [EK]	Name Plate	1	
		SFNNQL5S01 [E, Ei, EC]	Name Plate	1	
		SFNNQL5G01 [XL]	Name Plate	1	
		SFNNQL5X01 [XA, XM]	Name Plate	1	
		SFNNQL5P01 [PA, PE]	Name Plate	1	
		SFNNQL5P02 [PC]	Name Plate	1	
		SFNNQL5R01 [Other areas]	Name Plate	1	
10	SFACQL5N01	SFNNQL5N01	Cabinet (Silver)	1	(O)
		SFACQL5S21	Cabinet (Black)	1	(K)
13	SFNZQL5M01	SFNZQL5M01	Label (Silver)	1	(O)
		SFNZQL5M21	Label (Black)	1	(K)
25	SFGCC05N02	SFGCC05X01 [EK, XA, XM, PA, PE, and PC areas]	Cushion Rubber, Power Transformer	2	
		SFGCC05N02 [Other areas]	Cushion Rubber, Power Transformer	2	

Ref. No.	Change of Part No.		Part Name & Description	Per Set (Pcs.)	Remarks
	SL-QL5 [M]	→ SL-QL5/(K)			
<b>CABINET and CHASSIS PARTS</b>					
32	SFADD05N01E	SFADD05N01E	Dust Cover Ass'y (Silver)	1	○
		SFADD05S21E	Dust Cover Ass'y (Black)	1	Ⓚ
54	SFDJHSC0491	SFDJHSC0498 [EK]	AC Socket	1	⚠
		SFDJHSC0491 [XL]	AC Socket	1	⚠
		SFDJHSC04912 [XA, XM, PA, PE, and PC areas]	AC Socket	1	⚠
		SFDJHSC0492 [Other areas]	AC Socket	1	⚠
<b>TONARM PARTS</b>					
72	Addition	EPC-P28S [PA, PE, PC]	★ Cartridge	1	
		EPC-P30S [Other areas]	★ Cartridge	1	
73	Addition	EPS-P28ES [PA, PE, PC]	★ Stylus	1	
		EPS-P30ES [Other areas]	★ Stylus	1	
<b>ACCESSORIES</b>					
A1	SFNUQL5M01	SFNUQL5G01 [EK]	Instruction Book	1	
		SFNUQL5R01 [EG]	Instruction Book	1	
		SFNUQL5F01 [EF]	Instruction Book	1	
		SFNUQL5I01 [Ei]	Instruction Book	1	
		SFNUQL5X01 [XL, XA, XM]	Instruction Book	1	
		SFNUQL5P01 [PA, PE, PC]	Instruction Book	1	
		SFNUQL5S01 [Other areas]	Instruction Book	1	
A4	SFDAC05M01	SFDAC05G02 [EK]	AC Cord	1	⚠
		SFDAC05L01 [XL]	AC Cord	1	⚠
		SFDAC05X02 [XA, XM]	AC Cord	1	⚠
		SFDAC05N01 [PA, PE, PC]	AC Cord	1	⚠
		SFDAC05E02 [Other areas]	AC Cord	1	⚠
A5	Addition	SFDKI19118 [XA, XM] only	2pin Plug	1	⚠
A6	Addition	QJP0603S [PA, PE, PC] only	Adaptor, Gimens	1	⚠
<b>PACKING PARTS</b>					
P1	SFHPQL5M01	SFHPQL5C01 [EF] only	Carton Box (Silver)	1	○
		SFHPQL5M01 [Other areas]	Carton Box (Silver)	1	○
		SFHPQL5C21 [EF]	Carton Box (Black)	1	Ⓚ
		SFHPQL5M21 [Other areas]	Carton Box (Black)	1	Ⓚ

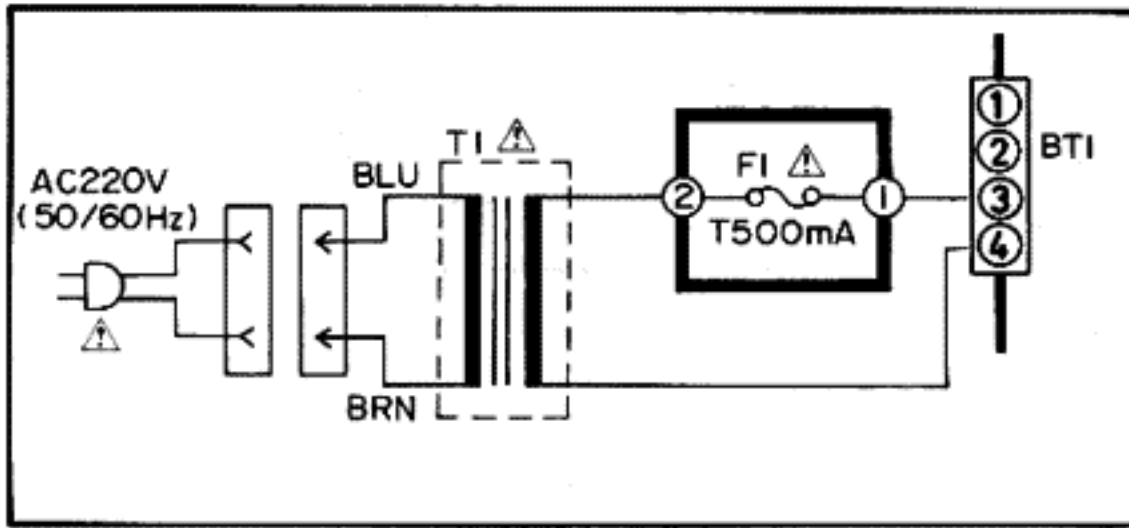
## EXPLODED VIEW



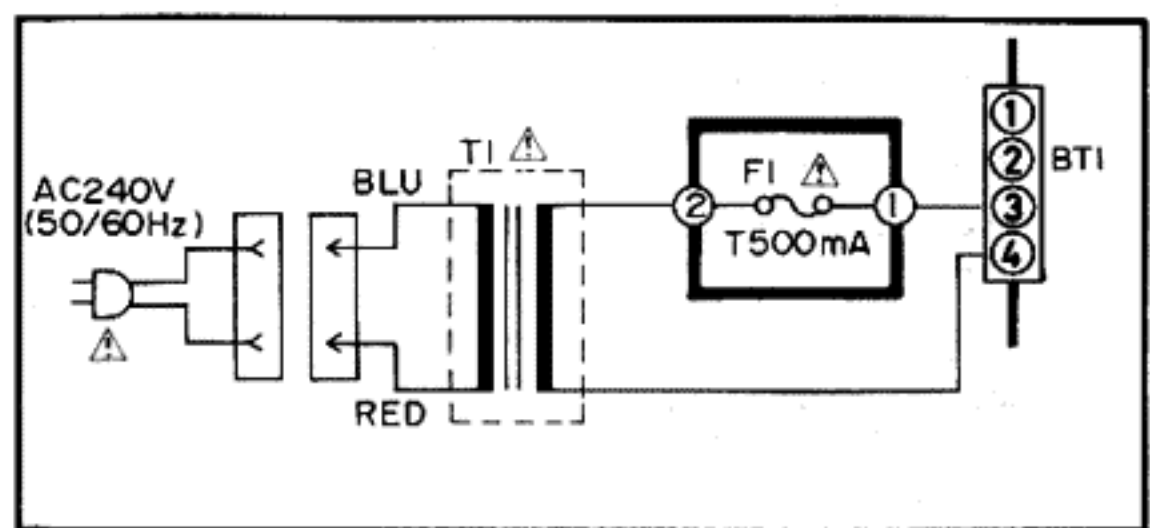
# ■ SCHEMATIC DIAGRAM

## • Power source circuit

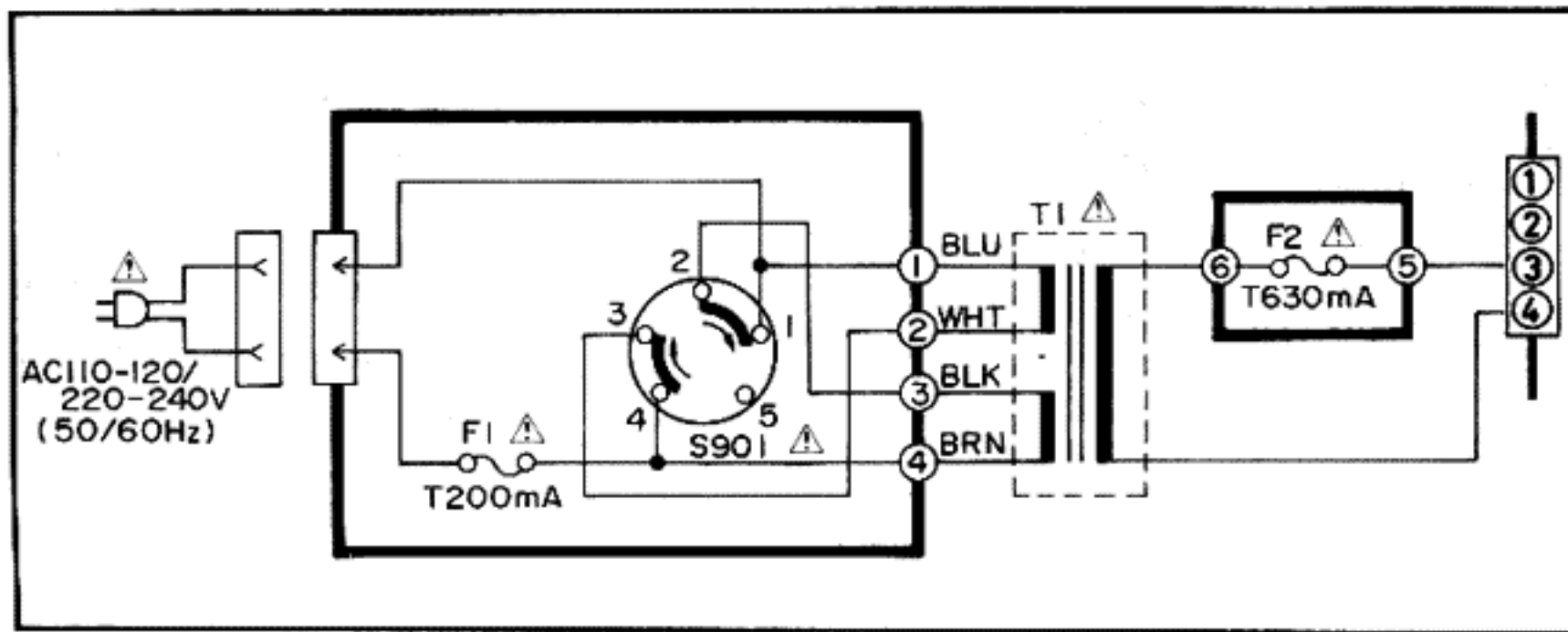
※ Product for continental Europe



※ Product for Australia.



※ Product for [EK], [XA], [XM], [PA], [PE], and [PC], areas.

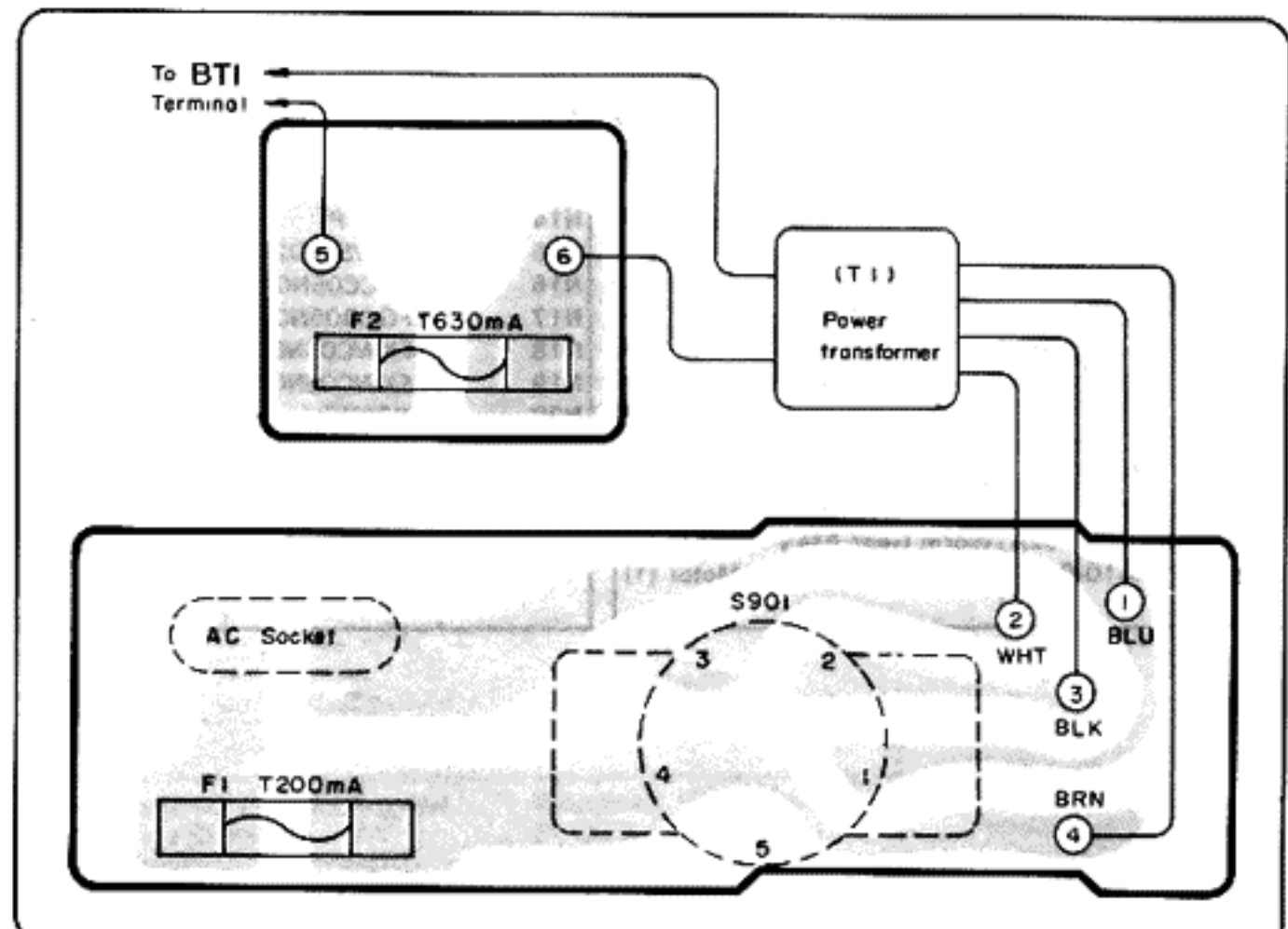
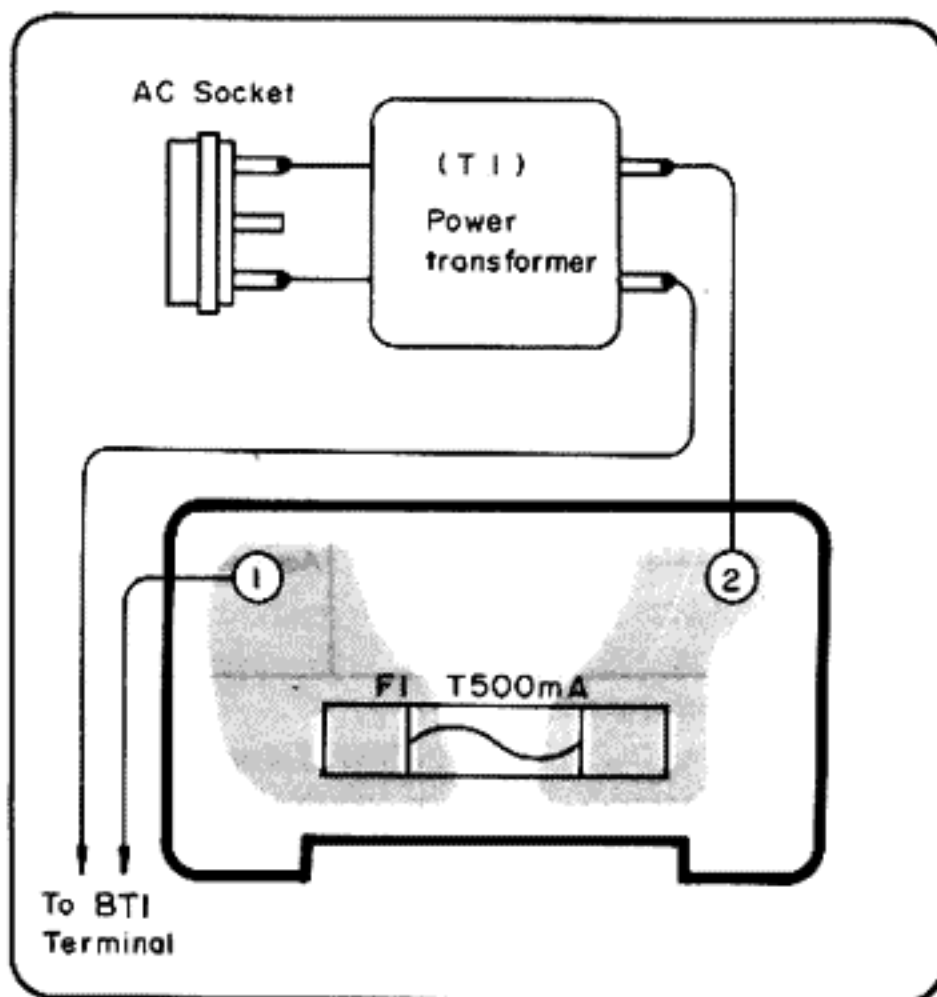


# ■ PRINTED CIRCUIT BOARD

## • Power source circuit

※ Product for Continental Europe and Australia.

※ Product for [EK], [XA], [XM], [PA], [PE], and [PC], areas.





# RESISTORS and CAPACITORS

- Notes:**
- Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
  - Important safety notice: Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
  - This "S" mark is service standard parts and may differ from production parts.

- Unless otherwise specified. All resistors are in OHMS ( $\Omega$ ) K = 1000 $\Omega$ , M = 1000k $\Omega$ . All capacitors are in MICROFARADS ( $\mu$ F) P = 10<sup>-6</sup>  $\mu$ F

## Numbering System of Resistor

Example

<u>ERD</u>	<u>25</u>	<u>F</u>	<u>J</u>	<u>101</u>
Type	Wattage	Shape	Tolerance	Value
<u>ERG</u>	<u>1</u>	<u>AN</u>	<u>J</u>	<u>2R2</u>
Type	Wattage	Shape	Tolerance	Value

## Numbering System of Capacitor

Example

<u>ECKD</u>	<u>1H</u>	<u>102</u>	<u>Z</u>	<u>F</u>
Type	Voltage	Value	Tolerance	Peculiarity
<u>ECEA</u>	<u>50</u>	<u>M</u>	<u>R47</u>	<u>R</u>
Type	Voltage	Peculiarity use	Value	Special use


Resistor Type	Wattage	Tolerance
ERD : Carbon	25 : 1/4W	J : $\pm$ 5%
ERX : Metal Film	1 : 1W	G : $\pm$ 2%
ERTD : Thermister		

- ERD2FCG□□□ → Fuse type carbon (1/4W)  
 ERD10TLJ□□□ → Chip type carbon (1/8W)  
 ECUV1H□□□ → Chip type ceramic

Capacitor Type	Voltage		Tolerance
	ECEA Type	Others	
ECEA : Electrolytic	1A : 10V	1H : 50V DC	J : $\pm$ 5%
ECEB : Electrolytic	1C : 16V	2H : 500V DC	K : $\pm$ 10%
ECKD : Ceramic	1E : 25V	1 : 100V	Z : +80%, -20%
ECQM : Polyester	1V : 35V		P : +100%, -0%
	1H : 50V		M : $\pm$ 20%
	50 : 50V		

Ref. No.	Part No.	Value	Ref. No.	Part No.	Value	Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
<b>RESISTORS</b>											
RF1	$\Delta$ ERD2FCG180	18	R315	ERDS2TJ333	33K	R402	ERDS2TJ683	68K	C102	$\text{S}$ ECEA50ZR22	0.22
R1	ERDS2TJ681	680	R316	ERDS2TJ332	3.3K	R403	ERDS2TJ122	1.2K	C103	$\text{S}$ ECQM1H274JZ	0.27
R2	ERDS2TJ221	220	R317	ERDS2TJ332	3.3K	R404	ERDS2TJ472	4.7K	C105	$\Delta$ $\text{S}$ ECEA1CN470S	47
R103	ERD10TLJ104U	100K	R318	ERDS2TJ332	3.3K	R405	ERDS2TJ681	680	C106	$\Delta$ $\text{S}$ ECEA1CN470S	47
R104	ERX1ANJ2R7	2.7	R319	ERDS2TJ332	3.3K	R406	ERDS2TJ272	2.7K	C107	$\text{S}$ ECEA50Z1	1
R105	ERD10TLJ270U	27	R320	ERDS2TJ272	2.7K	R407	ERDS2TJ152	1.5K	C201	$\text{S}$ ECEA1AU470	47
R201	ERD10TLJ393U	39K	R321	ERDS2TJ272	2.7K	R408	ERDS2TJ102	1K	C202	$\text{S}$ ECEA50ZR22	0.22
R202	ERD10TLJ394U	390K	R322	ERDS2TJ272	2.7K	R409	ERDS2TJ224	220K	C203	$\text{S}$ ECQM1H683JZ	0.068
R203	ERD10TLJ680U	68	R323	ERDS2TJ272	2.7K	R410	ERDS2TJ152	1.5K	C204	ECUV1H121JCM	120P
R204	ERD10TLJ151U	150	R324	ERDS2TJ271	270	R411	ERDS2TJ102	1K	C205	ECUV1H1330JCM	33P
R205	ERD10TLJ223U	22K	R325	ERDS2TJ821	820	R412	ERDS2TJ224	220K	C206	ECUV1H101JCM	100P
R207	ERD10TLJ102U	1K	R326	ERDS2TJ222	2.2K	R413	ERDS2TJ101	100	C207	$\text{S}$ ECEA1AU470	47
R208	ERD10TLJ680U	68	R327	ERDS2TJ272	2.7K	R414	ERDS2TJ471	470	C208	$\text{S}$ ECEA1AU470	47
R301	ERDS2TJ562	5.6K	R328	ERDS2TJ331	330	R415	ERDS2TJ101	100	C301	$\text{S}$ ECEA0JU470	47
R302	ERDS2TJ331	330	R329	ERDS2TJ272	2.7K	R416	ERDS2TJ471	470	C302	ECFR1H104ZF	0.1
R303	ERDS2TJ182	1.8K	R330	ERDS2TJ272	2.7K	R501	ERDS2TJ331	330	C303	$\text{S}$ ECCD1H680K	68P
R304	ERDS2TJ562	5.6K	R331	ERDS2TJ272	2.7K	R502	ERDS2TJ561	560	C304	ECFR1H104ZF	0.1
R305	ERDS2TJ562	5.6K	R332	ERDS2TJ103	10K	R503	ERDS2TJ820	82	C305	$\text{S}$ ECOM1H104JZ	0.1
R306	ERDS2TJ331	330	R333	ERDS2TJ223	22K	R504	ERTD2FFK251S	250	C306	$\text{S}$ ECEA1HU3R3	3.3
R307	ERDS2TJ331	330	R334	ERDS2TJ562	5.6K	R601	ERDS2TJ681	680	C307	$\text{S}$ ECKD1H102KB	0.001
R308	ERDS2TJ562	5.6K	R335	ERDS2TJ222	2.2K				C308	$\text{S}$ ECKD1H102KB	0.001
R309	ERDS2TJ332	3.3K	R336	ERDS2TJ224	220K	<b>CAPACITORS</b>					
R310	ERDS2TJ332	3.3K	R337	ERDS2TJ104	100K	C1	$\Delta$ ECQM1223KZ	0.022	C404	$\text{S}$ ECEA0JU470	47
R311	ERDS2TJ102	1K	R338	ERDS2TJ103	10K	C2	$\Delta$ ECQM1223KZ	0.022	C405	$\text{S}$ ECEA0JU470	47
R312	ERDS2TJ333	33K	R339	ERDS2TJ333	33K	C3	$\Delta$ ECQM1223KZ	0.022	C501	$\text{S}$ ECEA1CU101	100
R313	ERDS2TJ333	33K	R340	ERDS2TJ562	5.6K	C4	$\text{S}$ ECEB1VU102	1000	C601	ECFB1B104ZRM	0.1
R314	ERDS2TJ333	33K	R341	ERDS2TJ222	2.2K	C5	$\text{S}$ ECEA1CU330	33			
			RF401	$\Delta$ ERD2FCG330	33	C101	$\text{S}$ ECEA1CU330	33			
			R401	ERDS2TJ683	68K						

# REPLACEMENT PARTS LIST

- Notes:**
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
  2. Important safety notice:  
Components identified by  mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.
  3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
  4. The "S" mark is service standard parts and may differ from production parts.
  5. The parenthesized numbers in the columns of description stand for the quantity per set.
  6. (K) -marked parts are used for black only, while O -marked parts are for silver type only.
  7. Parts other than (K) - and O -marked are used for both black and silver types.

## Areas

- \* [E] is available in Switzerland and Scandinavia.
- \* [EK] is available in United Kingdom.
- \* [XL] is available in Australia.
- \* [EG] is available in F.R. Germany.
- \* [EB] is available in Belgium.
- \* [EH] is available in Holland.
- \* [EF] is available in France.
- \* [Ei] is available in Italy.
- \* [EC] is available in Czechoslovakia.
- \* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- \* [XM] is available in Central South America.
- \* [PA] is available in far East PX.
- \* [PE] is available in European Military.
- \* [PC] is available in European Audio Club.

Black type model No. : SL-QL5/(K)

Ref. No.	Part No.	Description
<b>INTEGRATED CIRCUIT</b>		
IC1	SVIUPC7812H	Regulator, 12V
IC101	AN6638	Turntable Drive
IC201	AN6683	Turntable Control
IC301	MN1421FPC	Micro Computer
IC401	AN6554	Comparator
<b>TRANSISTORS</b>		
Q1	2SD638	Regulator, 5V
Q301	2SD636	Switching
Q302	2SD892	Switching
Q303	2SD636	Offset Error Angle Det
Q304	2SB641	Offset Error Angle Det
Q305, 306	2SD636	Switching
Q401, 402	(S) 2SD973S	Tonearm Motor Control
Q403, 404	2SD892	Tonearm Motor Control
<b>DIODES</b>		
D1	(S) SVDS1RBA20Z	Rectifier
D2	MA4056	5.6V Zener
D301	SVDGL9-PR2F1	Cueing Up Indicator Switching
D302, 303	MA165	Indicator Switching
D304	MA4062	6.2V Zener
D305	SVDGL-9PR2F1	Repeat Indicator Switching
D306	MA162A	Switching
D501	SVDPR3432S	Tonearm Indicator
D502		

Ref. No.	Part No.	Description
<b>SWITCHES</b>		
S1	(S) SFDSC05N08	On/Off (Power)
S301~304	EVOQJ104K	Start, Stop, Cueing, Repeat
S305	SFDSSHW0699	Speed Selector
S306	SFDSD05N01	Record Detection
S307	SFDSD05N01	Cabinet (Reset)
S601	SFDSD2MSL-C	Ret Position Detection
S701	SFDSC05N02	Record Size Detection
S901 [EK, XA, XM, PA, PE, PC] only	(S) SFDSHXW225-2	Voltage Selector
<b>CRYSTAL</b>		
X201	SVQSH41TR	4.193MHz OSC
<b>PHOTO INTERRUPTERS</b>		
PC501	ON1262	Offset Sensor
PC601	ON1261	Tonearm Position Sensor

Ref. No.	Part No.	Description
<b>VARIABLE RESISTORS</b>		
VR301	EVN61AA00B54	Clock Frequency Adjustment, 50kΩ (B)
VR501	EVNK6JA00B14	Servo Gain Adjustment, 10kΩ (B)
<b>RELAY</b>		
RL501	SFDYAW6945	Muting Relay
<b>POWER TRANSFORMER</b>		
T1[EK, XA, XM, PA, PE, PC]	(S) SLT57DT7E	Power Source
T1[XL]	(S) SLT48DTE13E	Power Source
T1[Other Areas]	(S) SLT48DT10E	Power Source
<b>FUSE</b>		
F1[EK, XA, XM, PA, PE, PC]	(S) XBA2C02T1B	250V, T 200mA
F1[Other Areas]	(S) XBA2C05T1B	250V, T 500mA
F2[EK, XA, XM, PA, PE, PC] only	(S) XBA2C06T1B	250V, T 630mA

Ref. No.	Part No.	Description	
<b>CABINET AND CHASSIS PARTS</b>			
1	SFWEC06N01	Adaptor, 45r.p.m	(1)
2	SFQAC06N01	Spring, 45r.p.m. Adaptor	(1)
3	SFTGQ05N01	Turntable Mat	(1)
4	SFTEQ05N01	Turntable Platter	(1)
5	SFTMC07-01E	Rotate Magnet Ass'y	(1)
6[EK]	SFNNQL5G02	Name Plate	(1)
6[E,EL,EC]	SFNNQL5S01	Name Plate	(1)
6[XL]	SFNNQL5G01	Name Plate	(1)
6[XA, XM]	SFNNQL5X01	Name Plate	(1)
6[PA, PE]	SFNNQL5P01	Name Plate	(1)
6[PC]	SFNNQL5P02	Name Plate	(1)
6[Other Areas]	SFNNQL5R01	Name Plate	(1)
7	SFATQ15N01A	Hinge (Right Side)	(1)
8	SFATQ15N02A	Hinge (Left Side)	(1)
9	SFKKQL5N02	Ornament Plate	(1)
10	SFACQL5N01	Cabinet (Silver)	(1)
10	SFACQL5S21	Cabinet (Black)	(1)
11	SFUMC05N15	Holder, Rest Switch and Record Detecting Switch	(2)
12	SFQPC05N01	Spring, Reset Switch	(1)
13	SFNZQL5M01	Label (Silver), Speed Select	(1)
13	SFNZQL5M21	Label (Black), Speed Select	(1)
14	SFUMD05N03	Rod, Speed Select Switch	(1)
15	SFKTQL5N01	Button, Operation	(1)
16	SFKTD05N02	Knob, Speed Select	(1)
17	SFMGQ34N01	Cover, Stator Coil	(1)
18	SFMZC06N01R	Stator Frame Ass'y	(1)
19	SFUMQL5N01E	Lever, Record Detecting	(1)
20	SFUMQ15N03	Holder, L.E.D	(1)
21	SFUPQL5N01	Holder, Operation Button	(1)
22	SFAUL12M01	Bottom Board	(1)
23	SFGAC05N02	Insulator	(4)
24	SFQCC05N01	Spring, Insulator	(4)
25[EK, XA, XM, PA, PE, PC]	SFGCC05X01	Cushion Rubber, Power Transformer	(2)
25[Other Areas]	SFGCC05N02	Cushion Rubber, Power Transformer	(2)
26	SFGZC05N03	Cushion Rubber, Power Transformer	(1)
27	SFKTQ15N03	Knob, Power Switch	(1)
28	SFXJBL3N02E	Shaft Ass'y Power Switch	(1)
29	SFUMQ15N04	Stopper, Operation Circuit Board	(1)
30	SFQABL3N02	Spring, Power Switch Shaft	(1)
31	SFUMBL3N05	Holder, Power Switch Shaft	(1)
32	SFADD05N01E	Dust Cover Ass'y (Silver)	(1)
32	SFADD05S21E	Dust Cover Ass'y (Black)	(1)
32-1	SFAD130-02	Cushion Rubber, Dust Cover	(2)
33	SFKKQL5N01	Record Groove Scale Plate	(1)
34	SFGCC05N03	Rubber Spacer	(3)
35	SFGCD05N01	Rubber Spacer	(2)
36	SFGCC05N06	Rubber Spacer	(2)
37	SFUZC05N03	Latch, Lead Wires Holder	(1)
38	SFUMC05N20	Holder, Lead Wires	(1)
39	SFUKD05N01A	Base, Tonearm	(1)
40	SFUMC05N17	Wheel, Tonearm Drive	(1)
41	SFUMC05N02A	Rest Switch Ass'y	(1)
42	SFUMQL5N02A	Worm Gear Ass'y	(1)
43	SFGBC10-01	Belt, Tonearm Drive Motor	(1)

Ref. No.	Part No.	Description	
<b>CABINET AND CHASSIS PARTS</b>			
44	SFMHC05N01E	Tonearm Drive Motor Ass'y	(1)
45	SFUZC05N01	Rod, Rest Switch	(1)
46	SFXJC05N01	Guide Rail, Tonearm	(1)
47	SFGCC05N05	Cushion Rubber, Guide Rail	(2)
48	SFUPC05N03	Bracket, Guide Rail	(1)
49	SFUMD05N02	Cover, Tonearm Base (B)	(1)
50	SFUMD05N01	Cover, Tonearm Base (A)	(1)
51	SFUZC05N02E	Rope Ass'y	(1)
52	SFUMC06N11	Cap, Pulley	(3)
53	SFUMC05N22	Pulley, Rope Ass'y	(3)
54[EK]	SFDJHSC0498	AC Socket	(1)
54[XL]	SFDJHSC0491	AC Socket	(1)
54[XA, XM, PA, PE, PC]	SFDJHSC04912	AC Socket	(1)
54	SFDJHSC0492	AC Socket	(1)
[Other Areas]			
55	SFDHC05N02E	Phono Output Jack Ass'y	(1)
56	SFUMQ05N02A	Record Size Detector Ass'y	(1)
57	SFUMC05N11A	Record Detector Ass'y	(1)
58	SFUMC05N06	Guide, Rest Switch Rod	(1)
<b>TONARM PARTS</b>			
71	SFPAM00501A	Tonearm Ass'y	(1)
72[PA, PE, PC]	EPC-P28S	*Cartridge	(1)
72[Other Areas]	EPC-P30S	*Cartridge	(1)
73[PA, PE, PC]	EPC-28ES	*Stylus	(1)
73[Other Areas]	EPC-30ES	*Stylus	(1)
74	SFPSP00503	Spring, Lead Wire	(1)
75	SFPGM00502	Holder, AC cord/Phono Output Cord	(1)
76	SFPAB00502	Bracket, Tonearm	(1)
77	SFPGM00503	Rubber Spacer	(1)
78	SFPAB00501E	Tonearm Position Indicator Ass'y	(1)
78-1	SFPGM00505	Holder, L.E.D Circuit Board	(1)
79	SFPZB00503E	Lift Solenoid Ass'y	(1)
80	SFPCS00501	Cover, Tonearm Base	(1)
<b>SCREWS, WASHERS AND NUT</b>			
N1	XTV3+10BFN	Screw, 3x10	(20)
N2	XTN3-6BFZ	Screw, 3x6	(3)
N3	XTN3+5J	Screw,	(3)
N4	XTW3+10Q	Screw,	(1)
N5	XTV3+20BFN	Screw, 3x20	(5)
N6	XTV3+20BFZ	Screw, 3x20	(2)
N7	SFXGD05N01	Screw	(2)
N8	XTV3+8BFN	Screw, 3x8	(1)
N9	SFXGC05N02	Screw	(3)
N10	SFXGC05N03	Screw	(2)
N11	XTW3+14QFYR	Screw,	(6)
N12	XTV3+6BFN	Screw, 3x6	(4)
N13	XWC3B	Washer, φ3	(1)
N14	XUB3FP	Washer, φ3	(1)
N15	SFXW551D2	Washer	(1)
N16	SFGCC05N04	Washer	(3)
N17	SFGCD05N02	Washer	(2)
N18	SFXWC05N07	Washer	(3)
N19	SFXWC06N02	Washer	(1)
N20	XNC3HS	Nut, φ3	(5)

Ref. No.	Part No.	Description	
<b>SCREWS, WASHERS AND NUT</b>			
N21	SFPEV00502	Screw, Cartridge	(1)
N22	XSN3+12S	Screw, 3x12	(1)
N23	XTN3+8BFZ	Screw, 3x8	(2)
N24	XTN28+6BFZ	Screw, 2.6x6	(1)
N25	XTW26+6JFZ	Screw, 2.6x6	(2)
N26	XTV3+10BFZ	Screw, 3x10	(1)
N27	XTN2+6JFZ	Screw, 2x6	(1)
N28	XTN2+4JFZ	Screw, 2x4	(1)
N29	XWA3B	Washer, φ3	(1)
N30	XWG3	Washer, φ3	(1)
N31	XWC26AFY	Washer, φ2.6	(1)
N32	SFPEW00701	Washer	(1)
<b>ACCESSORIES</b>			
A1 [EK]	SFNUQL5G01	Instruction Book	(1)
A1 [EG]	SFNUQL5R01	Instruction Book	(1)
A1 [EF]	SFNUQL5F01	Instruction Book	(1)
A1 [Ei]	SFNUQL5I01	Instruction Book	(1)
A1 [XL, XA, XM]	SFNUQL5X01	Instruction Book	(1)
A1 [PA, PE, PC]	SFNUQL5P01	Instruction Book	(1)
A1 [Other Areas]	SFNUQL5S01	Instruction Book	(1)
A2	SFDHC05N01	Phono Output Cord	(1)
A3	SFDLC05N01	Ground Wire	(1)
A4[EK]	SFDAC05G02	AC Cord	(1)
A4[XL]	SFDAC05L01	AC Cord	(1)
A4[XA, XM]	SFDAC05X02	AC Cord	(1)
A4[PA, PE, PC]	SFDAC05N01	AC Cord	(1)
A4[Other Areas]	SFDAC05E02	AC Cord	(1)
A5[XA, XM,]only	SFDK119118	2 Pin Plug	(1)
A6[PA, PE, PC]only	QJP0603S	Adaptor, Gimens	(1)
<b>PACKING PARTS</b>			
P1 [EF] only	SFHPQL5C01	Carton Box (Silver)	(1)
P1 [Other Areas]	SFHPQL5M01	Carton Box (Silver)	(1)
P1 [EF] only	SFHPQL5C21	Carton Box (Black)	(1)
P1 [Other Areas]	SFHPQL5M21	Carton Box (Black)	(1)
P2	SFHHL13R01	Pad, Front	(1)
P3	SFHHL13R02	Pad, Rear	(1)
P4	SFHKC05N01	Clamper, Turntable	(3)
P5	SFHKC05N02	Spacer, Tonearm	(1)
P6	SFHSL13R01	Spacer, Dust Cover	(1)
P7	SFHDQ06N01	Pad,	(1)
P8	SFYF33B35	Turntable Mat	(1)
P9	SFYH60x60	Polyethylene Bag, Turntable Mat	(1)
P10	SFYH18x17	Polyethylene Bag, Set Accessories	(1)