# **Service Instructions**



# Lenco L 744 DD

# L 744 Direct Drive Auto-return

## **Technical Specifications**

#### **Drive Mechanism**

Power Supply, Voltage Power Supply Drive System Motor Speeds Speed (Pitch) Control Power Consumption Weight, turntable platter Diameter, turntable platter Construction, turntable platter:

Dimensions

Tone-arm Material Effective length Overhang Tone-arm bearings Offset angle Tracking error angle

and 114 mm from turntable center Tone-arm bearing friction vertical

110-130 V or 220-240 V AC 50 or 60 Hz **Direct drive** D.C. electronic commutation 331/3, 45 min-1  $\pm 3\%$ approx. 6.5 VA at 220 V/50 Hz 1.6 kg 320 mm

Aluminium die-cast with machined 331/3, 45 min-1 stroboscope markings for 50 and 60 Hz 462×362×145 mm

S-form, statically balanced

Precision point and ball bearings

+ 2.34°/-1° between 60 mm

and 145 mm, zero point at 64 mm

1.5 mN

1.5 mN

Ø 8 mm aluminium tube

17 mm, adjustable

227.1 mm

horizontal

26

≤

Rumble S/N ratio (DIN B) Wow and flutter (DIN) Wow and flutter (JIS) Tracking force, adjustable through Antiskating

Tone-arm weight:

Rumble S/N ratio

(DIN A)

50 dB 70 dB ± 0.08 % ± 0.045 % WRM <

0-50 mN For elliptical 0-30 mN spherical 0-50 mN 0-25 mm Shibata for dry and wet playing

Specifications and availability are subject to change!

Description label is to be found underneath the turntable platter

# Correct ordering of spare parts

When ordering spare parts please specify the complete name, part number, and the relevant page number of the service manual for each required part.

By this method you will be sure to obtain the required part.

#### Attention:

Only complete motors are available for replacement.

# Technical description of the motor

The turntable is directly driven by the motor axle. The speed is electronically controlled. A single change-over switch switches between the two speeds  $33^{1/3}$  and 45 rpm. The speeds can be exactly adjusted with the fine speed control and the illuminated stroboscope.

# **Detailed description**

Drive motor with speed stabilization and fine speed control. The motor is an external rotor DC motor with electronic commutation. The rotor is comprised of a permanent magnetic ring and position sensing elements. The stator is comprised of drive coils, control coils, position sensing coils, bearings and, underneath, the electronic circuit. The position sensing elements act as electronic commutation. The control voltage for the electronic speed control is obtained from the separate control coils. The control circuit operates by comparing the voltage from the control coils, which is proportional to the speed, with a reference voltage. The resulting voltage difference controls the current in the drive coils. The speed change and fine speed control simply change the reference voltage.

The complete electronic is mounted in the lower part of the motor. The circuit is very simple as virtually all the components are mounted in the specially developed integrated circuit.

#### **Power supply**

The power supply is very simple with all components except the transformer being mounted on a printed circuit board. The AC voltage from the transformer is full wave rectified by bridge G 1, and then smoothed by capacitor C 10. The resulting DC voltage is further regulated by transistor T 3 in conjunction with zener diode 18 giving 18 V to drive the motor electronic.

#### **General information**

1. Mains voltage 2. Fuses	220 V or 1 × 63 mAT	110/220 V Primary	
Power supply	01.		
1. Mains current at 2	220 V AC	= 12 mA	
2. DC Voltage U1 Measured betwee collector transiste		= 23.2-25.6 V	
3. Stabilized DC volt Measured betwee	age for motor $n M - (-)$ and $M + (+)$	= 16.2 - 18.5 V	

## Speed setting

#### 331/3 RPM, 50 Hz:

With fine control knob in middle position correct, with corresponding adjustment resistor 15 on the PCB (Fig. 4), until the top stroboscope ring appears stationary. 45 rpm, 50 Hz:

With fine control knob in middle position correct, with corresponding adjustment resistor 16 on the PCB (Fig. 4), until the stroboscope ring next to the top appears stationary.

331/3 RPM, 60 Hz; 45 RPM, 60 Hz:

Same as with 50 Hz: For  $33^{1}/_{3}$  rpm, 60 Hz observe the next to the lowest strobe ring and for 45 RPM, 60 Hz the lowest strobe ring.

# Fault finding and diagnosis

Fault

Unit does not work, neon lamp does not light.

Neon lamp lights but unit

switching off, neon lamp

Fine control does not work.

does not work. After

Motor does not turn.

Motor turns but not

properly.

lights, faintly.

Fuse 63 mAT blows.

Check fuse 63 mAT.

Cause

Short circuit in primary circuit. Short circuit in neon lamp or its socket.

Transformer defective. To check, secondary connections have to be desoldered and the primary current measured.

The primary no load current should be about 12 mA AC at 220 V, 50 Hz.

Printed circuit board takes too much current. Short circuit in cables. Electrolytic condensers C10, C12 defective.

Short in motor.

Primary winding in the mains transformer is open circuit.

P 1 or 2 or their connections defective. Component in motor or motor defective.

Motor mechanically blocked.

Supply voltage from T 3 defective. Broken connection to motor. IC or other component in motor defective.

Incorrect voltage from T 3. IC or diodes D 6, D 7, D 8 in motor defective. Connections from motor broken.

Motor does not start in one position.

#### Coil in stator defective. IC or diodes D 1, D 2, D 3 in motor defective.

**Important:** In case of motor defect the complete motor must be replaced. Only complete motors are available for replacement.

# Adjustment Instructions for L-744 DD

Step	Check	Pre-adjustment	Adjustment	Nominal Value	Remarks
1	Cartridge Overhang Tonearm height	<ul> <li>Slightly tighten screw 1, Fig. 1.</li> <li>Stick sleeves of the connection wires onto cartridge.</li> </ul>	<ul> <li>Adjust overhang with stylus adjustment gauge.</li> <li>Tighten screw 1.</li> <li>Loosen tonearm again and check if position of cartridge in head is parallel (gap/light test)</li> </ul>	<ul> <li>Overhang: 16.9 mm.</li> <li>Effective tonearm length: 227,1 ± 1 mm.</li> </ul>	<ul> <li>With adjustment screw 2, Fig. 1, set height of tone arm above tone arm support to about 1 mm.</li> <li>At minimum the lift must be set so stylus can be lowered to turntable platter.</li> </ul>
2	Electrical On – OFF switch	<ul> <li>Slightly tighten screw</li> <li>3, Fig. 2.</li> <li>Lock tonearm on its support.</li> </ul>	- Turn lever 4, Fig. 2, until micro-switch 5 Fig. 2, switches off.	<ul> <li>Switch-on pt.: Stylus tip min. 155 mm. from spindle.</li> <li>Switch-off point: 7 mm. between tone arm tube and tone arm rest.</li> </ul>	<ul> <li>At tone arm replacement</li> </ul>
3	Mechanical auto-stop and return (readiness to stop)	– Stylus – Spindle middle Set at 61 mm.	- With screw 6, Fig. 2, adjust until stop plate 7, Fig. 3, is engaged by cam 8, Fig. 3.		<ul> <li>Important: Correctly adjust stop-lock.</li> </ul>
4	Arm lift stroke	189 V.	– With screw 9, Fig. 4		<ul> <li>When tone arm return takes place before tone arm lift.</li> </ul>
5	Stop-lock	- Tone arm on support	<ul> <li>Stop-wire 10 must lightly touch stop lever 11, Fig. 4.</li> </ul>		<ul> <li>At operation of stop-switch the tone arm may not move on its rest and stop lever 11 may not touch friction plate 13, Fig. 3.</li> </ul>
6	LPI		<ul> <li>With screw 14,</li> <li>Fig. 2, turn</li> <li>trimplate so LPI</li> <li>lights up to 30</li> <li>at start of a</li> <li>30 cm. record.</li> </ul>		<ul> <li>Check with records of other diameters.</li> </ul>

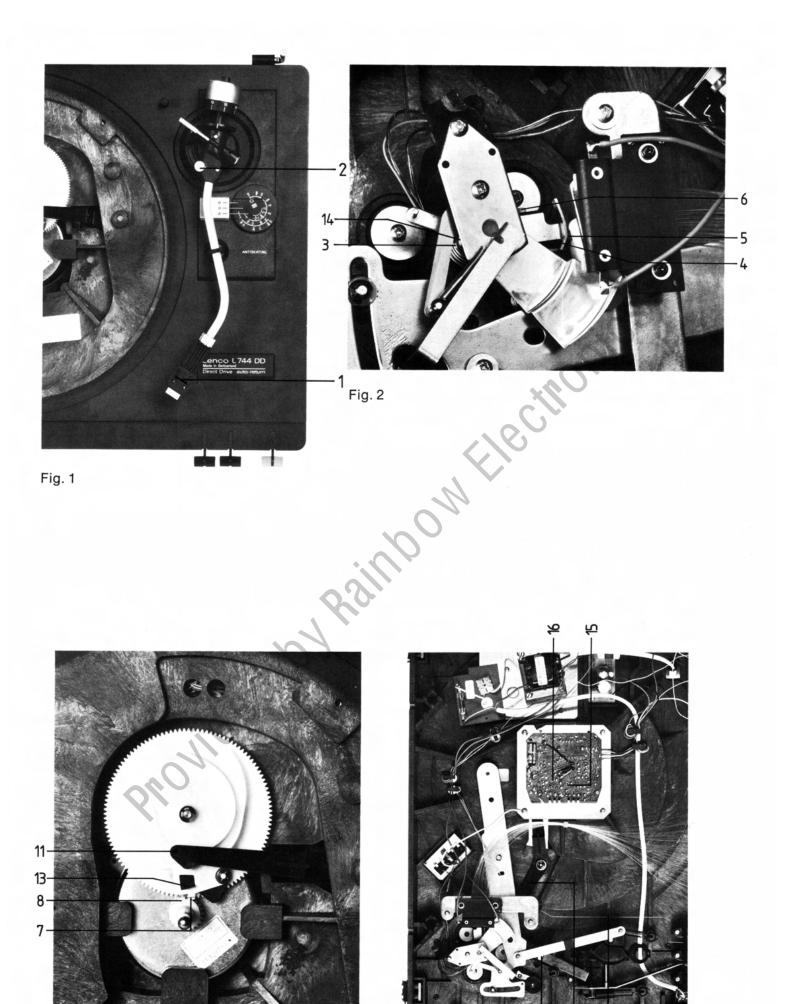


Fig. 3

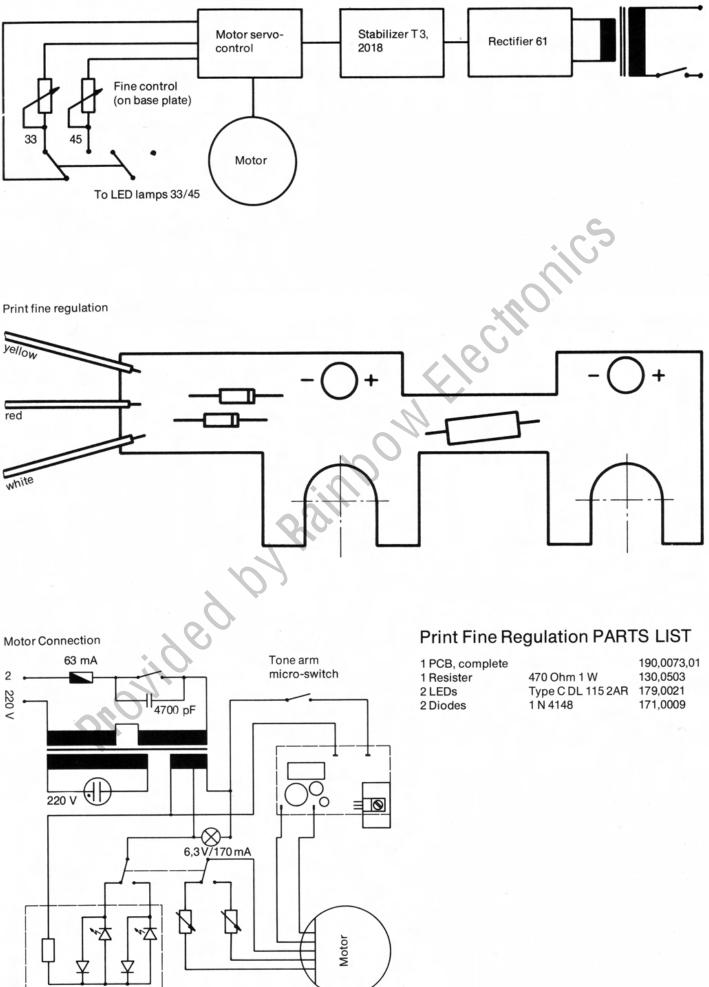
Fig. 4

1-

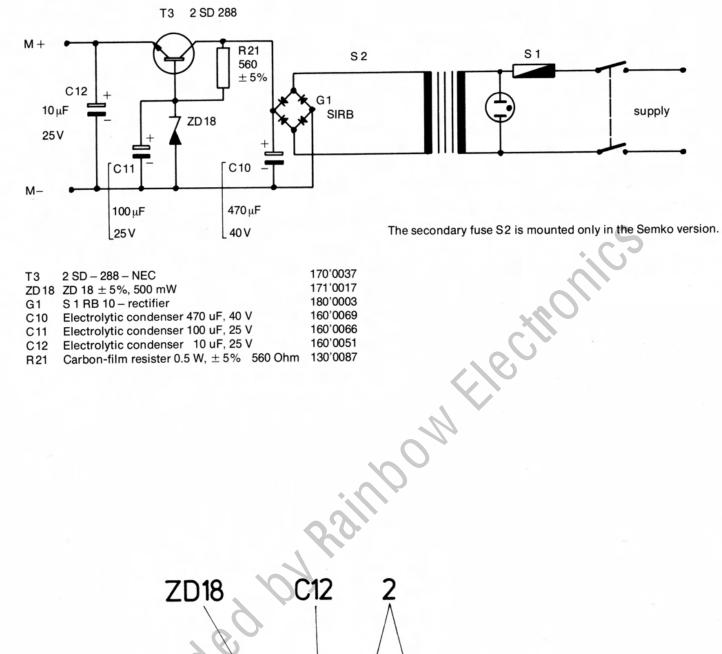
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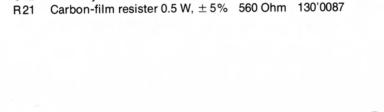
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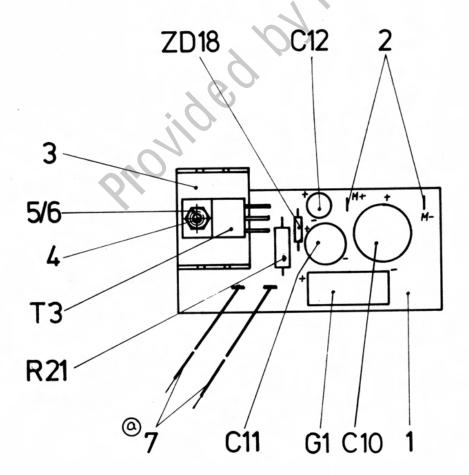
# Fine-setting BLOCK DIAGRAM



SUPPLY



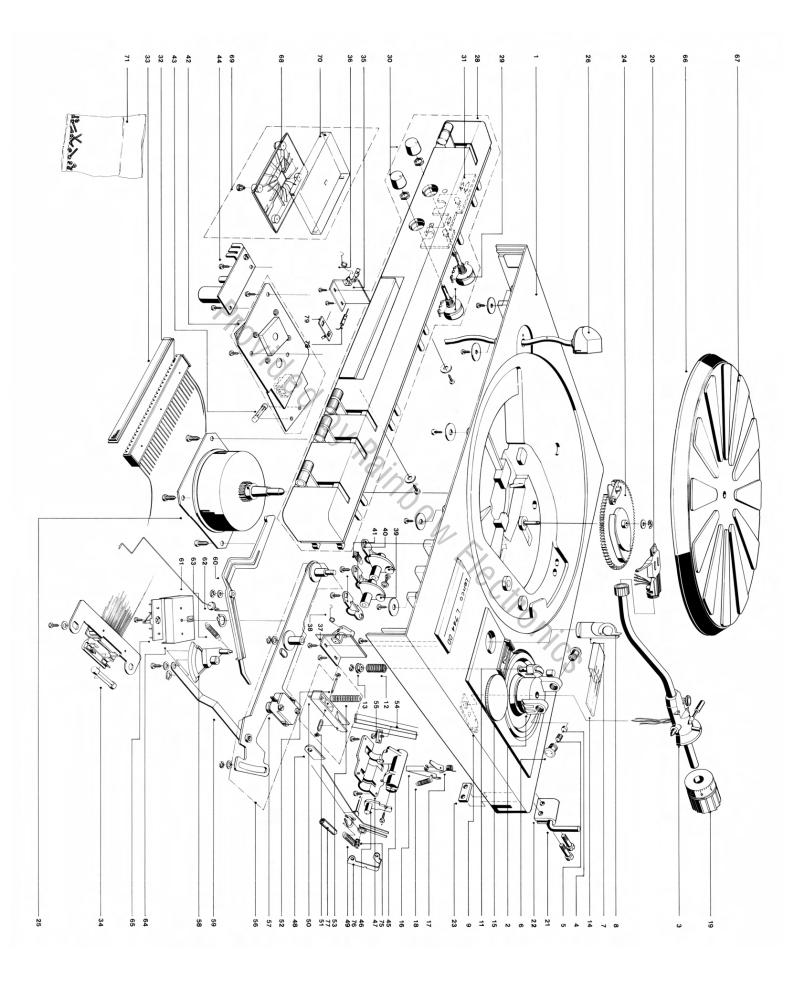




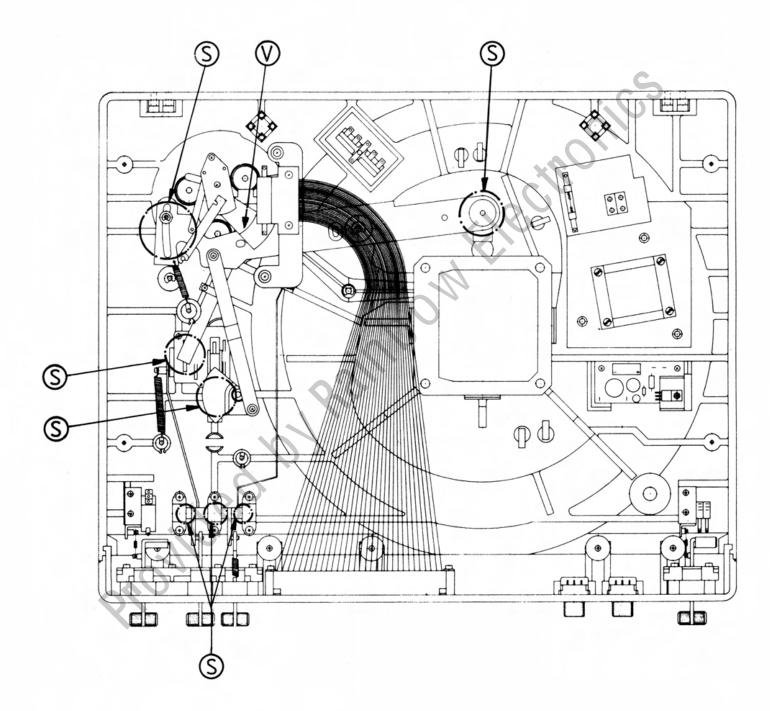
0 Lenco 40841 0

Pos.	PART	Stock No.
1	Housing, spray-painted – beige	050,0867,01
	Housing, spray-painted – black	050,0886,01
2	Tone arm support with axle	085,0033,01
3	Tone arm, complete	079,0063,01
4	Bearing RGC Type C73 C4	046,0023
5	Damping	070,0099
6	Bearing nut	060,0305
7	Tone arm support	050,0489,01
8	Tone arm support lock	050,0490,01
9	Bearing plate, complete	090,0586,01
11	Arm lift segment	050,0924,01
12	Pressure spring	081,0067
13	Bush	057,0464
14		
	Marking indicator, complete	050,0900,01
15	Setting disk, complete	050,0836
16	Anti-skating lever, riveted	090,0571,01
17	Rotating spring	083,0010
18	Tension spring	080,0014
19	Counter-weight, complete	060,0364,01
20	Plug-in head	225,0017,07
21	Hinge angle	057,0334,01
22	Hinge clamp	050,0454
23	Stop plate	090,0375,01
24	Curve wheel, complete	050,0897,01
25	Motor	271,0017,01
26		
	Stroboscope, complete-CSA	179,0031,01
28	Trimplate, complete	050,0921,01
29	Rotating potentiometer	147,0057
30	Knob	050,0831
31	Printed circuit board (PCB),	050,0051
51		100 0075 01
20	complete	190,0075,01
32	LPI, complete	050,0840,01
33	View window	050,0851
34	Lamp	179,0022
35	Support plate, complete	090,0543,01
36 37	Hinge spring Support plate, complete	077,0039
	- Variation I	090,0546,01
	Support plate, complete	000 05 17 01
~	- Variation II	090,0547,01
38	Hinge spring	077,0039
39	Guide segment	050,0823,01
40	Bearing shell	050,0821,01
41	Tension spring	080,0078
42	Mains transformer, complete	
	– 220 V / 50 Hz	055,0058,01
	Mains transformer, complete – 110 V / 220 V	055,0060,01
	Mains transformer, complete	
	– 240 V: BS	055,0061,01
	Mains transformer complete	
	Mains transformer, complete	055 0062 01
	– 220 V: D	055,0062,01
		055,0062,01

Pos.	PART	Stock No.	
43	Fuse – 400 mAT	178,0016	
	Fuse – 125 mAT	178,0025	
	Fuse – 63 mAT	178,0029	
	Fuse – 100 mAT	178,0035	
44	PCB assembly	190,0040,01	
45	Cam shaft	050,0818,01	
46	Off-center lever	050,0828,01	
47	Cover	050,0910,01	
48			
	Switch lever, riveted	090,0565,01	
49	Tension spring	080,0051	
50	Rocker	050,0911,01	
51	Rubber ring	070,0134	
52	Axle	057,0462	
53	Pressure spring	081,0068	
54	Lever	090,0530,01	
55	Support	050,0753,01	
56	Transmission lever,		
	complete - standard	090,0568,01	
	Transmission lever,	000,0000,01	
	complete – Demko	000 0574 01	
57		090,0574,01	
57	Micro-switch	090,0574,01	
58	Curve disk	050,0811,01	
59	Lever	090,0531,01	
60	Switch-off lever	050,0798	
61	Switch-off wire	077,0091	
62	Lead-through bush	070,0149	
63	Tension spring	080,0027	
64	Screening case	090,0467,01	
65	Contact holder, complete	097,0005,01	
66	Turntable platter	285,0008	
67	Turntable rubber mat	070,0116	
68	Bottom panel, spray-painted	330,0265,01	
69		350,0203,01	
09	Base spring-suspension,	050 0005 01	
70	complete	050,0835,01	
70	Dust cover, complete	330,0241	
71	Set of screws, consisting of: 2 cylindrical screws with	288,0023,01	
	cross-slotted head M25×8 2 cylindrical screws with	000,0061	
	cross-slotted head M25×10 2 cylindrical screws with	000,0062	
	cross-slotted head M25×12 2 cylindrical screws with	000,0081	
	cross-slotted head M25×14 2 cylindrical screws with	000,0064	
	cross-slotted head M25×16 2 cylindrical screws with	000,0066	
	cross-slotted head M25 × 18	000,0084	
	2 slotted nuts	060,0279	
	1 plastic bag	073,0318	
75	Pressure spring	081,0072	
76	Tone arm lift lever	081,0072	
77	Soflex tube	121,0037,02	
78 79	Resister 10 kOhm $1/2$ W $\pm$ 5%	130,0061	
/ 9	Soldering lug strip with eyelet	097,0007,01	



# Lubricating Plan



S= Graisse Silicones, Rohdorsil SA V= Oil 47 V, 500 000 C



Plattenspieler

TelefunkenS-900LencoL 744 DD

# **Rep. & Service Instruction**







Plattenspieler

S 900 hifi

Order-Nr. 319461225

Das Chassis des Plattenspielers ist als HS 20 hifi unter der Baustein-Nr. BS 5815 in Kompaktanlagen eingebaut.

The record players chassis is incorporated in compact units as HS 20 hifi under the construction no. BS 5815.

Ausgangsspannung Kanaltrennung

Frequenzgang

Kanalbalance

Impedanz

Auflagekraft

Ersatznadel

Le chassis du tourne-disques est incorporé dans des systèmes compacts comme HS 20 hifi sous le no. d'élément standardisé BS 5815.					
Technische Daten		Technical Data	Caractéristiques techniques		
Allgemeine Daten		General Data	Généralités		
Stromversorgung	220/110 V (50/60 Hz)	Power supply	Alimentation		
Antriebssystem	Direct-Drive	Drive System	Système d'entraînement		
Motor	kollektorloser Gleichstrommotor 18 V DC	Motor	Moteur		
Drehzahlen	33 1/3, 45 min <sup>-1</sup>	Speeds	Vitesse		
Drehzahlfeinregulierung	±3%	Speeds (Pitch) Control	Réglage de vitesse		
Leistungsaufnahme	ca. 2,2 VA bei 220 V/50 Hz	Power Consumption	Consommation		
Plattenteller	1,3 kg schwer, 305 mm Ø, Alumium-Druckguß, mit 33 ¹/₃, 45 min⁻¹ = Markierungen für 50 und 60 Hz	Turntable platter	Plateau		
Gehäuse-Abmessungen	460 x 350 x 140 mm	Housing dimensions	Dimensions du boitier		
Tonarm	S-förmig, statisch ausbalanciert	Tone-arm	Bras de lecture		
Material	Ø 8 mm Alu-Rohr	Material	Matière		
Tonarmlänge effektiv	227,1 mm	Effective length	Longueur effective		
Überhang	17 mm verstellbar	Overhang	Porte-à-faux		
Tonarmlager	Präzions-Spitz- und Kugellager	Tone-arm bearings	Palier du bras de lecture		
Kröpfungswinkel	26°	Offset angle	Angle correcteur		
Spurfehlwinkel	0,16°/cm	Tracking error angle	Angle de désalignement tangentiel max.		
Tonarmlagerreibung	vertikal: 1,5 mN; horizontal: 1,5 mN	Tone-arm bearing friction	Frottement du bras de lecture		
Rumpelfremdspannungs-	Volukal. 1,5 mill, Honzonal. 1,5 mill	Rumble S N ratio (DIN A)	Composante de ronronnemen		
abstand (DIN A)	$\ge -45 \text{ dB}$		(rumble) mesure non pondéré (DIN A)		
Geräuschspannungs-		Rumble S N ratio (DIN B)	Rapport signal/bruit (DIN B)		
abstand (DIN B)	≧ – 72 dB				
Gleichlauf-		Wow & flutter (DIN)	Pleurage et scintillement (DIN		
schwankungen (DIN)	≦ 0,055 %				
Auflagekraft,		Tracking force,	Réglage de la force d'applicat		
stufenlos einstellbar	0-50 mN	adjustable through	Antiplecting		
Antiskating	elliptisch 0–30 mN; sphärisch 0–50 mN Trocken- und Naßabspielen	Antiskating	Antiskating		
Tonabnehmer		Pick-up	Système de pick-up		
Тур:	Stereo-Tonabnehmer, magnetisch ORTOFON F 15 0 MK II	Туре	Туре		

150 MK II 20-20000 Hz 5 mV (1 kHz, 5 cm/s Schnelle) > 20 dB bei 1 kHz < 2 dB bei 1 kHz 3,8 kΩ 15 mN ORTOFON N 150 MK II

#### Frequency response Output voltage Channel separation Channel balance Impedance Stylus force Spare stylus Alterations reserved

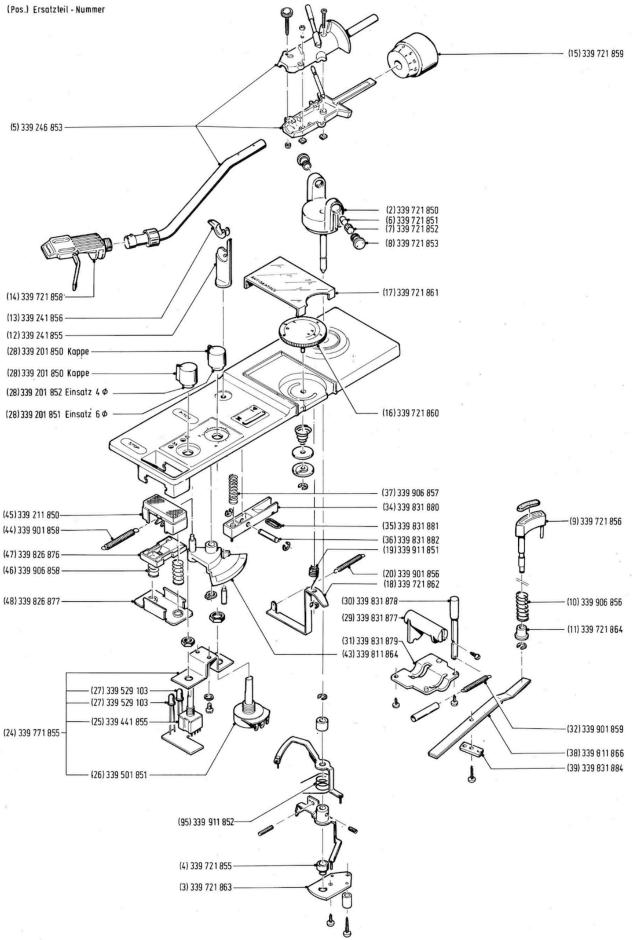
ation

Bande passante Tension de sortie Séparation canaux Balance des canaux Impédance Force d'appul Aiguille de remplacement Tous droits de modification réserve

#### Änderungen vorbehalten

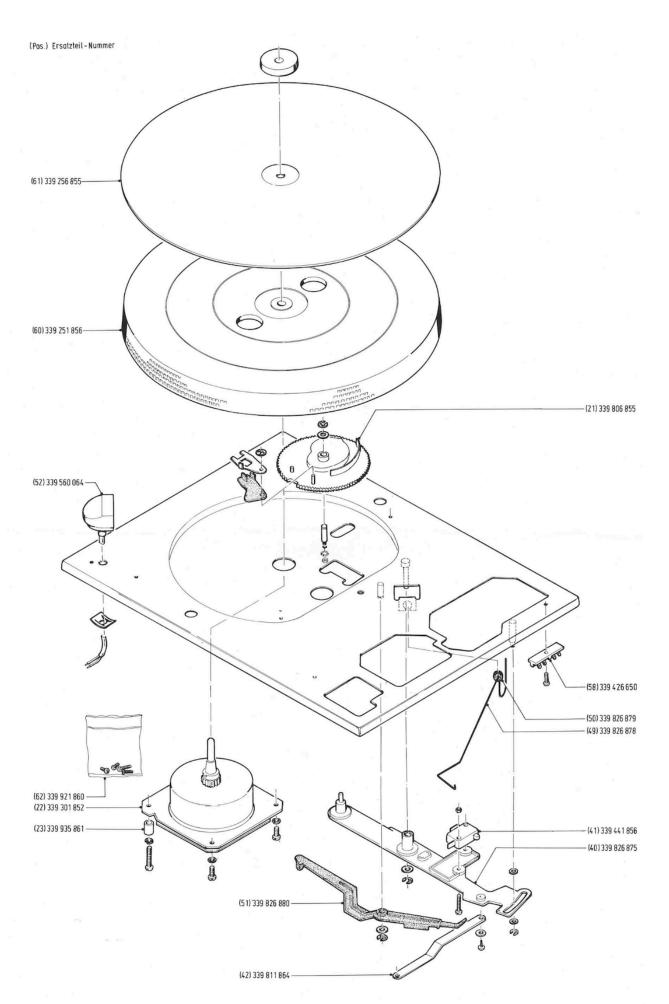
# Justierhinweise für S 900 hifi

Pkt.	Kontrolle	Voreinstellung	Einstellung	Sollwert	Bemerkung
1	Abtastsystem Überhang Tonarmhöhe	<ul> <li>Schrauben 1 Abb. 1 leicht anziehen</li> <li>Steckhülsen der Anschlußleitung auf System stecken gem. Abb. 2</li> </ul>	<ul> <li>Mit Nadeleinstellehre Überhang einstellen</li> <li>Schrauben 1 festziehen</li> <li>Tonarmkopf wieder lösen und parallelen Sitz des Systems im Kopf überprüfen (Lichtspaltprobe)</li> </ul>	<ul> <li>Überhang 16,9 mm</li> <li>effektive Tonarmlänge 227,1 ± 1 mm</li> </ul>	<ul> <li>Mit Stellschraube 2 Abb. 1 Höhe des Tonarmes über Tonarmstütze ca. 1 mm einstellen</li> <li>Nadel muß mit Lift im Minimum auf Platten- teller abgesenkt werden können</li> </ul>
2	Elektrischer Ein-Ausschalter	<ul> <li>Schraube 3 Abb. 4 leicht anziehen</li> <li>Tonarm auf Stütze arretieren</li> </ul>	<ul> <li>Hebel 5 Abb. 4 drehen bis Micro- Schalter 6 Abb. 4 ausschaltet</li> </ul>	<ul> <li>Einschaltpunkt: Nadelspitze min. 155 mm von Achs- mitte Motor</li> <li>Ausschaltpunkt: 7 mm zwischen Tonarmrohr und Anschlag Tonarm- stütze</li> </ul>	Bei Tonarmwechsel
3	Mechanische Abstell-Rückführ- Automatik (Abstellbereit- schaft)	<ul> <li>Abstand – Nadel – Achsmitte auf</li> <li>61 mm einstellen</li> </ul>	<ul> <li>Mit Schraube 7 Abb. 4 einstellen bis Abstell- plättchen 8 Abb. 3 an Nocken 9 Abb. 3 anschlägt</li> </ul>		<ul> <li>Wichtig: Stop-Sperre richtig einstellen</li> </ul>
4	Armliftweg		Mit Schraube 10     Abb. 4		Wenn Tonarm- rücktransport vor Abhebung des Tonarms
5	Stopsperre	Tonarm auf Stütze	<ul> <li>Stop-Draht 11 muß Abstellhebel 12 leicht berühren Abb. 4</li> </ul>		<ul> <li>Bei Betätigung der Stop-Taste darf sich der Tonarm auf der Tonarmstütze nicht bewegen und der Abstellhebel 12 das Friktionspl. 13 Abb. 3 nicht berühren</li> </ul>
6	Geschwindigkeit	Pitch auf Null	<ul> <li>Mit Einstellwider- stand 14 für 33 <sup>1</sup>/<sub>3</sub> min<sup>-1</sup> und Einstell- widerstand 15 für 45 min<sup>-1</sup> Abb. 4 Kontrolle mit Stroboskop</li> </ul>		



Wichtig: Bei Ersatzteilbestellungen bitte unbedingt die neunstellige Ersatzteilnummer angeben. N.B. When demanding Spare Parts it is absolutely necessary to quote the nine digit Part Number.

Important: Lors d'une commande de pièces de rechange, prière en tout cas d'indiquer le numéro d'article à 9 chiffres.



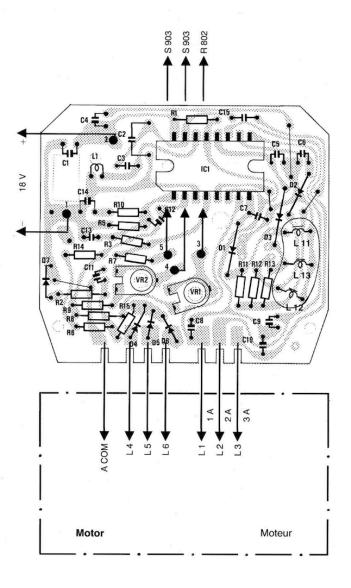
Wichtig: Bei Ersatzteilbestellungen bitte unbedingt die neunstellige Ersatzteilnummer angeben.
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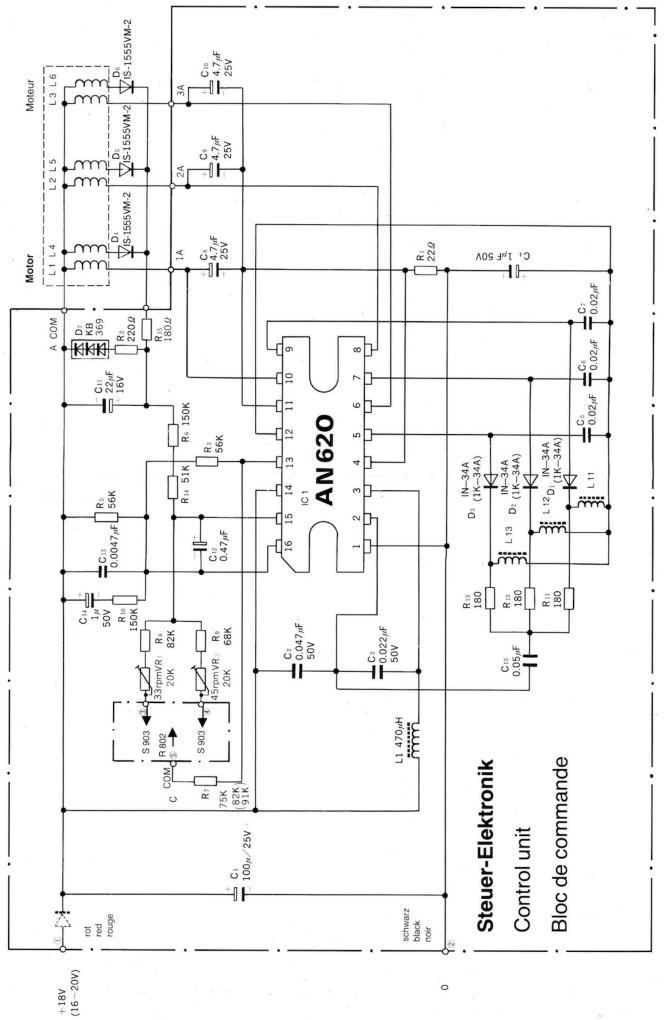
# Ersatzteilliste · Spare parts list · Liste de pièces de rechange

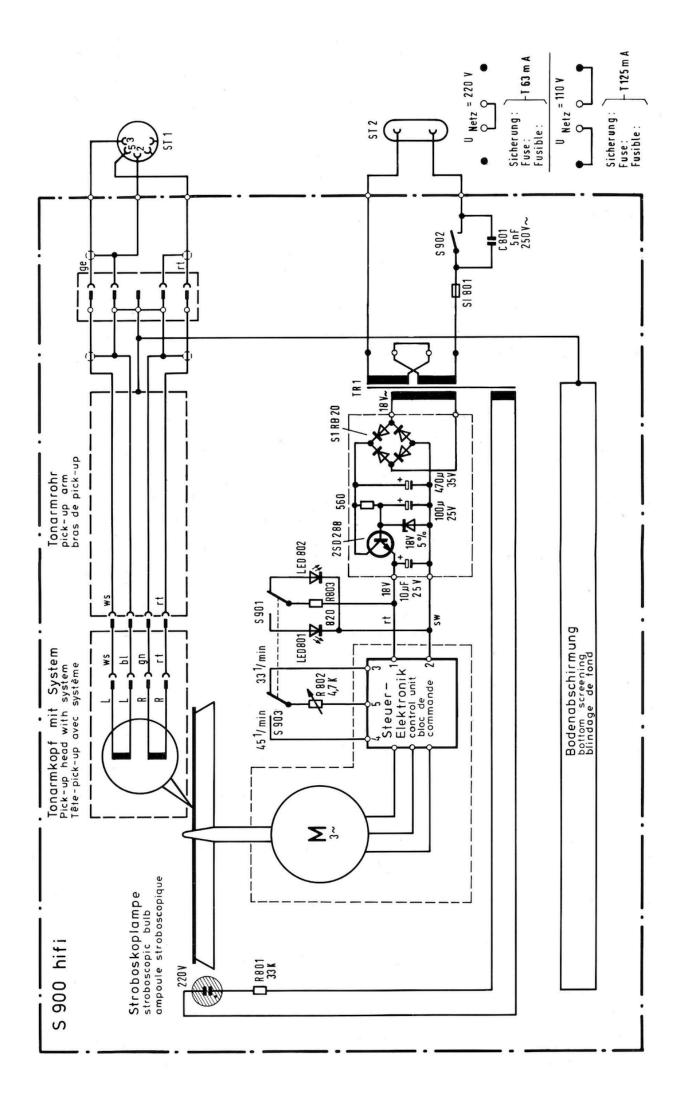
Wichtig: Bei Ersatzteilbestellungen bitte unbedingt die neunteilige Bestellnummer angeben! N. B.: When demanding Spare Parts it is absolutely necessary to quote the nine digit Part Number quoted herein! Important: Lors d'une commande de pièces de rechange, prière en tout cas d'indiquer le numéro d'article à 6 chiffres!

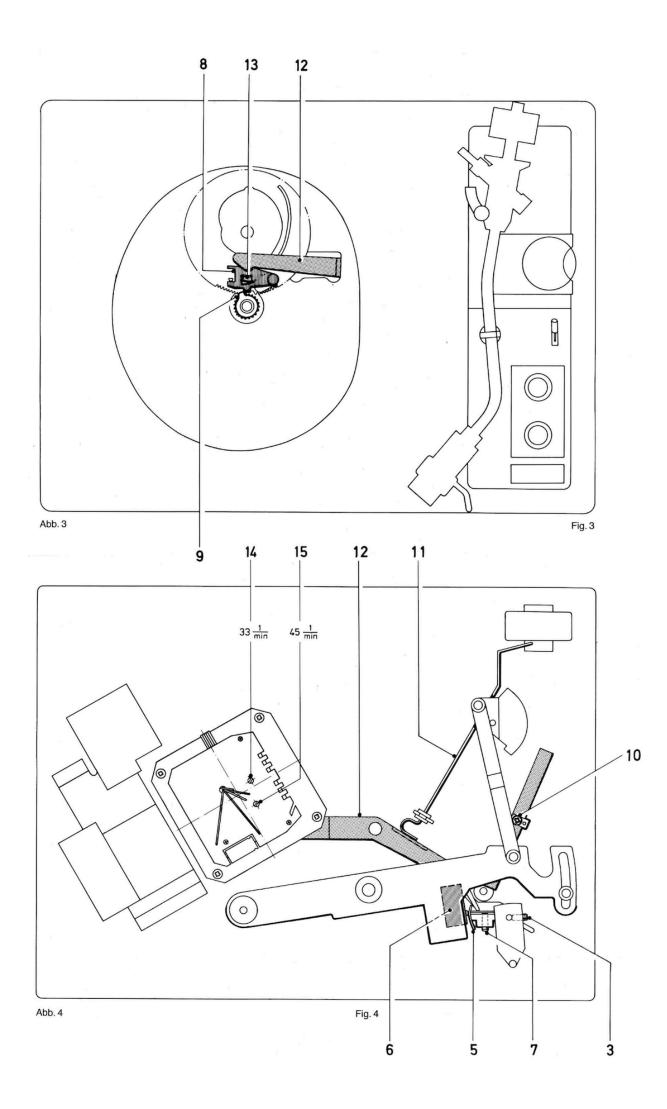
Position	Order-No.	Benennung, Item, Description
IC 1	339 575 073	IC AN 620
D 1, 2, 3	309 327 903	Diode 1N-34 A
D 4, 5, 6	339 529 140	Diode IS-1555 VM-2
D 7	339 529 139	Diode KB-369

# Steuer-Elektronik · control unit · bloc de commande









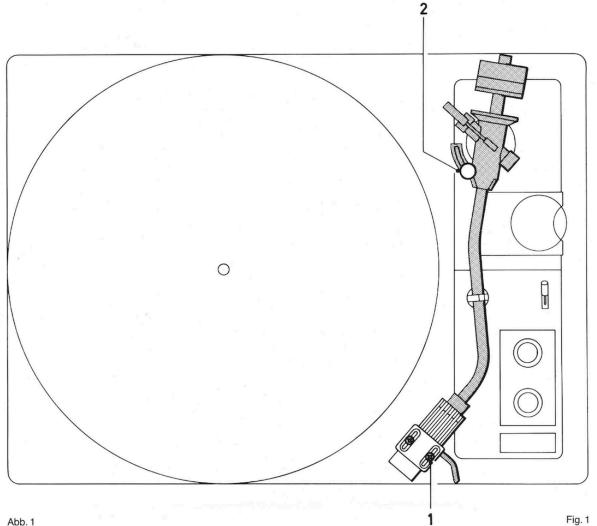
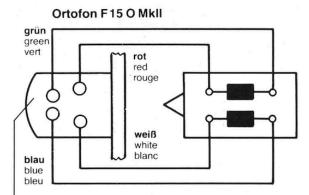


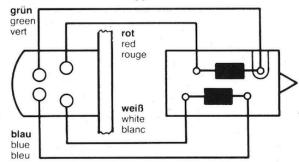
Abb. 1

Fig. 1



Tonkopfstecker: Ansicht von der Lötseite auf die Steckerstifte Magnetic headplug: view from soldered side onto plug pins Prise de tête sonore: vue du côté de soudre sur chevilles

### Shure M75 MG Type 2

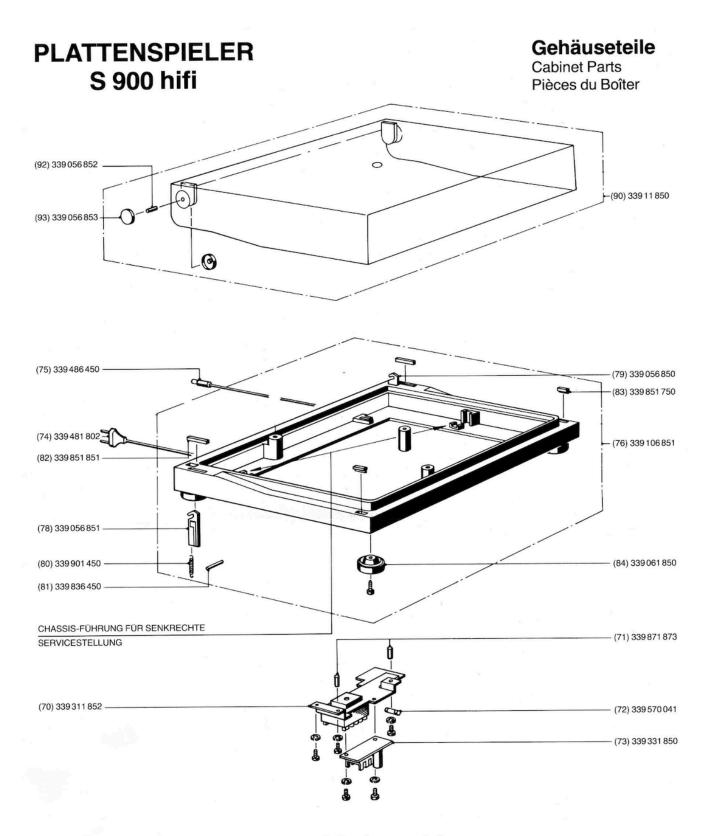


# Indications d'ajustage pour S 900 hifi

No	Contrôle	Préréglage	Réglage	Valeur de consigne	Remarque
1	Lecteur Porte-à-faux Hauteur du bras	<ul> <li>Serrer légèrement les vis 1 fig. 1</li> <li>Enficher les douilles de la conduite de raccordement sur le système selon fig. 3</li> </ul>	<ul> <li>Régler le porte-à- faux avec le calibre</li> <li>Serrer les vis 1</li> <li>Desserrer à nouveau la tête du bras de lecture et vérifier la paralléléité du système dans la tête (essai de fente lumineuse)</li> </ul>	<ul> <li>Porte-à-faux 16,9 mm</li> <li>Longueur effective du bras de lecture: 227,1 ± 1 mm</li> </ul>	<ul> <li>Régler à l'aide de la vis de réglage 2, fig. 1 la hauteur du bras par rapport à l'appui du bras: 1 mm env.</li> <li>L'aiguille doit pouvoir être descendue au minimum à l'aide du lift sur la platine</li> </ul>
2	Interrupteur électrique marche/arrêt	<ul> <li>Serrer légèrement la vis 3, fig. 4</li> <li>Bloquer le bras de lecture au-dessus de son appui</li> </ul>	<ul> <li>Tourner le levier 5, fig. 4 jusqu'à ce que le micro-inter- rupteur 6, fig. 4 commute</li> </ul>	<ul> <li>Point de mise en marche: pointe de l'aiguille à 155 mm min du milieu de l'axe du moteur</li> <li>Point de d'inter-ruption: 7 mm entre le tube du bras et la butée de l'appui du bras</li> </ul>	<ul> <li>En cas de remplace- ment du bras de lecture</li> </ul>
3	Mécanisme automatique d'arrêt et de retour	<ul> <li>Régler le centre de l'axe de l'aiguille à 61 mm</li> </ul>	<ul> <li>Régler avec la vis 7, fig. 4, de sorte que les plaquettes 8, fig. 3 butent contre la came 9, fig. 3</li> </ul>		<ul> <li>Important: régler convenablement le blocage du stop</li> </ul>
4	Course du lift du bras de lecture		<ul> <li>Avec la vis 10, fig. 4</li> </ul>		<ul> <li>Si le transport retour du bras se fait avant le soulèvement du bras</li> </ul>
5	Blocage du stop	Bras de lecture sur l'appui	<ul> <li>Le fil d'arrêt 11 doit effleurer le levier d'arrêt 12, fig. 4</li> </ul>		• En actionnant le bouton stop, le bras ne peut pas se déplacer sur l'appui, et le levier d'arrêt 12 ne peut pas touche la plaque de friction 13, fig. 3
6	Vitesse	<ul> <li>Pitch à zéro</li> </ul>	<ul> <li>Avec une résistance de réglage 14 pour 33 1/a tr/mn et résistance de réglage 15 pour 45 tr/mn, fig. 4; contrôle avec stroboscope</li> </ul>		

# Adjustment Instructions for S 900 hifi

Pt.	Control	Preliminary Adjustment	Adjustment	Desired Value	Notes
1	Cartridge Overhang Tone arm height	<ul> <li>Screw 1, Fig. 1 tighten slightly</li> <li>Connect cable connector clips to cartridge in accordance with Fig. 2</li> </ul>	<ul> <li>Adjust overhang with stylus adjustment gauge</li> <li>Tighten screw 1</li> <li>Loosen cartridge shell again and check that the cartridge is seated parallel in the shell (light gap check)</li> </ul>	<ul> <li>Overhang 16.9 mm</li> <li>Tone arm effective length 227.1 ± 1 mm</li> </ul>	<ul> <li>Using adjustment screw 2, Fig. 1, set height of tone of tone arm approx. 1 mm above tone arm rest</li> <li>It must be possible to lower stylus to turntable with cueing lever at minimum</li> </ul>
2	Electrical on-off switch	<ul> <li>Tighten screw 3, Fig. 3 slightly</li> <li>Secure tone arm on rest</li> </ul>	<ul> <li>Rotate lever 5, Fig. 4, until microswitch 6, Fig. 4, switches off</li> </ul>	<ul> <li>Switch-on point: Stylus min. 155 mm from motor axis center</li> <li>switch-off point: 7 mm between tone arm tube and stop on tone arm rest</li> </ul>	<ul> <li>When changing tone arm</li> </ul>
3	Automatic mechanical shut-off and return (readiness for shut-off)	<ul> <li>Set stylus-shaft center distance of 61 mm</li> </ul>	<ul> <li>Adjust using screw 7, Fig. 4, until shut-off plate 8, Fig. 3, strikes cam 9, Fig. 3</li> </ul>		<ul> <li>Important: Adjust stop-block correctly</li> </ul>
4	Arm lift distance		With srew 10, Fig. 4		• if tone arm returns before it is lifted
5	Stop block	• Tone arm on rest	<ul> <li>Stop wire 11 must just touch shut-off lever 12, Fig. 4</li> </ul>		• When the stop button is actuated, the tone arm may not move on its rest and the shut-off lever 12 may not touch friction plate 13, Fig. 3
6	Speed	<ul> <li>Pitch at zero</li> </ul>	<ul> <li>Use adjusting resistance 14 for 33 1/3 RPM and adjusting resistance 15 for 45 RPM, Fig. 4. Check with stroboscope</li> </ul>		



Wichtig: Bei Ersatzteilbestellungen bitte unbedingt die neunstellige Bestellnummer angeben! N. B. When demanding Spare Parts it is absolutely necessary to quote the nine digit Part Number quoted herein! Important: Lors d'une commande de pièces de rechange, prière en tout cas d'indiquer le numéro d'article à 9 chiffres!

- Transport-Hinweise Plattenteller abnehmen und getrennt verpacken.
- Tonarm mit Halteklammer sichern.
- Tonarm-Gegengewichte getrennt verpacken.
- . Nach Möglichkeit die Originalverpackung verwenden.

#### Allgemeine Service-Hinweise

Zur Senkrechtstellung des Chassis bei Reparaturen befinden sich im Gehäuse entsprechende Führungsstege (siehe explodierte Darstellung).

#### Instructions for Transporting

- Remove turntable and pack separately
- Secure pick-up arm in holder. Remove couterweights from pick-up arm and pack individually.
- Use, if available, original packing.
- **General Instructions for Servicing** For putting the chassis into upright .
- position when carrying.

#### Instructions pour le transport

- Enlever le plateau porte-disque et l'emballer séparément.
- Fixer le bras de pick-up dans son support.
- Contre-poids du bras l'emballer séparément.
- Si possible, utiliser l'emballage original.

#### Instructions de service générales

Pour le positionnement en verticale du châssis pour des réparations, le boîtier contient les entretoises de guidage respectives (voir présentation explosée).

Änderungen vorbehalten Subject to modifications Modifications réservées