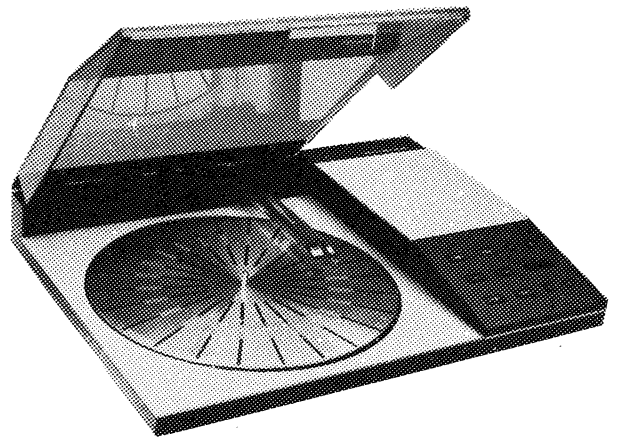


# Bang & Olufsen



## **Beogram 6002**

type 5641/42/43/45/46/47

## **Beogram TX**

type 5651/52/53/55



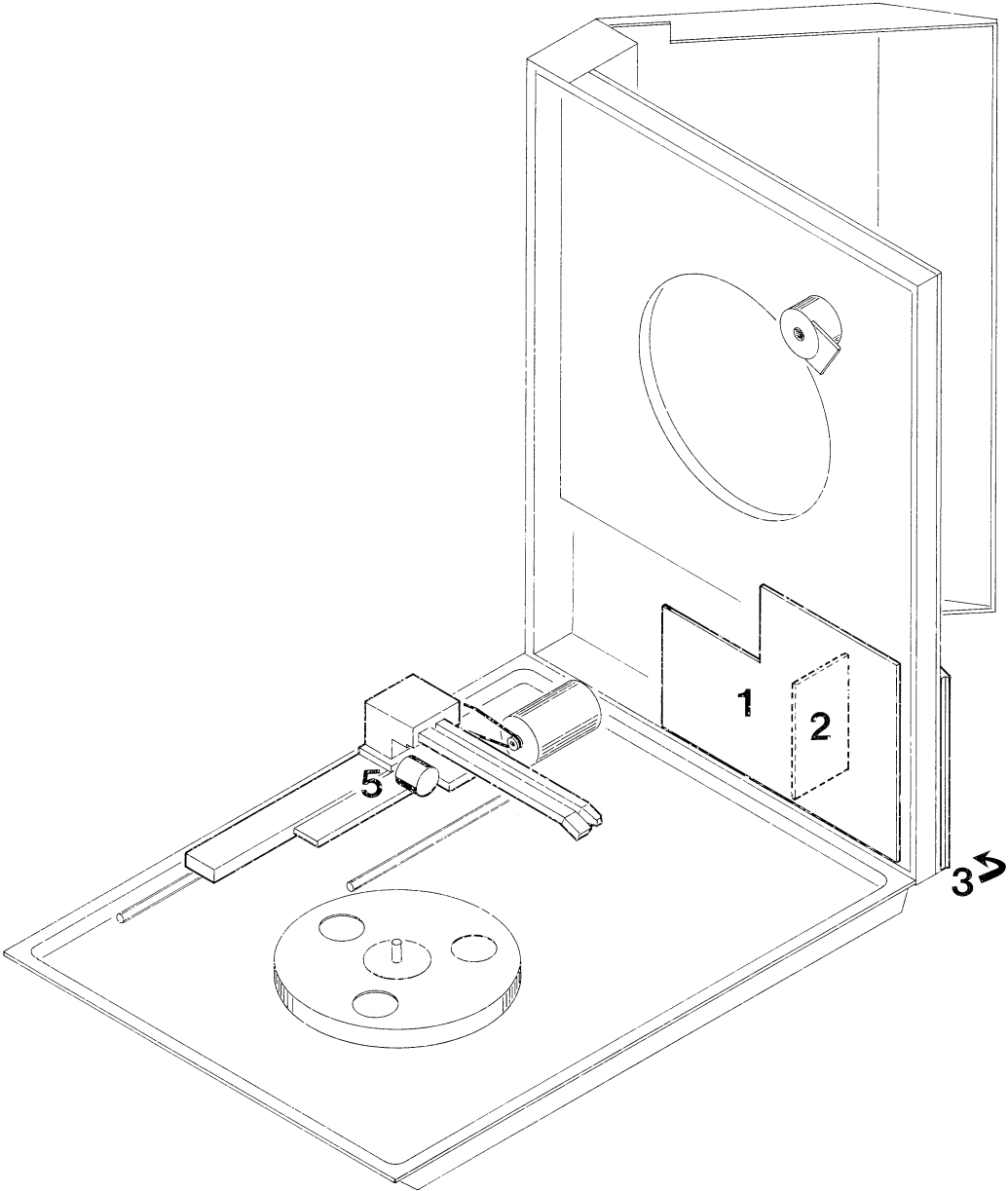
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Modules

- 1. Control Circuits and Power Supply
- 2. Data Link
- 3. Operating Panel
- 5. Sliding Chassis



## DIAGRAMFORKLARING

På diagrammet er der angivet typenumre på transistorer og IC'er i de tilfælde, hvor typenummeret er entydigt for komponentens placering i kredsløbet – f.eks. TR20/BC 557B.

Hvis positionsnummeret er efterfulgt af en stjerne **skal** reservedelsnummeret benyttes, da denne komponent er specielt udvalgt – f.eks. TR102\*.

## Koordinatsystem

De største printplader er forsynet med et koordinatsystem. Komponenterne på disse printplader er på diagrammet forsynet med en koordinatbetegnelse, som fortæller i hvilket felt på printpladen de er placeret (mindre skrifttype end positionsnummeret – f.eks. B3).

## Målebetingelser

Alle DC spændinger er positive i forhold til stel. Spændingerne er målt med plade på pladetallerkenen automatisk sænket pick-up arm og 33 omdr. De angivne impulser i detektorarmskredsløbet er målt med roterende plade-tallerken med detektorarmen inde over ribberne uden plade.

## EXPLANATION OF DIAGRAM

Type numbers of transistors and IC's have been indicated on the diagram in those cases where the type number is unambiguous for the position of the component in a circuitry – e.g. TR20/BC 557B.

If the position number is followed by an asterisk the spare part number **must be used** because this component has been especially selected – e.g. TR102\*.

## Co-ordinate System

The largest PC-boards have been provided with a co-ordinate system. The components on these PC-boards are provided with a grid reference on the diagram indicating in what grid they are positioned on the PC-board (smaller typing than position numbers – e.g. B3).

## Conditions of Measurement

All DC voltages are positive in relation to chassis. The voltages are measured with record on turntable, automatically lowered pick-up arm, and 33 r.p.m. The indicated impulses in the detectorarm circuit are measured with rotating turntable and with the detectorarm placed above the webs without record.

## ERLÄUTERUNGEN ZUM SCHALTBILD

Auf dem Schaltbild sind Typen-Nummern für Transistoren und IC's in den Fällen angegeben, in denen die Typen-Nummer für die Placierung der Komponente in einem Schaltkreis eindeutig ist – z.B. TR20/BC 557B.

Wenn auf die Positionsnummer ein Stern folgt, **ist** die Ersatzteilnummer **zu benutzen**, da diese Komponente speziell ausgewählt werden ist – z.B. TR102\*.

## Koordinatensystem

Die grössten Printplatten sind mit einem Koordinatensystem versehen. Die Komponenten auf diesen Printplatten sind auf dem Schaltbild mit einer Koordinatennummer versehen, die erhält, in welcher Koordinate der Printplatte sie angebracht sind (kleinere Schrifttype als die der Positionsnummer – z.B. B3).

## Meßbedingungen

Alle DC Spannungen sind positive im Verhältnis zur Masse. Die Spannungen sind mit Platte auf dem Plattenteller gelegt, mit automatisch gesenktem Tonarm und bei 33 Umdrehungen gemessen. Die im Detektorarmkreislauf angegebenen Impulse sind mit rotierendem Plattenteller und mit dem Detektorarm über den Rippen ohne Platte gemessen.

## NOTICE EXPLICATIVE DES SCHEMAS

Sur les schémas, les numéros de types sont indiqués pour les transistors et les circuits intégrés dans les cas où le numéro de type est univoque pour la disposition du composant dans un circuit – par exemple TR20/BC557B.

Si le numéro de position est suivi par un astérisque, il **faud** utiliser le numéro de la pièce de rechange, étant donné qu'il agit dès lors d'un composant spécialement sélectionné – par exemple TR102\*.

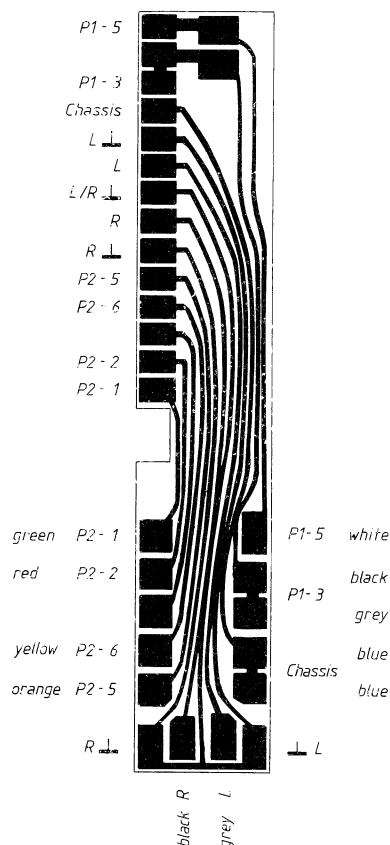
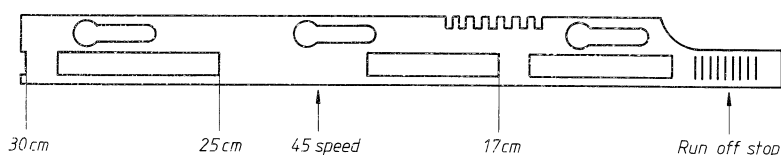
## Système de coordonnées

Les plus grands circuits imprimés sont munis d'un système de coordonnées. Les composants de ces circuits imprimés portent un numéro de coordonnée sur le schéma qui indiquent dans quelle coordonnée ils sont placés sur le circuit imprimé (en caractères plus petit que ceux qui indiquent le numéro de position – par exemple B3).

## Conditions de mesure

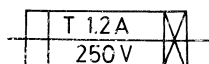
Toutes les DC tensions sont positives par rapport au châssis. Les tensions sont mesurées avec disque sur le plateau, bras de pick-up baissé automatiquement et 33 rotations.

Les impulsions indiquées dans le circuit du bras détecteur sont mesurées avec plateau rotatoire et bras détecteur au-dessus des nervures sans disque.



Explanation of the fuse symbols used in the set:

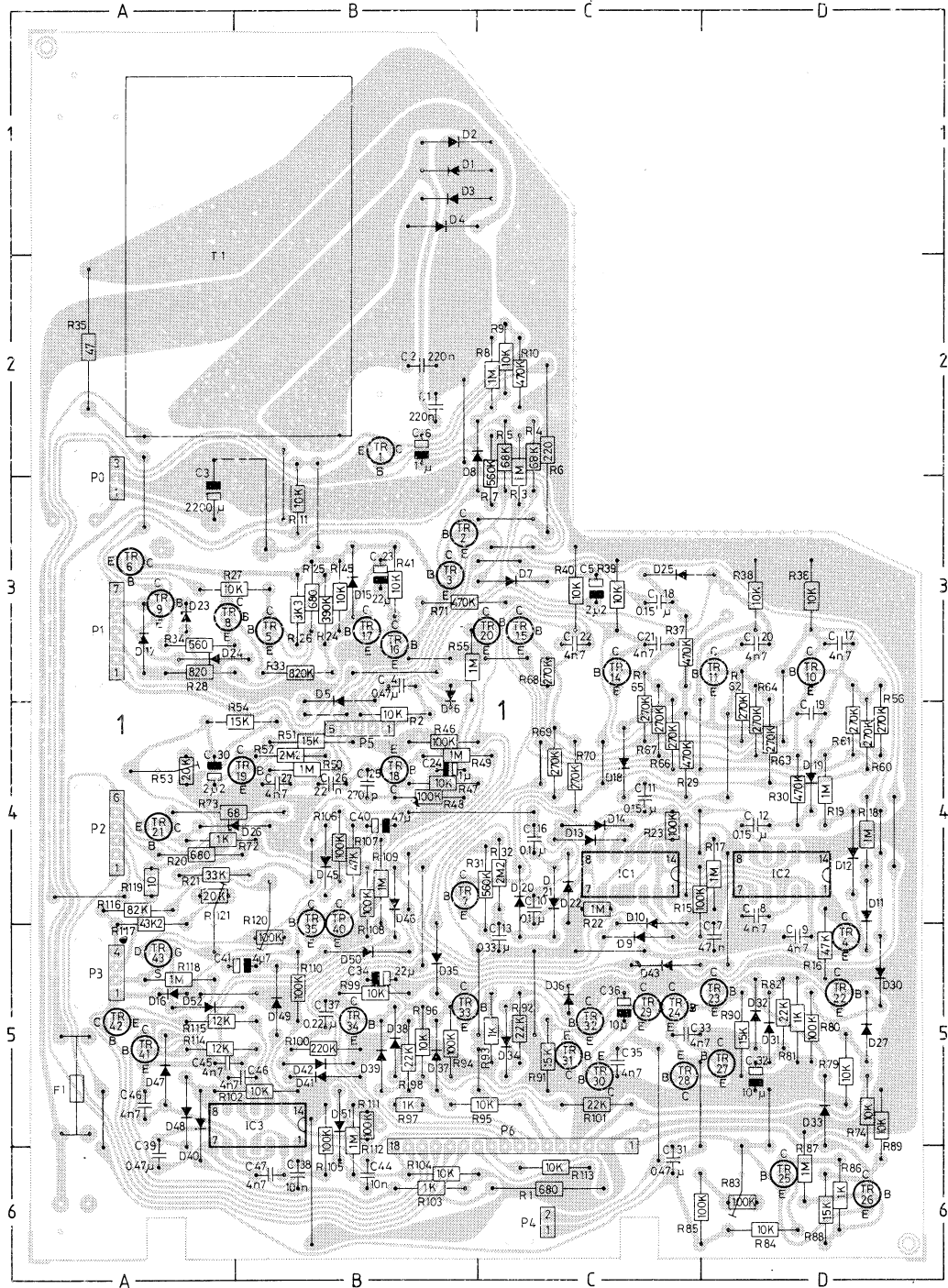
Explanation des symboles du fusible utilisés dans l'appareil:



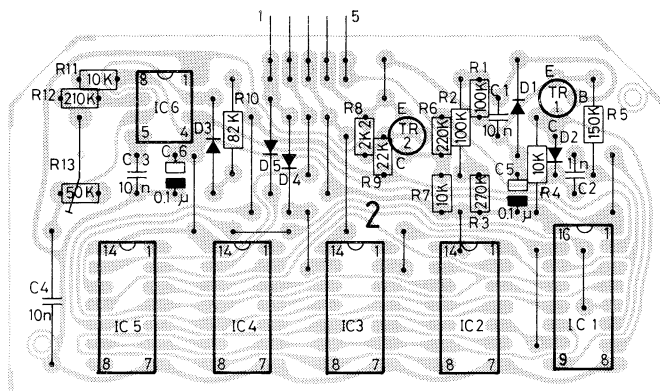
Replace with same type 1.2 amperes  
250 volts slow acting fuse.

Remplacer par un fusible de meme type retardé  
et de 1.2 amperes 250 volts.

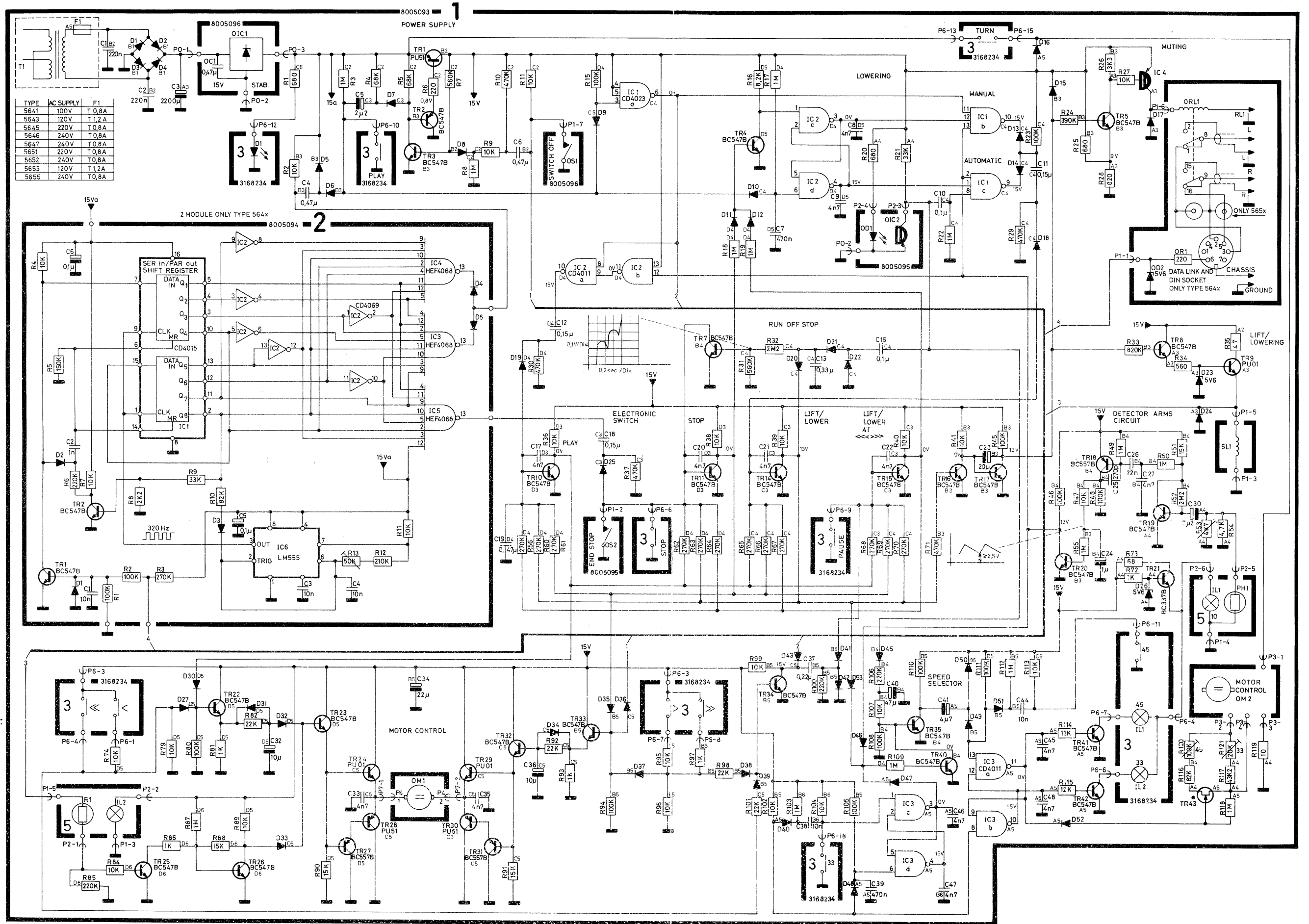
## PCB1, Control Circuits and Power Supply



## PCB2, Data Link



PC-Boards are seen from copperfoil-side



Transistors and IC's

17	19	20	24	101	102	103	105
01C1	8340064	<b>105</b> LM 340T-15 <b>105</b> $\mu$ A 7815 <b>105</b> $\mu$ A 7815 UC		1TR32-42	8320097	<b>20</b> BC 547B	
				1TR43	8320396	<b>24</b> MPF 4392 <b>24</b> 2N 5630 <b>24</b> 2N 4392	
01C2	8340084	<b>17</b> SRD 12B					
1TR1	8320423	<b>19</b> 92 PU 51		1IC1 $\Delta$	8340182	<b>102</b> CD 4023 BCN <b>102</b> MC 14023 BCP <b>102</b> HEF 4023 BP	
1TR2	8320152	<b>20</b> BC 557B					
1TR3-TR5	8320097	<b>20</b> BC 547B		1IC2-IC3 $\Delta$	8340109	<b>102</b> MC 14011B <b>102</b> CD 4011CN <b>102</b> CD 4011 <b>102</b> MC 14011CP	
1TR7-TR8	8320097	<b>20</b> BC 547B					
1TR9	8320422	<b>19</b> 92 PU01		1IC4	8340025	<b>19</b> SPS 5431 <b>19</b> MPS A65 <b>20</b> BC 516	
1TR10-TR17	8320097	<b>20</b> BC 547B					
1TR18	8320152	<b>20</b> BC 557B		2TR1-TR2	8320097	<b>20</b> BC 547B	
1TR19-TR20	8320097	<b>20</b> BC 547B					
1TR21	8320295	<b>20</b> BC 337-25/18		2IC1 $\Delta$	8340175	<b>101</b> CD 4015CN <b>101</b> MC 4015BCP <b>101</b> HEF 4015BP	
1TR22-TR23	8320097	<b>20</b> BC 547B					
1TR24	8320422	<b>20</b> 92 PU 01		2IC2 $\Delta$	8340173	<b>102</b> CD 4069CN <b>102</b> HEF 4069 UBP <b>102</b> MC 14069 UBCP	
1TR25-TR26	8320097	<b>20</b> BC 547B					
1TR27	8320152	<b>20</b> BC 557B					
1TR28	8320423	<b>19</b> 92 PU51		2IC3-IC5	8340471	<b>102</b> HEF 4068BP <b>102</b> 14068BCP	
1TR29	8320422	<b>19</b> 92 PU01					
1TR30	8320423	<b>19</b> 92 PU51		2IC6	8340144	<b>103</b> 555	
1TR31	8320152	<b>20</b> BC 557B					

$\Delta$  betyder at statisk elektricitet kan ødelægge komponenten.  
 $\Delta$  indicates that static electricity may destroy the component.  
 $\Delta$  bedeutet, daß statische Elektrizität die Komponente zerstören kann.

Diodes

209	215	217					
0D1	8330018	SEP 8506		1D23	8300128	<b>209</b> ZPD 5.6 <b>209</b> BZX 79C5V6	
						<b>209</b> BZX 83C5V6	
0D2	8300128	<b>209</b> ZPD 5V6 5% <b>209</b> BZX 79C5V6 <b>209</b> BZX 83C5V6		1D24	8300058	<b>209</b> 1N 4148	
				1D25		<b>217</b> SFD 184 <b>215</b> 1N 4148	
1D1-D4	8300102	<b>209</b> 1N 4004					
				1D5-D15	8300058	<b>209</b> 1N 4148 <b>217</b> SFD 184 <b>215</b> 1N 4148	
				1D26	8300128	<b>209</b> ZPD 5.6 <b>209</b> BZX 79C5V6 <b>209</b> BZX 83C5V6	
1D16	8300102	<b>209</b> 1N 4004		1D27-D53	8300058	<b>209</b> 1N 4148 <b>217</b> SFD 184 <b>215</b> 1N 4148	
1D17-D22	8300058	<b>209</b> 1N 4148 <b>217</b> SFD 184 <b>215</b> 1N 4148		2D1-D5	8300058	<b>209</b> 1N 4148 <b>217</b> SFD 184 <b>215</b> 1N 4148	



## LIST OF ELECTRICAL PARTS

OR1	5010092	220 $\Omega$ $\pm$ 5% 1/4W	OS1	7400268	Switch »OFF«
OC1	4130228	0.47 $\mu$ F $\pm$ 20% 63V	OS2	7400268	Switch »END STOP«
ORL1	7600059	Relay 12V		2816201	Bronze spring/lever

## Control Circuits and Power Supply 8005093, PCB1

R1	5001026	680 $\Omega$ $\pm$ 10% 1/2W	R64	5010083	270 k $\Omega$ $\pm$ 5% 1/4W
R2	5010059	10 k $\Omega$ $\pm$ 5% 1/4W	R65	5010083	270 k $\Omega$ $\pm$ 5% 1/4W
R3	5010054	1 M $\Omega$ $\pm$ 5% 1/4W	R66	5010083	270 k $\Omega$ $\pm$ 5% 1/4W
R4	5010062	68 k $\Omega$ $\pm$ 5% 1/4W	R67	5010083	270 k $\Omega$ $\pm$ 5% 1/4W
R5	5010062	68 k $\Omega$ $\pm$ 5% 1/4W	R68	5010083	270 k $\Omega$ $\pm$ 5% 1/4W
R6	5020465	220 $\Omega$ $\pm$ 5% 3W	R69	5010083	270 k $\Omega$ $\pm$ 5% 1/4W
R7	5010071	560 k $\Omega$ $\pm$ 5% 1/4W	R70	5010083	270 k $\Omega$ $\pm$ 5% 1/4W
R8	5010054	1 M $\Omega$ $\pm$ 5% 1/4W	R71	5010077	470 k $\Omega$ $\pm$ 5% 1/4W
R9	5010059	10 k $\Omega$ $\pm$ 5% 1/4W	R72	5010040	1 k $\Omega$ $\pm$ 5% 1/4W
R10	5010077	470 k $\Omega$ $\pm$ 5% 1/4W	R73	5020547	68 $\Omega$ $\pm$ 5% 2W
R11	5010059	10 k $\Omega$ $\pm$ 5% 1/4W	R74	5010059	10 k $\Omega$ $\pm$ 5% 1/4W
R15	5010049	100 k $\Omega$ $\pm$ 5% 1/4W	R79	5010059	10 k $\Omega$ $\pm$ 5% 1/4W
R16	5010154	8.2 k $\Omega$ $\pm$ 5% 1/4W	R80	5010049	100 k $\Omega$ $\pm$ 5% 1/4W
R17	5010054	1 M $\Omega$ $\pm$ 5% 1/4W	R81	5010040	1 k $\Omega$ $\pm$ 5% 1/4W
R18	5010054	1 M $\Omega$ $\pm$ 5% 1/4W	R82	5010079	22 k $\Omega$ $\pm$ 5% 1/4W
R19	5010054	1 M $\Omega$ $\pm$ 5% 1/4W	R84	5010059	10 k $\Omega$ $\pm$ 5% 1/4W
R20	5001026	680 $\Omega$ $\pm$ 10% 1/2W	R85	5010120	220 k $\Omega$ $\pm$ 5% 1/4W
R21	5010075	33 k $\Omega$ $\pm$ 5% 1/4W	R86	5010040	1 k $\Omega$ $\pm$ 5% 1/4W
R22	5010054	1 M $\Omega$ $\pm$ 5% 1/4W	R87	5010054	1 M $\Omega$ $\pm$ 5% 1/4W
R23	5010049	100 k $\Omega$ $\pm$ 5% 1/4W	R88	5010053	15 k $\Omega$ $\pm$ 5% 1/4W
R24	5010073	390 k $\Omega$ $\pm$ 5% 1/4W	R89	5010059	10 k $\Omega$ $\pm$ 5% 1/4W
R25	5010144	680 $\Omega$ $\pm$ 5% 1/4W	R90	5010053	15 k $\Omega$ $\pm$ 5% 1/4W
R26	5010076	3.3 k $\Omega$ $\pm$ 5% 1/4W	R91	5010053	15 k $\Omega$ $\pm$ 5% 1/4W
R27	5010059	16 k $\Omega$ $\pm$ 5% 1/4W	R92	5010079	22 k $\Omega$ $\pm$ 5% 1/4W
R28	5010068	820 $\Omega$ $\pm$ 5% 1/4W	R93	5010040	1 k $\Omega$ $\pm$ 5% 1/4W
R29	5010077	470 k $\Omega$ $\pm$ 5% 1/4W	R94	5010049	100 k $\Omega$ $\pm$ 5% 1/4W
R30	5010077	470 k $\Omega$ $\pm$ 5% 1/4W	R95	5010059	10 k $\Omega$ $\pm$ 5% 1/4W
R31	5010071	560 k $\Omega$ $\pm$ 5% 1/4W	R96	5010059	10 k $\Omega$ $\pm$ 5% 1/4W
R32	5010245	2.2 M $\Omega$ $\pm$ 10% 1/4W	R97	5010040	1 k $\Omega$ $\pm$ 5% 1/4W
R33	5010505	820 k $\Omega$ $\pm$ 5% 1/4W	R98	5010079	22 k $\Omega$ $\pm$ 5% 1/4W
R34	5010067	560 $\Omega$ $\pm$ 5% 1/4W	R99	5010059	10 k $\Omega$ $\pm$ 5% 1/4W
R35	5020549	47 $\Omega$ $\pm$ 5% 1/4W	R100	5010120	220 k $\Omega$ $\pm$ 5% 1/4W
R36	5010059	10 k $\Omega$ $\pm$ 5% 1/4W	R101	5010079	22 k $\Omega$ $\pm$ 5% 1/4W
R37	5010077	470 k $\Omega$ $\pm$ 5% 1/4W	R102	5010059	10 k $\Omega$ $\pm$ 5% 1/4W
R38	5010059	10 k $\Omega$ $\pm$ 5% 1/4W	R103	5010054	1 M $\Omega$ $\pm$ 5% 1/4W
R39	5010059	10 k $\Omega$ $\pm$ 5% 1/4W	R104	5010059	10 k $\Omega$ $\pm$ 5% 1/4W
R40	5010059	10 k $\Omega$ $\pm$ 5% 1/4W	R105	5010049	100 k $\Omega$ $\pm$ 5% 1/4W
R41	5010059	10 k $\Omega$ $\pm$ 5% 1/4W	R106	5010120	220 k $\Omega$ $\pm$ 5% 1/4W
R45	5010049	100 k $\Omega$ $\pm$ 5% 1/4W	R107	5010059	10 k $\Omega$ $\pm$ 5% 1/4W
R46	5010049	100 k $\Omega$ $\pm$ 5% 1/4W	R108	5010049	100 k $\Omega$ $\pm$ 5% 1/4W
R47	5010059	10 k $\Omega$ $\pm$ 5% 1/4W	R109	5010054	1 M $\Omega$ $\pm$ 5% 1/4W
R48	5010049	100 k $\Omega$ $\pm$ 5% 1/4W	R110	5010049	100 k $\Omega$ $\pm$ 5% 1/4W
R49	5010054	1 M $\Omega$ $\pm$ 5% 1/4W	R111	5010049	100 k $\Omega$ $\pm$ 5% 1/4W
R50	5010054	1 M $\Omega$ $\pm$ 5% 1/4W	R112	5010054	1 M $\Omega$ $\pm$ 5% 1/4W
R51	5010053	15 k $\Omega$ $\pm$ 5% 1/4W	R113	5010059	10 k $\Omega$ $\pm$ 5% 1/4W
R52	5010245	2.2 M $\Omega$ $\pm$ 10% 1/4W	R114	5010046	12 k $\Omega$ $\pm$ 5% 1/4W
R53	5370076	4.7 k $\Omega$ $\pm$ 20%	R115	5010046	12 k $\Omega$ $\pm$ 5% 1/4W
R54	5010053	15 k $\Omega$ $\pm$ 5% 1/4W	R116	5010091	82 k $\Omega$ $\pm$ 5% 1/4W
R55	5010054	1 M $\Omega$ $\pm$ 5% 1/4W	R117	5020132	43.2 k $\Omega$ $\pm$ 1% 1/4W
R56	5010083	270 k $\Omega$ $\pm$ 5% 1/4W	R118	5010054	1 M $\Omega$ $\pm$ 5% 1/4W
R60	5010083	270 k $\Omega$ $\pm$ 5% 1/4W	R119	5104009	10 $\Omega$ $\pm$ 10% 3W
R61	5010083	270 k $\Omega$ $\pm$ 5% 1/4W	R120	5370128	100 k $\Omega$ $\pm$ 20%
R62	5010083	270 k $\Omega$ $\pm$ 5% 1/4W	R121	5370068	22 k $\Omega$ $\pm$ 20%
R63	5010083	270 k $\Omega$ $\pm$ 5% 1/4W			

C1	4130233	220 nF $\pm$ 20% 63V	C19	4130234	470 nF $\pm$ 20% 63V
C2	4130233	220 nF $\pm$ 20% 63V	C20	4010161	4.7 nF $\pm$ 10% 63V
C3	4200393	2200 $\mu$ F 40V	C21	4010101	4.7 nF $\pm$ 10% 63V
C4	4130234	470 nF $\pm$ 10% 63V	C22	4010101	4.7 nF $\pm$ 10% 63V
C5	4200517	2.2 $\mu$ F 50V	C23	4200488	22 $\mu$ F 25V
C6	4130228	0.47 $\mu$ F $\pm$ 20% 63V	C24	4200512	1 $\mu$ F 50V
C7	4200523	0.47 $\mu$ F 50V	C25	4010110	270 pF $\pm$ 10% 100V
C8	4010101	4.7 nF $\pm$ 10% 63V	C26	4010107	22 nF -20+100% 40V
C9	4010101	4.7 nF $\pm$ 10% 63V	C27	4010063	4.7 nF $\pm$ 10% 63V
C10	4130230	100 nF $\pm$ 20% 63V	C30	4200517	2.2 $\mu$ F 50V
C11	4130232	150 nF $\pm$ 20% 63V	C31	4130234	470 nF $\pm$ 10% 63V
C12	4130232	150 nF $\pm$ 20% 63V	C32	4200524	10 $\mu$ F 25V
C13	4130236	330 nF $\pm$ 20% 63V	C33	4010101	4.7 nF $\pm$ 10% 63V
C16	4130230	100 nF $\pm$ 20% 63V	C34	4200508	22 $\mu$ F 25V
C17	4010101	4.7 nF $\pm$ 10% 63V	C35	4010101	4.7 nF $\pm$ 10% 63V
C18	4130232	150 nF $\pm$ 20% 63V	C36	4200524	10 $\mu$ F 25V

C37	4130233	220 nF ±20% 63V	C44	4010106	10 nF -20+80% 40V
C38	4010106	10 nF -20+80% 40V	C45	4010101	4.7 nF ±10% 63V
C39	4130234	470 nF ±10% 63V	C46	4010101	4.7 nF ±10% 63V
C40	4200516	47 µF 16V	C47	4010101	4.7 nF ±10% 63V
C41	4200515	4.7 µF 25V	C48	4010101	4.7 nF ±10% 63V

P0	7220166	Plug 3/3 pins	P3	7220201	Plug 4/4 pins
P1	7220247	Plug 7/7 pins	P4	7220176	Plug 2/2 pins
P2	7220167	Plug 6/6 pins	P6	7210397	Socket 18/17 pins

T1	8013276	Mains transformer 5641	F1	6600011	800 mA-slow 5641/45/46/ 47/5651/52/55
	8013277	Mains transformer 5643/53		6600051	1.2 A slow 5643/53
	8013278	Mains transformer 5645/51			
	8013279	Mains transformer 5646/47/ 52/55			

**Data Link 8005094, PCB2**

R1	5010049	100 kΩ ±5% 1/4W	R8	5010064	2.2 Ω ±5% 1/4W
R2	5010049	100 kΩ ±5% 1/4W	R9	5010075	33 kΩ ±5% 1/4W
R3	5010083	270 kΩ ±5% 1/4W	R10	5010091	82 kΩ ±5% 1/4W
R4	5010059	10 kΩ ±5% 1/4W	R11	5010059	10 kΩ ±5% 1/4W
R5	5010063	150 kΩ ±5% 1/4W	R12	5020484	210 kΩ ±1% 1/4W
R6	5010120	220 kΩ ±5% 1/4W	R13	5370061	47 kΩ ±20%
R7	5010059	10 kΩ ±5% 1/4W			

C1	4010041	10 µF -20+80% 40V	C4	4100034	10 nF ±2% 63V
C2	4010027	1 µF ±10% 100V	C5	4200474	0.1 µF 50V
C3	4010041	10 nF -20+80% 40V	C6	4200474	0.1 µF 50V

P5	7220307	Plug 5/5 pins
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**Operating Panel 3168234, PCB3**

IL1	8230069	5V/60 mA
IL2	8230069	5 V/60 mA

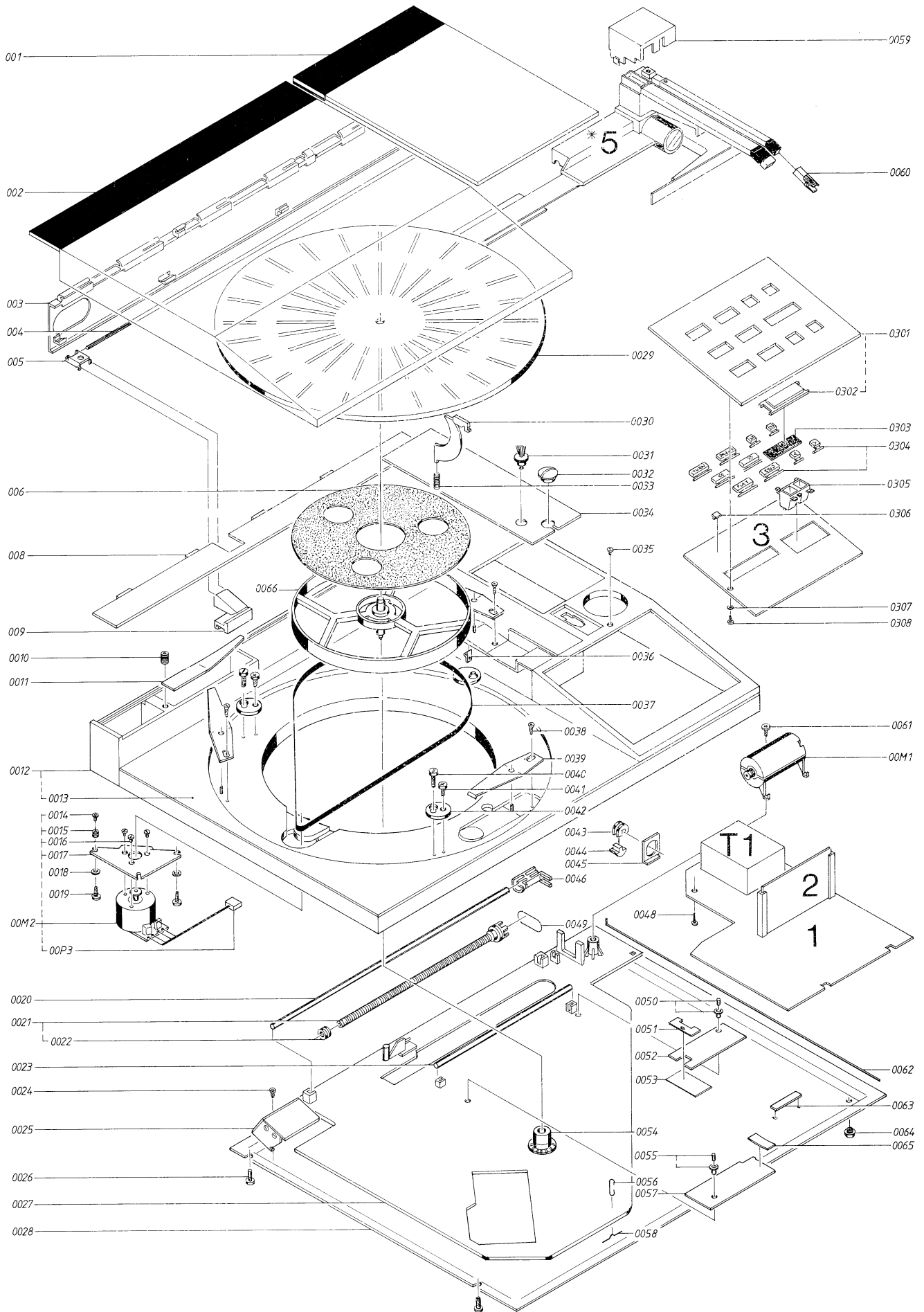
P6	6200049	Flat cable 10
	6200050	Flat cable 7

**Sliding Chassis 8055027,  
Module 5**

R1	5210009	Photo resistor	IL1	8230069	5V/600 mA
PH1	8760002	Photo element	IL2	8230068	18V/30 mA

L1	6810008	Coil
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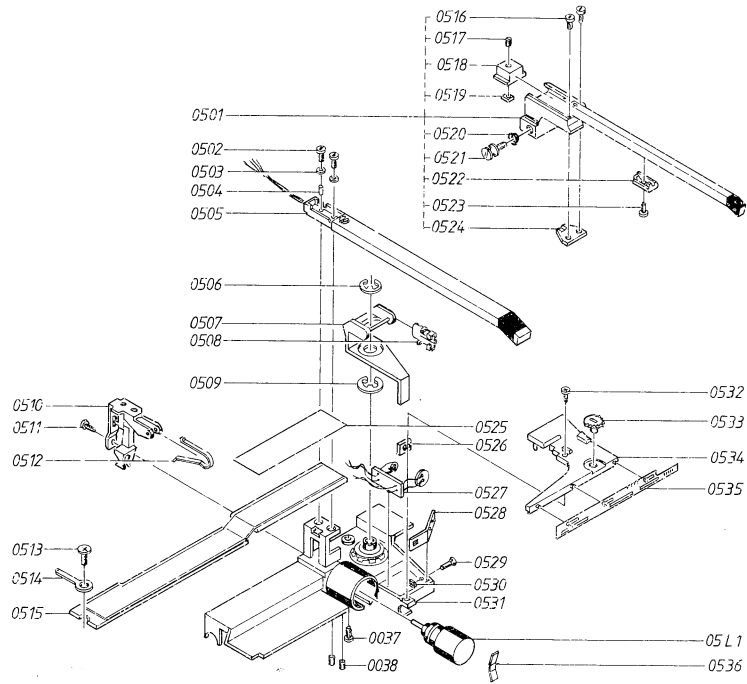




## LIST OF MECHANICAL PARTS

* 001	3164425	Lid	0033	2810096	Spring
* 002	3164516	Dust cover	0034	3458252	Cover
003	3030067	Back part	0035	3010007	Stop
004	2831043	Shaft	0036	2640040	Locking plate
005	2542527	Hinge	0037	2732061	Belt
006	2622264	Cover washer	0038	2039029	Screw AM3 x 16 black
008	3162131	Cover	0039	2816184	Leaf spring
009	3030048	Bracket	0040	2042216	Screw AM4 x 16
0010	2072102	Threaded pin M4 x 12	0041	2013202	Screw 2.9 x 9.5 black
0011	2816168	Leaf spring	0042	2641097	Clamp
* 0012	3414001	Cabinet, teak	0043	2641061	Bushing f/mains connector
	3414003	Cabinet, rosewood	0044	2641062	Locking plate f/mains connector
	3414004	Cabinet, oak			
	3414005	Cabinet, white	0045	2530446	Bracket
0013	3458274	Alu cover	0046	3152293	Holder
0014	2365095	Bushing	0048	2013095	Screw 2.9 x 9.5 black
0015	2938137	Rubber bushing	0049	2732045	Belt
0016	2036915	Screw AM2.6 x 3 black	0050	2364034	Locking plate
0017	3152214	Holder	0051	2816136	Bronze spring
0018	2622348	Washer 2.3	0052	8005096	PCB - 01C1
0019	2011005	Screw 2.2 x 9.5		7220134	Plug 2 pol
0020	2830092	Shaft 50 Hz	0053	3170169	Mica sheet
	2830099	Shaft 60 Hz	0054	2938211	Bearing
0021	2993034	Spindle	0055	2364034	Locking plate
0022	2389057	Threaded bushing	0056	2514028	Hook
0023	2830093	Shaft	0057	8005095	PCB 0D1/1C2
0024	2039027	Screw AM3 x 6 black	0058	2894045	Spring
* 0025	8005044	PCB Muting	0059	3164481	Cover
	3302348	Screen f/ØRL1	0060	8954850	MMC3 (replacement)
0026	2039027	Screw AM3 x 6 black	0061	2013080	Screw 2.9 x 9.5 black
0027	3114199	Floating chassis	0062	2830084	Shaft
0028	3454264	Bottom	0063	3152101	Holder
0029	2726146	Platter	0064	3103067	Rubber foot
0030	3011012	Friction arm	0065	2816179	Bronze spring
0031	3627013	Cleansing brush	0066	2862038	Fly wheel
0032	2775659	Button			
<hr/>					
00M1	8400117	Servo motor	01Modul	8005093	PCB without mains transformer and F1
00M2	8400118	Drive motor			
00P3	6274071	Bundle of wires w/socket		3152254	Holder f/PCB2
	3152380	Holder f/wire	* 01T1	8013278	Mains transformer (220V)
<hr/>					
02Modul	8005094	PCB - Data link			
<hr/>					
03Modul	3168234	Operating panel	0305	3152377	Housing
0301	3168168	Panel	0306	7500148	Contact spring
0302	3370123	Window	0307	2622005	Fibre washer 2.2
0303	3370143	Film »33/45«	0308	2011305	Screw 2.2 x 3.2
0304	2775953	Set of knobs			
<hr/>					
05Modul	8055027	Sliding chassis			
<hr/>					
* 001	3164517	Lid black 565x			
* 002	3164518	Dust cover 565x			
* 0012	3414056	Cabinet black 565x			
* 0025	8005122	PCB Muting 565x			
* 01T1	8013276	Mains transformer 5641 (100V)			
	8013277	Mains transformer 5643/53 (120V)			
	8013279	Mains transformer 5646/47/55 (240V)			

## Sliding Chassis 8055027



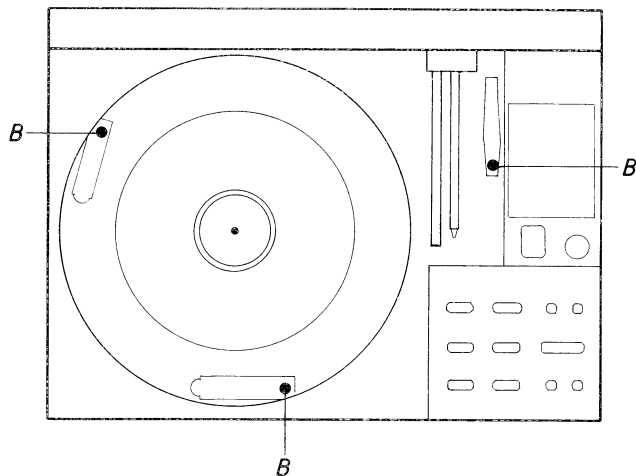
0501	3152378	Arm complete	0520	2812089	Spring
0502	2038247	Screw AM3 x 6	0521	2038077	Adjustment screw
0503	2622041	Washer	0522	3190085	Sliding indicator
0504	6430067	Silicon insulation	0523	2034236	Screw AM2 x 3
0505	2850120	Detector arm	0524	2641090	Clamp
0506	2390033	E-ring 5	0525	3302319	Cover
0507	3150050	Bearing holder	0526	3375032	Magnifier
0508	2816157	Spring	0527	8005054	PCB 5R1/IL2
0509	2390079	Spring washer 6	0528	2816164	Aperture
0510	2530396	Bracket	0529	2034014	Screw AM2 x 8
0511	2034236	Screw AM2 x 3	0530	2380068	Square nut M2
0512	2816185	Spring	0531	3114172	Slide
0513	2043024	Screw M4 x 6	0532	2011004	Screw 2.2 x 4.5 black
0514	7520091	Solder tag	0533	2625029	Adjustment washer
0515	8005043	PCB flexible w/bracket	0534	3152370	Cover
0516	2034211	Screw AM2 x 6	0535	3199063	Dial
0517	2072703	Threaded pin M3 x 6	0536	2816165	Bronze spring
0518	3342039	Counter weight	0537	2038084	Screw AM3 x 8
0519	2380054	Square nut M3	0538	6430067	Silicon insulation

05L1 6810008 Coil

### Parts Not Shown

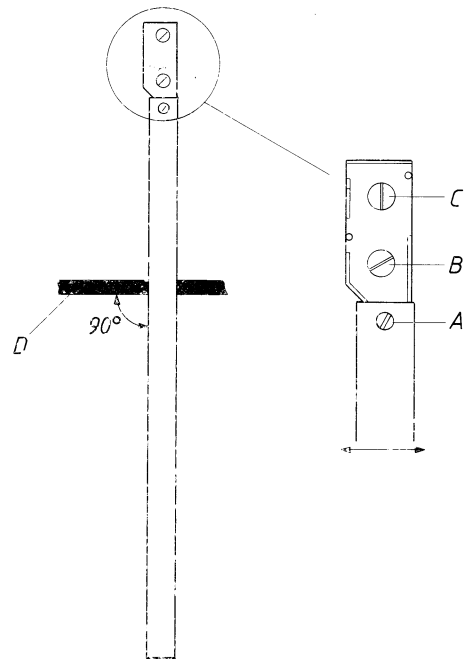
3015085	Record adaptor	6271101	Mains connector 5645/51
6270213	Connector 7 pol DIN/564x	6271115	Mains connector 5646
6270204	Connector 5 pol DIN/564x	6271091	Mains connector 5647/55
6270260	Connector RCA, 565x	3535078	Diagram
6270261	Chassis connector 565x	3391538	Outer carton
6274093	Bundle of wires 2-3/P0-P4	3397428	Foam packing set
6274091	Bundle of wires 7/P1	3390114	Plastic bag for cover
6274092	Bundle of wires 6/P2	3917041	Foam block
6271119	Mains connector 5641	3917062	Foam insert
6100012	Mains connector 5643/53		

## ADJUSTMENTS Drive Unit Height



Adjust the screws B – while putting the turntable on and taking it off again – until the top edge of the turntable is  $2.9 \pm 0.2$  mm higher than the cover plate.

## Tightening of the Detector Arm

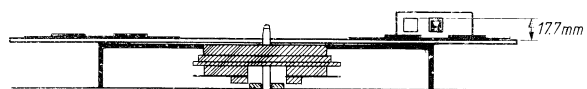


Loosen the screws B and C.

Tighten the screw B very gently.

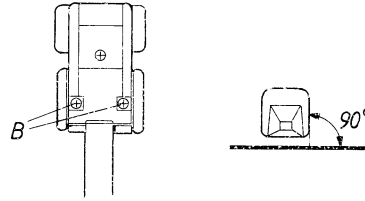
Turn the detector arm until it is at right angles to the rod D.

Tighten the screws B and C.

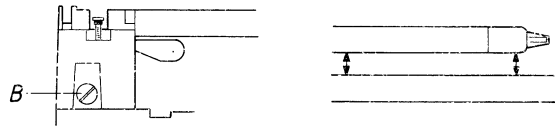


After tightening, check that the height between the upperside of the detector arm down to the turntable is 17.7 mm.

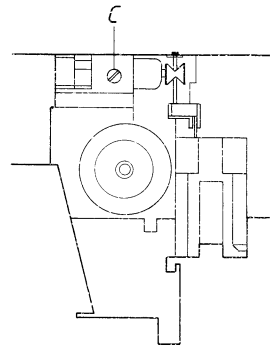
Adjustment is done with the screw A.

**Pick-up Parallelism**

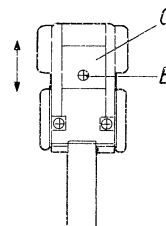
Adjust the screws B – by loosening and tightening respectively – until the side of the pick-up is at right angles to the turntable.

**Vertical Parallelism of the Pick-up Arm**

Adjust the screw B gently until the pick-up arm vertically parallels the detector arm.

**Horizontal Parallelism of the Pick-up Arm**

Adjust the screw C (to be found under the bottom of the carrier unit) until the pick-up arm horizontally parallels the detector arm.

**Pick-up Arm Balancing**

Set stylus pressure at 0.

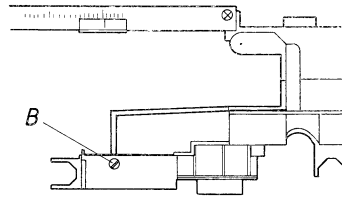
Loosen screw B.

With the pick-up arm lowered, move the counterbalancing weight C in either of the arrow directions until the pick-up is balanced.

Tighten the screw B and set the stylus pressure at 1.2 g with MMC3.



## Aperture for Photo Control



Adjust the aperture with testing record 3621001 in cutting 5.

Take the pick-up arm across to cutting 5 (stationary turntable) and lower it.

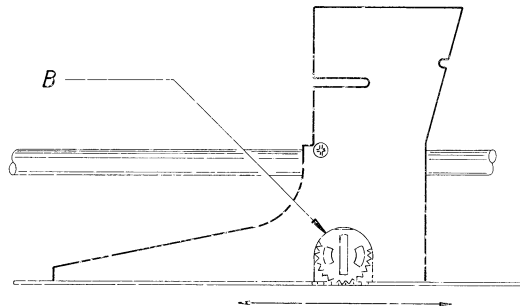
*Make sure that the aperture housing is not exposed to any stray light such as a bench lamp.*

Make the adjustment with the screw B in such a way that the first servo mechanism regulation after set-down will take place after  $2 \pm 1$  rotations of the turntable and then after each rotation.

To test the aperture regulation only, check that it regulates within 1/2 to 6 revolutions.

It is **possible** to adjust without disassembly, by only removing the black cover which houses the pick-up brush. This adjustment is to be made as above, the only difference being that the turntable must be braked to stop with the hand.

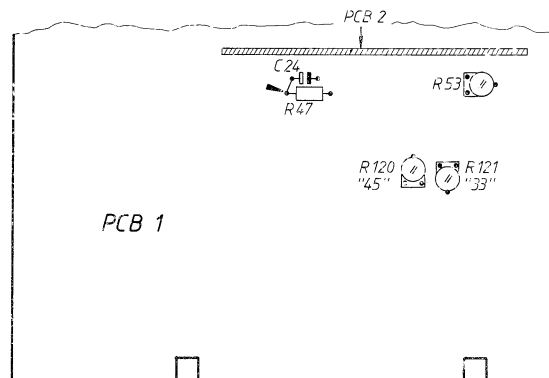
## Set-down



Adjust the positioner with the screw B in one of the directions of the arrow until the arm is lowered on to a 30 cm record at a distance between 146.3 mm and 148.25 mm from the centrepoint of the record.

## Speed

33 r.p.m./min should be adjusted first. Adjust with 1R121.  
Adjust 45 r.p.m./min. with 1R120.



The speed may be checked in two ways:

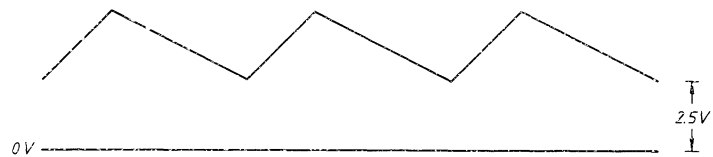
1. With a stroboscope disc and an ordinary lamp connected to the main. This check will result in an inaccuracy of approx. 2% since the 50 Hz mains frequency deviates  $\pm 1$  Hz.
2. With a stroboscope disc and a stroboscope lamp. This check will result in an accuracy corresponding to the tolerance of the stroboscope lamp with is normally much better than that of the mains frequency.

## Sensitivity Detector Arm

False light should not be admitted to the detector arm (e. g. from a bench lamp).

Move the detector arm across the ribs of the platter.

Connect an oscilloscope to the common point of 1R47 and 1C24.

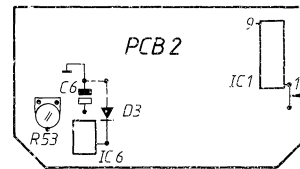


Adjust with 1R53 until a reading of 2.5 V is obtained up to the bottom of the sawtooth curve.

## Clock Generator

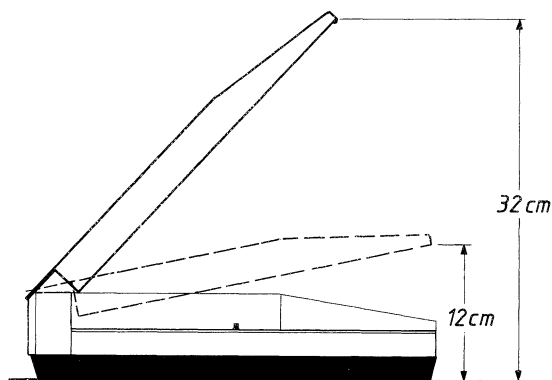
Short-circuit the anode of 2D3 briefly to the chassis.

Connect a frequency counter or a Bang & Olufsen Voltmeter RV11 and the Frequency Probe PF5 to pins 1/9 on 2IC1.



Adjust with 2R13 to 320 Hz  $\pm 5$  Hz (3.12 msec.) on pins 1/9 on 2IC1.

## Dust cover Lid Spring



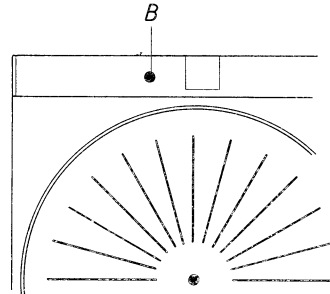
Adjust the dust cover lid with the screw B.

1. Lifting adjustment:

Lift the dust cover lid gently and release it when the lower front edge of the lid has been raised approx. 32 cm above the record player base. The lid will then automatically seek its top position.

## 2. Lowering adjustment:

Lower the dust cover lid gently and release it when the lower front end of the lid is approx. 12 cm from the base. The lid will then automatically seek its closed position.



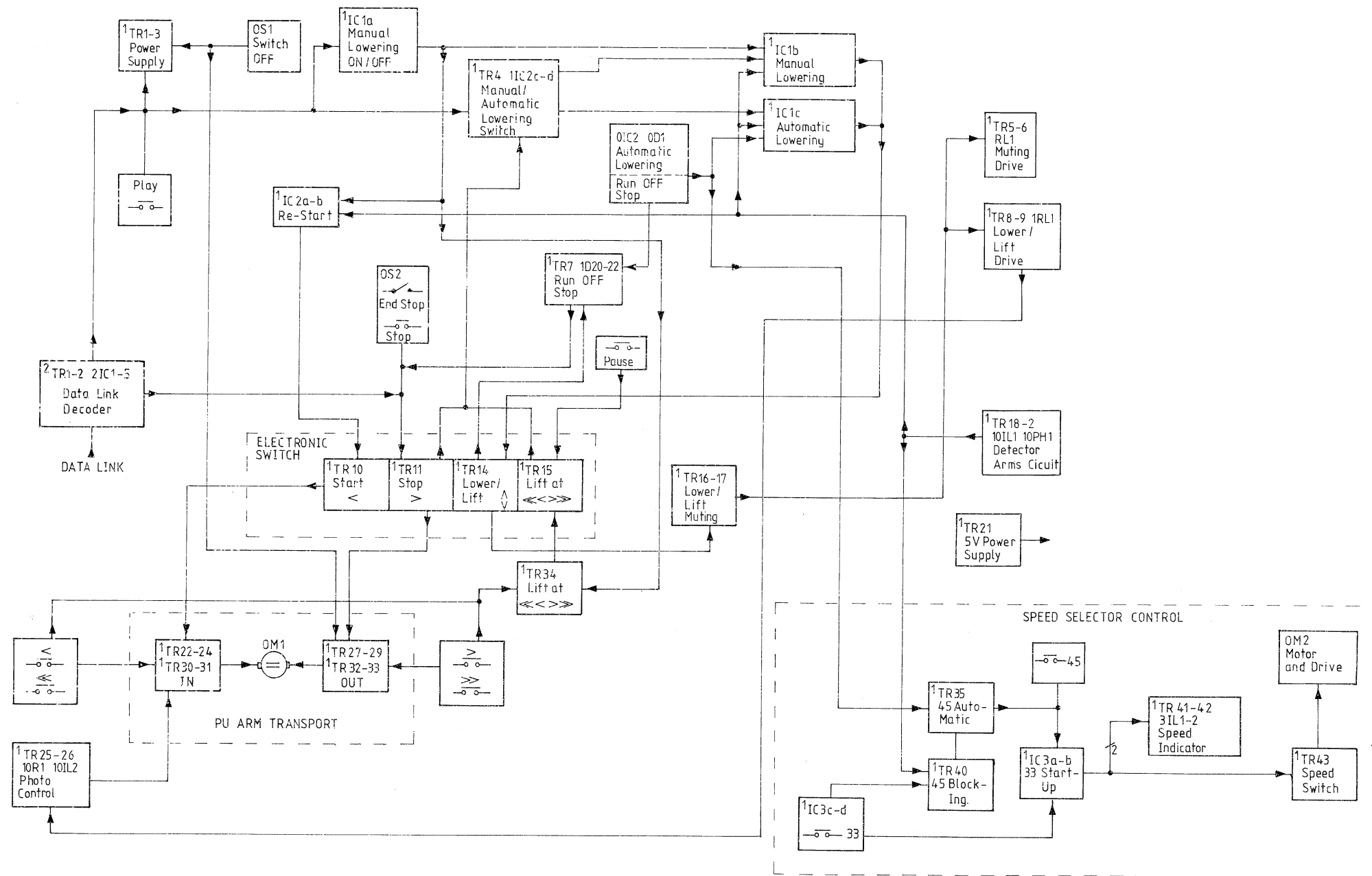
Adjust the dust cover lid with the screw B.

## Lubrication Chart

The need for relubrication is negligible.

In the case of overhauls and when replacing mechanical parts the directions below should be followed.

Point of lubrication	Lubricant	Remarks
Turntable bearing	3984008, M4 oil	Apply to shaft point + streak throughout length of shaft
Spindle pos. No. 0021	3984216, Rocol MTS 1000. Dilute to oily consistency (1:1) with 3984221, ESSO NUTO H44/HP32	Apply to spindle at least in 5 points
Spindle bearing	3984030, Barrierta L55/2	
Lift-lower	Castrol oilit 3984211	Apply to needle on pos. No. 0510
Damping of alu. lid 3984005	Kilopoise 3984005	Apply in one streak at each side

BLOCK DIAGRAM  
DESCRIPTION

The following is a brief description of the block diagram.

When PLAY is pressed, the power supply will be triggered and all the circuits in the record player will come on voltage and simultaneously the flip-flop 1IC2 c-d will go into a mode which allows automatic lowering of the PU arm (d = high). On starting up the starter section of the electronic switch (1TR10) will automatically become activated, and it will impart information to the PU arm transport circuit with the effect that the carrier forward transport will commence. Also, the flip-flop 1IC3 will go into the mode for 33 rpm (b = high).

If there is a 30 cm record on the platter, 0IC2 and 1TR20 will via 1IC1 impart information to the lower/lift section of the electronic switch (1TR14) with the effect that the latter is being activated and the forward transport of the carrier will stop, the PU arm will be lowered and the muting relay become activated. When the PU arm has been lowered a photo-control circuit will impart information to the PU arm transport circuit about regulation of the carrier position. If <<, <, > or >> are being activated during the playing of a record, 1TR15 in the electronic switch will become active via 1TR34, the muting relay will block signal passage, the PU arm will be lifted and the PU arm transport

circuit will receive direct information from the activated button. The manual/automatic lowering switch will also receive information from 1TR15 on activation of <<, <, > or >> and the flip-flop 1IC2c-d will switch with the effect that automatic lowering of the PU arm cannot occur during manual carrier transport (d = low) speed selector control will also be blocked so that automatic switching to 45 rpm cannot occur. On activation of PLAY subsequent to manual carrier transport or pause, information from 1IC1a-b will be imparted to the lower/lift section in the electronic switch, and the PU arm will be lowered.

When the PU is in the run-off groove of a record 0IC2 will transmit pulses to the run-off stop circuit (1TR7) where a DC voltage will gain in value until the stop section (1TR11) in the electronic switch will be triggered, the PU arm will be lifted, the muting relay will block signal passage and 1TR1 will impart information to the PU arm transport circuit, and the carrier return transport will commence. When the carrier reaches its stop position the switch off (OS1) is being activated so that the power supply is cut-off, and simultaneously OS1 will give information to the PU arm transport circuit with the effect that the latter will stop immediately on activation of OS1.

If PLAY is activated with no record on the platter, the detector arm circuit will transmit a low level to 1IC1b-c with the consequence that neither automatic nor manual lowering of the PU arm can occur with no record on the platter, and the forward transport of the carrier will continue across the platter. Prior to the 17 cm set-down point 0IC2 will transmit a high level 45 cm automatic (1TR35) and the speed selector circuit will switch to 45 rpm. Immediately before the carrier reaches the platter centre, the end stop (OS2) is being activated. This will in turn activate the stop section of the electronic switch.

The re-start circuit (1IC2a-b) will ensure a normal forward transport of carrier reactivation in cases when manual set-down is attempted without a record on the platter.

Via the data link decoder the functions play and stop can be achieved via a Beomaster equipped with the data link facility.

## TECHNICAL SPECIFICATIONS

Wow and flutter DIN	<±0.07%
Wow and flutter WRMS	<±0.025%
Rumble DIN weighted	>70 dB
Rumble DIN unweighted	>45 dB
Speeds	33-45 rpm
Speed deviation	<0.2%
Tangential tracking	<0.04°
Power consumption	15W
Dimensions W x H x D	49 x 9 x 37.5 cm
Weight	9 kg

## Power Supply and Frequency

Type 5641	100V 50 Hz
Type 5643/53	120V 60 Hz
Type 5645/51	220V 50 Hz
Type 5646/52	240V 50 Hz
Type 5647/55 (AUS)	240V 50 Hz

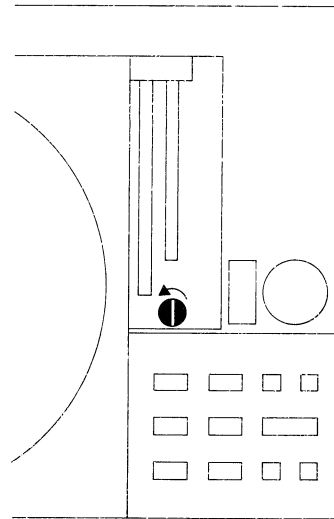
## MMC3 Cartridge

Recommended tracking force	12 mN/1.2 g
Frequency range	20-20,000 Hz ±2 dB
Channel separation 1000 Hz	>25 dB
Channel separation 50-15,000 Hz	>20 dB
Channel difference	<1.5 dB
Stylus	Elliptical nude diamond
Cantilever	Tapered aluminium tube
Effective tip mass	0.35 mg
Compliance	25 µm/mN
Sensitivity mV/cm/s RMS	>0.6 mV
Output 5 cm lateral RMS	>2.12 mV
Cartridge weight	1.6 g
Load impedance	≥47 kΩ
Load capacity	≤400 pF

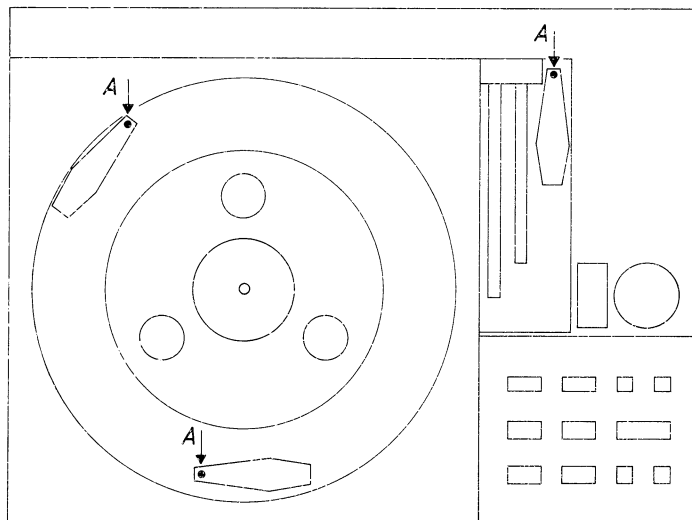
**Subject to change without notice**

## DISMANTLING Servicing Position

Loosen the black cover plate below the pick-up arm assembly by turning the black screw 1/4 turn in the direction of the arrow.

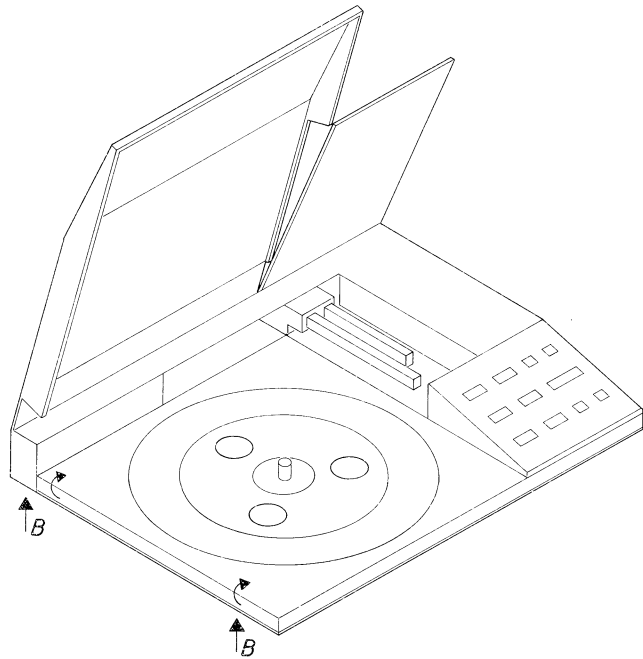


Remove the turntable.



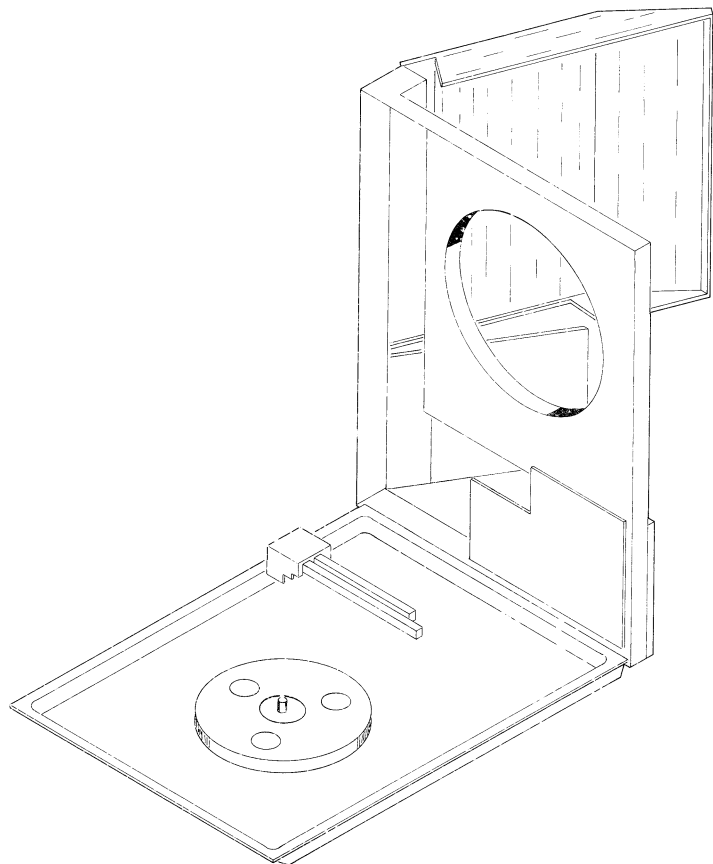
Lift the hooks for the suspension of the train drive/chassis off the suspension springs in the points A.

Remove the screws B.



Push, with due care, the train drive chassis to the right.

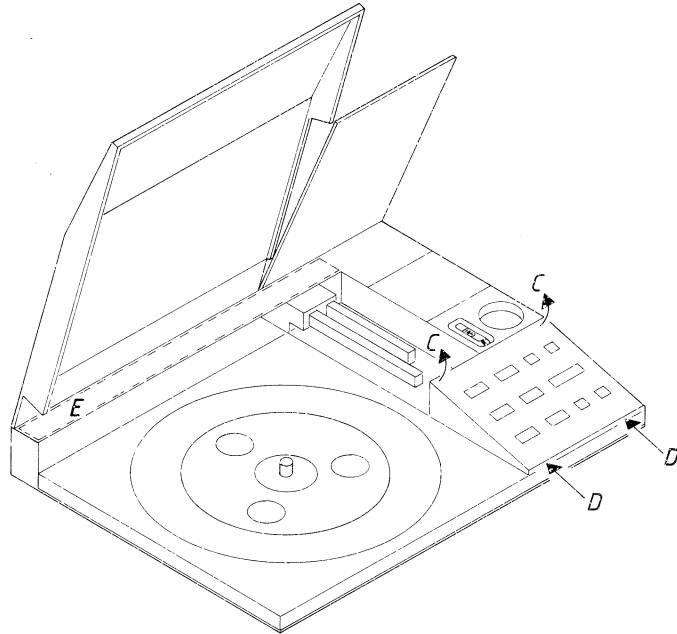
By lifting carefully at the left side of the top part it can now be tilted into the servicing position.



*When assembling, make sure the back part (pos. 003) catches the rear edge of the bottom plate completely.*

## Control Panel

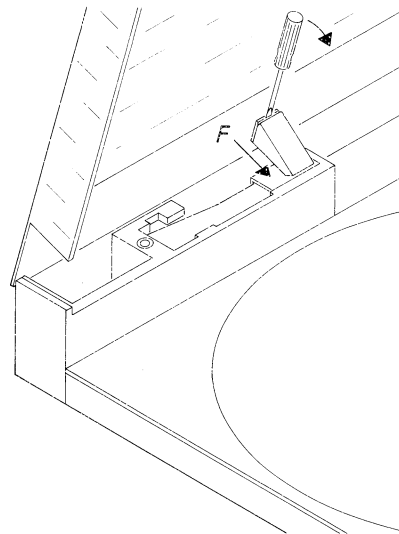
By lifting the rear edge of the control panel/cover (C) the retainer pins may be released.



After the retainer pins at the top edge of the control panel/cover have been loosened, pull the control panel cover in the direction of the arrows C, and then push in the direction of the arrows D.

## Dust Cover Spring

Remove cover E.



Press the dust cover spring down at the point F while the dust cover remains in its open position.

Insert a screwdriver between the dust cover and the cover hinge.

Lever the screwdriver with care in the direction of the arrow until the cover hinge is released.

## Dust Cover



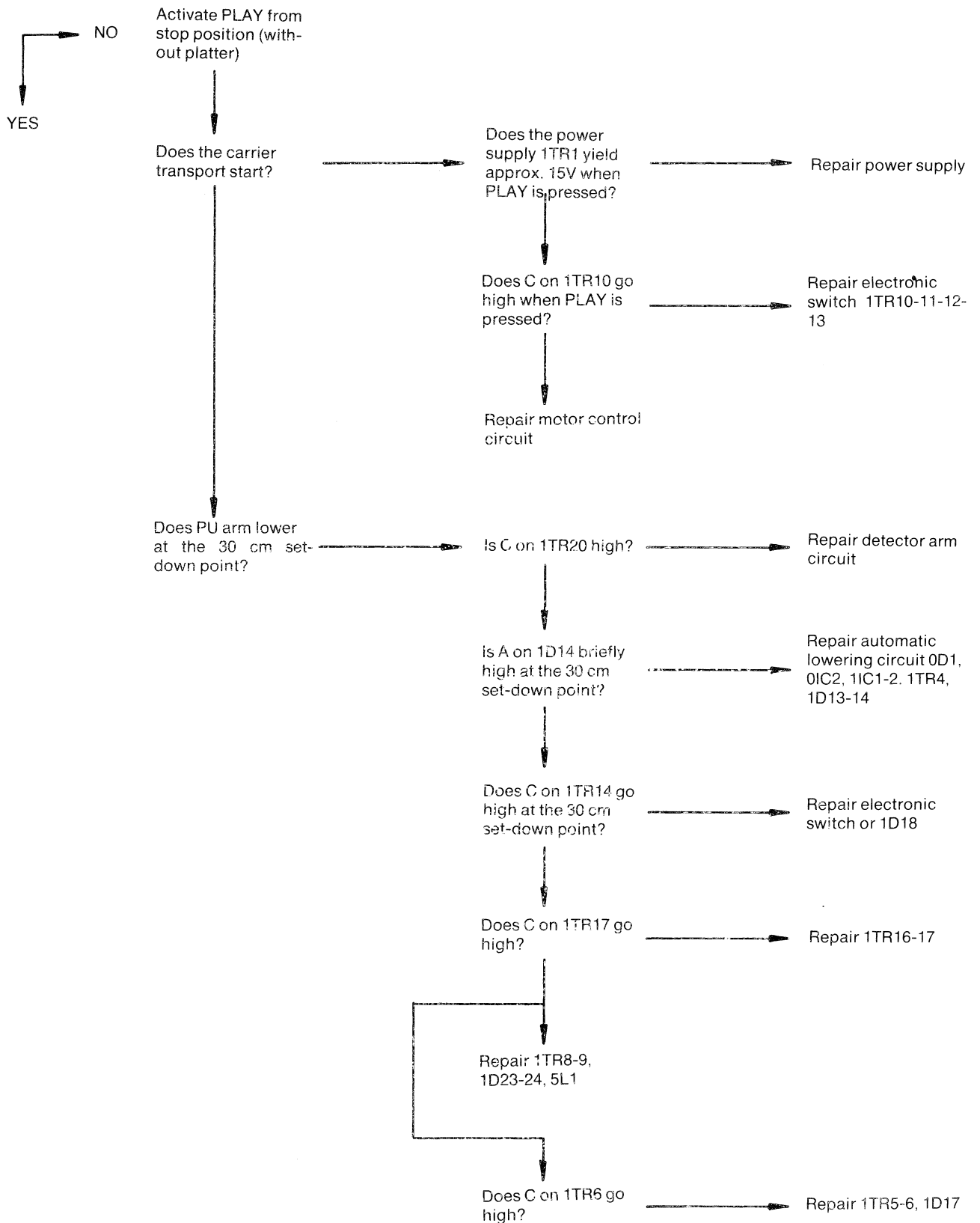
Pull carefully at the rear part in the direction of the arrows G until the rear part and the cover are released.

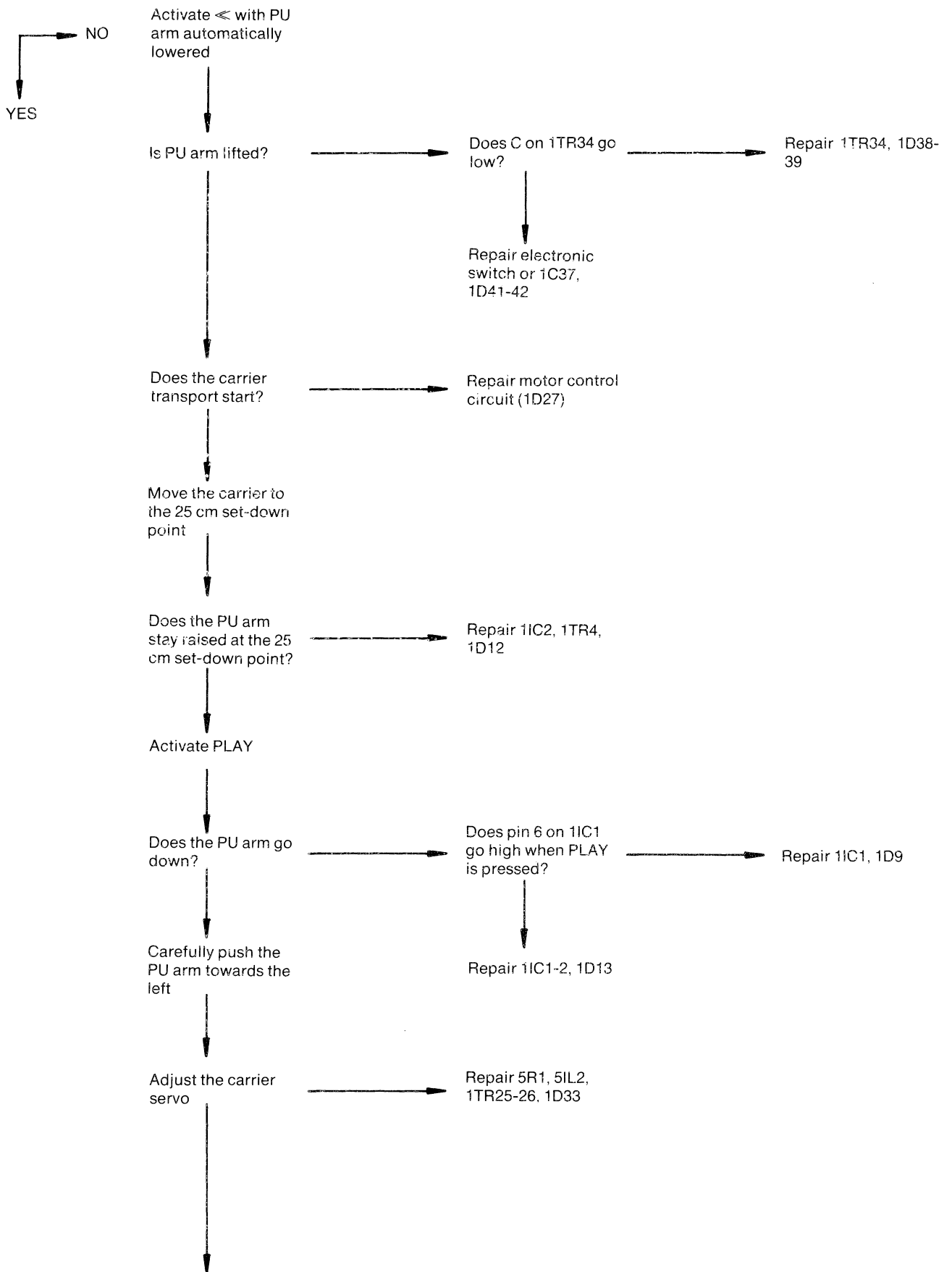


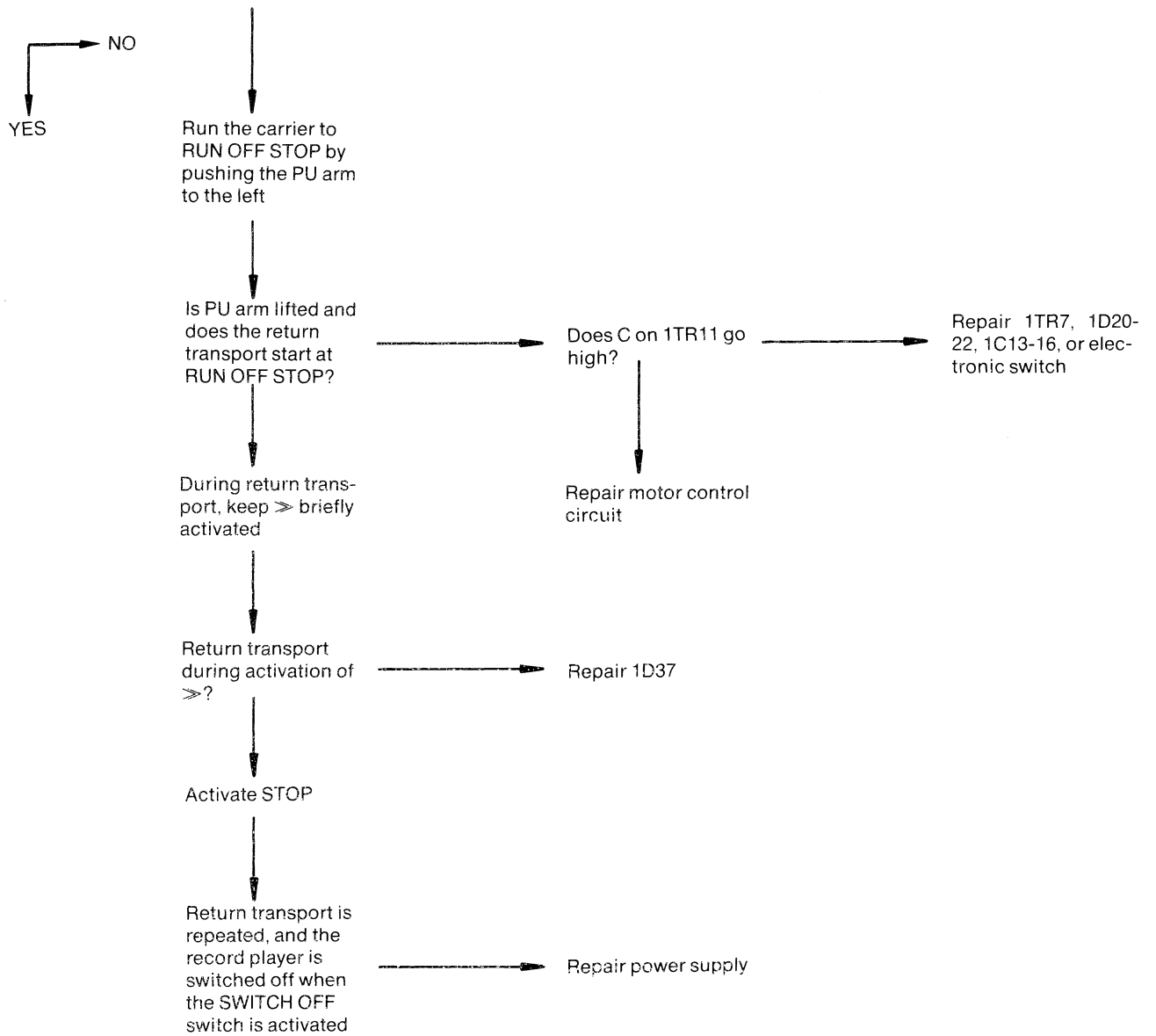
## FAULTFINDING

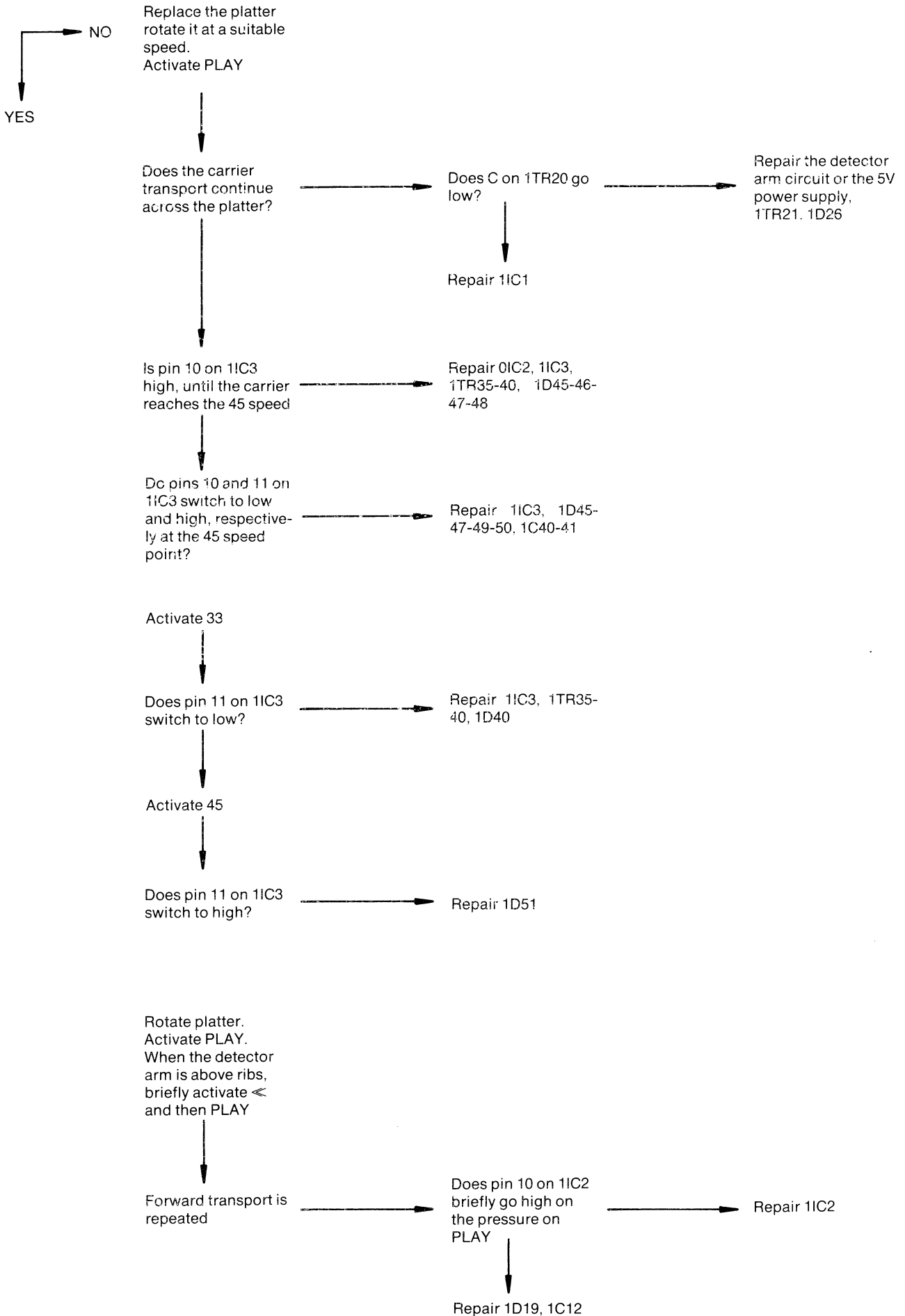
During a faultfinding job in the control circuit the below diagram would be useful.

Put the record player in the servicing position with the platter stationary. When the platter should rotate, then rotate it by hand at a suitable speed.

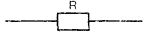
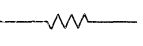


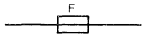

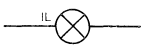
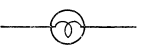
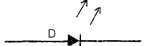

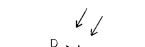

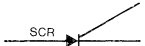

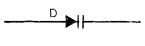

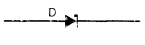

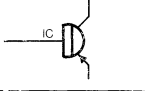
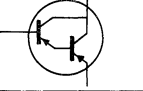

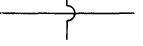
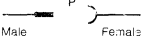
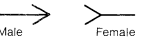










## Symbols

	Bang & Olufsen	US
<b>Resistor</b>		
<b>Electrolytic Capacitor</b>		
<b>Fuse</b>		
<b>Lamp</b>		
<b>Light Emitting Diode (LED)</b>		
<b>Photo Diode (Photosensitive type)</b>		
<b>Silicon Controlled Rectifier (SCR)</b>		
<b>Varactor</b>		
<b>Zener Diode</b>		
<b>Darlington Transistor (PNP)</b>		
<b>Wires Crossing</b>		
<b>Wire Connecting</b>		
<b>Ground, 0-point DC</b>		

## Insulation Test

Each record player **must** be insulation tested after having been dismantled. The test is to be made when the record player has been reassembled completely and is ready for delivery to the customer.

Make the insulation test as follows:

Short-circuited the two pins of the mains plug and connect one of the terminals to the insulation tester.

The other terminal from the insulation tester is connected to the chassis plate near the 7 pin. DIN-socket.

### NOTE!

To avoid ruining the record player it is essential that both insulation tester terminals are in really good mechanical contact.

Now slowly turn the voltage control of the insulation tester until a voltage of 1.5-2 kV is obtained. Hold it there for 1 second, then slowly turn the voltage down again.

**At no point during the testing procedure any flash-overs are permissible.**