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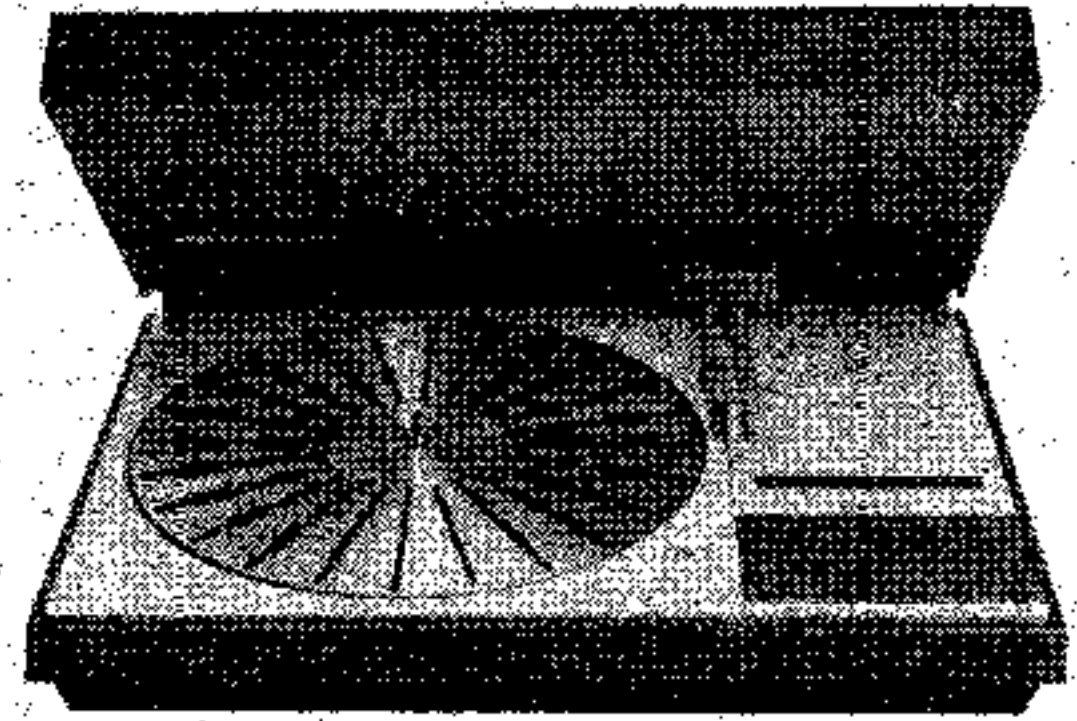
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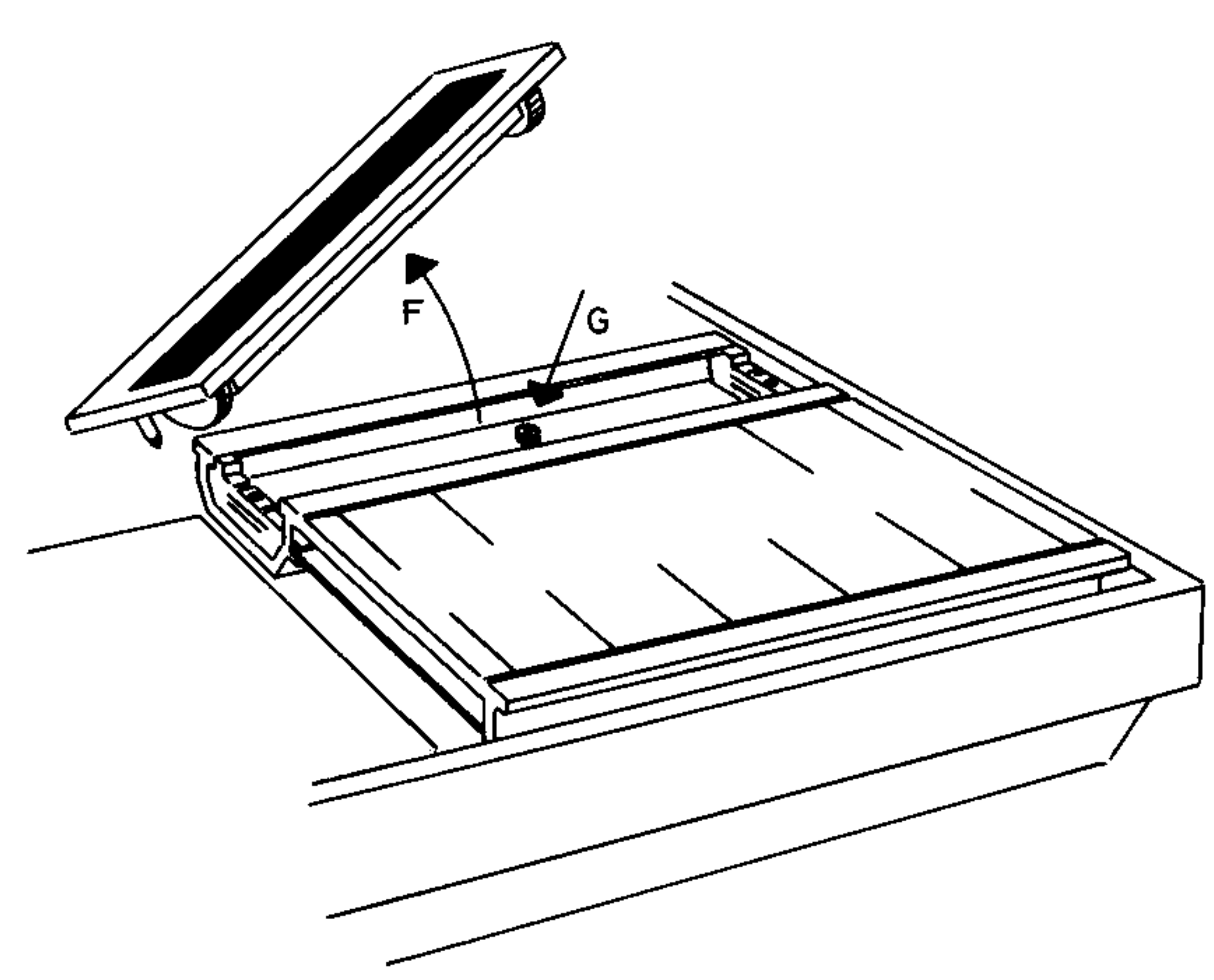
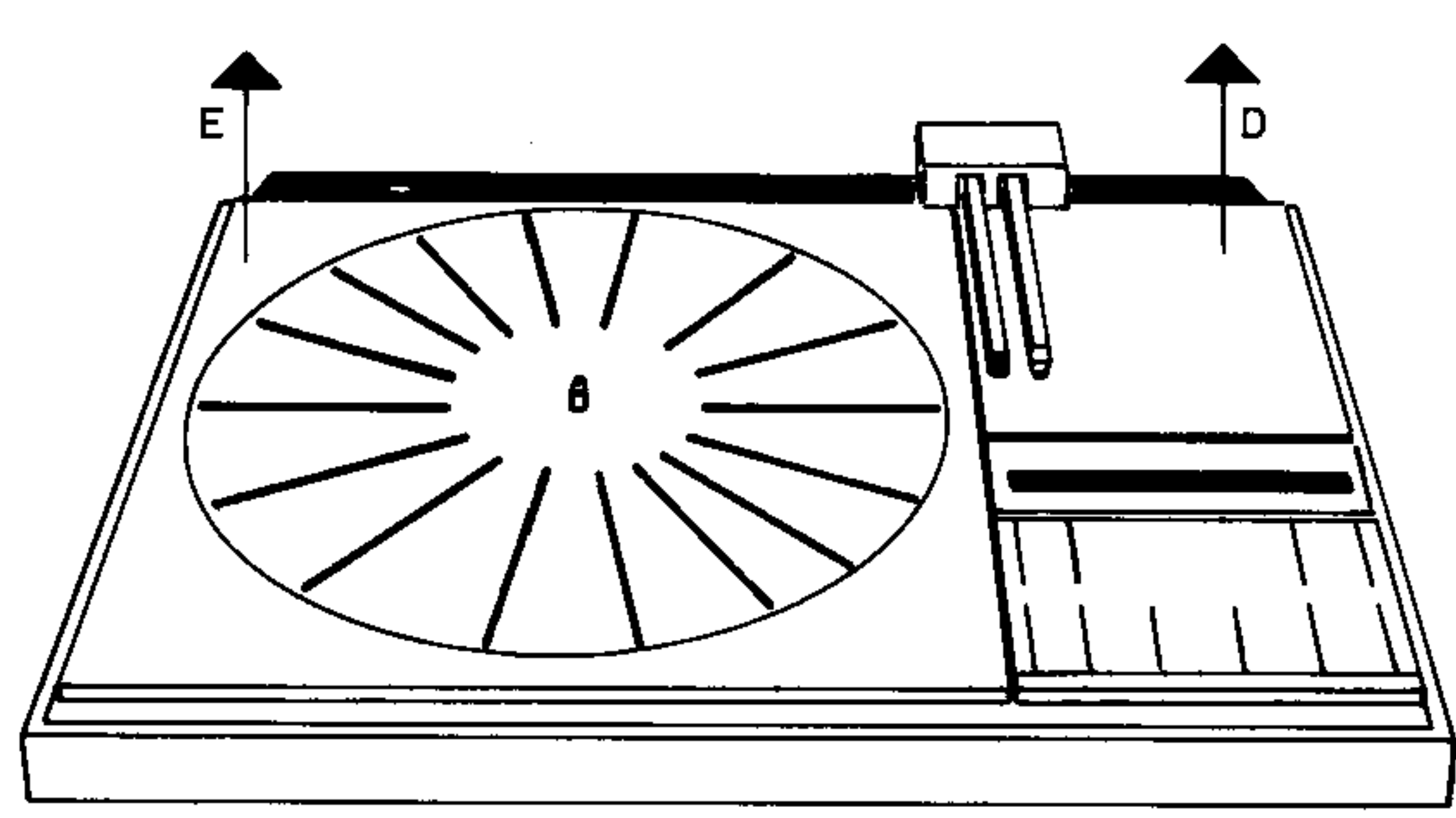
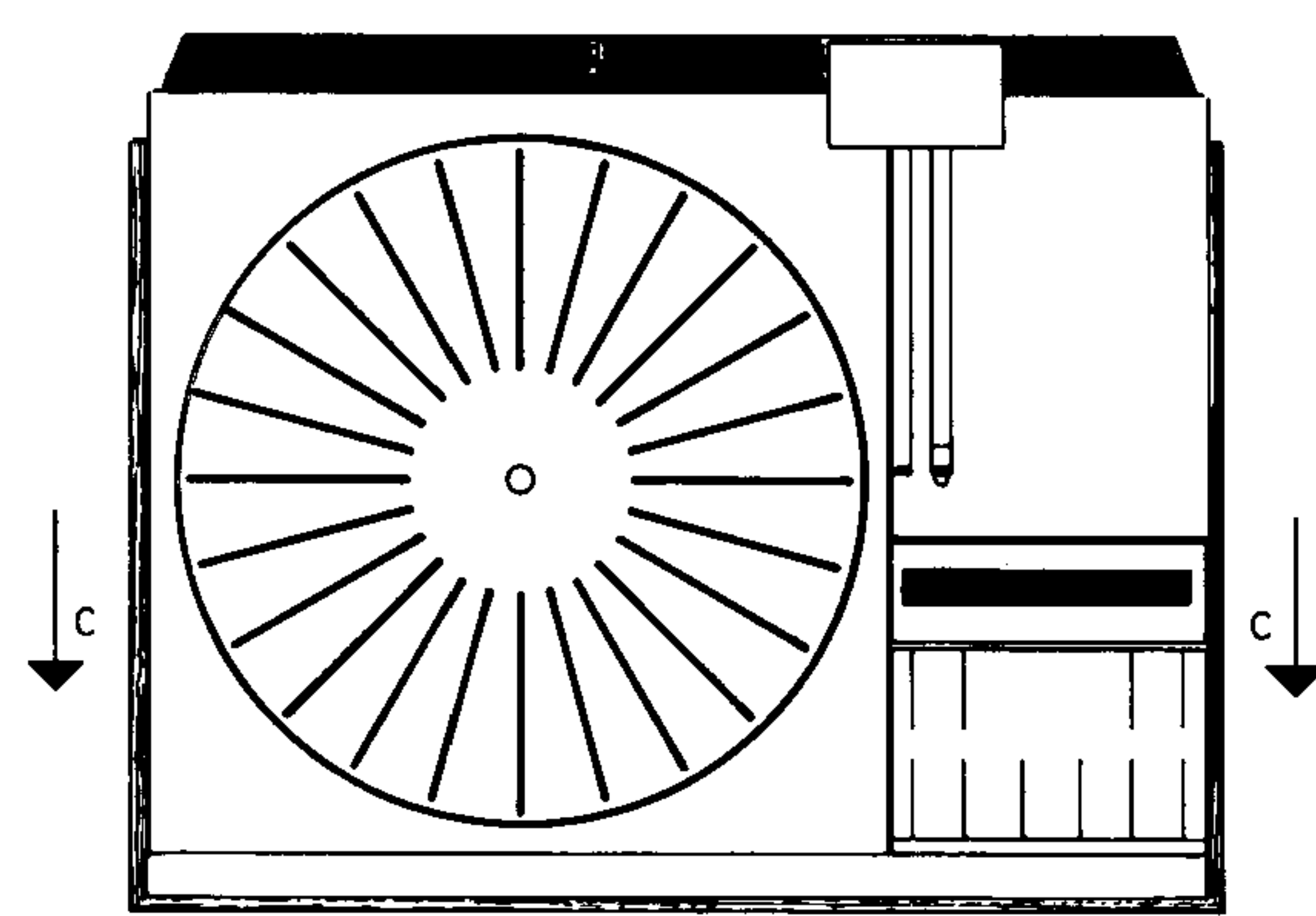
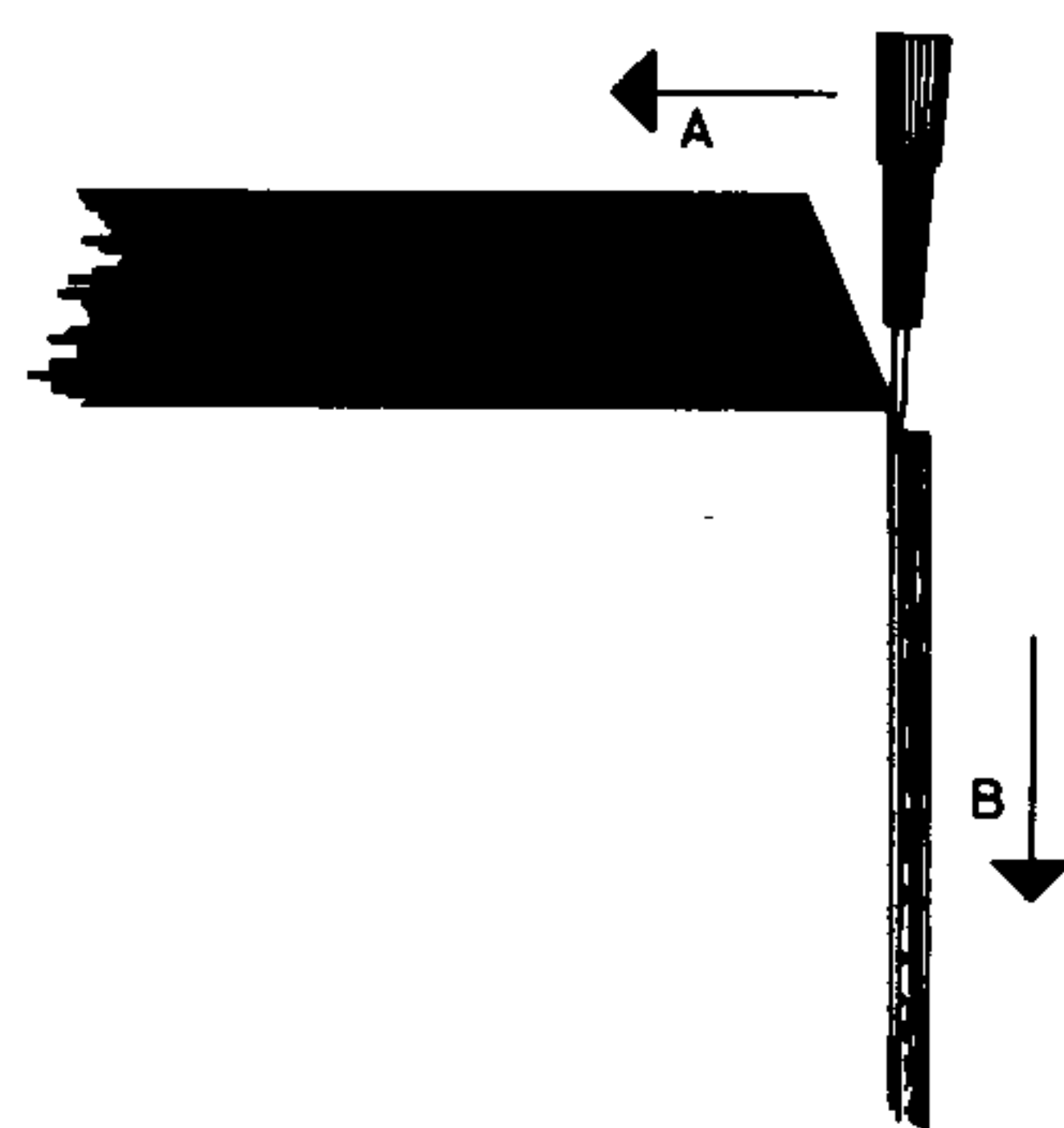


BEOGRAM 4002-6000

TYPE 5501-5502

SERVICE MANUAL

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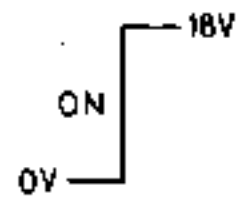
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Symboler
Symbols
Symbole

Som supplement til spændingsangivelserne benyttes symboler fra betjeningspanelet samt fra slædekontakterne til at angive, at en DC spænding i et kredsløb ændrer sig fra et niveau til et andet.

As a supplement to the measuring specification symbols from the operating panel and from the carrier switch are used to indicate that a DC voltage in a circuit changes from one level to another e.g.

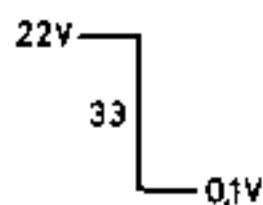
Als Ergänzung zu den Spannungsangaben werden die Symbole vom Bedienungspanel und von den Schlittenkontakten dazu benutzt, anzugeben, dass eine DC Spannung in einer Kreislauflauf sich von einem Niveau auf ein anderes ändert.



F.eks. betyder dette symbol, at spændingen springer fra 0 til 18 V, når panelkontakten ON aktiveres.

This symbol indicates that the voltage goes from 0 to 18 V when activating panel switch ON.

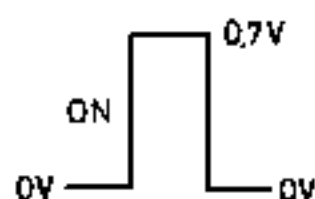
Z.B. bedeutet dieses Symbol, dass die Spannung von 0 auf 18 Volt springt, wenn den Kontakt ON aktiviert wird.



Dette symbol betyder, at spændingen springer fra 22 V til 0,1 V, når panelkontakten 33 aktiveres.

This symbol indicates that the voltage goes from 22 V to 0,1 when activating panel switch 33.

Dieses Symbol bedeutet, dass die Spannung von 22 Volt auf 0,1 Volt springt, wenn den Panelkontakt 33 aktiviert wird.



Dette symbol betyder, at spændingen springer fra 0 til 0,7 V, så længe ON kontakten aktiveres, hvorefter spændingen igen springer på 0 V.

This symbol indicates that the voltage goes from 0 to 0,7, as long as the ON switch is activated, whereafter the voltage goes to 0 again.

Dieses Symbol bedeutet, dass die Spannung von 0 auf 0,7 springt, solange den Kontakt ON aktiviert wird, worauf die Spannung wieder auf 0 Volt springt.

DIAGRAM 1 Beogram 4002 Type 5501 until no. 257556
Beogram 6000 Type 5502 until no. 260028

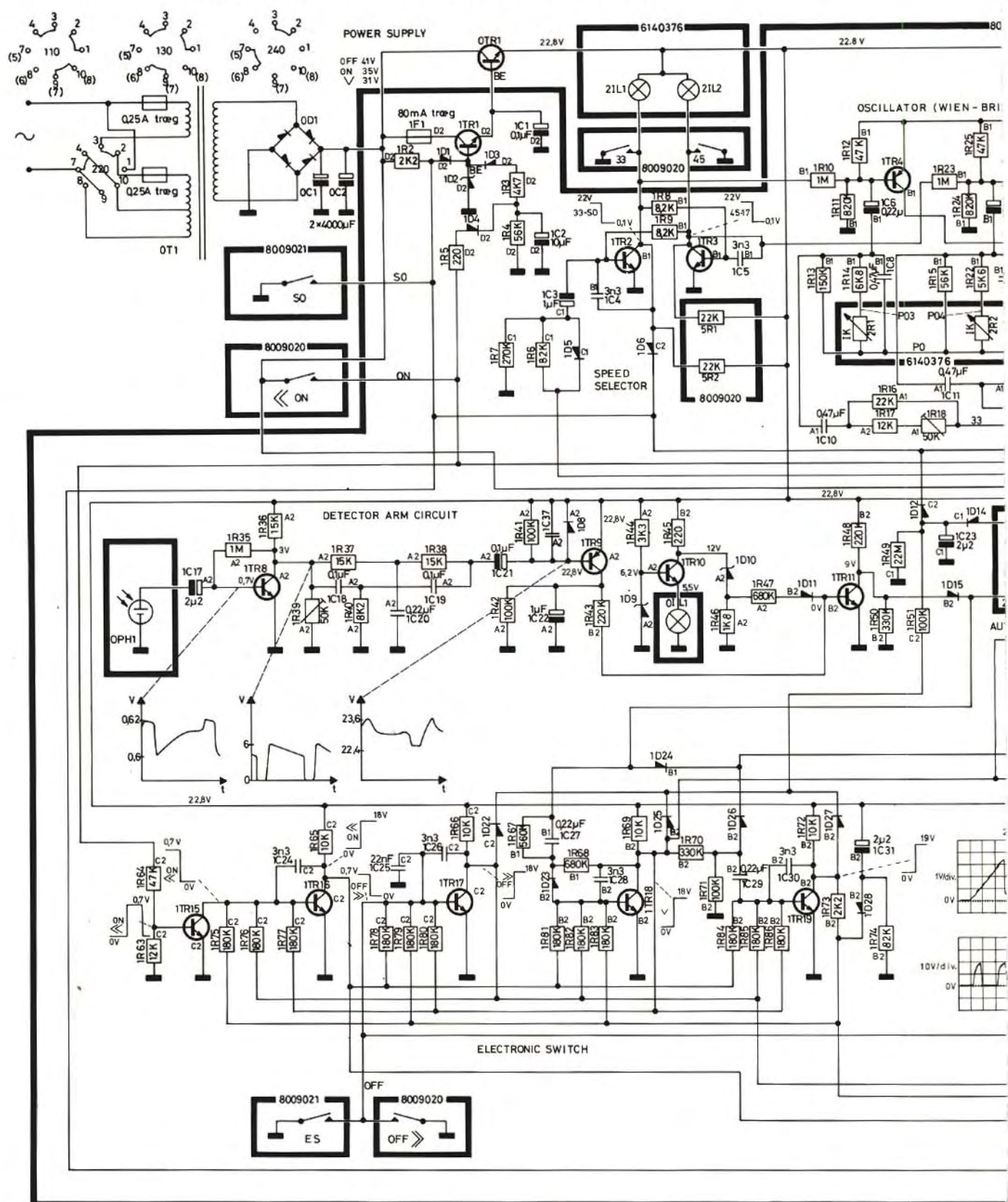
INDEX								
8320097	BC207B	BC107B	BC182BL	BC547B				
				BC237B				
				BC182B				
				BC171B				
8320103					2N5034			
					2N5035			
8320135		MM3005/ MM4005						
		BC143/ BC144						
		BC143/ BC142						
8320161		BC261B	BC212BL	BC212B				
				BC251B				
8320222						BD182		
						2N3055		
8320232		BC142						
		BC144						
8320265							TIP32	
8320266							TIP31	
8320295			BFR41	BC337				
8320312							TIP41A	

0TR1	8320103	1TR7	8320232	1TR19	8320097
0TR1	8320222	1TR8	8320097	1TR20	8320097
0TR2	8320266	1TR9	8320161	1TR21	8320097
0TR3	8320265	1TR10	8320295	1TR22	8320097
0TR4	8320312	1TR11	8320097	1TR23	8320161
		1TR12	8320097	1TR24	8320135
1TR1	8320232	1TR13	8320097	1TR25	8320135
1TR2	8320097	1TR14	8320232	1TR26	8320135
1TR3	8320097	1TR15	8320097	1TR27	8320135
1TR4	8320161	1TR16	8320097	1TR28	8320097
1TR5	8320161	1TR17	8320097	1TR29	8320161
1TR6	8320232	1TR18	8320097		

0D1	8310020	B80C2200	
1D2	8300054	ZPD24V±5%	BZX79C24V0
1D9	8300201	ZPD6V2±5%	BZX79C6V2
1D10	8300053	ZPD15V±5%	BZX79C15V0
1D12	8300101	BAX16	BZY88C15
3D1	8300102	IN4004	EM504
Other diodes	8300058	IN4148	SFD184

DIAGRAM 1

Beogram 4002 Type 5501 until no. 257556/Beogram 6000 Type 5502 until no. 260028



Alle DC spændinger er positive i forhold til stel, og de er målt med roterende pladetallerken, med hævet pick-up arm og med detektorarmen inde over en plade.

Spændingerne er målt med voltmeter med en indre modstand på mindst 2 Mohm.

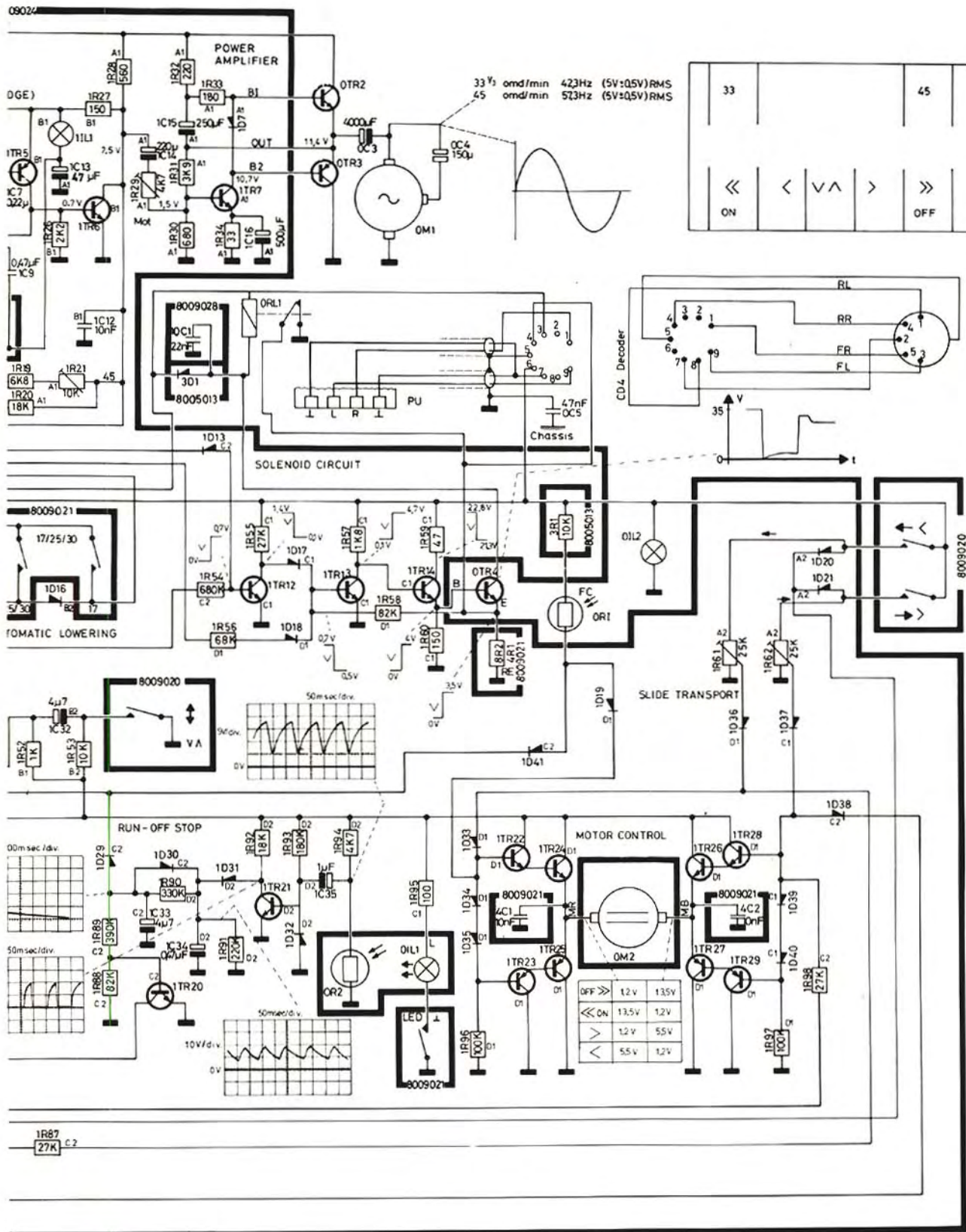
De angivne impulser i detektorarmskredsløbet er målt med roterende pladetallerken og med detektorarmen inde over ribberne uden plade på. Impulserne i udløbsstoppet er målt med pick-up'en sænket i en udløbsrille med en stigning på ca. 3 mm/omdr. på 30 cm plade.

All DC voltages are positive in proportion to chassis and raised pick-up arm and with the detector arm over the ribs without any record on.

The voltages are measured by voltmeter and an inner resistance of at least 2 Mohm.

The stated impulses of the detector arm circuit are measured with the detector arm over the ribs without any record on.

The impulses of the outlet stop are measured with the pick-up lowered in a run-out groove with a rise of approx. 3 mm/turns on 30 cm record.



and they are measured with rotating turn-
rm over a record.

resistor of at least 2 M ohms.

asured with rotating turntable and with

e pick-up lowered into an outlet groove

Alle DC Spannungen sind positiv im Verhältnis zu Masse und sie sind mit rotierendem Plattenteller, mit gehobenem Tonarm und mit dem Detektorarm über einer Platte gemessen.

Die Spannungen sind mit Voltmeter gemessen (Innenwiderstand min. 2 M ohm).

Die angegebenen Impulse des Detektorarmkreislaufes sind mit rotierendem Plattenteller und mit Detektorarm über den Ribben ohne Platte gemessen.

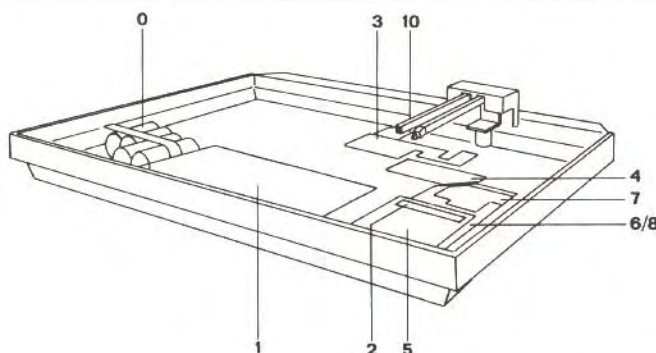
Die Impulse der Auslaufabschaltung sind mit dem Tonarm in einer Auslaufrille mit einer Steigung von etwa 3 mm/Umdrehungen auf 30 cm Platte gesenkt gemessen.

Bang & Olufsen

DIAGRAM 1

Beogram 4002 Type 5501 until no. 277556

Beogram 6000 Type 5502 until no. 260028



0

C

C1	4200310	4000 μ F 50 V
C2	4200310	4000 μ F 50 V
C3	4200259	4000 μ F 25 V
C4	4200260	150 μ F 10 V BIPOLAR
C5	4130087	47 nF 10% 250 V

IL

IL1	8230047	6 V 50 mA
IL2	8230044	24 V 25 mA

M

M1	8400066
M2	8400062

RL

RL1	6810001
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PH

PH1	8760002	BP 100
-----	---------	--------

R

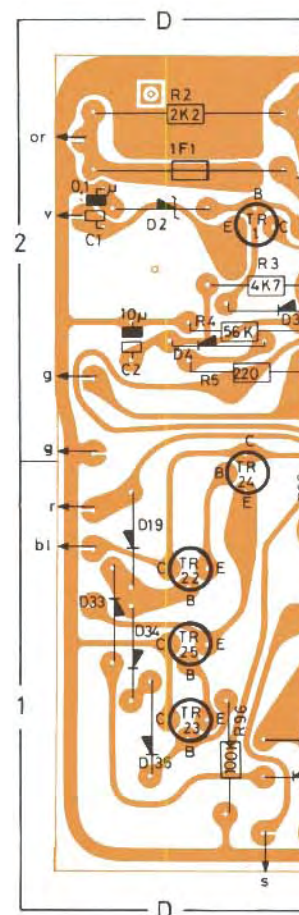
R1	5210004	ORP61
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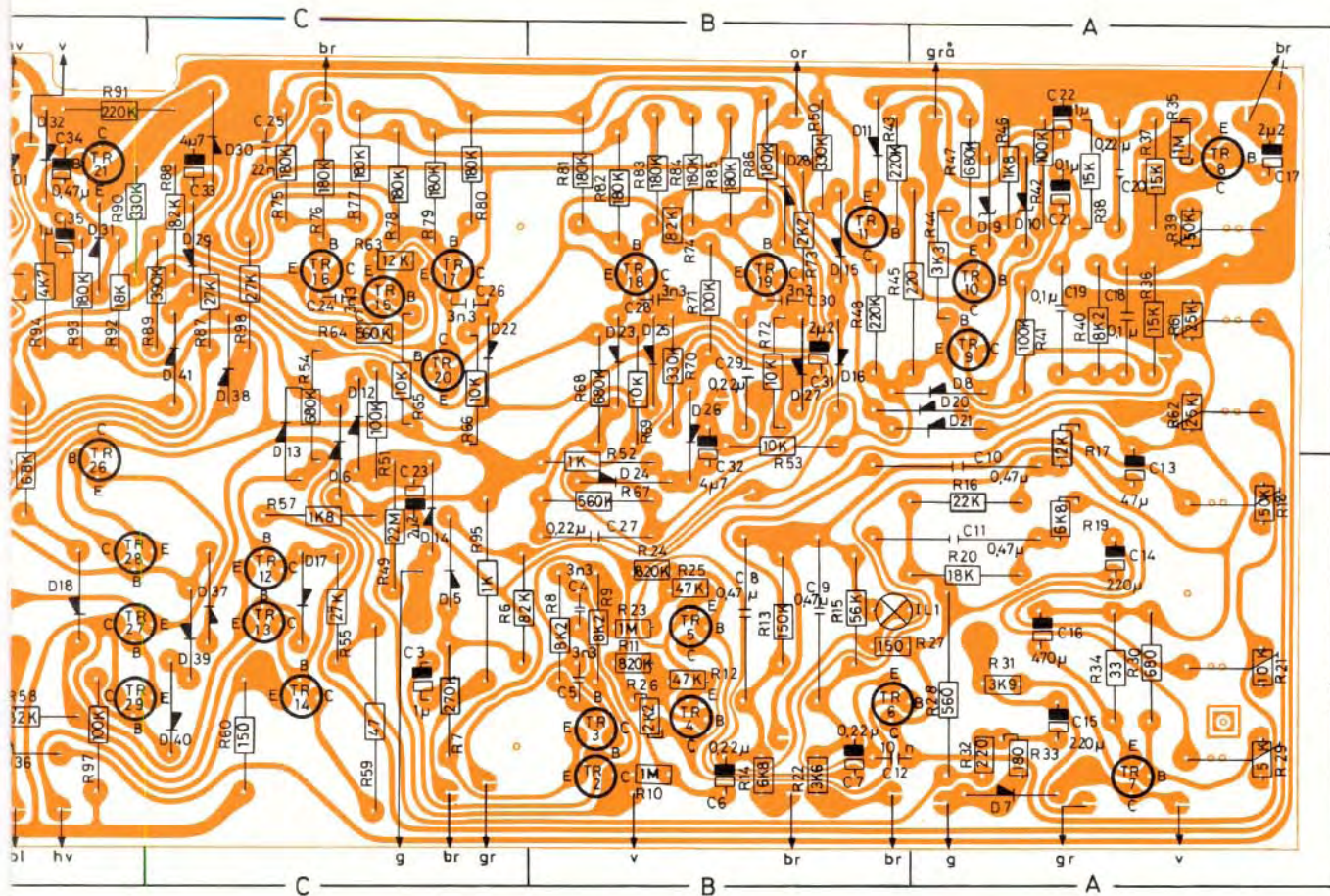
1

PC 8009024

R

R2	5002028	2K2 Ohm 10% 1 W	R33	5010362	180 Ohm 5% 1/8 W	R65	5010059	10 KOhm 5% 1/8 W
R3	5010048	4K7 Ohm 5% 1/8 W	R34	5010253	33 Ohm 5% 1/8 W	R66	5010059	10 KOhm 5% 1/8 W
R4	5010061	56 KOhm 5% 1/8 W	R35	5010054	1 MOhm 5% 1/8 W	R67	5010071	560 KOhm 5% 1/8 W
R5	5010092	220 Ohm 5% 1/8 W	R36	5010053	15 KOhm 5% 1/8 W	R68	5010074	680 KOhm 5% 1/8 W
R6	5010091	82 KOhm 5% 1/8 W	R37	5010053	15 KOhm 5% 1/8 W	R69	5010059	10 KOhm 5% 1/8 W
R7	5010083	270 KOhm 5% 1/8 W	R38	5010053	15 KOhm 5% 1/8 W	R70	5010117	330 KOhm 5% 1/8 W
R8	5010154	8K2 Ohm 5% 1/8 W	R39	5370061	50 KOhm 20% LIN	R71	5010049	100 KOhm 5% 1/8 W
R9	5010154	8K2 Ohm 5% 1/8 W	R40	5010154	8K2 Ohm 5% 1/8 W	R72	5010059	10 KOhm 5% 1/8 W
R10	5010054	1 MOhm 5% 1/8 W	R41	5010049	100 KOhm 5% 1/8 W	R73	5010064	2K2 Ohm 5% 1/8 W
R11	5010505	820 KOhm 5% 1/8 W	R42	5010049	100 KOhm 5% 1/8 W	R74	5010091	82 KOhm 5% 1/8 W
R12	5010045	47 KOhm 5% 1/8 W	R43	5010120	220 KOhm 5% 1/8 W	R75	5010072	180 KOhm 5% 1/8 W
R13	5010063	150 KOhm 5% 1/8 W	R44	5010076	3K3 Ohm 5% 1/8 W	R76	5010072	180 KOhm 5% 1/8 W
R14	5010052	6K8 Ohm 5% 1/8 W	R45	5002017	220 Ohm 10% 1 W	R77	5010072	180 KOhm 5% 1/8 W
R15	5010061	56 KOhm 5% 1/8 W	R46	5010066	1K8 Ohm 5% 1/8 W	R78	5010072	180 KOhm 5% 1/8 W
R16	5010079	22 KOhm 5% 1/8 W	R47	5010074	680 KOhm 5% 1/8 W	R79	5010072	180 KOhm 5% 1/8 W
R17	5010042	12 KOhm 5% 1/8 W	R48	5010120	220 KOhm 5% 1/8 W	R80	5010072	180 KOhm 5% 1/8 W
R18	5370061	50 KOhm 20% LIN	R49	5001085	22 MOhm 10% 1/2 W	R81	5010072	180 KOhm 5% 1/8 W
R19	5010052	6K8 Ohm 5% 1/8 W	R50	5010117	330 KOhm 5% 1/8 W	R82	5010072	180 KOhm 5% 1/8 W
R20	5010135	18 KOhm 5% 1/8 W	R51	5010049	100 KOhm 5% 1/8 W	R83	5010072	180 KOhm 5% 1/8 W
R21	5370074	10 KOhm 20% LIN	R52	5010040	1 KOhm 5% 1/8 W	R84	5010072	180 KOhm 5% 1/8 W
R22	5010041	5K6 Ohm 5% 1/8 W	R53	5010059	10 KOhm 5% 1/8 W	R85	5010072	180 KOhm 5% 1/8 W
R23	5010054	1MOhm 5% 1/8 W	R54	5010074	680 KOhm 5% 1/8 W	R86	5010072	180 KOhm 5% 1/8 W
R24	5010505	820 KOhm 5% 1/8 W	R55	5010141	27 KOhm 5% 1/8 W	R87	5010141	27 KOhm 5% 1/8 W
R25	5010045	47 KOhm 5% 1/8 W	R56	5010062	68 KOhm 5% 1/8 W	R88	5010091	82 KOhm 5% 1/8 W
R26	5010064	2K2 Ohm 5% 1/8 W	R57	5010066	1K8 Ohm 5% 1/8 W	R89	5010073	390 KOhm 5% 1/8 W
R27	5010057	150 Ohm 5% 1/8 W	R58	5010091	82 KOhm 5% 1/8 W	R90	5010117	330 KOhm 5% 1/8 W
R28	5002022	560 Ohm 10% 1W	R59	5002008	470 Ohm 10% 1 W	R91	5010120	220 KOhm 5% 1/8 W
R29	5370058	5 KOhm 20% LIN	R60	5010057	150 Ohm 5% 1/8 W	R92	5010135	18 KOhm 5% 1/8 W
R30	5010144	680 Ohm 5% 1/8 W	R61	5370068	25 KOhm 20% LIN	R93	5010072	180 KOhm 5% 1/8 W
R31	5010441	3K9 Ohm 5% 1/8 W	R62	5370068	25 KOhm 20% LIN	R94	5010048	4K7 Ohm 5% 1/8 W
R32	5010092	220 Ohm 5% 1/8 W	R63	5010042	12 KOhm 5% 1/8 W	R95	5002024	1 KOhm 10% 1W
			R64	5010071	560 KOhm 5% 1/8 W	R96	5010049	100 KOhm 5% 1/8 W





SET FRA PRINTSIDE / SEEN FROM CONDUCTOR SIDE / VON DER LEITERSEITE AUSGESEHEN

R97 5010049 100 KOhm 5% 1/8 W
R98 5010141 27 KOhm 5% 1/8 W

C



C1 4200169 0,1 μ F 35 V
C2 4201065 10 μ F 63 V
C3 4201057 1 μ F 35 V
C4 4011025 3n3F 10% 100 V
C5 4011025 3n3F 10% 100 V
C6 4201072 0,22 μ F 35 V
C7 4201072 0,22 μ F 35 V
C8 4130029 470 nF 10% 250 V
C9 4130029 470 nF 10% 250 V
C10 4130029 470 nF 10% 250 V
C11 4130029 470 nF 10% 250 V
C12 4010041 10 nF - 20% + 100% 40 V
C13 4201074 47 μ F 40 V
C14 4200183 220 μ F 25 V
C15 4200183 220 μ F 25 V
C16 4200109 470 μ F 6 V
C17 4201069 2 μ F 35 V
C18 4130075 100 nF 20% 250 V
C19 4130075 100 nF 20% 250 V
C20 4130082 220 nF 20% 250 V
C21 4200169 0,1 μ F 35 V
C22 4201057 1 μ F 35 V
C23 4201069 2 μ F 35 V
C24 4011025 3n3F 10% 100 V
C25 4010060 22 nF - 20 + 100% 40 V
C26 4011025 3n3F 10% 100 V

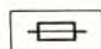
C27 4130082 220 nF 20% 250 V
C28 4011025 3n3F 10% 100 V
C29 4130082 220 nF 20% 250 V
C30 4011025 3n3F 10% 100 V
C31 4201069 2 μ F 35 V
C32 4200108 4 μ F 25 V
C33 4200108 4 μ F 25 V
C34 4201058 0,47 μ F 35 V
C35 4201057 1 μ F 35 V

IL



IL1 8230041 6 V 30 mA

F



F1 6600023 80 mA - T/250 V

Beogram 4002 Type 5501 until no. 277556
Beogram 6000 Type 5502 until no. 260028



R

C

Beogram 4002 Type 5501 from no. 257556

Beogram 6000 Type 5502 from no. 260028

DIAGRAM 1

INDEX								
8320097	BC207B	BC107B	BC182BL	BC547B				
				BC237B				
				BC182B				
				BC171B				
8320103					2N5034			
					2N5035			
8320135		MM3005 /						
		MM4005						
		BC143 /						
		BC144						
		BC143 /						
		BC142						
8320161		BC261B	BC212BL	BC212B				
				BC251B				
8320222						BD182		
						2N3055		
8320232		BC142						
		BC144						
8320265							TIP32	
8320266							TIP31	
8320295			BFR41	BC337				
8320312							TIP41A	

0TR1	8320103	1TR7	8320232	1TR19	8320097
0TR1	8320222	1TR8	8320232	1TR20	8320097
0TR2	8320266	1TR9	8320097	1TR21	8320097
0TR3	8320265	1TR10	8320161	1TR22	8320097
0TR4	8320312	1TR11	8320295	1TR23	8320097
		1TR12	8320097	1TR24	8320097
1TR1	8320232	1TR13	8320097	1TR25	8320135
1TR2	8320161	1TR14	8320097	1TR26	8320161
1TR3	8320097	1TR15	8320097	1TR27	8320135
1TR4	8320097	1TR16	8320232	1TR28	8320135
1TR5	8320161	1TR17	8320097	1TR29	8320097
1TR6	8320161	1TR18	8320097	1TR30	8320135
				1TR31	8320161

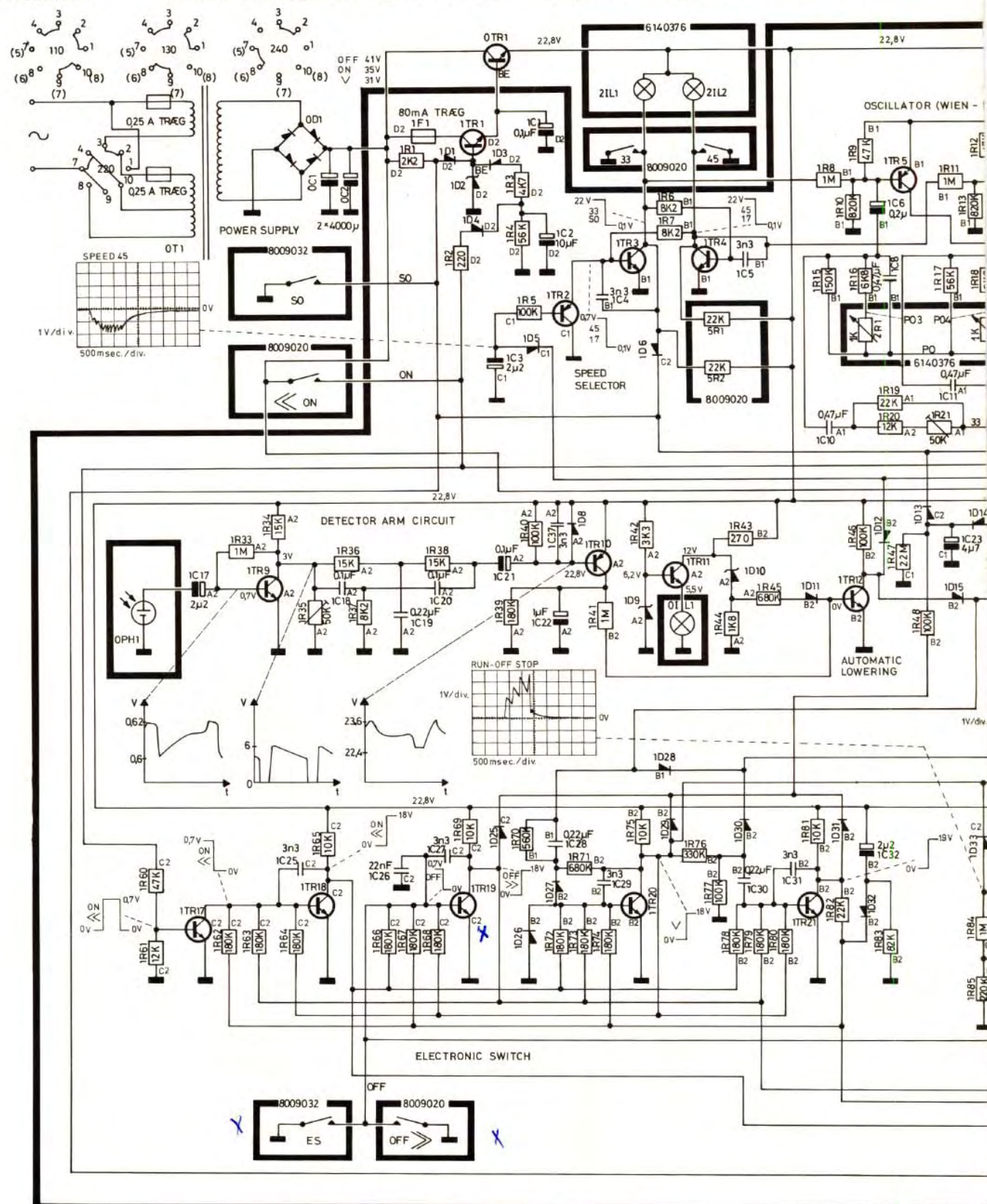
0D1	8310020	B80C2200		
1D2	8300054	ZPD24V±5%	BZX79C24V0	
1D9	8300201	ZPD6V2±5%	BZX79C6V2	
1D10	8300053	ZPD15V±5%	BZX79C15V0	BZY88C15
1D13	8300101	BAX16		
3D1	8300102	IN4004	EM504	
Other diodes	8300058	IN4148	SFD184	

Bang & Olufsen

DIAGRAM 1

Beogram 4002 Type 5501 from no. 257556

Beogram 6000 Type 5502 from no. 260028



Alle DC spændinger er positive i forhold til stel, og de er målt med roterende pladetallerken, med hævet pick-up arm og med detektorarmen inde over en plade. Spændingerne er målt med voltmeter med en indre modstand på mindst 2 Mohm.

De angivne impulser i detektorarmskredsløbet er målt med roterende pladetallerken og med detektorarmen inde over ribberne uden plade på.

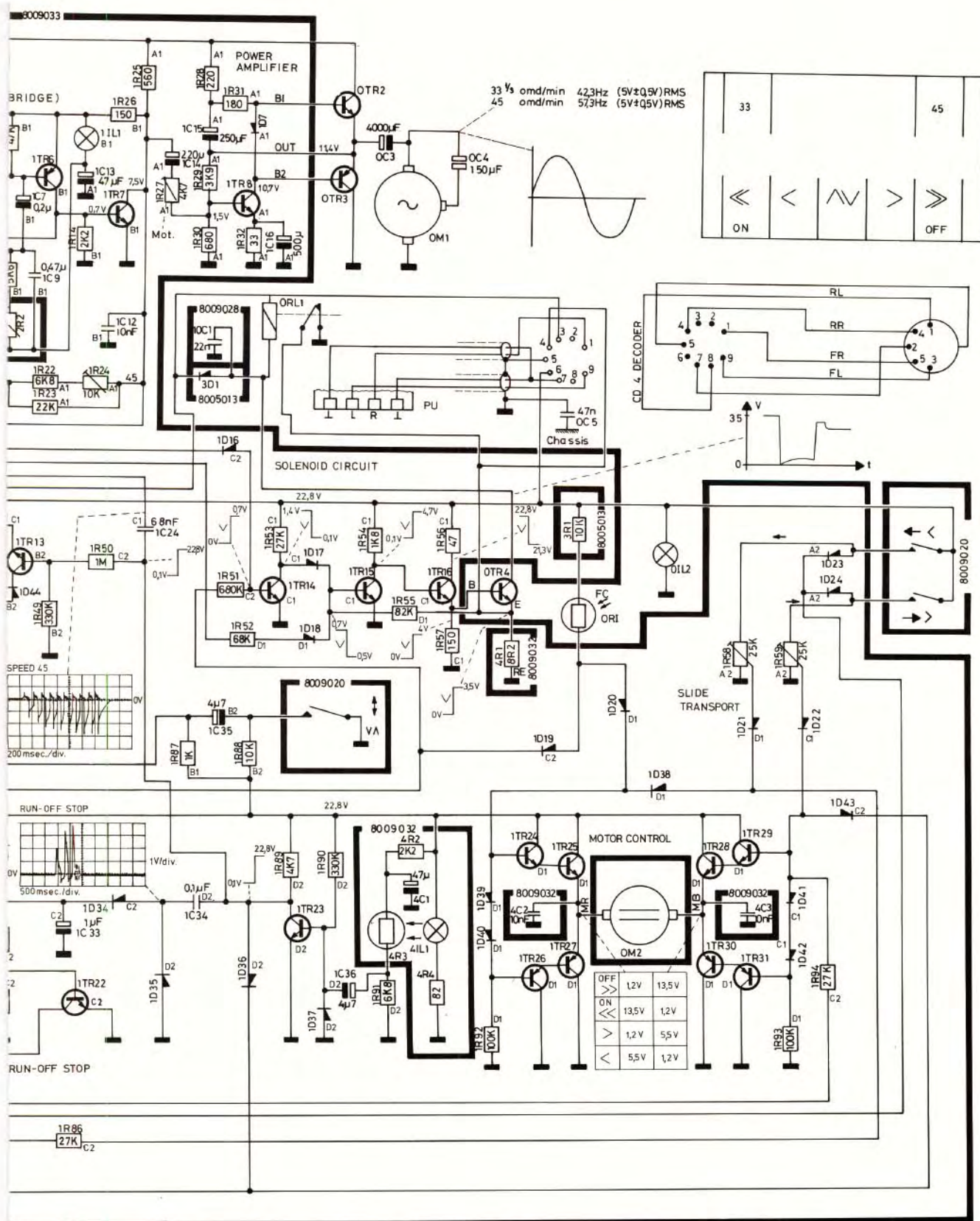
Oscillogrammer mærket SPEED 45 er målt med hævet pick-up arm under hurtig-ind transport, medens slædeskalaens speed 45 afsnit passerer fotomodstand og lampe.

Oscillogrammer mærket RUN-OFF STOP er målt med pick-up sænket i en udløbsrille, stigning ca. 3 mm/omdr., 30 cm plade.

All DC voltages are positive in proportion to the turntable and raised pick-up arm and with the measured by voltmeter and an inner resistor of

Oscillograms marked SPEED 45 are measured with transport while the speed 45 part of the carrier

Oscillograms marked RUN-OFF STOP are measured with pick-up lowered in a run-off groove, rise approx. 3 mm/turns, 30 cm record



assis and they are measured with rotating detector arm over a record. The voltages are at least 2 M ohms.

with raised pick-up arm during fast inward dial passes photo-resistor and lamp.

ured with pick-up arm lowered into an out-ord.

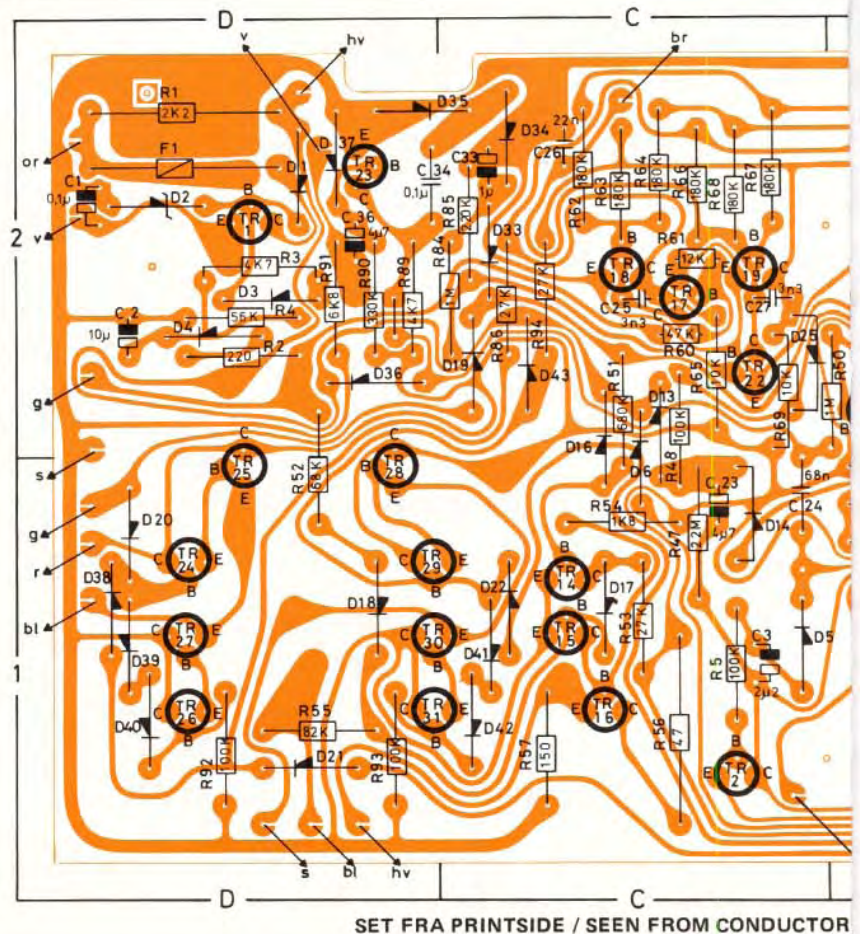
Alle DC Spannungen sind positiv im Verhältnis zu Masse und sie sind mit rotierendem Plattenteller, mit gehobenem Tonarm und mit dem Detektorarm über einer Platte gemessen. Die Spannungen sind mit Voltmeter gemessen (Innenwiderstand min. 2 M ohm).

Oszillogramme gezeichnet SPEED 45 sind mit gehobenem Tonarm während schnellen Hineintransports gemessen, während Abschnitt speed 45 der Schritteskala Photowiderstand und Lampe passiert.

Oszillogramme gezeichnet RUN-OFF STOP sind mit dem Tonarm in einer Auslaufrille gesenkt, Steigung etwa 3 mm/Umdrehungen, 30 cm Platte, gemessen.

DIAGRAM 1

Beogram 4002 Type 5501 from no. 257556
Beogram 6000 Type 5502 from no. 260028



1 PC 8009033

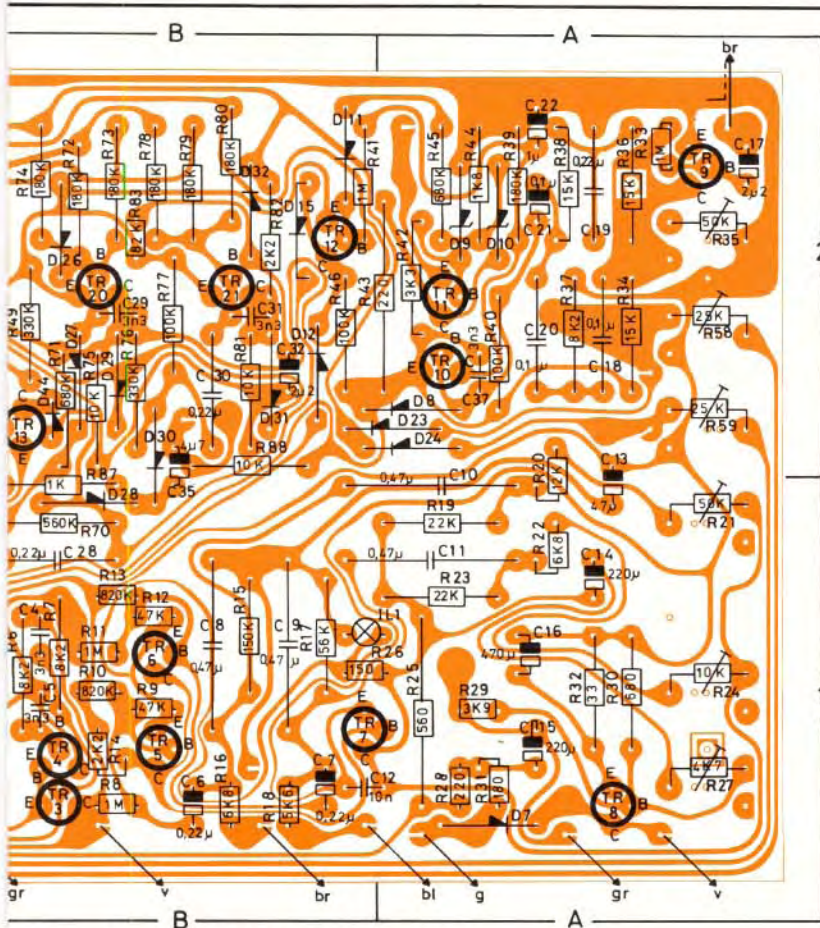
R



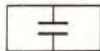
R1	5002028	2K2 Ohm 10% 1 W
R2	5010092	220 Ohm 5% 1/8 W
R3	5010048	4K7 Ohm 5% 1/8 W
R4	5010061	56 KOhm 5% 1/8 W
R5	5010049	100 KOhm 5% 1/8 W
R6	5010154	8K2 Ohm 5% 1/8 W
R7	5010154	8K2 Ohm 5% 1/8 W
R8	5010054	1 MOhm 5% 1/8 W
R9	5010640	47 KOhm 5% 1/8 W
R10	5010505	820 KOhm 5% 1/8 W
R11	5010054	1 MOhm 5% 1/8 W
R12	5010640	47 KOhm 5% 1/8 W
R13	5010505	820 KOhm 5% 1/8 W
R14	5010064	2K2 Ohm 5% 1/8 W
R15	5010063	150 KOhm 5% 1/8 W
R16	5010052	6K8 Ohm 5% 1/8 W
R17	5010061	56 KOhm 5% 1/8 W
R18	5010041	5K6 Ohm 5% 1/8 W
R19	5010079	22 KOhm 5% 1/8 W
R20	5010042	12 KOhm 5% 1/8 W
R21	5370061	50 KOhm 20% LIN
R22	5010052	6K8 Ohm 5% 1/8 W
R23	5010079	22 KOhm 5% 1/8 W
R24	5370074	10 KOhm 20% LIN
R25	5002022	560 Ohm 10% 1 W
R26	5010057	150 Ohm 5% 1/8 W
R27	5370058	4K7 Ohm 20% LIN
R28	5010092	220 Ohm 5% 1/8 W
R29	5010069	3K9 Ohm 5% 1/8 W

R30	5010144	680 Ohm 5% 1/8 W
R31	5010362	180 Ohm 5% 1/8 W
R32	5010253	33 Ohm 5% 1/8 W
R33	5010054	1 MOhm 5% 1/8 W
R34	5010053	15 KOhm 5% 1/8 W
R35	5370061	50 KOhm 20% LIN
R36	5010053	15 KOhm 5% 1/8 W
R37	5010154	8K2 Ohm 5% 1/8 W
R38	5010053	15 KOhm 5% 1/8 W
R39	5010072	180 KOhm 5% 1/8 W
R40	5010049	100 KOhm 5% 1/8 W
R41	5010054	1 MOhm 5% 1/8 W
R42	5010076	3K3 Ohm 5% 1/8 W
R43	5002018	270 Ohm 10% 1 W
R44	5010066	1K8 Ohm 5% 1/8 W
R45	5010074	680 KOhm 5% 1/8 W
R46	5010049	100 KOhm 5% 1/8 W
R47	5001085	22 MOhm 10% 1/2 W
R48	5010049	100 KOhm 5% 1/8 W
R49	5010117	330 KOhm 5% 1/8 W
R50	5010054	1 MOhm 5% 1/8 W
R51	5010074	680 KOhm 5% 1/8 W
R52	5010062	68 KOhm 5% 1/8 W
R53	5010141	27 KOhm 5% 1/8 W
R54	5010066	1K8 Ohm 5% 1/8 W
R55	5010091	82 KOhm 5% 1/8 W
R56	5002008	47 Ohm 10% 1 W
R57	5010057	150 Ohm 5% 1/8 W
R58	5370068	25 KOhm 20% LIN
R59	5370068	25 KOhm 20% LIN
R60	5010640	47 KOhm 5% 1/8 W
R61	5010042	12 KOhm 5% 1/8 W

R62	5010072	180 KOhm 5% 1/8 W
R63	5010072	180 KOhm 5% 1/8 W
R64	5010072	180 KOhm 5% 1/8 W
R65	5010059	10 KOhm 5% 1/8 W
R66	5010072	180 KOhm 5% 1/8 W
R67	5010072	180 KOhm 5% 1/8 W
R68	5010072	180 KOhm 5% 1/8 W
R69	5010059	10 KOhm 5% 1/8 W
R70	5010071	560 KOhm 5% 1/8 W
R71	5010074	680 KOhm 5% 1/8 W
R72	5010072	180 KOhm 5% 1/8 W
R73	5010072	180 KOhm 5% 1/8 W
R74	5010072	180 KOhm 5% 1/8 W
R75	5010059	10 KOhm 5% 1/8 W
R76	5010117	330 KOhm 5% 1/8 W
R77	5010049	100 KOhm 5% 1/8 W
R78	5010072	180 KOhm 5% 1/8 W
R79	5010072	180 KOhm 5% 1/8 W
R80	5010072	180 KOhm 5% 1/8 W
R81	5010059	10 KOhm 5% 1/8 W
R82	5010079	22 KOhm 5% 1/8 W
R83	5010091	82 KOhm 5% 1/8 W
R84	5010054	1 MOhm 5% 1/8 W
R85	5010120	220 KOhm 5% 1/8 W
R86	5010141	27 KOhm 5% 1/8 W
R87	5010040	1 KOhm 5% 1/8 W
R88	5010059	10 KOhm 5% 1/8 W
R89	5010048	4K7 Ohm 5% 1/8 W
R90	5010117	330 KOhm 5% 1/8 W
R91	5010052	6K8 Ohm 5% 1/8 W
R92	5010049	100 KOhm 5% 1/8 W



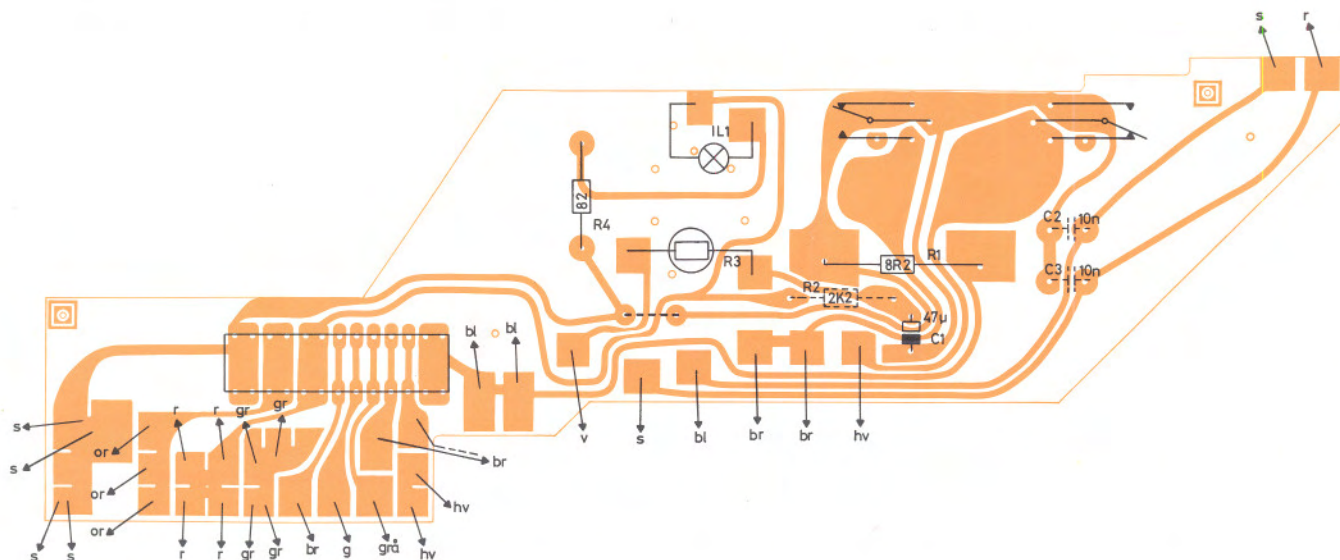
SIDE / VON DER LEITERSEITE AUSGESEHEN

R93	5010049	100 KOhm 5% 1/8 W	C27	4011025	3n3F 10% 100 V
R94	5010141	27 KOhm 5% 1/8 W	C28	4130082	220 nF 20% 250 V
			C29	4011025	3n3F 10% 100 V
			C30	4130082	220 nF 20% 250 V
			C31	4011025	3n3F 10% 100 V
			C32	4201069	2μ2 F 35 V
C			C33	4201057	1 μF 35 V
C1	4200169	0,1 μF 35 V	C34	4130075	100 nF 20% 250 V
C2	4201065	10 μF 63 V	C35	4200108	4μ7F 25 V
C3	4201069	2μ2 F 35 V	C36	4200108	4μ7F 25 V
C4	4011025	3n3 F 10% 100 V	C37	4011025	3n3F 10% 100 V
C5	4011025	3n3 F 10% 100 V			
C6	4201072	0,22 μF 35 V			
C7	4201072	0,22 μF 35 V			
C8	4130029	470 nF 10% 250 V	IL		
C9	4130029	470 nF 10% 250 V	IL1	8230041	6 V 30 mA
C10	4130029	470 nF 10% 250 V			
C11	4130029	470 nF 10% 250 V			
C12	4010041	10 nF - 20% + 100% 40 V			
C13	4201074	47 μF 40 V	F		
C14	4200183	220 μF 25 V	F1	6600023	80 mA-T/250 V
C15	4200183	220 μF 25 V			
C16	4200109	470 μF 6 V			
C17	4201069	2μ2F 35 V			
C18	4130075	100 nF 20% 250 V			
C19	4130082	220 nF 20% 250 V			
C20	4130075	100 nF 20% 250 V			
C21	4200169	0,1 μF 35 V			
C22	4201057	1 μF 35 V			
C23	4200108	4μ7 F 25 V			
C24	4130100	68 nF 10% 250 V			
C25	4011025	3n3 F 10% 100 V			
C26	4010060	22 nF - 20% + 100% 40 V			

~~Beogram 4002 Type 5501 serial no. 257556~~
~~Beogram 6000 Type 5502 serial no. 260028~~

Beogram 4002 Type 5501 from no. 257556

Beogram 6000 Type 5502 from no. 260028



SET FRA PRINTSIDE / SEEN FROM CONDUCTOR SIDE / VON DER LEITERSEITE AUSGESEHEN

4 PC 8009032

R

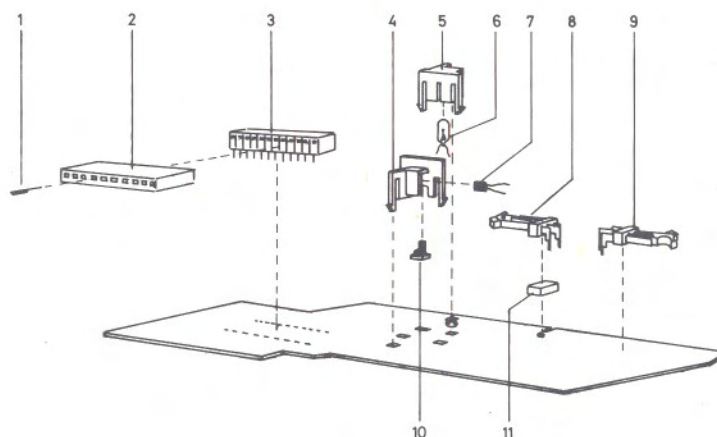
R1 5110028 8R2 Ohm 10% 1 W
 R2 5010064 2K2 Ohm 5% 1/8 W
 R3 5210005 RPY 58
 R4 5010056 82 Ohm 5% 1/8 W

C

C1 4201074 47 uF 40 V
 C2 4010041 10 nF - 20% + 100% 40 V

IL

IL1 8230044 24 V 25 mA



MEKANISK STYKLISTE FOR PC 8009032

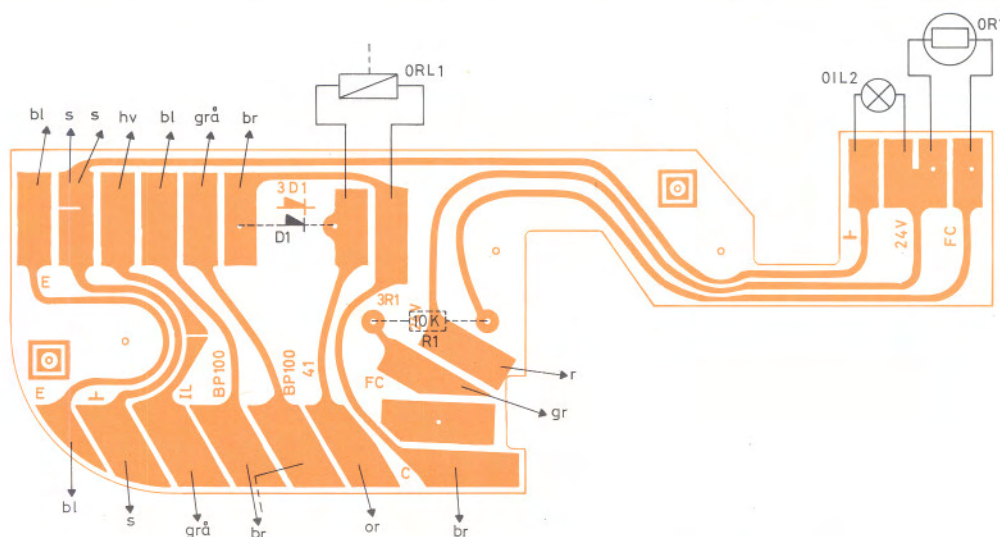
1	7500105	Stikben
2	7220060	Hus for stikben
3	7210072	Fatning
4	3131099	Hus
5	3131098	Hus
6	8230044	Lampe 24V - 25 mA
7	5210005	Fotomodstand RPY 58
8	7400115	Mikroomskifter
9	7400115	Mikroomskifter
10	3454170	Bundstykke
11	3103077	Fod

MECHANICAL PARTS LIST FOR PC 8009032

Pin
Housing for pin
Socket
Housing
Housing
Lamp 24 V - 25 mA
Photoresistor RPY 58
Switch
Switch
Bottom
Insert

MECHANISCHE STÜCKLISTE FÜR PC 8009032

Stift
Gehäuse für Stift
Fassung
Gehäuse
Gehäuse
Lampe 24 V - 25 mA
Fotowiderstand RPY 58
Umschalter
Umschalter
Bodenstück
Zwischeneinlegstück



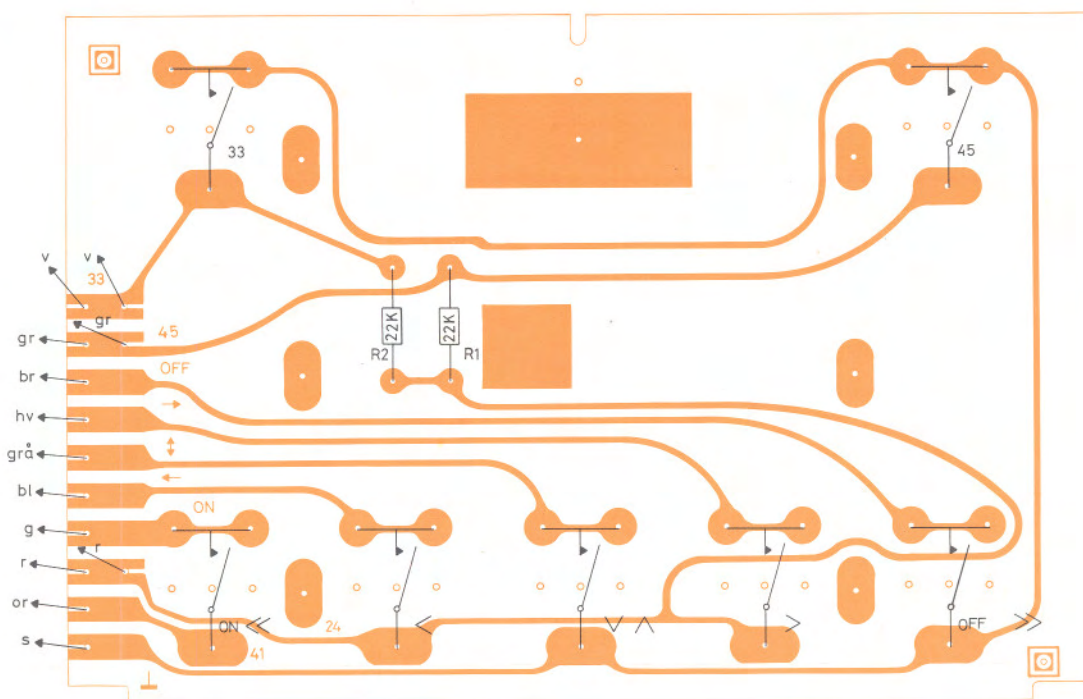
SET FRA PRINTSIDE / SEEN FROM CONDUCTOR SIDE / VON DER LEITERSEITE AUSGESEHEN

3 PC 8005013



R

R1 5010059 10 KOhm 5% 1/8 W



SET FRA PRINTSIDE / SEEN FROM CONDUCTOR SIDE / VON DER LEITERSEITE AUSGESEHEN

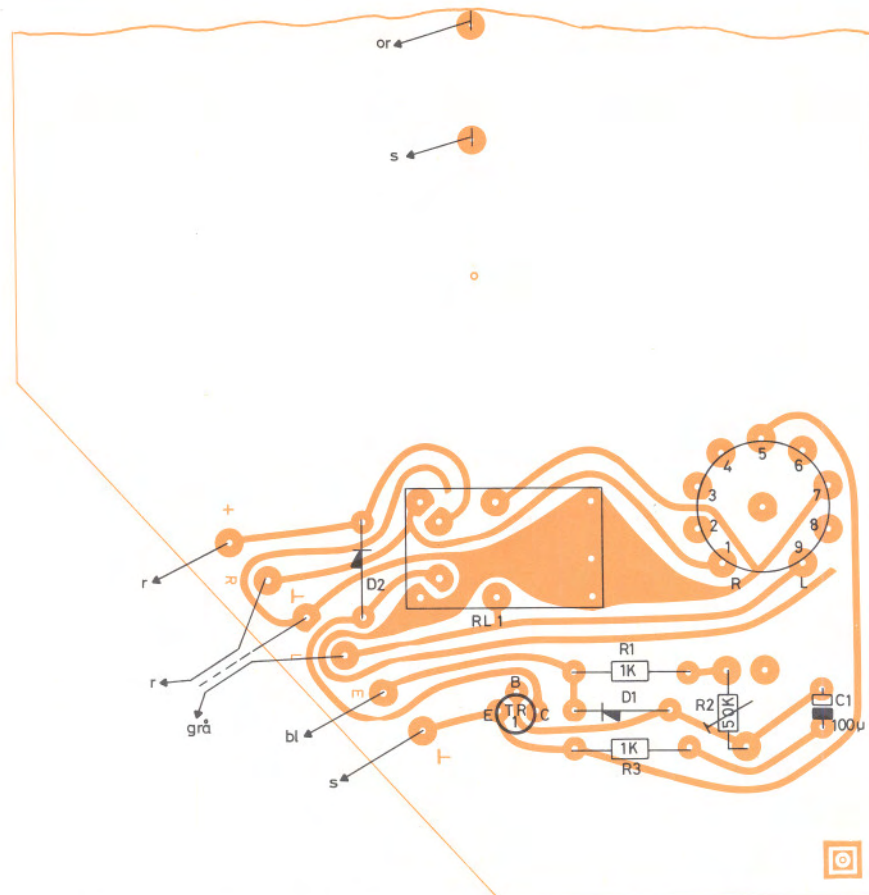
5 PC 8009020



R

R1 5010079 22 KOhm 5% 1/8 W
R2 5010079 22 KOhm 5% 1/8 W

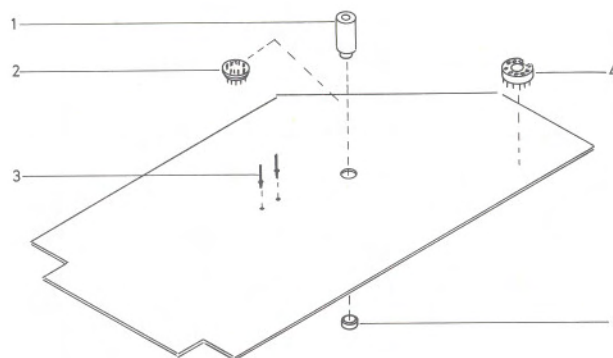
DIAGRAM 2



SET FRA PRINTSIDE / SEEN FROM CONDUCTOR SIDE / VON DER LEITERSEITE AUSGESEHEN

8 PC 8009029

R		C		RL	
R1	5370169	50 KOhm 20% LIN.	C1	4200098	100 µF 6 V 3
R2	5010040	1 KOhm 5% 1/8 W			
R3	5010040	1 KOhm 5% 1/8 W			
				RL1	7600007



MEKANISK STYKLISTE FOR PC 8009029

1	2938092	Bøsning for dekoder
2	7220066	Noval stik
3	7500013	Kontaktspyd
4	7203003	Noval fatning
5	2938093	Bøsning, støtterør

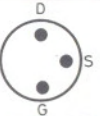
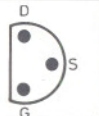
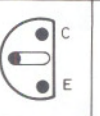
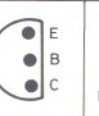
MECHANICAL PARTS LIST FOR PC 8009029

1	2938092	Bushing for decoder
2	7220066	Noval plug
3	7500013	Contact spear
4	7203003	Noval socket
5	2938093	Bushing, brace piping

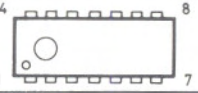
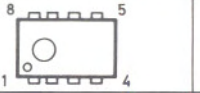
MECHANISCHE STÜCKLISTE FÜR PC 8009029

1	2938092	Buchse für Dekoder
2	7220066	Novalstecker
3	7500013	Kontaktstift
4	7203003	Novalfassung
5	2938093	Buchse, Rohranker

DIAGRAM 2

INDEX									
8320136	U1981E	3C2P	2N5245 3C2 TIS88A						
8320137				BC182B					
8320258						TIP31A	2N4922	2N5296	
8340028					MPSA13 SPS5418				

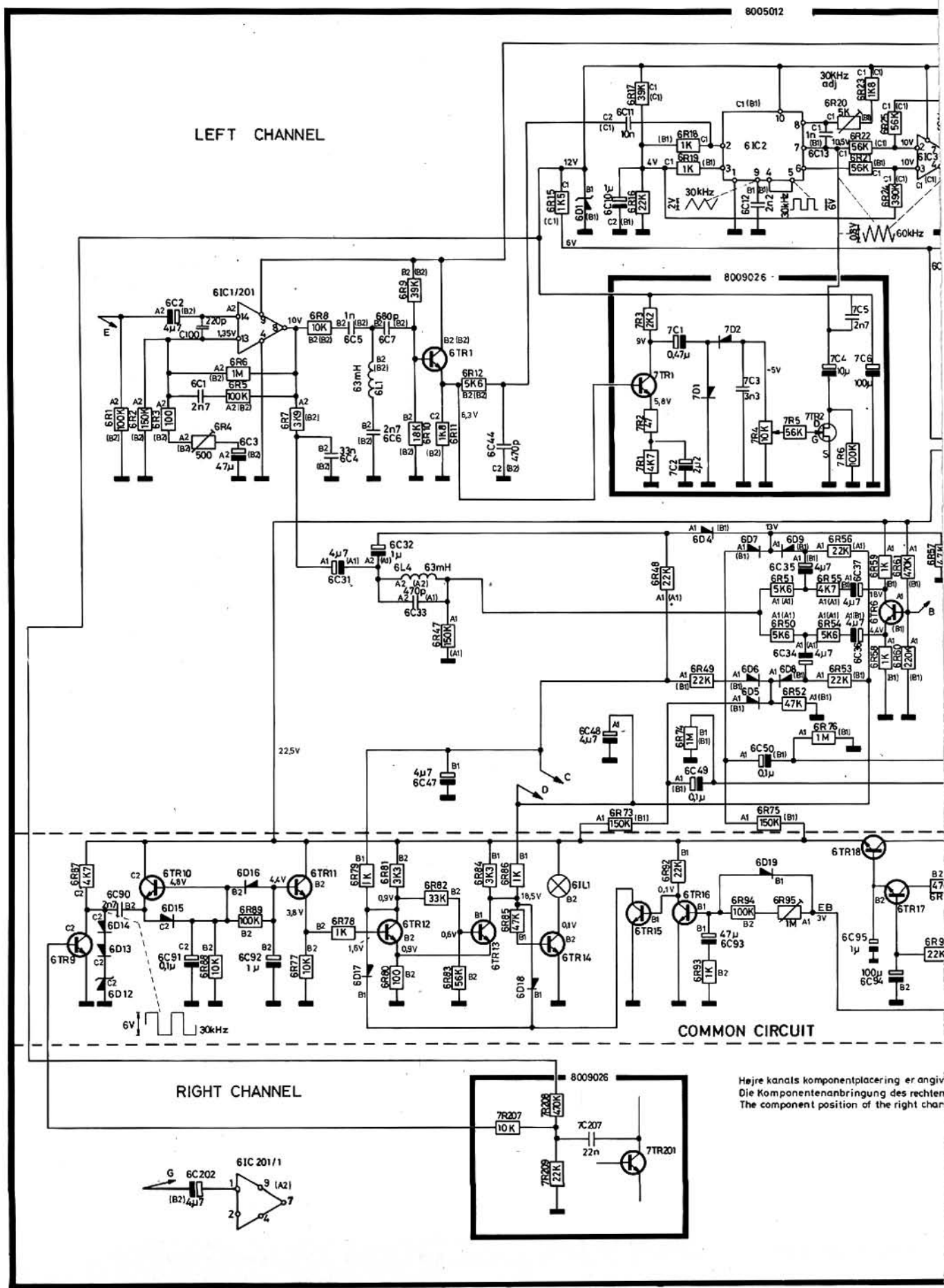
6TR1 (201)	8320137	6TR10	8320137	6TR18	8320258
6TR3 (203)	8320137	6TR11	8320137		
6TR4 (204)	8320137	6TR12	8320137	7TR1 (201)	8320137
6TR5 (205)	8320136	6TR13	8320137	7TR2 (202)	8320354
6TR6 (206)	8320137	6TR14	8320137		
6TR7 (207)	8320137	6TR15	8320137	8TR1	8340028
6TR8 (208)	8320136	6TR16	8320137		
6TR9	8320137	6TR17	8320137		

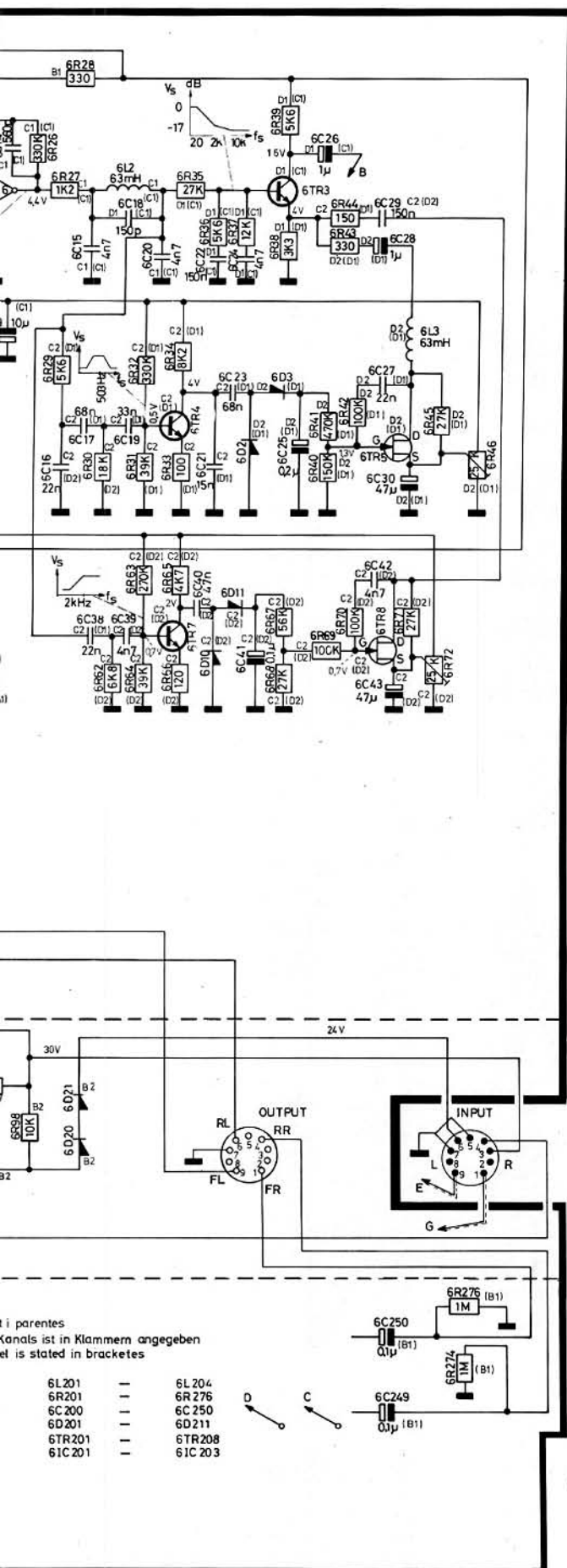
INDEX			
8340038	LM381		
8340039		LM307	
8340040	LM565		

6IC1/201	8340038
6IC2 (202)	8340040
6IC3 (203)	8340039

6D1	8300029	ZF 12V±5%	BZX79 C12V0
6D2 (202)	8300009	OA90	
6D3 (203)	8300009	OA 90	
6D10 (210)	8300009	OA 90	
6D11 (211)	8300009	OA 90	
6D12	8300036	ZF 4;7V±5%	BZX79 C4V7
6D19	8300009	OA 90	
7D1 (201)	8300042	OA 91	
7D2 (202)	8300042	OA 91	
8D1	8300042	OA 91	
Other diodes	8300131	IN4148	

DIAGRAM 2





De angivne spændinger er positive i forhold til stel, og er målt med CD-4 signal på indgangen.

Input – 60 dBm (775 μ V rms).

f mod. = 1 kHz; Δf = 1,3 kHz.

The stated voltages are positive in proportion to the chassis, and measured with CD-4 signal at the inputs.

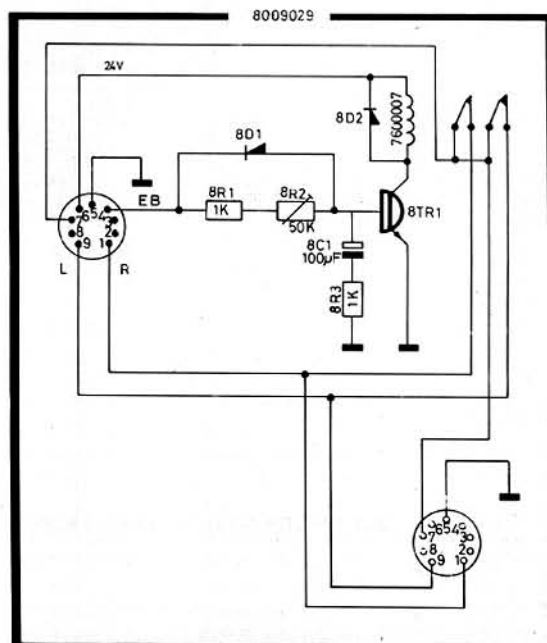
Input – 60 dBm (775 μ V rms).

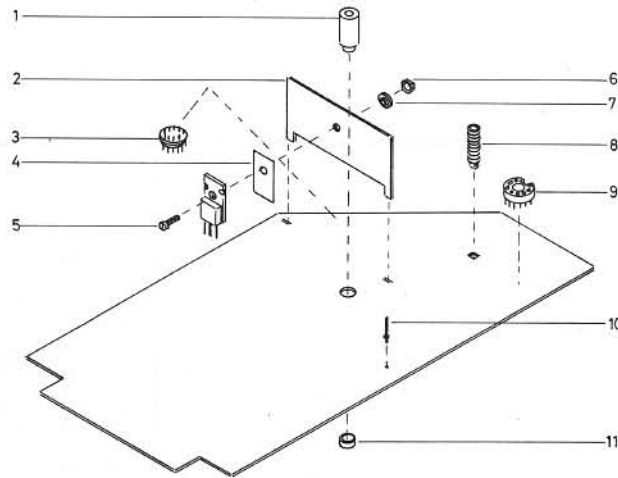
f mod. = 1 kHz; Δf = 1,3 kHz.

Die angegebenen Spannungen sind positiv im Verhältnis zu dem Chassis und sind mit CD-4 Signal auf dem Eingang gemessen.

Input – 60 dBm (775 μ V rms).

f mod. = 1 kHz; Δf = 1,3 kHz.





MEKANISK STYKLISTE FOR PC 8005012

1	2938093	Bøsning, støtterør
2	3358096	Køleplade
3	7220056	Noval stik
4	3170121	Glimmerskive
5	2038954	Skrue AM 3 x 6 DIN 963
6	2380011	Møtrik M 3
7	2938097	Isolationsbøsning
8	0514075	Spoleform
9	7203003	Noval fatning
10	7500013	Stikben
11	2938092	Bøsning for decoder

MECHANICAL PARTSLIST FOR PC 8005012

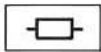
Bushing, brace piping
Heat sink
Noval plug
Mica sheet
Screw, AM 3 x 6 DIN 963
Nut M 3
Insulating bushing
Coil form
Noval socket
Contact plug
Bushing for decoder

MECHANISCHE STÜCKLISTE FÜR PC 8005012

Buchse, Rohranker
Kühlblech
Novalstecker
Glimmerscheibe
Schraube, AM 3 x 6 DIN 963
Mutter M 3
Isolierbuchse
Spuleform
Novalfassung
Stiftstecker
Buchse für Dekoder

6 PC 8005012

DECODER

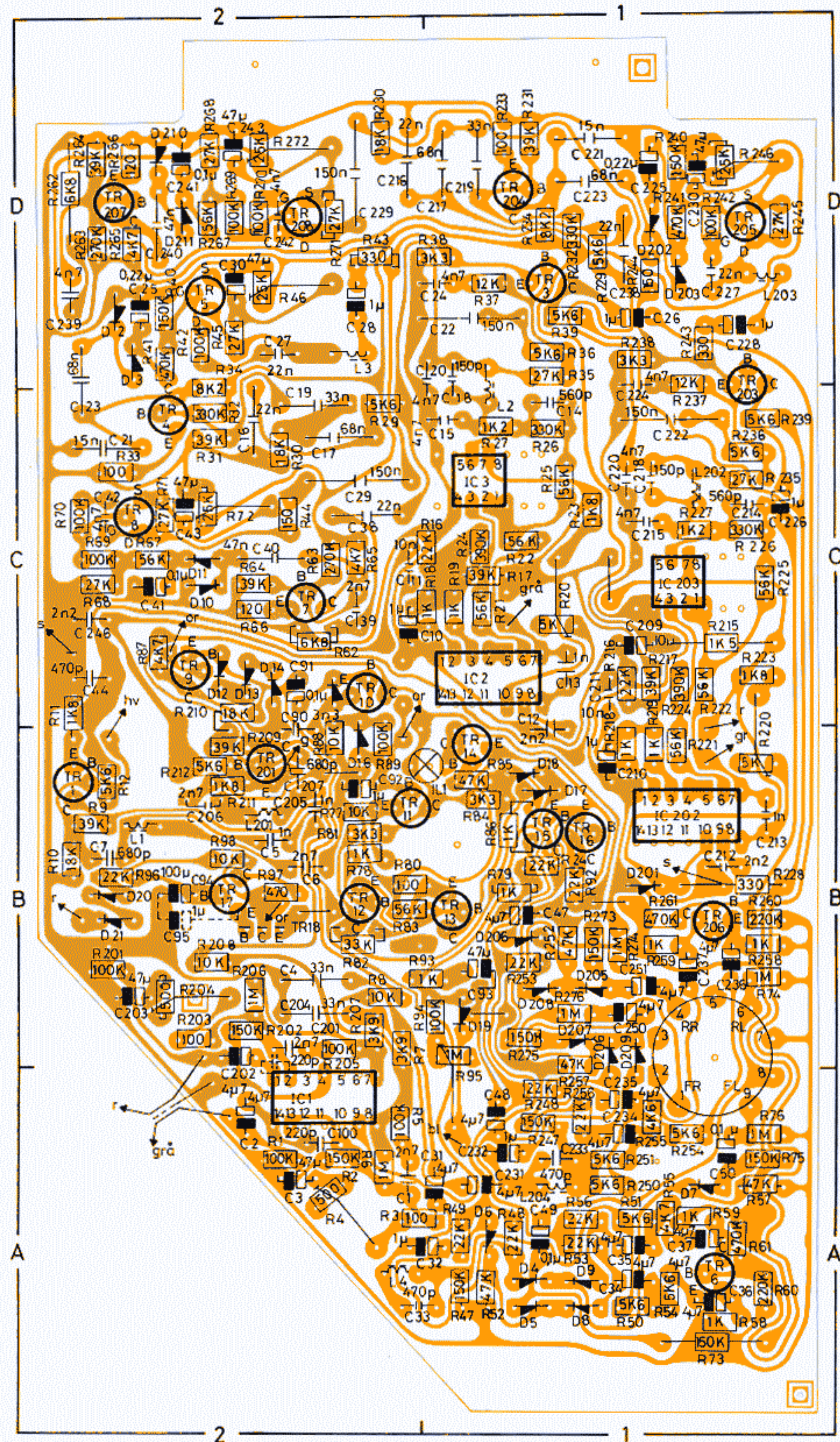


R

R1 (R201)	5010049	100 KOhm 5% 1/8 W
R2 (R202)	5010063	150 KOhm 5% 1/8 W
R3 (R203)	5010065	100 Ohm 5% 1/8 W
R4 (R204)	5370186	500 Ohm 20% LIN.
R5 (R205)	5010049	100 KOhm 5% 1/8 W
R6 (R206)	5010054	1 MOhm 5% 1/8 W
R7 (R207)	5010069	3K9 Ohm 5% 1/8 W
R8 (R208)	5010059	10 KOhm 5% 1/8 W
R9 (R209)	5010060	39 KOhm 5% 1/8 W
R10 (R210)	5010135	18 KOhm 5% 1/8 W
R11 (R211)	5010066	1K8 Ohm 5% 1/8 W
R12 (R212)	5010041	5K6 Ohm 5% 1/8 W
(R215)	5010247	1K5 Ohm 5% 1/8 W
R16 (R216)	5010079	22 KOhm 5% 1/8 W
R17 (R217)	5010060	39 KOhm 5% 1/8 W
R18 (R218)	5010040	1 KOhm 5% 1/8 W
R19 (R219)	5010040	1 KOhm 5% 1/8 W
R20 (R220)	5370058	5 KOhm 20% LIN.
R21 (R221)	5010061	56 KOhm 5% 1/8 W
R22 (R222)	5010061	56 KOhm 5% 1/8 W
R23 (R223)	5010066	1K8 Ohm 5% 1/8 W
R24 (R224)	5010073	390 KOhm 5% 1/8 W
R25 (R225)	5010061	56 KOhm 5% 1/8 W
R26 (R226)	5010117	330 KOhm 5% 1/8 W
R27 (R227)	5010153	1K2 Ohm 5% 1/8 W
(R228)	5001028	330 Ohm 10% 1/2 W
R29 (R229)	5010041	5K6 Ohm 5% 1/8 W
R30 (R230)	5010135	18 KOhm 5% 1/8 W
R31 (R231)	5010060	39 KOhm 5% 1/8 W
R32 (R232)	5010117	330 KOhm 5% 1/8 W
R33 (R233)	5010065	100 Ohm 5% 1/8 W
R34 (R234)	5010154	8K2 Ohm 5% 1/8 W
R35 (R235)	5010141	27 KOhm 5% 1/8 W
R36 (R236)	5010041	5K6 Ohm 5% 1/8 W
R37 (R237)	5010042	12 KOhm 5% 1/8 W

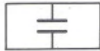
R38 (R238)	5010076	3K3 Ohm 5% 1/8 W
R39 (R239)	5010041	5K6 Ohm 5% 1/8 W
R40 (R240)	5010063	150 KOhm 5% 1/8 W
R41 (R241)	5010077	470 KOhm 5% 1/8 W
R42 (R242)	5010049	100 KOhm 5% 1/8 W
R43 (R243)	5010044	330 Ohm 5% 1/8 W
R44 (R244)	5010452	150 Ohm 5% 1/8 W
R45 (R245)	5010141	27 KOhm 5% 1/8 W
R46 (R246)	5370068	25 KOhm 20% LIN.
R47 (R247)	5010063	150 KOhm 5% 1/8 W
R48 (R248)	5010079	22 KOhm 5% 1/8 W
R49 (R249)	5010079	22 KOhm 5% 1/8 W
R50 (R250)	5010041	5K6 Ohm 5% 1/8 W
R51 (R251)	5001041	5K6 Ohm 5% 1/8 W
R52 (R252)	5010045	47 KOhm 5% 1/8 W
R53 (R253)	5010079	22 KOhm 5% 1/8 W
R54 (R254)	5010041	5K6 Ohm 5% 1/8 W
R55 (R255)	5010048	4K7 Ohm 5% 1/8 W
R56 (R256)	5010079	22 KOhm 5% 1/8 W
R57 (R257)	5010045	47 KOhm 5% 1/8 W
R58 (R258)	5010040	1 KOhm 5% 1/8 W
R59 (R259)	5010040	1 KOhm 5% 1/8 W
R60 (R260)	5010120	220 KOhm 5% 1/8 W
R61 (R261)	5010077	470 KOhm 5% 1/8 W
R62 (R262)	5010052	6K8 Ohm 5% 1/8 W
R63 (R263)	5010083	270 KOhm 5% 1/8 W
R64 (R264)	5010060	39 KOhm 5% 1/8 W
R65 (R265)	5010048	4K7 Ohm 5% 1/8 W
R66 (R266)	5010128	120 Ohm 5% 1/8 W
R67 (R267)	5010061	56 KOhm 5% 1/8 W
R68 (R268)	5010141	27 KOhm 5% 1/8 W
R69 (R269)	5010049	100 KOhm 5% 1/8 W
R70 (R270)	5010049	100 KOhm 5% 1/8 W
R71 (R271)	5010141	27 KOhm 5% 1/8 W
R72 (R272)	5370068	25 KOhm 20% LIN.
R73 (R273)	5010063	150 KOhm 5% 1/8 W
R74 (R274)	5010054	1 MOhm 5% 1/8 W
R75 (R275)	5010063	150 KOhm 5% 1/8 W
R76 (R276)	5010054	1 MOhm 5% 1/8 W
R77	5010059	10 KOhm 5% 1/8 W
R78	5010040	1 KOhm 5% 1/8 W
R79	5010040	1 KOhm 5% 1/8 W

DIAGRAM 2



R80	5010065	100 Ohm 5% 1/8 W
R81	5010076	3K3 KOhm 5% 1/8 W
R82	5010075	33 KOhm 5% 1/8 W
R83	5010061	56 KOhm 5% 1/8 W
R84	5010076	3K3 Ohm 5% 1/8 W
R85	5010045	47 KOhm 5% 1/8 W
R86	5010040	1 KOhm 5% 1/8 W
R87	5010048	4K7 Ohm 5% 1/8 W
R88	5010059	10 KOhm 5% 1/8 W
R89	5010049	100 KOhm 5% 1/8 W
R92	5010079	22 KOhm 5% 1/8 W
R93	5010040	1 KOhm 5% 1/8 W
R94	5010049	100 KOhm 5% 1/8 W
R95	5010054	1 MOhm 5% 1/8 W
R96	5010079	22 KOhm 5% 1/8 W
R97	5010058	470 KOhm 5% 1/8 W
R98	5010059	10 KOhm 5% 1/8 W

C



C1 (C201)	4010065	2n7F 10% 63 V
C2 (C202)	4200108	4μ7F 25 V
C3 (C203)	4200327	47 μF 6 V 3
C4 (C204)	4130088	33 nF 10% 250 V
C5 (C205)	4010027	1nF 10% 100 V
C6 (C206)	4010065	2n7 F 10% 63 V
C7 (C207)	4010031	680 pF 10% 100 V
C10 (C210)	4201057	1μF 35 V
C11 (C211)	4010041	10 nF - 20 + 100% 40 V
C12 (C212)	4010061	2n2 10% 63 V
C13 (C213)	4010027	1 nF 10% 100 V
C14 (C214)	4010064	560 pF 100% 63 V
C15 (C215)	4010063	4n7F 10% 63 V
C16 (C216)	4030089	22 nF 10% 250 V
C17 (C217)	4130100	68 nF 10% 250 V
C18 (C218)	4000023	150 pF 5% 63 V
C19 (C219)	4130088	33 nF 10% 250 V
C20 (C220)	4010063	4n7F 10% 63 V
C21 (C221)	4130097	15 nF 10% 250 V
C22 (C222)	4130111	150 nF 20% 250 V
C23 (C223)	4130100	68 nF 10% 250 V

C24 (C224)	4010063	4n7F 10% 63 V
C25 (C225)	4201072	0,22 μF 35 V
C26 (C226)	4201057	1 μF 35 V
C27 (C227)	4010060	22 nF - 20 + 100% 40 V
C28 (C228)	4201057	1 μF 35 V
C29 (C229)	4130097	15 nF 10% 250 V
C30 (C230)	4200317	47 μF 6 V 3
C31 (C231)	4200108	4 μ7F 25 V
C32 (C232)	4201057	1 μF 35 V
C33 (C233)	4010024	470 pF 10% 100 V
C34 (C234)	4200108	4 μ7F 25 V
C35 (C235)	4200108	4μ7F 25 V
C36 (C236)	4200108	4μ7F 25 V
C37 (C237)	4200108	4μ7F 25 V
C38 (C238)	4130089	22 nF 10% 250 V
C39 (C239)	4010063	4n7F 10% 63 V
C40 (C240)	4130087	47 nF 10% 270 V
C41 (C241)	4200169	0,4 μF 35 V
C42 (C242)	4010063	4n7F 10% 63 V
C43 (C243)	4200317	47 μF 6 V 3
C44 (C244)	4010024	470 pF 10% 100 V
C47	4200108	4μ7F 25 V
C48	4200108	4μ7F 25 V
C49	4200169	0,1 μF 35 V
C50	4200169	0,1 μF 35 V
C90	4010065	2n7 10% 63 V
C91	4200169	0,1 μF 35 V
C92	4201057	1 μF 35 V
C93	4200317	47 μF 6 V 3
C94	4201060	100 μF 35 V
C95	4201057	1 μF 35 V
C100	4010021	220 pF 10% 100 V

L

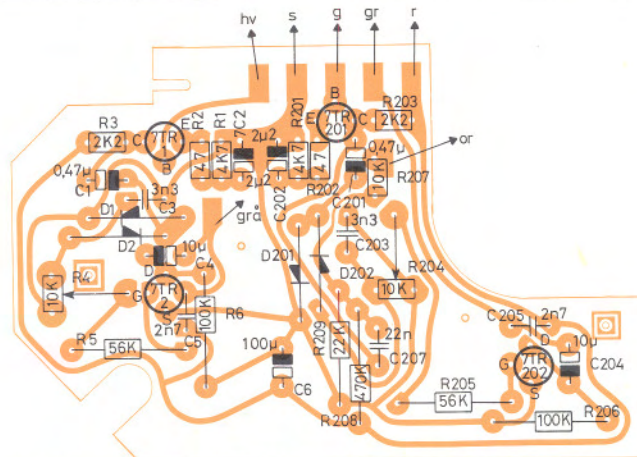


L1	8022054	100 mH 10%
L2	8022054	100 mH 10%
L3	8022054	100 mH 10%
L4	8022054	100 mH 10%

IL



IL1	8230044	24 V 25 mA
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SET FRA PRINTSIDE / SEEN FROM CONDUCTOR SIDE / VON DER LEITERSEITE AUSGESEHEN

7 PC 8009026

R

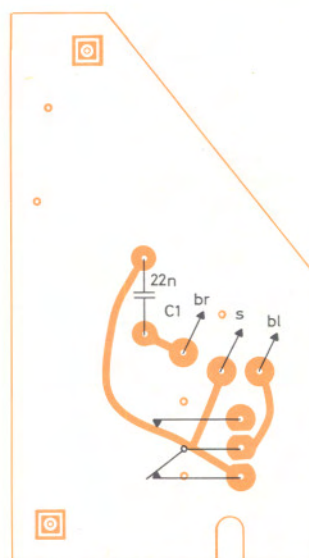
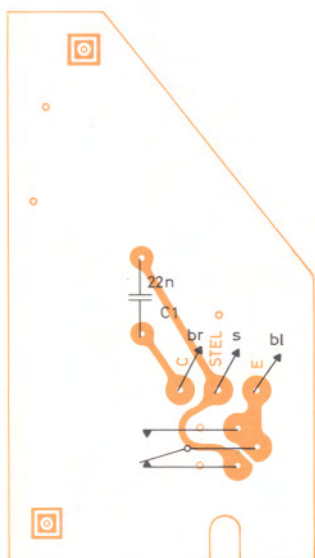


R1 (R201)	5010613	4K7 Ohm 5% 1/8 W
R2 (R202)	5010411	47 Ohm 5% 1/8 W
R3 (R203)	5010064	2K2 Ohm 5% 1/8 W
R4 (R204)	5370074	10 KOhm 20% LIN.
R5 (R205)	5010061	56 KOhm 5% 1/8 W
R6 (R206)	5010049	100 KOhm 5% 1/8 W
(R207)	5010059	10 KOhm 5% 1/8 W
(R208)	5010077	470 KOhm 5% 1/8 W
(R209)	5010079	22 KOhm 5% 1/8 W

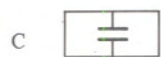
C



C1 (C201)	4201058	0,47 μF 35 V
C2 (C202)	4201069	2 μZF 35 V
C3 (C203)	4011025	2n3F 10% 100 V
C4 (C204)	4200101	10 μF 16 V
C5 (C205)	4010065	2n7F 10% 63 V
C6	4200099	100 μF 16 V
(C207)	4010060	22 nF - 20% + 100% 40 V



10 PC 8009028



C1 4130096 22 nF 10% 400 V

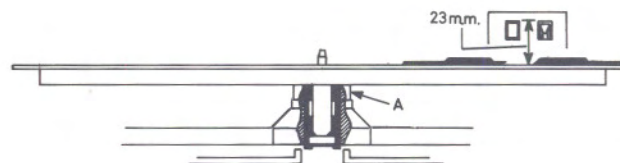
7400115 Microswitch for 6140418



C1 4130096 22 nF 10% 400 V

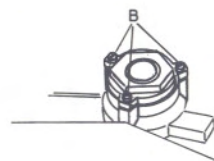
7402081 Microswitch for 6140419

MECHANICAL ADJUSTMENT Height Adjustment of Turntable



Loosen nut A at turntable bearing and adjust the height of the bearing so that the spacing between the turntable and detector arm is 23 mm.

Tighten nut A lightly.



Vertical Adjustment of Turntable Bearing

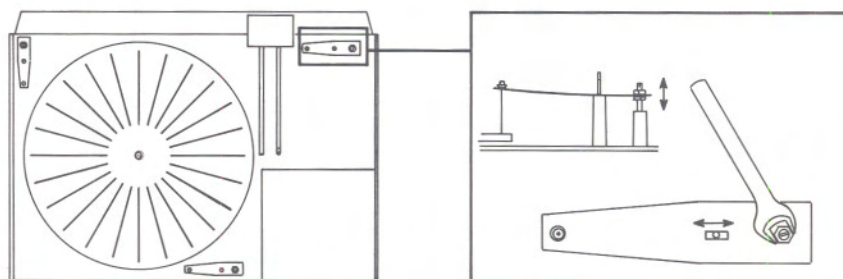
Turn transit screws to lock the floating chassis.

With screws B, adjust turntable bearing to be perpendicular to the chassis - in other words, the surface of the turntable must be parallel with the cover plate.

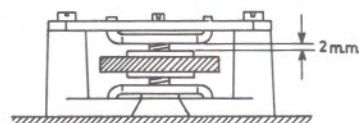
Check height adjustment (23 mm), both near the rim and near centre of the turntable.

Height and Side Adjustment of Chassis

Loosen transit screws so that chassis floats freely.



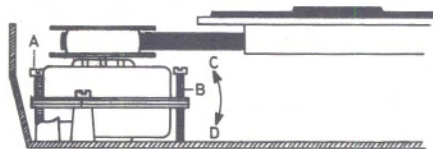
By means of the suspension springs adjust the chassis so that turntable is flush with the cover plate and so that the chassis is placed in middle of the transit screws.



Moreover slide the springs backwards or forwards so that the turntable is located in the centre of the hole in the cover plate.

To make the adjustment, first loosen the top nuts and thereafter adjust the screw to the desired height and slide the springs to the desired position. Lastly, tighten the nuts.

Adjustment of Belt Drive



The drive motor should be adjusted so that the belt runs in the middle of the pulley and the belt face on the turntable.

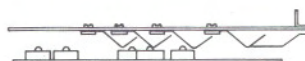
If it is desired to have the belt farther down on the pulley, loosen screw A and tighten screw B, causing the motor to tilt in the direction of arrow C.

If it is desired to have the belt farther up on the pulley, loosen screw B and tighten screw A, causing the motor to tilt in the direction of arrow D.

On completion of the adjustment tighten the loose screw. Thereafter check the adjustment.

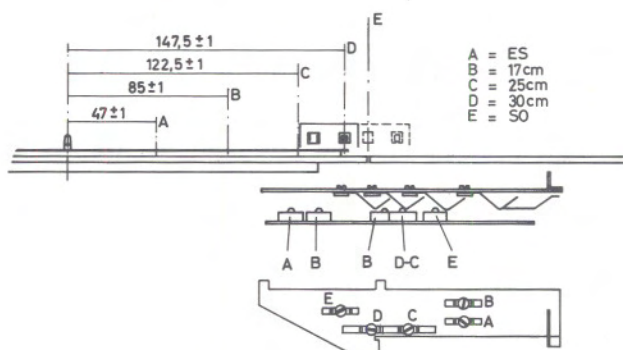
NOTE: The belt should be fitted with its ground (rough) side facing the pulley and belt face.

Adjustment of Slide Contact Springs Height



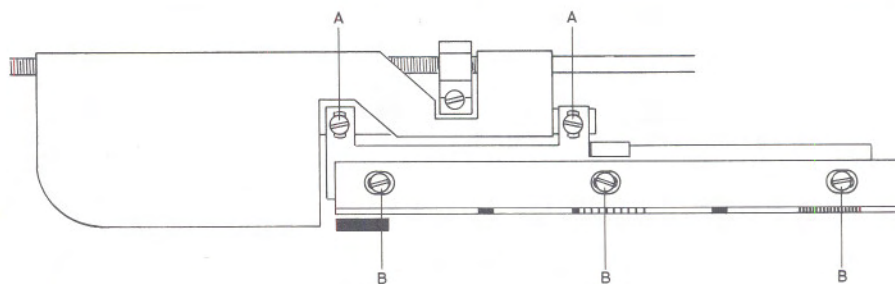
Adjust all contact springs so that they only just actuate the contacts but also so that they do not jam with the contact pins, thus blocking the slide transport.

Placement



The horizontal placement of the springs should be made so that they will actuate their respective contacts during slide transport when the pickup is spaced from the middle of the centre pin by the amount stated on the sketch.

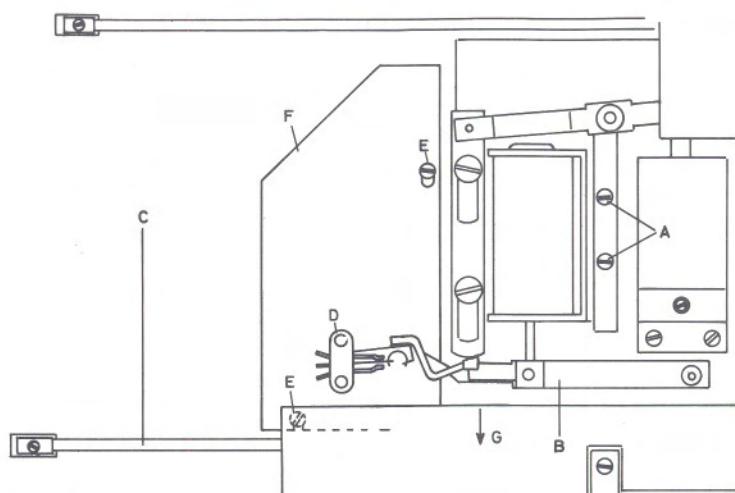
To make the adjustment, loosen the screw holding the spring in question and slide it in the oblong hole.



Adjustment of Position Marker

With the screws A loosened, the position marker bracket can be adjusted so that it runs parallel with the photoresistor housing.

With the screws B loosened, slide the position generator backwards or forwards until the arm lowers onto a 30 cm disc at a distance of between 146.5 mm and 148.25 mm from the centre of the disc.



Adjustment of Solenoid System

Solenoid.

Loosen screws A.

Slide solenoid to the place where arm B is parallel with rod C when solenoid armatur is pulled home.

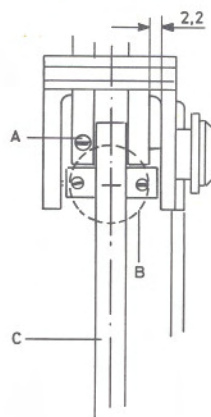
Tighten screws A.

Switch D.

NOTE: Make this adjustment without power applied to the unit.

Loosen screws E and slide plate F backwards or forwards so that positive action of switch D is only just obtained when arm B is pulled against the stop in the direction of arrow G.

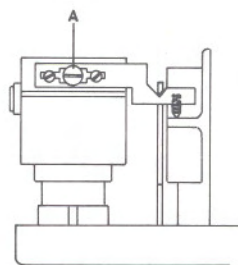
Horizontal Placement (Fixing)



Place pickup arm in pivot bracket so pickup-arm centre line C is located in the centre line of the pin B with an accuracy to $\pm 0,2$ mm. Adjustment is made by loosening screw A and sliding the pickup arm to one side or the other, thereafter retightening screw A.

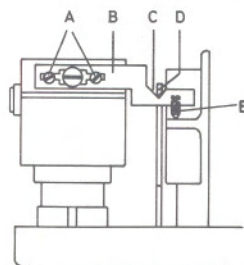
Adjustment is made by means of a plug jig (e.g. a 2.2 mm drill) placed as shown in the sketch.

Static Balance



Set stylus force adjustment screw at „0”.
Release pickup arm from lift arm.
Adjust screw A until system balance is obtained.

Parallelism



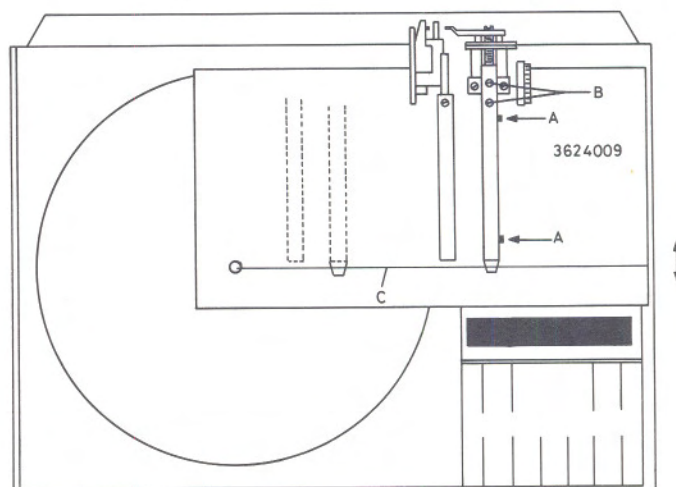
The pickup arm should be adjusted parallel with pins A in tool 3624009.

To make the adjustment, loosen screws A and thereafter slide arm B backwards or forwards. To check for parallelism, see that arm D is fully down in notch C.

Fine adjustment, if necessary, is made by bending arm C.

With screw E, adjust pickup arm to be horizontal. Reference: detector arm.

Adjustment of pickup arm Length

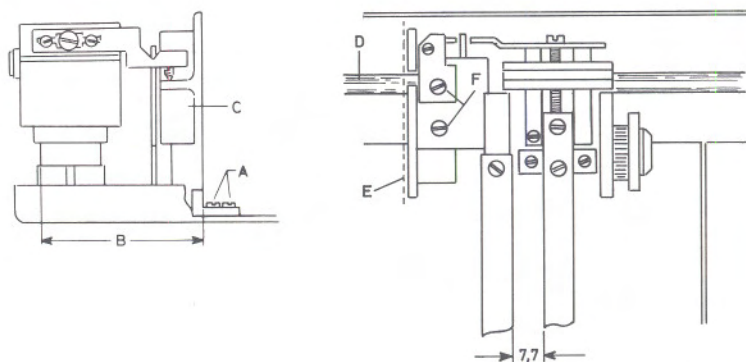


Adjust stylus force to 1 gr. Take off turntable. Run pickup arm in towards the centre.

Mount tool 3624009 on the Beogram 4002/6000 as shown by sketch. Run pickup arm out close to pins A. Lower pickup on to tool. Slide tool backwards or forwards so that stylus drops into groove C. Keep tool fixed in this position. Raise pickup and run it towards the centre. Lower pickup into the position shown in the sketch. If the stylus hits outside groove C, adjust screw B so that the deviation in question is halved. Run the pickup arm all the way out close to pins A. At this point lower the pickup and slide tool 3624009 so that the stylus is exactly in groove C. Raise the arm and now check if the arm is equally spaced from the pins A. Also make sure that the lifting arm rests in the bottom of the V-notch C on the arm B.

(See Parallelism Adjustment)

Detector Arm Adjustment



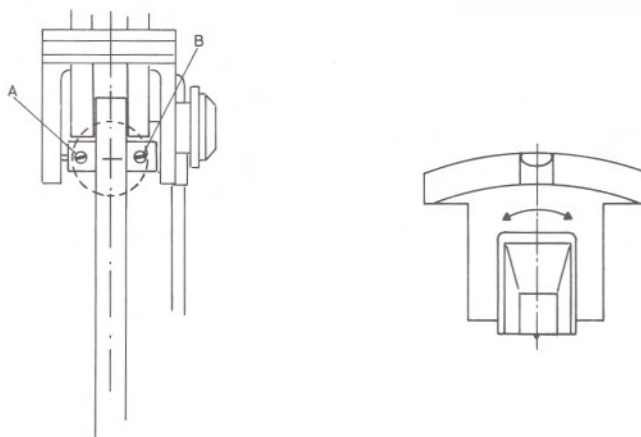
Loosen screws A.

Adjust detector arm holder C so that distance B is 49.4 mm. Make sure that surface E is at right angles to pole D.

With screws F loosened, adjust detector arm so that it is parallel with pickup arm at a distance of 7.7 mm (the pickup arm should be adjusted for horizontal placement and parallelism).

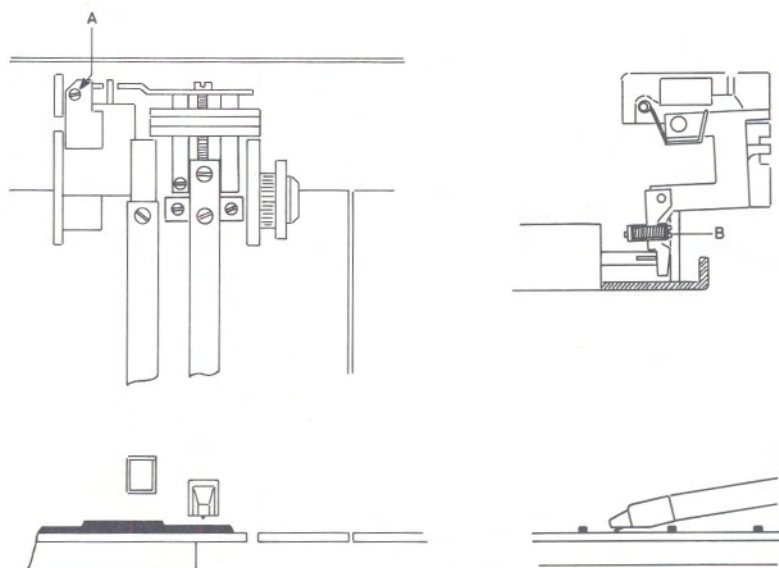
The adjustment may also be made with the pickup-arm cover plate mounted. Adjust the detector arm so that the air gap between the cover plate and the arm is the same on all three sides and the same for both arms while being parallel with the pickup arm at a distance of 7.7 mm.

Rotation



By loosening screw A and tightening screw B or vice versa adjust the rotation of the pickup arm so that its top side is parallel with the rods. Use a spirit level for checking this adjustment.

Lowering Adjustment

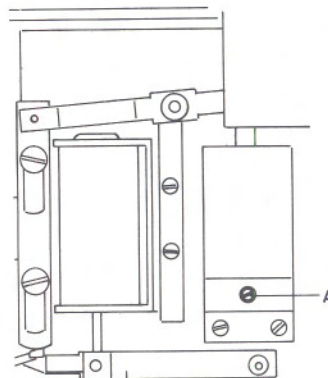


Loosen screw A.

Adjust screw B so that the pickup stylus, in the lowered condition of the pickup arm, only just touches the turntable between the ribs.

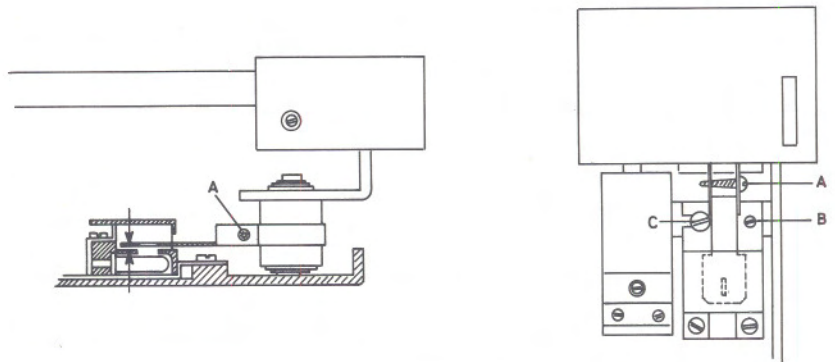
Thereafter adjust screw A, also in the lowered condition of the pickup arm, so that the pickup stylus positively clears the low portion of the turntable ribs (by approx. 0.5 mm).

Adjustment of Damper Cylinder



Adjust valve A so that pickup lowers smoothly. Lowering time: approx. 1 sec.

Adjustment of Shutter



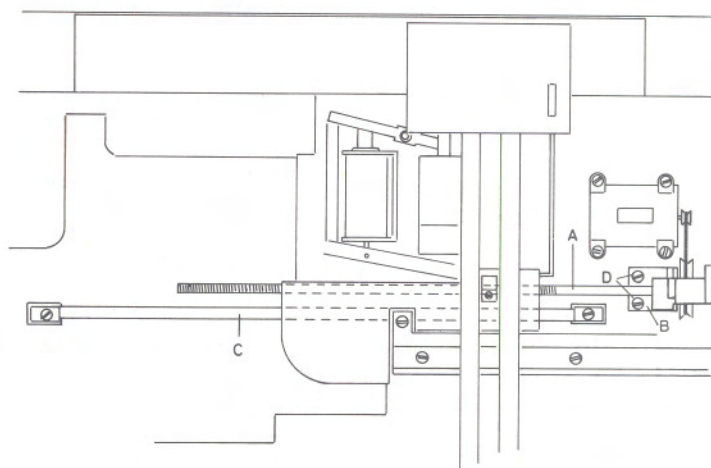
To adjust the shutter, loosen screw A and slide it on the arm pivot.

The shutter should be adjusted to be as close as possible to the housing without touching it. Also adjust the shutter so that the shutter arm will be parallel with pickup arm.

Fine adjustment of the shutter is made with a disc on turntable and with the turntable belt removed.

- 1: Run arm in across disc.
- 2: Lower pickup.
- 3: Turn turntable by hand and check to see that the servo regulates the first time after 1 - 3 revolutions and thereafter at each revolution.
- 4: If the servo does not regulate within 1 - 3 revolutions, loosen screw C and adjust eccentric B; Thereafter raise the arm and repeat items 2 to 4.
- 5: When eccentric B has been adjusted, tighten screw C.

Adjustment of Spindle

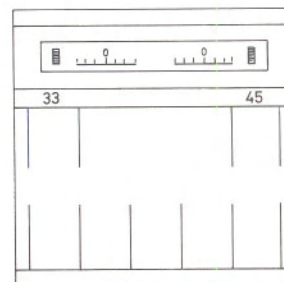
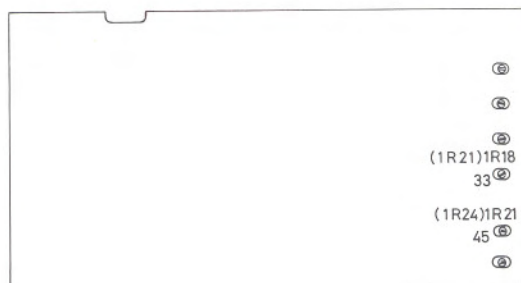


Adjust spindle A to be parallel with rod C.
To adjust, loosen screws D and turn cap B.

ELECTRICAL ADJUSTMENT Speed

References to adjustment potentiometers without brackets apply to:
BEOGRAM 4000 until No. 257556
BEOGRAM 6000 until No. 260028

References in brackets apply to units after the above numbers.



Set 33 and 45 r.p.m. dials to 0.

33 r.p.m. is adjusted with potentiometer 1R18 (1R21)

45 r.p.m. is adjusted with potentiometer 1R21 (1R24).

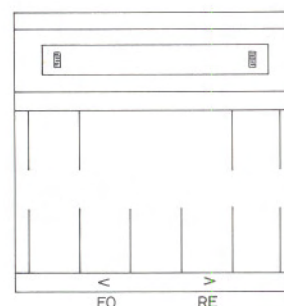
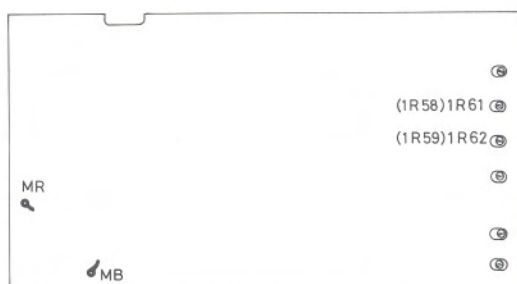
Speed may be checked in several ways:

1: Stroboscope disc and lamp connected to mains. This check involves an inaccuracy of approx. 2% due to the fact that the 50 Hz mains frequency varies by approx. ± 1 Hz.

2: Stroboscope disc and stroboscope lamp. This check provides an accuracy comparable to the tolerance of the stroboscope lamp which as a rule is considerably better than that of the mains frequency.

3: The reference to the production adjustment appears as the result of division to 50 Hz from a crystal of $1 \text{ MHz} \pm 1 \text{ Hz}$, providing an accuracy of the order of $\mu\%$.

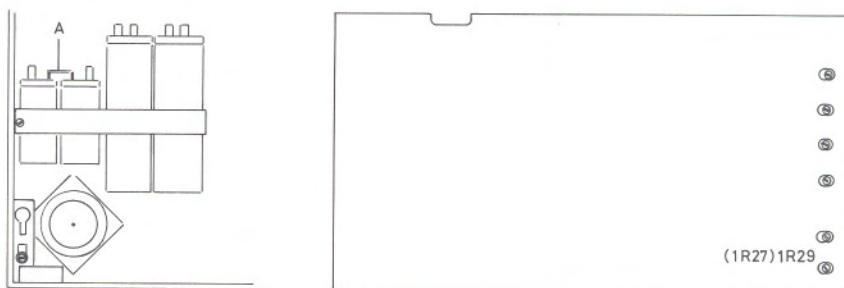
Slow slide transport



Connect vacuum-tube voltmeter at point MR. Depress FO button and adjust voltage at point MR to 5,5 V, using 1R61 (1R58).

Connect vacuum-tube voltmeter at point MB. Depress RE button, and adjust voltage at point MB to 5,5 V, using 1R62 (1R59).

Voltage for drive motor

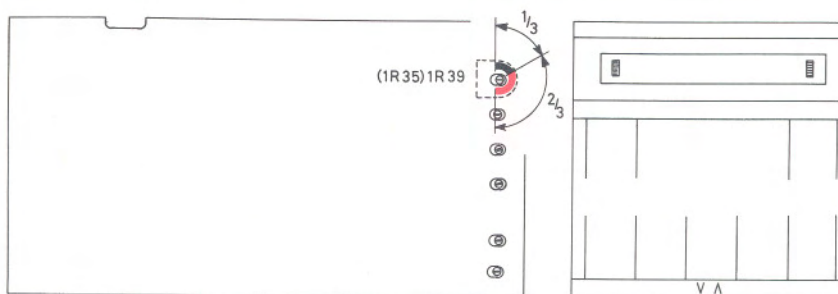


Connect LF vacuum-tube voltmeter and oscilloscope at point A so that measurements will be made with respect to chassis (zero) potential.

Adjust 1R29 (1R27) for maximum voltage and minimum 4.5 Vrms at both speeds.

No clipping (distortion) must occur.

Detector arm sensitivity



Adjustment of sensitivity on the detector arm circuit is carried out in the interest of transparent disc.

Turn 1R39 (1R35) (DRS) anti-clockwise against the stop; thereafter turn slowly clockwise until the pickup arm, by pressing LIFT, can be lowered to a transparent disc; making sure, however, that the pickup arm cannot be lowered when no disc has been placed on the turntable.

1R39 (1R35) (DRS) must be used only within the first 1/3 of the mechanical adjustment range; see sketch.

NOTE: The red sector for 1R39 (1R35) symbolises the range to which 1R39 (1R35) must not be set as it will then load the circuit.

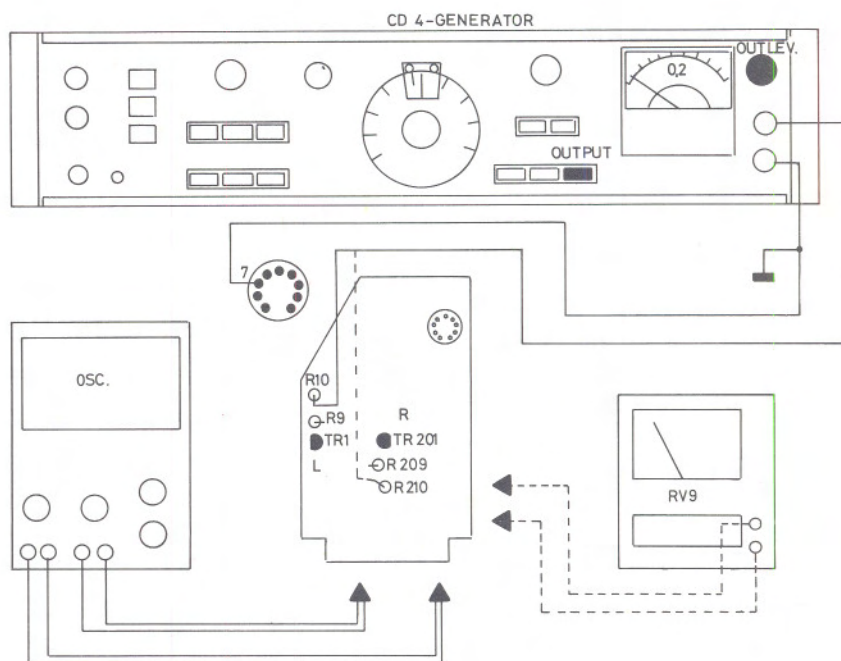
This may have the consequence that the pickup arm can be lowered when no disc has been put on the turntable.

ADJUSTMENT OF CD-4 DECODER Instruments

CD-4 Generator:
LF Vacuum-tube voltmeter:
Oscilloscope:
Test disc:

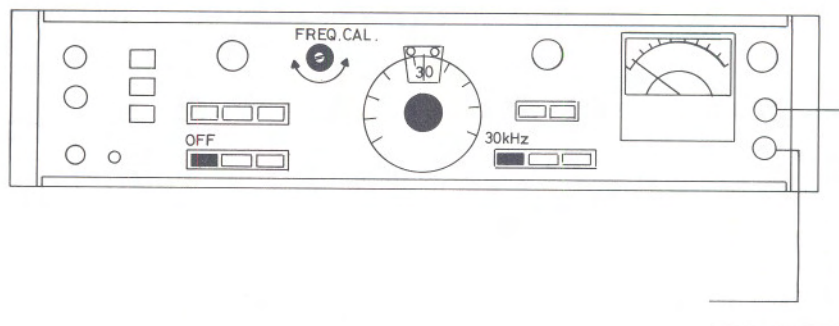
MSG 213, Meguro
RV 9, B&O
OS 1000, Advance
D 65, Telequipment
4 DE - 205, JVC

Set-up



References are for left channel. Bracketed references are for right channel.
Before connecting the generator to the decoder, adjust output voltage to
to 400 mV (0,2 on black scale with OUTPUT depressed).
The generator should be connected to the base of 6TR1 (6TR201).
NOTE: measuring instruments, generator and decoder should have power
applied to them for not less than 15 mon. before making any adjustments.

Calibration of CD-4 Generator



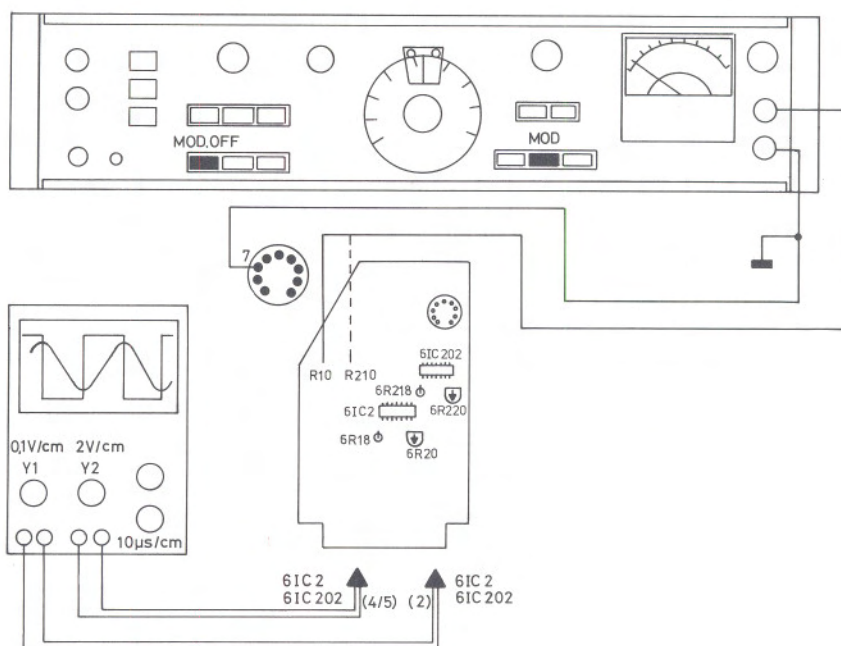
Depress MOD. SELECTOR „OFF”.

Depress FREQ. CAL. 30 kHz.

Set FREQUENCY dial to 30 kHz.

Adjust FREQ. CAL. for minimum meter reading. Three dips will be noted during adjustment. Select dip giving lowest meter reading.

VCO



Depress MOD. SELECTOR „OFF”.

Depress MOD.

Start BEOGRAM (press „ON” and thereafter „<”).

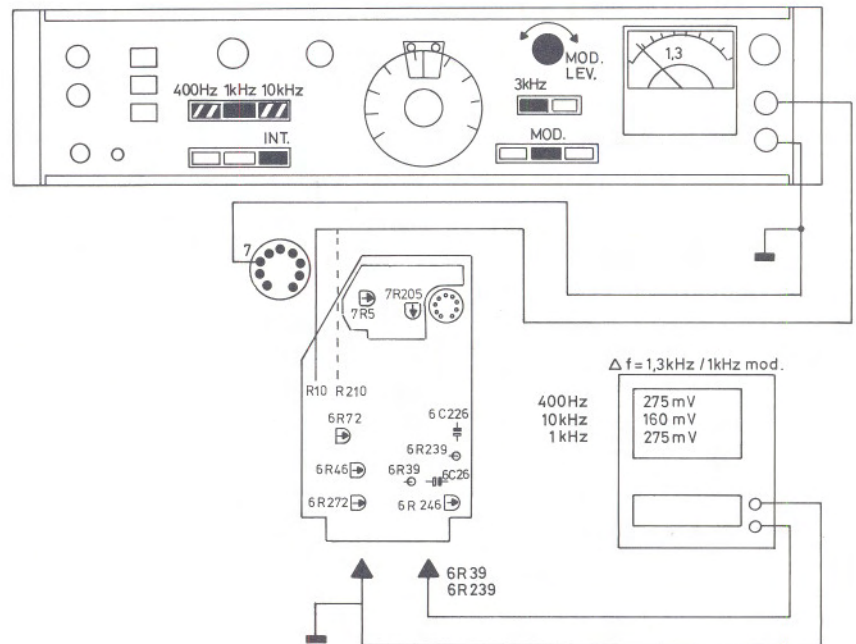
Connect Y 1 input of oscilloscope to pin 2 of 6IC2 (6IC202).

Connect Y 2 input of oscilloscope to pins 4 and 5 of 6IC2 (6IC202).

Sensitivity: Y 1 = 0,1 V/cm; Y 2 = 2 V/cm; 10 μs/cm.

Adjust 6R20 (6R220) so that the leading and trailing edges of square-wave voltage intersect bottom and top of sine-wave voltage as shown in the sketch.

ANRS Coarse Adjustment

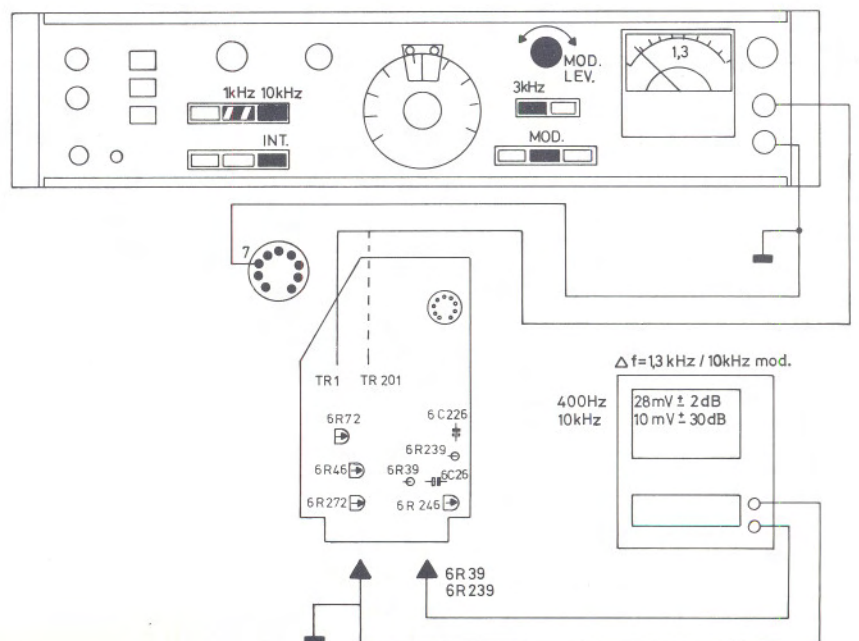


The dB values specified in the Adjustment Procedure refer to 0 dB = 1 V RMS.

- (1) Turn 7R5 (7R205) clockwise against the stop.
- (2) Turn 6R72 (6R272) anti-clockwise against the stop.
- (3) Depress MOD. SELECTOR „INT”
- (4) Depress „1 kHz”.
- (5) Depress METER RANGE „3 kHz”.
- (6) Depress „MOD”.
- (7) Adjust „MOD. LEVEL” for 1,3 on meter (0-3 scale).
- (8) Connect LF vacuum-tube voltmeter to 6R39 (6R239).
- (9) Depress „400 Hz”.
- (10) Adjust 6R46 (6R246) for 275 mV (-11 dB) at 6R39 (6R239)
- (11) Depress „10 kHz”.
- (12) Adjust 6R72 for 160 mV (-16 dB).
- (13) Depress „1 kHz”.
- (14) LF vacuum-tube-voltmeter reading should be 275 mV (-11 dB) ± 1 dB.

Fine Adjustment

If tolerance is not met, check adjustment of CD-4 generator, 6R46 (6R246) and 6R72 (6R272)



- (15) Depress „10 kHz”
- (16) Depress METER RANGE „3 kHz”
- (17) Depress MOD.
- (18) Adjust „MOD LEVEL” so that meter reads 1,3 (0-3 scale).
- (19) Voltage at 6R39 (6R239) should be 10 mV (-40 dB) $\pm$ 3 dB.
- (20) If tolerance is not met, perform fine adjustment of 6R72 (6R272).
- (21) Depress „400 kHz”.
- (22) Voltage at 6R39 (6R239) should be 28 mV (-31 dB) $\pm$ 2 dB.
- (23) If tolerances are not met, perform fine adjustment of 6R46 (6R246).
- (24) In the cases where fine adjustments have been performed after the coarse adjustments, recheck items (4) to (14) under Coarse Adjust ment above.
400 Hz $\pm$ 1 dB; 10 kHz $\pm$ 3 dB
- (25) If tolerances there are not met it may be found useful to check the gain of the ANRS circuit;
this will reveal any failures in said circuit.

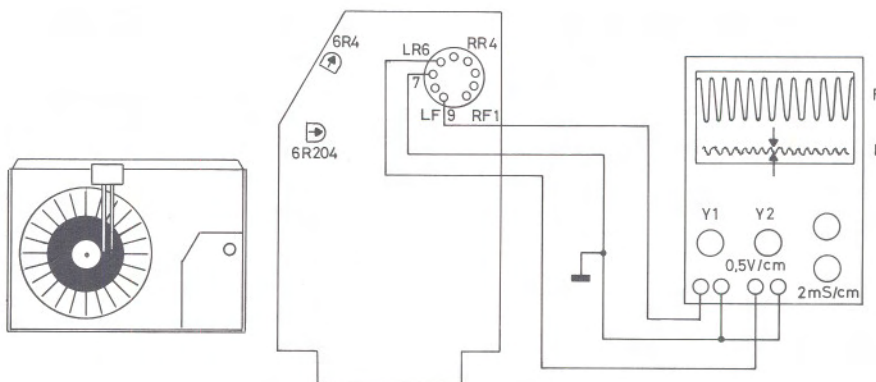
The chart, which is intended as a guide, is to be used during checking of input level relative to output level.

	mod. freq.	*inp.		outp.	
	Hz	mV	-dB	mV	-dB
$\Delta f = 1,3 \text{ kHz v. } 1 \text{ kHz}$	400	180	15	275	11
	10 k	90	21	160	16
$\Delta f = 1,3 \text{ kHz v. } 10 \text{ kHz}$	400	40	28	28	31
	10 k	25	32	10	40

*

Input level to be measured between 6L2 (6L202) and 6R35 (6R235).

Separation



Remove connections to CD-4 generator.

Separation can be measured in different ways.

1: By means of an oscilloscope.

Connect Y 1 input of oscilloscope to decoder output, pin 9 (1) (hot) and pin 7 (7) (cold) of socket.

Connect Y 2 input of oscilloscope to decoder output, pin 6 (4) (hot) and pin 7 (7) (cold) of socket.

Sensitivity: 0.5 V/cm; 2 mS/cm.

Play test record, e.g. JVC 4DE - 205, section 3, with the MMC 6000 to be used with the decoder. Adjust 6R4 (6R204) for minimum at Y 2 input of oscilloscope, corresponding to minimum in rear channel.

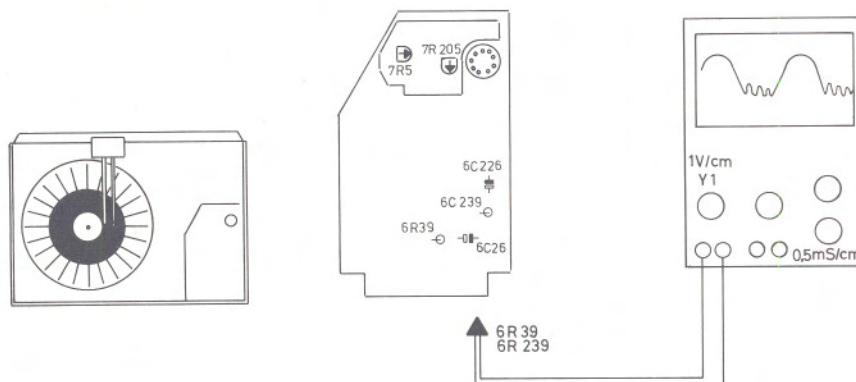
2: By means of a 4-channel amplifier.

Turn off front channels.

Play test record JVC 4DE - 205 with the MMC 6000 to be used with the decoder.

Adjust 6R4 (6R204) for minimum sound in rear channels.

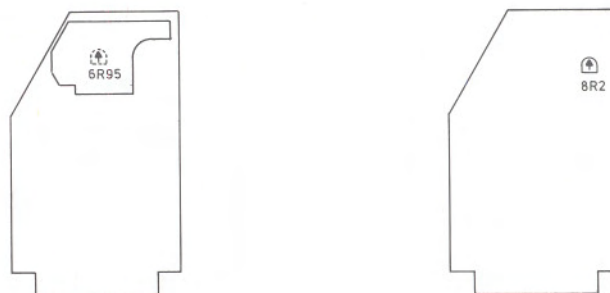
Carrier Detector



SILENT CIRCUIT

Adjust carrier detector by means of JVC test record 4DE - 205, section 2.
Adjust 7R5 (7R205) so that 400 Hz sine-wave curve is only just undistorted.

NOTE: After replacement of pickup it is necessary to perform adjustment of channel separation and carrier.



Beogram 6000

Adjust 6R95 to admit passage of pickup signal between 1 and 2 disc revolutions after pickup has been lowered (33 r.p.m.)

Beogram 4002

Adjust 8R2 as described for 6R95 above

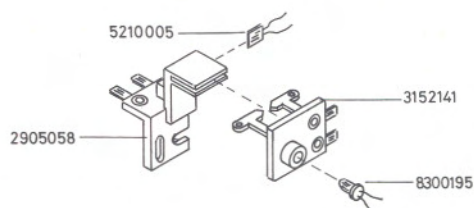
PARTS LIST FOR BEOGRAM 4002-6000
TYPE 5501 - 5502

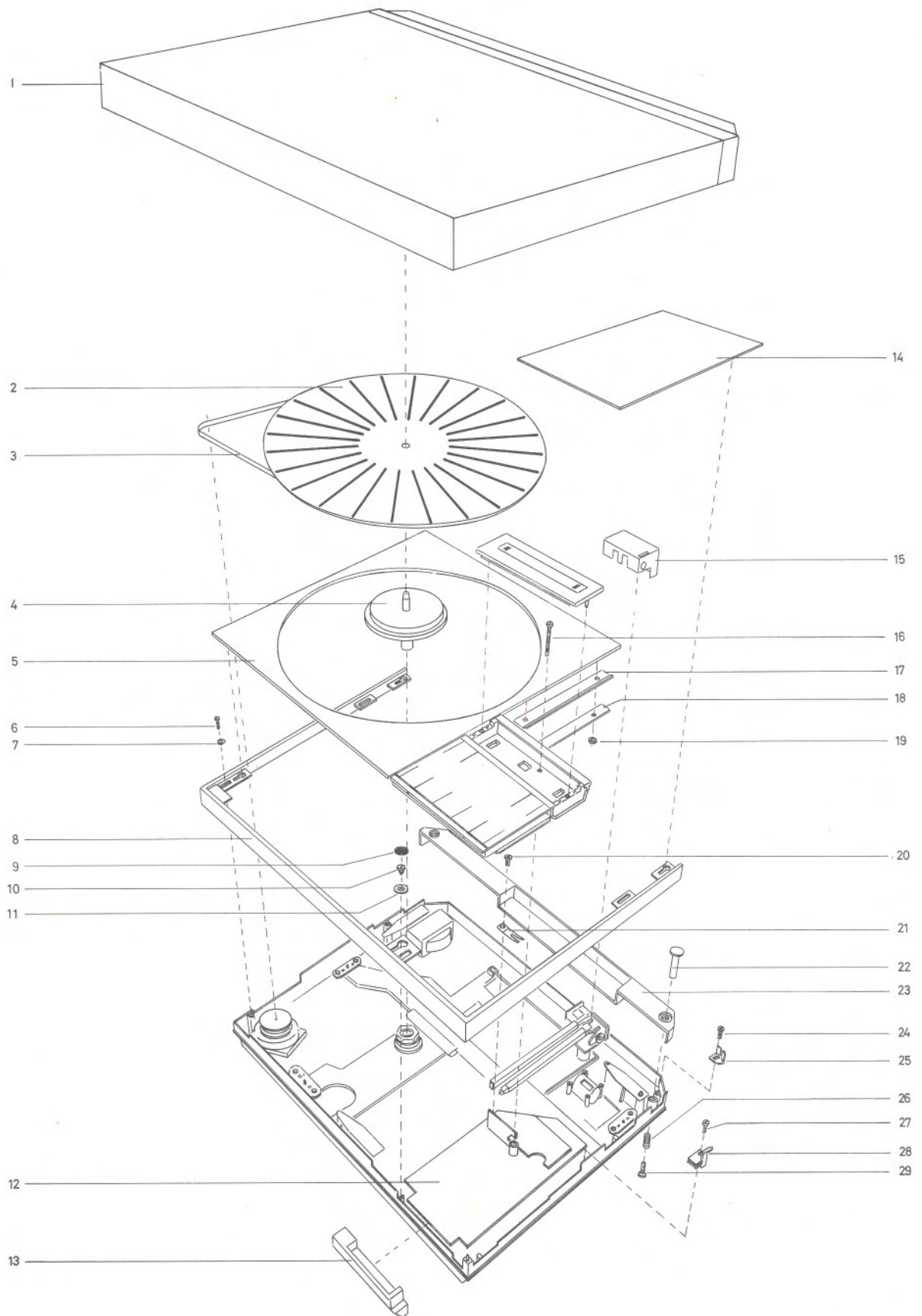
1	3164184	Lid collected - BEOGRAM 4002
	3164183	Lid collected - BEOGRAM 6000
2	2726086	Turntable
3	2732018	Driving-belt
4	2726078	Turntable lower
5	3458113	Top plate
6	2038009	Screw AM 3 x 8 mm DIN 963
7	2803004	Steering washer
8	3412051	Cabinet, teak 4002
	3412053	Cabinet, rosewood 4002 + 6000
	3412054	Cabinet, oak 4002
	3412055	Cabinet, white 6000
9	3912037	Felt washer
10	2038901	Screw
11	2620019	Washer
12	8009029	PC board muting BEOGRAM 4002
	8005012	PC board decoder BEOGRAM 6000
	8009026	PC board carrier frequency detectors BEOGRAM 6000
13	3152159	Holder
14	3458114	Top plate
15	3164142	Cover for PU-arm
16	2038237	Screw AM 3 x 30 mm DIN 84
17	2816085	Spring
18	3014023	Steering plate
19	2380093	Nut M3 nylon
20	2042205	Screw AM 4 x 6 mm DIN 84
21	2816083	Holder
22	2994012	Bushing
23	3452204	Back piece for BEOGRAM 4002
	3452205	Back piece for BEOGRAM 6000
24	2038208	Screw AM 3 x 5 mm DIN 84
25	3014028	Rule for back piece right
	3014029	Rule for back piece left
26	2810066	Spring
27	2038220	Screw AM 3 x 12 mm DIN 84
28	3152135	Lead holder
29	2042216	Screw AM 4 x 16 mm DIN 84

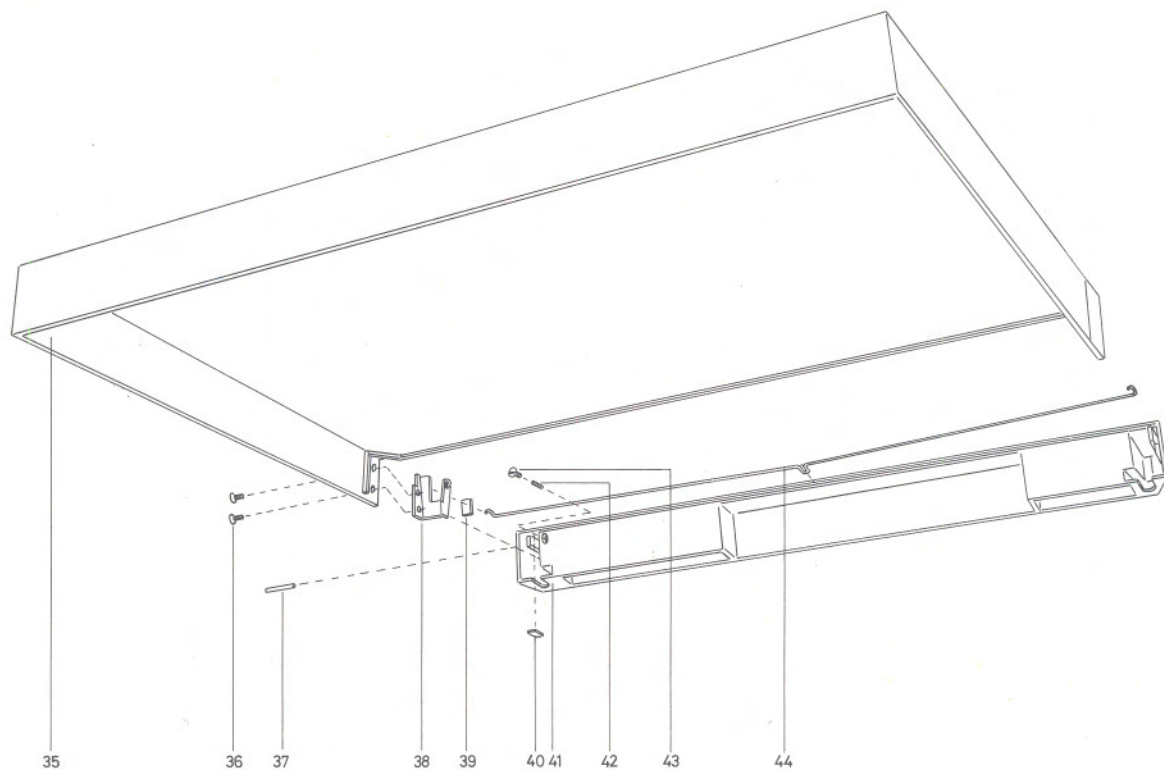
Comment on pos. 137, page 7-8:

BEOGRAM 4002, type 5501 till No.
277556
BEOGRAM 6000, type 5502 till No.
260028

When ordering parts for run-off stop please
apply the numbers shown on the sketch

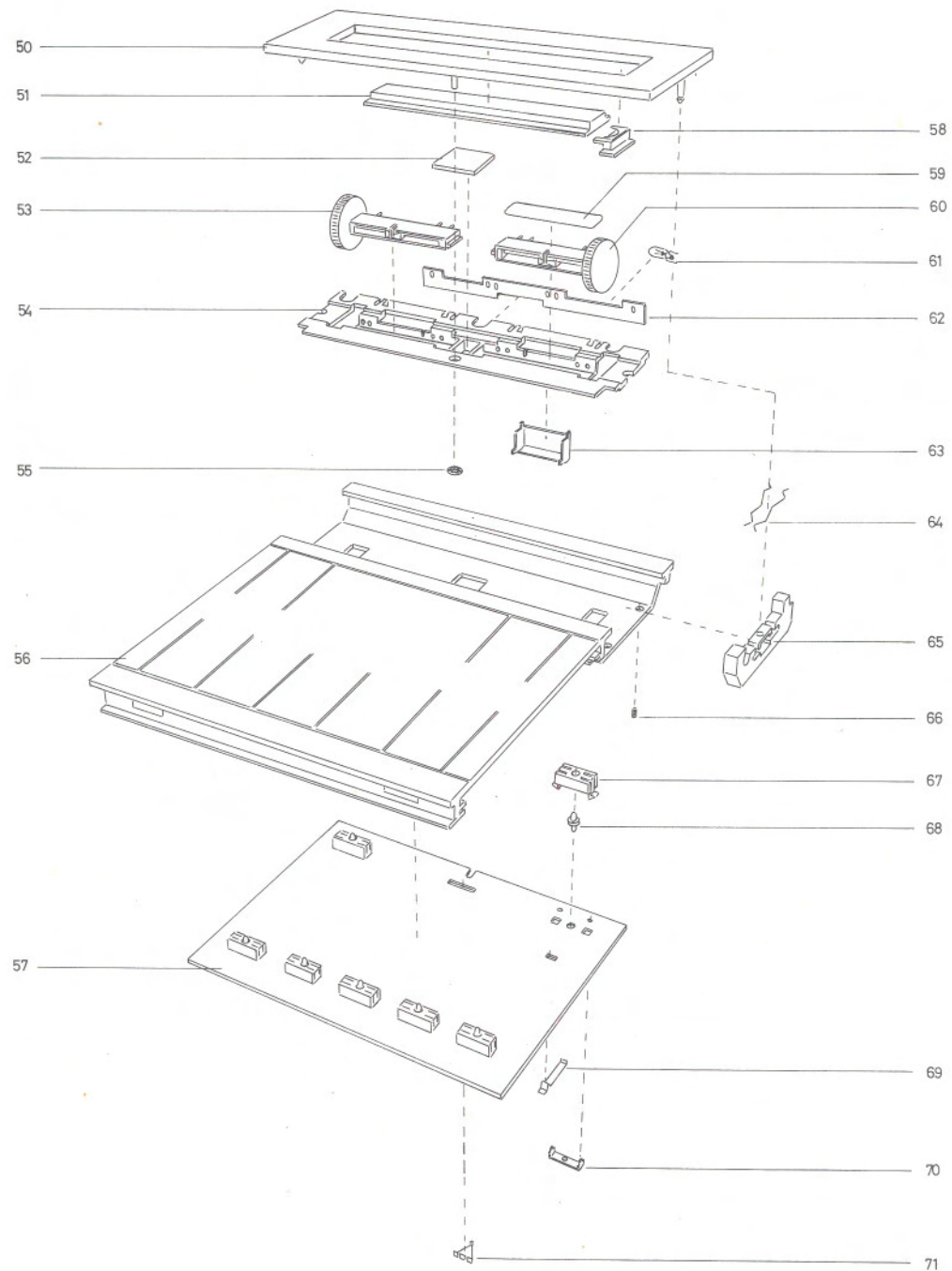


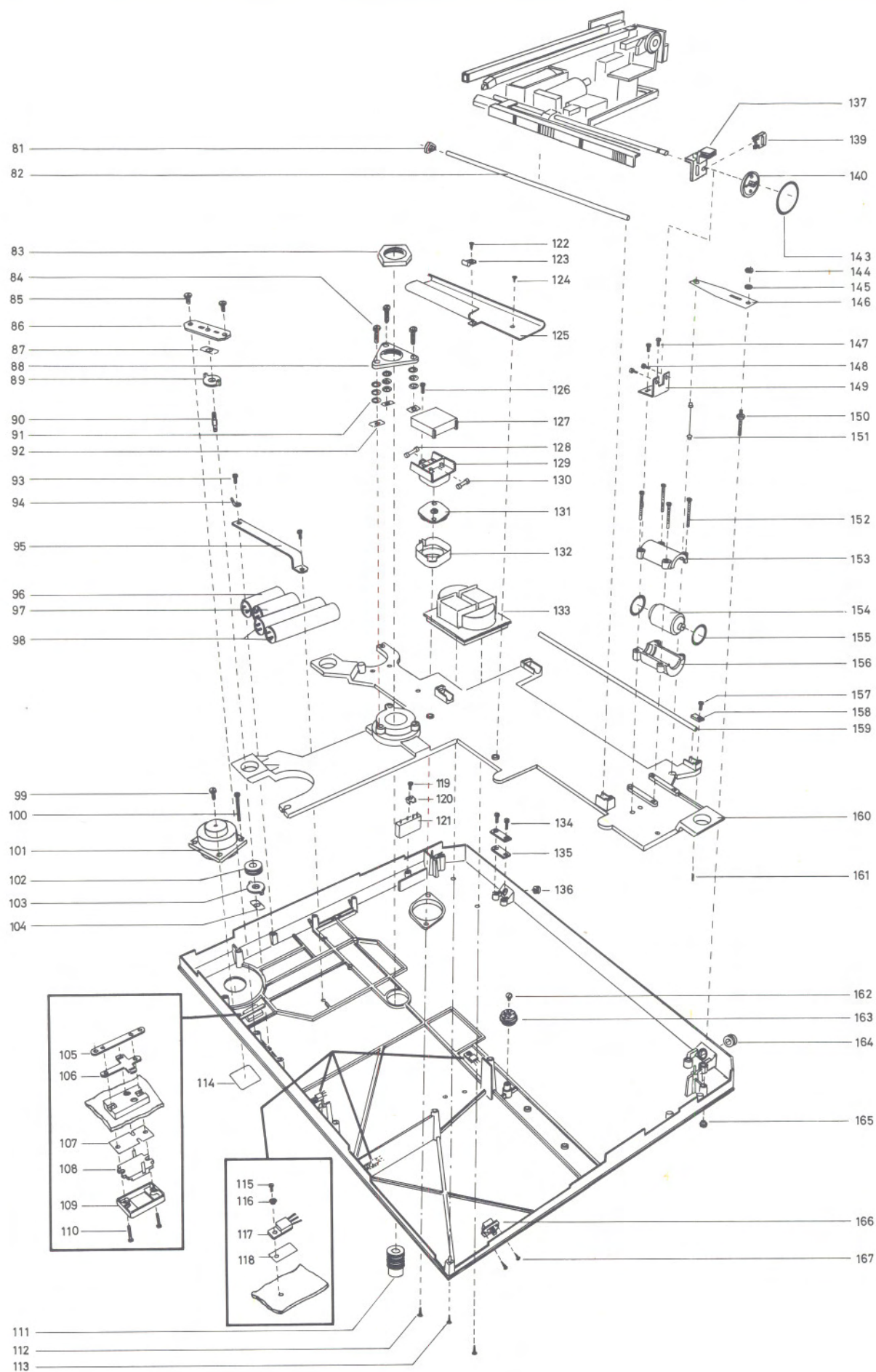




35	3164190	Dust cover
	3010007	Stop for cover
	2560039	Decorative list for BEOGRAM 4002
	2560040	Decorative list for BEOGRAM 6000
36	2038055	Screw AM 3 x 6 mm DIN 63
37	2830014	Bearing needle
38	3030023	Hinge left
	3030022	Hinge right
39	3015030	Guide piece
40	3010011	Stop for cover
41	3452145	Back piece
42	2072704	Treaded pin M3 x 2,5 mm DIN 438
43	2038050	Screw AM 3 x 4 DIN 63
44	2819062	Spring

50	3458121	Top plate
51	3199046	Dial
52	3164179	Cover
53	5300090	Potentiometer, left
54	3131085	Housing for potentiometer
55	2395034	Spire
56	3168049	Chassis complete, BEOGRAM 4002
	3168048	Chassis complete, BEOGRAM 6000
	2361018	Pin 2 x 5 mm
57	8009020	PC-board, terminal print
58	3199047	End piece
59	3180621	Sticker
60	5300091	Potentiometer, right
61	8230052	Lamp
62	6140376	PC-board
63	3300044	Cover
64	2819096	Spring
65	3152129	Holder
66	2072701	Threaded pin M 3 x 4 mm DIN 438
67	3152068	Holder
68	2992059	Contact pin
69	7500075	Contact spring
70	7500050	Contact bridge
71	2816111	Locking spring



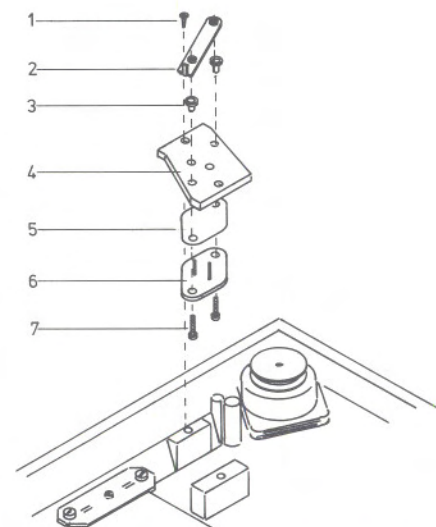


81	2905045	Bearing for slide	135	0287155	Clamp
82	2830049	Shaft	136	2938077	Rubber
83	2380096	Nut	137	2905056	Bearing for spindle
84	2038216	Screw AM 3 x 10 mm DIN 84	139	2905055	Bearing
85	2042211	Screw AM 4 x 12 mm DIN 84	140	2722014	Pulley
86	3014021	Rule		2072920	Treaded pin M 2 x 6 mm
87	2628005	Spring		2380068	Square nut M2
88	2641076	Clamp	143	2732032	Servobelt
89	2381008	Wing nut	144	2380016	Nut
90	2993024	Threaded pin	145	2622022	Washer
91	2624027	Washer	146	2816081	Blade spring
92	2390020	Spire nylon	147	2038208	Screw AM 3 x 5 mm DIN 84
93	2038208	Screw AM 3 x 5 mm DIN 84	148	2038208	Screw AM 3 x 5 mm DIN 84
94	7530008	Solder tag	149	2530253	Bracket
95	2510108	Clamp	150	2072914	Adjustment screw
96	4200260	150 µF BIPOLAR	151	3955022	Strop
97	4200259	4000 µF/25 V	152	2038235	Screw AM 3 x 25 mm DIN 84
98	4200310	4000 µF/50 V	153	3131048	Housing for motor
99	2038216	Screw AM 3 x 10 mm DIN 84	154	8400062	Servomotor
100	2038233	Screw AM 3 x 20 mm DIN 84		2722016	Pulley
101	8400066	Motor	155	2732015	O-ring
	2722010	Belt washer	156	3131048	Housing for motor
102	2938099	Rubber bushing	157	2038216	Screw AM 3 x 10 mm DIN 84
103	2381007	Wing nut	158	2644003	Clamp
104	2628005	Spring	159	2830045	Shaft
105	7530045	Solder tag	160	3114066	Chassis
106	3172027	Insulating piece	161	2072705	Treaded pin M 3 x 4 mm
107	3170047	Mica sheet	162	2038901	Screw
108*	8320103	Transistor, OTR1	163	7200031	Noval socket
109	3164027	Cover		7220066	Noval plug
110	2034215	Screw AM 2 x 8 mm DIN 84	164	2938004	Rubber bushing
111	2905064	Bearing	165	3103067	Feet
112	2013012	Screw 2,84 x 12,7 ART 4260	166	6273712	Switch
113	2013002	Screw 2,84 x 6,35 ART 4260		7500014	Contact bushing
114	3180632	Sticker, black	167	2011304	Screw
115	2038206	Screw AM 3 x 4 mm DIN 84			
116	2938097	Insulating bushing			
117	8320266	Transistor OTR2			
	8320265	Transistor OTR3			
	8320312	Transistor OTR4			
118	3170121	Mica sheet			
119	2038247	Screw AM 3 x 6 mm DIN 84			
120	2574043	Bracket			
121	8310020	Rectifier			
122	2013200	Screw 2,84 x 6,35 ART 4261			
123	2514023	Lead holder			
124	2013002	Screw 2,84 x 6,35 ART 4260			
125	3013017	Rule			
126	2038247	Screw AM 3 x 6 mm DIN 84			
127	3164109	Cover			
	3180607	Plate			
128	6600000	Fuse 250 MA-250VT			
129	3131060	Fuse holder			
130	6600000	Fuse 250MA-250V-T			
131	7401001	Mains-voltage switch			
132	3131050	Housing for mains-voltage switch			
133	8013137	Mainstransformer			
134	2038222	Screw AM 3 x 14 mm DIN 84			

* Pos. 108

When replacing OTR1 in chassis with transistor mounting as shown on the drawing to the right order No. 8320222.
(Production of transistor 8320103 has stopped)

- 1 2013004 Screw 2,84 x 9,52 ART 4260
- 2 7530045 Soldering lug
- 3 2938009 Insulating bushing
- 4 3358101 Heat sink
- 5 3170002 Mica sheet
- 6 8320222 Transistor OTR1
- 7 2038216 Screw AM 3 x 10 DIN 84



174	2038952	Screw 3 x 4 DIN 963	226	2072701	Treaded pin M 3 x 4 mm
175	2038206	Screw 3 x 4 DIN 84	227	2034231	Screw AM 2 x 4 mm DIN 84
176	2038247	Screw AM 3 x 6 mm DIN 84	228	2854023	Arm
177	2072918	Treaded pin M 3 x 15 mm	229	2390001	Circlip
178	3151086	Holder	230	3342030	Counterweight
179	2038247	Screw AM 3 x 6 mm DIN 84	231	3152162	Holder for counterweight
	2625002	Tooth-lock washer 3,2	232	2390046	Circlip
	7530008	Solder tag	233	2070400	Treaded pin
180	3152076	Holder	234	3150032	Bearing holder
181	2032208	Screw AM 3 x 5 mm DIN 84		2900003	Ball bearing
182	3391407	Transport protection		2622168	Washer, brass
183	2034236	Screw AM 2 x 3 mm DIN 84		2812036	Spring
184	3152145	Holder for cover		2390047	Circlip
	3947421	Tape	235	2548109	Bracket
	2645025	Plate	236	2700008	Adjustment bushing
185	3937808	Slave arm	237	2834041	Shaft collected
186	2390004	Circlip UG 3 x 0,6	238	2831025	Shaft
187*	3152179	Holder for pickup arm complete	239	2365085	Valve
188	2810044	Spring	240	2390046	Circlip
	6420044	Insulation	241	2038206	Screw AM 3 x 4 mm DIN 84
189	8760002	Foto cell	242	3131059	Damper cylinder
190	2853025	Arm	243	2038222	Screw AM 3 x 14 mm DIN 84
191	8230047	Lamp 6 V	244	3164196	Housing with lamp
192	3375023	Optics	245	2854024	Diaphragmarm
193	2853039	Arm	246	2013203	Screw 2,84 x 12,7 mm ART 4261
194	2810024	Spring	247	3131052	Housing for foto resistor
195	6810001	Magnet coil		5210004	Fotoresistor
196	2850047	Press bar	248	3151085	Holder
197	2038948	Screw	249	2038946	Screw
198	2854022	Change lever	250	2794029	Roller
199	2034236	Screw AM 2 x 3 mm DIN 84	251	2622041	Washer
200	2850077	Pickup arm	252	2038208	Screw AM 3 x 5 mm DIN 84
201	2038216	Screw AM 3 x 10 mm DIN 84	253	2798003	Exentrik
202	2641075	Clamp	254	3114068	Chassis, slide
203	2072911	Adjustment screw		3180536	Sticker for transport screw
204	8954410	Pickup MMC 4000 - BEOGRAM 4002		2038946	Screw
	8954400	Pickup MMC 6000 - BEOGRAM 6000		2620028	Rubber disc
	3624008	Service-kit for pickup	255	2624028	Thrust washer
205	3302230	Cap for pickup	256	2390046	Circlip
206	2038948	Screw	257	2510086	Bracker
207	2624021	Washer	258	6140417	PC-board
208	2038206	Screw AM 3 x 4 mm DIN 84	259	2038206	Screw AM 3 x 4 mm DIN 84
209	8009028	PC-board			
	7400115	Microswitch			
210	2389031	Bearing nut			
211	2038208	Screw AM 3 x 5 mm DIN 84			
212	3152074	Holder			
213	2993028	Spindle			
214	3199048	Dial			
215	3151139	Holder for dial			
216	2816116	Spring			
217	2034220	Screw AM 2 x 12 DIN 84			
218	2034211	Screw AM 2 x 6 DIN 84			
219	2819061	Spring			
220	2851083	Lifting arm complete			
	2812065	Spring			
	2034219	Screw AM 2 x 10 DIN 84			
221	2812041	Spring			
222	2390004	Circlip			
223	2894029	Armature			
224	2802023	Washer			
225	2038233	Screw AM 3 x 20 mm DIN 84			

NOT SHOWN PARTS

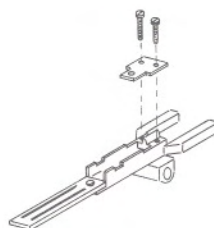
6271048	Mains lead
6270169	PU-wire with plug
3535039	Instruction diaphragm 5501/5502
3391384	Outer carton
3391385	Top/bottom inserts
3397157	Packing - lidinserts
3397158	Packing - left
3397159	Packing - right

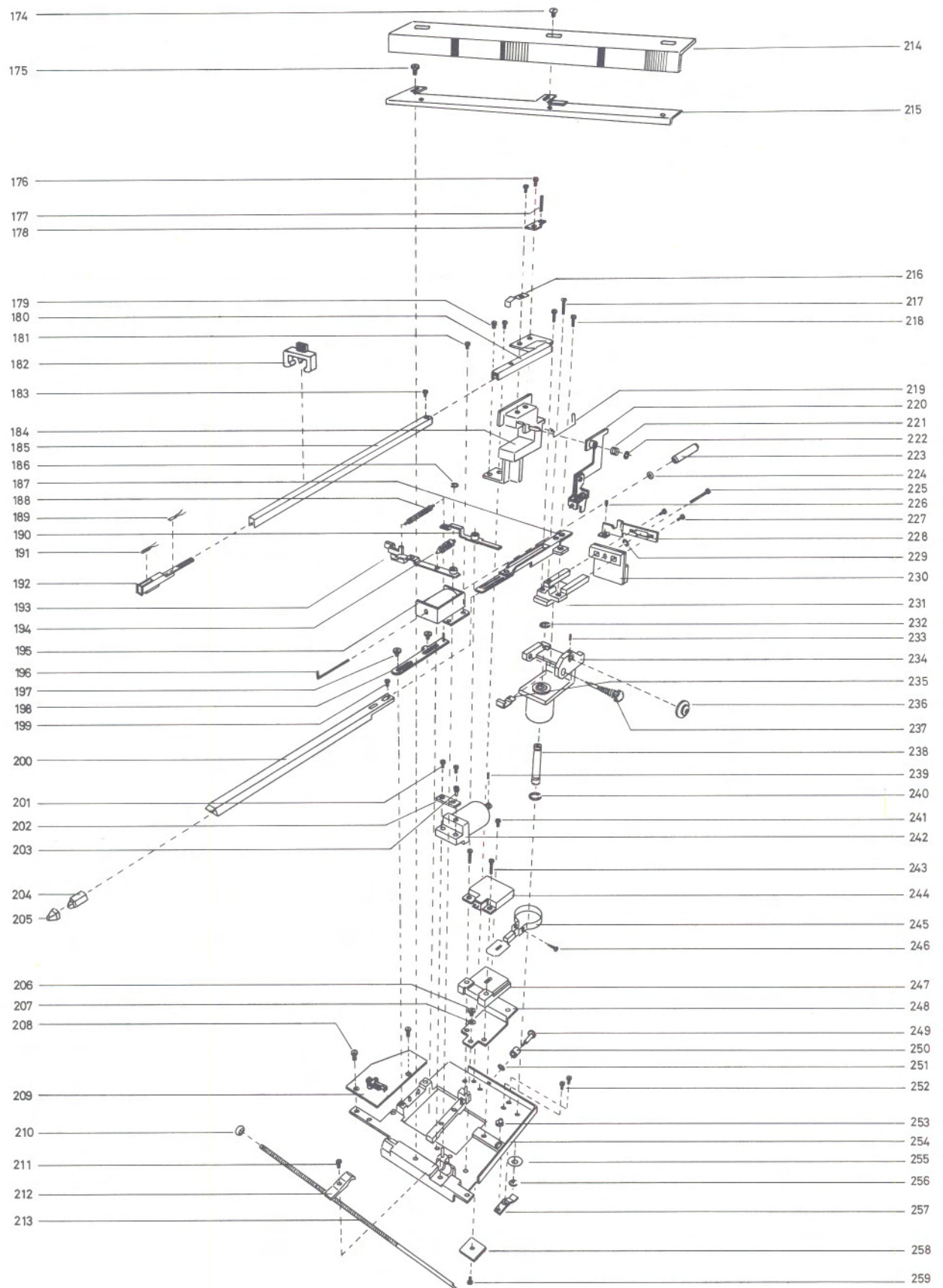
SUBJECT TO CHANGE WITHOUT NOTICE

* Pos. 187

Two types of holders for pick-up arm have been used in production. The type shown to the right is no longer available. If one of the parts for this holder is defective and must be replaced it will be necessary to replace the following parts:

187	3152179	Holder for pick-up arm, complete
200	2850077	Pick-up arm



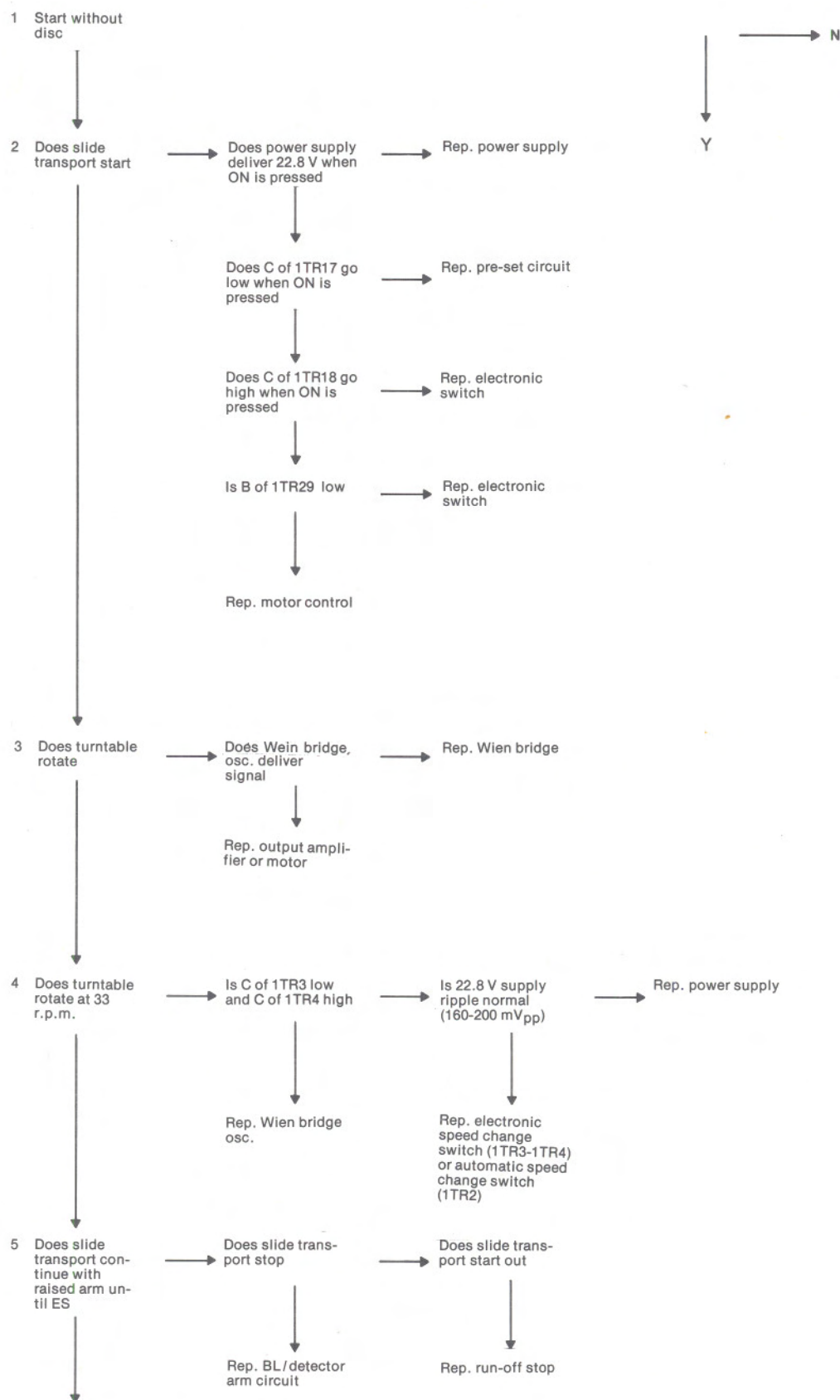


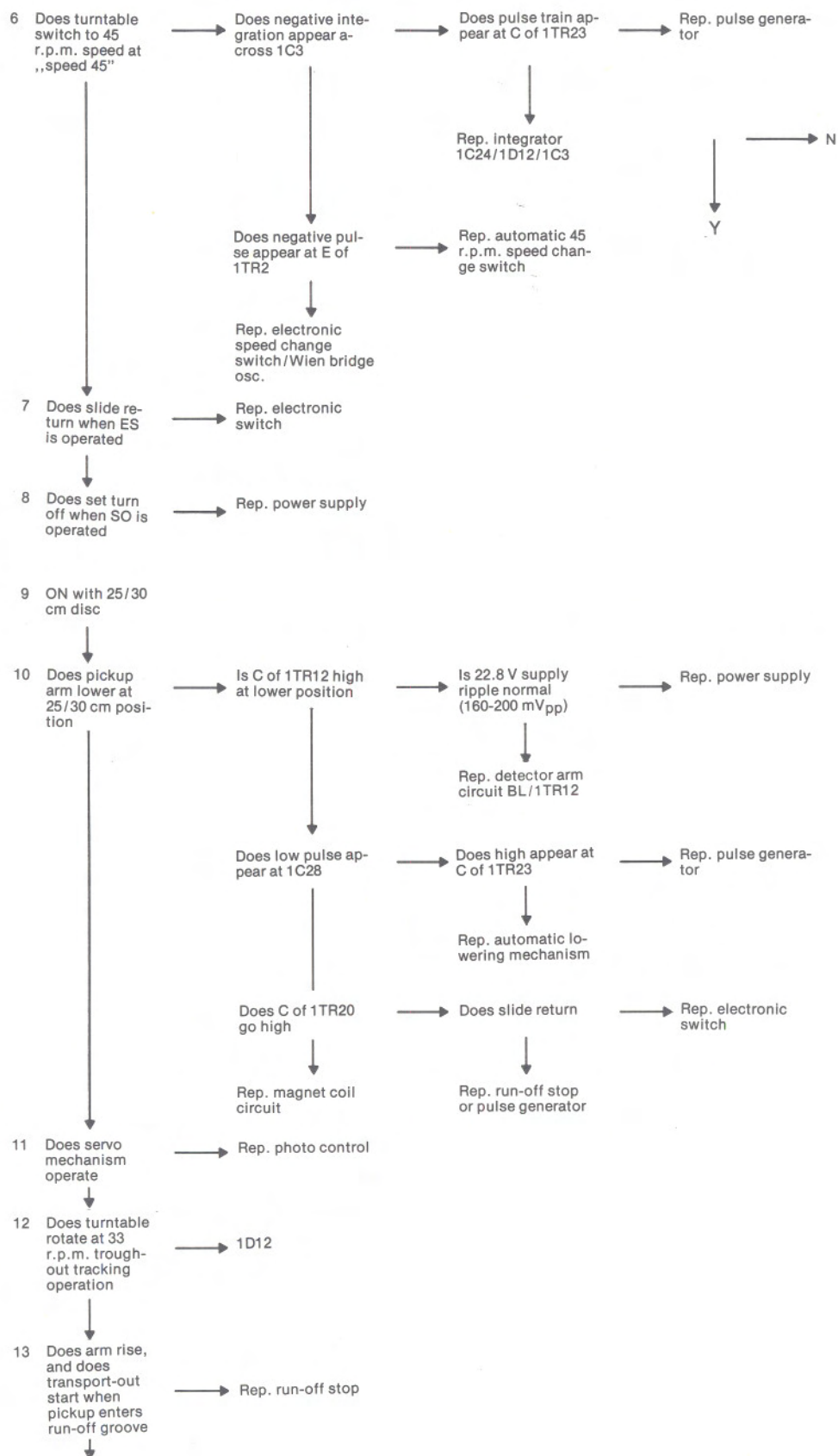
LUBRICATION

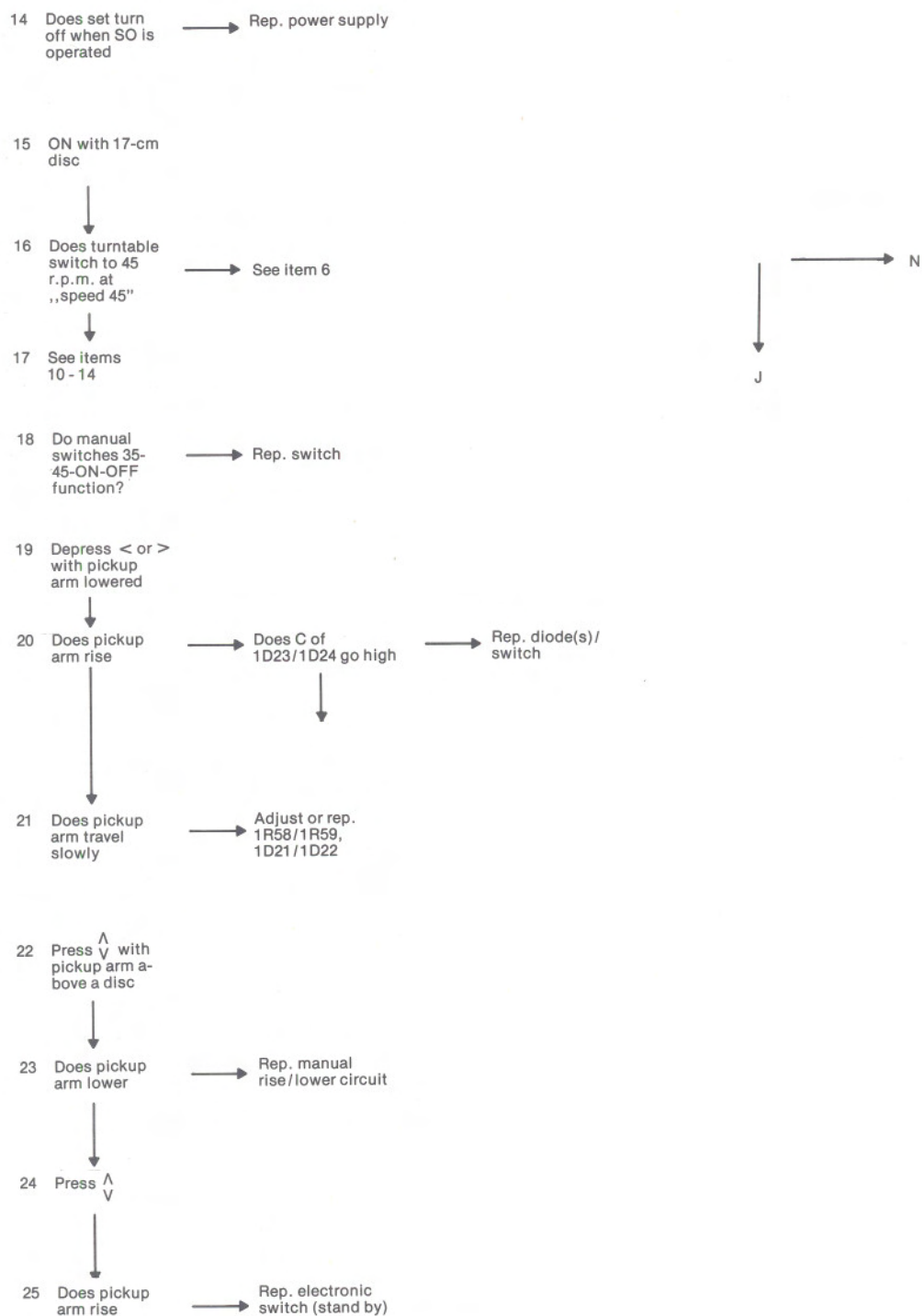
The need for relubrication is negligible.

In the case of overhauls and replacement of mechanical parts the directions given below should be followed.

Pos. No.	Description	Lubricant
190	Arm	3984211, Castrol everyman oil
193	Arm	
198	Arm	
220	Arm	
250	Roller	
242	Damper cylinder	3984214, Dow corning 200 fluid
194	Magnet-coil spring	3984222, Valvata oil 79
137	Bearing for spindle	3984218, Mylocote DX paste (white)
213	Spindle	3984216, Rocol MTS 1000. Diluted to oily viscosity with ESSO NUTO H 44
111	Main bearing	3984221, ESSO NUTO H 44 Alternative: Teresso 43







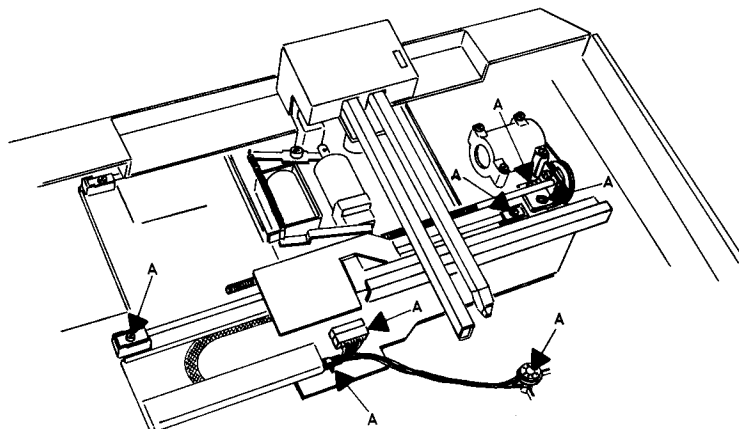
NOTATER/NOTES/NOTIZEN

SERVICE TIPS

Demontering af slæde

Dismounting of slide

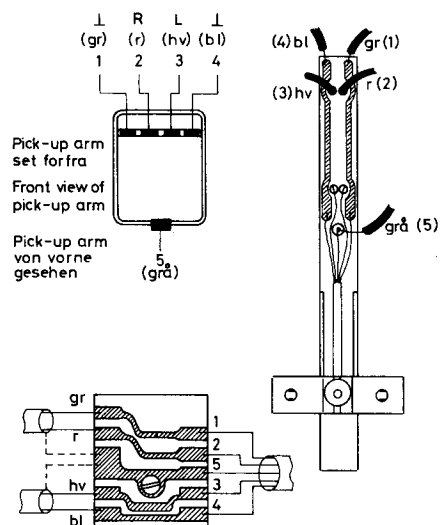
Demontierung vom Schlitten



Ledningsmontering i pick-up arm

Mounting of cable in the pick-up arm

Montierung einer Leitung im Tonabnehmerarm



NOTATER/NOTES/NOTIZEN