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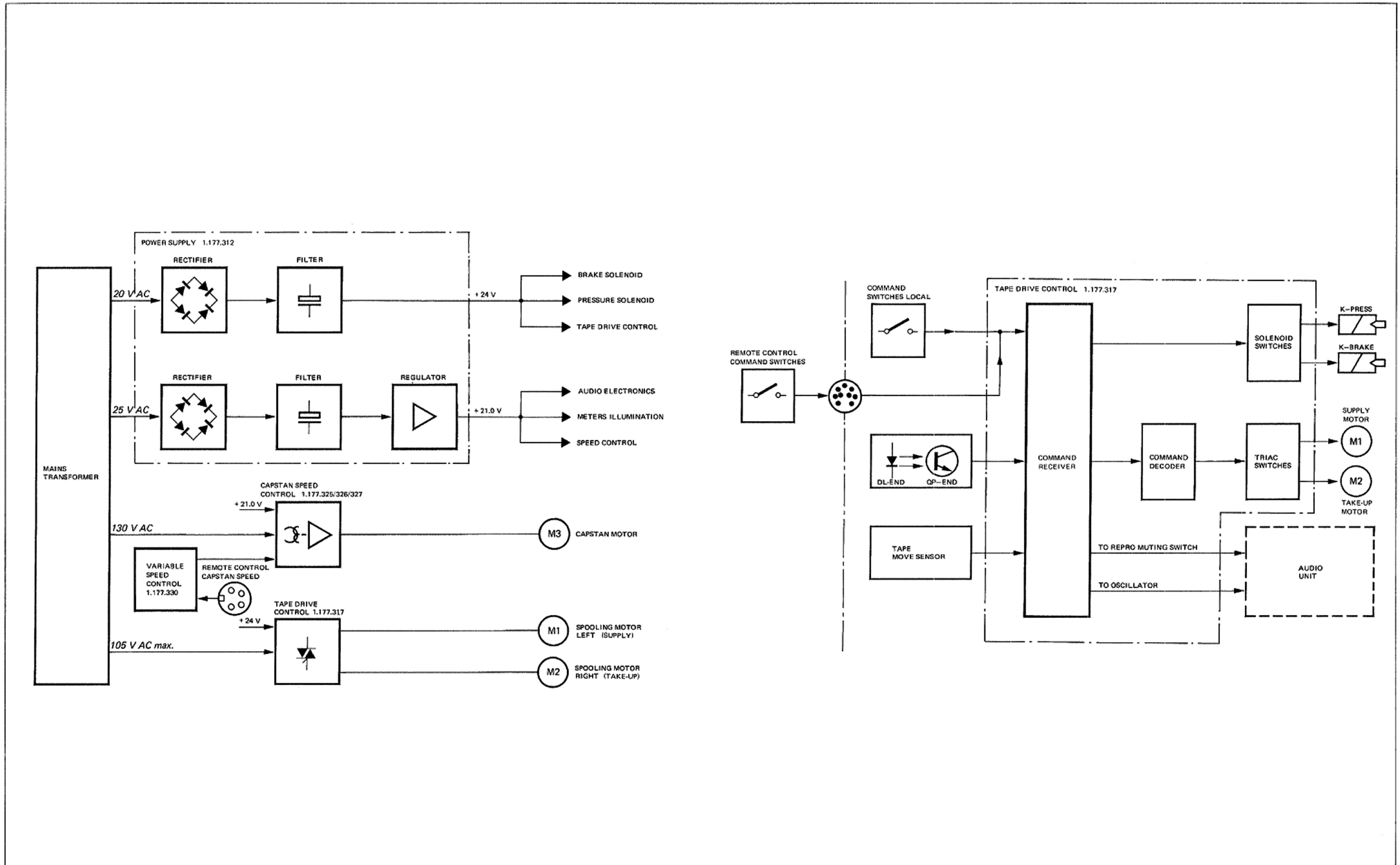
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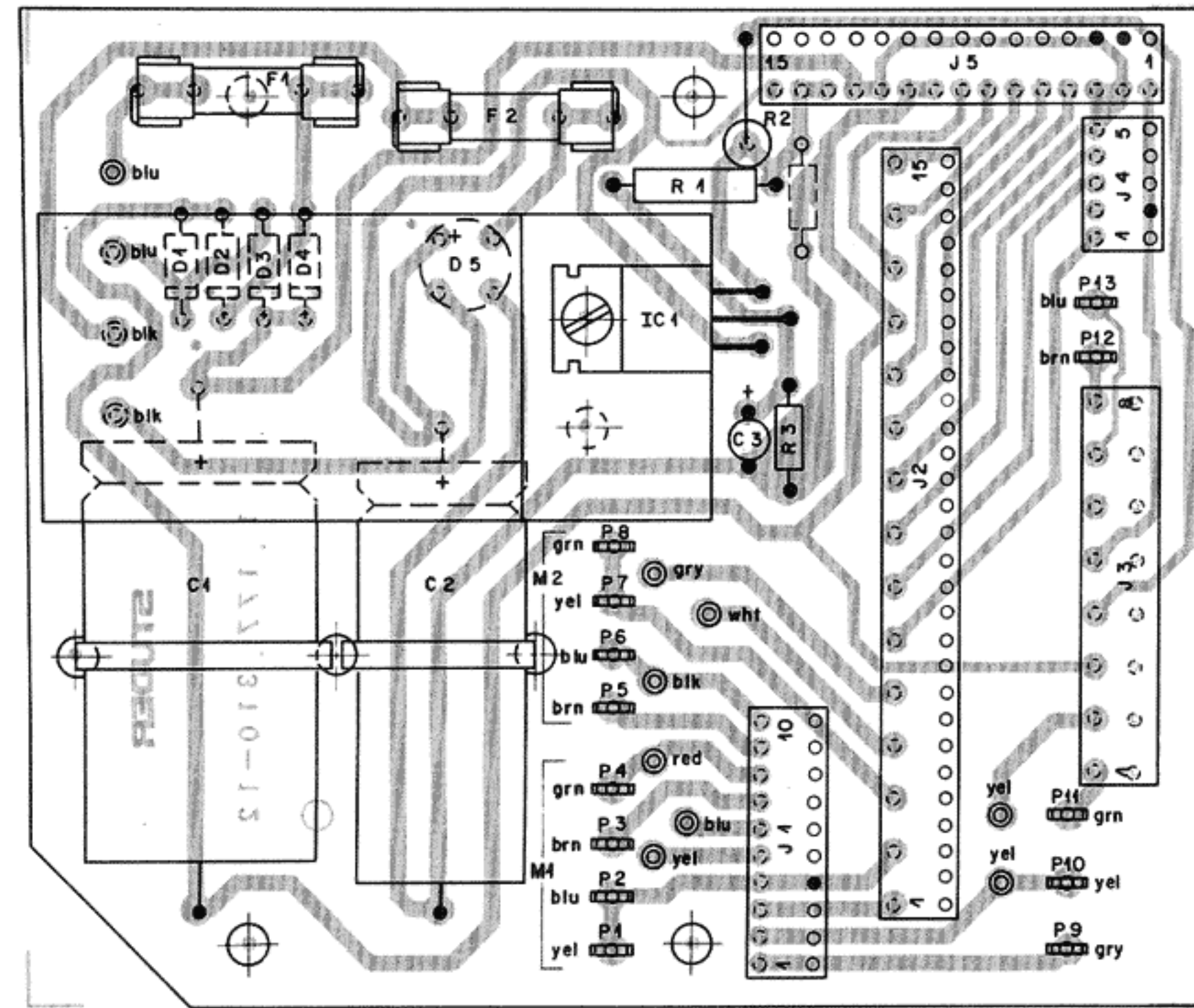
BLOCK DIAGRAM / POWER SUPPLY AND TAPE DRIVE CONTROL







POWER SUPPLY PCB 1.177.310.00

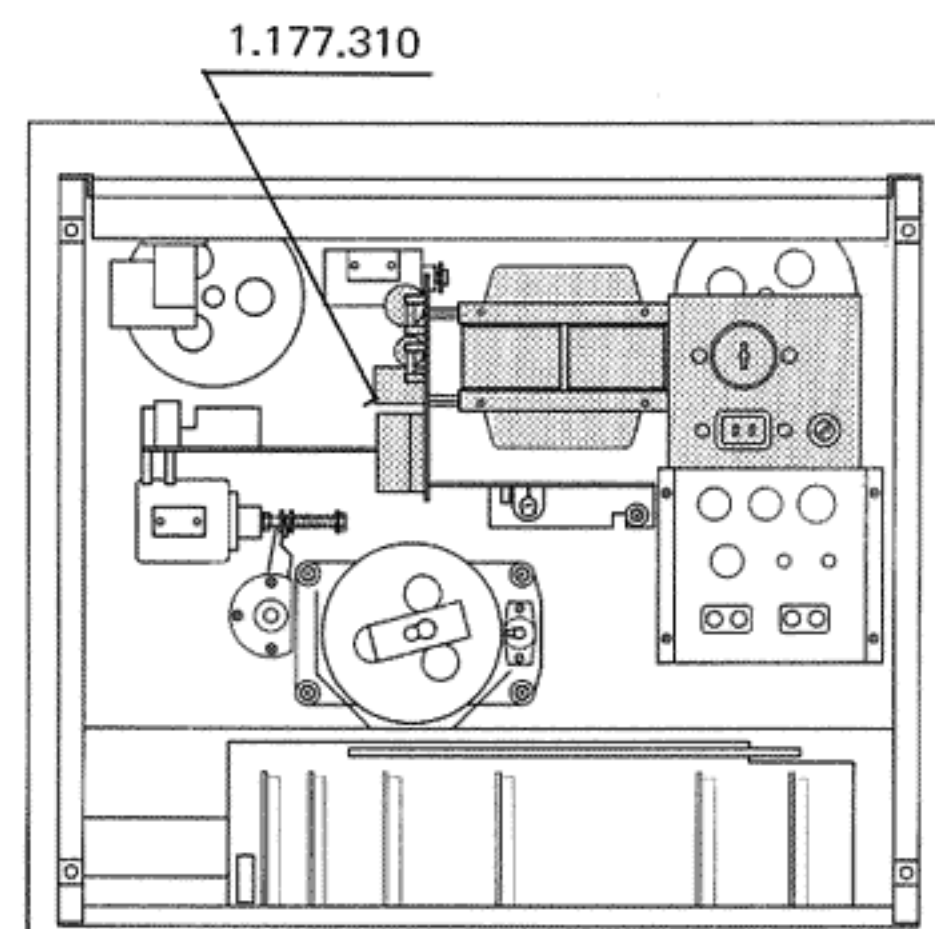


POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT MFR
C 01	59.25.5222	2200 U	-10% 35V EL	
C 02	59.25.5102	1000 U	-10% 40V EL	
C 03	59.30.1101	100 U	-20% 3V TA	
D 01	50.04.0122	1 N 4001		any
D 02	50.04.0122	1 N 4001		any
D 03	50.04.0122	1 N 4001		any
D 04	50.04.0122	1 N 4001		any
D 05	70.01.0222	B35 C 800		
F_01	51.01.0119	1,6 AT	5 x 20 Slow Blow	
F_02	51.01.0114	500 mA T	5 x 20 Slow Blow	
IC 01	50.05.0242	78 M 20	20V 0,5 A	F,T
J 01	54.01.0290	10-Pole	Socket Strip	
J 02	54.01.0535	15-Pole	"	
J 03	54.01.0546	8-Pole	"	
J 04	54.01.0288	5-Pole	"	
J 05	54.01.0219	15-Pole	"	
P 1-13	54.02.0320		Flat Pin 0,8 AMP	
R_01	57.42.4182	1,8 K	5% .33W CF	
R_02	57.41.4220	22	5% 4 W WW	
R_03	57.41.4820	82	5% .25W CF	

F = Fairchild CP = Carbon Film  
T = Texas Instr. WW = Wire Wound

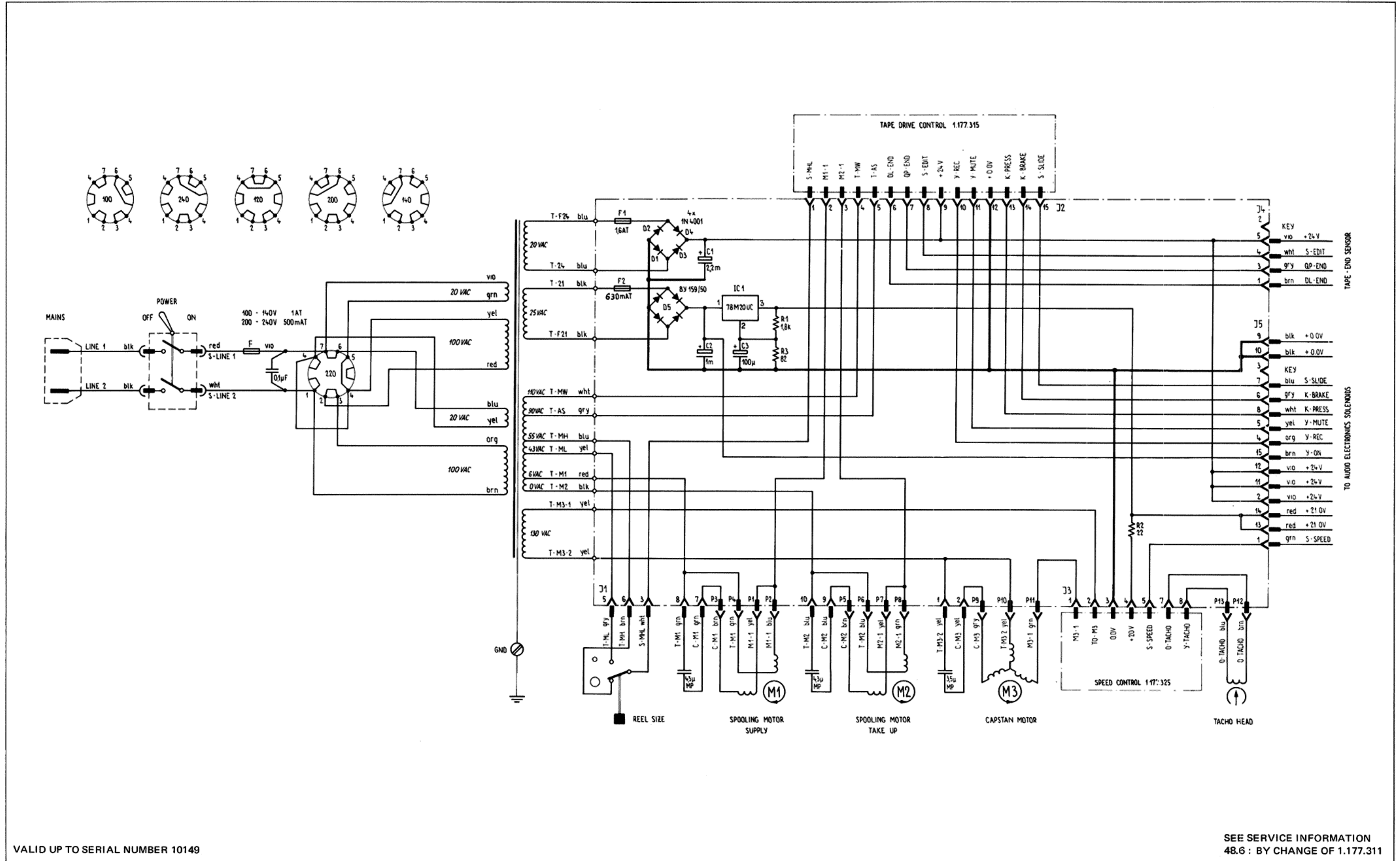
IND	DATE	NAME
	1.4.77	Wartburg/g

**STUDER** Power Supply 1.177.310 PAGE 1 of 1





POWER SUPPLY PCB 1.177.310.00



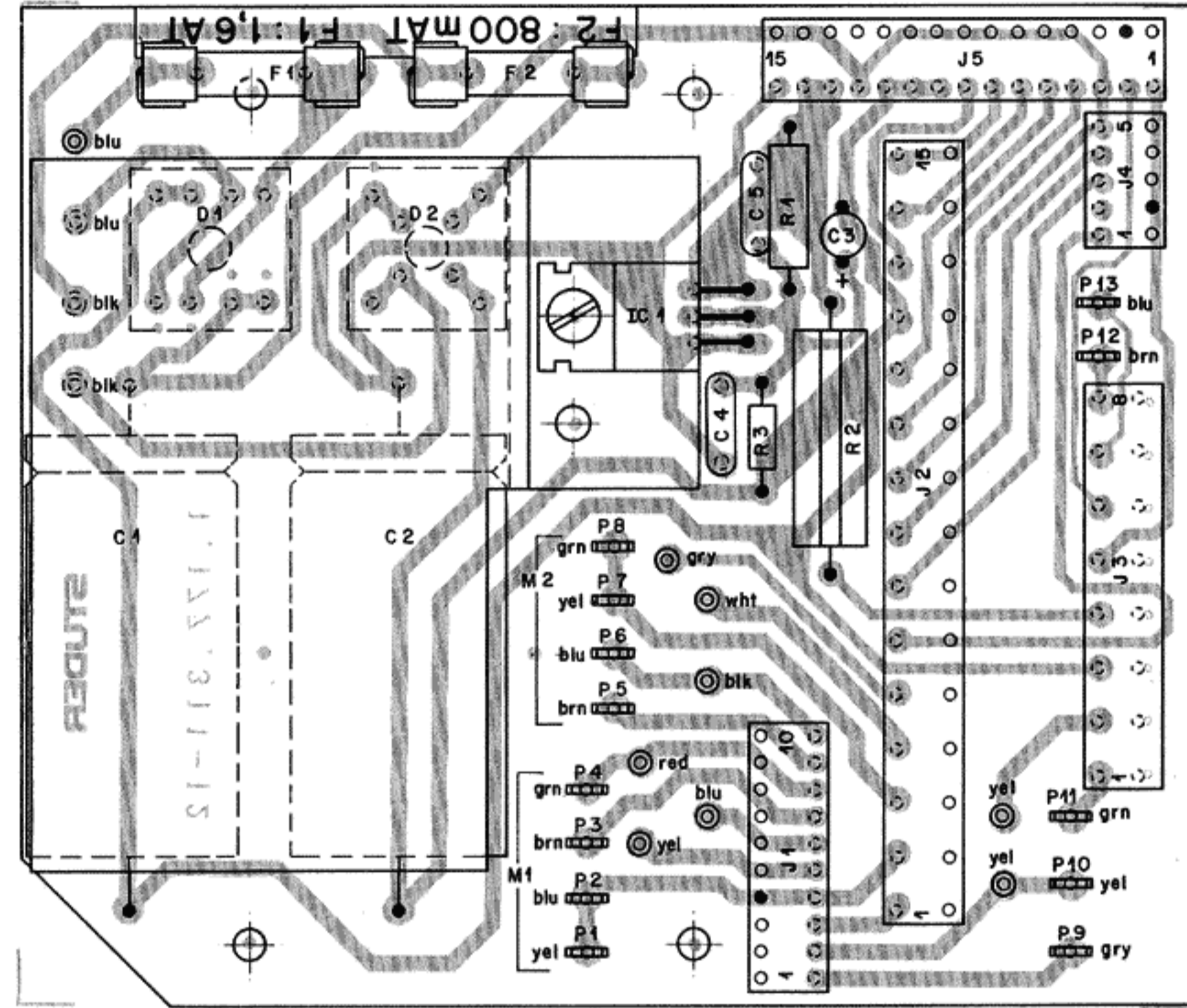
VALID UP TO SERIAL NUMBER 10149

SEE SERVICE INFORMATION  
48.6 : BY CHANGE OF 1.177.311

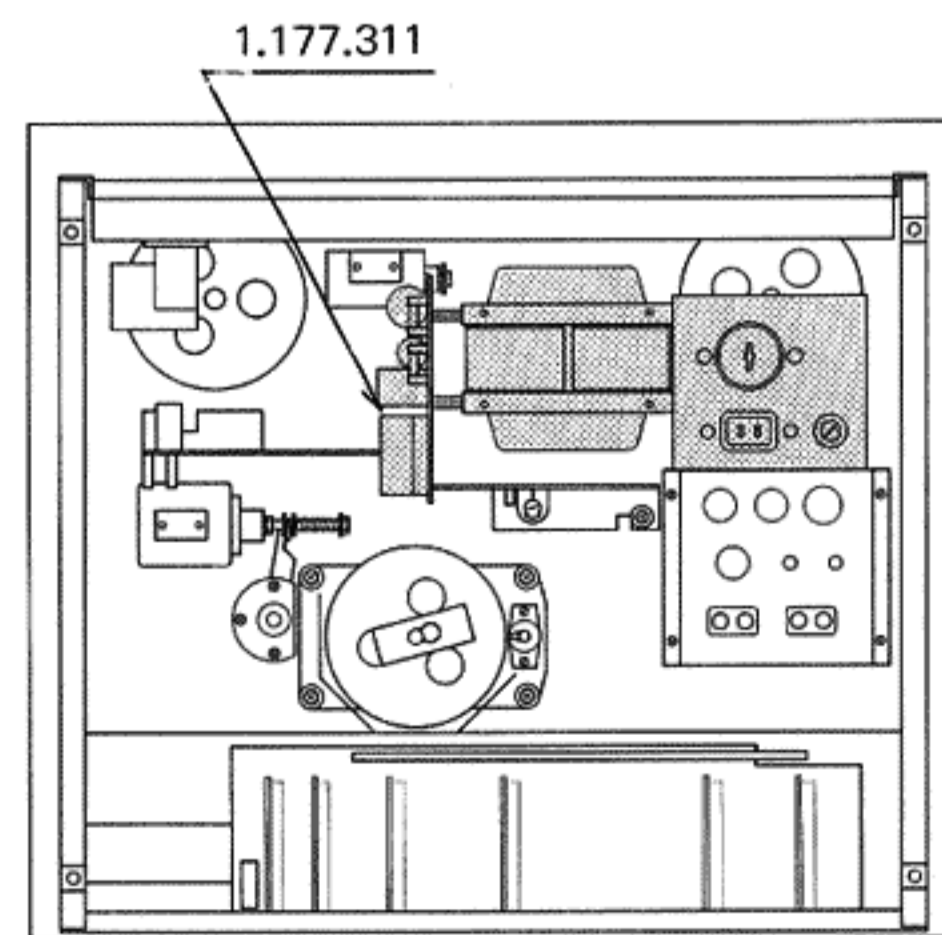




POWER SUPPLY PCB 1.177.311.00

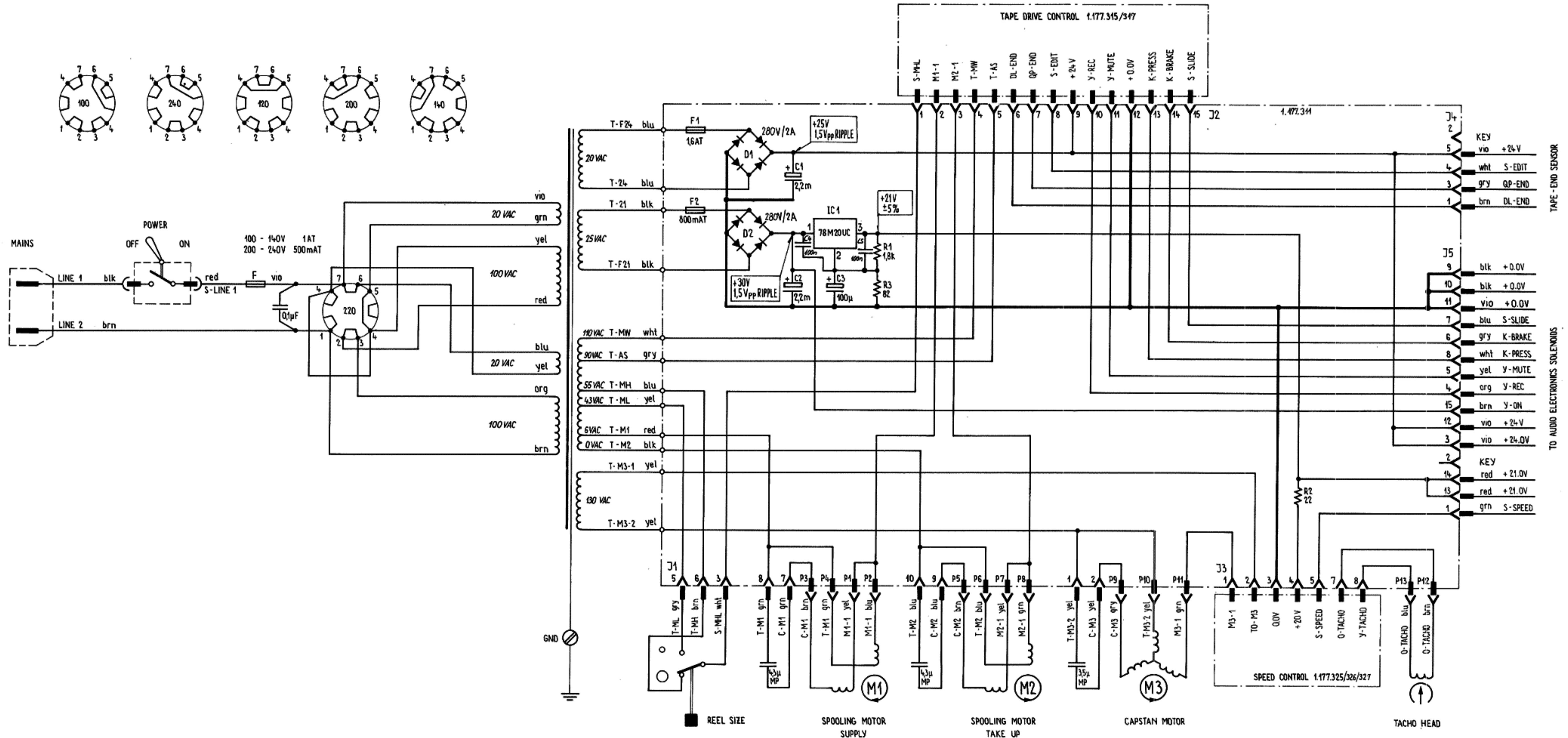


POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT	MFR
C 01	59.25.5222	2200 U	-10% 35V EL		
C 02	59.25.5222	2200 U	-10% 35V EL		
C 03	59.30.1101	100 U	-20% 3V TA		
C 04	59.32.3104	100 N	20% 40V CER		
C 05	59.32.3104	100 N	20% 40V CER		
D 01	70.01.0226	280V/2A	Bridge Rect. SI		
D 02	70.01.0226	280V/2A	Bridge Rect. SI		
F 01	51.01.0119	1.6AT	5 x 20 Slow Blow		
F 02	51.01.0116	800 MAT	5 x 20 Slow Blow		
IC 01	50.05.0242	78 M 20	20V 0.5 A		F.T
J 01	54.01.0290	10-Pole	Socket Strip		
J 02	54.01.0535	15-Pole	"		
J 03	54.01.0546	8-Pole	"		
J 04	54.01.0288	5-Pole	"		
J 05	54.01.0219	15-Pole	"		
P 1-13	54.02.0320		Flat Pin 0.8 AMP		
R 01	57.42.4182	1.8 K	5% .33W CF		
R 02	57.56.4220	22	5% 4 W WW		
R 03	57.41.4820	82	5% .25W CF		
F = Fairchild T = Texas Instr. CF = Carbon Film WW = Wire Wound					
IND DATE NAME 2.10.79 19.10.77 Ludwig/gv				1.177.311 PAGE 1 of 1	





POWER SUPPLY PCB 1.177.311.00



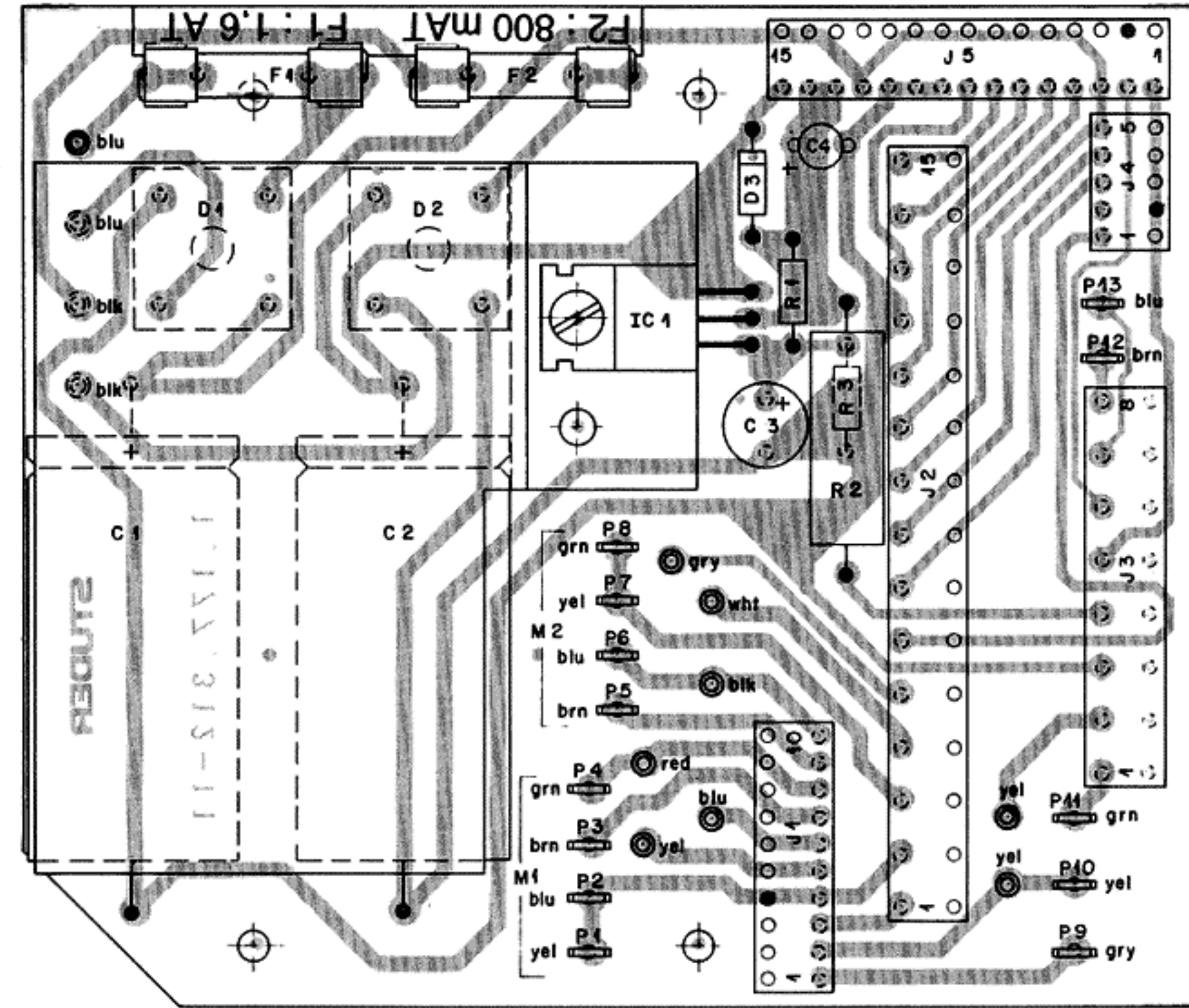
VALID FROM SERIAL NUMBER 10150 TO 107301

SEE SERVICE INFORMATION 57.6 : C4, C5



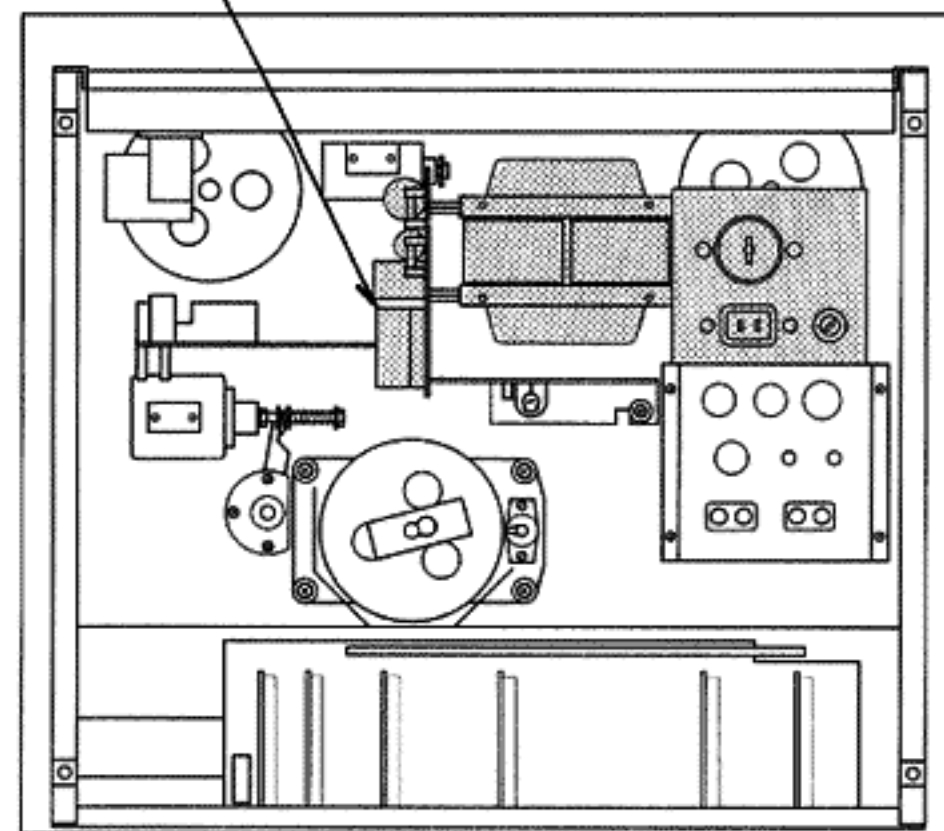


POWER SUPPLY PCB 1.177.312.00



Index 3 9.2.93

1.177.312



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.25.5222	2m2	C-EL, 20%, 40V	
0	C 2	59.25.5222	2m2	C-EL, 20%, 40V	
0	C 3	59.22.5470	47u	EL 25V, 20%, RM5	
2	C 4	59.22.8109	1u	EL 50V, 20%, RM5	
0	D 1	70.01.0226	2A	DZ 280V / 2A, SI	
0	D 2	70.01.0226	2A	DZ 280V / 2A, SI	
0	D 3	50.04.0122	1N4001	1A, DO 41	
0	F 1	51.01.0119	1.6A	T 5*20 L 250V	
0	F 2	51.01.0116	800mA	T 5*20 L 250V	
0	IC 1	50.10.0104	LM317SP	IC LM 317 SP, ...T,	
0	J 1	54.01.0290	10-P	J LEISTE 10 POL CIS AUFST.	
0	J 2	54.01.0535		J LEISTE 15 POL CIS AUFST.	
0	J 3	54.01.0546		J LEISTE 8 POL CIS DURCHS	
0	J 4	54.01.0288	5-P	J LEISTE 5 POL CIS AUFST.	
0	J 5	54.01.0219	15-P	J LEISTE 15 POL CIS AUFST.	
0	P 1	54.02.0320	1p	Flatpin, 2.8*0.8mm	
0	P 2	54.02.0320	1p	Flatpin, 2.8*0.8mm	
0	P 3	54.02.0320	1p	Flatpin, 2.8*0.8mm	
0	P 4	54.02.0320	1p	Flatpin, 2.8*0.8mm	
0	P 5	54.02.0320	1p	Flatpin, 2.8*0.8mm	
0	P 6	54.02.0320	1p	Flatpin, 2.8*0.8mm	
0	P 7	54.02.0320	1p	Flatpin, 2.8*0.8mm	
0	P 8	54.02.0320	1p	Flatpin, 2.8*0.8mm	
0	P 9	54.02.0320	1p	Flatpin, 2.8*0.8mm	
0	P 10	54.02.0320	1p	Flatpin, 2.8*0.8mm	
0	P 11	54.02.0320	1p	Flatpin, 2.8*0.8mm	
0	P 12	54.02.0320	1p	Flatpin, 2.8*0.8mm	
0	P 13	54.02.0320	1p	Flatpin, 2.8*0.8mm	
0	R 1	57.39.3010		R 301 , 1%, 0207 , MF	
0	R 2	57.56.4220	22R	WW, 5%, 4 W	
0	R 3	57.11.4472		R 4.7 K , 2%, 0207 , MF	

End of List

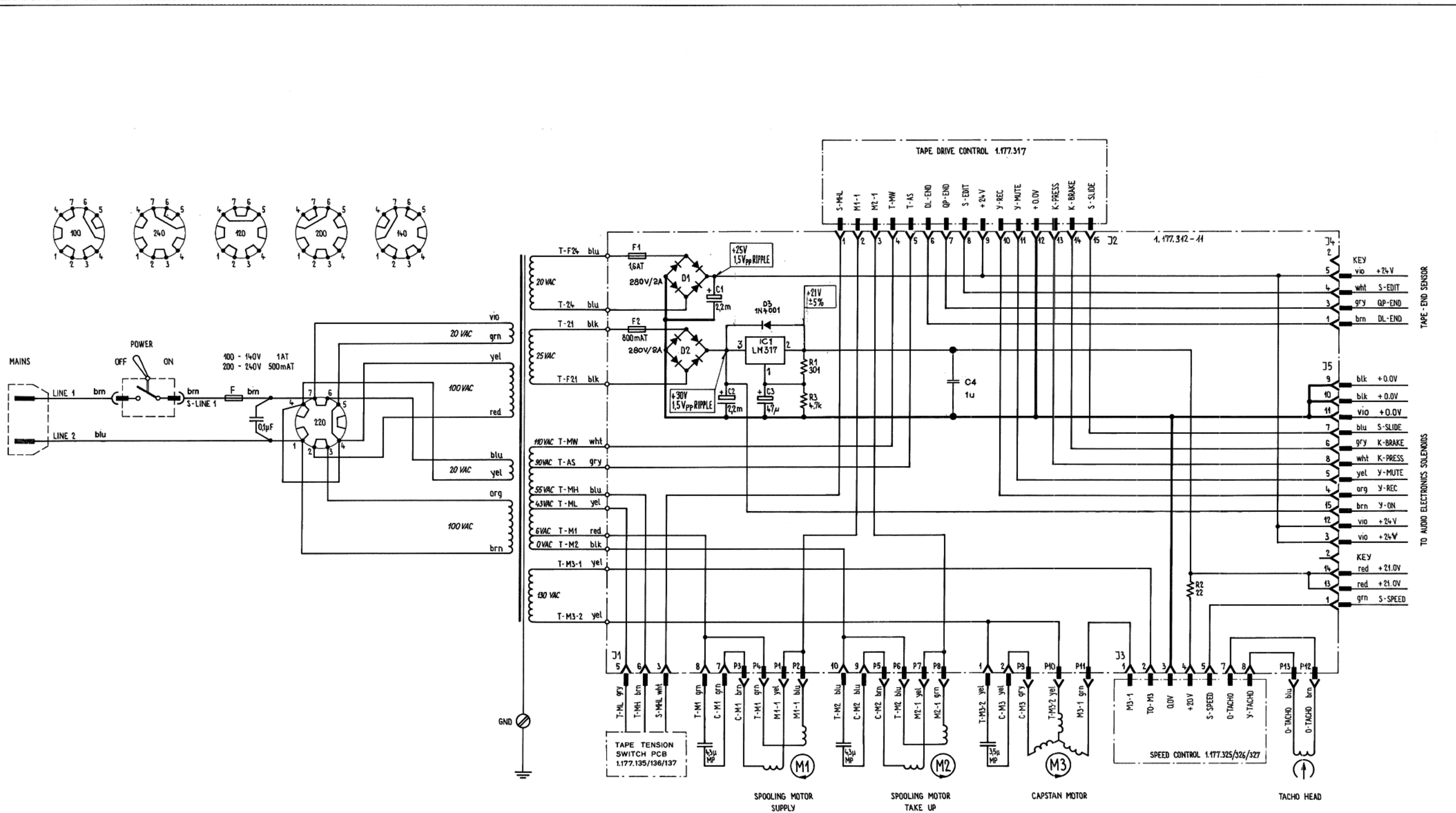
Comments:

- (1) 25.6.1985 C4 to prevent IC1 from oscillating.
- (2) 9.2.1993 C4 change from 68 nF to 1 uF





POWER SUPPLY PCB 1.177.312.00



VALID FROM SERIAL NUMBER 107302

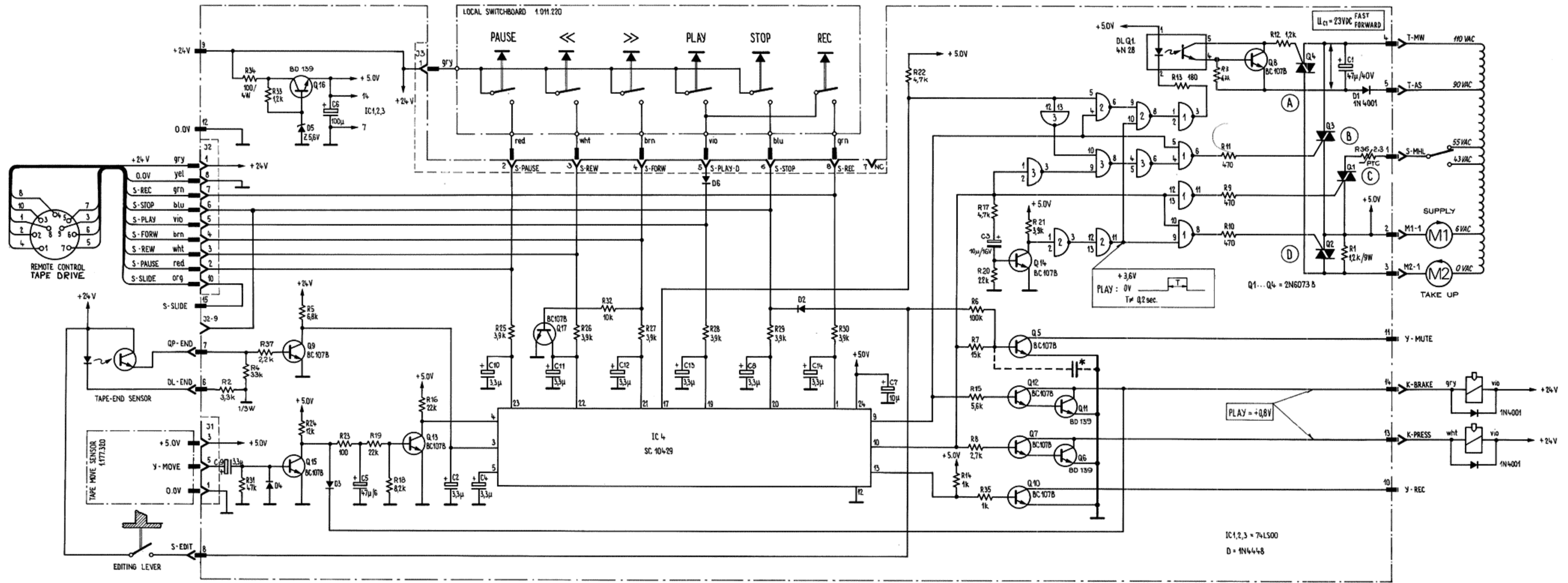






TAPE DRIVE CONTROL PCB 1.177.315.00

REVISED EDITION



IC1,2,3 = 74LS00  
D = 1N4448

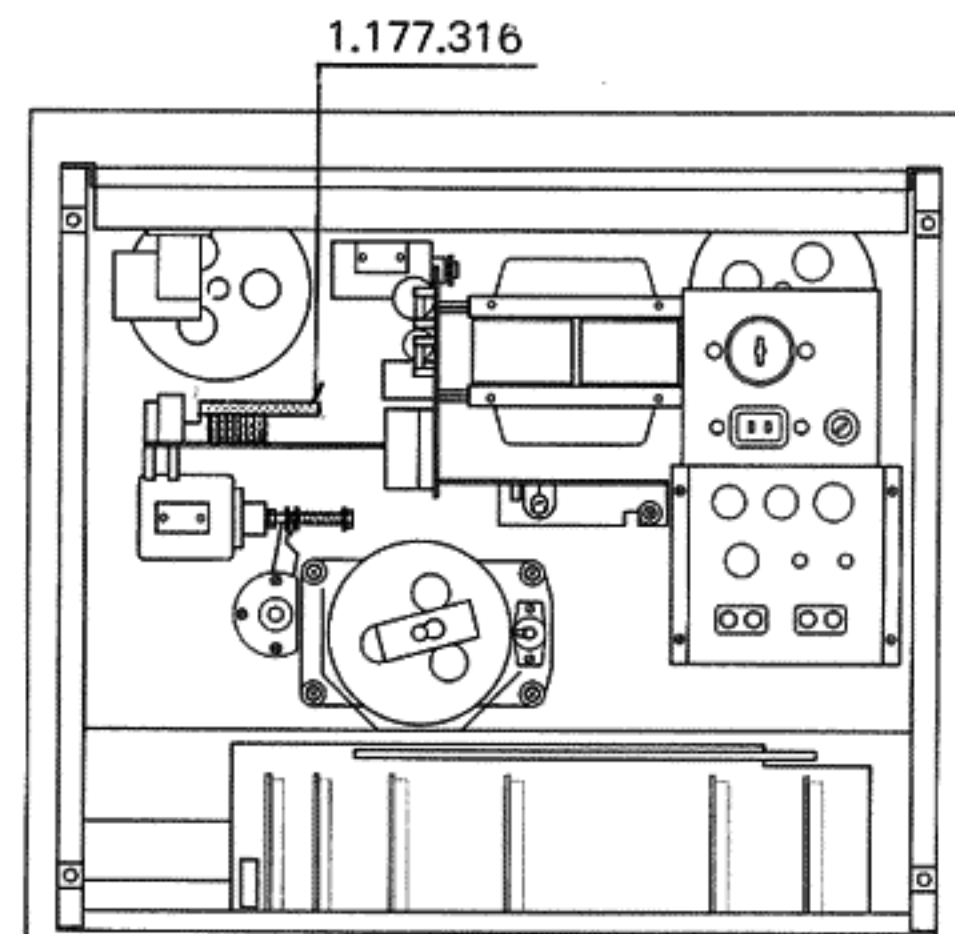
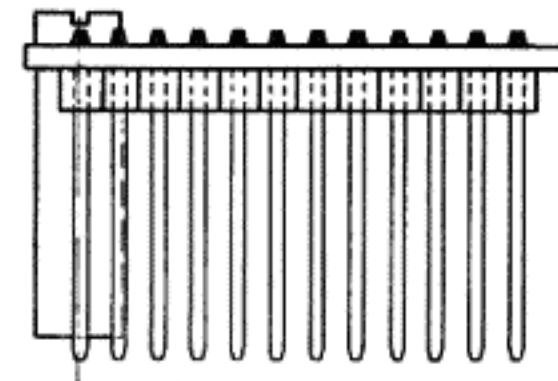
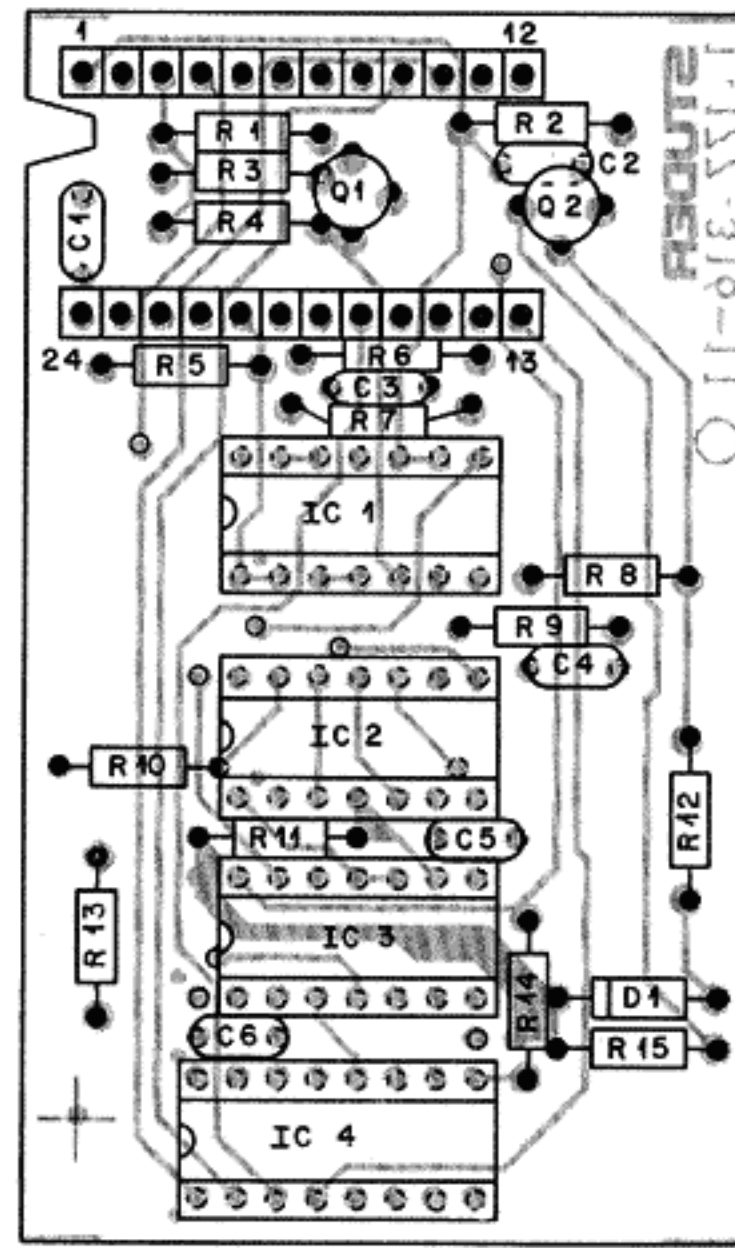
VALID UP TO SERIAL NUMBER 52699

IC4 MAY BE REPLACED BY THE SUBSTITUTION LOGIC PC-BOARD 1.177.316

SEE SERVICE INFORMATION  
48.9 : C\*  
52.6 : R2



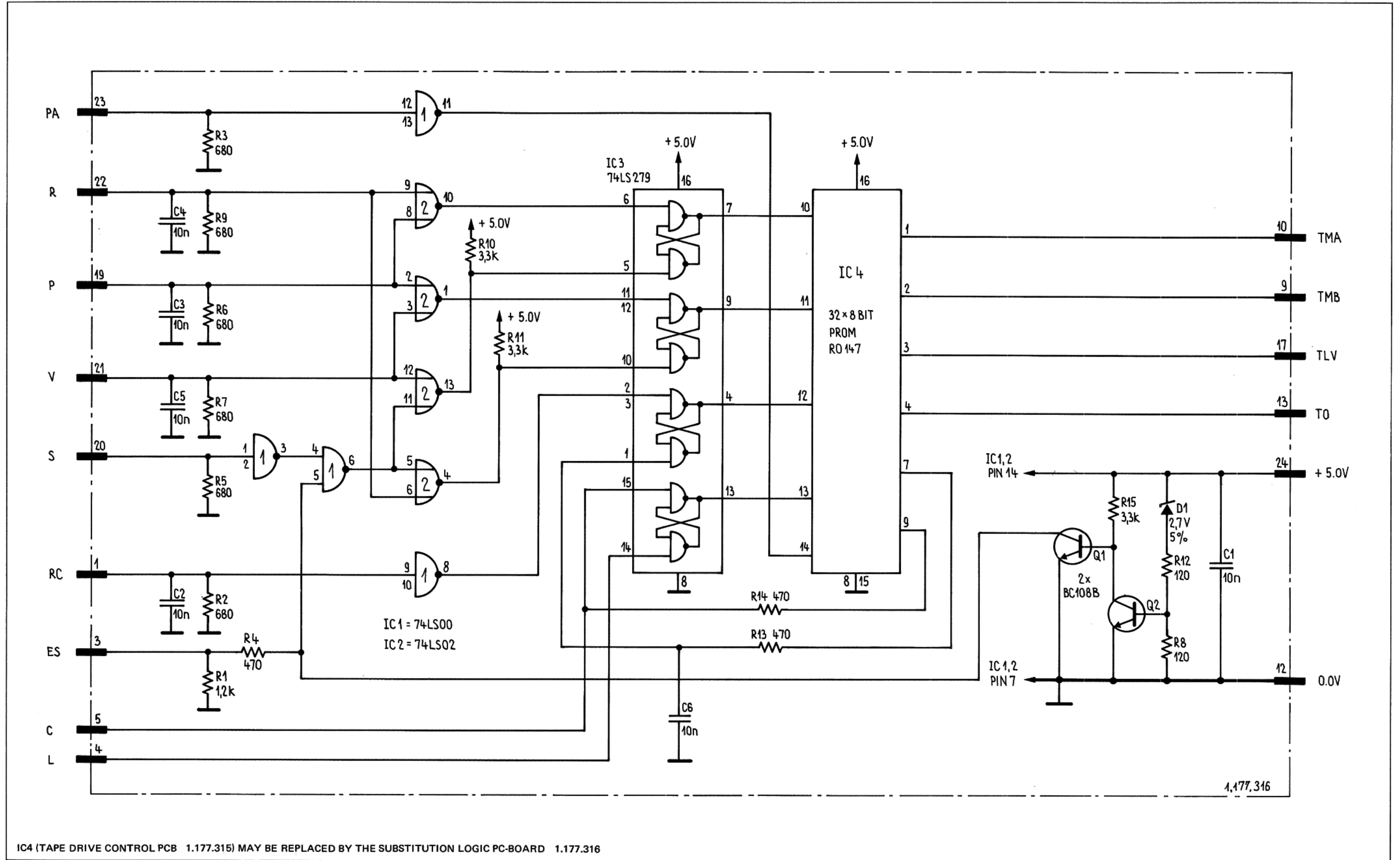
SUBSTITUTION LOGIC PCB 1.177.316.00



POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT	MFR
C 1-6	59.32.3103	10 nF	20%	CER	
D 01	50.04.1106	Z 2.7 V	5%	SI	any
IC 01	50.06.0000	74LS00		LS-TTL	any
IC 02	50.06.0002	74LS02		LS-TTL	any
IC 03	50.06.0279	74LS279		LS-TTL	any
IC 4	1.177.315-51	R 0147		PROM 32x8 Tri-State	Sig.
P1-24	54.01.0020			Pin .63 x .63	
Q1,Q2	50.03.0438	BC 108 B		NPN	any
R 01	57.41.4122	1,2 k	5%	.25W CF	
R 02	57.41.4681	680			
R 03	57.41.4681	680			
R 04	57.41.4471	470			
R 05	57.41.4681	680			
R 06	57.41.4681	680			
R 07	57.41.4681	680			
R 08	57.41.4121	120			
R 09	57.41.4681	680			
R 10	57.41.4332	3,3 k			
R 11	57.41.4332	3,3 k			
R 12	57.41.4121	120			
R 13	57.41.4471	470			
R 14	57.41.4471	470			
R 15	57.41.4332	3,3 k			
Sig = Signetics IND DATE NAME 4.11.77 Wasser/gv <b>STUDER</b> Substitution Logic Board 1.177.316 PAGE 1 of 1					



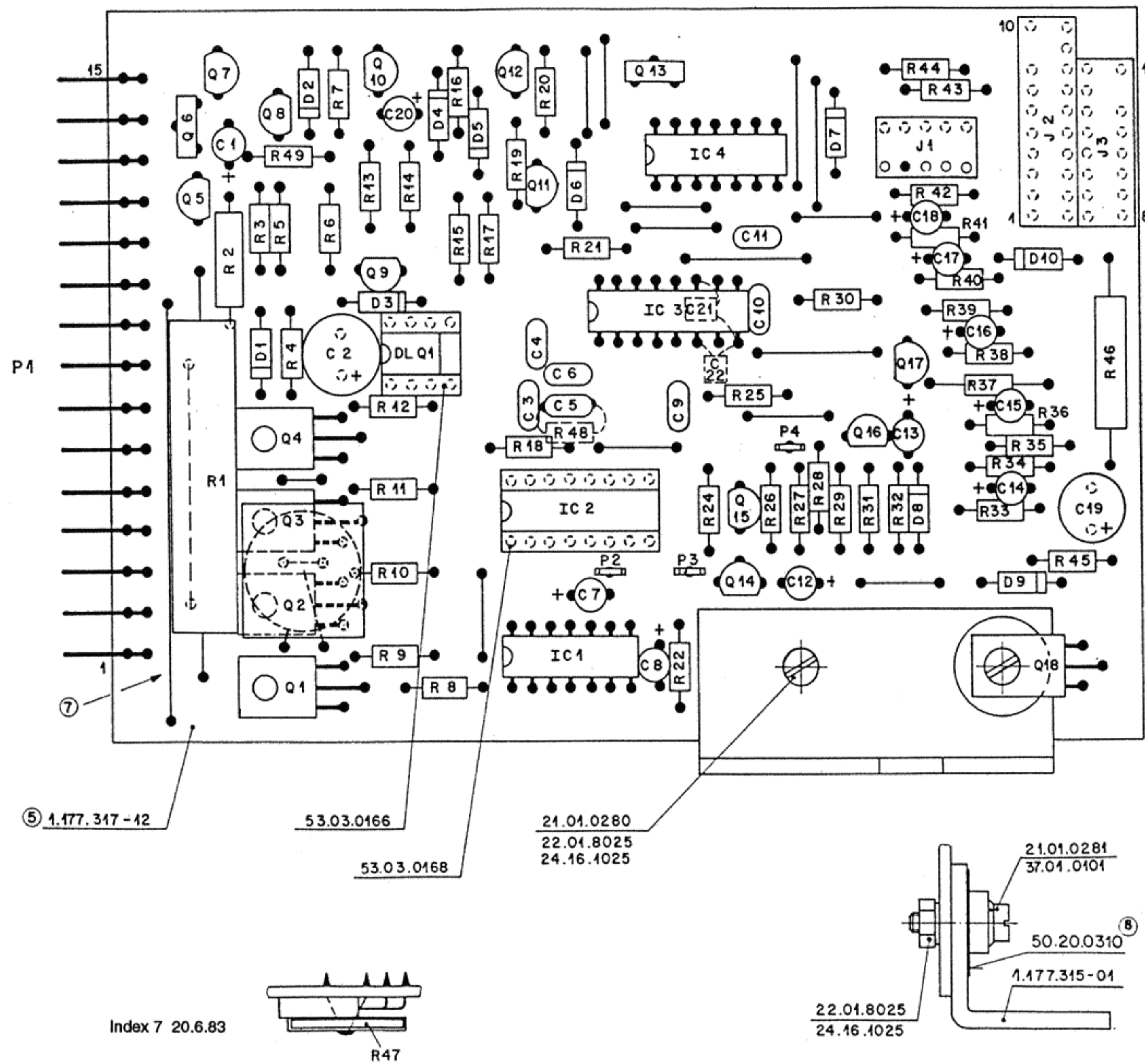
SUBSTITUTION LOGIC PCB 1.177.316.00



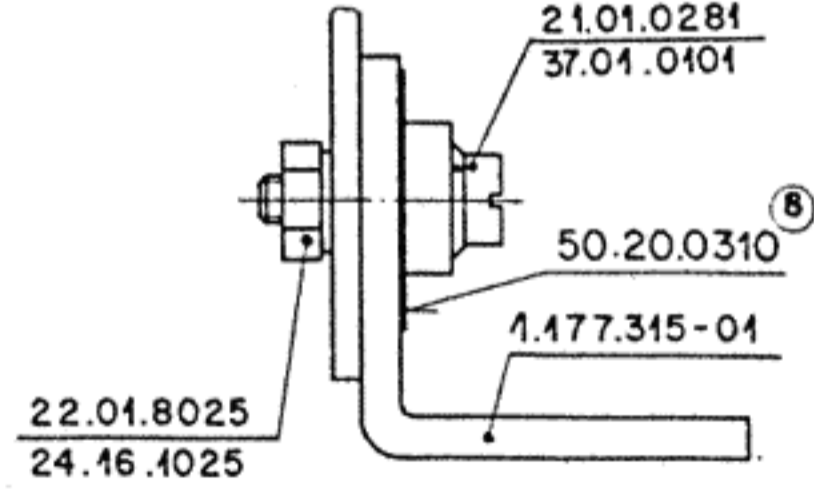
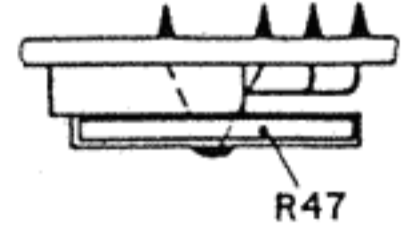




TAPE DRIVE CONTROL PCB 1.177.317.00 (B77 MKI)



Index 7 20.6.83



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.22.3101		100u	EL 10V, 20%, RM5
0	C 2	59.22.6470		47u	EL 40V, 20%, RM5
0	C 3	59.32.3103		10n	C 10 N, 100%, 40V, CER
0	C 4	59.32.3103		10n	C 10 N, 100%, 40V, CER
0	C 5	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 6	59.32.3103		10n	C 10 N, 100%, 40V, CER
0	C 7	59.22.6100		10u	EL 35V, 20%, RM5
0	C 8	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 9	59.32.3103		10n	C 10 N, 100%, 40V, CER
0	C 10	59.32.3103		10n	C 10 N, 100%, 40V, CER
0	C 11	59.32.3103		10n	C 10 N, 100%, 40V, CER
0	C 12	59.22.3470		47u	EL 10V, 20%, RM5
0	C 13	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 14	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 15	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 16	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 17	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 18	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 19	59.22.3101		100u	EL 10V, 20%, RM5
0	C 20	59.26.0680		68u	SAL, 20%, 6.3V
5	C 21	59.32.3472			C 4.7 N, 100%, 40V, CER
5	C 22	59.32.3472			C 4.7 N, 100%, 40V, CER
0	D 1	50.04.0122		1N4001	1A, DO 41
0	D 2	50.04.1119		15V	Zener, 5%, 0.5W, DO-35
0	D 3	50.04.0122		1N4001	1A, DO 41
0	D 4	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 5	50.04.1106		2V7	Zener, 5%, 0.5W, DO-35
0	D 6	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 7	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 8	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 9	50.04.1108		5V6	Zener, 5%, 0.5W, DO-35
0	D 10	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	DLQ 1	50.99.0126		4N26	DLQ 4 N 26,
0	IC 1	50.06.0000		74LS00	IC SN 74 LS 00 N TTL
0	IC 2	1.177.317.51			PROM 32 X 8
0	IC 3	50.06.0279		74LS279	IC SN 74 LS 279 N
0	IC 4	50.06.0002		74LS02	IC SN 74 LS 02 N TTL
0	J 1	54.01.0288		5-P	J LEISTE 5 POL CIS AUFST.
0	J 2	54.01.0242		10-P	J LEISTE 10 POL CIS DURCHS
0	J 3	54.01.0262		8-P	J LEISTE 8 POL CIS DURCHS
0	P 1	54.01.0481			P LEISTE 15 POL CIS WINKEL
0	P 2	54.01.0320		10-P	P LEISTE 10 POL CIS GERADE
0	P 3	54.01.0320		10-P	P LEISTE 10 POL CIS GERADE
5	P 4	54.01.0320		10-P	P LEISTE 10 POL CIS GERADE
0	Q 1	50.99.0119		2N6073B	Q 2N 6073B, SAC 326, TRIAC
0	Q 2	50.99.0119		2N6073B	Q 2N 6073B, SAC 326, TRIAC
0	Q 3	50.99.0119		2N6073B	Q 2N 6073B, SAC 326, TRIAC
0	Q 4	50.99.0119		2N6073B	Q 2N 6073B, SAC 326, TRIAC
0	Q 5	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 6	50.03.0478		BD135-10	BD 135-10
0	Q 7	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 8	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 9	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 10	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 11	50.03.0317			BC 251 A, BC 307 A
0	Q 12	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 13	50.03.0478		BD135-10	BD 135-10
0	Q 14	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 15	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 16	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 17	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 18	50.03.0478		BD135-10	BD 135-10
0	R 1	57.57.4821		820	R 820 , 5%, 11 W, VVV
0	R 2	57.42.4332			R 3.3 K, 5%, .33W, CSCH
0	R 3	57.11.4104			R 100 K, 2%, 0207, MF
0	R 4	57.11.4472			R 4.7 K, 2%, 0207, MF
0	R 5	57.11.4153			R 15 K, 2%, 0207, MF
0	R 6	57.11.4472			R 4.7 K, 2%, 0207, MF
0	R 7	57.11.4223			R 22 K, 2%, 0207, MF
0	R 8	57.11.4181			R 180 , 2%, 0207, MF
0	R 9	57.13.4471		470	R 470 , 2%, 0414, MF
0	R 10	57.11.4471			R 470 , 2%, 0207, MF
0	R 11	57.11.4471			R 470 , 2%, 0207, MF
0	R 12	57.11.4122			R 1.2 K, 2%, 0207, MF
0	R 13	57.11.4272			R 2.7 K, 2%, 0207, MF
0	R 14	57.11.4681			R 680 , 2%, 0207, MF
0	R 15	57.11.4332			R 3.3 K, 2%, 0207, MF
0	R 16	57.11.4333			R 33 K, 2%, 0207, MF
0	R 17	57.11.4121			R 120 , 2%, 0207, MF
0	R 18	57.11.4471			R 470 , 2%, 0207, MF
0	R 19	57.11.4223			R 22 K, 2%, 0207, MF
0	R 20	57.11.4121			R 120 , 2%, 0207, MF
0	R 21	57.11.4471			R 470 , 2%, 0207, MF
0	R 22	57.11.4392			R 3.9 K, 2%, 0207, MF
0	R 24	57.11.4223			R 22 K, 2%, 0207, MF
0	R 25	57.11.4331			R 330 , 2%, 0207, MF
0	R 26	57.11.4822			R 8.2 K, 2%, 0207, MF
0	R 27	57.11.4223			R 22 K, 2%, 0207, MF
0	R 28	57.11.4223			R 22 K, 2%, 0207, MF
0	R 29	57.11.4101			R 100 , 2%, 0207, MF
0	R 30	57.11.4681			R 680 , 2%, 0207, MF
0	R 31	57.11.4153			R 15 K, 2%, 0207, MF
0	R 32	57.11.4473			R 47 K, 2%, 0207, MF
0	R 33	57.11.4391			R 390 , 2%, 0207, MF
0	R 34	57.11.4222			R 2.2 K, 2%, 0207, MF
0	R 35	57.11.4681			R 680 , 2%, 0207, MF
0	R 36	57.11.4392			R 3.9 K, 2%, 0207, MF
0	R 37	57.11.4123			R 12 K, 2%, 0207, MF
0	R 38	57.11.4392			R 3.9 K, 2%, 0207, MF
0	R 39	57.11.4681			R 680 , 2%, 0207, MF
0	R 40	57.11.4392			R 3.9 K, 2%, 0207, MF
0	R 41	57.11.4681			R 680 , 2%, 0207, MF
0	R 42	57.11.4392			R 3.9 K, 2%, 0207, MF
0	R 43	57.11.4392			R 3.9 K, 2%, 0207, MF
0	R 44	57.41.4681			R 680 , 5%, .25W, CSCH
0	R 45	57.11.4122			R 1.2 K, 2%, 0207, MF
0	R 46	57.56.4101		100R	VVV, 5%, 4 W
0	R 47	57.99.0210			R 2.3 , PTC
0	R 48	57.11.4563			R 56 K, 2%, 0207, MF
0	R 49	57.11.4681			R 680 , 2%, 0207, MF

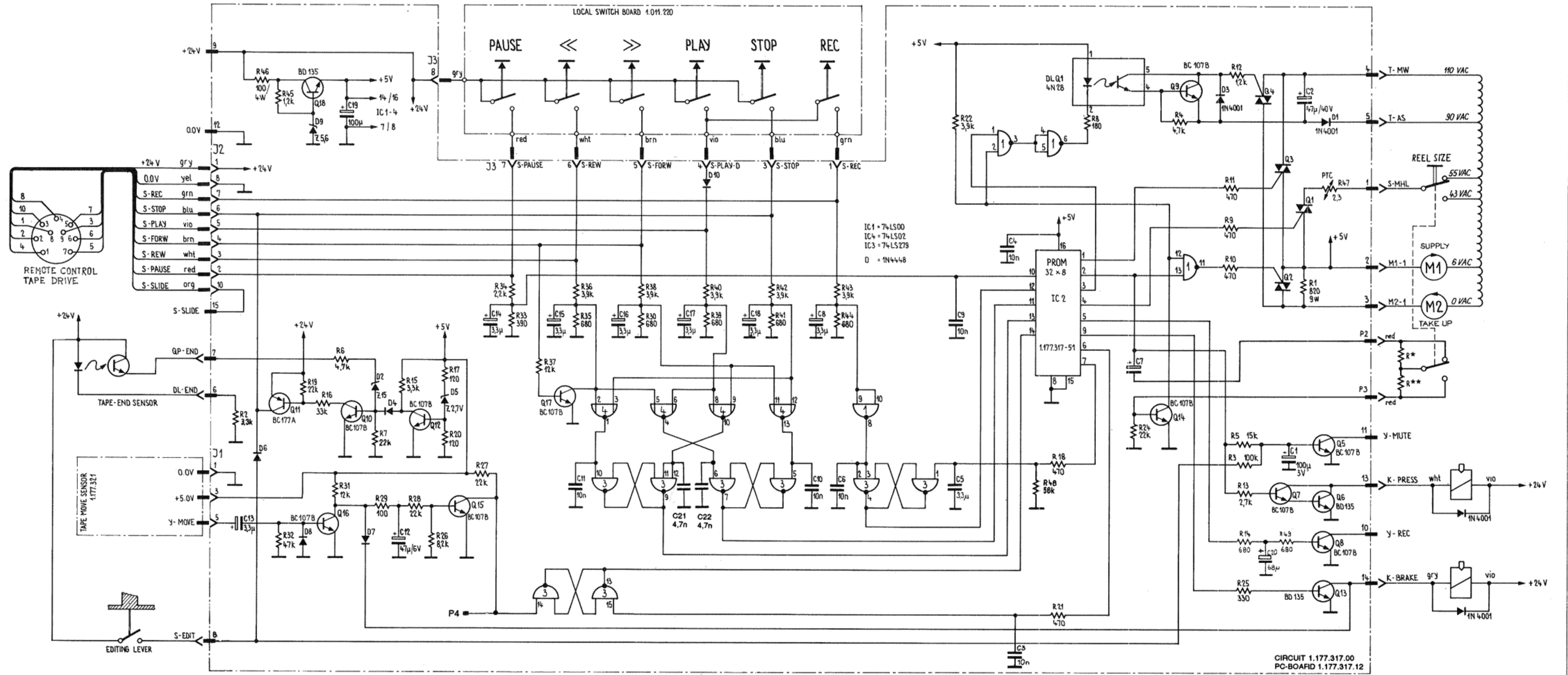
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 16	57.11.4333			R 33 K, 2%, 0207, MF
0	R 17	57.11.4121			R 120 , 2%, 0207, MF
0	R 18	57.11.4471			R 470 , 2%, 0207, MF
0	R 19	57.11.4223			R 22 K, 2%, 0207, MF
0	R 20	57.11.4121			R 120 , 2%, 0207, MF
0	R 21	57.11.4471			R 470 , 2%, 0207, MF
0	R 22	57.11.4392			R 3.9 K, 2%, 0207, MF
0	R 24	57.11.4223			R 22 K, 2%, 0207, MF
0	R 25	57.11.4331			R 330 , 2%, 0207, MF
0	R 26	57.11.4822			R 8.2 K, 2%, 0207, MF
0	R 27	57.11.4223			R 22 K, 2%, 0207, MF
0	R 28	57.11.4223			R 22 K, 2%, 0207, MF
0	R 29	57.11.4101			R 100 , 2%, 0207, MF
0	R 30	57.11.4681			R 680 , 2%, 0207, MF
0	R 31	57.11.4153			R 15 K, 2%, 0207, MF
0	R 32	57.11.4473			R 47 K, 2%, 0207, MF
0	R 33	57.11.4391			R 390 , 2%, 0207, MF
0	R 34	57.11.4222			R 2.2 K, 2%, 0207, MF
0	R 35	57.11.4681			R 680 , 2%, 0207, MF
0	R 36	57.11.4392			R 3.9 K, 2%, 0207, MF
0	R 37	57.11.4123			R 12 K, 2%, 0207, MF
0	R 38	57.11.4392			R 3.9 K, 2%, 0207, MF
0	R 39	57.11.4681			R 680 , 2%, 0207, MF
0	R 40	57.11.4392			R 3.9 K, 2%, 0207, MF
0	R 41	57.11.4681			R 680 , 2%, 0207, MF
0	R 42	57.11.4392			R 3.9 K, 2%, 0207, MF
0	R 43	57.11.4392			R 3.9 K, 2%, 0207, MF
0	R 44	57.41.4681			R 680 , 5%, .25W, CSCH
0	R 45	57.11.4122			R 1.2 K, 2%, 0207, MF
0	R 46	57.56.4101		100R	VVV, 5%, 4 W
0	R 47	57.99.0210			R 2.3 , PTC
0	R 48	57.11.4563			R 56 K, 2%, 0207, MF
0	R 49	57.11.4681			R 680 , 2%, 0207, MF

End of List

Comments:  
 (01) 13.9.1979  
 (02) 23.01.1981  
 (03) 15.4.1981  
 (04) 10.6.1981  
 (05) 4.12.1981



TAPE DRIVE CONTROL PCB 1.177.317.00 (B77 MKI)



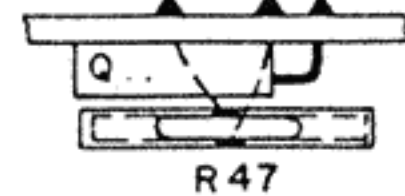
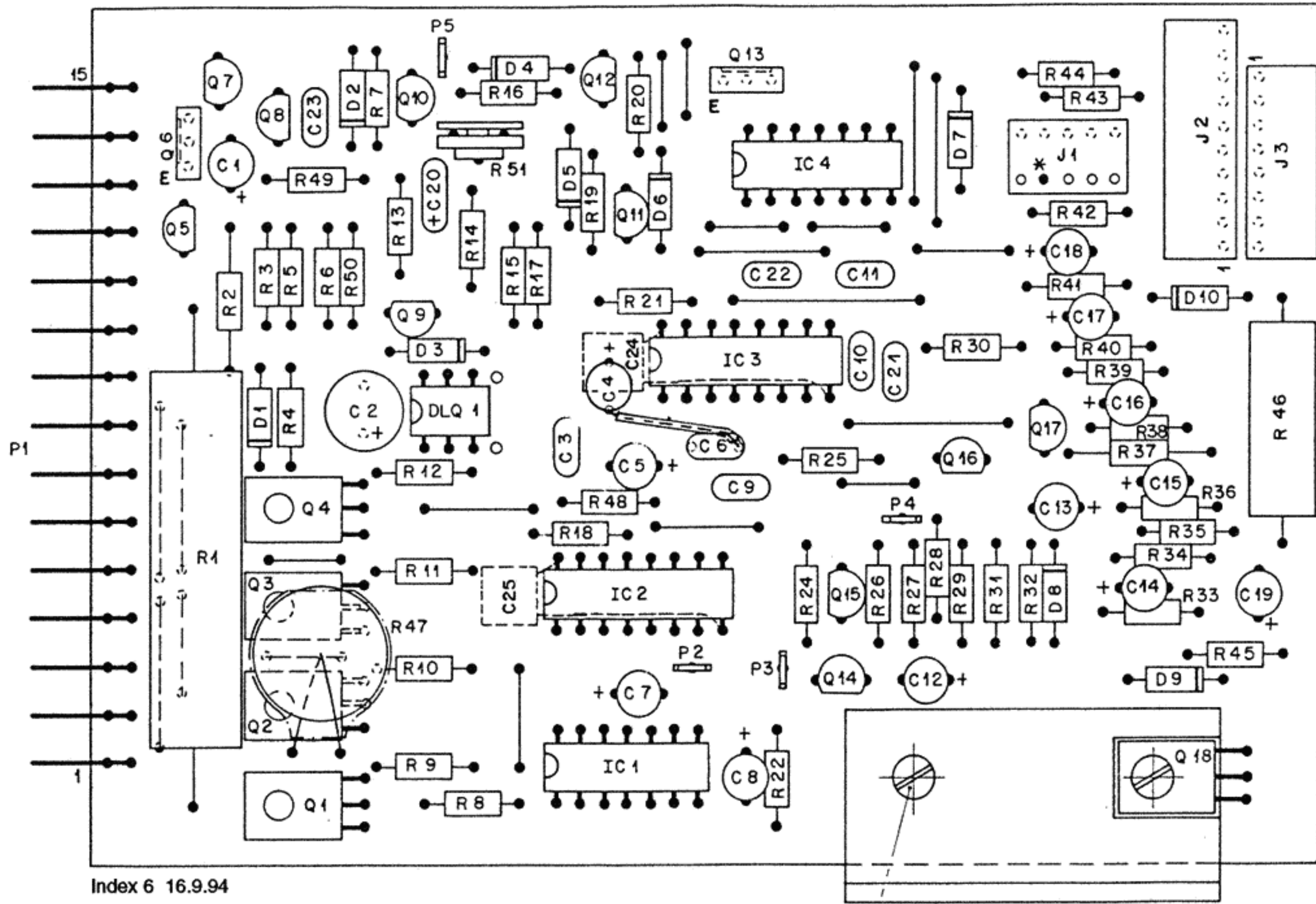
VERSION	REEL SIZE SWITCH	R*	R**
B77 LS/SL5	1.177.145	470 Ω	470 Ω
B77 STD	1.177.146	470 Ω	8.2 k
B77 HS	1.177.147	3.9 k	8.2 k

VALID FROM SERIAL NUMBER 53522 TO 52699

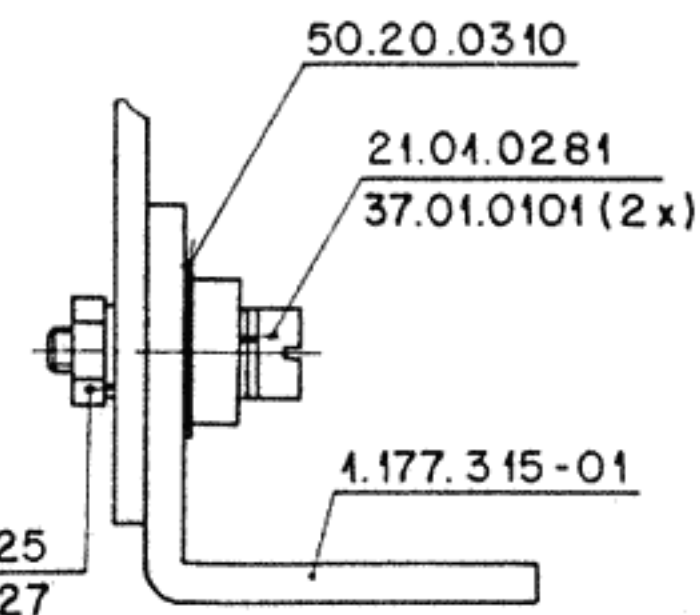




TAPE DRIVE CONTROL PCB 1.177.317.81 (B77 MKII)



21.01.0280  
22.01.8025  
24.16.1025



22.01.8025  
23.01.1027

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description	Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.22.3101		100u	EL 10V, 20%, RM5	9	R 13	57.11.3272		2k7	MF, 1%, 0207
0	C 2	59.22.6470		47u	EL 40V, 20%, RM5	9	R 14	57.11.3681		680R	MF, 1%, 0207
0	C 3	59.32.3103		10n	C 10 N, 100%, 40V, CER	9	R 15	57.11.3332		3k3	MF, 1%, 0207
6	C 4	59.22.8109		1u	EL 50V, 20%, RM5	9	R 16	57.11.3333		33k	MF, 1%, 0207
0	C 5	59.22.8479		4u7	EL 50V, 20%, RM5	9	R 17	57.11.3121		120R	MF, 1%, 0207
0	C 6	59.32.3103		10n	C 10 N, 100%, 40V, CER	9	R 18	57.11.3471		470R	MF, 1%, 0207
0	C 7	59.22.6100		10u	EL 35V, 20%, RM5	9	R 19	57.11.3223		22k	MF, 1%, 0207
0	C 8	59.22.8479		4u7	EL 50V, 20%, RM5	9	R 20	57.11.3121		120R	MF, 1%, 0207
0	C 9	59.32.3103		10n	C 10 N, 100%, 40V, CER	9	R 21	57.11.3471		470R	MF, 1%, 0207
0	C 10	59.32.3103		10n	C 10 N, 100%, 40V, CER	9	R 22	57.11.3392		3k9	MF, 1%, 0207
0	C 11	59.32.3103		10n	C 10 N, 100%, 40V, CER	9	R 24	57.11.3223		22k	MF, 1%, 0207
0	C 12	59.22.3470		47u	EL 10V, 20%, RM5	9	R 25	57.11.3331		330R	MF, 1%, 0207
0	C 13	59.22.8479		4u7	EL 50V, 20%, RM5	9	R 26	57.11.3822		8k2	MF, 1%, 0207
0	C 14	59.22.8479		4u7	EL 50V, 20%, RM5	9	R 27	57.11.3223		22k	MF, 1%, 0207
0	C 15	59.22.8479		4u7	EL 50V, 20%, RM5	9	R 28	57.11.3223		22k	MF, 1%, 0207
0	C 16	59.22.8479		4u7	EL 50V, 20%, RM5	9	R 29	57.11.3101		100R	MF, 1%, 0207
0	C 17	59.22.8479		4u7	EL 50V, 20%, RM5	9	R 30	57.11.3681		680R	MF, 1%, 0207
0	C 18	59.22.8479		4u7	EL 50V, 20%, RM5	9	R 31	57.11.3153		15k	MF, 1%, 0207
0	C 19	59.22.3101		100u	EL 10V, 20%, RM5	9	R 32	57.11.3473		47k	MF, 1%, 0207
0	C 20	59.26.0680		68u	SAL, 20%, 6.3V	9	R 33	57.11.3391		390R	MF, 1%, 0207
0	C 21	59.32.3472			C 4.7 N, 100%, 40V, CER	9	R 34	57.11.3222		2k2	MF, 1%, 0207
0	C 22	59.32.3472			C 4.7 N, 100%, 40V, CER	9	R 35	57.11.3681		680R	MF, 1%, 0207
0	C 23	59.32.3103		10n	C 10 N, 100%, 40V, CER	9	R 36	57.11.3392		3k9	MF, 1%, 0207
7	C 24	59.32.3103		10n	C 10 N, 100%, 40V, CER	9	R 37	57.11.3123		12k	MF, 1%, 0207
8	C 25	59.32.3103		10n	C 10 N, 100%, 40V, CER	9	R 38	57.11.3392		3k9	MF, 1%, 0207
0	D 1	50.04.0122		1N4001	1A, DO 41	9	R 39	57.11.3681		680R	MF, 1%, 0207
0	D 2	50.04.1108		5V6	Zener, 5%, 0.5W, DO-35	9	R 40	57.11.3392		3k9	MF, 1%, 0207
0	D 3	50.04.0122		1N4001	1A, DO 41	9	R 41	57.11.3681		680R	MF, 1%, 0207
0	D 4	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35	9	R 42	57.11.3392		3k9	MF, 1%, 0207
0	D 5	50.04.1106		2V7	Zener, 5%, 0.5W, DO-35	9	R 43	57.11.3392		3k9	MF, 1%, 0207
0	D 6	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35	0	R 44	57.41.4681		R 680, 5%, 25W, CSCH	
0	D 7	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35	9	R 45	57.11.3122		1k2	MF, 1%, 0207
0	D 8	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35	0	R 46	57.56.4101		100R	WV, 5%, 4W
2	D 9	50.99.0176			D 5.6 V, 2%, 40W, Z	0	R 47	57.99.0210		R 2.3	PTC
0	D 10	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35	9	R 48	57.11.3563		56k	MF, 1%, 0207
0	DLQ 1	50.99.0126		4N26	DLQ 4 N 26,	9	R 49	57.11.3681		680R	MF, 1%, 0207
0	IC 1	50.06.0000		74LS00	IC SN 74 LS 00 N TTL	9	R 50	57.11.3473		47k	MF, 1%, 0207
0	IC 2	1.177.317.51			PROM 32 X 8	5	R 51	58.02.4474		470k	20%, 0.1W, Carbon
0	IC 3	50.06.0279		74LS279	IC SN 74 LS 279 N						
0	IC 4	50.06.0002		74LS02	IC SN 74 LS 02 N TTL						
0	J 1	54.01.0288		5-P	J LEISTE 5 POL CIS AUFST.						
0	J 2	54.01.0242		10-P	J LEISTE 10 POL CIS DURCHS						
0	J 3	54.01.0262		8-P	J LEISTE 8 POL CIS DURCHS						
0	P 1	54.01.0481			P LEISTE 15 POL CIS WINKEL						
0	P 2	54.02.0320		1p	Flatpin, 2.8*0.8mm						
0	P 3	54.02.0320		1p	Flatpin, 2.8*0.8mm						
0	P 4	54.02.0320		1p	Flatpin, 2.8*0.8mm						
0	P 5	54.02.0320		1p	Flatpin, 2.8*0.8mm						
0	Q 1	50.99.0119		2N6073B	Q 2N 6073B, SAC 326, TRIAC						
0	Q 2	50.99.0119		2N6073B	Q 2N 6073B, SAC 326, TRIAC						
0	Q 3	50.99.0119		2N6073B	Q 2N 6073B, SAC 326, TRIAC						
0	Q 4	50.99.0119		2N6073B	Q 2N 6073B, SAC 326, TRIAC						
4	Q 5	50.03.0340		BC337-25	800mA, 45V, NPN						
0	Q 6	50.03.0478		BD135-10	BD 135-10						
0	Q 7	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 8	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 9	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 10	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
3	Q 11	50.03.0625		BC327P	BC 327 selected						
0	Q 12	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 13	50.03.0478		BD135-10	BD 135-10						
0	Q 14	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 15	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 16	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 17	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 18	50.03.0478		BD135-10	BD 135-10						
0	R 1	57.57.4821		820	R 820, 5%, 11W, WV						
9	R 2	57.11.3682		6k8	MF, 1%, 0207						
9	R 3	57.11.3104		100k	MF, 1%, 0207						
9	R 4	57.11.3472		4k7	MF, 1%, 0207						
9	R 5	57.11.3153		15k	MF, 1%, 0207						
9	R 6	57.11.3472		4k7	MF, 1%, 0207						
9	R 7	57.11.3223		22k	MF, 1%, 0207						
9	R 8	57.11.3181		180R	MF, 1%, 0207						
6	R 9	57.11.3471		470R	MF, 1%, 0207						
9	R 10	57.11.3471		470R	MF, 1%, 0207						
9	R 11	57.11.3471		470R	MF, 1%, 0207						
9	R 12	57.11.3122		1k2	MF, 1%, 0207						

End of List

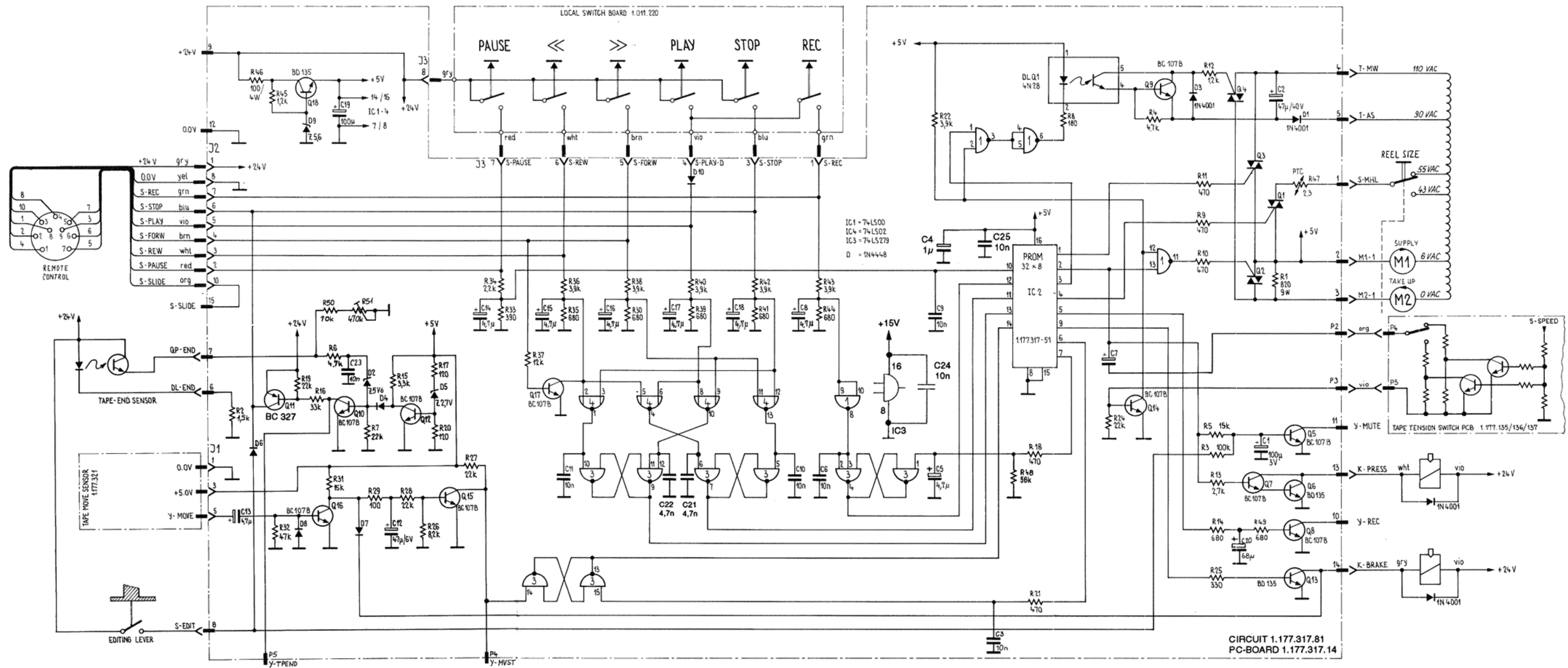
Comments:

- \* (01) 23.03.84 Adaptation for very thin tapes
- \* (02) 21.05.86 Smaller tolerance of 5V
- \* (03) 11.08.86 Higher current rating against peripheral load
- \* (04) 11.02.87 Lower V-CE of Q5 and lower LED-Current
- \* (05) 18.11.87 Replacement for R51
- \* (06) 2.6.88
- \* (07) 10.10.89 additional C24 parallel to C4
- \* (08) 9.05.90 C24 direct by IC3 pin 8 to 16, C25 by IC2 pin 8 to 16
- (09) R2-R51 2% changed to 1%



TAPE DRIVE CONTROL PCB 1.177.317.81 (B77 MKII)

- VERSION 1.177.317.00**  
 C23 = NOT EQUIPPED  
 D02 = Z15V  
 P05 = NOT EQUIPPED  
 R02 = 3,3k  
 R50 = NOT EQUIPPED  
 R51 = NOT EQUIPPED  
 PCB = 1.177.317.12

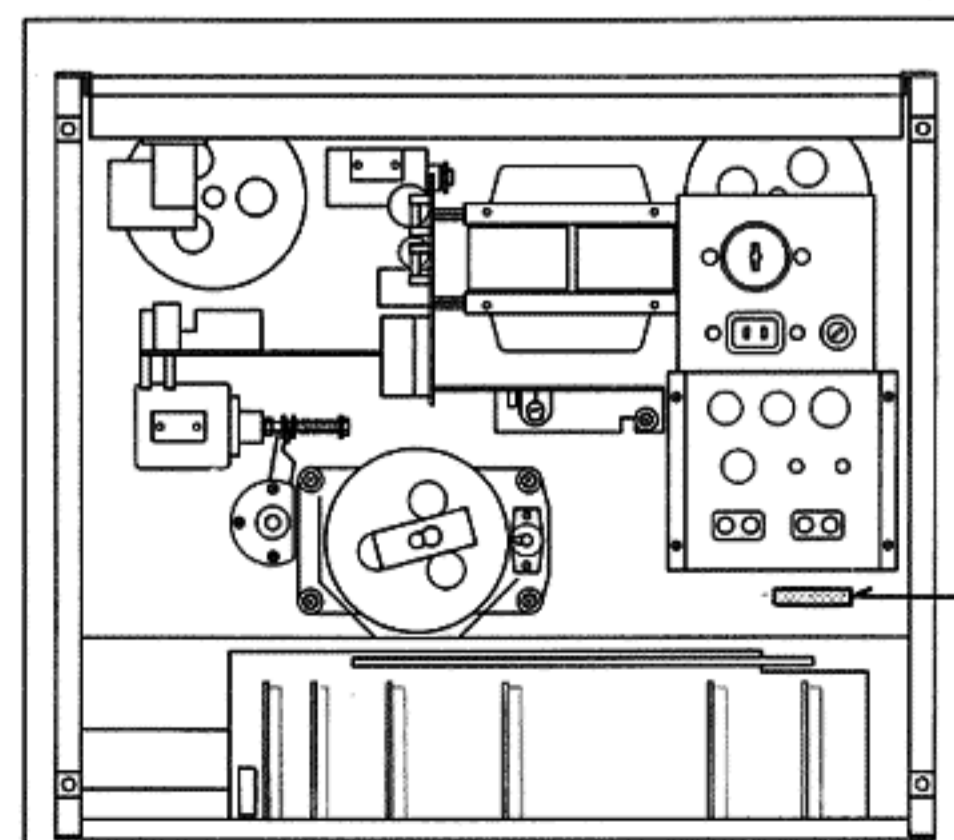
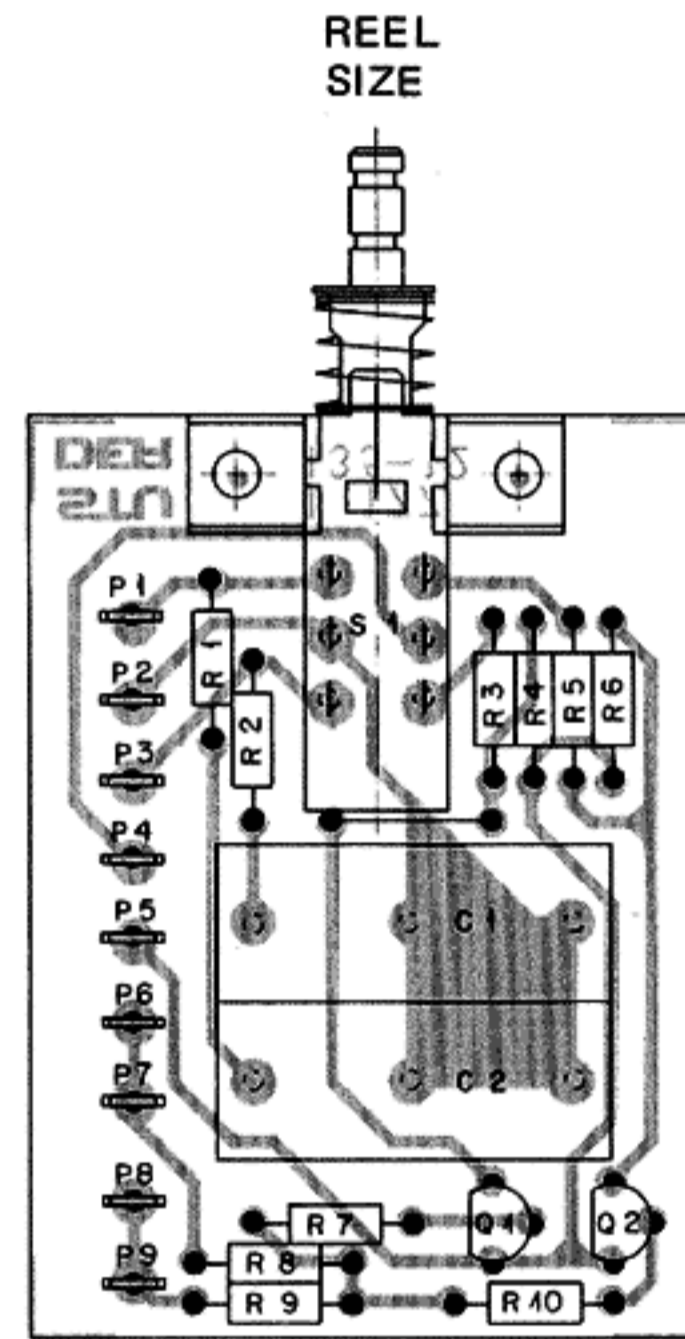


CIRCUIT 1.177.317.81  
PC-BOARD 1.177.317.14





TAPE TENSION SWITCH PCB 1.177.135.00 / 1.177.136.00 / 1.177.137.00



1.177.135/136/137

INC.	PCS. NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
(01)	C.....1	59.99.0450	0.47uF		
(01)	C.....2	59.99.0450	0.47uF		
	P.....1	54.02.0320		AMP-flat pin	
	P.....2	54.02.0320		AMP-flat pin	
	P.....3	54.02.0320		AMP-flat pin	
	P.....4	54.02.0320		AMP-flat pin	
	P.....5	54.02.0320		AMP-flat pin	
	P.....6	54.02.0320		AMP-flat pin	
	P.....7	54.02.0320		AMP-flat pin	
	P.....8	54.02.0320		AMP-flat pin	
	P.....9	54.02.0320		AMP-flat pin	
	Q.....1	50.03.0497	BC 550C		
	Q.....2	50.03.0497	BC 550C		
(01)	R.....1	57.11.4479	4.7 Ohm	5%, 0.25W, CF	
(01)	R.....2	57.11.4479	4.7 Ohm	5%, 0.25W, CF	
(01)	R.....3	57.11.4221	220 Ohm	5%, 0.25W, CF	
(01)	R.....4	57.11.4181	180 Ohm	5%, 0.25W, CF	
(01)	R.....5	57.11.4221	220 Ohm	5%, 0.25W, CF	
(01)	R.....6	57.11.4180	180 Ohm	5%, 0.25W, CF	
(01)	R.....7	57.11.4684	680 kOhm	5%, 0.25W, CF	
(01)	R.....8	57.11.4274	270 kOhm	5%, 0.25W, CF	
(01)	R.....9	57.11.4104	100 kOhm	5%, 0.25W, CF	
(01)	R.....10	57.11.4684	680 kOhm	5%, 0.25W, CF	
	S.....1	1.177.100.07		Push-button switch	

E1=Electrolytic, C=Ceramic  
 Manufacturer: Sig=Signetics, TI=Texas Instruments  
 CRIG 86/08/27  
 S T U C E R 81/01/07 RW TAPE TENSION SWITCH PL 1.177.135.00 PAGE 1

INC.	PCS. NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
(01)	C.....1	59.99.0450	0.47uF		
(01)	C.....2	59.99.0450	0.47uF		
	P.....1	54.02.0320		AMP-flat pin	
	P.....2	54.02.0320		AMP-flat pin	
	P.....3	54.02.0320		AMP-flat pin	
	P.....4	54.02.0320		AMP-flat pin	
	P.....5	54.02.0320		AMP-flat pin	
	P.....6	54.02.0320		AMP-flat pin	
	P.....7	54.02.0320		AMP-flat pin	
	P.....8	54.02.0320		AMP-flat pin	
	P.....9	54.02.0320		AMP-flat pin	
	Q.....1	50.03.0497	BC 550C		
	Q.....2	50.03.0497	BC 550C		
(01)	R.....1	57.11.4479	4.7 Ohm	5%, 0.25W, CF	
(01)	R.....2	57.11.4479	4.7 Ohm	5%, 0.25W, CF	
(01)	R.....3	57.11.4221	220 Ohm	5%, 0.25W, CF	
(01)	R.....4	57.11.4471	470 Ohm	5%, 0.25W, CF	
(01)	R.....5	57.11.4392	3.9 kOhm	5%, 0.25W, CF	
(01)	R.....6	57.11.4392	3.9 kOhm	5%, 0.25W, CF	
(01)	R.....7	57.11.4684	680 kOhm	5%, 0.25W, CF	
(01)	R.....8	57.11.4274	270 kOhm	5%, 0.25W, CF	
(01)	R.....9	57.11.4104	100 kOhm	5%, 0.25W, CF	
(01)	R.....10	57.11.4684	680 kOhm	5%, 0.25W, CF	
	S.....1	1.177.100.07		Push-button switch	

E1=Electrolytic, C=Ceramic  
 Manufacturer: Sig=Signetics, TI=Texas Instruments  
 CRIG 80/08/29  
 S T U C E R 81/01/07 RW TAPE TENSION SWITCH PL 1.177.136.00 PAGE 1

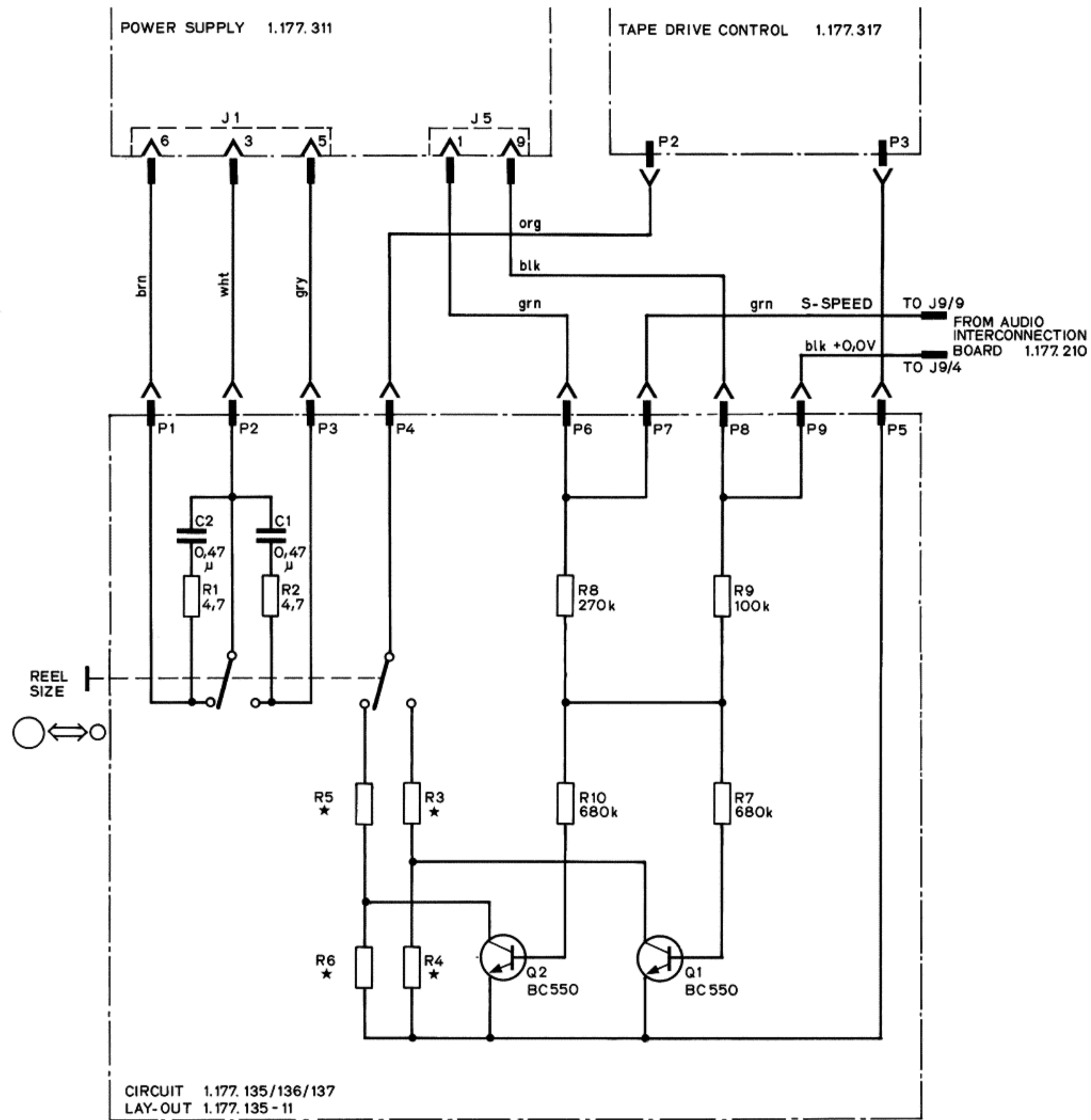
INC.	PCS. NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
(01)	C.....1	59.99.0450	0.47uF		
(01)	C.....2	59.99.0450	0.47uF		
	P.....1	54.02.0320		AMP-flat pin	
	P.....2	54.02.0320		AMP-flat pin	
	P.....3	54.02.0320		AMP-flat pin	
	P.....4	54.02.0320		AMP-flat pin	
	P.....5	54.02.0320		AMP-flat pin	
	P.....6	54.02.0320		AMP-flat pin	
	P.....7	54.02.0320		AMP-flat pin	
	P.....8	54.02.0320		AMP-flat pin	
	P.....9	54.02.0320		AMP-flat pin	
	Q.....1	50.03.0497	BC 550C		
	Q.....2	50.03.0497	BC 550C		
(01)	R.....1	57.11.4479	4.7 Ohm	5%, 0.25W, CF	
(01)	R.....2	57.11.4479	4.7 Ohm	5%, 0.25W, CF	
(01)	R.....3	57.11.4122	1.2 kOhm	5%, 0.25W, CF	
(01)	R.....4	57.11.4272	2.7 kOhm	5%, 0.25W, CF	
(01)	R.....5	57.11.4392	3.9 kOhm	5%, 0.25W, CF	
(01)	R.....6	57.11.4392	3.9 kOhm	5%, 0.25W, CF	
(01)	R.....7	57.11.4684	680 kOhm	5%, 0.25W, CF	
(01)	R.....8	57.11.4274	270 kOhm	5%, 0.25W, CF	
(01)	R.....9	57.11.4104	100 kOhm	5%, 0.25W, CF	
(01)	R.....10	57.11.4684	680 kOhm	5%, 0.25W, CF	
	S.....1	1.177.100.07		Push-button switch	

E1=Electrolytic, C=Ceramic  
 Manufacturer: Sig=Signetics, TI=Texas Instruments  
 CRIG 86/08/27  
 S T U C E R 81/01/07 RW TAPE TENSION SWITCH PL 1.177.137.00 PAGE 1





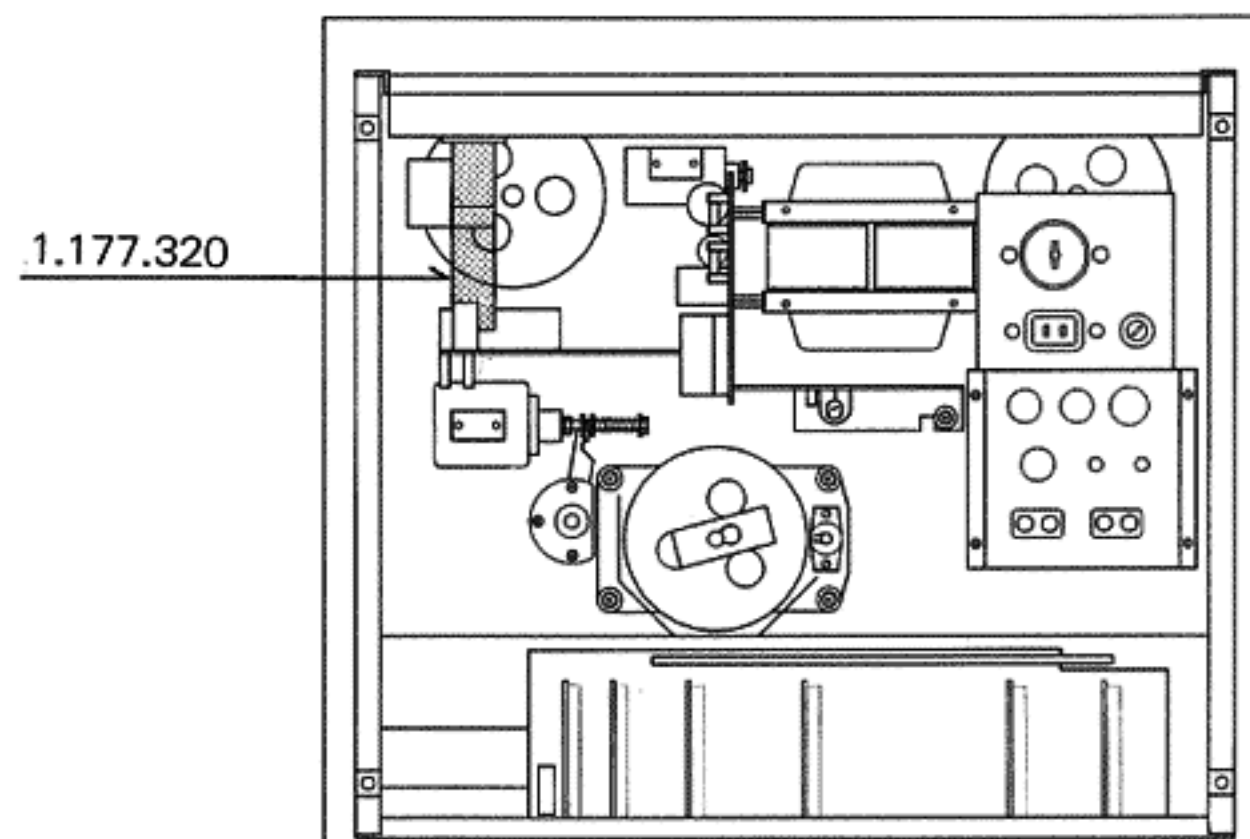
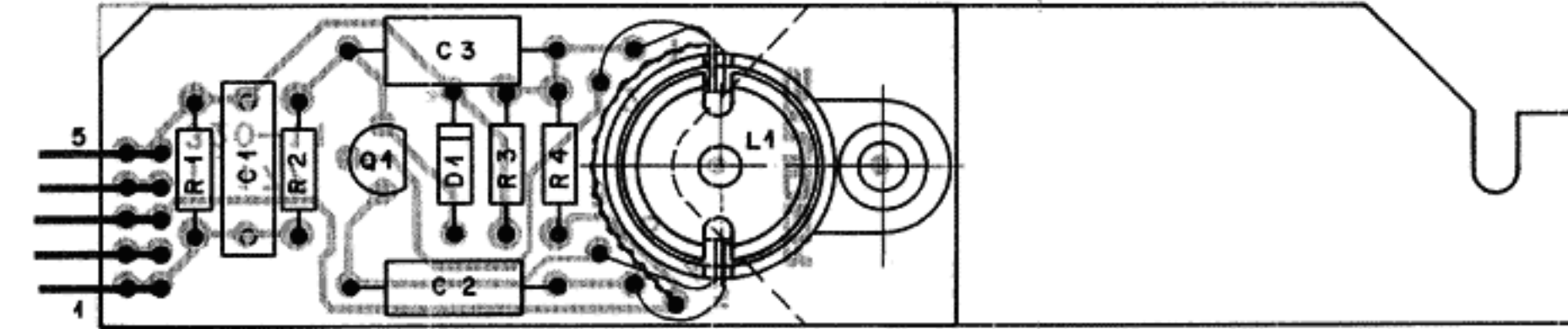
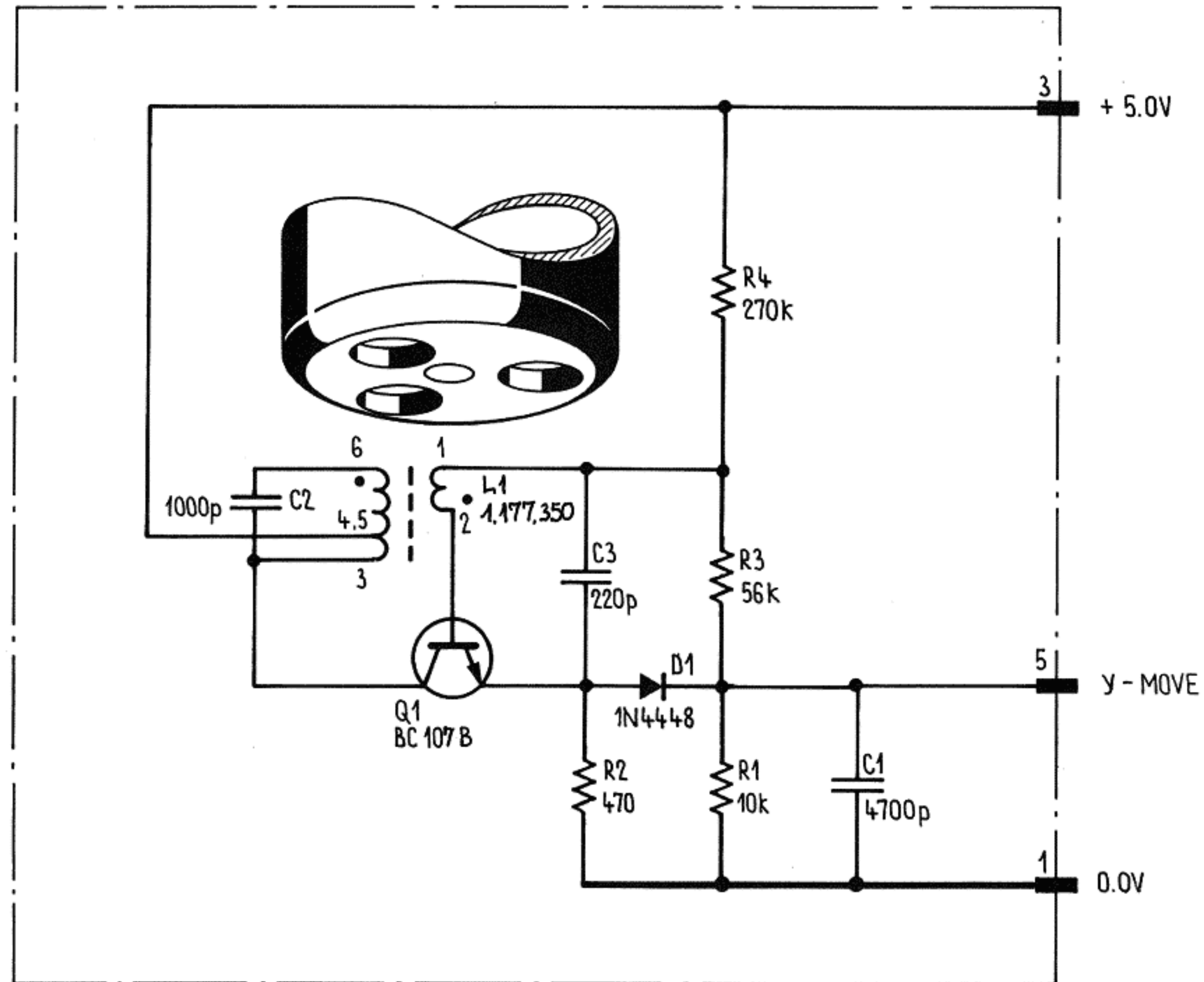
TAPE TENSION SWITCH PCB 1.177.135.00 / 1.177.136.00 / 1.177.137.00



SPEED RANGE	*R3	*R4	*R5	*R6
1.177.135.00 1 7/8 - 3 3/4"	220R	180R	220R	180R
1.177.136.00 3 3/4 - 7 1/2"	220R	470R	3,9k	3,9k
1.177.137.00 7 1/2 - 15"	1,2k	2,7k	3,9k	3,9k



TAPE MOVE SENSOR PCB 1.177.320.00



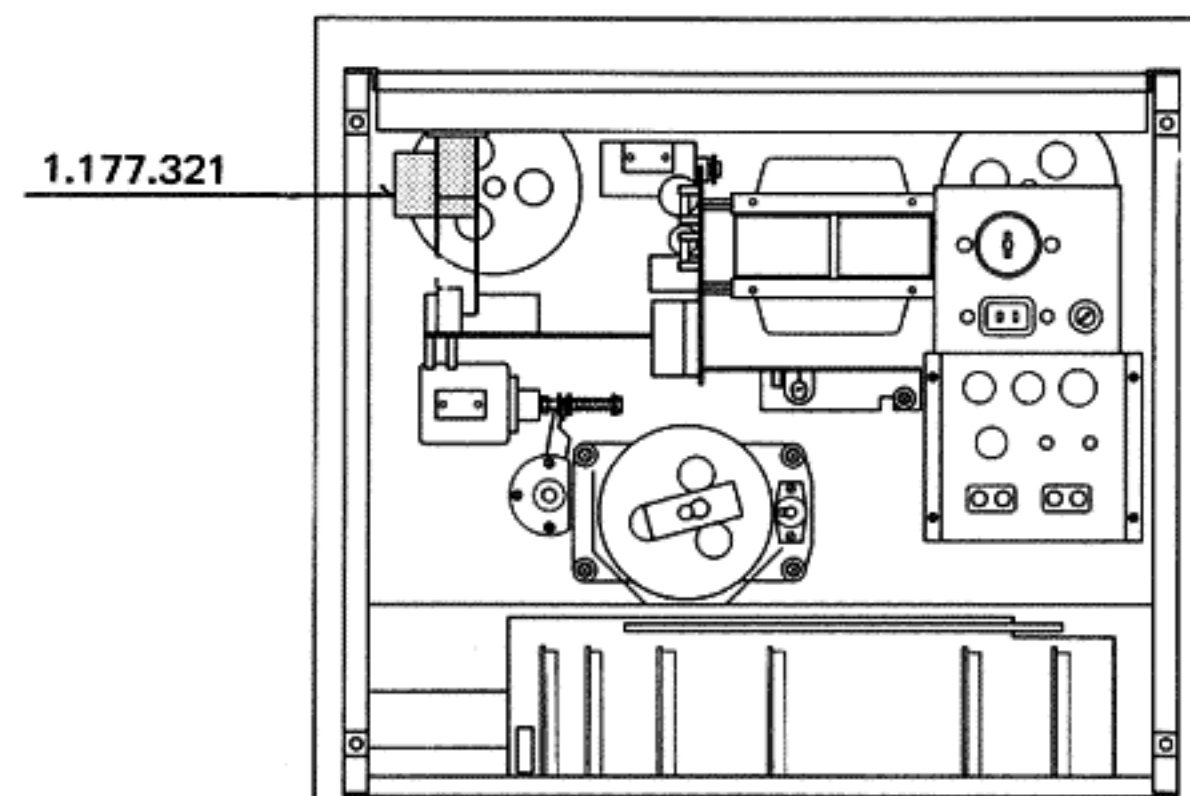
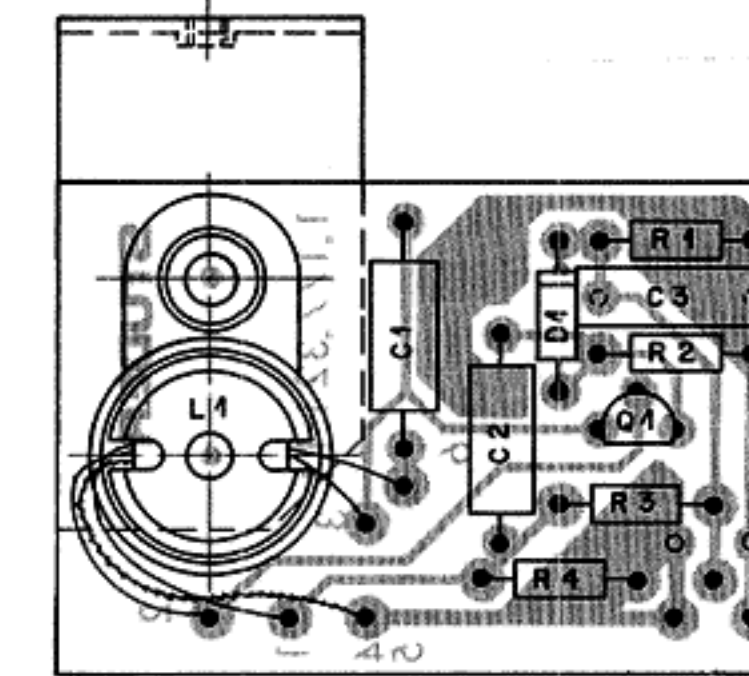
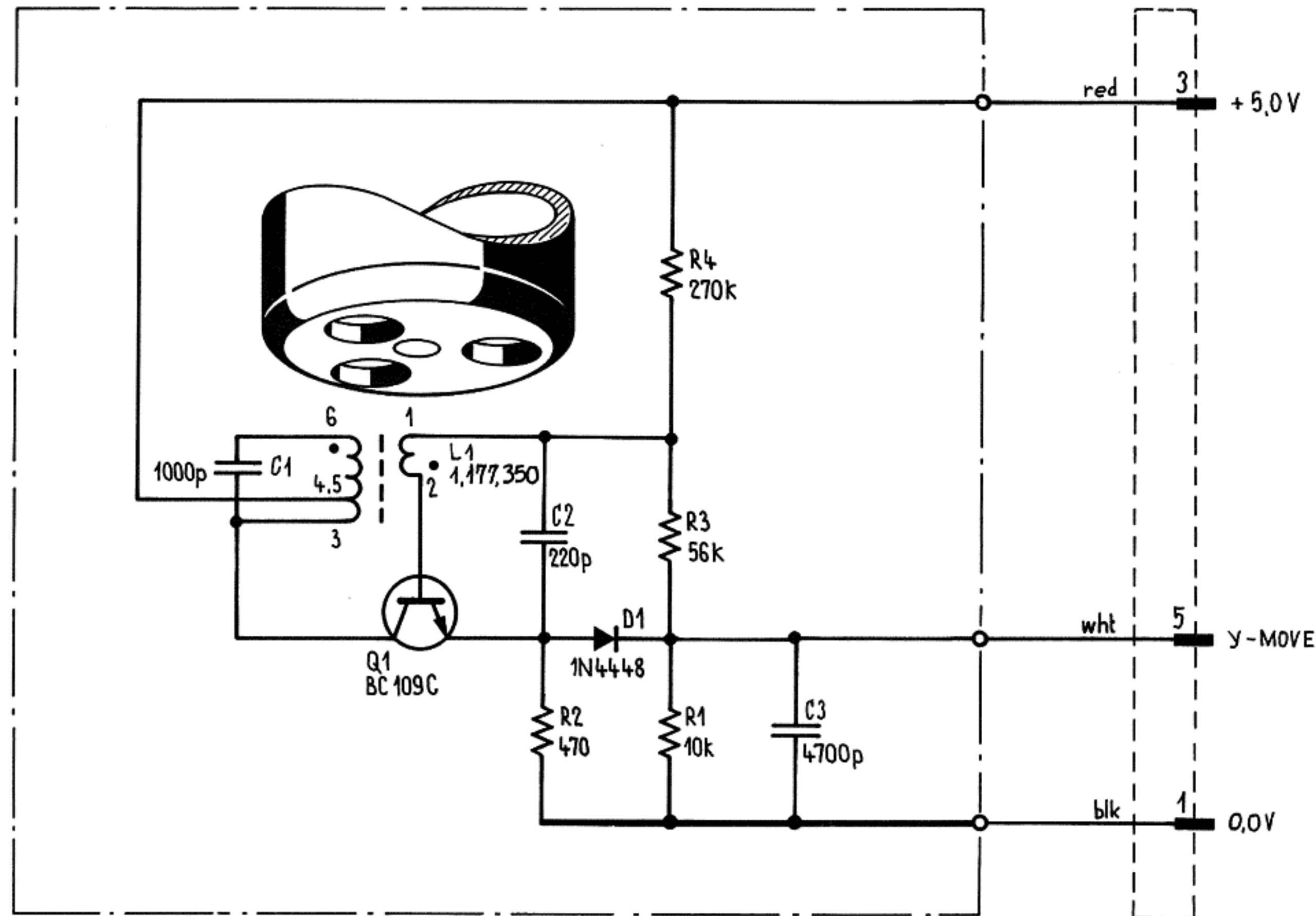
POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT	MFR
C 01	59.31.4472	4700 P	20% 160V	PETP	
C 02	59.04.7102	1000 P	5% 63V	PS	
C 03	59.04.8221	220 P	5% 160V	PS	
D 01	50.04.0125	1 N 4448			any
L 01	1.177.350				S
P 01	54.01.0269	5 - Pole	Pin Strip	AMP	
Q 01	50.03.0436	BC 107 B			any
R 01	57.41.4103	10 K	5% .25W	CF	
R 02	57.41.4471	470			
R 03	57.41.4563	56 K			
R 04	57.41.4274	270 K			

S = Studer  
 CF = Carbon Film  
 PS = polystyrene  
 PETP = polyester

IND: 31.3.77  
 DATE: Wartburg  
 NAME:

**STUDER** Tape Move Sensor 1.177.320 PAGE 1 of 1

TAPE MOVE SENSOR PCB 1.177.321.00



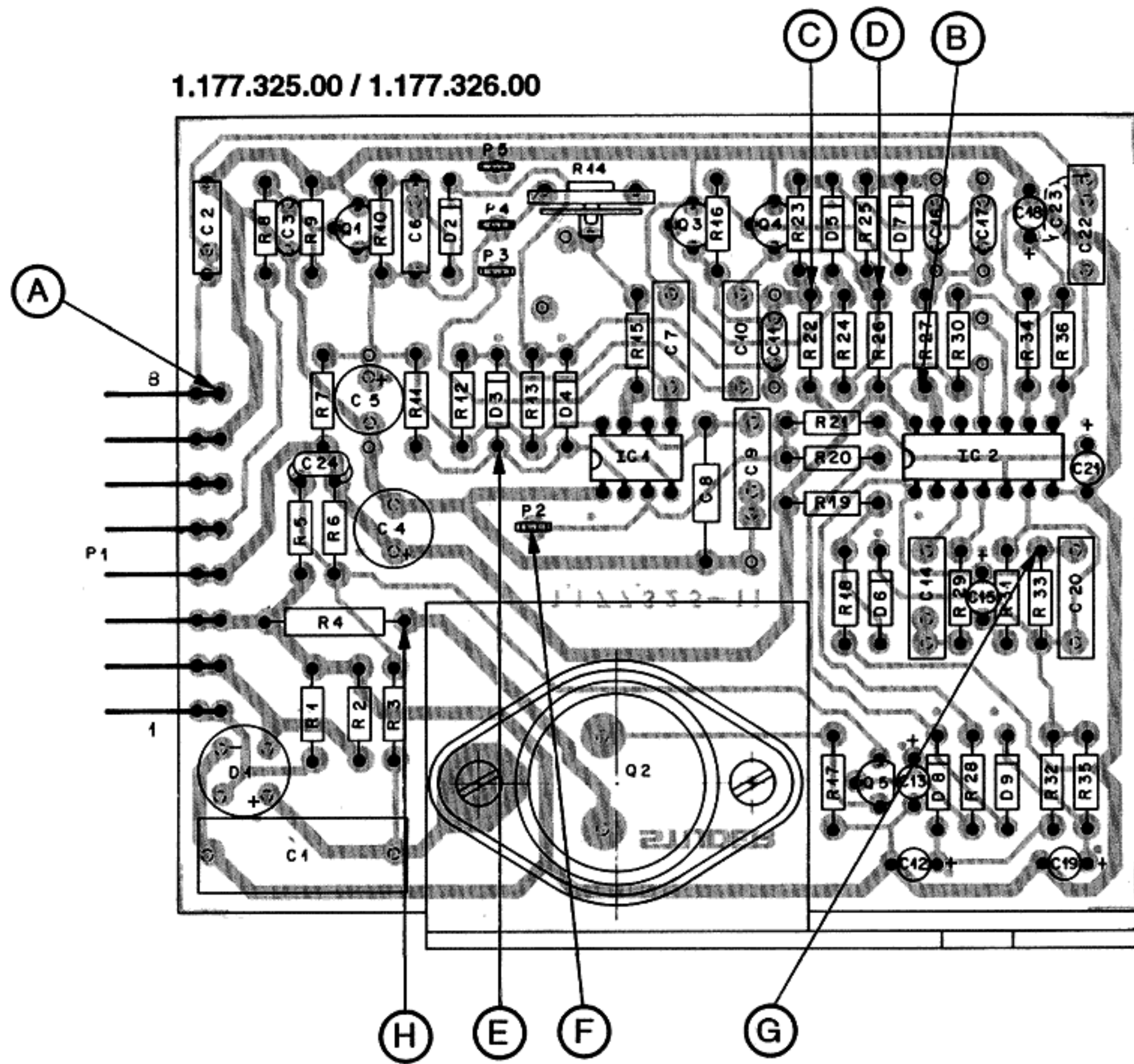
POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT	MFR
C 01	59.04.7102	1000 P	5% 63V PS		
C 02	59.04.8221	220 P	5% 160V PS		
C 03	59.31.4472	4700 P	20% 160V PETP		
D 01	50.04.0125	1 N 4448			any
L 01	1.177.350				S
Q 01	50.03.0439	BC 109 C			any
R 01	57.41.4103	10 k	5% .25W CF		
R 02	57.41.4471	470			
R 03	57.41.4563	56 k			
R 04	57.41.4274	270 k			
S = Studer    CF = Carbon Film PS = Polystyrene PETP = Polyester					
			IND	DATE	NAME
STUDER			1.177.321		PAGE 1 of 1

VALID FROM SERIAL NUMBER 24030





CAPSTAN SPEED CONTROL PCB 1.177.325.00 / 1.177.326.00 / 1.177.327.00 (B77 MKI)



POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT MFR
C 01	59.99.0450	0.47 U	±10% 150V MP	
C 02	59.31.4104	0.1 U	5% 250V MPETP	
C 03	59.32.3472	4700 P	-20% 40V CER	
C 04	59.22.5470	47 U	10% 25V EL	
C 05	59.22.5470	47 U	10% 25V EL	
C 06	59.31.4104	0.1 U	5% 250V MPETP	
C 07	59.31.4103	0.01 U	20% 160V PETA	
C 08	59.12.8162	1600 P	1% 125V FS	
C 09	59.11.4472	4700 P	2.5% 160V PC	
C 10	59.31.4472	4700 P	20% 160V PETA	
C 11	59.32.3472	4700 P	-20% 40V CER	
C 12	59.30.4100	10 U	-20% 16V TA	
C 13	59.30.6109	1 U	-20% 35V TA	
C 14	59.31.4103	0.01 U	20% 160V PETA	
C 15	59.30.4100	10 U	20% 16V TA	
C 16	59.32.3472	4700 P	-20% 40V CER	
C 17	59.32.3472	4700 P	-20% 40V CER	
C 18	59.30.4100	10 U	20% 16V TA	
C 19	59.30.4100	10 U	20% 16V TA	
C 20	59.31.1224	0.22 U	20% 100V MPETP	
C 21	59.30.6109	1 U	20% 35V TA	
C 22	59.31.4473	0.047U	20% 250V MPETP	
C 23	59.32.0220	22 P	20% 500V KER	
C 24	59.32.0220	22 P	20% 500V KER	
D 01	70.01.0223	B 250 C800		
D 02	50.04.0125	1 N 4448		any
D 03	50.04.0125	1 N 4448		any
D 04	50.04.0125	1 N 4448		any
D 05	50.04.0125	1 N 4448		any
D 06	50.04.0125	1 N 4448		any
D 07	50.04.0125	1 N 4448		any
D 08	50.04.0125	1 N 4448		any
D 09	50.04.0125	1 N 4448		any
IC 01	50.05.0158	NE 555	Timer	MCL455P S.M
IC 02	50.05.0237	TBA 231	µA 739 equiv.	SN76131N F.A.T
P 01	54.01.0582	8 - Pole	Pin Strip	AMP
P 2-5	54.02.0320		FLAT-PIN 0,8	AMP
Q 01	50.03.0436	BC 107 B		NPN
Q 02	50.03.0477	MJ 411		NPN Power
Q 03	50.03.0436	BC 107 B		NPN
Q 04	50.03.0436	BC 107 B		NPN
Q 05	50.03.0318	BC 178 B		PNP

M = Motorola MP = metallized paper  
 S = Signetics PS = polystyrene  
 A = Ates CER = ceramic  
 T = Texas Instr. PETP = polyester  
 F = Fairchild MPETP = metallized polyester

①	8.4.81	Fol./gy
②	15.6.78	PL
③	1.4.77	Wartburg

IND DATE NAME  
 1.177.325 PAGE 1 of 2

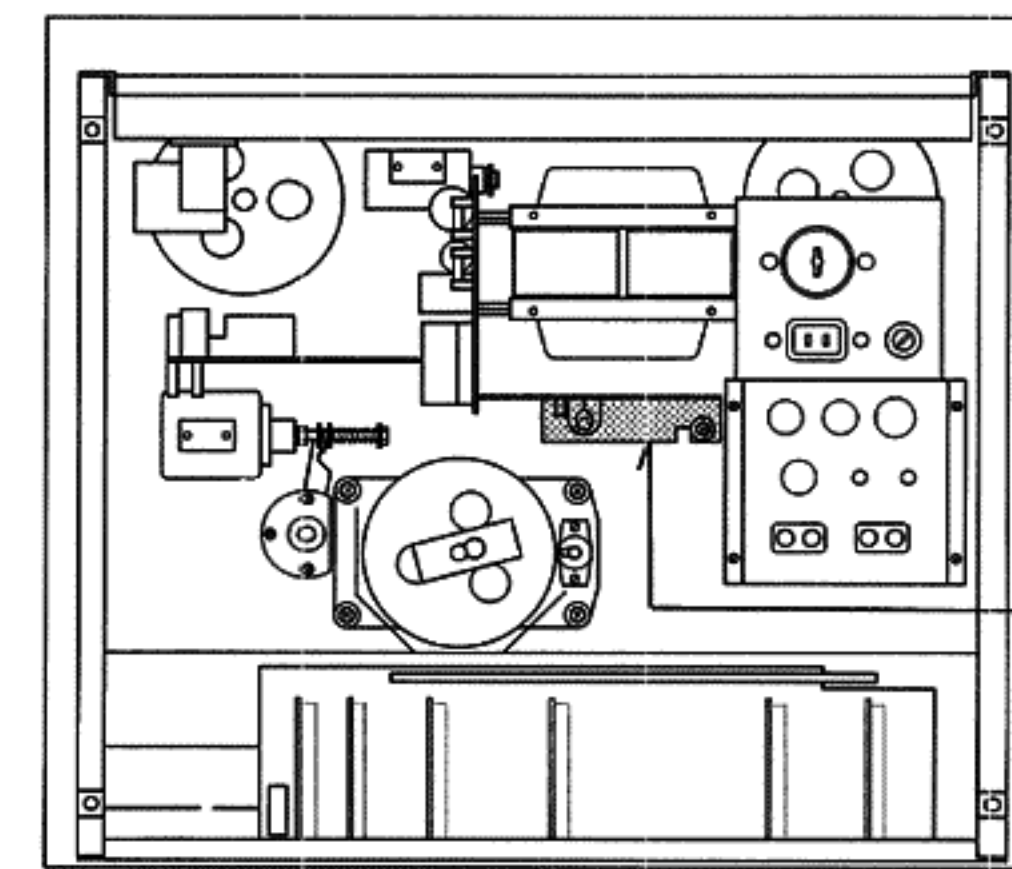
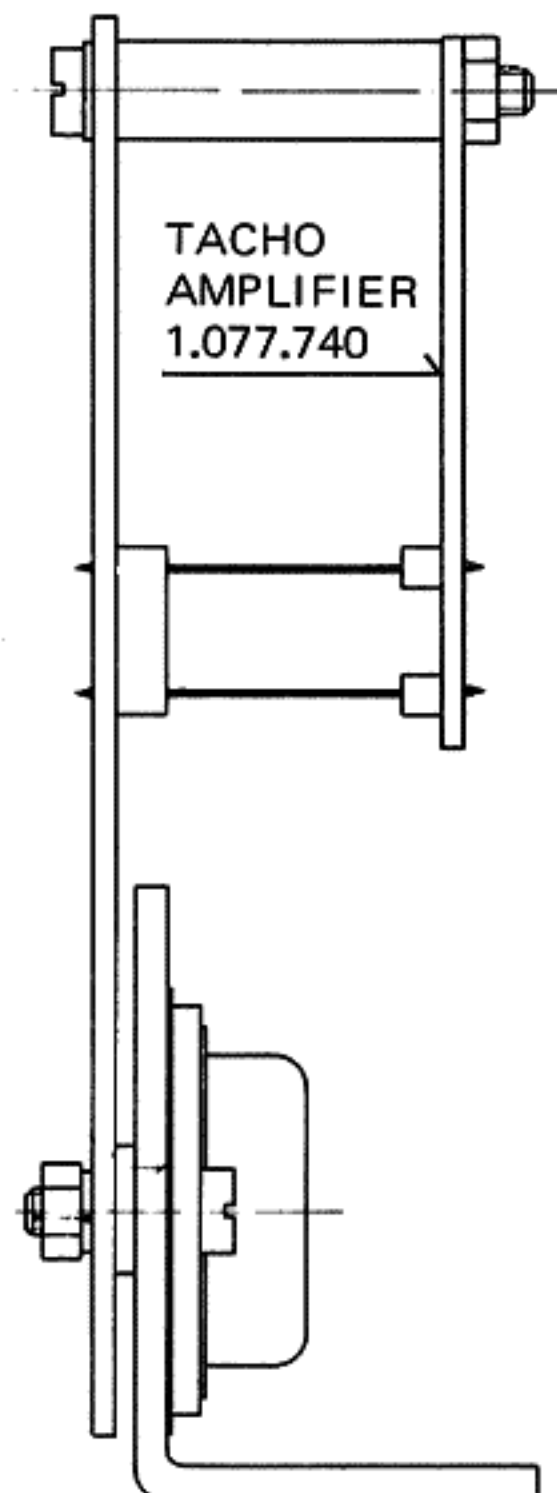
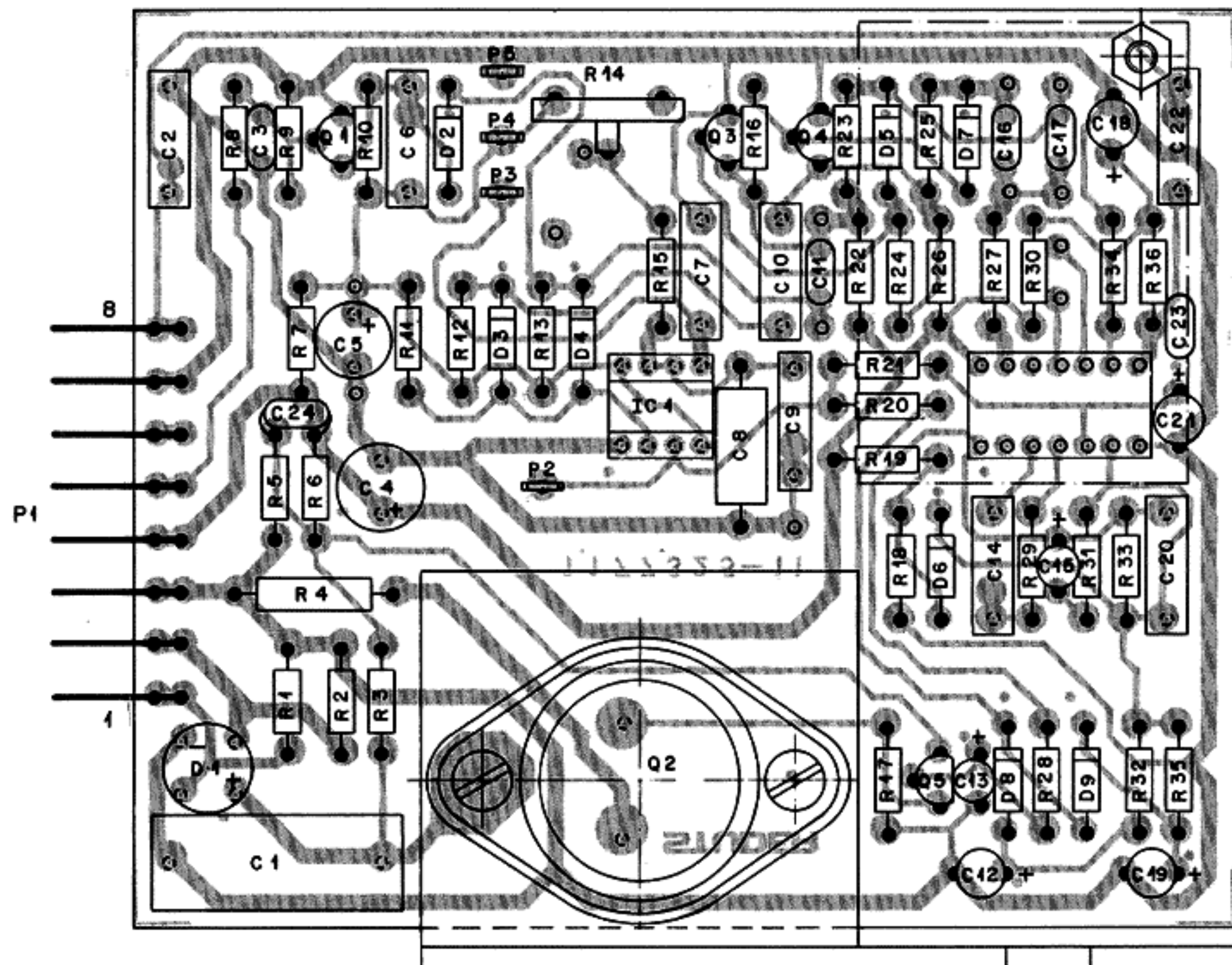
POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT MFR
R 01	57.41.4473	47 K	5% .25W CP	
R 02	57.41.4473	47 K	5% .25W CP	
R 03	57.41.4683	68 K	5% .25W CP	
R 04	57.42.4100	10	5% .33W CP	
R 05	57.41.4222	2.2 K	5% .25W CP	
R 06	57.41.4102	1 K		
R 07	57.41.4821	820		
R 08	57.41.4103	10 K		
R 09	57.41.4223	22 K		
R 10	57.41.4472	4.7 K		
R 11	57.41.4223	22 K		
R 12	57.41.4103	10 K		
R 13	57.41.4103	10 K		
R 14	58.99.0126	10 K	10% 500ppm/°C PCF	
R 15	57.99.0179	86.6K	1% 50ppm MF	
R 16	57.41.4223	22 K	5% .25W CP	
R 17	57.41.4152	1.5 K		
R 18	57.41.4152	1.5 K		
R 19	57.41.4103	10 K		
R 20	57.41.4221	220		
R 21	57.41.4472	4.7 K		
R 22	57.41.4332	3.3 K		
R 23	57.41.4223	22 K		
R 24	57.41.4223	22 K		
R 25	57.41.4223	22 K		
R 26	57.41.4332	3.3 K		
R 27	57.41.4472	4.7 K		
R 28	57.41.4472	4.7 K		
R 29	57.41.4330	33		
R 30	57.41.4103	10 K		
R 31	57.41.4682	6.8 K		
R 32	57.41.4222	2.2 K		
R 33	57.41.4105	1 M		
R 34	57.41.4103	10 K		
R 35	57.41.4222	2.2 K		
R 36	57.41.4103	10 K		

CP = Carbon Film  
 PCF = Pot. carbon Film  
 MF = Metal Film

①	8.4.81	Fol./gy
②	15.6.78	PL
③	1.4.77	Wartburg

IND DATE NAME  
 1.177.325 PAGE 2 of 2

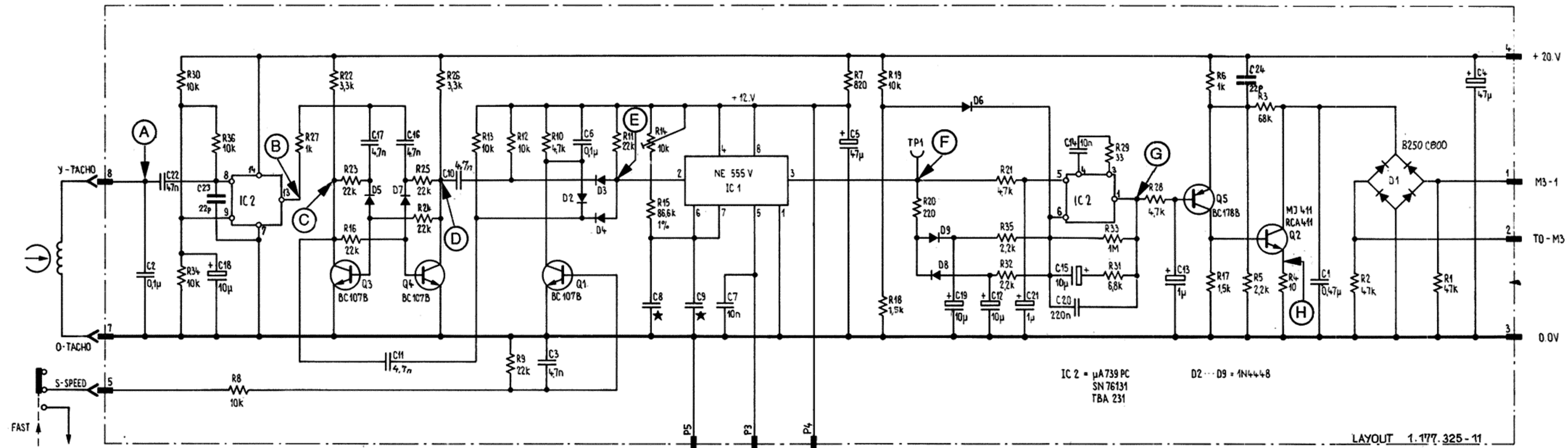
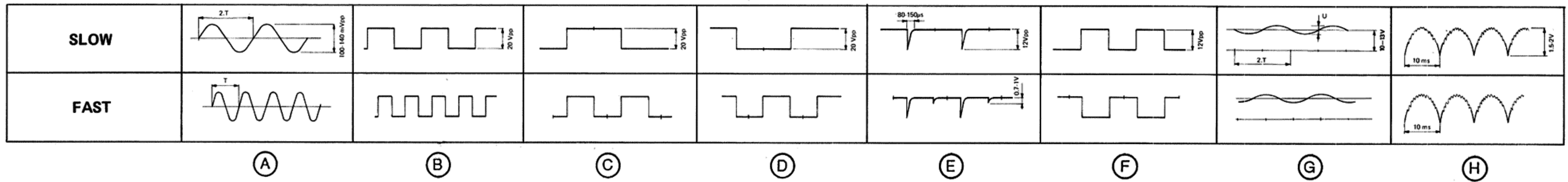
1.177.327.00



1.177.325 / 326 / 327



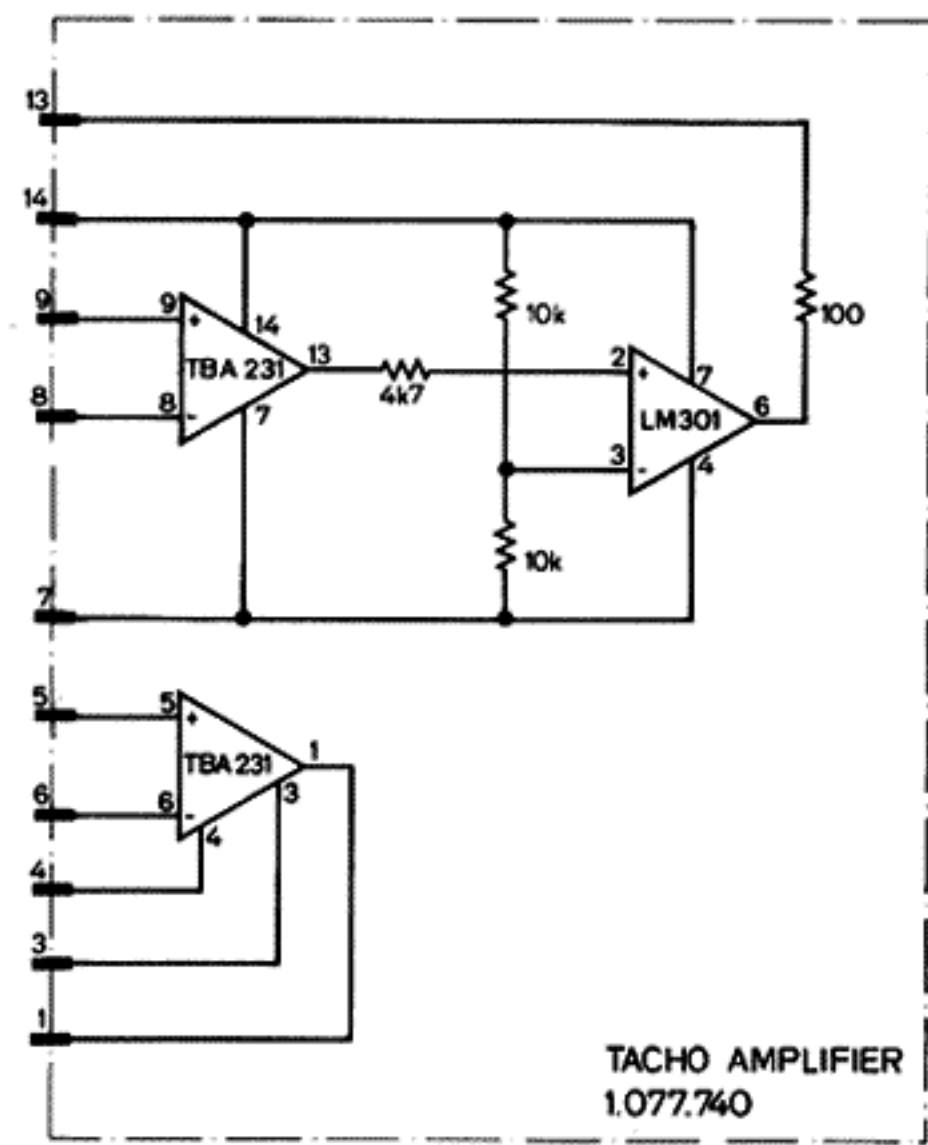
CAPSTAN SPEED CONTROL PCB 1.177.325.00 / 1.177.326.00 / 1.177.327.00 (B77 MKI)



SEE SERVICE INFORMATION  
63.9 : CAPSTAN START

SPEED CONTROL	T	U
1.177.325	625 µs	1 Vpp
1.177.326	833 µs	2.5 Vpp
1.177.327	1666 µs	3 Vpp

TYPE	SPEED	CAPSTAN SHAFT φ	C-MOTOR NO.	SPEED CONTROL	C8 ★	C9 ★
HS	7 1/2" - 15"	9.06 mm	1.021.320	1.177.325	1.6 nF	4.7 nF
STD	3 3/4" - 7 1/2"	4.51 mm	1.021.300	1.177.325	1.6 nF	4.7 nF
LS	1 7/8" - 3 3/4"	3.00 mm	1.021.304	1.177.326	1.6 nF	6.8 nF
SLS	15/16" - 1 7/8"	3.00 mm	1.021.304	1.177.327	5.6 nF	10 nF



VERSION 1.177.327:  
INSTEAD OF THE  
REMOVED IC2 THE  
SUB-ASSEMBLY  
TACHO AMPLIFIER  
1.077.740 IS PLUGGED  
INTO THE IC2 SOCKET

REMOTE CONTROL  
CAPSTAN SPEED

PIN CONFIGURATION  
14-PIN DUAL-IN-LINE

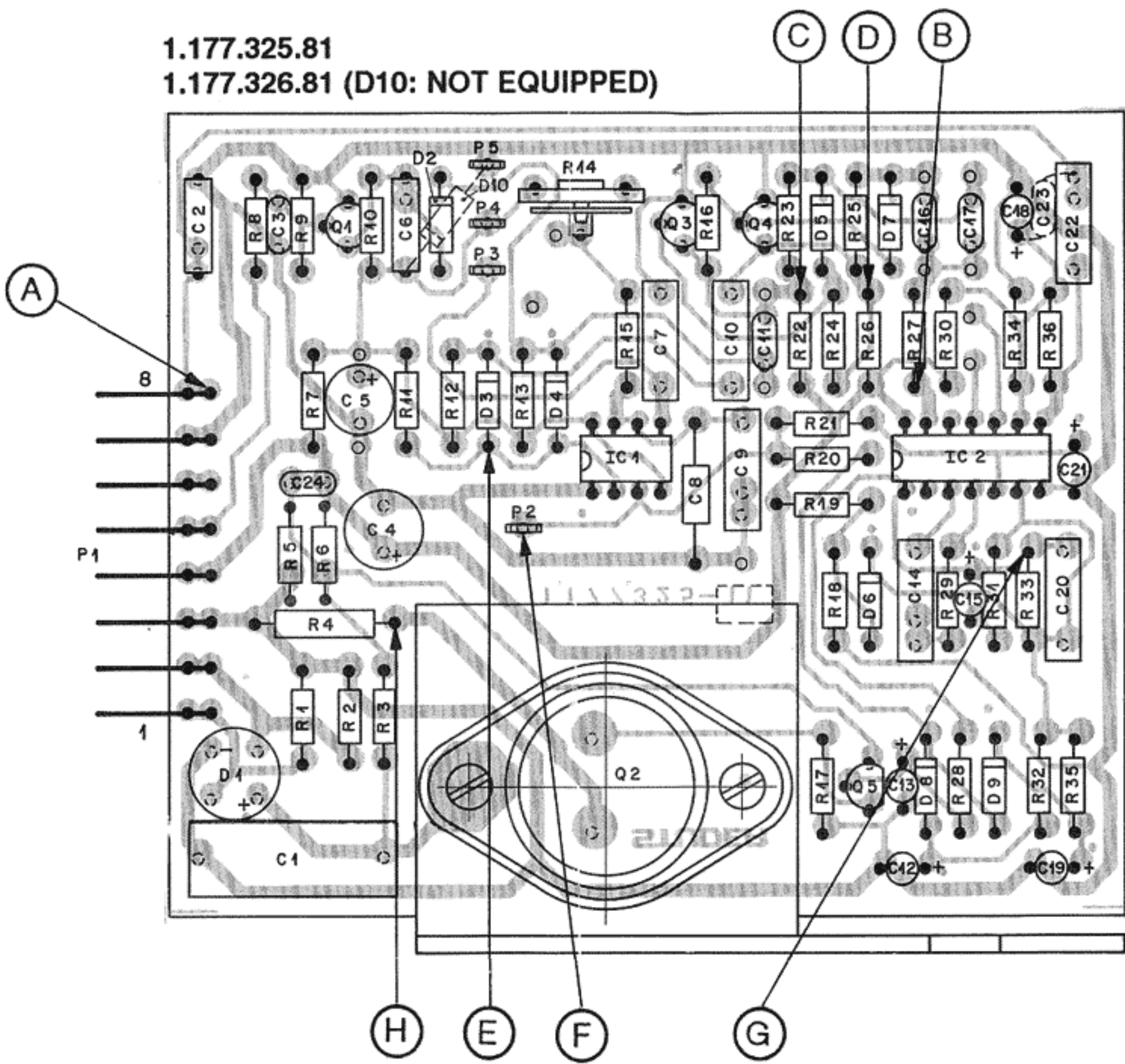
TACHO AMPLIFIER  
1.077.740

LAYOUT 1.177.325-11





CAPSTAN SPEED CONTROL PCB 1.177.325.81 / 1.177.326.81 / 1.177.327.81 (B77 MKII)



IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.	IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
C.....1		59.99.0450	0.47 uF	10%, 150V, MP		IC....1		50.05.0158	NE 555	Timer	NE1455P S.M
C.....2		59.31.4104	0.1 uF	5%, 250V, MPETP		IC....2		50.05.0237	TBA 231	UA 739 analog.	SN76131N F.A.T
C.....3		59.32.3472	4700 pF	-20%, 40V, Cer		P.....1		54.01.0582	8-Pole	Pin-Strip	AMP
C.....4		59.22.5470	47 uF	10%, 25V, E1		P.....2		54.01.0320		Flat-Pin 0.8	AMP
C.....5		59.22.5470	47 uF	10%, 25V, E1		P.....3		54.01.0320		Flat-Pin 0.8	AMP
C.....6		59.31.4104	0.1 uF	5%, 250V, MPETP		P.....4		54.01.0320		Flat-Pin 0.8	AMP
C.....7		59.31.4103	0.01 uF	20%, 160V, PETP		P.....5		54.01.0320		Flat-Pin 0.8	AMP
C.....8		59.12.8162	1600 pF	1%, 125V, PS		Q.....1		50.03.0436	BC 107 B	NPN	RCA 411 M.C.A
C.....9		59.99.0517	4700 pF	2.5%, 160V, PC	WIMA, FK-3 type	Q.....2		50.03.0477	MJ 411	NPN-Power	
C.....10		59.11.6471	470 pF	20%, 25V, PC		Q.....3		50.03.0436	BC 107 B	NPN	
C.....11		59.11.6471	470 pF	20%, 40V, PC		Q.....4		50.03.0436	BC 107 B	NPN	
C.....12		59.22.6100	10 uF	10%, 35V, E1		Q.....5		50.03.0318	BC 178 B	PNP	
C.....13		59.22.8109	1 uF	10%, 50V, E1		R.....1		57.11.4473	47 kOhm	5%, 0.25W, CF	
C.....14		59.31.4103	0.01 uF	20%, 160V, PETP		R.....2		57.11.4473	47 kOhm	5%, 0.25W, CF	
C.....15		59.22.6100	10 uF	10%, 35V, E1		R.....3		57.11.4683	68 kOhm	5%, 0.25W, CF	
C.....16		59.32.3472	4700 pF	-20%, 40V, Cer		R.....4		57.12.4100	10 Ohm	5%, 0.33W, CF	
C.....17		59.32.3472	4700 pF	-20%, 40V, Cer		R.....5		57.11.4222	2.2 kOhm	5%, 0.25W, CF	
C.....18		59.22.6100	10 uF	10%, 35V, E1		R.....6		57.11.4102	1 kOhm	5%, 0.25W, CF	
C.....19		59.22.6100	10 uF	10%, 35V, E1		R.....7		57.11.4561	560 Ohm	5%, 0.25W, CF	
C.....20		59.31.1224	0.22 uF	20%, 100V, MPETP		R.....8		57.11.4103	10 kOhm	5%, 0.25W, CF	
C.....22		59.21.4473	0.047uF	20%, 250V, MPETP		R.....9		57.11.4223	22 kOhm	5%, 0.25W, CF	
C.....23		59.32.0220	22 pF	20%, 500V, Cer		R.....10		57.11.4472	4.7 kOhm	5%, 0.25W, CF	
C.....24		59.32.0220	22 pF	20%, 500V, Cer		R.....11		57.11.4223	22 kOhm	5%, 0.25W, CF	
C.....25			not used			R.....12		57.11.4103	10 kOhm	5%, 0.25W, CF	
D.....1		70.01.0223	8250 C800			R.....13		57.11.4103	10 kOhm	5%, 0.25W, CF	
D.....2		50.04.0125	1 N 4448	any		R.....14		58.99.0126	10 kOhm	10%, 500ppm/°C, PCF	
D.....3		50.04.0125	1 N 4448	any		R.....15		58.99.0179	86.6kOhm	1%, 50ppm	
D.....4		50.04.0125	1 N 4448	any		R.....16		57.11.4223	22 kOhm	5%, 0.25W, CF	
D.....5		50.04.0125	1 N 4448	any		R.....17		57.11.4152	1.5 kOhm	5%, 0.25W, CF	
D.....6		50.04.0125	1 N 4448	any		R.....18		57.11.4152	1.5 kOhm	5%, 0.25W, CF	
D.....7		50.04.0125	1 N 4448	any		R.....19		57.11.4103	10 kOhm	5%, 0.25W, CF	
D.....8		50.04.0125	1 N 4448	any		R.....20		57.11.4221	220 Ohm	5%, 0.25W, CF	
D.....9		50.04.0125	1 N 4448	any		R.....21		57.11.4472	4.7 kOhm	5%, 0.25W, CF	
D.....10		50.04.1119	15 V	5%, 400mA, Z		R.....22		57.11.4332	3.3 kOhm	5%, 0.25W, CF	

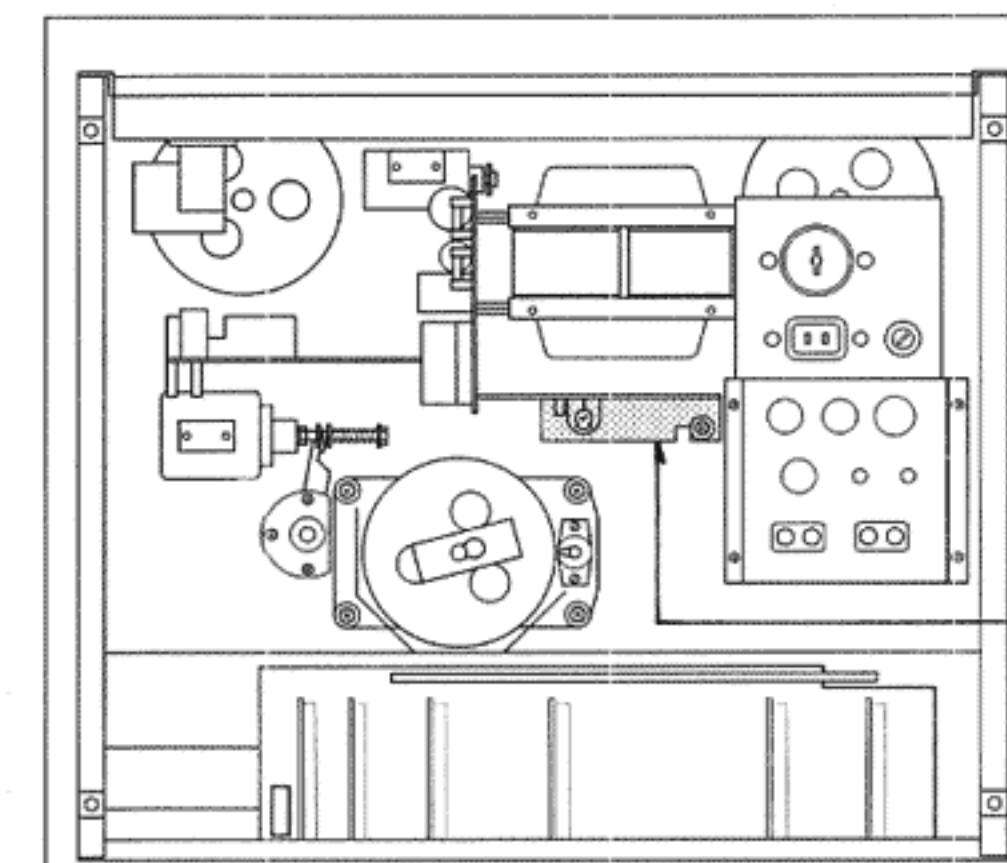
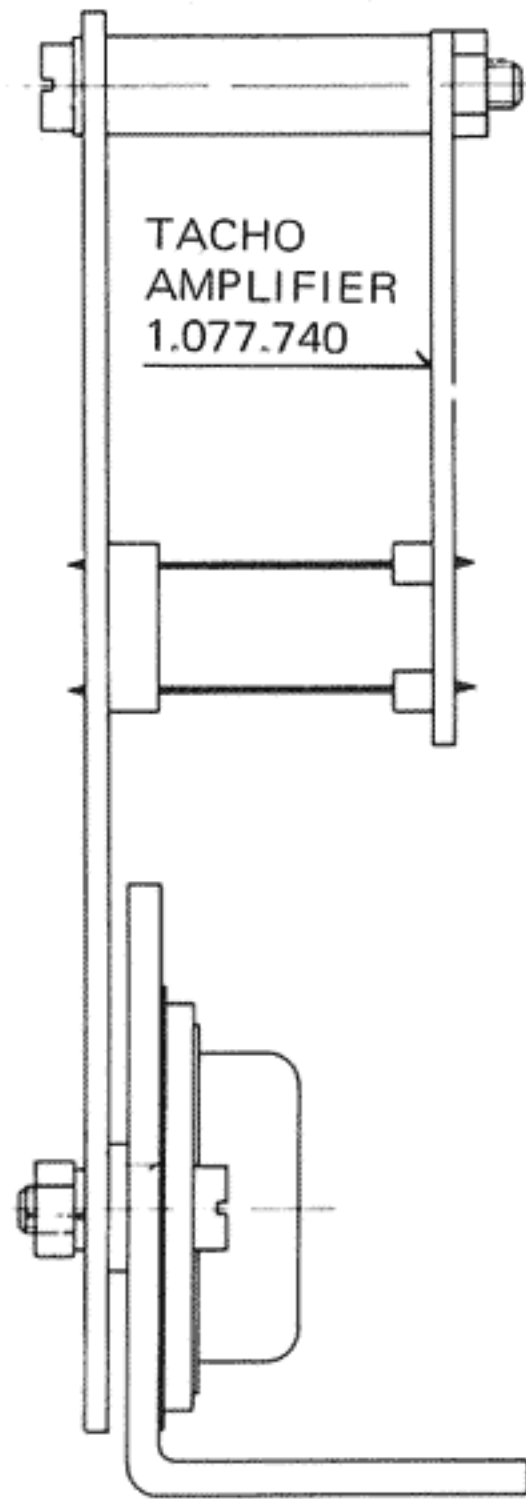
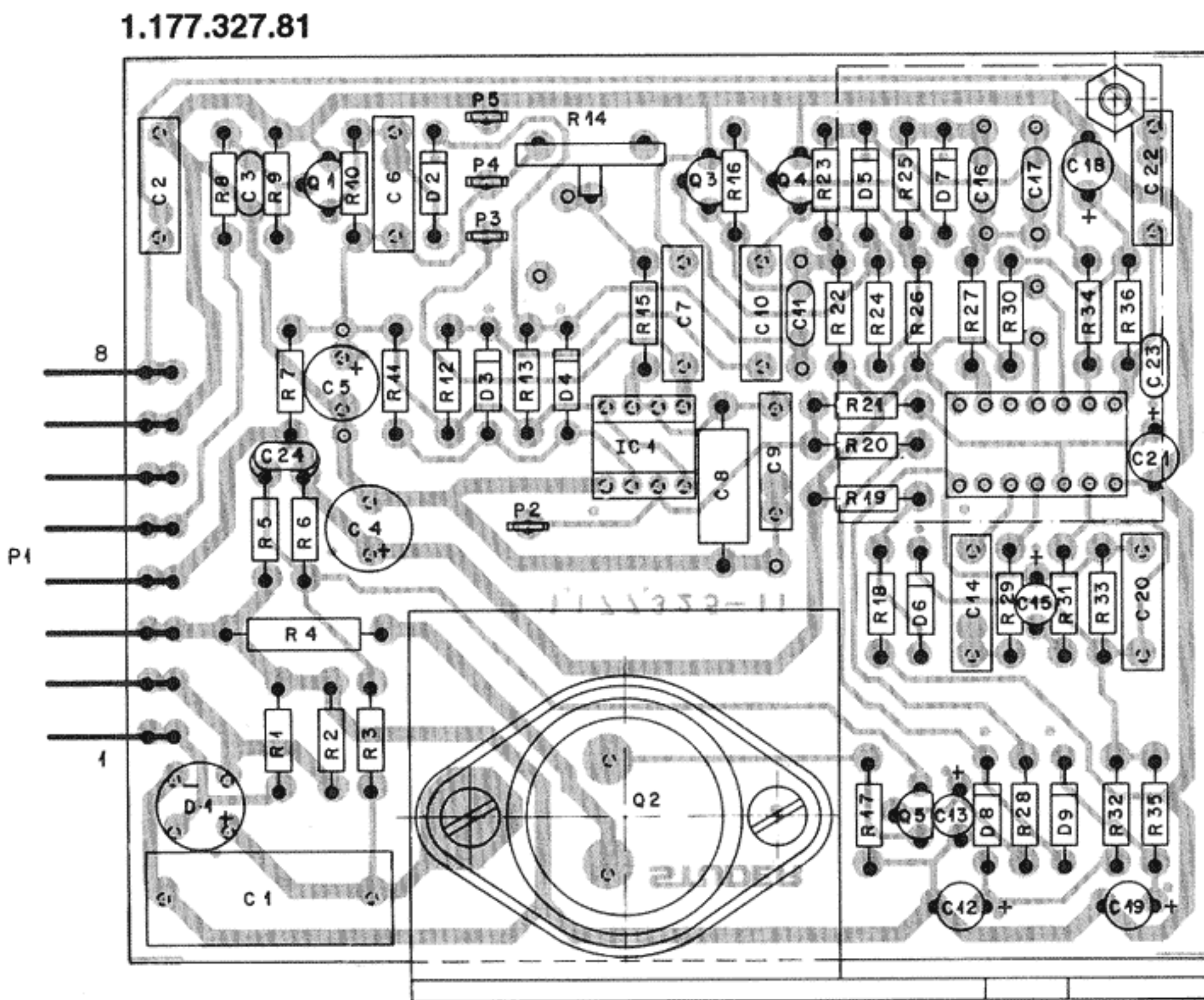
STUDER (00) 84/03/22 Mth CAPSTAN SPEED CONTROL 1.177.325.81 PAGE 1 STUDER (00) 84/03/22 Mth CAPSTAN SPEED CONTROL 1.177.325.81 PAGE 2

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
R.....23		57.11.4223	22 kOhm	5%, 0.25W, CF	
R.....24		57.11.4223	22 kOhm	5%, 0.25W, CF	
R.....25		57.11.4223	22 kOhm	5%, 0.25W, CF	
R.....26		57.11.4332	3.3 kOhm	5%, 0.25W, CF	
R.....27		57.11.4102	1 kOhm	5%, 0.25W, CF	
R.....28		57.11.4472	4.7 kOhm	5%, 0.25W, CF	
R.....29		57.11.4330	33 Ohm	5%, 0.25W, CF	
R.....30		57.11.4103	10 kOhm	5%, 0.25W, CF	
R.....31		57.11.4682	6.8 kOhm	5%, 0.25W, CF	
R.....32		57.11.4222	2.2 kOhm	5%, 0.25W, CF	
R.....33		57.11.4105	1 Mohm	5%, 0.25W, CF	
R.....34		57.11.4103	10 kOhm	5%, 0.25W, CF	
R.....35		57.11.4222	2.2 kOhm	5%, 0.25W, CF	
R.....36		57.11.4103	10 kOhm	5%, 0.25W, CF	

E=Electrolytic, Cer=Ceramic, MP=Metallized Paper, PS=Polystyrene, MPETP=Metallized Polyester, PETP=Polyester, PC=Polycarbonate, Manufacturer: Sig=Signetics, TI=Texas Instruments, A=Atos, M=Motorola, F=Fairchild

ORIG 84/03/22

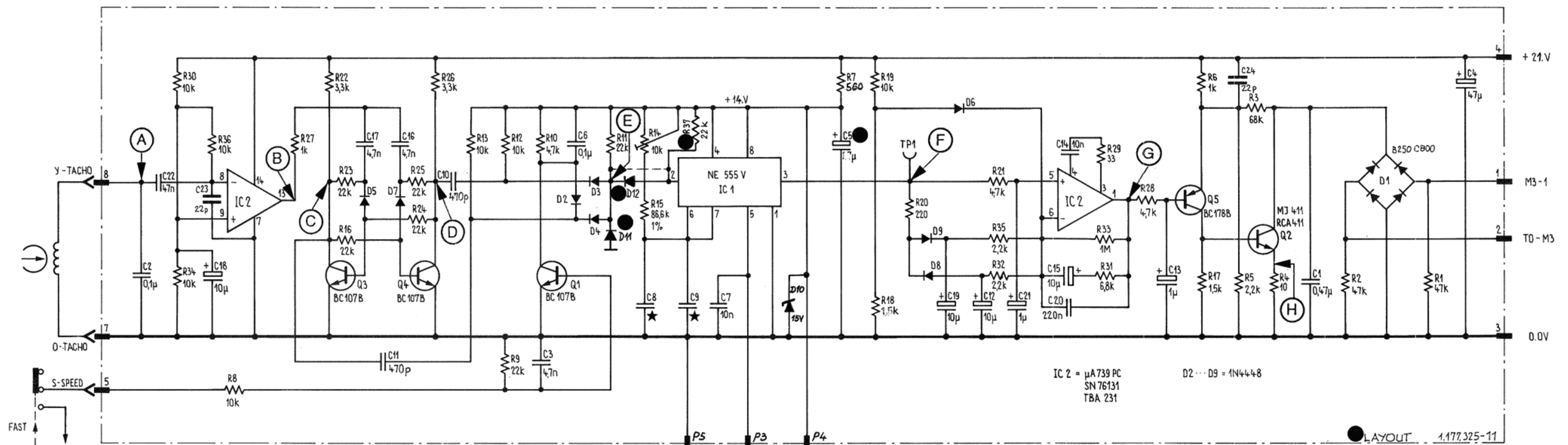
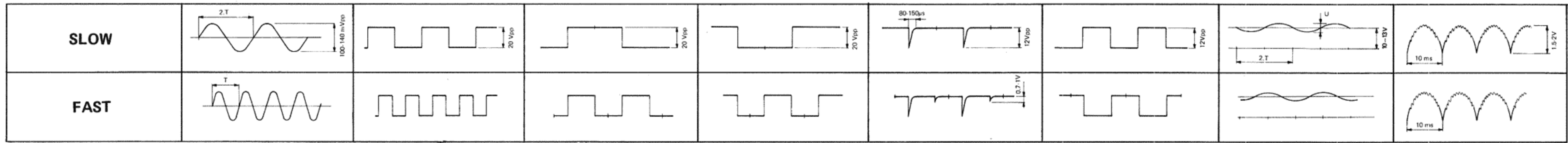
STUDER (00) 84/03/22 Mth CAPSTAN SPEED CONTROL 1.177.325.81 PAGE 3



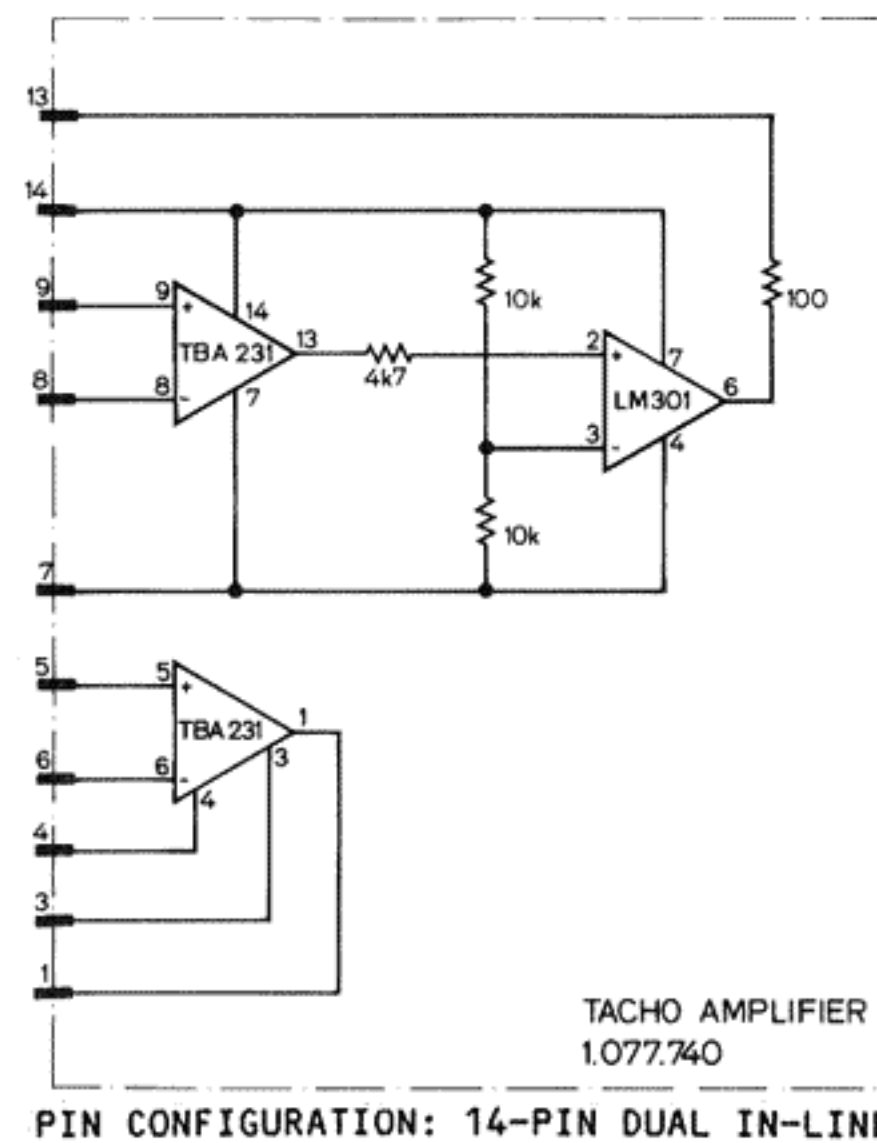
1.177.325 / 326 / 327



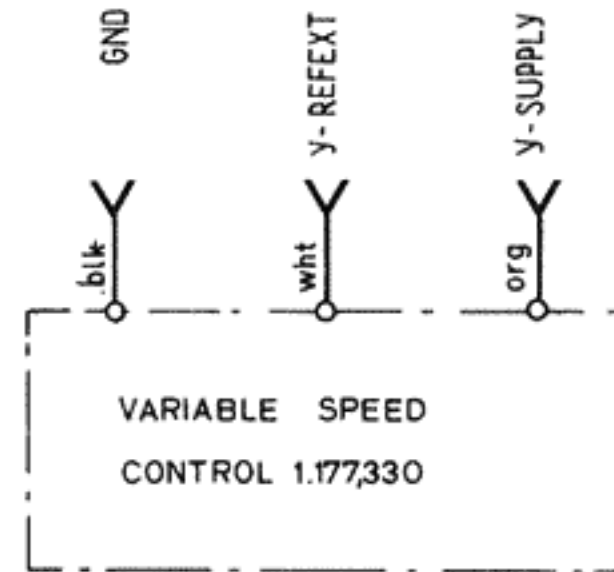
CAPSTAN SPEED CONTROL PCB 1.177.325.81 / 1.177.326.81 / 1.177.327.81 (B77 MKII)



- FROM SERIAL NO. 152,540:
- PCB LAYOUT 1.177.325.11 REPLACED BY PCB LAYOUT 1.177.325.12
- C5 (47 µF, ORDER NO. 59.22.5470) REPLACED BY C5 (22 µF, ORDER NO. 59.22.5220)
- ADDITIONAL COMPONENTS:
- D11 (1N4448, ORDER NO. 50.04.0125)
- D12 (1N4448, ORDER NO. 50.04.0125)
- R37 (22 kΩ, ORDER NO. 57.11.4223)



VERSION 1.177.327: INSTEAD OF THE REMOVED IC2 THE SUB-ASSY TACHO AMPLIFIER 1.077.740 IS PLUGGED INTO THE IC2 SOCKET



VERSION 1.177.325-00/326-00/327-00  
D10 = NOT EQUIPPED  
R 7 = 820Ω

SEE SERVICE INFORMATION 63.9 : CAPSTAN START

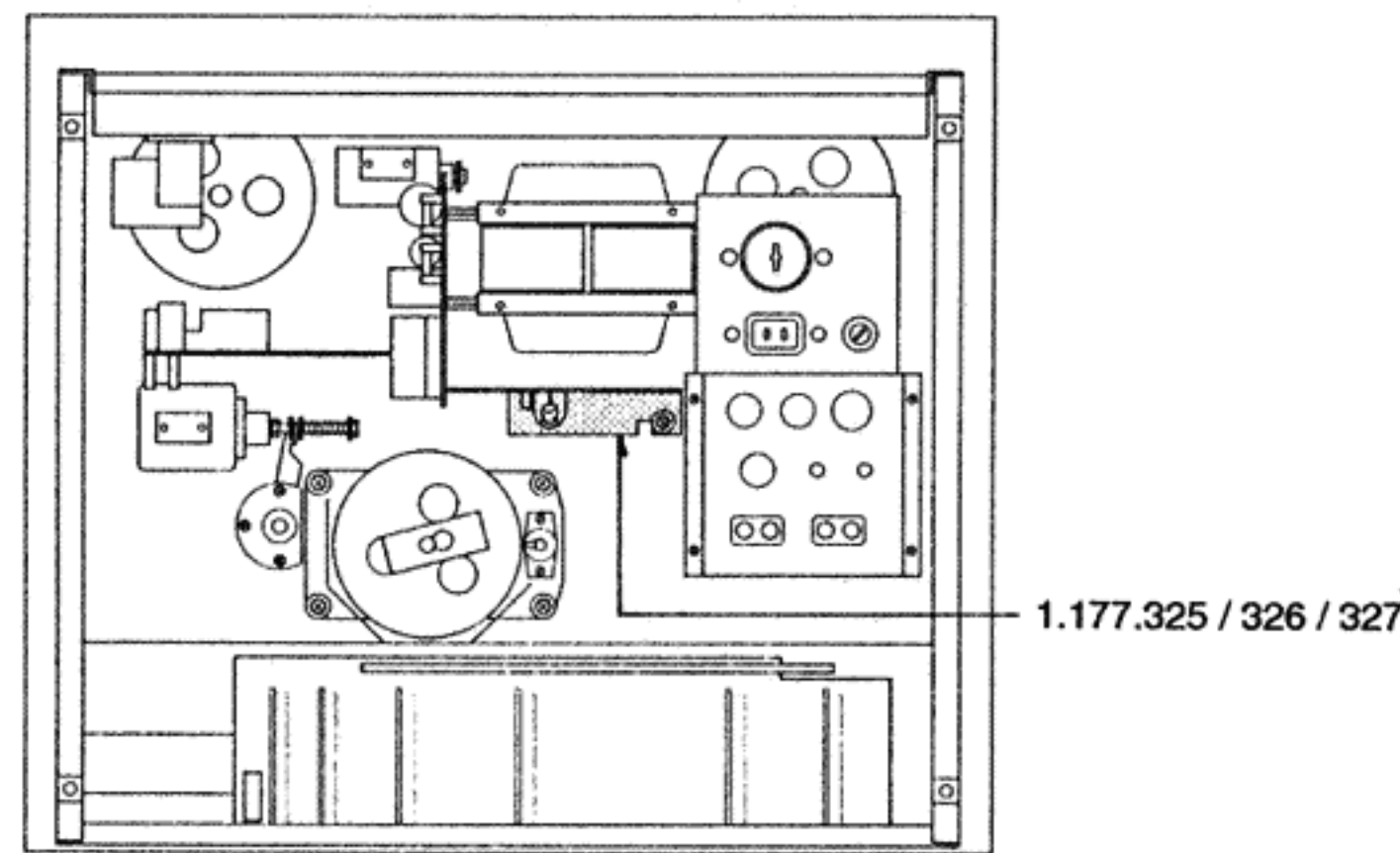
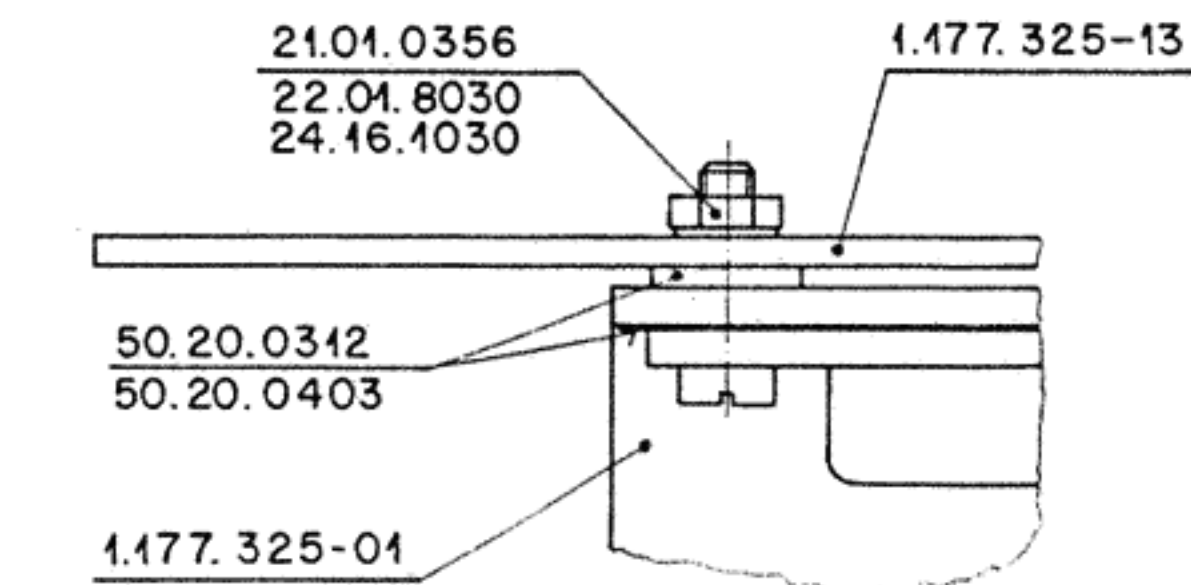
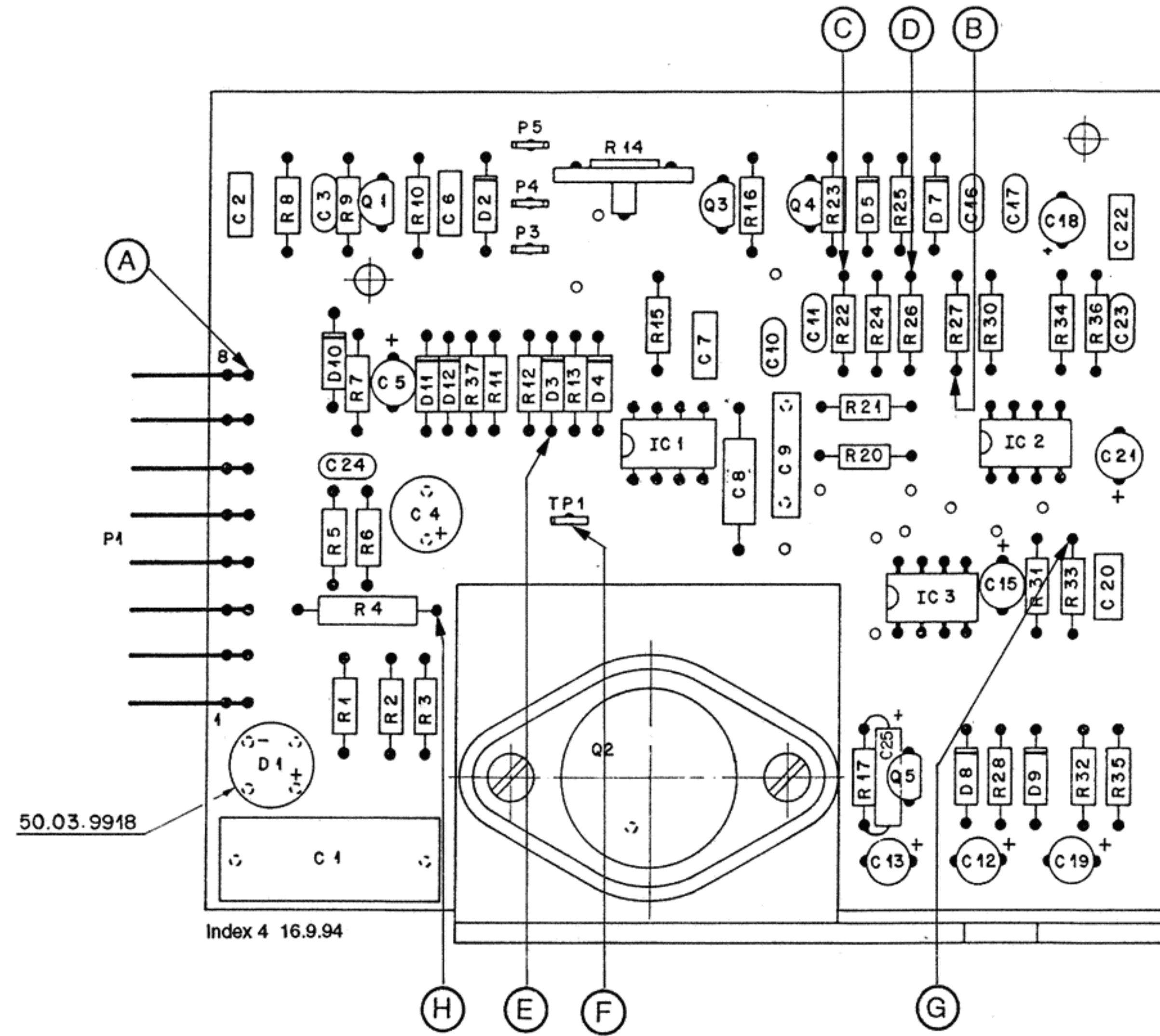
TYPE	SPEED	CAPSTAN SHAFT φ	C-MOTOR NO.	SPEED CONTROL	C8 ★	C9 ★
HS	7 1/2" - 15"	9.06 mm	1.021.320	1.177.325	1.6 nF	4.7 nF
STD	3 3/4" - 7 1/2"	4.51 mm	1.021.300	1.177.325	1.6 nF	4.7 nF
LS	1 7/8" - 3 3/4"	3.00 mm	1.021.304	1.177.326	1.6 nF	6.8 nF
SLS	15/16" - 1 7/8"	3.00 mm	1.021.304	1.177.327	5.6 nF	10 nF

SPEED CONTROL	T	U
1.177.325	625 µs	1 Vpp
1.177.326	833 µs	2.5 Vpp
1.177.327	1666 µs	3 Vpp





CAPSTAN SPEED CONTROL 1.177.325.82 / 1.177.326.82 / 177.327.82 (B77 MKII)



Idx.	Pos.	FOR	Part No.	Qty.	Type/Val.	Description
0	C 1		59.99.0450			C 47 U, 10%, 150V, MP
0	C 2		59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 3		59.32.3472			C 4.7 N, 100%, 40V, CER
0	C 4		59.22.5470		47u	EL 25V, 20%, RM5
0	C 5		59.22.5220		22u	EL 25V, 20%, RM5
0	C 6		59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 7		59.06.0103		10n	PETP, 63V, 10%, RM5
0	C 8	1.177.325.82	59.12.8162		1n6	C 1600 P, 1%, 125V, PS
0	C 8	1.177.326.82	59.12.8162		1n6	C 1600 P, 1%, 125V, PS
0	C 8	1.177.327.82	59.12.7682		6n8	C 6800 P, 1%, 63V, PS
0	C 9	1.177.325.82	59.99.0517			C 4700 P, 2.5%, 160V, PC
0	C 9	1.177.326.82	59.11.4682			C 6800 P, 2.5%, 160V, PC
0	C 9	1.177.327.82	59.11.4103			C 01 U, 2.5%, 160V, PC
0	C 10		59.34.5471		470p	CER 63V, 5%, N1500
0	C 11		59.34.5471		470p	CER 63V, 5%, N1500
0	C 12		59.22.6100		10u	EL 35V, 20%, RM5
1	C 13		59.30.6478		470n	TA, 20%, 35V
0	C 15		59.22.6100		10u	EL 35V, 20%, RM5
0	C 16		59.32.3472			C 4.7 N, 100%, 40V, CER
0	C 17		59.32.3472			C 4.7 N, 100%, 40V, CER
0	C 18		59.22.6100		10u	EL 35V, 20%, RM5
0	C 19		59.22.6100		10u	EL 35V, 20%, RM5
0	C 20		59.06.0224		220n	PETP, 63V, 10%, RM5
1	C 21		59.30.6478		470n	TA, 20%, 35V
0	C 22		59.06.0473		47n	PETP, 63V, 10%, RM5
0	C 23		59.32.1220		22p	C 22 P, 10%, 400V, CER
0	C 24		59.32.1220		22p	C 22 P, 10%, 400V, CER
1	C 25		59.25.6229		2u2	C-EL, 20%, 63V
0	D 1		70.01.0223		0.8A	DZ B 250 C 800 SI
0	D 2		50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 3		50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 4		50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 5		50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 7		50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 8		50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 9		50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 10		50.04.1119		15V	Zener, 5%, 0.5W, DO-35
0	D 11		50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 12		50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	IC 1		50.05.0158		LM555	IC LM 555 CN
0	IC 2		50.09.0107		RC4559	IC RC 4559 N, UPC 4559, A
0	IC 3		50.05.0286		LM358	IC LM 358 N, LM 358 P, OPAMP, A
0	MP 1	1.177.325.13	mp			CAPSTAN-REGELPRINT
0	P 1	54.01.0582				P LEISTE 8 POL CIS WINKEL
0	P 2	54.02.0320			1p	Flatpin, 2.8*0.8mm
0	P 3	54.02.0320			1p	Flatpin, 2.8*0.8mm
0	P 4	54.02.0320			1p	Flatpin, 2.8*0.8mm
0	P 5	54.02.0320			1p	Flatpin, 2.8*0.8mm
0	Q 1	50.03.0436			BC237B	BC 237 B, 547 B, 550 B,
0	Q 2	50.03.0477			MJ15024	MJ15024 250V/16A, TO 3
0	Q 3	50.03.0436			BC237B	BC 237 B, 547 B, 550 B,
0	Q 4	50.03.0436			BC237B	BC 237 B, 547 B, 550 B,
0	Q 5	50.03.0515			BC307B	BC 307 B, BC 557 B, PNP
2	R 1	57.11.3473			47k	MF, 1%, 0207
2	R 2	57.11.3473			47k	MF, 1%, 0207
2	R 3	57.11.3683			68k	MF, 1%, 0207
2	R 4	57.11.3100			10R	MF, 1%, 0207
2	R 5	57.11.3222			2k2	MF, 1%, 0207
2	R 6	57.11.3102			1k0	MF, 1%, 0207
2	R 7	57.11.3561			560R	MF, 1%, 0207
2	R 8	57.11.3103			10k	MF, 1%, 0207
2	R 9	57.11.3223			22k	MF, 1%, 0207
2	R 10	57.11.3472			4k7	MF, 1%, 0207
2	R 11	57.11.3223			22k	MF, 1%, 0207
2	R 12	57.11.3103			10k	MF, 1%, 0207
2	R 13	57.11.3103			10k	MF, 1%, 0207
0	R 14	58.99.0126				R 10 K, 20%, 15W, PCSCH
0	R 15	57.99.0179				R 86.6 K, 1%, 50PPM, MF
2	R 16	57.11.3223			22k	MF, 1%, 0207
2	R 17	57.11.3152			1k5	MF, 1%, 0207
2	R 20	57.11.3221			220R	MF, 1%, 0207
2	R 21	57.11.3472			4k7	MF, 1%, 0207
2	R 22	57.11.3332			3k3	MF, 1%, 0207
2	R 23	57.11.3223			22k	MF, 1%, 0207
2	R 24	57.11.3223			22k	MF, 1%, 0207
2	R 25	57.11.3223			22k	MF, 1%, 0207
2	R 26	57.11.3332			3k3	MF, 1%, 0207

Idx.	Pos.	FOR	Part No.	Qty.	Type/Val.	Description
2	R 27		57.11.3102		1k0	MF, 1%, 0207
2	R 28		57.11.3472		4k7	MF, 1%, 0207
2	R 30		57.11.3103		10k	MF, 1%, 0207
2	R 31		57.11.3682		6k8	MF, 1%, 0207
2	R 32		57.11.3222		2k2	MF, 1%, 0207
2	R 33		57.11.3105		1M0	MF, 1%, 0207
2	R 34		57.11.3103		10k	MF, 1%, 0207
2	R 35		57.11.3222		2k2	MF, 1%, 0207
2	R 36		57.11.3103		10k	MF, 1%, 0207
2	R 37		57.11.3223		22k	MF, 1%, 0207

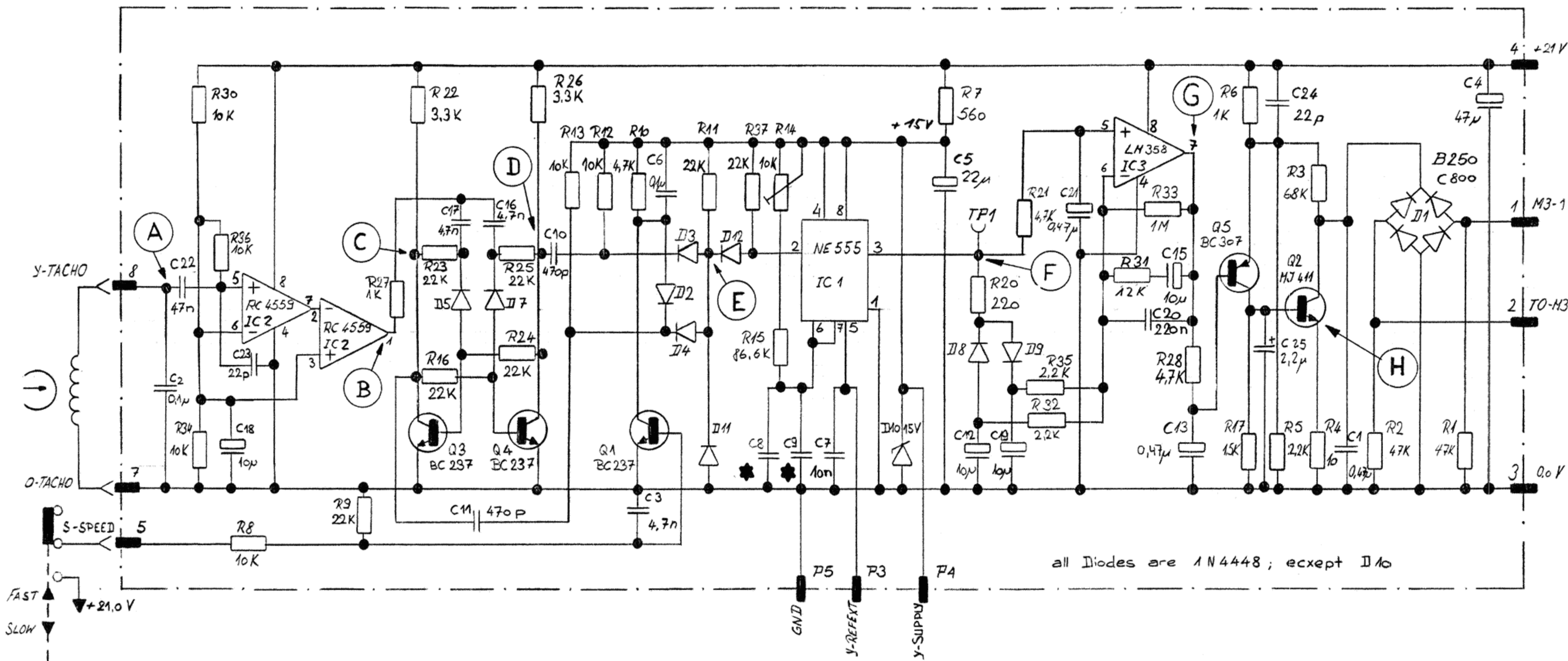
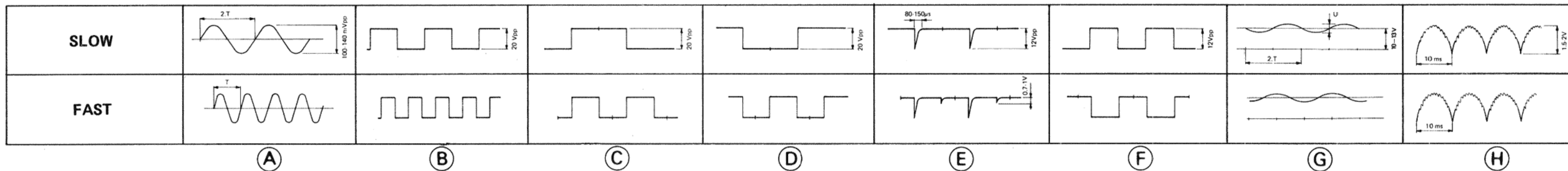
End of List

Comments:  
 (01) Servo-loop improved f. low frequencies.  
 (02) R1-R37 2% changed to 1%

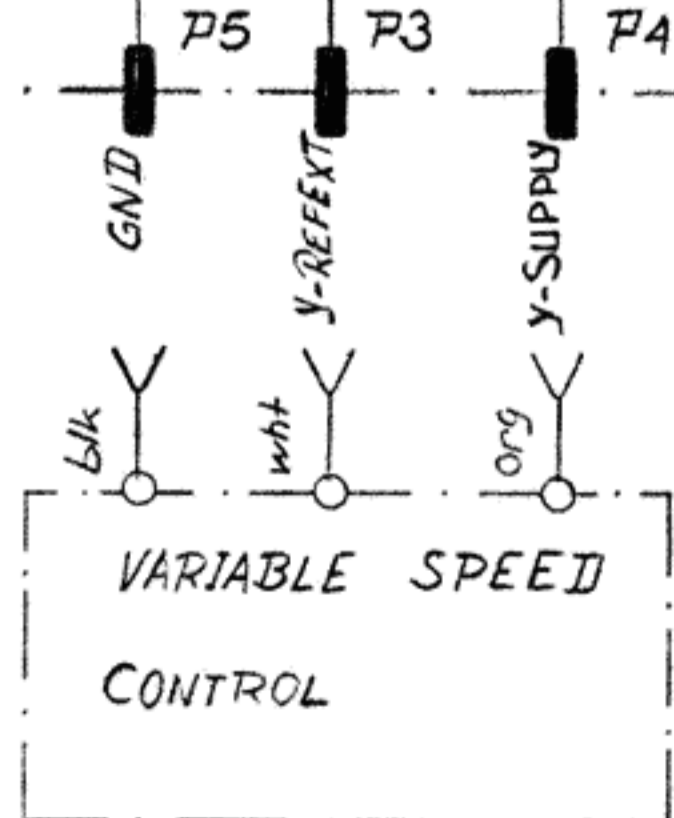




CAPSTAN SPEED CONTROL 1.177.325.82 / 1.177.326.82 / 177.327.82 (B77 MKII)



all Diodes are 1N4448; except D10



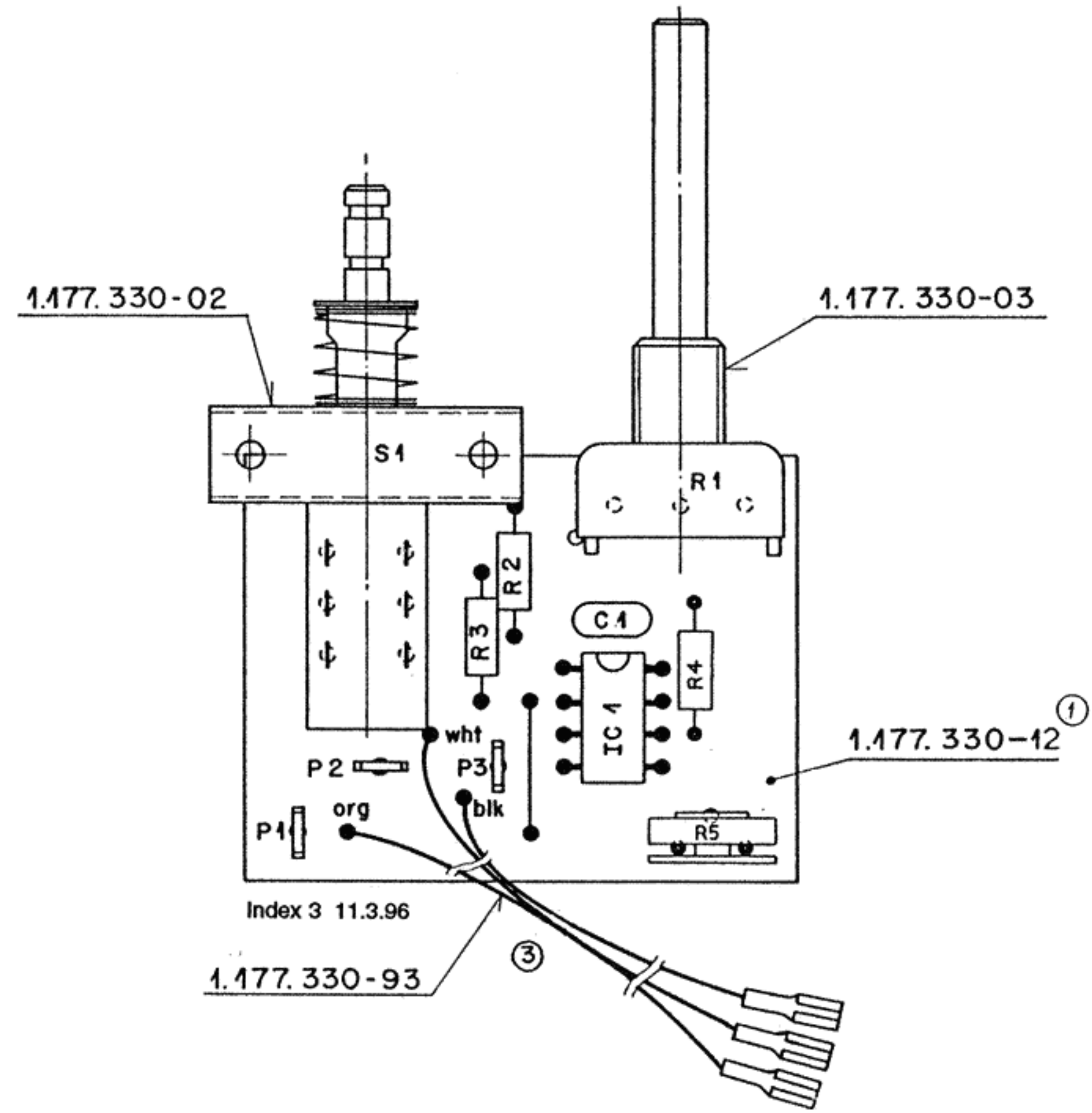
SPEED CONTROL	T	U
1. 177.325	625 µs	1 Vpp
1. 177.326	833 µs	2.5 Vpp
1. 177.327	1666 µs	3 Vpp

TYPE	SPEED	CAPSTAN SHAFT Ø	C-MOTOR NO.	SPEED CONTROL	C8	C9
HS	7 1/2" - 15"	9.06mm	1.021.320	1.177.325	1.6nF	4.7nF
STD	3 3/4" - 7 1/2"	4.51mm	1.021.300	1.177.325	1.6nF	4.7nF
LS	1 7/8" - 3 3/4"	3.00mm	1.021.304	1.177.326	1.6nF	6.8nF
SLS	15/16" - 1 7/8"	3.00mm	1.021.304	1.177.327	6.8nF	10nF





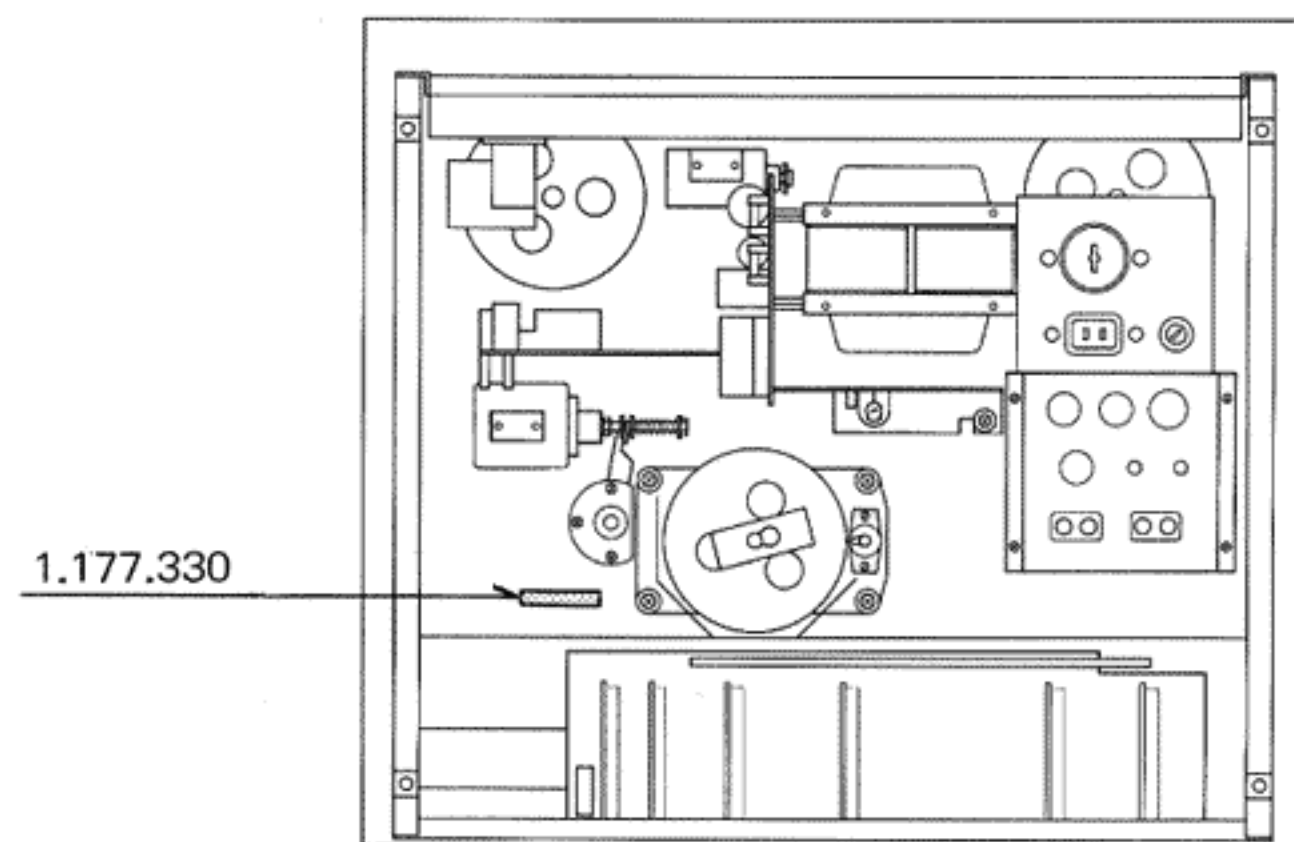
VARIABLE SPEED CONTROL PCB 1.177.330.00



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.32.1680	68p	C	68 P , 10% , 400V , CER
0	IC 1	50.05.0257			IC LM 301 AJG, UA 748 CP, A
0	P 1	54.02.0320	1-P	P	FLACH, 2.8*0.8, GERADE
0	P 2	54.02.0320	1-P	P	FLACH, 2.8*0.8, GERADE
0	P 3	54.02.0320	1-P	P	FLACH, 2.8*0.8, GERADE
0	R 1	1.177.330.03			POT 10 K LIN
2	R 2	57.11.3332	3k3	R	3.3 K , 1% , 0207 , MF
2	R 3	57.11.3563	56k	R	56 K , 1% , 0207 , MF
0	R 4	57.39.2432		R	24.3 K , 1% , 0207 , MF
1	R 5	58.02.4472	4k7	R	4.7 K , 20% , .1 W , PCSCH
0	S 1	1.177.330.02			EINER-TASTENSCHALTER

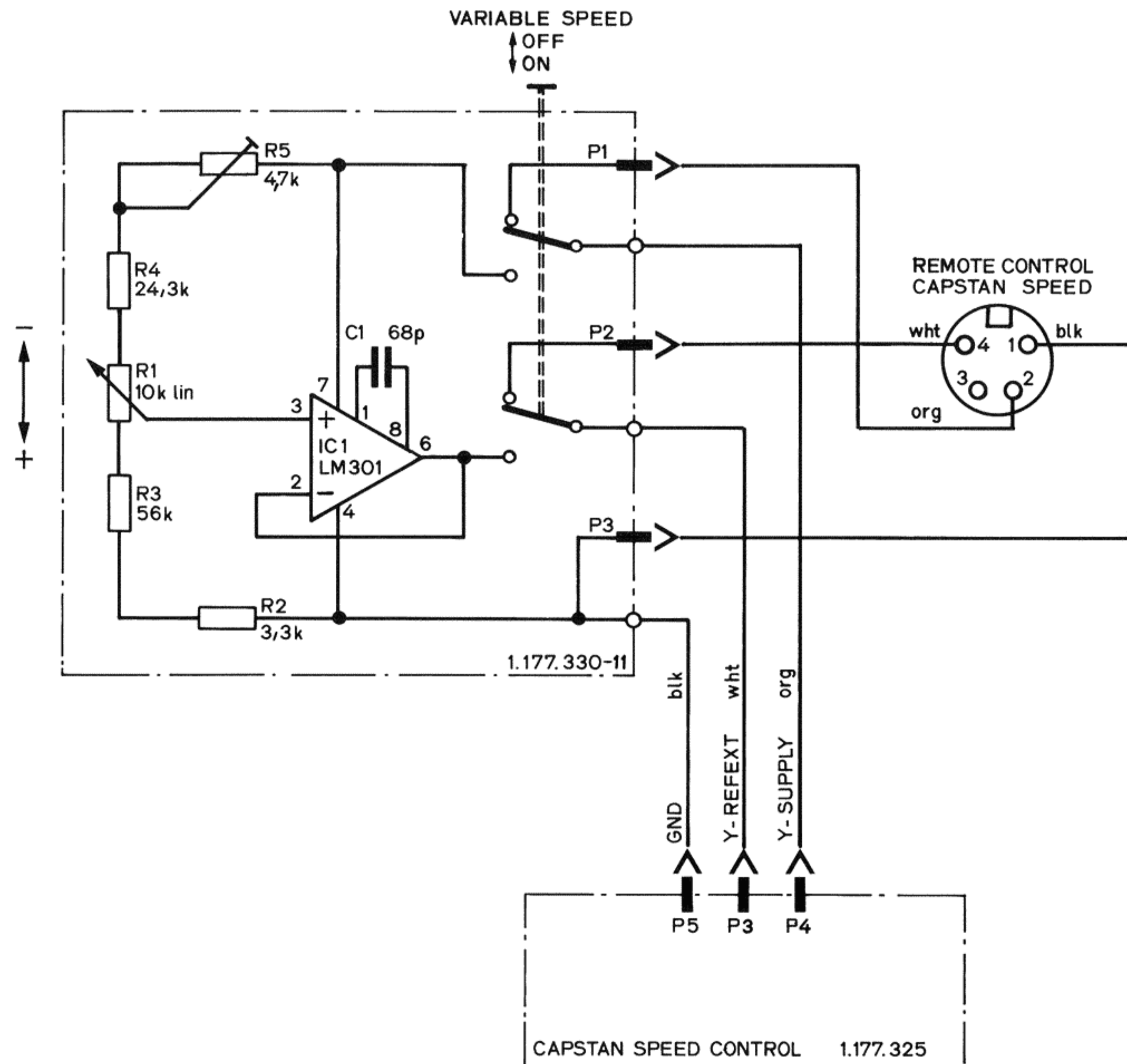
End of List

**Comments**  
 (01) 18.11.87 Replacement of R 5.  
 (02) R2+R3 2% changed to 1%



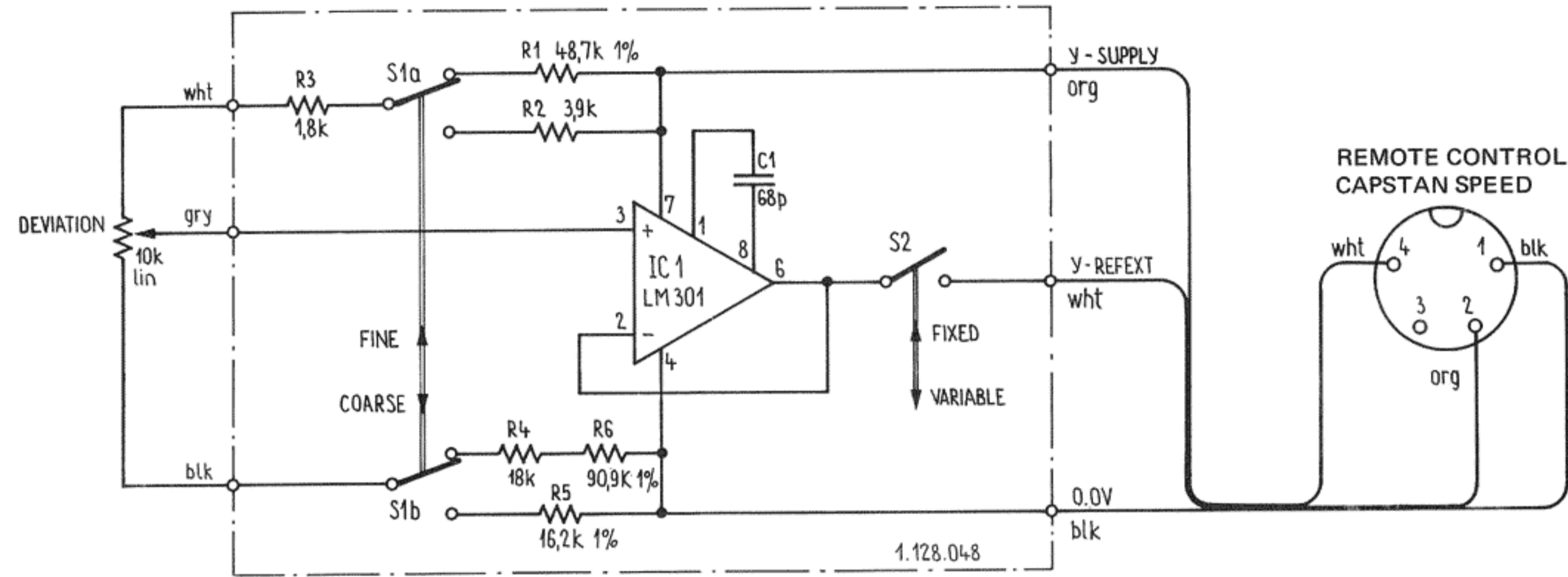


VARIABLE SPEED CONTROL PCB 1.177.330.00

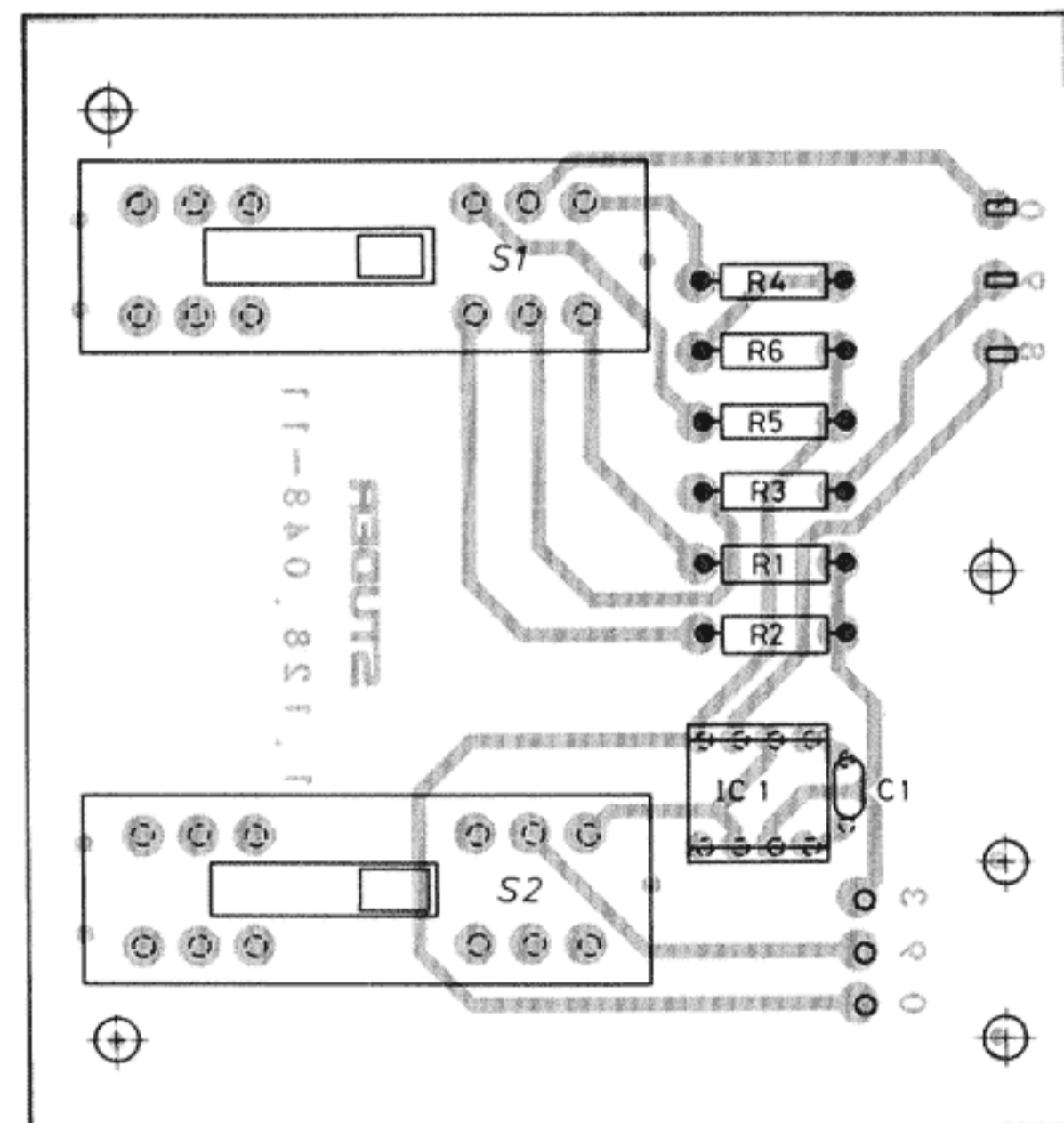




VARIABLE SPEED CONTROL UNIT / EXTERNAL 1.228.045.00  
 - Variable Speed Control PCB 1.128.048.00

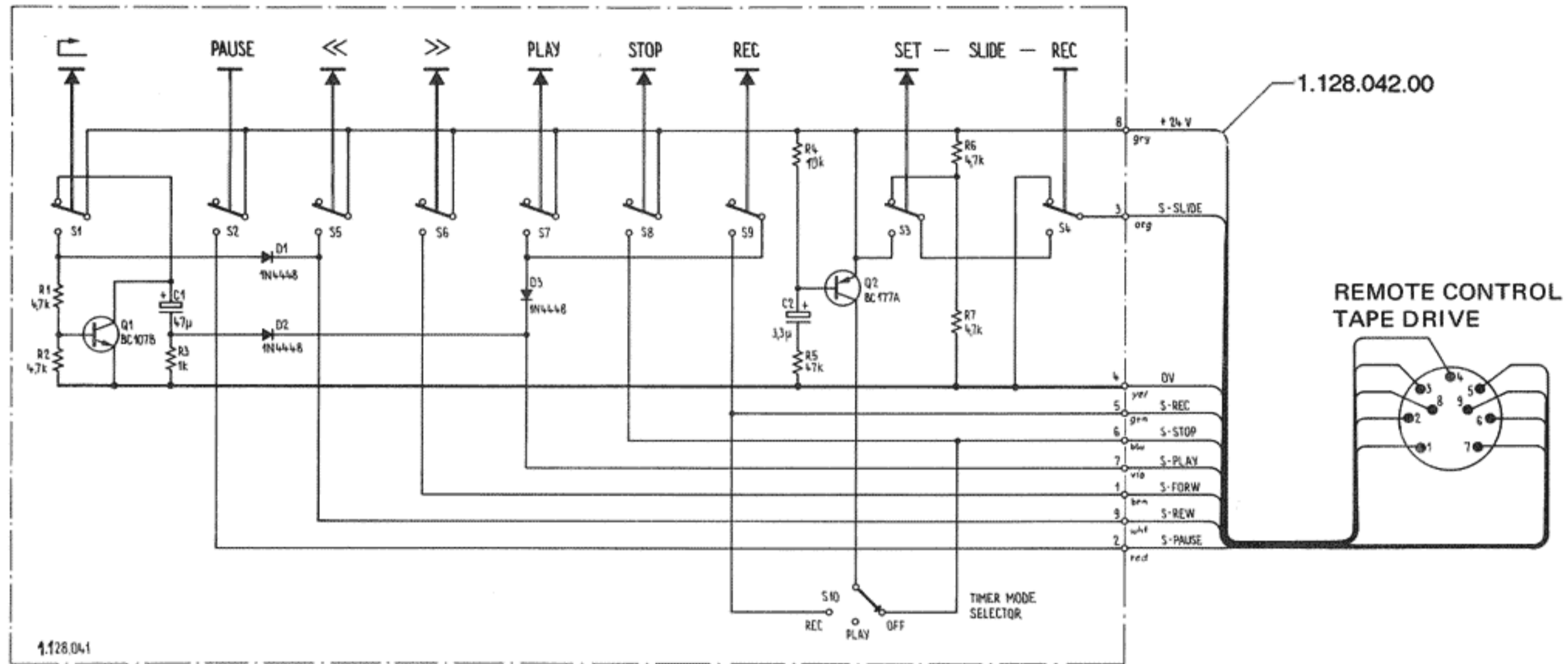


POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT MFR
C 01	59.32.1680	68 P	10% 500V KER	
IC 1	50.05.0144	LM 301 AN		LTN
R 01	57.39.4872	48,7 K	.25W 1% MF	(1)
R 02	57.41.4392	3,9 K	5% CSCH	(1)
R 03	57.41.4182	1,8 K	5% CSCH	(1)
R 04	57.41.4183	18 K	5% CSCH	(1)
R 05	57.39.1622	16,2 K	1% MF	(1)
R 06	57.39.9092	90,9 K	1% MF	(1)
S 01	1.128.021.03		Schiebeschalter	
S 02	1.128.021.03		Schiebeschalter	
14.9.77 28.1.77 IND DATE NAME				
STUDER		Capstannachsteuerprint	1.128.048	PAGE 1 of 1



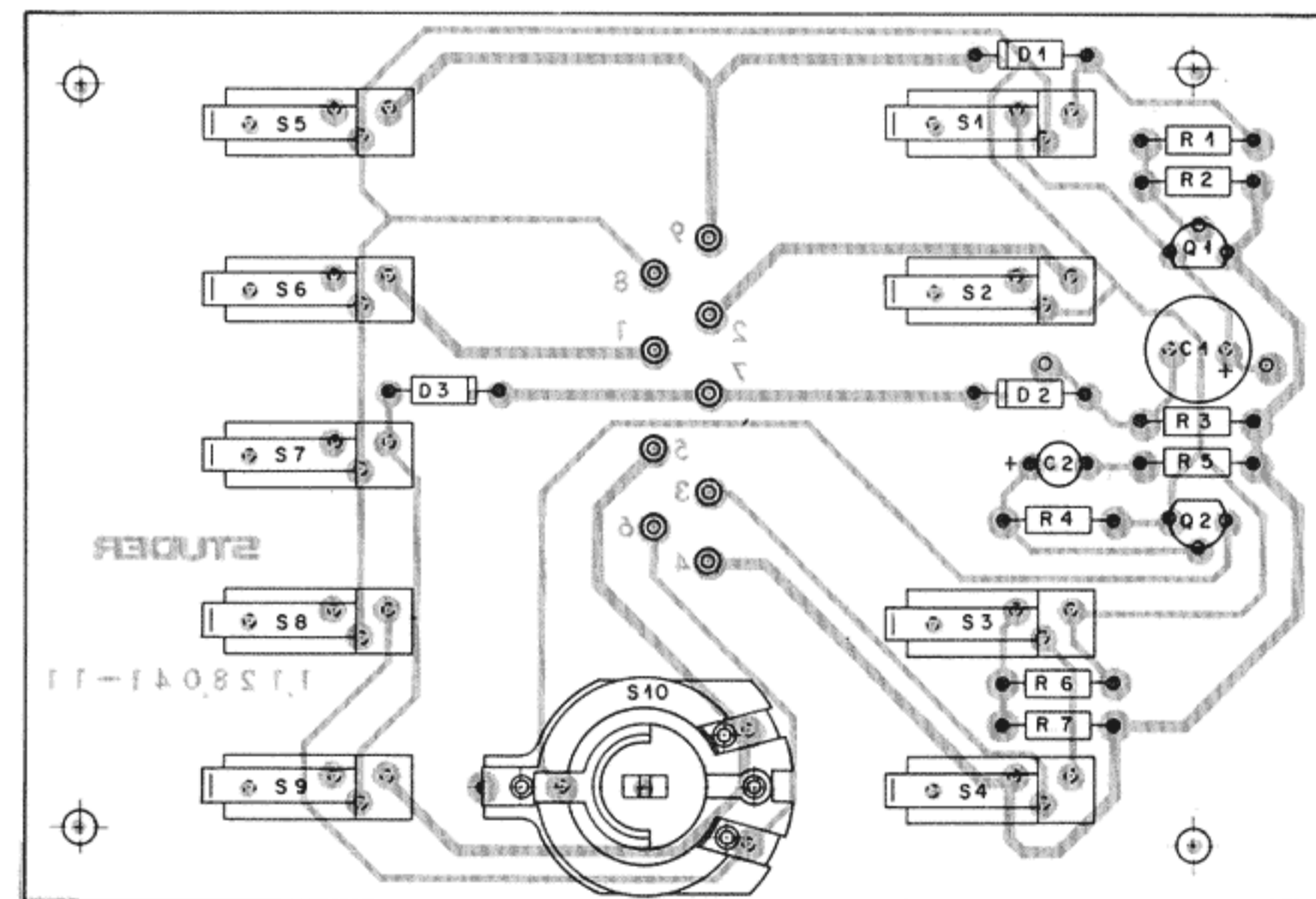


REMOTE CONTROL UNIT / COMMAND SWITCHES 1.128.040.00  
 - Remote Control PCB 1.128.041.00



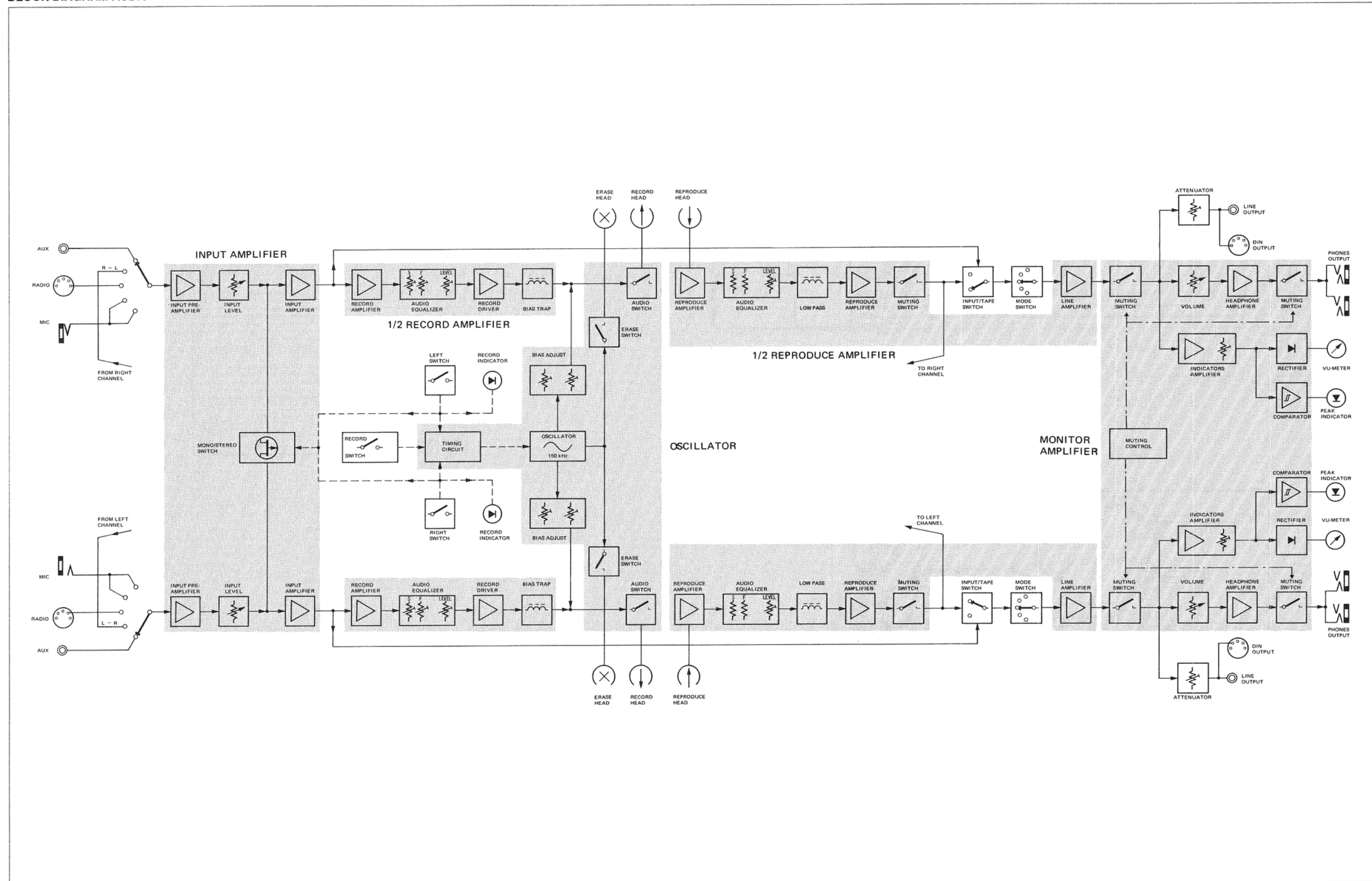
POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT	MFR
C 01	59.22.6470	47 U	-10%	40V	EL
C 02	59.30.6339	3.3 U	-20%	35V	TA
D 01-3	50.04.0125	1 N 4448			SI
Q 01	50.03.0436	BC 107 B			NPN
Q 02	50.03.0317	BC 177 A			PNP
R 01	57.41.4472	4.7 K	5%	.25W	CSCH
R 02	57.41.4472	4.7 K			
R 03	57.41.4102	1 K			
R 04	57.41.4103	10 K			(1)
R 05-07	57.41.4473	47 K			
S 01-09	55.99.0139	1 x U	Microsw.	AG	
S 10	55.99.0142	3 x U	Dreh	UNTER.	

IND	DATE	NAME
	5.4.78	
	28.1.77	
STUDER Laufwerkfernsteuerprint		1.128.041
		PAGE 1 of 1



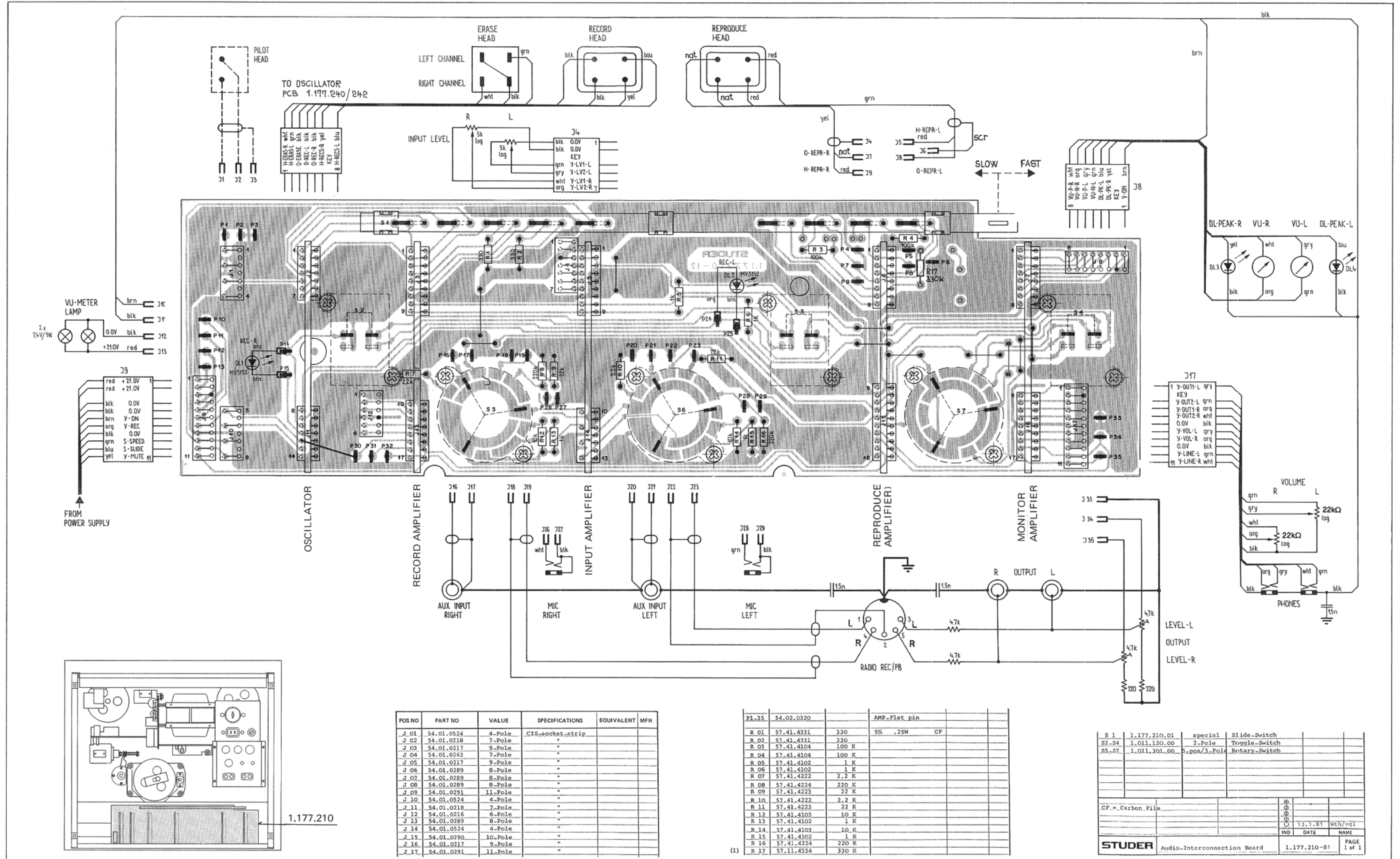


BLOCK DIAGRAM AUDIO





AUDIO INTERCONNECTION PCB 1.177.210.81



POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT	MFR
J 01	54.01.0524	4-Pole	CIS-socket-strip		
J 02	54.01.0218	7-Pole	"		
J 03	54.01.0217	9-Pole	"		
J 04	54.01.0263	7-Pole	"		
J 05	54.01.0217	9-Pole	"		
J 06	54.01.0289	8-Pole	"		
J 07	54.01.0289	8-Pole	"		
J 08	54.01.0289	8-Pole	"		
J 09	54.01.0291	11-Pole	"		
J 10	54.01.0524	4-Pole	"		
J 11	54.01.0218	7-Pole	"		
J 12	54.01.0216	6-Pole	"		
J 13	54.01.0289	8-Pole	"		
J 14	54.01.0524	4-Pole	"		
J 15	54.01.0290	10-Pole	"		
J 16	54.01.0217	9-Pole	"		
J 17	54.01.0291	11-Pole	"		

P1-35	54.02.0320		AMP-Flat pin
R 01	57.41.4331	330	5% .25W CF
R 02	57.41.4331	330	
R 03	57.41.4104	100 K	
R 04	57.41.4104	100 K	
R 05	57.41.4102	1 K	
R 06	57.41.4102	1 K	
R 07	57.41.4222	2.2 K	
R 08	57.41.4224	220 K	
R 09	57.41.4223	22 K	
R 10	57.41.4222	2.2 K	
R 11	57.41.4223	22 K	
R 12	57.41.4103	10 K	
R 13	57.41.4102	1 K	
R 14	57.41.4103	10 K	
R 15	57.41.4102	1 K	
R 16	57.41.4224	220 K	
R 17	57.11.4334	330 K	

S 1	1.177.210.01	special	Slide-Switch
S2-S4	1.011.120.00	2-Pole	Toggle-Switch
S5-S7	1.011.301.00	5-pos/3-Pole	Rotary-Switch

CF = Carbon Film

13.1.81 Wch/vgl

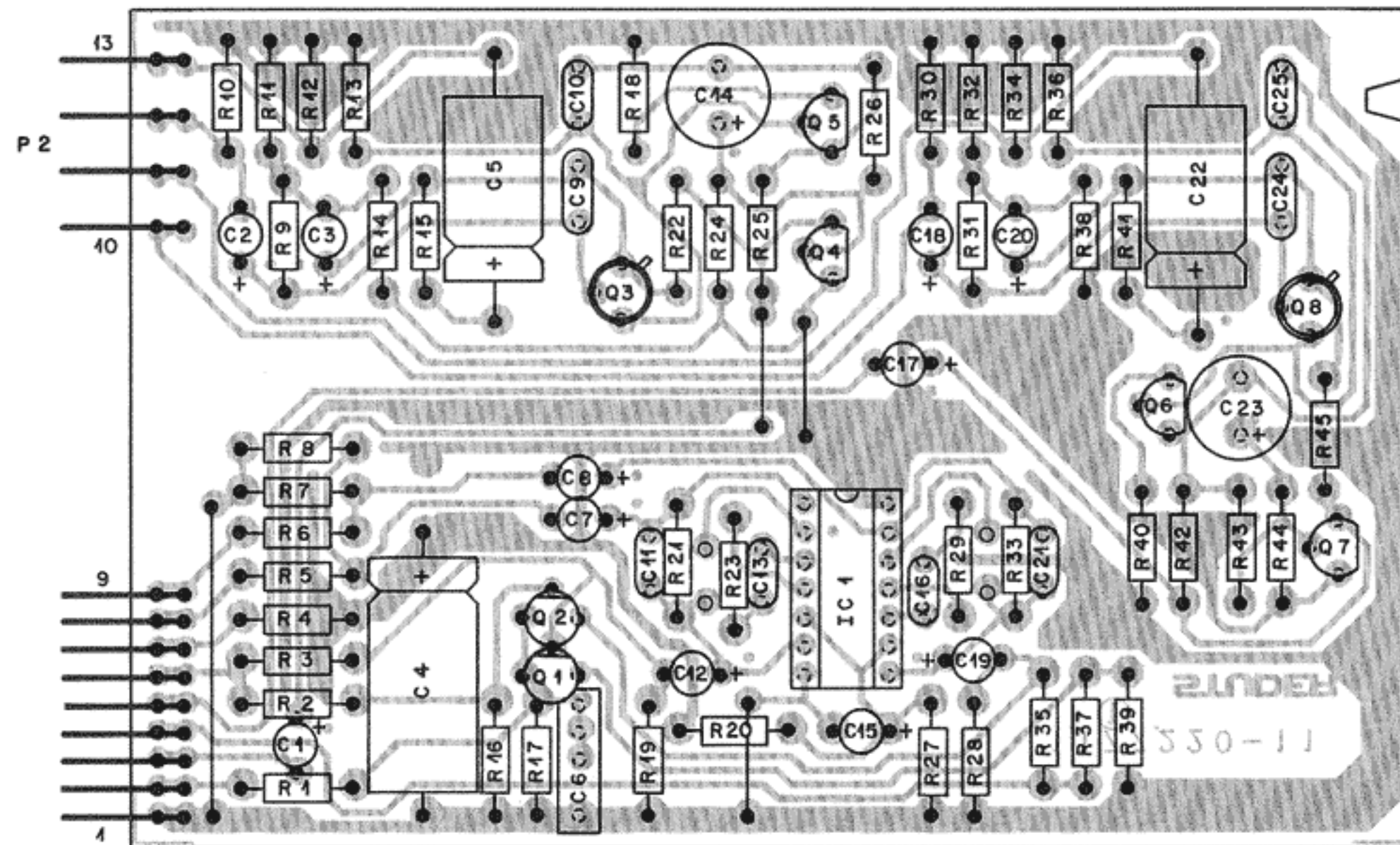
REV DATE NAME

**STUDER** Audio-Interconnection Board 1.177.210-81 PAGE 1 of 1





INPUT AMPLIFIER PCB 1.177.220.00



POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT MFR
C 01	59.30.4100	10 U	-20% 16 V TA	
C 02	59.30.4100	10 U	-20% 16 V TA	
C 03	59.30.4339	3,3 U	-20% 16 V TA	
C 04	59.25.4221	220 U	-10% 25 V EL	
C 05	59.25.3121	125 U	-10% 16 V EL	
C 06	59.31.1104	0,1 U	20% 100V MPETP	
C 07	59.30.4100	10 U	-20% 16 V TA	
C 08	59.30.4100	10 U	-20% 16 V TA	
C 09	59.32.1152	1500P	-10% 500V CER	
C 10	59.32.0220	22 P	-20% 500V CER	
C 11	59.32.0220	22 P	-20% 500V CER	
C 12	59.30.4100	10 U	-20% 16 V TA	
C 13	59.32.3103	0,01U	-20% 40 V CER	
C 14	59.22.5470	47 U	-10% 25 V EL	
C 15	59.30.4100	10 U	-20% 16 V TA	
C 16	59.32.3103	0,01U	-20% 40 V CER	
C 17	59.30.4100	10 U	-20% 16 V TA	
C 18	59.30.4100	10 U	-20% 16 V TA	
C 19	59.30.4100	10 U	-20% 16 V TA	
C 20	59.30.4339	3,3 U	-20% 16 V TA	
C 21	59.32.0220	22 P	-20% 500V CER	
C 22	59.25.3121	125 U	-10% 16 V EL	
C 23	59.22.5470	47 U	-10% 25 V EL	
C 24	59.32.1152	1500P	-10% 500V CER	
C 25	59.32.0220	22 P	-20% 500V CER	
IC 01	50.05.0288	TRA 231		A
P 01	54.01.0220	9 - Pole	PIN-Strip AMP	
P 02	54.01.0470	4 - Pole	PIN-Strip AMP	
Q 01	50.03.0329	SPF 316	P-Channel J-FET	P1228E M,T
Q 02	50.03.0329	SPF 316	P-Channel J-FET	P1228E M,T
Q 03	50.03.0305	BC 179 B	PNP	
Q 04	50.03.0436	BC 107 B	NPN	any
Q 05	50.03.0439	BC 109 C	NPN	
Q 06	50.03.0439	BC 109 C	NPN	
Q 07	50.03.0436	BC 107 B	NPN	any
Q 08	50.03.0305	BC 179 B	PNP	

A = Ates  
M = Motorola  
T = Teledyne  
TI = Texas Instr.

IND 29.9.78  
DATE 5.4.77  
NAME Wartburg

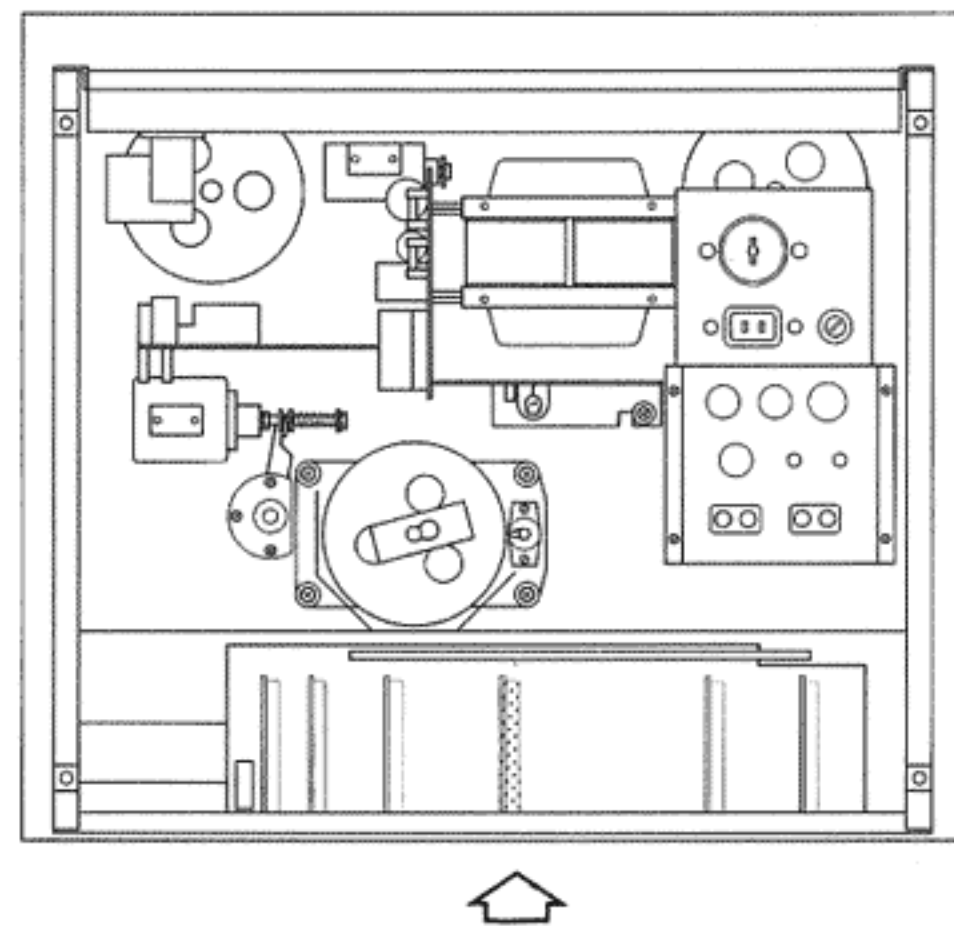
**STUDER** Input Amplifier 1.177.220 PAGE 1 of 2

POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT MFR
R 01	57.41.4104	100 k	5% .25W CF	
R 02	57.41.4103	10 k		
R 03	57.41.4103	10 k		
R 04	57.41.4470	47		
R 05	57.41.4100	10		
R 06	57.41.4100	10		
R 07	57.41.4472	4,7 k		
R 08	57.41.4472	4,7 k		
R 09	57.41.4223	22 k		
R 10	57.41.4224	220 k		
R 11	57.41.4104	100 k		
R 12	57.41.4104	100 k		
R 13	57.41.4682	6,8 k		
R 14	57.41.4184	180 k		
R 15	57.41.4470	47		
R 16	57.41.4103	10 k		
R 17	57.41.4105	1 M		
R 18	57.41.4680	68		
R 19	57.41.4103	10 k		
R 20	57.41.4104	100 k		
R 21	57.41.4153	15 k		
R 22	57.41.4183	18 k		
R 23	57.41.4330	33		
R 24	57.41.4333	33 k		
R 25	57.41.4221	220		
R 26	57.41.4682	6,8 k		
R 27	57.41.4104	100 k		
R 28	57.41.4103	10 k		
R 29	57.41.4330	33		
R 30	57.41.4224	220 k		
R 31	57.41.4223	22 k		
R 32	57.41.4104	100 k		
R 33	57.41.4153	15 k		
R 34	57.41.4104	100 k		
R 35	57.41.4103	10 k		
R 36	57.41.4682	6,8 k		
R 37	57.41.4103	10 k		
R 38	57.41.4184	180 k		
R 39	57.41.4103	10 k		
R 40	57.41.4680	68		
R 41	57.41.4470	47		
R 42	57.41.4221	220		
R 43	57.41.4682	6,8 k		
R 44	57.41.4333	33 k		
R 45	57.41.4183	18 k		

CF = Carbon Film

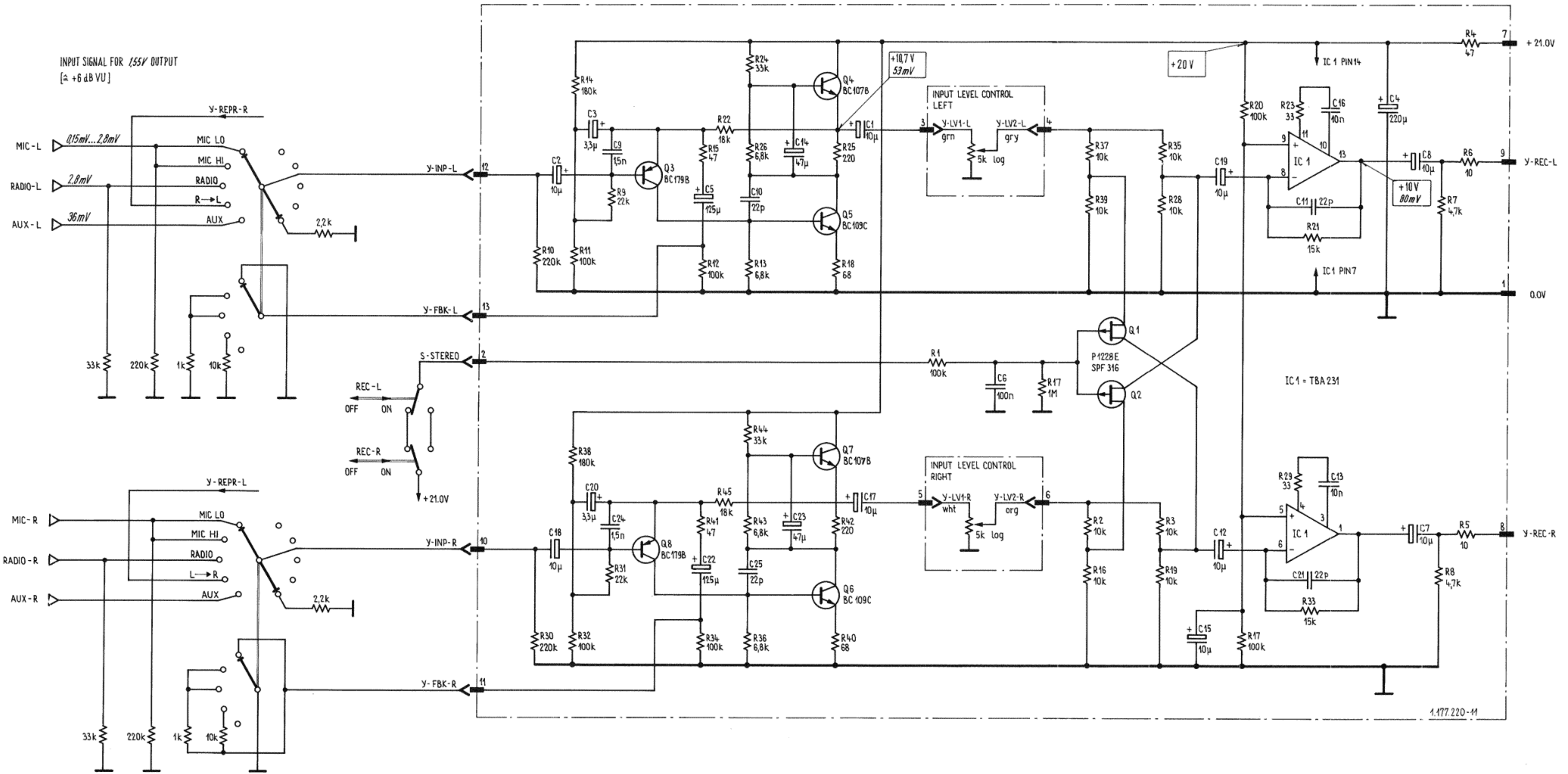
IND 29.9.78  
DATE 5.4.77  
NAME Wartburg

**STUDER** Input Amplifier 1.177.220 PAGE 2 of 2





INPUT AMPLIFIER PCB 1.177.220.00



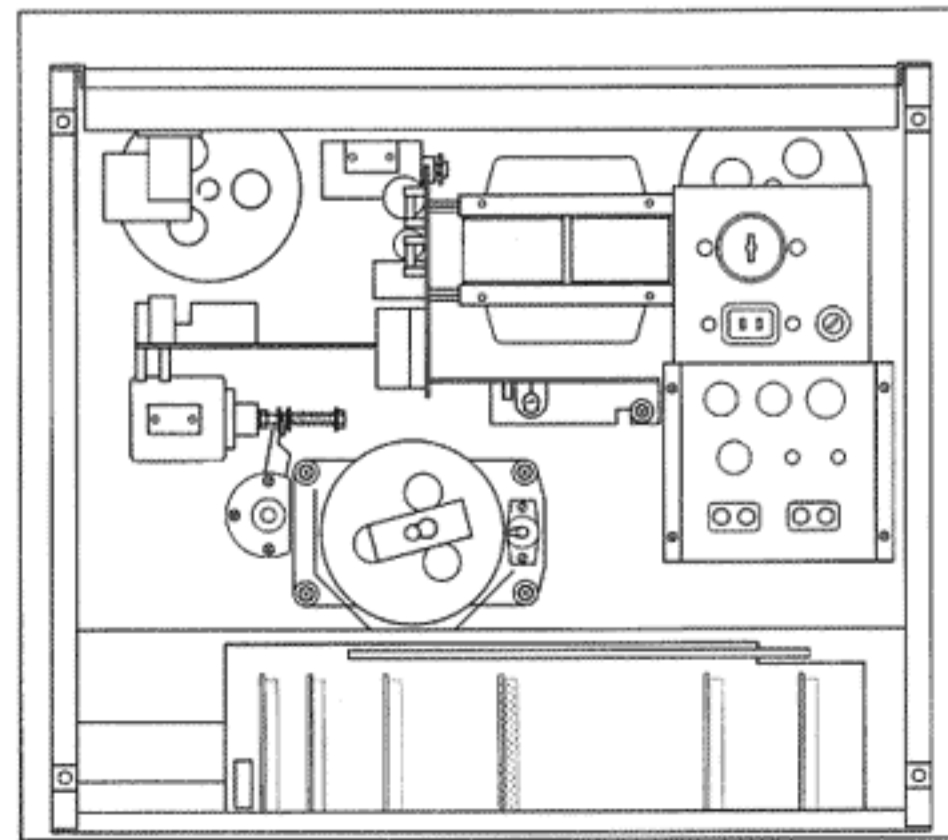
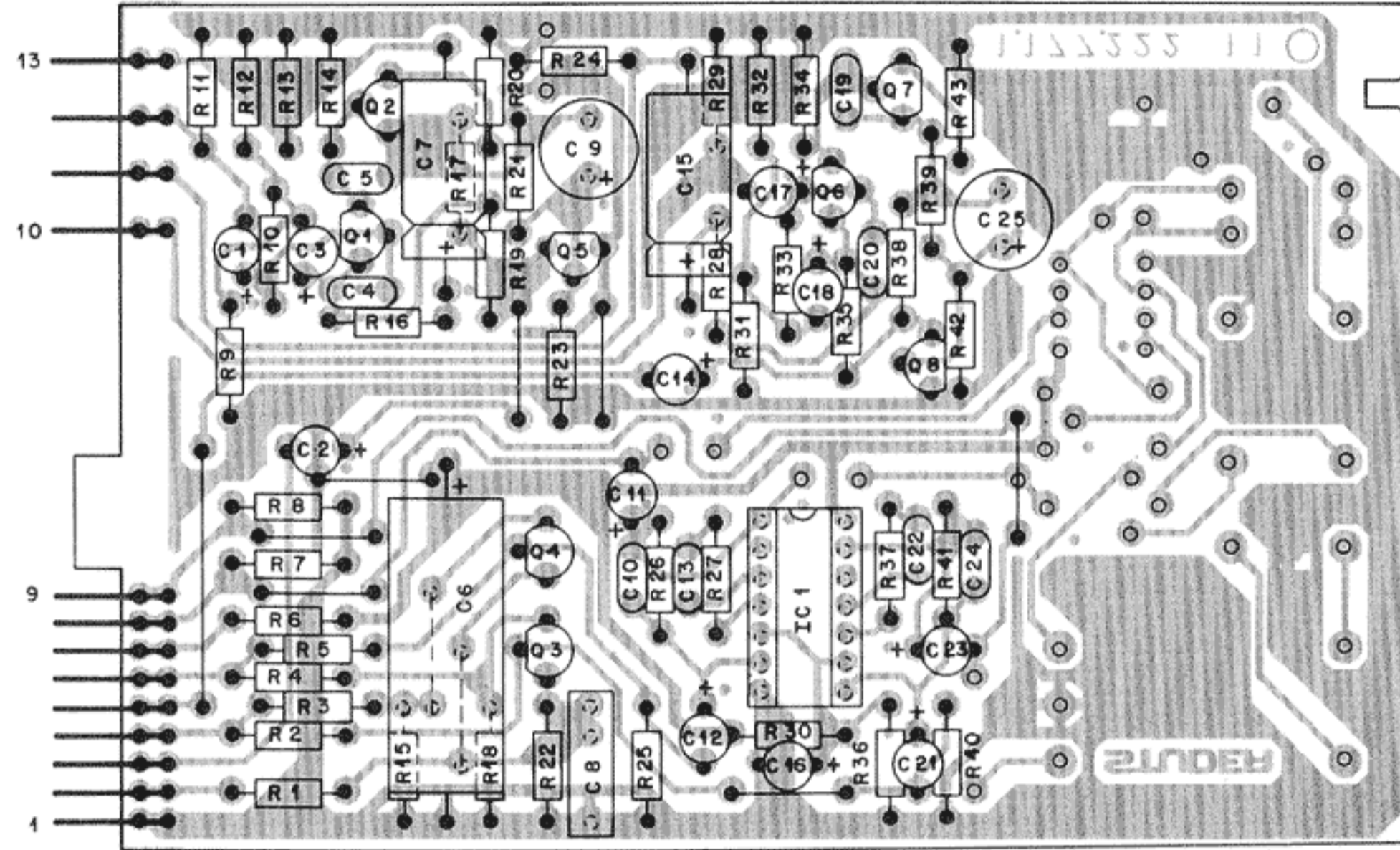
VALID TILL SERIAL No. 38284

SEE SERVICE INFORMATION  
51.3 : C10,11,21,25 (OSCILLATION)





INPUT AMPLIFIER PCB 1.177.221.00



INC.	PCS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
C.....1	99.22.6100	10 uF	10%	35V, E1	
C.....2	99.22.6100	10 uF	10%	35V, E1	
C.....3	99.22.6479	4.7 uF	-10%	50V, E1	
C.....4	99.32.1152	1500 pF	-10%	50V, Cer	
C.....5	99.32.0470	47 pF	-20%	50V, Cer	
C.....6	99.25.4221	220 uF	-10%	25V, E1	
C.....7	99.25.3121	125 uF	-10%	16V, E1	
C.....8	99.31.1104	0.1 uF	20%	100V, MPETP	
C.....9	99.22.5470	47 uF	20%	25V, E1	
C.....10	99.32.0470	47 pF	-20%	50V, Cer	
C.....11	99.22.6100	10 uF	-10%	35V, E1	
C.....12	99.22.6100	10 uF	-10%	35V, E1	
C.....13	99.32.3103	0.01 uF	+80%	40V, Cer	
C.....14	99.22.6100	10 uF	-10%	35V, E1	
C.....15	99.25.3121	125 uF	-10%	16V, E1	
C.....16	99.22.6100	10 uF	-10%	35V, E1	
C.....17	99.22.6100	10 uF	-10%	35V, E1	
C.....18	99.22.6479	4.7 uF	-10%	50V, E1	
C.....19	99.32.0470	47 pF	-20%	50V, Cer	
C.....20	99.32.1152	1500 pF	-10%	50V, Cer	
C.....21	99.22.6100	10 uF	-10%	35V, E1	
C.....22	99.32.3103	0.01 uF	+80%	40V, Cer	
C.....23	99.22.6100	10 uF	-10%	35V, E1	
C.....24	99.32.0470	47 pF	-20%	50V, E1	
C.....25	99.22.5470	47 uF	20%	25V, E1	

INC.	PCS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
IC.....1	50.05.0288	TBA 231			A
P.....1	54.01.0220	9-Pole		Pin-Strip	AMP
P.....2	54.01.0470	4-Pole		Pin-Strip	AMP
Q.....1	50.03.0305	BC 179 B		PNP	
Q.....2	50.03.0439	BC 109 C		NPN	
Q.....3	50.03.0329	SPF 316		P-channel J-FET	M,T
Q.....4	50.03.0329	SPF 316		P-channel J-FET	M,T
Q.....5	50.03.0436	BC 107 B		NPN	
Q.....6	50.03.0305	BC 179 B		PNP	

STUDER 82/12/06 RW INPUT AMPL- MK 2 1.177.221.00 PAGE 1

INC.	PCS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
Q.....7	50.03.0439	BC 109 C		NPN	
Q.....8	50.03.0436	BC 107 B		NPN	
R.....1	57.11.4104	100 kOhm	5%	0.25W, CF	
R.....2	57.11.4103	10 kOhm	5%	0.25W, CF	
R.....3	57.11.4103	10 kOhm	5%	0.25W, CF	
R.....4	57.11.4103	10 kOhm	5%	0.25W, CF	
R.....5	57.11.4103	10 kOhm	5%	0.25W, CF	
R.....6	57.11.4670	47 Ohm	5%	0.25W, CF	
R.....7	57.11.4672	4.7 kOhm	5%	0.25W, CF	
R.....8	57.11.4672	4.7 kOhm	5%	0.25W, CF	
R.....9	57.11.4184	180 kOhm	5%	0.25W, CF	
R.....10	57.11.4223	22 kOhm	5%	0.25W, CF	
R.....11	57.11.4224	220 kOhm	5%	0.25W, CF	
R.....12	57.11.4104	100 kOhm	5%	0.25W, CF	
R.....13	57.11.4104	100 kOhm	5%	0.25W, CF	
R.....14	57.11.4682	6.8 kOhm	5%	0.25W, CF	
R.....15	57.11.4103	10 kOhm	5%	0.25W, CF	
R.....16	57.11.4470	47 Ohm	5%	0.25W, CF	
R.....17	57.11.4221	220 Ohm	5%	0.25W, CF	
R.....18	57.11.4103	10 kOhm	5%	0.25W, CF	
R.....19	57.11.4183	18 kOhm	5%	0.25W, CF	
R.....20	57.11.4680	68 Ohm	5%	0.25W, CF	
R.....21	57.11.4682	6.8 kOhm	5%	0.25W, CF	
R.....22	57.11.4105	1 MOhm	5%	0.25W, CF	
R.....23	57.11.4333	33 kOhm	5%	0.25W, CF	
R.....24	57.11.4104	100 kOhm	5%	0.25W, CF	
R.....25	57.11.4103	10 kOhm	5%	0.25W, CF	
R.....26	57.11.4153	15 kOhm	5%	0.25W, CF	
R.....27	57.11.4330	33 Ohm	5%	0.25W, CF	
R.....28	57.11.4670	47 Ohm	5%	0.25W, CF	
R.....29	57.11.4224	220 kOhm	5%	0.25W, CF	
R.....30	57.11.4104	100 kOhm	5%	0.25W, CF	
R.....31	57.11.4184	180 kOhm	5%	0.25W, CF	
R.....32	57.11.4104	100 kOhm	5%	0.25W, CF	
R.....33	57.11.4223	22 kOhm	5%	0.25W, CF	
R.....34	57.11.4682	6.8 kOhm	5%	0.25W, CF	

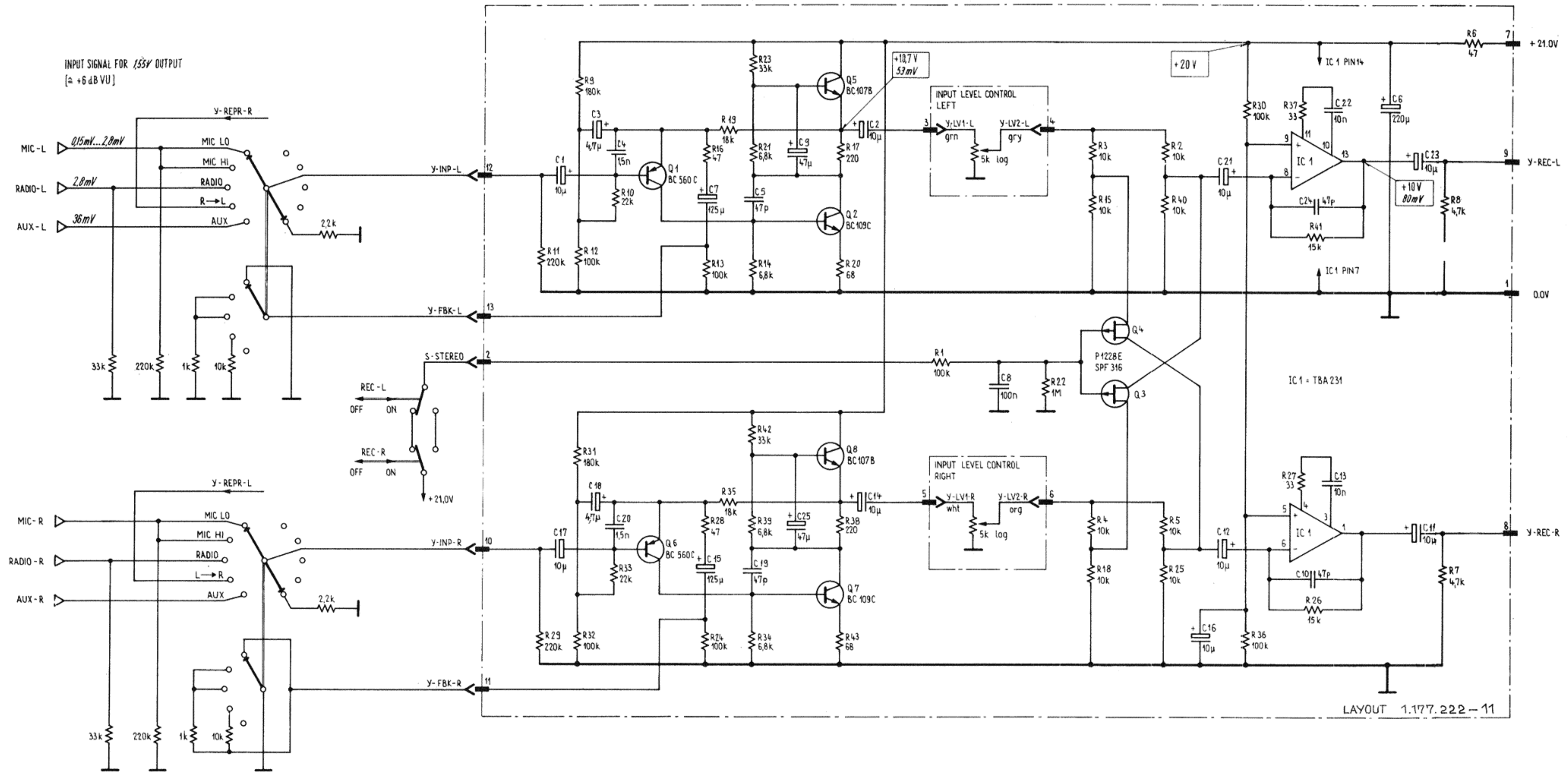
STUDER 82/12/06 RW INPUT AMPL- MK 2 1.177.221.00 PAGE 2

INC.	PCS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
R.....35	57.11.4183	18 kOhm	5%	0.25W, CF	
R.....36	57.11.4104	100 kOhm	5%	0.25W, CF	
R.....37	57.11.4330	33 Ohm	5%	0.25W, CF	
R.....38	57.11.4221	220 Ohm	5%	0.25W, CF	
R.....39	57.11.4682	6.8 kOhm	5%	0.25W, CF	
R.....40	57.11.4103	10 kOhm	5%	0.25W, CF	
R.....41	57.11.4153	15 kOhm	5%	0.25W, CF	
R.....42	57.11.4333	33 kOhm	5%	0.25W, CF	
R.....43	57.11.4680	68 Ohm	5%	0.25W, CF	

E=Electrolytic, C=Ceramic, T=Tantalum, MPETP=Metallized polyest.  
 Manufacturer: Ray=Raytheon, I=Ilex Instruments, A=SGS-Ates,  
 M=Motorola, T=Teleonye, N=National,  
 ORIG 82/02/08 (02) 81/12/21  
 STUDER 82/12/06 RW INPUT AMPL- MK 2 1.177.221.00 PAGE 3



INPUT AMPLIFIER PCB 1.177.221.00

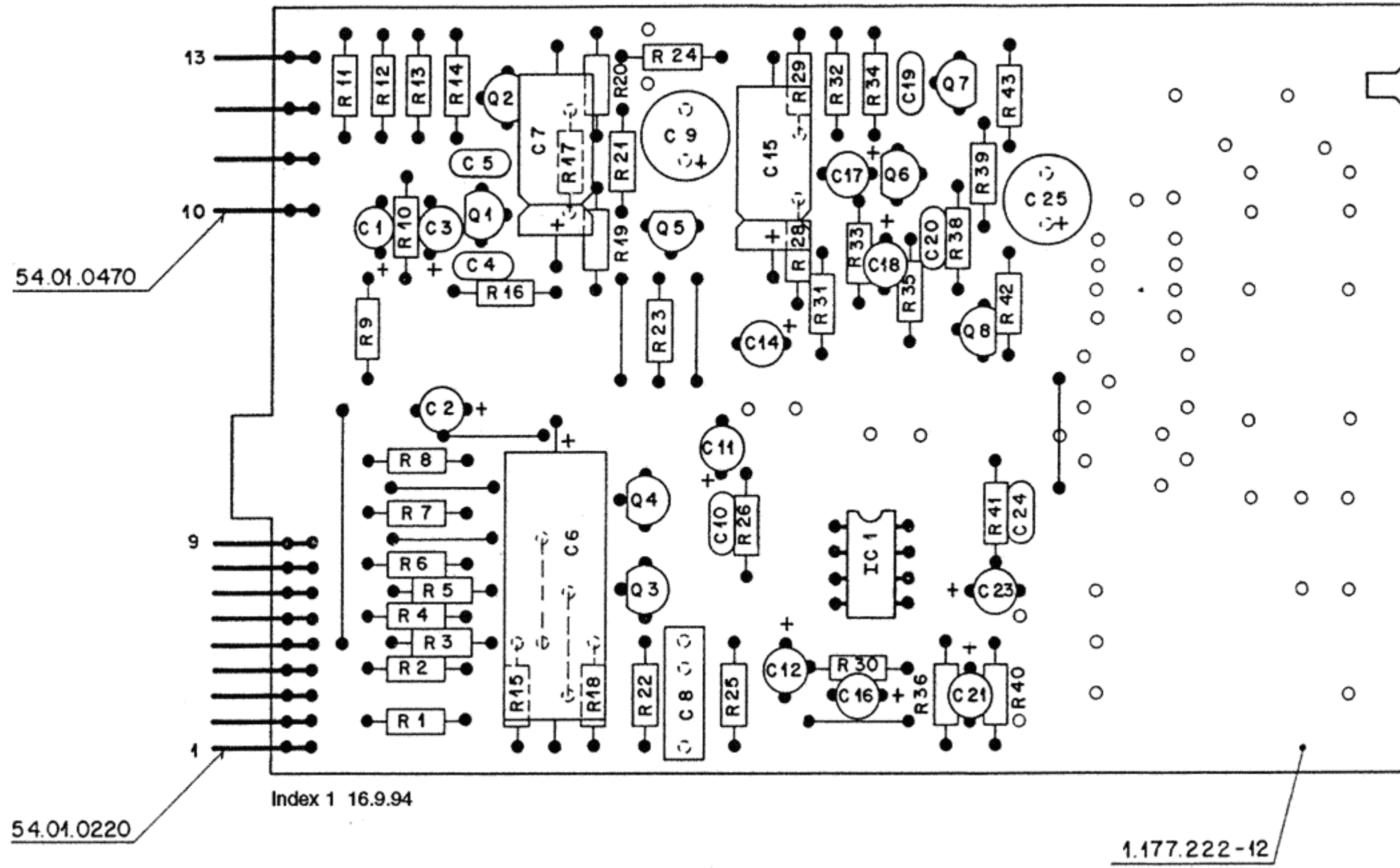


VALID SINCE SERIAL No. 38285





INPUT AMPLIFIER PCB 1.177.221.81



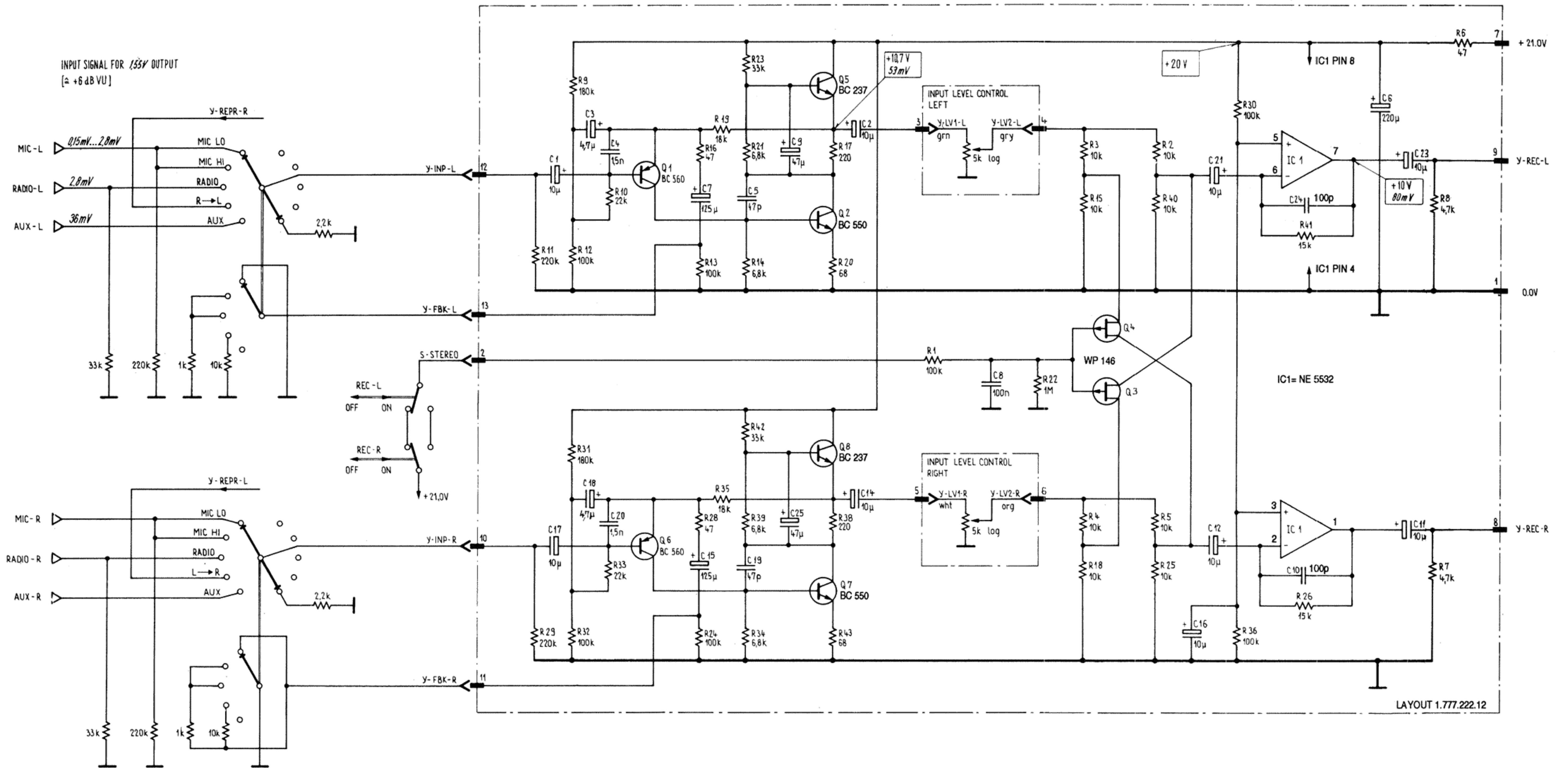
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.22.6100	10u	EL	35V, 20%, RM5
0	C 2	59.22.6100	10u	EL	35V, 20%, RM5
0	C 3	59.22.8479	4u7	EL	50V, 20%, RM5
0	C 4	59.32.1152	1n5	C	1500 P, 10%, 400V, CER
0	C 5	59.32.1470	47p	C	47 P, 10%, 400V, CER
0	C 6	59.25.4221	220u	C-EL	20%, 25V
0	C 7	59.25.3221	220u	C-EL	20%, 16V
0	C 8	59.06.0104	100n	PETP	63V, 10%, RM5
0	C 9	59.22.5470	47u	EL	25V, 20%, RM5
0	C 10	59.32.1101	100p	C	100 P, 10%, 400V, CER
1	C 11	59.99.2702		C	10 U, .25 V, EL
1	C 12	59.99.2702		C	10 U, .25 V, EL
0	C 14	59.22.6100	10u	EL	35V, 20%, RM5
0	C 15	59.25.3221	220u	C-EL	20%, 16V
1	C 16	59.99.2702		C	10 U, .25 V, EL
0	C 17	59.22.6100	10u	EL	35V, 20%, RM5
0	C 18	59.22.8479	4u7	EL	50V, 20%, RM5
0	C 19	59.32.1470	47p	C	47 P, 10%, 400V, CER
0	C 20	59.32.1152	1n5	C	1500 P, 10%, 400V, CER
1	C 21	59.99.2702		C	10 U, .25 V, EL
1	C 23	59.99.2702		C	10 U, .25 V, EL
0	C 24	59.32.1101	100p	C	100 P, 10%, 400V, CER
0	C 25	59.22.5470	47u	EL	25V, 20%, RM5
0	IC 1	50.09.0105		NE5532N	IC NE 5532 N, RC 5532 NB .A
0	P 1	54.01.0220		9-P	P LEISTE 9 POL CIS WINKEL
0	P 2	54.01.0470			P LEISTE 4 POL CIS WINKEL
0	Q 1	50.03.0496		BC327-40	BC 327-40
0	Q 2	50.03.0497		BC337-40	BC 337-40
0	Q 3	50.03.0329		P 1087	P 1087
0	Q 4	50.03.0329		P 1087	P 1087
0	Q 5	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 6	50.03.0496		BC327-40	BC 327-40
0	Q 7	50.03.0497		BC337-40	BC 337-40
0	Q 8	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
1	R 1	57.11.3104		100k	MF, 1%, 0207
1	R 2	57.11.3103		10k	MF, 1%, 0207
1	R 3	57.11.3103		10k	MF, 1%, 0207
1	R 4	57.11.3103		10k	MF, 1%, 0207
1	R 5	57.11.3103		10k	MF, 1%, 0207
1	R 6	57.11.3470		47R	MF, 1%, 0207
1	R 7	57.11.3472		4k7	MF, 1%, 0207
1	R 8	57.11.3472		4k7	MF, 1%, 0207
1	R 9	57.11.3184		180k	MF, 1%, 0207
1	R 10	57.11.3223		22k	MF, 1%, 0207
1	R 11	57.11.3224		220k	MF, 1%, 0207
1	R 12	57.11.3104		100k	MF, 1%, 0207
1	R 13	57.11.3104		100k	MF, 1%, 0207
1	R 14	57.11.3682		6k8	MF, 1%, 0207
1	R 15	57.11.3103		10k	MF, 1%, 0207
1	R 16	57.11.3470		47R	MF, 1%, 0207
1	R 17	57.11.3221		220R	MF, 1%, 0207
1	R 18	57.11.3103		10k	MF, 1%, 0207
1	R 19	57.11.3183		18k	MF, 1%, 0207
1	R 20	57.11.3680		68R	MF, 1%, 0207
1	R 21	57.11.3682		6k8	MF, 1%, 0207
1	R 22	57.11.3105		1M0	MF, 1%, 0207
1	R 23	57.11.3333		33k	MF, 1%, 0207
1	R 24	57.11.3104		100k	MF, 1%, 0207
1	R 25	57.11.3103		10k	MF, 1%, 0207
1	R 26	57.11.3153		15k	MF, 1%, 0207
1	R 28	57.11.3470		47R	MF, 1%, 0207
1	R 29	57.11.3224		220k	MF, 1%, 0207
1	R 30	57.11.3104		100k	MF, 1%, 0207
1	R 31	57.11.3184		180k	MF, 1%, 0207
1	R 32	57.11.3104		100k	MF, 1%, 0207
1	R 33	57.11.3223		22k	MF, 1%, 0207
1	R 34	57.11.3682		6k8	MF, 1%, 0207
1	R 35	57.11.3183		18k	MF, 1%, 0207
1	R 36	57.11.3104		100k	MF, 1%, 0207
1	R 38	57.11.3221		220R	MF, 1%, 0207
1	R 39	57.11.3682		6k8	MF, 1%, 0207
1	R 40	57.11.3103		10k	MF, 1%, 0207
1	R 41	57.11.3153		15k	MF, 1%, 0207
1	R 42	57.11.3333		33k	MF, 1%, 0207
1	R 43	57.11.3680		68R	MF, 1%, 0207

Comments:  
 (01) 06.10.86 Low leakage replacement type necessary for better S/N ratio.  
 (02) 16.9.94 R1-R43 2% changed to 1%

STUDER REGENSDORF ZÜRICH		"ESE" INPUT AMPLIFIER MKII		1.177.221.81	
Ausgabe		Auszeichnung		Kopie für	
Datum		Gez		Gez	
16.9.94		[Signature]		[Signature]	
4.11.85		[Signature]		[Signature]	

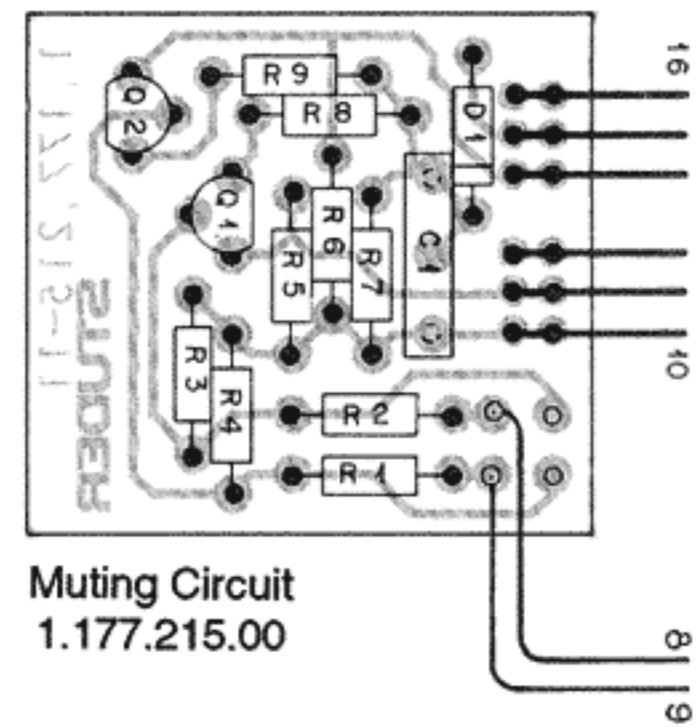
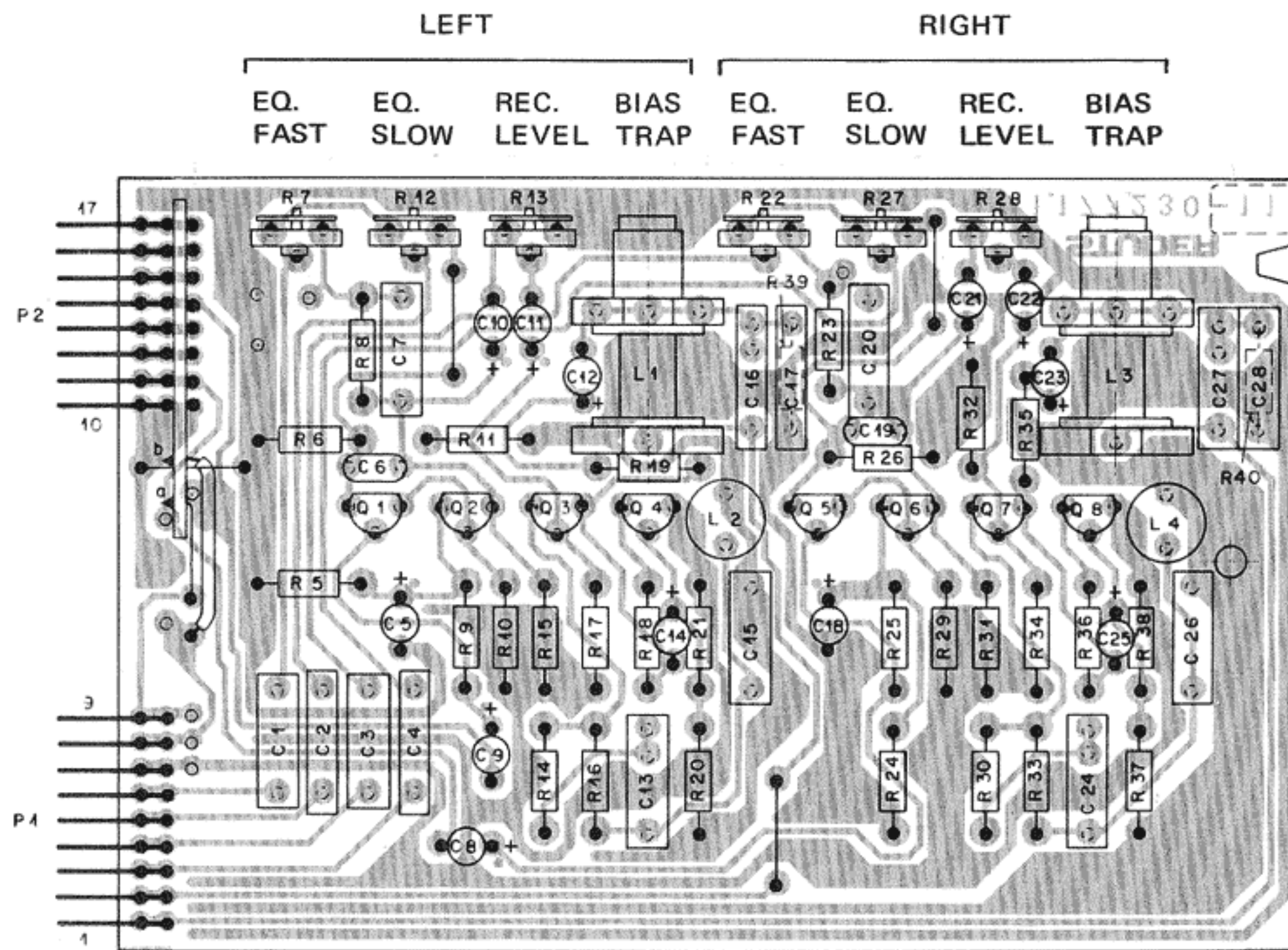


INPUT AMPLIFIER PCB 1.177.221.81

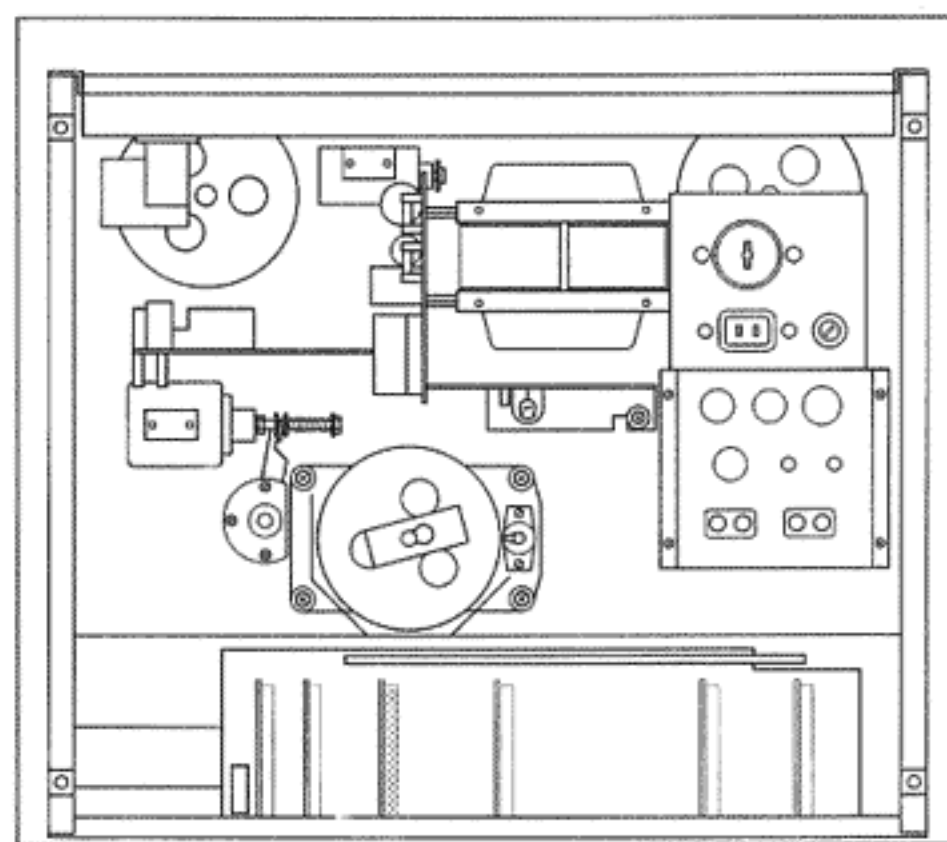




RECORD AMPLIFIER PCB (NAB 3¼-7½ ips) 1.177.230.81  
- Muting Circuit 1.177.215.00



Muting Circuit  
1.177.215.00



INC.	POS. NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
C.....1		59.11.6272	2700 pF	5%, 400V, PC	
C.....2		59.11.6272	2700 pF	5%, 400V, PC	
C.....3		59.11.6272	2700 pF	5%, 400V, PC	
C.....4		59.11.6272	2700 pF	5%, 400V, PC	
C.....5		59.22.3101	100 uF	10%, 12V, E1	
C.....6		59.32.0220	22 pF	20%, 500V, Cor	
C.....7		59.31.6104	0.1 uF	10%, 100V, MPETP	
C.....8		59.22.8479	4.7 uF	10%, 50V, E1	
C.....9		59.22.8479	4.7 uF	10%, 50V, E1	
C.....10		59.22.8479	4.7 uF	10%, 50V, E1	
C.....11		59.22.8109	1 uF	10%, 50V, E1	
C.....12		59.22.8479	4.7 uF	10%, 50V, E1	
C.....13		59.99.0257	0.033uF	10%, 160V, PETP	
C.....14		59.22.3470	47 uF	10%, 10V, E1	
C.....15		59.31.9103	0.01 uF	10%, 100V, PETP	
C.....16		59.11.6471	470 pF	5%, 400V, PC	
C.....17		59.11.6332	3300 pF	5%, 400V, PC	
C.....18		59.22.3101	100 uF	10%, 12V, E1	
C.....19		59.32.0220	22 pF	20%, 500V, Cor	
C.....20		59.31.6104	0.1 uF	10%, 100V, MPETP	
C.....21		59.22.8479	4.7 uF	10%, 50V, E1	
C.....22		59.22.8109	1 uF	10%, 50V, E1	
C.....23		59.22.8479	4.7 uF	10%, 50V, E1	
C.....24		59.99.0257	0.033uF	10%, 160V, PETP	
C.....25		59.22.3470	47 uF	10%, 10V, E1	
C.....26		59.31.9103	0.01 uF	10%, 100V, PETP	
C.....27		59.11.6471	470 pF	5%, 400V, PC	
C.....28		59.11.6332	3300 pF	5%, 400V, PC	

L.....1		1.177.231.00			5
L.....2		62.02.1222	2.2 mH	5%	5
L.....3		1.177.231.00			5
L.....4		62.02.1222	2.2 mH	5%	5
P.....1		56.01.0270	9-Pole	Pin-Strip	AMP
P.....2		56.01.0270	9-Pole	Pin-Strip	AMP

STUDER R2/11/30 RW RECORD AMPLIFIER 1.177.230.81 PAGE 1

INC.	POS. NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
Q.....1		50.03.0439	BC 109 C	NPN	
Q.....2		50.03.0436	BC 107 B	NPN	
Q.....3		50.03.0436	BC 107 B	NPN	
Q.....4		50.03.0436	BC 107 B	NPN	
Q.....5		50.03.0439	BC 109 C	NPN	
Q.....6		50.03.0436	BC 107 B	NPN	
Q.....7		50.03.0436	BC 107 B	NPN	
Q.....8		50.03.0436	BC 107 B	NPN	

P.....1					
P.....2					
P.....3					
P.....4					
P.....5		57.11.4821	820 Ohm	5%, 0.25W, CF	
P.....6		57.11.4332	3.3 kOhm	5%, 0.25W, CF	
P.....7		58.02.4223	22 kOhm	10%, 0.1 W, CF	
P.....8		57.11.4563	56 kOhm	5%, 0.25W, CF	
P.....9		57.11.4104	100 kOhm	5%, 0.25W, CF	
P.....10		57.11.4154	150 kOhm	5%, 0.25W, CF	
P.....11		57.11.4563	56 kOhm	5%, 0.25W, CF	
P.....12		58.02.4223	22 kOhm	10%, 0.1 W, CF	
P.....13		58.02.4223	22 kOhm	10%, 0.1 W, CF	
P.....14		57.11.4472	4.7 kOhm	5%, 0.25W, CF	
P.....15		57.11.4682	6.8 kOhm	5%, 0.25W, CF	
P.....16		57.11.4681	680 Ohm	5%, 0.25W, CF	
P.....17		57.11.4224	220 kOhm	5%, 0.25W, CF	
P.....18		57.11.4331	330 Ohm	5%, 0.25W, CF	
P.....19		57.11.4102	1 kOhm	5%, 0.25W, CF	
P.....20		57.11.4224	220 kOhm	5%, 0.25W, CF	
P.....21		57.11.4104	100 kOhm	5%, 0.25W, CF	
P.....22		58.02.4223	22 kOhm	10%, 0.1 W, CF	
P.....23		57.11.4563	56 kOhm	5%, 0.25W, CF	
P.....24		57.11.4821	820 Ohm	5%, 0.25W, CF	
P.....25		57.11.4104	100 kOhm	5%, 0.25W, CF	
P.....26		57.11.4332	3.3 kOhm	5%, 0.25W, CF	
P.....27		58.02.4223	22 kOhm	10%, 0.1 W, CF	
P.....28		58.02.4223	22 kOhm	10%, 0.1 W, CF	

STUDER R2/11/30 RW RECORD AMPLIFIER 1.177.230.81 PAGE 2

INC.	POS. NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
P.....29		57.11.4154	150 kOhm	5%, 0.25W, CF	
P.....30		57.11.4472	4.7 kOhm	5%, 0.25W, CF	
P.....31		57.11.4682	6.8 kOhm	5%, 0.25W, CF	
P.....32		57.11.4563	56 kOhm	5%, 0.25W, CF	
P.....33		57.11.4681	680 Ohm	5%, 0.25W, CF	
P.....34		57.11.4224	220 kOhm	5%, 0.25W, CF	
P.....35		57.11.4102	1 kOhm	5%, 0.25W, CF	
P.....36		57.11.4331	330 Ohm	5%, 0.25W, CF	
P.....37		57.11.4224	220 kOhm	5%, 0.25W, CF	
P.....38		57.11.4104	100 kOhm	5%, 0.25W, CF	
P.....39		57.11.4104	100 kOhm	5%, 0.25W, CF	
P.....40		57.11.4104	100 kOhm	5%, 0.25W, CF	

E1=Electrolytic, Cer=Ceramic, PC=Polycarbonate, MPETP=Metalized Polyester  
PETP=Polyester  
Manufacturer: S+STUDER

CR1: 02/02/08 (02) 01/12/21

STUDER R2/11/30 RW RECORD AMPLIFIER 1.177.230.81 PAGE 3

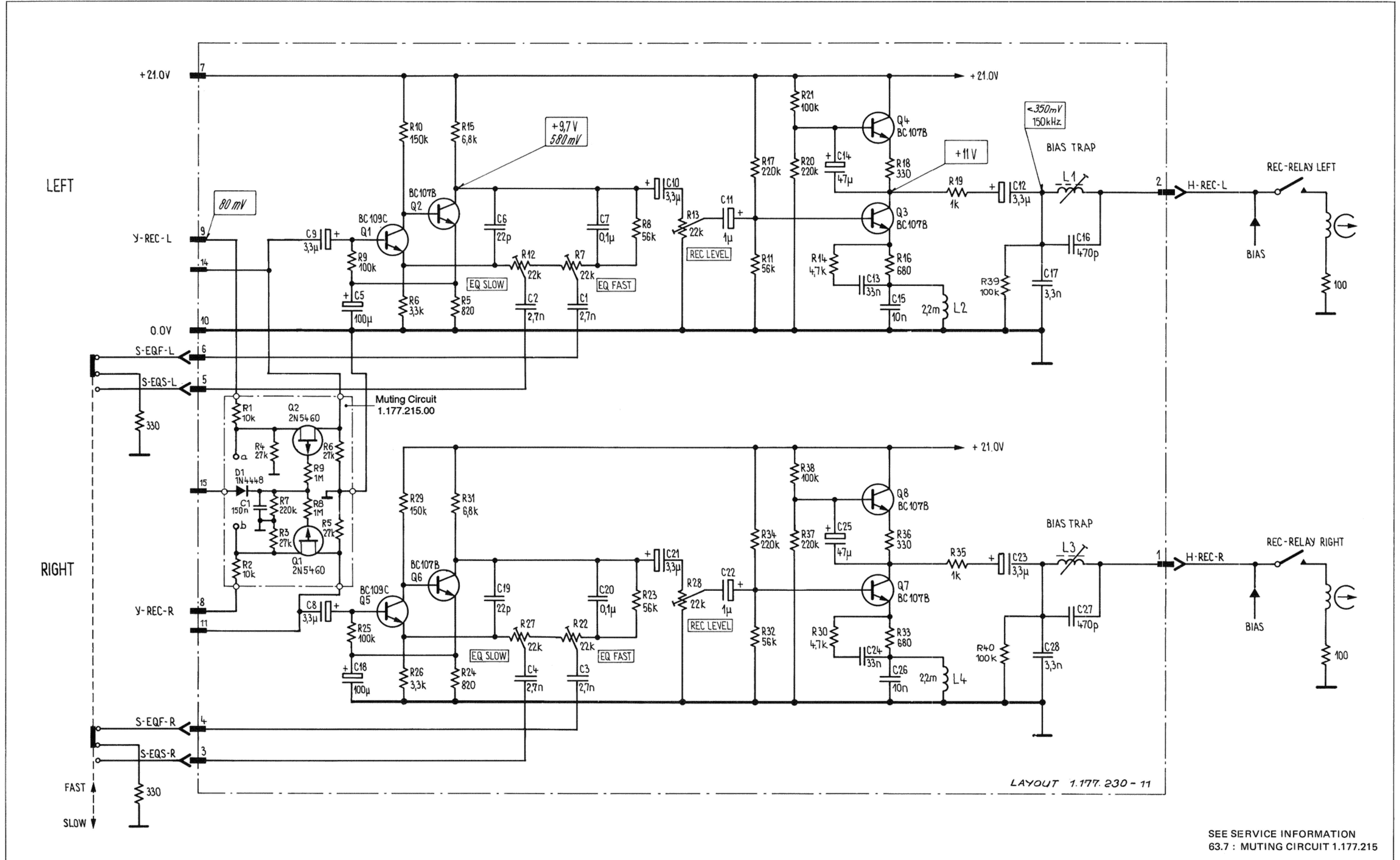
Muting Circuit  
1.177.215.00

IND	POS NO	PART NO	VALUE	SPECIFICATIONS/EQUIVALENT	MFR
③	C1	59.31.1154	150kF		
	D1	50.04.0125	AW448	S	
	J1	54.01.0227	3Pol	CIS	
	J2	54.01.0227	3Pol	CIS	
	Q1	50.03.0312	2N540	PCH Fet	
	Q2	50.03.0312	2N540	PCH Fet	
②	R1	57.11.4103	10k		
②	R2	57.11.4103	10k		
	R3	57.11.4273	27k		
	R4	57.11.4273	27k		
	R5	57.11.4273	27k		
	R6	57.11.4273	27k		
	R7	57.11.4224	220k		
①	R8	57.11.4105	1M		
①	R9	57.11.4105	1M		

IND	DATE	NAME
④		
③	11.3.81	Wagthaler
②	28.1.81	Wagthaler
①	18.1.81	Gantner
①	18.12.80	Gantner

STUDER Muting Circuit PL 1.177.215-00 PAGE 1 OF 1

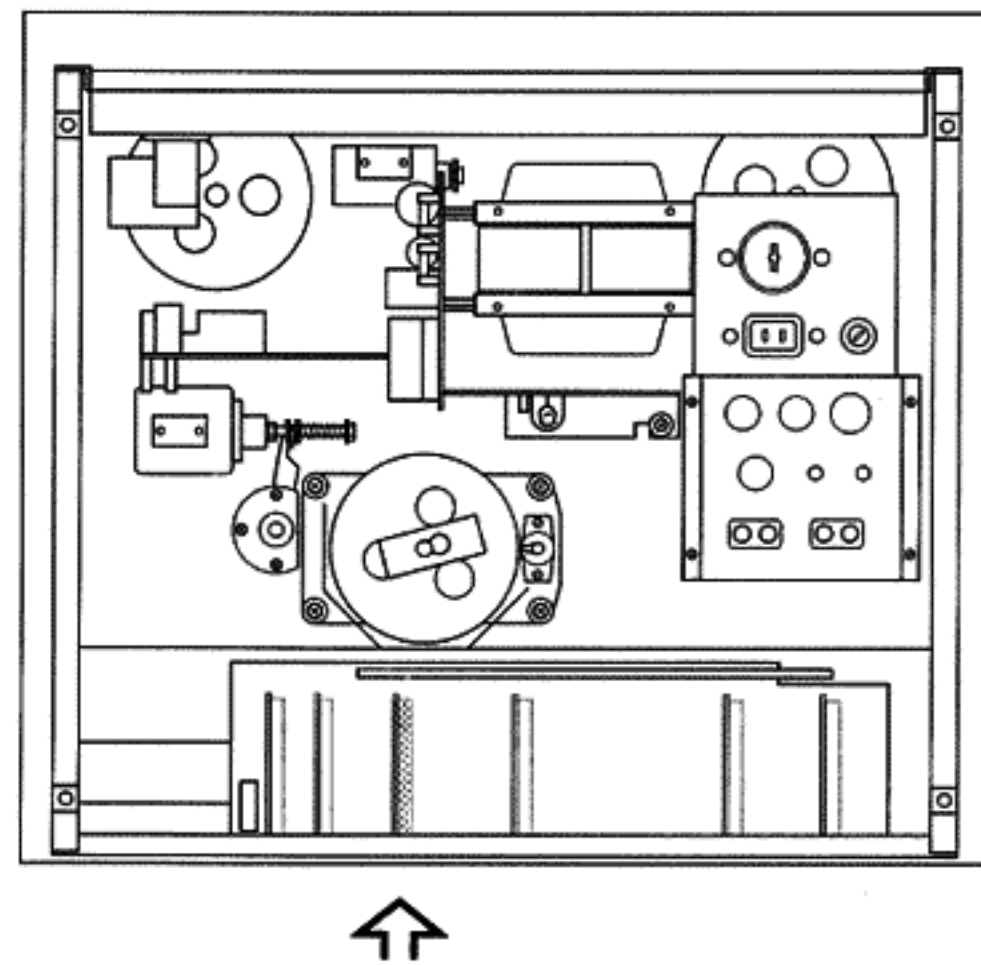
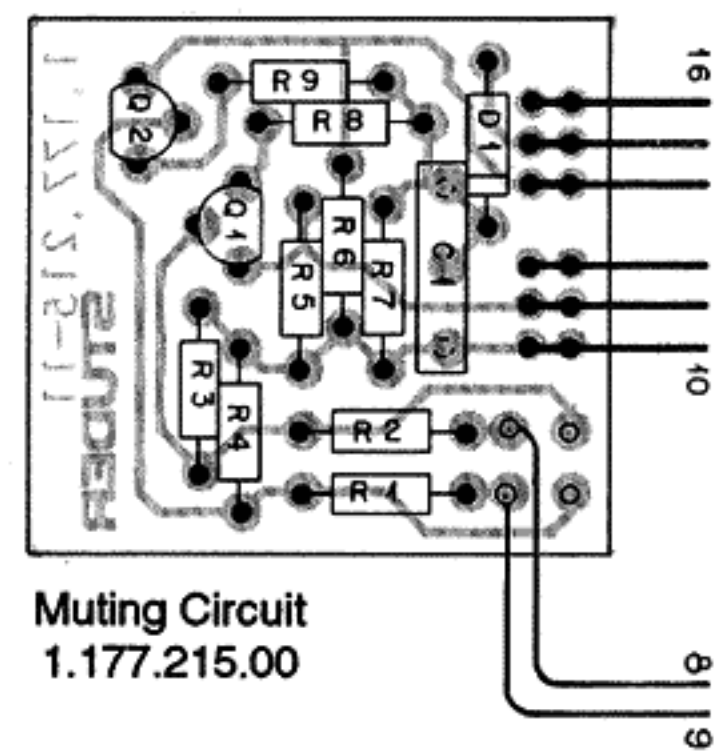
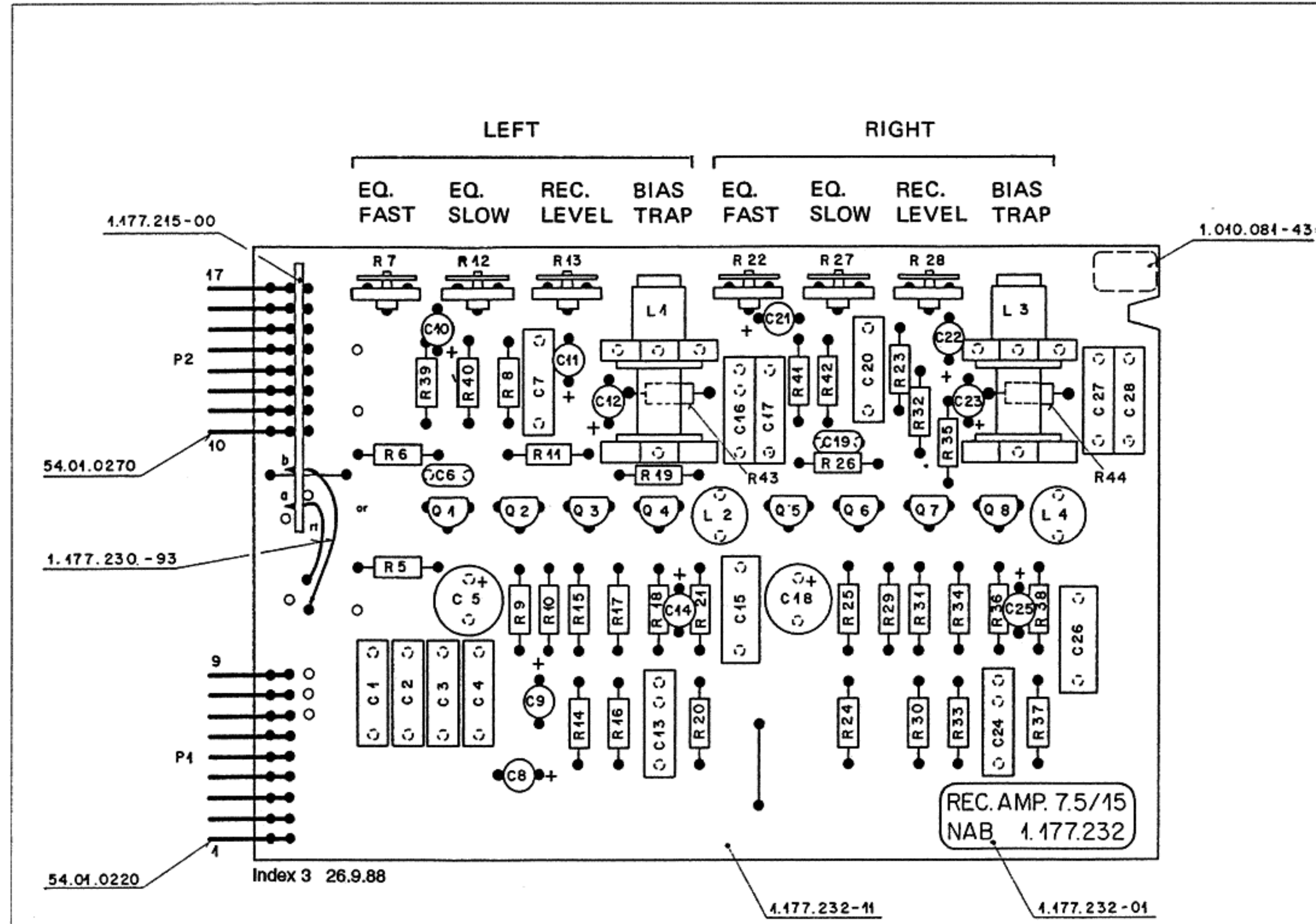
RECORD AMPLIFIER PCB (NAB 3¼-7½ ips) 1.177.230.81  
- Muting Circuit 1.177.215.00



SEE SERVICE INFORMATION  
63.7 : MUTING CIRCUIT 1.177.215



RECORD AMPLIFIER PCB (NAB 7 1/2-15 ips) 1.177.232.81  
- Muting Circuit 1.177.215.00



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.11.3682			C 6800 P , 5% , 160V , PC
0	C 2	59.11.6272			C 2700 P , 5% , 400V , PC
0	C 3	59.11.3682			C 6800 P , 5% , 160V , PC
0	C 4	59.11.6272			C 2700 P , 5% , 400V , PC
0	C 5	59.22.3101	100u		EL 10V , 20% , RM5
0	C 6	59.32.0220			C 22 P , 20% , 400V , CER
0	C 7	59.31.6104	100n		C .1 U , 10% , 100V , MPETP
0	C 8	59.22.8479	4u7		EL 50V , 20% , RM5
0	C 9	59.22.8479	4u7		EL 50V , 20% , RM5
0	C 10	59.22.8479	4u7		EL 50V , 20% , RM5
0	C 11	59.22.8109	1u		EL 50V , 20% , RM5
0	C 12	59.22.8479	4u7		EL 50V , 20% , RM5
0	C 13	59.11.3682			C 6800 P , 5% , 160V , PC
0	C 14	59.22.3470	47u		EL 10V , 20% , RM5
0	C 15	59.31.9103			C .01 U , 10% , 160V , MPETP
0	C 16	59.11.6471			C 470 P , 5% , 400V , PC
0	C 17	59.11.6332			C 3300 P , 5% , 400V , PC
0	C 18	59.22.3101	100u		EL 10V , 20% , RM5
0	C 19	59.32.0220			C 22 P , 20% , 400V , CER
0	C 20	59.31.6104	100n		C .1 U , 10% , 100V , MPETP
0	C 21	59.22.8479	4u7		EL 50V , 20% , RM5
0	C 22	59.22.8109	1u		EL 50V , 20% , RM5
0	C 23	59.22.8479	4u7		EL 50V , 20% , RM5
0	C 24	59.11.3682			C 6800 P , 5% , 160V , PC
0	C 25	59.22.3470	47u		EL 10V , 20% , RM5
0	C 26	59.31.9103			C .01 U , 10% , 160V , MPETP
0	C 27	59.11.6471			C 470 P , 5% , 400V , PC
0	C 28	59.11.6332			C 3300 P , 5% , 400V , PC
0	L 1	1.177.231.00			SPERRKREISSPULE
0	L 2	62.02.1222			L 2.2 M , 5% , D 8
0	L 3	1.177.231.00			SPERRKREISSPULE
0	L 4	62.02.1222			L 2.2 M , 5% , D 8
0	P 1	54.01.0220	9-P		P LEISTE 9 POL CIS WINKEL
0	P 2	54.01.0270	8-P		P LEISTE 8 POL CIS WINKEL
0	Q 1	50.03.0439			BC 239 C , BC 549 C NPN
0	Q 2	50.03.0436	BC237B		BC 237 B , 547 B , 550 B ,
0	Q 3	50.03.0436	BC237B		BC 237 B , 547 B , 550 B ,
0	Q 4	50.03.0436	BC237B		BC 237 B , 547 B , 550 B ,
0	Q 5	50.03.0439			BC 239 C , BC 549 C NPN
0	Q 6	50.03.0436	BC237B		BC 237 B , 547 B , 550 B ,
0	Q 7	50.03.0436	BC237B		BC 237 B , 547 B , 550 B ,
0	Q 8	50.03.0436	BC237B		BC 237 B , 547 B , 550 B ,
0	R 5	57.11.4821			R 820 , 2% , 0207 , MF
0	R 6	57.11.4332			R 3.3 K , 2% , 0207 , MF
0	R 7	58.02.4223	22k		20% , 0.1W , Carbon
0	R 8	57.11.4393			R 39 K , 2% , 0207 , MF
0	R 9	57.11.4104			R 100 K , 2% , 0207 , MF
0	R 10	57.11.4154			R 150 K , 2% , 0207 , MF
0	R 11	57.11.4563			R 56 K , 2% , 0207 , MF
0	R 12	58.02.4223	22k		20% , 0.1W , Carbon
0	R 13	58.02.4223	22k		20% , 0.1W , Carbon
0	R 14	57.11.4102			R 1 K , 2% , 0207 , MF
0	R 15	57.11.4682			R 6.8 K , 2% , 0207 , MF
0	R 16	57.11.4681			R 680 , 2% , 0207 , MF
0	R 17	57.11.4224			R 220 K , 2% , 0207 , MF
0	R 18	57.11.4331			R 330 , 2% , 0207 , MF
0	R 19	57.11.4102			R 1 K , 2% , 0207 , MF
0	R 20	57.11.4224			R 220 K , 2% , 0207 , MF
0	R 21	57.11.4104			R 100 K , 2% , 0207 , MF
0	R 22	58.02.4223	22k		20% , 0.1W , Carbon
0	R 23	57.11.4393			R 39 K , 2% , 0207 , MF
0	R 24	57.11.4821			R 820 , 2% , 0207 , MF
0	R 25	57.11.4104			R 100 K , 2% , 0207 , MF
0	R 26	57.11.4332			R 3.3 K , 2% , 0207 , MF
0	R 27	58.02.4223	22k		20% , 0.1W , Carbon
0	R 28	58.02.4223	22k		20% , 0.1W , Carbon
0	R 29	57.11.4154			R 150 K , 2% , 0207 , MF
0	R 30	57.11.4102			R 1 K , 2% , 0207 , MF
0	R 31	57.11.4682			R 6.8 K , 2% , 0207 , MF
0	R 32	57.11.4563			R 56 K , 2% , 0207 , MF
0	R 33	57.11.4681			R 680 , 2% , 0207 , MF
0	R 34	57.11.4224			R 220 K , 2% , 0207 , MF
0	R 35	57.11.4102			R 1 K , 2% , 0207 , MF
0	R 36	57.11.4331			R 330 , 2% , 0207 , MF
0	R 37	57.11.4224			R 220 K , 2% , 0207 , MF
0	R 38	57.11.4104			R 100 K , 2% , 0207 , MF
0	R 39	57.11.4272			R 2.7 K , 2% , 0207 , MF

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 40	57.11.4223			R 22 K , 2% , 0207 , MF
0	R 41	57.11.4272			R 2.7 K , 2% , 0207 , MF
0	R 42	57.11.4223			R 22 K , 2% , 0207 , MF
0	R 43	57.11.4104			R 100 K , 2% , 0207 , MF
0	R 44	57.11.4104			R 100 K , 2% , 0207 , MF

Comments:  
(01) 13.1.1981  
(02) 21.12.1981

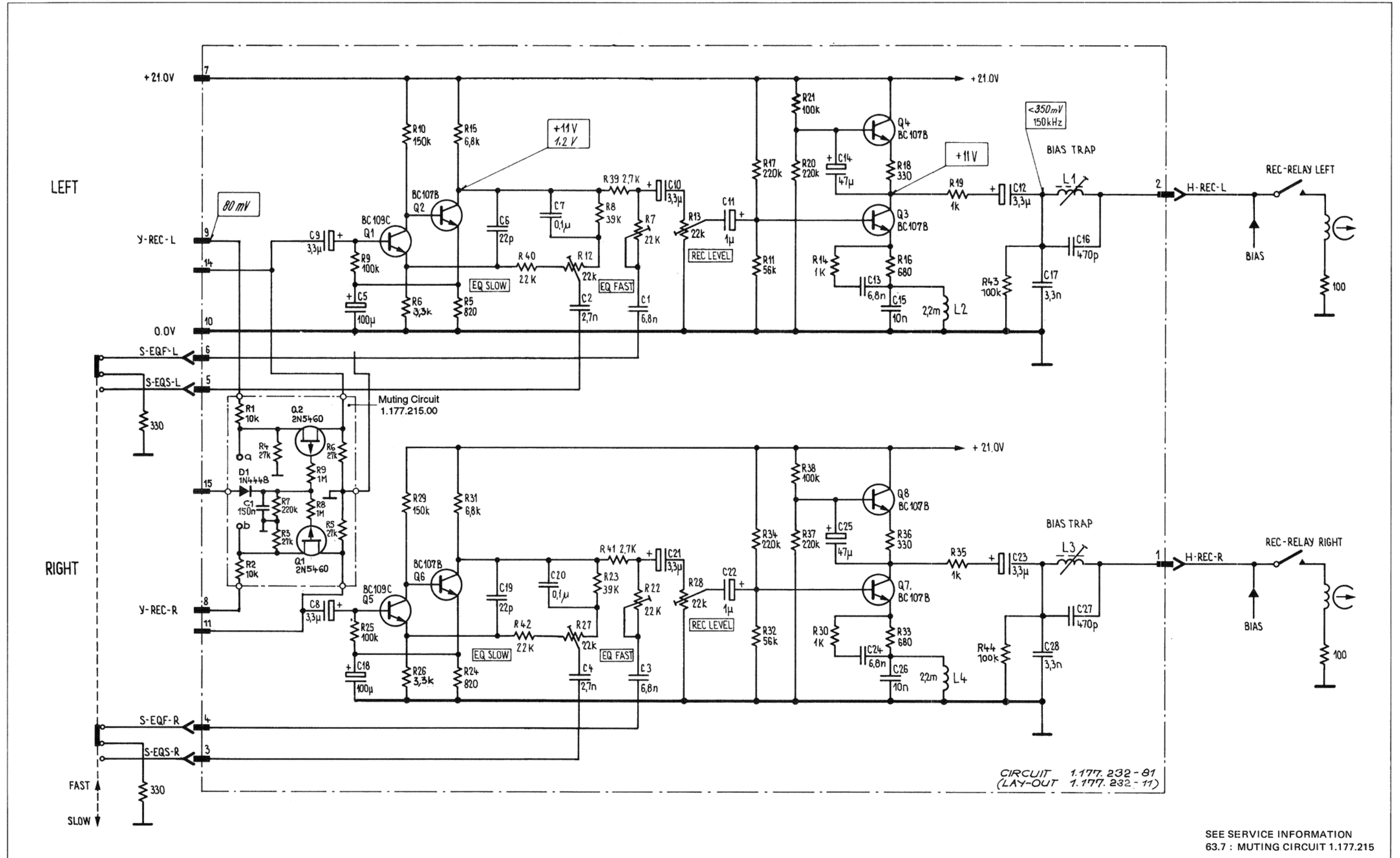
Muting Circuit  
1.177.215.00

IND	POS NO	PART NO	VALUE	SPECIFICATIONS/EQUIVALENT	MFR
③	C1	59.31.4154	150nF		
	D1	50.04.0125	1N4448	S'	
	D1	54.01.0227	3Pol	CIS	
	D2	54.01.0227	3Pol	CIS	
	Q1	50.03.0312	2N5960	PCH Fet	
	Q2	50.03.0312	2N5960	PCH Fet	
②	R1	57.11.4103	10k		
②	R2	57.11.4103	10k		
	R3	57.11.4273	27k		
	R4	57.11.4273	27k		
	R5	57.11.4273	27k		
	R6	57.11.4273	27k		
	R7	57.11.4224	220k		
①	R8	57.11.4105	1M		
①	R9	57.11.4105	1M		

IND	DATE	NAME	
④			
③	11.3.81	Wagner	
②	28.1.81	Wagner	
①	14.1.81	Gantner	
○	18.12.80	Gantner	

STUDER Muting Circuit PL 1.177.215-00 PAGE 1 OF 1

RECORD AMPLIFIER PCB (NAB 7½-15 ips) 1.177.232.81  
- Muting Circuit 1.177.215.00





STUDER

B77 MKII

SECTION 7/42

RECORD AMPLIFIER PCB (NAB 7½-15 ips) 1.177.232.82

- Muting Circuit 1.177.215.00

Index 3 26.9.88

MP 1

Muting Circuit  
1.177.215.00

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.11.3682			C 6800 P , 5% , 160V , PC
0	C 2	59.11.6272			C 2700 P , 5% , 400V , PC
0	C 3	59.11.3682			C 6800 P , 5% , 160V , PC
0	C 4	59.11.6272			C 2700 P , 5% , 400V , PC
0	C 5	59.22.3101	100u		EL 10V, 20%, RM5
0	C 6	59.34.2220	22p		CER 63V, 5%, N150
0	C 7	59.31.6104	100n		C .1 U , 10%, 100V , MPETP
0	C 8	59.22.8479	4u7		EL 50V, 20%, RM5
0	C 9	59.22.8479	4u7		EL 50V, 20%, RM5
0	C 10	59.22.8479	4u7		EL 50V, 20%, RM5
0	C 11	59.22.8109	1u		EL 50V, 20%, RM5
0	C 12	59.22.8479	4u7		EL 50V, 20%, RM5
0	C 14	59.22.3470	47u		EL 10V, 20%, RM5
0	C 15	59.31.6103	10n		C .01 U , 10%, 100V , MPETP
0	C 16	59.11.6471			C 470 P , 5% , 400V , PC
0	C 17	59.11.6332			C 3300 P , 5% , 400V , PC
0	C 18	59.22.3101	100u		EL 10V, 20%, RM5
0	C 19	59.34.2220	22p		CER 63V, 5%, N150
0	C 20	59.31.6104	100n		C .1 U , 10%, 100V , MPETP
0	C 21	59.22.8479	4u7		EL 50V, 20%, RM5
0	C 22	59.22.8109	1u		EL 50V, 20%, RM5
0	C 23	59.22.8479	4u7		EL 50V, 20%, RM5
0	C 25	59.22.3470	47u		EL 10V, 20%, RM5
0	C 26	59.31.6103	10n		C .01 U , 10%, 100V , MPETP
0	C 27	59.11.6471			C 470 P , 5% , 400V , PC
0	C 28	59.11.6332			C 3300 P , 5% , 400V , PC
0	L 1	1.177.231.00			SPERRKREISSPULE
0	L 2	62.02.1222			L 2.2 M , 5% , D 8
0	L 3	1.177.231.00			SPERRKREISSPULE
0	L 4	62.02.1222			L 2.2 M , 5% , D 8
0	MP 1	1.177.232.11	mp		AUFNAHMEVERST.PRINT 19/38NAB
0	MP 2	1.177.215.00	mp		MUTING CIRCUIT
0	P 1	54.01.0220	9-P		P LEISTE 9 POL CIS WINKEL
0	P 2	54.01.0270	8-P		P LEISTE 8 POL CIS WINKEL
1	Q 1	50.03.0407		BC550C	BC 550 C
0	Q 2	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 3	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 4	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
1	Q 5	50.03.0407		BC550C	BC 550 C
0	Q 6	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 7	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 8	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	R 5	57.11.3821		820R	MF, 1%, 0207
0	R 6	57.11.3152		1k5	MF, 1%, 0207
0	R 7	58.02.4223		22k	20%, 0.1W, Carbon
0	R 8	57.11.3393		39k	MF, 1%, 0207
0	R 9	57.11.3104		100k	MF, 1%, 0207
0	R 10	57.11.3154		150k	MF, 1%, 0207
0	R 11	57.11.3563		56k	MF, 1%, 0207
0	R 12	58.02.4223		22k	20%, 0.1W, Carbon
0	R 13	58.02.4223		22k	20%, 0.1W, Carbon
0	R 15	57.11.3682		6k8	MF, 1%, 0207
0	R 16	57.11.3681		680R	MF, 1%, 0207
0	R 17	57.11.3224		220k	MF, 1%, 0207
0	R 18	57.11.3331		330R	MF, 1%, 0207
0	R 19	57.11.3102		1k0	MF, 1%, 0207
0	R 20	57.11.3224		220k	MF, 1%, 0207
0	R 21	57.11.3104		100k	MF, 1%, 0207
0	R 22	58.02.4223		22k	20%, 0.1W, Carbon
0	R 23	57.11.3393		39k	MF, 1%, 0207
0	R 24	57.11.3821		820R	MF, 1%, 0207
0	R 25	57.11.3104		100k	MF, 1%, 0207
0	R 26	57.11.3152		1k5	MF, 1%, 0207
0	R 27	58.02.4223		22k	20%, 0.1W, Carbon
0	R 28	58.02.4223		22k	20%, 0.1W, Carbon
0	R 29	57.11.3154		150k	MF, 1%, 0207
0	R 31	57.11.3682		6k8	MF, 1%, 0207
0	R 32	57.11.3563		56k	MF, 1%, 0207
0	R 33	57.11.3681		680R	MF, 1%, 0207
0	R 34	57.11.3224		220k	MF, 1%, 0207
0	R 35	57.11.3102		1k0	MF, 1%, 0207
0	R 36	57.11.3331		330R	MF, 1%, 0207
0	R 37	57.11.3224		220k	MF, 1%, 0207
0	R 38	57.11.3104		100k	MF, 1%, 0207
0	R 39	57.11.3272		2k7	MF, 1%, 0207
0	R 40	57.11.3223		22k	MF, 1%, 0207
0	R 41	57.11.3272		2k7	MF, 1%, 0207
0	R 42	57.11.3223		22k	MF, 1%, 0207
0	R 43	57.11.3104		100k	MF, 1%, 0207
0	R 44	57.11.3104		100k	MF, 1%, 0207

End of List

Comments:  
(01) Q1+Q5 50430497 changed to 50030407

Muting Circuit  
1.177.215.00

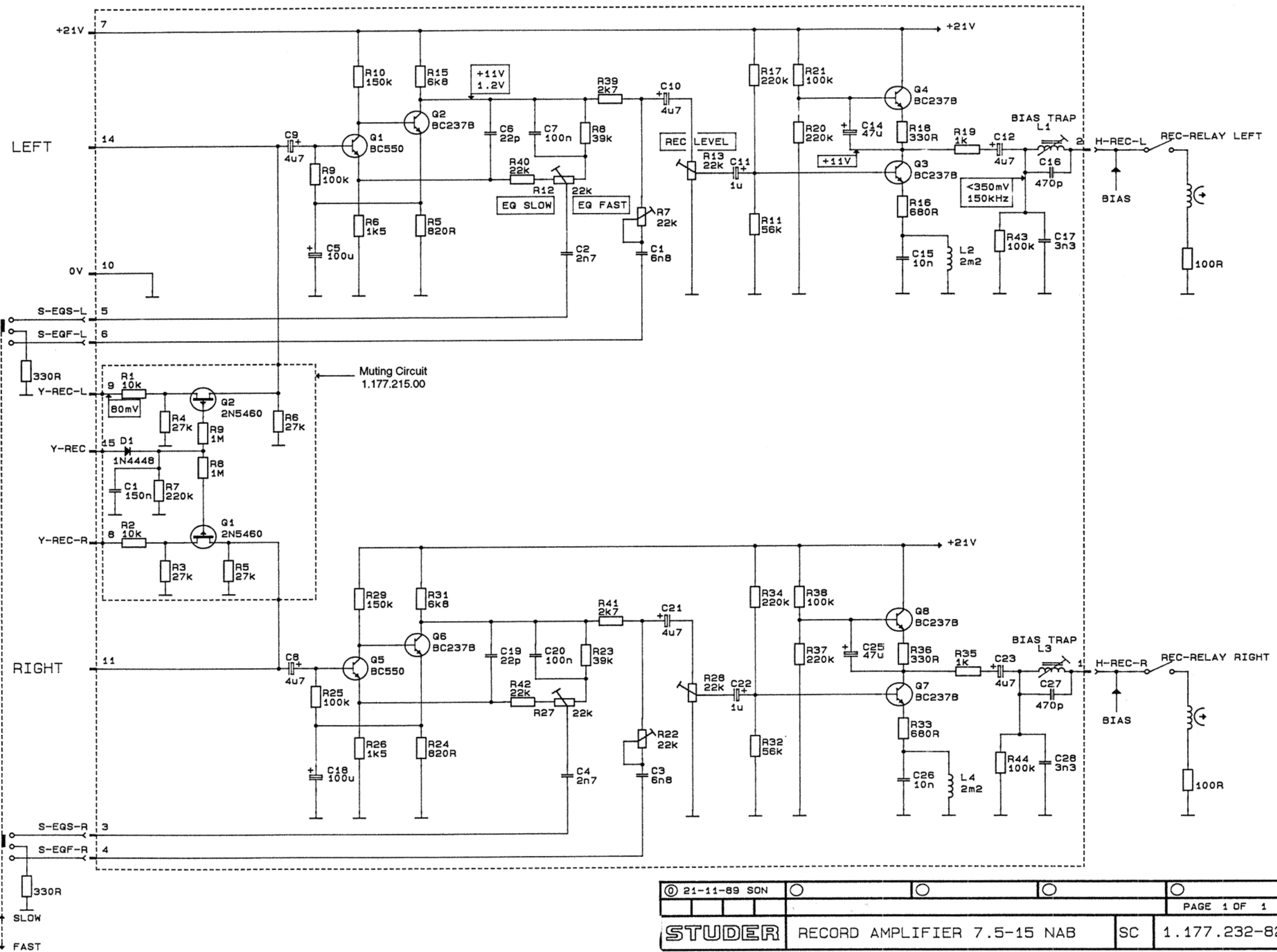
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③ C1	59.31.6154	150kF		
D1	5009.0125	AN4448	S:	
J1	54.01.0227	3POL	CIS	
J2	54.01.0227	3POL	CIS	
Q1	50.03.0312	2N3960	PCH Fet	
Q2	50.03.0312	2N3960	PCH Fet	
② R1	57.11.4103	10k		
② R2	57.11.4103	10k		
R3	57.11.4273	27k		
R4	57.11.4273	27k		
R5	57.11.4273	27k		
R6	57.11.4273	27k		
R7	57.11.4224	220k		
① R8	57.11.4105	11k		
① R9	57.11.4105	11k		

IND	DATE	NAME
④		
③	11.3.81	Wangthaler
②	28.1.81	Wangthaler
①	14.1.81	Gautner
○	18.12.80	Gautner

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EDITION 0197

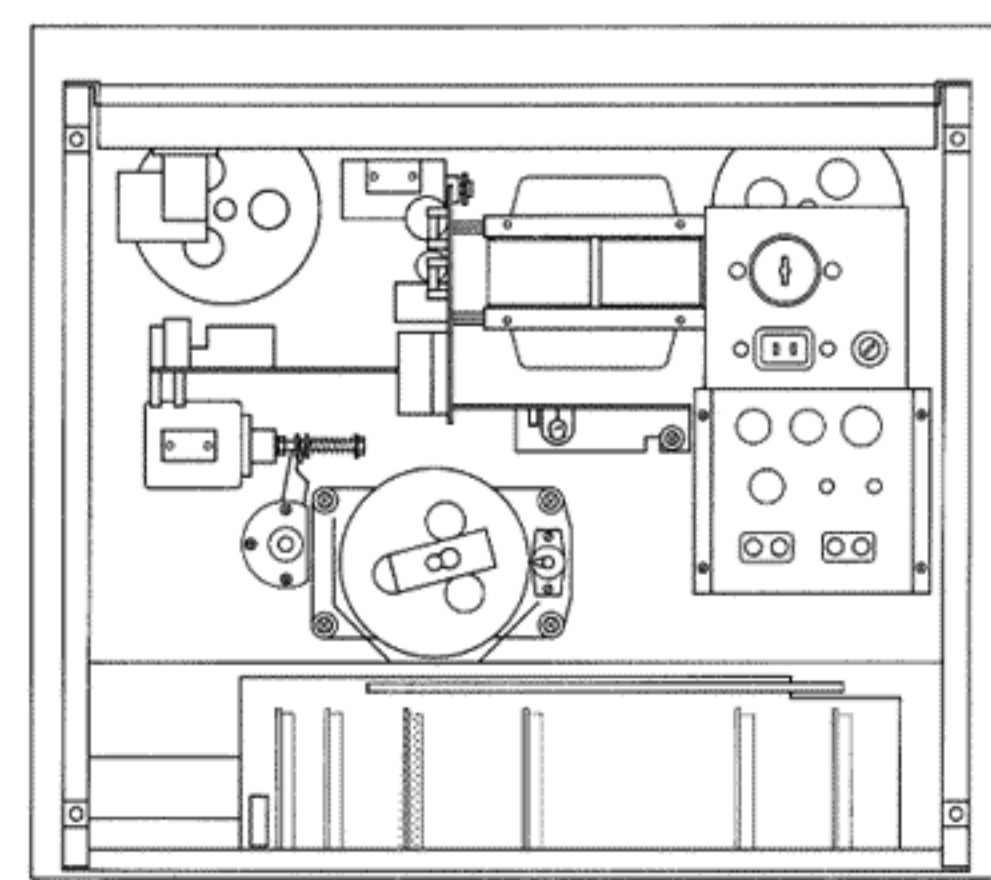
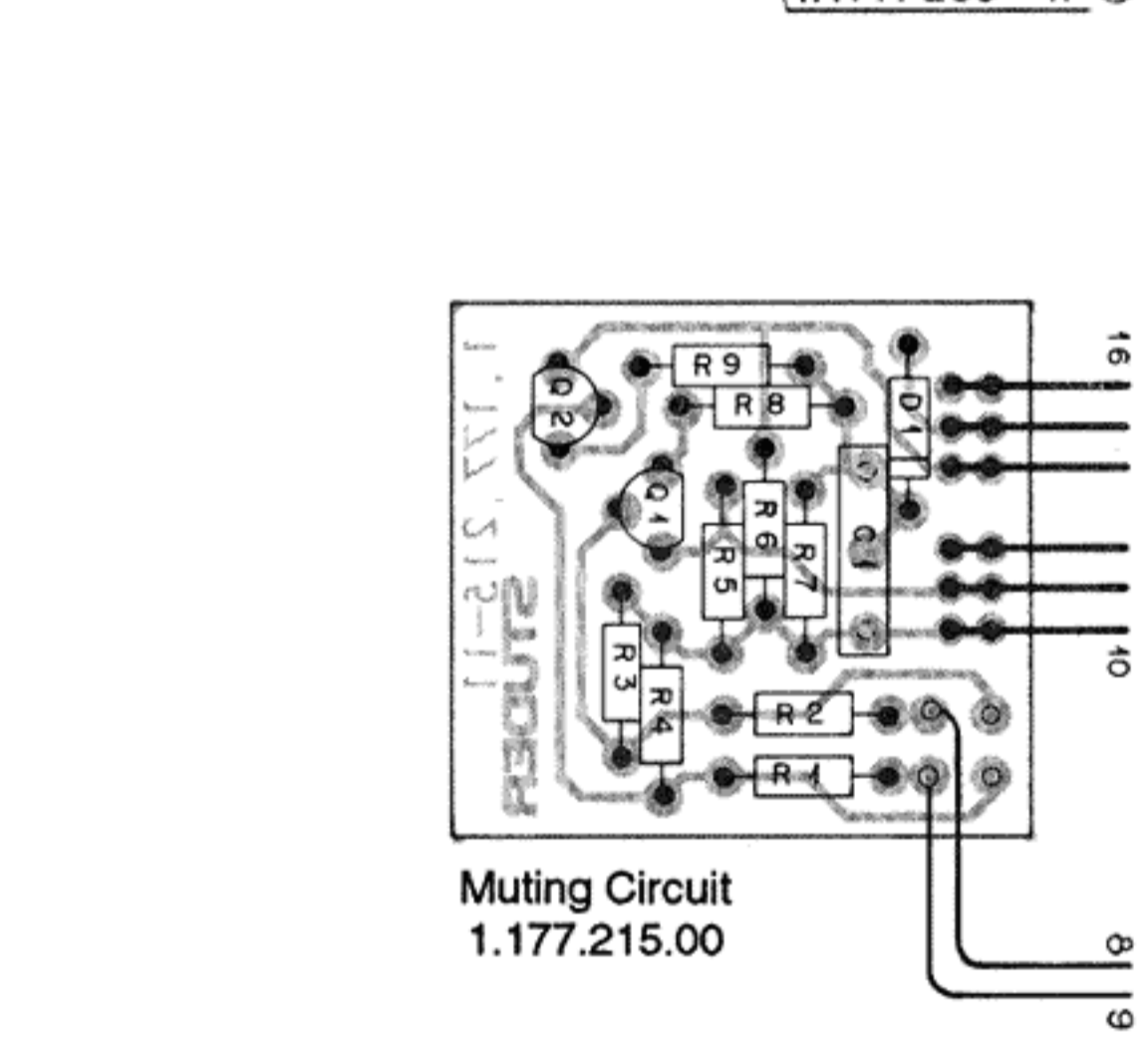
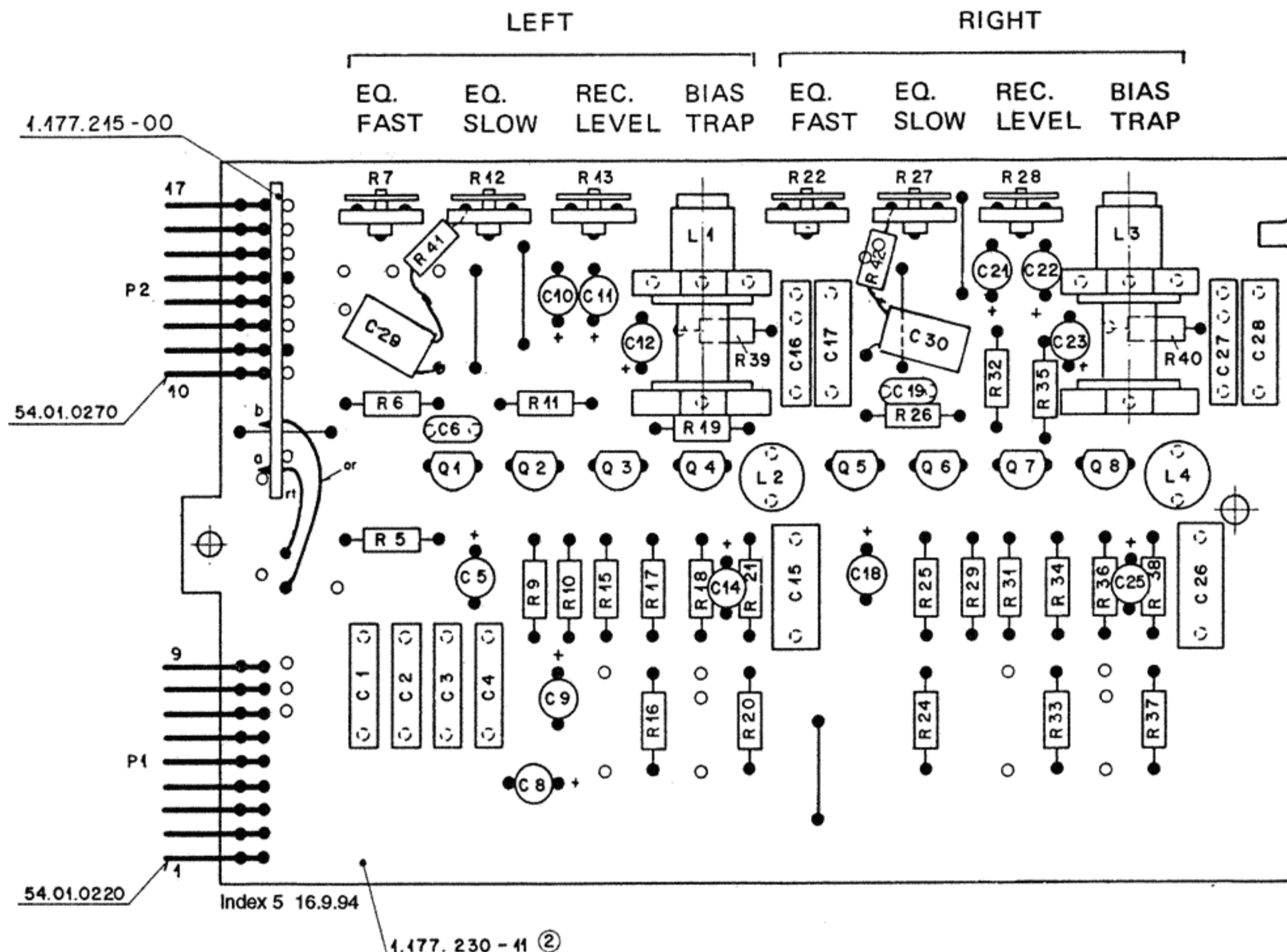
RECORD AMPLIFIER PCB (NAB 7½-15 ips) 1.177.232.82  
- Muting Circuit 1.177.215.00



© 21-11-89 SON		PAGE 1 OF 1	
STUDER		RECORD AMPLIFIER 7.5-15 NAB	SC 1.177.232-82



RECORD AMPLIFIER PCB (IEC 7½-15 ips) 1.177.233.81  
- Muting Circuit 1.177.215.00



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.11.6272			C 2700 P, 5%, 400V, PC
0	C 2	59.11.6272			C 2700 P, 5%, 400V, PC
0	C 3	59.11.6272			C 2700 P, 5%, 400V, PC
0	C 4	59.11.6272			C 2700 P, 5%, 400V, PC
0	C 5	59.22.3101	100u		EL 10V, 20%, RM5
0	C 6	59.32.0220			C 22 P, 20%, 400V, CER
0	C 8	59.22.8479	4u7		EL 50V, 20%, RM5
0	C 9	59.22.8479	4u7		EL 50V, 20%, RM5
0	C 10	59.22.8479	4u7		EL 50V, 20%, RM5
0	C 11	59.22.8109	1u		EL 50V, 20%, RM5
0	C 12	59.22.8479	4u7		EL 50V, 20%, RM5
0	C 14	59.22.3470	47u		EL 10V, 20%, RM5
0	C 15	59.31.9103			C .01 U, 10%, 160V, MPETP
0	C 16	59.11.6471			C 470 P, 5%, 400V, PC
0	C 17	59.11.6332			C 3300 P, 5%, 400V, PC
0	C 18	59.22.3101	100u		EL 10V, 20%, RM5
0	C 19	59.32.0220			C 22 P, 20%, 400V, CER
0	C 21	59.22.8479	4u7		EL 50V, 20%, RM5
0	C 22	59.22.8109	1u		EL 50V, 20%, RM5
0	C 23	59.22.8479	4u7		EL 50V, 20%, RM5
0	C 25	59.22.3470	47u		EL 10V, 20%, RM5
0	C 26	59.31.9103			C .01 U, 10%, 160V, MPETP
0	C 27	59.11.6471			C 470 P, 5%, 400V, PC
4	C 28	59.11.6332			C 3300 P, 5%, 400V, PC
3	C 29	59.34.4331	330p		CER 63V, 5%, N750
3	C 30	59.34.4331	330p		CER 63V, 5%, N750
0	L 1	1.177.231.00			SPERRKREISSPULE
0	L 2	62.02.1222			L 2.2 M, 5%, D 8
0	L 3	1.177.231.00			SPERRKREISSPULE
0	L 4	62.02.1222			L 2.2 M, 5%, D 8
0	P 1	54.01.0220	9-P		P LEISTE 9 POL CIS WINKEL
0	P 2	54.01.0270	8-P		P LEISTE 8 POL CIS WINKEL
4	Q 1	50.03.0407	BC550C		BC 550 C
0	Q 2	50.03.0436	BC237B		BC 237 B, 547 B, 550 B,
0	Q 3	50.03.0436	BC237B		BC 237 B, 547 B, 550 B,
0	Q 4	50.03.0436	BC237B		BC 237 B, 547 B, 550 B,
4	Q 5	50.03.0407	BC550C		BC 550 C
0	Q 6	50.03.0436	BC237B		BC 237 B, 547 B, 550 B,
0	Q 7	50.03.0436	BC237B		BC 237 B, 547 B, 550 B,
0	Q 8	50.03.0436	BC237B		BC 237 B, 547 B, 550 B,
4	R 5	57.11.3821	820R		MF, 1%, 0207
4	R 6	57.11.3152	1k5		MF, 1%, 0207
0	R 7	58.02.4223	22k		20%, 0.1W, Carbon
4	R 9	57.11.3104	100k		MF, 1%, 0207
4	R 10	57.11.3154	150k		MF, 1%, 0207
4	R 11	57.11.3563	56k		MF, 1%, 0207
0	R 12	58.02.4223	22k		20%, 0.1W, Carbon
0	R 13	58.02.4223	22k		20%, 0.1W, Carbon
4	R 15	57.11.3682	6k8		MF, 1%, 0207
4	R 16	57.11.3681	680R		MF, 1%, 0207
4	R 17	57.11.3224	220k		MF, 1%, 0207
4	R 18	57.11.3331	330R		MF, 1%, 0207
4	R 19	57.11.3102	1k0		MF, 1%, 0207
4	R 20	57.11.3224	220k		MF, 1%, 0207
4	R 21	57.11.3104	100k		MF, 1%, 0207
0	R 22	58.02.4223	22k		20%, 0.1W, Carbon
4	R 24	57.11.3821	820R		MF, 1%, 0207
4	R 25	57.11.3104	100k		MF, 1%, 0207
4	R 26	57.11.3152	1k5		MF, 1%, 0207
0	R 27	58.02.4223	22k		20%, 0.1W, Carbon
0	R 28	58.02.4223	22k		20%, 0.1W, Carbon
4	R 29	57.11.3154	150k		MF, 1%, 0207
4	R 31	57.11.3682	6k8		MF, 1%, 0207
4	R 32	57.11.3563	56k		MF, 1%, 0207
4	R 33	57.11.3681	680R		MF, 1%, 0207
4	R 34	57.11.3224	220k		MF, 1%, 0207
4	R 35	57.11.3102	1k0		MF, 1%, 0207
4	R 36	57.11.3331	330R		MF, 1%, 0207
4	R 37	57.11.3224	220k		MF, 1%, 0207
4	R 38	57.11.3104	100k		MF, 1%, 0207
4	R 39	57.11.3104	100k		MF, 1%, 0207
4	R 40	57.11.3104	100k		MF, 1%, 0207
4	R 41	57.11.3153	15k		MF, 1%, 0207
4	R 42	57.11.3153	15k		MF, 1%, 0207

End of List

Comments:  
(01) 13.1.1981  
(02) 21.12.1981  
(03) 5.6.1986  
(04) Q1+Q5 50030439 changed to 50030407  
R5-R42 2% changed to 1%

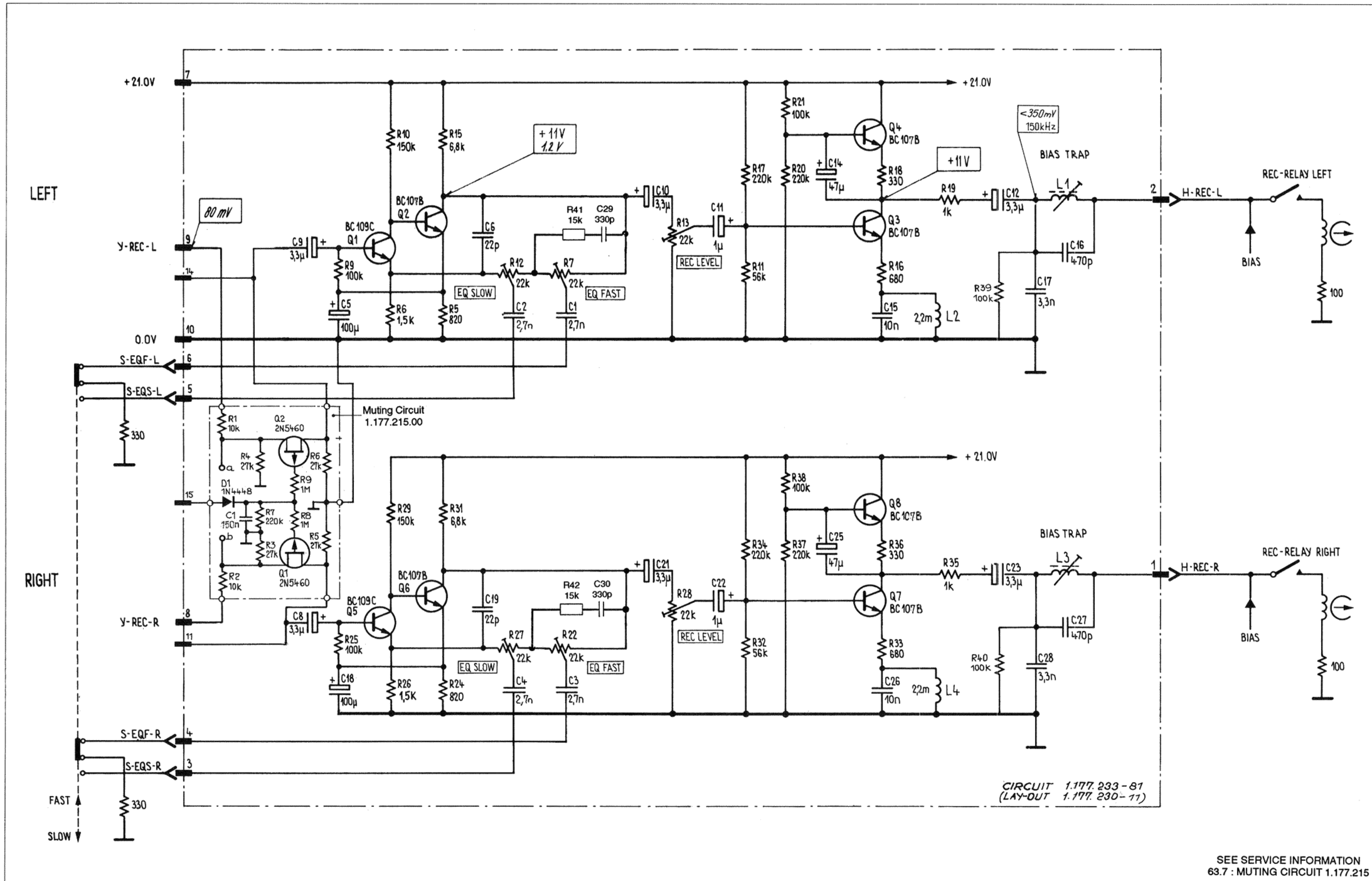
Muting Circuit  
1.177.215.00

IND	POS NO	PART NO	VALUE	SPECIFICATIONS/EQUIVALENT	MFR
③	C1	59.31.1154	150nF		
	D1	50.04.0125	1N442	S:	
	J1	54.01.0227	3Pol	CIS	
	J2	54.01.0227	3Pol	CIS	
	Q1	50.03.0312	2N5960	PCH Fet	
	Q2	50.03.0312	2N5960	PCH Fet	
②	R1	57.11.4103	10k		
②	R2	57.11.4103	10k		
	R3	57.11.4273	27k		
	R4	57.11.4273	27k		
	R5	57.11.4273	27k		
	R6	57.11.4273	27k		
	R7	57.11.4224	220k		
①	R8	57.11.4105	1M		
①	R9	57.11.4105	1M		

IND	DATE	NAME
④		
③	11.3.81	Wanghster
②	28.1.81	Wanghster
①	14.1.81	Gautner
○	18.12.80	Gautner

RECORD AMPLIFIER PCB (IEC 7½-15 ips) 1.177.233.81

- Muting Circuit 1.177.215.00



CIRCUIT 1.177.233-81  
(LAY-OUT 1.177.230-11)

SEE SERVICE INFORMATION  
63.7 : MUTING CIRCUIT 1.177.215



STUDER

B77 MKI / MKII

SECTION 7/46

RECORD AMPLIFIER PCB (NAB 1 7/8 - 3 3/4 ips) 1.177.237.81  
- Muting Circuit 1.177.215.00

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.11.6272			C 2700 P, 5%, 400V, PC
0	C 2	59.11.4472			C 4700 P, 2.5%, 160V, PC
0	C 3	59.11.6272			C 2700 P, 5%, 400V, PC
0	C 4	59.11.4472			C 4700 P, 2.5%, 160V, PC
0	C 5	59.22.3101		100u	EL 10V, 20%, RM5
0	C 6	59.32.0220			C 22 P, 20%, 400V, CER
0	C 7	59.31.6104		100n	C .1 U, 10%, 100V, MPETP
0	C 8	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 9	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 10	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 11	59.22.8109		1u	EL 50V, 20%, RM5
0	C 12	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 13	59.11.3103			C .01 U, 5%, 160V, PC
0	C 14	59.22.3470		47u	EL 10V, 20%, RM5
0	C 15	59.11.3103			C .01 U, 5%, 160V, PC
0	C 16	59.11.6471			C 470 P, 5%, 400V, PC
0	C 17	59.11.6332			C 3300 P, 5%, 400V, PC
0	C 18	59.22.3101		100u	EL 10V, 20%, RM5
0	C 19	59.32.0220			C 22 P, 20%, 400V, CER
0	C 20	59.31.6104		100n	C .1 U, 10%, 100V, MPETP
0	C 21	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 22	59.22.8109		1u	EL 50V, 20%, RM5
0	C 23	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 24	59.11.3103			C .01 U, 5%, 160V, PC
0	C 25	59.22.3470		47u	EL 10V, 20%, RM5
0	C 26	59.11.3103			C .01 U, 5%, 160V, PC
0	C 27	59.11.6471			C 470 P, 5%, 400V, PC
0	C 28	59.11.6332			C 3300 P, 5%, 400V, PC
0	L 1	1.177.231.00			SPERRKREISSPULE
0	L 2	62.02.1222			L 2.2 M, 5%, D 8
0	L 3	1.177.231.00			SPERRKREISSPULE
0	L 4	62.02.1222			L 2.2 M, 5%, D 8
0	P 1	54.01.0220		9-P	P LEISTE 9 POL CIS WINKEL
0	P 2	54.01.0270		8-P	P LEISTE 8 POL CIS WINKEL
3	Q 1	50.03.0407		BC550C	BC 550 C
0	Q 2	50.03.0436		BC237B	BC 237 B, 547 B, 550 B.
0	Q 3	50.03.0436		BC237B	BC 237 B, 547 B, 550 B.
0	Q 4	50.03.0436		BC237B	BC 237 B, 547 B, 550 B.
3	Q 5	50.03.0407		BC550C	BC 550 C
0	Q 6	50.03.0436		BC237B	BC 237 B, 547 B, 550 B.
0	Q 7	50.03.0436		BC237B	BC 237 B, 547 B, 550 B.
0	Q 8	50.03.0436		BC237B	BC 237 B, 547 B, 550 B.
3	R 5	57.11.3821		820R	MF, 1%, 0207
3	R 6	57.11.3222		2k2	MF, 1%, 0207
0	R 7	58.02.4223		22k	20%, 0.1W, Carbon
3	R 8	57.11.3473		47k	MF, 1%, 0207
3	R 9	57.11.3104		100k	MF, 1%, 0207
3	R 10	57.11.3154		150k	MF, 1%, 0207
3	R 11	57.11.3563		56k	MF, 1%, 0207
0	R 12	58.02.4223		22k	20%, 0.1W, Carbon
0	R 13	58.02.4223		22k	20%, 0.1W, Carbon
3	R 14	57.11.3102		1k0	MF, 1%, 0207
3	R 15	57.11.3682		6k8	MF, 1%, 0207
3	R 16	57.11.3681		680R	MF, 1%, 0207
3	R 17	57.11.3224		220k	MF, 1%, 0207
3	R 18	57.11.3331		330R	MF, 1%, 0207
3	R 19	57.11.3102		1k0	MF, 1%, 0207
3	R 20	57.11.3224		220k	MF, 1%, 0207
3	R 21	57.11.3104		100k	MF, 1%, 0207
0	R 22	58.02.4223		22k	20%, 0.1W, Carbon
3	R 23	57.11.3473		47k	MF, 1%, 0207
3	R 24	57.11.3821		820R	MF, 1%, 0207
3	R 25	57.11.3104		100k	MF, 1%, 0207
3	R 26	57.11.3222		2k2	MF, 1%, 0207
0	R 27	58.02.4223		22k	20%, 0.1W, Carbon
0	R 28	58.02.4223		22k	20%, 0.1W, Carbon
3	R 29	57.11.3154		150k	MF, 1%, 0207
3	R 30	57.11.3102		1k0	MF, 1%, 0207
3	R 31	57.11.3682		6k8	MF, 1%, 0207
3	R 32	57.11.3563		56k	MF, 1%, 0207
3	R 33	57.11.3681		680R	MF, 1%, 0207
3	R 34	57.11.3224		220k	MF, 1%, 0207
3	R 35	57.11.3102		1k0	MF, 1%, 0207
3	R 36	57.11.3331		330R	MF, 1%, 0207
3	R 37	57.11.3224		220k	MF, 1%, 0207
3	R 38	57.11.3104		100k	MF, 1%, 0207
3	R 39	57.11.3104		100k	MF, 1%, 0207
3	R 40	57.11.3104		100k	MF, 1%, 0207

Comments:  
(01) 13.1.1981  
(02) 21.12.1981  
(03) Q1+Q5 50030439 changed to 50030407  
R5-R40 2% changed to 1%

Muting Circuit  
1.177.215.00

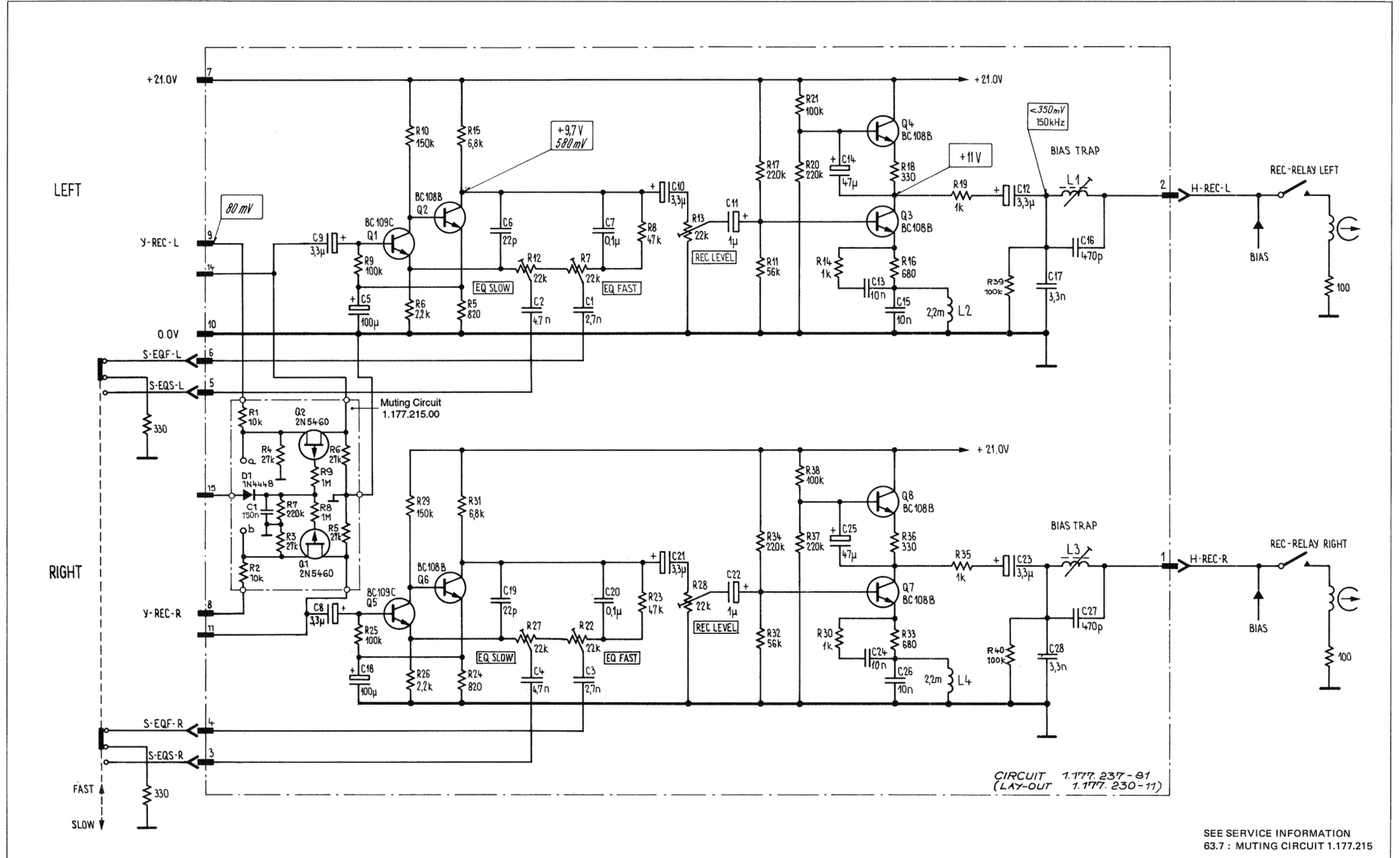
IND	POS NO	PART NO	VALUE	SPECIFICATIONS/EQUIVALENT	MFR
③	C1	59.31.1154	150nF		
	D1	50.04.0125	1N4422	S	
	Q1	50.03.0312	2N3960	PCH Fet	
	Q2	50.03.0312	2N3960	PCH Fet	
②	R1	57.11.4103	10k		
②	R2	57.11.4103	10k		
	R3	57.11.4273	27k		
	R4	57.11.4273	27k		
	R5	57.11.4273	27k		
	R6	57.11.4273	27k		
	R7	57.11.4224	220k		
①	R8	57.11.4105	1H		
①	R9	57.11.4105	1H		

IND	DATE	NAME
④		
③	1.1.81	Waughlin
②	28.1.81	Waughlin
①	14.1.81	Gantner
○	18.12.80	Gantner

STUDER Muting Circuit PL 1.177.215-00 PAGE 1 OF 1

EDITION 0197

RECORD AMPLIFIER PCB (NAB 1 7/8 - 3 3/4 ips) 1.177.237.81  
- Muting Circuit 1.177.215.00



SEE SERVICE INFORMATION  
63.7 : MUTING CIRCUIT 1.177.215



STUDER

B77 MKI / MKII

SECTION 7/48

RECORD AMPLIFIER PCB (NAB 15/16 - 1 7/8 ips) 1.177.238.81  
- Muting Circuit 1.177.215.00

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.11.4103			C .01 U , 2.5% , 160V , PC
0	C 2	59.12.4183			C .018 U , 5% , 250V , MPETP
0	C 3	59.11.4103			C .01 U , 2.5% , 160V , PC
3	C 4	59.12.4183			C .018 U , 5% , 250V , MPETP
0	C 5	59.22.3101	100u		EL 10V , 20% , RM5
0	C 6	59.32.0220			C 22 P , 20% , 400V , CER
0	C 7	59.31.6104	100n		C .1 U , 10% , 100V , MPETP
0	C 8	59.22.8479	4u7		EL 50V , 20% , RM5
0	C 9	59.22.8479	4u7		EL 50V , 20% , RM5
0	C 10	59.22.8479	4u7		EL 50V , 20% , RM5
0	C 11	59.22.8109	1u		EL 50V , 20% , RM5
0	C 12	59.22.8479	4u7		EL 50V , 20% , RM5
3	C 13	59.11.4103			C .01 U , 2.5% , 160V , PC
0	C 14	59.22.3470	47u		EL 10V , 20% , RM5
0	C 15	59.31.9103			C .01 U , 10% , 160V , MPETP
0	C 16	59.11.6471			C 470 P , 5% , 400V , PC
0	C 17	59.11.6332			C 3300 P , 5% , 400V , PC
0	C 18	59.22.3101	100u		EL 10V , 20% , RM5
0	C 19	59.32.0220			C 22 P , 20% , 400V , CER
0	C 20	59.31.6104	100n		C .1 U , 10% , 100V , MPETP
0	C 21	59.22.8479	4u7		EL 50V , 20% , RM5
0	C 22	59.22.8109	1u		EL 50V , 20% , RM5
0	C 23	59.22.8479	4u7		EL 50V , 20% , RM5
0	C 24	59.11.4103			C .01 U , 2.5% , 160V , PC
0	C 25	59.22.3470	47u		EL 10V , 20% , RM5
0	C 26	59.31.9103			C .01 U , 10% , 160V , MPETP
0	C 27	59.11.6471			C 470 P , 5% , 400V , PC
3	C 28	59.11.6332			C 3300 P , 5% , 400V , PC
0	L 1	1.177.231.00			SPERRKREISSPULE
0	L 2	62.02.1222			L 2.2 M , 5% , D 8
0	L 3	1.177.231.00			SPERRKREISSPULE
0	L 4	62.02.1222			L 2.2 M , 5% , D 8
0	P 1	54.01.0220	9-P		P LEISTE 9 POL CIS WINKEL
0	P 2	54.01.0270	8-P		P LEISTE 8 POL CIS WINKEL
3	Q 1	50.03.0407	BC550C		BC 550 C
0	Q 2	50.03.0436	BC237B		BC 237 B , 547 B , 550 B.
0	Q 3	50.03.0436	BC237B		BC 237 B , 547 B , 550 B.
0	Q 4	50.03.0436	BC237B		BC 237 B , 547 B , 550 B.
3	Q 5	50.03.0407	BC550C		BC 550 C
0	Q 6	50.03.0436	BC237B		BC 237 B , 547 B , 550 B.
0	Q 7	50.03.0436	BC237B		BC 237 B , 547 B , 550 B.
0	Q 8	50.03.0436	BC237B		BC 237 B , 547 B , 550 B.
3	R 5	57.11.3821	820R		MF, 1%, 0207
3	R 6	57.11.3332	3k3		MF, 1%, 0207
0	R 7	58.02.4223	22k		20%, 0.1W, Carbon
3	R 8	57.11.3563	56k		MF, 1%, 0207
3	R 9	57.11.3104	100k		MF, 1%, 0207
3	R 10	57.11.3154	150k		MF, 1%, 0207
3	R 11	57.11.3563	56k		MF, 1%, 0207
0	R 12	58.02.4223	22k		20%, 0.1W, Carbon
0	R 13	58.02.4223	22k		20%, 0.1W, Carbon
3	R 14	57.11.3681	680R		MF, 1%, 0207
3	R 15	57.11.3682	6k8		MF, 1%, 0207
3	R 16	57.11.3681	680R		MF, 1%, 0207
3	R 17	57.11.3224	220k		MF, 1%, 0207
3	R 18	57.11.3331	330R		MF, 1%, 0207
3	R 19	57.11.3102	1k0		MF, 1%, 0207
3	R 20	57.11.3224	220k		MF, 1%, 0207
3	R 21	57.11.3104	100k		MF, 1%, 0207
0	R 22	58.02.4223	22k		20%, 0.1W, Carbon
3	R 23	57.11.3563	56k		MF, 1%, 0207
3	R 24	57.11.3821	820R		MF, 1%, 0207
3	R 25	57.11.3104	100k		MF, 1%, 0207
3	R 26	57.11.3332	3k3		MF, 1%, 0207
0	R 27	58.02.4223	22k		20%, 0.1W, Carbon
0	R 28	58.02.4223	22k		20%, 0.1W, Carbon
3	R 29	57.11.3154	150k		MF, 1%, 0207
3	R 30	57.11.3681	680R		MF, 1%, 0207
3	R 31	57.11.3682	6k8		MF, 1%, 0207
3	R 32	57.11.3563	56k		MF, 1%, 0207
3	R 33	57.11.3681	680R		MF, 1%, 0207
3	R 34	57.11.3224	220k		MF, 1%, 0207
3	R 35	57.11.3102	1k0		MF, 1%, 0207
3	R 36	57.11.3331	330R		MF, 1%, 0207
3	R 37	57.11.3224	220k		MF, 1%, 0207
3	R 38	57.11.3104	100k		MF, 1%, 0207
3	R 39	57.11.3104	100k		MF, 1%, 0207
3	R 40	57.11.3104	100k		MF, 1%, 0207

Comments:  
(01) 13.01.1981  
(02) 21.12.1981  
(03) 16.9.1994 C4,C13+C28/ Q1+Q5 changed to 50030407  
R5-R40 2% changed to 1%

Muting Circuit  
1.177.215.00

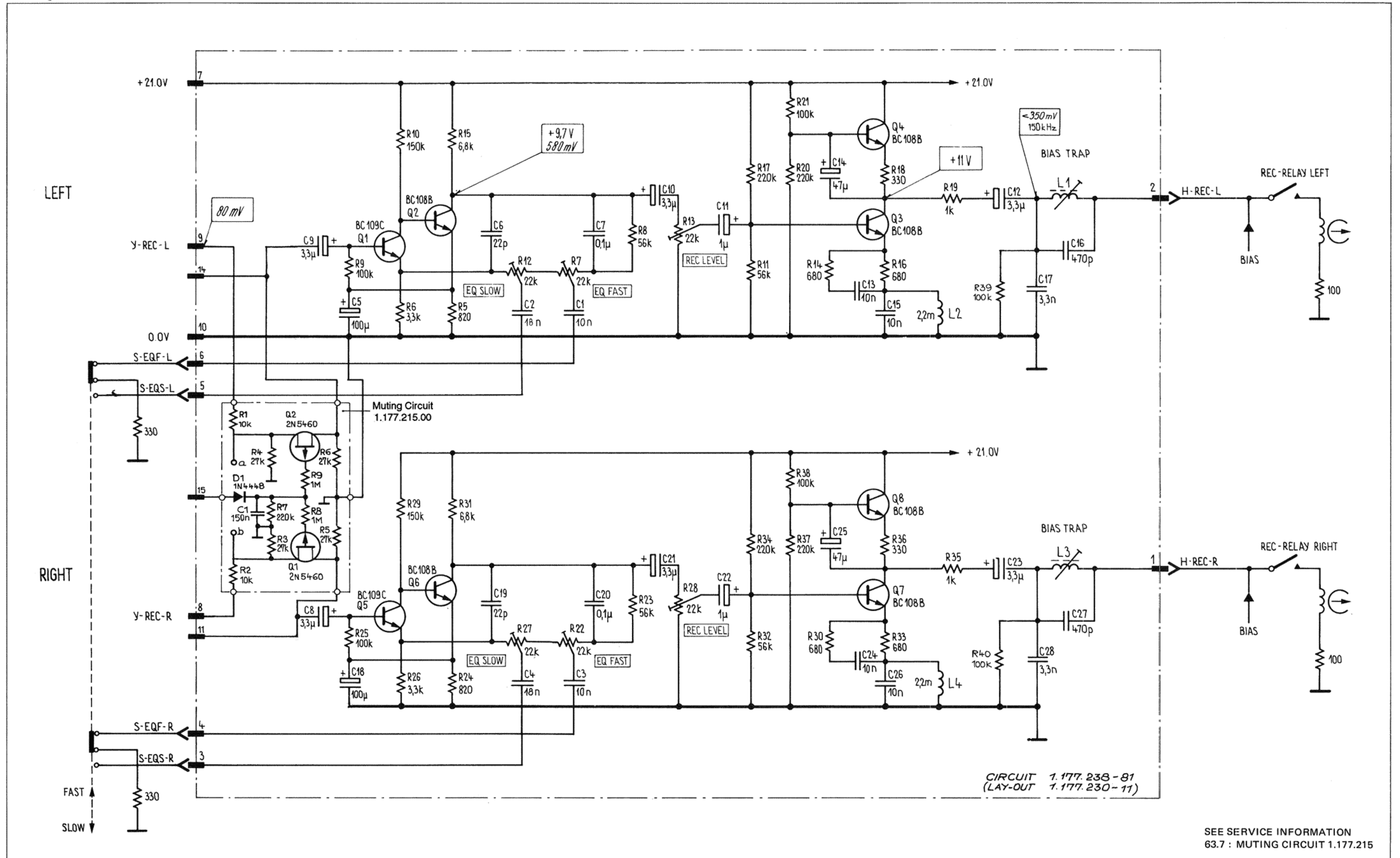
IND	POS NO	PART NO	VALUE	SPECIFICATIONS/EQUIVALENT	MFR
③	CA	59.31.1154	150nF		
	DA	50.04.0125	1N4428	51	
	JA	54.01.0227	3P01	CIS	
	J2	54.01.0227	3P01	CIS	
	QA	50.03.0312	2N5360	PCH Fet	
	Q2	50.03.0312	2N5360	PCH Fet	
②	PA	57.11.4103	10k		
②	PA	57.11.4103	10k		
	RA	57.11.4273	27k		
	RA	57.11.4273	27k		
	RA	57.11.4273	27k		
	RA	57.11.4273	27k		
	RA	57.11.4273	27k		
	RA	57.11.4273	27k		
	RA	57.11.4273	27k		
①	RA	57.11.4105	11k		
①	RA	57.11.4105	11k		

IND	DATE	NAME
④		
③	11.3.81	Wangthaler
②	28.1.81	Wangthaler
①	14.1.81	Gantner
○	18.12.80	Gantner

STUDER Muting Circuit PL 1.177.215-00 PAGE 1 OF 1

EDITION 0197

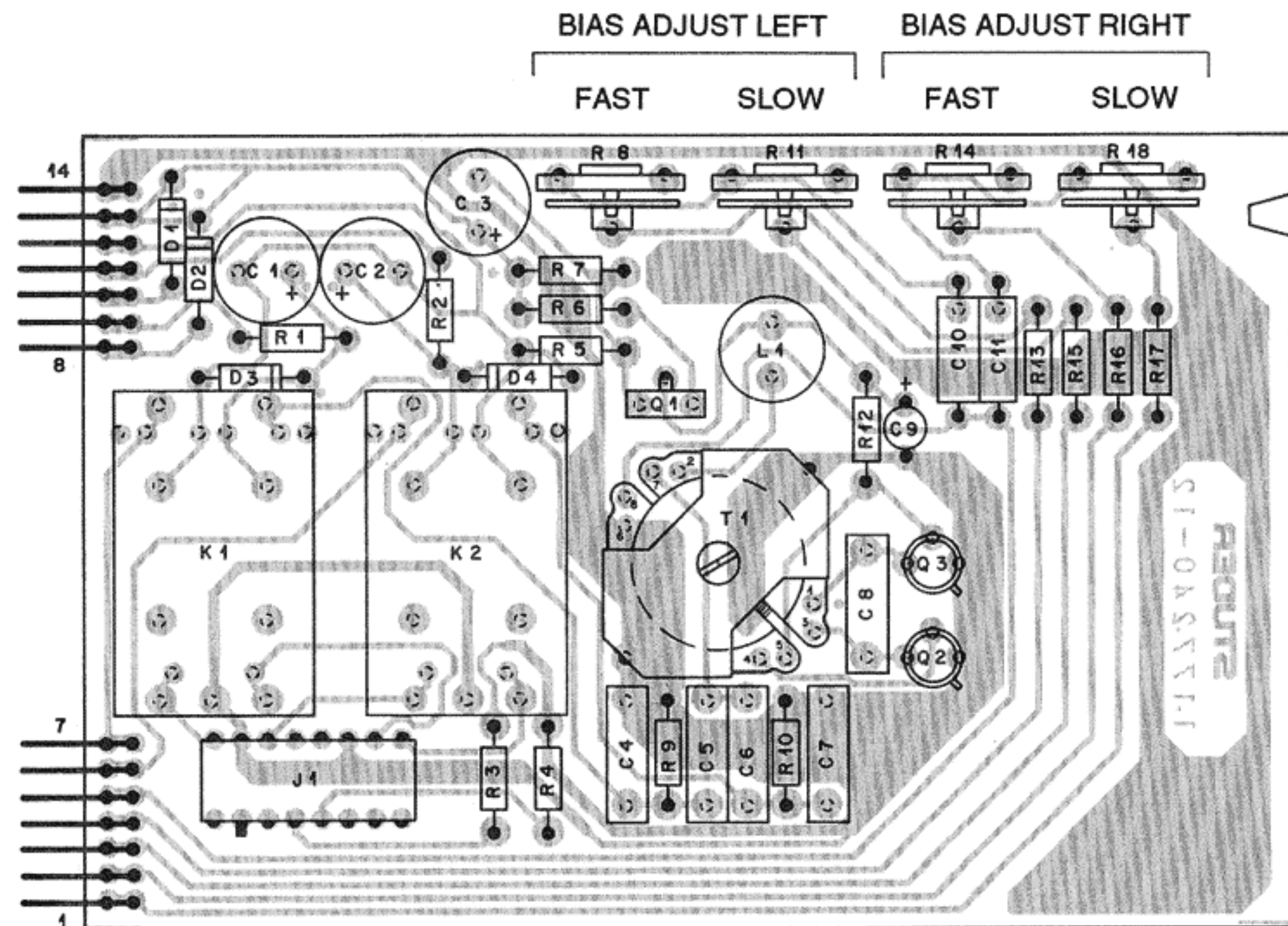
RECORD AMPLIFIER PCB (NAB 15/16 - 1 7/8 ips) 1.177.238.81  
- Muting Circuit 1.177.215.00







OSCILATOR PCB 4 TRACK 1.177.240.00 / 1.177.242.00 / 1.177.243.00



PARTS LIST 1.177.240.00

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.22.4101	100u	EL	16V, 20%, RM5
0	C 2	59.22.4101	100u	EL	16V, 20%, RM5
0	C 3	59.22.2221	220u	EL	6.3V, 20%, RM5
0	C 4	59.11.4472		C	4700 P, 2.5%, 160V, PC
0	C 5	59.11.4472		C	4700 P, 2.5%, 160V, PC
0	C 6	59.11.4472		C	4700 P, 2.5%, 160V, PC
0	C 7	59.11.4472		C	4700 P, 2.5%, 160V, PC
0	C 8	59.11.3682		C	6800 P, 5%, 160V, PC
0	C 9	59.22.8479	4u7	EL	50V, 20%, RM5
0	C 10	59.04.8221		C	220 P, 5%, 160V, PP
0	C 11	59.04.8221		C	220 P, 5%, 160V, PP
0	D 1	50.04.0125	1N4448		75V, 150mA, 4ns, DO-35
0	D 2	50.04.0125	1N4448		75V, 150mA, 4ns, DO-35
0	D 3	50.04.0125	1N4448		75V, 150mA, 4ns, DO-35
0	D 4	50.04.0125	1N4448		75V, 150mA, 4ns, DO-35
0	J 1	54.01.0306	8-P		J LEISTE 8 POL CIS PARLEL
0	K 1	56.04.0147	2*u		12V, 220V/2 A, PCB
0	K 2	56.04.0147	2*u		12V, 220V/2 A, PCB
0	L 1	62.02.2122		L	1.2 M, 5%, D10
0	P 1	54.01.0223	7-P		P LEISTE 7 POL CIS WINKEL
0	P 2	54.01.0223	7-P		P LEISTE 7 POL CIS WINKEL
0	Q 1	50.03.0479		BD136-10	BD 136-10
3	Q 2	50.03.0551		BC639	BC 639
3	Q 3	50.03.0551		BC639	BC 639

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 1	57.11.3331	330R	MF, 1%, 0207	
0	R 2	57.11.3331	330R	MF, 1%, 0207	
0	R 3	57.11.3101	100R	MF, 1%, 0207	
0	R 4	57.11.3101	100R	MF, 1%, 0207	
0	R 5	57.11.3682	6k8	MF, 1%, 0207	
0	R 6	57.11.3100	10R	MF, 1%, 0207	
0	R 7	57.11.3102	1k0	MF, 1%, 0207	
0	R 8	58.19.0503		R 50 K, 20%, .15W, PCSCH	
0	R 9	57.11.3105	1M0	MF, 1%, 0207	
0	R 10	57.11.3105	1M0	MF, 1%, 0207	
0	R 11	58.19.0503		R 50 K, 20%, .15W, PCSCH	
0	R 12	57.11.3153	15k	MF, 1%, 0207	
0	R 13	57.11.3102	1k0	MF, 1%, 0207	
0	R 14	58.19.0503		R 50 K, 20%, .15W, PCSCH	
0	R 15	57.11.3102	1k0	MF, 1%, 0207	
0	R 16	57.11.3102	1k0	MF, 1%, 0207	
0	R 17	57.11.3102	1k0	MF, 1%, 0207	
0	R 18	58.19.0503		R 50 K, 20%, .15W, PCSCH	
0	T 1	1.022.181.00		OSZILLATORSPULE B 77	

Comments:  
 (01) 26.9.1979  
 (02) 21.12.1981  
 (03) 11.07.89 New part

End of List

PARTS LIST 1.177.242.00

POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT	MFR
C 01	59.22.4101	100 U	10% 16 V	EL	
C 02	59.22.4101	100 U	10% 16 V	EL	
C 03	59.22.2221	220 U	10% 6.3V	EL	
C 04	59.11.4472	4700P	2.5% 160V	PC	
C 05	59.11.4472	4700P	2.5% 160V	PC	
C 06	59.11.4472	4700P	2.5% 160V	PC	
C 07	59.11.4472	4700P	2.5% 160V	PC	
C 08	59.11.3682	6200P	5% 160V	PC	
C 09	59.30.6339	3.1 U	20% 35 V	TA	
C 10	59.04.8221	220 P	5% 160V	PS	
C 11	59.04.8221	220 P	5% 160V	PS	
D 01	50.04.0125	1 N 4448			any
D 02	50.04.0125	1 N 4448			any
D 03	50.04.0125	1 N 4448			any
D 04	50.04.0125	1 N 4448			any
J 01	54.01.0306	8 - Pole	Socket-Strip AMP		
K 01	56.04.0150	2 x U	500 Ω 12V		N.O
K 02	56.04.0150	2 x U	500 Ω 12V		N.O
L 01	62.02.2122	1,2 mH	5% R <sub>PC</sub> max. 6Ω		
P 01	54.01.0223	7 - Pole	Pin-Strip AMP		
P 02	54.01.0223	7 - Pole	Pin-Strip AMP		
Q 01	50.03.0479	BD 140	Medium Power	PNP	
Q 02	50.03.0434	BFR 18		NPN	
Q 03	50.03.0434	BFR 18		NPN	
R 01	57.41.4331	330	5% .25W	CF	
R 02	57.41.4331	330			
R 03	57.41.4101	100			
R 04	57.41.4101	100			
R 05	57.41.4682	6,8 k			
R 06	57.41.4100	10			
R 07	57.41.4102	1 k			
R 08	58.19.0503	50 k	20% .15W	PCF	
R 09	57.41.4105	1 M	5% .25W	CF	
R 10	57.41.4105	1 M	5% .25W	CF	
R 11	58.19.0503	50 k	20% .15W	PCF	
R 12	57.41.4153	15 k	5% .25W	CF	
R 13	57.41.4102	1 k	5% .25W	CF	
R 14	58.19.0503	50 k	20% .15W	PCF	
R 15	57.41.4102	1 k	5% .25W	CF	
R 16	57.41.4102	1 k	5% .25W	CF	
R 17	57.41.4102	1 k	5% .25W	CF	
R 18	58.19.0503	50 k	20% .15W	PCF	
T 01	1.022.192.00		Oscillator Coil		S

PC = Polycarbonate	N = National	⊕	
PS = Polystyrene	O = Omron	⊖	
CF = Carbon Film		⊙	26.9.79
PCF = Pol. Carbon Film		⊙	12.12.78
		IND	DATE
			NAME
<b>STUDER</b>		Oscillator	1.177.242

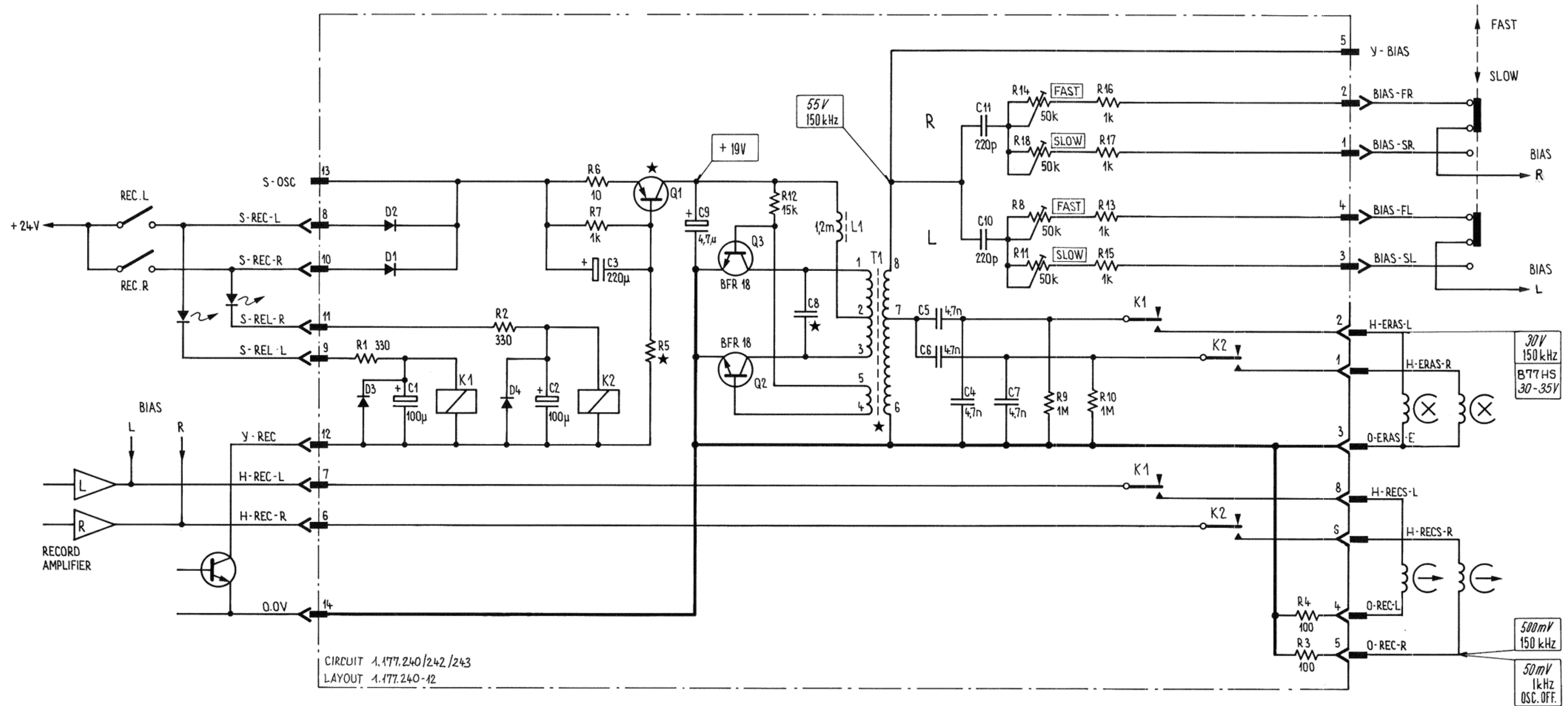
PARTS LIST 1.177.243.00

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.22.4101	100u	EL	16V, 20%, RM5
0	C 2	59.22.4101	100u	EL	16V, 20%, RM5
0	C 3	59.22.2221	220u	EL	6.3V, 20%, RM5
0	C 4	59.11.4472		C	4700 P, 2.5%, 160V, PC
0	C 5	59.11.4472		C	4700 P, 2.5%, 160V, PC
0	C 6	59.11.4472		C	4700 P, 2.5%, 160V, PC
0	C 7	59.11.4472		C	4700 P, 2.5%, 160V, PC
0	C 8	59.99.0516		C	12 N, 5%, 160V, PC
0	C 9	59.22.8479	4u7	EL	50V, 20%, RM5
0	C 10	59.04.8221		C	220 P, 5%, 160V, PP
0	C 11	59.04.8221		C	220 P, 5%, 160V, PP
0	D 1	50.04.0125	1N4448		75V, 150mA, 4ns, DO-35
0	D 2	50.04.0125	1N4448		75V, 150mA, 4ns, DO-35
0	D 3	50.04.0125	1N4448		75V, 150mA, 4ns, DO-35
0	D 4	50.04.0125	1N4448		75V, 150mA, 4ns, DO-35
0	J 1	54.01.0306	8-P		J LEISTE 8 POL CIS PARLEL
0	K 1	56.04.0147	2*u		12V, 220V/2 A, PCB
0	K 2	56.04.0147	2*u		12V, 220V/2 A, PCB
0	L 1	62.02.2122		L	1.2 M, 5%, D10
0	P 1	54.01.0223	7-P		P LEISTE 7 POL CIS WINKEL
0	P 2	54.01.0223	7-P		P LEISTE 7 POL CIS WINKEL
0	Q 1	50.03.0510		BD136-16	BD 136-16 ...K, -L, -M
3	Q 2	50.03.0551		BC639	BC 639
3	Q 3	50.03.0551		BC639	BC 639
0	R 1	57.11.3331	330R	MF, 1%, 0207	
0	R 2	57.11.3331	330R	MF, 1%, 0207	
0	R 3	57.11.3101	100R	MF, 1%, 0207	
0	R 4	57.11.3101	100R	MF, 1%, 0207	
0	R 5	57.11.3562	5k6	MF, 1%, 0207	
0	R 6	57.11.3100	10R	MF, 1%, 0207	
0	R 7	57.11.3102	1k0	MF, 1%, 0207	
0	R 8	58.19.0503		R 50 K, 20%, .15W, PCSCH	
0	R 9	57.11.3105	1M0	MF, 1%, 0207	
0	R 10	57.11.3105	1M0	MF, 1%, 0207	
0	R 11	58.19.0503		R 50 K, 20%, .15W, PCSCH	
0	R 12	57.11.3153	15k	MF, 1%, 0207	
0	R 13	57.11.3102	1k0	MF, 1%, 0207	
0	R 14	58.19.0503		R 50 K, 20%, .15W, PCSCH	
0	R 15	57.11.3102	1k0	MF, 1%, 0207	
0	R 16	57.11.3102	1k0	MF, 1%, 0207	
0	R 17	57.11.3102	1k0	MF, 1%, 0207	
0	R 18	58.19.0503		R 50 K, 20%, .15W, PCSCH	
0	T 1	1.022.203.00		OSZILLATORSPULE	

End of List

Comments:  
 (01) 15.4.1981  
 (02) 21.12.1981  
 (03) 11.07.89 New part

OSCILATOR PCB 4 TRACK 1.177.240.00 / 1.177.242.00 / 1.177.243.00



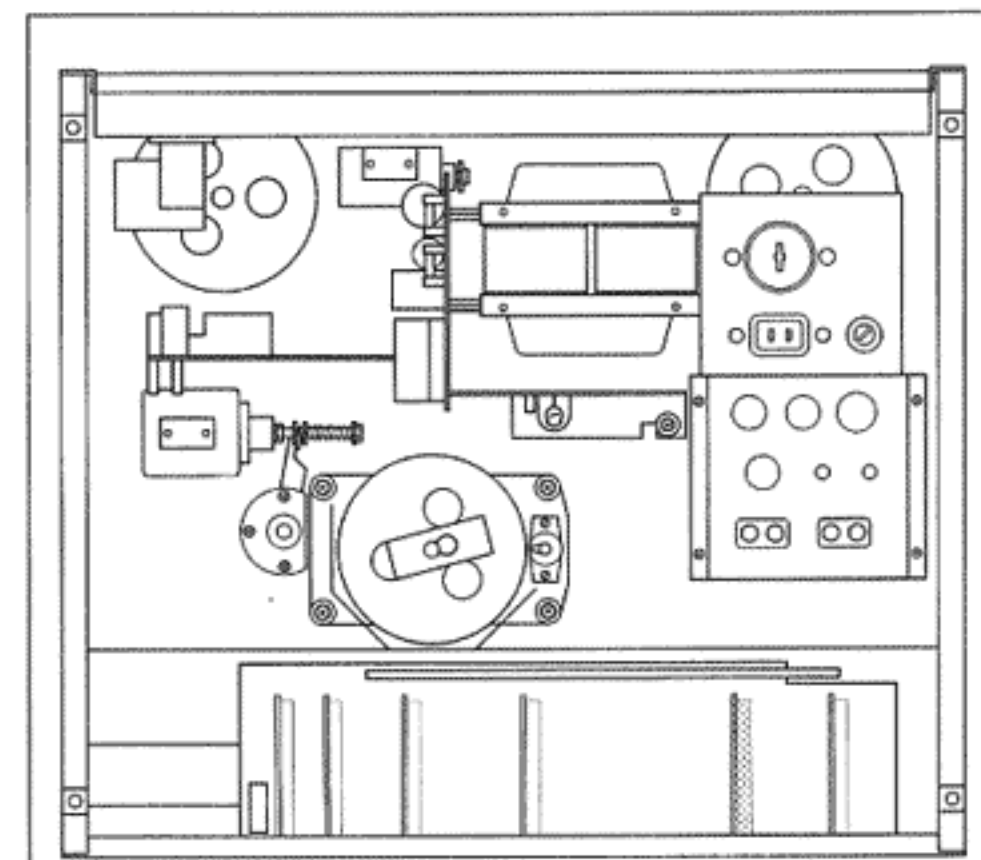
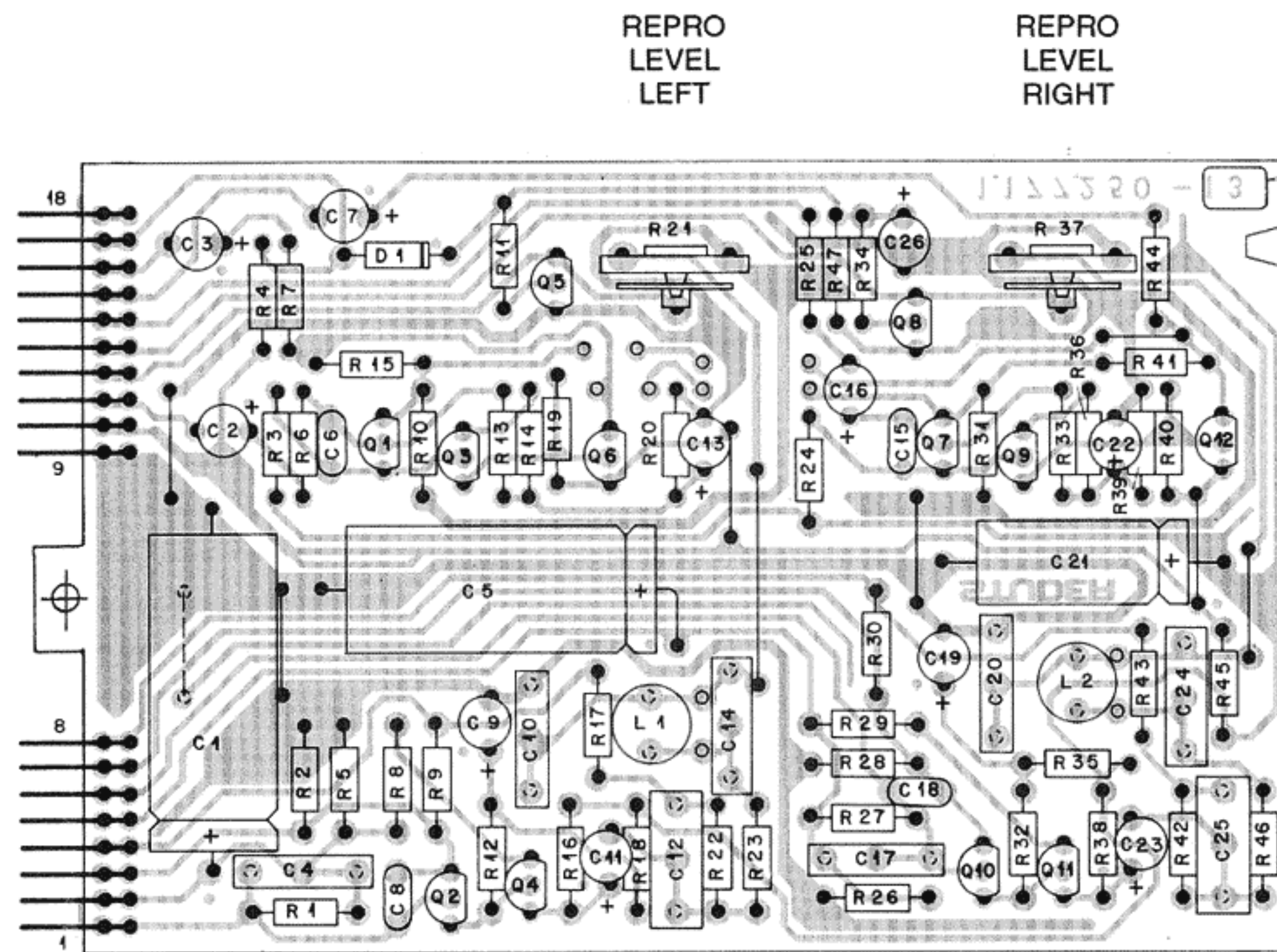
1.177.242: VALID ONLY FOR EARLIER VERSIONS B77 HS  
T1 = 1.022.192.00 C8 = 8200p

★ VALUES SEE CORRESPONDING POSITION LIST





REPRODUCE AMPLIFIER PCB (NAB 3¼-7½ ips) 1.177.250.81



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description	Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
1	C 1	59.25.1222	2m2	C-EL, 20%, 6.3V		2	R 38	57.11.3123	12k	MF, 1%, 0207	
0	C 2	59.22.8479	4u7	EL 50V, 20%, RM5		2	R 39	57.11.3182	1k8	MF, 1%, 0207	
0	C 3	59.22.8220	22u	EL 35V, 20%, RM5		2	R 40	57.11.3153	15k	MF, 1%, 0207	
0	C 4	59.11.6221		C 220 P, 5%, 400V, PC		2	R 41	57.11.3102	1k0	MF, 1%, 0207	
1	C 5	59.25.1222	2m2	C-EL, 20%, 6.3V		2	R 42	57.11.3334	330k	MF, 1%, 0207	
0	C 6	59.32.0101		C 100 P, 20%, 400V, CER		2	R 43	57.11.3472	4k7	MF, 1%, 0207	
0	C 7	59.22.8220	22u	EL 35V, 20%, RM5		2	R 44	57.11.3391	390R	MF, 1%, 0207	
0	C 8	59.32.0101		C 100 P, 20%, 400V, CER		2	R 45	57.11.3102	1k0	MF, 1%, 0207	
0	C 9	59.22.8479	4u7	EL 50V, 20%, RM5		2	R 46	57.11.3102	1k0	MF, 1%, 0207	
0	C 10	59.99.0259		C 2.7 N, 10%, 400V, MPETP		2	R 47	57.11.3473	47k	MF, 1%, 0207	
0	C 11	59.22.8479	4u7	EL 50V, 20%, RM5							
0	C 12	59.11.3103		C .01 U, 5%, 160V, PC							
0	C 13	59.22.3101	100u	EL 10V, 20%, RM5							
0	C 14	59.11.6561		C 560 P, 5%, 400V, PC							
0	C 15	59.32.0101		C 100 P, 20%, 400V, CER							
0	C 16	59.22.8479	4u7	EL 50V, 20%, RM5							
0	C 17	59.11.6221		C 220 P, 5%, 400V, PC							
0	C 18	59.32.0101		C 100 P, 20%, 400V, CER							
0	C 19	59.22.8479	4u7	EL 50V, 20%, RM5							
0	C 20	59.99.0259		C 2.7 N, 10%, 400V, MPETP							
0	C 21	59.25.4101	100u	C-EL, 20%, 25V							
0	C 22	59.22.3101	100u	EL 10V, 20%, RM5							
0	C 23	59.22.8479	4u7	EL 50V, 20%, RM5							
0	C 24	59.11.6561		C 560 P, 5%, 400V, PC							
2	C 25	59.11.3103		C .01 U, 5%, 160V, PC							
0	C 26	59.36.5339		C 3.3 U, 20%, 35V, TA							
0	D 1	50.04.0125	1N4448	75V, 150mA, 4ns, DO-35							
0	L 1	62.02.1222		L 2.2 M, 5%, D 8							
0	L 2	62.02.1222		L 2.2 M, 5%, D 8							
0	P 1	54.01.0270	8-P	P LEISTE 8 POL CIS WINKEL							
0	P 2	54.01.0271	10-P	P LEISTE 10 POL CIS WINKEL							
2	Q 1	50.03.0407	BC550C	BC 550 C							
0	Q 2	50.03.0407	BC550C	BC 550 C							
0	Q 3	50.03.0436	BC237B	BC 237 B, 547 B, 550 B,							
0	Q 4	50.03.0407	BC550C	BC 550 C							
0	Q 5	50.03.0436	BC237B	BC 237 B, 547 B, 550 B,							
0	Q 6	50.03.0436	BC237B	BC 237 B, 547 B, 550 B,							
2	Q 7	50.03.0407	BC550C	BC 550 C							
0	Q 8	50.03.0436	BC237B	BC 237 B, 547 B, 550 B,							
0	Q 9	50.03.0436	BC237B	BC 237 B, 547 B, 550 B,							
0	Q 10	50.03.0407	BC550C	BC 550 C							
0	Q 11	50.03.0407	BC550C	BC 550 C							
0	Q 12	50.03.0436	BC237B	BC 237 B, 547 B, 550 B,							
2	R 1	57.11.3224	220k	MF, 1%, 0207							
2	R 2	57.11.3331	330R	MF, 1%, 0207							
2	R 3	57.11.3154	150k	MF, 1%, 0207							
2	R 4	57.11.3682	6k8	MF, 1%, 0207							
2	R 5	57.11.3102	1k0	MF, 1%, 0207							
2	R 6	57.11.3102	1k0	MF, 1%, 0207							
2	R 7	57.11.3391	390R	MF, 1%, 0207							
2	R 8	57.11.3680	68R	MF, 1%, 0207							
2	R 9	57.11.3392	3k9	MF, 1%, 0207							
2	R 10	57.11.3470	47R	MF, 1%, 0207							
2	R 11	57.11.3123	12k	MF, 1%, 0207							
2	R 12	57.11.3104	100k	MF, 1%, 0207							
2	R 13	57.11.3154	150k	MF, 1%, 0207							
2	R 14	57.11.3680	68R	MF, 1%, 0207							
2	R 15	57.11.3102	1k0	MF, 1%, 0207							
2	R 16	57.11.3123	12k	MF, 1%, 0207							
2	R 17	57.11.3472	4k7	MF, 1%, 0207							
2	R 18	57.11.3104	100k	MF, 1%, 0207							
2	R 19	57.11.3153	15k	MF, 1%, 0207							
2	R 20	57.11.3182	1k8	MF, 1%, 0207							
0	R 21	58.19.0203		R 20 K, 20%, .15W, PCSCHE							
2	R 22	57.11.3334	330k	MF, 1%, 0207							
2	R 23	57.11.3102	1k0	MF, 1%, 0207							
2	R 24	57.11.3154	150k	MF, 1%, 0207							
2	R 25	57.11.3102	1k0	MF, 1%, 0207							
2	R 26	57.11.3102	1k0	MF, 1%, 0207							
2	R 27	57.11.3224	220k	MF, 1%, 0207							
2	R 28	57.11.3331	330R	MF, 1%, 0207							
2	R 29	57.11.3680	68R	MF, 1%, 0207							
2	R 30	57.11.3392	3k9	MF, 1%, 0207							
2	R 31	57.11.3470	47R	MF, 1%, 0207							
2	R 32	57.11.3104	100k	MF, 1%, 0207							
2	R 33	57.11.3154	150k	MF, 1%, 0207							
2	R 34	57.11.3123	12k	MF, 1%, 0207							
2	R 35	57.11.3104	100k	MF, 1%, 0207							
2	R 36	57.11.3680	68R	MF, 1%, 0207							
0	R 37	58.19.0203		R 20 K, 20%, .15W, PCSCHE							

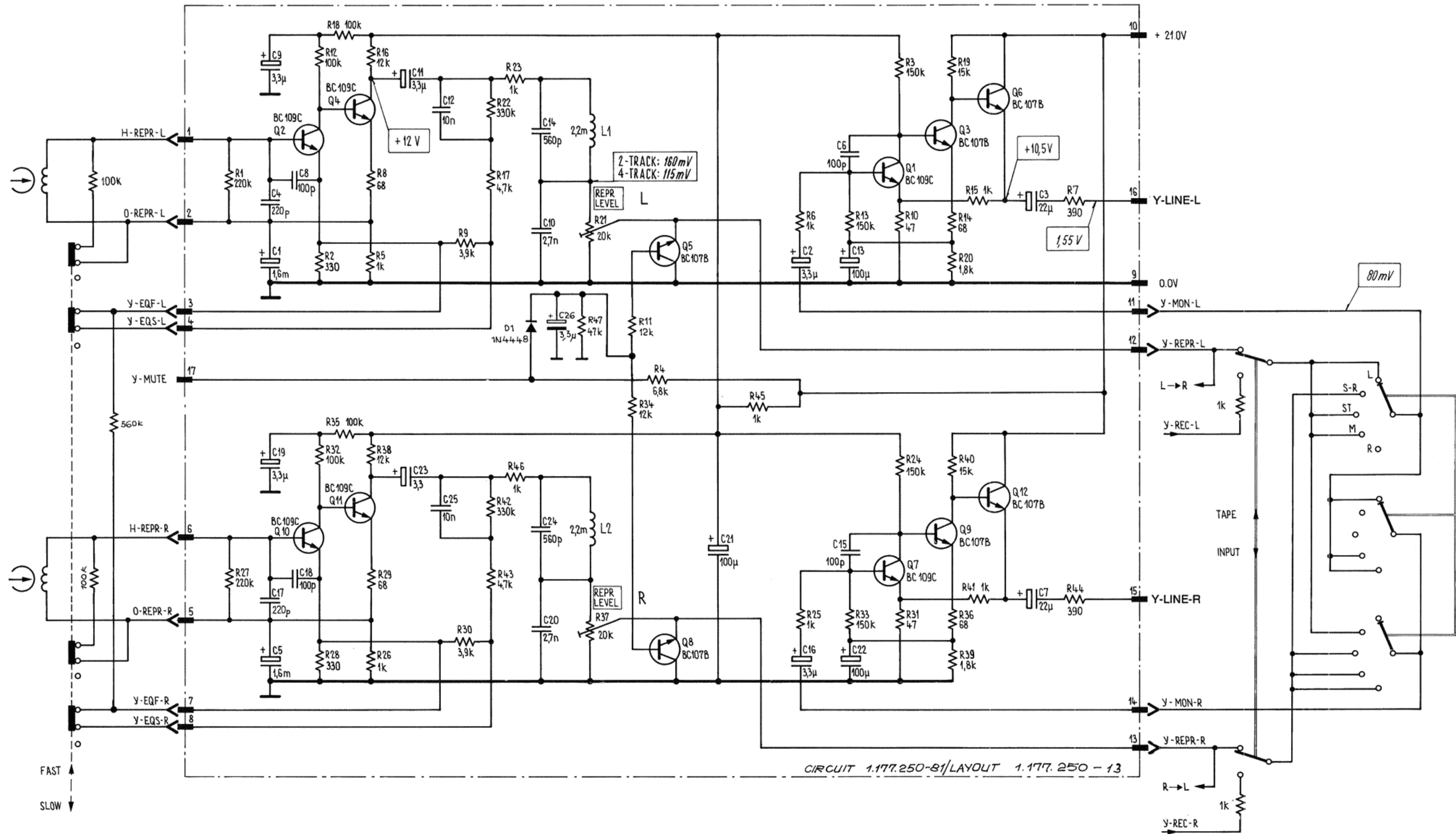
End of List

Comments:

- (01) 85.02.14 Standardized capacitance value for C 5.
- (02) 16.9.1994 Q1+Q7 50030439 changed to 50030407
- R1-R47 2% changed to 1%



REPRODUCE AMPLIFIER PCB (NAB 3¼-7½ ips) 1.177.250.81

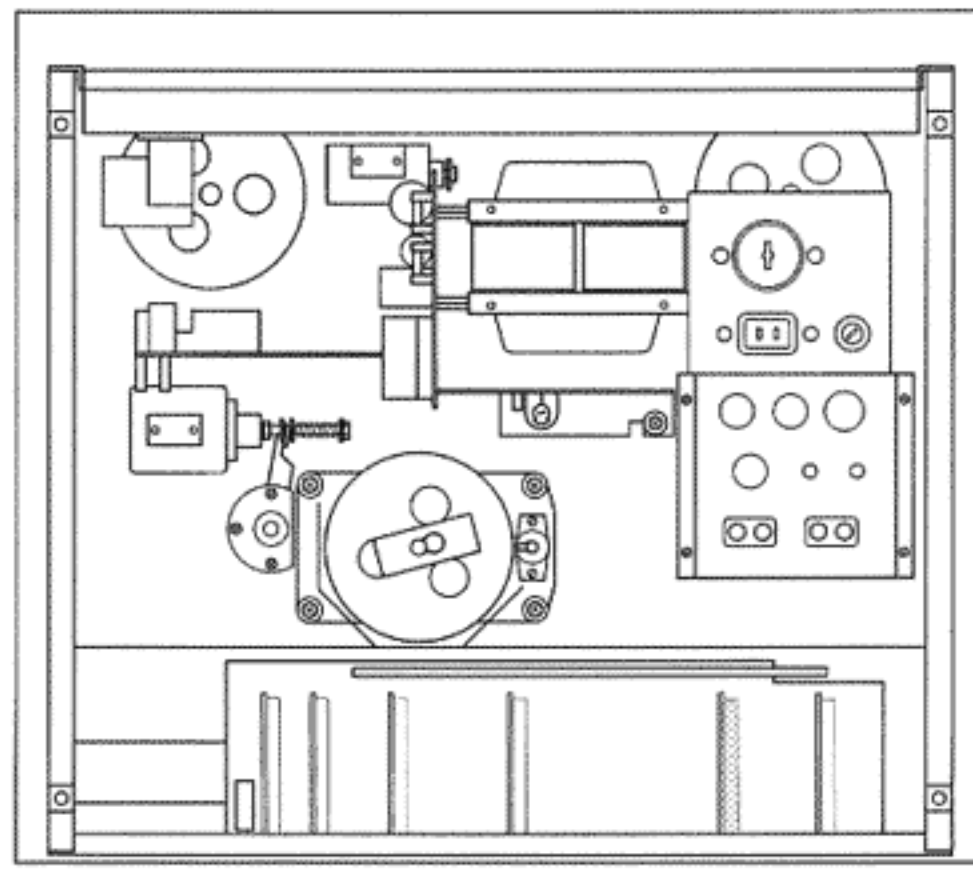
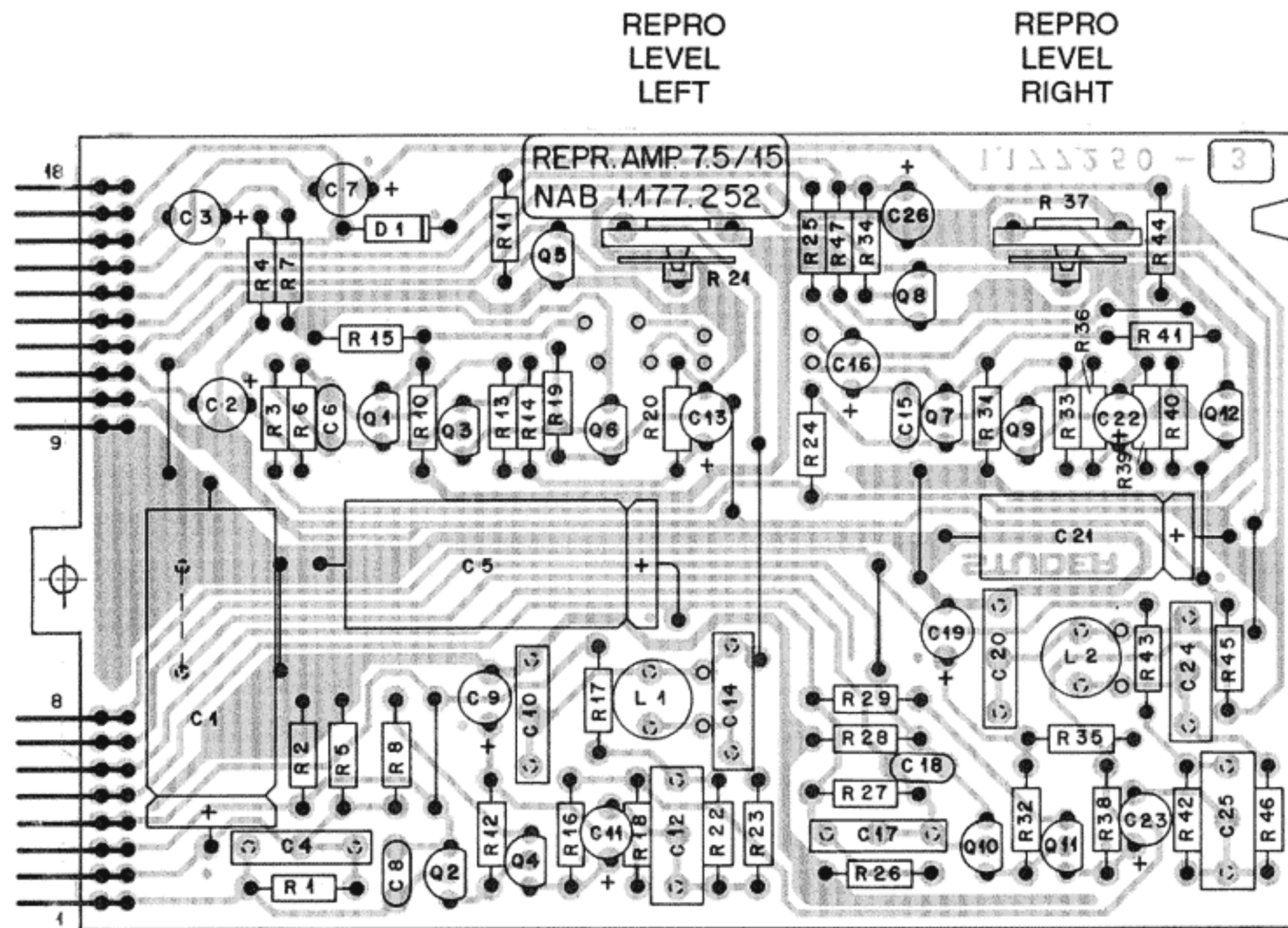


C26, D1, R47 ARE MISSING FOR VERSION 1.177.250-00





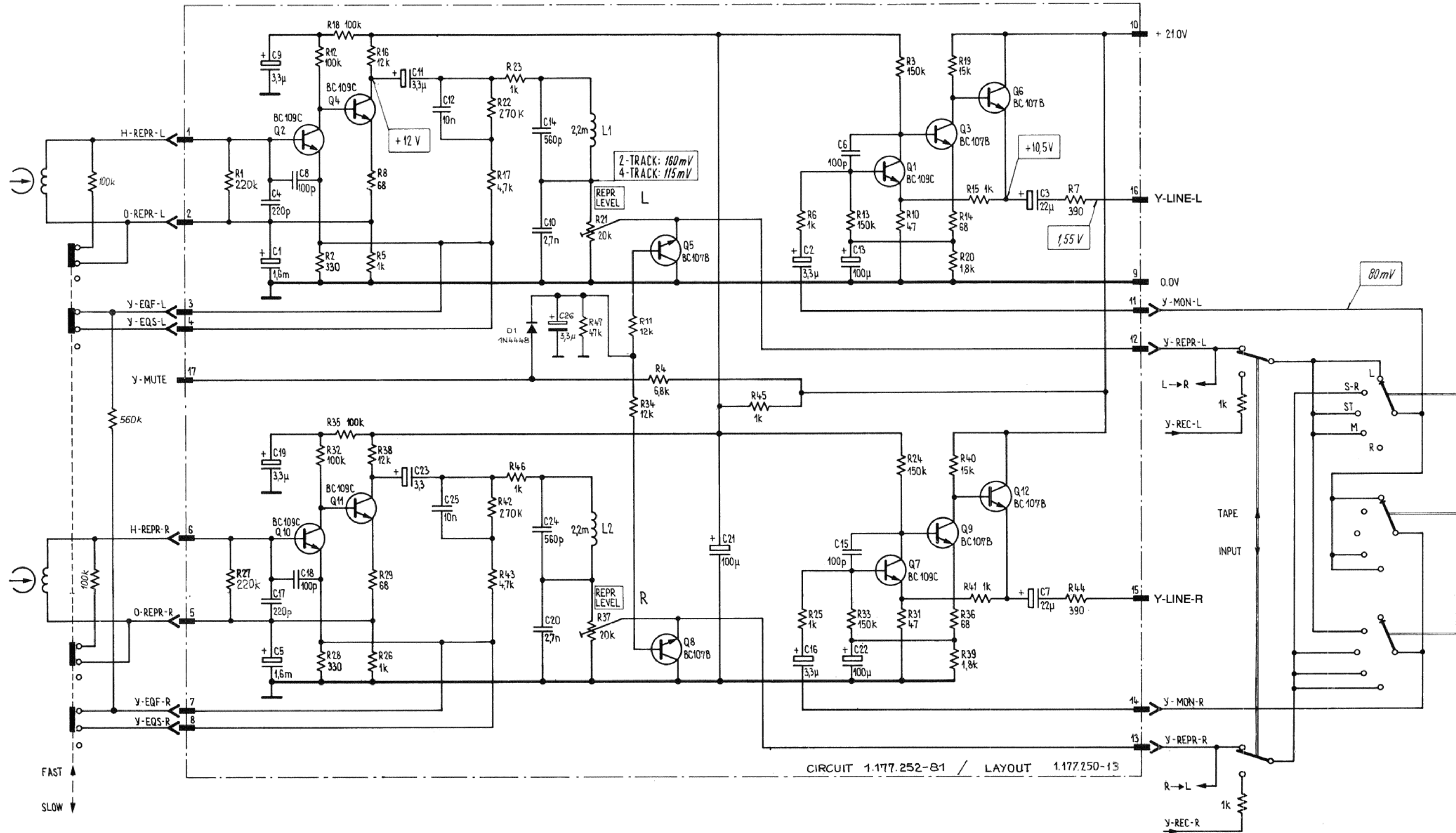
REPRODUCE AMPLIFIER PCB (NAB 7½-15 ips) 1.177.252.81



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description	Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
1	C 1	59.25.1222	2m2	C-EL, 20%, 6.3V		2	R 38	57.11.3123	12k	MF, 1%, 0207	
0	C 2	59.22.8479	4u7	EL 50V, 20%, RM5		2	R 39	57.11.3182	1k8	MF, 1%, 0207	
0	C 3	59.22.6220	22u	EL 35V, 20%, RM5		2	R 40	57.11.3153	15k	MF, 1%, 0207	
0	C 4	59.11.6221		C 220 P, 5%, 400V, PC		2	R 41	57.11.3102	1k0	MF, 1%, 0207	
1	C 5	59.25.1222	2m2	C-EL, 20%, 6.3V		2	R 42	57.11.3274	270k	MF, 1%, 0207	
0	C 6	59.32.0101		C 100 P, 20%, 400V, CER		2	R 43	57.11.3472	4k7	MF, 1%, 0207	
0	C 7	59.22.6220	22u	EL 35V, 20%, RM5		2	R 44	57.11.3391	390R	MF, 1%, 0207	
0	C 8	59.32.0101		C 100 P, 20%, 400V, CER		2	R 45	57.11.3102	1k0	MF, 1%, 0207	
0	C 9	59.22.8479	4u7	EL 50V, 20%, RM5		2	R 46	57.11.3102	1k0	MF, 1%, 0207	
0	C 10	59.99.0259		C 2.7 N, 10%, 400V, MPETP		2	R 47	57.11.3473	47k	MF, 1%, 0207	
0	C 11	59.22.8479	4u7	EL 50V, 20%, RM5							End of List
0	C 12	59.11.3103		C .01 U, 5%, 160V, PC							
0	C 13	59.22.3101	100u	EL 10V, 20%, RM5							
0	C 14	59.11.6561		C 560 P, 5%, 400V, PC							
0	C 15	59.32.0101		C 100 P, 20%, 400V, CER							
0	C 16	59.22.8479	4u7	EL 50V, 20%, RM5							
0	C 17	59.11.6221		C 220 P, 5%, 400V, PC							
0	C 18	59.32.0101		C 100 P, 20%, 400V, CER							
0	C 19	59.22.8479	4u7	EL 50V, 20%, RM5							
0	C 20	59.99.0259		C 2.7 N, 10%, 400V, MPETP							
0	C 21	59.25.4101	100u	C-EL, 20%, 25V							
0	C 22	59.22.3101	100u	EL 10V, 20%, RM5							
0	C 23	59.22.8479	4u7	EL 50V, 20%, RM5							
0	C 24	59.11.6561		C 560 P, 5%, 400V, PC							
2	C 25	59.11.3103		C .01 U, 5%, 160V, PC							
0	C 26	59.36.5339		C 3.3 U, 20%, 35V, TA							
0	D 1	50.04.0125	1N4448	75V, 150mA, 4ns, DO-35							
0	L 1	62.02.1222		L 2.2 M, 5%, D 8							
0	L 2	62.02.1222		L 2.2 M, 5%, D 8							
0	P 1	54.01.0270	8-P	P LEISTE 8 POL CIS WINKEL							
0	P 2	54.01.0271	10-P	P LEISTE 10 POL CIS WINKEL							
2	Q 1	50.03.0407	BC550C	BC 550 C							
0	Q 2	50.03.0407	BC550C	BC 550 C							
0	Q 3	50.03.0436	BC237B	BC 237 B, 547 B, 550 B,							
0	Q 4	50.03.0407	BC550C	BC 550 C							
0	Q 5	50.03.0436	BC237B	BC 237 B, 547 B, 550 B,							
0	Q 6	50.03.0436	BC237B	BC 237 B, 547 B, 550 B,							
2	Q 7	50.03.0407	BC550C	BC 550 C							
0	Q 8	50.03.0436	BC237B	BC 237 B, 547 B, 550 B,							
0	Q 9	50.03.0436	BC237B	BC 237 B, 547 B, 550 B,							
0	Q 10	50.03.0407	BC550C	BC 550 C							
0	Q 11	50.03.0407	BC550C	BC 550 C							
0	Q 12	50.03.0436	BC237B	BC 237 B, 547 B, 550 B,							
2	R 1	57.11.3224	220k	MF, 1%, 0207							
2	R 2	57.11.3331	330R	MF, 1%, 0207							
2	R 3	57.11.3154	150k	MF, 1%, 0207							
2	R 4	57.11.3682	6k8	MF, 1%, 0207							
2	R 5	57.11.3102	1k0	MF, 1%, 0207							
2	R 6	57.11.3102	1k0	MF, 1%, 0207							
2	R 7	57.11.3391	390R	MF, 1%, 0207							
2	R 8	57.11.3680	68R	MF, 1%, 0207							
2	R 10	57.11.3470	47R	MF, 1%, 0207							
2	R 11	57.11.3123	12k	MF, 1%, 0207							
2	R 12	57.11.3104	100k	MF, 1%, 0207							
2	R 13	57.11.3154	150k	MF, 1%, 0207							
2	R 14	57.11.3680	68R	MF, 1%, 0207							
2	R 15	57.11.3102	1k0	MF, 1%, 0207							
2	R 16	57.11.3123	12k	MF, 1%, 0207							
2	R 17	57.11.3472	4k7	MF, 1%, 0207							
2	R 18	57.11.3104	100k	MF, 1%, 0207							
2	R 19	57.11.3153	15k	MF, 1%, 0207							
2	R 20	57.11.3182	1k8	MF, 1%, 0207							
0	R 21	58.19.0203		R 20 K, 20%, .15W, PCSCH							
2	R 22	57.11.3274	270k	MF, 1%, 0207							
2	R 23	57.11.3102	1k0	MF, 1%, 0207							
2	R 24	57.11.3154	150k	MF, 1%, 0207							
2	R 25	57.11.3102	1k0	MF, 1%, 0207							
2	R 26	57.11.3102	1k0	MF, 1%, 0207							
2	R 27	57.11.3224	220k	MF, 1%, 0207							
2	R 28	57.11.3331	330R	MF, 1%, 0207							
2	R 29	57.11.3680	68R	MF, 1%, 0207							
2	R 31	57.11.3470	47R	MF, 1%, 0207							
2	R 32	57.11.3104	100k	MF, 1%, 0207							
2	R 33	57.11.3154	150k	MF, 1%, 0207							
2	R 34	57.11.3123	12k	MF, 1%, 0207							
2	R 35	57.11.3104	100k	MF, 1%, 0207							
2	R 36	57.11.3680	68R	MF, 1%, 0207							
2	R 37	58.19.0203		R 20 K, 20%, .15W, PCSCH							

Comments:  
 (01) 85 02.14 Standardized capacitance value for C 5.  
 (02) 16.9.94 Q1+Q7 50030439 changed to 50030407  
 R1-R47 2% changed to 1%

REPRODUCE AMPLIFIER PCB (NAB 7½-15 ips) 1.177.252.81

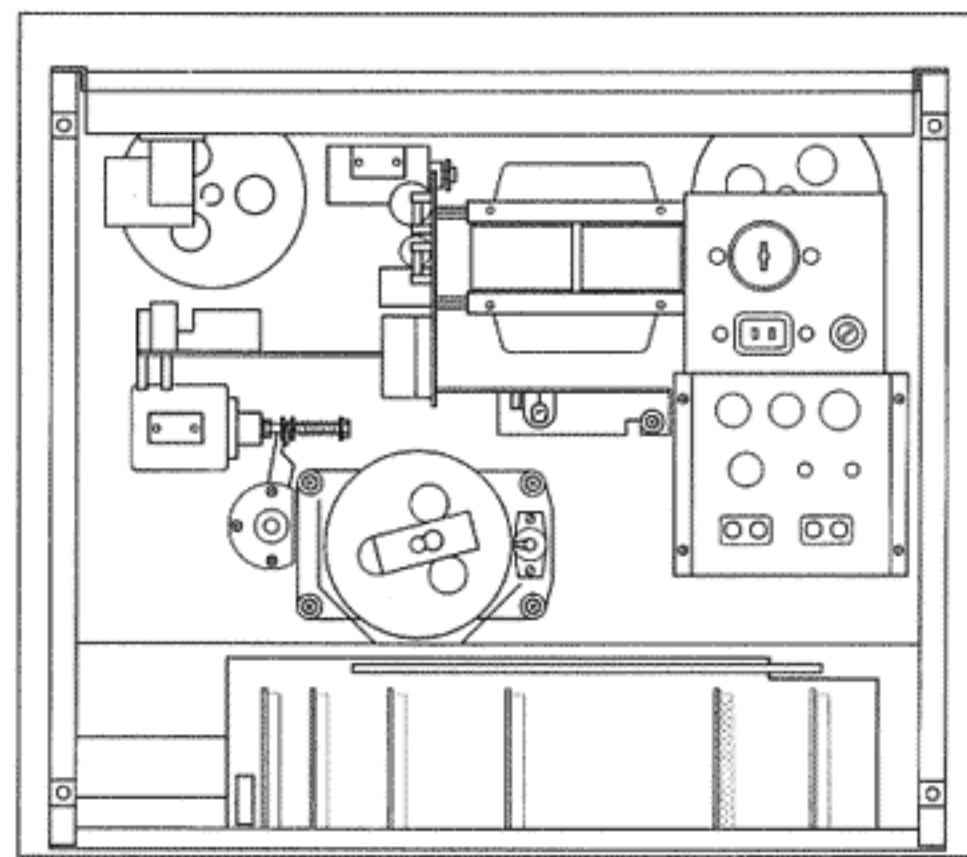
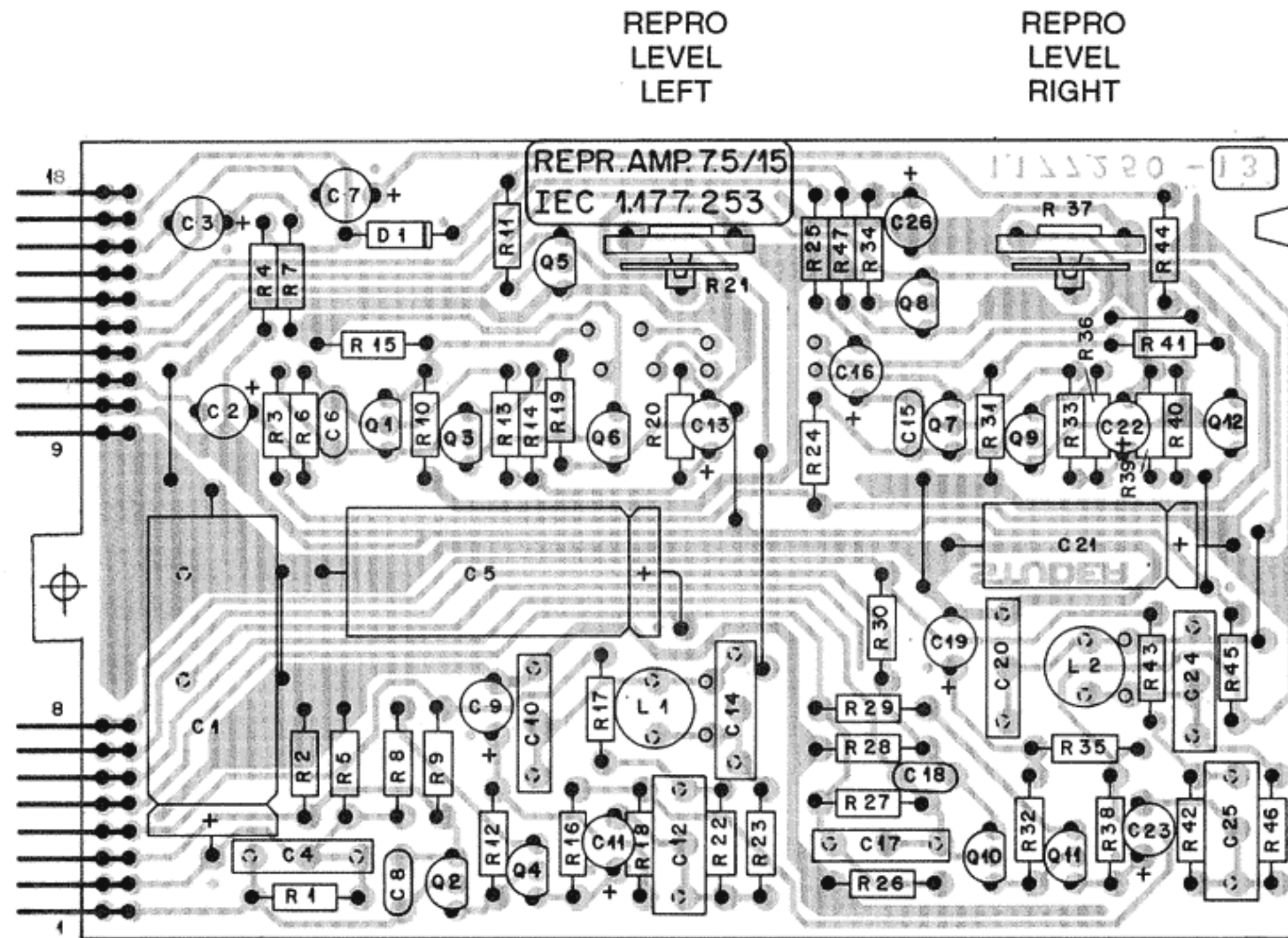


C26, D1, R47 ARE MISSING FOR VERSION 1.177.252-00





REPRODUCE AMPLIFIER PCB (IEC 7½-15 ips) 1.177.253.81



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
2	C 1	59.25.1222		2m2	C-EL, 20%, 6.3V
0	C 2	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 3	59.22.6220		22u	EL 35V, 20%, RM5
0	C 4	59.11.6221			C 220 P, 5%, 400V, PC
2	C 5	59.25.1222		2m2	C-EL, 20%, 6.3V
0	C 6	59.32.0101			C 100 P, 20%, 400V, CER
0	C 7	59.22.6220		22u	EL 35V, 20%, RM5
0	C 8	59.32.0101			C 100 P, 20%, 400V, CER
0	C 9	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 10	59.99.0259			C 2.7 N, 10%, 400V, MPETP
0	C 11	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 12	59.11.3103			C .01 U, 5%, 160V, PC
0	C 13	59.22.3101		100u	EL 10V, 20%, RM5
0	C 14	59.11.6561			C 560 P, 5%, 400V, PC
0	C 15	59.32.0101			C 100 P, 20%, 400V, CER
0	C 16	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 17	59.11.6221			C 220 P, 5%, 400V, PC
0	C 18	59.32.0101			C 100 P, 20%, 400V, CER
0	C 19	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 20	59.99.0259			C 2.7 N, 10%, 400V, MPETP
0	C 21	59.25.4101		100u	C-EL, 20%, .25V
0	C 22	59.22.3101		100u	EL 10V, 20%, RM5
0	C 23	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 24	59.11.6561			C 560 P, 5%, 400V, PC
3	C 25	59.11.3103			C .01 U, 5%, 160V, PC
0	C 26	59.36.5339			C 3.3 U, 20%, 35V, TA
0	D 1	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	L 1	62.02.1222			L 2.2 M, 5%, D 8
0	L 2	62.02.1222			L 2.2 M, 5%, D 8
0	P 1	54.01.0270		8-P	P LEISTE 8 POL CIS WINKEL
0	P 2	54.01.0271		10-P	P LEISTE 10 POL CIS WINKEL
3	Q 1	50.03.0407		BC550C	BC 550 C
0	Q 2	50.03.0407		BC550C	BC 550 C
0	Q 3	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 4	50.03.0407		BC550C	BC 550 C
0	Q 5	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 6	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
3	Q 7	50.03.0407		BC550C	BC 550 C
0	Q 8	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 9	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 10	50.03.0407		BC550C	BC 550 C
0	Q 11	50.03.0407		BC550C	BC 550 C
0	Q 12	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
3	R 1	57.11.3563		56k	MF, 1%, 0207
3	R 2	57.11.3331		330R	MF, 1%, 0207
3	R 3	57.11.3154		150k	MF, 1%, 0207
3	R 4	57.11.3682		6k8	MF, 1%, 0207
3	R 5	57.11.3102		1k0	MF, 1%, 0207
3	R 6	57.11.3102		1k0	MF, 1%, 0207
3	R 7	57.11.3391		390R	MF, 1%, 0207
3	R 8	57.41.4680			R 68, 5%, .25W, CSCH
3	R 9	57.11.3272		2k7	MF, 1%, 0207
3	R 10	57.11.3470		47R	MF, 1%, 0207
3	R 11	57.11.3123		12k	MF, 1%, 0207
3	R 12	57.11.3104		100k	MF, 1%, 0207
3	R 13	57.11.3154		150k	MF, 1%, 0207
3	R 14	57.11.3680		68R	MF, 1%, 0207
3	R 15	57.11.3102		1k0	MF, 1%, 0207
3	R 16	57.11.3123		12k	MF, 1%, 0207
3	R 17	57.11.3392		3k9	MF, 1%, 0207
3	R 18	57.11.3104		100k	MF, 1%, 0207
3	R 19	57.11.3153		15k	MF, 1%, 0207
3	R 20	57.11.3182		1k8	MF, 1%, 0207
0	R 21	58.19.0203			R 20 K, 20%, .15W, PCSCH
3	R 22	57.11.3684		680k	MF, 1%, 0207
3	R 23	57.11.3102		1k0	MF, 1%, 0207
3	R 24	57.11.3154		150k	MF, 1%, 0207
3	R 25	57.11.3102		1k0	MF, 1%, 0207
3	R 26	57.11.3102		1k0	MF, 1%, 0207
3	R 27	57.11.3563		56k	MF, 1%, 0207
3	R 28	57.11.3331		330R	MF, 1%, 0207
3	R 29	57.11.3680		68R	MF, 1%, 0207
3	R 30	57.11.3272		2k7	MF, 1%, 0207
3	R 31	57.11.3470		47R	MF, 1%, 0207
3	R 32	57.11.3104		100k	MF, 1%, 0207
3	R 33	57.11.3154		150k	MF, 1%, 0207
3	R 34	57.11.3123		12k	MF, 1%, 0207
3	R 35	57.11.3104		100k	MF, 1%, 0207
3	R 36	57.11.3680		68R	MF, 1%, 0207
0	R 37	58.19.0203			R 20 K, 20%, .15W, PCSCH

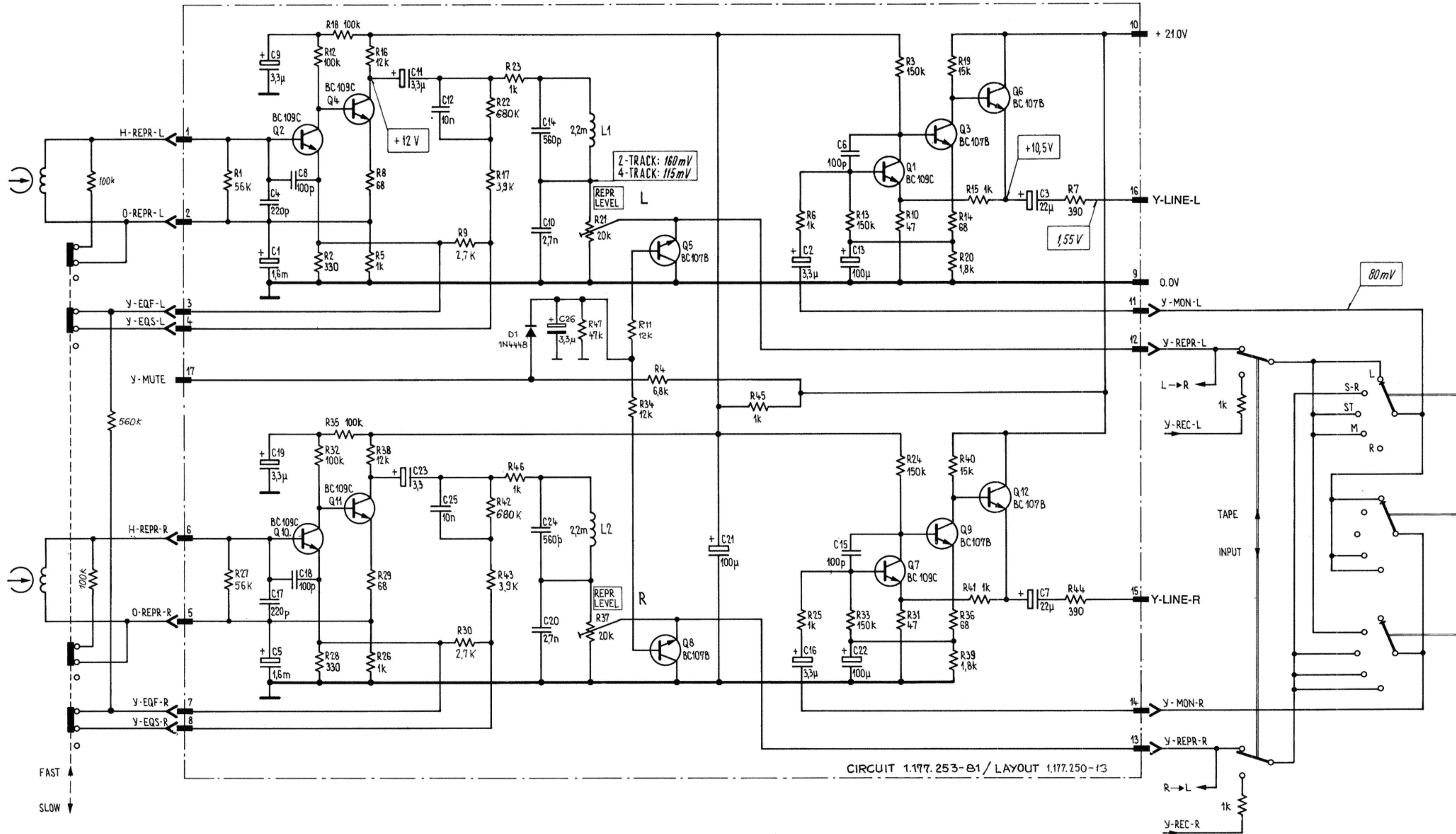
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
3	R 38	57.11.3123		12k	MF, 1%, 0207
3	R 39	57.11.3182		1k8	MF, 1%, 0207
3	R 40	57.11.3153		15k	MF, 1%, 0207
3	R 41	57.11.3102		1k0	MF, 1%, 0207
3	R 42	57.11.3684		680k	MF, 1%, 0207
3	R 43	57.11.3392		3k9	MF, 1%, 0207
3	R 44	57.11.3391		390R	MF, 1%, 0207
3	R 45	57.11.3102		1k0	MF, 1%, 0207
3	R 46	57.11.3102		1k0	MF, 1%, 0207
3	R 47	57.11.3473		47k	MF, 1%, 0207

End of List

**Comments:**  
 (01) 82.12.14 Increase of low-freq. gain.  
 (02) 85.02.14 Standardized capacitance value for C 5.  
 (03) 16.9.1994 Q1+Q7 50030439 changed to 50030407  
 R1-R47 5% changed to 1%



REPRODUCE AMPLIFIER PCB (IEC 7½-15 ips) 1.177.253.81



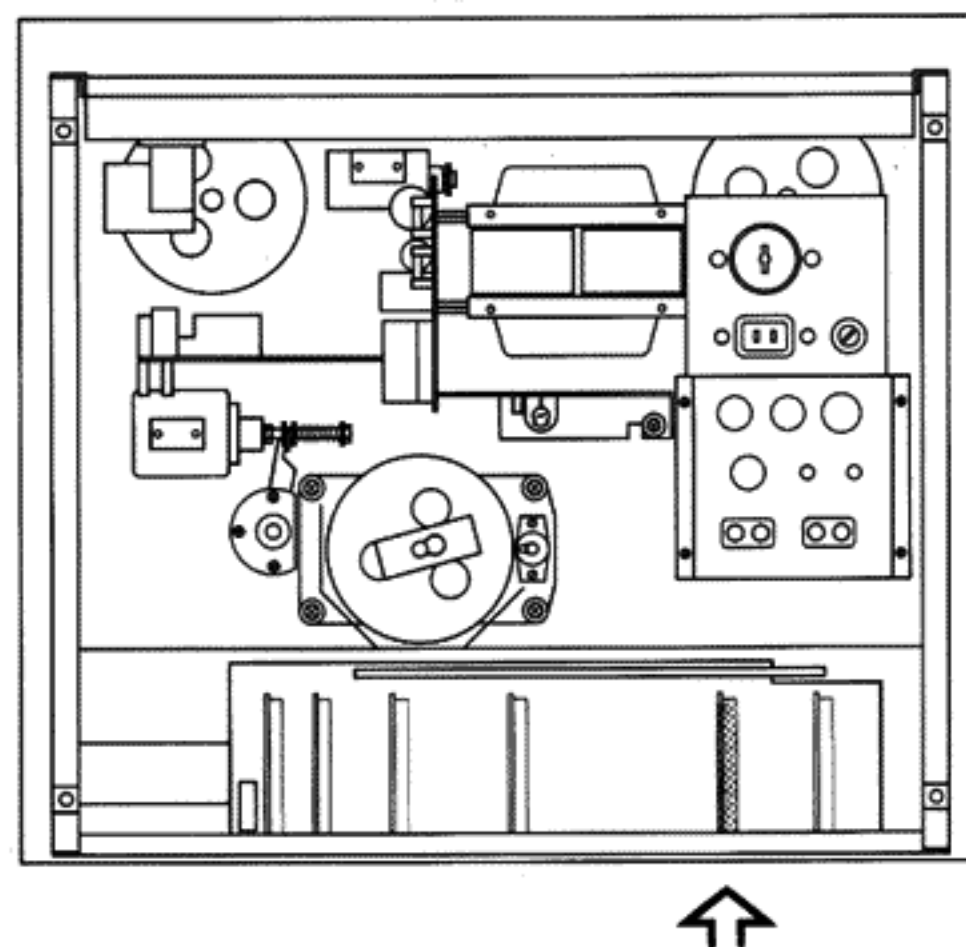
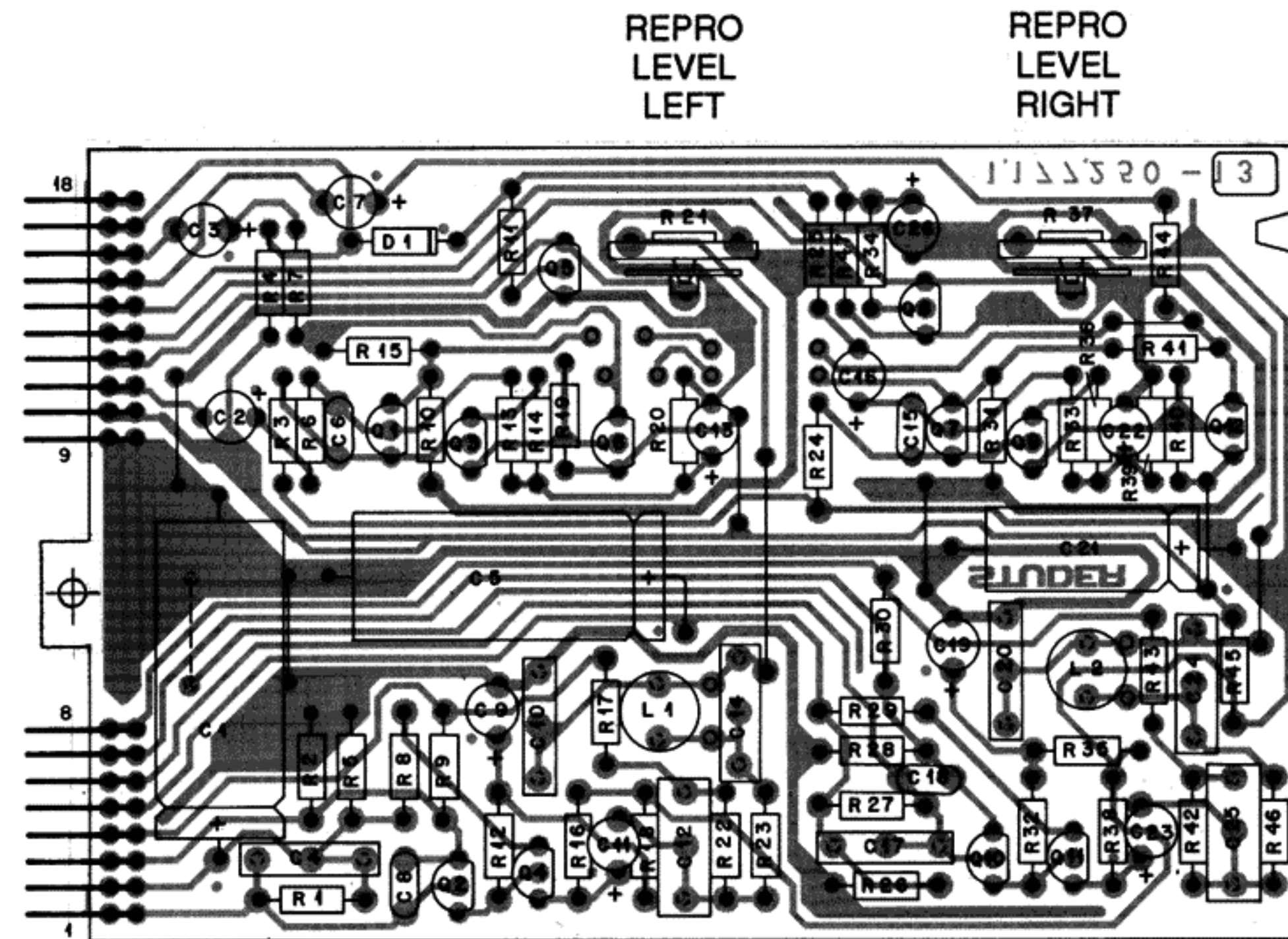
C26,D1,R47 ARE MISSING FOR VERSION 1.177.253-00

SEE SERVICE INFORMATION  
63.10: R17





REPRODUCE AMPLIFIER PCB (NAB 1 7/8-3 3/4 ips) 1.177.257.81



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
1	C 1	59.25.1222		2m2	C-EL, 20%, 6.3V
0	C 2	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 3	59.22.8220		22u	EL 35V, 20%, RM5
0	C 4	59.11.6221			C 220 P, 5%, 400V, PC
1	C 5	59.25.1222		2m2	C-EL, 20%, 6.3V
0	C 6	59.32.0101			C 100 P, 20%, 400V, CER
0	C 7	59.22.8220		22u	EL 35V, 20%, RM5
0	C 8	59.32.0101			C 100 P, 20%, 400V, CER
0	C 9	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 10	59.99.0259			C 2.7 N, 10%, 400V, MPETP
0	C 11	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 12	59.11.3103			C .01 U, 5%, 160V, PC
0	C 13	59.22.3101		100u	EL 10V, 20%, RM5
0	C 14	59.11.6561			C 560 P, 5%, 400V, PC
0	C 15	59.32.0101			C 100 P, 20%, 400V, CER
0	C 16	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 17	59.11.6221			C 220 P, 5%, 400V, PC
0	C 18	59.32.0101			C 100 P, 20%, 400V, CER
0	C 19	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 20	59.99.0259			C 2.7 N, 10%, 400V, MPETP
0	C 21	59.25.4101		100u	C-EL, 20%, 25V
0	C 22	59.22.3101		100u	EL 10V, 20%, RM5
0	C 23	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 24	59.11.6561			C 560 P, 5%, 400V, PC
2	C 25	59.11.3103			C .01 U, 5%, 160V, PC
0	C 26	59.36.5339			C 3.3 U, 20%, 35V, TA
0	D 1	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	L 1	62.02.1222			L 2.2 M, 5%, D 8
0	L 2	62.02.1222			L 2.2 M, 5%, D 8
0	P 1	54.01.0270		8-P	P LEISTE 8 POL CIS WINKEL
0	P 2	54.01.0271		10-P	P LEISTE 10 POL CIS WINKEL
2	Q 1	50.03.0407		BC550C	BC 550 C
0	Q 2	50.03.0407		BC550C	BC 550 C
0	Q 3	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 4	50.03.0407		BC550C	BC 550 C
0	Q 5	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 6	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
2	Q 7	50.03.0407		BC550C	BC 550 C
0	Q 8	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 9	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 10	50.03.0407		BC550C	BC 550 C
0	Q 11	50.03.0407		BC550C	BC 550 C
0	Q 12	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
2	R 1	57.11.3224		220k	MF, 1%, 0207
2	R 2	57.11.3331		330R	MF, 1%, 0207
2	R 3	57.11.3154		150k	MF, 1%, 0207
2	R 4	57.11.3682		6k8	MF, 1%, 0207
2	R 5	57.11.3102		1k0	MF, 1%, 0207
2	R 6	57.11.3102		1k0	MF, 1%, 0207
2	R 7	57.11.3391		390R	MF, 1%, 0207
2	R 8	57.11.3680		68R	MF, 1%, 0207
2	R 9	57.11.3332		3k3	MF, 1%, 0207
2	R 10	57.11.3470		47R	MF, 1%, 0207
2	R 11	57.11.3123		12k	MF, 1%, 0207
2	R 12	57.11.3104		100k	MF, 1%, 0207
2	R 13	57.11.3154		150k	MF, 1%, 0207
2	R 14	57.11.3680		68R	MF, 1%, 0207
2	R 15	57.11.3102		1k0	MF, 1%, 0207
2	R 16	57.11.3123		12k	MF, 1%, 0207
2	R 17	57.11.3822		8k2	MF, 1%, 0207
2	R 18	57.11.3104		100k	MF, 1%, 0207
2	R 19	57.11.3153		15k	MF, 1%, 0207
2	R 20	57.11.3182		1k8	MF, 1%, 0207
0	R 21	58.19.0203			R 20 K, 20%, .15W, PCSCH
2	R 22	57.11.3334		330k	MF, 1%, 0207
2	R 23	57.11.3102		1k0	MF, 1%, 0207
2	R 24	57.11.3154		150k	MF, 1%, 0207
2	R 25	57.11.3102		1k0	MF, 1%, 0207
2	R 26	57.11.3102		1k0	MF, 1%, 0207
2	R 27	57.11.3224		220k	MF, 1%, 0207
2	R 28	57.11.3331		330R	MF, 1%, 0207
2	R 29	57.11.3680		68R	MF, 1%, 0207
2	R 30	57.11.3332		3k3	MF, 1%, 0207
2	R 31	57.11.3470		47R	MF, 1%, 0207
2	R 32	57.11.3154		150k	MF, 1%, 0207
2	R 33	57.11.3154		150k	MF, 1%, 0207
2	R 34	57.11.3123		12k	MF, 1%, 0207
2	R 35	57.11.3104		100k	MF, 1%, 0207
2	R 36	57.11.3680		68R	MF, 1%, 0207
0	R 37	58.19.0203			R 20 K, 20%, .15W, PCSCH

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
2	R 38	57.11.3123		12k	MF, 1%, 0207
2	R 39	57.11.3182		1k8	MF, 1%, 0207
2	R 40	57.11.3153		15k	MF, 1%, 0207
2	R 41	57.11.3102		1k0	MF, 1%, 0207
2	R 42	57.11.3334		330k	MF, 1%, 0207
2	R 43	57.11.3822		8k2	MF, 1%, 0207
2	R 44	57.11.3391		390R	MF, 1%, 0207
2	R 45	57.11.3102		1k0	MF, 1%, 0207
2	R 46	57.11.3102		1k0	MF, 1%, 0207
2	R 47	57.11.3473		47k	MF, 1%, 0207

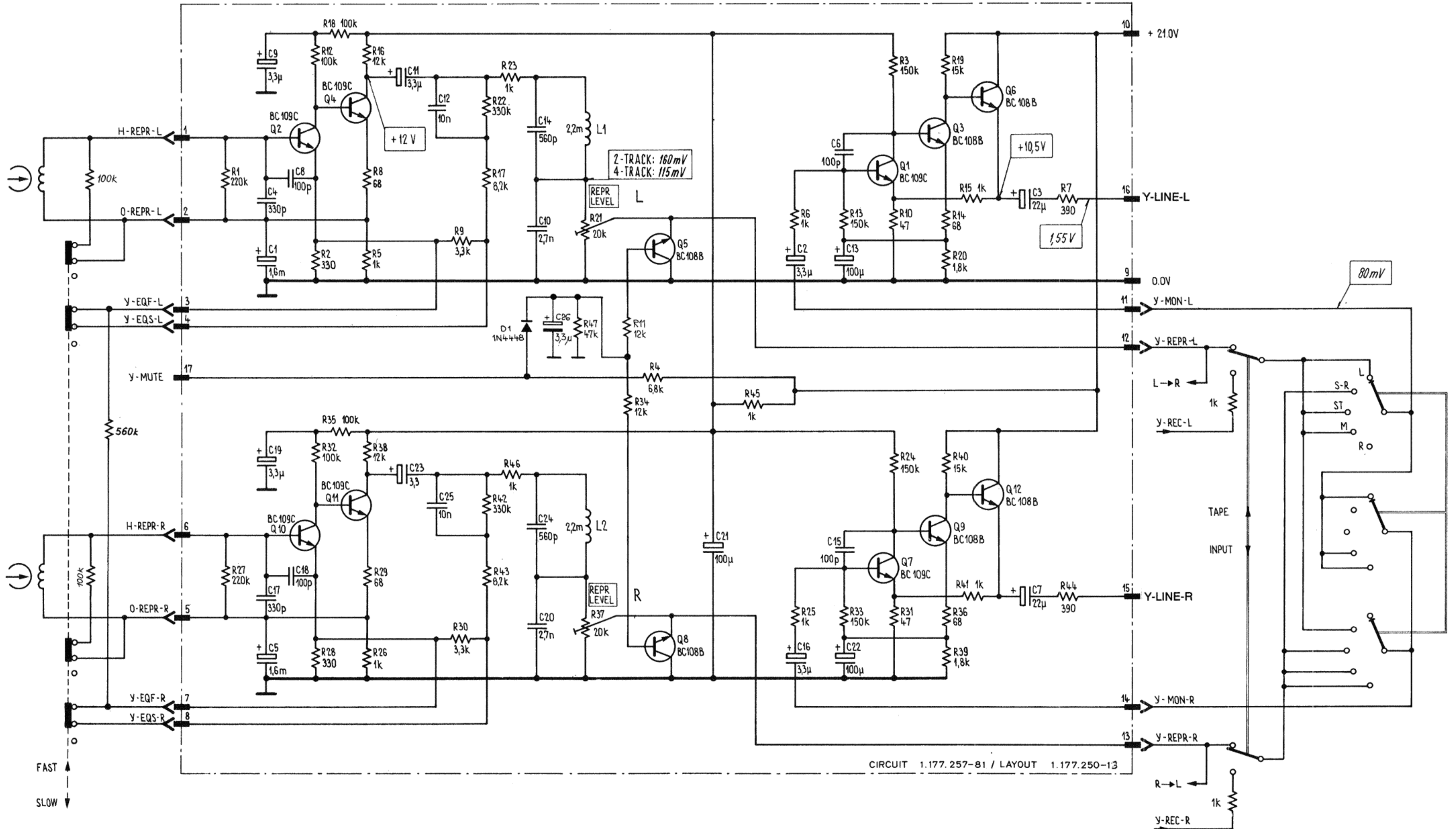
End of List

Comments:

- (01) 85.02.14 Standardized capacitance value for C.5.
- (02) 16.9.94 Q1+Q7 50030439 changed to 50030407
- R1-R47 2% changed to 1%



REPRODUCE AMPLIFIER PCB (NAB 1 7/8-3 3/4 ips) 1.177.257.81



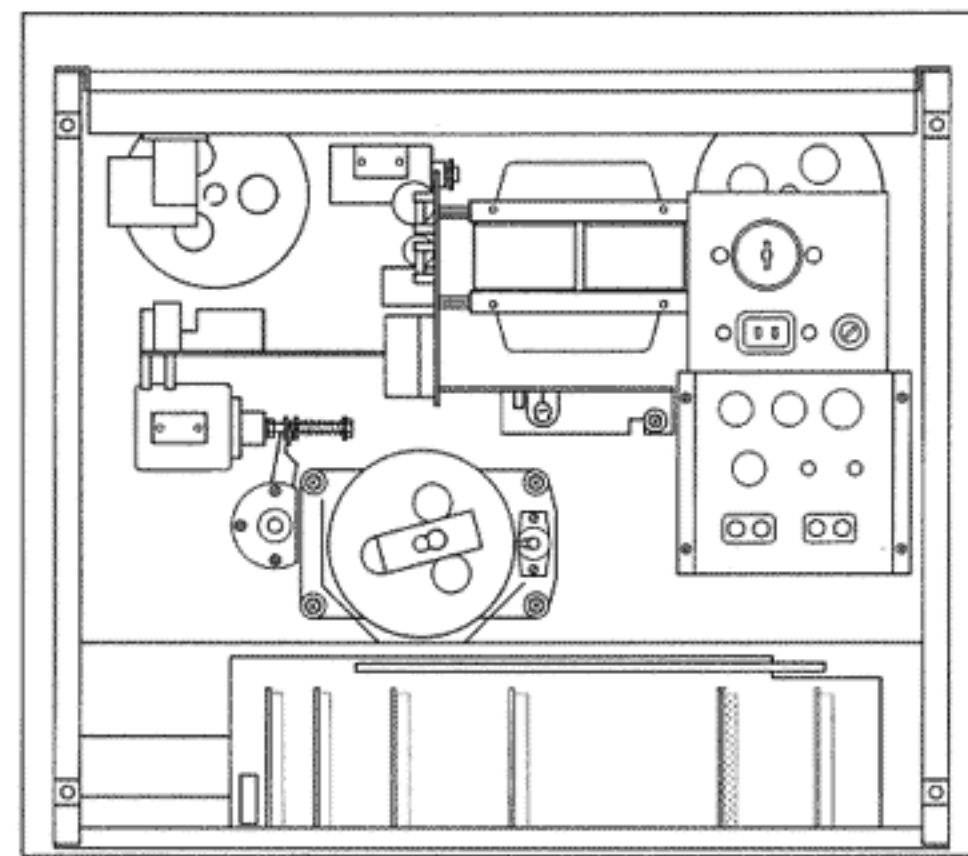
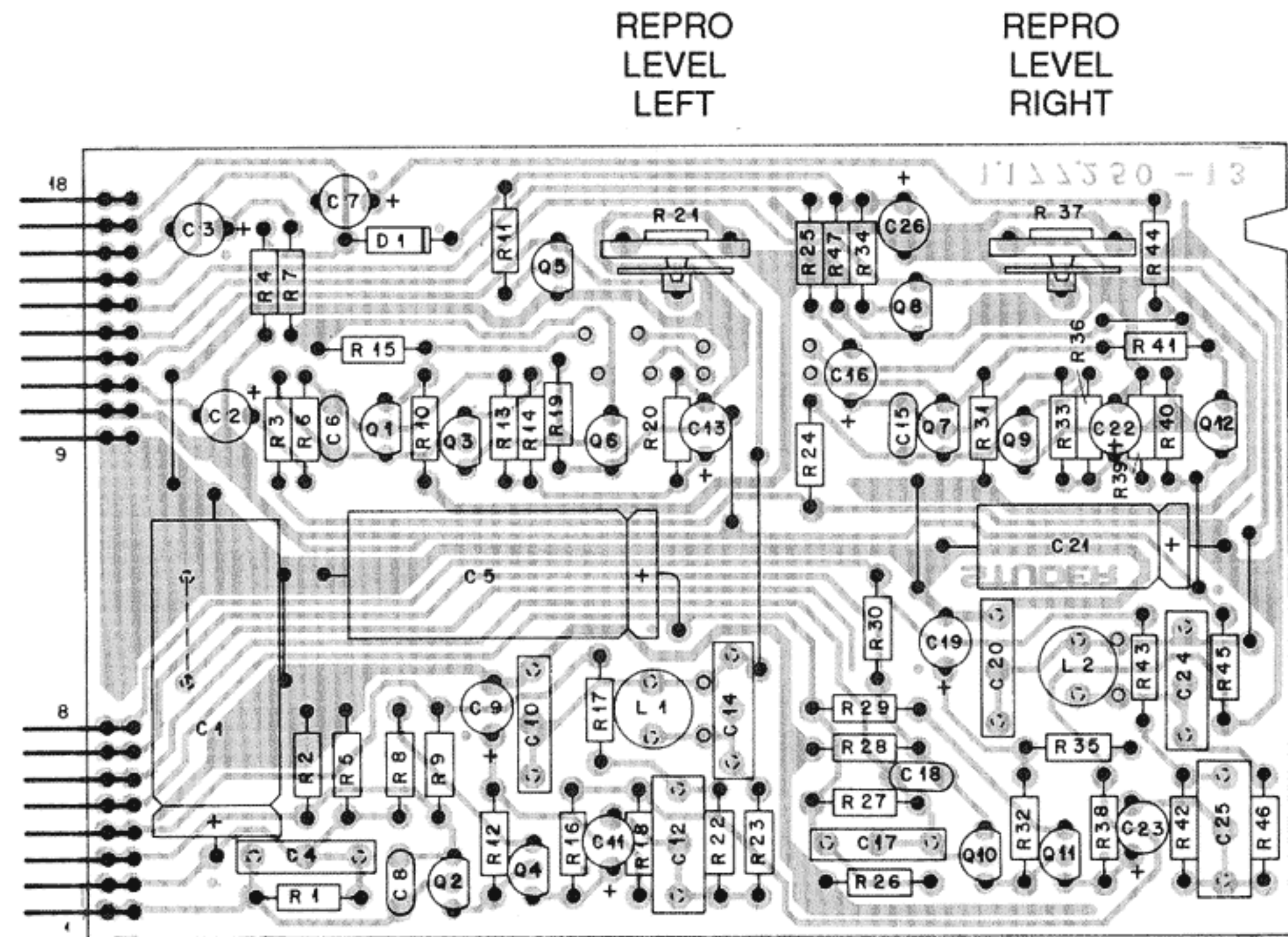
CIRCUIT 1.177.257-81 / LAYOUT 1.177.250-13

C26,D1,R47 ARE MISSING FOR VERSION 1.177.257-00





REPRODUCE AMPLIFIER PCB (NAB 15/15-1 7/8 ips) 1.177.258.00



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
2	C 1	59.25.1222		2m2	C-EL, 20%, 6.3V
0	C 2	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 3	59.22.6220		22u	EL 35V, 20%, RM5
0	C 4	59.11.6821			C 820 P, 5%, 400V, PC
2	C 5	59.25.1222		2m2	C-EL, 20%, 6.3V
0	C 6	59.32.0101			C 100 P, 20%, 400V, CER
0	C 7	59.22.6220		22u	EL 35V, 20%, RM5
0	C 8	59.32.0101			C 100 P, 20%, 400V, CER
0	C 9	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 10	59.99.0259			C 2.7 N, 10%, 400V, MPETP
0	C 11	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 12	59.11.3103			C .01 U, 5%, 160V, PC
0	C 13	59.22.3101		100u	EL 10V, 20%, RM5
0	C 14	59.11.6561			C 560 P, 5%, 400V, PC
0	C 15	59.32.0101			C 100 P, 20%, 400V, CER
0	C 16	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 17	59.11.6821			C 820 P, 5%, 400V, PC
0	C 18	59.32.0101			C 100 P, 20%, 400V, CER
0	C 19	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 20	59.99.0259			C 2.7 N, 10%, 400V, MPETP
0	C 21	59.25.4101		100u	C-EL, 20%, 25V
0	C 22	59.22.3101		100u	EL 10V, 20%, RM5
0	C 23	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 24	59.11.6561			C 560 P, 5%, 400V, PC
3	C 25	59.11.3103			C .01 U, 5%, 160V, PC
1	C 26	59.36.5339			C 3.3 U, 20%, 35V, TA
1	D 1	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	L 1	62.02.1222			L 2.2 M, 5%, D 8
0	L 2	62.02.1222			L 2.2 M, 5%, D 8
0	P 1	54.01.0270		8-P	P LEISTE 8 POL CIS WINKEL
0	P 2	54.01.0271		10-P	P LEISTE 10 POL CIS WINKEL
3	Q 1	50.03.0407		BC550C	BC 550 C
0	Q 2	50.03.0407		BC550C	BC 550 C
0	Q 3	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 4	50.03.0407		BC550C	BC 550 C
0	Q 5	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 6	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
3	Q 7	50.03.0407		BC550C	BC 550 C
0	Q 8	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 9	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 10	50.03.0407		BC550C	BC 550 C
0	Q 11	50.03.0407		BC550C	BC 550 C
0	Q 12	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
3	R 1	57.11.3224		220k	MF, 1%, 0207
3	R 2	57.11.3331		330R	MF, 1%, 0207
3	R 3	57.11.3154		150k	MF, 1%, 0207
3	R 4	57.11.3682		6k8	MF, 1%, 0207
3	R 5	57.11.3102		1k0	MF, 1%, 0207
3	R 6	57.11.3102		1k0	MF, 1%, 0207
3	R 7	57.11.3391		390R	MF, 1%, 0207
3	R 8	57.11.3680		68R	MF, 1%, 0207
3	R 9	57.11.3103		10k	MF, 1%, 0207
3	R 10	57.11.3470		47R	MF, 1%, 0207
3	R 11	57.11.3123		12k	MF, 1%, 0207
3	R 12	57.11.3104		100k	MF, 1%, 0207
3	R 13	57.11.3154		150k	MF, 1%, 0207
3	R 14	57.11.3680		68R	MF, 1%, 0207
3	R 15	57.11.3102		1k0	MF, 1%, 0207
3	R 16	57.11.3123		12k	MF, 1%, 0207
3	R 17	57.11.3123		12k	MF, 1%, 0207
3	R 18	57.11.3104		100k	MF, 1%, 0207
3	R 19	57.11.3153		15k	MF, 1%, 0207
3	R 20	57.11.3182		1k8	MF, 1%, 0207
0	R 21	58.19.0203			R 20 K, 20%, .15W, PCSCH
3	R 22	57.11.3334		330k	MF, 1%, 0207
3	R 23	57.11.3102		1k0	MF, 1%, 0207
3	R 24	57.11.3154		150k	MF, 1%, 0207
3	R 25	57.11.3102		1k0	MF, 1%, 0207
3	R 26	57.11.3102		1k0	MF, 1%, 0207
3	R 27	57.11.3224		220k	MF, 1%, 0207
3	R 28	57.11.3331		330R	MF, 1%, 0207
3	R 29	57.11.3680		68R	MF, 1%, 0207
3	R 30	57.11.3103		10k	MF, 1%, 0207
3	R 31	57.11.3470		47R	MF, 1%, 0207
3	R 32	57.11.3104		100k	MF, 1%, 0207
3	R 33	57.11.3154		150k	MF, 1%, 0207
3	R 34	57.11.3123		12k	MF, 1%, 0207
3	R 35	57.11.3104		100k	MF, 1%, 0207
3	R 36	57.11.3680		68R	MF, 1%, 0207
0	R 37	58.19.0203			R 20 K, 20%, .15W, PCSCH

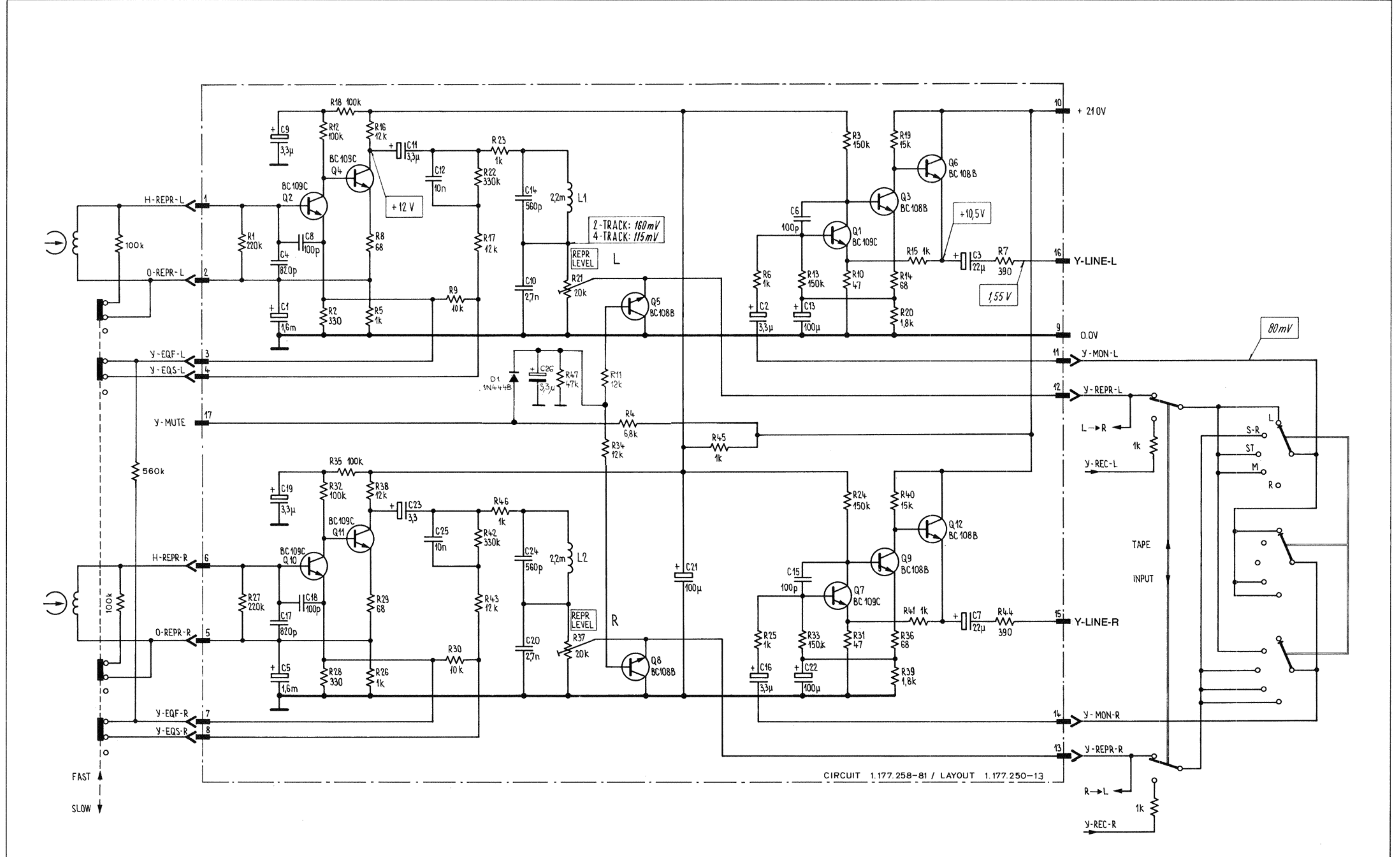
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
3	R 38	57.11.3123		12k	MF, 1%, 0207
3	R 39	57.11.3182		1k8	MF, 1%, 0207
3	R 40	57.11.3153		15k	MF, 1%, 0207
3	R 41	57.11.3102		1k0	MF, 1%, 0207
3	R 42	57.11.3334		330k	MF, 1%, 0207
3	R 43	57.11.3123		12k	MF, 1%, 0207
3	R 44	57.11.3391		390R	MF, 1%, 0207
3	R 45	57.11.3102		1k0	MF, 1%, 0207
3	R 46	57.11.3102		1k0	MF, 1%, 0207
3	R 47	57.11.3473		47k	MF, 1%, 0207

End of List

Comments:  
 (01) 12.12.1981  
 (02) 85.02.14 Standardized capacitance value for C 5.  
 (03) 16.09.1994 Q1+Q7 50030439 changed to 50030407  
 R1-R2 2% changed to 1%



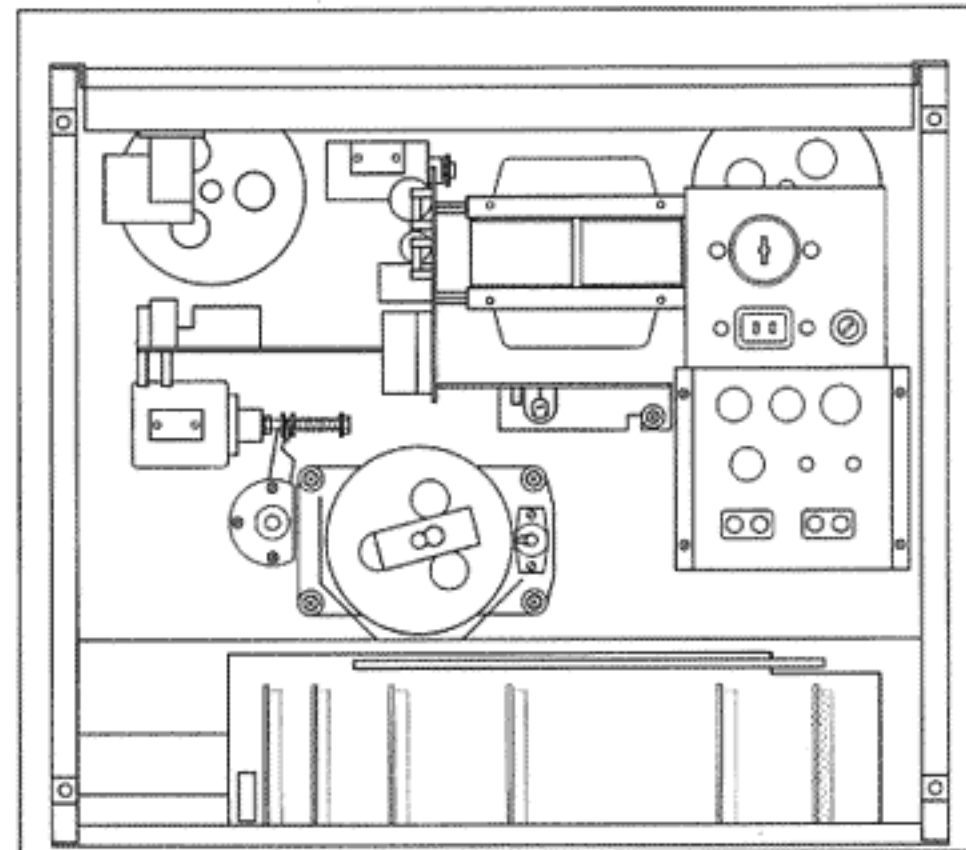
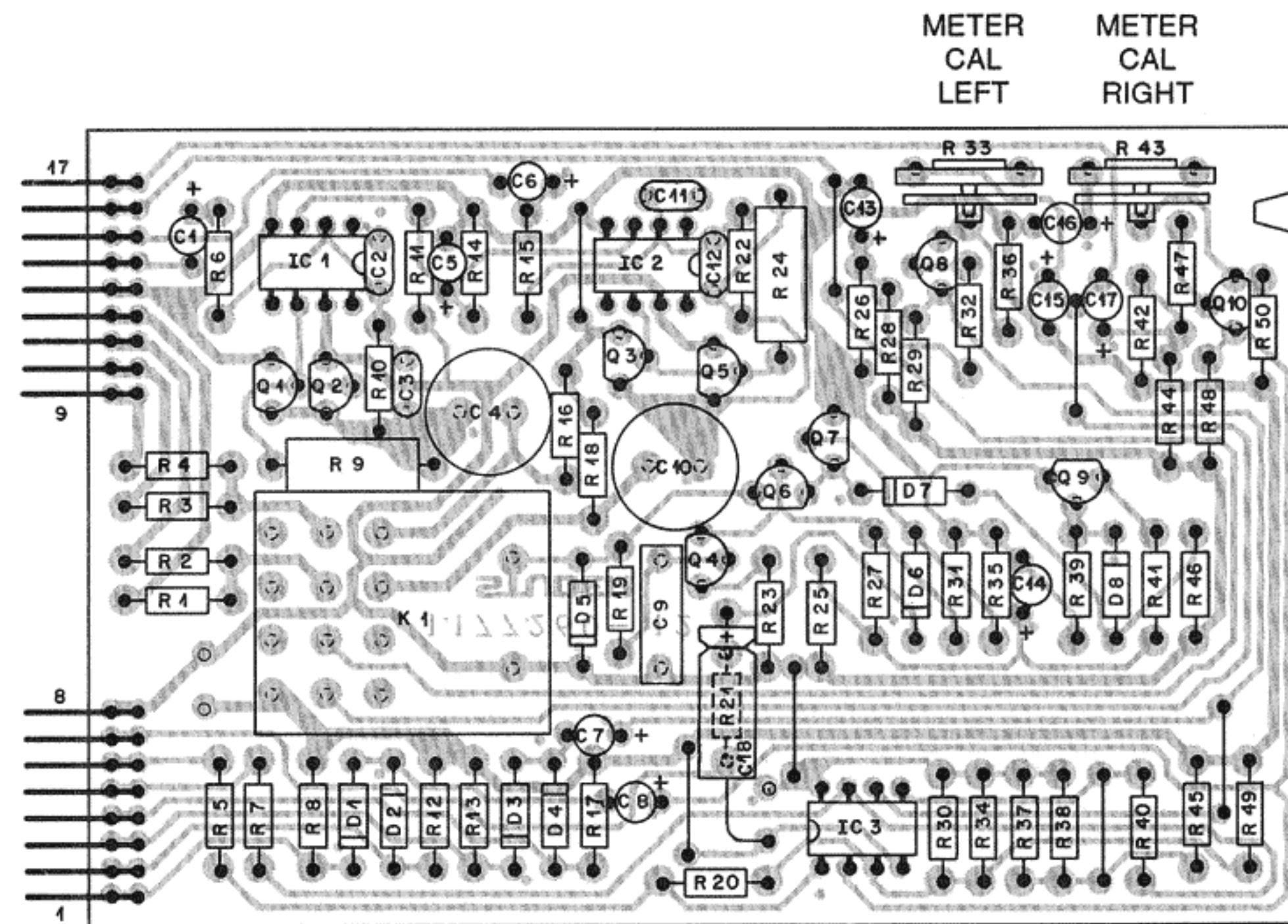
REPRODUCE AMPLIFIER PCB (NAB 15/15-1 7/8 ips) 1.177.258.00







MONITOR AMPLIFIER PCB 1.177.260.00



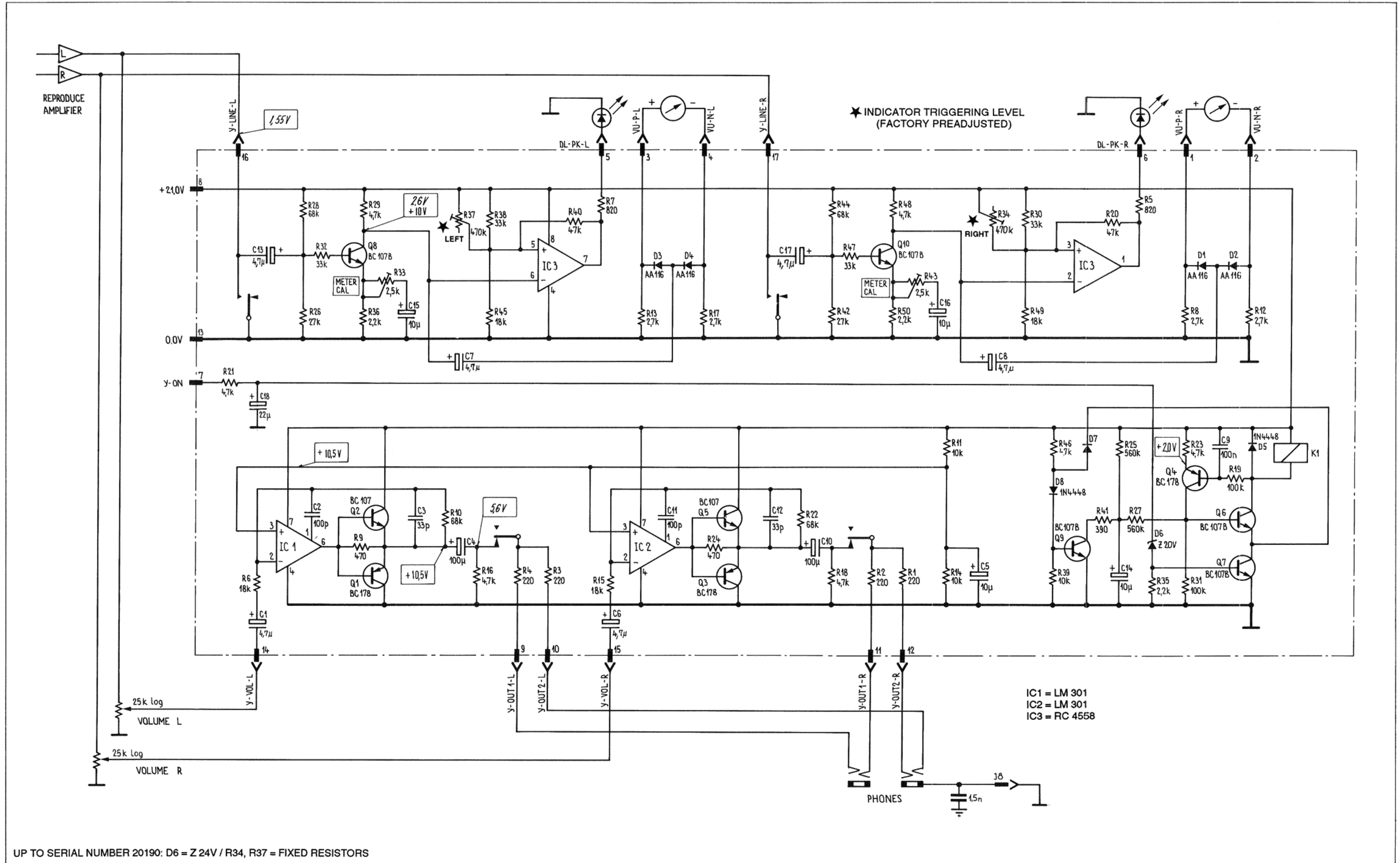
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description	Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
6	C 1	59.30.7479		4u7	TA, 20%, 25V	0	R 38	57.41.4333			R 33 K, 5%, .25W, CSCH
0	C 2	59.32.0101			C 100 P, 20%, 400V, CER	0	R 39	57.41.4103			R 10 K, 5%, .25W, CSCH
0	C 3	59.32.1330		33p	C 33 P, 10%, 400V, CER	0	R 40	57.41.4473			R 47 K, 5%, .25W, CSCH
0	C 4	59.22.5101		100u	EL 25V, 20%, RM5	0	R 41	57.41.4391			R 390, 5%, .25W, CSCH
0	C 5	59.22.6100		10u	EL 35V, 20%, RM5	0	R 42	57.41.4273			R 27 K, 5%, .25W, CSCH
6	C 6	59.30.7479		4u7	TA, 20%, 25V	0	R 43	58.19.0252			R 2.5 K, 20%, .15W, PCSCH
0	C 7	59.22.8479		4u7	EL 50V, 20%, RM5	0	R 44	57.41.4683			R 68 K, 5%, .25W, CSCH
0	C 8	59.22.8479		4u7	EL 50V, 20%, RM5	0	R 45	57.41.4183			R 18 K, 5%, .25W, CSCH
0	C 9	59.31.1104			C .1 U, 20%, 100V, MPETP	0	R 46	57.41.4472			R 4.7 K, 5%, .25W, CSCH
0	C 10	59.22.5101		100u	EL 25V, 20%, RM5	0	R 47	57.41.4333			R 33 K, 5%, .25W, CSCH
0	C 11	59.32.0101			C 100 P, 20%, 400V, CER	0	R 48	57.41.4472			R 4.7 K, 5%, .25W, CSCH
0	C 12	59.32.1330		33p	C 33 P, 10%, 400V, CER	0	R 49	57.41.4183			R 18 K, 5%, .25W, CSCH
0	C 13	59.22.8479		4u7	EL 50V, 20%, RM5	0	R 50	57.41.4222			R 2.2 K, 5%, .25W, CSCH
0	C 14	59.22.6100		10u	EL 35V, 20%, RM5						
0	C 15	59.22.6100		10u	EL 35V, 20%, RM5						
0	C 16	59.22.6100		10u	EL 35V, 20%, RM5						
0	C 17	59.22.8479		4u7	EL 50V, 20%, RM5						
0	C 18	59.25.5220		22u	C-EL, 20%, 40V						
0	D 1	50.04.0953			D AA 143, 1 K 261, AA 116 GE						
0	D 2	50.04.0953			D AA 143, 1 K 261, AA 116 GE						
0	D 3	50.04.0953			D AA 143, 1 K 261, AA 116 GE						
0	D 4	50.04.0953			D AA 143, 1 K 261, AA 116 GE						
0	D 5	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35						
0	D 6	50.04.1109		20V	Zener, 5%, 0.5W, DO-35						
0	D 7	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35						
0	D 8	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35						
0	IC 1	50.05.0257			IC LM 301 AJG, UA 748 CP, .A						
0	IC 2	50.05.0257			IC LM 301 AJG, UA 748 CP, .A						
0	IC 3	50.05.0245			IC RC 4558 JG, MC 4558 CP1 .A						
5	K 1	56.04.0120			K 24V 4*U, >80MV/.05MA, PRINT						
0	P 1	54.01.0270		8-P	P LEISTE 8 POL CIS WINKEL						
0	P 2	54.01.0220		9-P	P LEISTE 9 POL CIS WINKEL						
0	Q 1	50.03.0318			BC 558 B, BC 308 B, BC 252 B						
0	Q 2	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 3	50.03.0318			BC 558 B, BC 308 B, BC 252 B						
0	Q 4	50.03.0318			BC 558 B, BC 308 B, BC 252 B						
0	Q 5	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 6	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 7	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 8	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 9	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 10	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	R 1	57.41.4221			R 220, 5%, .25W, CSCH						
0	R 2	57.41.4221			R 220, 5%, .25W, CSCH						
0	R 3	57.41.4221			R 220, 5%, .25W, CSCH						
0	R 4	57.41.4221			R 220, 5%, .25W, CSCH						
0	R 5	57.41.4821			R 820, 5%, .25W, CSCH						
0	R 6	57.41.4183			R 18 K, 5%, .25W, CSCH						
0	R 7	57.41.4821			R 820, 5%, .25W, CSCH						
0	R 8	57.41.4272			R 2.7 K, 5%, .25W, CSCH						
0	R 9	57.43.4471			R 470, 5%, .5 W, CSCH						
0	R 10	57.41.4683			R 68 K, 5%, .25W, CSCH						
0	R 11	57.41.4103			R 10 K, 5%, .25W, CSCH						
0	R 12	57.41.4272			R 2.7 K, 5%, .25W, CSCH						
0	R 13	57.41.4272			R 2.7 K, 5%, .25W, CSCH						
0	R 14	57.41.4103			R 10 K, 5%, .25W, CSCH						
0	R 15	57.41.4183			R 18 K, 5%, .25W, CSCH						
0	R 16	57.41.4472			R 4.7 K, 5%, .25W, CSCH						
0	R 17	57.41.4272			R 2.7 K, 5%, .25W, CSCH						
0	R 18	57.41.4472			R 4.7 K, 5%, .25W, CSCH						
0	R 19	57.41.4104			R 100 K, 5%, .25W, CSCH						
0	R 20	57.41.4473			R 47 K, 5%, .25W, CSCH						
0	R 21	57.11.4472			R 4.7 K, 2%, 0207, MF						
0	R 22	57.41.4683			R 68 K, 5%, .25W, CSCH						
0	R 23	57.41.4472			R 4.7 K, 5%, .25W, CSCH						
0	R 24	57.43.4471			R 470, 5%, .5 W, CSCH						
0	R 25	57.41.4564			R 560 K, 5%, .25W, CSCH						
0	R 26	57.41.4273			R 27 K, 5%, .25W, CSCH						
0	R 27	57.41.4564			R 560 K, 5%, .25W, CSCH						
0	R 28	57.41.4683			R 68 K, 5%, .25W, CSCH						
0	R 29	57.41.4472			R 4.7 K, 5%, .25W, CSCH						
0	R 30	57.41.4333			R 33 K, 5%, .25W, CSCH						
0	R 31	57.41.4104			R 100 K, 5%, .25W, CSCH						
0	R 32	57.41.4333			R 33 K, 5%, .25W, CSCH						
0	R 33	58.19.0252			R 2.5 K, 20%, .15W, PCSCH						
0	R 34	58.99.0131			R 470 K, LIN, .25W, RTRIM						
0	R 35	57.41.4222			R 2.2 K, 5%, .25W, CSCH						
0	R 36	57.41.4222			R 2.2 K, 5%, .25W, CSCH						
0	R 37	58.99.0131			R 470 K, LIN, .25W, RTRIM						

End of List

Comments:

- (01) 18.7.1977
- (02) 8.9.1977
- (03) 2.12.1977
- (04) 21.12.1981
- (05) 13.03.85 Replacement type with better contact material
- (06) 04.06.86 Replacement type with smaller leak current

MONITOR AMPLIFIER PCB 1.177.260.00

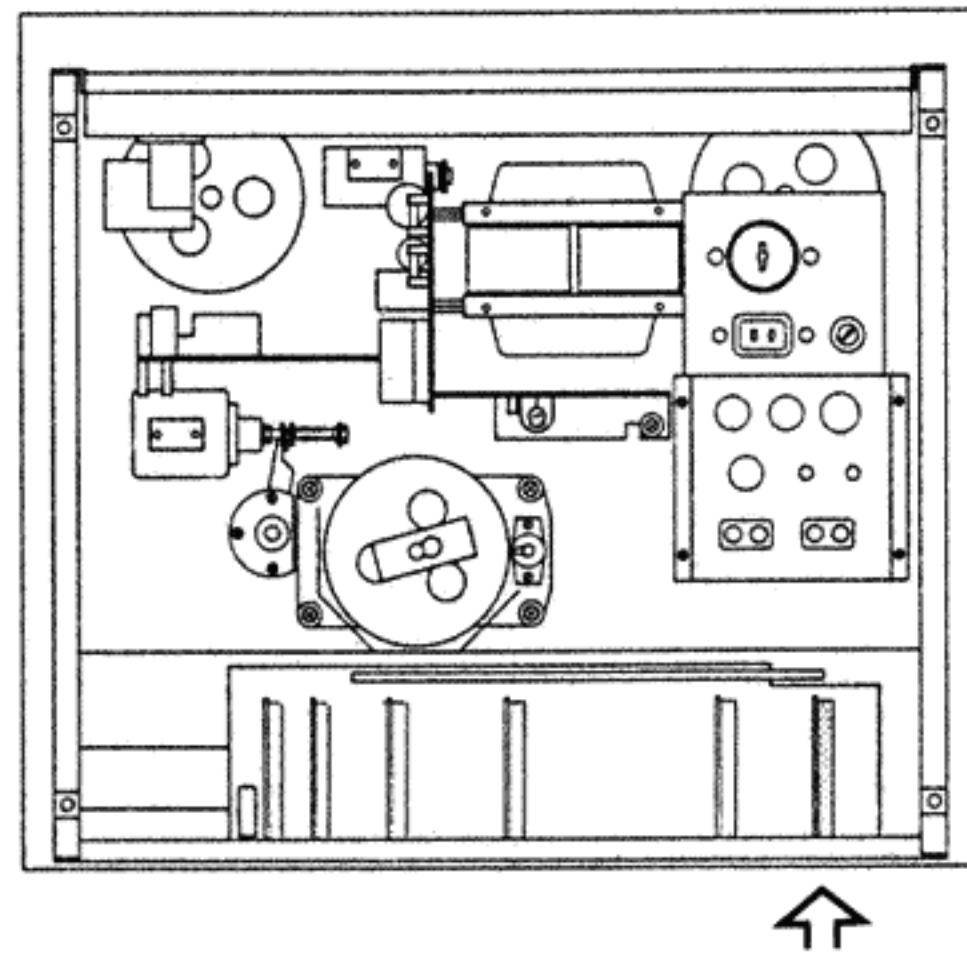
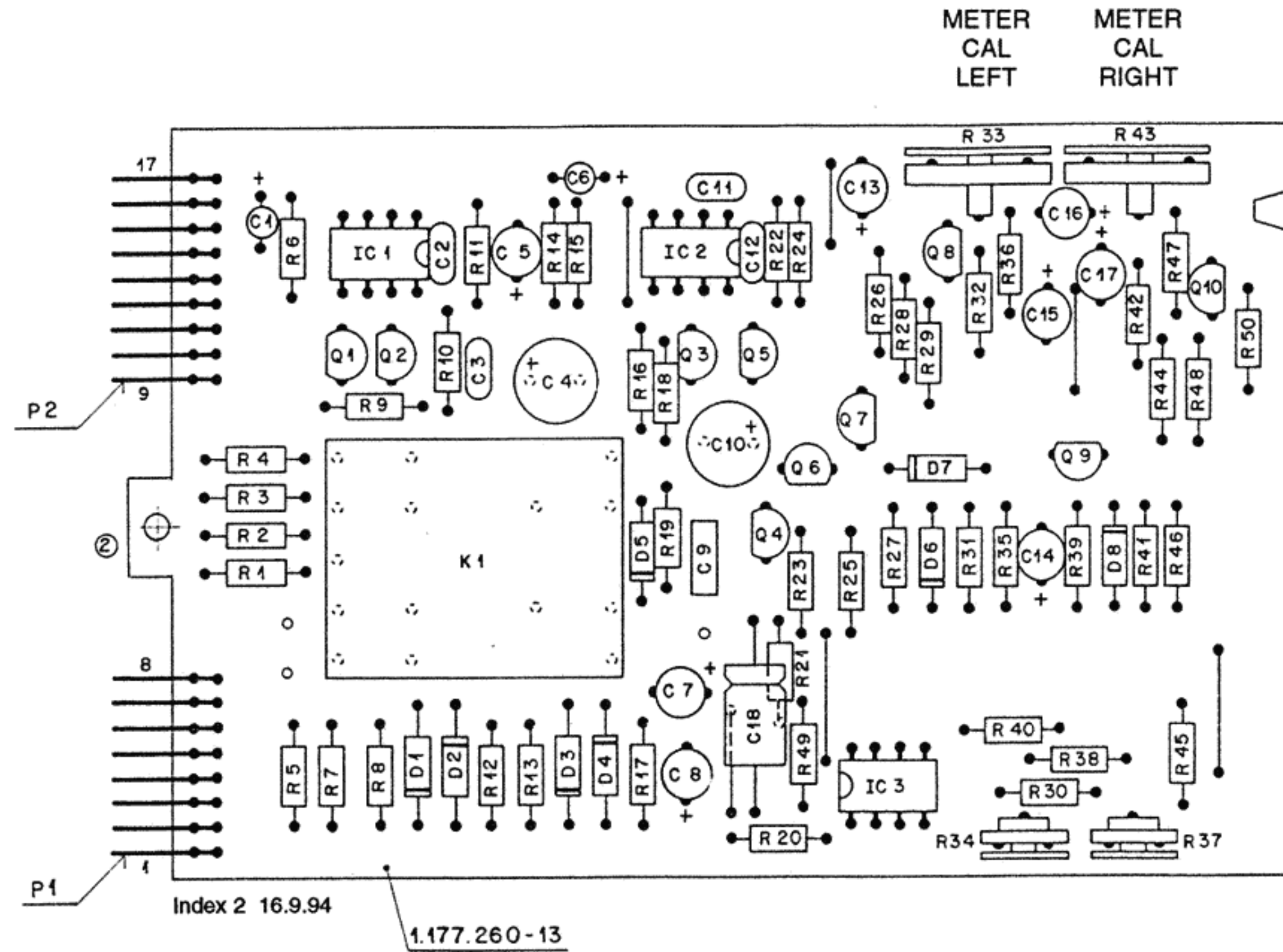


UP TO SERIAL NUMBER 20190: D6 = Z 24V / R34, R37 = FIXED RESISTORS





MONITOR AMPLIFIER PCB 1.177.260.81

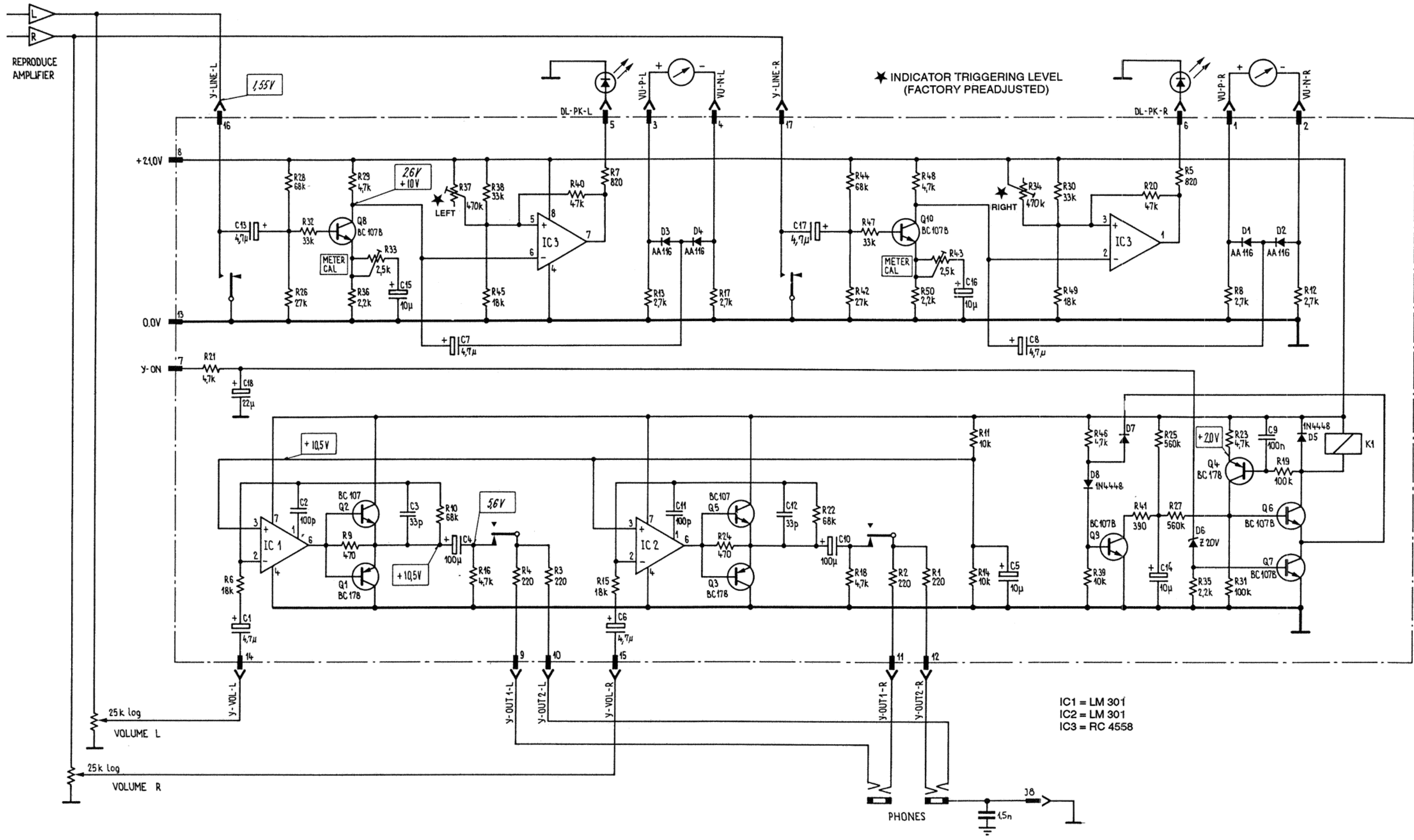


Idx.	Pos.	Part No.	Qty.	Type/Val.	Description	Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.30.7479		4u7	TA, 20%, 25V	1	R 35	57.11.3222		2k2	MF, 1%, 0207
0	C 2	59.32.0101			C 100 P, 20%, 400V, CER	1	R 36	57.11.3222		2k2	MF, 1%, 0207
0	C 3	59.32.1330		33p	C 33 P, 10%, 400V, CER	0	R 37	58.02.4474		470k	20%, 0.1W, Carbon
0	C 4	59.22.5101		100u	EL 25V, 20%, RMS	1	R 38	57.11.3333		33k	MF, 1%, 0207
0	C 5	59.22.6100		10u	EL 35V, 20%, RMS	1	R 39	57.11.3103		10k	MF, 1%, 0207
0	C 6	59.30.7479		4u7	TA, 20%, 25V	1	R 40	57.11.3473		47k	MF, 1%, 0207
0	C 7	59.22.8479		4u7	EL 50V, 20%, RMS	1	R 41	57.11.3391		390R	MF, 1%, 0207
0	C 8	59.22.8479		4u7	EL 50V, 20%, RMS	1	R 42	57.11.3273		27k	MF, 1%, 0207
0	C 9	59.06.0104		100n	PETP, 63V, 10%, RM5	0	R 43	58.19.0222		R 2.2 K, 20%, .15W, PCSCH	
0	C 10	59.22.5101		100u	EL 25V, 20%, RM5	1	R 44	57.11.3683		68k	MF, 1%, 0207
0	C 11	59.32.0101			C 100 P, 20%, 400V, CER	1	R 45	57.11.3183		18k	MF, 1%, 0207
0	C 12	59.32.1330		33p	C 33 P, 10%, 400V, CER	1	R 46	57.11.3472		4k7	MF, 1%, 0207
0	C 13	59.22.8479		4u7	EL 50V, 20%, RM5	1	R 47	57.11.3333		33k	MF, 1%, 0207
0	C 14	59.22.6100		10u	EL 35V, 20%, RM5	1	R 48	57.11.3472		4k7	MF, 1%, 0207
0	C 15	59.22.6100		10u	EL 35V, 20%, RM5	1	R 49	57.11.3183		18k	MF, 1%, 0207
0	C 16	59.22.6100		10u	EL 35V, 20%, RM5	1	R 50	57.11.3222		2k2	MF, 1%, 0207
0	C 17	59.22.8479		4u7	EL 50V, 20%, RM5						
0	C 18	59.25.5220		22u	C-EL, 20%, 40V						
0	D 1	50.04.0953			D AA 143, 1 K 261, AA 116 GE						
0	D 2	50.04.0953			D AA 143, 1 K 261, AA 116 GE						
0	D 3	50.04.0953			D AA 143, 1 K 261, AA 116 GE						
0	D 4	50.04.0953			D AA 143, 1 K 261, AA 116 GE						
0	D 5	50.04.0125		1N4448	75V, 150mA, .4ns, DO-35						
0	D 6	50.04.1109		20V	Zener, 5%, 0.5W, DO-35						
0	D 7	50.04.0125		1N4448	75V, 150mA, .4ns, DO-35						
0	D 8	50.04.0125		1N4448	75V, 150mA, .4ns, DO-35						
0	IC 1	50.05.0144			IC LM 301 AN, .A						
0	IC 2	50.05.0144			IC LM 301 AN, .A						
0	IC 3	50.09.0107			IC RC 4559 N, UPC 4559 .A						
0	K 1	56.04.0144			K 24V 4*U, 220V/2A, PRINT						
0	MP 1	1.177.260.13	mp		MONITOR AMPLIFIER PCB						
0	P 1	54.01.0270		8-P	P LEISTE 8 POL CIS WINKEL						
0	P 2	54.01.0220		9-P	P LEISTE 9 POL CIS WINKEL						
0	Q 1	50.03.0515		BC307B	BC 307 B, BC 557 B, PNP						
0	Q 2	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 3	50.03.0515		BC307B	BC 307 B, BC 557 B, PNP						
0	Q 4	50.03.0515		BC307B	BC 307 B, BC 557 B, PNP						
0	Q 5	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 6	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 7	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 8	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 9	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
0	Q 10	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,						
1	R 1	57.11.3221		220R	MF, 1%, 0207						
1	R 2	57.11.3221		220R	MF, 1%, 0207						
1	R 3	57.11.3221		220R	MF, 1%, 0207						
1	R 4	57.11.3221		220R	MF, 1%, 0207						
1	R 5	57.11.3821		820R	MF, 1%, 0207						
1	R 6	57.11.3183		18k	MF, 1%, 0207						
1	R 7	57.11.3821		820R	MF, 1%, 0207						
1	R 8	57.11.3272		2k7	MF, 1%, 0207						
1	R 9	57.11.3471		470R	MF, 1%, 0207						
1	R 10	57.11.3683		68k	MF, 1%, 0207						
1	R 11	57.11.3103		10k	MF, 1%, 0207						
1	R 12	57.11.3272		2k7	MF, 1%, 0207						
1	R 13	57.11.3272		2k7	MF, 1%, 0207						
1	R 14	57.11.3103		10k	MF, 1%, 0207						
1	R 15	57.11.3183		18k	MF, 1%, 0207						
1	R 16	57.11.3472		4k7	MF, 1%, 0207						
1	R 17	57.11.3272		2k7	MF, 1%, 0207						
1	R 18	57.11.3472		4k7	MF, 1%, 0207						
1	R 19	57.11.3104		100k	MF, 1%, 0207						
1	R 20	57.11.3473		47k	MF, 1%, 0207						
1	R 21	57.11.3472		4k7	MF, 1%, 0207						
1	R 22	57.11.3683		68k	MF, 1%, 0207						
1	R 23	57.11.3472		4k7	MF, 1%, 0207						
1	R 24	57.11.3471		470R	MF, 1%, 0207						
1	R 25	57.11.3564		560k	MF, 1%, 0207						
1	R 26	57.11.3273		27k	MF, 1%, 0207						
1	R 27	57.11.3564		560k	MF, 1%, 0207						
1	R 28	57.11.3683		68k	MF, 1%, 0207						
1	R 29	57.11.3472		4k7	MF, 1%, 0207						
1	R 30	57.11.3333		33k	MF, 1%, 0207						
1	R 31	57.11.3104		100k	MF, 1%, 0207						
1	R 32	57.11.3333		33k	MF, 1%, 0207						
0	R 33	58.19.0222		R 2.2 K, 20%, .15W, PCSCH							
0	R 34	58.02.4474		470k	20%, 0.1W, Carbon						

End of List  
 Comments:  
 (01) R1-R50 2% changed to 1%



MONITOR AMPLIFIER PCB 1.177.260.81



IC1 = LM 301  
IC2 = LM 301  
IC3 = RC 4558

UP TO SERIAL NUMBER 20190: D6 = Z 24V / R34, R37 = FIXED RESISTORS



**EINBAUANLEITUNG FÜR DIA-  
STEUERUNGEN****FH / Free Head**

Für "free head"-Betrieb  
Bestellnummern: 2-Spur 74501  
4-Spur 74503

**DIA / Dia-Synchro**

Zur einfachen Diasteuerung  
Bestellnummern: 2-Spur 74502  
4-Spur 74504

**DHA / Dissolve Head Amplifier**

Für Dia Überblendsysteme  
Bestellnummern: 2-Spur 74495  
4-Spur 74496

**Allgemeines**

**1.** Laufwerkabdeckung vom Tonbandgerät abnehmen.

**2.** Dia-Pilotkopf auf die im Nachrüstsatz enthaltene, rechteckige Montageplatte aufschrauben und zwar auf der Seite der versenkten Montagelöcher.

**3.** Montageplatte mit Diapilotkopf rechts von der Tonachse auf den Kopfträger schrauben (siehe Fig. 4). Die drei Federn sind an der Unterseite der Montageplatte zu verwenden.

**4.** Die am anderen Ende des Kopfkabels befindlichen Flachstecker auf dem Audio Interconnection Board 1.177.210 einstecken (gemäß Fig. 1, 2, 3/Polarität beliebig). Kopfkabel kann am grossen Kabelbund fixiert werden.

**5.** Nach Ausbau des Audio-Anschlussfeldes die bereits mit Verbindungskabeln versehene 5- bzw. 6-polige Buchse beim Anschluss SLIDE SYNC montieren. Im Falle eines DHA-Bausatzes ist das abgeschirmte Kabel zwischen Capstan-Motor und NF-Platine zu verlegen. Weiteres Vorgehen entsprechend der jeweiligen Bausatzvariante.

**Beim FH-Bausatz:**

**6.** Das Kabel von der 5-poligen Buchse oberhalb des Tonmotors verlegen und den am Kabelende befindlichen Flachstecker in die Steckerleiste J1 des Audio Interconnection Boards 1.177.210 einstecken (siehe Fig. 1). Danach weiter bei Punkt 10.

**INSTALLATION INSTRUCTIONS FOR  
SLIDE CONTROL ELECTRONICS****FH / Free Head**

For "free head" operation  
Order number: 2-track 74501  
4-track 74503

**DIA / Dia-Synchro**

For single projector operation  
Order number: 2-track 74502  
4-track 74504

**DHA / Dissolve Head Amplifier**

For cross-fade systems  
Order number: 2-track 74495  
4-track 74496

**General**

**1.** Remove tape transport cover.

**2.** Attach the sync head to the rectangular mounting plate contained in the kit, so that the countersink side of the holes points to its head.

**3.** Install the sync head with its mounting plate on the right of the capstan shaft by utilizing the 3-flat head screws (see fig. 4). Use the 3 springs on the underside of the mounting plate.

**4.** Connect the push on terminals of the head cable to the mother board 1.177.210 as shown in the drawing on page 3 of this instruction sheet (according fig. 1, 2, 3/no need to observe polarity). If found necessary, tie the head cable to the existing wire harness.

**5.** Remove audio connector panel and install the 5-pole or 6-pole socket (depending on kit) at position 44 (SLIDE SYNC) of the connector panel. Route the shielded cable between the capstan motor and the audio boards. Continue as described under the appropriate heading.

**FH kit**

**6.** Place the cable from the 5-pole socket above the capstan motor and insert the flat plug at the cable's end into the upper edge J1 connector on board 1.177.210 (see fig. 1). Continue at step 10.

**INSTRUCTION DE MONTAGE POUR LES  
KITS DE COMMANDE DE DIAPOSITIVES****FH / Free Head**

Pour utilisation "tête libre"  
Numéros de référence: 2-pistes 74501  
4-pistes 74503

**DIA / Dia-Synchro**

Pour commande dias simple  
Numéros de référence: 2-pistes 74502  
4-pistes 74504

**DHA / Dissolve Head Amplifier**

Pour fondu enchaîné  
Numéros de référence: 2-pistes 74495  
4-pistes 74496

**Généralités**

**1.** Déposez le capot de recouvrement du mécanisme.

**2.** Vissez la tête pilote contenue dans le kit, sur la plaque de montage rectangulaire, côté fraisé des trous de fixation.

**3.** A droite de l'axe de cabestan, vissez la plaque de montage avec la tête pilote, sur le support des têtes (voir fig. 4), les 3 ressorts sous la plaque de montage.

**4.** Raccordez la fiche plate de l'extrémité du câble à circuit de base 1.177.210 (conforme à fig. 1, 2, 3/polarité quelconque). Attachez si nécessaire, le câble au toron principal.

**5.** Après démontage du panneau de raccordement audio, fixez la prise 5 ou 6 pôles à l'emplacement 44 (SLIDE SYNC). Pour la version DHA, tirez le câble blindé entre le moteur de cabestan et le circuit de base. Les instructions suivantes varient selon les versions.

**Kit de montage FH**

**6.** Placez le câble de la fiche 5 pôles au-dessus du moteur de cabestan et raccordez la fiche plate de l'extrémité du câble J1 à la partie supérieure du connecteur libre du circuit de base 1.177.210 (voir fig. 1). Poursuivre au point 10.

**Beim DIA- sowie DHA Bausatz:**

**6.** DIA- oder DHA-Platine (1.177.270 resp. 1.177.282) in die freien Steckerleisten J1/J10 auf dem Audio Interconnection Board 1.177.210 einstecken (siehe Fig. 2).

**7.** Drehschalter des DHA-Bausatzes bzw. Schalter des DIA-1/4Spur-Bausatzes in das im Chassis vorhandene Loch rechts der Drucktaste "reel size" einbauen.

**8.** Beim DIA-Bausatz das Verbindungskabel zur 6-poligen Buchse SLIDE SYNC oberhalb des Tonmotors verlegen und die beiden Flachstecker (beliebige Polung) auf dem Slide Synchronizer 1.177.270 einstecken (siehe Fig. 2).

Beim DHA-Satz den flachen, 6-poligen (CIS) Stecker in die freie Steckerleiste auf dem Interface 1.177.282 einstecken (siehe Fig. 3).

**9.** Bei DHA- oder DIA-1/4Spur-Umrüstung auf der Laufwerkabdeckung die Lochmitte für den jeweiligen Schalter links vom Kopfträger, schräg unterhalb des Bandfühlshebels, gemäss der Massskizze Fig. 4 anreissen. Loch mit einem Durchmesser von 8,7 mm bohren und anschliessend die zutreffende Beschriftungsetikette aufkleben.

**10.** Nach Auflegen eines Tonbandes den Diapilotkopf in der Höhe so verstellen, dass seine Ober- und Unterkante mit dem vorbeilaufenden Tonband bündig ist.

Bei den DHA- und FH-Versionen kann zur Senkrechtstellung des Spaltes die Vollspur-Aufzeichnung einer Frequenz im Bereich von 1...3 kHz abgespielt werden, wobei der Kopf mittels Taumelschraube auf maximale Ausgangsspannung einzustellen ist.

Bei der Version DIA empfiehlt sich eine Funktionskontrolle nach Bedienungsanleitung 10.2.

**11.** Laufwerkabdeckung wieder montieren. Dabei darauf achten, dass das Kopfkabel nicht eingeklemmt wird.

**DIA and DHA kit**

**6.** Insert DIA or DHA circuit board (1.177.270 or 1.177.282) into the free socket strip J1/J10 on board 1.177.210 (see fig. 2).

**7.** Install the 3 position rotary switch of the DHA kit or the push-button switch of the DIA-1/4track-kit in the free hole to the right of the push-button "reel size"

**8.** When installing a DIA kit, route the interconnecting cable to the 6-pole socket SLIDE SYNC above the capstan motor and connect the two push-on terminals to the DIA electronics 1.177.270 (see fig. 2).

In case of the DHA kit connect the flat 6-pole plug to the free socket on board 1.177.282 (see fig. 3).

**9.** When retrofitting a DHA- or DIA-1/4track-kit, mark the center of the hole for the required switch to the left of the head-block as shown on the drawing at the bottom according the dimensional drawing fig. 4. Drill a 8,7 mm (11/32 inch) diameter hole and attach the self-adhesive designation label.

**10.** By running a tape on the recorder, adjust the sync head laterally, so that its upper and lower edges are in line with the passing tape. On DHA and FH kits gap azimuth can be adjusted by reproducing a full-track recording of 1...3 khz and altering the heads azimuth setting until a maximum signal output is obtained. On DIA conversions, it is suggested to run a functional check as per section 10.2 of the recorders operating instructions.

**11.** Reinstall the plastic deck cover and take care not to pinch the head cable.

**Kit de montage DIA ou DHA**

**6.** Enfichez la plaquette DIA (1.177.270) ou DHA (1.177.282) dans les connecteurs libres J1/J10 du circuit de base 1.177.210 (voir fig. 2).

**7.** A droite de la touche "reel size", montez dans le trou libre du châssis le commutateur du kit DIA 4 pistes ou le commutateur rotatif du kit DHA.

**8.** Pour le kit DIA, placez au-dessus du moteur de cabestan, le câble de la fiche 6 pôles SLIDE SYNC et raccordez les deux fiches plates (sans tenir compte de la polarité) aux connecteurs de la plaquette DIA 1.177.270 (voir fig. 2).

Pour le kit DHA, raccordez la fiche plate 6 pôles (CIS) au connecteur de la plaquette 1.177.282 (voir fig. 3).

**9.** Les versions DIA 4 pistes et DHA nécessitent une perforation du capot de recouvrement du mécanisme, à gauche du support des têtes, en dessous du tendeur de bande. Marquez le centre du trou à l'aide de l'esquisse se trouvant au dessin des dimensions fig. 4. Percez avec une mèche de 8,7 mm et collez l'étiquette correspondante.

**10.** Après la mise en place d'une bande, ajustez la hauteur de la tête pilote, de manière à faire coïncider les arrêts supérieurs et inférieurs avec la largeur de la bande. Dans les versions DHA et FH, l'ajustage correct de l'azimut permet l'enregistrement et la lecture dans une largeur de bande allant de 1...3 kHz. On réglera l'azimut au maximum de signal de sortie. Pour la version DIA, il est conseillé d'effectuer un contrôle de fonction selon le mode d'emploi 10.2.

**11.** Remontez le capot de recouvrement du mécanisme, en veillant de ne pas pincer le câble de la tête pilote.

FIG.1 INSTALLATION OF FREE HEAD KIT

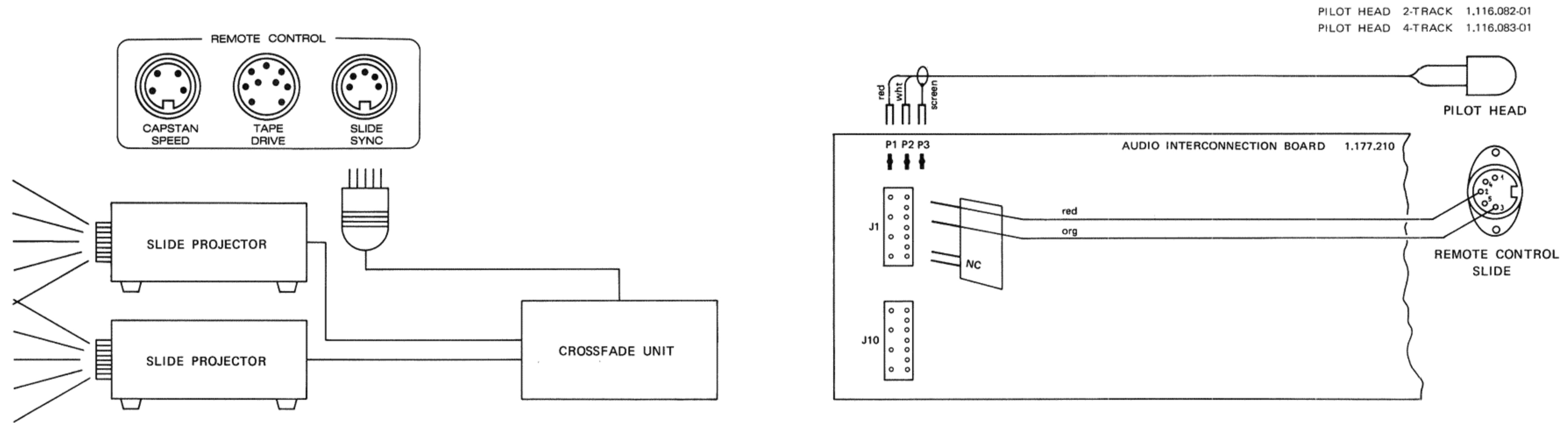
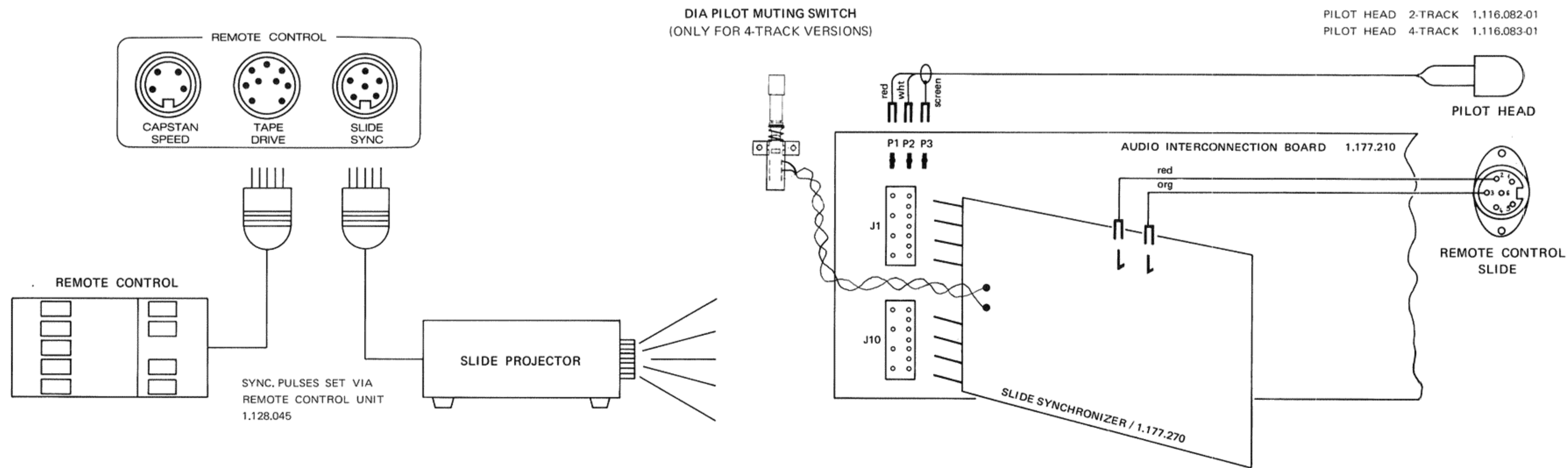


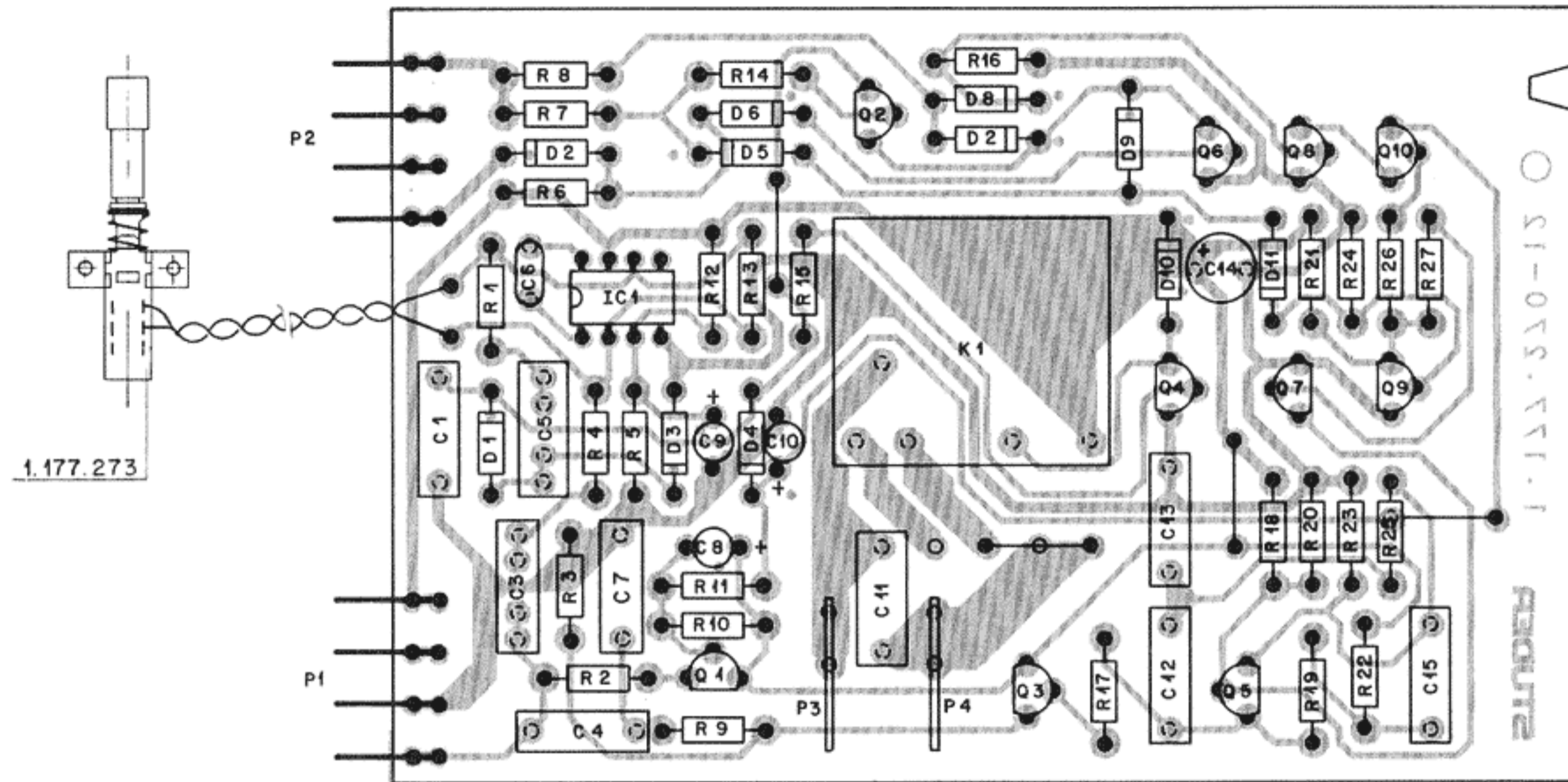
FIG.2 INSTALLATION OF DIA SYNC KIT







SLIDE SYNCHRONIZER PCB 1.177.270.00



Schaltbefehl	Funktion	Effected switching	Resulting function	Commande	Fonction
PLAY	Wiedergabe Steuerimpulse	PLAY	Reproduction of control impulses	PLAY	Lecture des impulsions
PLAY + SLIDE-REC	Wiedergabe Steuerimpulse gesperrt	PLAY + SLIDE-REC	Reproduction of control impulses disabled	PLAY + SLIDE-REC	Blocage de la lecture des impulsions
PLAY + REC + Vorwahl	normale NF-Aufnahme	PLAY + REC + preselector	Normal audio recording	PLAY + REC + préselecteur	Enregistrement BF normal
PLAY + REC + SLIDE-REC	Löschen der Steuerimpulse	PLAY + REC + SLIDE-REC	Erasure of control impulses	PLAY + REC + SLIDE-REC	Effacement des impulsions de commande
PLAY + REC + SLIDE-REC + SET-SLIDE	solange SET gedrückt, wird Steuerimpuls gesetzt (kurz und lang möglich).	PLAY + REC + SLIDE-REC + SET-SLIDE	Recording of a new impulse as long as the button SET is kept depressed.	PLAY + REC + SLIDE-REC + SET-SLIDE	Enregistrement des impulsions de commande aussi longtemps que la touche SET reste enfoncée.

POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT	MFR
C 01	59.31.6104	0,1 U	10% 100V	MPETP	
C 03	59.31.6104	0,1 U	10% 100V	MPETP	
C 04	59.31.6104	0,1 U	10% 100V	MPETP	
C 05	59.31.1224	0,22 U	20% 100V	MPETP	
C 06	59.32.0100	10 P	20% 50V	CER	
C 07	59.31.6104	0,1 U	10% 100V	MPETP	
C 08	59.30.1470	47 U	-20% 3V	TA	
C 09	59.30.6339	3,3 U	-20% 35V	TA	
C 10	59.30.6339	3,3 U	-20% 35V	TA	
C 11	59.31.1224	0,22 U	20% 100V	MPETP	
C 12	59.31.6104	0,1 U	10%		
C 13	59.31.6104	0,1 U			
C 14	59.22.5470	47 U	-10% 25V	EL	
C 15	59.31.6104	0,1 U	10% 100V	MPETP	
D 01	50.04.0125	1N 4448			any
D 02	50.04.0125	1N 4448			
D 03	50.04.0125	1N 4448			
D 04	50.04.0125	1N 4448			
D 05	50.04.0119	Z 15	15V 5%	400mW	
D 06	50.04.0125	1N 4448			
D 07	50.04.0125	1N 4448			
D 08	50.04.0125	1N 4448			
D 09	50.04.0125	1N 4448			
D 10	50.04.0125	1N 4448			
D 11	50.04.0125	1N 4448			
IC 1	50.05.0257	LM 301			TI, N
K 01	56.99.0116	1 x U	24V		S, O
P 01	54.01.0470	4-Pole	PIN-Strip	AMP	
P 02	54.01.0470	4-Pole	PIN-Strip	AMP	
P 03	54.02.0328		Flat Pin 0,8	AMP	
P 04	54.02.0328		Flat Pin 0,8	AMP	
Q 01	50.03.0318	BC178B		PNP	any
Q 02	50.03.0436	BC107B		NPN	
Q 03	50.03.0436	BC107B		NPN	
Q 04	50.03.0436	BC107B		NPN	
Q 05	50.03.0439	BC109C		NPN	
Q 06	50.03.0436	BC107B		NPN	
Q 07	50.03.0436	BC107B		NPN	
Q 08	50.03.0436	BC107B		NPN	
Q 09	50.03.0436	BC107B		NPN	
Q 10	50.03.0436	BC107B		NPN	

POS NO	PART NO	VALUE	SPECIFICATIONS	EQUIVALENT	MFR
R 01	57.41.4682	6,8 k	5% .25W	CF	
R 02	57.41.4153	15 k			
R 03	57.41.4822	8,2 k			
R 04	57.41.4271	270			
R 05	57.41.4223	22 k			
R 06	57.41.4223	22 k			
R 07	57.41.4182	1,8 k			
R 08	57.41.4103	10 k			
R 09	57.41.4472	4,7 k			
R 10	57.41.4332	3,3 k			
R 11	57.41.4333	33 k			
R 12	57.41.4223	22 k			
R 13	57.41.4105	1 M			
R 14	57.41.4223	22 k			
R 15	57.11.4333	33 k			
R 16	57.41.4332	3,3 k			
R 17	57.41.4103	10 k			
R 18	57.41.4333	33 k			
R 19	57.41.4332	3,3 k			
R 20	57.41.4183	18 k			
R 21	57.41.4103	10 k			
R 22	57.41.4182	1,8 k			
R 23	57.41.4332	3,3 k			
R 24	57.41.4332	3,3 k			
R 25	57.41.4331	330			
R 26	57.41.4333	33 k			
R 27	57.41.4333	33 k			

DIASTEUERUNG 1.177.270

Slide synchronizing electronics 1.177.270

Synchronisateur de diapositives 1.177.270

Mit einem eingebauten Spezial-Tonkopf und angeschlossener Laufwerk-Fernbedienung, ermöglicht diese Schaltung Steuerimpulse für den Bildwechsel bei handelsüblichen Dia-Projektoren auf Band zu bringen.

A special magnetic head in conjunction with the slide synchronizing electronics makes it possible to record control impulses on tape. Upon playback, these impulses will effect a picture change in any commercially available projector, when connected to the B77 recorder. This system is operational only in conjunction with the REVOX B77 remote control device.

Ce circuit monté dans un B77 équipé d'une tête pilote et raccordé à la commande à distance, permet la commande par la bande d'un projecteur de diapositives.

La commande par les contacts du relais, isolés galvaniquement du circuit, s'adapte à n'importe quel type de projecteur.

Eine Anpassung der Steuerschaltung an diverse Projektor-Fabrikate ist gewährleistet, indem über einen galvanisch getrennten Relaiskontakt geschaltet wird.

Reliable operation with different makes of projectors is ensured by the fact that control of the slide advance mechanism is effected by separate relay contacts.

Les deux touches de commande REC-SLIDE et SET-SLIDE permettent les fonctions suivantes:

Über die beiden Steuertasten REC-SLIDE und SET-SLIDE, werden die folgenden Betriebszustände gewählt:

- Wiedergabe von Schaltimpulsen
- Sperren der Wiedergabe von bereits aufgezeichneten Schaltimpulsen (wichtig bei bespielt 4-Spur Bändern)
- Löschen sowie Setzen von (neuen) Impulsen

By means of the buttons REC-SLIDE and SET-SLIDE on the remote control device, the following operating conditions can be selected:

- Reproduction of control (switching) impulses.
- Disabling of the synchronizing circuit so as not to respond to signals scanned by the impulse head (important when playing fully recorded quarter track tapes).
- Erasure and recording of (new) control impulses.

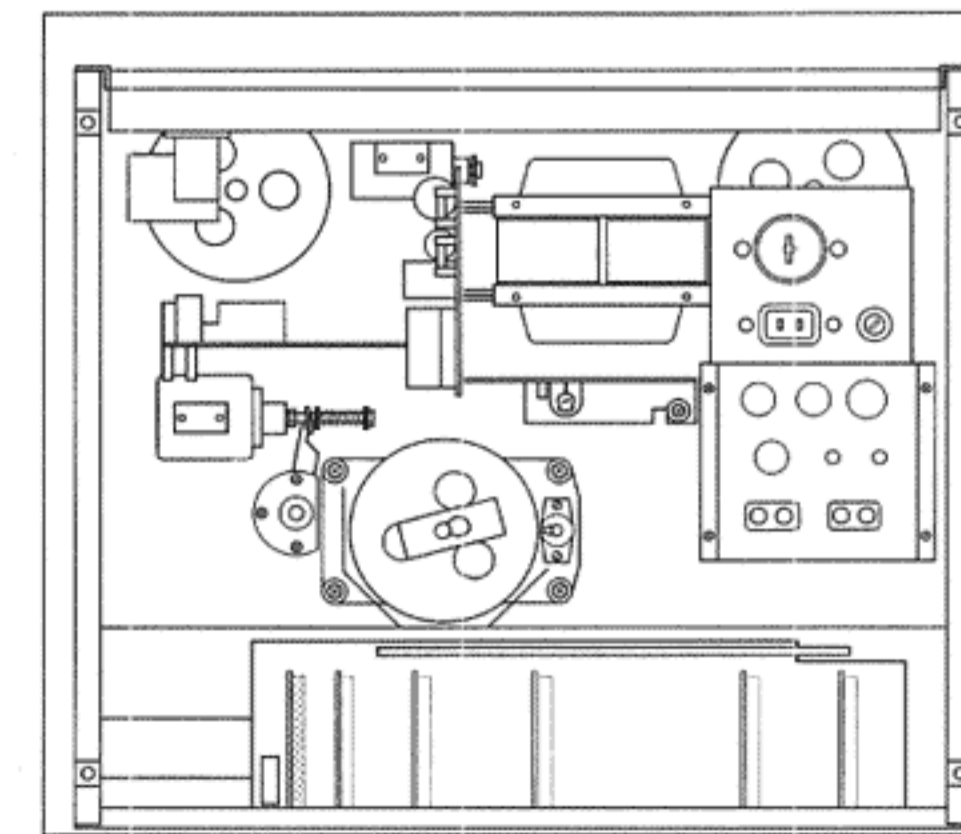
- Lecture des impulsions de commande
- Blocage de la lecture des impulsions de commande (important pour les appareils 4 pistes).
- Effacement ainsi qu'enregistrement des (nouvelles) impulsions.

Ces impulsions sont constituées par des trains d'un signal sinusoïdal de 1 kHz. L'effacement s'effectue par courant continu.

Es werden 1 kHz Sinussignale aufgezeichnet. Die Löschung erfolgt mit Gleichstrom.

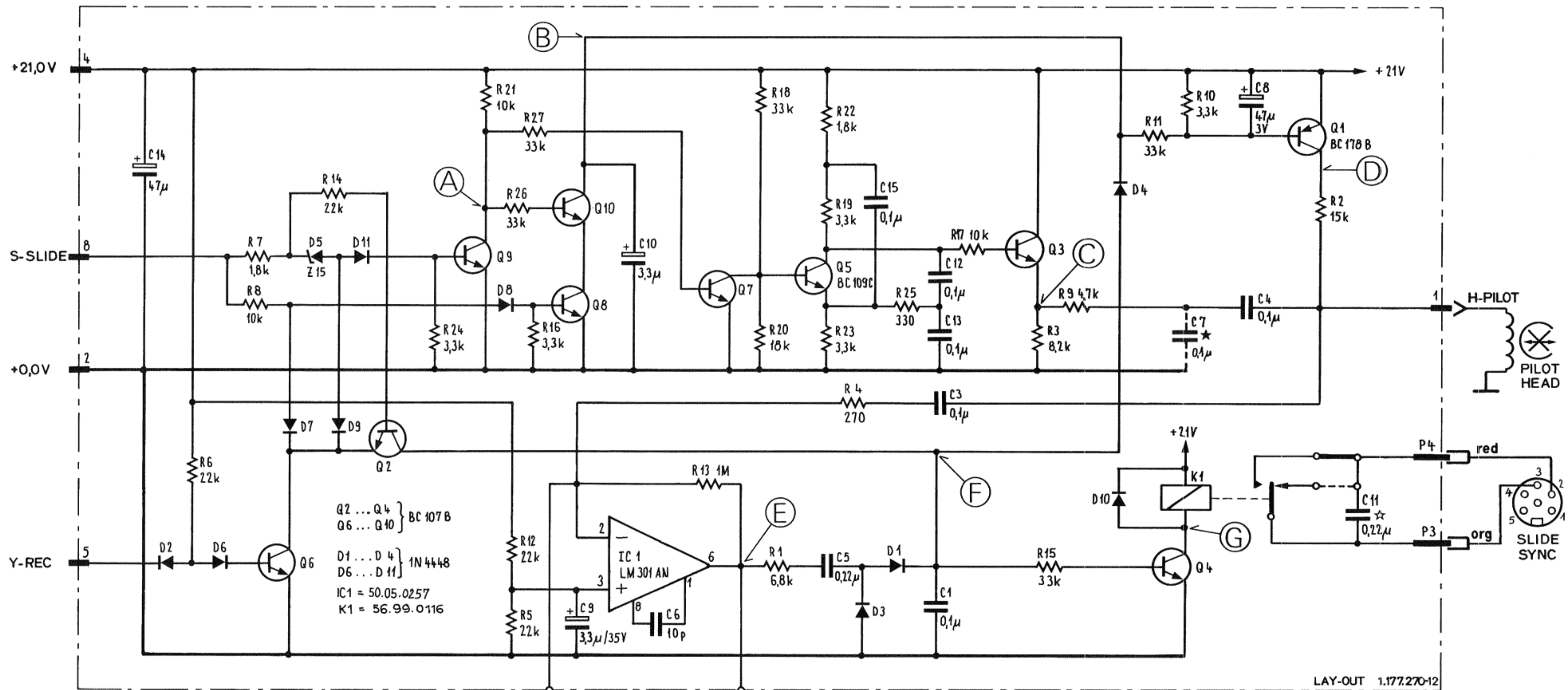
The exact function of each control button can be seen from the table. To disable the relay without a remote control device connected to the recorder, pull the "DIA PILOT MUTING SWITCH".

Les fonctions exactes des touches de commande sont données par la table. La mise sans l'aide de la commande à distance, peut se faire avec le bouton poussoir "DIA PILOT MUTING SWITCH".

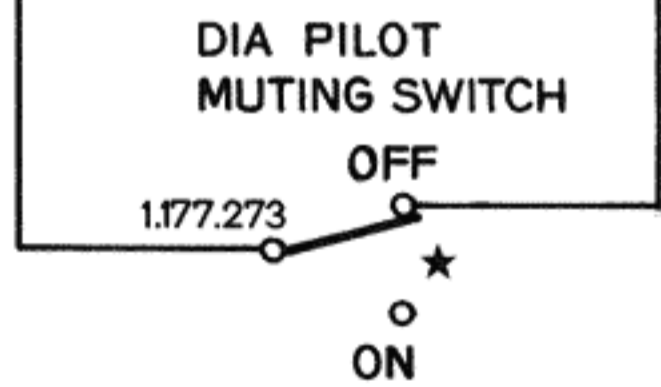




SLIDE SYNCHRONIZER PCB 1.177.270.00

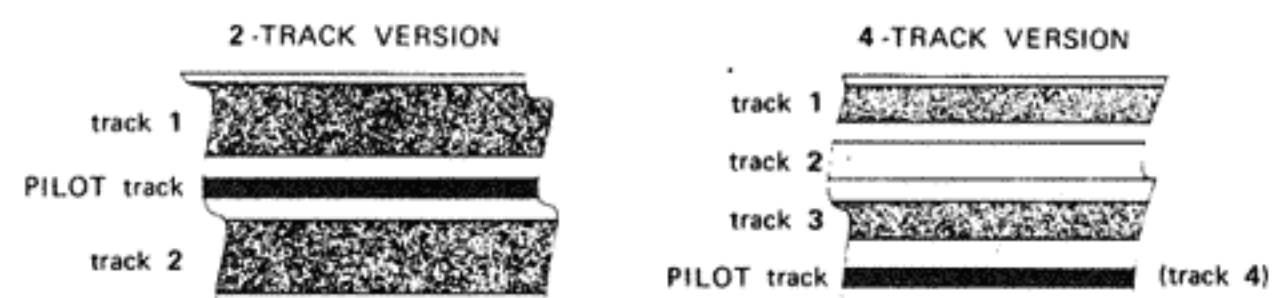


LAY-OUT 1.177.270-12



★ FOR 4-TRACK VERSION ONLY

☆ REMOVE C11 FOR USE WITH ANY ELECTRONICALLY CONTROLLED PROJECTOR



2-TRACK VERSION / KIT 74502  
4-TRACK VERSION / KIT 74504

MODE	Y-REC	S-SLIDE	RELAY	1 kHz-OSC	DC ERASING	(A)	(B)	(C)	(D)	(E)	(F)	(G)
PLAY	HI	00V	(ON)	---	---	15 V	21 V	---	0V	46Vrms	1.5V AC ±0.5V	(0V)
RECORD + REC-SLIDE	LO	12V	---	---	ON	12.5V	0.1V	---	21V	---	0.5V DC	21V
RECORD + REC-SLIDE + SET-SLIDE	LO	24V	ON	ON	---	0.1V	21 V	2Vrms	0V	15Vpp	3 V AC ±0.7V	(0V)
PLAY + REC-SLIDE (CANCELS REPRO PULSES)	HI	12V	---	---	---	15 V	21 V	---	0V	---	0V	21V



FIG.3 INSTALLATION OF DISSOLVE HEAD KIT

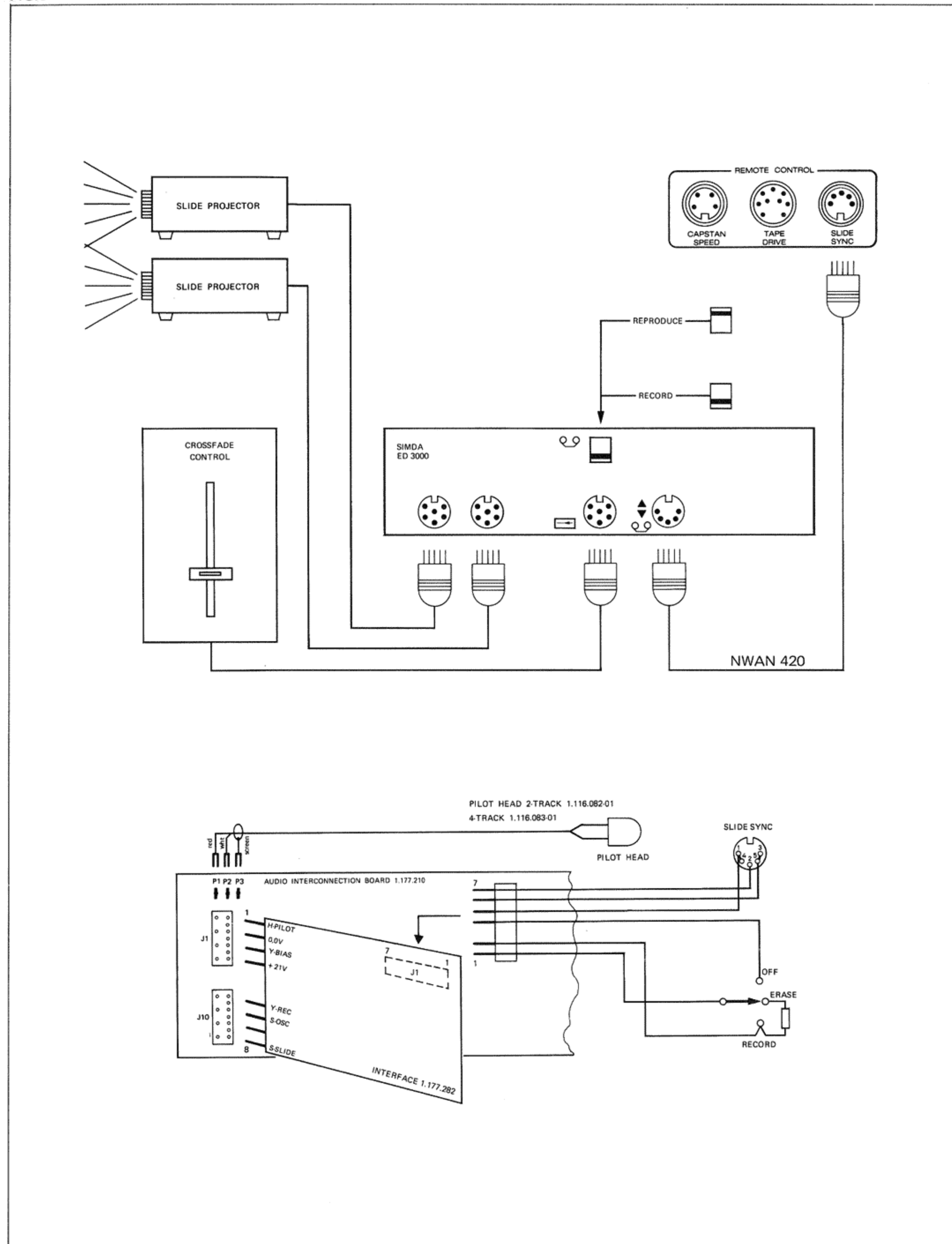


FIG.4 HOLE DRILLING INSTRUCTIONS

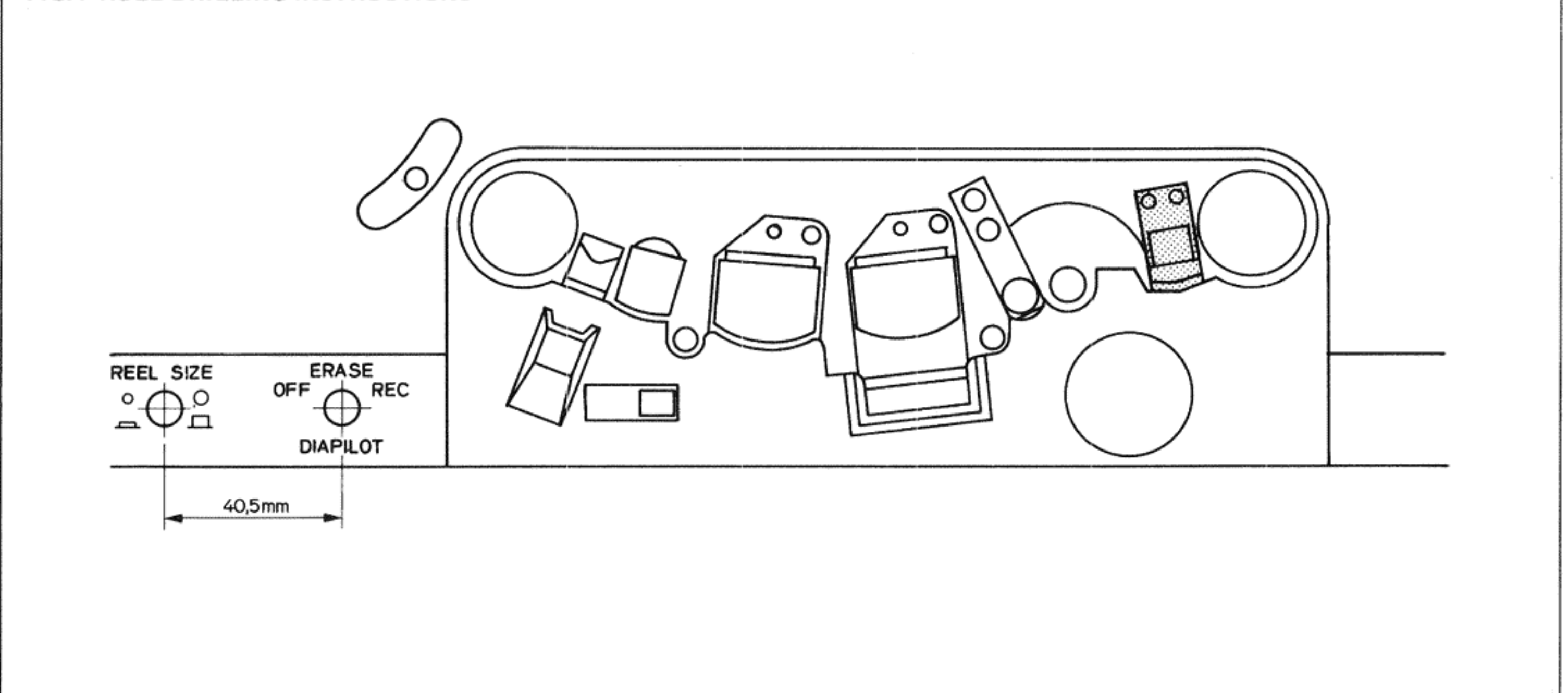
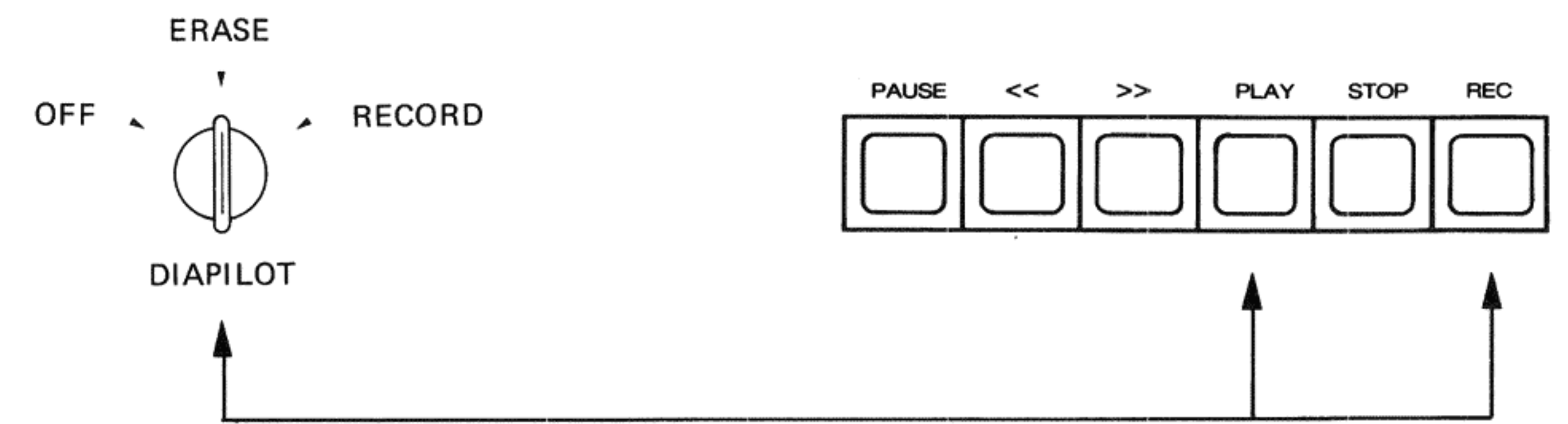


FIG.5 DHA OPERATION



- PLAY+REC ⊕ DIAPILOT "OFF" = REPRODUCTION OF PILOT-TRACK  
 "ERASE" = PILOT TRACK ERASED  
 "RECORD" = SIMDA-SIGNAL RECORDED ON PILOT-TRACK
- PLAY ⊕ DIAPILOT "OFF" } = REPRODUCTION OF PILOT-TRACK  
 "ERASE" }  
 "RECORD" }

POSITION OF RECORD PRESELECTORS NOT IMPORTANT FOR DIAPILOT-MODE



DISSOLVE HEAD AMPLIFIER PCB 1.177.282.00 (INTERFACE SIMDA ED 3000P)

IND	POS NO	PART NO	VALUE	SPECIFICATIONS/EQUIVALENT	MFR
C 01	59.31.2103	10 N	20%	100V MPETP	
C 02	59.32.1152	1500 P	10%	400V CER	
C 03	59.11.3562	5,6 N	10%	100V PC	
C 04	59.31.1224	220 N	20%	100V MPETP	
C 05	59.30.4100	10 U	20%	16V TA	
C 06	59.30.4100	10 U			
C 07	59.31.1104	100 N	20%	100V MPETP	
C 08	59.31.1104	100 N			
C 09	59.30.4100	10 U	20%	16V TA	
C 10	59.11.6561	560 P	5%	400V PC	
C 11	59.30.1470	47 U	20%	3V TA	
C 12	59.30.4100	10 U	20%	16V TA	
C 13	59.31.1104	100 N	20%	100V MPETP	
D 01	50.04.0125	1N4448			
D 02	50.04.0125	1N4448			
D 03	50.04.0125	1N4448			
D 04	50.04.0125	1N4448			
D 05	50.04.0125	1N4448			
D 06	50.04.0125	1N4448			
D 07	50.04.0125	1N4448			
D 08	50.04.1119	15 V		Z	
J 01	54.01.0244	7-Pole		Socket-Strip AMP	
IC 01	50.05.0245	RC4558			
1 K 01	56.04.0147	500 Q		Relais 12V	N
2 C 14	59.34.4221	220 P	5%	25V, CER	
2 C 15	59.32.3103	10 N	5%	25V, CER	

IND	DATE	NAME
④		N = National
③		
②	10.10.83	vgl/ <i>FM</i>
①	5.9.82	VH
○	23.5.79	R.W/gv

**STUDER** Interface Simda ED3000P/B77 1.177.282.00 PAGE 1 OF 3

IND	POS NO	PART NO	VALUE	SPECIFICATIONS/EQUIVALENT	MFR
R 14	57.11.4103	10 k	5%	.25W CF	
R 15	57.11.4224	220 k			
R 16	58.02.5103	10 k	20%	.1 W PCF	
R 17	57.11.4104	100 k	5%	.25W CF	
R 18	57.11.4224	220 k			
R 19	57.11.4153	15 k			
R 20	57.11.4223	22 k			
R 21	57.11.4224	220 k			
R 22	57.11.4103	10 k			
R 23	57.11.4332	3,3 k			
R 24	57.11.4224	220 k			
R 25	57.11.4154	150 k			
R 26	57.11.4105	1 M			
R 27	57.11.4102	1 k			
R 28	57.11.4153	15 k			
R 29	57.11.4222	2,2 k			
R 30	57.11.4104	100 k			
R 31	57.11.4332	3,3 k			

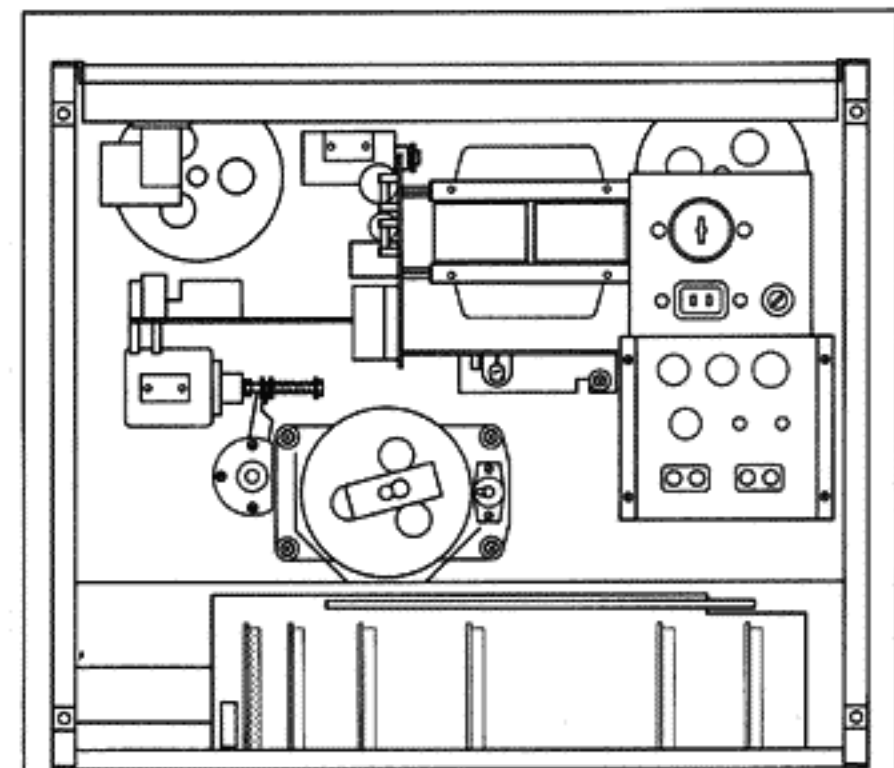
IND	DATE	NAME
④		
③		
②	10.10.83	vgl/ <i>FM</i>
①	15.9.82	VH
○	23.5.79	R.W/gv

**STUDER** Interface Simda ED3000P/B77 1.177.282.00 PAGE 3 OF 3

IND	POS NO	PART NO	VALUE	SPECIFICATIONS/EQUIVALENT	MFR
L 01	1.022.141.00			RF Transformer	
L 02	62.02.3473	47 mH			
P 01	54.01.0470	4-Pole		PIN-Strip AMP	
P 02	54.01.0470	4-Pole		PIN-Strip AMP	
Q 01	50.03.0436	BC107B		NPN	
Q 02	50.03.0436	BC107B		NPN	
Q 03	50.03.0318	BC178A		PNP	
Q 04	50.03.0436	BC107B		NPN	
Q 05	50.03.0436	BC107B		NPN	
Q 06	50.03.0436	BC107B		NPN	
Q 07	50.03.0318	BC178A		PNP	
Q 08	50.03.0436	BC107B		NPN	
R 01	57.11.4472	4,7 k	5%	.25W CF	
R 02	57.11.4391	390			
R 03	57.11.4153	15 k			
R 04	57.11.4472	4,7 k			
R 05	57.11.4223	22 k			
R 06	57.11.4222	2,2 k			
R 07	57.11.4471	470			
R 08	57.11.4223	22 k			
R 09	58.02.5103	10 k	20%	.1 W PCF	
R 10	57.11.4103	10 k	5%	.25W CF	
R 11	57.11.4562	5,6 k			
R 12	57.11.4472	4,7 k			
R 13	57.11.4472	4,7 k			

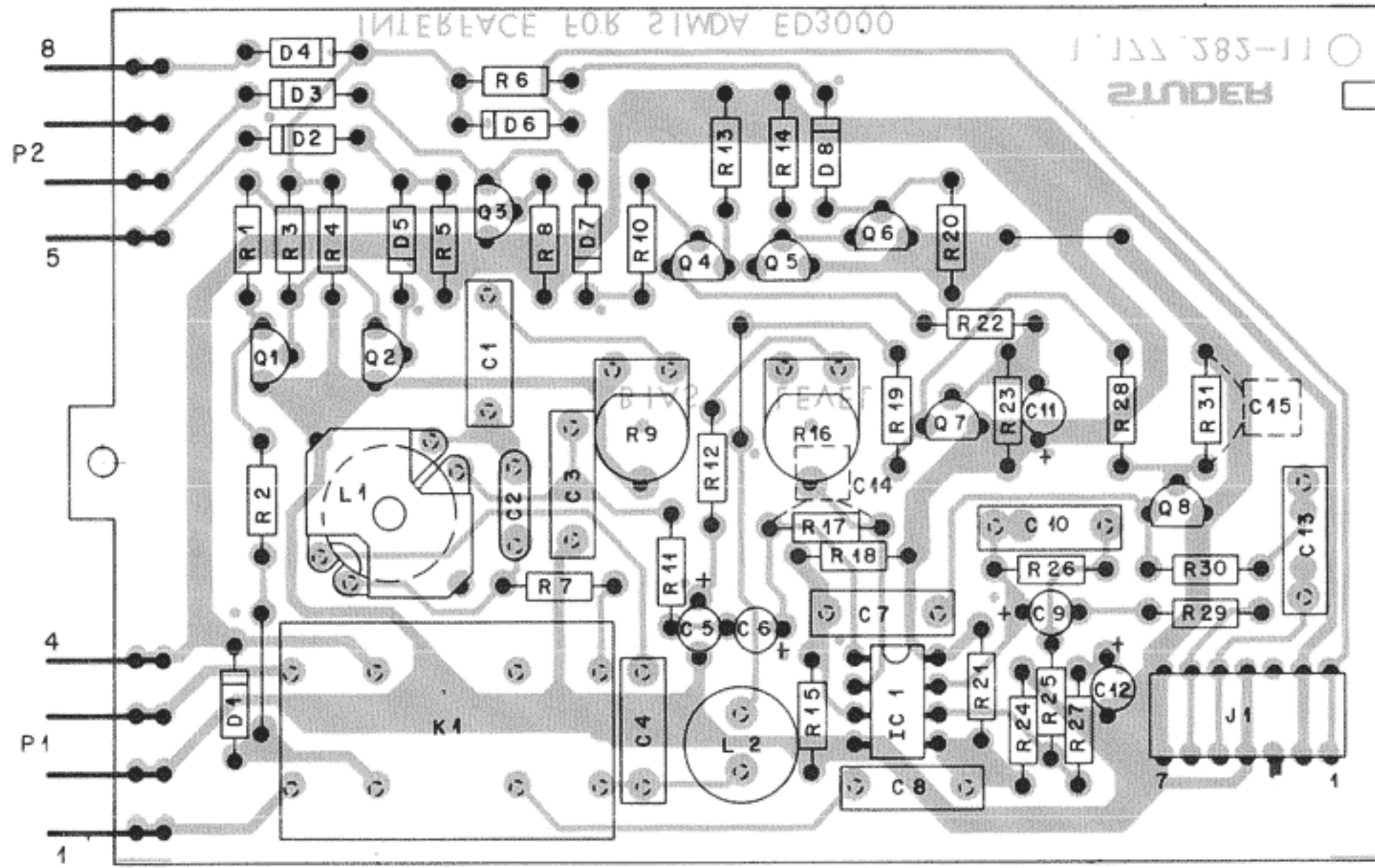
IND	DATE	NAME
④		
③		
②	10.10.83	vgl/ <i>FM</i>
①	15.9.82	VH
○	23.5.79	R.W/gv

**STUDER** Interface Simda ED3000P/B77 1.177.282.00 PAGE 2 OF 3

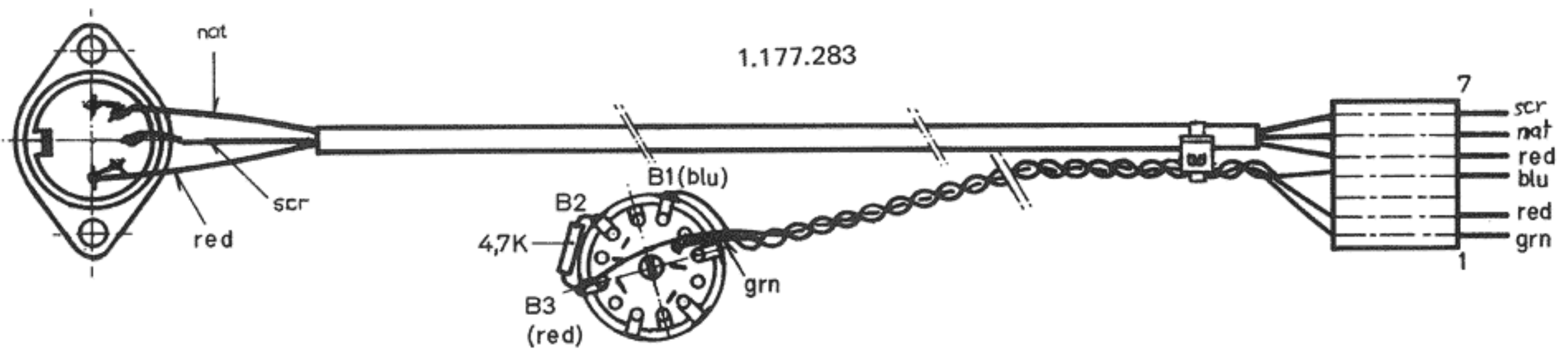




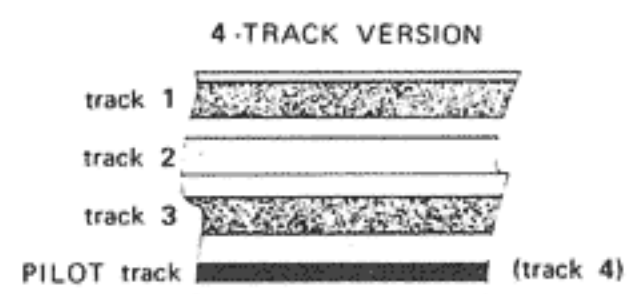
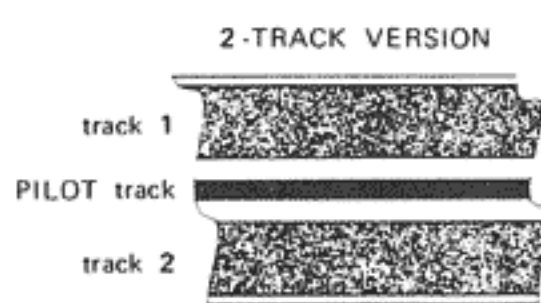
DISSOLVE HEAD AMPLIFIER PCB 1.177.282.00 (INTERFACE SIMDA ED 3000P)



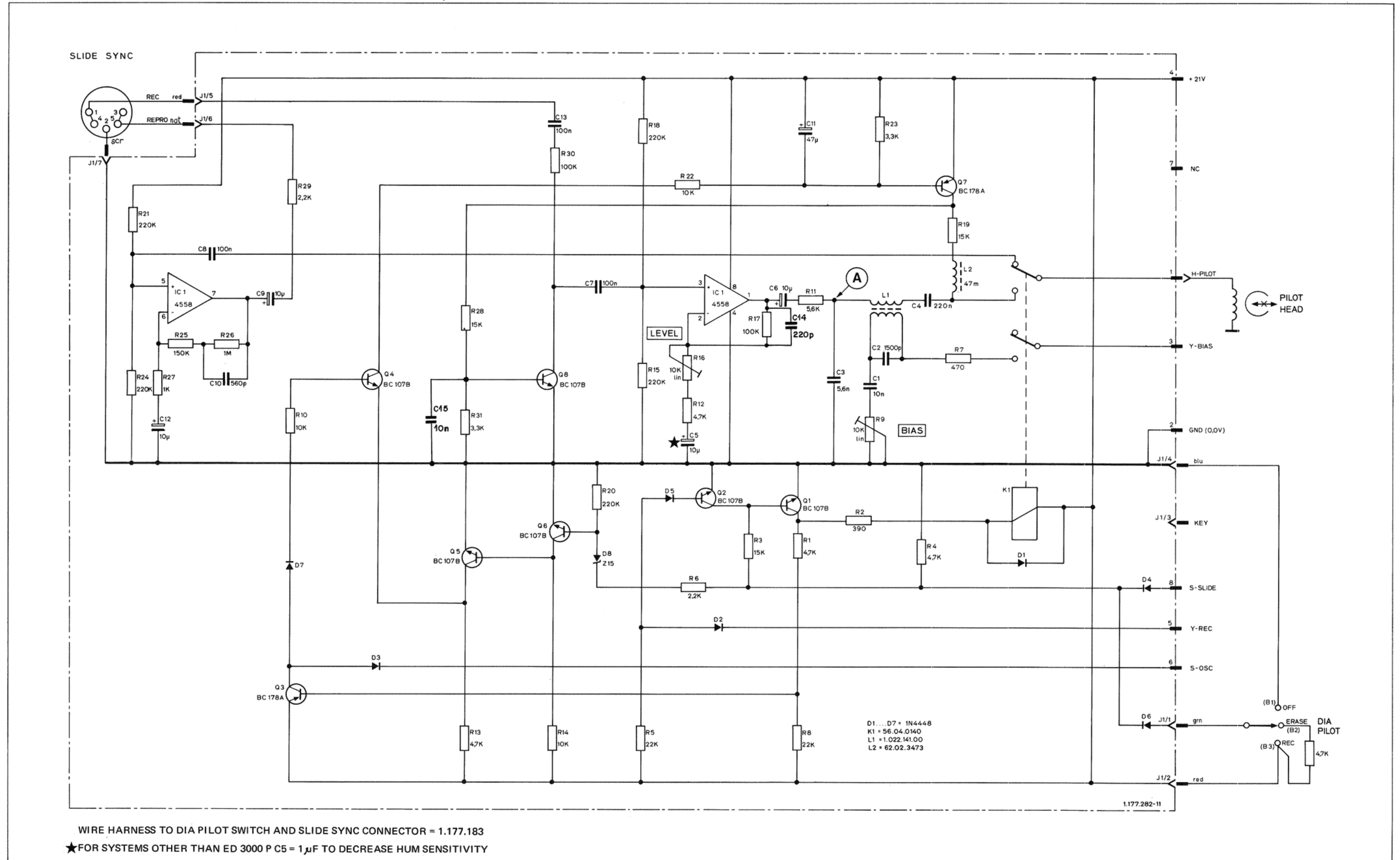
WIRE HARNESS TO DHA-KIT



PILOT TRACK VERSIONS



DISSOLVE HEAD AMPLIFIER PCB 1.177.282.00 (INTERFACE SIMDA ED 3000P)



WIRE HARNESS TO DIA PILOT SWITCH AND SLIDE SYNC CONNECTOR = 1.177.183

★FOR SYSTEMS OTHER THAN ED 3000 P C5 = 1µF TO DECREASE HUM SENSITIVITY