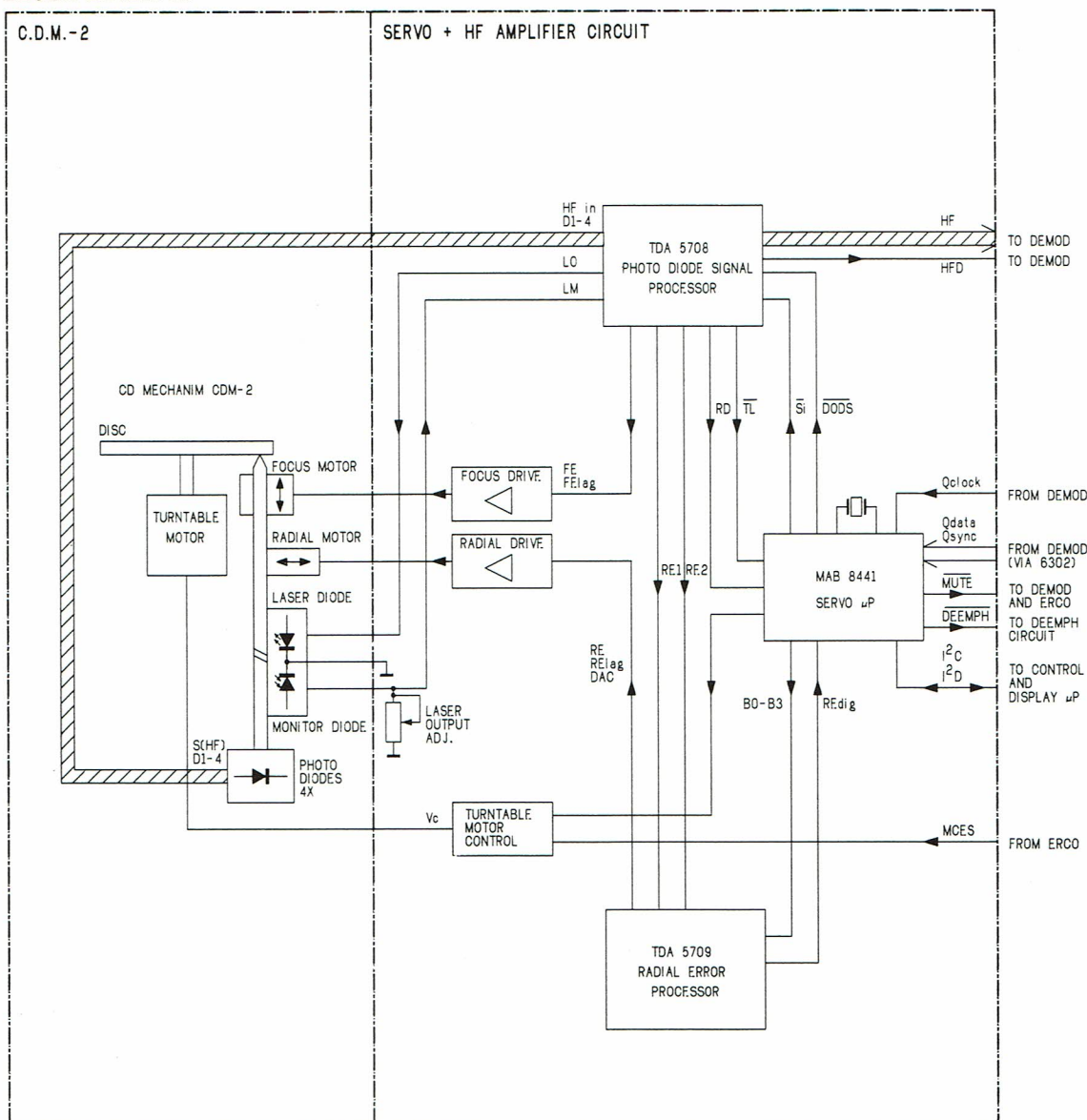




CS 102 219

C.D.M.-2

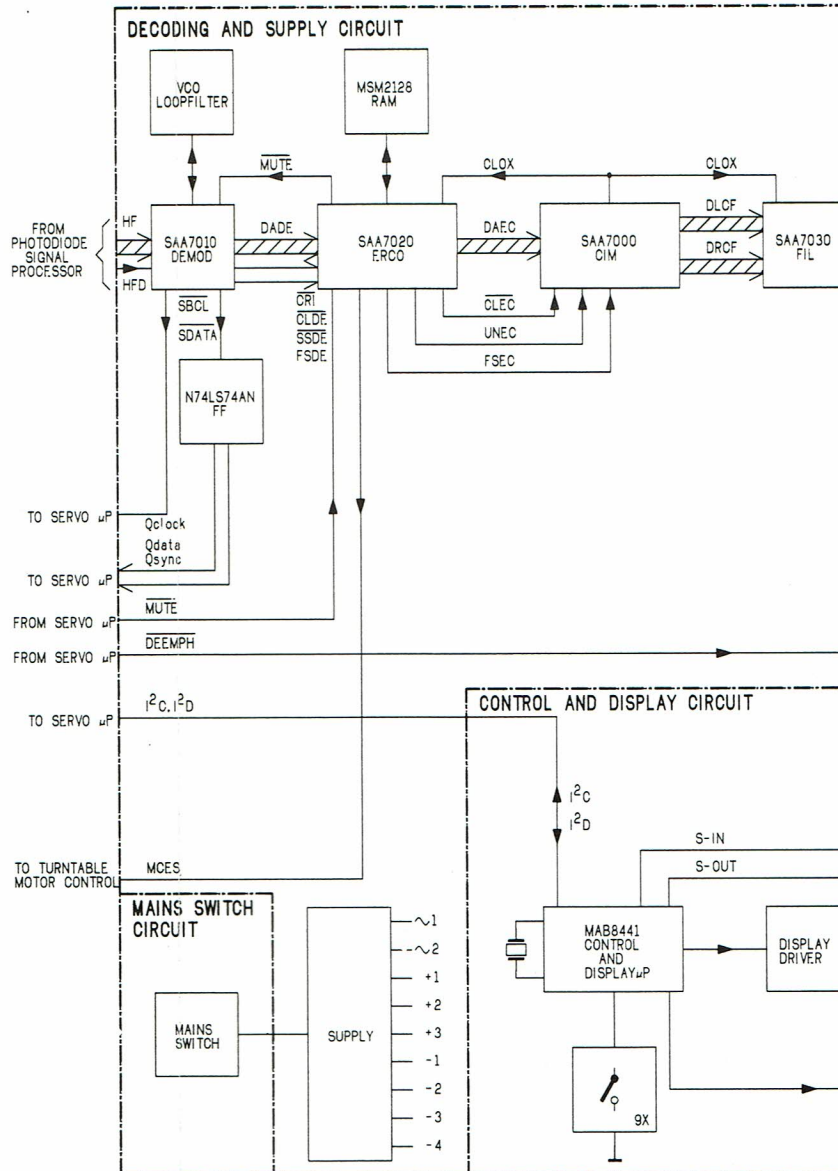
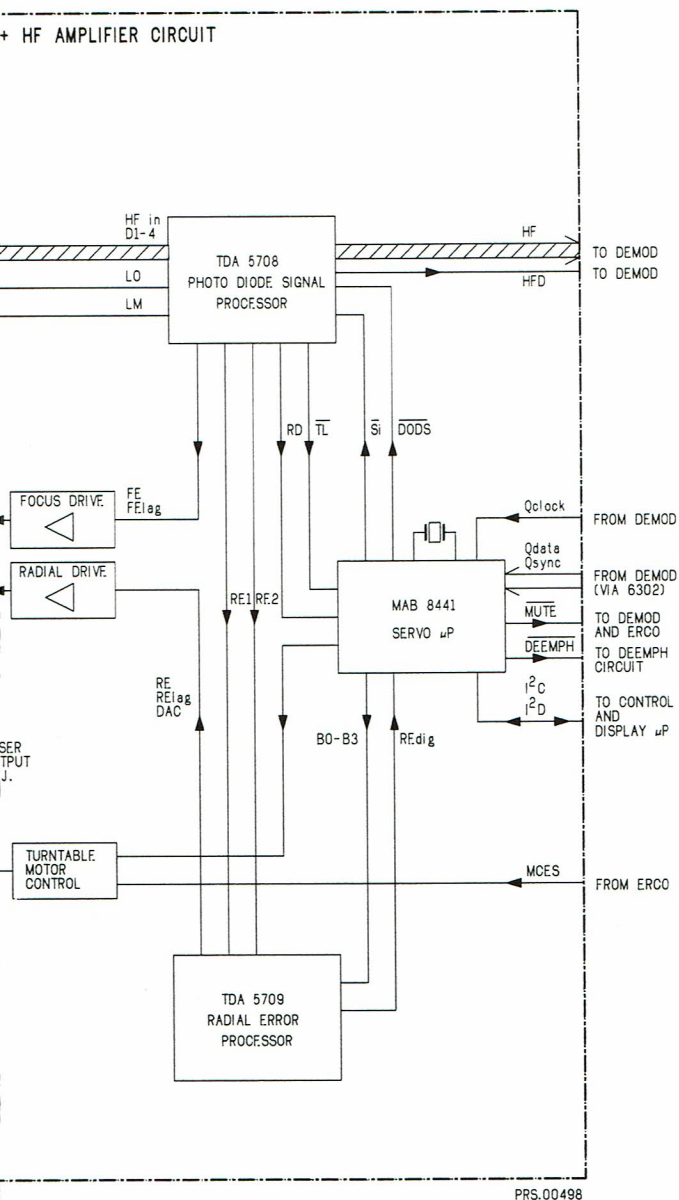
SERVO + HF AMPLIFIER CIRCUIT



PRS.00498

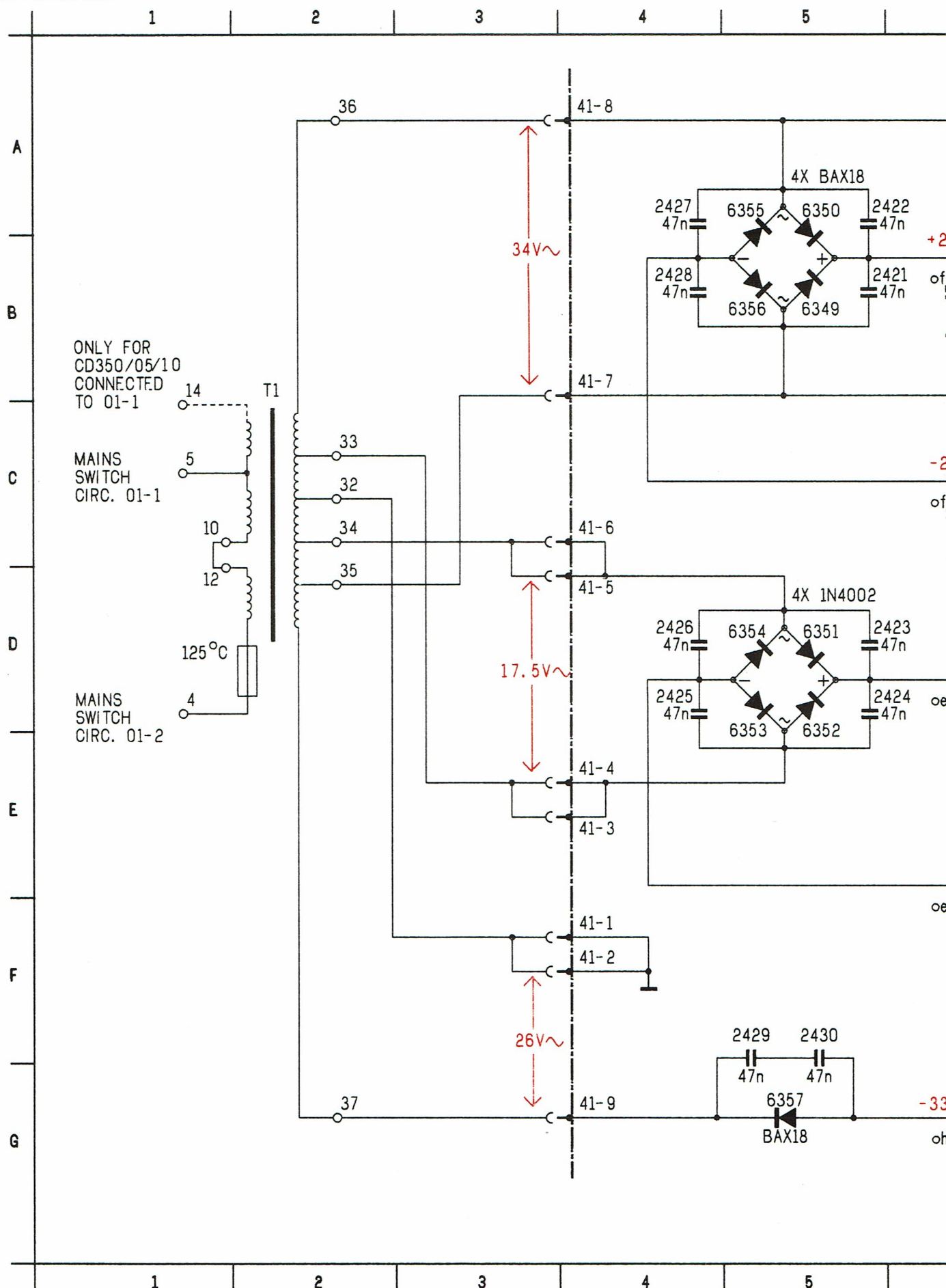
B0-B3	-	Control bits for radial circuit
DAC	-	Current output for track jumping (Digital to Analogue Converted)
DEEMPH	-	Deemphasis
DODS	-	Drop out detector supression
D1÷4	-	Photodiode currents
FE	-	Focus error signal
FE lag	-	Focus error signal for LAG network
HF	-	HF output for DEMOD
HFD	-	HF detector output for DEMOD
HF-in	-	HF current input
I ² C	-	Clock signal servo-control μ P
I ² D	-	Data signal servo-control μ P
LM	-	Laser monitor diode input
LO	-	Laser amplifier current output
MCES	-	Motor control from ERCO to servo circuit
MUTE	-	Mute signal

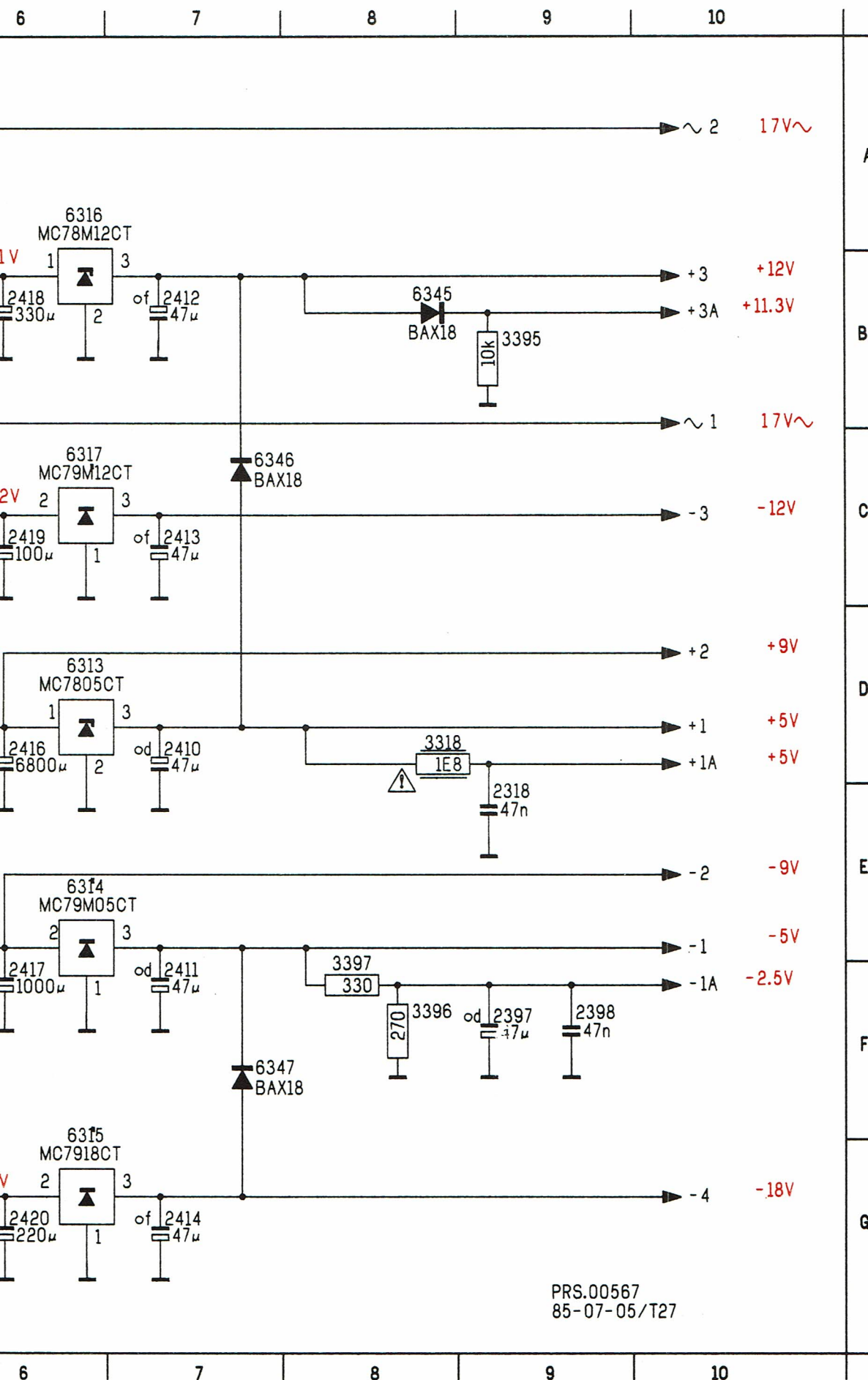
Q CLOCK	-	Subcode clock input for servo μ P
Q DATA	-	Subcode data input for servo μ P
Q SYNC	-	Subcode synchronization input for servo μ P
RE	-	Radial error signal (amplified RE_2 - RE_1 currents)
RE1	-	Radial error signal 1 (summation of amplified currents D_3 and D_4)
RE2	-	Radial error signal 2 (summation of amplified currents D_1 and D_2)
RE dig	-	Radial error digital
RE lag	-	Radial error signal for LAG network
RD	-	Ready signal, starting up procedure finished
$\overline{Si}$	-	On/off control for laser supply and focus circuit
$\overline{TL}$	-	Track loss signal
Vc	-	Control voltage for turntable motor



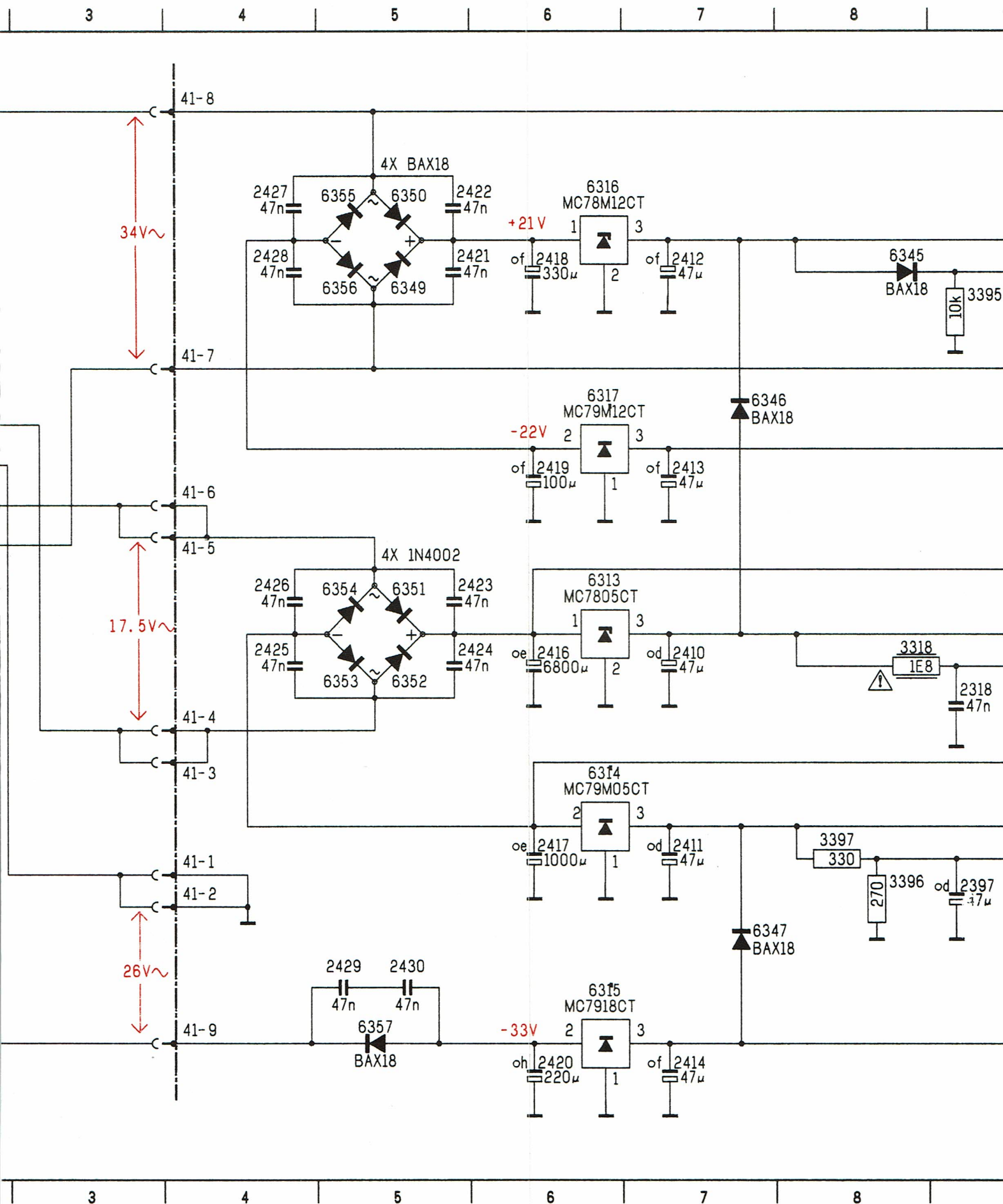
HF amplifier circuit	Q CLOCK	-	Subcode clock input for servo μP
RF feedback (Converted)	Q DATA	-	Subcode data input for servo μP
	Q SYNC	-	Subcode synchronization input for servo μP
Radial error signal	RE	-	Radial error signal (amplified RE ₂ -RE ₁ currents)
LAG network	RE1	-	Radial error signal 1 (summation of amplified currents D ₃ and D ₄)
for DEMOD	RE2	-	Radial error signal 2 (summation of amplified currents D ₁ and D ₂)
control μP	RE dig	-	Radial error digital
control μP	RE lag	-	Radial error signal for LAG network
input	RD	-	Ready signal, starting up procedure finished
output	Si	-	On/off control for laser supply and focus circuit
RCO to servo	TL	-	Track loss signal
	Vc	-	Control voltage for turntable motor

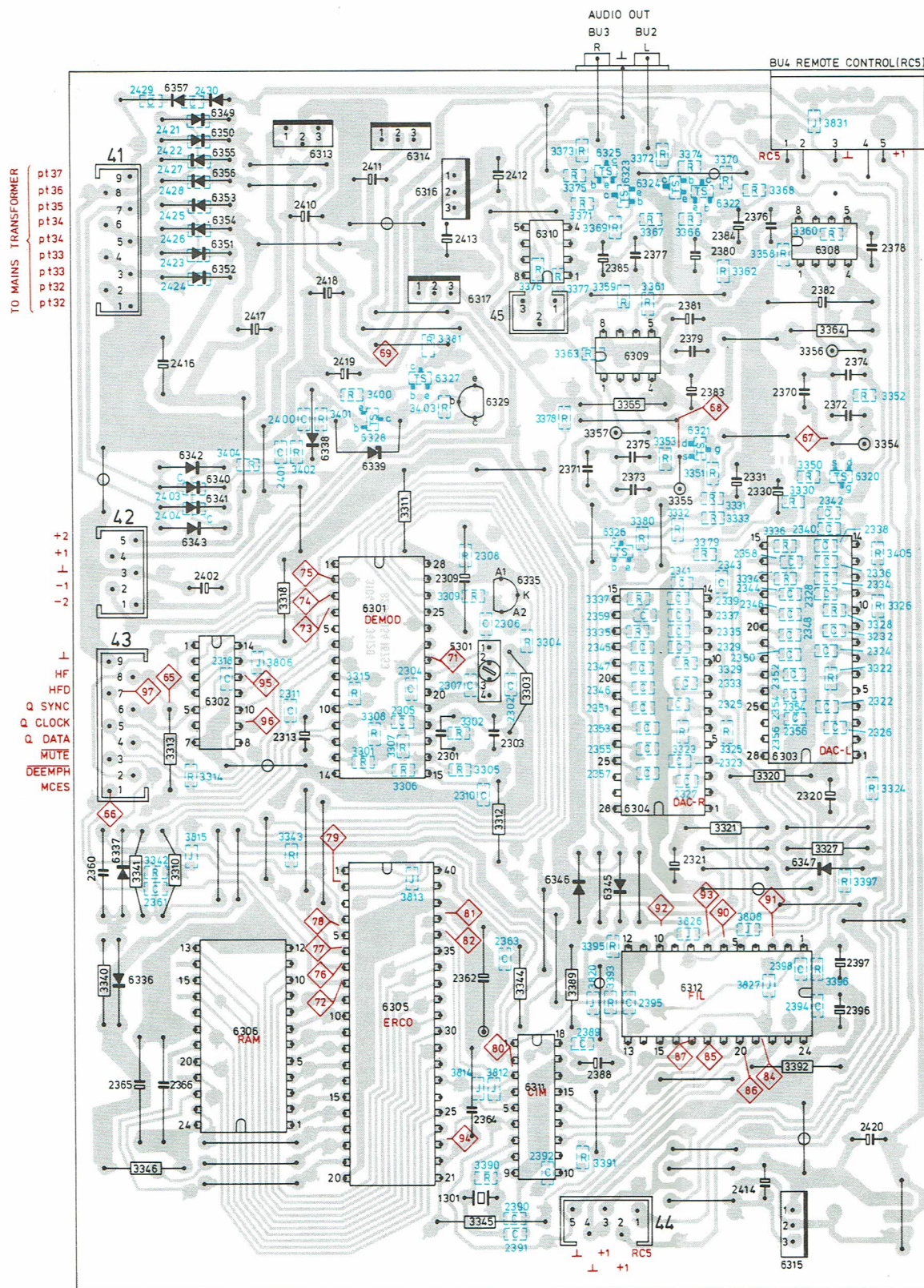
CLDE	-
CLEC	-
CLOX	-
CRI	-
DADE	-
DAEC	-
DEEMPH	-
DLCF	-
DRCF	-
FSDE	-
FSEC	-
HF	-
HFD	-
I²C	-
I²D	-
MCES	-
MUTE	-
Q CLOCK	-
Q DATA	-
Q SYNC	-
SBCL	-
S DATA	-
S-IN	-
S-OUT	-
UNEC	-





2318	E	9
2397	F	9
2398	F	9
2410	D	7
2411	F	7
2412	B	7
2413	C	7
2414	G	7
2416	D	6
2417	F	6
2418	B	6
2419	C	6
2420	G	6
2421	B	6
2422	A	6
2423	D	6
2424	D	6
2425	D	4
2426	D	4
2427	A	4
2428	B	4
2429	F	5
2430	F	5
3318	D	8
3395	B	9
3396	F	8
3397	F	8
6345	B	8
6346	C	7
6347	F	7
6349	B	5
6350	A	5
6351	D	5
6352	D	5
6353	D	5
6354	D	5
6355	A	5
6356	B	5
6357	G	5
T1	B	2





⊕ ⊕ CONNECTED TO COPPERFOIL ON COMPONENT SIDE OF THE PCB

[C] = CHIP CAPACITOR

[J] = CHIP JUMPER

[R] = CHIP RESISTOR

[T] = CHIP TRANSISTOR

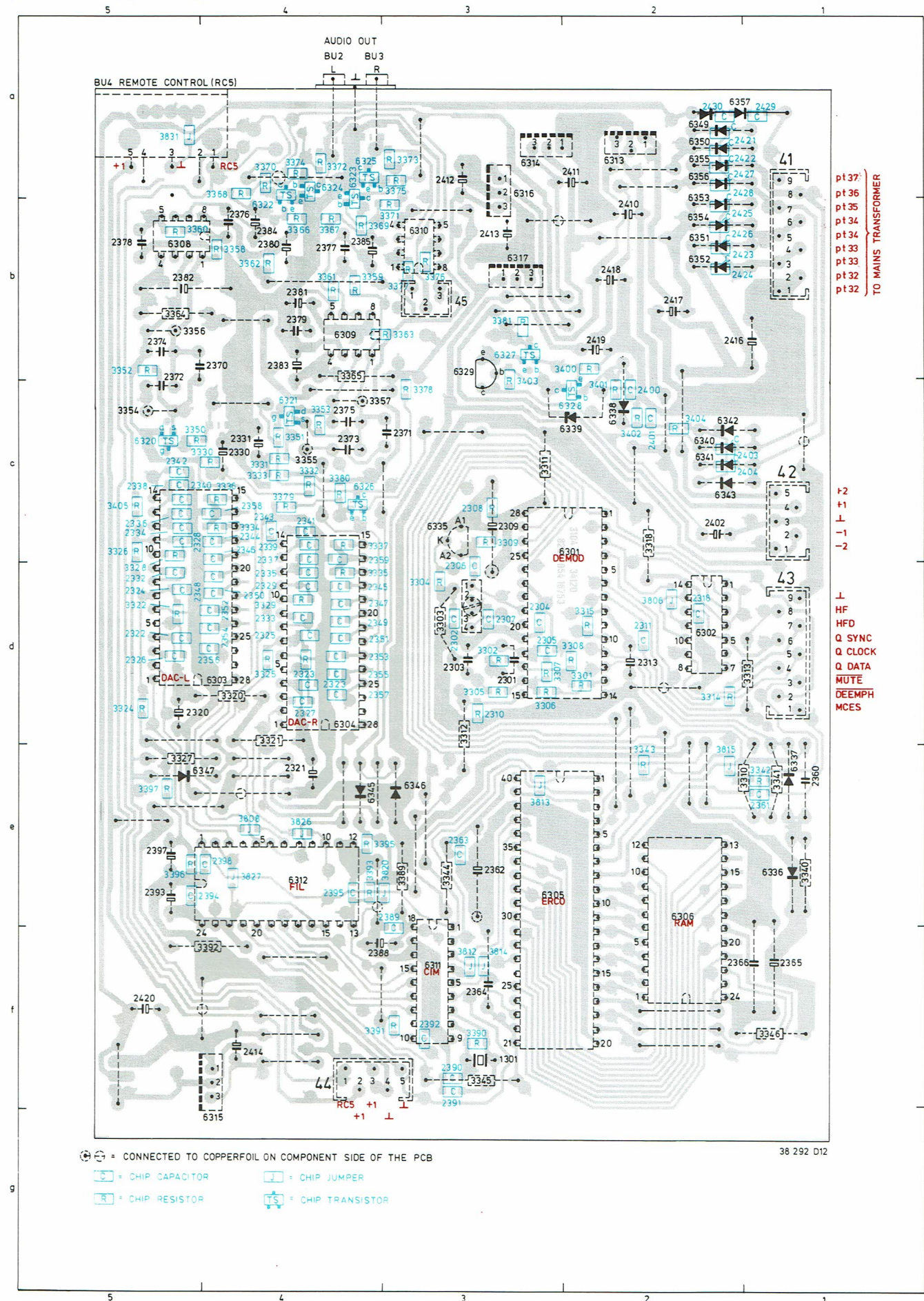
38 293 D12

For non active chipcomponents see seperate list

					
SAA7000	CIM	4822 209 10375	1301	X-tal 4,2336 MHz	4822 242 70663
SAA7010	DEM0D	4822 209 10857			
SAA7020	ERCO	4822 209 10377	5301		4822 156 21155
SAA7030	FIL	4822 209 10378			
TDA1540	DAC	4822 209 81453	2301,2303	22nF-2%	4822 121 50609
MSM2128-20RS	RAM	4822 209 10379	2370,2371	5,1nF-2%	4822 121 50976
NJM4560D		4822 209 83274	2372,2373	1,5nF-2%	4822 121 50432
LM833N		4822 209 83163	2374+2377	2,2nF-2%	4822 121 50841
SN74LS74AN		4822 209 80782	2378,2379	1,2nF-2%	5322 121 54135
MC7805CT		4822 209 80891			
MC78M12CT		5322 209 86176	3311,3318,3320	$\left. \begin{array}{l} 1,8 \Omega\text{-NFR25} \\ 1 \Omega\text{-NFR25} \end{array} \right\}$	4822 111 30489
MC79M05CT		4822 209 83164	3321,3346,3389		4822 111 30483
MC7912CT		4822 209 82065	3344,3392		
MC7918CT		4822 209 83165			
			BU2,3	CINCH-socket	4822 267 30631
BC548B		4822 130 40937	BU4	DIN-socket	4822 267 40284
BC818/25 ©		4822 130 42696			
BC818/25R ©		4822 130 42697	Miscellaneous		
BC848B ©		5322 130 41982	Spring clip		
BC858BR ©		4822 130 42134	Transformer fuse		
BC858CR ©		4822 130 42634	Mains transf.		
BSR56 ©		4822 130 42633	Mains transf. (only for 07/17/34)		
IN4002		5322 130 30684	4822 492 63076		
IN4148		4822 130 30621	4822 252 20007		
BAX18		4822 130 34121	4822 146 21047		
HZ4B2/C3V9		4822 130 32843	4822 146 21067		
BB212		4822 130 31129			

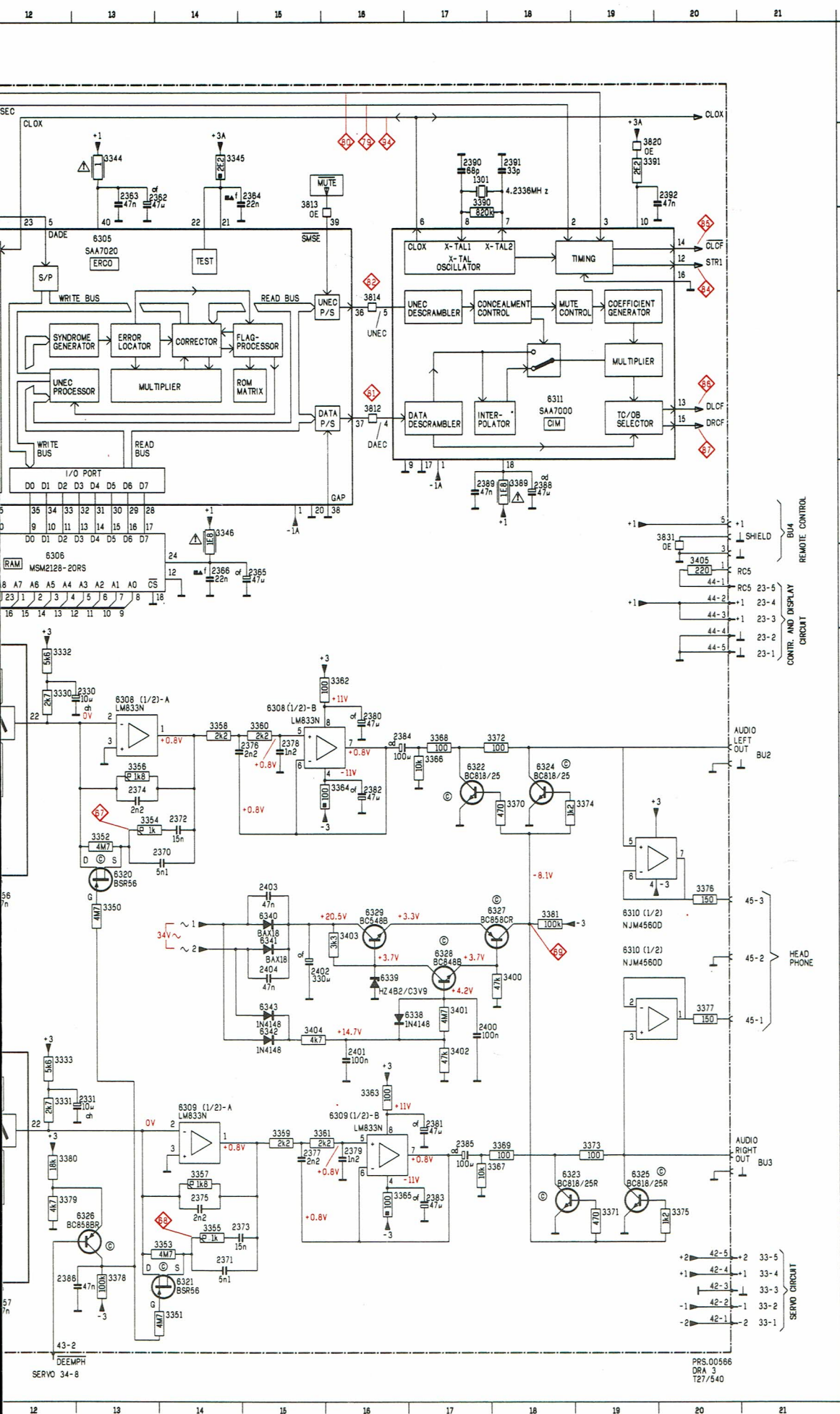
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2302	D3	2307	D3	2313	D2	2323	D4	2328	C5	2333	D4	2338	C5	2343	C4	2348	D4	2354	D4
2303	D3	2308	C3	2318	D2	2324	D5	2329	D4	2334	C5	2339	C4	2344	C4	2350	D4	2355	D4
2304	D3	2309	C3	2320	D5	2325	D4	2330	C4	2335	D4	2340	C5	2345	D4	2351	D4	2356	D4
2357	D4	2362	E3	2370	B5	2375	C4	2380	B4	2385	B4	2392	F3	2400	C2	2410	B2	2416	B1
2358	C4	2363	E3	2371	C3	2376	B4	2381	B4	2388	F3	2394	E5	2401	C2	2411	A2	2417	B2
2359	C4	2364	F3	2372	C5	2377	B4	2382	B5	2389	E4	2395	E4	2402	C2	2412	A3	2418	B2
2360	E1	2365	F1	2373	C4	2378	B5	2383	B4	2390	F3	2396	E5	2403	C2	2413	B3	2419	B2
2361	E1	2366	F1	2374	B5	2379	B4	2384	B4	2391	F3	2397	E5	2404	C2	2414	F4	2420	F5
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2422	A2	2427	A2	2301	D2	2306	D3	2311	C3	2318	C2	2324	D5	2330	C4	2335	D4	2342	E1
2423	B2	2428	A2	2302	D3	2307	D3	2312	D3	2320	D4	2325	D4	2331	C4	2336	C4	2343	E2
2424	B2	2429	A1	2303	D3	2308	D2	2313	D1	2321	D4	2326	C5	2332	C4	2337	C4	2344	E3
2425	B2	2430	A2	2304	D3	2309	C3	2314	D2	2322	D5	2328	C5	2333	C4	2340	E1	2345	F3
3346	F1	3354	C5	3360	B5	3365	B4	3370	A4	3375	A3	3380	C4	3391	F3	3400	B2	3405	C5
3350	C5	3355	C4	3361	B4	3366	B4	3371	B3	3376	B3	3381	B3	3392	F4	3401	C2	3406	D2
3351	C4	3356	B5	3362	B4	3367	B4	3372	A4	3377	B3	3385	B4	3393	E4	3402	C2	3408	E4
3352	B5	3357	C4	3363	B3	3368	A4	3373	A3	3378	C3	3389	E3	3395	E4	3403	B3	3412	F3
3353	C4	3359	B4	3364	B5	3369	B4	3374	A4	3379	C4	3390	F3	3396	E5	3404	C2	3413	E3
3814	F3	3831	A5	6304	D4	6310	B3	6316	A3	6323	A4	6328	C2	6338	C2	6343	C2	6351	B2
3815	E2	3301	D3	6305	E3	6311	F3	6317	B3	6324	A4	6329	B3	6339	C2	6345	E4	6352	B2
3820	E3	6301	C2	6306	E2	6312	E4	6320	C5	6325	A4	6335	C3	6340	C2	6346	E3	6353	B2
3826	E4	6302	D2	6308	B5	6313	A2	6321	C4	6326	C4	6336	E1	6341	C2	6349	A2	6354	B2
3827	E4	6303	D4	6309	B4	6314	A3	6322	A4	6327	B3	6337	E1	6342	C2	6350	A2	6355	A2
6356	A2																		
6357	A2																		

6-4
1985-07-01
SUPPLY + DECODER PCB



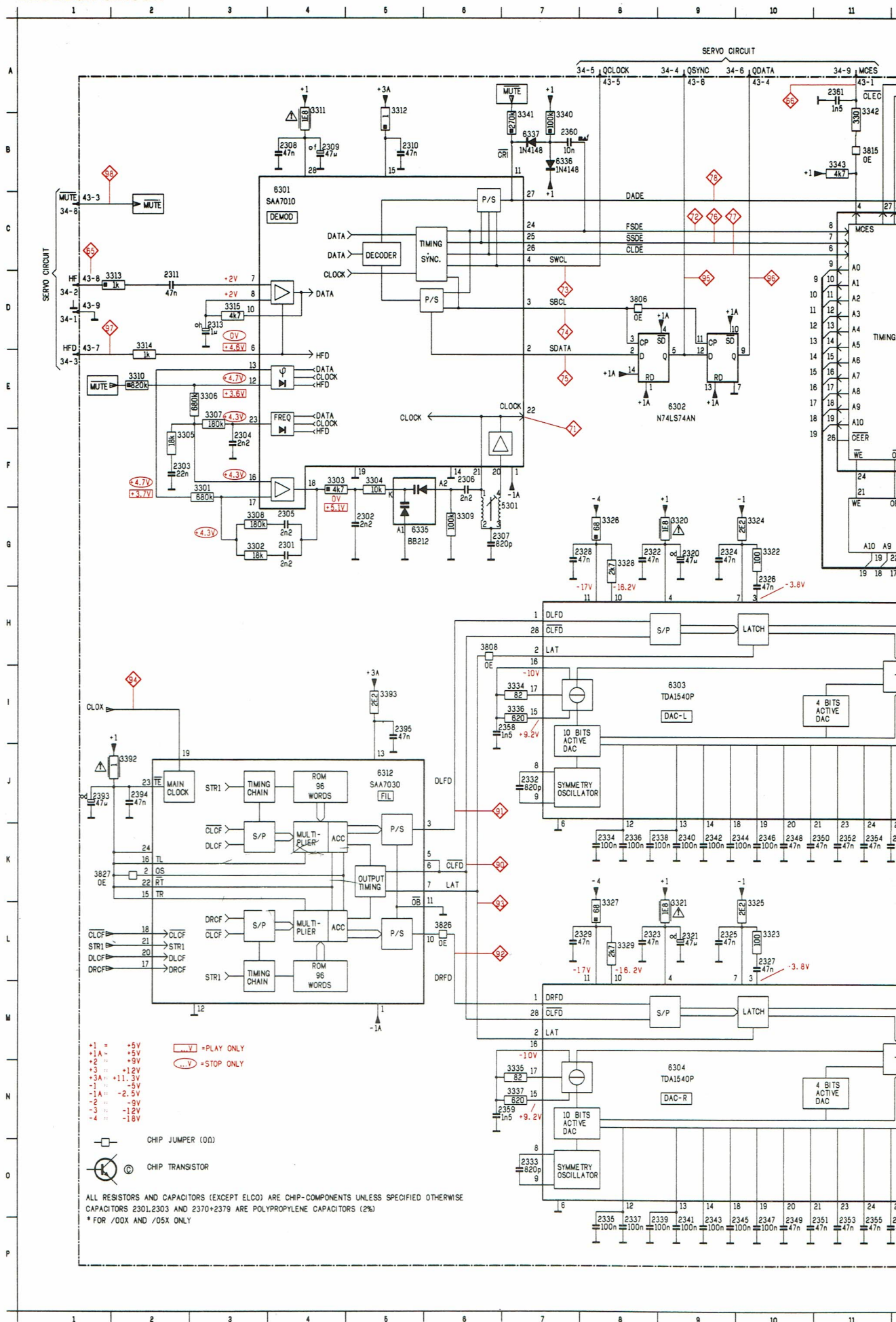
For non active chipcomponents see seperate list

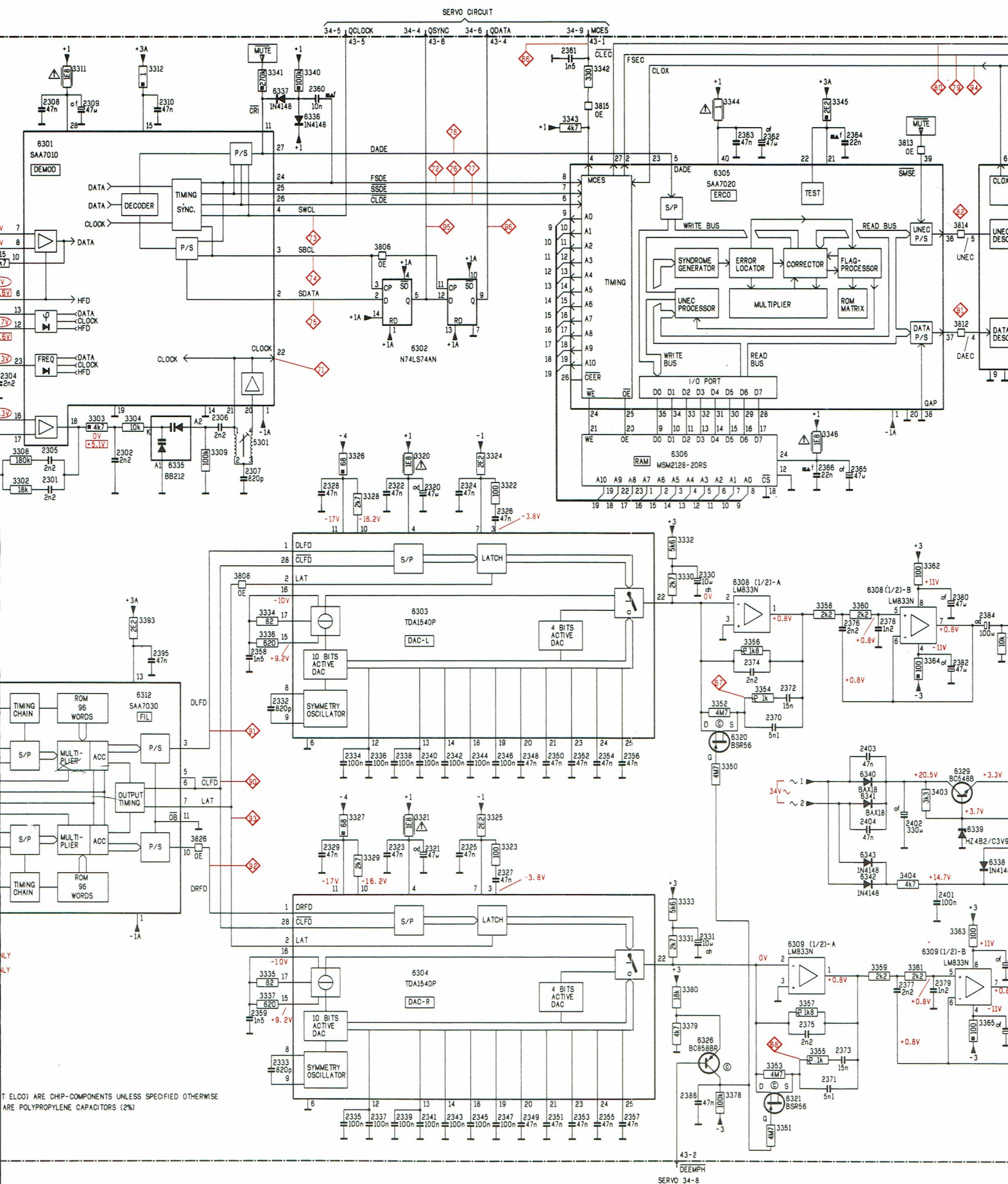
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2357	D4	2362	E3	2370	B5	2375	C4	2380	B4	2385	B4	2392	F3	2400	C2	2410	B2	2416	B1
2358	C4	2363	E3	2371	C3	2376	B4	2381	B4	2388	F3	2394	E5	2401	C2	2411	A2	2417	B2
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3820	E3	6301	C2	6306	E2	6312	E4	6320	C5	6325	A4	6335	C3	6340	C2	6346	E3	6353	B2
3826	E4	6302	D2	6308	B5	6313	A2	6321	C4	6326	C4	6336	E1	6341	C2	6349	A2	6354	B2
3827	E4	6303	D4	6309	B4	6314	A3	6322	A4	6327	B3	6337	E1	6342	C2	6350	A2	6355	A2
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6357	A2																		



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	2303	G5	G4	3393
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	2303	G7	3401	B17
	2303	G8	3402	B18
	2309	B4	3403	L15
	2310	B5	3404	K16
	2311	D2	3405	G20
	2312	D3	3406	B18
	2320	G9	3408	H8
	2321	L9	3412	B16
	2322	G8	3413	B15
	2323	G9	3414	B16
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	2326	D10	3426	B16
	2327	D10	3427	B16
	2328	G8	3431	F20
	2329	L8	5301	F7
	2330	H13	5301	B4
	2331	H13	5302	B9
	2332	J7	5303	N9
	2333	G7	5304	N9
	2334	K8	5305	C13
	2335	K8	5306	C13
	2336	K8	5309	H14
	2337	P8	5308	H13
	2338	K8	5309	H16
	2339	K8	5310	H14
	2340	P9	5310	K19
	2341	P9	5311	K19
	2342	K9	5312	J5
	2343	K9	5313	J13
	2344	K10	5321	O14
	2345	P10	5322	H18
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	2347	K10	5324	N18
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	2353	L11	5328	K17
	2354	P11	5329	K16
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	2366	O14		
	2370	J14		
	2371	J14		
	2372	J14		
	2373	O14		
	2374	L13		
	2375	L14		
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	3371	N19		
	3372	L18		
	3373	N19		
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DECODER CIRCUIT

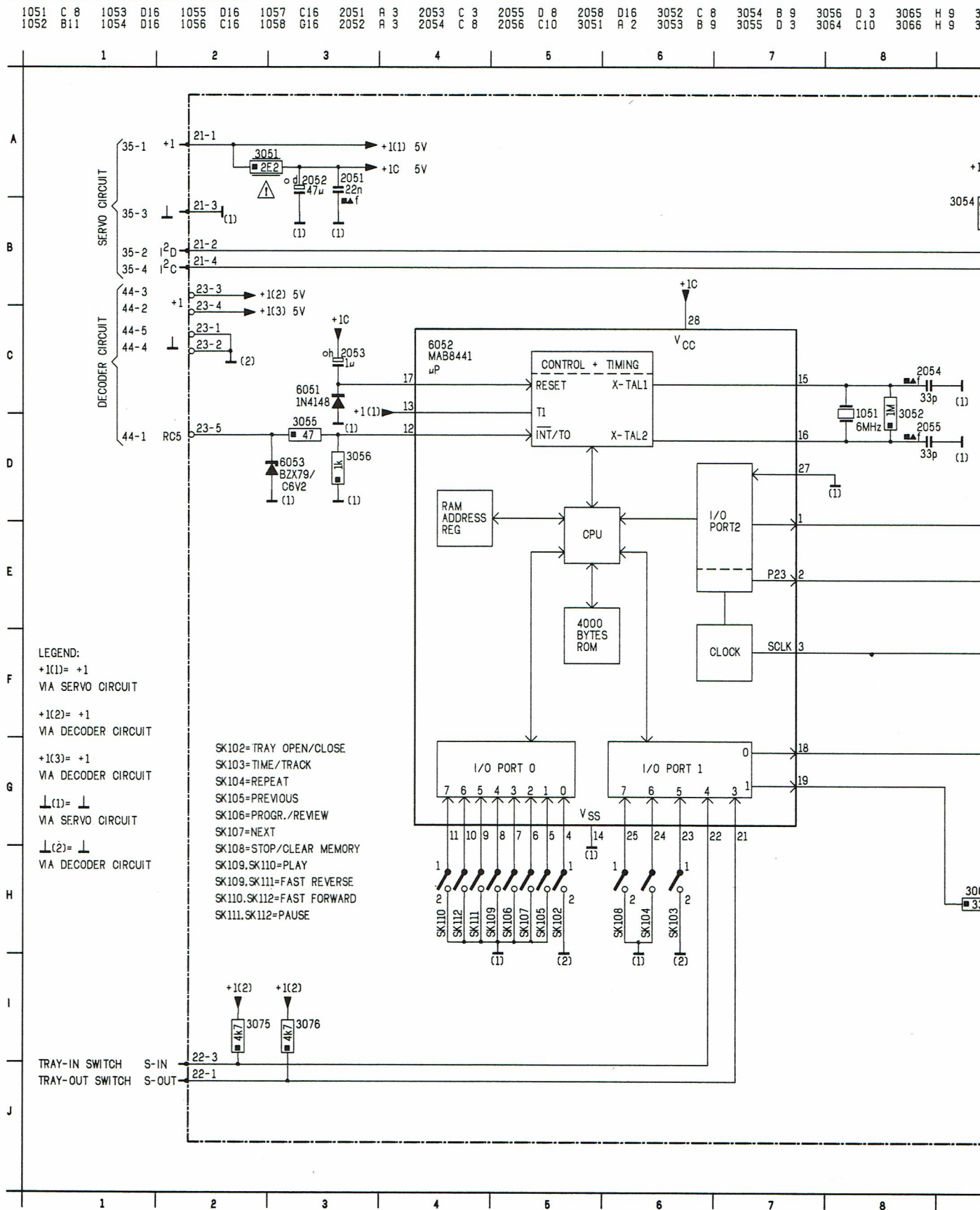




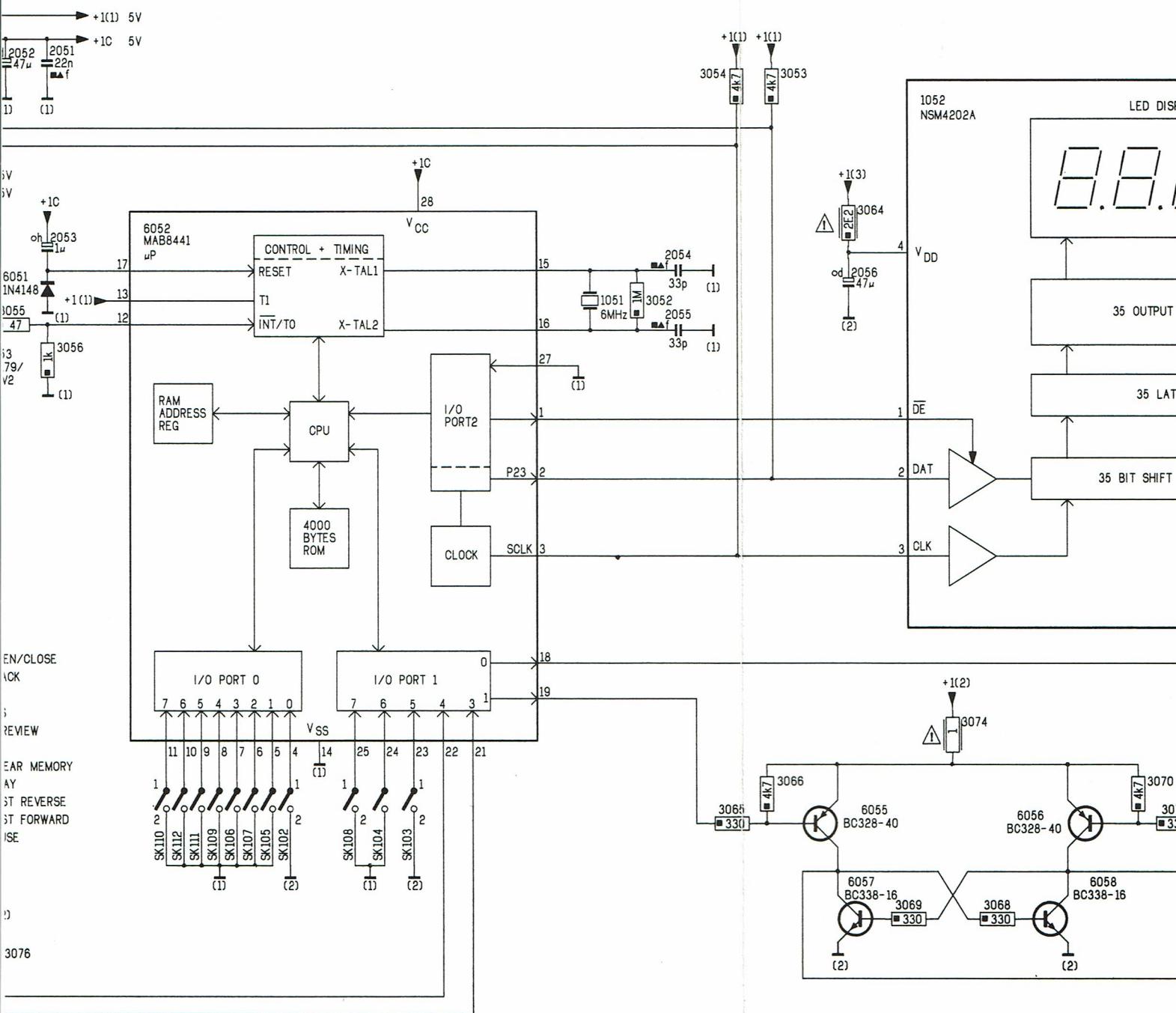
6-6

1985-07-01

CONTROL + DISPLAY CIRCUIT

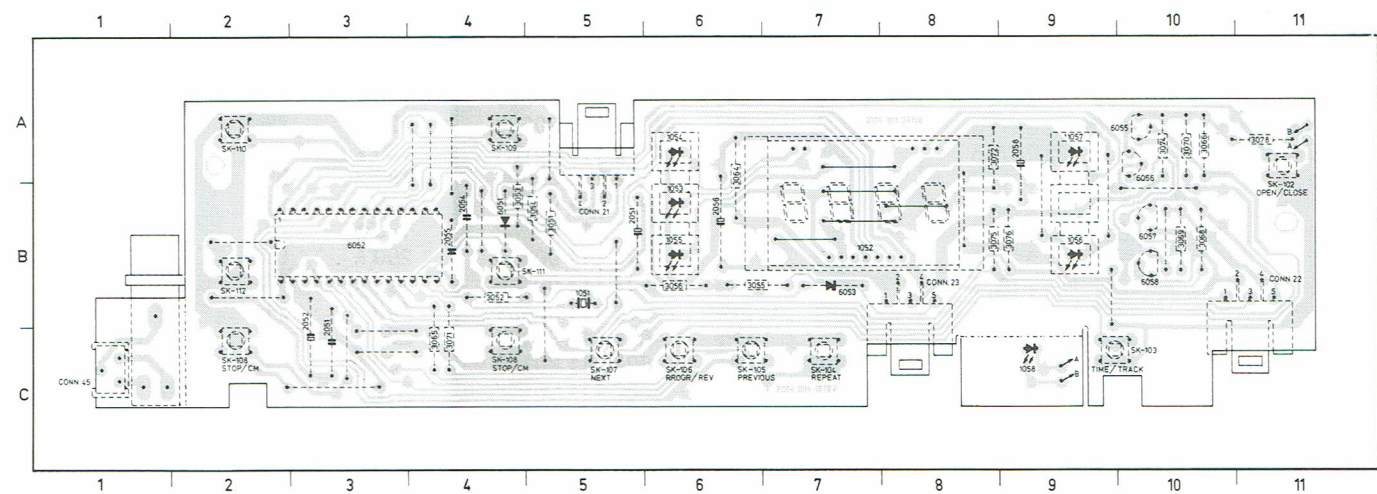


C16 G16	2051 2052	A 3 A 3	2053 2054	C 3 C 8	2055 2056	D 8 D 10	2058 3051	D16 A 2	3052 3053	C 8 B 9	3054 3055	B 9 D 3	3056 3064	D 3 C 10	3065 3066	H 9 H 9	3068 3069	I11 I10	3070 3071	H12 H13	3072 3074	B16 G11	3075 3076	I 2 I 3	3078 6051	F16 C 3	6052 6053
3			4			5			6		7		8		9		10		11		12						

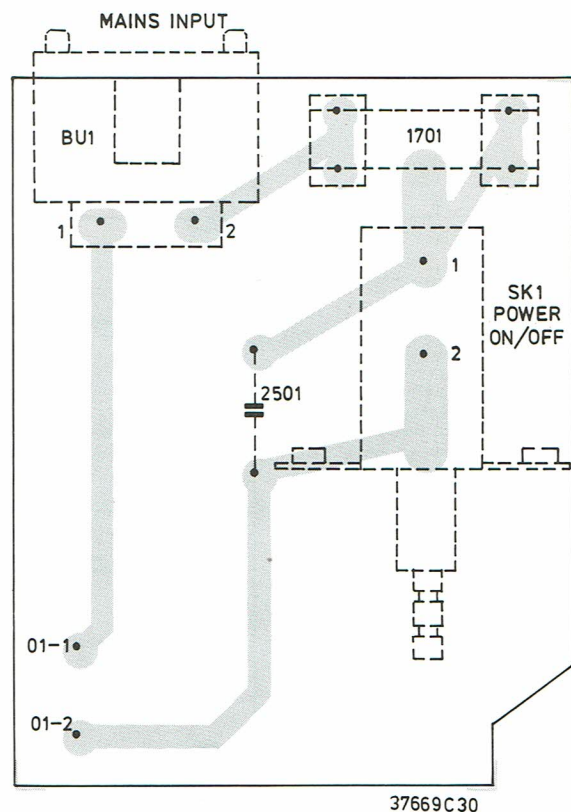
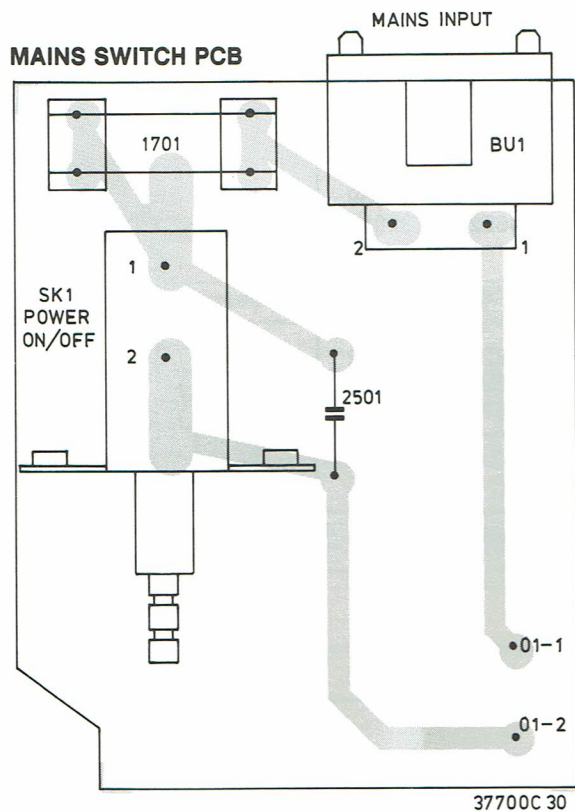
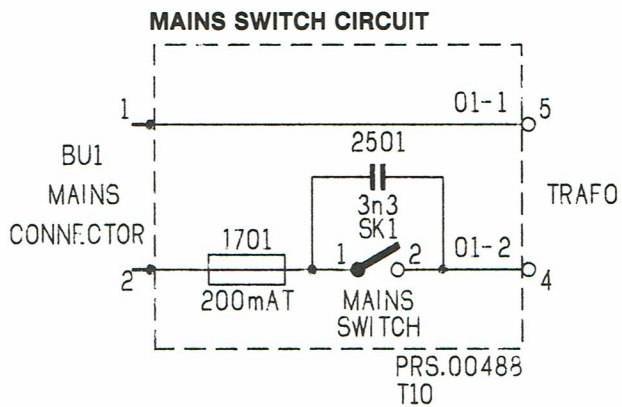


CONTROL + DISPLAY

		
6052	μP MAB8441P/T014	4822 209 11063
		
BC328-40		4822 130 41715
BC338-16		4822 130 40892
		
IN4148		4822 130 30621
HZ6C2 (6V2)		4822 130 32698
		
1053	TLR123 (RED)	5322 130 34957
1054,1055, 1056,1057	TLG 223A (GREEN)	5322 130 34959
1058	MV5460 (GREEN)	4822 130 32842
		
3051	2,2Ω-NFR25	4822 111 30492
30643072	3,3Ω-NFR25	4822 111 30593
3074	1Ω-NFR25	4822 111 30483
		
1051	X-tal 6MHz	4822 242 70392
Display		
1052	NSM4202A	4822 130 90262
		
SK102+112	TACT SWITCH	4822 276 11276
		
BU5	Headphone socket	4822 267 30568

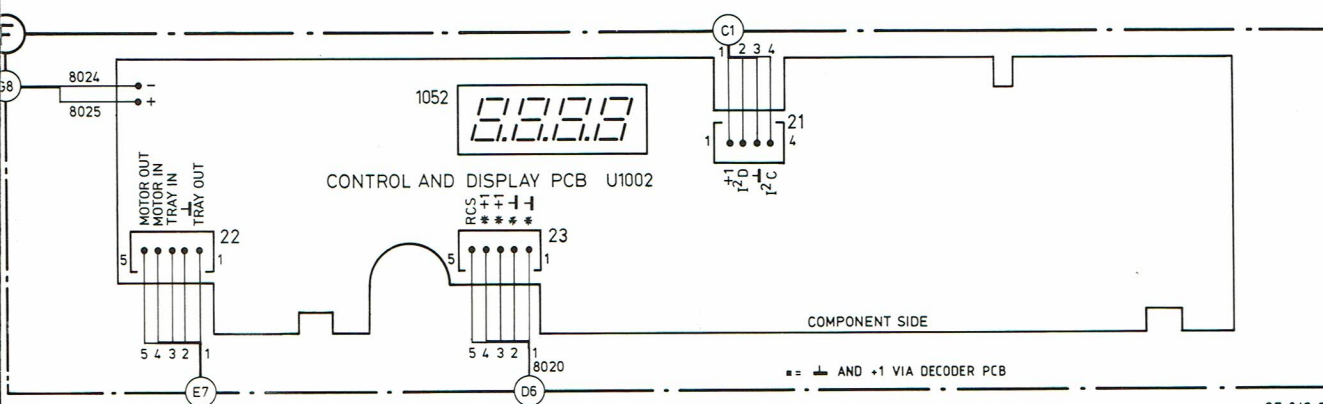
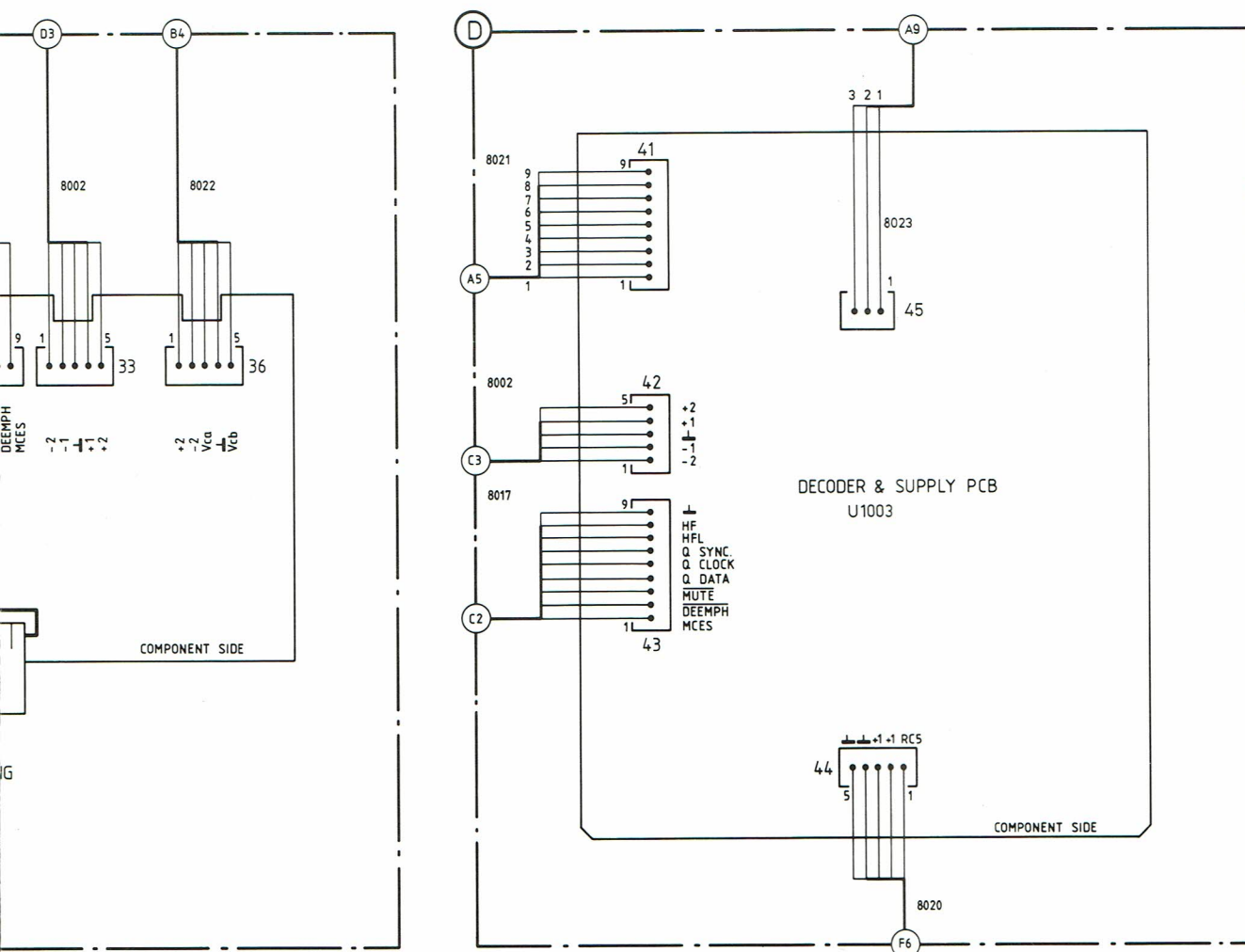
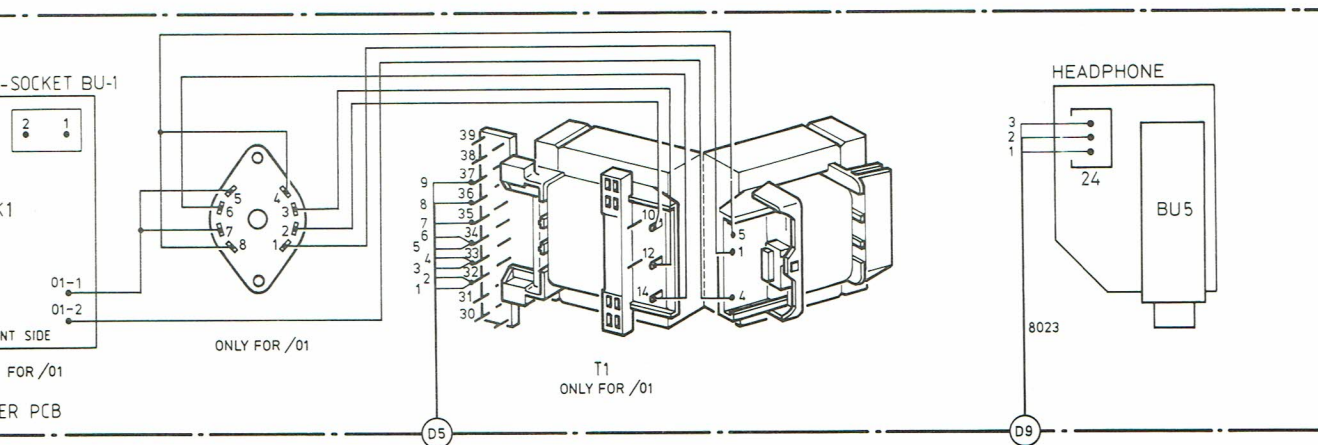


1051	B7	3075	B4
1052	B5	3076	B3
1053	B6	3078	A1
1054	A6	6051	B8
1055	B6	6052	B9
1056	B3	6053	B5
1057	A3	6055	A2
1058	C3	6056	A2
2051	C9	6057	B2
2052	C9	6058	B2
2053	B6	BU 5	B11
2054	B8	SK102	A1
2055	B8	SK103	C2
2056	B6	SK104	C5
2058	A3	SK105	C6
3051	B7	SK106	C6
3052	B8	SK107	C7
3053	B8	SK108	C10
3054	B7	SK109	A8
3055	B6	SK110	A10
3056	B6	SK111	B8
3064	A6	SK112	B10
3065	C8		
3066	A2		
3068	B2		
3069	B2		
3070	A2		
3071	C8		
3072	A4		
3074	A2		



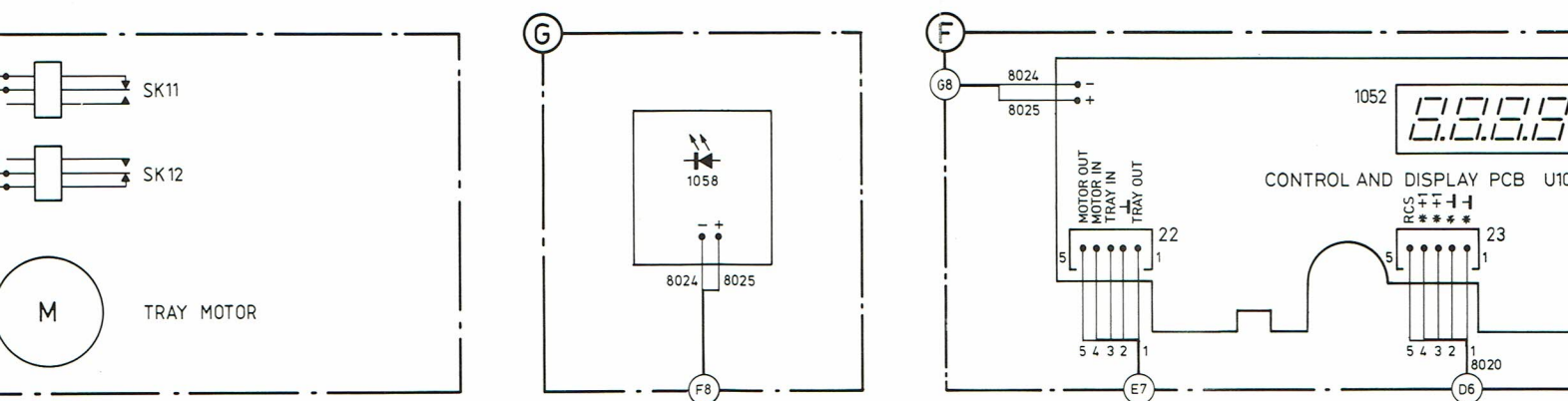
		
SK1	MAINS SWITCH	4822 276 11309
		
2701	3,3 nF-400V	4822 122 40327
		
1701	220/240V version	4822 253 30012
	200 mA	
	110/127V version	4822 253 30016
	400 mA	
Miscellaneous		
Fuse holder		4822 492 60063
BU-1 mains inlet		4822 265 20262

 Chips 50 V NP0 S1206			 Chips 0,125 W S1206			 Chips 0,125 W S1206		
1 pF	5%	4822 122 32279	8,2 E	10%	4822 111 90397	9,1 k	5%	4822 111 90373
1,5 pF	5%	4822 122 31792	9,1 E	10%	4822 111 90398	10 k	2%	4822 111 90249
1,8 pF	5%	4822 122 32087	10 E	5%	5322 111 90095	11 k	5%	4822 111 90337
3,3 pF	5%	4822 122 32079	11 E	5%	4822 111 90338	12 k	2%	4822 111 90253
3,9 pF	5%	4822 122 32081	12 E	5%	4822 111 90551	13 k	2%	4822 111 90509
4,7 pF	5%	4822 122 32082	13 E	5%	4822 111 90343	15 k	5%	4822 111 90196
8,2 pF	5%	4822 122 32083	15 E	5%	4822 111 90344	16 k	5%	4822 111 90346
10 pF	5%	4822 122 31971	16 E	5%	4822 111 90347	18 k	5%	4822 111 90238
12 pF	5%	4822 122 32139	18 E	5%	5322 111 90139	20 k	5%	4822 111 90349
18 pF	5%	4822 122 31769	20 E	5%	4822 111 90352	22 k	2%	4822 111 90251
22 pF	10%	4822 122 31837	22 E	5%	4822 111 90186	24 k	2%	4822 111 90512
27 pF	5%	4822 122 31966	27 E	5%	4822 116 60186	27 k	2%	4822 111 90542
33 pF	5%	4822 122 31756	30 E	5%	4822 111 90356	30 k	2%	4822 111 90216
39 pF	5%	4822 122 31972	33 E	5%	4822 111 90357	33 k	5%	5322 111 90267
47 pF	5%	4822 122 31772	36 E	5%	4822 111 90359	36 k	2%	4822 111 90514
56 pF	5%	4822 122 31774	39 E	5%	4822 111 90361	39 k	5%	5322 111 90108
68 pF	5%	4822 122 32267	43 E	5%	5322 116 90125	43 k	5%	4822 111 90363
82 pF	10%	4822 122 31839	47 E	5%	4822 111 90217	47 k	2%	4822 111 90543
100 pF	5%	4822 122 31765	51 E	5%	4822 111 90365	51 k	5%	5322 111 90274
120 pF	5%	4822 122 31766	56 E	5%	4822 116 60187	56 k	2%	4822 111 90573
150 pF	5%	4822 122 31767	62 E	5%	4822 111 90367	62 k	5%	5322 111 90275
180 pF	2%	4822 122 31794	68 E	5%	4822 111 90203	68 k	5%	4822 111 90202
220 pF	5%	4822 122 31965	75 E	5%	4822 111 90371	75 k	2%	4822 111 90574
270 pF	5%	4822 122 32142	82 E	5%	4822 116 60158	82 k	2%	4822 111 90575
330 pF	10%	4822 122 31642	91 E	5%	4822 111 90375	91 k	5%	5322 111 90277
390 pF	5%	4822 122 31771	100 E	5%	5322 111 90091	100 k	2%	4822 111 90214
470 pF	5%	4822 122 31727	110 E	5%	4822 111 90335	110 k	5%	5322 111 90269
560 pF	5%	4822 122 31773	120 E	5%	4822 111 90339	120 k	2%	4822 111 90568
680 pF	5%	4822 122 31775	130 E	5%	4822 116 60164	130 k	2%	4822 111 90511
820 pF	5%	4822 122 31974	150 E	5%	5322 111 90098	150 k	5%	5322 111 90099
1 nF	10%	5322 122 31647	160 E	5%	4822 111 90345	160 k	2%	5322 111 90264
1,2 nF	5%	4822 122 31807	180 E	5%	5322 111 90242	180 k	2%	4822 111 90565
1,5 nF	10%	4822 122 31781	200 E	5%	4822 111 90348	200 k	5%	4822 111 90351
2,2 nF	10%	4822 122 31644	220 E	5%	4822 111 90178	220 k	5%	4822 111 90197
2,7 nF	10%	4822 122 31783	240 E	5%	4822 111 90459	240 k	2%	4822 111 90215
3,3 nF	10%	4822 122 31969	270 E	5%	4822 111 90154	270 k	5%	4822 111 90302
4,7 nF	10%	4822 122 31784	300 E	5%	4822 111 90156	300 k	5%	5322 111 90266
5,6 nF	10%	4822 122 31916	330 E	5%	5322 111 90106	330 k	2%	4822 111 90513
6,8 nF	10%	4822 122 31976	360 E	1%	4822 111 90288	360 k	2%	4822 111 90515
10 nF	10%	4822 122 31728	390 E	5%	5322 111 90138	390 k	5%	4822 111 90182
12 nF	10%	5322 122 31648	430 E	2%	4822 111 90362	430 k	5%	4822 111 90168
15 nF	10%	4822 122 31782	470 E	5%	5322 111 90109	470 k	5%	4822 111 90161
18 nF	10%	4822 122 31759	510 E	5%	4822 111 90245	510 k	5%	4822 111 90364
22 nF	10%	4822 122 31797	560 E	5%	5322 111 90113	560 k	5%	4822 111 90169
33 nF	10%	4822 122 31981	620 E	5%	4822 111 90366	620 k	2%	4822 111 90213
100 nF	20%	4822 122 31947	680 E	5%	4822 111 90162	680 k	2%	4822 111 90368
			750 E	5%	4822 111 90438	750 k	5%	4822 111 90369
			820 E	5%	4822 111 90171	820 k	5%	4822 111 90205
			910 E	5%	4822 111 90372	910 k	5%	4822 111 90374
			1 k	5%	5322 111 90092	1 M	2%	4822 111 90252
			1,1 k	5%	4822 111 90294	1,1 M	5%	4822 111 90408
			1,2 k	5%	5322 111 90096	1,2 M	10%	4822 111 90409
			1,3 k	5%	4822 111 90244	1,3 M	10%	4822 111 90411
			1,5 k	5%	4822 111 90151	1,5 M	10%	4822 111 90412
			1,6 k	5%	5322 111 90265	1,6 M	10%	4822 111 90413
			1,8 k	5%	5322 111 90101	2 M	10%	4822 111 90415
			2 k	5%	4822 111 90165	2,2 M	10%	4822 111 90185
			2,2 k	2%	4822 111 90248	2,4 M	10%	4822 111 90416
			2,4 k	5%	4822 111 90289	2,7 M	10%	4822 111 90417
			2,7 k	2%	4822 111 90569	3 M	10%	4822 111 90418
			3 k	5%	4822 111 90198	3,3 M	10%	4822 111 90191
			3,3 k	5%	4822 111 90157	3,6 M	10%	4822 111 90419
			3,6 k	5%	5322 111 90107	3,9 M	10%	4822 111 90421
			3,9 k	2%	4822 111 90571	4,3 M	10%	4822 111 90422
			4,3 k	5%	4822 111 90167	4,7 M	10%	4822 111 90423
			4,7 k	5%	5322 111 90111	5,1 M	10%	4822 111 90424
			5,1 k	5%	5322 111 90268	5,6 M	10%	4822 111 90508
			5,6 k	2%	4822 111 90572	6,2 M	10%	4822 111 90426
			6,2 k	2%	4822 111 90545	6,8 M	10%	4822 111 90328
			6,8 k	2%	4822 111 90544	7,5 M	10%	4822 111 90427
			7,5 k	5%	4822 111 90276	8,2 M	10%	4822 111 90329
			8,2 k	5%	5322 111 90118	9,1 M	10%	4822 111 90428



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SYMBOL	DESCRIPTION
	Capacitor, general
	Electrolytic capacitor (+ and - may be omitted)
	Bipolar electrolytic capacitor (+ may be omitted)
	Resistor, general
	N.T.C. resistor
	P.T.C. resistor
	Voltage divider with preset adjustment
	Chip jumper
	Pin contact
	Bus contact
	Coil, self-induction
	Transformer with electrically poor conducting core and adjustable pre-magnetization
	Diode
	Zener diode
	Stabistor
	Double variable capacity diode (in one envelope)
	Photo conductive diode
	L.E.D.

SYMBOL	DESCRIPTION
	Transistor (N.P.N.)
	Transistor (P.N.P.)
	Direct current (DC)
	Alternating current (AC)
	Earth (functional)
	Frame or chassis connection
	Direction in which AC voltages are passed on (optional present)
	Interrupted line
	Not-connected crossing lines
	Connected lines
	Cable tree with lead-outs
	Changer, general (arrow is optional)
	Voltage Controlled Oscillator
	Band-pass filter
	Phase changing network
	Delay element
	Amplifier, general

SYMBOL	DESCRIPTION
	Operational amplifier
	Differential amplifier
	Splitter
	Operational amplifier with open output
	Exclusive OR gate
	True/complement amplifier with high input
	Flip Flop
	AND gate
	OR gate
	Inverter with high input

	0.2W (CR 16)	$\leq 220k\Omega$	5%
	0.33W (CR 25)	$\leq 1 M\Omega$	5%
	0.33W (SFR25)	$> 1 M\Omega$	10%
	0.25W (VR 25)	$\leq 10M\Omega$	5%
	0.5W (CR 37)	$> 10M\Omega$	10%
	0.67W (CR 52)		5%
	1.15W (CR 68)		5%

	Ceramic plate
	Polyester flat foil
	Polyester mepolesco
	Mylar (Polyester flat foil small sized)
	Micropoco
	Tubular ceramic (body colour pink or yellow/green)
	Miniature single elco
	Subminiature tantalum

*	a = 2.5	V
	b = 4	V
	c = 6.3	V
	d = 10	V
	e = 16	V
	f = 25	V
	g = 40	V
	h = 63	V
	i = 100	V
	j = 125	V
	k = 125	V
	m = 150	V
	n = 160	V
	q = 200	V
	r = 250	V
	s = 300	V
	t = 350	V
	u = 400	V
	v = 500	V
	w = 630	V
	x = 1000	V
	A = 1.6	V
	B = 6	V
	C = 12	V
	D = 15	V
	E = 20	V
	F = 35	V
	G = 50	V
	H = 75	V
	I = 80	V