



# EK 22

PROGRAMMABLE  
SYNTHESIZER

PLEASE NOTE

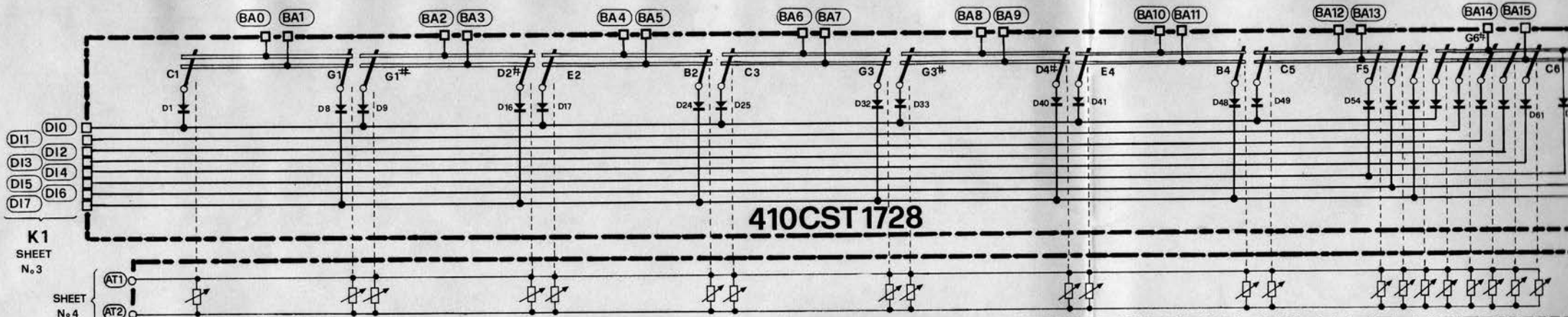
EK22/44 - EM22/44 MODIFICATIONS

IN ORDER TO AVOID:

- A) DISMEMORIZATION OF RAM AT THE MOMENT OF SWITCHING ON OF AN INSTRUMENT CONNECTED WITH OTHERS DUE TO PARASITIC CURRENTS
- B) FUSE'S BREAK OF + 5

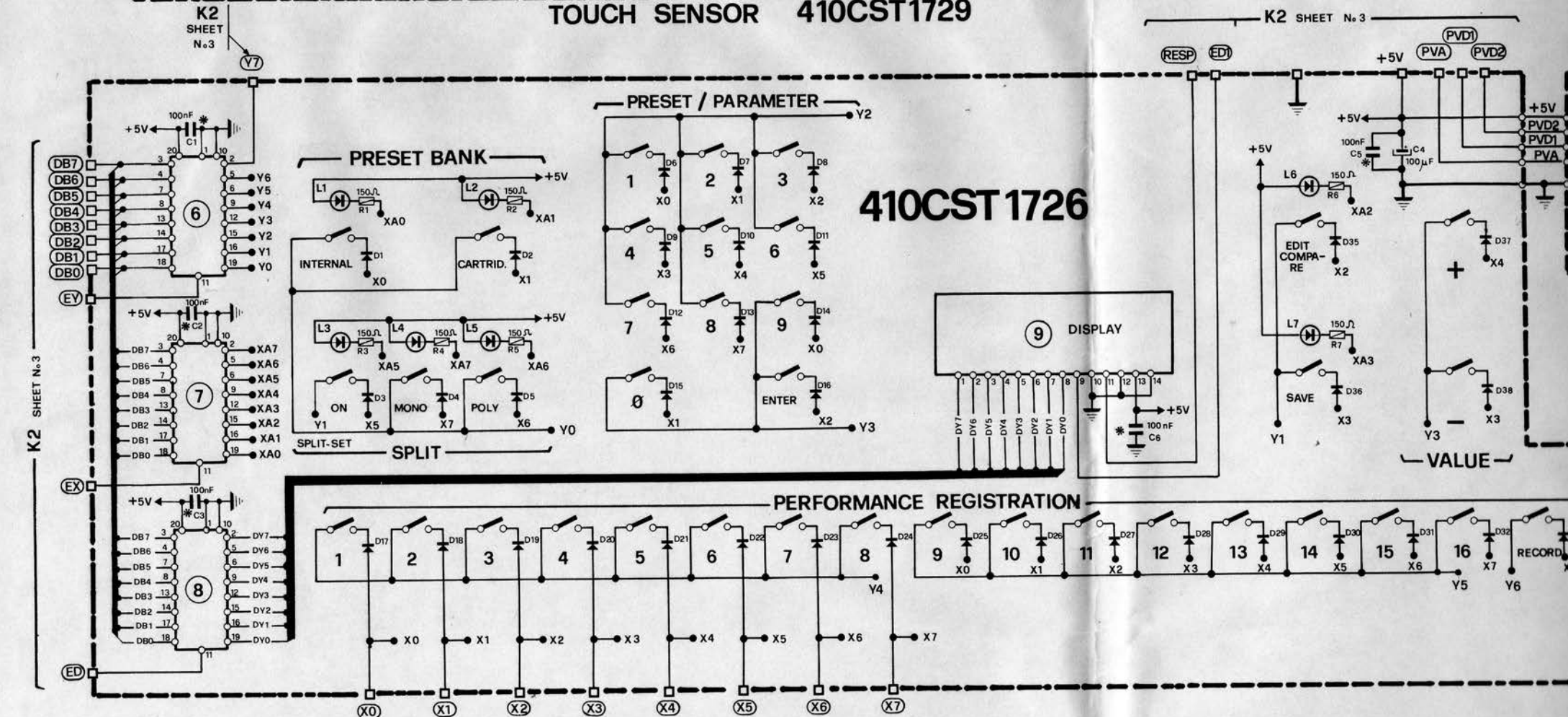
WE SUGGEST YOU TO CONNECT WITH WIRE 0,50 OR 0,75 MASS TO EARTH ANCHORAGE.

BESIDES, TO AVOID THE CASUAL READING OF "CONSTRUCTOR'S CODE" ON EPROM OF BOARD 1708, WHICH COULD PROVOKE THE BAD FUNCTIONING OF DCG 1 AND/OR 2, CONNECT A DIODE WITH SIGNAL BA 130 OR EQUIVALENT BETWEEN PIN 24 AND PIN 28 (CATHODE ON 28) OF IC 1.



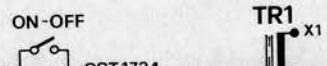
410CST1728

TOUCH SENSOR 410CST1729



410CST1726

I.C.		
CODE	TYPE	MANUF.



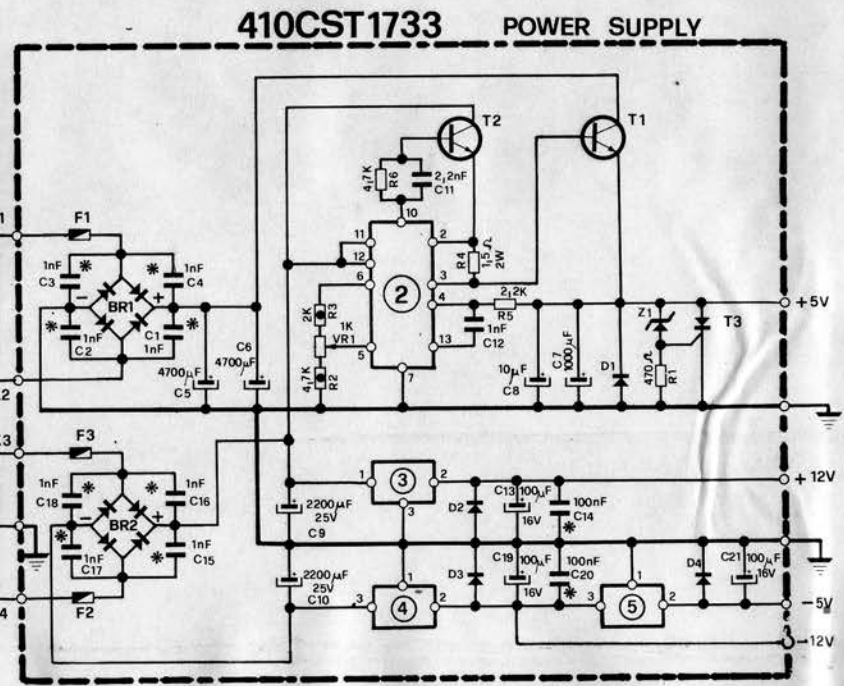
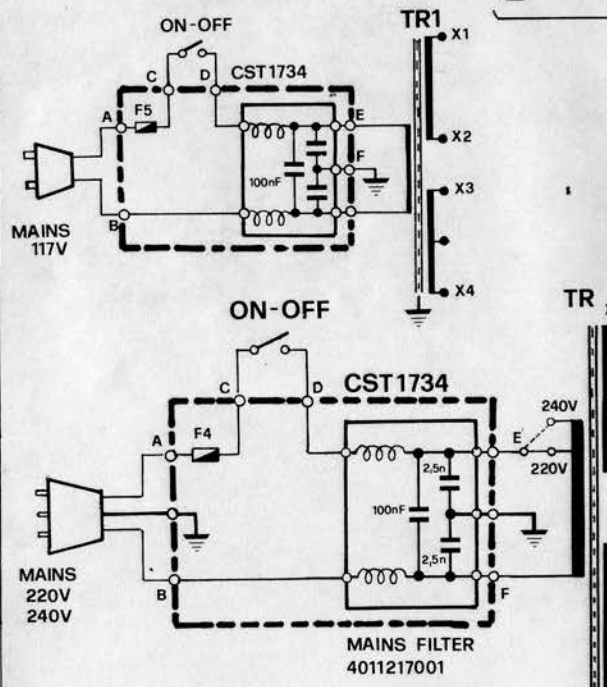
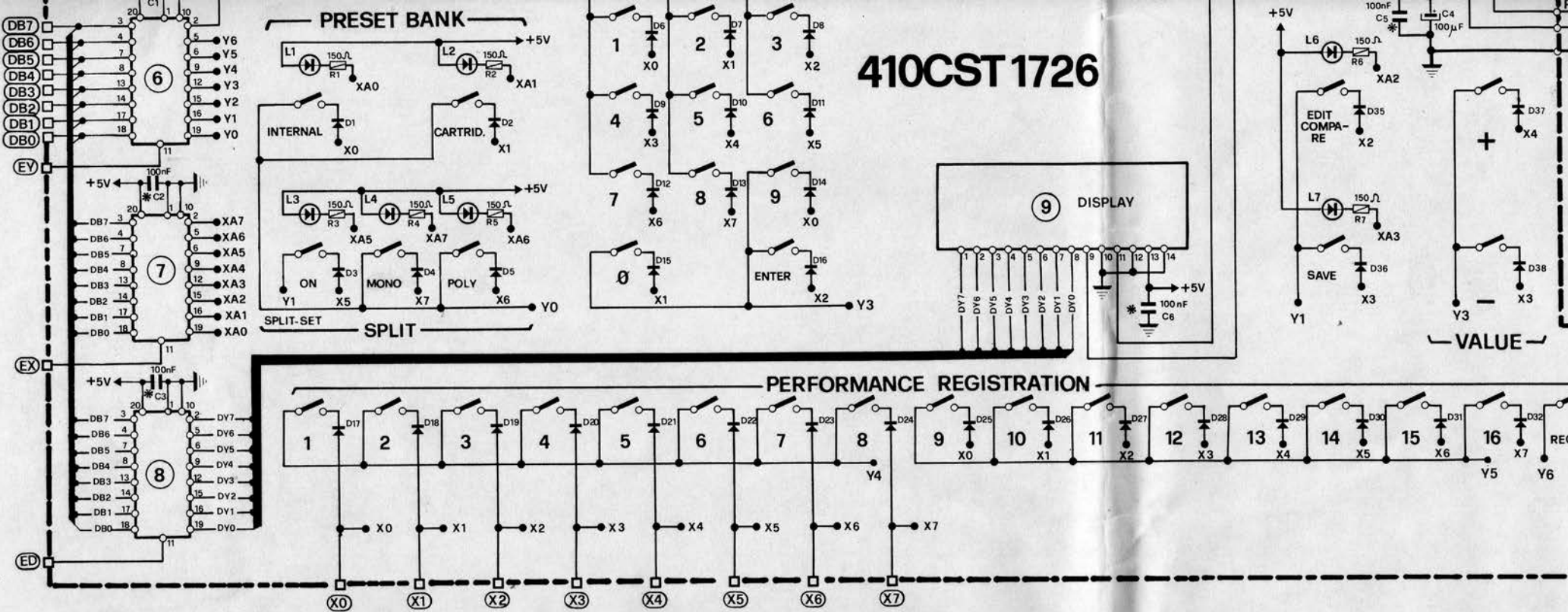
CST1734

D  
E  
F  
G  
H  
I  
J  
K

K2 SHEET No.3

K2 SHEET No.3

# 410CST 1726



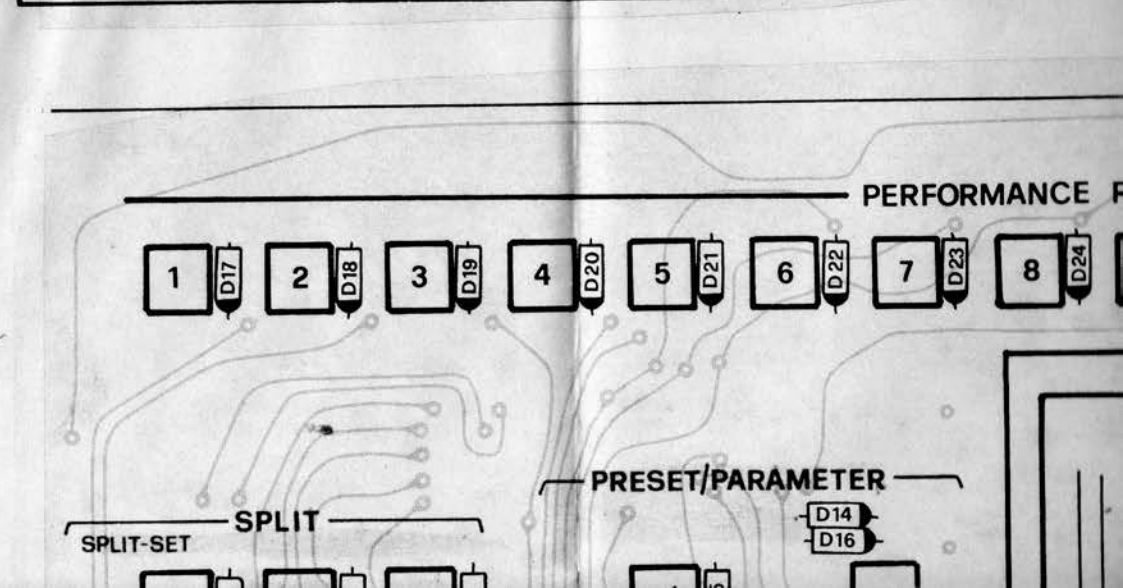
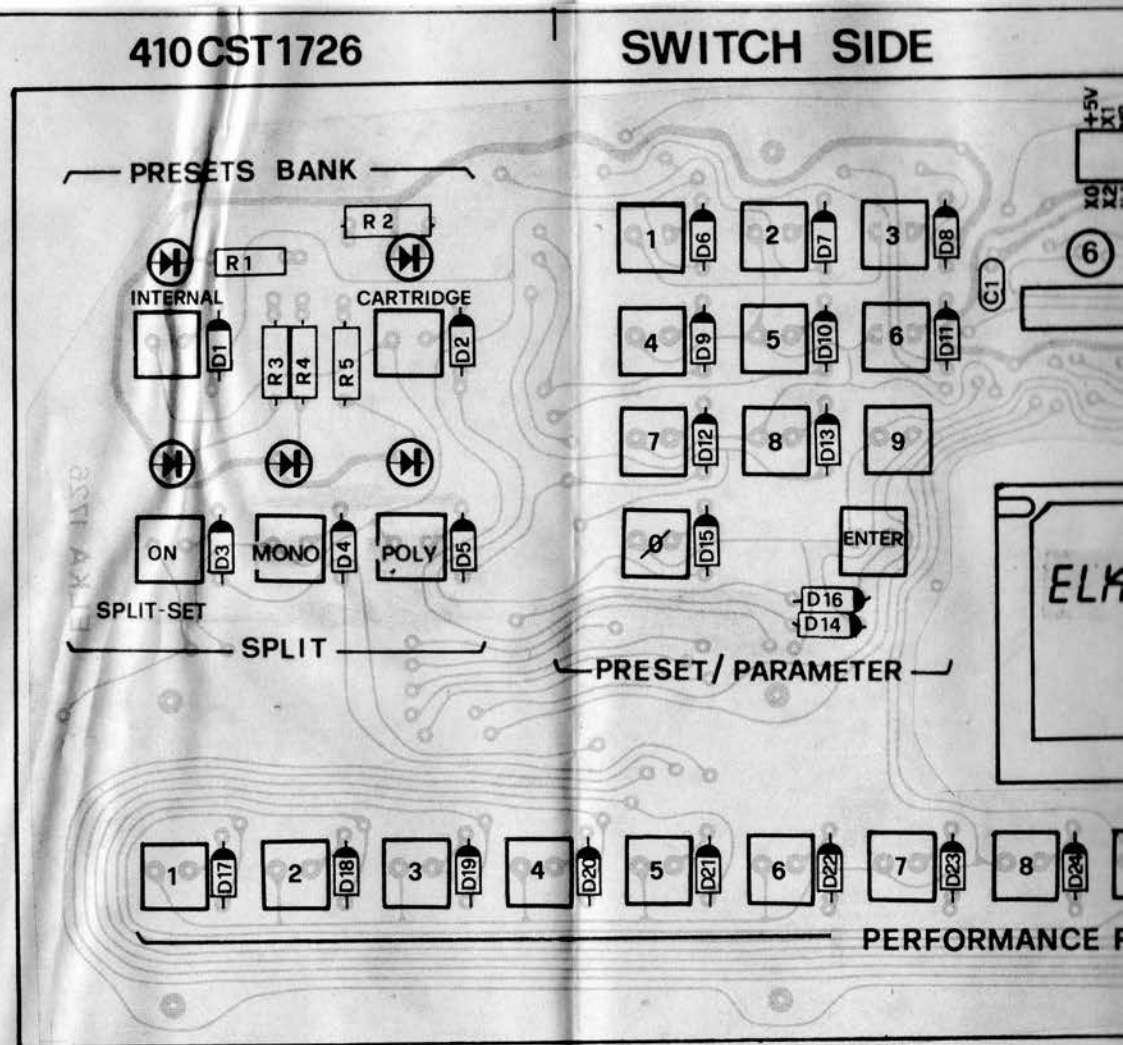
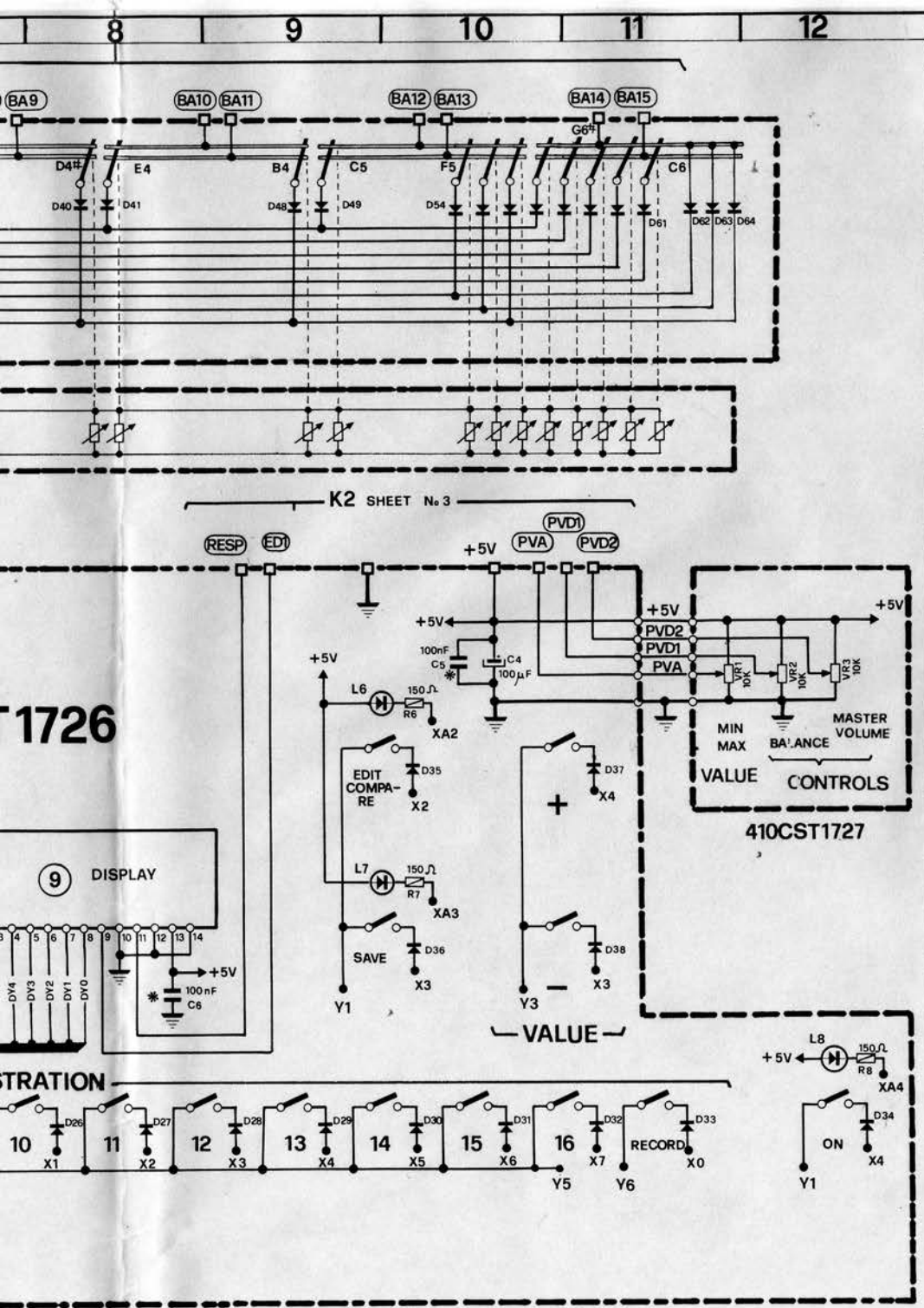
I.C.		
CODE	TYPE	MANUF.
2	LM723	
3	78M12	
4	79M12	
5	µA 79M05	
6	74LS377	
7	74AS374	
8	74LS377	
9	LC745016L	

- Z1 = 5.6V 0.5W
- D1 = IN5404
- D2+D4 = 10D2 - 1N4002
- F1 = Fuse 5AT
- F2-F3 = " 500mAT
- F4 = " 500mAT
- F5 = " 1AT
- BR1 = B80 C5000/3300
- BR2 = W02-BS2-PG120
- TR = TRANSFORMER T 146N
- TR1 = " T 146K

CODE	TYPE	TRANS.
T1	TIP3055	
T2	TIP121	
T3	TIC116D	

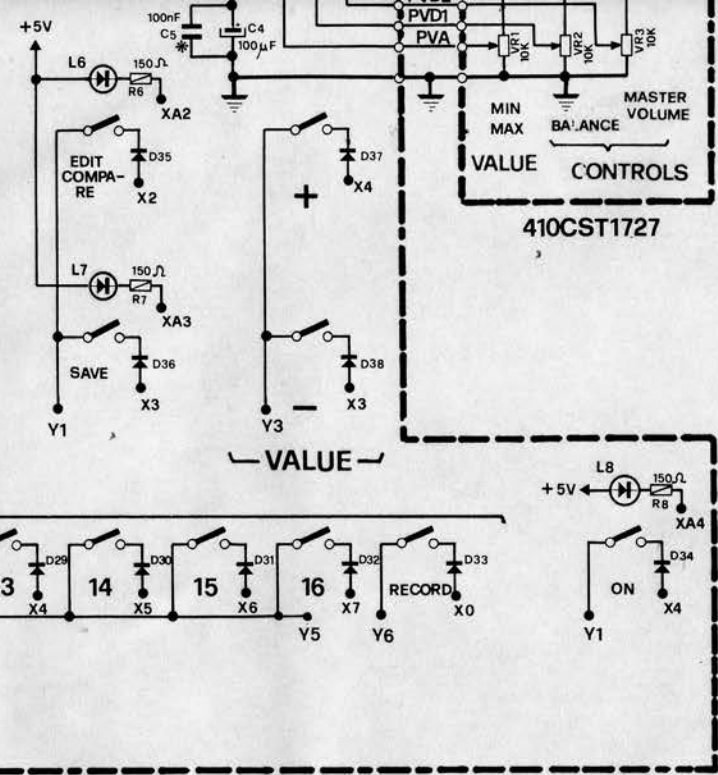
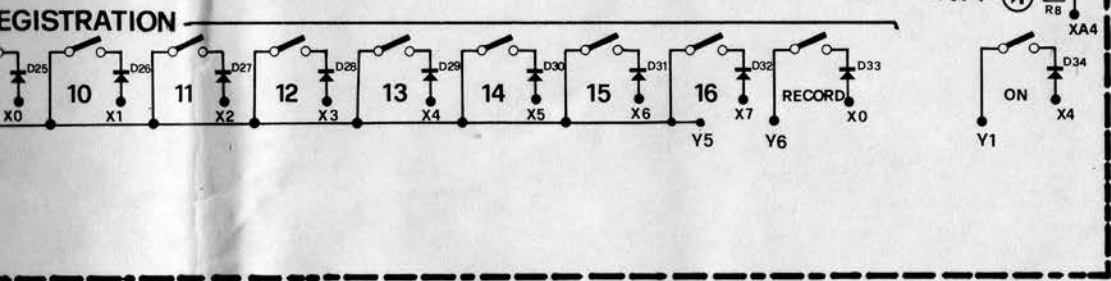
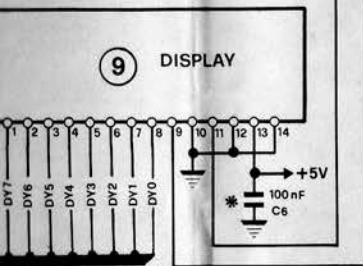
LED = 935 B55

1 2 3 4 5 6 7 8 9 10 11



I.C.		
CODE	TYPE	MANUF.

ST 1726

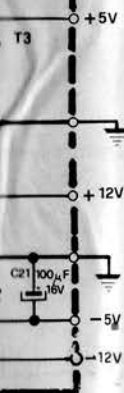


I.C.		
CODE	TYPE	MANUF.
2	LM723	
3	78M12	
4	79M12	
5	A79M05	
6	74LS377	
7	74AS374	
8	74LS377	
9	LC7LM016L	

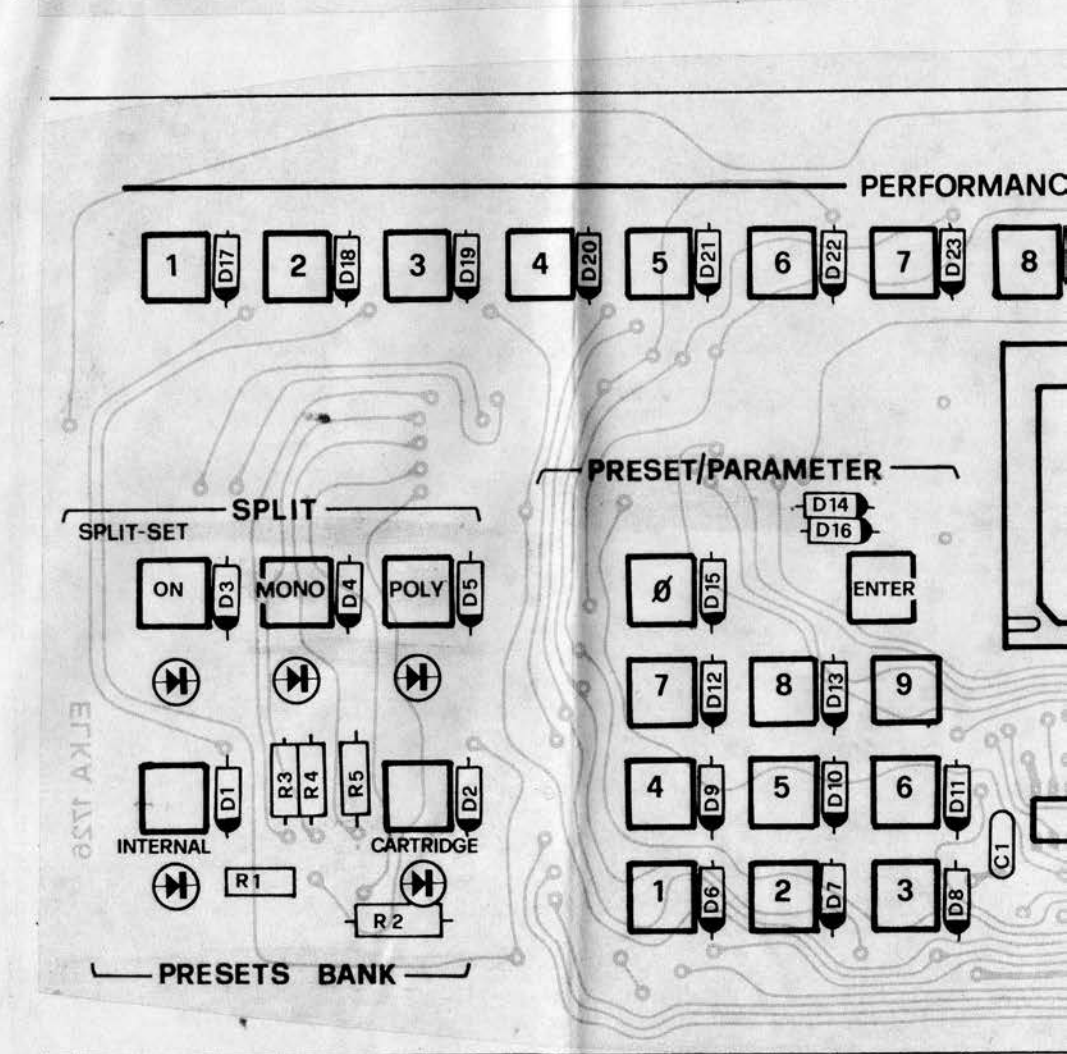
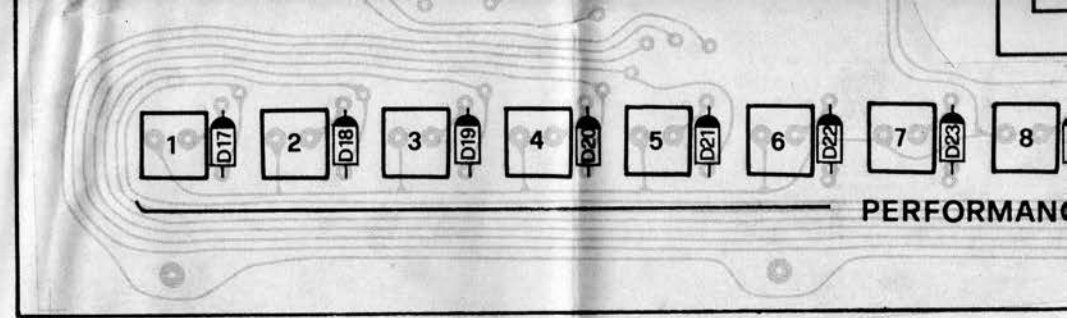
- Z1 = 5,6V 0,5W
- D1 = IN5404
- D2+D4 = 10D2 - 1N4002
- F1 = Fuse 5AT
- F2-F3 = 500mAT
- F4 = 500mAT
- F5 = 1AT
- BR1 = B80 C5000/3300
- BR2 = W02-BS2-PG120
- TR = TRANSFORMER T146N
- TR1 = T146K

CODE	TYPE	TRANS.
T1	TIP3055	
T2	TIP121	
T3	TIC116D	

LED = 935 B55

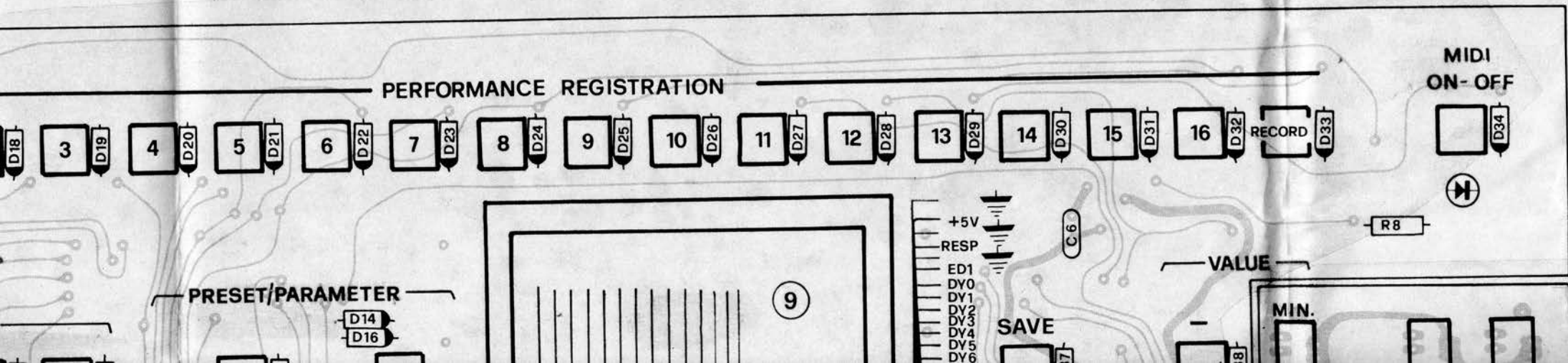
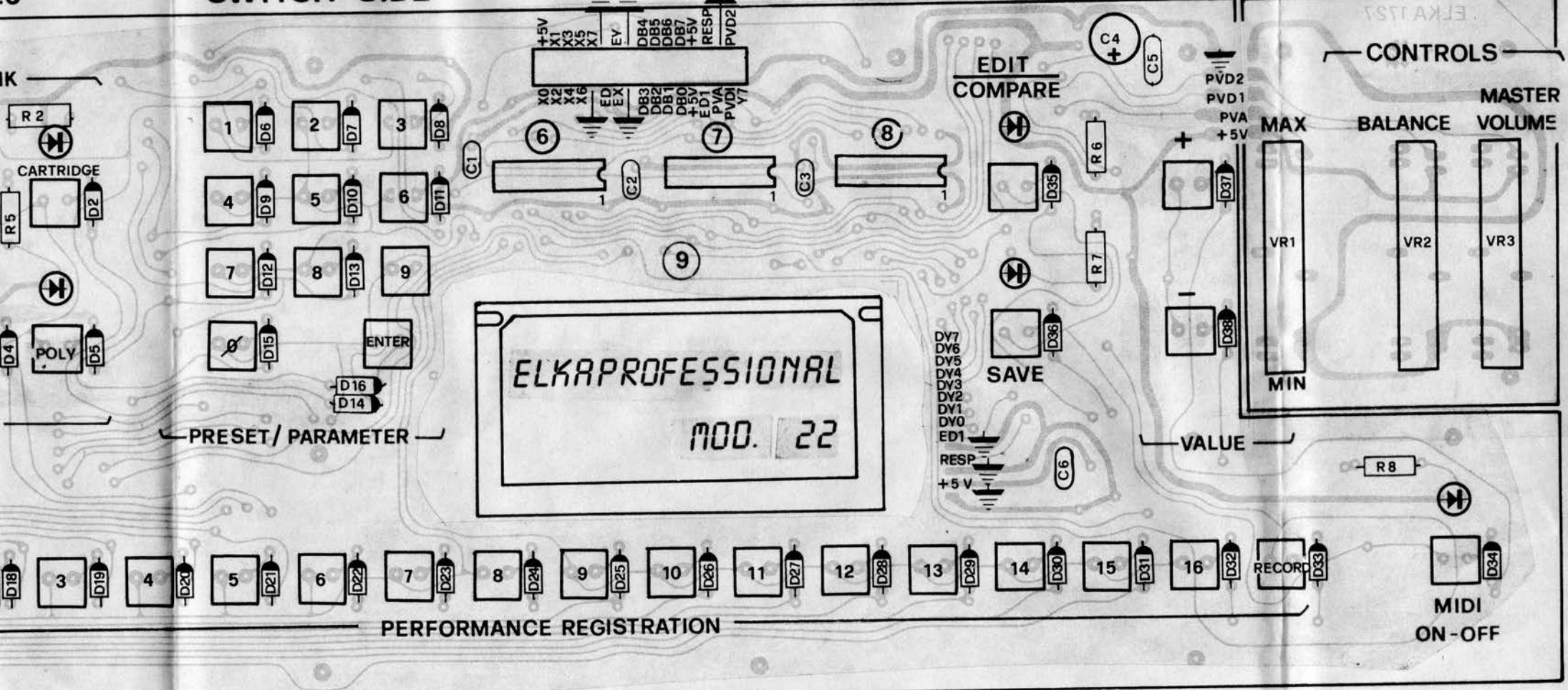


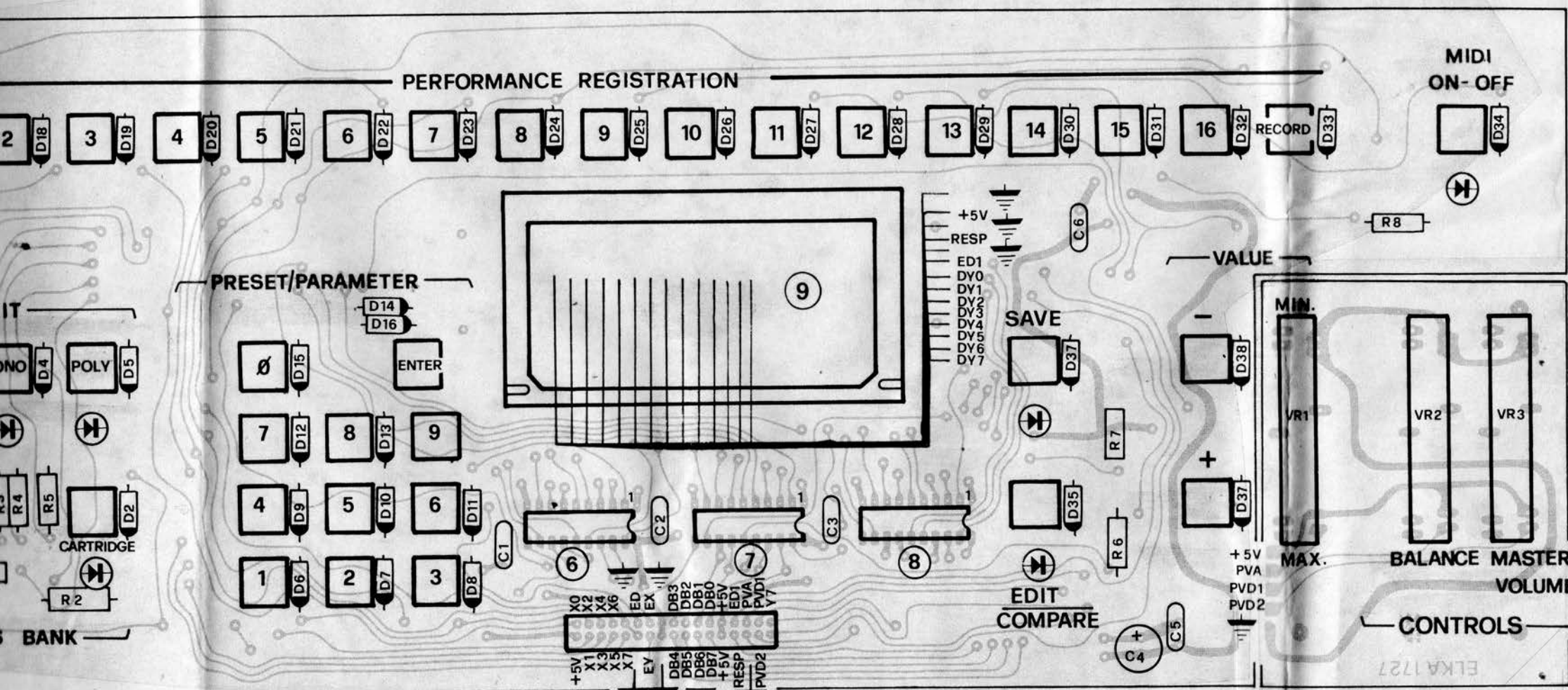
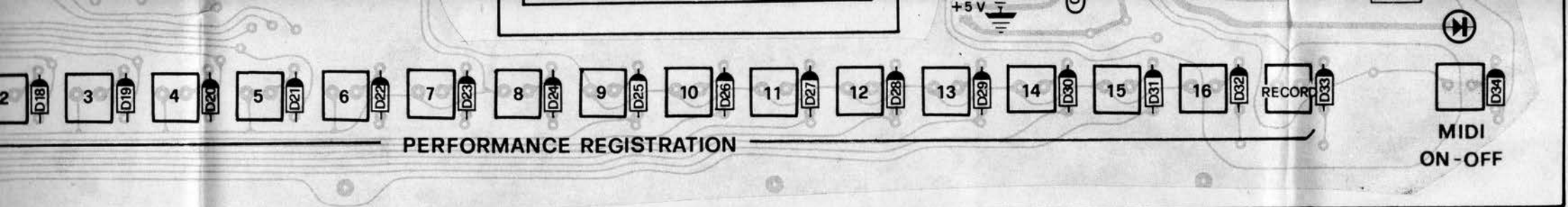
D  
E  
F  
G  
H  
I  
J  
K



410CST1726

(COMPONENTS SIDE)

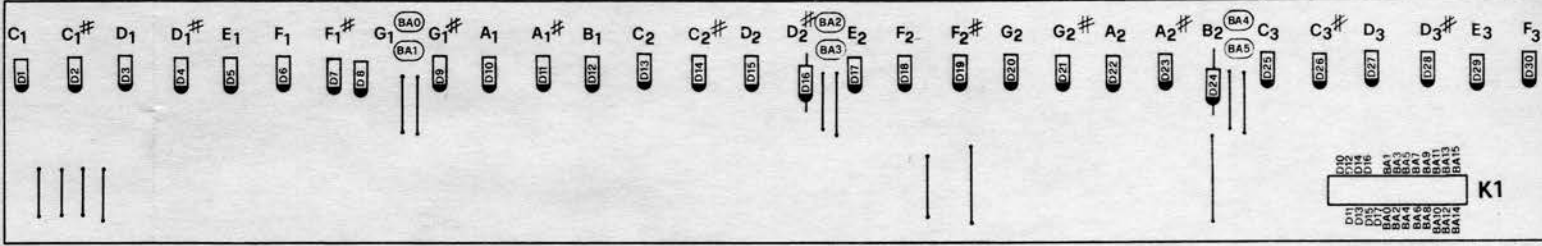




0CST1726 (COMPONENTS SIDE) (477GR17260) 410CST1727 (477GR17270)

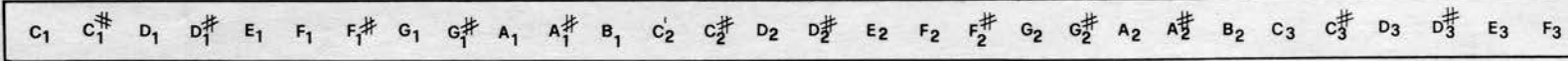


410CST1728

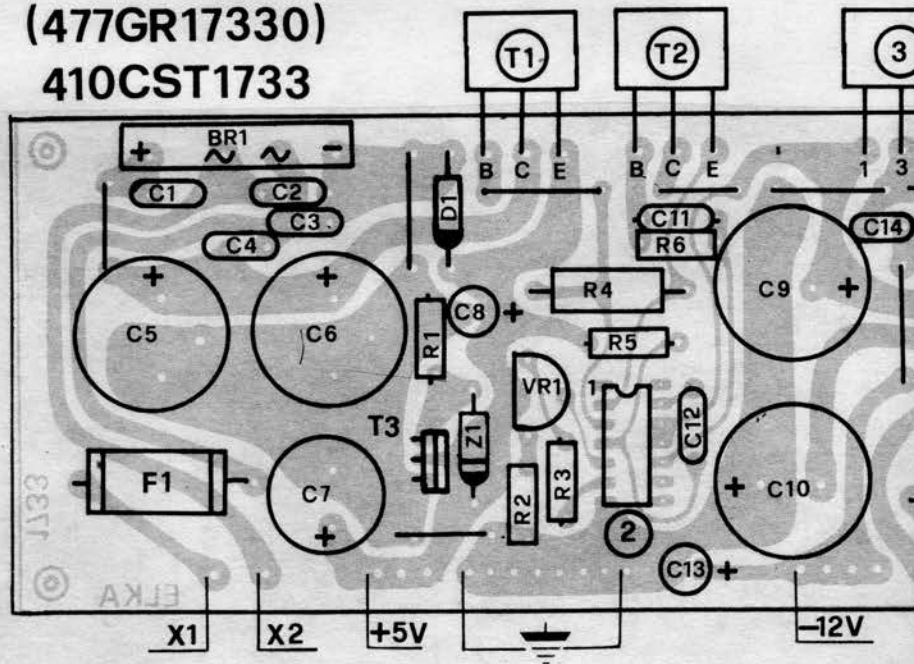


(COPPER SIDE)

410CST1729

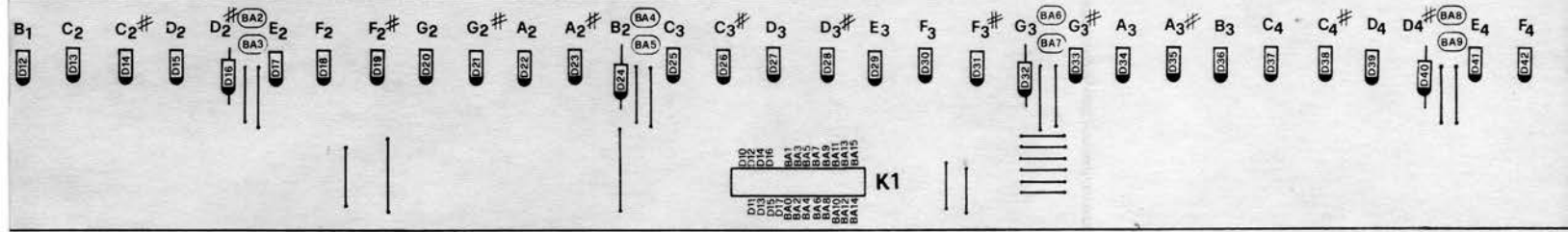


(477GR17330)  
410CST1733



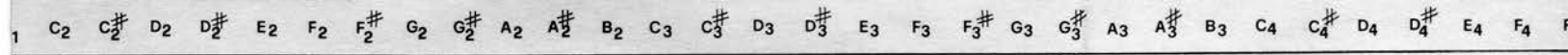
410CST1728

(477GR1728)

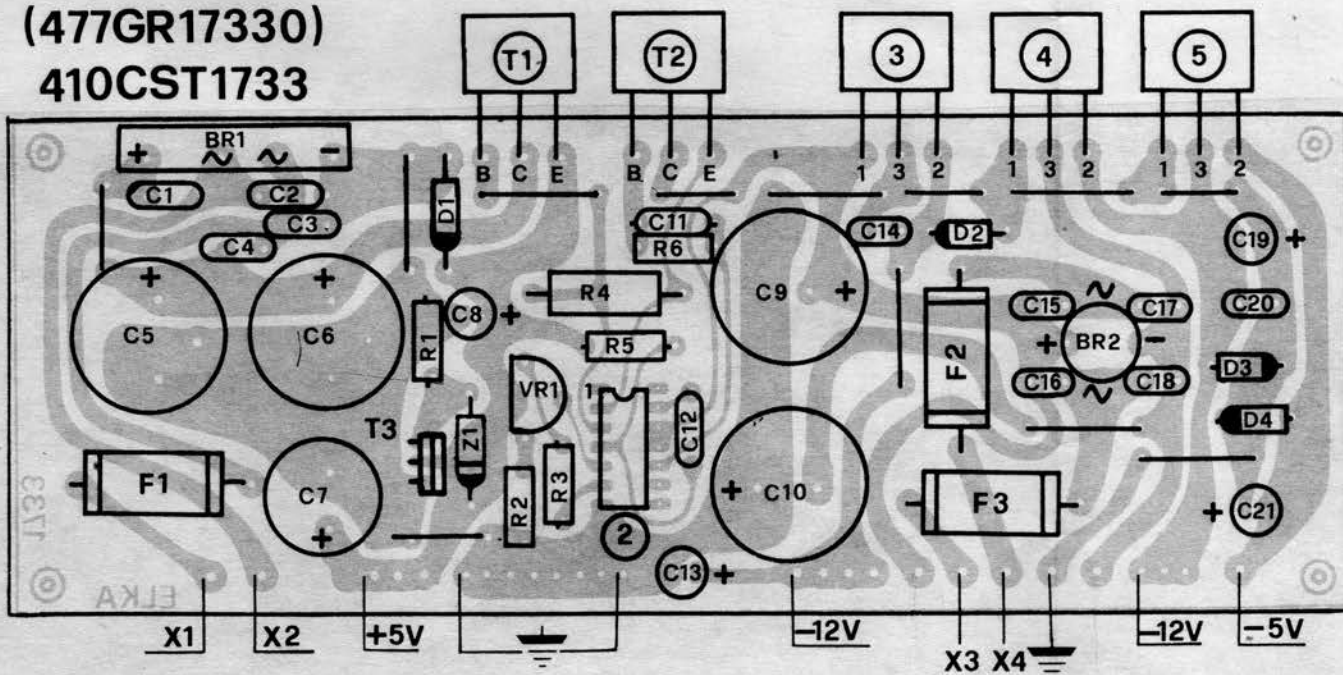


410CST1729

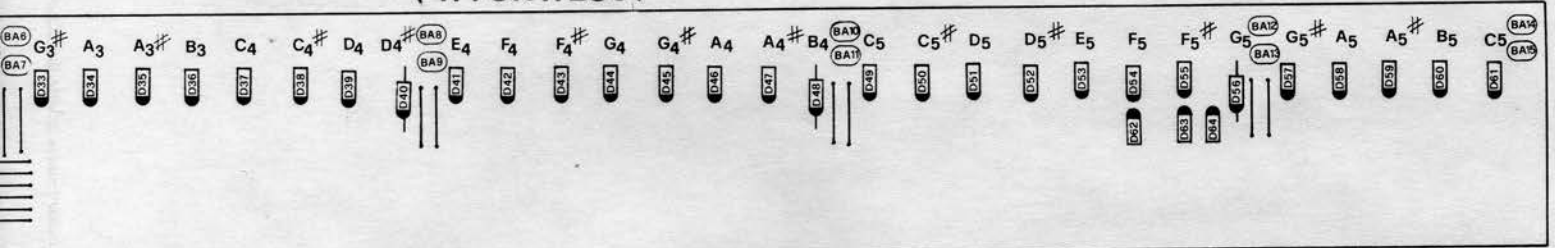
(477GR1729)



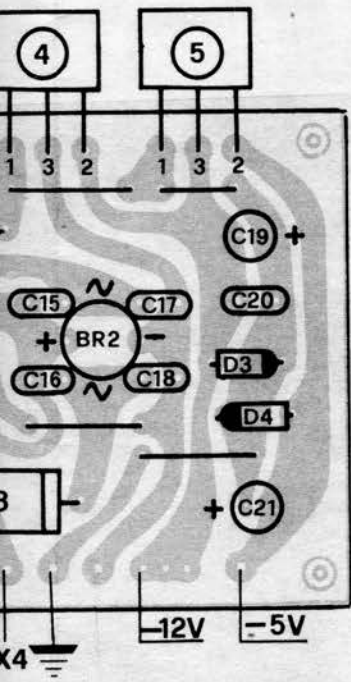
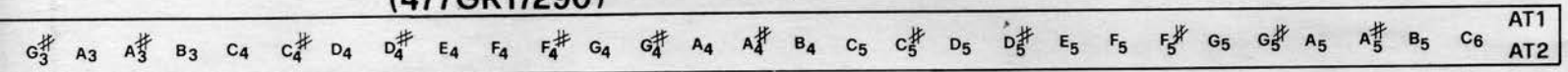
(477GR17330)  
410CST1733



(477GR17280)

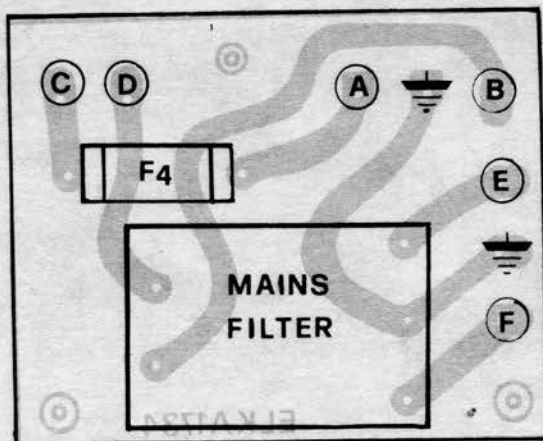


(477GR17290)

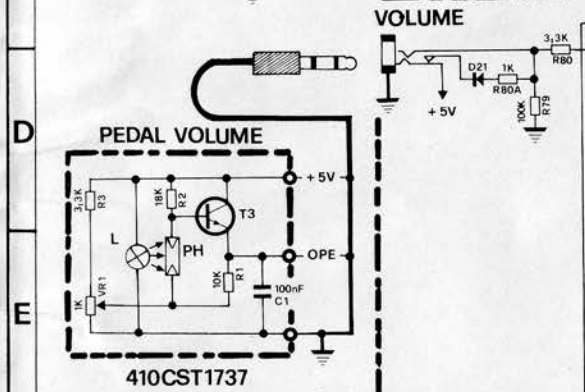
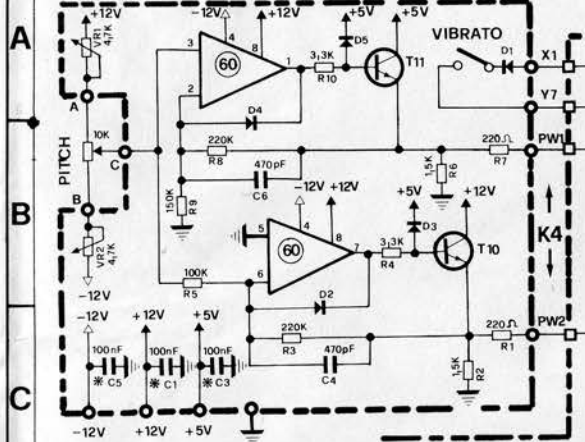


(410CST1734)

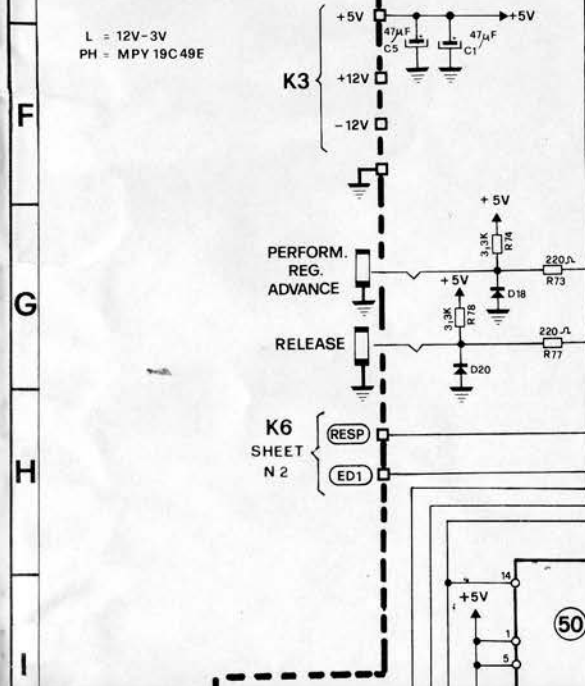
(477GR17340)



# 410CST1730

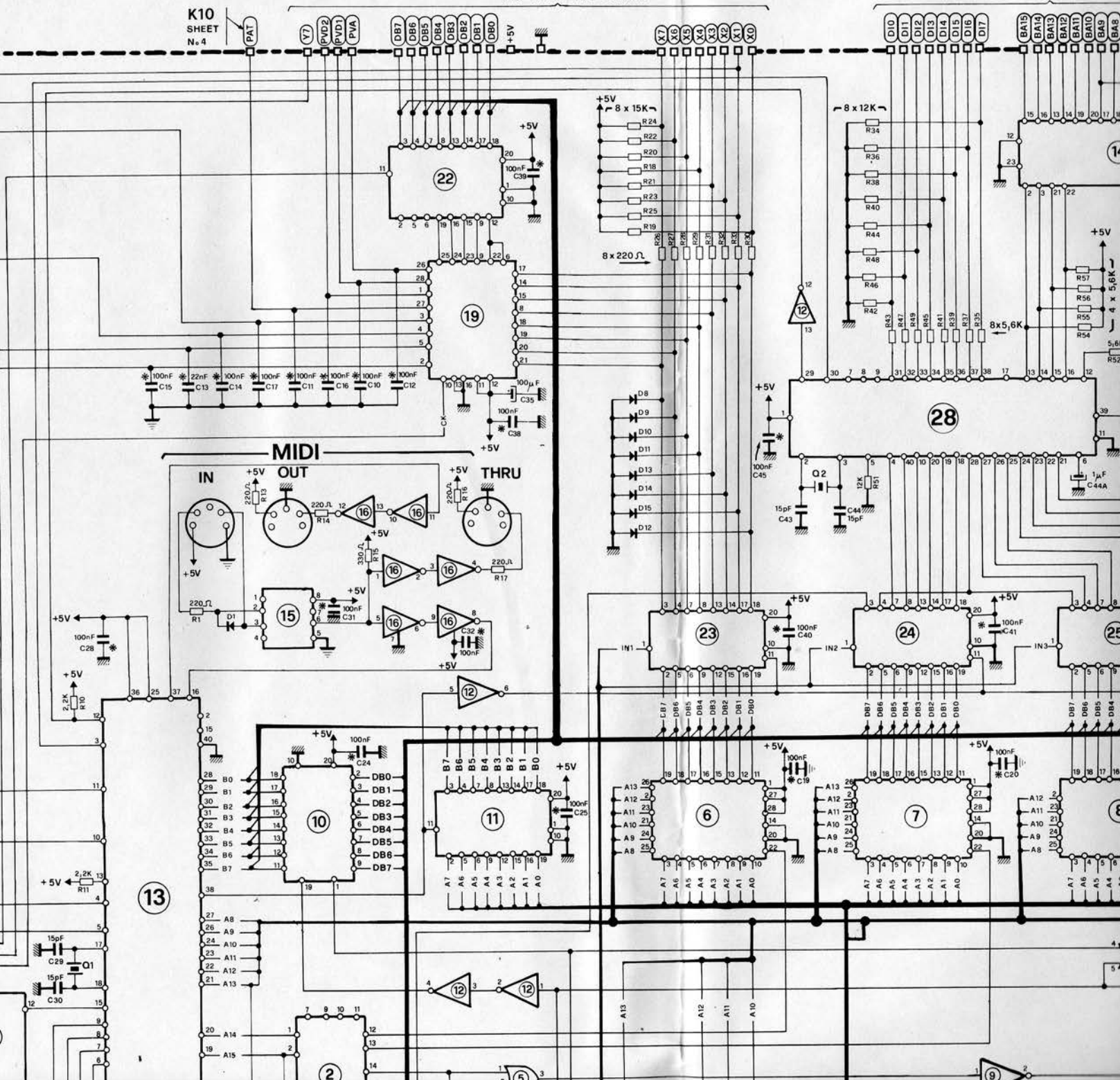


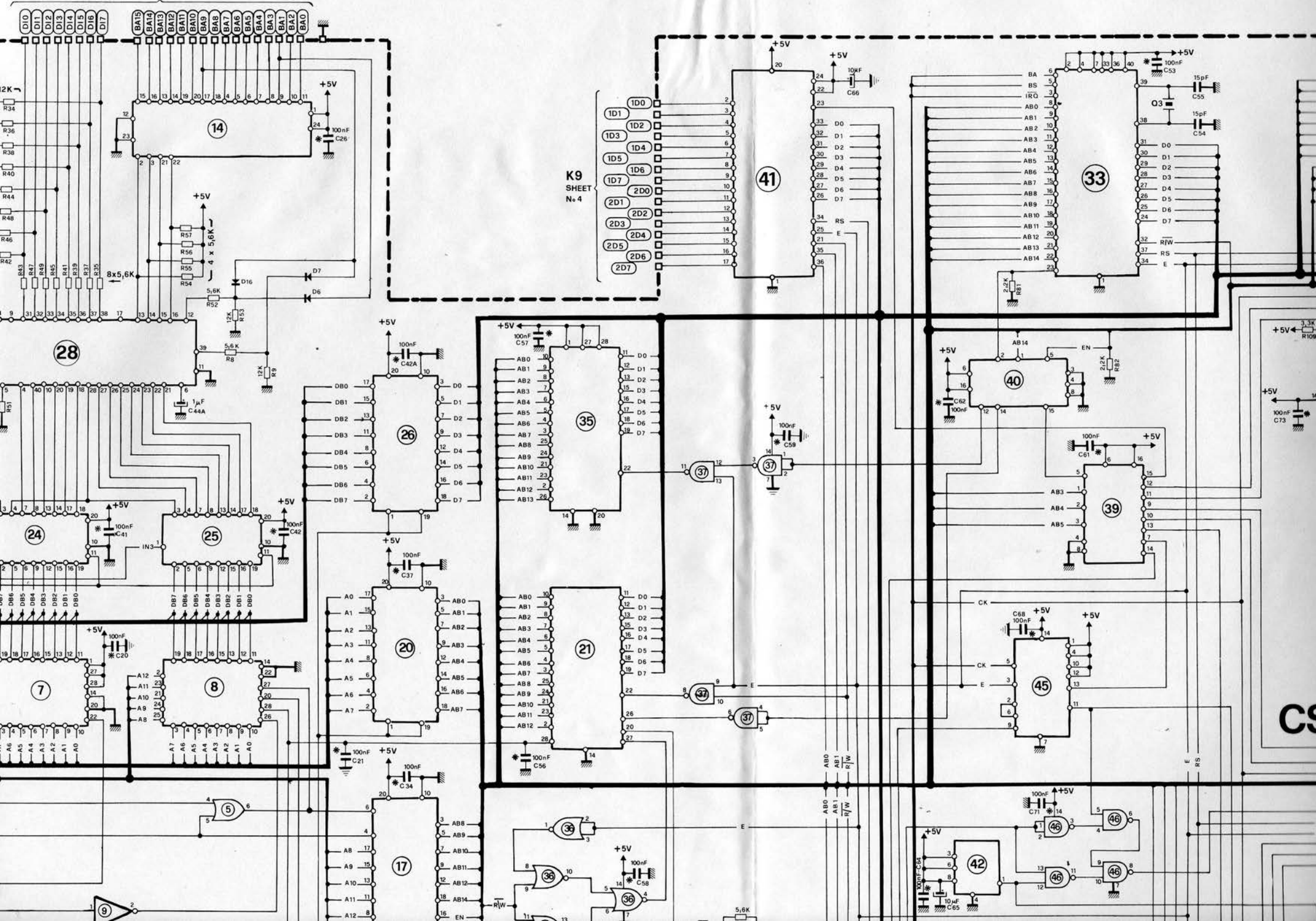
L = 12V-3V  
PH = MPY 19C49E

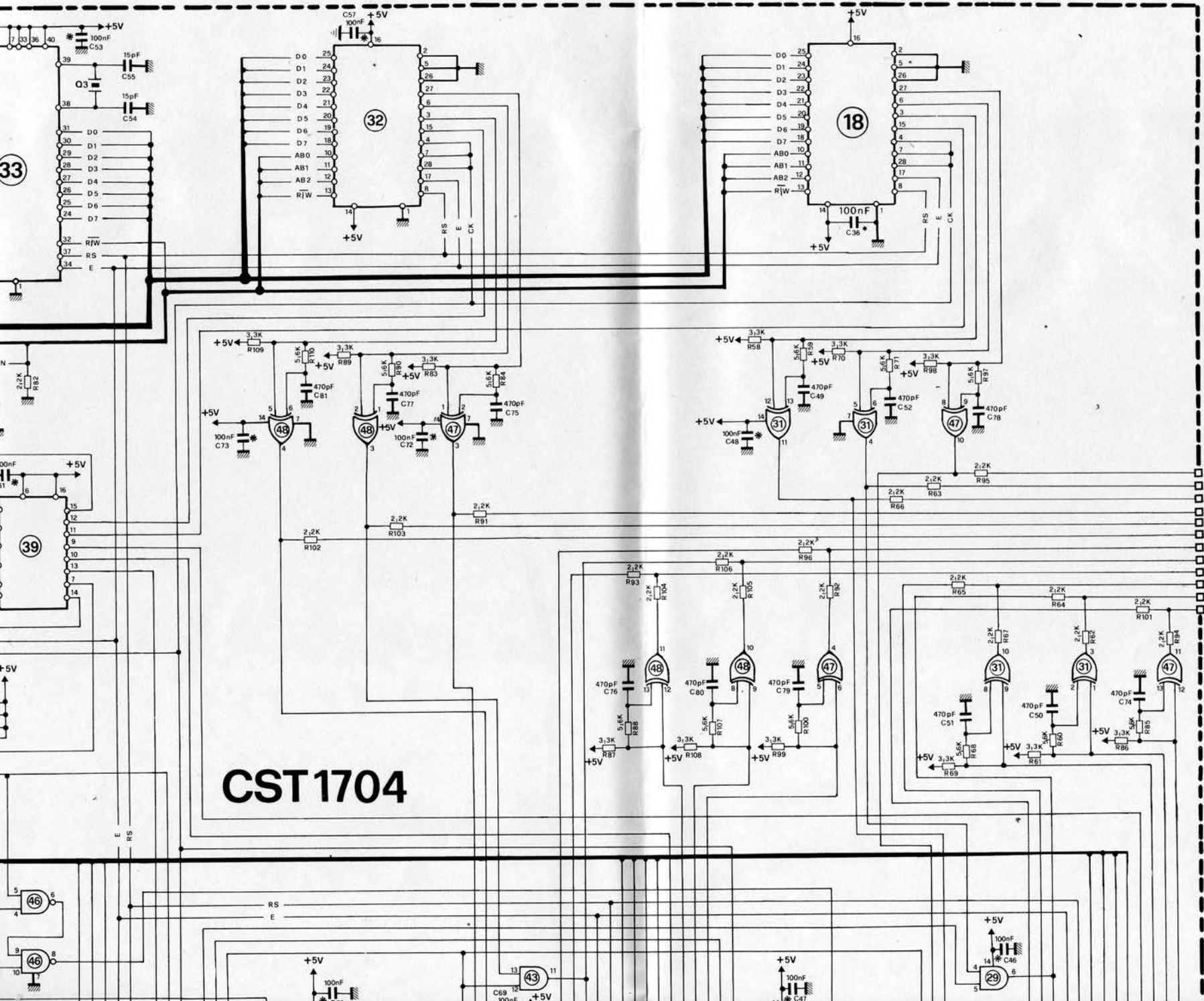


K6 SHEET N 2  
RESP  
ED1

K10 SHEET N. 4  
PAT







# CST1704

I.C. 1704		
CODE	TYPE	MANUF.
1	7705	
2-3	74S138	
4-5	74S32	
6-7-35	27128	
8-21	6264-5565	
9	74S04	
10	74LS245	
11	74LS373	
13	TMS7001	
14	74HC4514	
15	6N138	
17-20-26	74LS244	
18-27-32-38	68B40	
19	ADC 809	
22	74LS377	
23-25	74LS374	
28	Z8601	
29-43	74HC08	
30-37-44-46	74HC00	
31-47-48	74HC386	
33	68B09	
34-41-49	68B21	
36	74S02	
42	MM5437	
45	74LS74	
12	74LS04	
16	7404	
39-40	74LS138	
50	74LS93	
60	TL062	

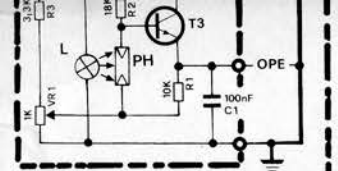
CODE	TYPE	TRANS.
T2-T3	NPN	BC173B
T10-T11	NPN	BC173B
T1	PNP	BC415B

O1 = 8MHZ  
 O2-O3=5MHZ  
 Z1 = 3.9Vz

A  
B  
C  
D  
E  
F  
G  
H  
I

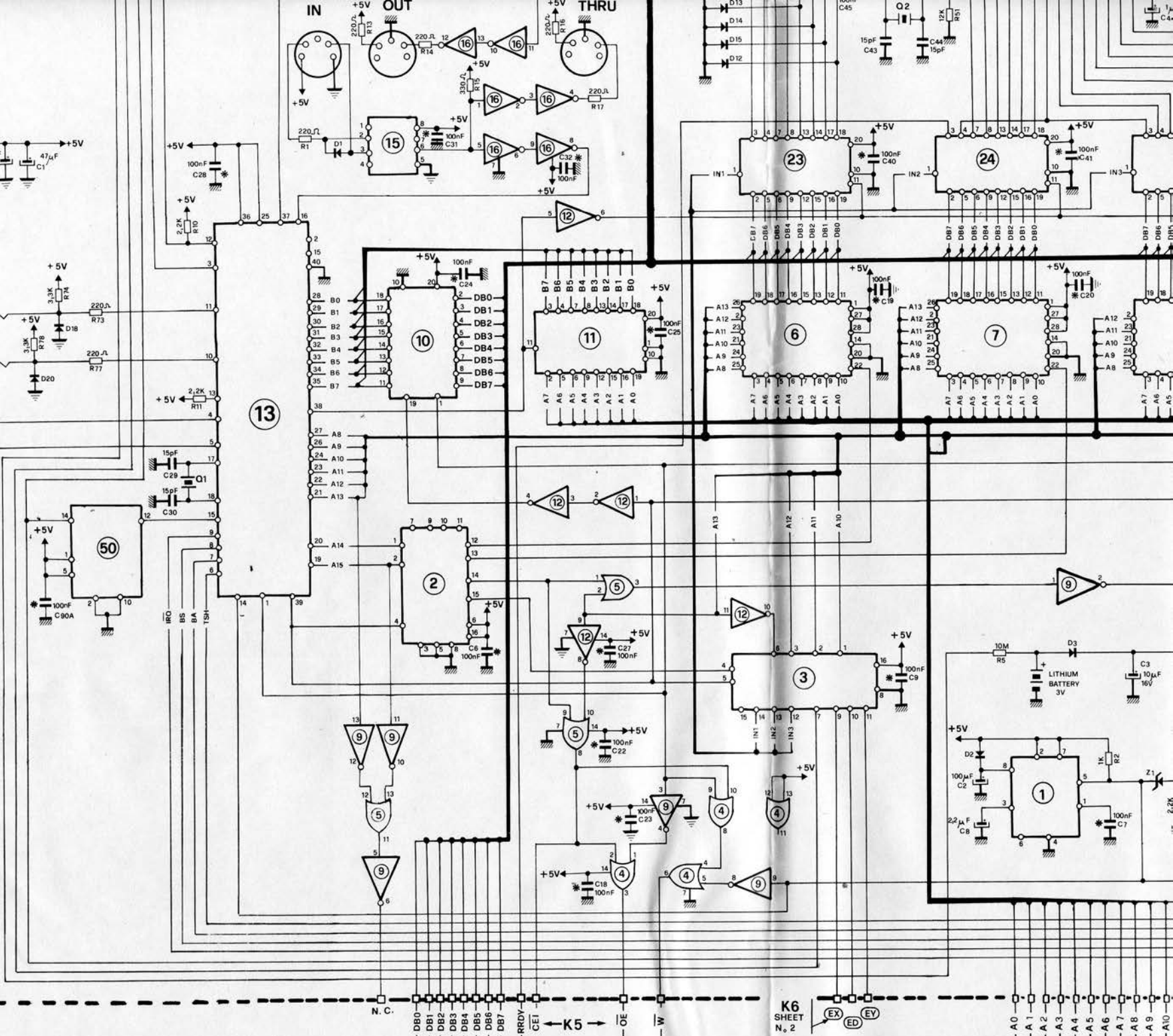
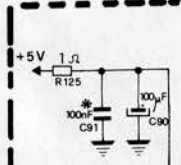
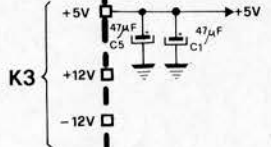
K8 SHEET No. 4

E  
F  
G  
H  
I  
J  
K  
L



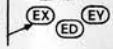
410CST1737

L = 12V-3V  
PH = MPY 19C49E

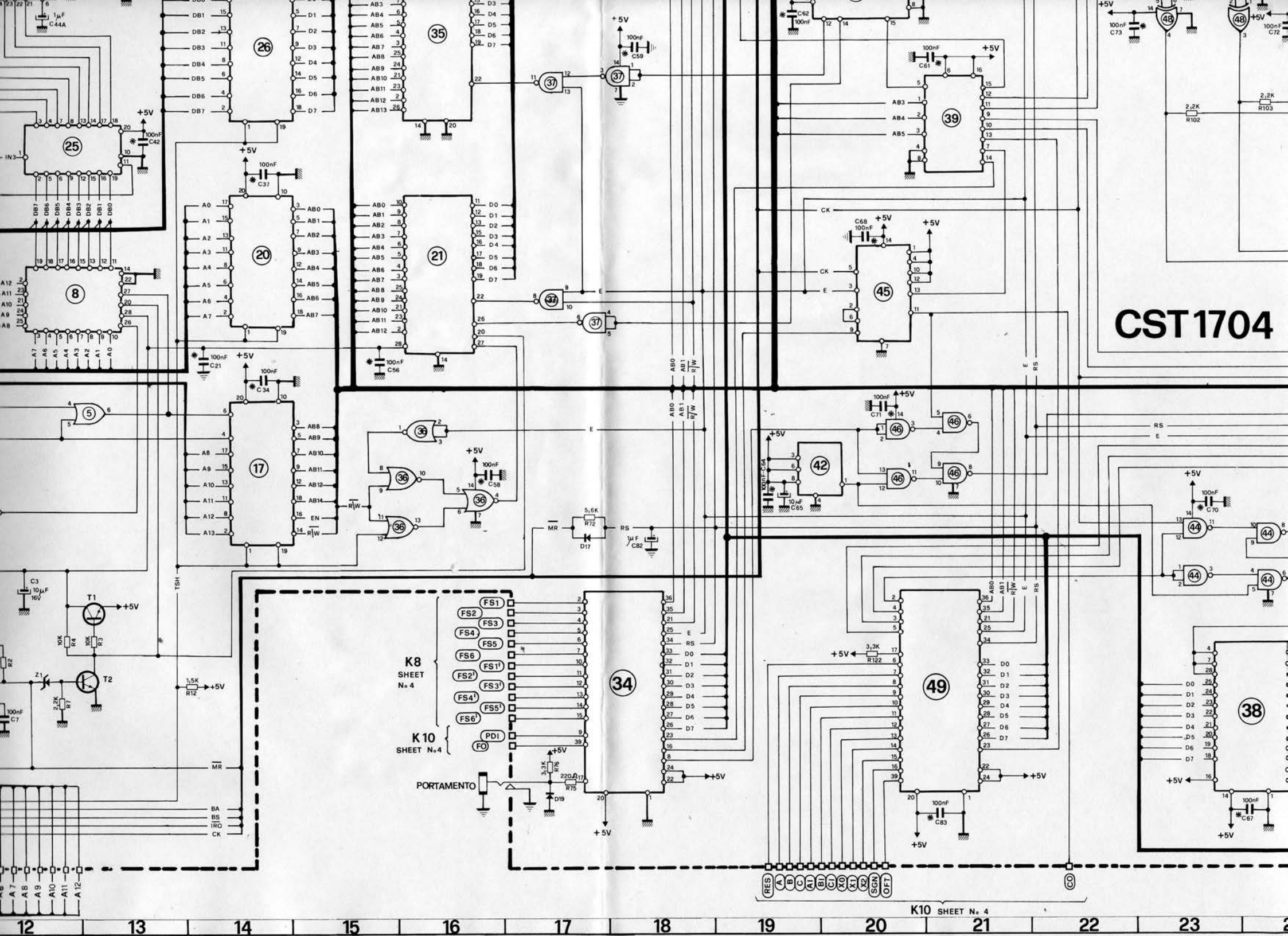


SHEET N 3a

K6 SHEET N. 2



1 2 3 4 5 6 7 8 9 10 11 12



# CST1704

K8  
SHEET No. 4

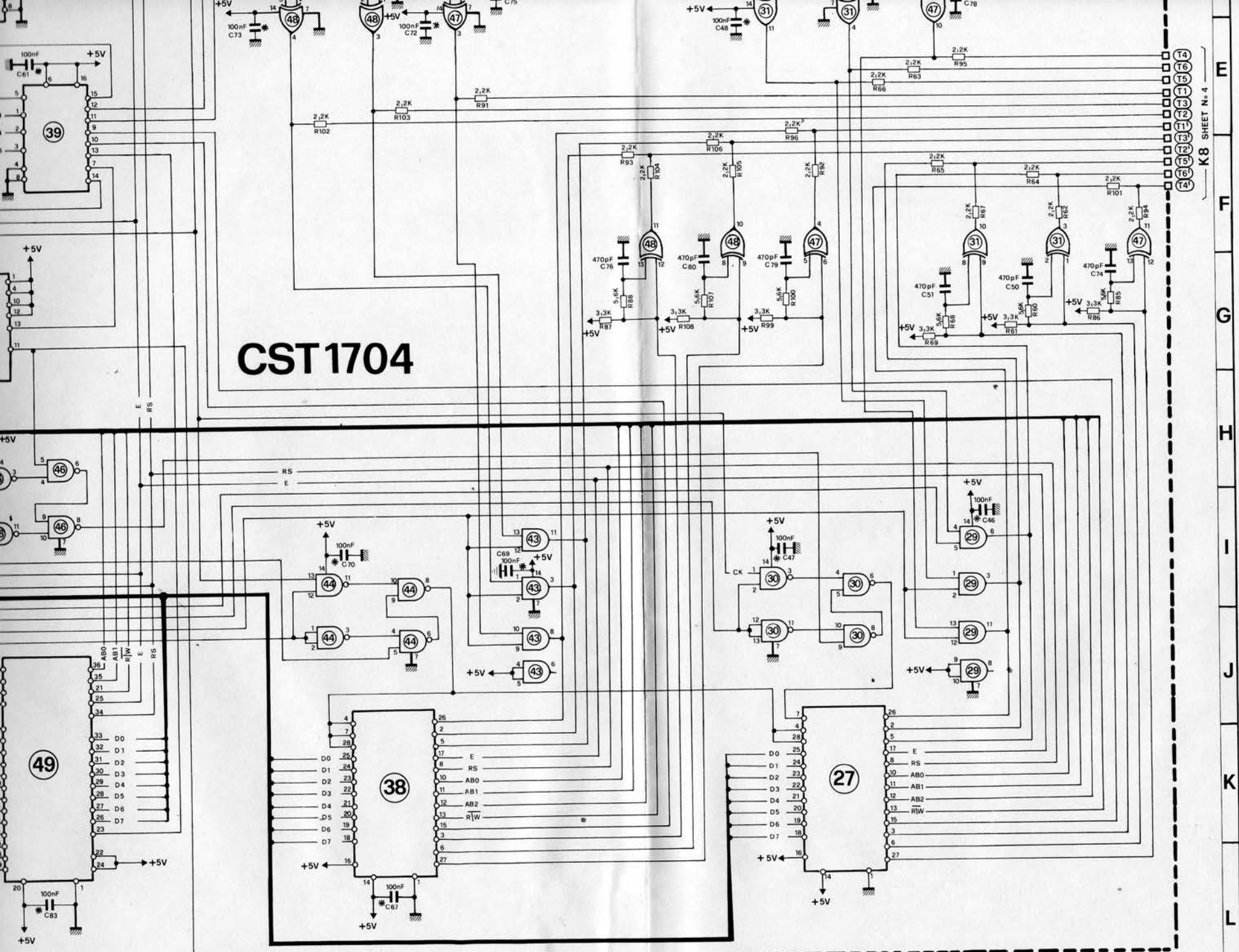
K10  
SHEET No. 4

K10 SHEET No. 4



T2-T3	NPN	BC173B
T10-T11	PNP	BC415B

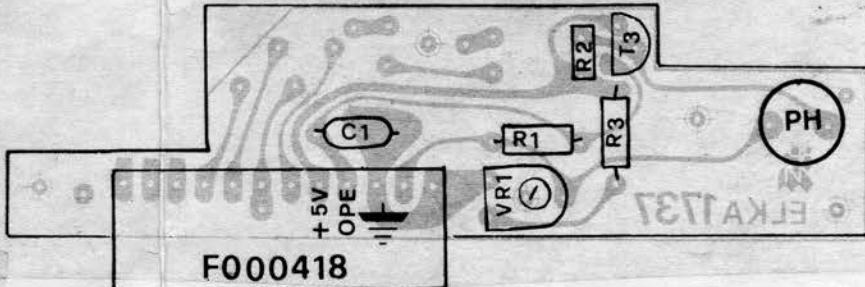
Q1 = 8MHZ  
 Q2-Q3 = 5MHZ  
 Z1 = 3,9Vz



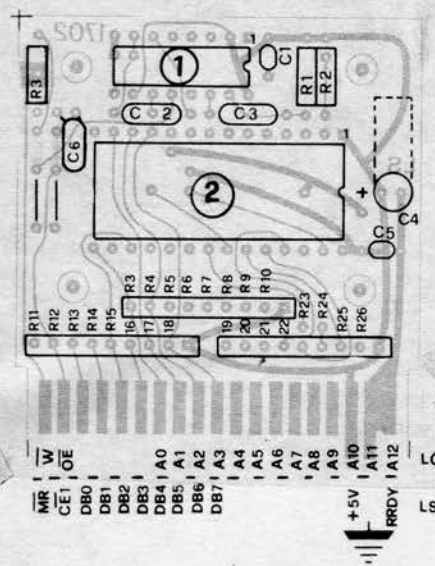
**CST1704**

K8 SHEET No. 4

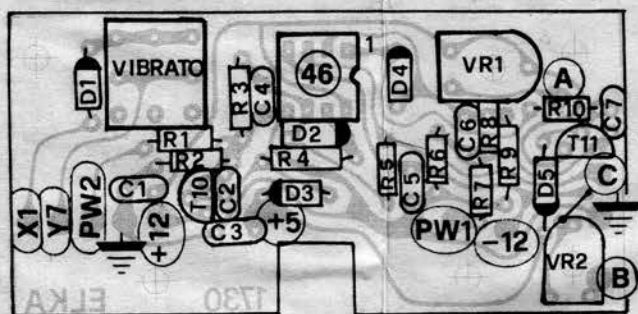
410CST1737 (477GR17370)



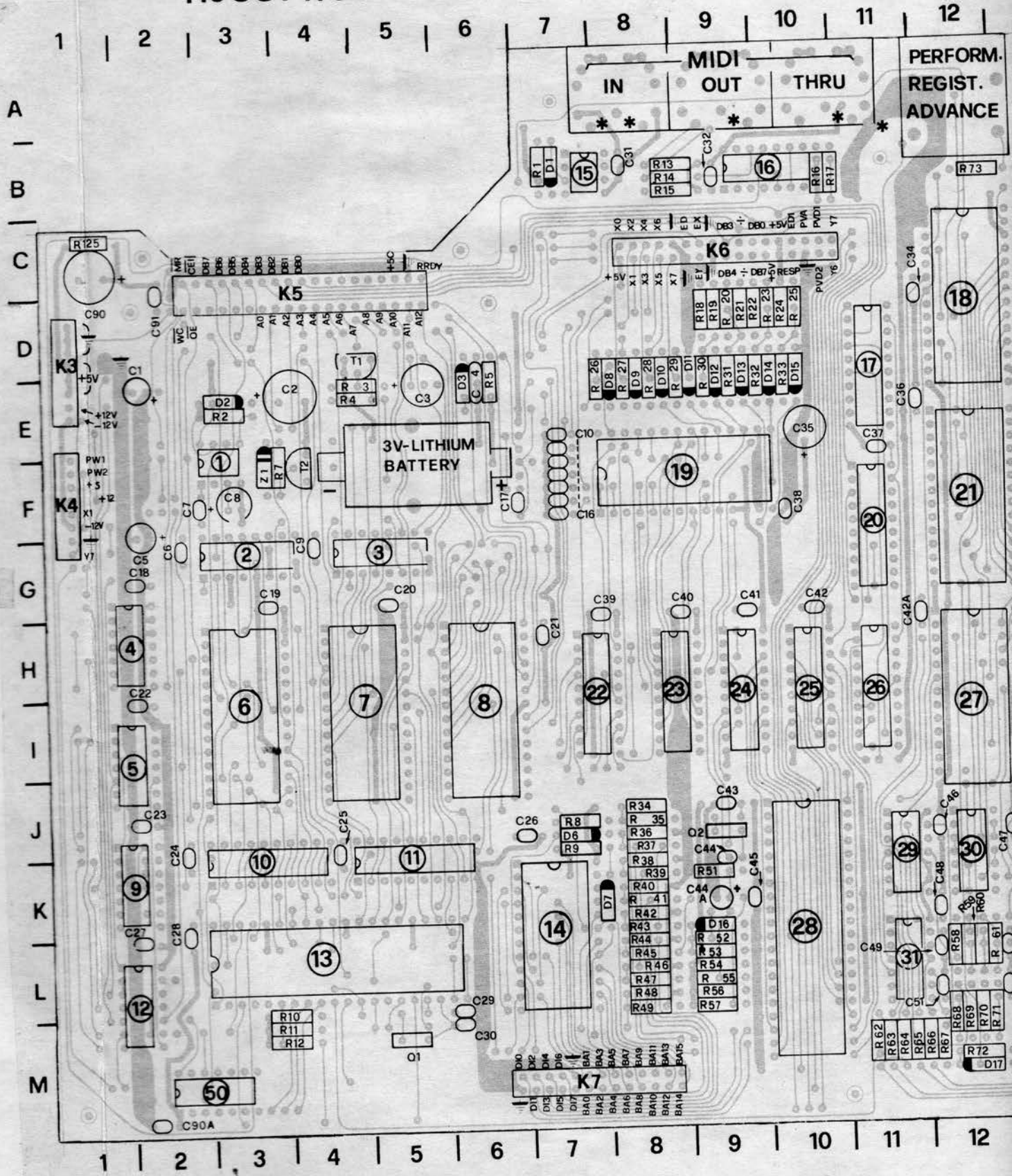
(477GR17020)  
410CST1702



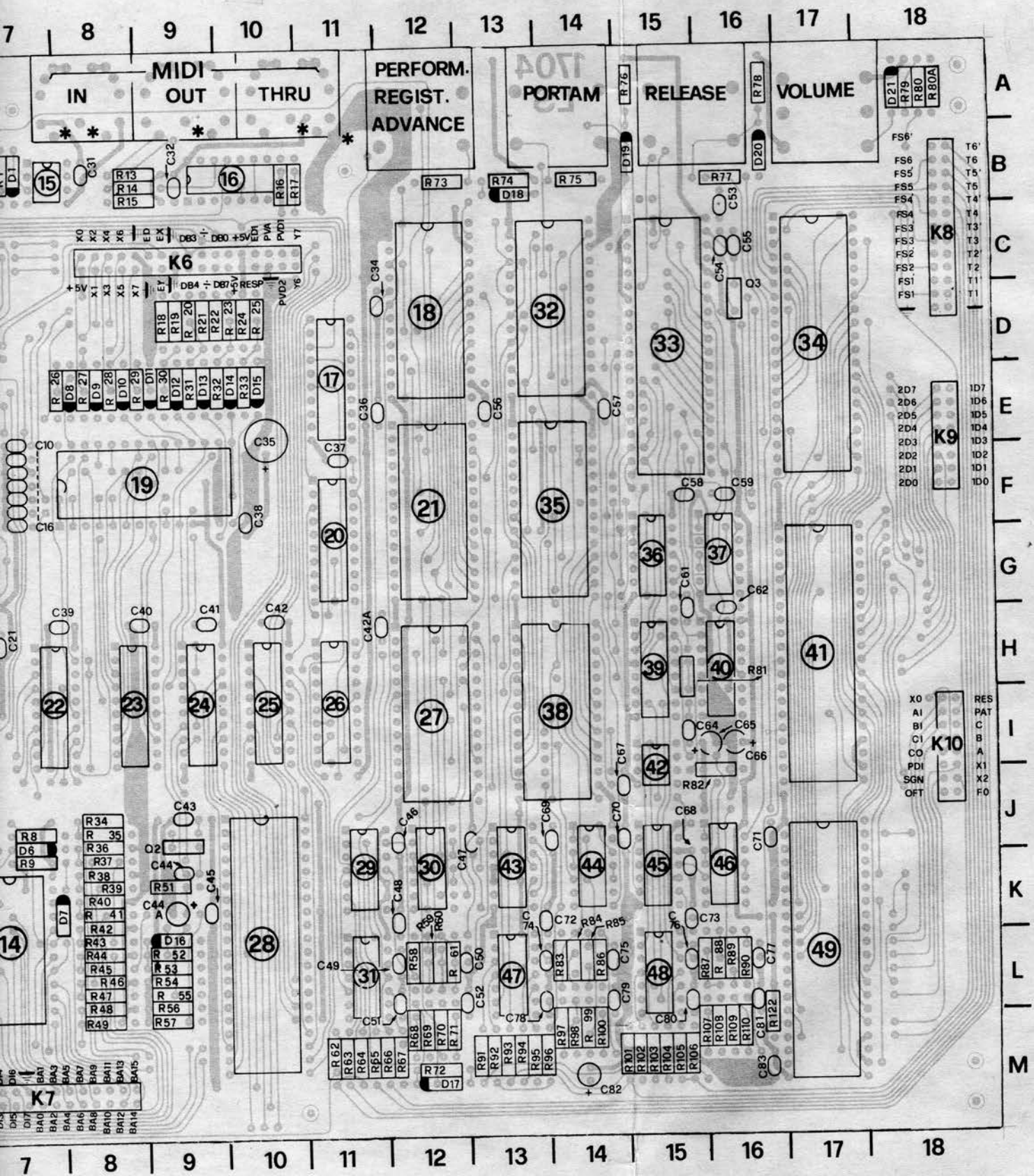
410CST1730 (477GR17300)



# 410CST 1704

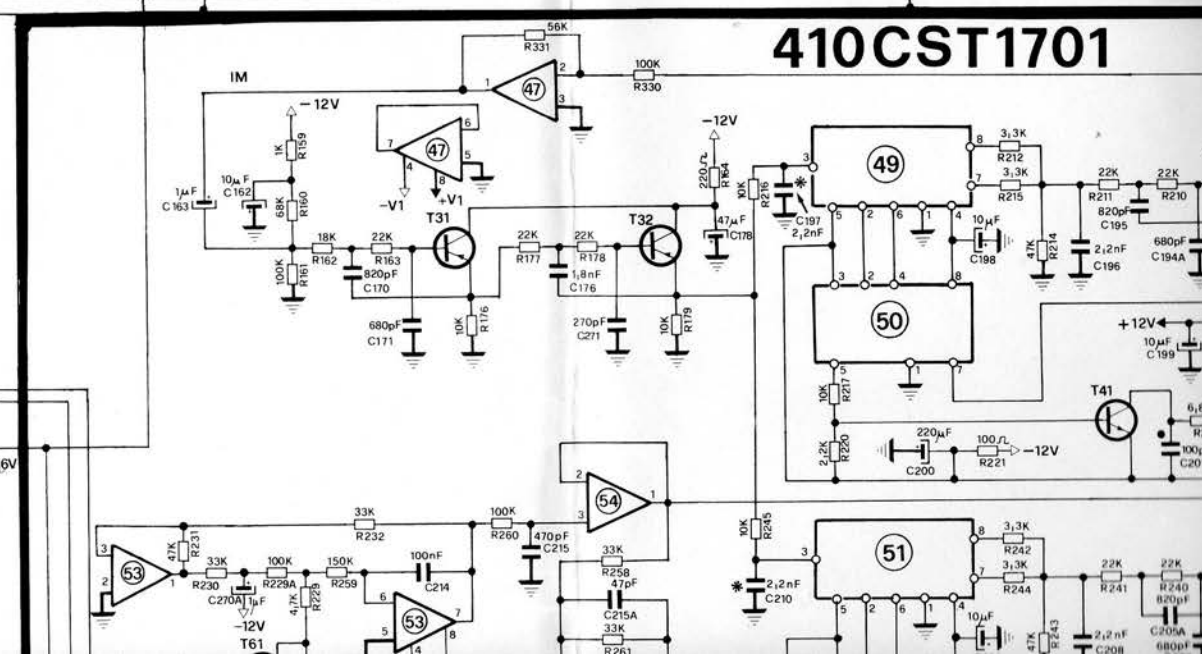
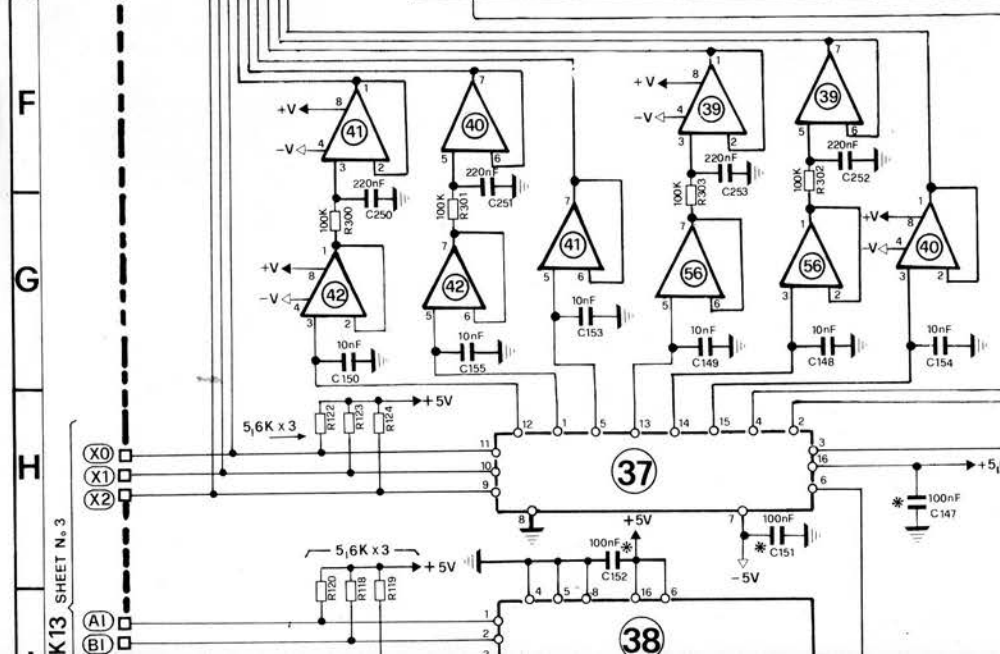
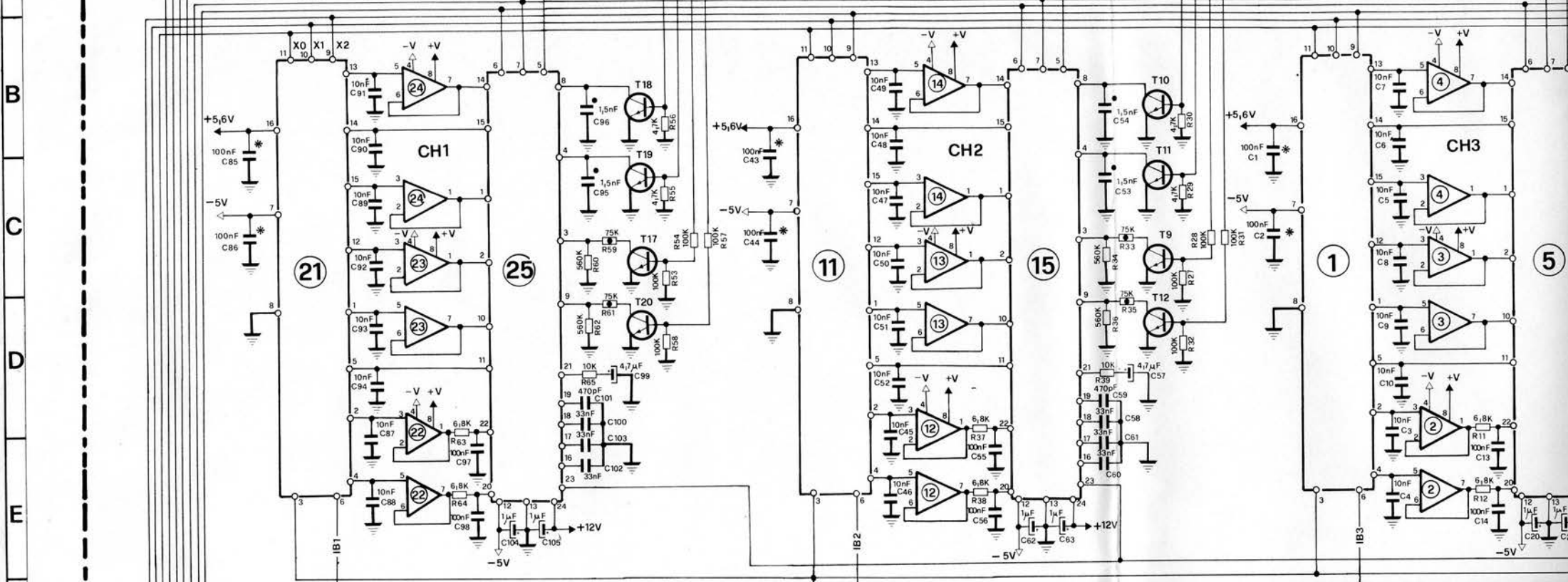


(477GR17040)

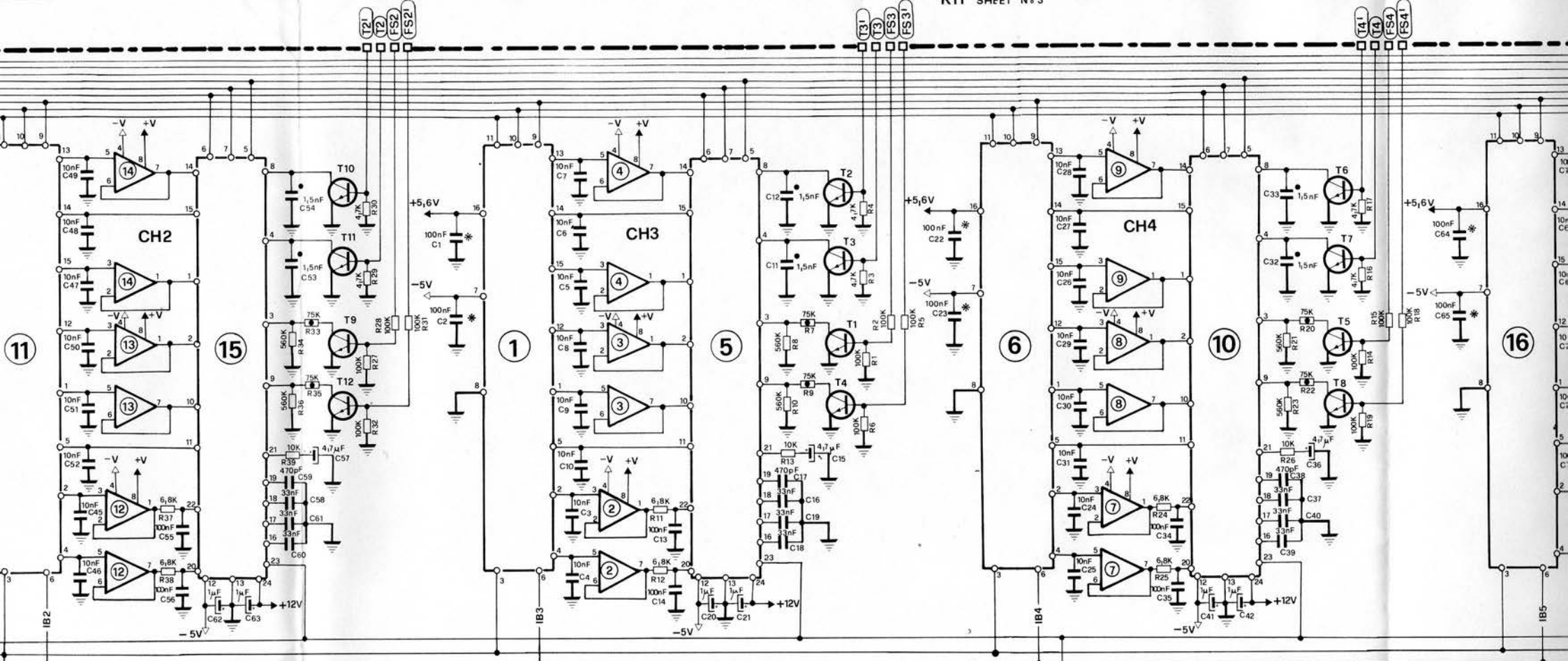


COMP.	S. D.	P. B.
R1	E5	B7
R2	K12	E3
R3	J13	E4
R4	J12	E4
R5	J11	E6
R7	K12	F3
R8	D13	J7
R9	D13	K7
R10	F4	M4
R11	G4	M4
R12	K14	M4
R13	E6	B8
R14	E6	B8
R15	E7	B8
R16	E7	B10
R17	E8	B10
R18	B9	D9
R19	B9	D9
R20	B9	D9
R21	B9	D9
R22	B9	D9
R23	B9	D10
R24	B9	D10
R25	B9	D10
R26	C9	E8
R27	C9	E8
R28	C9	E8
R29	C9	E8
R30	C9	E9
R31	C9	E9
R32	C9	E9
R33	C9	E10
R34	B10	J8
R35	C11	J8
R36	B10	J8
R37	C11	K8
R38	B10	K8
R39	C11	K8
R40	B10	K8
R41	C11	K8
R42	C10	K8
R43	C11	L8
R44	B10	L8
R45	C11	L8
R46	C10	L8
R47	C11	L8
R48	C10	L8
R49	C11	L8
R51	D12	K9
R52	C12	L9
R53	D13	L9
R54	C12	L9
R55	C12	L8
R56	C12	L8
R57	C12	L8
R58	D27	L12
R59	D27	L12
R60	G29	L12
R61	G29	L12
R62	F29	M11
R63	E28	M11
R64	F29	M11
R65	F28	M11
R66	E28	M11
R67	F29	M12
R68	G28	M12
R69	G28	M12
R70	D27	M12
R71	D28	M12
R72	I17	M12
R73	H4	B12
R74	G4	B13
R75	L17	B14
R76	L17	A15
R77	H3	B16
R78	H2	A16
R79	D3	A18
R80	D3	A18
R80A	D3	A18
R81	C20	H15
R82	D21	J16
R83	D24	L14
R84	D24	L14
R85	G30	L14
R86	G30	L14
R87	G25	L16
R88	G26	L16
R89	D23	L16
R90	D24	L16
R91	E24	M13
R92	F27	M13
R93	F26	M13
R94	F30	M13
R95	E28	M13
R96	E27	M13
R97	D28	M14
R98	D28	M14
R99	G27	M14
R100	G27	M14
R101	F30	M14
R102	E23	M15
R103	E24	M15
R104	F26	M15
R105	F26	M15
R106	F26	M15
R107	G26	M16
R108	G26	M16
R109	D23	M16
R110	D23	M16
R122	K20	M16
R125	I2	C1
C1	E3	E2
C2	K11	E4
C3	J12	E5
C5	E3	G2
C6	J7	G2
C7	K12	F2
C8	K11	F3
C9	J10	G4
C10	D7	E7
C11	D7	F7
C12	D7	F7
C13	D6	F7
C14	D6	F7
C15	D6	F7
C16	D7	F7
C17	D6	F6
C18	L7	G2
C19	G10	G3
C20	G11	G5
C21	H14	H7
C22	J8	I2
C23	J6	J2
C24	G6	K2
C25	G8	K4
C26	B13	J6
C27	J8	L2

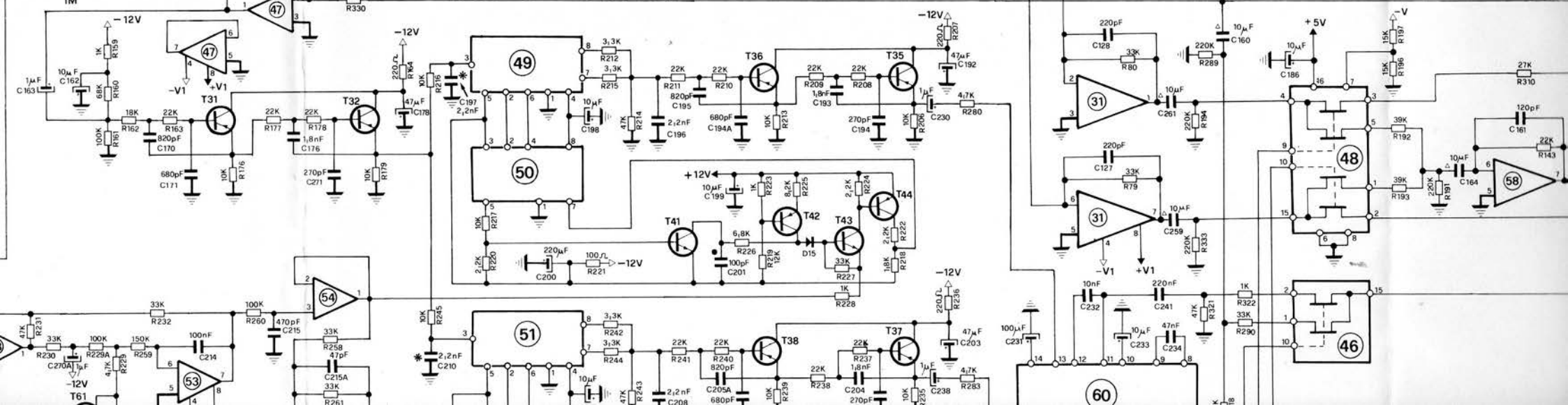
COMP.	S. D.	P. B.
C28	F4	L2
C29	H4	L6
C30	H4	M6
C31	E6	B8
C32	F7	B9
C34	H14	D11
C35	D8	E10
C36	C27	E11
C37	F14	F11
C38	D8	F10
C39	B8	H7
C40	F10	H8
C41	F11	H9
C42	F13	H10
C42A	D14	H11
C43	E10	J9
C44	E10	K9
C44A	D10	K9
C45	D12	K9
C46	I29	J12
C47	I27	J13
C48	D27	K12
C49	D27	L12
C50	G29	L12
C51	G28	L12
C52	D28	L12
C53	A21	C16
C54	B22	C16
C55	A22	C16
C56	H15	E13
C57	A23	E14
C58	I16	F15
C59	F18	F16
C61	E21	G15
C62	D19	H16
C64	I19	I15
C65	I19	I16
C66	A19	I16
C67	L24	J14
C68	G20	K15
C69	I25	J14
C70	I23	J14
C71	H20	J16
C72	E24	K13
C73	E23	K15
C74	G30	L13
C75	D25	L14
C76	G26	L15
C77	D24	L16
C78	D28	L13
C79	G27	L14
C80	G26	L15
C81	D23	L16
C82	I18	M14
C83	L21	M16
C90	J2	C1
C90A	I3	M2
C91	J2	C2
T1	J13	D4
T2	K13	F4
Q1	H4	M5
Q2	D10	J9
Q3	B21	D16
D1	F5	B7
D2	J11	E3
D3	J11	E6
D6	C3	J7
D7	C3	K7
D8	D9	E8
D9	D9	E8
D10	D9	E8
D11	D9	E9
D12	E9	E9
D13	D9	E9
D14	E9	E10
D15	E9	E10
D16	C13	K9
D17	I17	M12
D18	H4	B13
D19	L17	B15
D20	H20	B16
D21	C5	A18
D24		F2
IC1	K11	F3
IC2	I6	G3
IC3	J9	G5
IC4	L8	H2
IC5	J7	I2
IC6	G9	I3
IC7	G11	I4
IC8	G12	I6
IC9	I11	K2
IC10	G6	K3
IC11	G7	K5
IC12	I7	L2
IC13	H5	L4
IC14	B12	L7
IC15	E6	B7
IC16	E7	B10
IC17	I14	E11
IC18	B27	D12
IC19	C7	F9
IC20	G14	G11
IC21	G16	F12
IC22	B7	I7
IC23	F9	I8
IC24	F11	I9
IC25	F12	I10
IC26	E14	I11
IC27	K27	I12
IC28	D11	K10
IC29	I29	K11
IC30	I27	K12
IC31	F30	L11
IC32	B23	D14
IC33	B21	D15
IC34	K18	D17
IC35	E16	F14
IC36	I16	G15
IC37	F18	G16
IC38	K24	I14
IC39	E21	H15
IC40	D20	H16
IC41	B18	H17
IC42	I19	I15
IC43	I25	K13
IC44	I24	K14
IC45	G20	K15
IC46	H21	K16
IC47	D28	L13
IC48	D23	L15
IC49	K21	L17
IC50	I4	M2
LITHIUM BATTERY 3V	J11	F5
Z1	K12	F3

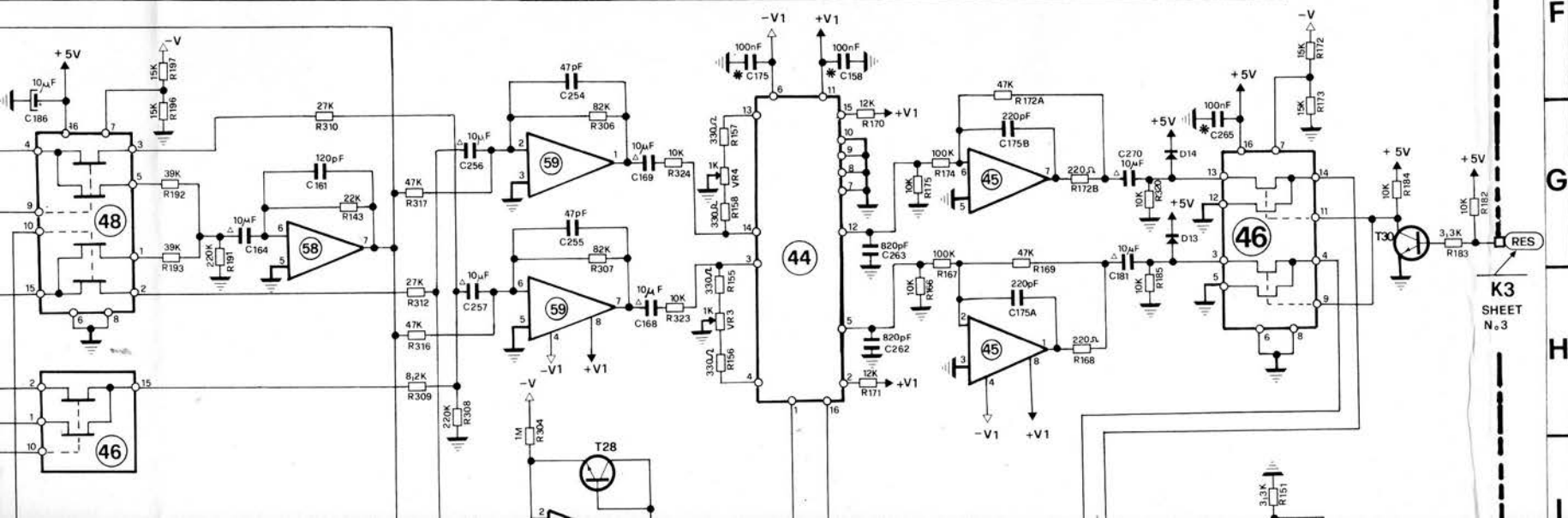
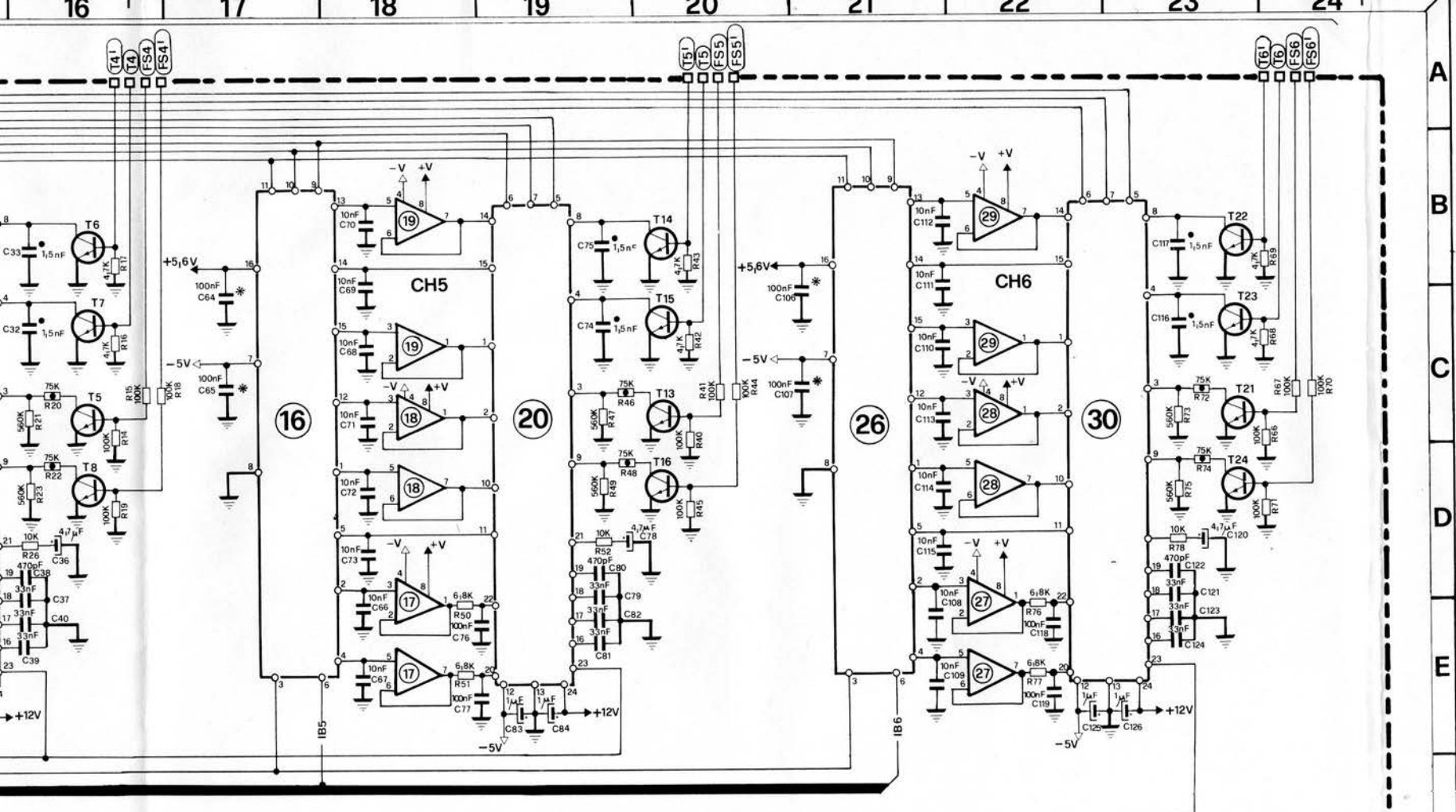


# 410CST1701



# 410CST1701





I. C.		
CODE	TYPE	MANUF.
1-6-11-16-21-26-37	4051	
2-4-7-9-12-14		
17-19-22-24	TL062	
27-29-39-42		
56-57	3396	
5-10-15-20		
25-30	DAC0808	
32-33		
44	13600	
47-45-53-55-31	TL082	
34-36-58-59		
48-46	4053	
49-51	MN3009	
50-52	MN3101	
60	DNR1894	
35	LM393	
38	74HC138	
43	LM386N	

CODE	TYPE	TRANS.
T1-T24-T26-T30	NPN	BC173B
T41-T43		
T46-T48-T61	PNP	BC415C
T25-T31-T32		
T35-T40-T42-T44		
T47-T49		

K3  
SHEET  
N.3



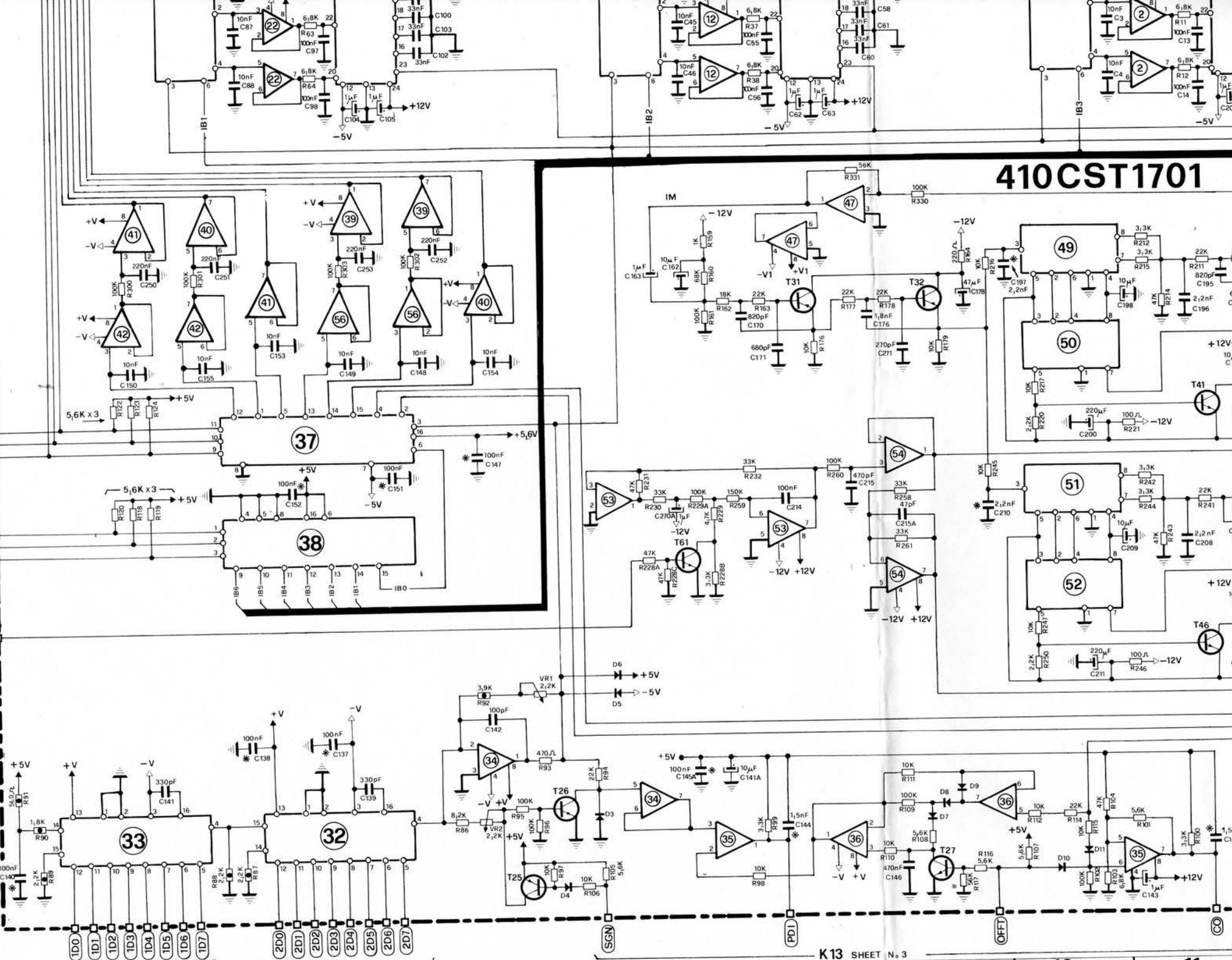
E  
F  
G  
H  
I  
J  
K  
L

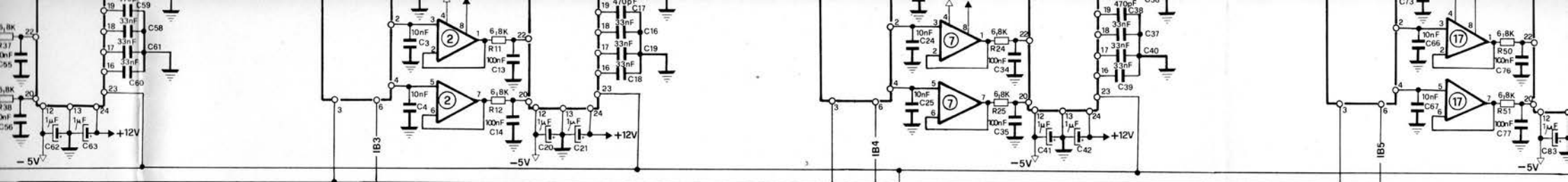
X0  
X1  
X2  
A1  
B1  
C1  
FO

K12 SHEET No. 3

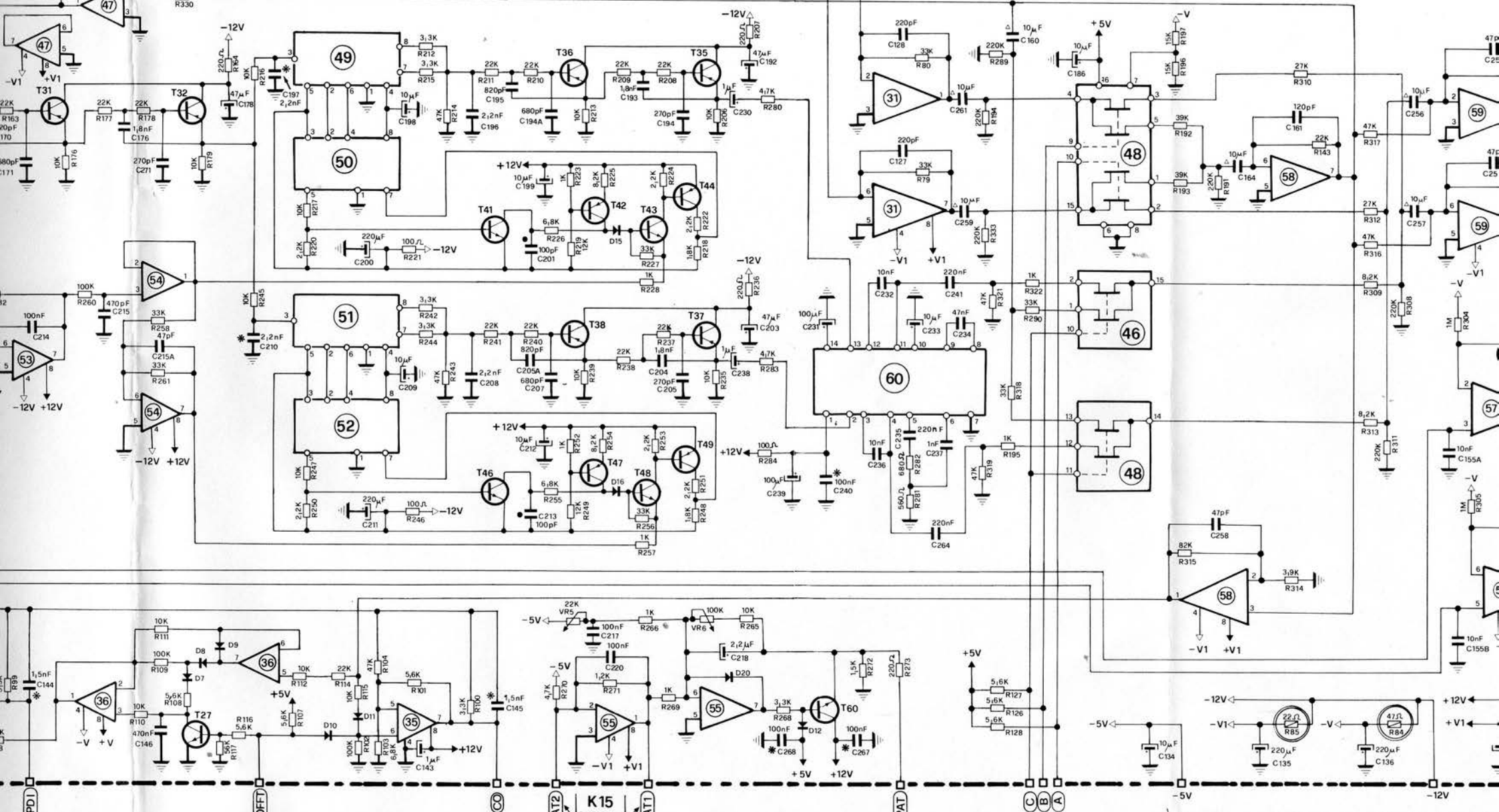
K13 SHEET No. 3

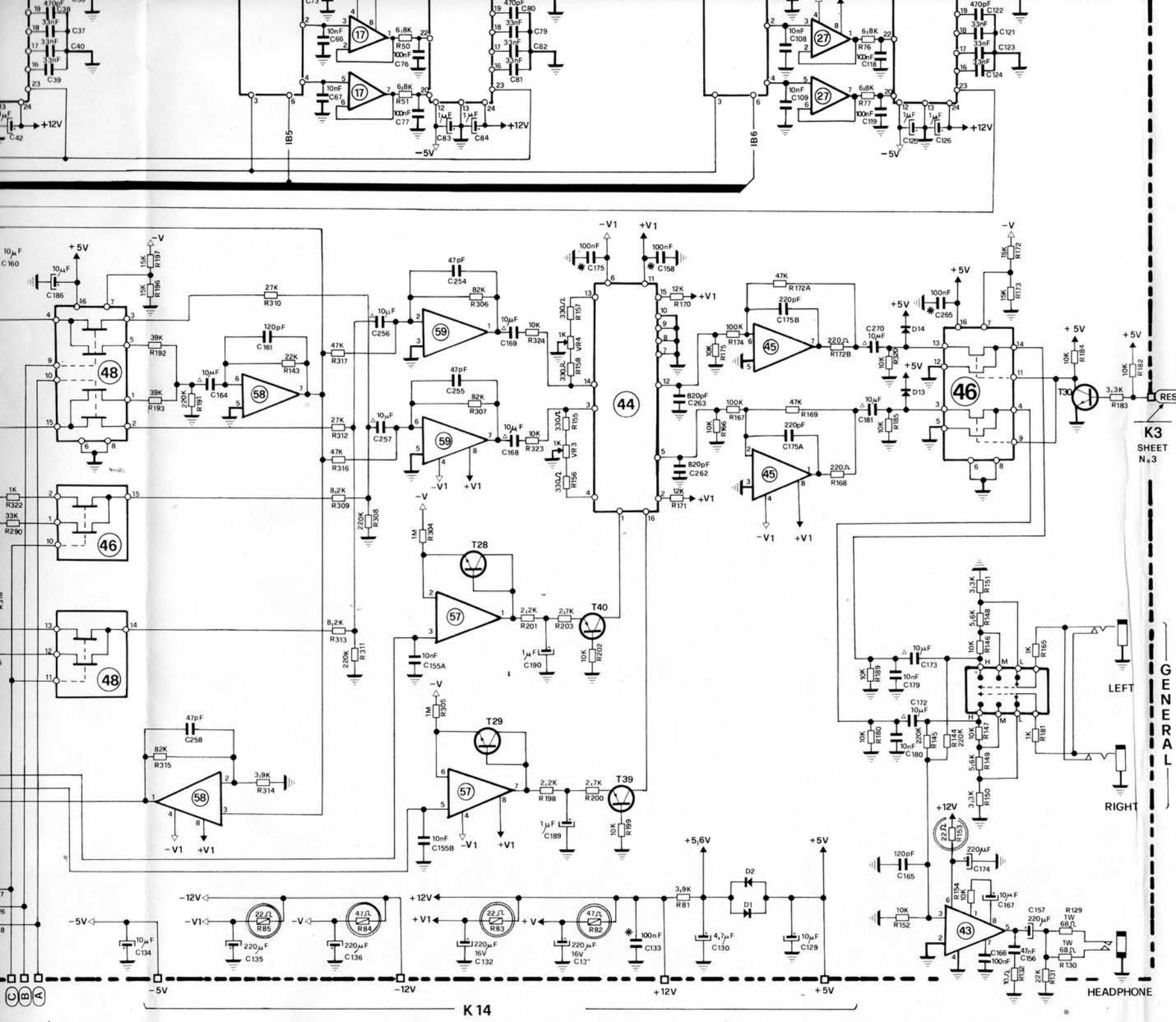
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# 410CST1701





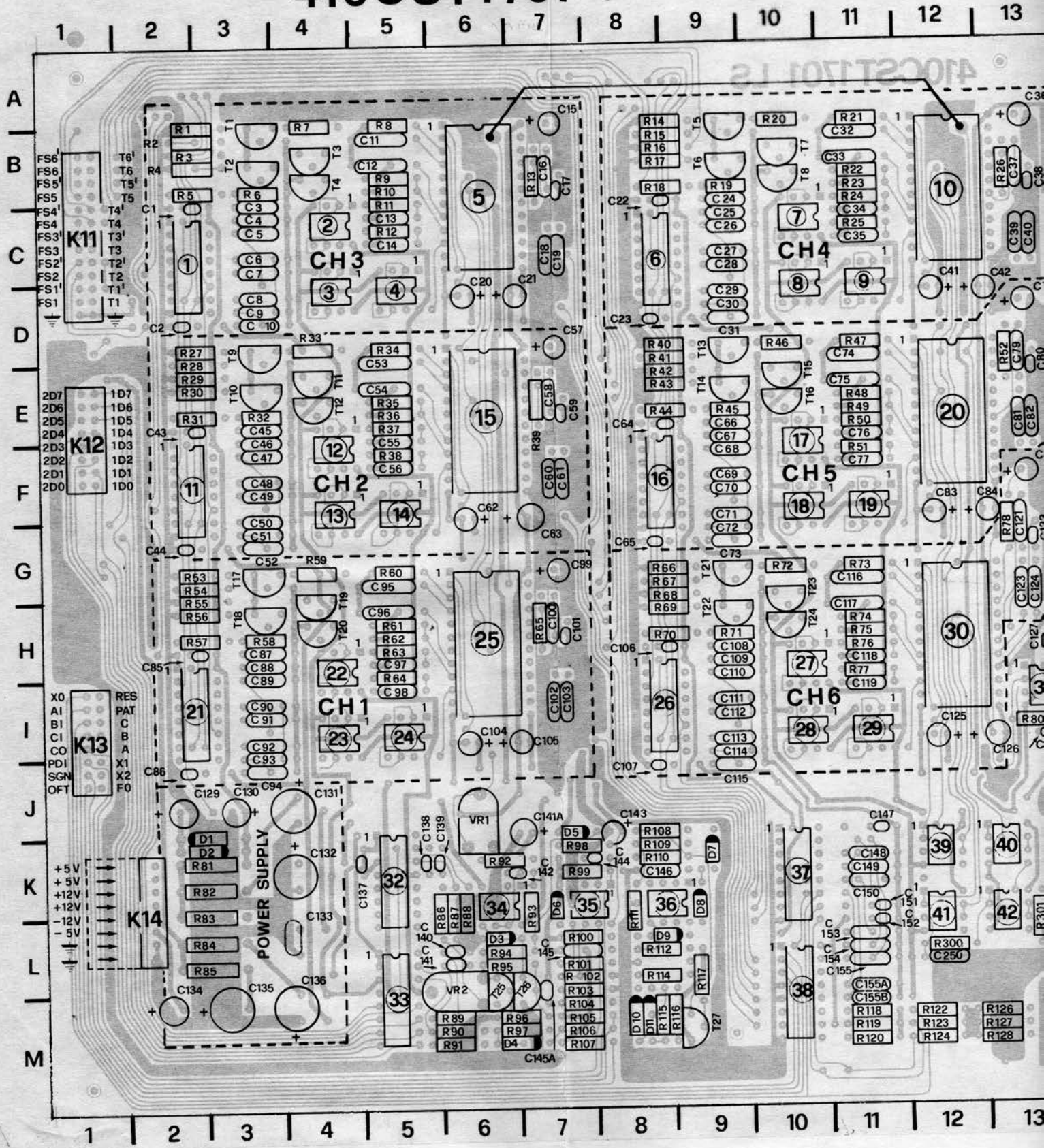
26 - 37	4051
2 ÷ 4 - 7 - 9 - 12 ÷ 14	TL062
17 ÷ 19 - 22 ÷ 24	
27 ÷ 29 - 39 ÷ 42	
56 - 57	
5 - 10 - 15 - 20	3396
25 - 30	
32 - 33	DAC0808
44	13600
47-45-53-55-31	TL082
34-36-58-59	
48-46	4053
49 - 51	MN3009
50 - 52	MN 3101
60	DNR1894
35	LM 393
38	74HC138
43	LM386N

CODE	TYPE	TRANS.
T1 ÷ T4 - T26 - T30	NPN	BC173B
T41 - T43		
T46 - T48 - T61		
T25 - T31 - T32	PNP	BC415C
T35 - T40 - T42 - T44		
T47 - T49		

K3  
SHEET  
No. 3

GENERAL  
LEFT  
RIGHT

# 410CST1701



# (477GR17010)

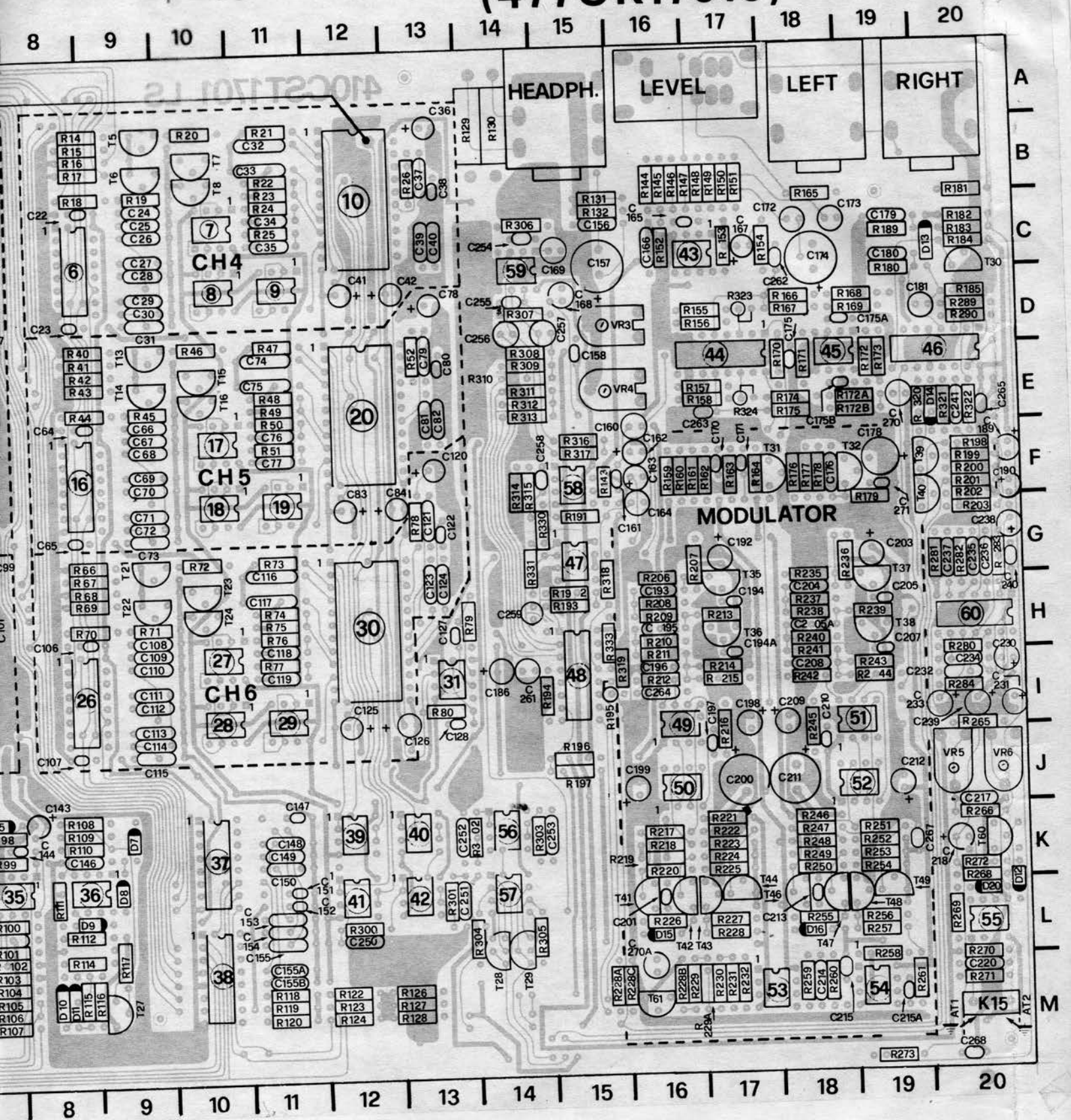
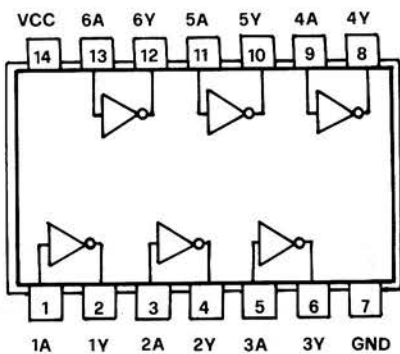
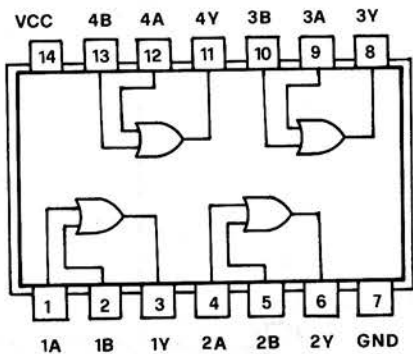


Table with 10 columns and 1000 rows of alphanumeric data. The data is organized into 10 vertical columns, each containing a sequence of characters and numbers. The columns are separated by vertical lines, and the rows are separated by horizontal lines. The data appears to be a grid of reference codes or identifiers.



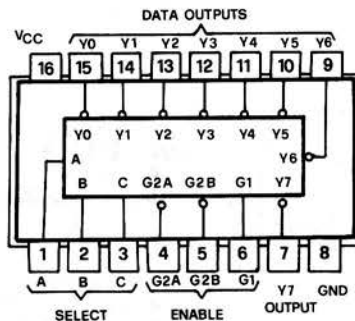
**7404-74S04-74LS04**

HEX INVERTERS



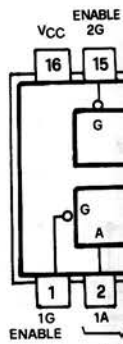
**74S32**

QUADRUPLE POSITIVE-OR

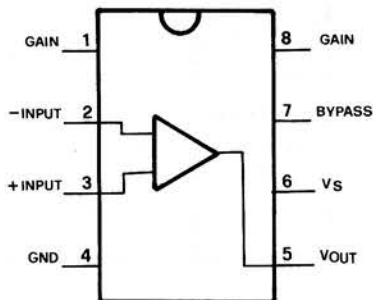


**74LS138N-74S138  
74HC138**

3-TO-8 LINE DECODERS/MULTIPLEXERS

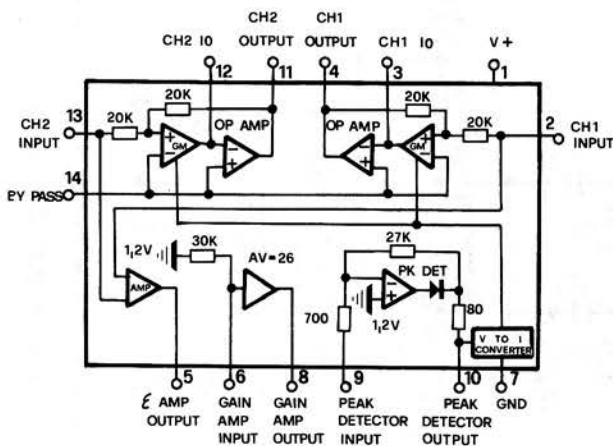


DUAL 2



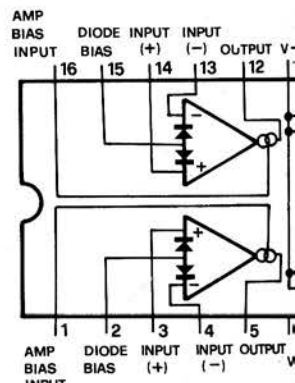
**LM386**

LOW VOLTAGE AUDIO  
POWER AMPLIFIER



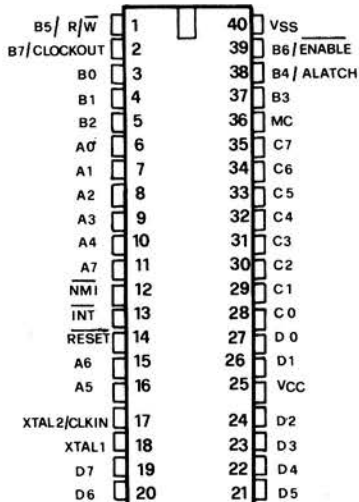
**LM1894**

DINAMIC NOISE REDUCTION SYSTEM DNR™



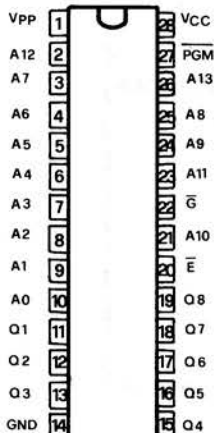
**13600**

DUAL OPERATIONAL TRANS-  
AMPLIFIERS WITH LINEARIZERS  
AND BUFFERS



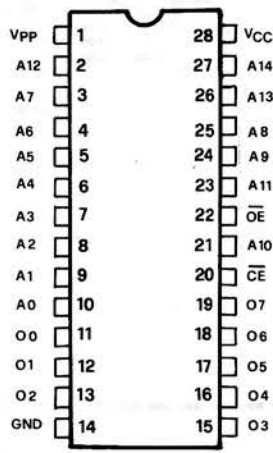
**TMS7001**

8-BIT MICROCOMPUTER



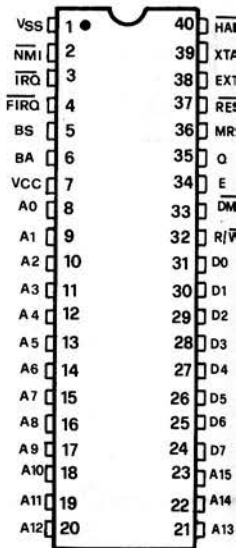
**27128**

16K x 8 BYTES EPROM



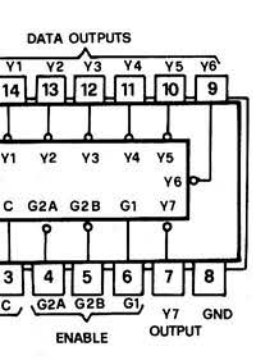
**27256**

256K (32K x 8) UV ERASABLE  
PROM

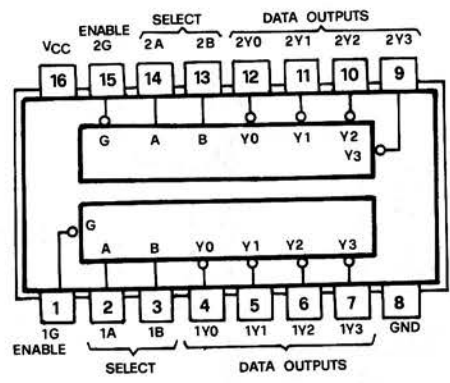


**68B09**

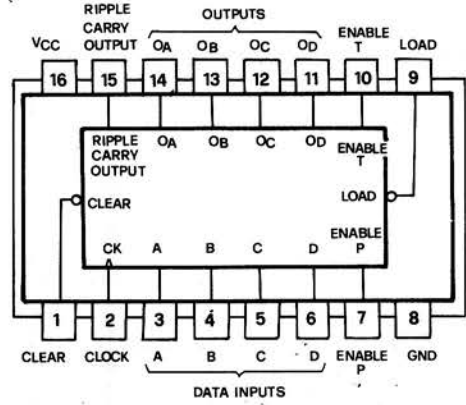
8-BIT MICROPROCESSOR



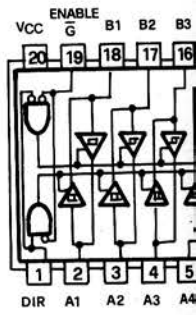
**74S138**  
**74HC138**  
DECODERS/MULTIPLEXERS



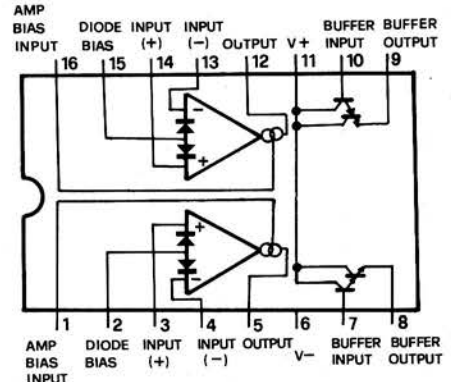
**74LS139**  
DUAL 2-TO-4 LINE DECODERS/  
MULTIPLEXERS



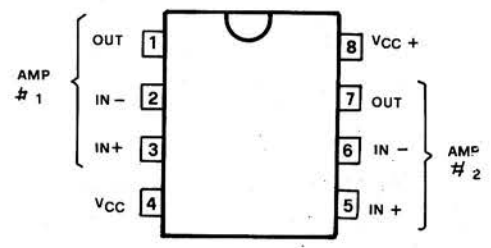
**74LS161**  
SYNCHRONOUS 4 BIT COUNTERS



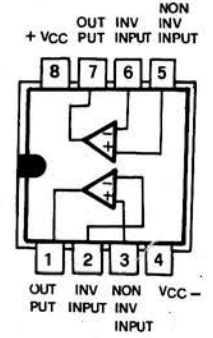
**74LS161**  
OCTAL BUS



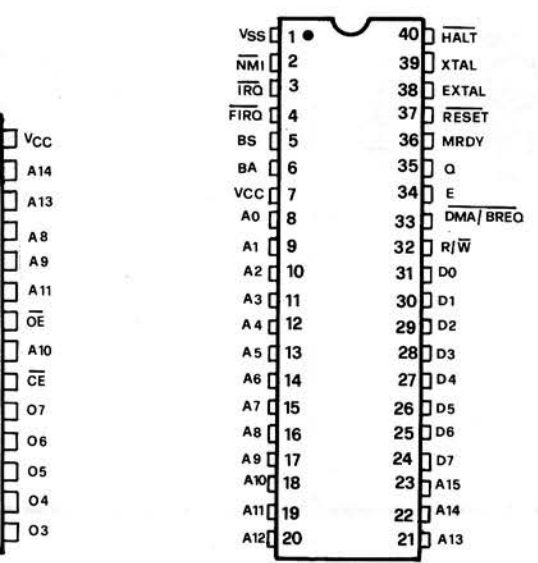
**13600**  
DUAL OPERATIONAL TRANSCONDUCTANCE  
AMPLIFIERS WITH LINEARIZING DIODES  
AND BUFFERS



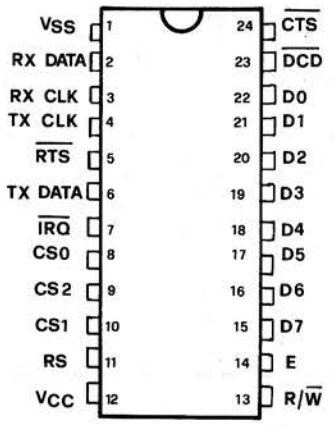
**TL062**  
D, GR, OR P DUAL-IN-LINE PACKAGE



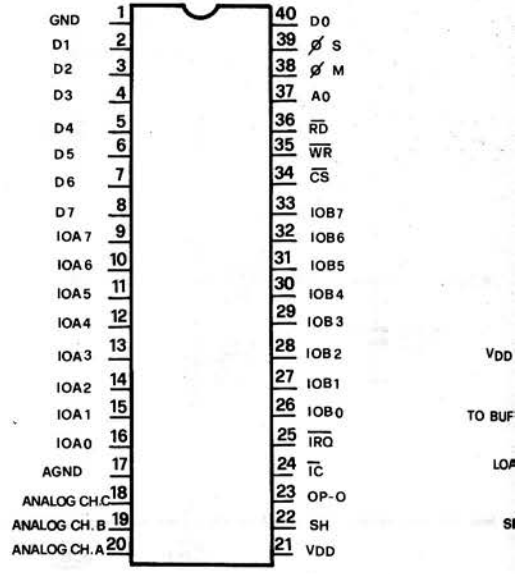
**TL082**  
JFET-INPUT  
OPERATIONAL AMPLIFIER



**68B09**  
8-BIT MICROPROCESSOR

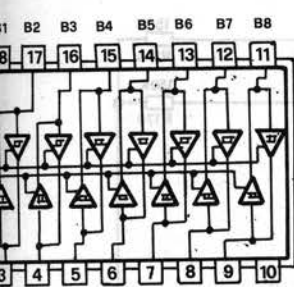


**68B50**  
ASYNCHRONOUS COMMUNICATIONS  
INTERFACE ADAPTER

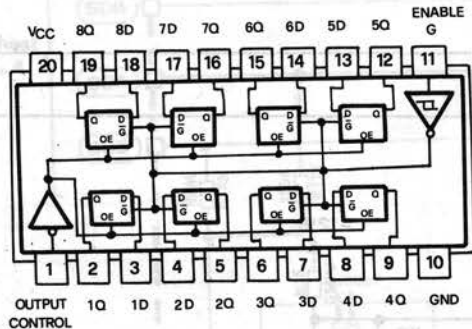


**SG1**  
SOUND GENERATORS

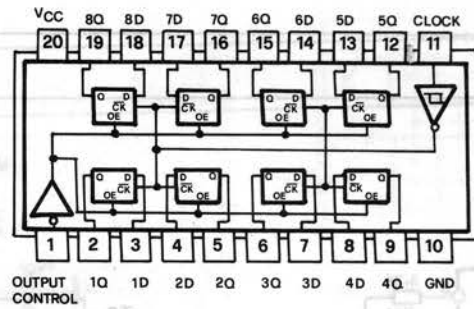




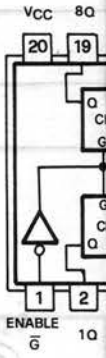
**74LS245**  
OCTAL BUS TRANSCEIVERS



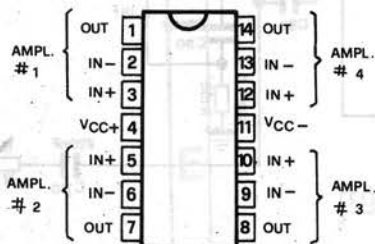
**74LS373**  
OCTAL D-TYPE LATCHES



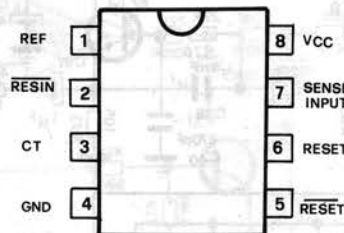
**74LS374-74AS374**  
OCTAL D-TYPE FLIP-FLOPS



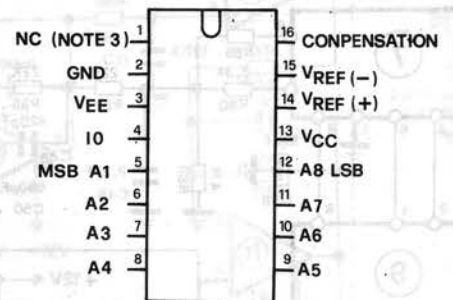
VCC 8Q  
ENABLE  $\bar{G}$



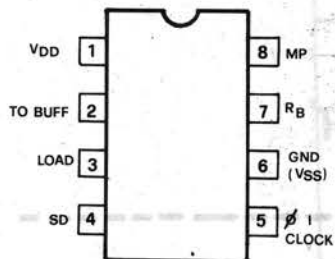
**TL084**  
JFET-INPUT OPERATIONAL AMPLIFIERS



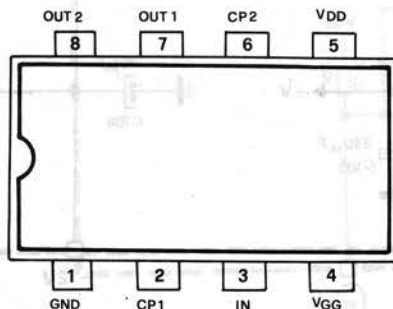
**TL7705**  
D OR P DUAL-IN-LINE PACKAGE



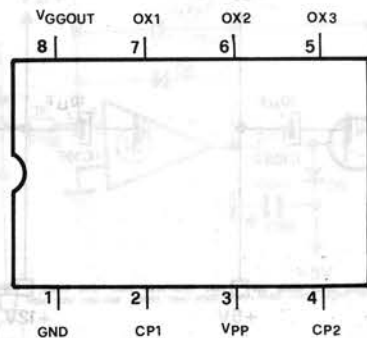
**DAC0808**  
8 BIT D/A CONVERTERS



**DA1**  
DIGITAL ANALOGIC



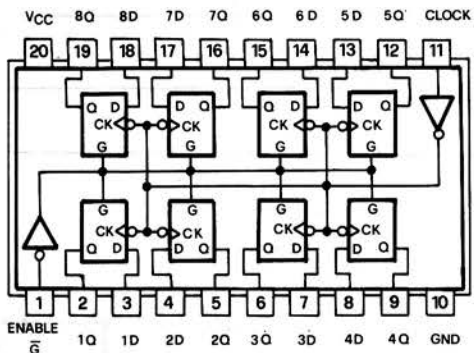
**MN3009**  
TERMINAL ASSIGNMENTS



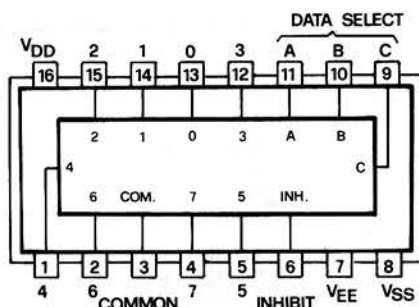
**MN3101**  
CLOCK GENERATOR DRIVER



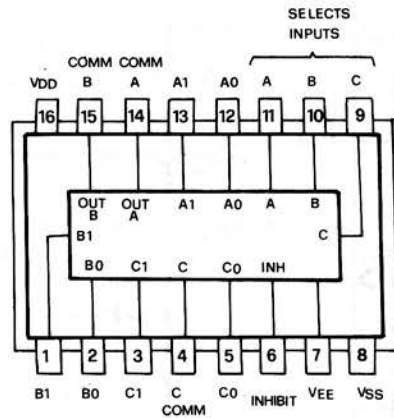
SPLIT



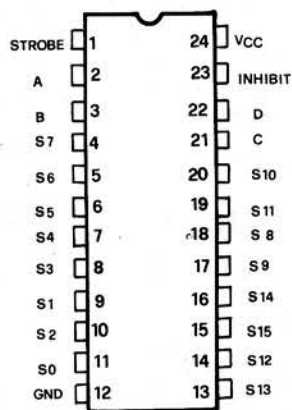
**74LS377**  
OCTAL D-TYPE FLIP-FLOPS



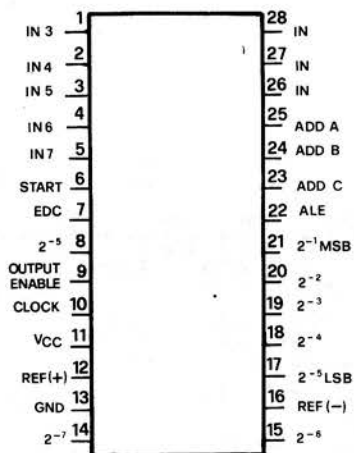
**4051**  
SINGLE 8-CHANNEL  
MULTIPLEXER/ DEMULTIPLEXER



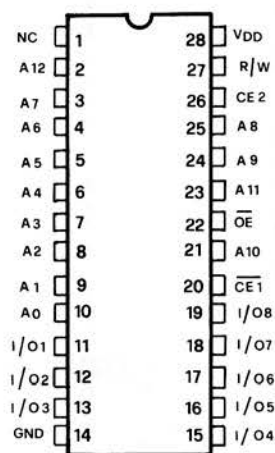
**4053**  
TRIPLE 2 CHAN. ANALOG  
MULTIPLEXER DE MULTIPLEXER



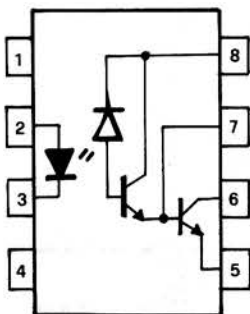
**HC4514**  
4-TO-16 LINE DECODER/LATCH



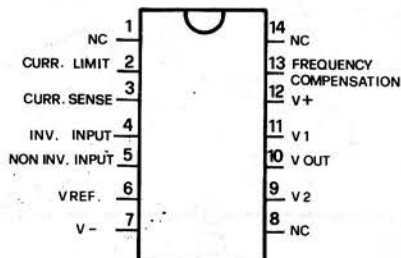
**ADC0809**  
8-BIT  $\mu$ P COMPATIBLE A/D  
CONVERTERS WITH 8-CHANNEL  
MULTIPLEXER



**5565-6264**  
8, 192 WORD X 8 BIT CMOS STATIC  
RAM



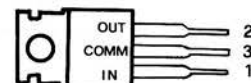
**6N138**  
SPLIT DARLINGTON OPTOISOLATORS



**LM723 or LM723C**  
VOLTAGE REGULATORS



**79M12-79M05**  
NEGATIVE VOLTAGE REGULATOR



**78M12**  
POSITIVE VOLTAGE REGULATOR

*Manufactured by* **ELKA**