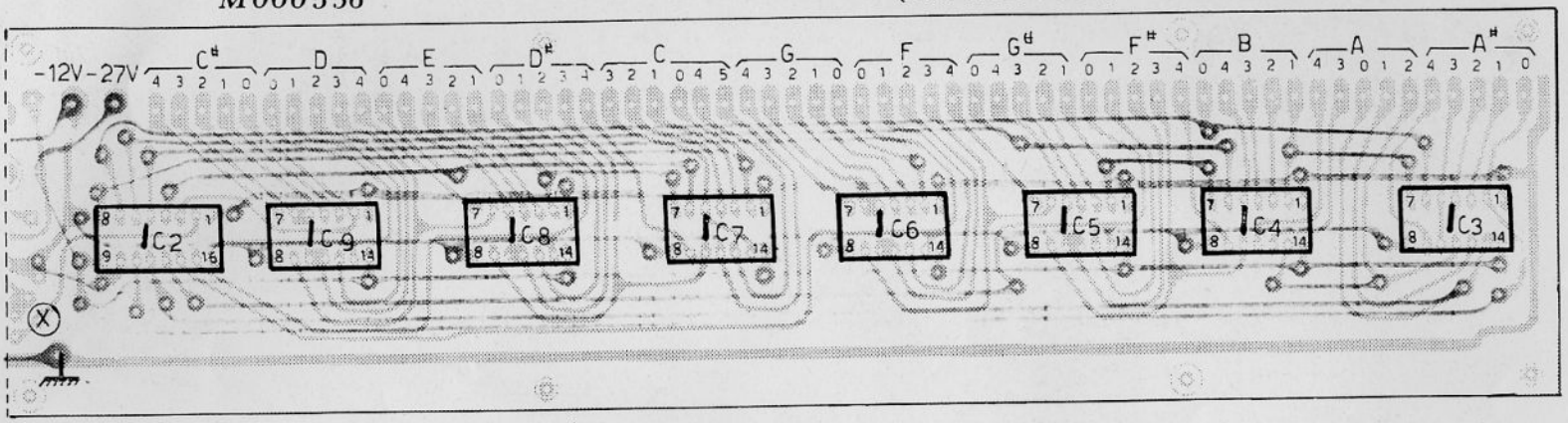
ELKA

WILGAMAT

schematic diagrams

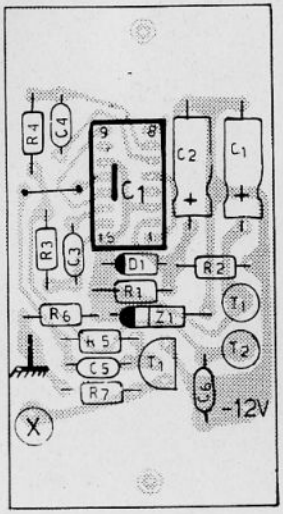
M000556

(457GR05561)



410CST0868

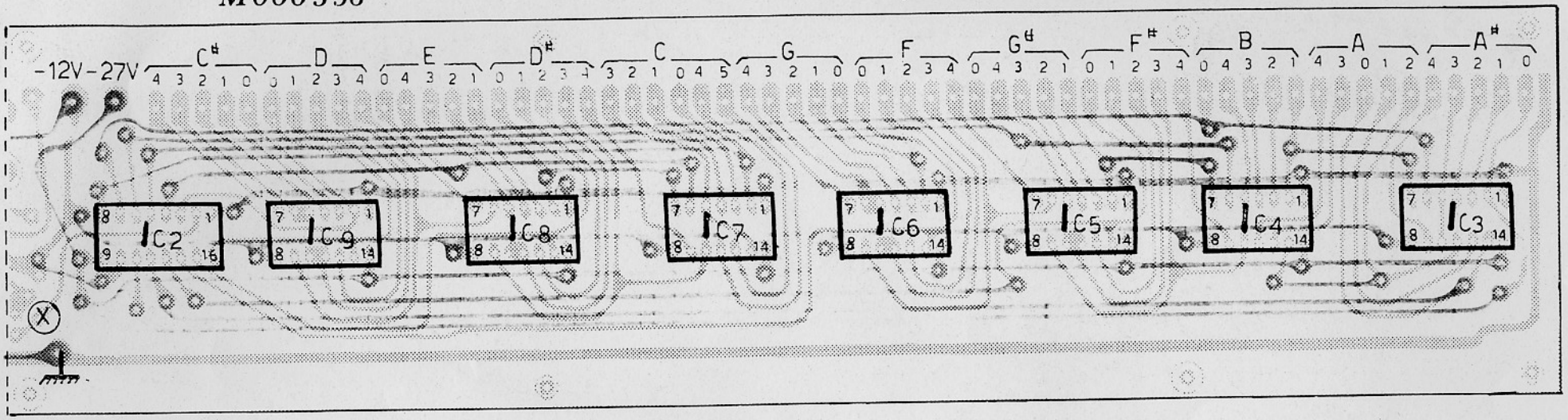
(457GR08680)



THE NUMBERS IN BRACKETS REPRESENT THE ELKA CODES OF THE ASSEMBLED BOARDS WHILST THE OTHERS REPRESENT THE ELKA CODES OF THE NON ASSEMBLED

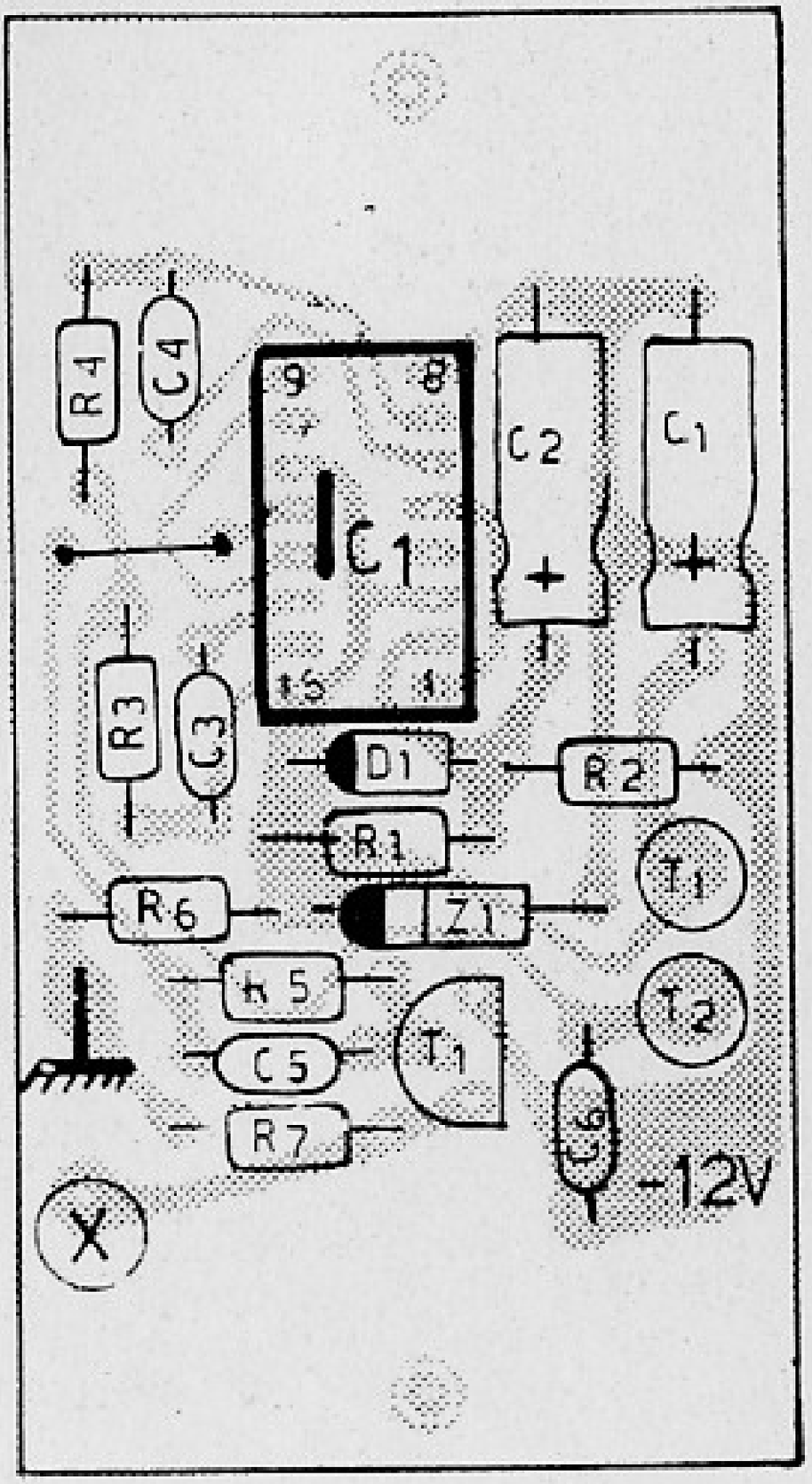
	Model WILGAMAT	Object Assembly of Printed Circuit	Sheet No 2 - 18
			Date 12 - 12 - 77

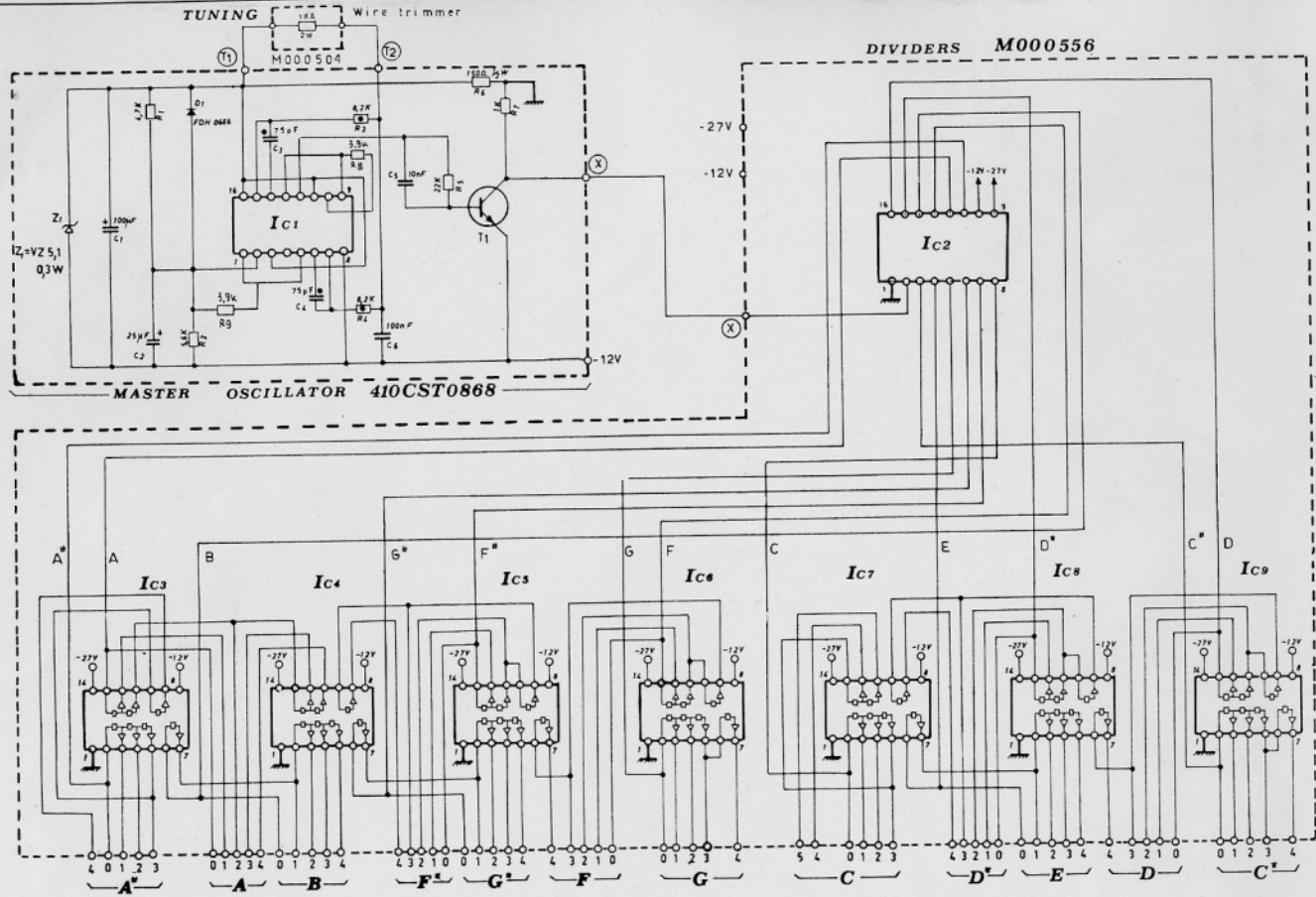
M000556 (457GR05561)



410CST0868

(457GR08680)





Code	Type	Transistors
T1	NPN	BC 171

IC1 = SN 74221 Texas

IC2 = { AY-1-0212 G.I.E. / MK 50242 G.I.E.

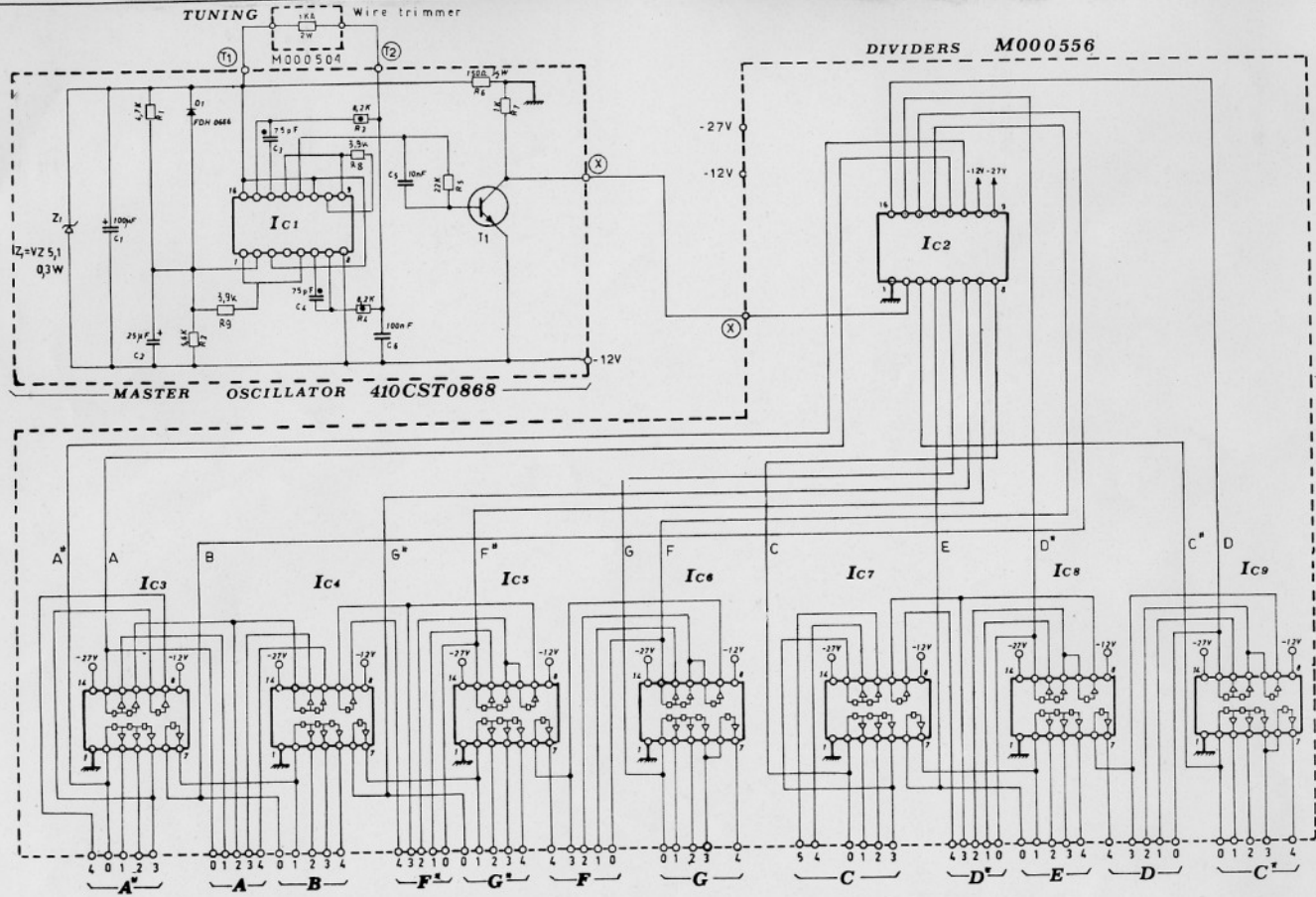
IC3 = IC9 = { EL 4444 NC Texas / HBF 470 AE S.G.S.

Note

1) All resistor marked by point • must be metal film ones 2% tollerance

2) All capacitors marked by a point • are polycarbonate 2 % tollerance

Model	Object:	Sheet N. 3-18
WILGAMAT	Master oscillator and dividers	Date 5-12-77



Code	Type	Transistors
T1	NPN	BC 171

IC1 = SN 74221 Texas

IC2 = { AY-1-0212 G.I.E. / MK 50242 G.I.E.

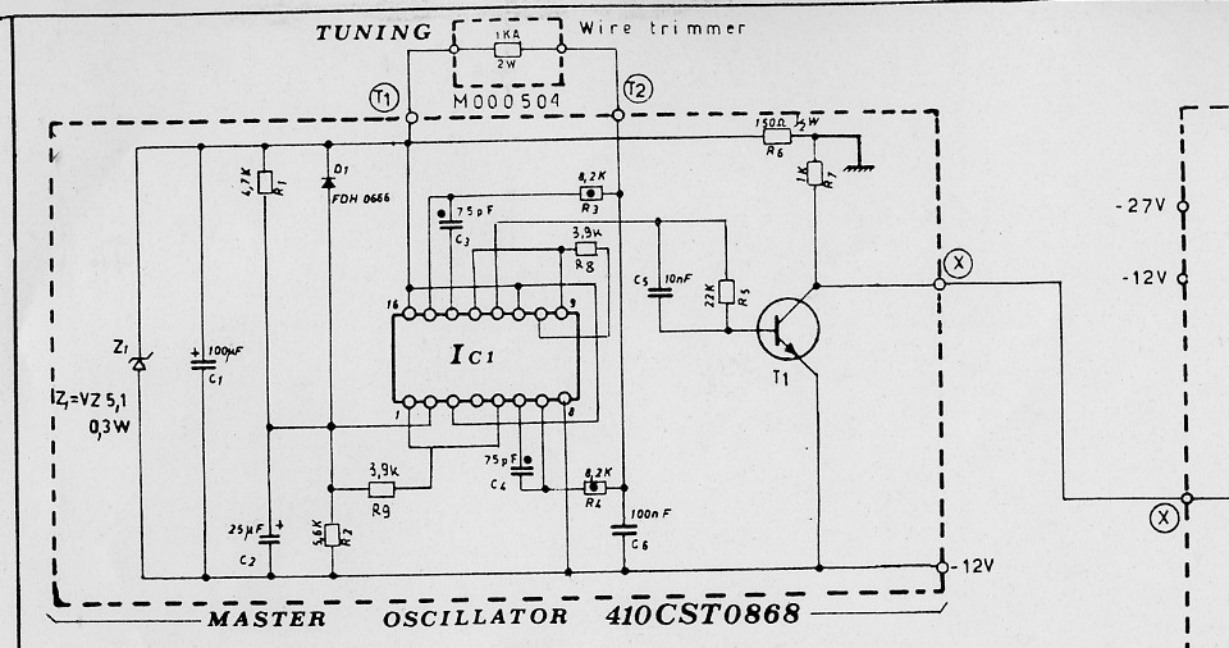
IC3 = IC9 = { EL 4444 NC Texas / HBF 470 AE S.G.S.

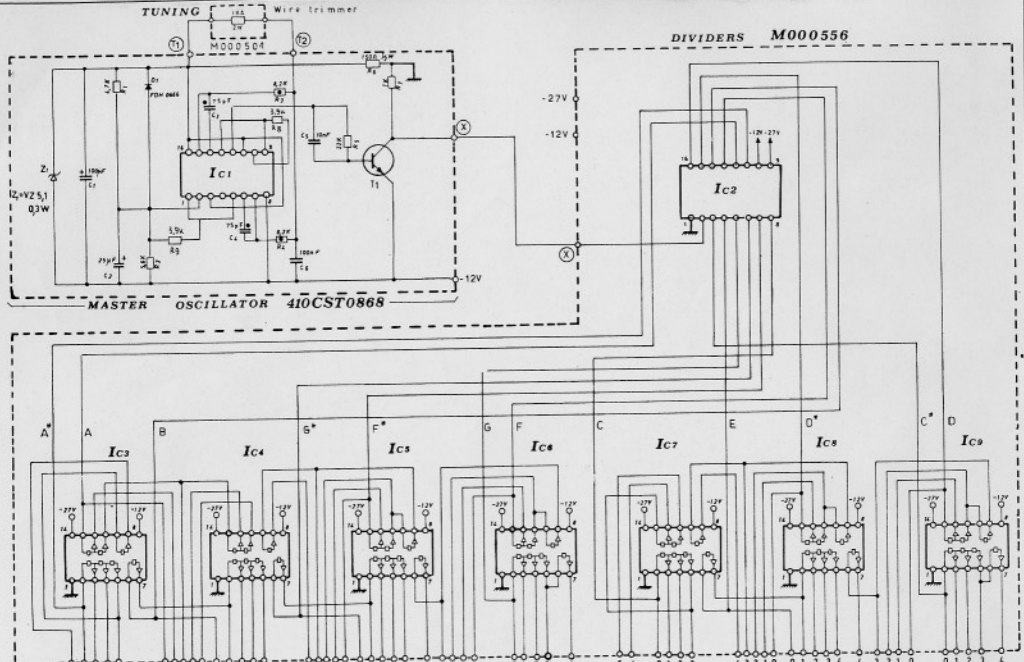
Note

1) All resistor marked by point • must be metal film ones 2% tollerance

2) All capacitors marked by a point • are polycarbonate 2 % tollerance

Model	Object:	Sheet N. 3-18
WILGAMAT	Master oscillator and dividers	Date 5-12-77


TUNING
1KA
2W
Wire trimmer
M000504
T1
T2
150Ω ½W
R6
1K
R7
4,7K
R1
D1
FDH 0666
4,2K
R3
75pF
C3
3,9K
R8
C5 10nF
22K
R5
T1
X
-27V
-12V
16
9
1
8
IC1
Z1
100µF
C1
IZ=VZ 5,1
0,3W
3,9K
R9
75pF
C4
4,2K
R4
100nF
C6
25µF
C2
5,6K
R2
-12V
MASTER OSCILLATOR 410CST0868



Code	Type	Transistors
T1	NPN	BC 171

IC1 = SN 74221 Texas

IC2 = { AY-1-0212 G.I.E. / MK 50242 G.I.E.

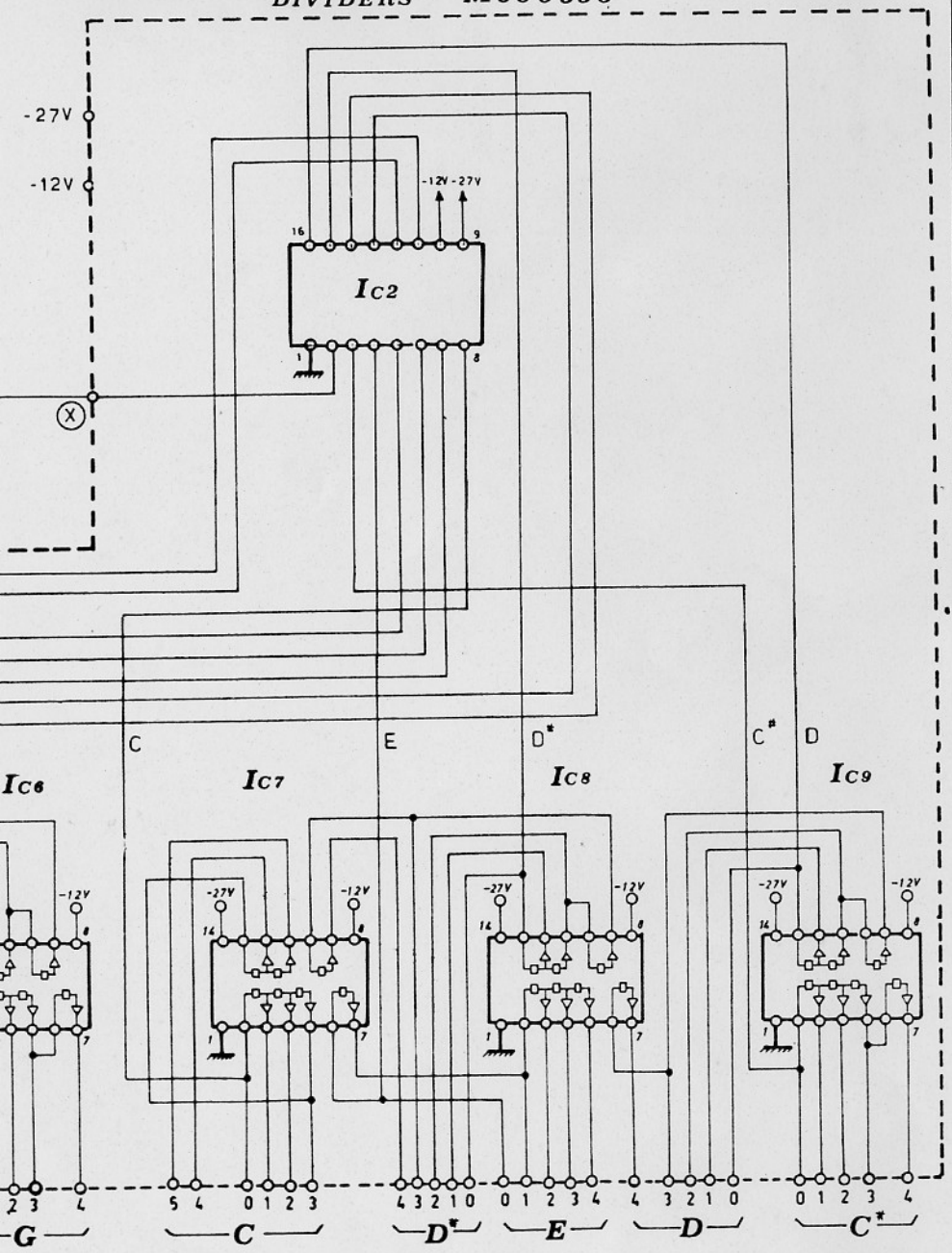
IC3 = IC9 = { EL 4444 NC Texas / HBF 470 AE S.G.S.

Note

1) All resistor marked by point • must be metal film ones 2% tollerance

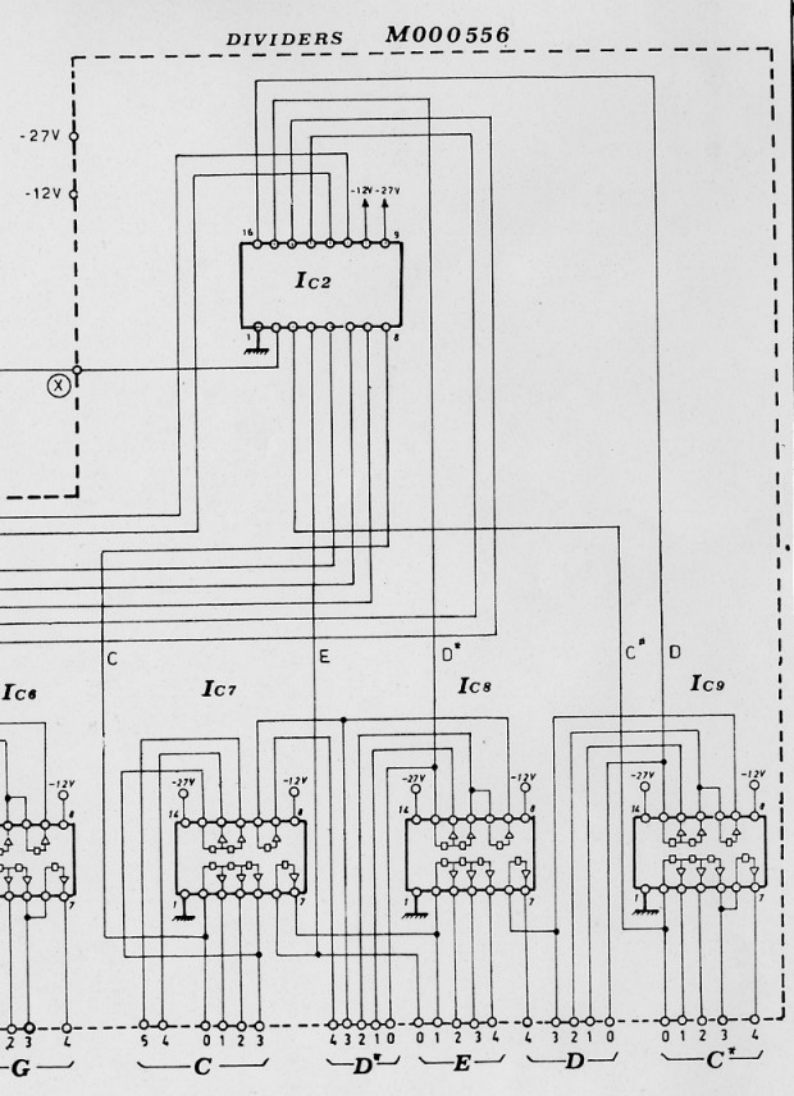
2) All capacitors marked by a point • are polycarbonate 2 % tollerance

Model	Object:	Sheet
WILGAMAT	Master oscillator and dividers	№ 3-18
		Date 5-12-77



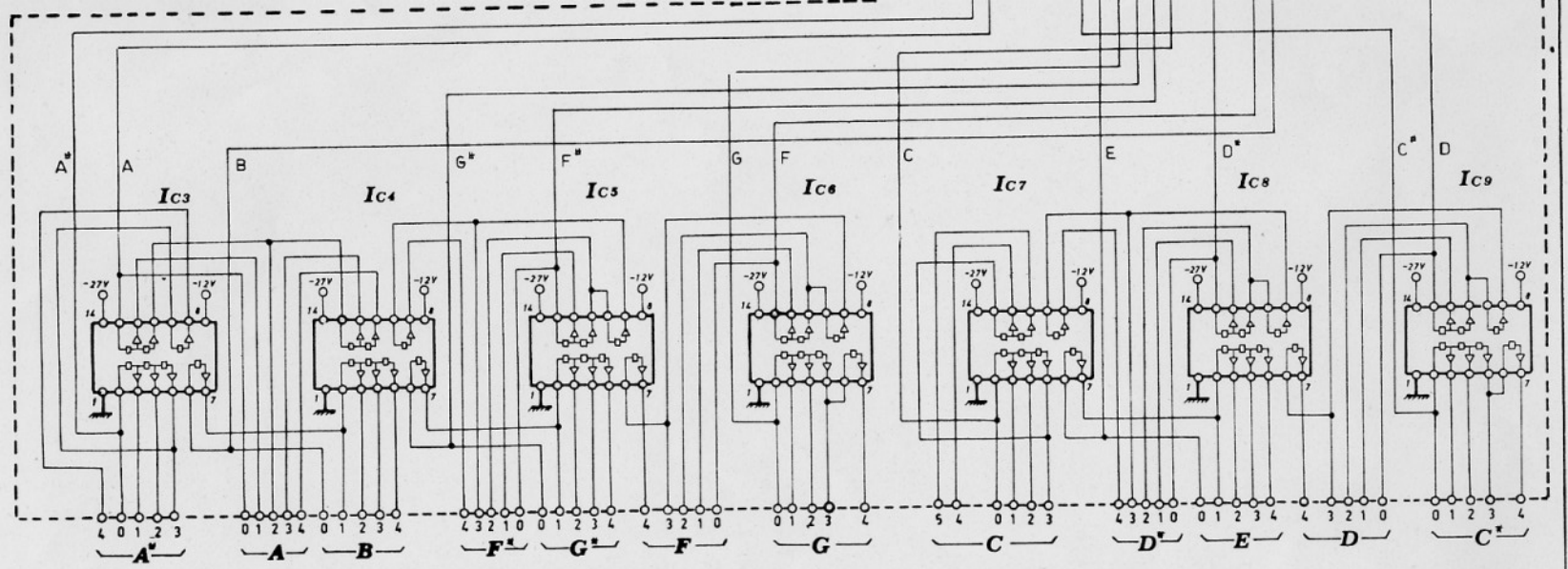
stor marked by point •
e metal film ones 2% tollerance
citors marked by a point •
lycarbonate 2 % tollerance

	Model WILGAMAT	Object: Master oscillator and dividers	Sheet N. 3-18
			Date 5-12-77



stor marked by point •
metal film ones 2% tollerance
citors marked by a point •
lycarbonate 2 % tollerance

	Model	Object:	Sheet N. 3-18
	WILGAMAT	Master oscillator and dividers	Date 5-12-77



Code	Type	Transistors
T1	NPN	BC 171

$Ic1$ = SN 74221 Texas

$Ic2$ = { AY-1-0212 G.I.E. / MK 50242 G.I.E.

$Ic3 = Ic9$ = { EL 4444 NC Texas / HBF 470 AE S.G.S.

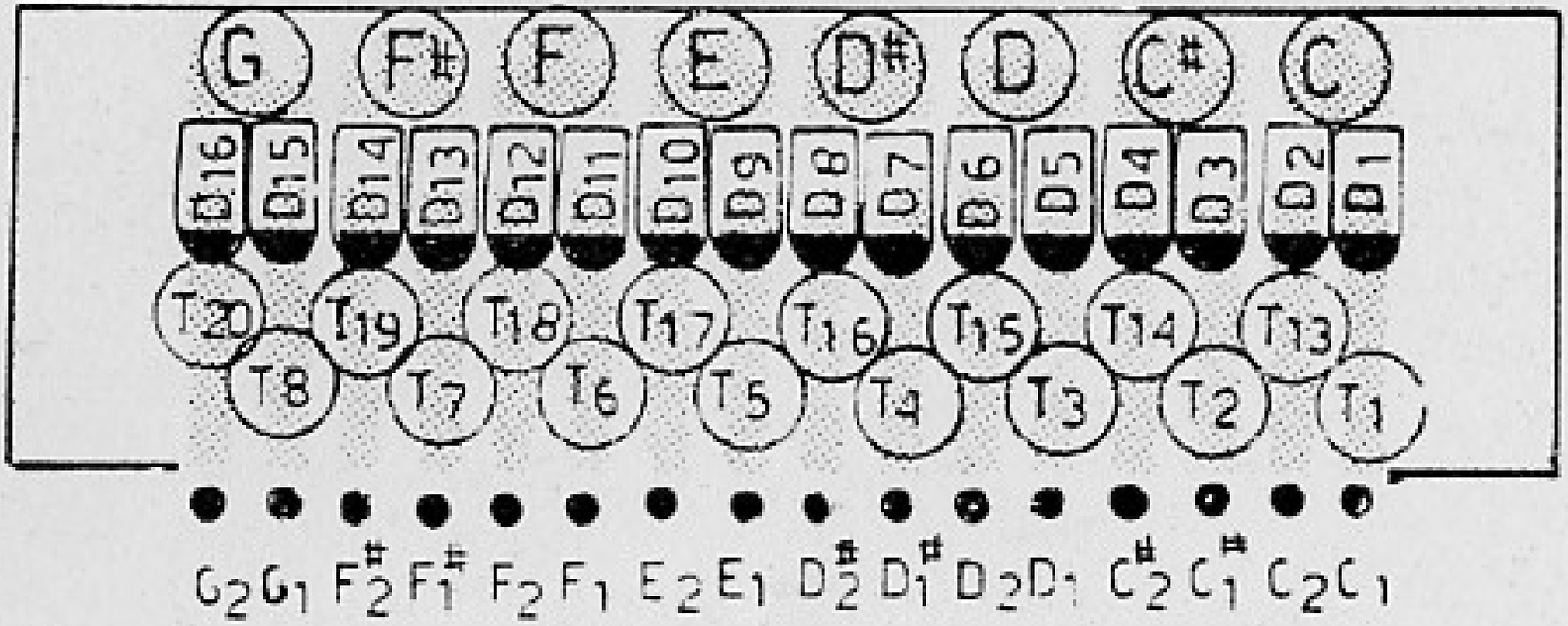
Note

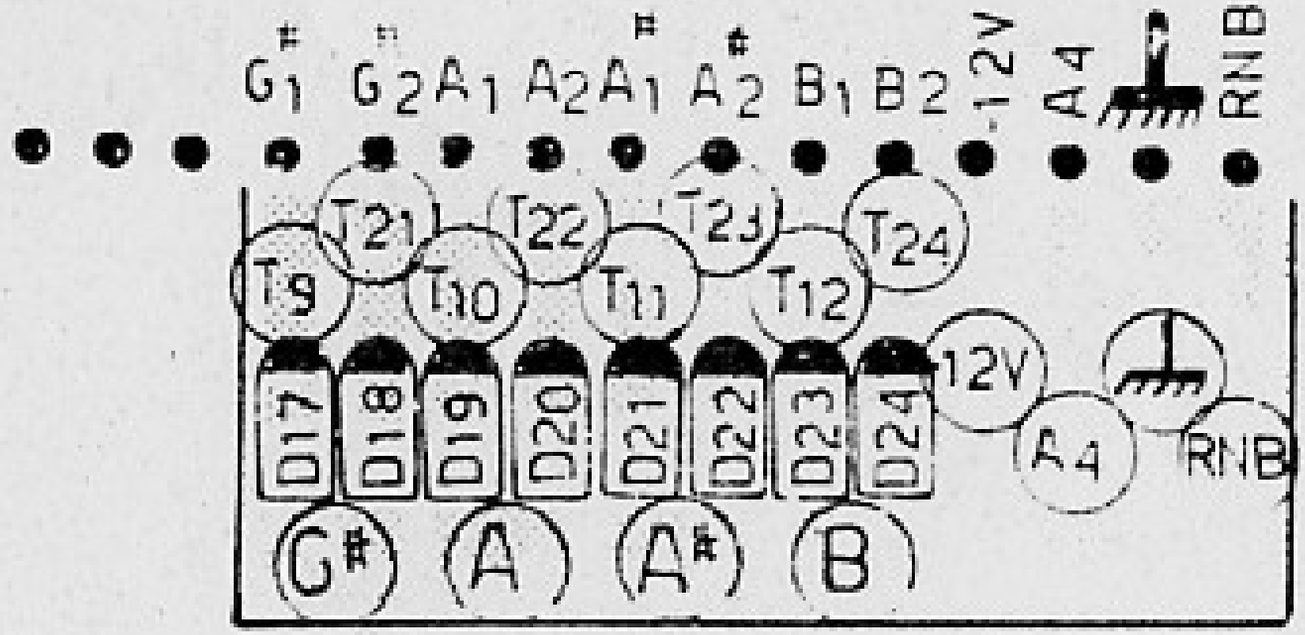
1) All resistor marked by point • must be metal film ones 2% tollerance

2) All capacitors marked by a point • are polycarbonate 2 % tollerance

	Model	Object:	Sheet N. 3-18
	WILGAMAT	Master oscillator and dividers	Date 5-12-77

410CST0877

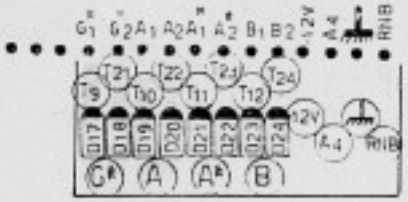




410CST0876

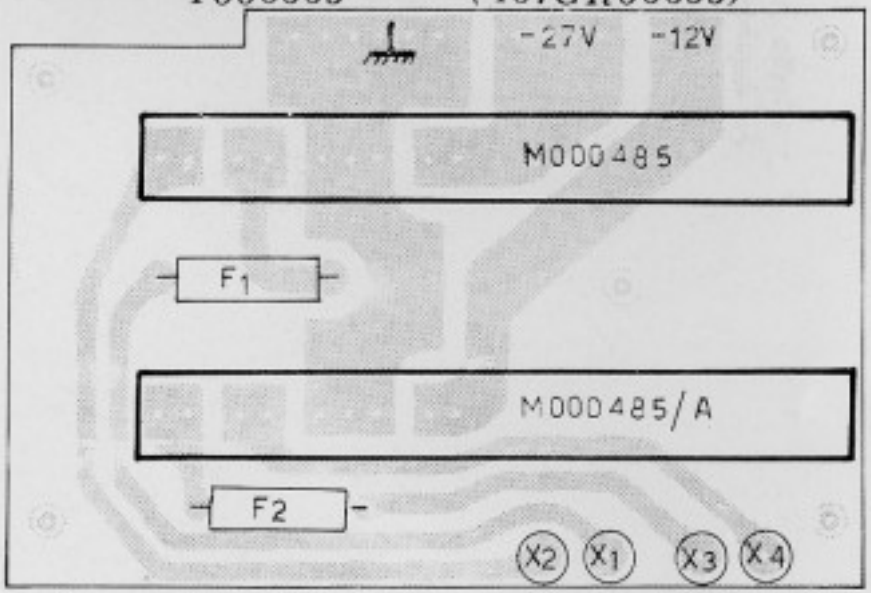
410CST0877



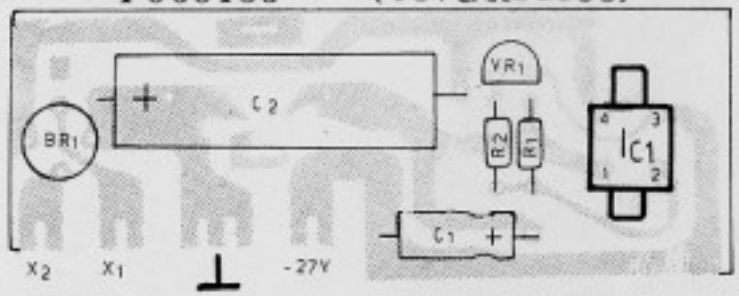


410CST0876

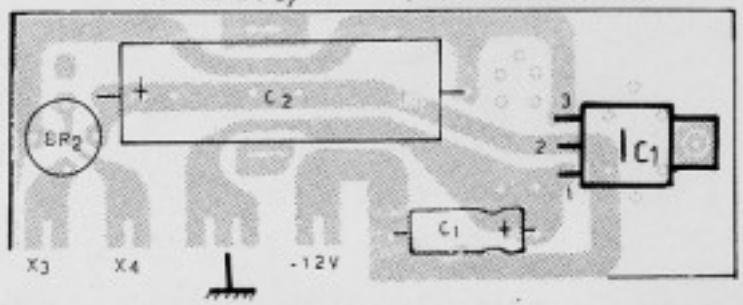
F000665 (457GR06655)



F000485 (457GR04855)



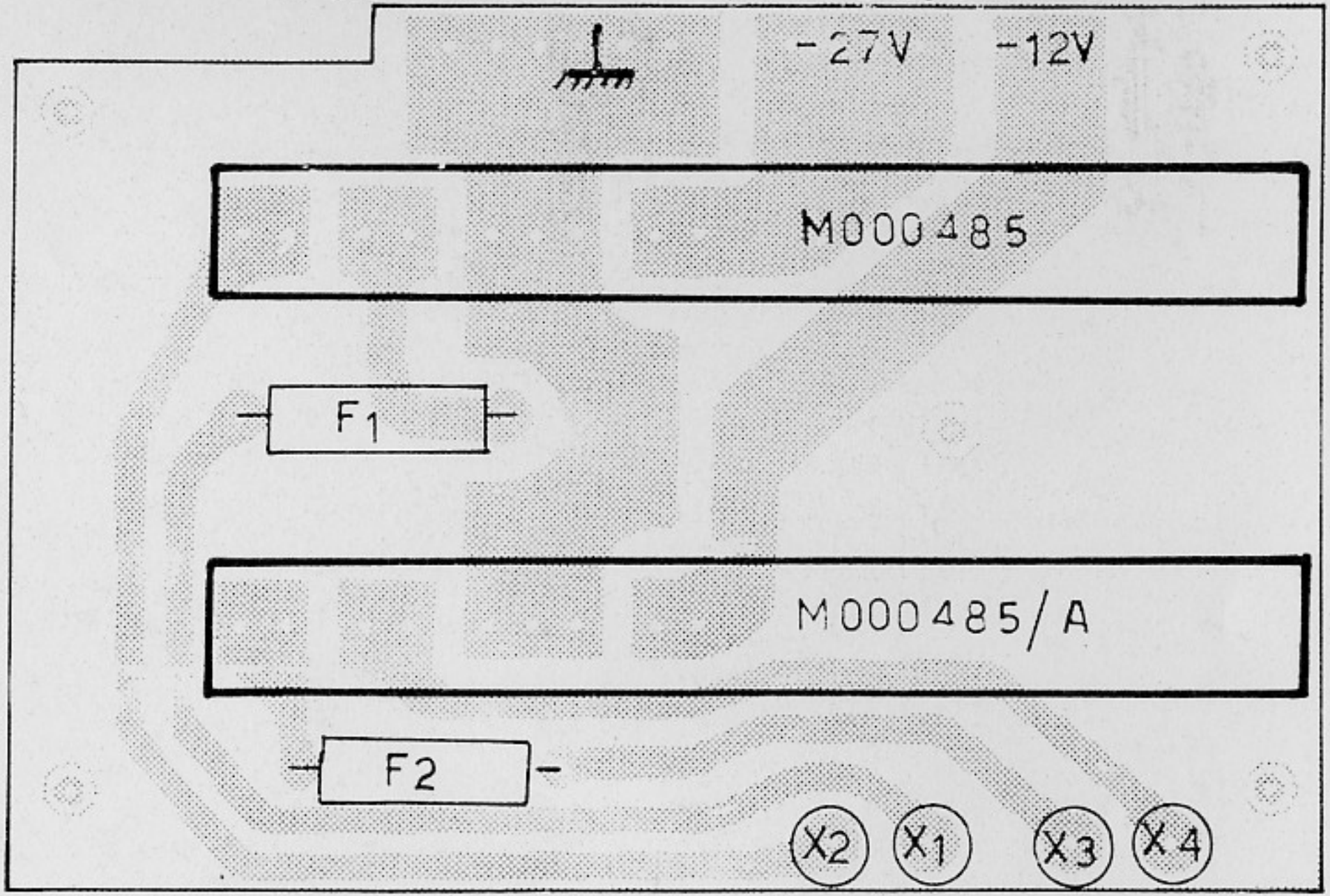
F000485/A (457GR04854)



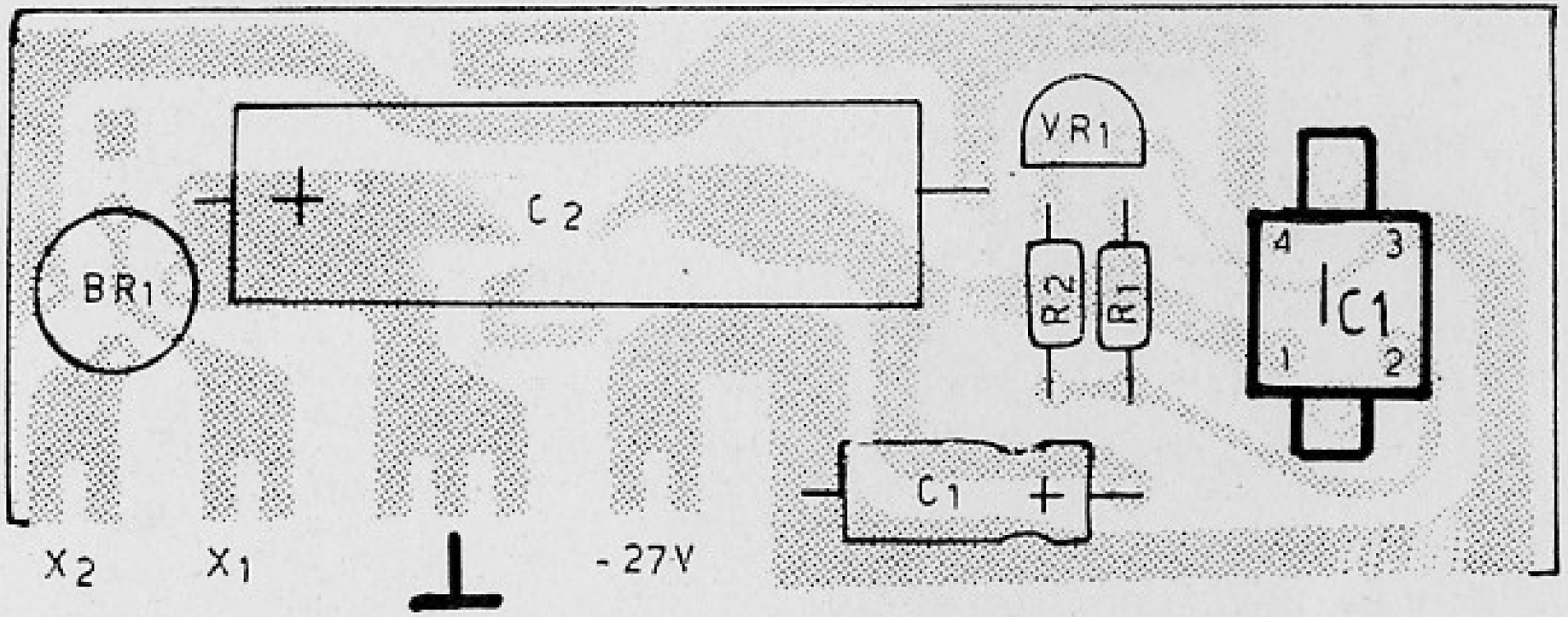
THE NUMBERS IN BRACKETS REPRESENT THE ELKA CODES OF THE 3002 MULTI-HYBRIDS WHILST THE OTHERS REPRESENT THE ELKA CODES OF THE NON-ASSEMBLED BOARDS.

	Model WILGAMAT	Object: Assembly of Printed Circuit	Sheet No 4-18
			Date 13-12-77

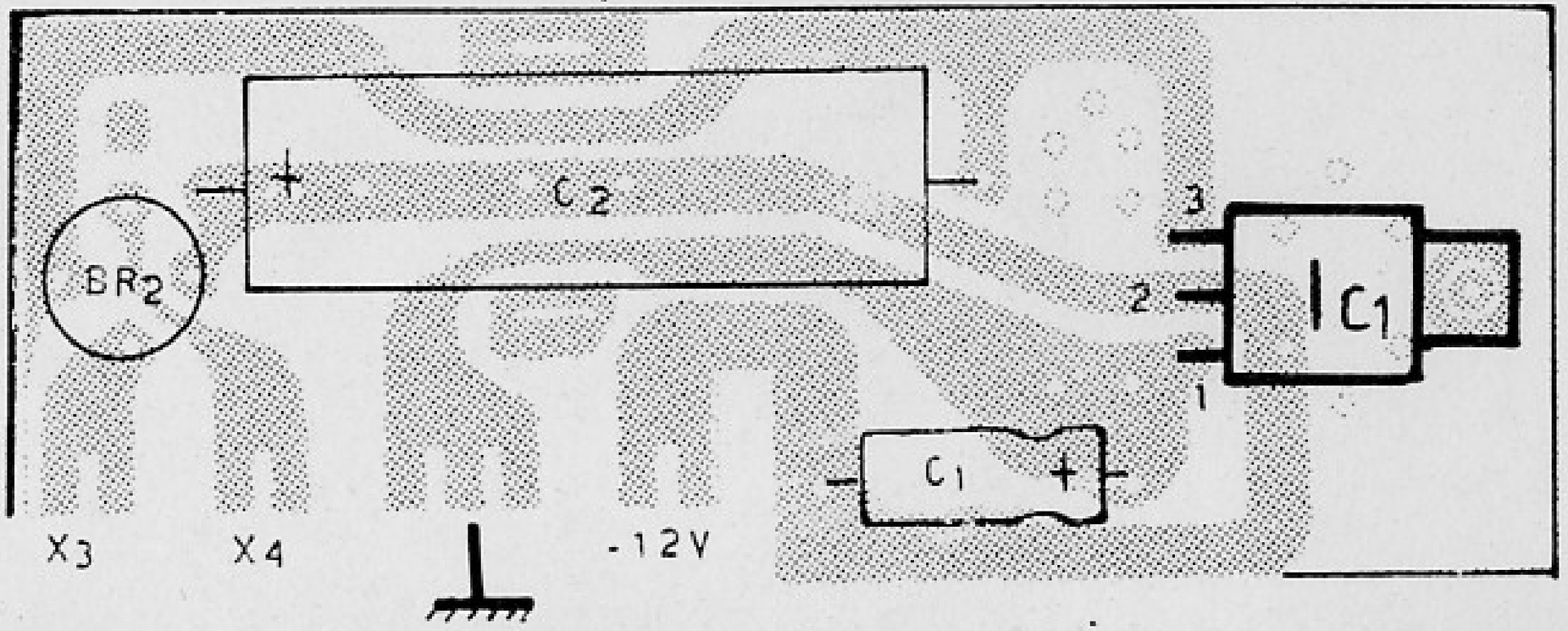
F000665 (457GR06655)

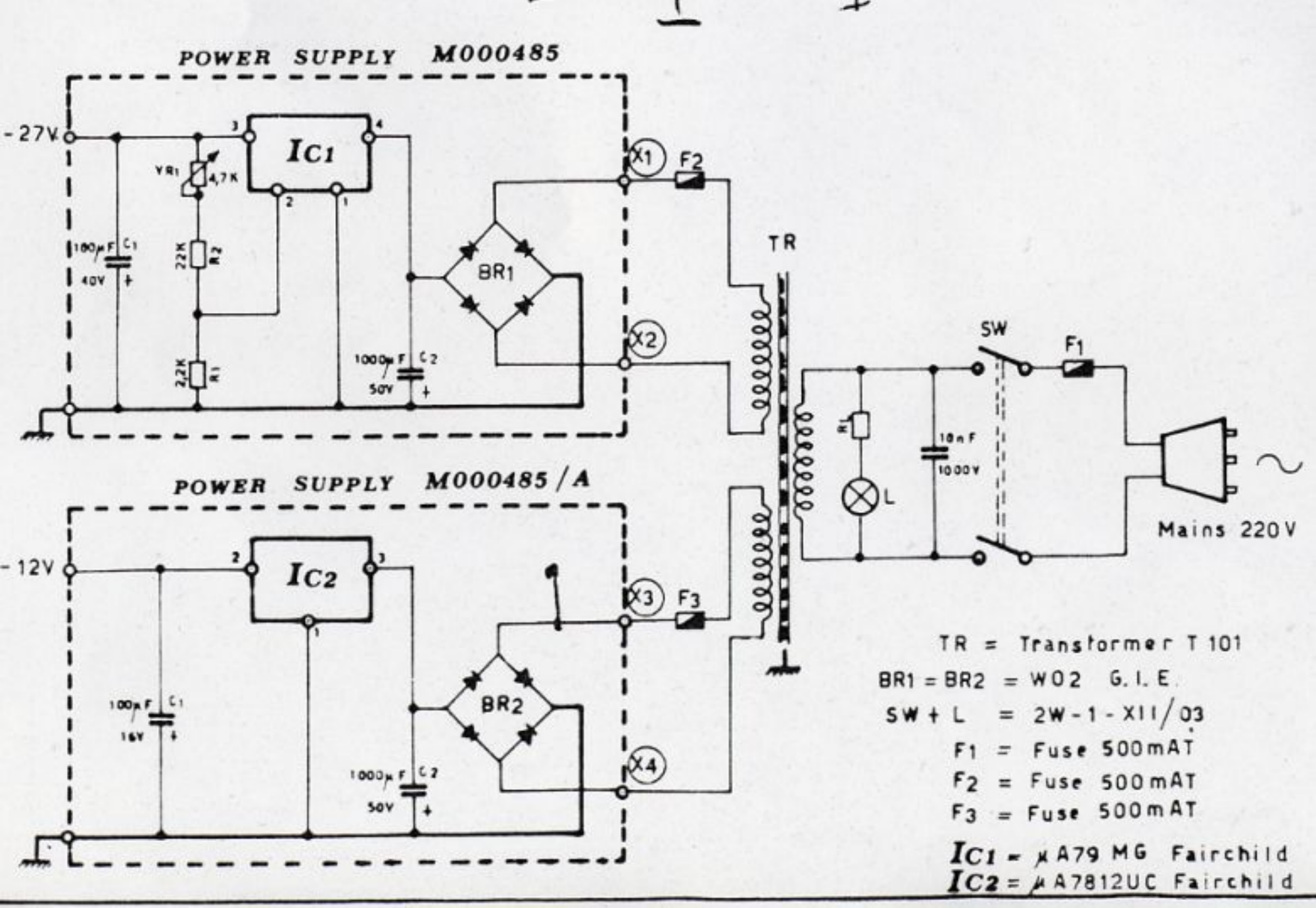


F000485 (457GR04855)



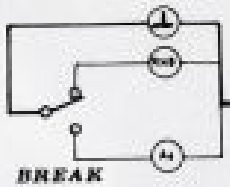
F000485/A (457GR04854)

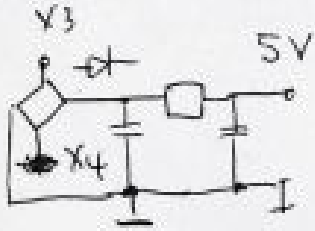



POWER SUPPLY M000485
-27V
IC1
YR1
4,7K
100µF C1
40V
22K R2
22K R1
1000µF C2
50V
BR1
X1
F2
X2
TR
SW
F1
RL
L
10nF
1000V
Mains 220V
POWER SUPPLY M000485/A
-12V
IC2
100µF C1
16V
1000µF C2
50V
BR2
X3
F3
X4
TR = Transformer T 101
BR1 = BR2 = W02 G.I.E.
SW + L = 2W-1-X11/03
F1 = Fuse 500mAT
F2 = Fuse 500mAT
F3 = Fuse 500mAT
IC1 = µA79 MG Fairchild
IC2 = µA7812UC Fairchild

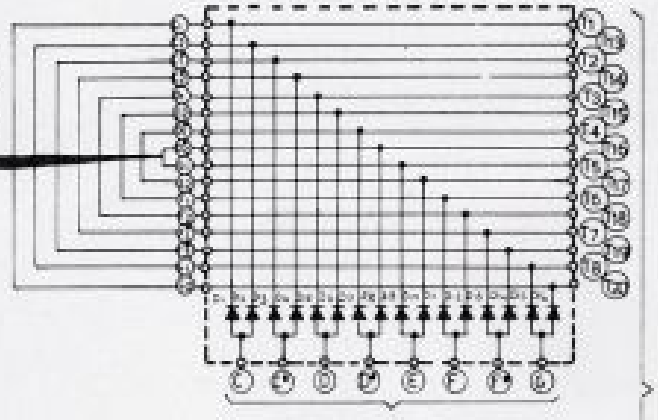


CONTACTS ASSEMBLY FOR KEYBOARD F000673





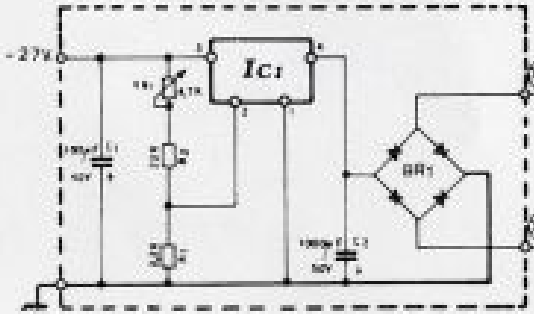
410CST0876



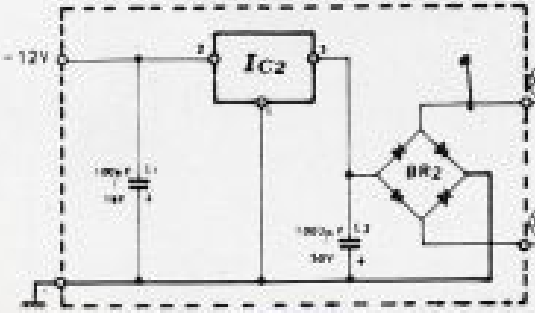
See Sheet N. 11-56 (410CST0743)

See Sheet N. 11-18 410CST0735 410CST0736

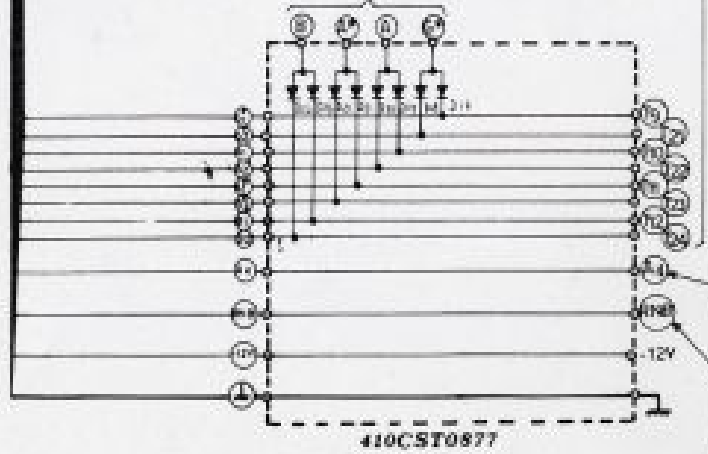
POWER SUPPLY M000485



POWER SUPPLY M000485/A



TR = Transformer T 101
BR1 = BR2 = W02 G.I.E
SW + L = 2W-1-X11/03
F1 = Fuse 500mAT
F2 = Fuse 500mAT
F3 = Fuse 500mAT
IC1 = μA79 MG Fairchild
IC2 = μA7812UC Fairchild

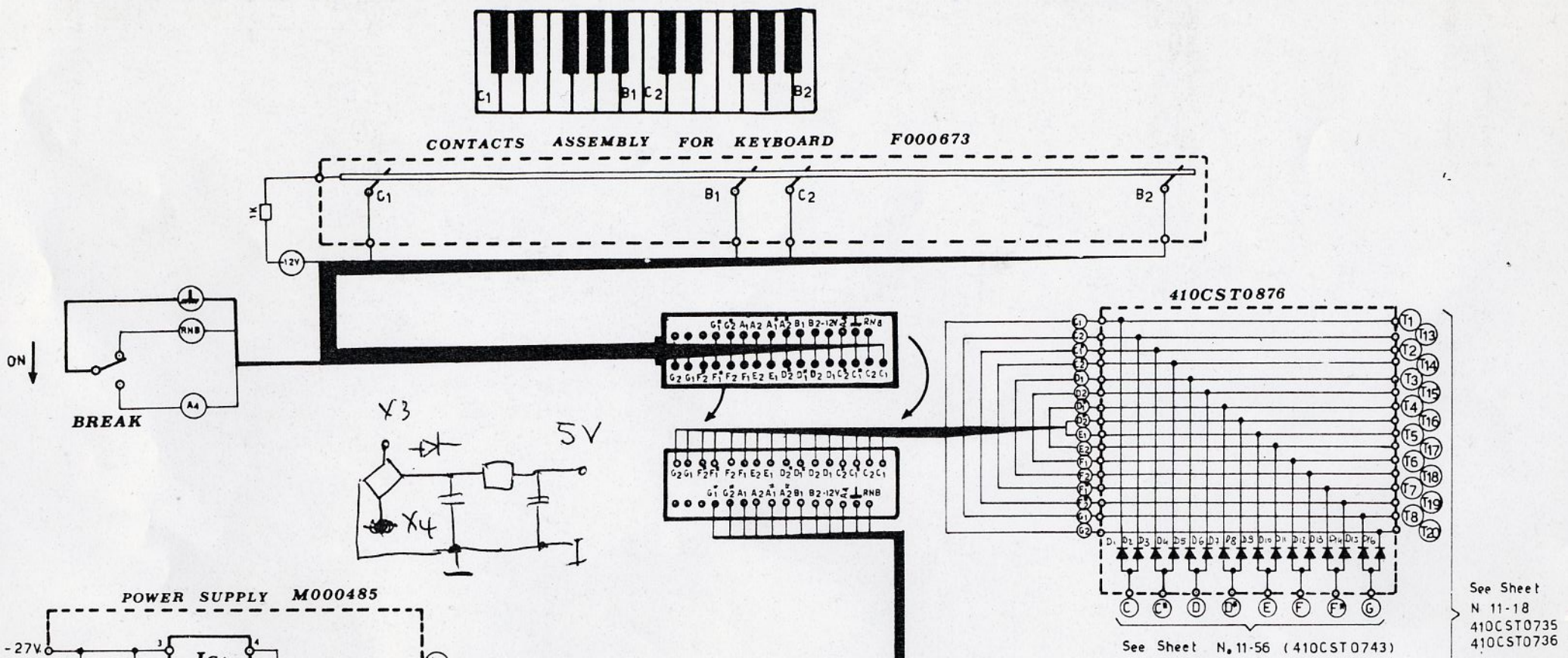


410CST0877

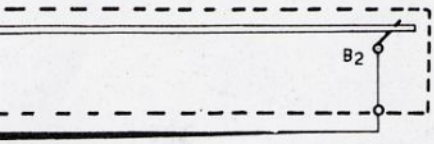
See Sheet N. 7-18 410CST0740

To Rhythm Unit
See Sheet N. 9-18 410CST0743

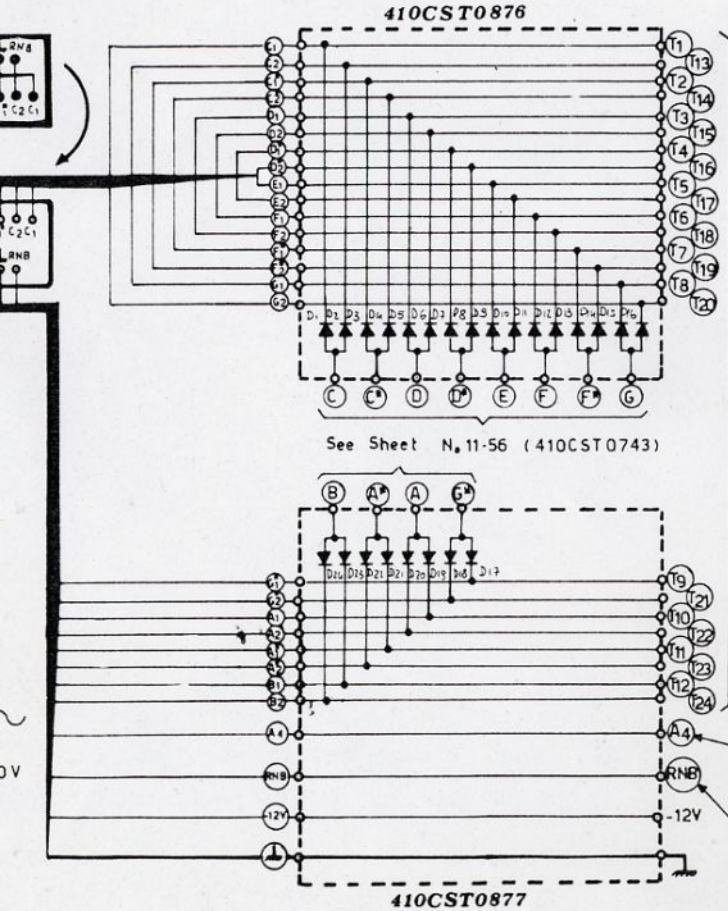
	Model	Object:	Sheet N. 5-18
	WILGAMAT	Power supply and contacts assembly for keyboard	Date 7-12-77


C1
B1
C2
B2
CONTACTS ASSEMBLY FOR KEYBOARD F000673
1K
12V
ON
RNB
A4
BREAK
X3
5V
X4
410CST0876
POWER SUPPLY M000485
-27V
See Sheet N, 11-56 (410CST0743)
See Sheet N 11-18 410CST0735 410CST0736

F000673

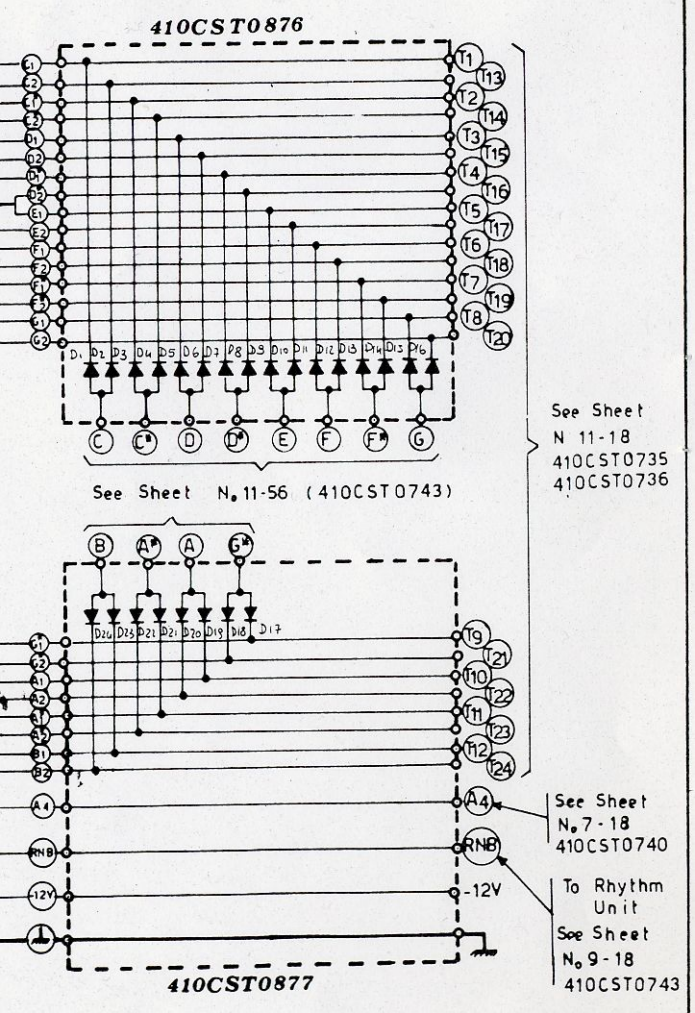


410CST0876

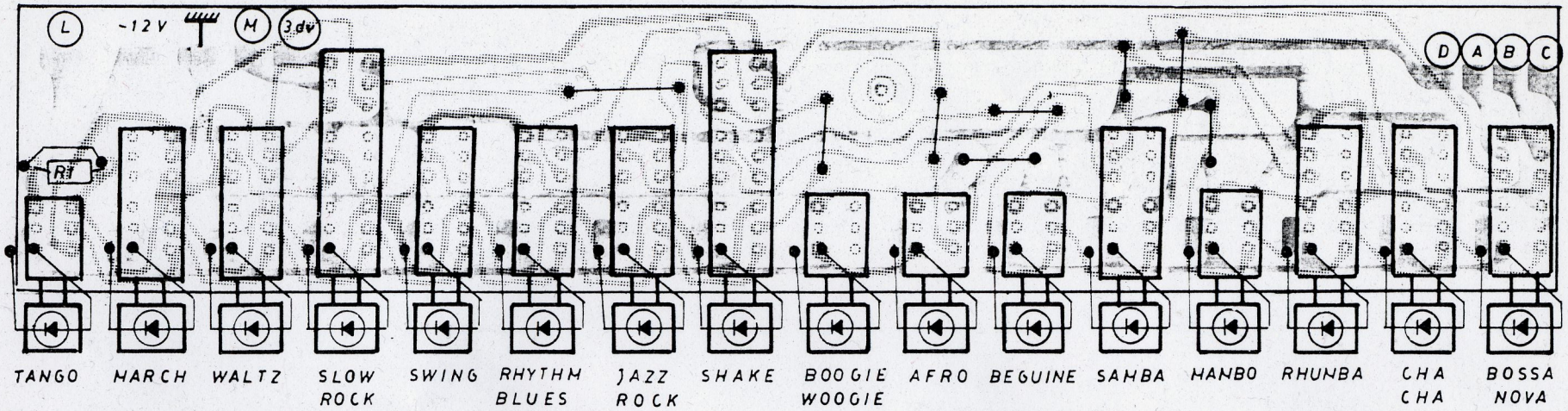


410CST0877

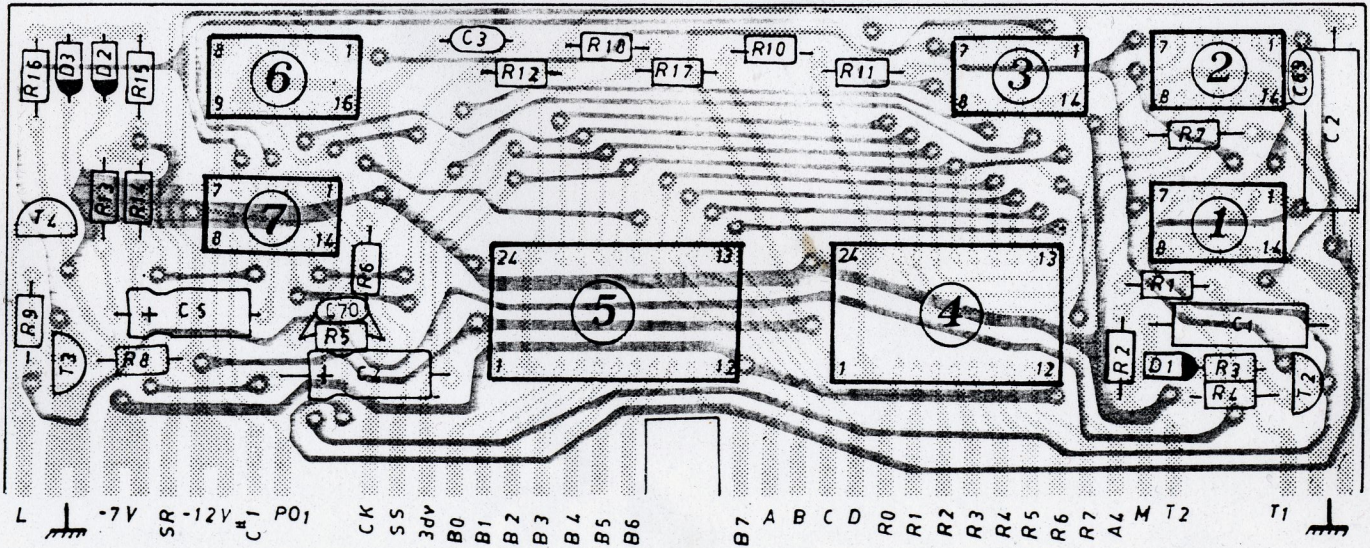
	Model	Object:	Sheet N. 5-18
	WILGAMAT	Power supply and contacts assembly for keyboard	Date 7-12-77


410CST0876
C1
C2
C#1
C#2
D1
D2
D#1
D#2
E1
E2
F1
F2
F#1
F#2
G1
G2
T1
T2
T3
T4
T5
T6
T7
T8
T13
T14
T15
T16
T17
T18
T19
T20
D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16
C
C#
D
D#
E
F
F#
G
See Sheet No. 11-56 (410CST0743)
See Sheet N 11-18 410CST0735 410CST0736
B
A#
A
G#
D22 D23 D21 D20 D19 D18 D17
B1
B2
A1
RNB
-12V
T9
T10
T11
T12
T21
T22
T23
T24
A4
RNB
-12V
See Sheet No. 7-18 410CST0740
To Rhythm Unit
See Sheet No. 9-18 410CST0743
410CST0877

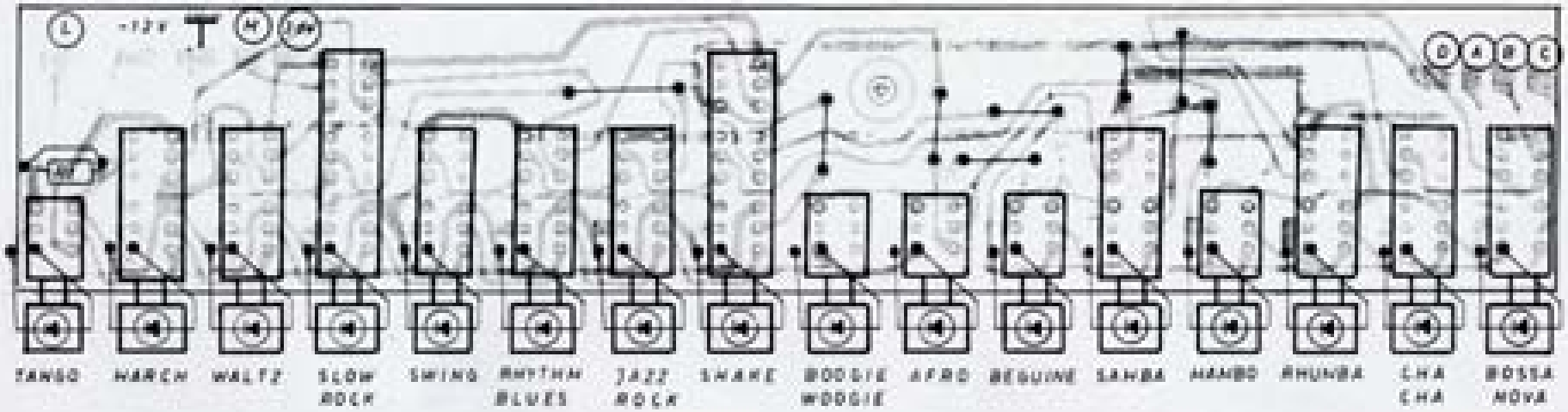
(427GR08010) 410CST0801 410CST0802 (427GR08020)



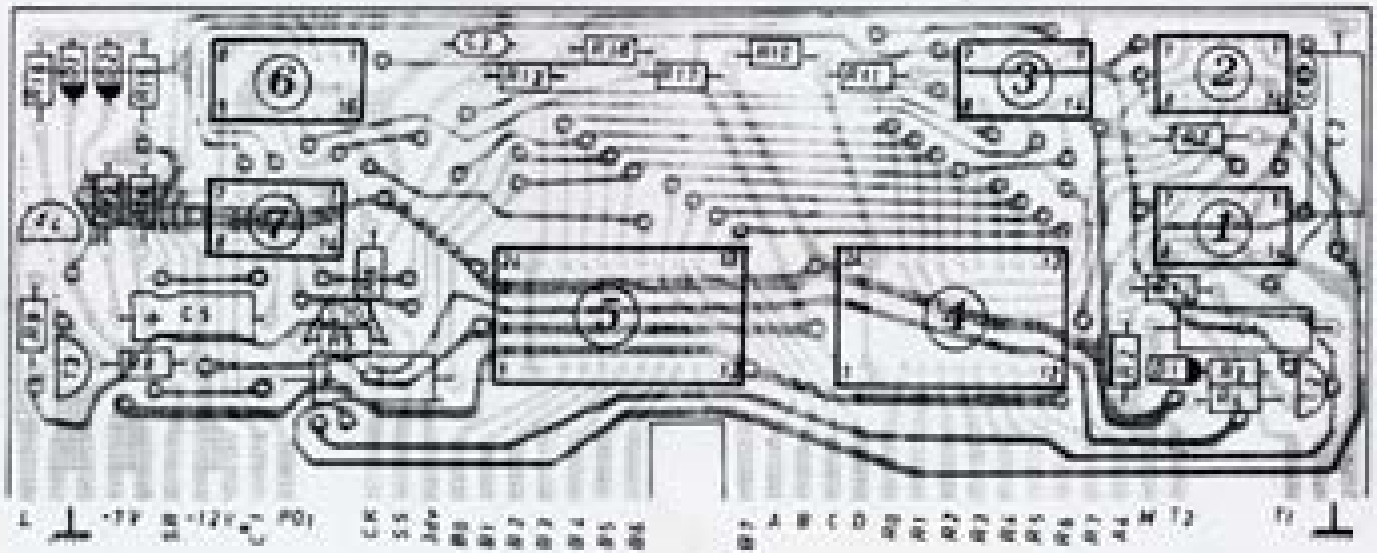
410CST0740 (427GR07400)



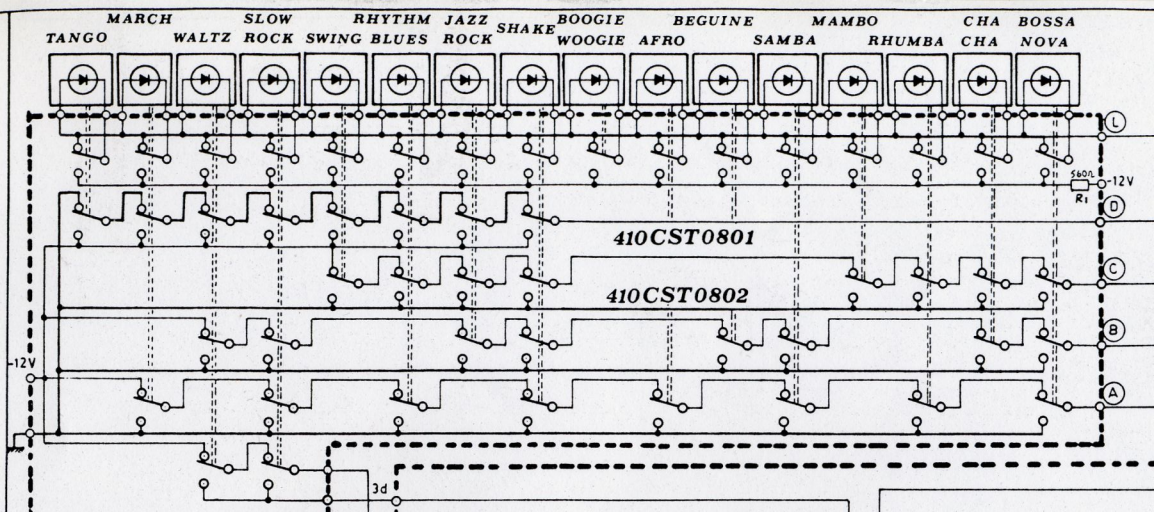
(427GR08010) 410CST0801 410CST0802 (427GR08020)

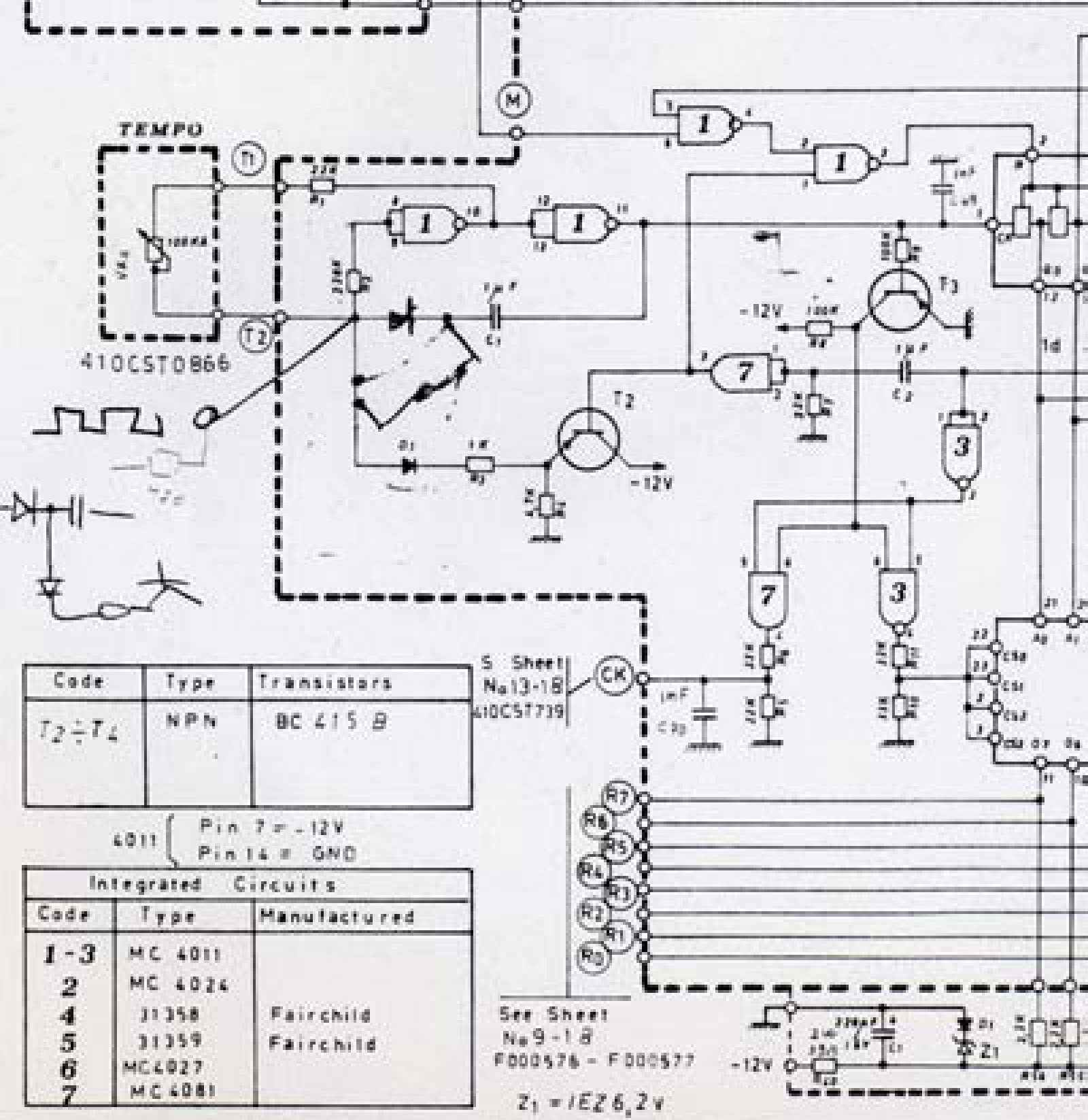


410CST0740 (427GR07400)



	Model WILLIAMS T	Object Assembly of Printed Circuit	Sheet No. 5-18
			Date 21-4-77

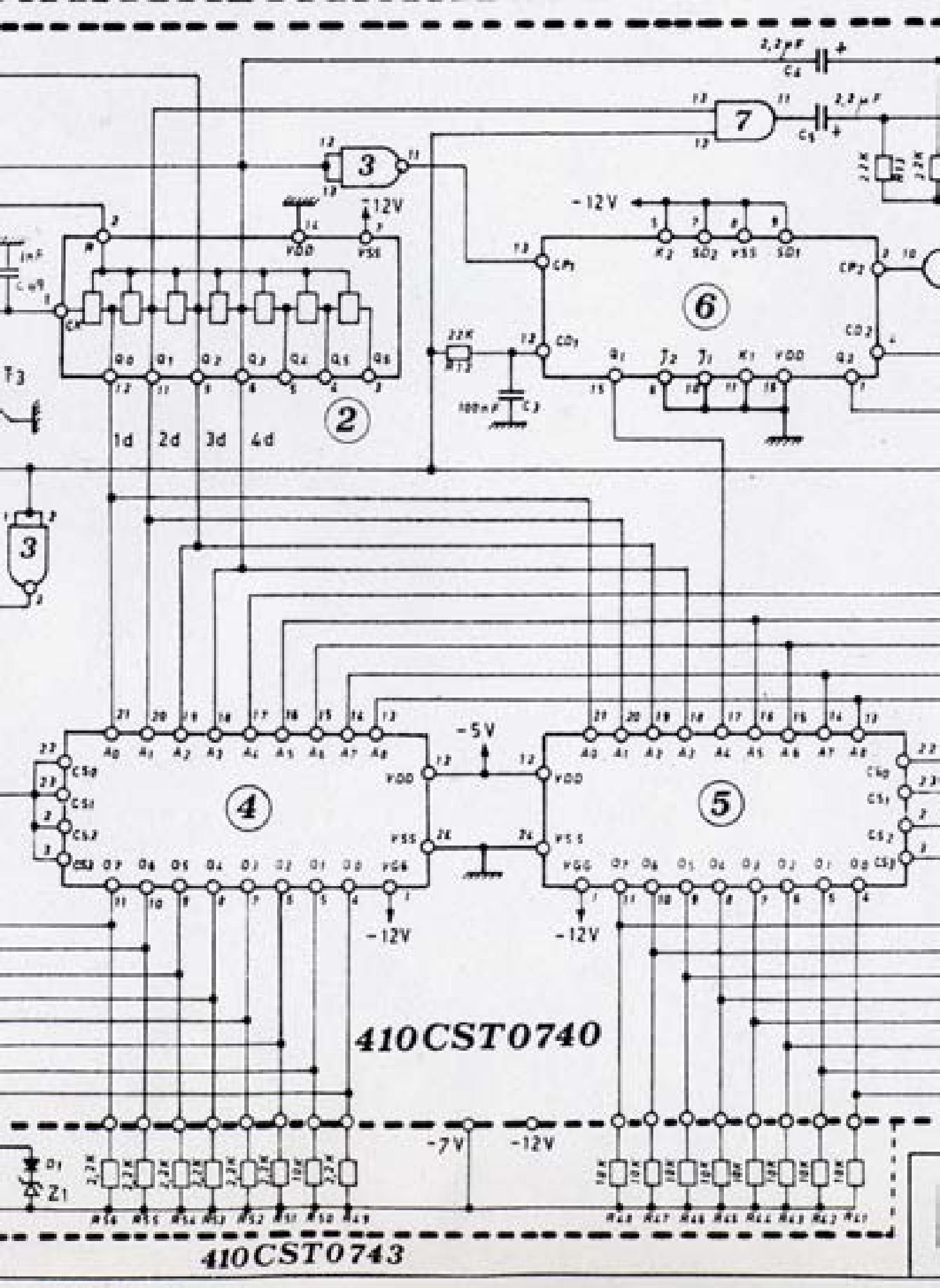

TANGO
MARCH WALTZ
SLOW ROCK
SWING
RHYTHM BLUES
JAZZ ROCK
SHAKE
BOOGIE WOOGIE
AFRO
BEGUINE
SAMBA
MAMBO
RHUMBA
CHA CHA
BOSSA NOVA
L
D
C
B
A
-12V
560Ω
Ri
410CST0801
410CST0802
3d

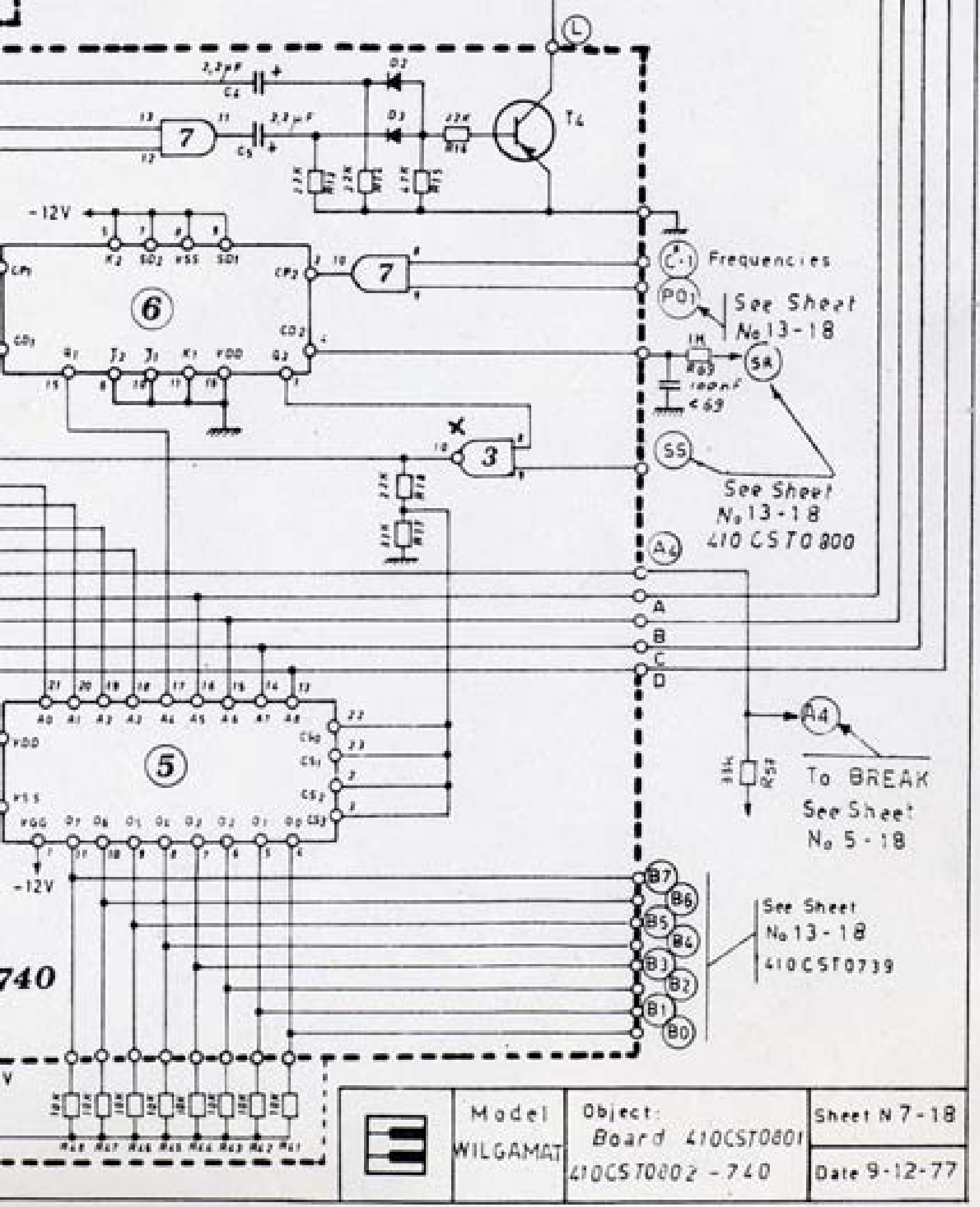


Code	Type	Transistors
T2 ÷ T4	NPN	BC 415 B

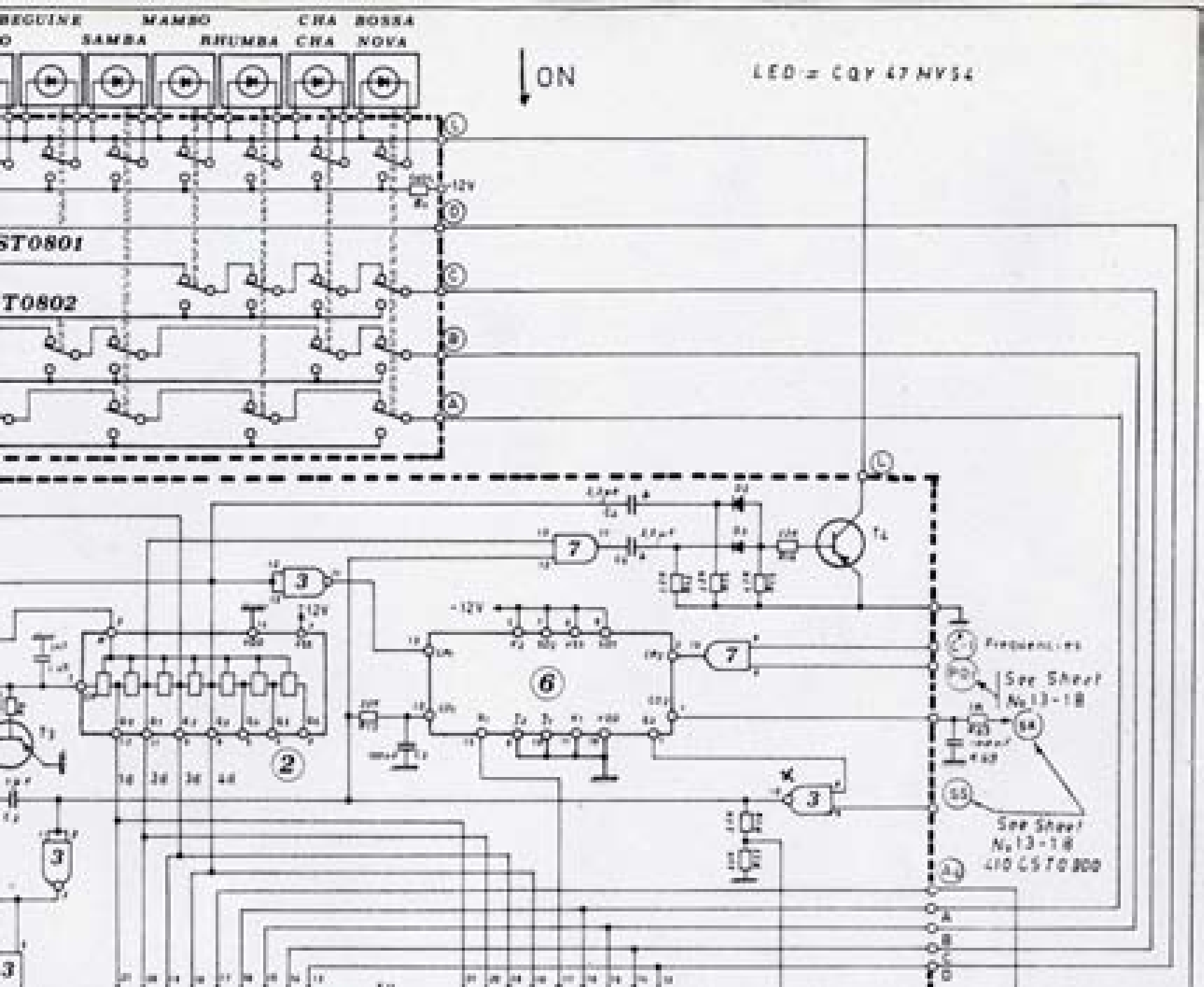
4011 { Pin 7 = -12V
Pin 14 = GND

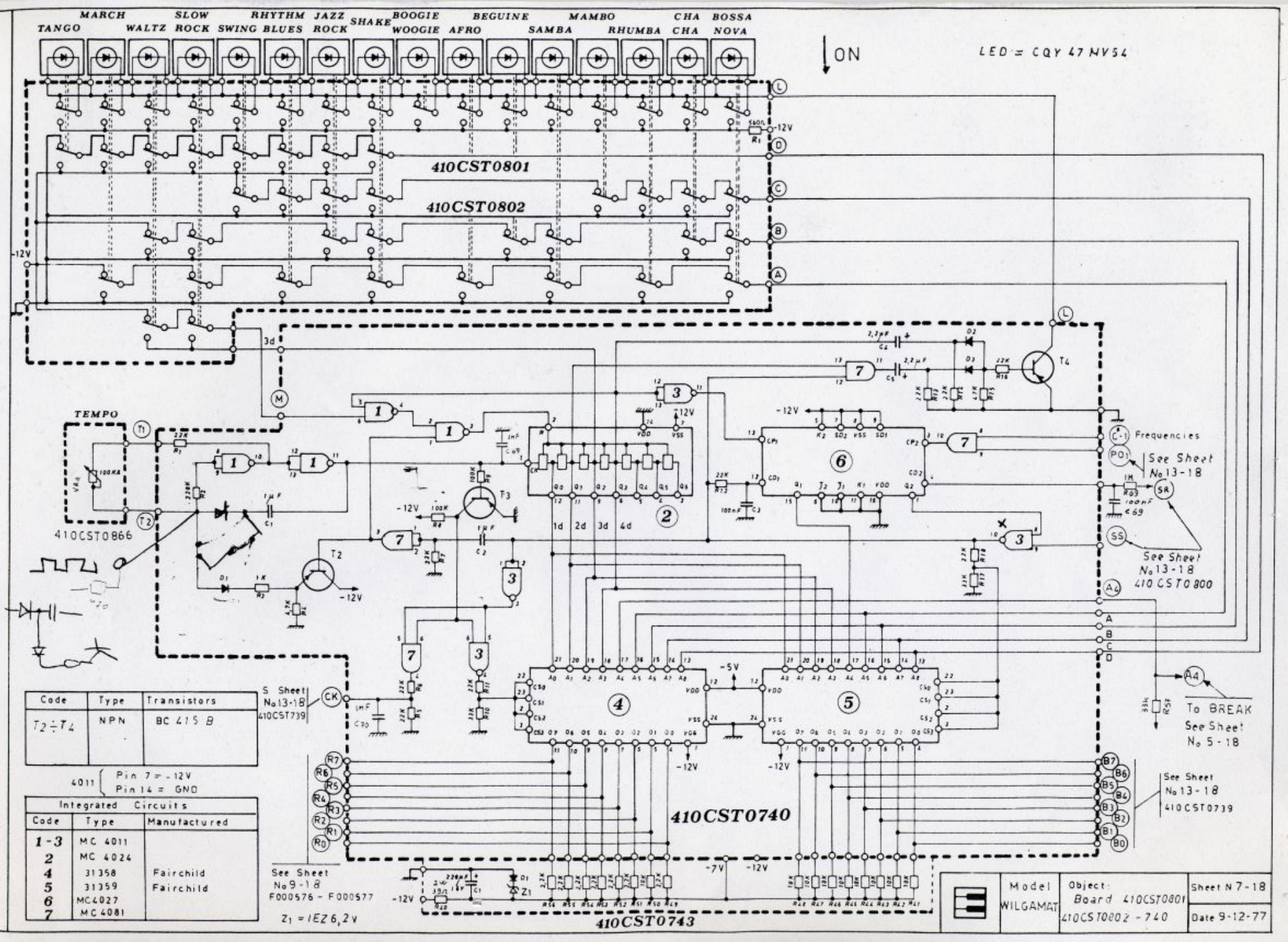
Integrated Circuits		
Code	Type	Manufactured
1-3	MC 4011	
2	MC 4024	
4	31358	Fairchild
5	31359	Fairchild
6	MC4027	
7	MC 4081	


7
3
-12V
VDD
VSS
2
1d
2d
3d
4d
6
-12V
22K
100nF
-5V
4
5
-12V
-12V
410CST0740
-7V
-12V
410CST0743



	Model WILGAMAT	Object: Board 410CST0801 410CST0802 - 740	Sheet N 7-18
			Date 9-12-77


BEGUINE
SAMBA
MAMBO
RHUMBA
CHA CHA
BOSSA NOVA
ON
LED = CQY 47 MV 54
ST0801
T0802
12V
-12V
See Sheet No 13-18
See Sheet No 13-18 of CS T0800



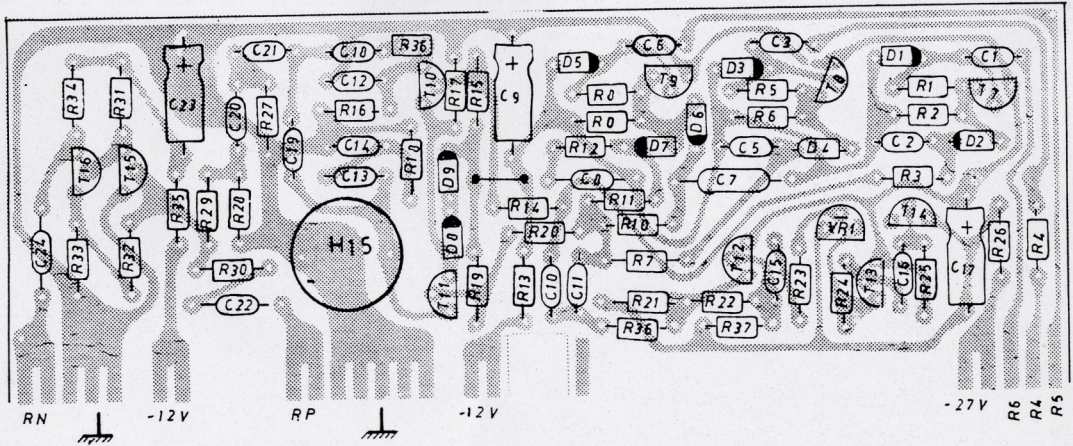
Code	Type	Transistors
T2 ÷ T4	NPN	BC 415 B

4011 { Pin 7 = -12V, Pin 14 = GND }

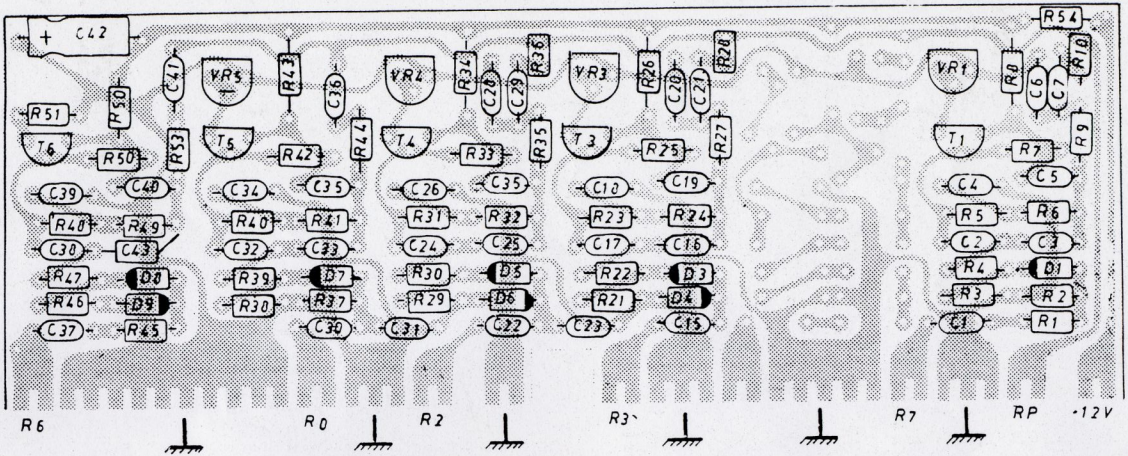
Integrated Circuits		
Code	Type	Manufactured
1-3	MC 4011	
2	MC 4024	
4	31358	Fairchild
5	31359	Fairchild
6	MC4027	
7	MC 4081	

	Model WILGAMAT	Object: Board 410CST0801 410CST0802 - 740	Sheet N 7-18
			Date 9-12-77

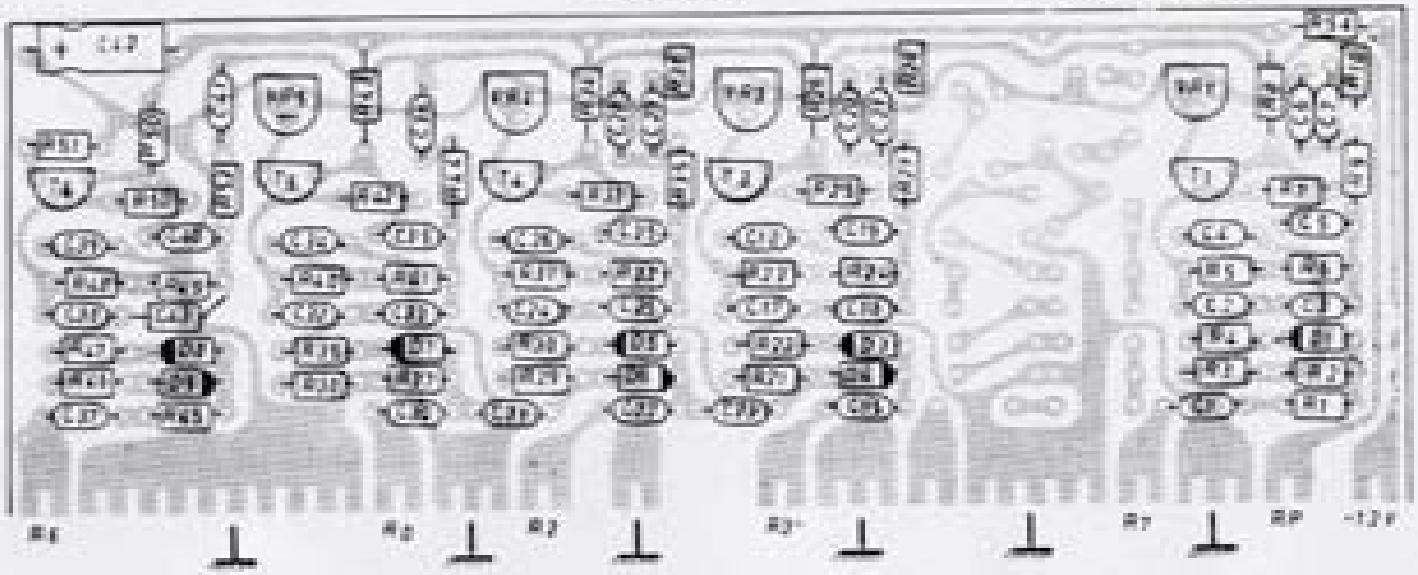
F000577 (427GR05774)



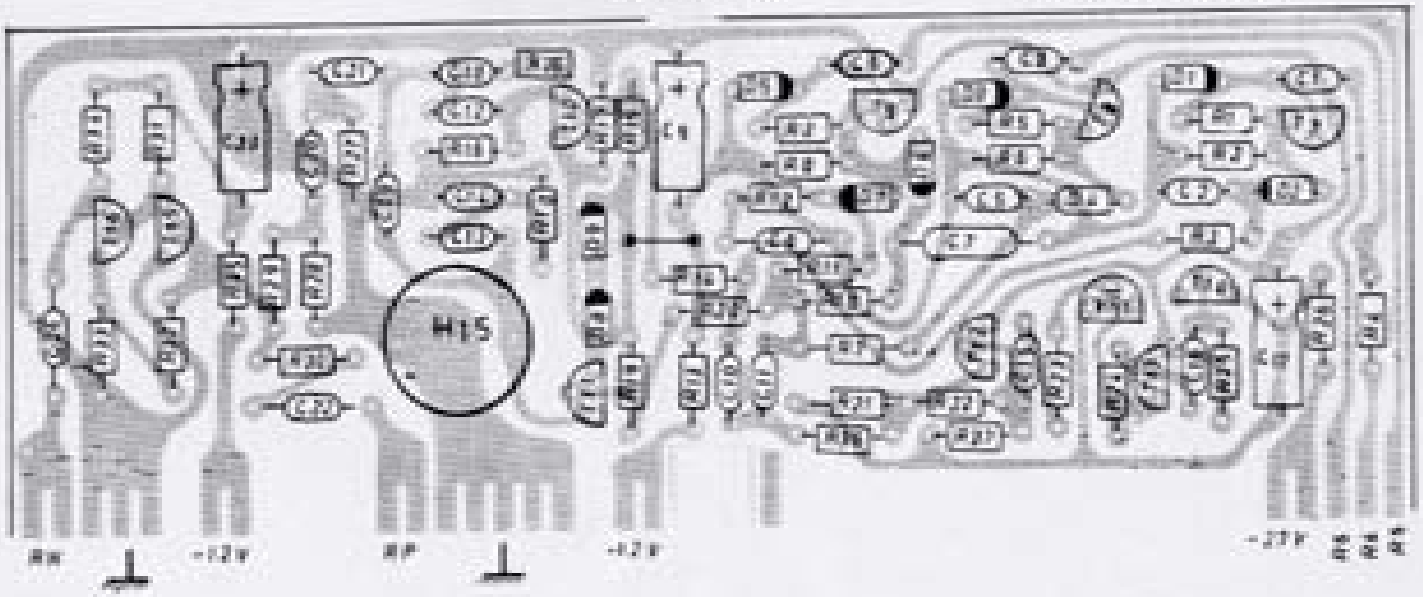
F000576 (427GR05764)



F000576 A27GR05760



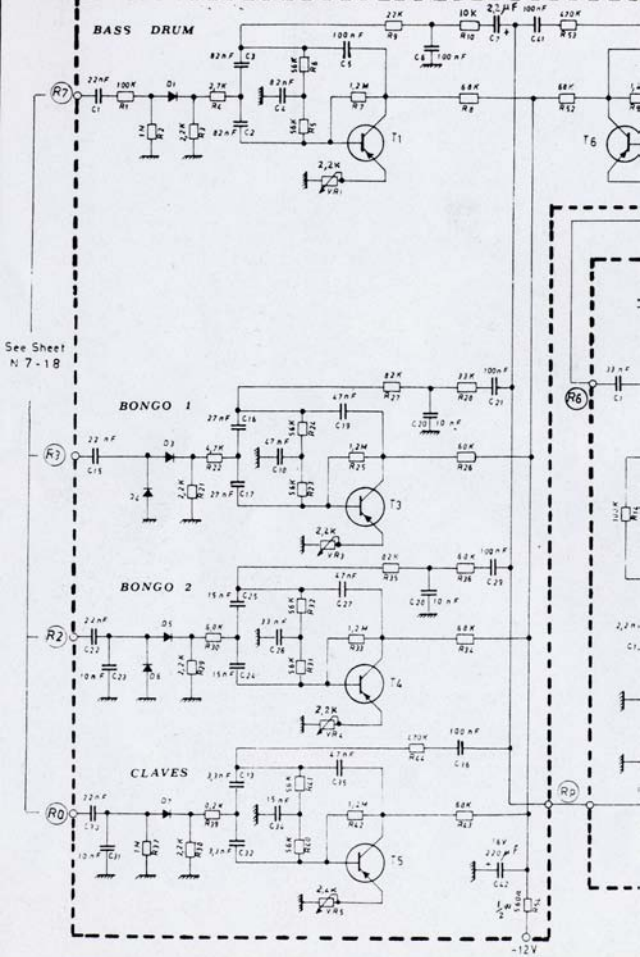
F000577 A27GR05770



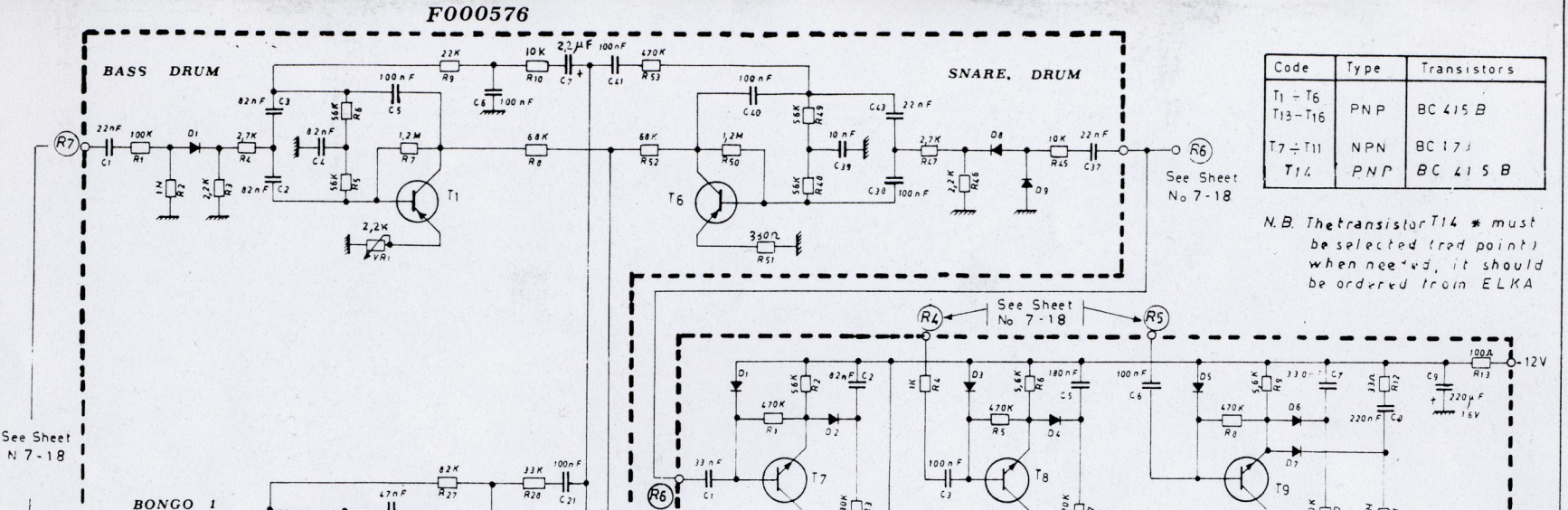
THE NUMBERS ON BRACKETS REPRESENT THE SCAN CODES OF THE ASSEMBLED BOARDS WHILST THE OTHERS REPRESENT THE SCAN CODES OF THE NON-ASSEMBLED BOARDS.

	Model WILLIAMS	Object Assembly of Printed Circuit	Sheet No. 8-18
			Date 5-8-77

F000576



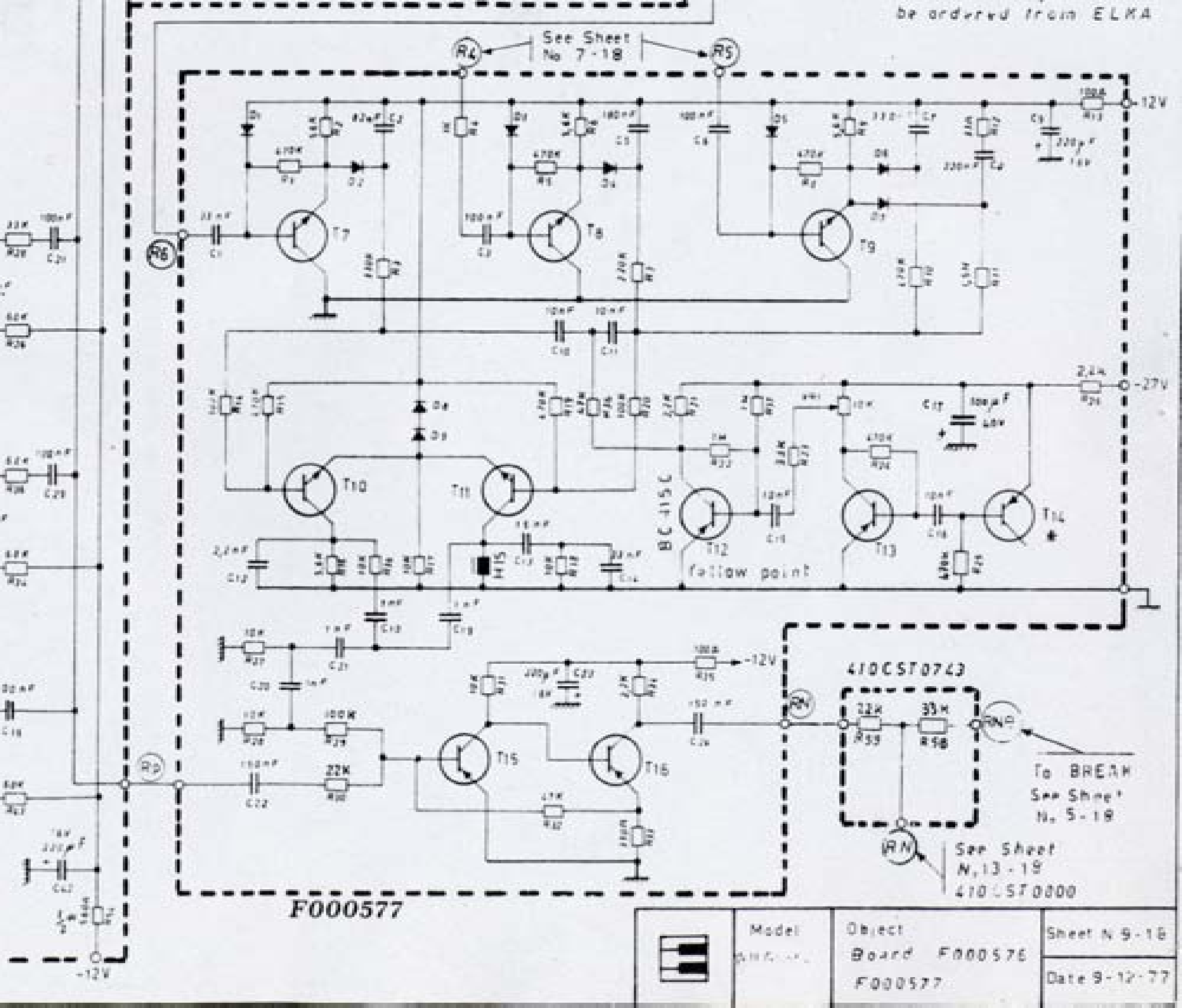
F000576



Code	Type	Transistors
T1 – T6 T13 – T16	PNP	BC 415 B
T7 ÷ T11	NPN	BC 171
T14	PNP	BC 415 B

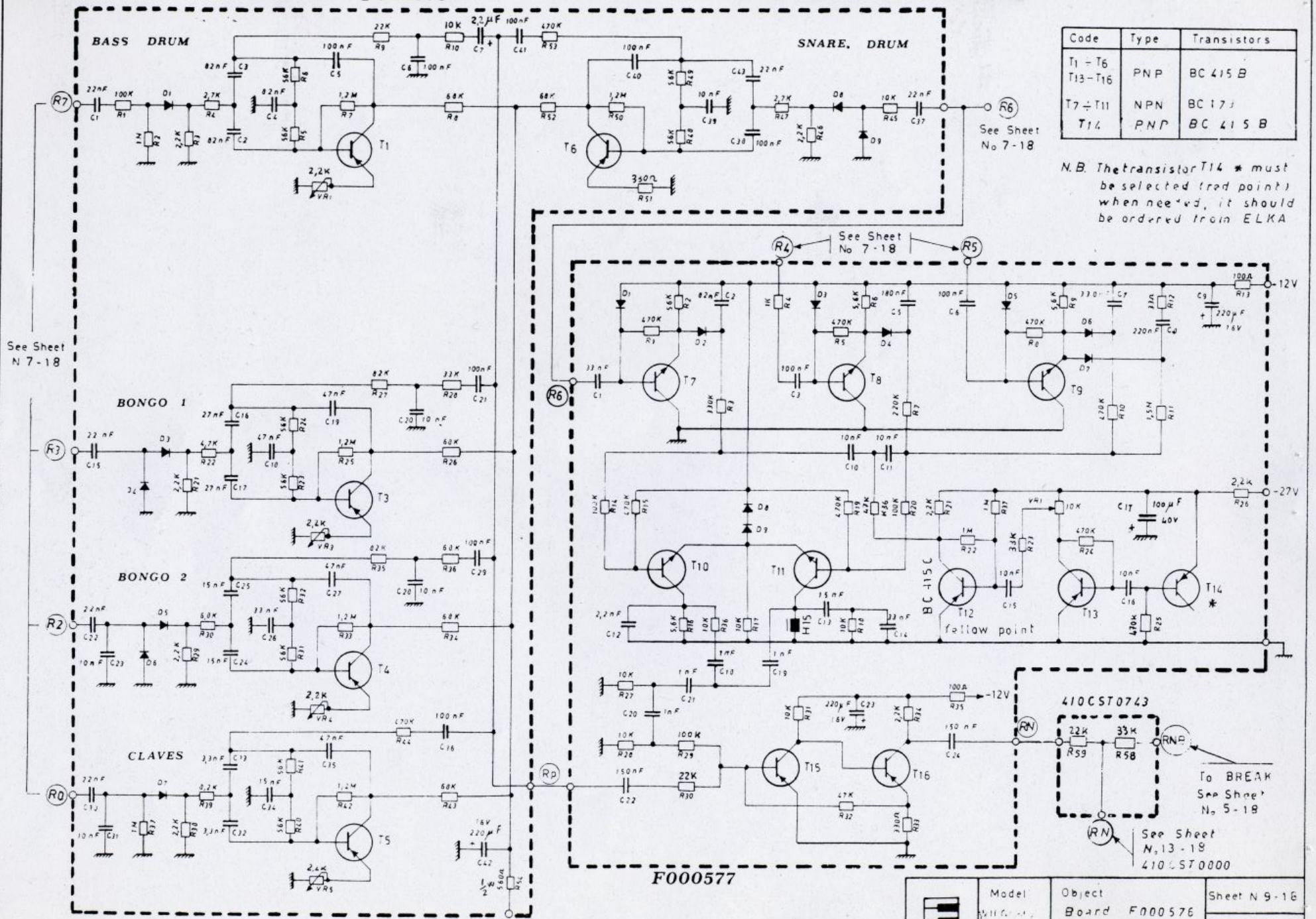
N.B. The transistor T14 * must be selected (red point) when needed, it should be ordered from ELKA

be ordered from ELKA



	Model	Object Board F000576 F000577	Sheet N 9-18 Date 9-12-77

F000576



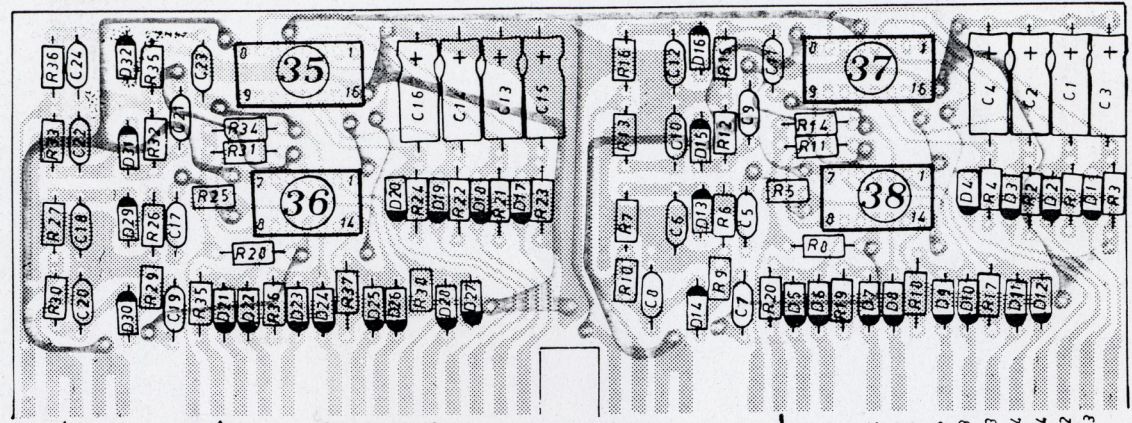
Code	Type	Transistors
T1 – T6 T13 – T16	PNP	BC 415 B
T7 ÷ T11	NPN	BC 171
T14	PNP	BC 415 B

N.B. The transistor T14 * must be selected (red point) when needed, it should be ordered from ELKA

F000577

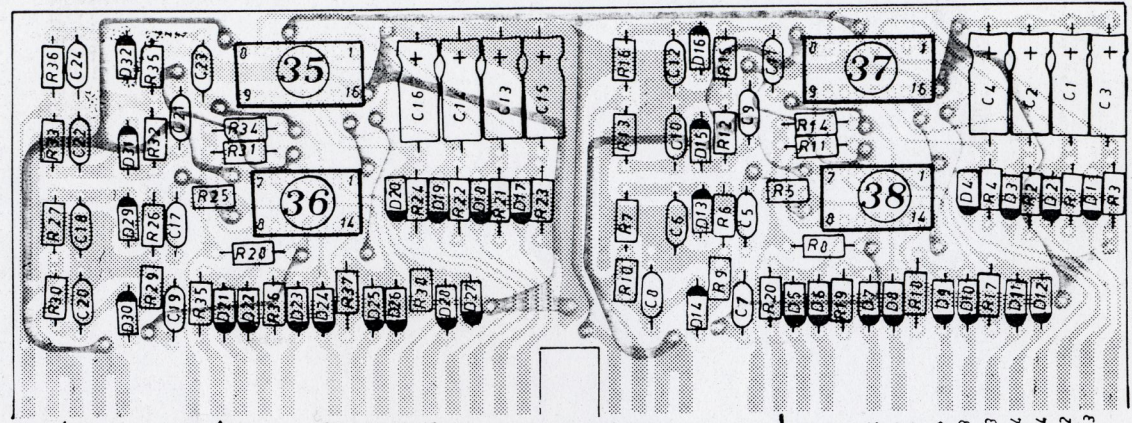
	Model	Object	Sheet N 9-18
		Board F000576 F000577	Date 9-12-77

410CST0735 (427GR0735A-B-C)



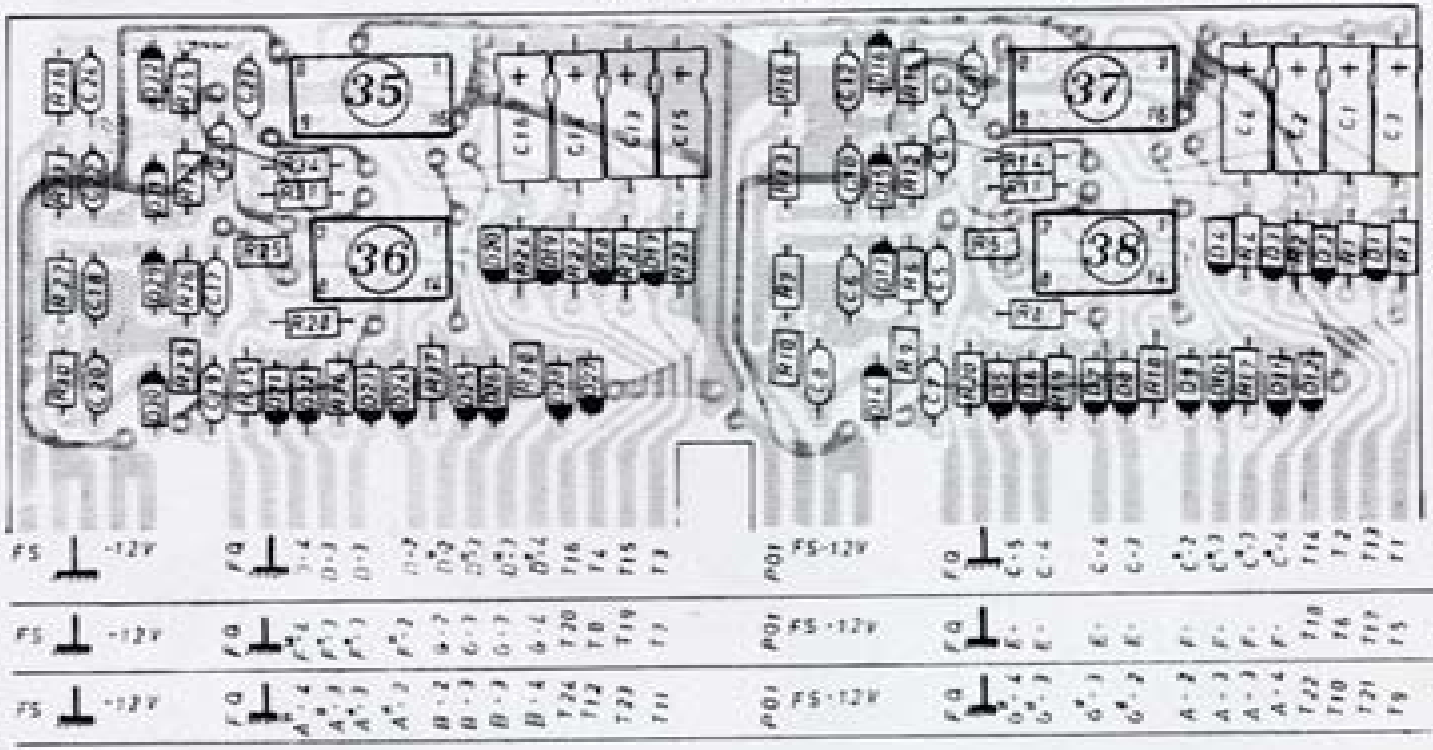
| | | |

410CST0735 (427GR0735A-B-C)

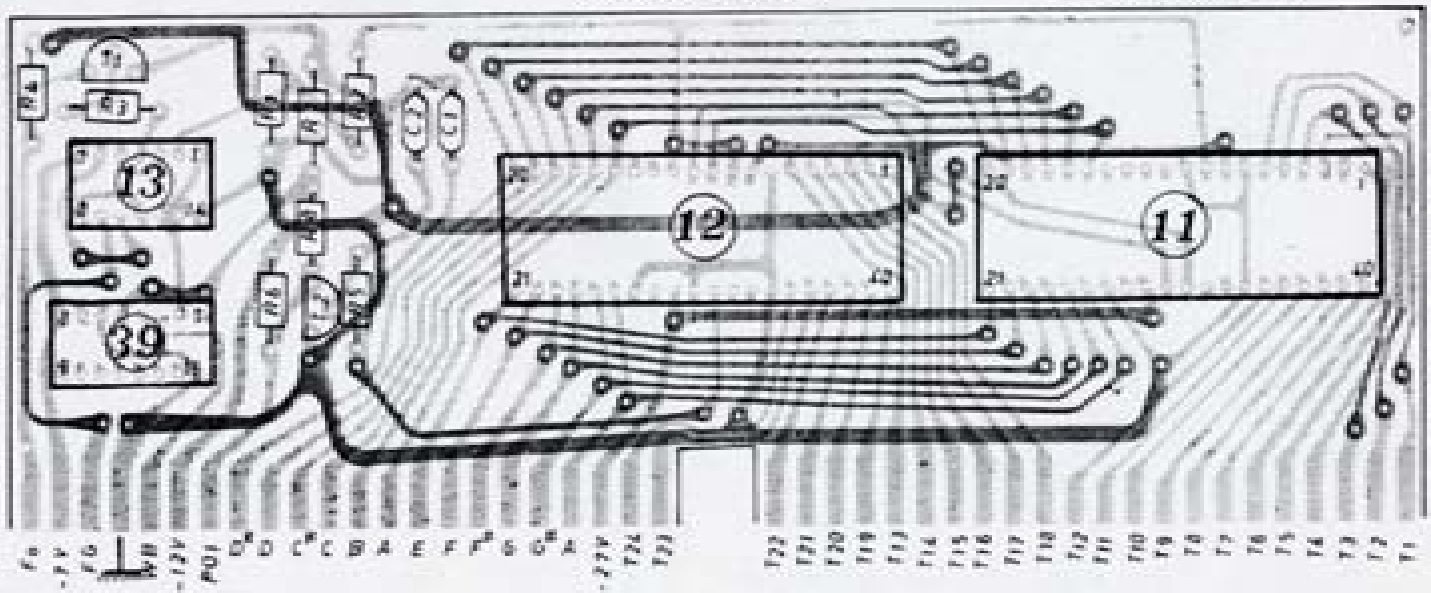


| | | |

410CST0735 (427GR0735A-B-C)

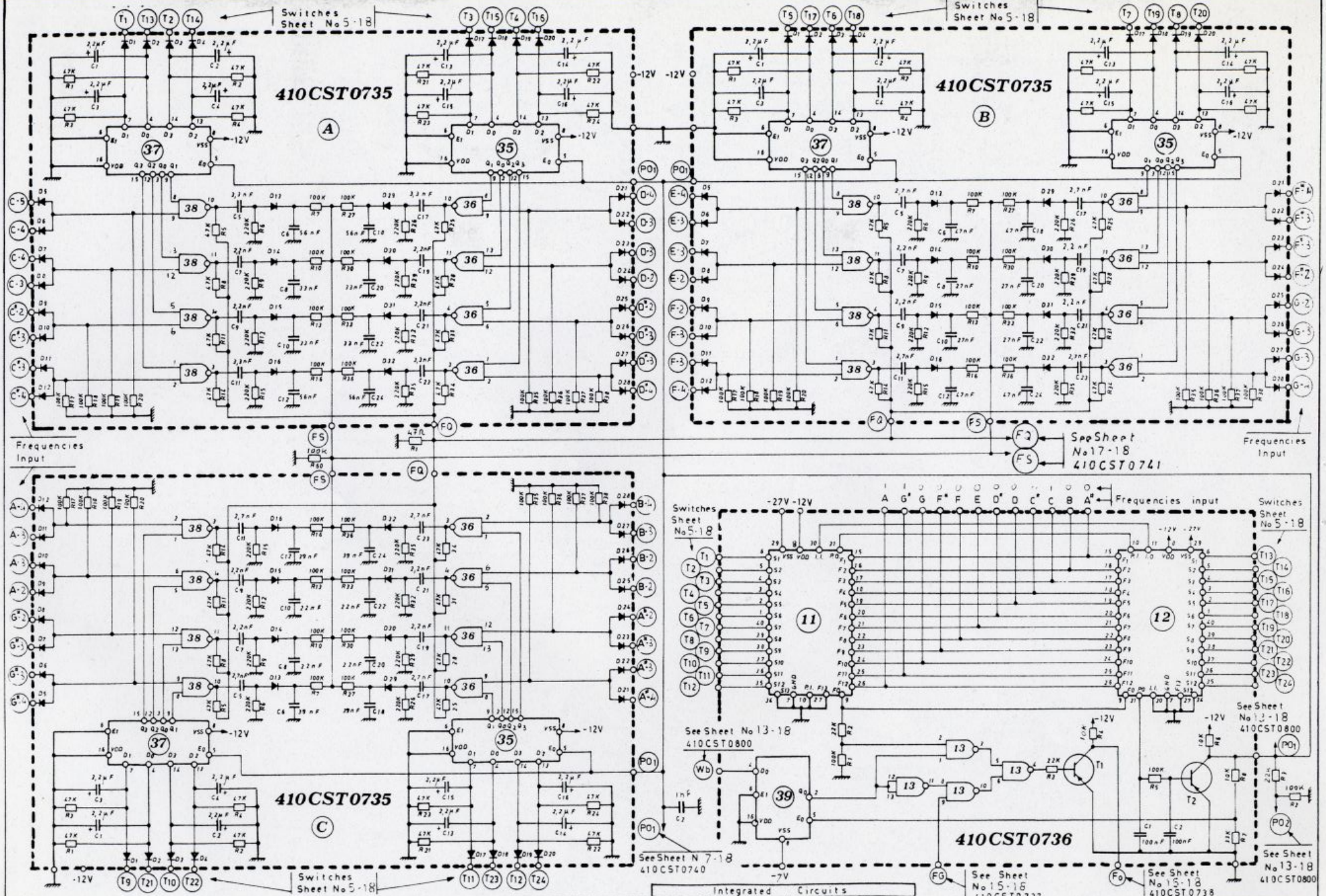


410CST0736 (427GR07360)



THE NUMBERS IN BRACKETS REPRESENT THE ELKA CODES OF THE ASSEMBLED BOARDS WHILST THE OTHERS REPRESENT THE ELKA CODES OF THE NON-ASSEMBLED BOARDS.

	Model MILGRAM	Object Assembly of Printed Circuit	Sheet N. 10-18
			Date 21-4-77

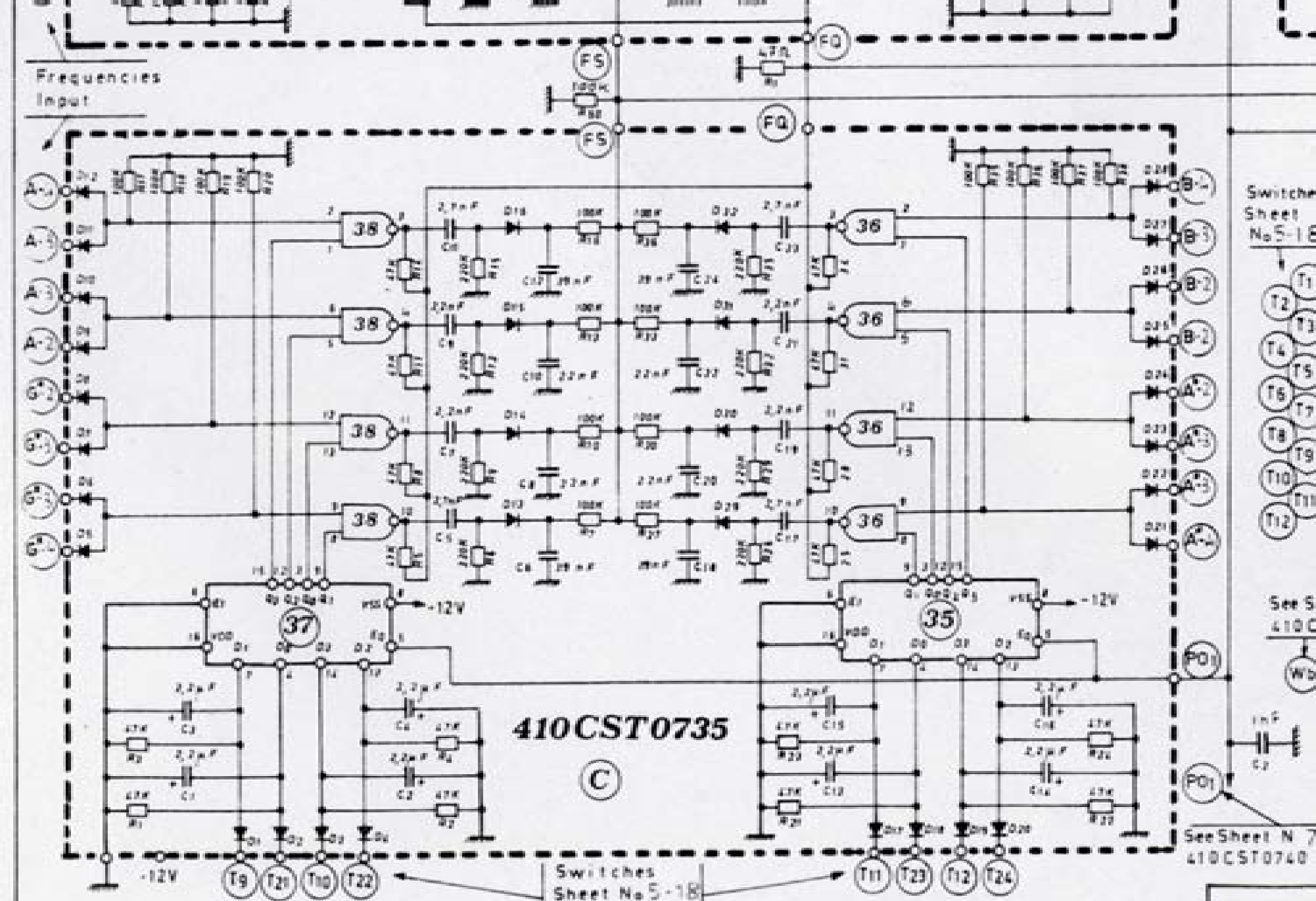


Code	Type	Transistors
T1 - T2	PNP	BC 415

36	Pin 7 = -12V, Pin 14 = GND
38	
13	Pin 7 = -7V, Pin 14 = GND

Integrated Circuits		
Code	Type	Manufactured
36-38-13	MC 4011	
35-37-39	MC 4042	
11 - 12	AY-1-13-13	G. I. E.

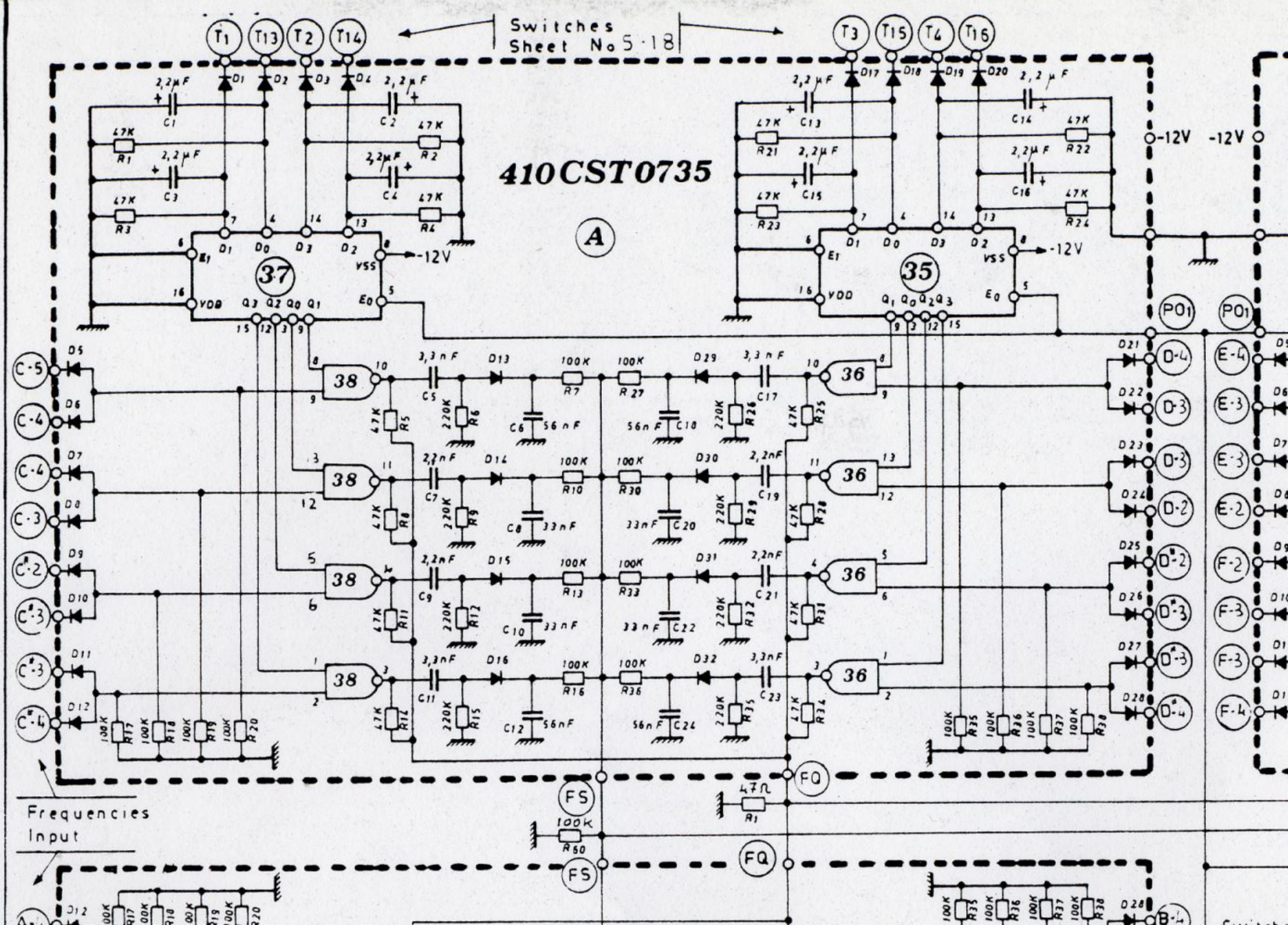
	Model WILDMAT	Object: Board 410CST0735-736	Sheet No 1-18
			Date 9-12-77

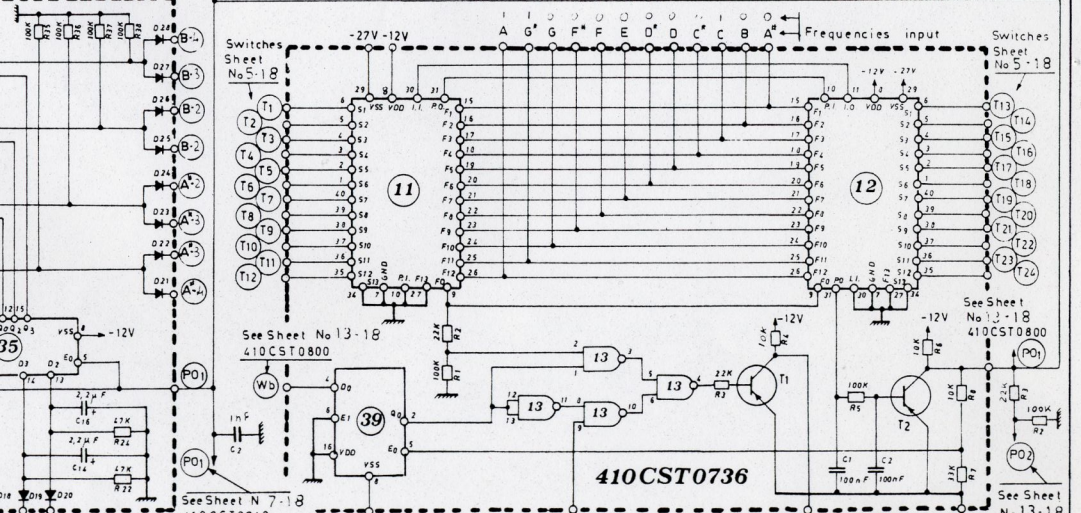


Code	Type	Transistors
T1 - T2	PNP	BC 415

36	Pin 7 = -12V
38	Pin 14 = GND
13	Pin 7 = -9V
	Pin 14 = GND

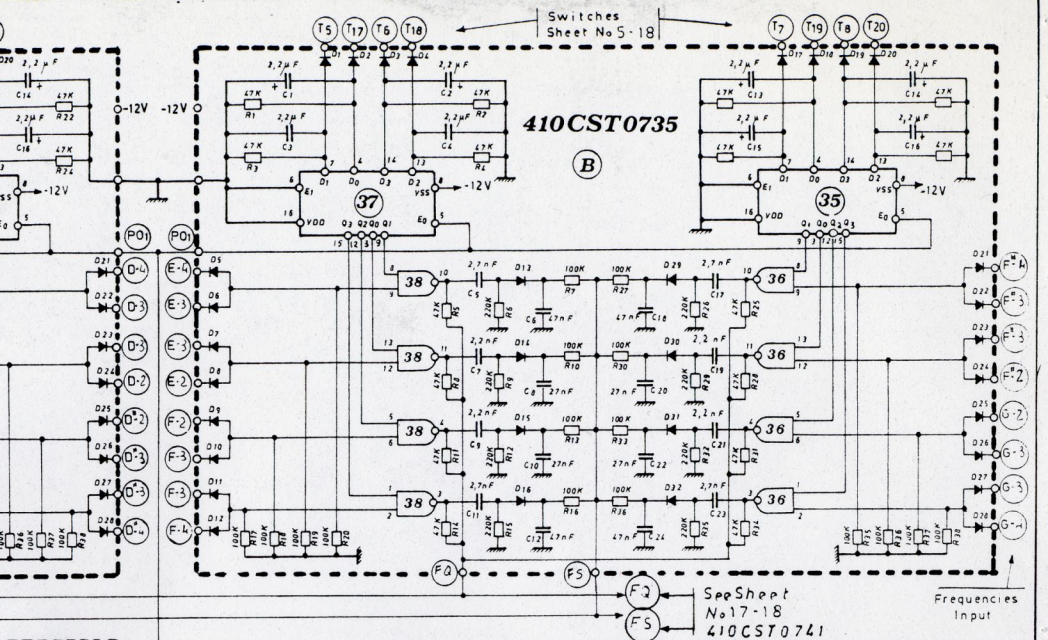
Code
36-38-13
35-37-39
11 - 12


Switches
Sheet No 5·18
410CST0735
A
T1
T13
T2
T14
T3
T15
T4
T16
-12V
37
35
38
36
Frequencies
Input
FS
FQ
PO1

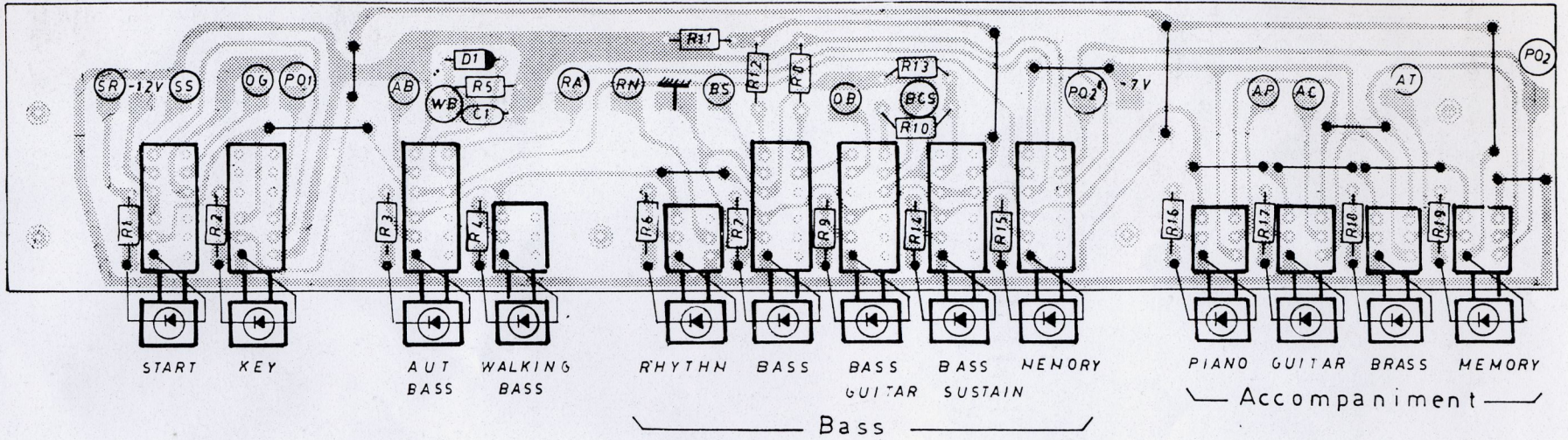


		Integrated Circuits		
		Code	Type	Manufactured
36 38	Pin 7 = -12V Pin 14 = GND	36-38-13	MC 4011	
13	Pin 7 = -7V Pin 14 = GND	35-37-39	MC 4042	
		11 - 12	AY-1-13-13	G. I. E.

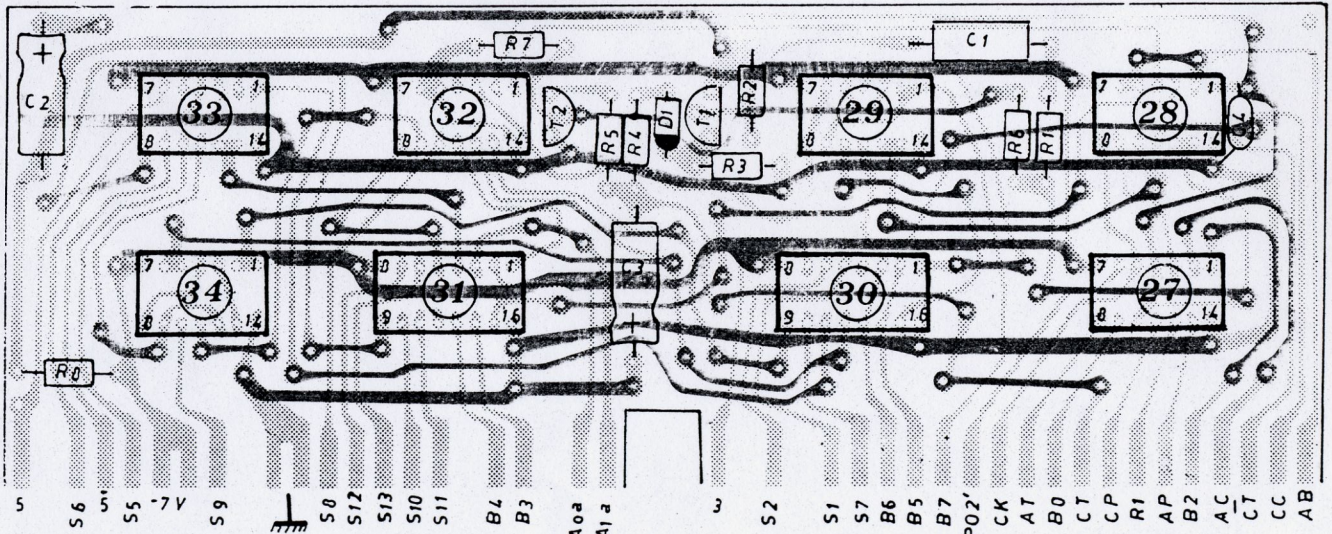
Model	Object:	Sheet No 1 : 1-18
WILDFIRE	Board 410CST0735-736	Date 9-12-77


Switches
Sheet No 5-18
T5
T17
T6
T18
T7
T19
T8
T20
410CST0735
B
-12V
37
35
38
36
PO1
FQ
FS
See Sheet
No 17-18
410CST0741
Frequencies
Input

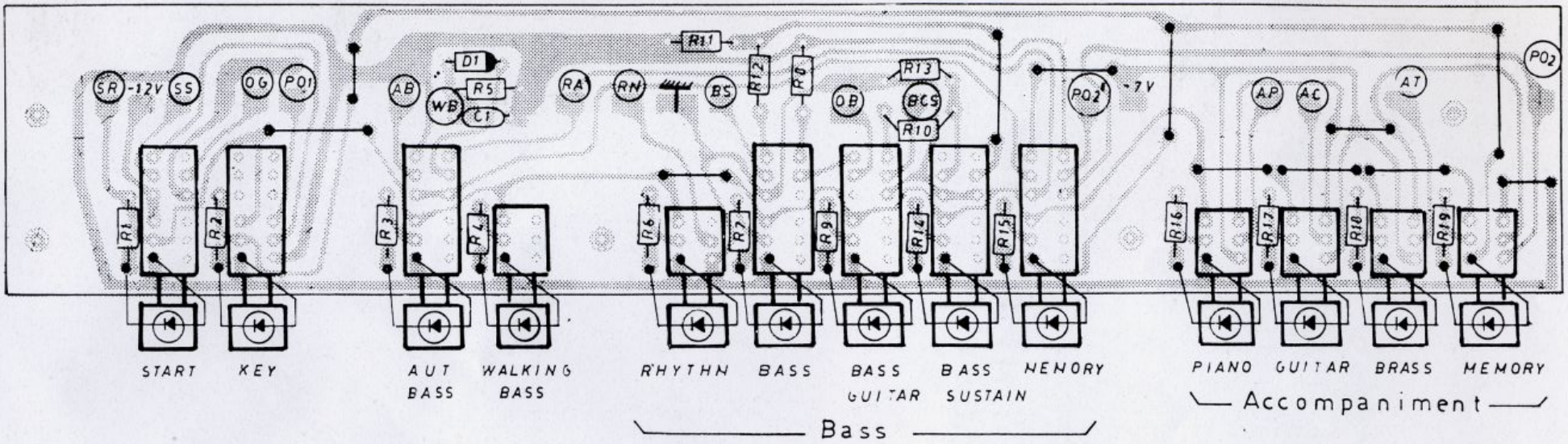
410CST0800 (427GR08000)



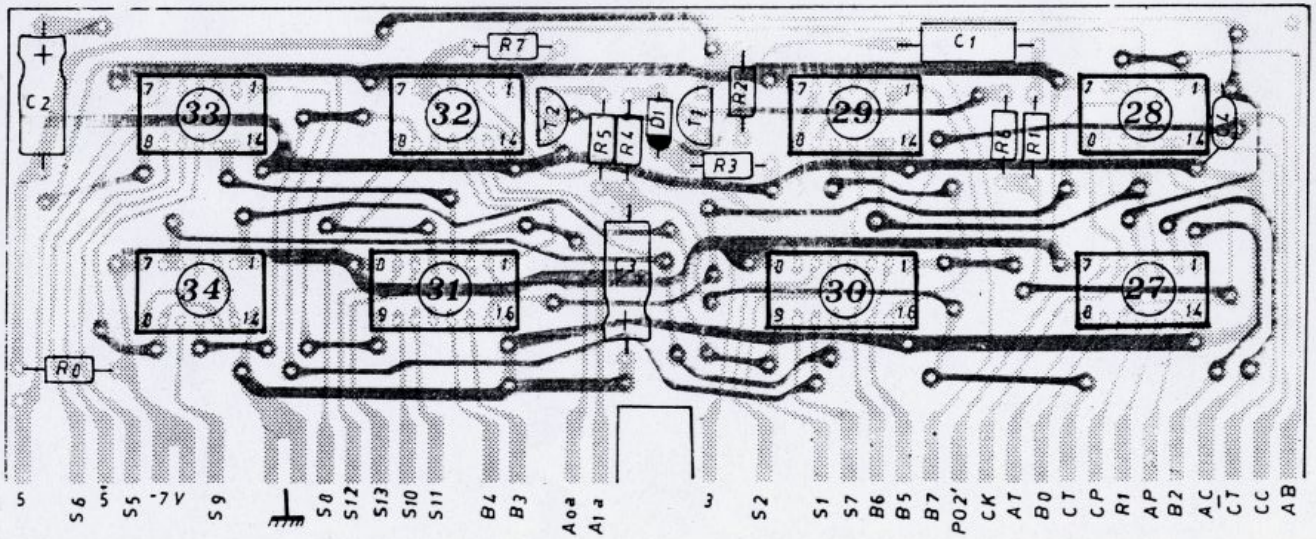
410CST0739 427GR07390



410CST0800 (427GR08000)

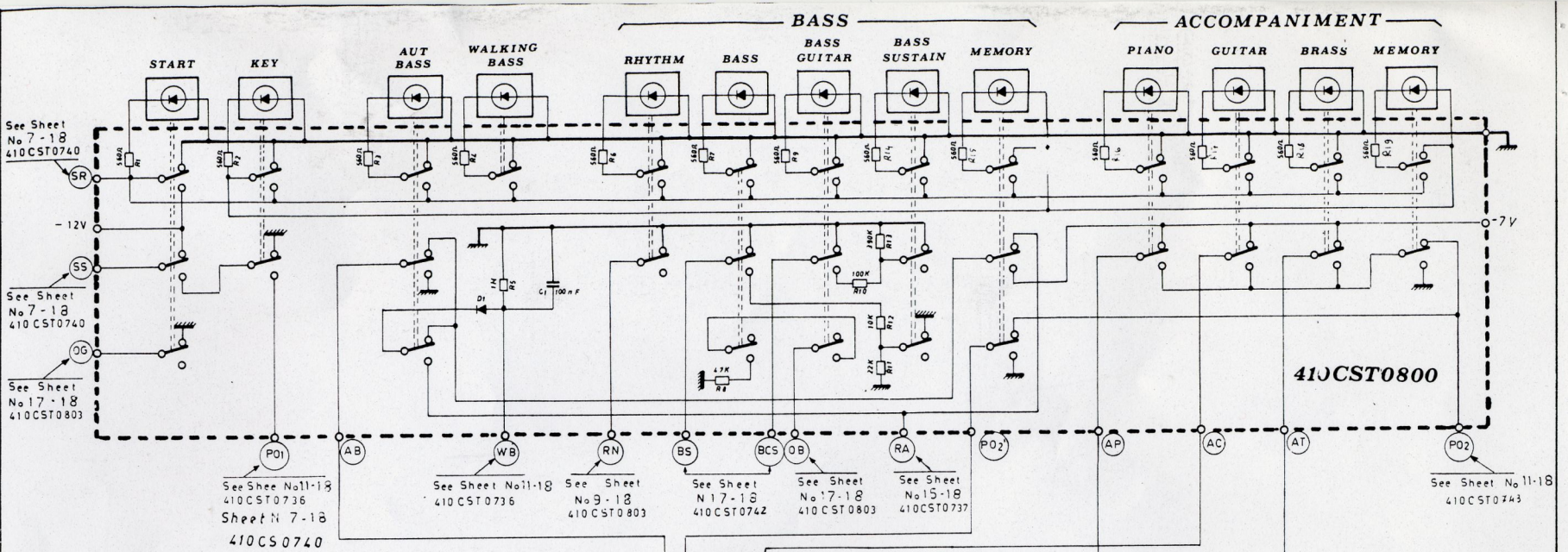


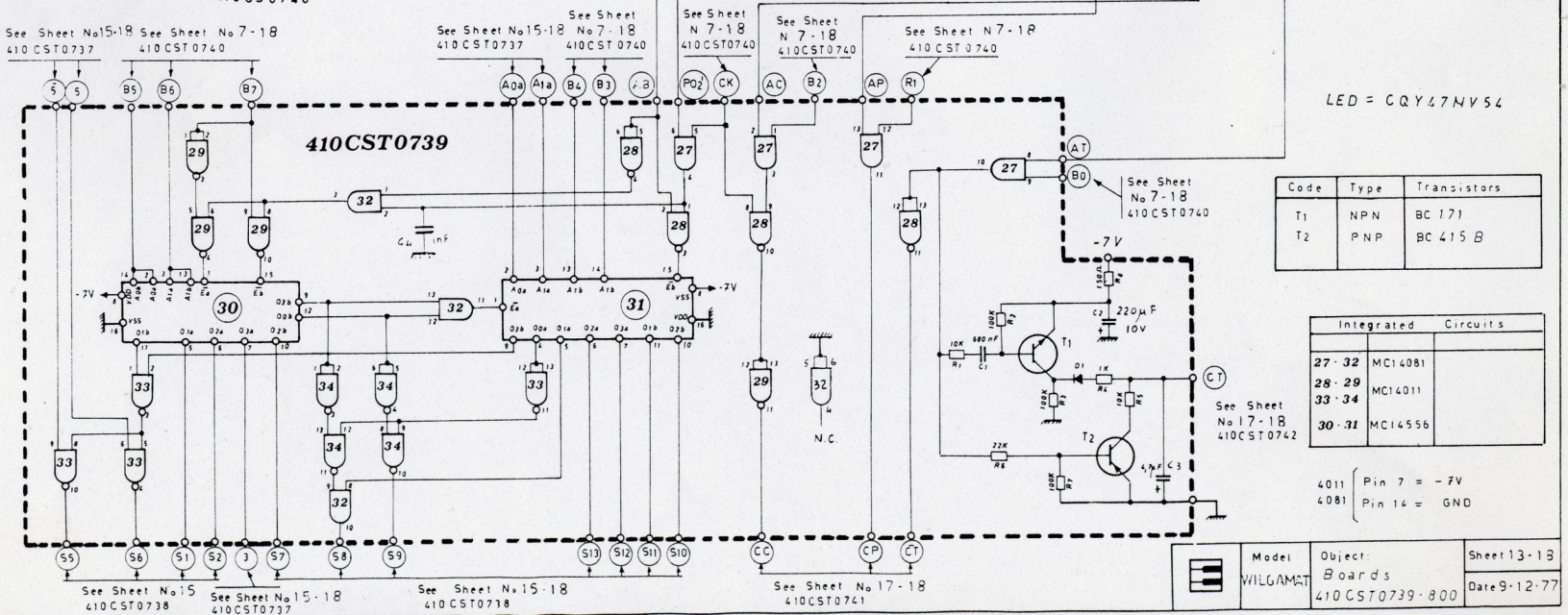
410CST0739 427GR07390



THE NUMBERS IN BRACKETS REPRESENT THE ELKA CODES OF THE ASSEMBLED BOARDS WHILST THE OTHERS REPRESENT THE ELKA CODES OF THE NON ASSEMBLED BOARDS.

	Model	Object	Sheet N° 12-18
	WILGAMAT	Assembly of Printed Circuit	Date 22-4-77


BASS
ACCOMPANIMENT
START
KEY
AUT BASS
WALKING BASS
RHYTHM
BASS
BASS GUITAR
BASS SUSTAIN
MEMORY
PIANO
GUITAR
BRASS
MEMORY
See Sheet No 7-18 410CST0740
SR
SS
OG
-12V
-7V
See Sheet No 7-18 410CST0740
See Sheet No 17-18 410CST0803
560R
100K
47K
22K
10K
1N
100nF
D1
C1
410CST0800
P01
AB
WB
RN
BS
BCS
OB
RA
P02
AP
AC
AT
P02
See Shee No11-18 410CST0736
Sheet N 7-18
410CS0740
See Sheet No11-18 410CST0736
See Sheet No 9-18 410CST0803
See Sheet N 17-18 410CST0742
See Sheet No 17-18 410CST0803
See Sheet No 15-18 410CST0737
See Sheet No 11-18 410CST0743

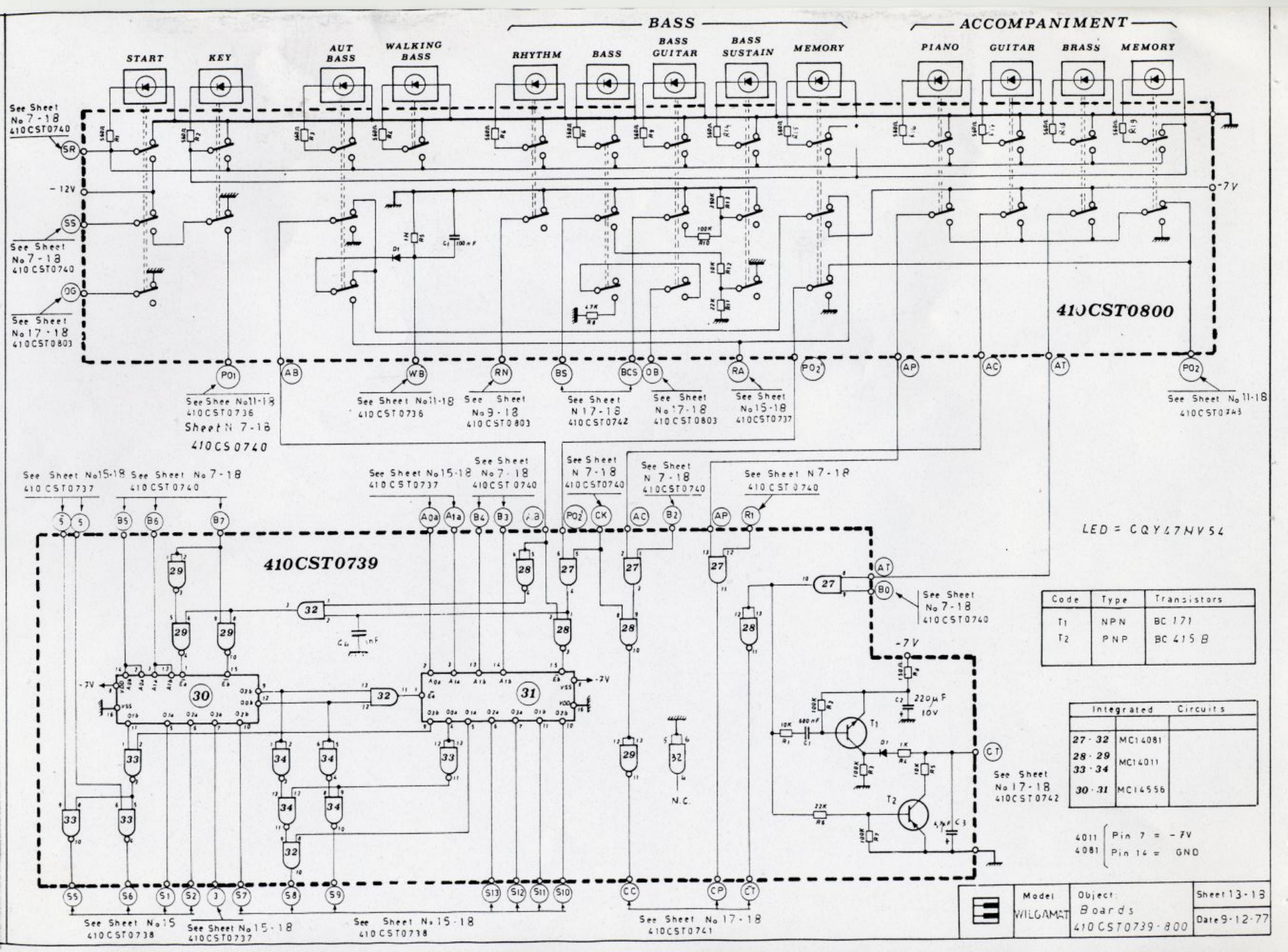


Code	Type	Transistors
T1	NPN	BC 171
T2	PNP	BC 415 B

Integrated Circuits		
27 · 32	MC14081	
28 · 29	MC14011	
33 · 34		
30 · 31	MC14556	

4011 / 4081: Pin 7 = -7V, Pin 14 = GND

	Model	Object:	Sheet 13 · 18
	WILGAMAT	Boards 410CST0739 · 800	Date 9-12-77



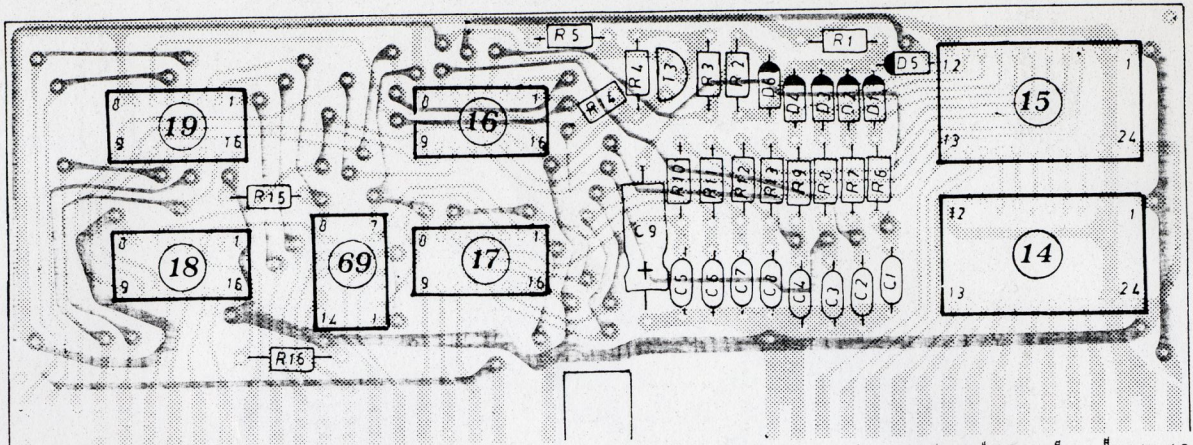
Code	Type	Transistors
T1	NPN	BC 171
T2	PNP	BC 415 B

Integrated Circuits		
27 · 32	MC14081	
28 · 29 · 33 · 34	MC14011	
30 · 31	MC14556	

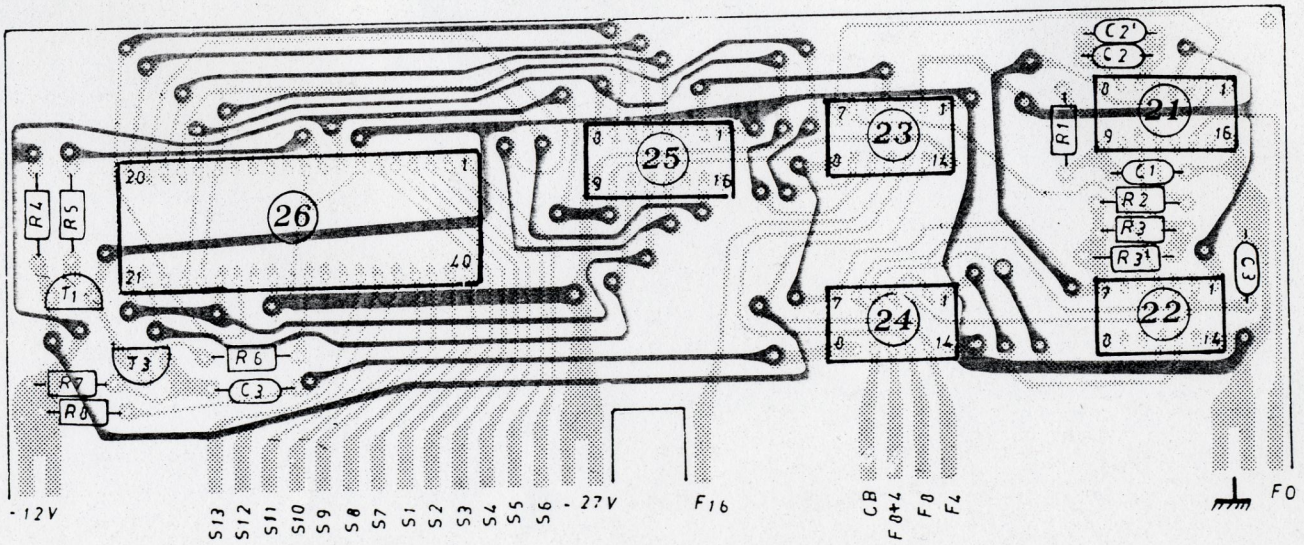
4011 / 4081 — Pin 7 = -7V, Pin 14 = GND

Model	Object	Sheet
WILGAMAT	Boards 410CST0739 · 800	13 · 18
		Date 9-12-77

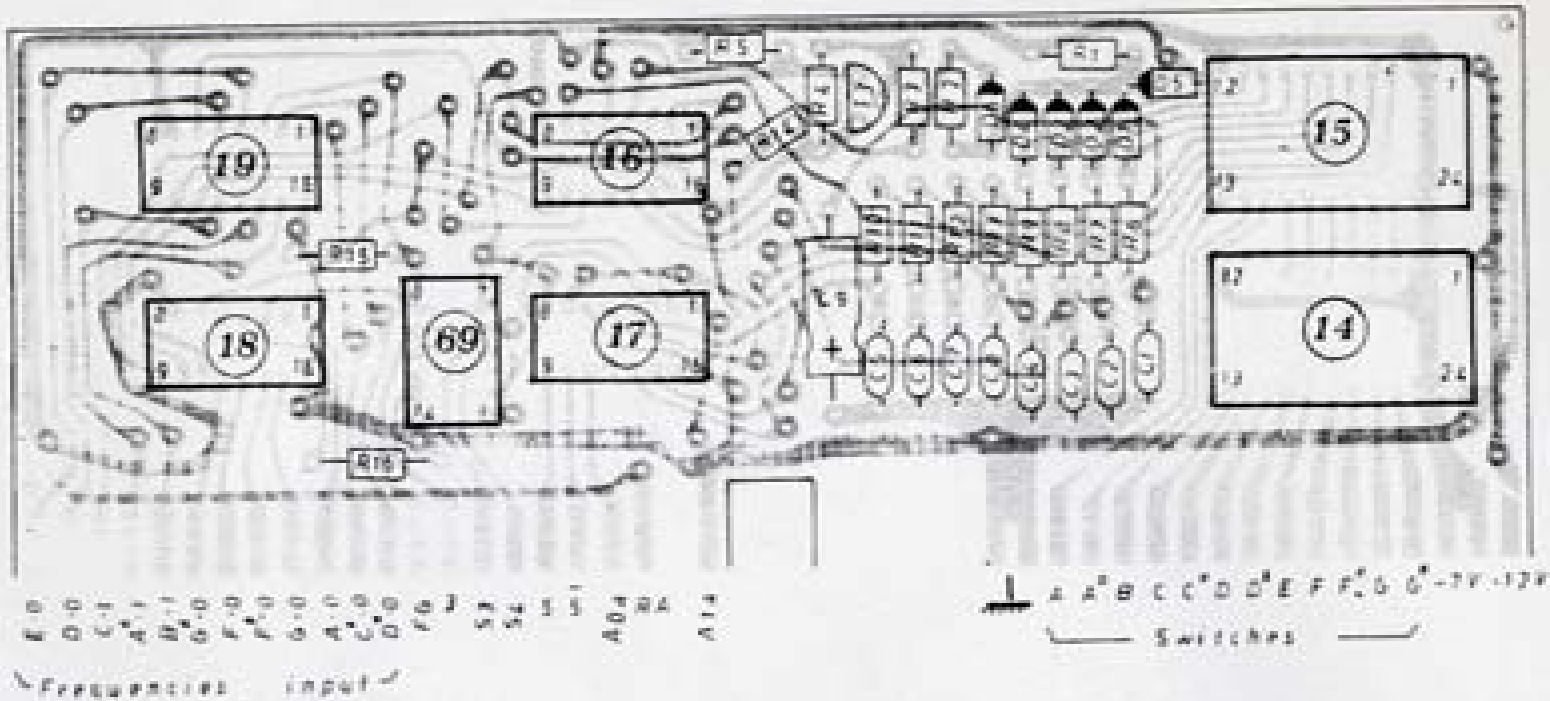
410CST0737 (427GR07370)



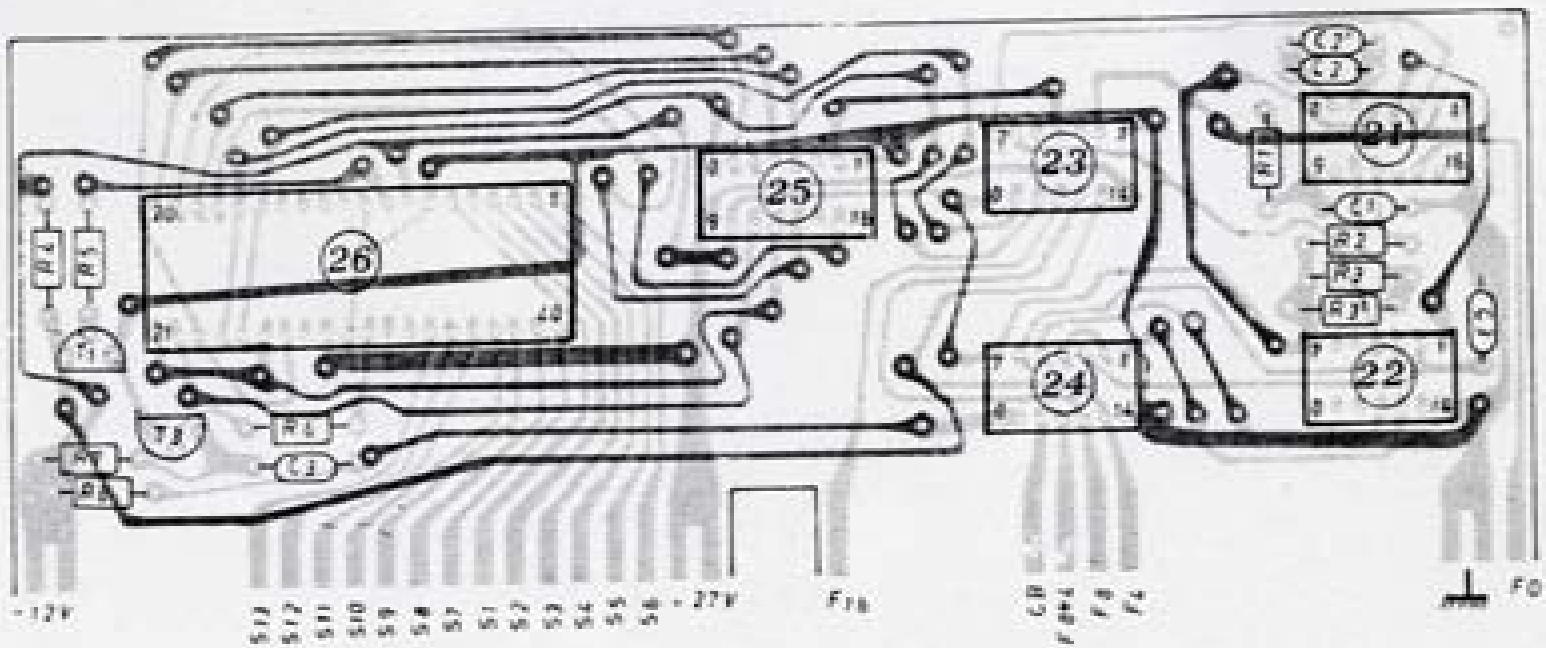
410CST0738 (427GR07380)



410CST0737 (427GR07370)

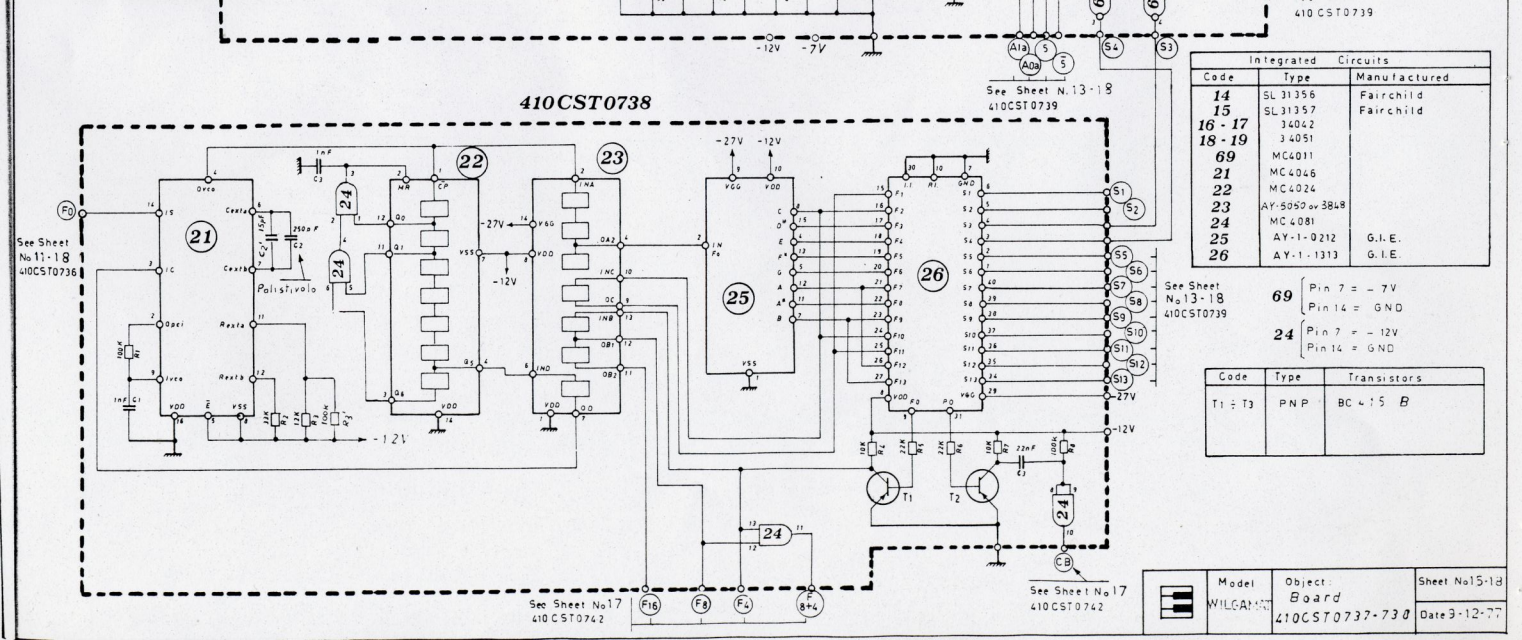


410CST0738 (427GR07380)



THE NUMBERS IN BRACKETS REPRESENT THE ELKA CODES OF THE ASSEMBLED BOARDS WHILST THE OTHERS REPRESENT THE ELKA CODES OF THE NON-ASSEMBLED BOARDS.

	Model WILGRAM	Object Assembly of Printed Circuits	Sheet No. 14-18
			Date 26-4-77



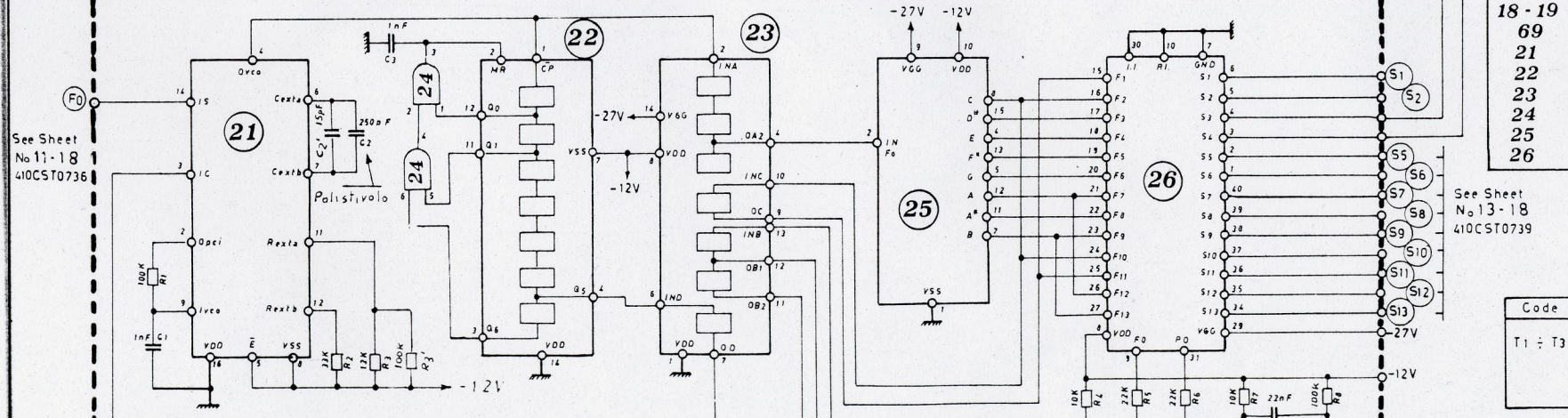
Integrated Circuits		
Code	Type	Manufactured
14	SL 31356	Fairchild
15	SL 31357	Fairchild
16 - 17	34042	
18 - 19	34051	
69	MC4011	
21	MC4046	
22	MC4024	
23	AY-5050 ov 3848	
24	MC4081	
25	AY-1-0212	G.I.E.
26	AY-1-1313	G.I.E.

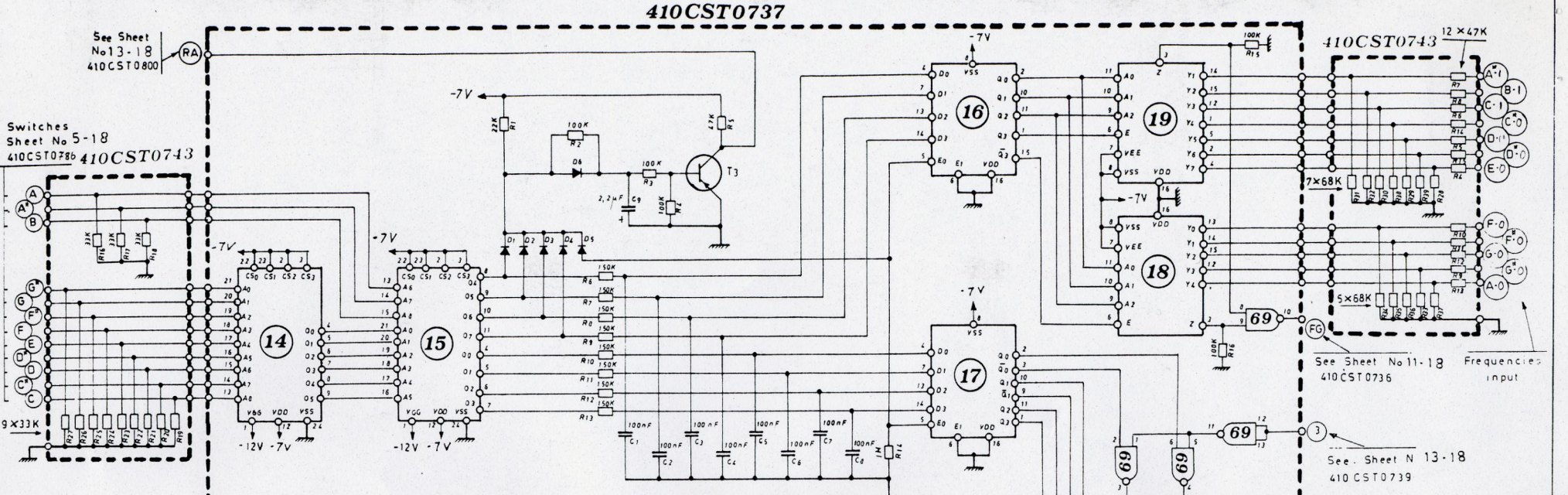
69 Pin 7 = - 7V; Pin 14 = GND

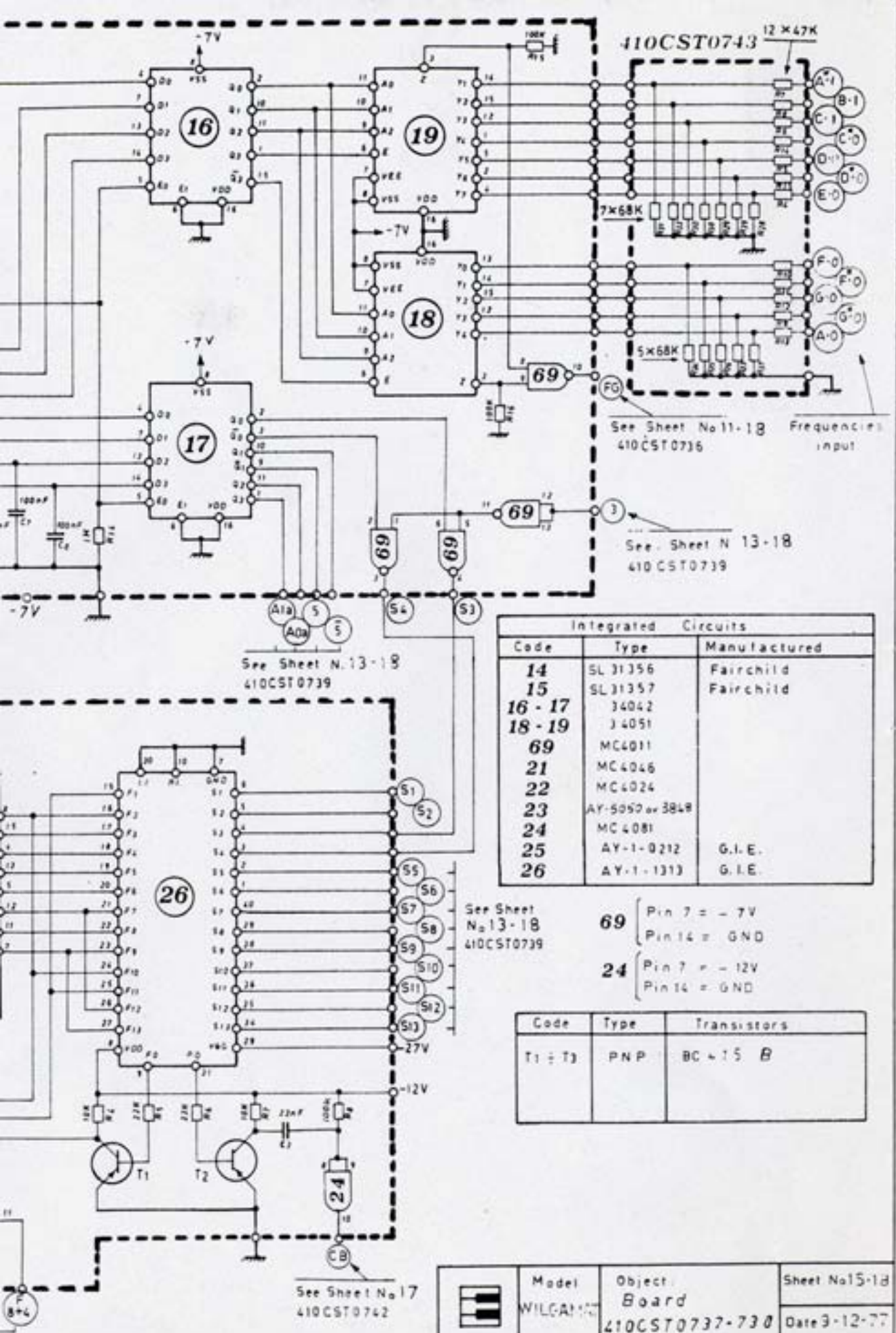
24 Pin 7 = - 12V; Pin 14 = GND

Code	Type	Transistors
T1 ÷ T3	PNP	BC 415 B

	Model WILGA MT	Object: Board 410CST0737-730	Sheet No 15-1d
			Date 9-12-77


F0
See Sheet No 11 - 18 410CST0736
21
22
23
24
24
25
26
Ovco
Cexta
Cextb
Ipci
Ivco
Rexta
Rextb
Polistivolo
250p F
C2
15pF
C2'
100K R1
1nF C1
22K R2
12K R3
100K R3'
-12V
1nF C3
MR
CP
Q0
Q1
Q5
Q6
VDD
VSS
-27V
V6G
INA
OA2
INC
OC
INB
OB1
IND
OB2
OD
VGG
VDD
IN Fo
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F13
I.I
RI
GND
FO
PO
S1
S2
S5
S6
S7
S8
S9
S10
S11
S12
S13
-27V
-12V
10K R4
22K R5
22K R6
10K R7
22nF
100K R8
See Sheet No 13 - 18 410CST0739
18 - 19
69
21
22
23
24
25
26
Code
T1 ÷ T3


410CST0737
See Sheet No 13-18 410CST0800
RA
Switches Sheet No 5-18 410CST0786
410CST0743
9×33K
-7V
-12V
-7V
14
15
16
17
18
19
69
T3
D1
D2
D3
D4
D5
D6
2,2µF
100nF
1M
150K
100K
47K
22K
410CST0743
12×47K
7×68K
5×68K
FG
See Sheet No 11-18 410CST0736
Frequencies input
See Sheet N 13-18 410CST0739



Integrated Circuits		
Code	Type	Manufactured
14	SL 31356	Fairchild
15	SL 31357	Fairchild
16 - 17	34042	
18 - 19	34051	
69	MC4011	
21	MC4046	
22	MC4024	
23	AY-5050 or 3848	
24	MC4081	
25	AY-1-0212	G.I.E.
26	AY-1-1313	G.I.E.

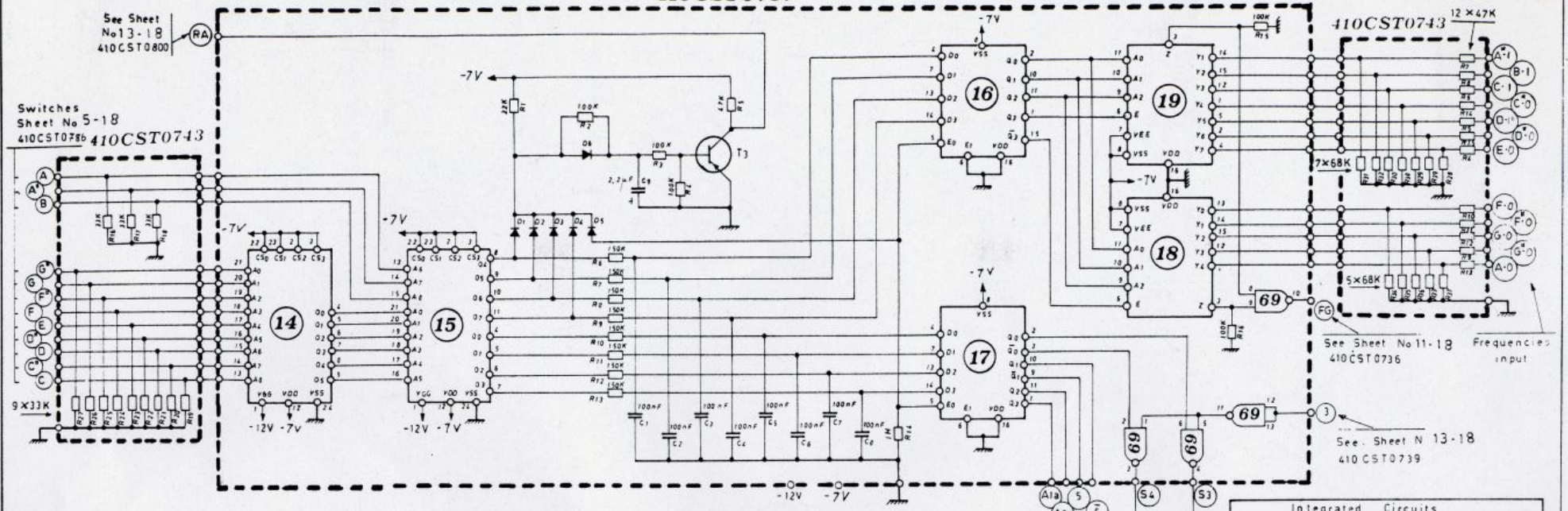
69 Pin 7 = - 7V
Pin 14 = GND

24 Pin 7 = - 12V
Pin 14 = GND

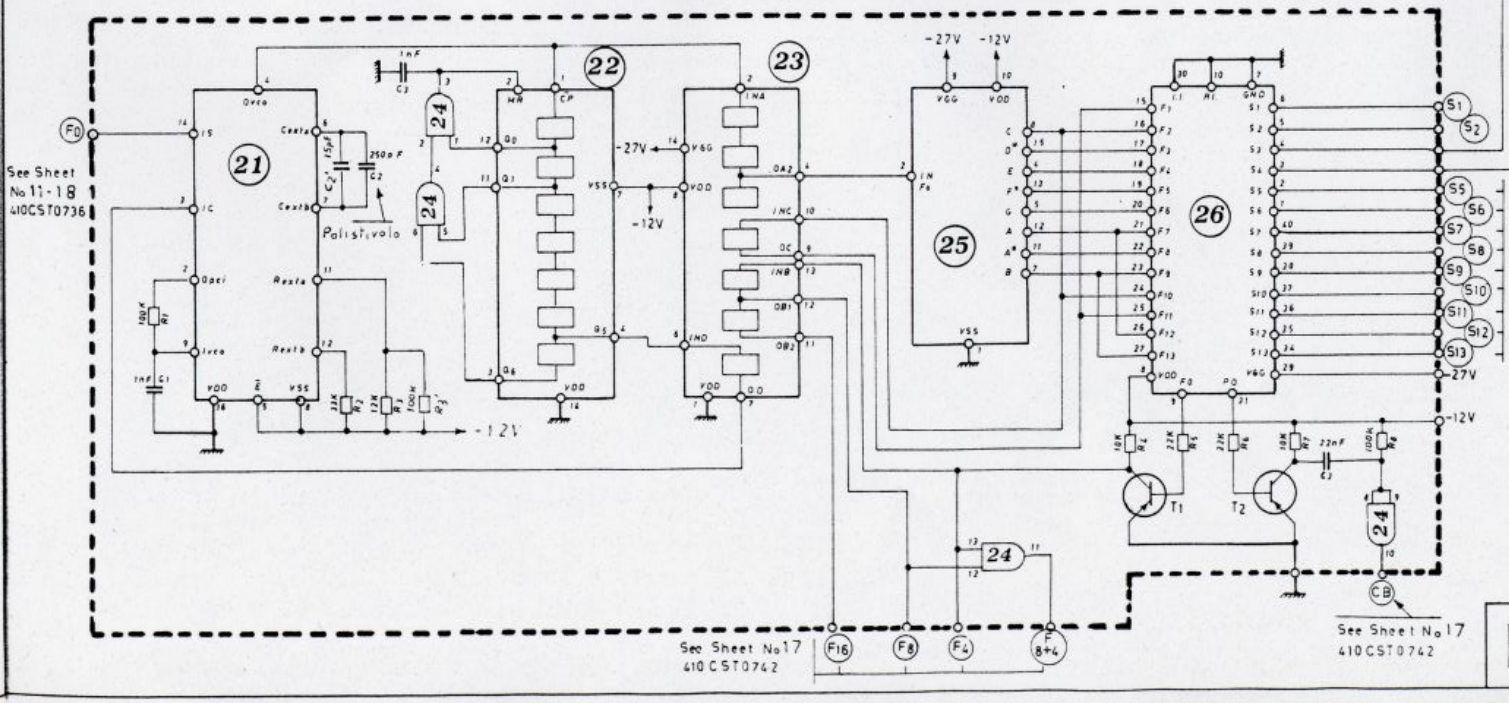
Code	Type	Transistors
T1 ÷ T3	PNP	BC 415 B

	Model WILGA	Object: Board 410CST0737-738	Sheet No 15-18
			Date 3-12-77

410CST0737



410CST0738



Integrated Circuits		
Code	Type	Manufactured
14	SL 31356	Fairchild
15	SL 31357	Fairchild
16 - 17	34042	
18 - 19	34051	
69	MC4011	
21	MC4046	
22	MC4024	
23	AY-5050 or 3848	
24	MC4081	
25	AY-1-0212	G.I.E.
26	AY-1-1313	G.I.E.

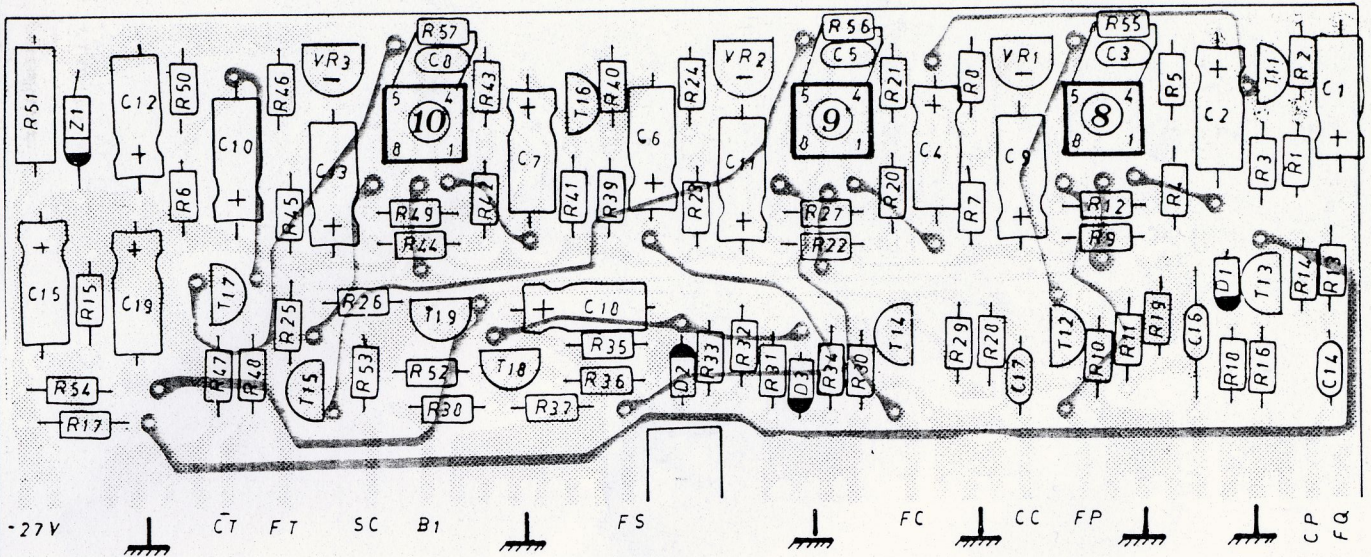
69 { Pin 7 = - 7V
Pin 14 = GND

24 { Pin 7 = - 12V
Pin 14 = GND

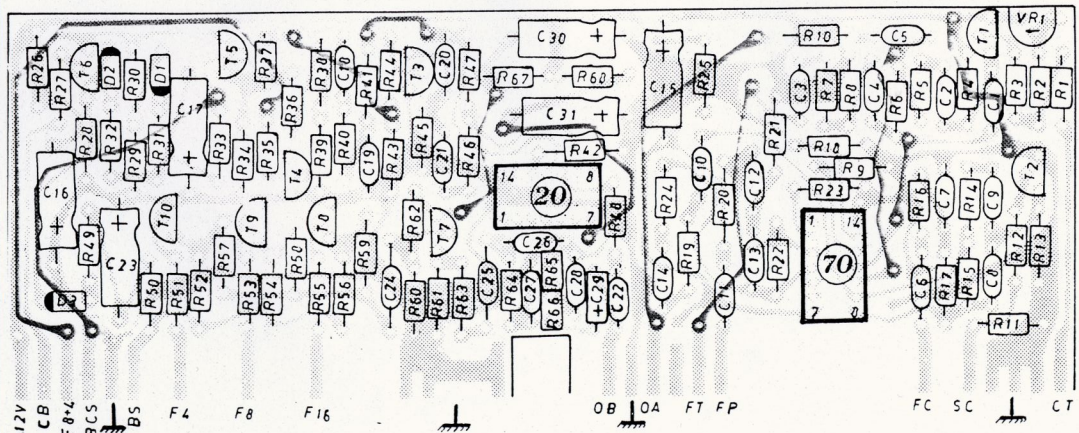
Code	Type	Transistors
T1 ÷ T3	PNP	BC 415 B

	Model	Object:	Sheet No 15-1d
	WILGA MK1	Board 410CST0737-730	Date 3-12-77

410CST0741 (427GR07410)

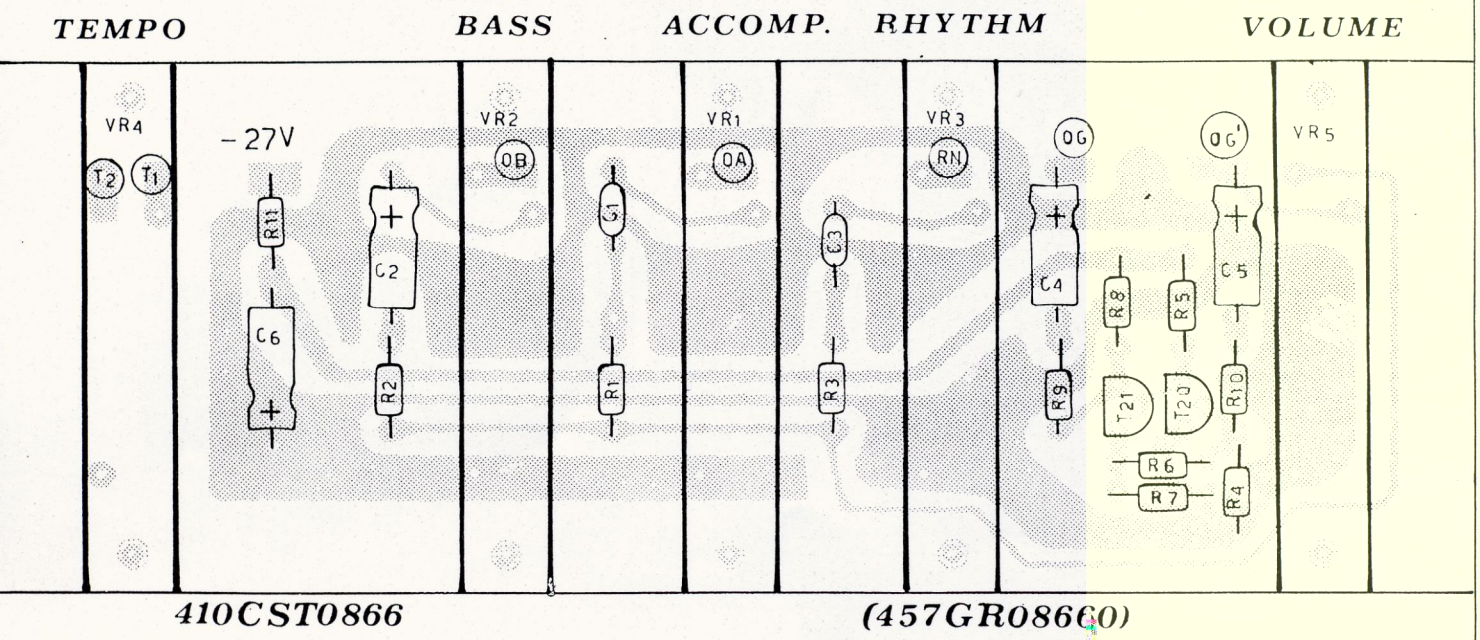


410CST0742 (427GR07420)



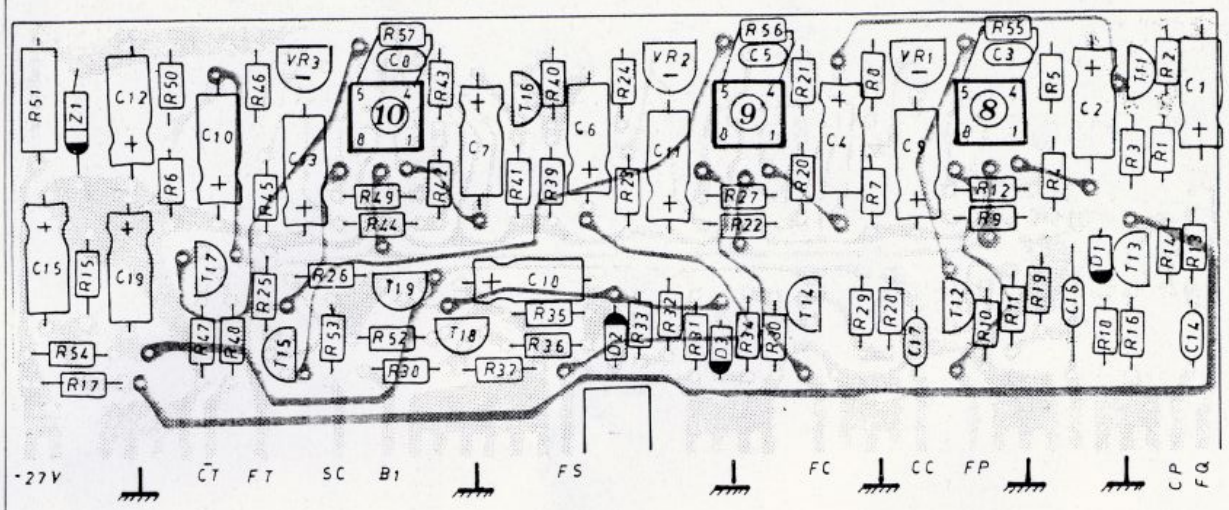
THE NUMBERS IN BRACKETS REPRESENT THE ELKA CODES OF THE ASSEMBLED BOARDS WHILST THE OTHERS REPRESENT THE ELKA CODES OF THE NON-ASSEMBLED BOARDS.

	Model WILGAMAT	Object: Assembly of Printed Circuit	Sheet No 16-18
			Date 13-12-77

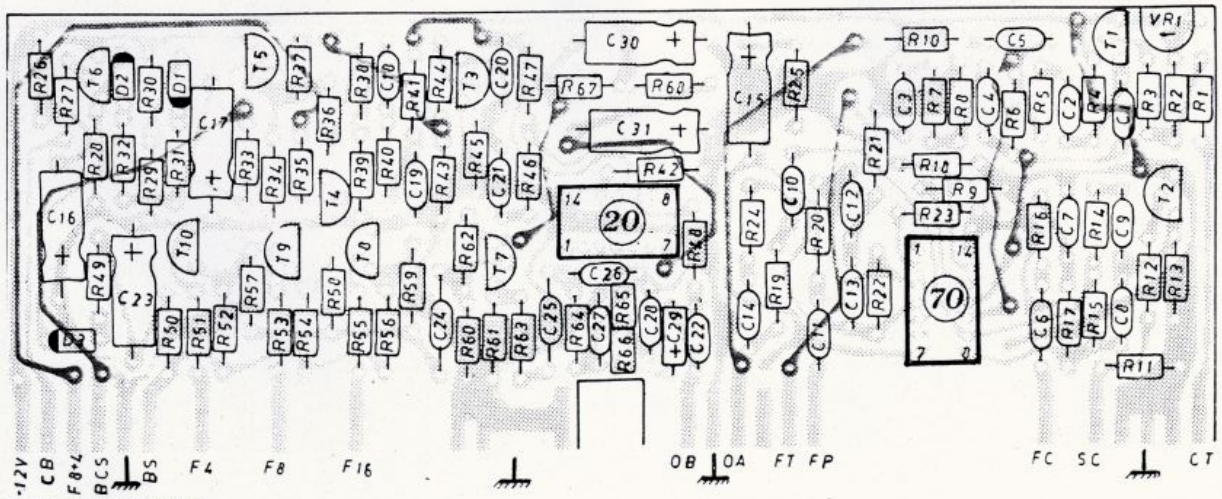


410CST0866 (457GR08660)

410CST0741 (427GR07410)



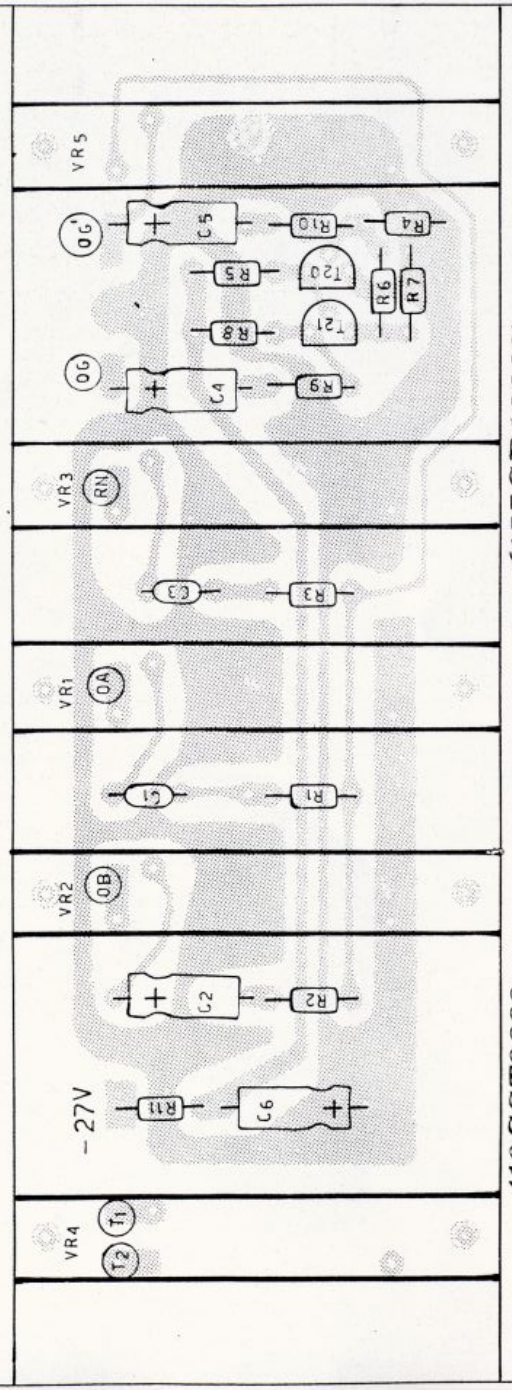
410CST0742 (427GR07420)

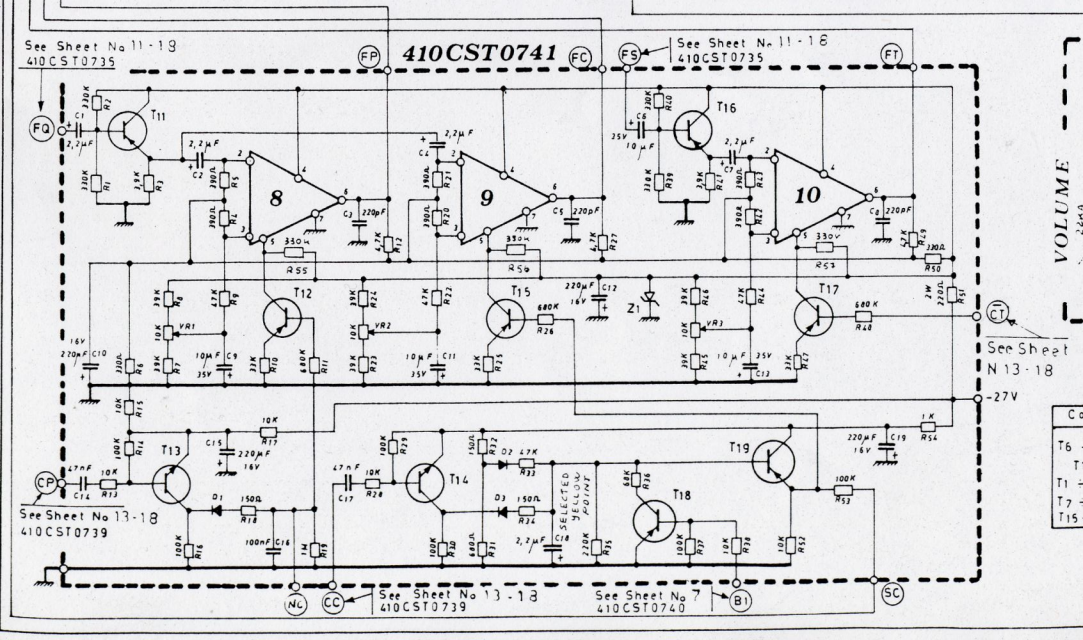


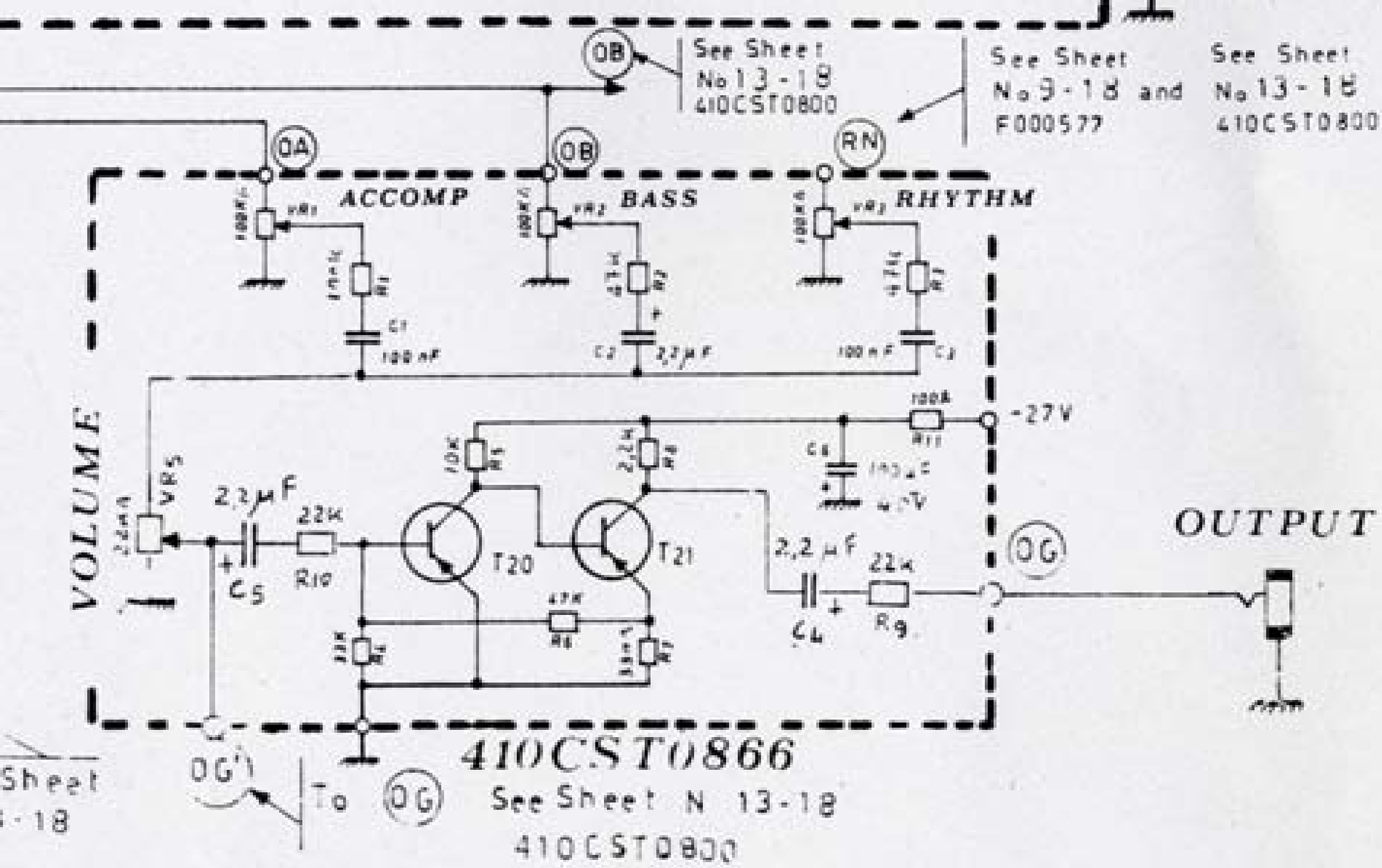
THE NUMBERS IN BRACKETS REPRESENT THE ELKA CODES OF THE ASSEMBLED BOARDS WHILST THE OTHERS REPRESENT THE ELKA CODES OF THE NON-ASSEMBLED BOARDS.

	Model	Object:	Sheet No 16-18
	WILGAMAT	Assembly of Printed Circuit	Date 13-12-77

TEMPO BASS ACCOMP. RHYTHM VOLUME




410CST0741
See Sheet No 11-18
410CST0735
See Sheet No 11-18
410CST0735
See Sheet No 13-18
410CST0739
See Sheet No 13-18
410CST0739
See Sheet No 7
410CST0740
See Sheet
N 13-18
-27V
VOLUME
FP
FC
FS
FT
FQ
CT
CP
NG
CC
B1
SC
T11
T12
T13
T14
T15
T16
T17
T18
T19
8
9
10
Z1
D1
D2
D3
SELECTED
YELLOW
POINT

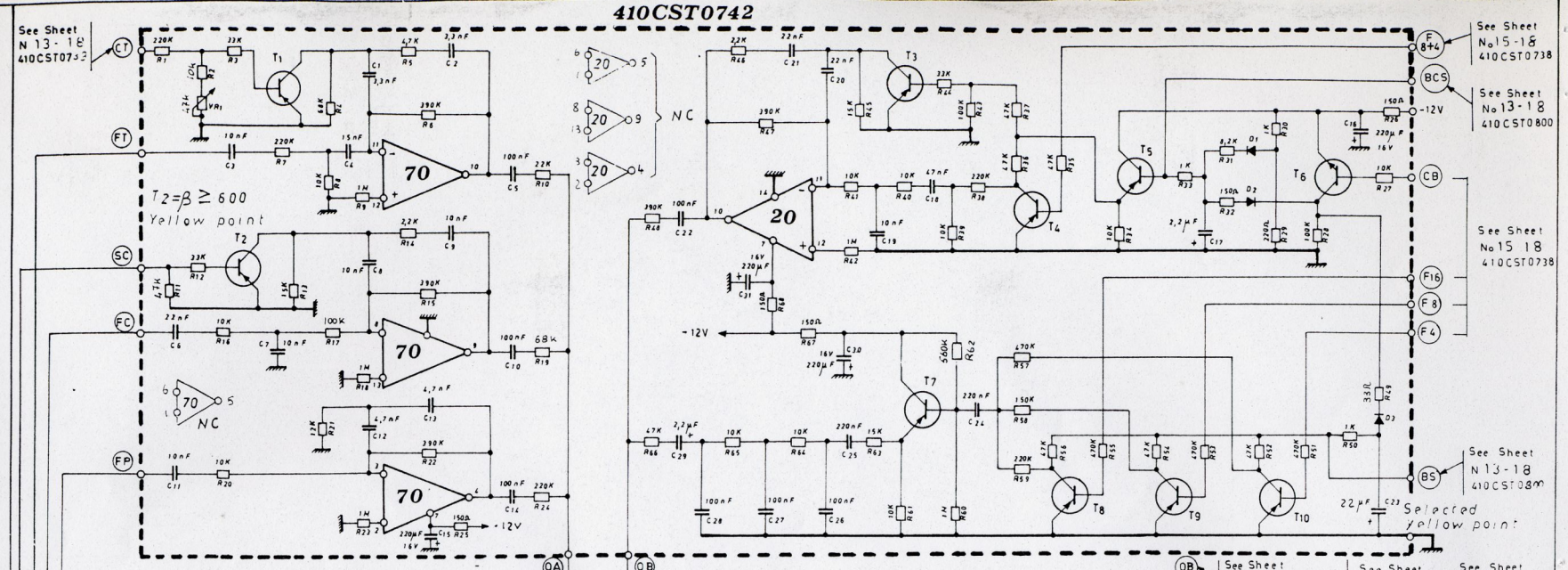


Code	Type	Transistors
T6 - T13, T14	NPN	BC 173
T1 - T5, T7 - T12, T15 - T21	PNP	BC 415 B

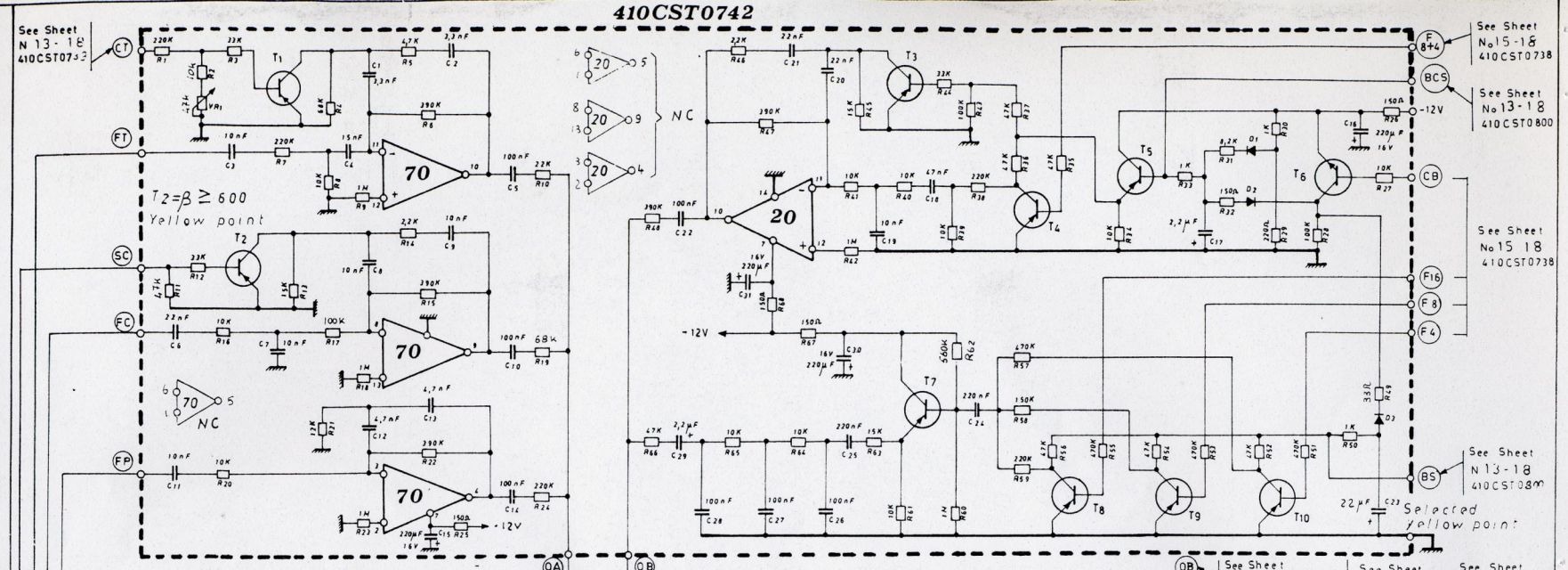
Integrated Circuits		
Code	Type	Manufactured
20 - 70	3301	
8, 9 - 10	CA 3080	RCA

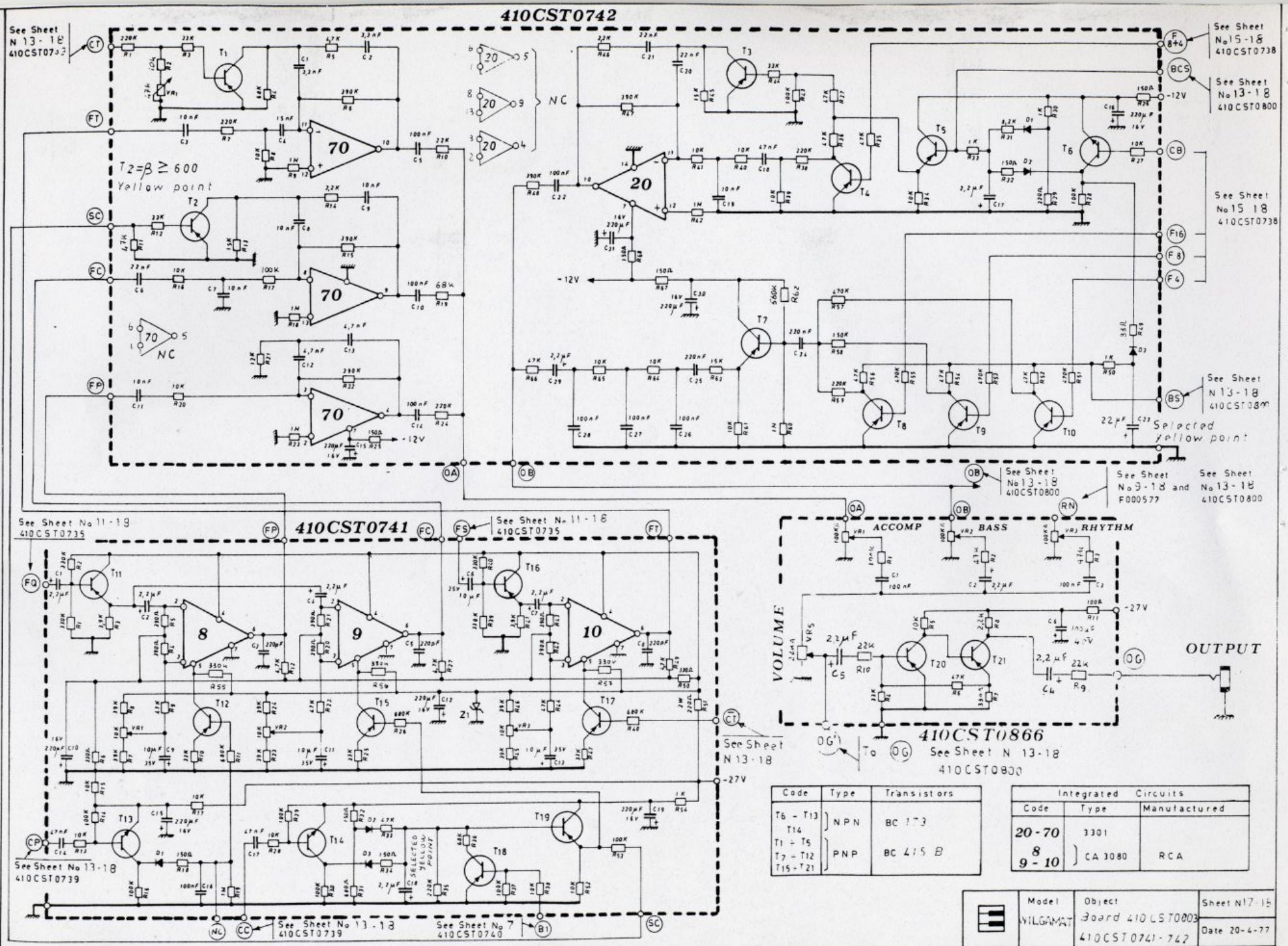
	Model	Object	Sheet N17-15
	VILGRAT	Board 410 CST0803	
		410CST0741-747	Date 20-4-77

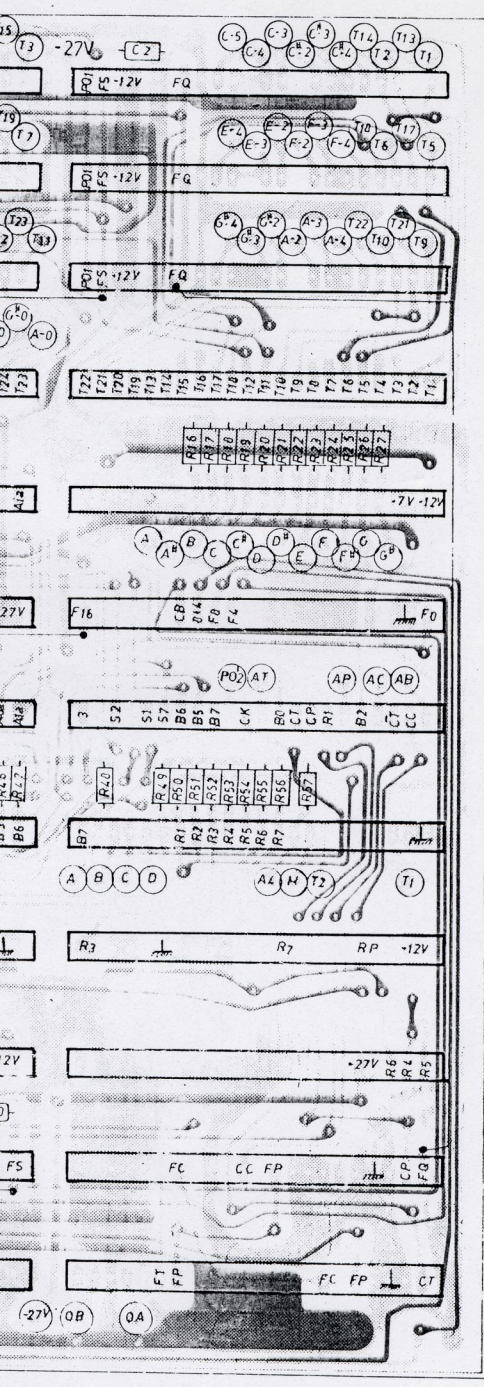
410CST0742


See Sheet N 13 - 18 410CST0738
See Sheet No15 - 18 410CST0738
See Sheet No13 - 18 410CST0800
See Sheet No15 18 410CST0738
See Sheet N 13-18 410CST0800
Selected yellow point
T2=β ≥ 600
Yellow point
NC
-12V

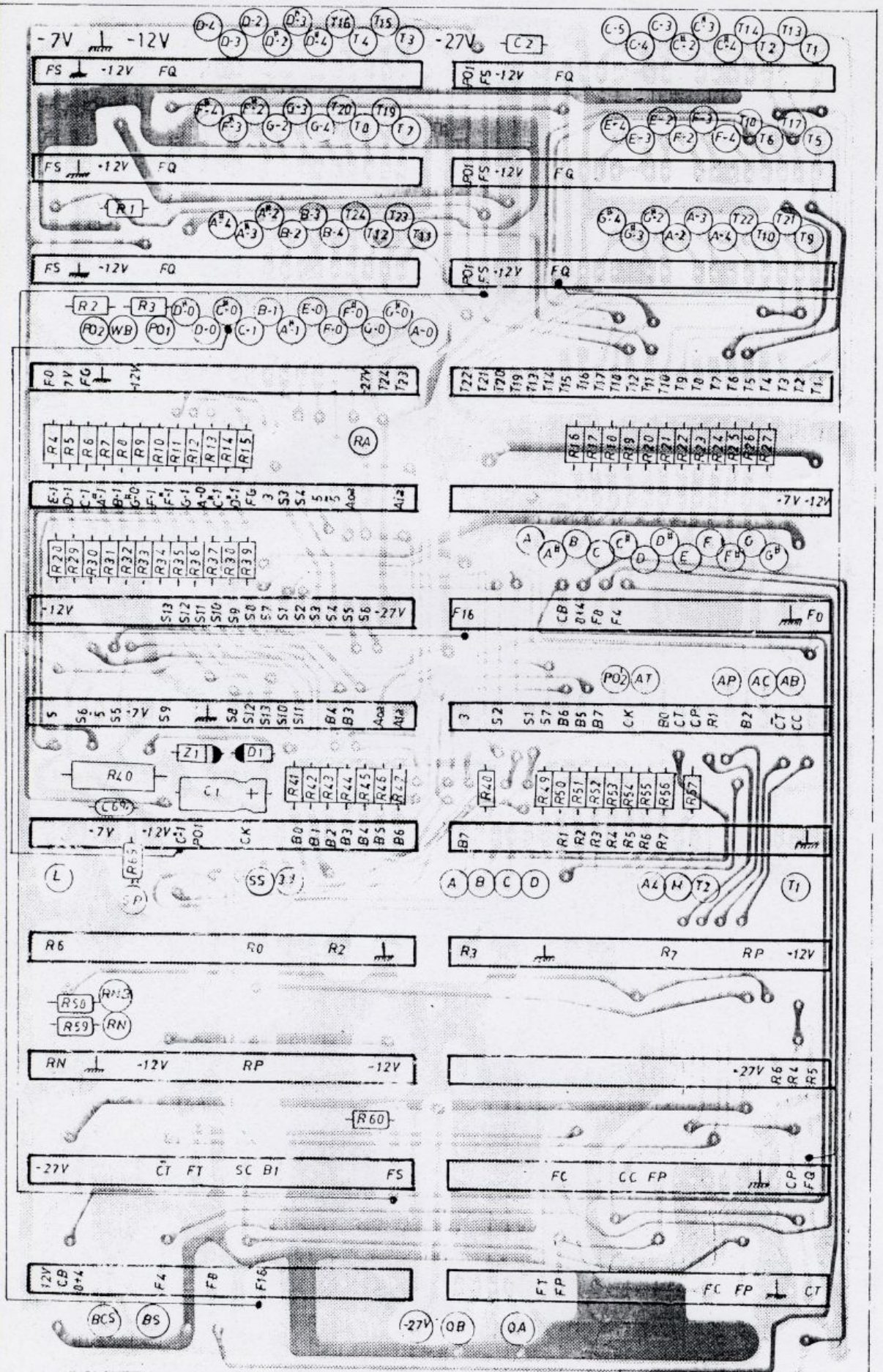
410CST0742


See Sheet N 13 - 18 410CST0738
See Sheet No15 - 18 410CST0738
See Sheet No13 - 18 410CST0800
See Sheet No15 18 410CST0738
See Sheet N 13-18 410CST0800
Selected yellow point
T2=β ≥ 600
Yellow point
NC
-12V


410CST0742
410CST0741
410CST0866
See Sheet N 13-18 410CST0733
See Sheet No 15-18 410CST0738
See Sheet No 13-18 410CST0800
See Sheet No 15 18 410CST0738
See Sheet N 13-18 410CST0800
See Sheet No 9-18 and F000577
See Sheet No 13-18 410CST0800
See Sheet No 11-18 410CST0735
See Sheet No 11-18 410CST0735
See Sheet N 13-18
See Sheet N 13-18 410CST0739
See Sheet No 13-18 410CST0739
See Sheet No 7 410CST0740
See Sheet N 13-18 410CST0800
T2=β ≥ 600
Yellow point
Selected yellow point
NC
-12V
-27V
ACCOMP
BASS
RHYTHM
VOLUME
OUTPUT
Code | Type | Transistors
T6 - T13 T14 | NPN | BC 173
T1 - T5 T7 - T12 T15 - T21 | PNP | BC 415 B
Integrated Circuits
Code | Type | Manufactured
20-70 | 3301 |
8 9-10 | CA 3080 | RCA
Model WILGAMAT
Object Board 410CST0003 410CST0741-742
Sheet N17-18
Date 20-4-77

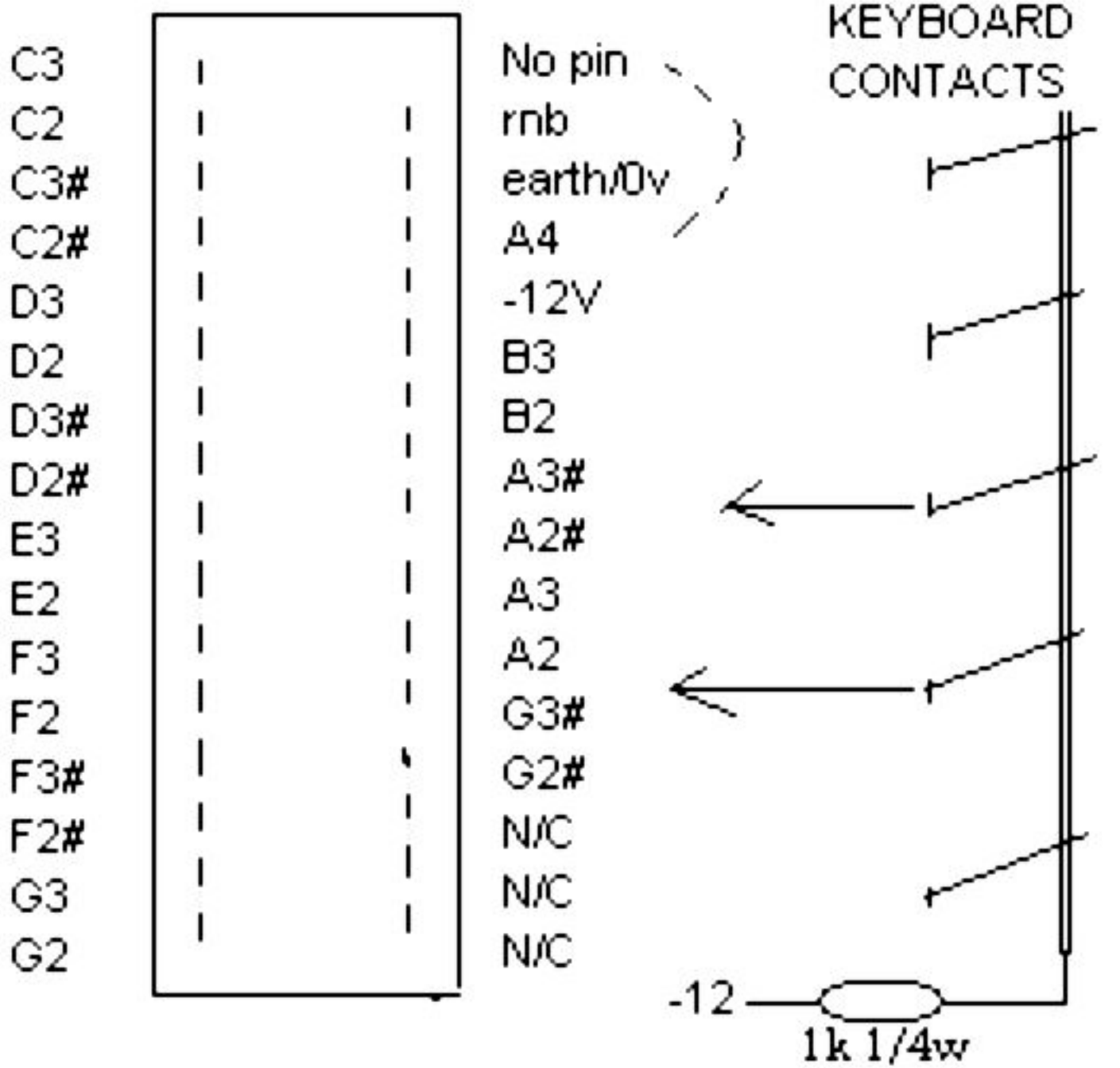

735 A
735 B
735 C
736
737
738
739
740
576
577
741
742
-27V
-12V
FQ
FS
FP
CC
CP
CT
FT
R3
R7
RP
F16
F0
F4
F8
AT
AP
AC
AB
A4
T1
T2
-7V -12V
Sheet No 18
Object
Model

-7V
-12V
FS
FQ
-27V
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R20
R29
R30
R31
R32
R33
R34
R35
R36
R37
R38
R39
R40
R41
R42
R43
R44
R45
R46
R47
R50
R59
R60
R0
C1
D1
Z1
RA
RN
RP
CK
CT
SC
F4
F8
F16
12V
CB
0+4



THE NUMBERS IN BRACKETS REPRESENT THE ELKA CODES OF THE ASSEMBLED BOARDS WHILST THE OTHERS REPRESENT THE ELKA CODES OF THE NON ASSEMBLED BOARDS.

Model	WILGAMAT
Object	Assembly of Printed Circuit
Sheet No	18-18
Date	14-6-77


KEYBOARD
CONTACTS
C3
C2
C3#
C2#
D3
D2
D3#
D2#
E3
E2
F3
F2
F3#
F2#
G3
G2
No pin
rnb
earth/0v
A4
-12V
B3
B2
A3#
A2#
A3
A2
G3#
G2#
N/C
N/C
N/C
-12
1k 1/4w

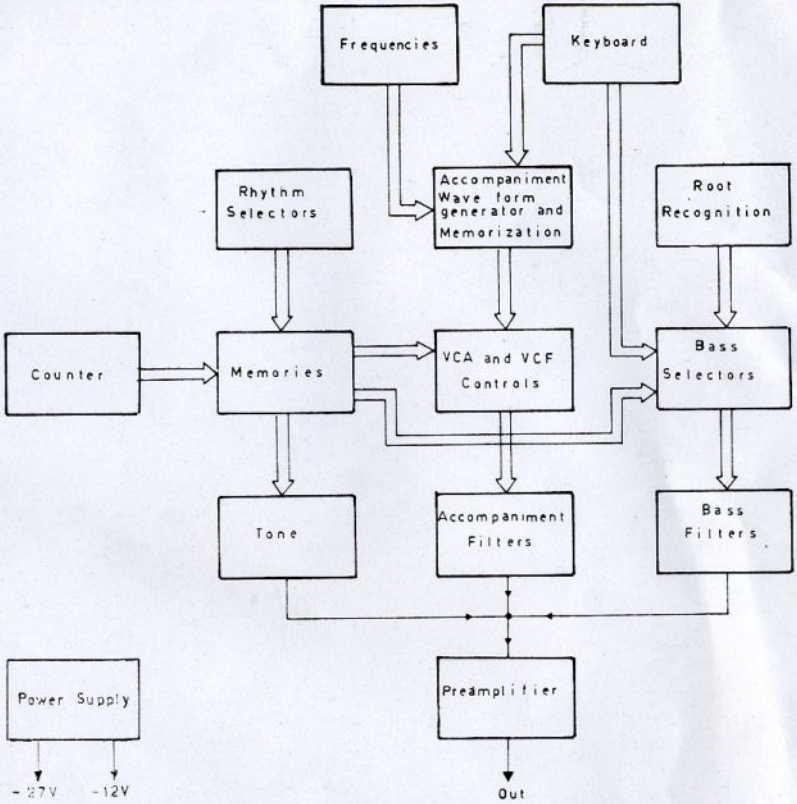
Transistors	Equivalents
BC 171	BC 173 - BC 108 - BC 208 - BC 209
BC 173	BC 109 - BC 209 - BC 239
BC 415 B	BC 205 B - BC 308 B
BC 415 C	BC 205 C - BC 308 C
BC 205 C	BC 308 C
BC 308 C	BC 205 C

All diodes are FDH 9439 Fairchild
or BA 130

N. B.

1 The firm reserves the right to make changes without any warning and to their own discretion.

2 The tensions are measured when the instrument is turned on but not played



	Model	Object:	Sheet No 1 - 18
	WILGAMAT	Block Diagram	Date 9 - 12 - 77