

**SCHEMATIC DIAGRAMS
MOD.**

Sprinter 61

SECOND EDITION

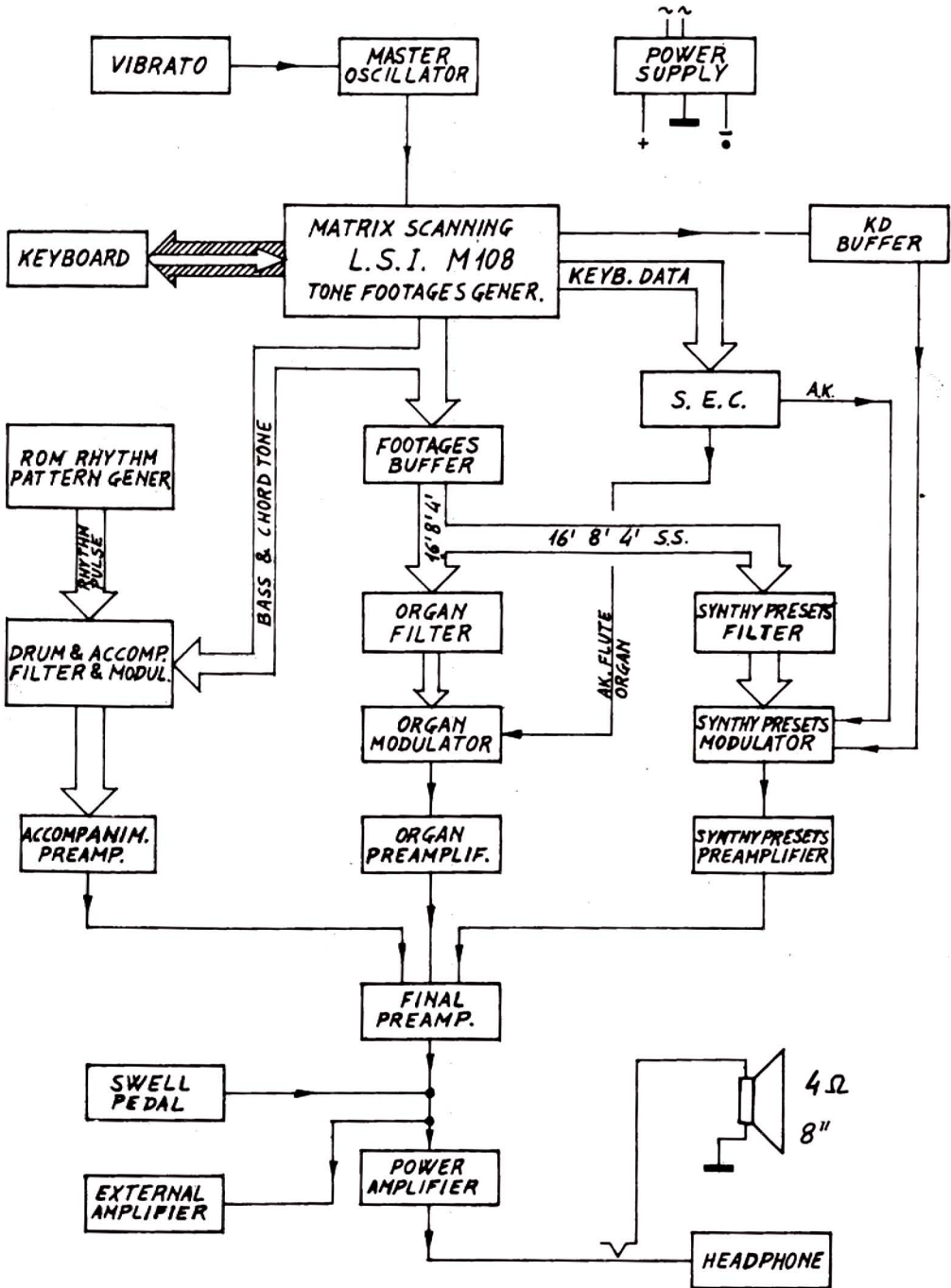
ELECTRONIC ORGAN

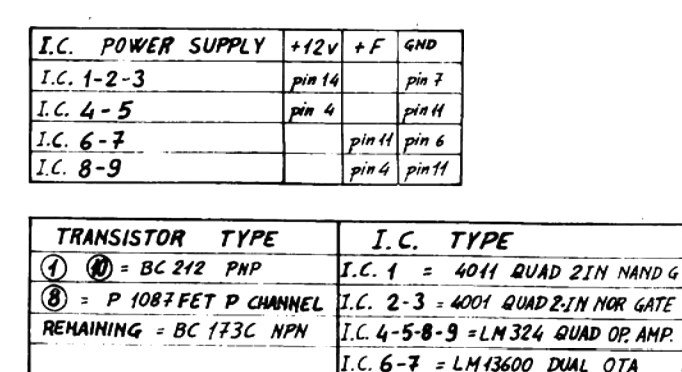
 **GEM**[®] A PRODUCT OF

**general
electro**  **music**

MONDAINO · FO · ITALY

BLOCK DIAGRAM

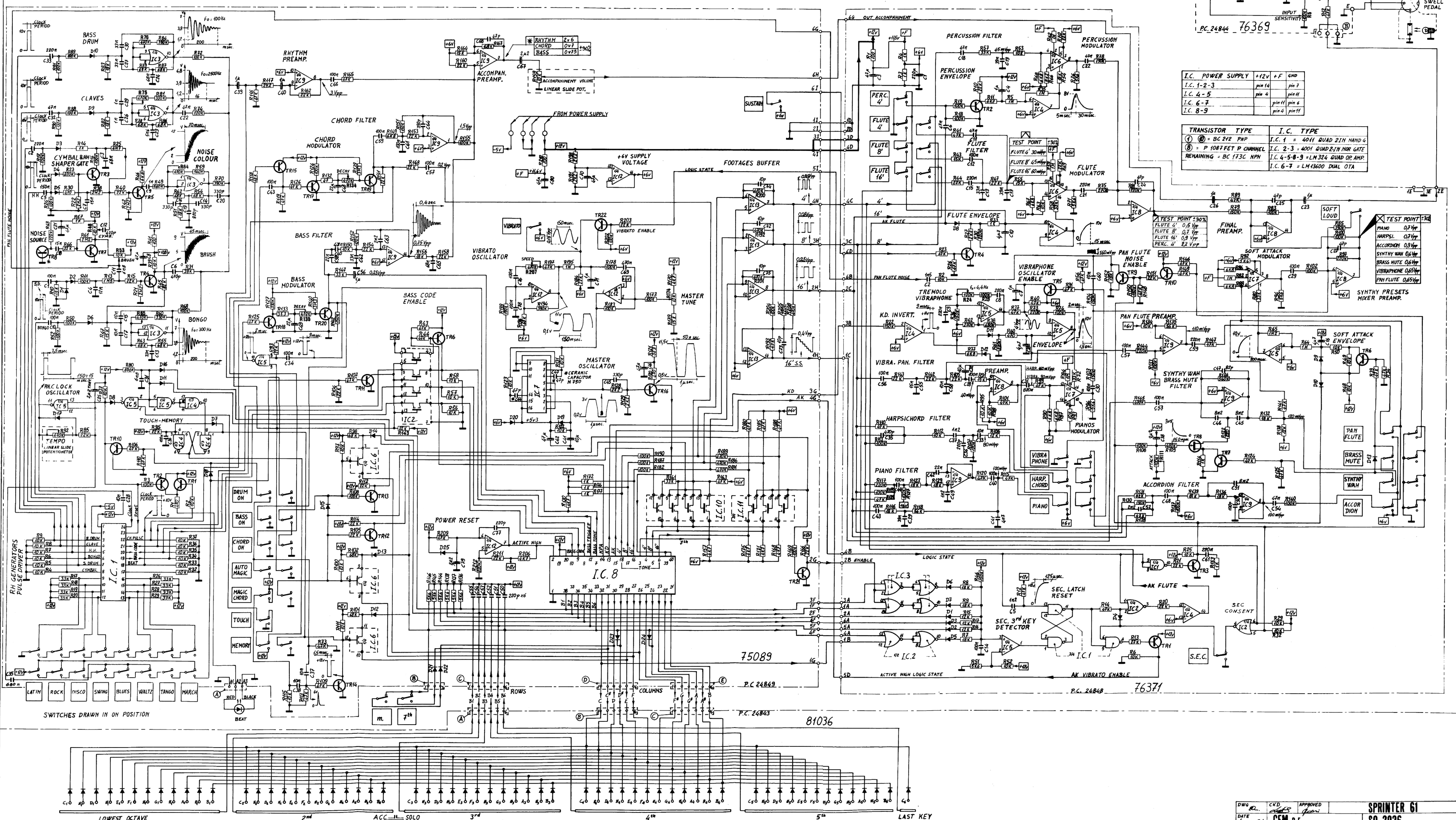


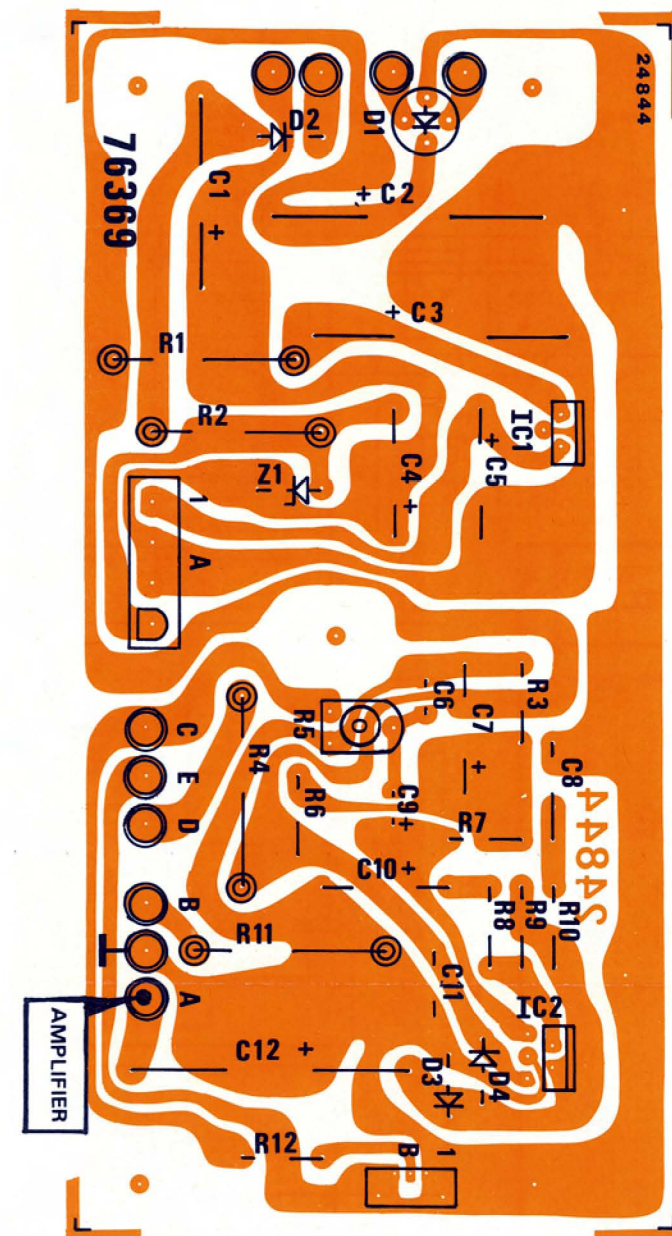
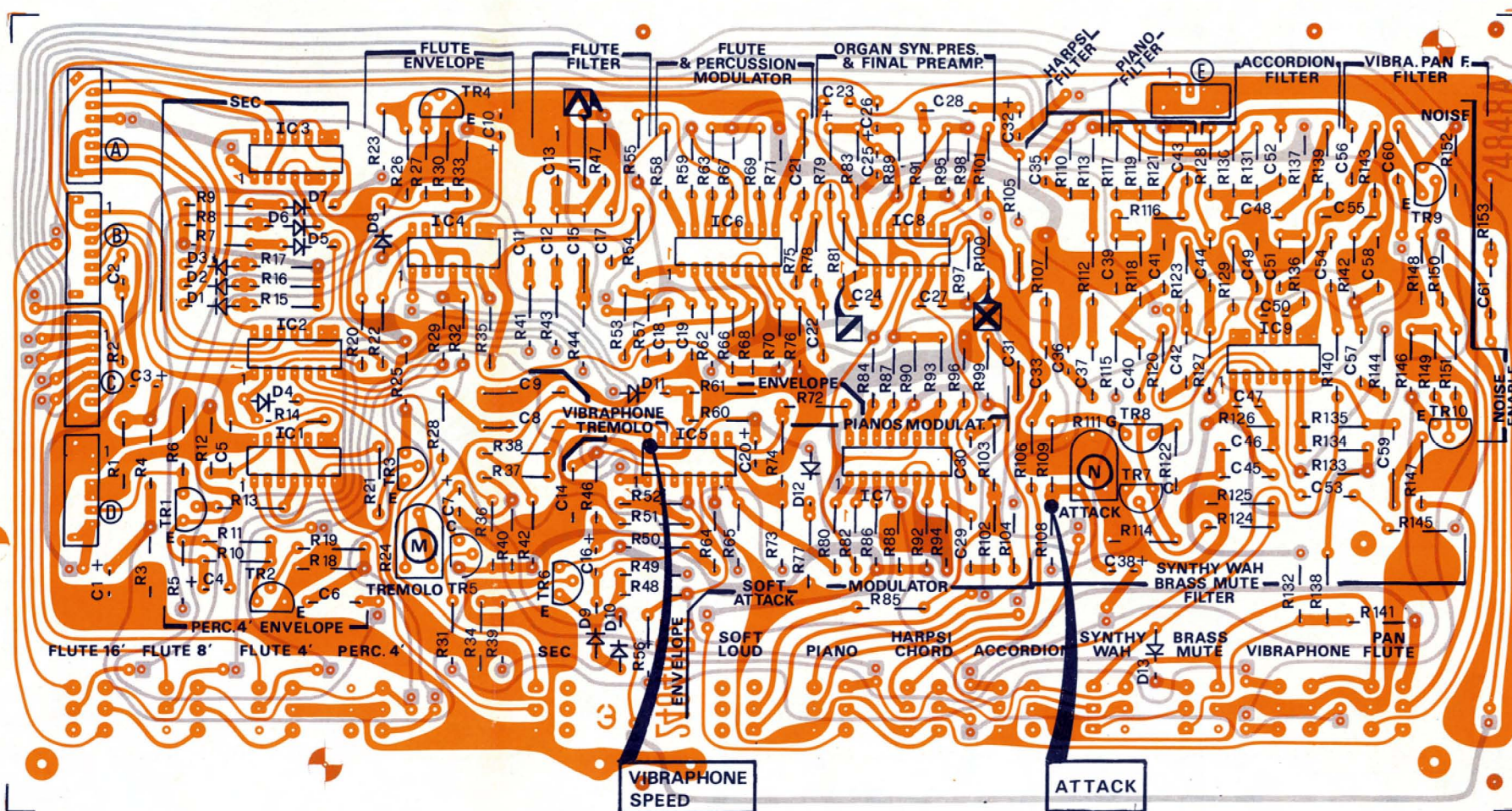
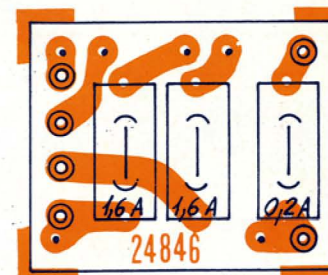
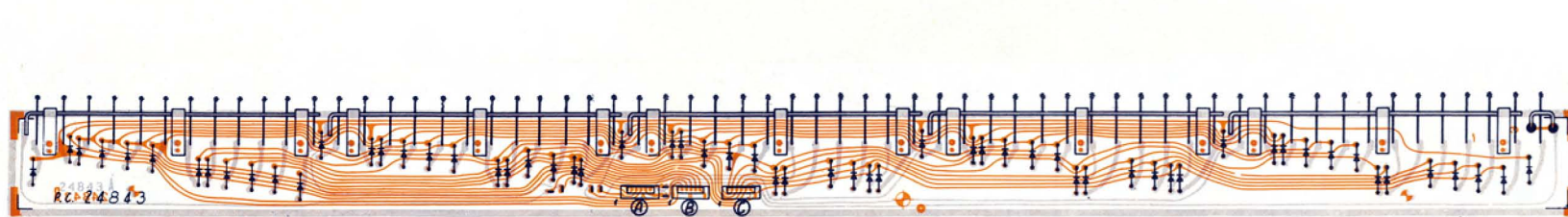


TRANSISTOR TYPE	
⑧	= FACTORY SELECTED RED DOT *
② ⑥ ⑮	= BC 212 SMALL SIGNAL PNP
⑮	= BF 494 HIGH SPEED
REMAINING = BC 173C SMALL SIGNAL NPN	

I.C.	TYPE
I.C. 1	= RHYTHM PATTERN GENERATOR CUSTOM
I.C. 2-6-10-11	= LM 4016 BILAT. CLK. SWITCH
I.C. 3	= 4001 FACTORY SELECTED RED DOT
I.C. 4 = 4023	TRIPLE 3 IN HAND G
I.C. 5 = 4093	QUAD 2 IN 1 SCHMITT TRIGGER
I.C. 7	= LS 74221 DUAL MONOSTABLE
I.C. 8 = LM 108	LSI DIGITAL TONE GENERATOR
I.C. 9-12-13	= LM 324 QUAD. OP. AMP.

I.C. POWER SUPPLY	+12V	+F	+10V _B	Grid
I.C. 2-4-5-6-10-11	pin 14			pin 7
I.C. 3			pin 14	pin 7
I.C. 9-13		pin 4		pin 11
I.C. 12	pin 4			pin 11





PART LIST «SPRINTER 61»

MISCELLANEOUS

Black frame	15417
Cheek block	15419
Loudspeaker, 8", 4 ohm	22064
Leg kit	19147/19148
Knob for slider pot.	15406
Switch knob, orange	15407
Switch knob, grey	15408
Switch knob, light-blue	15409
Switch knob, ivory	15410
Switch knob, red	15411
Switch knob, black	15412
Switch knob, green	15413
Pushbutton, 2 keys, red	14449
Black cover, printed	15418
Music stand	17458

KEYBOARD

Keyboard assy	72055
Mechanical part only	80024
Sharp key, black	15999
Natural key, white	15998
Spring actuator	15225
Spring for white key	16002
Spring for black key	16001
P.C. Board, 24845 assy	81035
Diode, Si, signal (FDH999)	8103
Bus bar, L, silvered	16086
Bus bar, U, silvered	16085
Contact spring	16055

POWER SUPPLY & AMPLIFIER

Power supply & ampl. assy	73568
Jack	14200
Socket, 3 poles	14101
Mains transformer europe	23070
Mains transformer, UL & CSA	23071
Mains switch, europe	11278
Mains switch, UL & CSA	11237
P. C. Board 24846 assy	76370
P. C. Board 24844 assy	76369
Diode, Si, rectifier (1N4002)	8156
Zener, 5,1 V., (ZPY 5,1)	8232
Bridge rectifier (2W02)	8168
Voltage regulator 12 V. (78M12)	10038
Amplifier (TDA 2030)	10028
Trimmer, res, 100K ohm	7244

RHYTHM & FILTER

Rhythm & filter assy	82047
P. C. Board 24847 assy	76368
P. C. Board 24850 assy	76412
Trimmer, res. 10K ohm	7191
Trimmer, res. 22K ohm	7206
Trimmer, res. 100K ohm	7244
Trimmer, res. 470k ohm	7331
Slider pot. 470K ohm	7952
Slider pot 10K ohm	7903
Pushbutton, 8 keys, push - push	14444
Pushbutton, 4 keys, push - push	14445
Pushbutton, 2 keys, push - push	14446
Pushbutton, 7 keys, pushpush	14447
Diode, Si, signal (FDH 999)	8103
Transistor, NPN, (BC 173C)	9271
Transistor, PNP, (BC 212)	9193
Transistor, noise generator	9401
Transistor, NPN, H.F., (BF 494)	9305
Transistor, FET, P.CH., (PI087)	9856
Rhythm generator (M 254)	10014
Tone generator (M 108)	10015
4001; quad 2-input NOR	10505
4023, triple 3-input NAND	10564
LM 324, quad op. amplifier	10056
74LS 221; dual monostable	10030
13600, dual OTA	10029
4016, quad bilateral Switch	10518
4093, quad 2-input NAND	10565

CALIBRATION PROCEDURE "SPRINTER 61"

Initial conditions: Instrument switched-on, All tabs excluded, Accompaniment volume to max, Swell pedal to max.

Instrument	Test point	Measurement Conditions	Trimmer	Diagram Ref.	Reading
Master Oscillator					
Tuner	Loudspeaker	Flute 8' on	I	R174-75089	Zero beat
By ear		A3 key pressed			
Digital counter	pin 8-IC13 (organ tuning)	Flute 8' on	I	R174-75089	440 Hz.
		A3 key pressed			
Cymbal & HH					
Oscilloscope	TR 5 coll. (cymbal-HH)	Latin on	A	R48-75089	2,5 Vpp.
2V./cm.		Drum on			
10mS./cm.		Tempo 1/4 course			
Noise colour					
By ear	Loudspeaker	Latin on	C	R64-75089	Shining sound
		Drum on			
		Tempo 1/4 course			
Claves					
Oscilloscope	Pin 4-IC3 (claves)	Latin on	E	R75-75089	16mS.
2V./cm.		Drum on			Decay time
5mS./cm.		Tempo 1/4 course			
Bass Drum					
Oscilloscope	Pin 10-IC3 (bass drum)	Tango on	F	R76-75089	160mS.
2V./cm.		Drum on			Decay time
20mS./cm.		Tempo 1/4 course			
Bongo					
Oscilloscope	Pin 11-IC3 (bongo)	Tango on	D	R65-75089	160mS.
2V./cm.		Drum on			Decay time
20mS./cm.		Tempo 1/4 course			
Brush					
Oscilloscope	TR 4 coll. (brush)	Tango on	B	R53-75089	5 Vpp.
2V./cm.		Drum on			
10mS./cm.		Tempo 1/4 course			
Chord Decay					
Digital volt.	R132 cross point C48 (chord decay)	Tango on	G	R134-75089	2,6 V.
		Automagic on			
		Touch on			
Bass Decay					
Oscilloscope	Pin 14-IC9 (bass decay)	Tango on	H	R135-75089	0,4 S.
0,1 V./cm. a.c.		Automagic on			Decay time
0,1S./cm.		Tempo 1/4 course			
		Fl pressed			
Vibrato Speed					
Oscilloscope	Pin 8 IC12 (vibrato speed)		L	R207-75089	150mS.
2V./cm.					Period
20mS./cm.					
Attack					
Digital volt.	R108 cross point C38 (attack)		N	R111-76371	3,5 V.d.c.
Amplifier					
Oscilloscope	Pin A 76369 (amplifier)	Flute on	O	R5-76369	2,5 Vpp.
0,5V./cm.		F3 pressed			
1mS./cm.					
Vibraphone Speed					
Oscilloscope	Pin 14-IC5 (vibraphone speed)		M	R24-76371	220mS.
2V./cm.					Period
50mS./cm.					