

**SCHEMATIC
DIAGRAM**

CRUMAR[®]
Musical Instruments

**mod.
toccata**

¹ →○ K 2.1	FEMALE CONNECTOR SYMBOL (es. K2.1)
○←	PLUG IN CONNECTOR SYMBOL
○→	OUTPUT SIGNAL (TO DWG...)
○←	INPUT SIGNAL (FROM DWG...)
○	TEST POINT (TP...)
●	CONNECTING POINT (ON p.c.b.)

ALL resistors 1/4 unless otherwise indicated

ALL tabswitches shown in OFF position

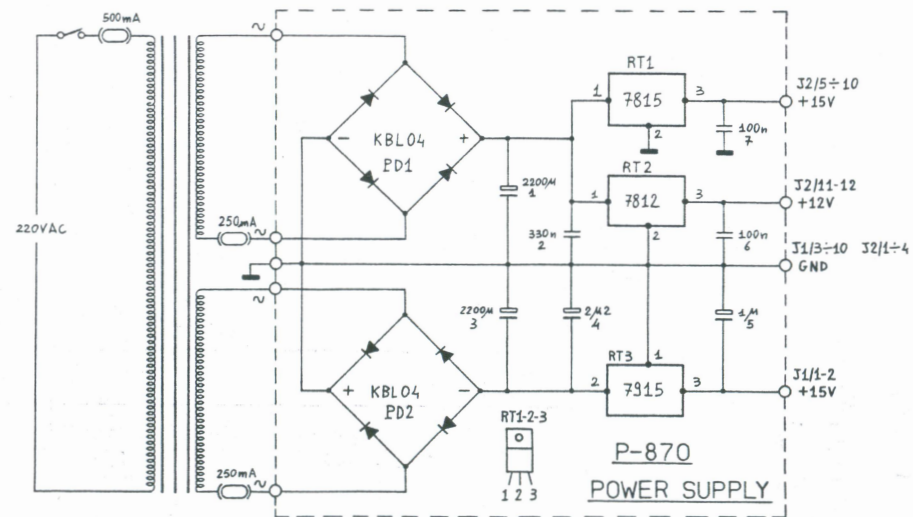
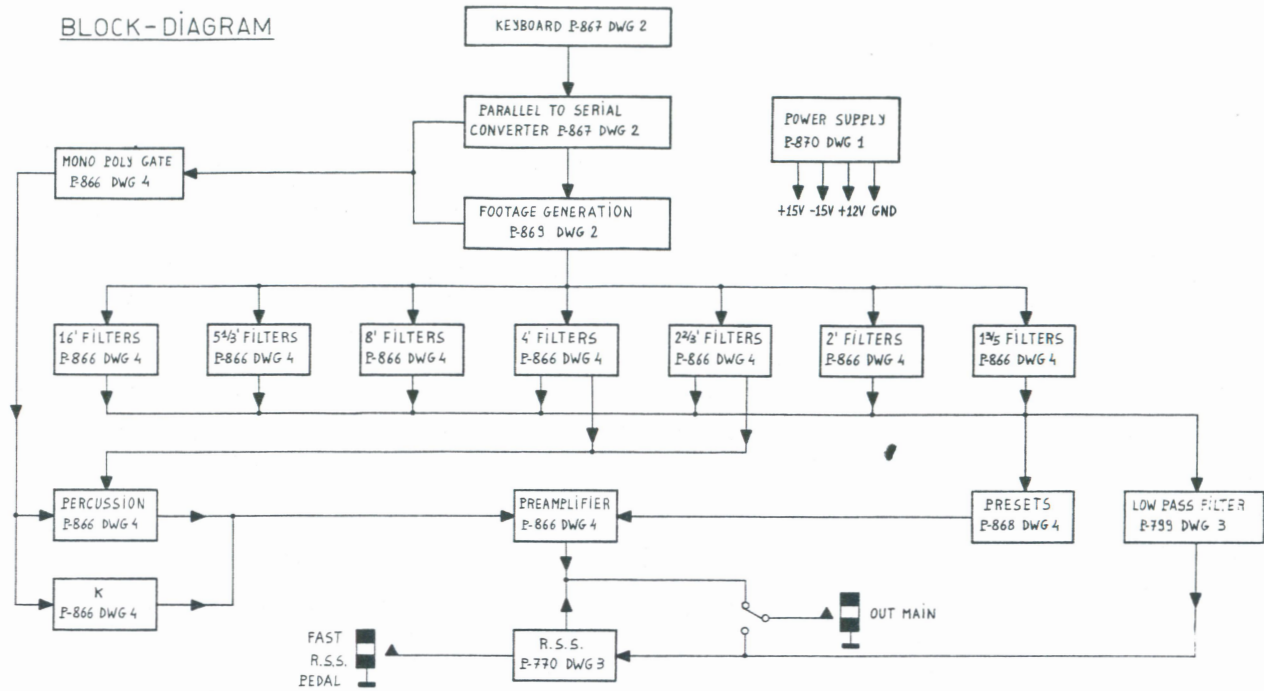
ALL keyswitches shown in OFF position

See part list for component part numbers

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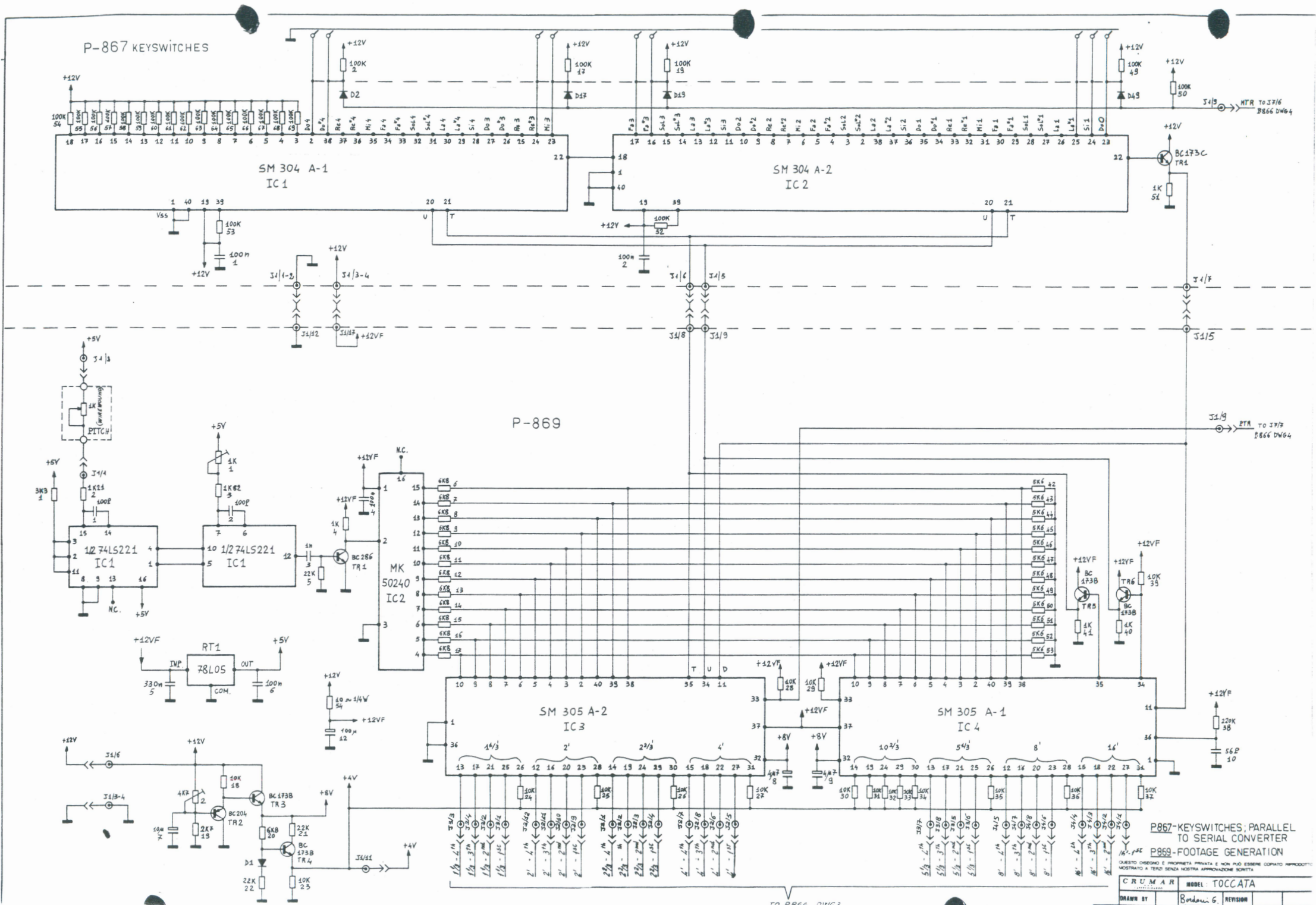
- DWG 1 (P-870) = POWER SUPPLY
- DWG 2 (P-867) = KEYSWITCHES PARALLEL TO SERIAL CONVERTER
- DWG 2 (P-869) = FOOTAGE GENERATION
- DWG 3 (P-799) = R.S.S. SWITCHES
- DWG 3 (P-770) = R.S.S.
- DWG 4 (P-868) = PRESETS AND PERCUSSION SWITCHES
- DWG 4 (P-866) = FLUTE FILTERS-PRESETS PERCUSSION PREAMPLIFIERS

BLOCK-DIAGRAM



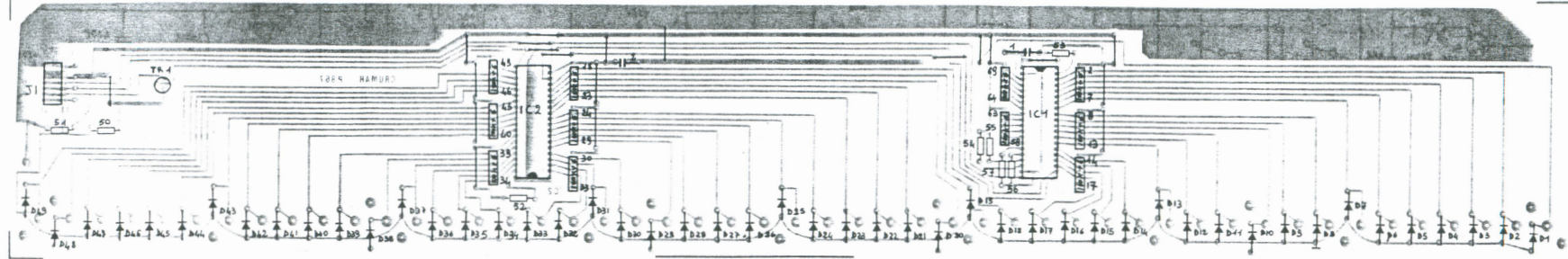
QUESTO DISEGNO È PROPRIETÀ PRIVATA E NON PUÒ ESSERE COPiato, RIPRODOTTO, REGISTRATO A TERZO SENZA NOSTRA APPROVAZIONE SCRITTA.

CRUMAR	MODEL: TOCCATA
BANDA 6	REVISIONI
DWG-1	DATE: 1-11-80



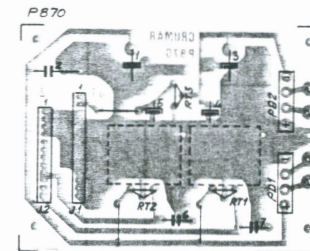
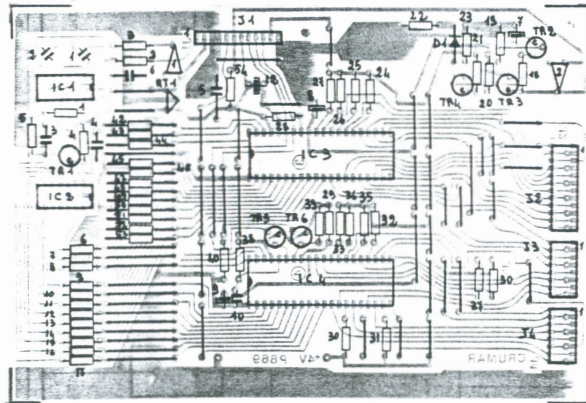
P867-KEYSWITCHES; PARALLEL TO SERIAL CONVERTER
 P869-FOOTAGE GENERATION
 QUESTO CIRCUITO È PROPIETÀ PRIVATA E NON PUÒ ESSERE COPiato, RIPRODOTTO, MOSTRATO A TERZI SENZA NOSTRA APPROVAZIONE SCRITTA.
 C R U M A R MODEL: TOCCATA
 DRAWN BY: B. G. REVISION:

P-867



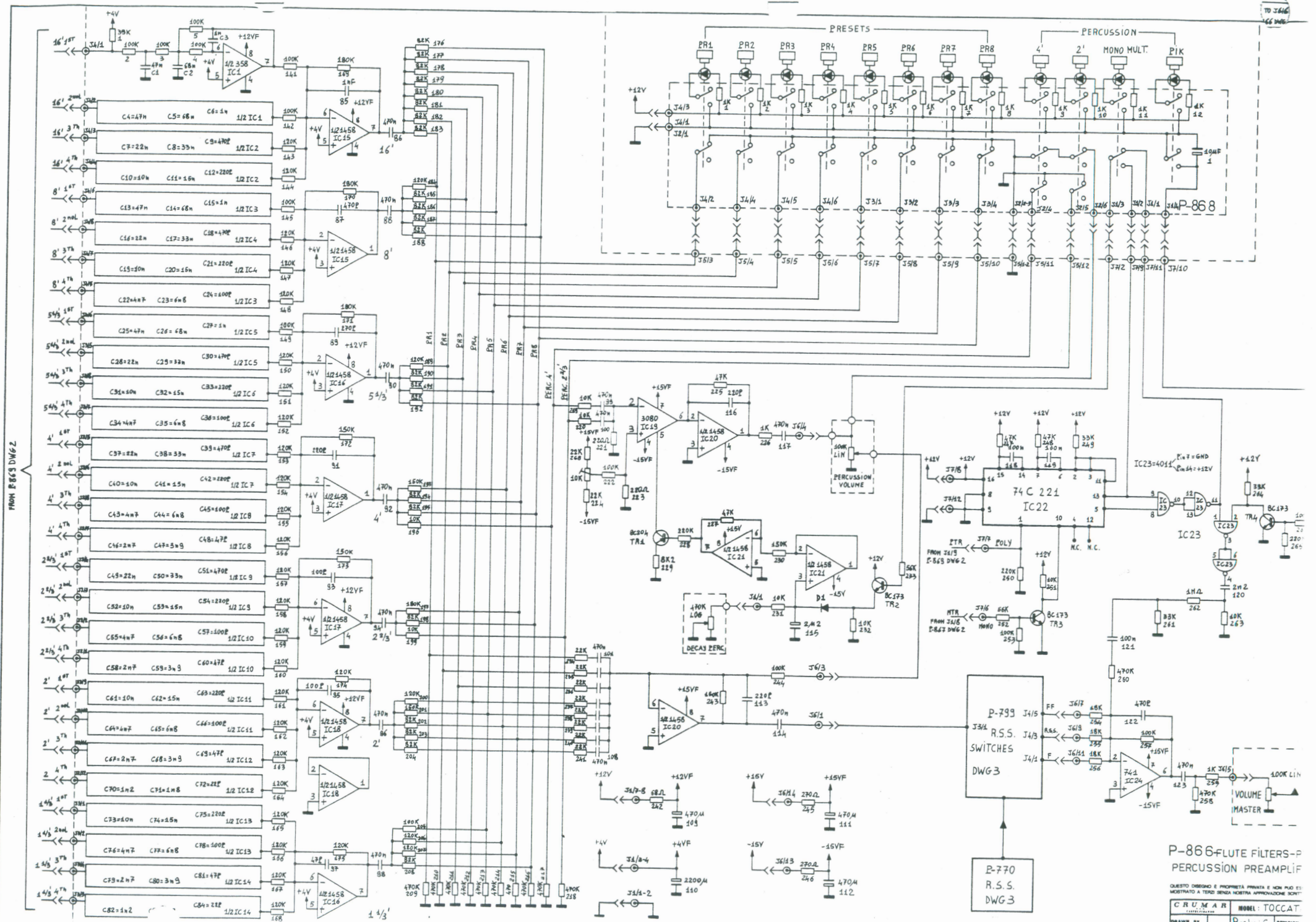
DWG 2A

P-869



QUESTO DISEGNO È PROPRIETÀ PRIVATA E NON PUÒ ESSERE COPiato NEMO DOTTO
MONTATO A TERZO SENZA NOSTRA APPROVAZIONE SCRITTA.

C.R.U.M.A.R.		MODEL: TOCCATA	
PROGETTO	REVISIONI	REVISIONI	REVISIONI
DWG: 2A	PROJEKTANT	DATA	16-11-80



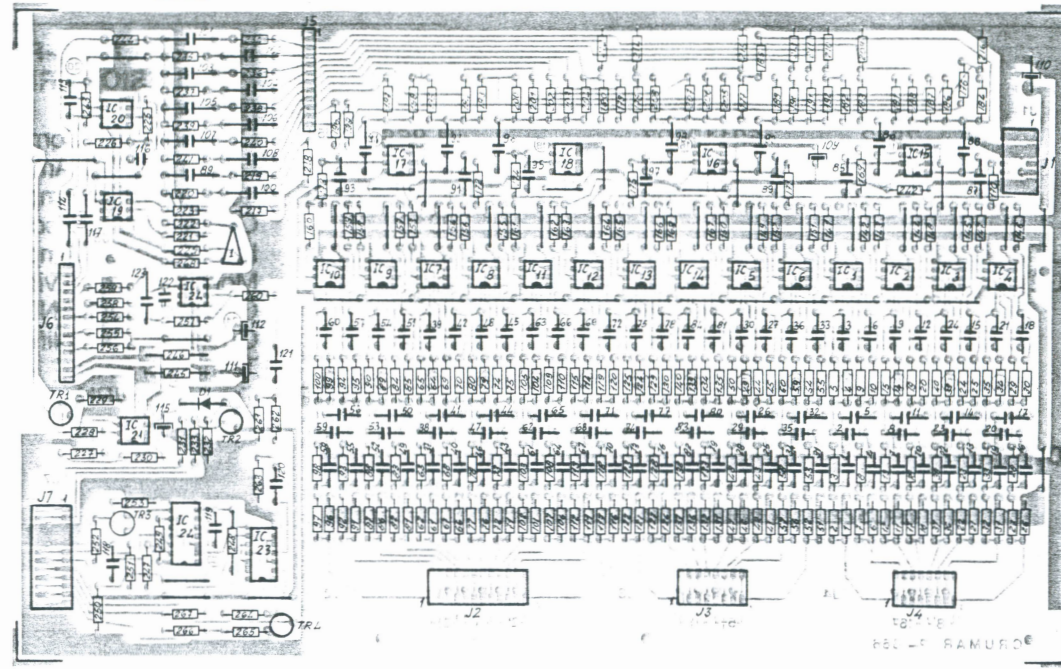
FROM P-863 DWG 2

P-866-FLUTE FILTERS-P
PERCUSSION PREAMPLIF

QUESTO DISEGNO È PROPRIETÀ PRIVATA E NON PUÒ ESSERE MOSTRATO A TERZI SENZA NOSTRA APPROVAZIONE SCRITTA

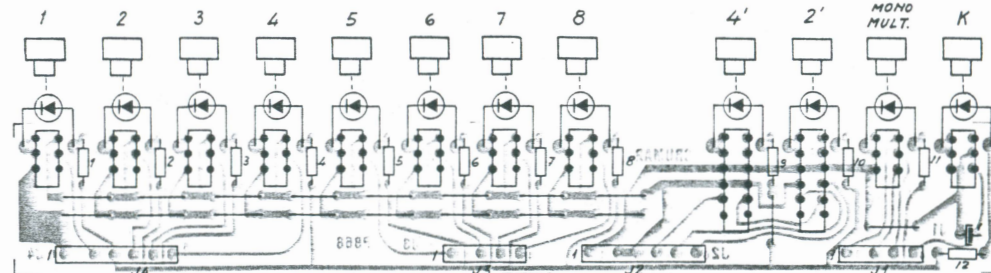
C R U M A R MODEL: TOCCAT
DRAWN BY B. G. REVISION

P866



ORGAN PRESETS

PERCUSSION



P868

QUESTO DISEGNO È PROPRIETÀ PRIVATA E NON PUÒ ESSERE COPiato NEPI DOTTI
 MOSTRATO A TERZI SENZA NOSTRA APPROVAZIONE SCRITTA

CRUMAR
 MODEL: TOCCATA

BRUNO
 BRUNO G. REVISIONI

DWG. A DESIGN

DATE 6-4-80

MODEL TOCCATA

ELECTRONIC COMPONENT LIST

Schem. Ref.	Circuit	Type	Part Code
POWER SUPPLY (DWG1)			
P-870	Complete with Components		978002469
RT1	Voltage Regulator	7815	62110020
RT2	Voltage Regulator	7812	62110027
RT3	Voltage Regulator	7915	62110022
PD1-PD2	Rectifier Bridge	KBL04	66000006
KEYSWITCHES PARALLEL TO SERIAL CONVERTER (DWG2)			
P-867	Complete with Components		978002466
IC1-IC2	Parallel Series Converter	SM304A	68070134
TR1	Buffer	BC173C	62120003
D1 ÷ D49	Diodes	BA130	65000001
FOOTAGE GENERATION (DWG2)			
P-869	Complete with Components		978002468
IC1	Master Oscillator	74LS221	68000058
IC2	Mostek	MK50240	68000009
IC3-IC4	Generator Circuit	SM305A	68070135
TR1	Buffer	BC173C	62120003
TR2	Voltage Regulator	BC308	62210001
TR3 - TR4	Voltage Regulator	BC173C	62120003
TR5 - TR6	Buffer	BC173C	62120003
RT1	Voltage Regulator	78L05	62110031
D1	Diode	BA130	65000001
R.S.S. SWITCHES (DWG3)			
P-799	Complete with Components		978002474
IC1	Operational Amplifier	741	68000059
TR1 ÷ TR4	Transistors NPN	BC173C	62120003
D1	Diode	BA130	65000001
R.S.S. (DWG3)			
P-770	Complete with Components		978002475
IC1 ÷ IC4	Operational Amplifier	1458	68000053
I2 - IC3	Quad Analog Switches CMOS	4016	68000072
IC5	Quad 2-Input NAND Gates CMOS	4011	68000034
IC6	Analog Delay Line	TDA 1022	68000084
TR2 - TR7	Transistors NPN	BC173C	62120003
TR3 - TR6	Transistors PNP	BC308	62210001
D1 ÷ D11	Diodes	BA130	65000001
PRESETS AND PERCUSSION SWITCHES (DWG4)			
P-868	Complete with Components		978002467

MODEL TOCCATA

ELECTRONIC COMPONENT LIST

Schem. Ref.	Circuit	Type	Part Code
FLUTE FILTERS-PRESETS PERCUSSION PREAMPLIFIERS (DWG4)			
P-866	Complete with Components		978002465
IC1 ÷ IC14	Low Power Op. Amplifier	358	68000093
IC15 ÷ IC18	Low Noise Op. Amplifier	1458	68000053
IC19	Operational Transconductance Amplifier	3080	68000066
IC20 - IC21	Low Noise Op. Amplifier	1458	68000053
IC22	Monostable Multivibrator	74C221	68000099
IC23	Quad 2-Input NAND Gates CMOS	4011	68000034
IC24	Operational Amplifier	741	68000059
TR1	Transistor PNP	BC204	62210001
TR2-TR3-TR4	Transistor NPN	BC173C	62120003
D1	Diode	BA130	65000001