

**SCHEMATIC
DIAGRAM**

CRUMAR[®]

Musical Instruments

**mod.
trilogy**



FEMALE CONNECTOR SYMBOL (es. J 2/1)



PLUG IN CONNECTOR SYMBOL



WIRE SOLDERING POINT



TEST POINT (T P...)



CONNECTING POINT (ON p.c.b.)



METALLIC FILM RESISTOR 1%

ALL resistors 1/4w unless otherwise indicated

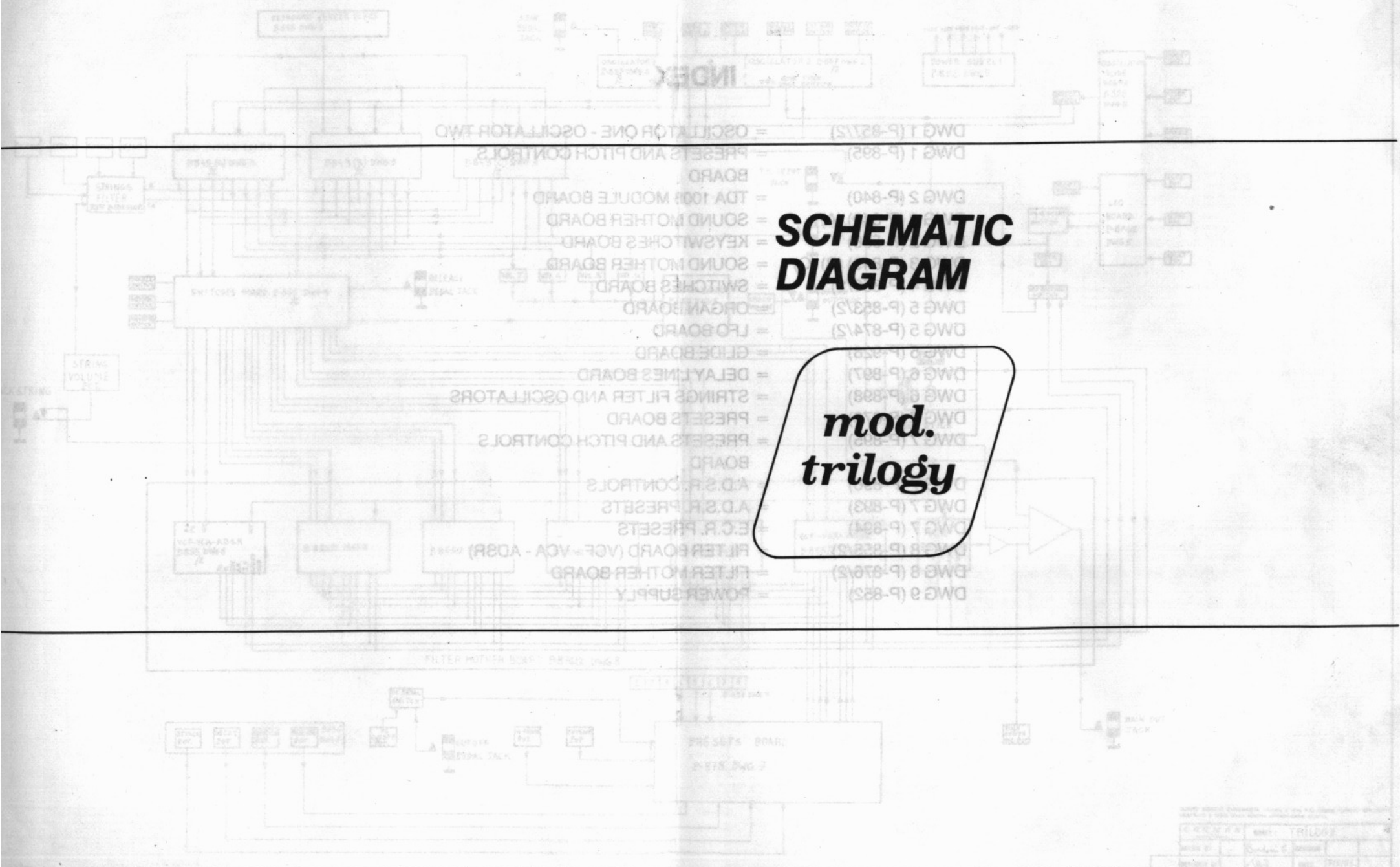
ALL tab switches shown in OFF position

ALL key switches shown in OFF position

See part list for component part numbers

**CRUMAR RESERVES THE RIGHT TO CHANGE
SPECIFICATIONS AND DESIGNS, WITHOUT
NOTICE AND LIABILITY.**

BLOCK AND WIRING DIAGRAM



**SCHEMATIC
DIAGRAM**

*mod.
trilogy*

DATE	REV	TRILOGY
DESIGNER	DATE	REV
DRWING	DATE	REV
CHKD BY	DATE	REV

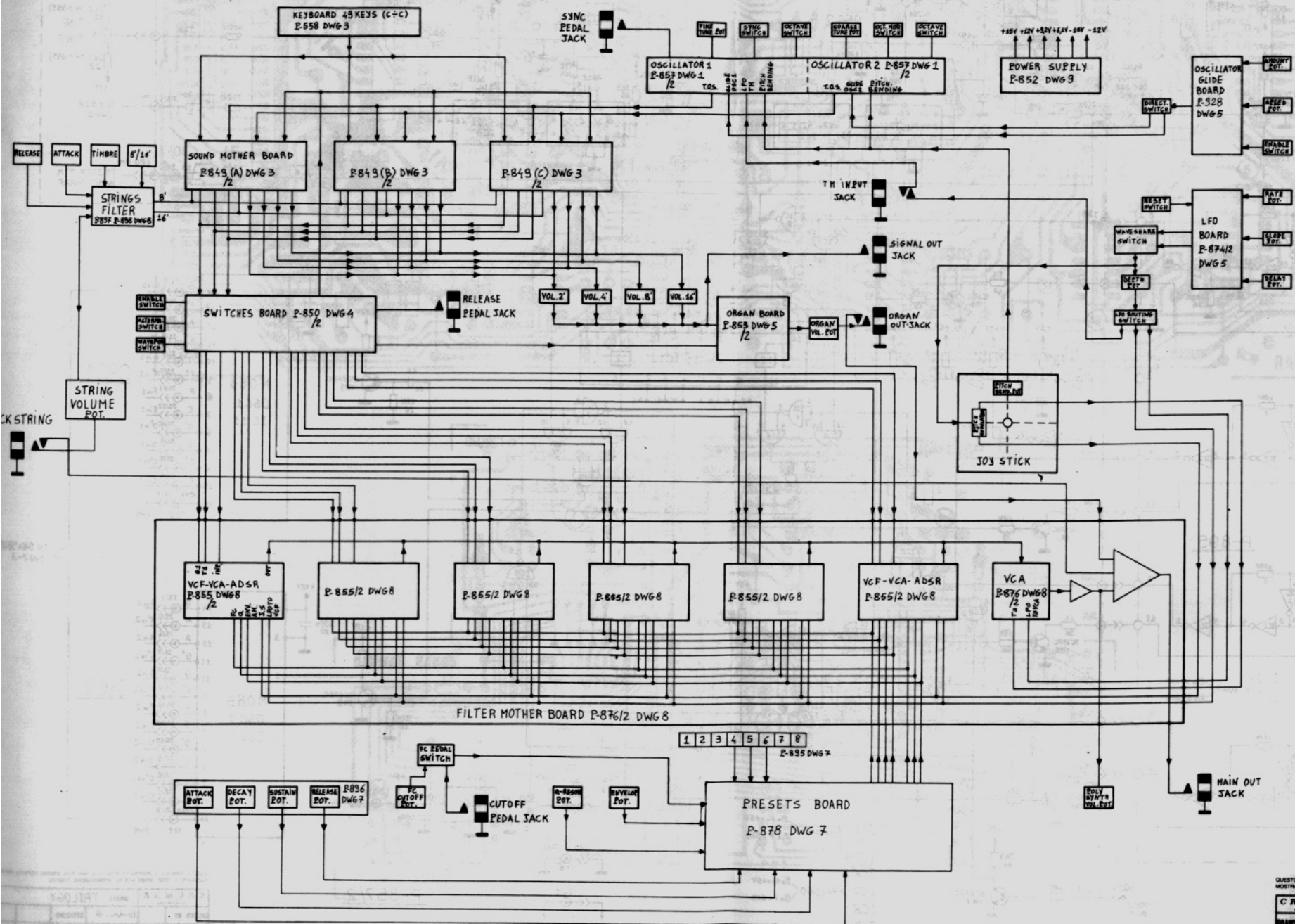
INDEX

DWG 1 (P-857/2)	= OSCILLATOR ONE - OSCILLATOR TWO
DWG 1 (P-895)	= PRESETS AND PITCH CONTROLS BOARD
DWG 2 (P-840)	= TDA 1008 MODULE BOARD
DWG 2 (P-849) (A)	= SOUND MOTHER BOARD
DWG 2 (P-558)	= KEYSWITCHES BOARD
DWG 3 (P-849) (B) (C)	= SOUND MOTHER BOARD
DWG 4 (P-850/2)	= SWITCHES BOARD
DWG 5 (P-853/2)	= ORGAN BOARD
DWG 5 (P-874/2)	= LFO BOARD
DWG 5 (P-928)	= GLIDE BOARD
DWG 6 (P-897)	= DELAY LINES BOARD
DWG 6 (P-898)	= STRINGS FILTER AND OSCILLATORS
DWG 7 (P-878)	= PRESETS BOARD
DWG 7 (P-895)	= PRESETS AND PITCH CONTROLS BOARD
DWG 7 (P-896)	= A.D.S.R. CONTROLS
DWG 7 (P-893)	= A.D.S.R. PRESETS
DWG 7 (P-894)	= E.C.R. PRESETS
DWG 8 (P-855/2)	= FILTER BOARD (VCF - VCA - ADSR)
DWG 8 (P-876/2)	= FILTER MOTHER BOARD
DWG 9 (P-852)	= POWER SUPPLY

See part list for component part numbers

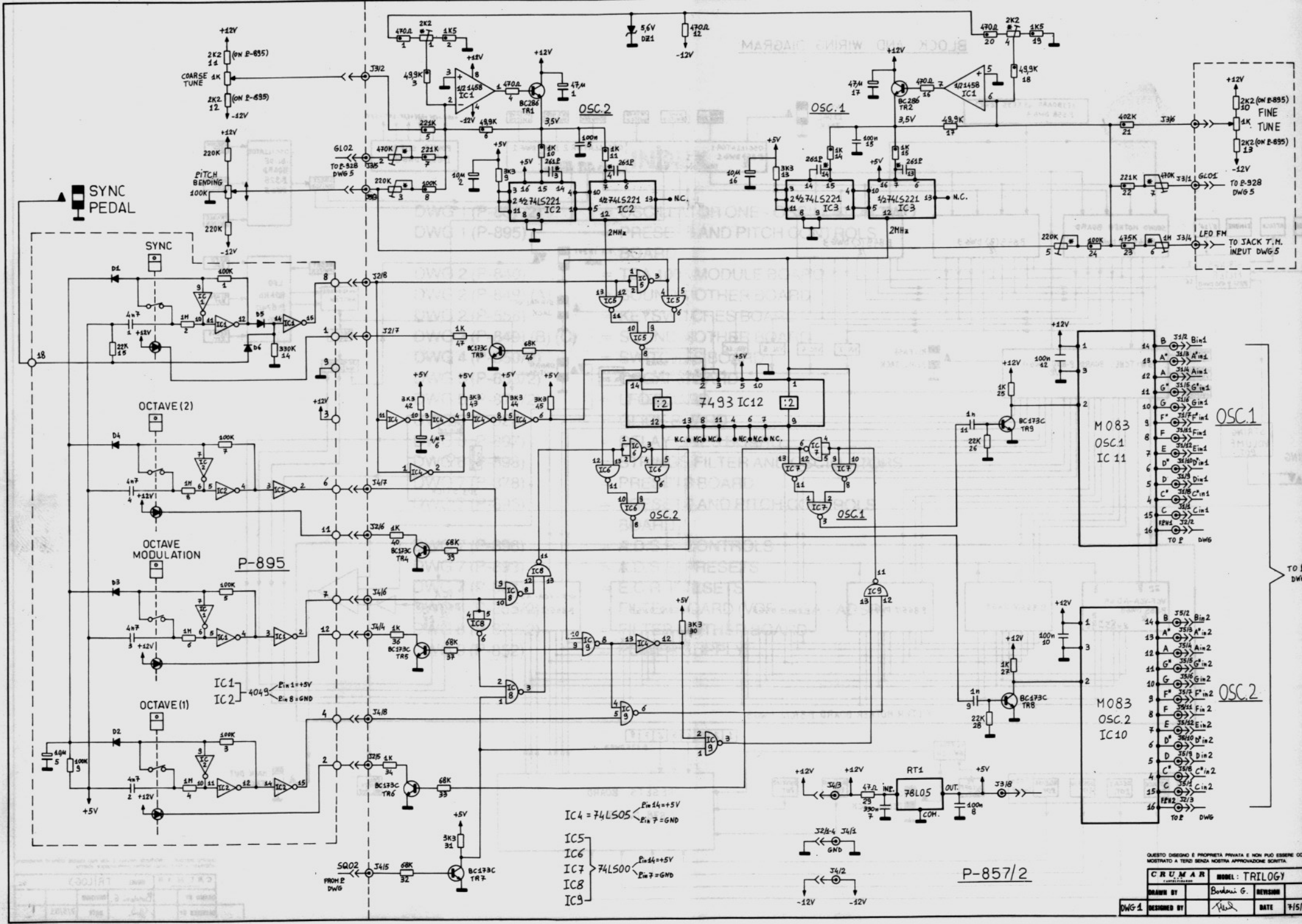
CRONOS RESERVES THE RIGHT TO CHANGE SPECIFICATIONS AND DESIGNS, WITHOUT NOTICE AND LIABILITY.

BLOCK AND WIRING DIAGRAM



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

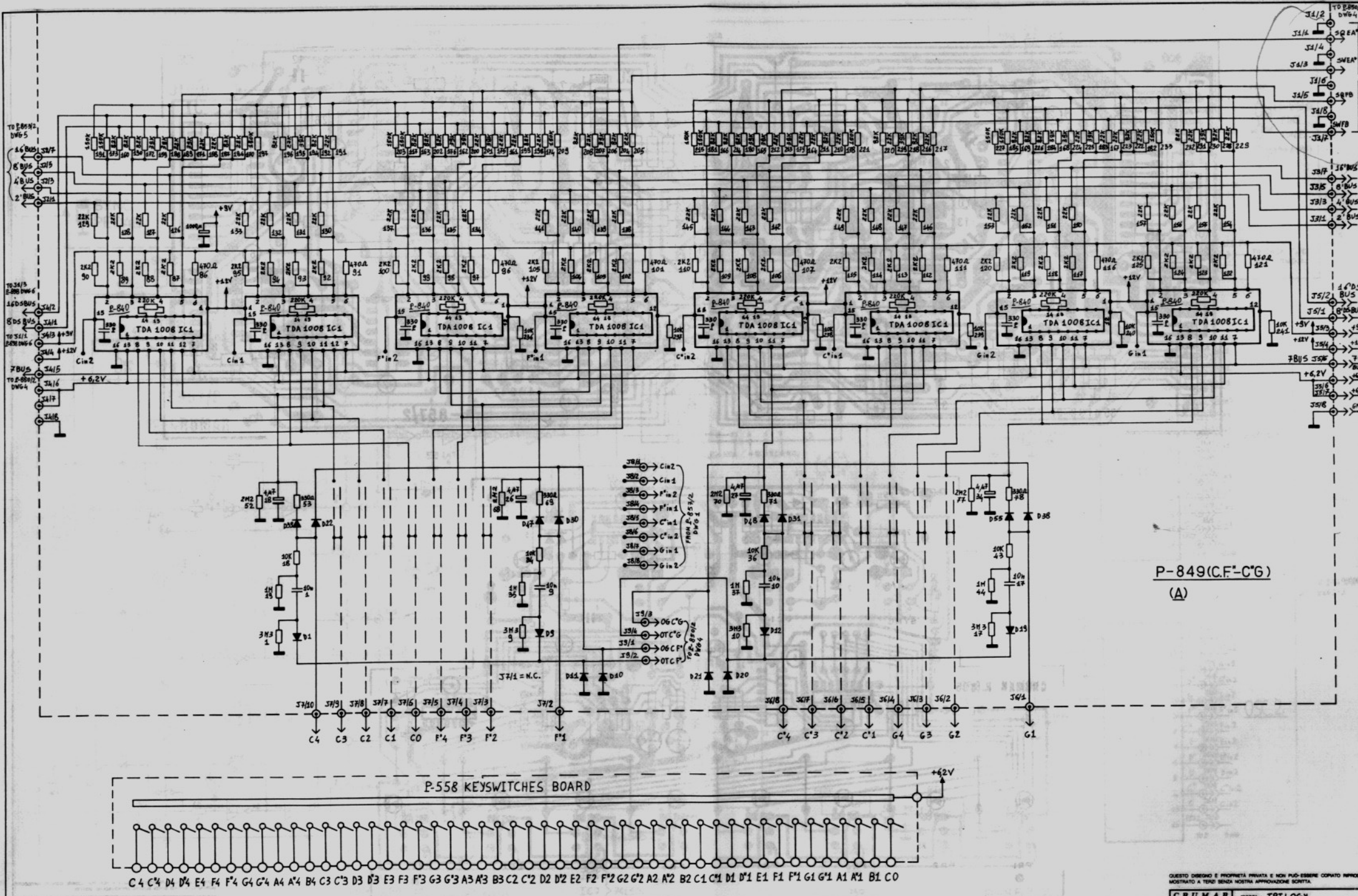
CRUMAR	MODEL: TRILOGY
DRAWN BY: <i>Bordani G.</i>	REVISION:
DESIGNED BY: <i>...</i>	DATE: 7/5/81



QUESTO DISEGNO È PROPRIETÀ PRIVATA E NON PUÒ ESSERE COPIATO, RIPRODOTTO, DISTRIBUITO, VENDUTO, NOSTRA APPROVAZIONE SCRITTA.

CRUMAR		MODEL: TRILOGY	
DRAWN BY	Bordani G.	REVISION	
DESIGNED BY		DATE	7/51

DWG 1



P-849(C.F'-C'G)
(A)

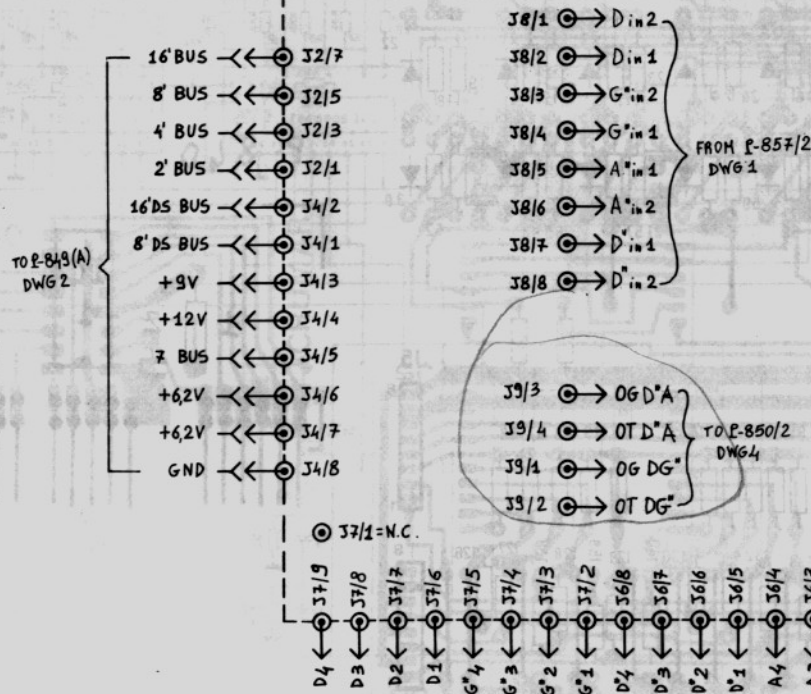
QUESTO DISEGNO È PROPRIETÀ PRIVATA E NON PUÒ ESSERE COPERTO NEMMENO MOSTRATO A TERZI SENZA NOSTRA APPROVAZIONE SCRITTA.

CRUMAR		MODEL: TRILOGY	
DRAWN BY	Benedict G.	DESIGNED BY	[Signature]
DATE	7/5/81		

PWG2

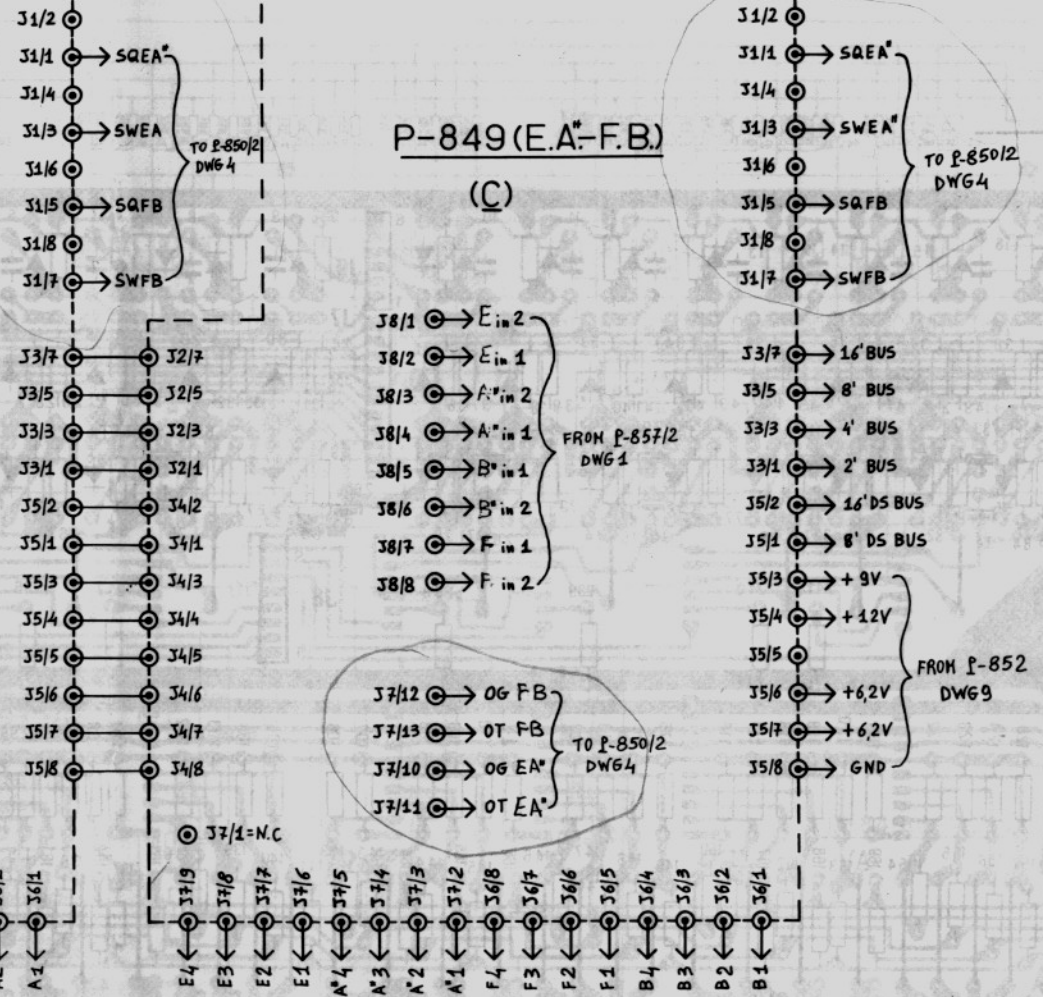
P-849 (D.G.-D.A.)

(B)

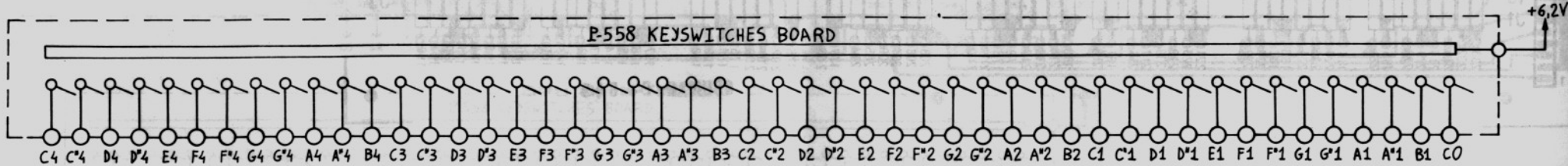


P-849 (E.A*-F.B.)

(C)



P-558 KEYSWITCHES BOARD

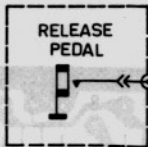


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CRUMAR		MODEL: TRILOGY	
DRAWN BY		Bordani G.	REVISION
DESIGNED BY		<i>[Signature]</i>	DATE 7/5/81

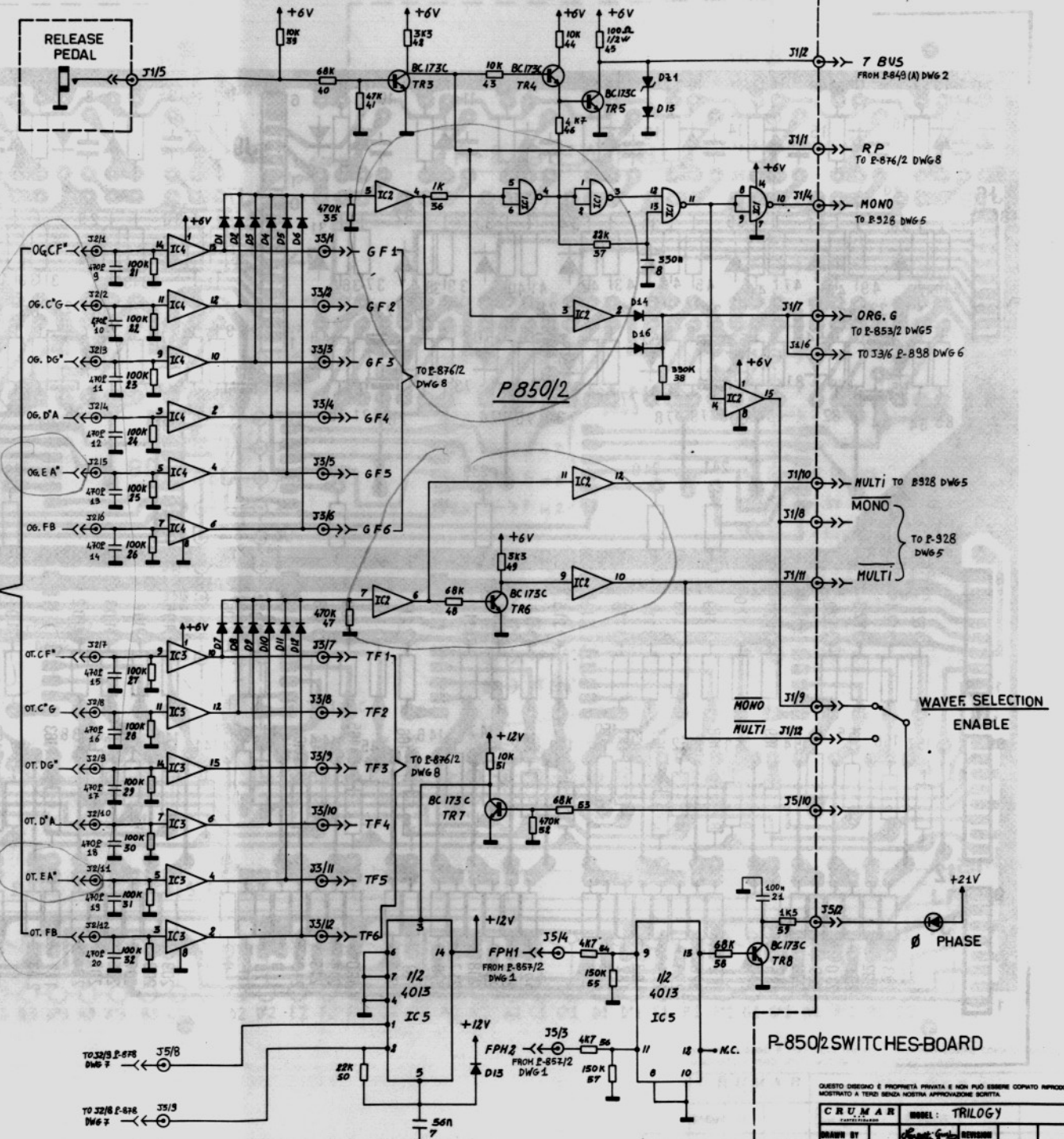
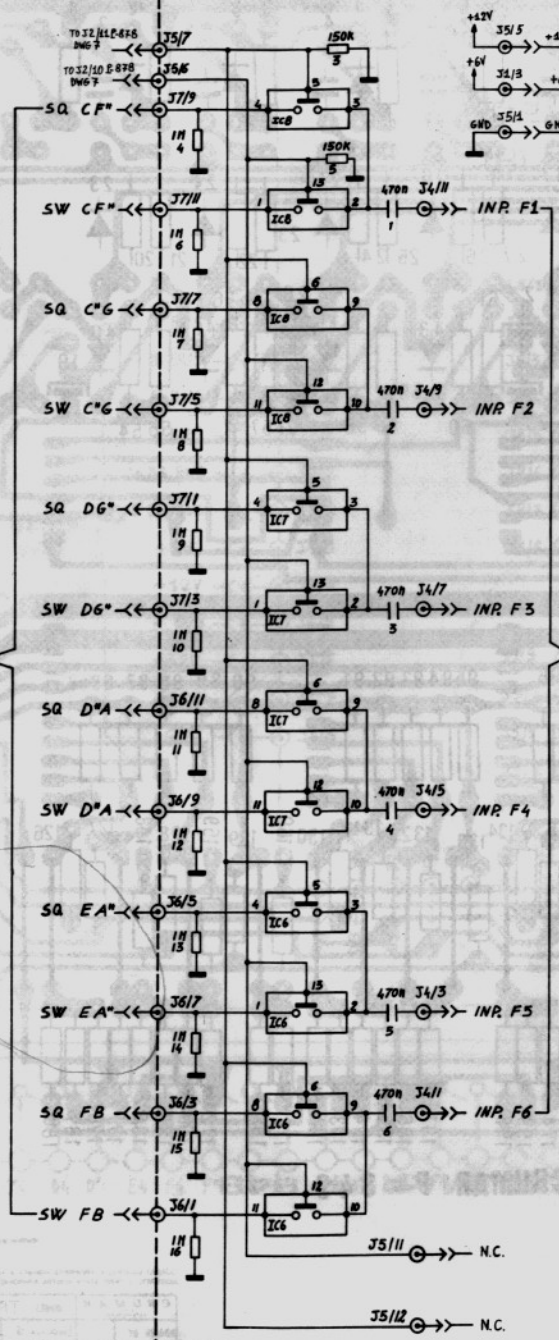
DWG3

IC6 } P₁ = 7 = GND
 IC7 } P₁ = 14 = +12V
 IC8 }
 IC1 = 4011
 IC6 } 4016
 IC7 }
 IC8 }
 IC2 } 4050
 IC3 }
 IC4 }



FROM E-545(A)-(B)-(C) DWG 2-3

FROM E-545(A)-(B)-(C) DWG 2-3

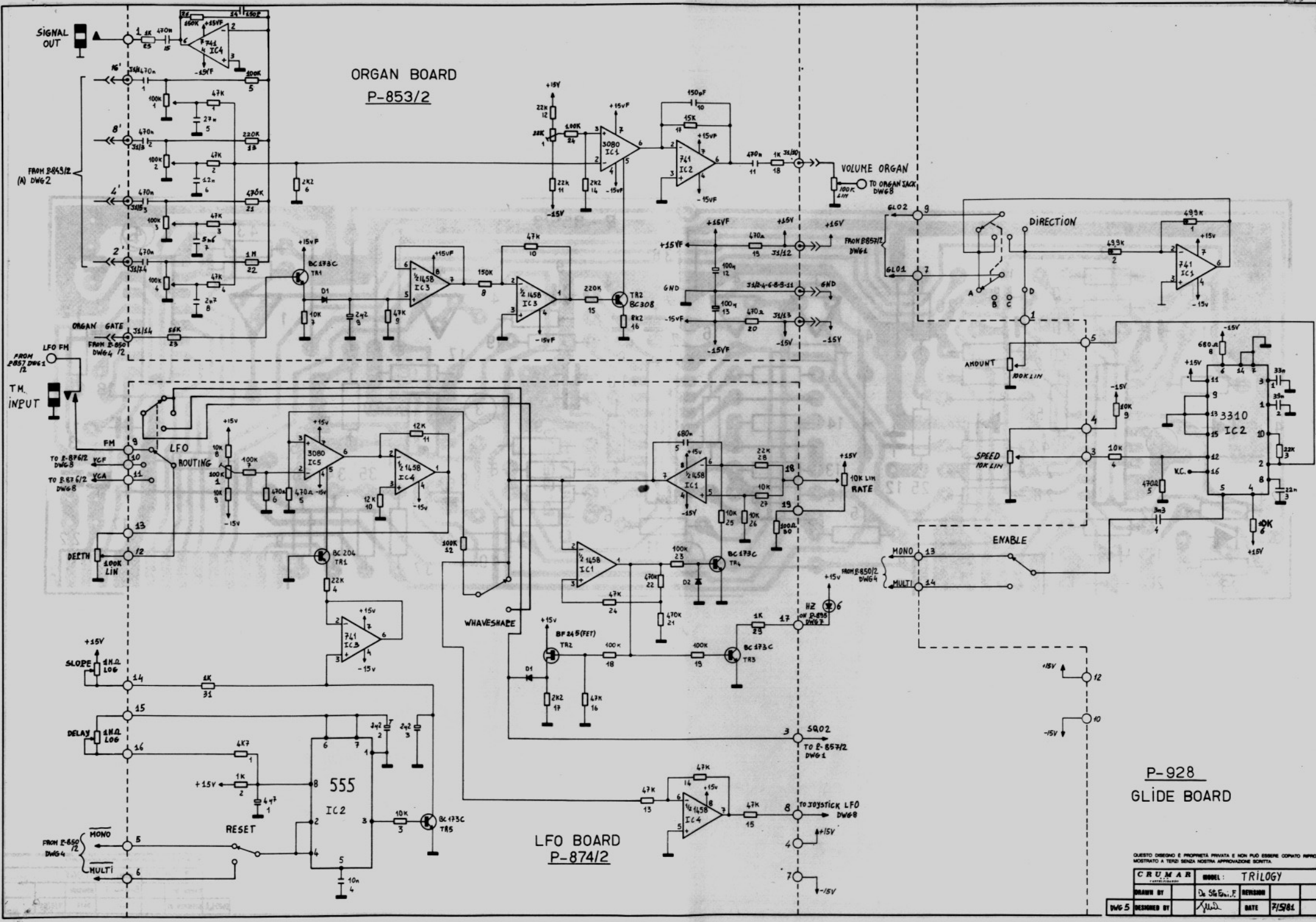


P-850/2 SWITCHES-BOARD

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

CRUMAR	MODEL: TRILOGY
DRAWN BY: [Signature]	REVISION: [Signature]
DWG 4	DATE: 1/15/84

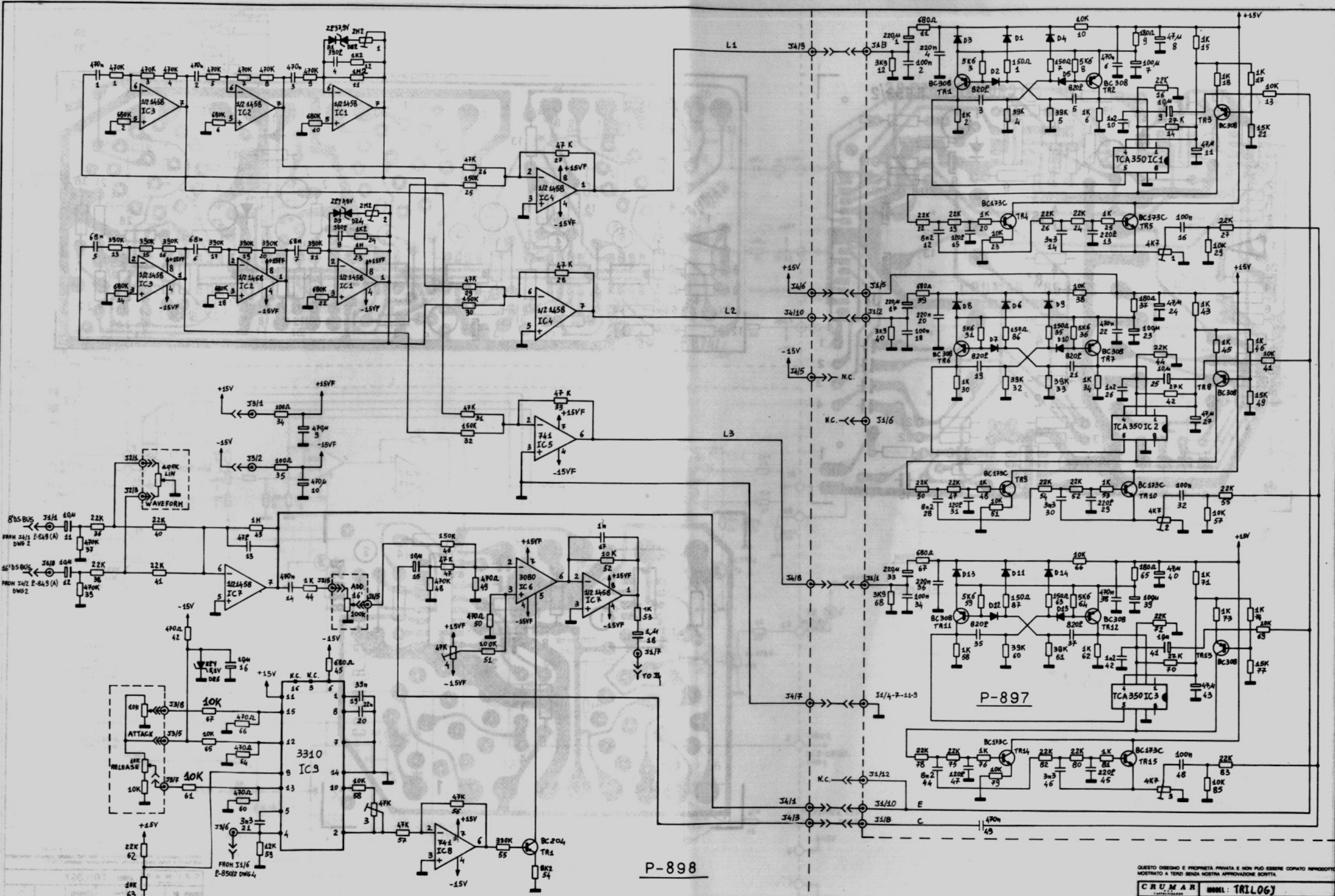
ORGAN BOARD
P-853/2



P-928
GLIDE BOARD

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

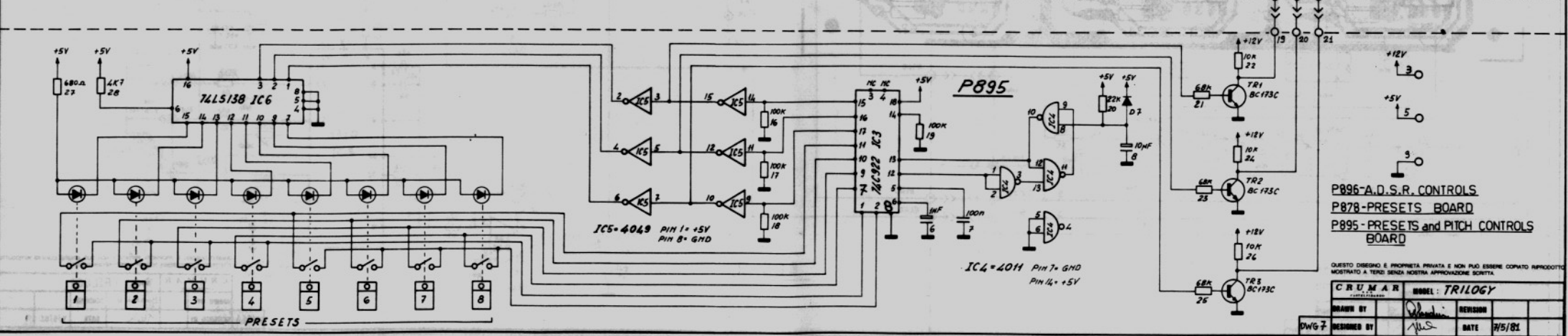
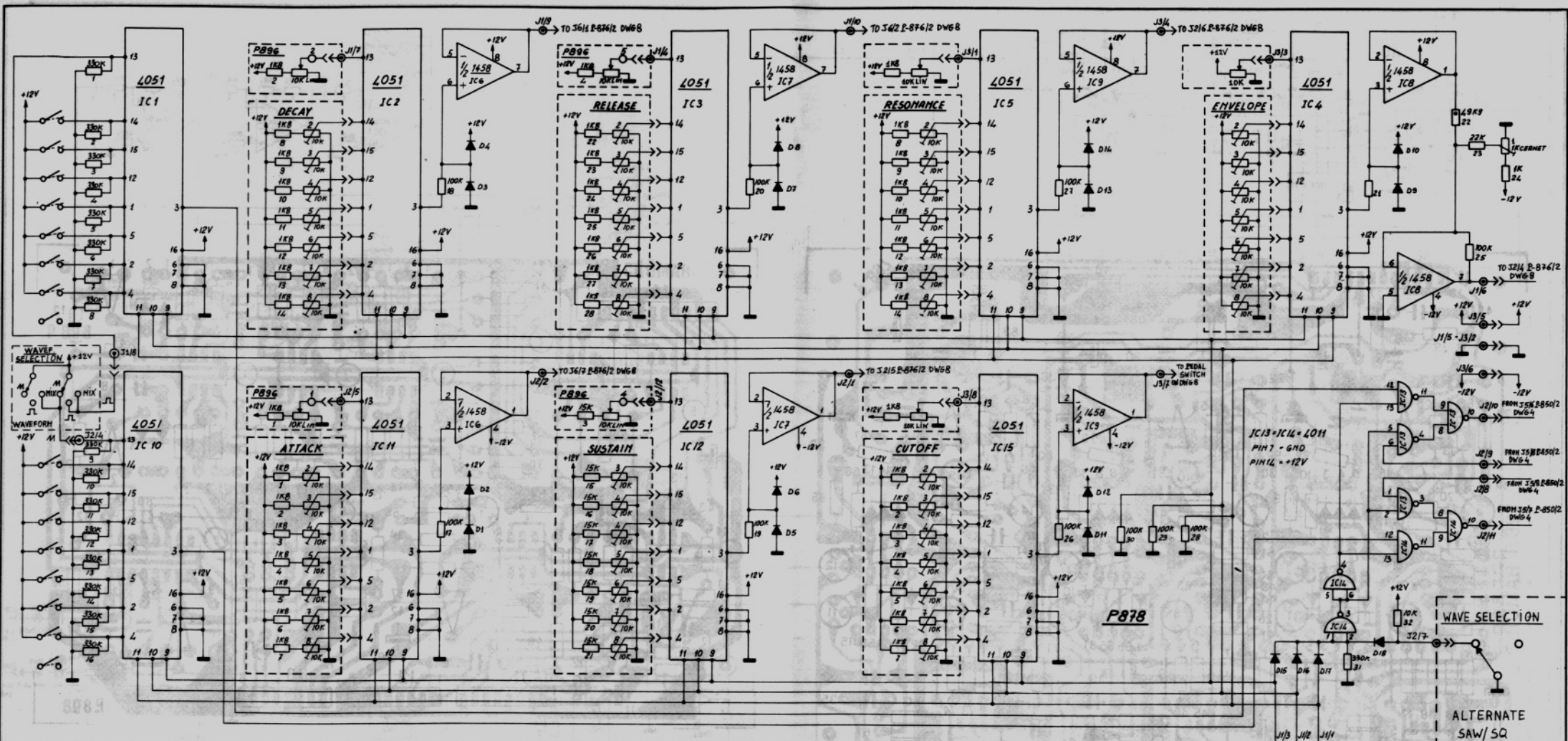
C R U M A R		MODEL: TRIOLOGY
DRAWN BY	De Stefano, F.	REVISION
DWG 5	RESIGNED BY	DATE 7/5/84



P-898

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

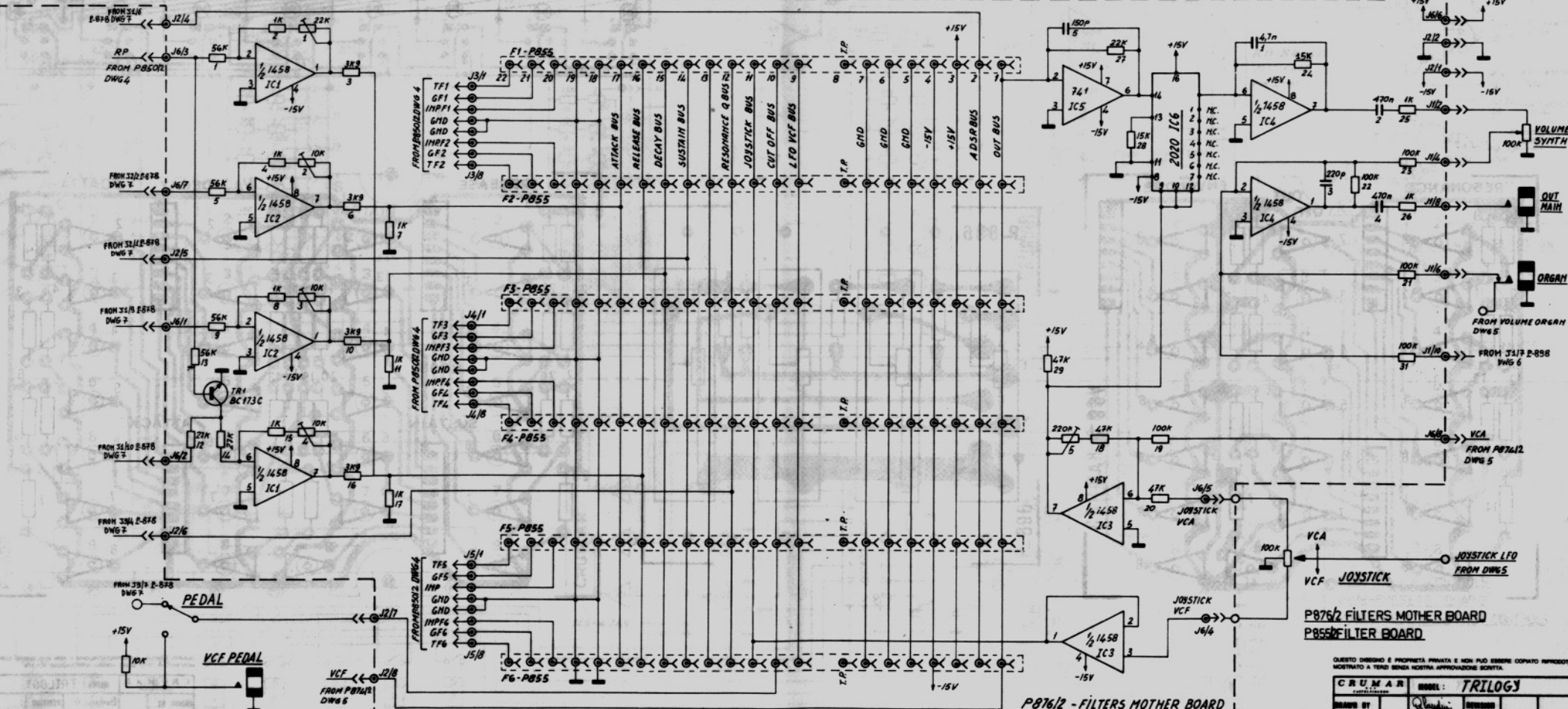
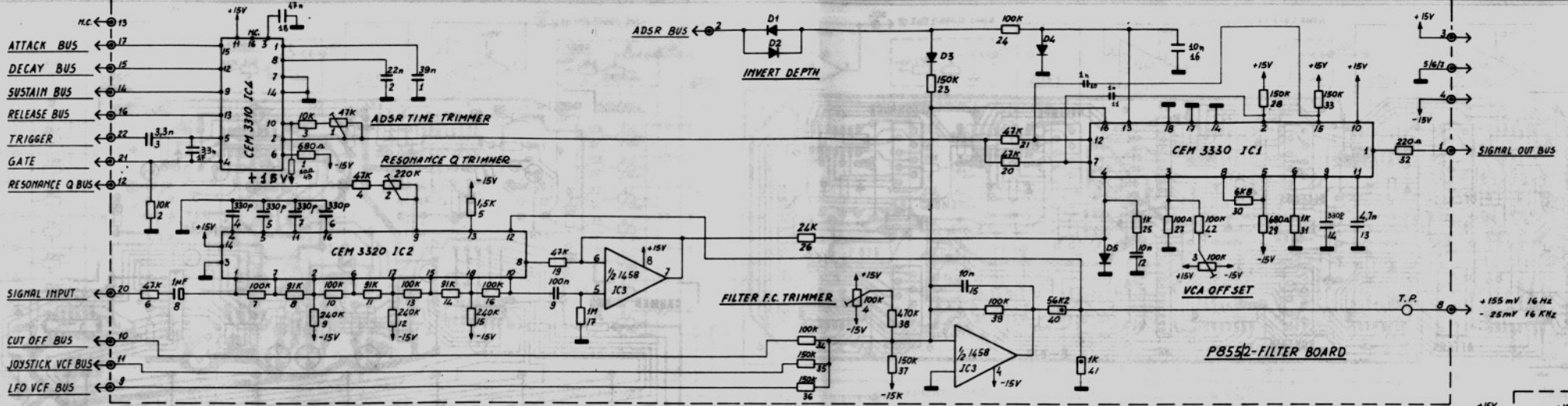
C R U M A R		MODEL: TRILOGY	
DRAWN BY	Barbieri G.	REVISION	
DWG 6	DESIGNED BY	DATE	7/5/84



P896-A.D.S.R. CONTROLS
 P878-PRESETS BOARD
 P895-PRESETS and PITCH CONTROLS BOARD

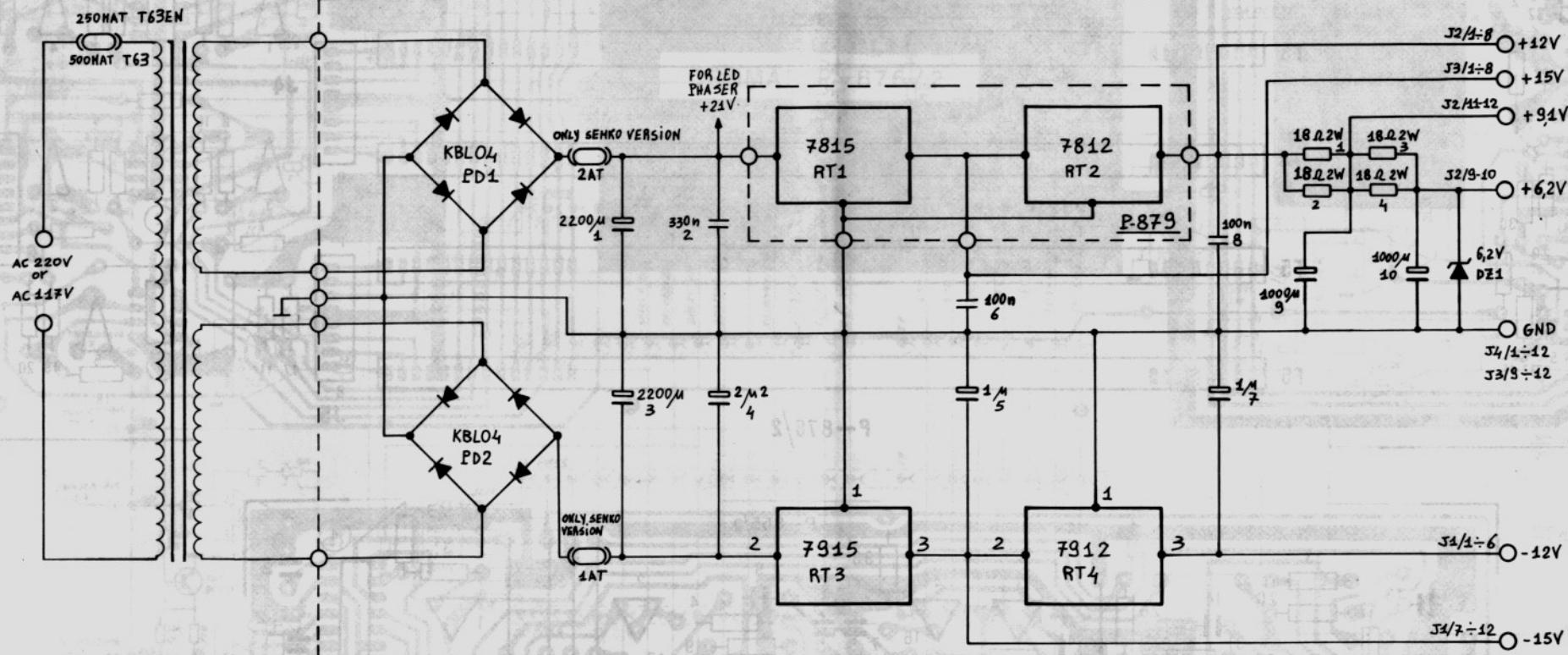
QUESTO DISEGNO È PROPRIETÀ PRIVATA E NON PUÒ ESSERE COPiato RIPRODOTTO
 MOSTRATO A TERZI SENZA NOSTRA APPROVAZIONE SCRITTA.

C.R.U.M.A.R.		MODEL: TRILOGY	
DRAWN BY	REVISION	DATE	1/5/81
DWG 7	REVISION BY	DATE	



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

C R U M A R I		MODEL: TRILOGY
DESIGNED BY: <i>Quadrini</i>	DESIGNED	
DWG 8	REVISIONED BY: <i>MS</i>	DATE: 7/5/81



P-852
POWER SUPPLY

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

CRUMAR CANTALISSANO		MODEL: TRILOGY	
DRAWN BY		Bordani G.	REVISION
DWG 9	DESIGNED BY	<i>[Signature]</i>	DATE 7/5/81

MODEL TRILOGY

ELECTRONIC COMPONENT LIST

Schem. Ref.	Circuit	Type	Part Code
OSCILLATOR ONE - OSCILLATOR TWO (DWG 1)			
P-857/2	Complete with Components		978002579
IC1	Dual Operational Amplifier	1458	68000053
IC2 - IC3	Master Oscillator	74LS221	68000058
IC4	Hex inverter open Collector LS-TTL	74LS05	68000116
IC5 ÷ IC9	Quad 2 - Input NAND Gates LS-TTL	74LS00	68000117
IC10 - IC11	T.O.S.	M083	68070129
IC12	4-Bit Binary counter LS-TTL	74LS93	68020127
TR1 - TR2	Power transistor NPN	BC286	62110002
TR3 ÷ TR9	Transistor NPN	BC173C	62120003
DZ1	Diode Zener	ZPY 5,6 V	67000017
RT1	Voltage Regulator	7805	62110023
PRESETS AND PITCH CONTROLS BOARD (DWG 1)			
P-895	Complete with Components		978002520
IC1 - IC2 - IC5	Buffer	4049	68010131
IC3	Encoder	74C922	68000110
IC4	NAND Gate	4011	68000034
IC6	Decoder	74LS138	68020153
TR1 - TR3	NPN Transistor	BC173C	62120003
D1 ÷ D7	Diodes	BA130	65000001
TDA 1008 MODULE BOARD (DWG2)			
P-840	Complete with Components		978002433
IC1	Frequency divider	TDA1008	68000104
SOUND MOTHER BOARD (DWG2)			
P-849 (A)	Complete with Components		978002531
D1 ÷ D55	Diodes	BA130	65000001
KEYSWITCHES BOARD (DWG2)			
P-558	Complete with Components		978002484
SOUND MOTHER BOARD (WDG3)			
P-849 (B) (C)	Complete with Components		978002448
D1 ÷ D52	Diodes	BA130	65000001

POWER SUPPLY

MODEL TRILOGY

ELECTRONIC COMPONENT LIST

Schem. Ref.	Circuit	Type	Part Code
SWITCHES BOARD (DWG4)			
P-850/2	Complete with Components		978002530
IC1	Quad 2-Input Nand Gates CMOS	4011	68000034
IC2 ÷ IC4	Hex Non-inverting buffer CMOS	4050	68000085
IC5	Dual D Flip-flop CMOS	4013	68010136
IC6 ÷ IC8	Quad bilateral switch	4016	68000072
TR3 ÷ TR8	Transistor NPN	BC173C	62120003
D1 ÷ D14	Diodes	BA130	65000001
DZ1	Diode Zener	ZPY2,1V	67000022
ORGAN BOARD (DWG5)			
P-853/2	Complete with Components		978002516
IC1	Operational transconductance amplifier	3080	68000066
IC2	Operational amplifier	741	68000059
IC3	Dual operational amplifier	1458	68000054
IC4	Operational amplifier	741	68000059
TR1	Transistor NPN	BC173C	62120003
TR2	Transistor PNP	BC308	62210001
D1	Diode	BA130	65000001
LFO BOARD (DWG5)			
P-874/2	Complete with Components		978002535
IC1 - IC2	Dual operational amplifier	1458	68000053
IC3	Timer	555	68030137
IC4	Operational amplifier	741	68000059
IC5	Operational transconductance amplifier	3080	68000066
TR1	Transistor PNP	BC204	62210001
TR2	Fet	BF245B	62120002
TR3 ÷ TR5	Transistor NPN	BC173C	62120003
D1 - D2	Diodes	BA130	65000001
GLIDE BOARD (DWG5)			
P-928	Complete with Components		978002570
IC1	Operational amplifier	741	68000059
IC2		3310	68030142
DELAY LINES BOARD (DWG6)			
P-897	Complete with Components		978002522
IC1 ÷ IC3	Analog Delay Line	TCA350	68000007

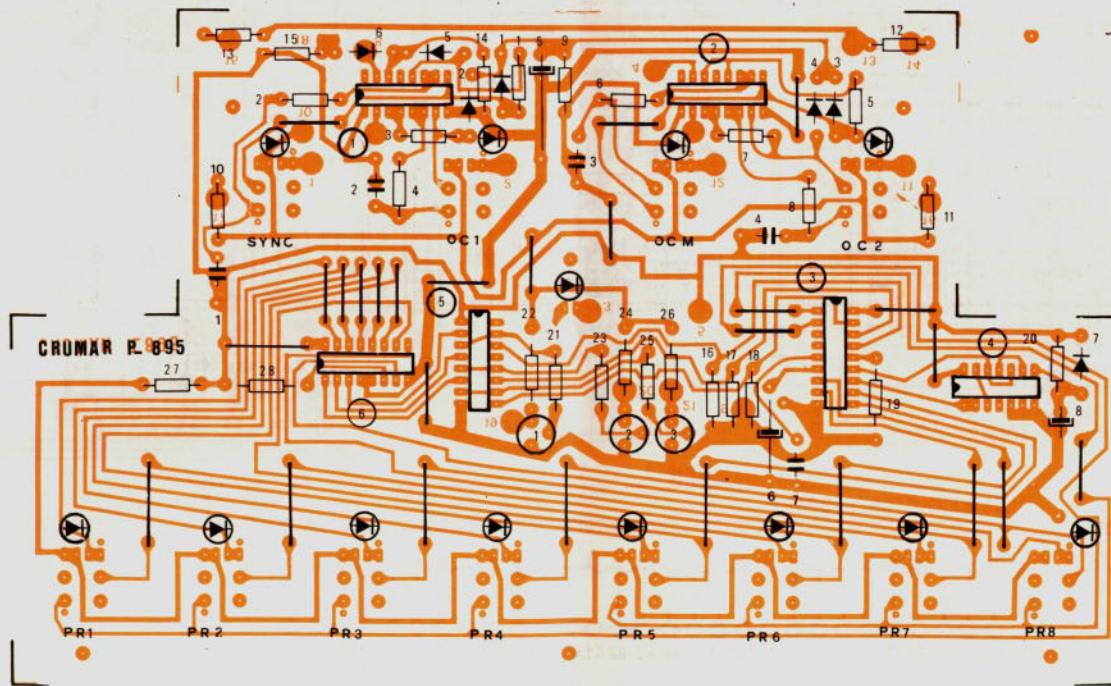
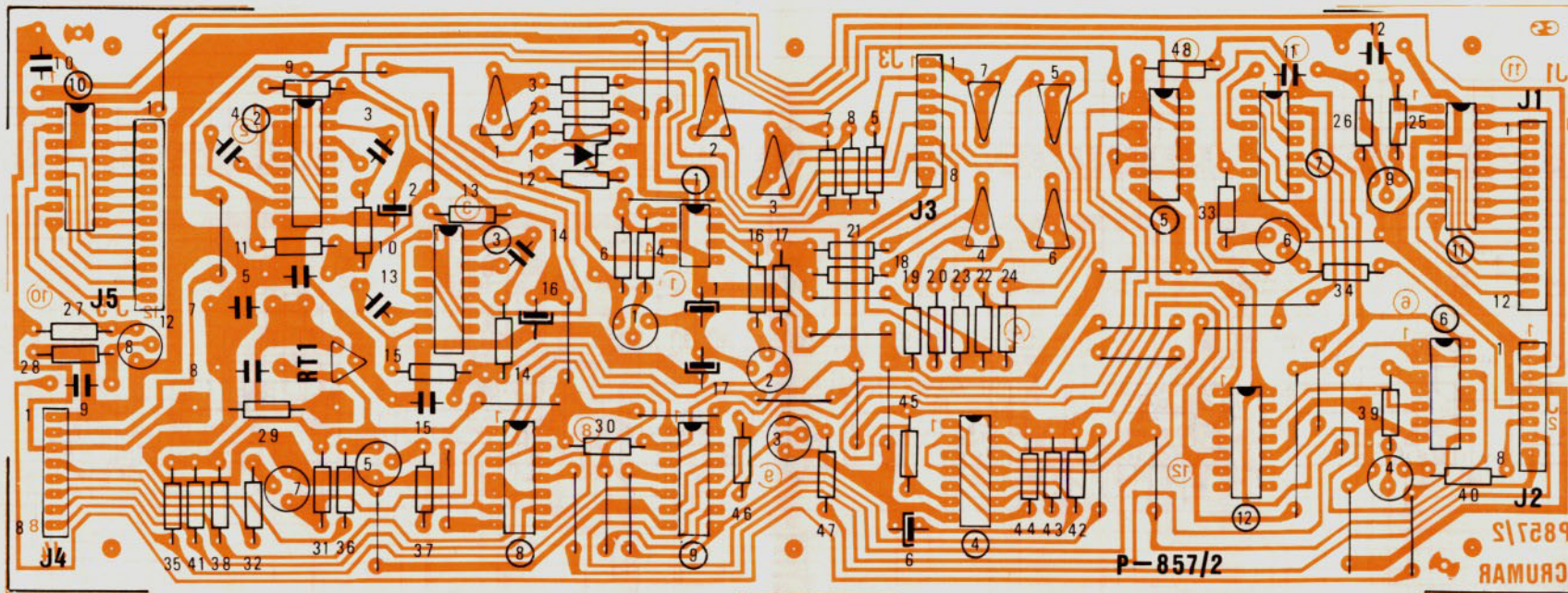
MODEL TRILOGY
 PART NO. 978002530
 DATE 10/1/84
 BY J. J. JONES
 CHECKED BY J. J. JONES
 APPROVED BY J. J. JONES
 TRIPLE
 10/1/84

MODEL TRILOGY
ELECTRONIC COMPONENT LIST

Schem. Ref.	Circuit	Type	Part Code
TR1 ÷ TR3	Analog Delay Line	BC308	62210001
TR4 - TR5	Analog Delay Line	BC173C	62120003
TR6 ÷ TR8	PNP Transistor	BC308	62210001
TR9 - TR10	NPN Transistor	BC173C	62120003
TR11 ÷ TR13	PNP Transistor	BC308	62210001
TR14 - TR15	NPN Transistor	BC173C	62120001
D1 ÷ D15	Diodes	BA130	65000001
STRINGS FILTER AND OSCILLATORS (DWG6)			
P-898	Complete with Components		978002523
IC1 ÷ IC4	Dual Operational Amplifier	1458	68000054
IC5 - IC8	Operational Amplifier	741	68000059
IC6	O.T.A.	3080	68000066
IC7	Dual Operational Amplifier	1458	68000054
IC9	Envelope Generator	3310	68030142
TR1	PNP Transistor	BC308	62210001
DZ2 - DZ4	Diode Zener	ZPY3,9V	67000025
DZ5	Diode Zener	ZPY5,1V	67000012
D1 - D3	Diodes	BA130	65000001
PRESETS BOARD (DWG7)			
P-878	Complete with Components		978002482
IC1 ÷ IC5	Analog Demultiplexer	4051	68010154
IC6 ÷ IC9	Dual Operational Amplifier	1458	68000054
IC10 ÷ IC12	Analog Demultiplexer	4051	68010154
IC13 - IC14	NAN Gate	4011	68000034
IC15	Analog Demultiplexer	4051	68010154
D1 ÷ D18	Diodes	BA130	65000001
A.D.S.R. CONTROLS (DWG7)			
P-896	Complete with Components		978002521
A.D.S.R. PRESETS (DWG7)			
P-893	Complete with Components		978002518

MODEL TRILOGY
ELECTRONIC COMPONENT LIST

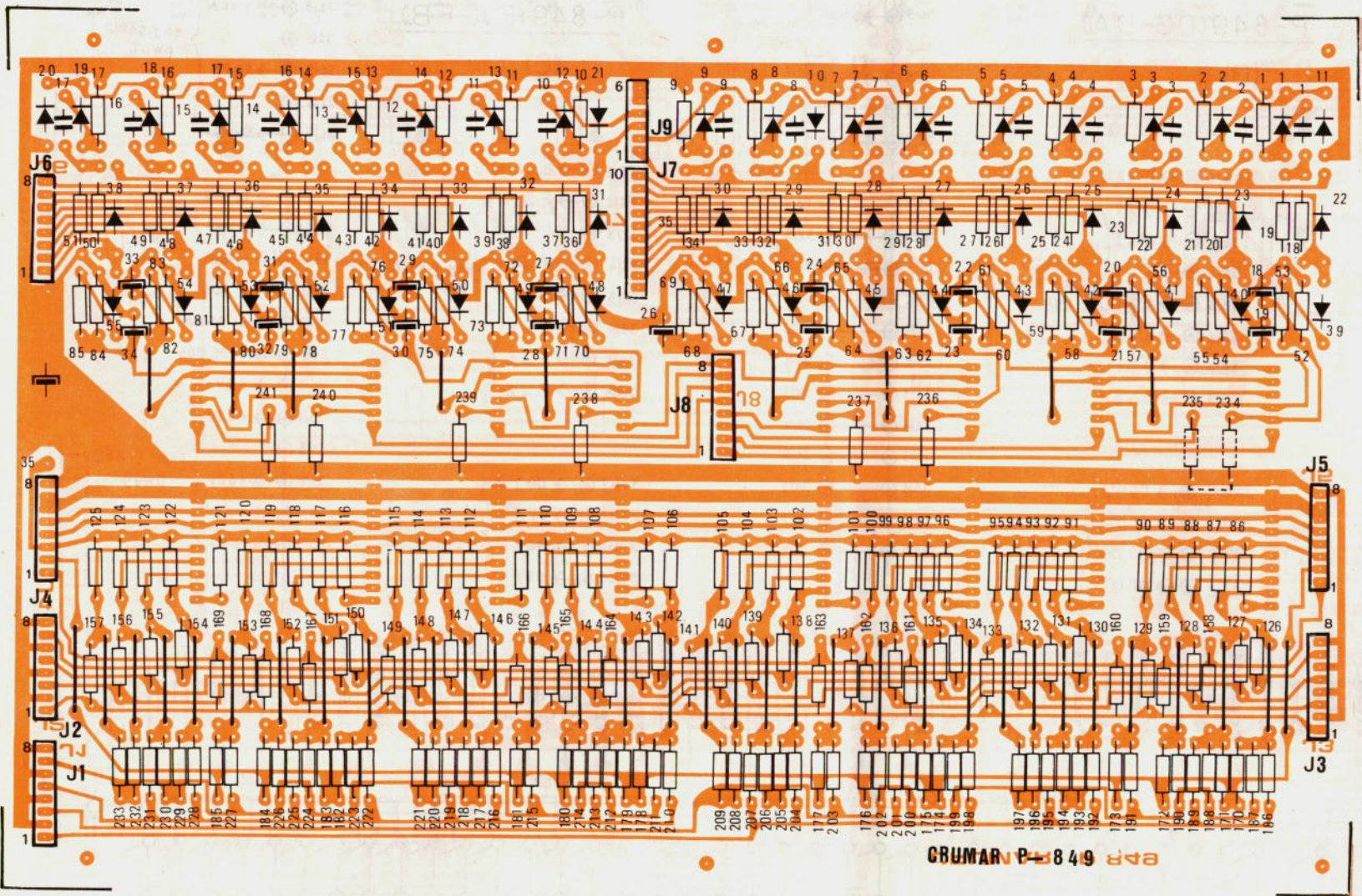
Schem. Ref.	Circuit	Type	Part Code
E.C.R. PRESETS (DWG7)			
P-894	Complete with Components		978002519
FILTER BOARD (VCF-VCA-ADSR) (DWG8)			
P-855/2	Complete with Components		978002543
IC1	Dual voltage controlled amplifier	3330	68030144
IC2	Voltage controlled filter	3320	68030143
IC3	Dual operational amplifier	1458	68000054
IC4	Voltage controlled envelope generator	3310	68030142
D1 ÷ D5	Diodes	BA130	65000001
FILTER MOTHER BOARD (DWG8)			
P-876/2	Complete with Components		978002536
IC1 ÷ IC4	Dual operational amplifier	1458	68000053
IC5	Operational amplifier	741	68000059
IC6	Voltage controlled amplifier	SSM2020	68030139
TR1	Transistor NPN	BC173C	62120003
POWER SUPPLY (DWG9)			
P-852	Complete with Components		978002533
RT1	Voltage Regulator	7815	62110020
RT2	Voltage Regulator	7812	62110027
RT3	Voltage Regulator	7915	62110022
RT4	Voltage Regulator	7912	62110037
PD1	Rectifier Bridge	KBL04	66000006
PD2	Rectifier Bridge	KBL04	66000006
DZ1	Diode Zener	ZPY6,2V	67000023
DZ2	Diode Zener	ZPY9,1V	67000013
T63	Transformer CSA Version		18010100
T63EN	Transformer SEMKO Version		18010099



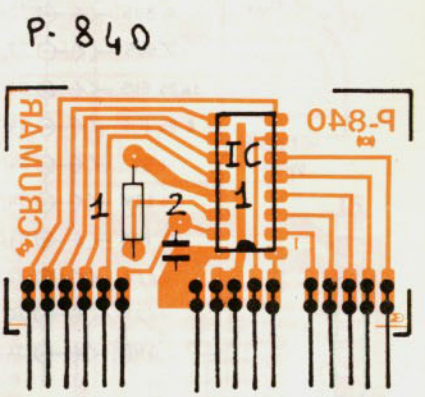
DWG1A

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

CROMAR		MODEL: TRILOGY	
DRAWN BY	Bonini G.	REVISOR	
DESIGNED BY	<i>[Signature]</i>	DATE	7/5/81



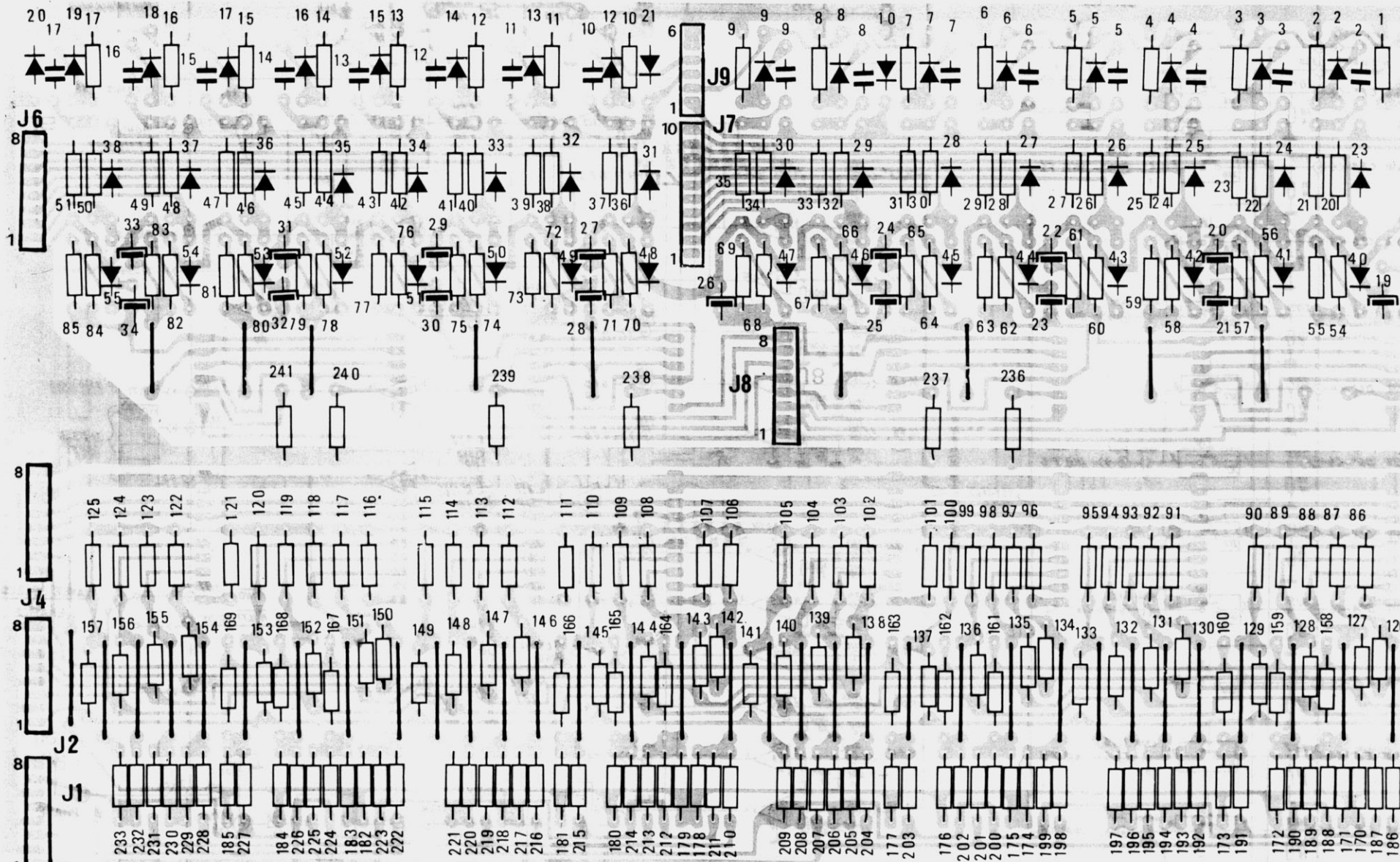
CRUMAR P-849 840



DWG2A

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

CRUMAR		MODEL: TRILOGY	
DRAWN BY	Bondini G.	REVISION	
DESIGNED BY	<i>[Signature]</i>	DATE	7/5/81

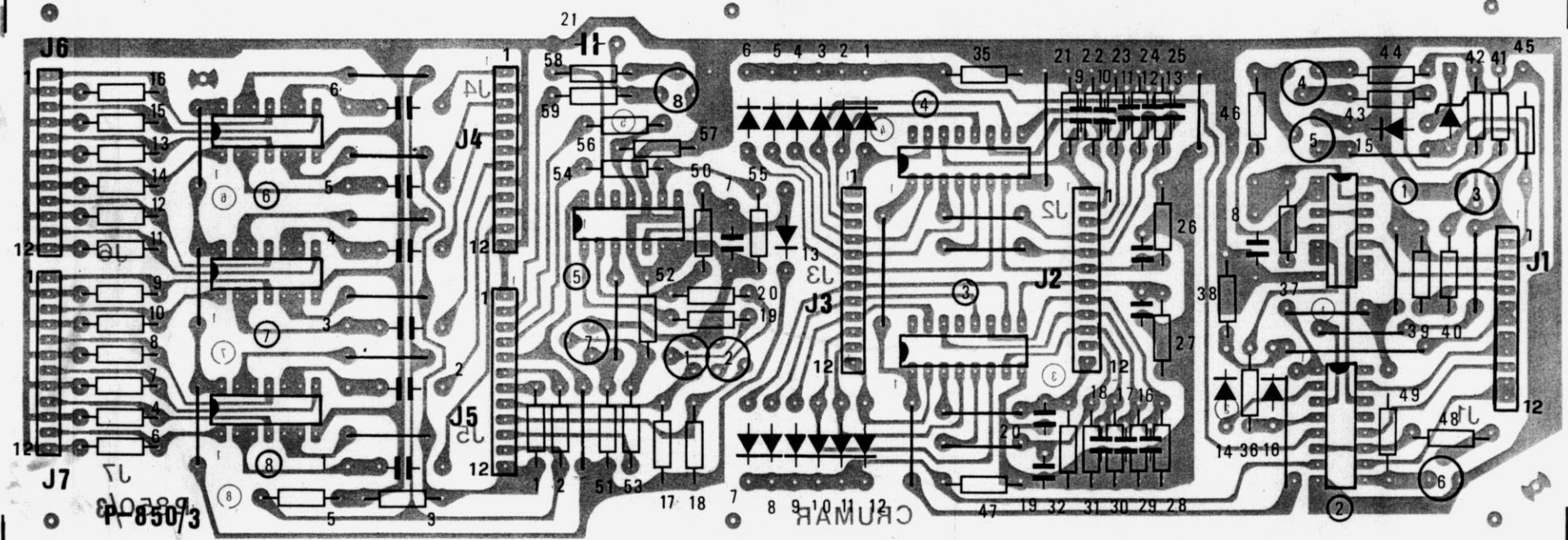


DWG3A

CRUMAR P-849

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

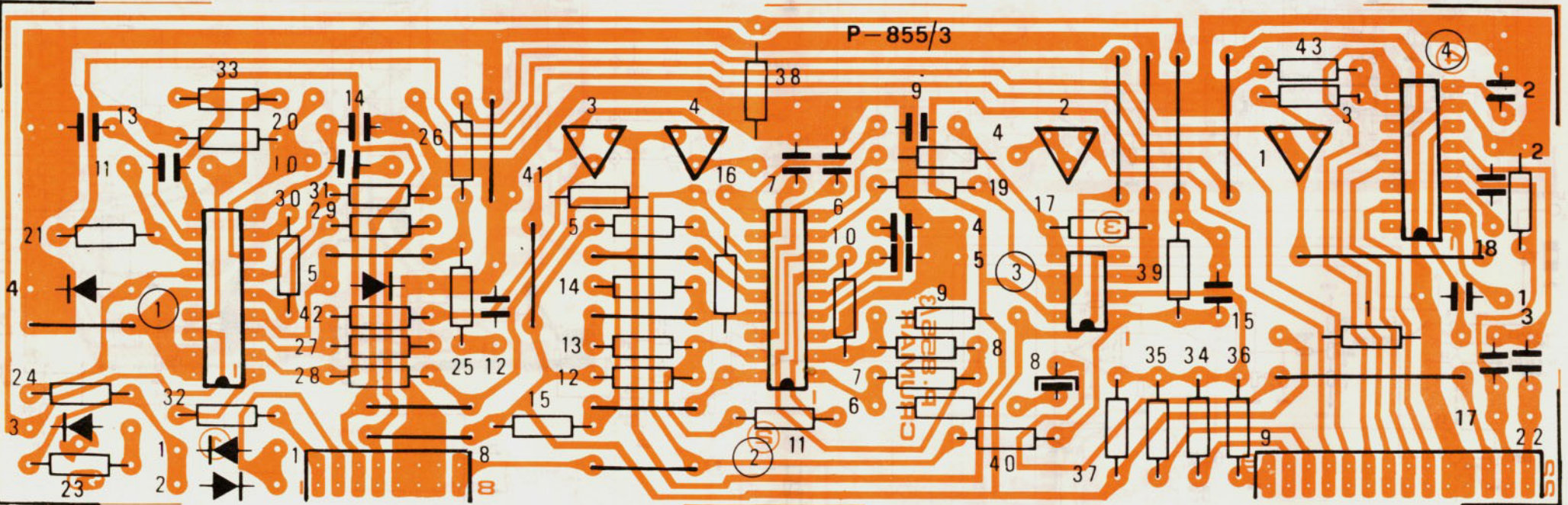
CRUMAR		MODEL: TRILOGY	
DRAWN BY	Bonanni G.	REVISION	
DESIGNED BY		DATE	7/15/85



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

CRUMAR		MODEL: TRIOLOGY	
DRAWN BY	Bombard G.	DESIGNED BY	
DATE	7/5/81	DATE	7/5/81

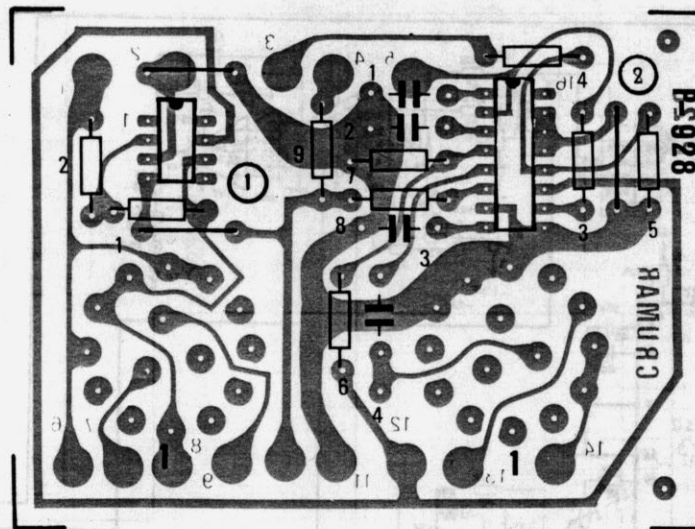
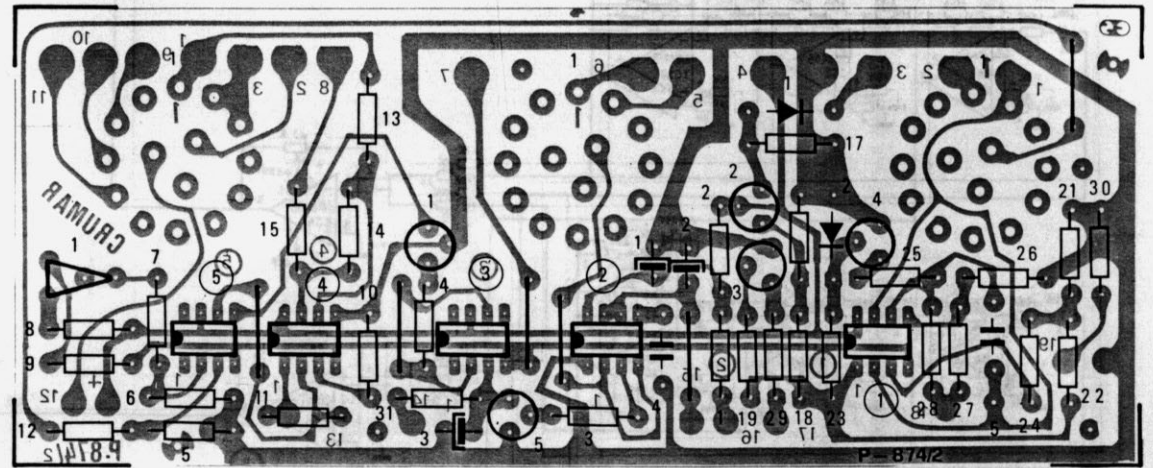
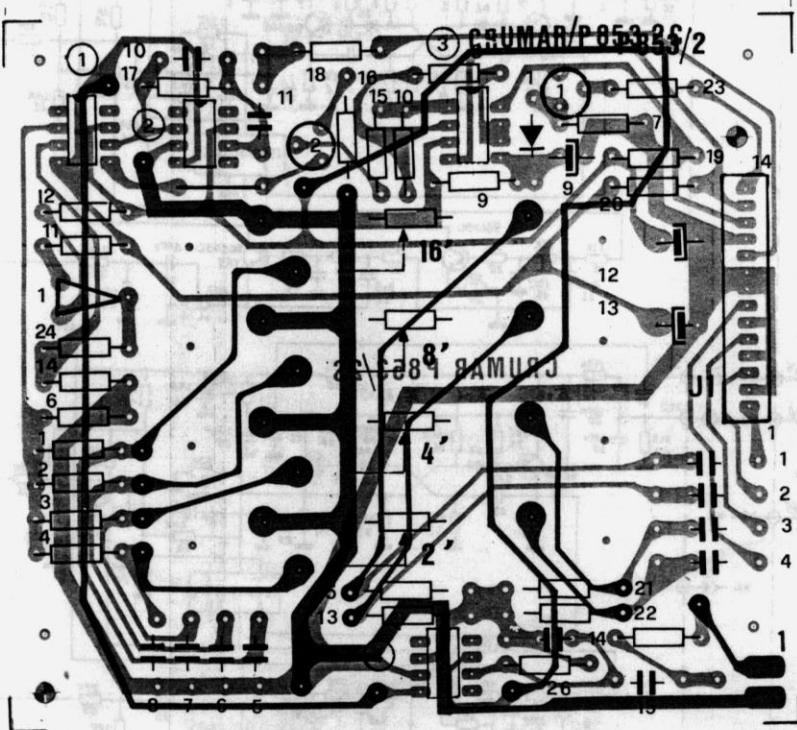
P-855/3



DWG4A2

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

CRUMAR		MODEL: TRILOGY	
DRAWN BY	Bordani G.	REVISION	
DESIGNED BY	<i>[Signature]</i>	DATE	7/5/81

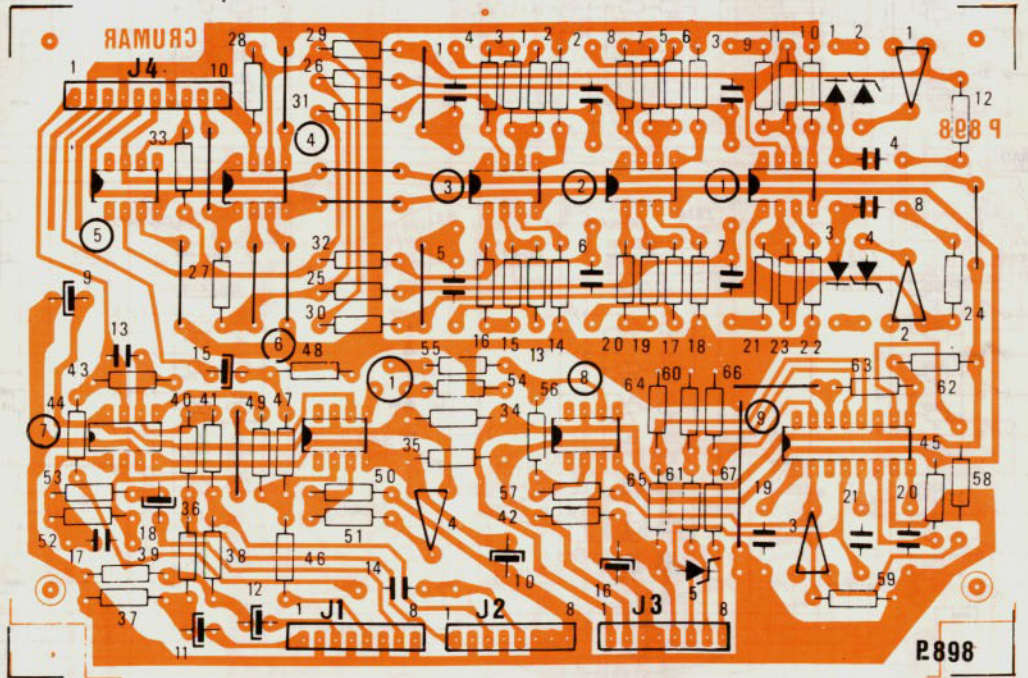
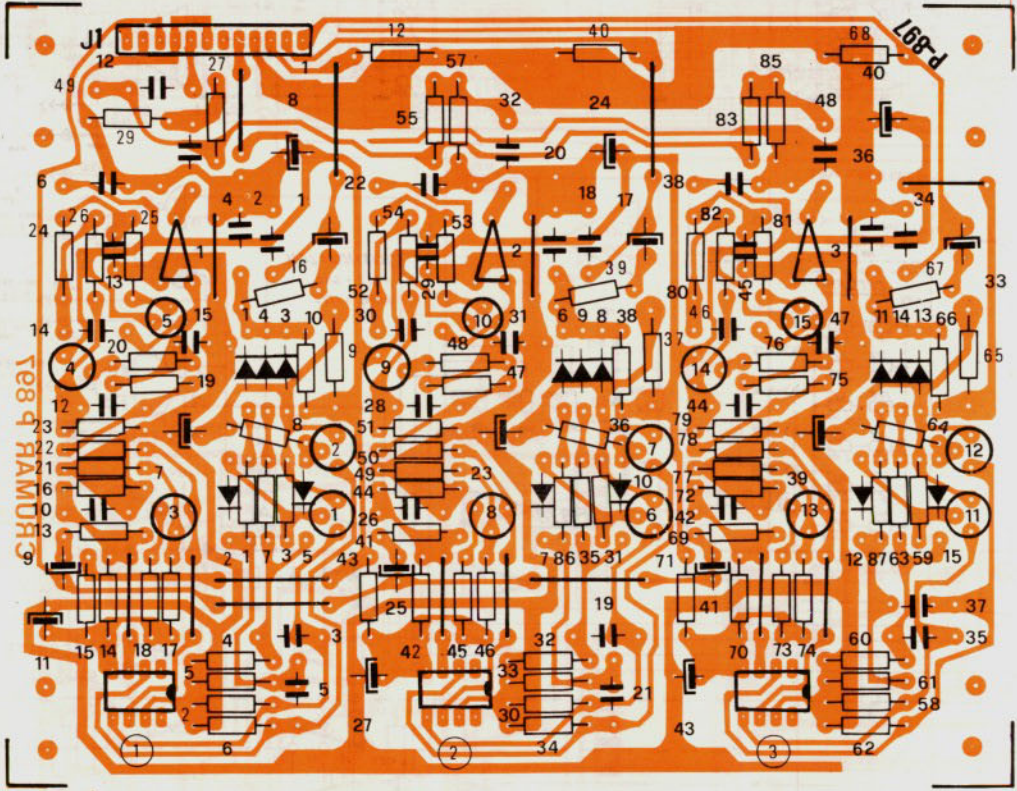


DWG5A

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

CRUMAR	MODEL: TRILOGY
DRAWN BY	Bondini G. NEWBORN
DESIGNED BY	DATE 7/5/81

DWG5A



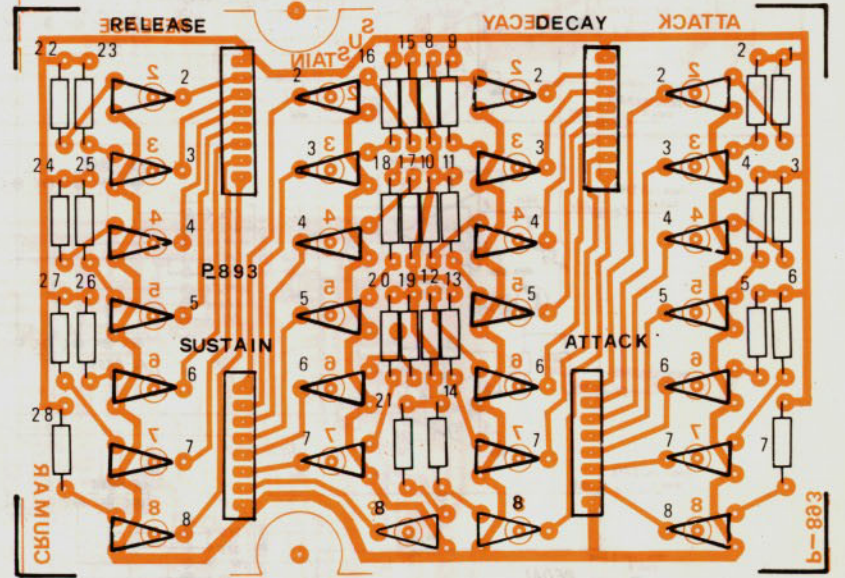
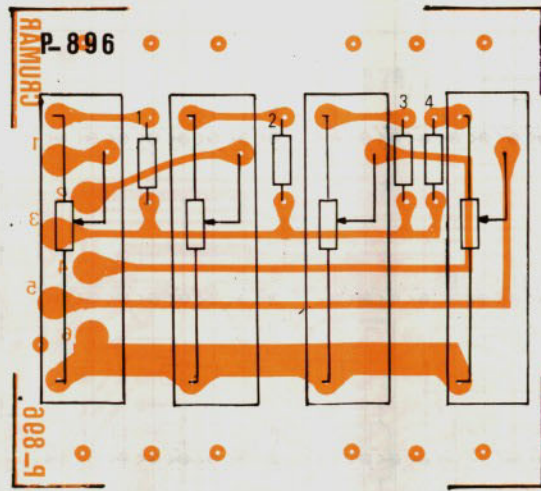
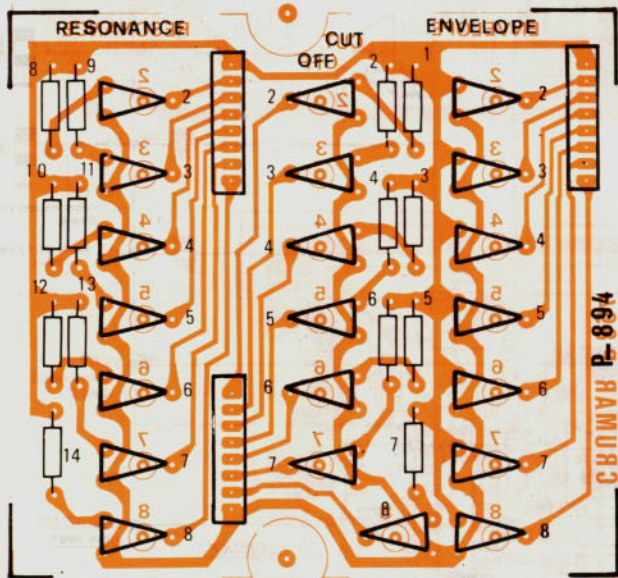
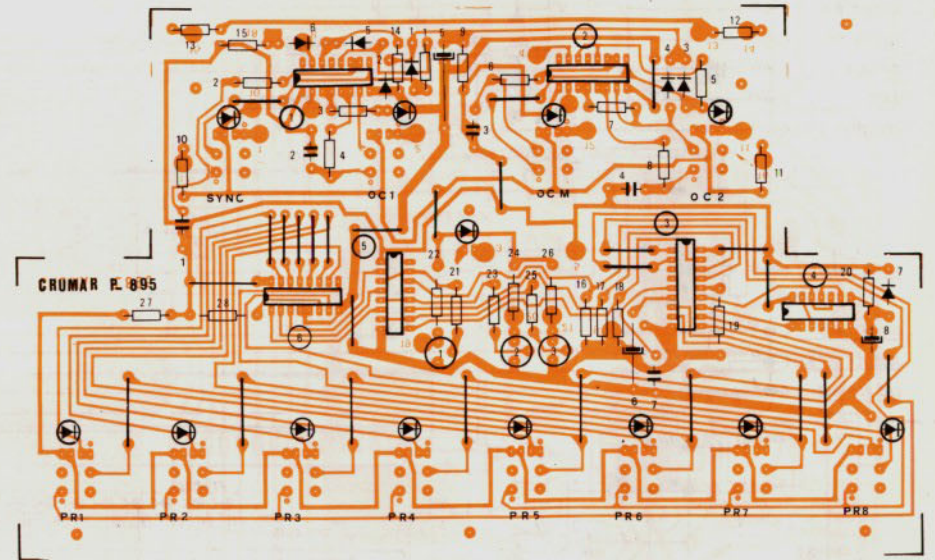
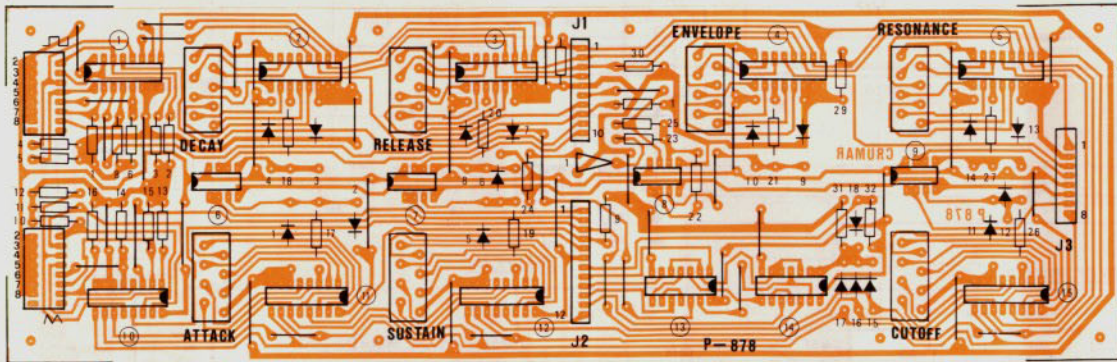
DWG6A

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

CRUMAR MODEL: TRILOGY

DRAWN BY: Bonanni G. REVISION:

DWG6A DESIGNED BY: DATE: 7/5/81

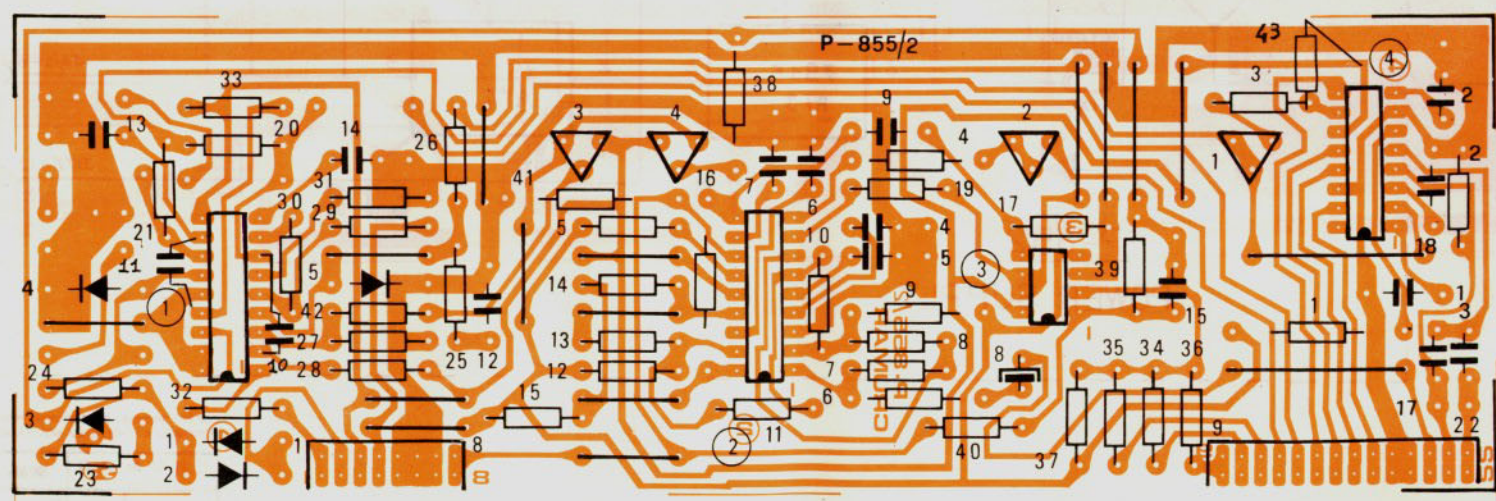
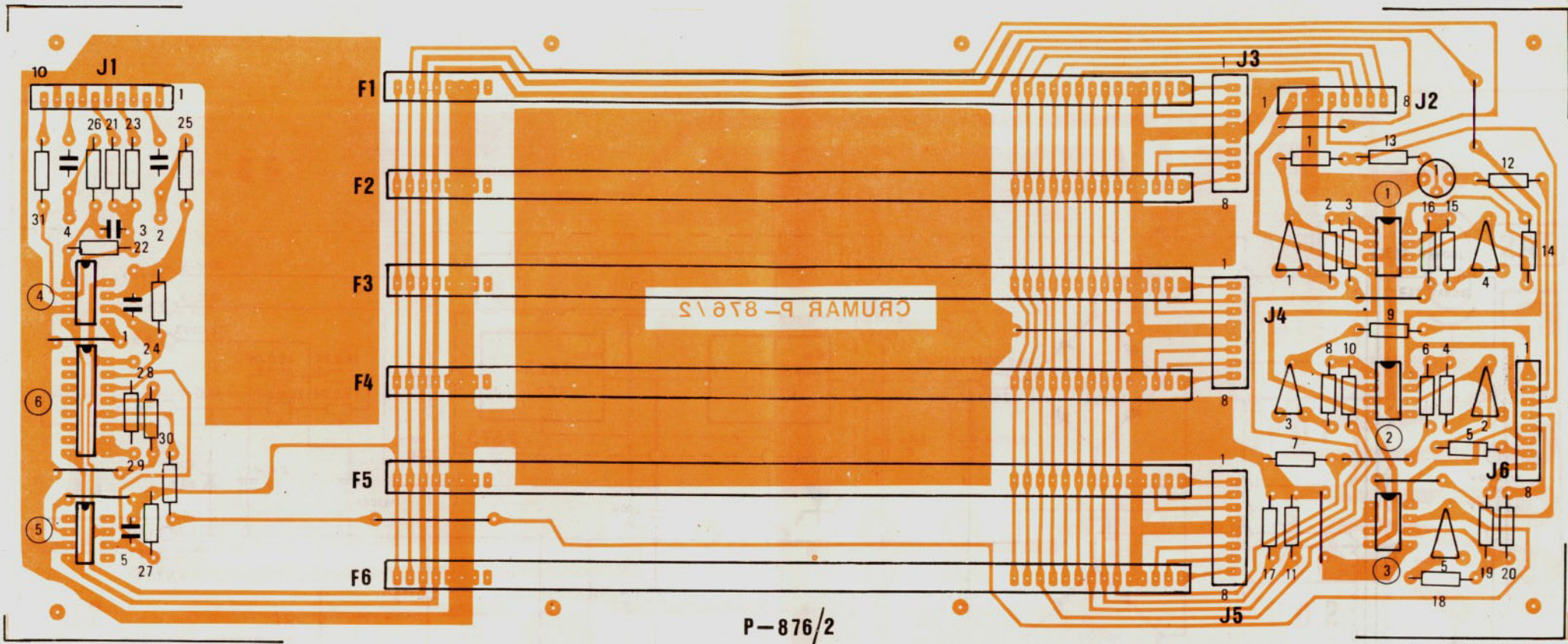


DWG7A

QUESTO DISEGNO È PROPRIETÀ PRIVATA E NON PUÒ ESSERE COPiato APPROPRIO MENTRE A TERZI SENZA NOSTRA APPROVAZIONE SCRITTA.

CRUMAR		MODEL: TRILOGY	
DRAWN BY	Bonini G.	REVISION	
DESIGNED BY		DATE	7/5/81

DWG7A



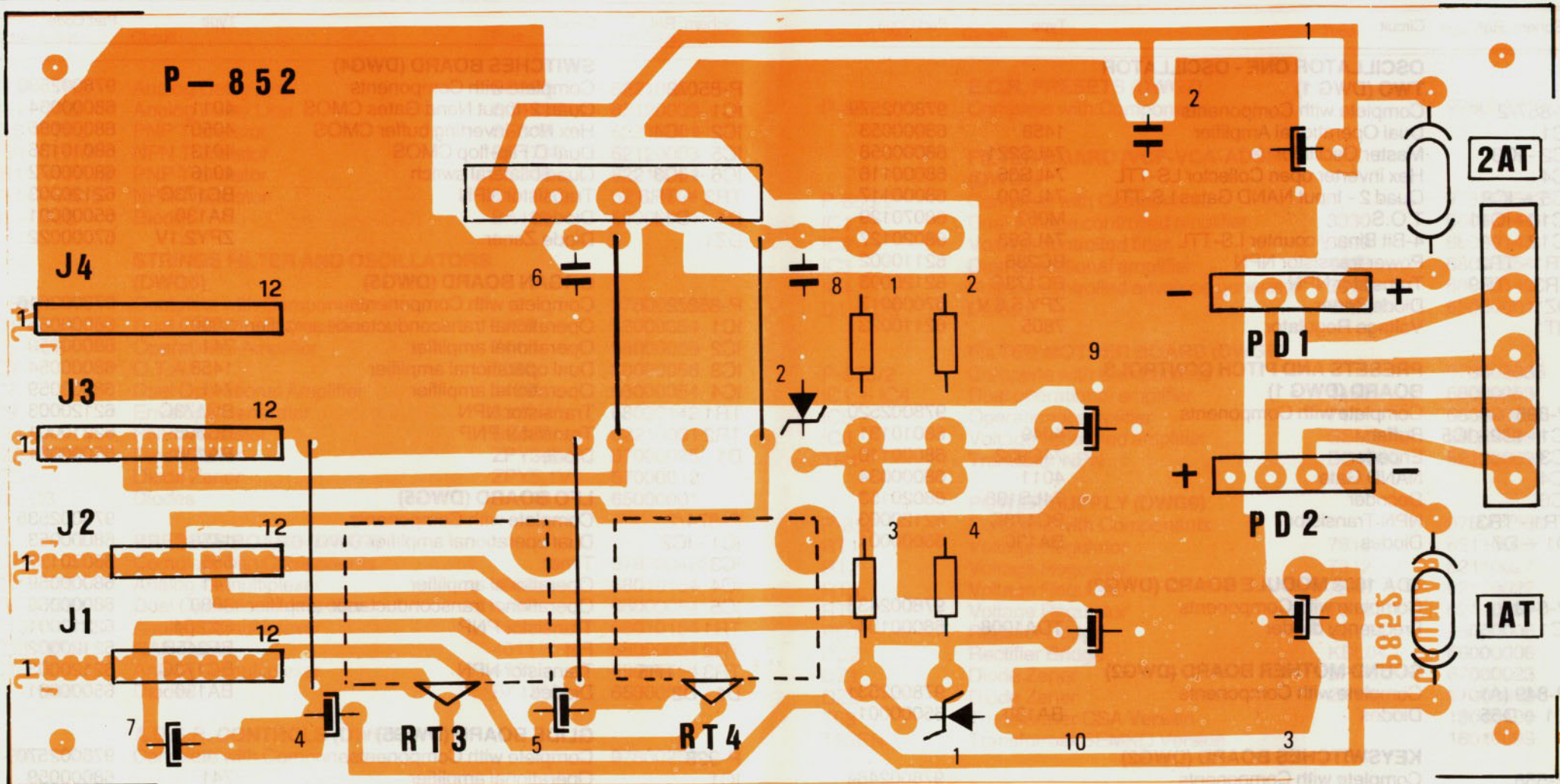
DWG8A

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

CRUMAR		MODEL: TRILOGY	
DRAWN BY	Buriani G.	REVISION	
DESIGNED BY	<i>[Signature]</i>	DATE	7/15/81

DWG8A

P-852



DWG9A

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

CRUMAR		MODEL: TRILOGY	
DRAWN BY	Bonanni G.	REVISION	
DESIGNED BY	<i>[Signature]</i>	DATE	7/5/81