

Bill of Materials for: M.NATS Revision G and H 1176 Printed Circuit Board

CAPACITORS

Count	Label-Value	Attributes	Designation
2	220pF	CERAMIC	C3,C4
1	27pF	CERAMIC	C6
1	10pF	CERAMIC	C12
0	33pF	CERAMIC	C16 (Legacy Item?) Pin 8 is NC on TL071
1	47pF	CERAMIC	C29
1	220pF	CERAMIC	C32
2	100pF	CERAMIC	C100,C101
5	100uF/35V	ELECTROLYTIC	C2,C7,C8,C13,C21
3	47uF	ELECTROLYTIC	C9,C11,C34
1	22uF	ELECTROLYTIC	C14
1	470uF/35V	ELECTROLYTIC	C15
1	47uF/35V	ELECTROLYTIC	C18
4	10uF/35V	ELECTROLYTIC	C23,C30,C31,C33
2	1000uF/35V	ELECTROLYTIC	C24,C26
1	1000uF/50V	ELECTROLYTIC	C25
3	1.0uF	POLY	C1,C10,C17
2	.22uF	POLY	C5,C27
1	.022uF	POLY	C22
2	.1uF	POLY	C28,C35-(C*4 on some boards)
2	6.8uF/35V	TANTALUM	C19,C20

SEMICONDUCTORS

Count	Label-Value	Attributes	Designation
6	1N4003	DIODE	CR1,CR2,CR7,CR8,CR9,CR10
2	FDH333	DIODE	CR3,CR4
1	1N4148	DIODE	CR11
1	TL071	DIP8 IC	IC1
1	NE5532	DIP8 IC	IC2
2	BF245A	FET	Q1,Q10
8	BC107	TRANSISTOR	Q2,Q3,Q4,Q5,Q12,Q13,Q14,Q15
2	BC560	TRANSISTOR	Q6,Q7
1	BD135 or BD139	TRANSISTOR	Q8
1	BD136 or BD140	TRANSISTOR	Q9
1	1N4740A	ZENER DIODE	CR6

RESISTORS

Count	Label-Value	Attributes	Designation
1	10k LOG	POTENTIOMETER	R5
1	100k LOG	POTENTIOMETER	R27
1	25k LOG or LIN	POTENTIOMETER	R77
1	5M LOG or LIN	POTENTIOMETER	R78
2	150R	RESISTOR	R15,R87 (Ratio Board)
3	56k	RESISTOR	R2,R24,R26
3	100k	RESISTOR	R3,R4,R58
1	27k	RESISTOR	R6
11(13)	10k	RESISTOR	R8,R28,R35,R52,R56,R82,R1A,R1B,R1C,R1D,R1E (R*,R*1 if using Lundahl input transformer - note: Lundahl suggests 12k in this application rather than the 10k suggested in Jakob's version)

RESISTORS Continued

Count	Label-Value	Attributes	Designation
5	1k	RESISTOR	R10,R37,R84,R85,R86
1	560k	RESISTOR	R11
3	1M	RESISTOR	R12,R29,R60
3	180R	RESISTOR	R13,R14,R73
1	6.8k	RESISTOR	R17
1	22k	RESISTOR	R18
1	82R	RESISTOR	R19
1	1.8k	RESISTOR	R20
1	7.5k	RESISTOR	R21
5	47k	RESISTOR	R23,R62,R68,R74,R75
2	68k	RESISTOR	R25,R31
1	200k	RESISTOR	R30
1	2k	RESISTOR	R32
1	11k	RESISTOR	R33
2	4.3k	RESISTOR	R34,R49
1	100R	RESISTOR	R36
2	1.2k	RESISTOR	R38,R39
2	470R	RESISTOR	R42,R76
1	560R	RESISTOR	R43
1	1.5k	RESISTOR	R44
1	2.2k	RESISTOR	R45
1	10M	RESISTOR	R46
1	8.2k	RESISTOR	R50 (not used in Gyraf version)
2	3.6k	RESISTOR	R51,R59
1	15k	RESISTOR	R53
2	470k	RESISTOR	R57,R61
2	4.7k	RESISTOR	R63,R70
2	2.4k	RESISTOR	R64,R72
1	270R	RESISTOR	R65
1	182k	RESISTOR	R66
1	38.3k	RESISTOR	R67
1	44.2k	RESISTOR	R69
1	7.68k	RESISTOR	R71
1	270k	RESISTOR	R79
1	3.9k	RESISTOR	R83
1	220R	RESISTOR	R89
2	4.3R	RESISTOR 5% CARBON	R40,R41
1	3.9M	RESISTOR 5% CARBON	R48
2	2.2M	RESISTOR CARBON	R7,R9
1	1.1k	RESISTOR CARBON 1W	R87 (Main PCB)
1	100R	TRIM POT	R16
1	100k	TRIM POT	R54
1	2k	TRIM POT	R55
1	2k	TRIM POT	R81

MISCELLANEOUS

Count	Label-Value	Attributes	Designation
1	7824	VOLTAGE REGULATOR	VR1
1	LUNDAHL LL1540 or OEP A262A2E	TRANSFORMER	T1
1	LUNDAHL LL5402 or OEP A262A2E	TRANSFORMER	T2
1	LORLIN OR ALPHA	2 POLE 6 POSITION SWITCH	S1
1	LORLIN OR ALPHA	4 POLE 3 POSITION SWITCH	S2

Resistors 0.25 to 0.6W Metal or Carbon Film 1% unless otherwise indicated. Most common 1% metal film resistors sold nowadays are 0.5 or 0.6 Watt but are the size of what most 1/4 Watt resistors were in the "old days". The body length should be approximately 1/4" or 6.5mm and should fit in a resistor PCB footprint with .4" pad centres. The components listed here are primarily parts that go onto the boards and should not be construed as a complete list of parts to build a finished 1176 clone. You will need to supply an appropriate AC power transformer, a VU meter and case, knobs etc to finish your clone.