



# P90 (MXR™ Phase 90™ Replica) Bill of Materials



Version 2012November19

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## Resistors:

Resistor ID	Value	3-band Marking	4-band Marking
R1	10k	 brown-black-orange	 brown-black-black-red
R2	470k	 yellow-violet-yellow	 yellow-violet-black-orange
R3	22k	 red-red-orange	 red-red-black-red
R4	22k	 red-red-orange	 red-red-black-red
R5	22k	 red-red-orange	 red-red-black-red
R6	22k	 red-red-orange	 red-red-black-red
R7	10k	 brown-black-orange	 brown-black-black-red
R8	10k	 brown-black-orange	 brown-black-black-red
R9	10k	 brown-black-orange	 brown-black-black-red
R10	10k	 brown-black-orange	 brown-black-black-red
R11	10k	 brown-black-orange	 brown-black-black-red
R12	10k	 brown-black-orange	 brown-black-black-red
R13	10k	 brown-black-orange	 brown-black-black-red
R14	10k	 brown-black-orange	 brown-black-black-red
R15	22k	 red-red-orange	 red-red-black-red










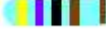





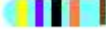














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R16	10k	 brown-black-orange	 brown-black-black-red
R17	1M	 brown-black-green	 brown-black-black-yellow
R18	3M9 (3.9M)	 orange-white-green	 orange-white-black-yellow
R19	150k	 brown-green-yellow	 brown-green-black-orange
R20	4k7 (4.7k)	 yellow-violet-red	 yellow-violet-black-brown
R21	Speed Control Potentiometer		
R22	250k Trimmer		
R23	150k	 brown-green-yellow	 brown-green-black-orange
R24	150k	 brown-green-yellow	 brown-green-black-orange
R25	470k	 yellow-violet-yellow	 yellow-violet-black-orange
R26	150k	 brown-green-yellow	 brown-green-black-orange
R27	150k	 brown-green-yellow	 brown-green-black-orange
R28	56k	 green-blue-orange	 green-blue-black-red
R29	150k	 brown-green-yellow	 brown-green-black-orange
R30	10k	 brown-black-orange	 brown-black-black-red
R31	1k (current limiting for LED Bypass indicator)	 brown-black-red	 brown-black-black-brown
R32	1M5 (1.5M) (optional, for bypass switch click prevention)	 brown-green-green	 brown-green-black-yellow



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### Capacitors:

Capacitor ID	Value	Type	Possible Marking
C1	0.01 $\mu$ F	Film	103
C2	0.047 $\mu$ F	Film	473
C3	0.047 $\mu$ F	Film	473
C4	0.047 $\mu$ F	Film	473
C5	0.047 $\mu$ F	Film	473
C6	10 $\mu$ F	Tantalum ( or Aluminum Electrolytic)	10 $\mu$ F
C7	15 $\mu$ F	Tantalum ( or Aluminum Electrolytic)	15 $\mu$ F
C8	0.01 $\mu$ F	Film	103
C9	0.047 $\mu$ F	Film	473
C10	0.047 $\mu$ F	Film	473

### Potentiometers:

Part ID	Value	Type
R21 - Speed Control	500k	Reverse Log Taper (or 100k linear)
R22 - Phase tuning (trimmer)	250k	Trimmer

### Other:

Part ID	Part Name
IC1, IC2, IC3, IC4, IC5, IC6	LM741 (or other single opamp)
Q1, Q2, Q3, Q4	2N5952 Matched JFETs (or similar JFETs)
Q5	2N4125 (or 2N3906 or other similar PNP BJT transistor)
D1	1N914 or other similar diode "marking "F914"
D2	5.1 volt Zener diode Marking "F231B"



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D3	LED (status indicator optional)
J1	Stereo quarter-inch jack
J2	Mono quarter-inch jack
J3	DC Jack
B1	9 volt battery (not included in the Kit)
Sw1	Heavy Duty 3PDT foot switch
	9v battery snap, Printed Circuit Board, 24 gauge stranded wire, Enclosure, Knob