

Jaguar XJ heater control

Parts List

U1	LM741 Op-amp
U2	7805 +5V Regulator
U3, U4	PC817 Opto-coupler
U5	L293D Motor driver
R1	100 Ohm ½ Watt (Brown, Black, Brown)
R2, 10, 11, 12, 13	1k Ohm ¼ Watt (Brown, Black, Red)
R3, 4, 8	10k Ohm ¼ Watt (Brown, Black, Orange)
R5	2.2k Ohm ¼ Watt (Red, Red, Red)
R9	100 Ohm 1/8 Watt (Brown, Black, Brown)
C1	10 mf electrolytic
C2	.010 mf
D1, 2	5.1V Zener
D3	LED Green
D4	LED Blue
D5	LED Red

Short leg of LED is the cathode (-) lead and goes in the square solder pad.

R6 and R7 not used. Leave empty.

Push all components tight against the board when soldering.

Wire color codes are standard British Brown (N), Yellow (Y), White (W), Green (G), Blue (U), Red (R), Black (B).

The Orange wire is not used. Just tape it back out of the way

The Black wire must contain the fuse. Use standard fuse 2 – 3 amp. No bigger than 3 amp.

+5V connector on board edge is not used.

It is a good idea to install and test the power supplies before adding any other parts. The solder pads for the 7805 regulator are very close together and easy to bridge when soldering.

The first supply is made up of R1, D1, and D2.

The second is U2 and C1 and C2.

Apply +12V to the Brown (N) pad and Ground to the Black (B) pad on the side of the board.

To test supply 1. Using ground as a reference, there should be ~5V on the cathode of D2 and ~10V on the cathode of D1. (This is a simple voltage divider to provide a +/- 5V supply for the op-amp. If you reference it to the connection between the diodes you will get the +/- 5V. Voltages will not be exact, but will be close.)

Supply 2 can be checked on the +5V pad on the side of the board. (This is a regulated 5V for the motor controller.)