












## Auto-Oiler Bill of Materials

Minor electrical items such as resistors, diodes and wiring are not listed on the BOM as they are low cost and readily available. See electrical schematic for specifications.

Item	Photo	Advert location	Typical advert item description	Quantity	Cost GBP	Shipping	Total	Notes
20mm OD Transparent Acrylic Tube		Ebay	6mm-30mm OD Clear Transparent Acrylic Plastic Pipe Tube 1/2/3mm Wall 25cm Long	1	4.03	0	4.03	The forum post shows 15mm OD tube used, but later experiments revealed that 20mm could be used for both the sight glasses and the oil tank. If 20mm is used for the sight glasses I'd suggest a wall thickness of 2 or 3 mm be used.
Drip tubes		Ebay	2 Bottle 50ml Needle Tip Dispenser Solder Liquid Flux Dispensing + 22 Needle Set	1	3.41	0	3.41	Once you've used two needles for the Auto-Oiler project, you have the bonus of two handy dropper bottles for cutting fluid or oil.
PVC tubing 4mm OD, 2mm ID		Hose World	2MM I.D. X 4MM O.D. CLEAR UNREINFORCED PVC TUBING	3	0.12	4.5	4.86	Min shipping GBP 4.50, so at 12 pence per meter buy loads! <a href="https://www.hoseworld.com/2mm-i-d-x-4mm-o-d-clear-unreinforced-pvc-tubing-cup-02-04.html">https://www.hoseworld.com/2mm-i-d-x-4mm-o-d-clear-unreinforced-pvc-tubing-cup-02-04.html</a>
Photo Interrupter sensor H92B4		Ebay	5 Pcs 1/6" Slot PCB Photo Interrupter Slotted Optical Switch H92B4 J.ZT	1	2.95	0	2.95	Pack of 5 sensors. 2 are used for the drip sensors and 1 to sense spindle rpm if you are using the system in 'work done' mode.
USB leads		Ebay	NEW USB EXTENSION Cable Lead A Male To Female High Speed 2.0 1m 2m 3m 5m lot	2	1.99	0	3.98	Any cable with a USB A male on one end will do as you cut the other end off. Beware ... one set of cables I bought was impossible to solder and had to be discarded.
Prototype bread board		Ebay	Double Sided Prototype PCB Printed Circuit Board FR-4 2.54mm	1	1.95	0	1.95	I used the 30 x 70 mm item and cut to the size required.
Female USB A Socket		Ebay	Type A Female USB To DIP 2.54MM PCB Board Adapter Breakout Board.	1	2.09	0	2.09	Price is for pack of 2.
12v DC geared motor Type S30K		Ebay	DC 6V 12V Reducer Plastic Gear Motor 7RPM-40RPM Reversible S30K	2	3.52	1.2	8.24	Several types are available. I used a 12v DC and 14rpm version.
Peristaltic pump		Ali express	INTLLAB 12V DC DIY Peristaltic Liquid Pump Dosing Pump for Aquarium Lab Analytical	2	2.13	1.58	5.84	Several size pumps are available and are described by the tube size. I used the 2 x 4 mm size. Various voltages are also available, but this is unimportant as the motor is not used in this project.
Arduino uno		Ali express	UNO R3 Development Board ATmega328P CH340 CH340G For Arduino UNO R3 With Straight Pin Header	1	2.39	0.94	3.33	This was the cheapest UNO I could find. Some of the Chinese clones may require a special driver to be installed on your PC. Genuine Unos retail around GBP 18.00.
Arduino screw shield		Ebay	Screw Shield Assembled Terminal Expansion Board Proto Type for Arduino Black/Red	1	2.66	1.3	3.96	Many cheap adverts offer a kit of parts for you to solder together.
Motor relays		Ebay	12V Mini PCB Relay SPDT 5 Pin	1	3.49	0	2.99	Pack of 2. Type SRD-05VDC-SL-C. Contacts rated at 10 amp at 250v AC with a 5v DC coil. Used only in conjunction with DC motor version.

**Total cost of Major components GBP 47.63**