

Bertram BOM - BOM

		Part	Quantity	Approx. Unit Price	Approx. Total Cost	Source		Vendor	URL				
Components	Bearings	8mm x 22mm x 7mm Bearing	10	\$6.88	\$68.80	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#5972k501/=173wlc7">https://www.mcmaster.com/#5972k501/=173wlc7</a>				
		5mm x 16mm x 5mm Bearing	8	\$6.63	\$53.04	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#6455k92/=1691yg2">https://www.mcmaster.com/#6455k92/=1691yg2</a>				
		4mm x 13mm x 5mm Bearing	9	\$6.63	\$59.67	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#6455k91/=16a35bi">https://www.mcmaster.com/#6455k91/=16a35bi</a>				
		3mm x 10mm x 4mm Bearing	3	\$7.18	\$21.54	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#7804k128/=16andz9">https://www.mcmaster.com/#7804k128/=16andz9</a>				
	Rods	M8 x 40mm Threaded Rod	1	\$8.91	\$8.91	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#93805a359/=16b397c">https://www.mcmaster.com/#93805a359/=16b397c</a>				
		8mm x 140mm Smooth Rod	1										
		8mm x 115mm Smooth Rod	1	\$3.52	\$3.52	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#5544t272/=17fqv6l">https://www.mcmaster.com/#5544t272/=17fqv6l</a>				
		8mm x 80mm Smooth Rod	1										
	Belts	65cm T5 Belt	1										
		50cm T5 Belt	1	\$26.84	\$26.84	<a href="#">BRECOFlex</a>		BRECOFlex	<a href="http://www.brecoflex.com/products/timing-belts/t-series/">http://www.brecoflex.com/products/timing-belts/t-series/</a>				
		35cm T5 Belt	1										
	Pulleys	T5 Pulley 8mm Bore	2	\$12.59	\$25.18	<a href="#">BRECOFlex</a>		BRECOFlex	<a href="http://www.brecoflex.com/products/pulleys/stock-pulleys/t5-pulleys/">http://www.brecoflex.com/products/pulleys/stock-pulleys/t5-pulleys/</a>				
		T5 Pulley 1/4" Bore	1	\$11.64	\$11.64	<a href="#">BRECOFlex</a>		BRECOFlex	<a href="http://www.brecoflex.com/products/pulleys/stock-pulleys/t5-pulleys/">http://www.brecoflex.com/products/pulleys/stock-pulleys/t5-pulleys/</a>				
		T5 Pulley 5mm Bore	1	\$11.64	\$11.64	<a href="#">BRECOFlex</a>		BRECOFlex	<a href="http://www.brecoflex.com/products/pulleys/stock-pulleys/t5-pulleys/">http://www.brecoflex.com/products/pulleys/stock-pulleys/t5-pulleys/</a>				
	Couplers	5mm to 8mm Shaft Coupler	1	\$4.95	\$4.95	<a href="#">Adafruit</a>		Adafruit	<a href="https://www.adafruit.com/product/1176">https://www.adafruit.com/product/1176</a>				
Fasteners	Heat-Set Inserts	M3 Heat-Set Inserts	41	\$0.12	\$5.04	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#94180a331/=16a5dte">https://www.mcmaster.com/#94180a331/=16a5dte</a>				
		M4 Heat-Set Inserts	22	\$0.14	\$3.14	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#94180a351/=169uxa6">https://www.mcmaster.com/#94180a351/=169uxa6</a>				
		M5 Heat-Set Inserts	16	\$0.23	\$3.66	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#94180a361/=168kfr2">https://www.mcmaster.com/#94180a361/=168kfr2</a>				
	Screws	M5 x 14mm Screw	16	\$0.12	\$1.93	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#91290a230/=168k5ox">https://www.mcmaster.com/#91290a230/=168k5ox</a>				
		M8 x 65mm Screw	1	\$0.37	\$0.37	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#91280a552/=17fqwsv">https://www.mcmaster.com/#91280a552/=17fqwsv</a>				
		M3 x 25mm Screw	5	\$0.12	\$0.61	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#91290a125/=16a4rfa">https://www.mcmaster.com/#91290a125/=16a4rfa</a>				
		M4 x 20mm Screw	7	\$0.10	\$0.70	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#91290a168/=16a3cro">https://www.mcmaster.com/#91290a168/=16a3cro</a>				
		M4 x 40mm Screws	11	\$0.18	\$1.93	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#91290a184/=17fqx4i">https://www.mcmaster.com/#91290a184/=17fqx4i</a>				
		M3 x 40mm Screw	7	\$0.10	\$0.67	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#91290a136/=17fqxej">https://www.mcmaster.com/#91290a136/=17fqxej</a>				
		M3 x 10mm Screw	20	\$0.07	\$1.40	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#91290a115/=169ntxy">https://www.mcmaster.com/#91290a115/=169ntxy</a>				
		M4 x 10mm Screw	4	\$0.08	\$0.33	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#91290a144/=16cnyqx">https://www.mcmaster.com/#91290a144/=16cnyqx</a>				
		M3 x 16mm Screw	10	\$0.08	\$0.84	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#91290a120/=16a86rk">https://www.mcmaster.com/#91290a120/=16a86rk</a>				
		M3 x 30mm Screw	1	\$0.18	\$0.18	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#91502a111/=16anq4z">https://www.mcmaster.com/#91502a111/=16anq4z</a>				
		M4 x 55mm Screw	4	\$0.18	\$0.70	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#91290a187/=173wlim">https://www.mcmaster.com/#91290a187/=173wlim</a>				
		M4 x 45mm Screw	4	\$0.21	\$0.84	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#91290a145/=17fqxmo">https://www.mcmaster.com/#91290a145/=17fqxmo</a>				
		M3 Thread-Forming Screw	4	\$0.35	\$1.41	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#96817a912/=17fqxxl">https://www.mcmaster.com/#96817a912/=17fqxxl</a>				
	Nuts	M3 Nut	4	\$0.02	\$0.08	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#90591a250/=16a33z7">https://www.mcmaster.com/#90591a250/=16a33z7</a>				
		M4 Nut	14	\$0.02	\$0.32	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#90591a255/=16a33cf">https://www.mcmaster.com/#90591a255/=16a33cf</a>				
		M8 Locknut	1	\$0.16	\$0.16	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#94645a210/=16an7rs">https://www.mcmaster.com/#94645a210/=16an7rs</a>				
	Washers	M3 Washer	7	\$0.02	\$0.11	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#93475a210/=17fqy7a">https://www.mcmaster.com/#93475a210/=17fqy7a</a>				
		M4 Washer	12	\$0.02	\$0.22	<a href="#">McMaster Carr</a>		McMaster Carr	<a href="https://www.mcmaster.com/#93475a230/=17fqyf4">https://www.mcmaster.com/#93475a230/=17fqyf4</a>				
Electronics	Motors	Nema 23 Motor	2	\$12.87	\$25.74	<a href="#">Stepper Online</a>		Stepper Online	<a href="http://www.omc-stepperonline.com/nema-23-cnc-stepper-motor-28a-126nm1785ozin-23hs222804s-p-108.html">http://www.omc-stepperonline.com/nema-23-cnc-stepper-motor-28a-126nm1785ozin-23hs222804s-p-108.html</a>				
		Nema 17 5:1 Geared Motor	1	\$27.64	\$27.64	<a href="#">Stepper Online</a>		Stepper Online	<a href="http://www.omc-stepperonline.com/gear-ratio-51-planetary-gearbox-with-nema-17-stepper-motor-17hs130404spg5-p-140.html">http://www.omc-stepperonline.com/gear-ratio-51-planetary-gearbox-with-nema-17-stepper-motor-17hs130404spg5-p-140.html</a>				
		Nema 17 Motor	1	\$6.97	\$6.97	<a href="#">Stepper Online</a>		Stepper Online	<a href="http://www.omc-stepperonline.com/nema-17-stepper-motor-34mm-12v-04a-26ncm37ozin-17hs130404s-p-166.html">http://www.omc-stepperonline.com/nema-17-stepper-motor-34mm-12v-04a-26ncm37ozin-17hs130404s-p-166.html</a>				
		Nema 14 Motor	1	\$7.51	\$7.51	<a href="#">Stepper Online</a>		Stepper Online	<a href="http://www.omc-stepperonline.com/nema-14-bipolar-stepper-54v-08a-18ncm255ozin-14hs130804s-p-93.html">http://www.omc-stepperonline.com/nema-14-bipolar-stepper-54v-08a-18ncm255ozin-14hs130804s-p-93.html</a>				
		Servo Motor	1	\$32.75	\$32.75	<a href="#">Amazon</a>		Amazon	<a href="https://www.amazon.com/Hitec-32645S-HS-645MG-Torque-Metal/dp/B003T6RSVQ/">https://www.amazon.com/Hitec-32645S-HS-645MG-Torque-Metal/dp/B003T6RSVQ/</a>				
		Nema 17 Long Motor	1	\$14.48	\$14.48	<a href="#">Stepper Online</a>		Stepper Online	<a href="http://www.omc-stepperonline.com/unipolar-steppernema-17--motor-65ncm92ozin12a-17hs241206s-p-20.html">http://www.omc-stepperonline.com/unipolar-steppernema-17--motor-65ncm92ozin12a-17hs241206s-p-20.html</a>				
	Controller	Arduino Mega 2560	1	\$14.48	\$14.48	<a href="#">Adafruit</a>		Adafruit	<a href="https://www.adafruit.com/product/191">https://www.adafruit.com/product/191</a>				
		RAMPS Shield	1	\$14.48	\$14.48	<a href="#">Amazon</a>		Amazon	<a href="https://www.amazon.com/SainSmart-Printer-controller-Mega2560-Mega1280/dp/B00E8A0FYY/">https://www.amazon.com/SainSmart-Printer-controller-Mega2560-Mega1280/dp/B00E8A0FYY/</a>				
		DRV8825 Stepper Drivers	5	\$13.99	\$69.95	<a href="#">Amazon</a>		Amazon	<a href="https://www.amazon.com/Hobbypower-StepStick-4-layer-DRV8825-Stepper/dp/B00NCSK6T2">https://www.amazon.com/Hobbypower-StepStick-4-layer-DRV8825-Stepper/dp/B00NCSK6T2</a>				
		24V 240W Power Supply	1	\$42.49	\$42.49	<a href="#">Inventables</a>		Inventables	<a href="https://www.inventables.com/technologies/enclosed-power-supply">https://www.inventables.com/technologies/enclosed-power-supply</a>				
		Power Supply Interface PCB	1	\$20.00	\$20.00	<a href="#">Inventables</a>		Inventables	<a href="https://www.inventables.com/technologies/power-supply-interface-pcb">https://www.inventables.com/technologies/power-supply-interface-pcb</a>				
				Approximate Total Cost	\$596.88								