

PUNYO Bubble Gripper Bill of Materials (BOM) v1.0

Group	Subgroup	Part Number	Item	Qty	Qty/Pkg	Link	
Tools	3D Printing	PRI-MK3S-KIT-ORG-PEI 4289A71	FDM 3D Printer, Any type Deburring tool	1	1	https://shop.prusa3d.com/en/3d-printers/180-original-prusa-i3-mk3s-kit.html https://www.mcmaster.com/4289A71/	
	Laser Cutting	Speedy 400	Laser cutter	1	1	https://www.troteclaser.com/en-us/laser-machines/laser-engravers-speedy-series/	
	Soldering	6997A23	Temperature controlled soldering iron		1	1	https://www.mcmaster.com/6997A23/
		92160A123	Heat set installation soldering iron tip		1	1	https://www.mcmaster.com/92160A123/
		FA400-04	Bench top fume absorber		1	1	https://www.grainger.com/product/32TV20
		5153A32	Solder scour pad with metal brass wire		1	1	https://www.mcmaster.com/5153A32/
		JIC-2030	Wire stripper		1	1	https://www.digikey.com/en/products/detail/jonard-tools/JIC-2030/2308356
		8464A49	Vise		1	1	https://www.mcmaster.com/8464A49/
		170MN	Pliers		1	1	https://www.digikey.com/en/products/detail/apex-tool-group/170MN/278946
	32000556	Thermally insulated flat load		1	1	https://www.msdirect.com/browse/tnpla/32000556	
	Air Source	082-01-0063	Standard bike pump for schrader valves	1	1	https://www.target.com/p/schwinn-cyclone-plus-bike-pump-white/-/A-52529290	
	Other	ProPerf48foam2	Large sponge paintbrush		1	48	https://www.amazon.com/Lightweight-Durable-Acrylics-Varnishes-Polyurethane/dp/B01MR5NB5H/
		QP-1	Paint stirring sticks		1	30	https://www.homedepot.com/p/1-qt-Paint-Stick-30-Pack-QP-1/301810963
		ACM10562	Ruler		1	1	https://www.amazon.com/Westcott-Clear-Flexible-Acrylic-Metric/dp/B004E3NK92/
		01-005413	Scissors		1	1	https://www.amazon.com/Fiskars-1541301001-Non-Stick-Titanium-Softgrip/dp/B003YNI688/
		70875A12	Cutting board		1	1	https://www.mcmaster.com/70875A12/
		54845T42	Isopropyl alcohol		1	1	https://www.mcmaster.com/54845T42/
		70585T2	Shop towels		1	100	https://www.mcmaster.com/70585T2/
		8754000975	Powder free nitrile gloves		2	100	https://www.amazon.com/MedPride-Powder-Free-Nitrile-Gloves-Medium/dp/B00GS8W3T4
		2703A71	M3 tap		1	1	https://www.mcmaster.com/2703A71/
2548A12		Tap Handle		1	1	https://www.mcmaster.com/2548A12/	
8541533089	Suction cups		1	2	https://www.amazon.com/Kaisiking-Suction-Computer-Compatible-MacBook/dp/B077QP2QG5		
FEHE030	Spudger		1	3	https://www.amazon.com/Foresay-Printer-Removal-Enhanced-Version/dp/B01A81FXMK		
B07NWSB41X	Small thin brushes		2	50	https://www.amazon.com/dp/B07NWSB41X		
6835A37	Sandpaper		1	1	https://www.mcmaster.com/6835A37/		
GPM241	Felt marker		1	24	https://www.amazon.com/BIC-Intensity-Permanent-24-Count-packaging/dp/B00H14PM1A		
6958A21	1.5 mm allen key		1	1	https://www.mcmaster.com/6958A21/		
6958A12	2.5 mm allen key		1	1	https://www.mcmaster.com/6958A12/		
6958A51	3.5 mm allen key		1	1	https://www.mcmaster.com/6958A51/		
DPSJB	Compressed air duster		1	1	https://www.amazon.com/Falcon-Compressed-Disposable-Cleaning-DPSJB/dp/B0000AE67M/		
Materials	Connectors	5225K183	Push-to-Connect Tube Fitting for Air - Straight Adapter (8 mm STEM OD, 4 mm Tube OD)	1	1	https://www.mcmaster.com/5225K183/	
		5225K739	Push-to-Connect Tube Fitting for Air - 90 Degree Swivel Elbow (4 mm Tube OD, M3 x 0.5 mm pipe w/ O-ring)	2	1	https://www.mcmaster.com/5225K739/	
		1201N56	Push-to-Connect Fitting with Shut-Off for Air, Straight Connector (4 mm Tube OD)	4	1	https://www.mcmaster.com/1201N56/	
		5225K85	Push-to-Connect Tube Fitting for Air, Wye Connector (4 mm Tube OD)	2	1	https://www.mcmaster.com/5225K85/	
	Tubing	5233K112	Soft PVC Plastic Tubing (2 mm ID, 4 mm OD), 50 ft	1	1	https://www.mcmaster.com/5233K112/	
	Adhesives	2063184	Cyanoacrylate (CA) glue		1	1	https://www.amazon.com/Krazy-Glue-2063184-Fast-Clear/dp/B07QFC118C
		K07020007	Repositionable spray adhesive		1	1	https://www.amazon.com/Easy-Tack-Spray-Adhesive-10-25oz/dp/B00M0X4O2K/
		TAPE-STICK-1-3PK	Painters Tape		1	1	https://www.amazon.com/ScotchBlue-Painters-Multi-Use-94-Inch-60-Yard/dp/B0000424CP
	VHB 4950 - S-10117	VHB double sided tape		1	1	https://www.amazon.com/3M-4950-Heavy-Duty-Mounting/dp/B007Y7G1K/	
	Pattern Printing	SUP459WHT	Latex sheet, 0.45 mm thick, 5 meters		1	1	https://www.supatex.com/product/supatex-white/
	LX-802	Black or colored latex screen printing ink		1	1	https://www.floridaflex.com/latex-inks---balloons.html	
	3D Printing	6938936705468	PLA Filament		1	1	https://www.amazon.com/PolyLite-Printer-Filament-PLA-2-2lb/dp/B011AVQVH6?th=1
Soldering	7659A121	Lead-free solder, 0.125" Diameter		1	1	https://www.mcmaster.com/7659A121/	
Laser Cutting	5353	Avery Shipping Labels, 8-1/2" x 11" (removable label paper)		2	100	https://www.avery.com/products/labels/5353	
	8560K216	Cast acrylic sheet - 3/16" thick		1	1	https://www.mcmaster.com/8560K216/	
Other	B08Z8LN28Y	Parchment paper		1	1	https://www.amazon.com/Reynolds-Kitchens-Pop-Up-Parchment-Sheets/dp/B07L25WYS2/	
Fasteners	Washers	93475A195	M2 washers	16	100	https://www.mcmaster.com/93475A195/	
		98269A420	M3 washers	8	100	https://www.mcmaster.com/98269A420/	
		98269A430	M4 washers	4	100	https://www.mcmaster.com/98269A430/	
	Screws	91290A012	M2 x 5 mm socket head cap screws		28	100	https://www.mcmaster.com/91290A012/
		91290A017	M2 x 10 mm socket head cap screws		8	100	https://www.mcmaster.com/91290A017/
		91290A113	M3 x 8 mm socket head cap screws		8	100	https://www.mcmaster.com/91290A113/
		91290A150	M4 x 14 mm socket head cap screws		4	100	https://www.mcmaster.com/91290A150/
	Heat-Sets	94180A307	M2 heat-set inserts, 2.9 mm installed length		36	100	https://www.mcmaster.com/94180A307/
94180A331	M3 heat-set inserts, 3.8 mm installed length		8	100	https://www.mcmaster.com/94180A331/		
Other	5779K433	Push-to-connect fitting clips		6	7	https://www.mcmaster.com/5779K433/	
Electronics	Cables	CA3A-90LMICB-03M	USB 3.0 Type A straight to Micro B left angle exit - 0.3 m long		1	1	https://www.l-com.com/usb-usb-30-type-a-straight-to-micro-b-left-angle-exit-03m
		CA3A-90RMICB-03M	USB 3.0 Type A straight to Micro B right angle exit - 0.3 m long		1	1	https://www.l-com.com/usb-usb-30-type-a-straight-to-micro-b-right-angle-exit-03m
		CAB-15092	USB Cable A to C		1	1	https://www.sparkfun.com/products/15092 , https://www.amazon.com/Braided-Compatible-Samsung-Portable-Charger/dp/B07RYSXQMS
		PRT-14426	50 mm Qwic Cable		1	1	https://www.sparkfun.com/products/14426
		PRT-14427	100 mm Qwic Cable		1	1	https://www.sparkfun.com/products/14427
		AK-A7516012	USB Hub		1	1	https://www.amazon.com/gp/product/B00XMD7KPU
	HL-007250	USB 3.0 Extension Cable		1	1	https://www.amazon.com/AmazonBasics-Extension-Cable-Male-Female/dp/B014RWATK2/	
	Sensors	103844	Pico Flexx		2	1	https://www.automation24.com/development-kit-pmd-vision-r-camboard-pico-flexx-700-000-094
	SEN-16476	SparkFun Qwic MicroPressure Sensor		2	1	https://www.sparkfun.com/products/16476	
	Microcontroller	DEV-15443	SparkFun RedBoard Artemis Nano		1	1	https://www.sparkfun.com/products/15443
Grippers	WSG 032-068-B	Schunk WSG 32 or other gripper		1	1	https://schunk.com/us_en/gripping-systems/product/43613-0306130-wsg-032-068-b/	