

Project: Robotic Arm V1.0
Revision date: 2025-11-04

<https://www.printables.com/@TomKnox>



Level	Description	Qty	Description	ALIEXPRESS	AMAZON
>	Component				
>>	Nema 17 - Stepper Motor	1	SM42HT47-1684 1.8° step, 1.6 A, 60mm	ALIEXPRESS LINK	AMAZON Link
>>	Arduino Mega	1	ARDUINO MEGA 2560	ALIEXPRESS LINK	AMAZON Link
>>	Stepper Driver	6	Stepper Driver tb6560	ALIEXPRESS LINK	AMAZON Link
>>	Power Supply	1	Power Supply 24V 320W	ALIEXPRESS LINK	AMAZON Link
>>	RAMPS Board	1	RAMPS V1.4	ALIEXPRESS LINK	AMAZON Link
>>	Voltage Converter	1	Power converter 24V a 12V	ALIEXPRESS LINK	AMAZON Link
>>	Servo Motor	1	Servo Motor 180° 55G TORQUE=13KG/CM	ALIEXPRESS LINK	AMAZON Link
>>	Nema 17 - Geared Stepper	1	Gear Ratio 5:1 Planetary Gearbox (step 0.35° 2Nm, 1.68A)	ALIEXPRESS LINK	AMAZON Link
>>	Nema 23 - Stepper Motor	2	112mm Single shaft Ø8mm, step 1.8°, 3A, 3Nm hoding torque	ALIEXPRESS LINK	AMAZON Link
>>	Nema 14 - Stepper Motor	1	SM35HT36-1004A, 1.8° step, 1A, 1400g·cm	ALIEXPRESS LINK	AMAZON Link
>>	Nema 17 - Stepper Motor	1	SM42HT33-1334, 1.8° step, 1.33A, 2200 g·cm	ALIEXPRESS LINK	AMAZON Link
>>	Smooth Rod	1	Smooth Rod ,M8x134mm (cut to length)	ALIEXPRESS LINK	AMAZON Link
>>	Smooth Rod	1	Smooth Rod ,M8x114mm (cut to length)	ALIEXPRESS LINK	AMAZON Link
>>	Smooth Rod	1	Smooth Rod ,M8x80mm (cut to length)	ALIEXPRESS LINK	AMAZON Link
>>	Bearing	10	Ball Bearing 608ZZ 8mm x 22mm x 7mm	ALIEXPRESS LINK	AMAZON Link
>>	Bearing	8	Ball Bearing 625ZZ 5mm x 16mm x 5mm	ALIEXPRESS LINK	AMAZON Link
>>	Bearing	9	Ball Bearing 624ZZ 4mm x 13mm x 5mm	ALIEXPRESS LINK	AMAZON Link
>>	Bearing	3	Ball Bearing 623ZZ 3mm x 10mm x 4mm	ALIEXPRESS LINK	AMAZON Link
>>	Brass Heat Insert	3	M4x8x5	ALIEXPRESS LINK	AMAZON Link
>>	Brass Heat Insert	20	M3x5, 6x4, 7	ALIEXPRESS LINK	AMAZON Link
>>	Pulley	3	Pulley T5, Bore 8mm, 14 tooth, 17mm width	ALIEXPRESS LINK	AMAZON Link
>>	Pulley	2	Pulley T5, Bore 5mm, 10 tooth, 17 mm width	ALIEXPRESS LINK	AMAZON Link
>>	Threaded Rod	1	ROD BAR M8 L 42mm (Order 50mm and grind 2mm off)	ALIEXPRESS LINK	AMAZON Link
>>	Shaft Coupling	1	COUPLING STEEL 5 TO 8 mm rigid	ALIEXPRESS LINK	AMAZON Link
>>	Cooling Fan	1	Axial Fan DC 24V 80x80x25mm	ALIEXPRESS LINK	AMAZON Link
>>	Cooling Fan	1	Axial Fan DC 24V 50x50x15mm	ALIEXPRESS LINK	AMAZON Link
>>	Power Cable	1	Power supply cable IEC 1.5m (buy the one for your region.	ALIEXPRESS LINK	AMAZON Link
>>	USB Cable	1	Cable USB 2.0 AM/BM 1,8m	ALIEXPRESS LINK	AMAZON Link
>>	Cable Management	10	Cable Ties	ALIEXPRESS LINK	AMAZON Link
>>	Bushing	8	Self Lubricating bearing 5mm x 8mm x 10mm	ALIEXPRESS LINK	AMAZON Link
>>	Bushing	2	Self Lubricating bearing 8mm x 12mm x 20mm	ALIEXPRESS LINK	AMAZON Link
>>	Timing Belt	1.8m	Breco belt T5, 15mm width, L 180cm	ALIEXPRESS LINK	AMAZON Link
>>	Base Plate	1	Wood Base - 550mm x 550mm x 16mm (Or another material to your choosing)		
>	Fasteners				
>>	Hexagonal Head Cap Screw	4	MC65 M3x8		
>>	Hexagonal Head Cap Screw	30	MC65 M3x10		
>>	Hexagonal Head Cap Screw	6	MC65 M3x12		
>>	Hexagonal Head Cap Screw	13	MC65 M3x16		AMAZON Link
>>	Hexagonal Head Cap Screw	4	MC65 M3x20	ALIEXPRESS LINK	
>>	Hexagonal Head Cap Screw	5	MC65 M3x25		
>>	Hexagonal Head Cap Screw	2	MC65 M3x30		
>>	Hexagonal Head Cap Screw	4	MC65 M3x35		AMAZON Link
>>	Hexagonal Head Cap Screw	7	MC65 M3x40		
>>	Hexagonal Head Cap Screw	2	MC65 M4x10		
>>	Hexagonal Head Cap Screw	2	MC65 M4x12		
>>	Hexagonal Head Cap Screw	8	MC65 M4x16		
>>	Hexagonal Head Cap Screw	3	MC65 M4x20		
>>	Hexagonal Head Cap Screw	4	MC65 M4x25	ALIEXPRESS LINK	AMAZON Link
>>	Hexagonal Head Cap Screw	8	MC65 M4x30		
>>	Hexagonal Head Cap Screw	4	MC65 M4x40		
>>	Hexagonal Head Cap Screw	6	MC65 M4x45		
>>	Hexagonal Head Cap Screw	4	MC65 M4x60		AMAZON Link
>>	Hexagonal Head Cap Screw	120	MC65 M5x14	ALIEXPRESS LINK	AMAZON Link
>>	Hexagonal Head Cap Screw	8	MC65 M5x20		
>>	Hexagonal Bolt	1	M65 M8x65	ALIEXPRESS LINK	AMAZON Link
>>	Nut	30	NUT M3	ALIEXPRESS LINK	AMAZON Link
>>	Nut	4	NUT M4	ALIEXPRESS LINK	AMAZON Link
>>	Locknut	18	LOCKNUT M4		
>>	Locknut	16	LOCKNUT M5	ALIEXPRESS LINK	AMAZON Link
>>	Locknut	2	LOCKNUT M8		
>>	Washer	10	WASHER M3	ALIEXPRESS LINK	AMAZON Link
>	Filaments				
>>	ABS/ASA/PETG&PC Filament	-	Approx 500g required	ALIEXPRESS LINK	AMAZON Link
>>	ABS/ASA/PETG&PC Filament	-	Approx 500g required	ALIEXPRESS LINK	AMAZON Link
>>	Black PLA Filament	-	Approx 750g required (includes 500g for the stand)	ALIEXPRESS LINK	AMAZON Link
>>	White TPU Filament	-	Approx 50g required, for feet	ALIEXPRESS LINK	AMAZON Link
>	Tools				
>>	Crimp Tool	1		ALIEXPRESS LINK	AMAZON Link
>>	Hex Key set	1		ALIEXPRESS LINK	AMAZON Link
>>	Soldering Iron	1		ALIEXPRESS LINK	AMAZON Link
>>	Wire cutter	1		ALIEXPRESS LINK	AMAZON Link
>>	Wire stripper	1		ALIEXPRESS LINK	AMAZON Link
>>	Precision Screwdriver Set	1		ALIEXPRESS LINK	AMAZON Link
>>	Heat insert set	1		ALIEXPRESS LINK	AMAZON Link
>>	Heat insert tip - set	1		ALIEXPRESS LINK	AMAZON Link
>>	Soldering Iron TS101	1		ALIEXPRESS LINK	AMAZON Link
>>	Heat Insert Kit	1		ALIEXPRESS LINK	AMAZON Link

3D printed components		
>>	0007-0100 - Robotic Arm	QTY
>>	0007-0101_1M1	1 Axis 1
>>	0007-0102_1M2	1 Axis 1
>>	0007-0103_1M3	1 Axis 1
>>	0007-0201_2M1	1 Axis 2
>>	0007-0202_2M2M	1 Axis 2
>>	0007-0203_2M2H	1 Axis 2
>>	0007-0204_T2M18D	1 Axis 2
>>	0007-0205_T2M18I	1 Axis 2
>>	0007-0301_3M1	1 Axis 3
>>	0007-0302_3M2C	1 Axis 3
>>	0007-0303_3M2	1 Axis 3
>>	0007-0304_T3M1C	1 Axis 3
>>	0007-0401_4M1	1 Axis 4
>>	0007-0402_4M2	1 Axis 4
>>	0007-0403_4M2C	1 Axis 4
>>	0007-0404_T4M1E	1 Axis 4
>>	0007-0508_Top Plate	1 Tool Head
>>	0007-0501_Bottom Plate	1 Tool Head
>>	0007-0502_Cylinder	2 Tool Head
>>	0007-0506_Pivot Arm	1 Tool Head
>>	0007-0503_Gripper Left	1 Tool Head
>>	0007-0504_Gripper Right	1 Tool Head
>>	0007-0505_Idol Gear	1 Tool Head
>>	0007-0507_Servo Gear	1 Tool Head
>>	0007-0601_Servo GearBox	1 Electrical Enclosure
>>	0007-0602_Fan Module	1 Electrical Enclosure
>>	0007-0603_Suport Drivers	1 Electrical Enclosure
>>	0007-0701_Feel	4 Base
>>	0007-0701_Cover Axis2	2 Joint Cover
>>	0007-0702_Cover Axis3	2 Joint Cover
>>	0007-0703_Cover Axis4	2 Joint Cover
>>	0007-0704_Cover Axis4Top	1 Joint Cover