


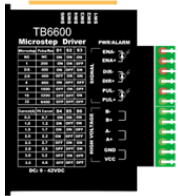




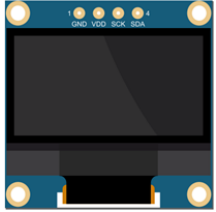


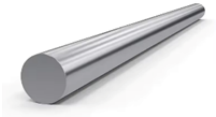





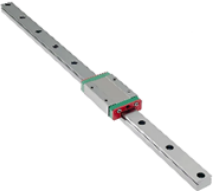



















Hardware List








#	Image	Component	Quantity	Note
1		NEMA23 Dual Shaft Stepper Motor	1	Primary motor for motion control.
2		NEMA23 Stepper Motor Mount Bracket	1	Mounting bracket for the stepper motor.
3		80kg Servo	1	High-torque servo for precise movements.
4		TB6600 Stepper Motor Driver	1	Driver for controlling the stepper motor.
5		AC to DC 24V 10A Power Adapter	1	Power supply for the system.
6		Arduino Nano	1	Microcontroller for system control.








#	Image	Component	Quantity	Note
7		3D-printed Enclosure and Assessors Set	1 set (11 pieces)	Includes bearing mount, enclosure parts, knife holder, and more.
8		Power Regulator and Wire Connector PCB	1 (Optional)	For power regulation and wiring.
9		0.96 OLED	1	Display for system status.
10		Rotary Encoder	1	Input device for user control.
11		20100 *300mm Aluminum Profile Extrusion	1	Base structure of the system.
12		100x8.0mm Linear Shaft Rod	1	Linear motion component.
13		40mm*8.0mm GT2 Timing Pulley	2	For belt-driven motion.







#	Image	Component	Quantity	Note
14		12mm U-groove Pulley Wheel	2	For guiding belts or cables.
15		M5*35*20 Bearing Rubber Pulley	2	For smooth rotational motion.
16		300mm 2MGT Closed Loop Belt	1	Belt for motion transmission.
17		8.0mm Pillow Bearing Block	2	Support for rotating shafts.
18		MGN12H * 100mm Linear Rail Slider	1	For precise linear motion.
19		M3 Linkage Servo Rod	1	Connects servo to the knife holder.
20		Bicycle Chain Tensioner	2	For tensioning belts or chains.
21		M5 Fish-eye Ring	1	Tubing input guider.

#	Image	Component	Quantity	Note
22		20AWG wires (1 meter)	1	Cut into 8.0cm each for wiring.
23	 Female to Female	10cm Female to Female Breadboard wires	9	For connecting OLED (4) and Rotary Encoder (5).
24	 46x16	46x16 Connect Plate	1	Connects knife blade to 3D-printed knife holder clip.
25		18mm Snap-off Knife Blade	1	Cutting blade for the system.
26	 2020 L-Type	2020 L-type Bracket	2	Tensioner mount to base.
27	 80x32 L	80*32 Angle Fixed Bracket	3	Tubing guider to base.
28	 M9-M5-6	M5-9 Spacer	2	Bike tensioner to 2020 L-type Bracket.

#	Image	Component	Quantity	Note
29	 M3	M3 Spring Washer	1	Linkage servo rod to the knife holder.
30	 M5	M5 Spring Washer	1	Fish-eye ring to 80x32 angle fixed bracket.
31	 M5	M5 Washer	1	For fish-eye ring.
32	 M3	M3 Nut	5	Linkage servo rod (1), Slider mount (4).
33	 M4	M4 Nut	6	TB6600 to enclosure (2), Stepper motor to bracket (4).
34	 M5	M5 Nut	10	Fish-eye ring (1), 2020 L-type Bracket to base (2), Knife holder (3), Servo mount (4).
35	 M6	M6 Nut	4	For tubing guide.

#	Image	Component	Quantity	Note
36		M4 2020 Slot T-nut	12	Stepper motor bracket to base (4), Enclosure holders to base (4), Bearing mount to base (4).
37		M5 2020 Slot T-nut	6	Servo mount to base (4), Tensioner 2020 L-type bracket to base (2).
38		M6 2020 Slot T-nut	3	Tubing guider bracket to base.
39		M1.7x3 Phillip Round Head Screw	4	For OLED display.
40		M2.6x5 Phillip Round Head Screw	8	PCB to enclosure (4), Enclosure to enclosure mount (4).
41		M2.6x12 Phillip Round Head Screw	4	Top-to-bottom enclosure.
42		M3x6 Hex Round Head Screw	4	Knife holder to the Slider.

#	Image	Component	Quantity	Note
43	 <p>M3x10</p>	M3x10 Hex Round Head Screw	4	Slider mounts to the 3D-printed Servo mount.
44	 <p>M3x18</p>	M3x18 Hex Round Head Screw	2	Linkage servo rod to 3D-printed Knife Holder and Servo Arm.
45	 <p>M4x8</p>	M4x8 Hex Round Head Screw	10	TB6600 to Control box (2), Control box mounts to base (4), Stepper motor mounts to base (4).
46	 <p>M4x12</p>	M4x12 Hex Round Head Screw	4	Stepper motor to the Stepper motor mount.
47	 <p>M4x35</p>	M4x35 Hex Round Head Screw	4	3D-printed Bearing mount to the base.
48	 <p>M5x8</p>	M5*8 Hex Round Head Screw	7	Tensioner to base (2), Servo mount to base (4), Tighten blade to knife holder (1).
49	 <p>M5x14</p>	M5x14 Hex Round Head Screw	4	Tensioner to 2020 angle bracket (2), Connect plate to knife holder (2).

#	Image	Component	Quantity	Note
50	 <p>M5x25</p>	M5*25 Hex Round Head Screw	4	Install Servo to 3D-printed Servo mount.
51	 <p>M6x8</p>	M6*8 Hex Socket Screw	3	Tubing guider: 80*32 Angle Fixed Bracket to Base.
52	 <p>M6x10</p>	M6*10 Hex Socket Screw	4	Tubing guider: 3D-printed guider to 80*32 Angle Fixed Bracket.
53	 <p>M3.5</p>	M4 Self Tapping Screw	4	Aluminum Profile Extrusion End Cap.
54	 <p>M4</p>	M5 Plastic Expansion Tube	4	Aluminum Profile Extrusion End Cap.
55		Metric Wrench 1.5 mm- 6.0 mm set	1	Tool for assembly.