Bill of materials

Use the screws supplied with the servos. Body screw reference: M2 × 4/6/8 mm, selected for each joint’s available depth. Parts from other manufacturers may require adjustments.

Qty.	Item	Reference / notes
4	MG90S positional servo	Use the arms and screws supplied with each servo.
1	ESP32 DevKit	Leg control and speaker output.
1	AI-Thinker ESP32-CAM with camera	Check the fit of your module.
1	2S Li-ion battery pack with BMS	7.4 V nominal; project reference: 2500 mAh, 70 × 38 × approx. 21 mm.
2	Adjustable LM2596 converter	Separate servo and logic branches; measure outputs and check current capability.
1	TIP41C NPN transistor	Speaker driver.
1	220 Ω resistor	1/4 W; between GPIO25 and TIP41C base.
1	1N4007 diode	Stripe toward speaker positive.
1	PC speaker / passive buzzer	This guide uses regulated 5 V as the electrical reference.
1	1000 µF capacitor	Rated 16 V or higher; servo supply.
2	470 µF capacitor	Rated 10 V or higher; one near each board.
1 kit	M2 screws	Reference assortment: M2 × 4, 6 and 8 mm. Try M2 × 6 where depth allows.
8	M2 nuts	Mechanical list reference: tray and capacitor holder.
12 + spares	Small hair elastic bands	Start with 3 per leg.
~2 m	Flexible wire	Choose gauge and connectors for current and available space.
~10	Small cable ties	Keep wires clear of moving parts.
1 set	Power switch and connector	Suitable current rating; terminal layout varies by component.
1	2S Li-ion charger	8.4 V CC/CV, compatible with the battery. A BMS is not a charger.
1	DC jack, if used	Verify polarity and terminal connections.
1	Suitable fuse	Select for circuit current and wire rating.

Qty.	Item	Reference / notes
1	USB cable / USB-UART adapter	Initial flashing; camera UART signals must be 3.3 V.