Magnus Robotics

SPARCO × MAGNUS · INNOVATION PARTNERSHIP

G1 Setup Guide

Unbox · Start · Drive · Pack up

Version 1.0 · August 2026

01 · ABOUT THIS PARTNERSHIP

This guide is part of the Sparco × Magnus Innovation Partnership. Magnus provides the robots, the training program, and remote support; Sparco leads deployments and education locally. Together we make hands-on robotics simple — for schools, labs, and businesses in the region.

02 · MEET THE UNITREE G1

The G1 is a full-size humanoid robot made by Unitree Robotics. It walks, balances, gestures, and dances — all driven from a handheld remote control. It arrives folded in a travel case, boots up lying flat on the floor, and stands up with a light pull on its back from you.

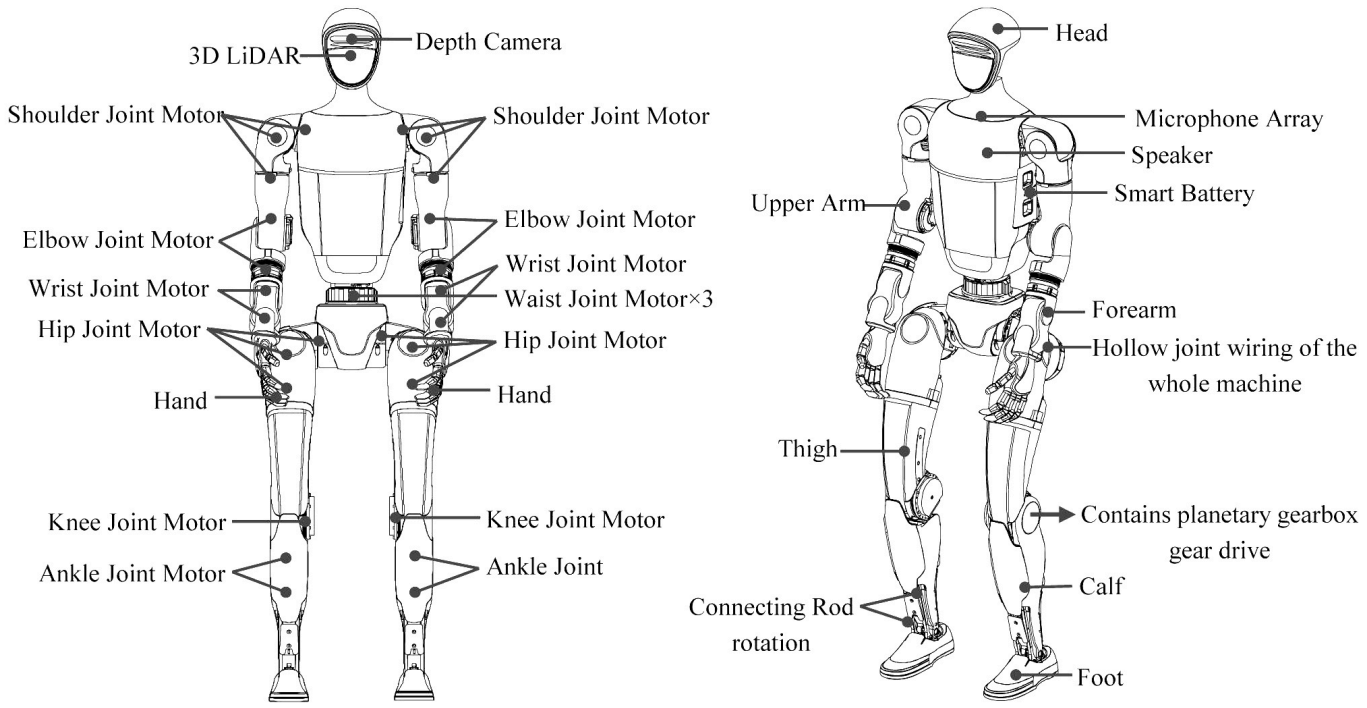
Nothing here needs a technical background. Every step tells you what to do, what "correct" looks like, and what to do if something is off. The whole cycle takes about 10 minutes each way.

03 · WHAT'S INSIDE

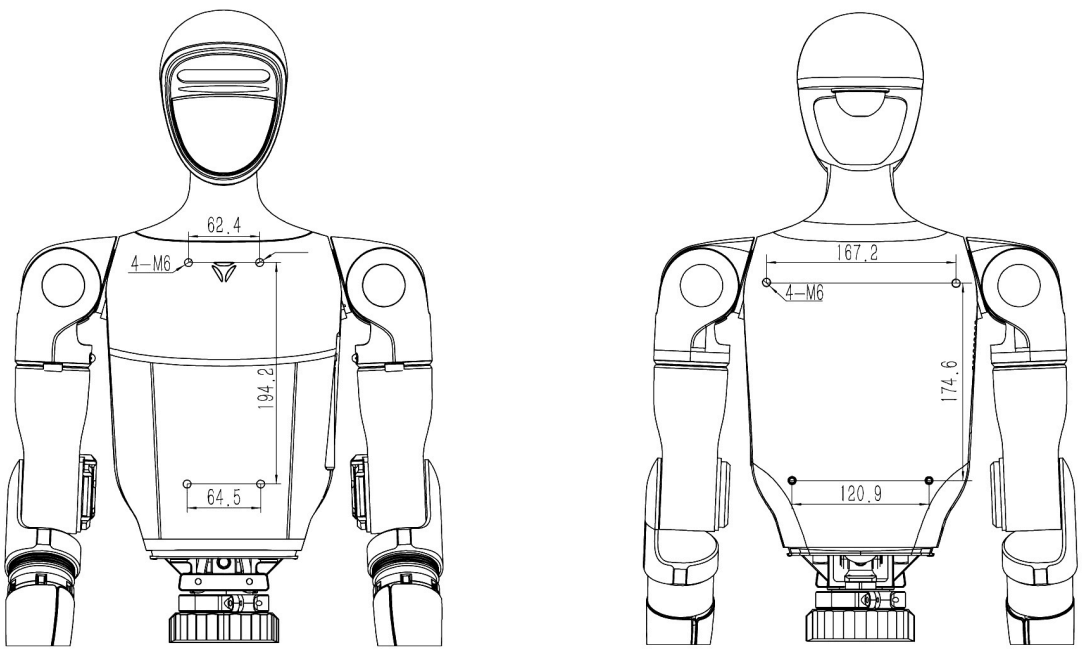
Meet Your G1 — Know About Your G1

Learn this first · every step in this guide refers to front and back

POWERED BY Magnus Robotics



THE OFFICIAL FRONT AND BACK VIEWS



Unitree calls the front view "Positive". The holes are M6 mounting points — ignore them.

FRONT — the BLUE LIGHT side

A dark band across its head glows blue.
That band is the robot's face.
Its kneecaps and toes are on this side.
On its back = blue light at the ceiling.

BACK — no blue light at all

The head is plain black here. No light.
The two big black discs (the hip motors) are on this side, and so are its heels.
On its front = blue light at the floor.

Field tip — the quick check we use in practice:

Look for the blue light on its head. That side is the FRONT · always. Everything in this guide is described from it.

Two rules when you lay it down

1. The feet point the way you want the robot to walk.
2. Everyone else stands 2 metres back while the robot stands up.

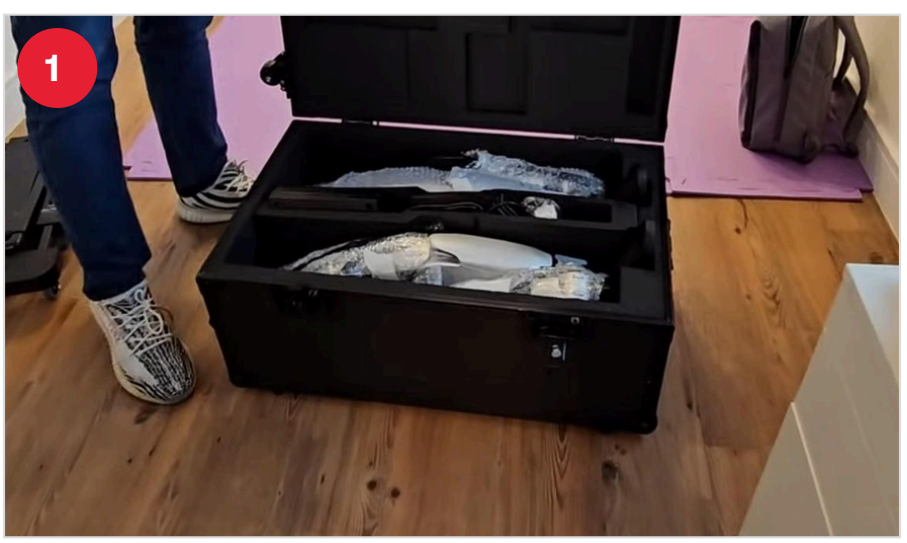
Take It Out of the Case

Two people, every time

STOP anytime: hold L2 + B for 5 seconds — or double-click START

TWO DAYS BEFORE — do these, or the day will not happen

1. Put every robot battery AND the remote on charge. Two days ahead, not the night before.
2. FIRST TIME ONLY — bind the remote to the robot in the Unitree app. A brand-new remote will not drive the robot until it is bound. See page 10.
3. On the day: two people, and a flat, dry, hard floor — never stairs, never steep slopes.

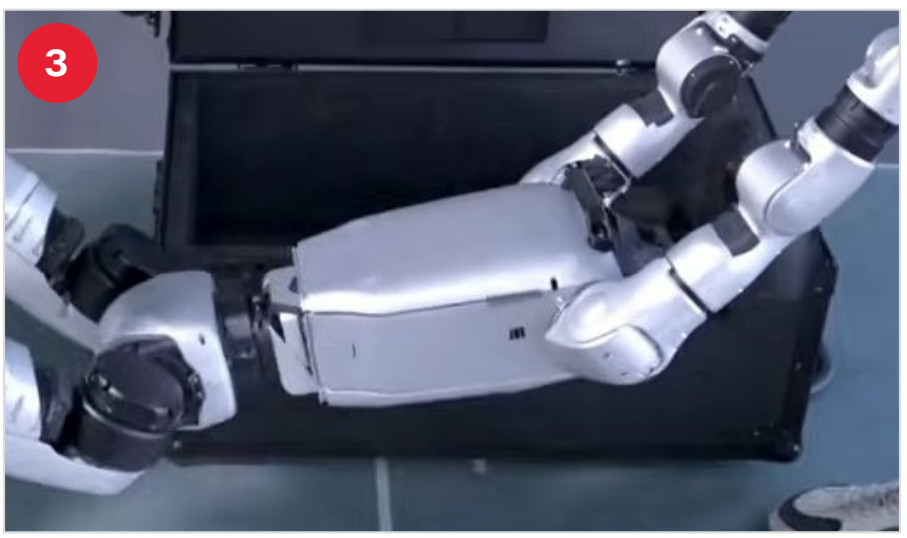


Open the case.

The robot lies inside folded up, with its legs folded onto its back. Take a photo now — you will repack it exactly like this.

Free it from the foam.

Hands on the body, lift it clear of the case. Never pull on the hip or knee joints — they pinch.



Two people carry it out.

One person takes the robot by its back and shoulders, the other holds the thighs. Never lift it alone.

Turn it over. Its face must look at the ceiling.

Face and chest to the ceiling, arms out, feet pointing the way it will walk. It cannot stand up any other way.

Start It Up

The robot is lying flat on the floor, face to the ceiling · steps 1-4

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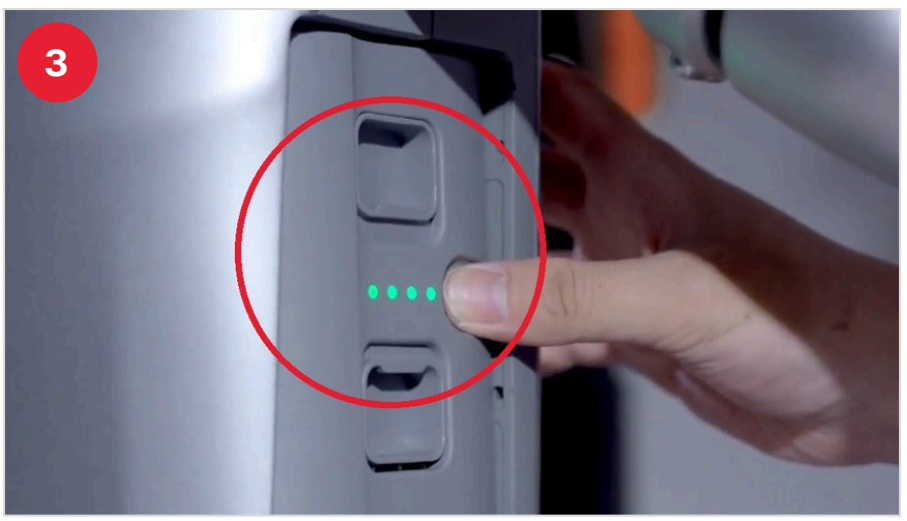
Turn the remote on.

Hold its power button for 2 seconds, until the light comes on. If it does not light up, charge it — a dead remote is the most common problem.

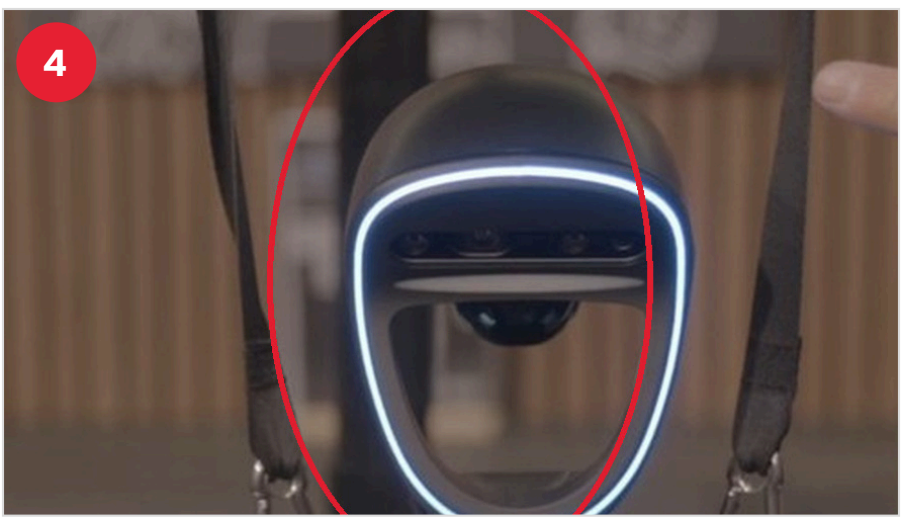
Slide the battery in at the side.

Under the arm, power switch facing the robot's BACK. Push until it clicks, then check the buckle has snapped home. If it will not go all the way in, turn it around — never force it, you will damage the connector and the buckle.



Power the robot on.

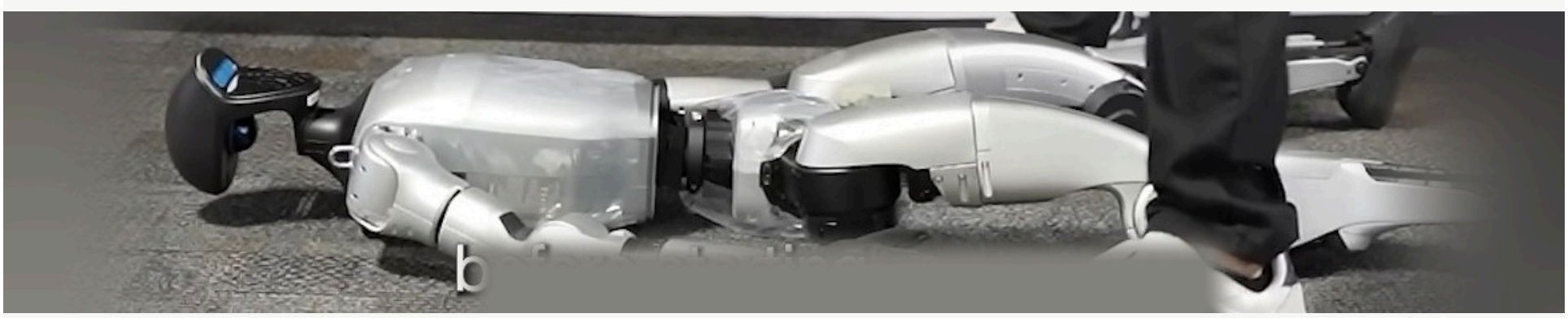
On the battery button: click once, then press it again and hold. The lights on the battery come on.



Wait about 1 minute.

The head light goes from blue to flashing purple and the robot says "zero torque mode". Its head sits in the centre and its arms and legs hang limp — the motors are still off, so that is correct. Do not touch it until you hear it.

4A THIS IS THE WHOLE ROBOT, LYING READY TO START



Flat on the floor, face to the ceiling, arms loose at its sides. Nothing under it, nothing on top of it.

Start It Up

Getting it on its feet · steps 5-7

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BEFORE YOU STAND IT UP — CHECK BOTH OF THESE

YES — start it up like this.

1. The panel and the head point UP, at the ceiling.
2. The two small circles are the black discs. They point DOWN, so you see no disc face.

Both must be true. If only one is true, do not start it up.

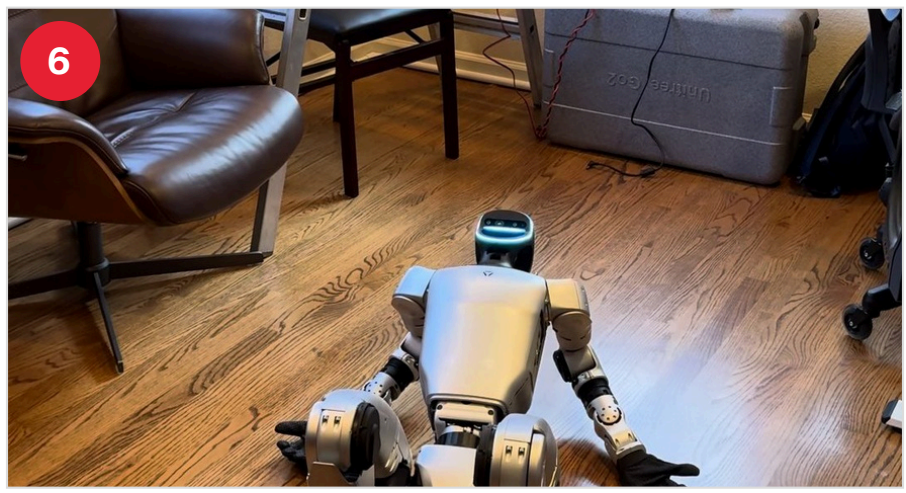
NO — it cannot stand up like this.

1. This is the BACK — one big smooth panel, no face.
2. You can see both black disc faces — so it is the wrong way up.

Turn the robot over before anything else.

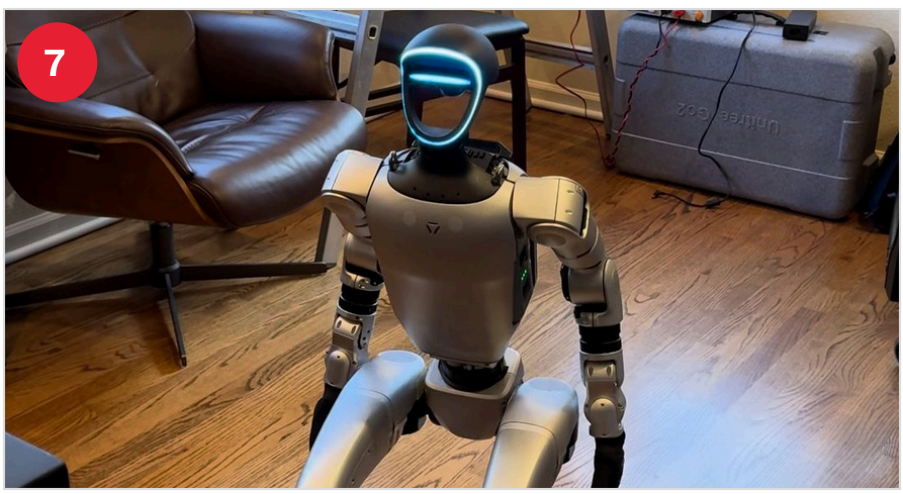
Hold L2 + B: Damping Mode.

Still on the floor, face to the ceiling. The robot goes from limp to firm and holds its own weight. Before you go on, check it lies straight — both shoulders on the floor, body not twisted.



Hold L2 + X: Lie-to-Stand Mode.

Lift its back about 5 cm and hold it there — just enough to take some of its weight — so it can get its feet under itself. It crouches first.



It stands up on its feet.

Everyone else stands 2 metres back while it rises. One person stays within arm's reach of the robot, hands free.

Pack It Back

Squat it down, power off, battery out · steps 1-4

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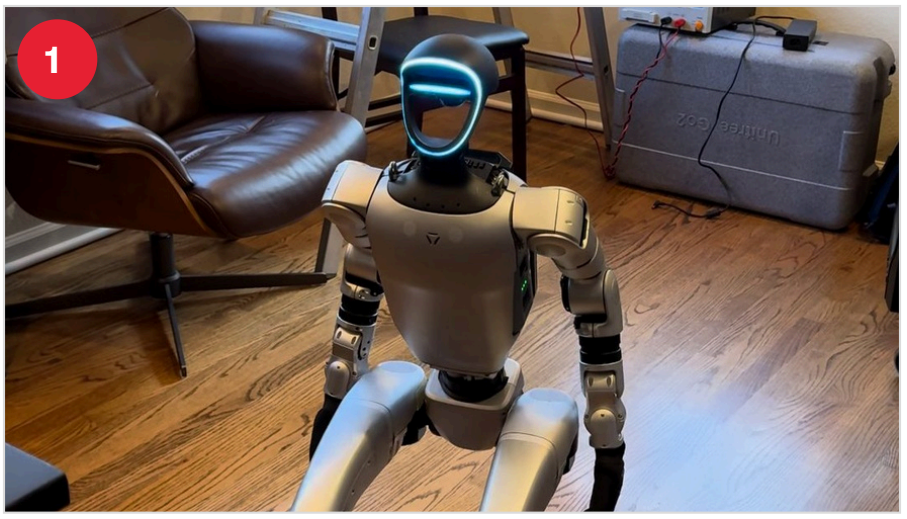
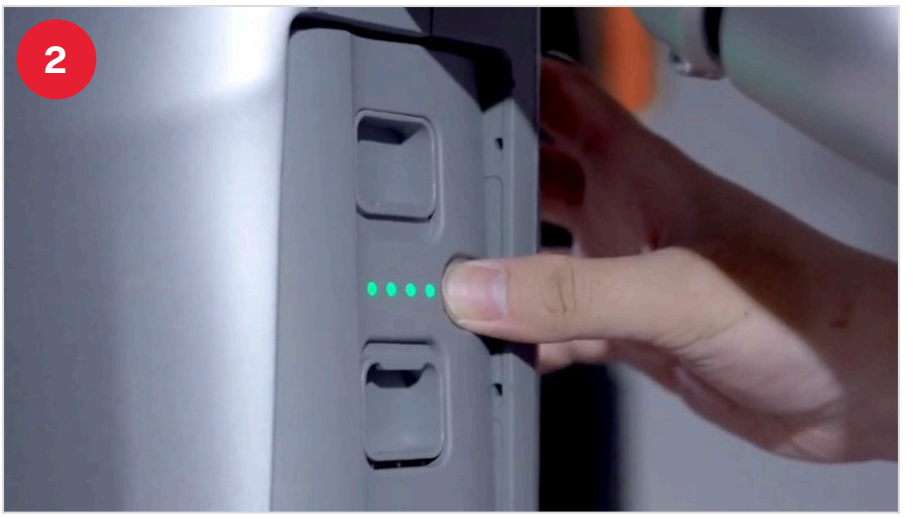


Hold L2 + A: Squat Mode.

The robot squats down on the floor. Never power it off while it is standing — it goes floppy and falls.



Only now, power it off.

Battery button: click once, then press and hold. The lights go out and the robot goes floppy.

Take the battery out.

Same slot at the side, under the arm. Do this before you lift it, then put the battery on charge.

Check the two hip-joint motors.

Look straight down at the robot: you must be able to SEE both circled black discs. If you can, the body is the right way round and it will drop into the case.

4A — ENSURE THE TORSO ORIENTATION IS RIGHT, BEFORE YOU LIFT IT

1 Look straight down at the robot. You must be able to SEE both circled black discs.
2 Try to twist the body: it will not turn any further in that direction.

Both true = the robot drops straight into the case. If you cannot see both discs, twist the body the other way until you can.

You will check this same pair of discs once more as 7A, after the head is in the case.

Pack It Back

Into the case · steps 5-6

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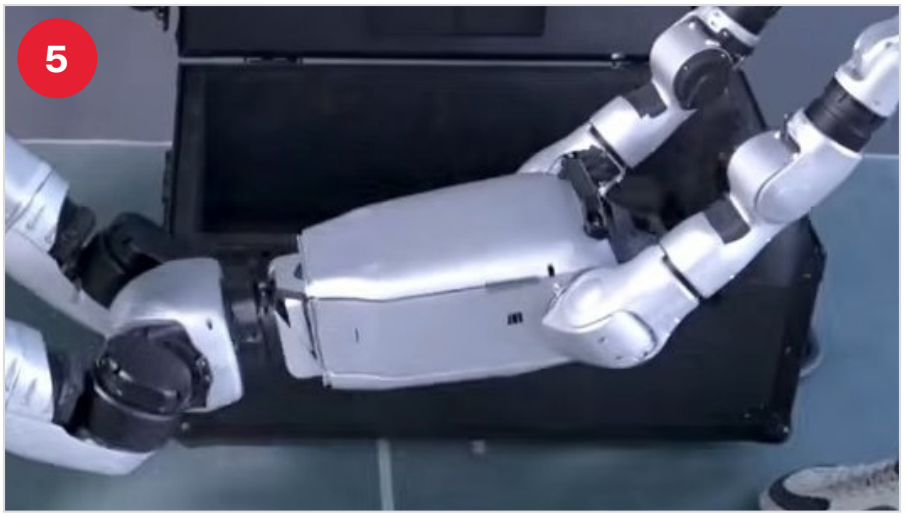


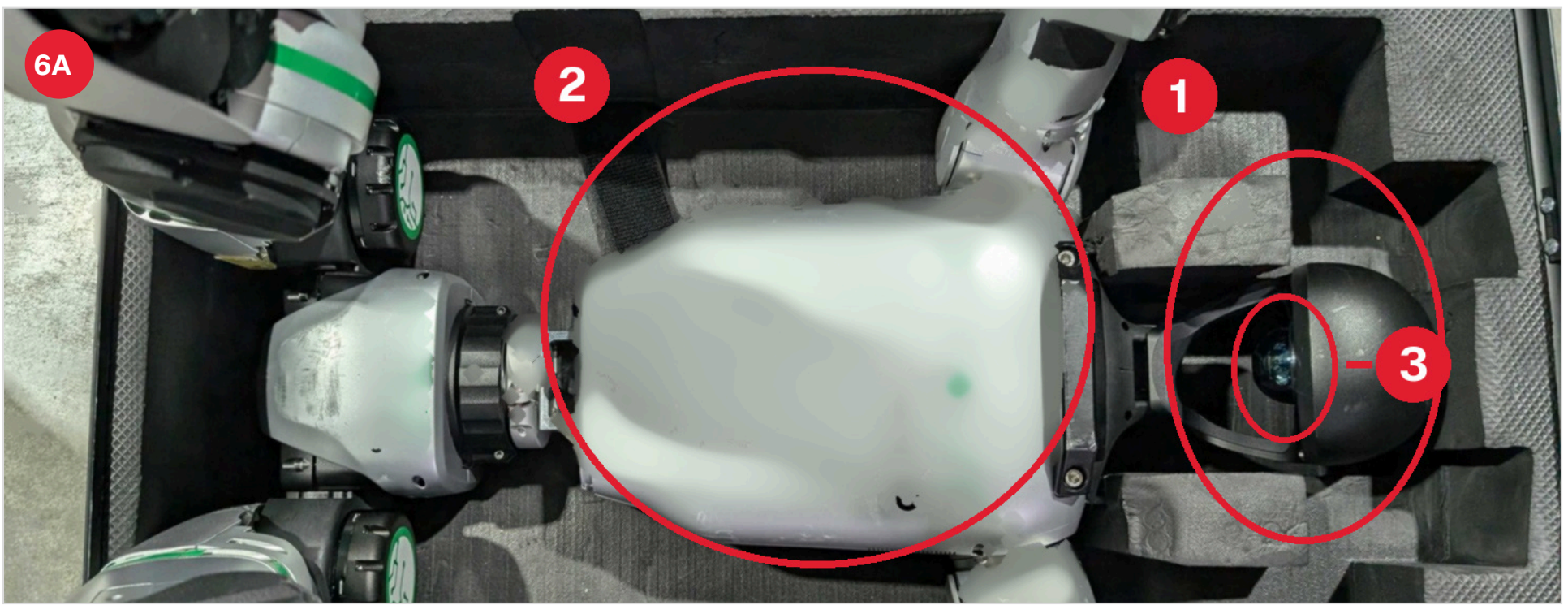
Two people lift it.

Back and thighs, same grip as taking it out. Never lift it alone.

Head goes in first.

Feed the head into its own slot at the end of the case, before any other part of the robot. Then check 6A below.

6A — WHAT "HEAD GOES IN FIRST" LOOKS LIKE



The robot goes in lying down, not sitting. Its head is the first part to go in. The robot is switched off by now, so there are no lights to go by — use the three marks instead.

1 THE HEAD is down inside the black foam hole at the end of the case. Not resting on top of it.
2 THE BACK is what you see from above: one big smooth panel. If you see its face or chest, it is upside down.
3 THE LiDAR is the small ball on the head — the robot's laser scanner. Keep it clear, never press it into foam.

Head will not go into the hole? Do not push it. Lift the robot back out, turn it so the head is at the other end, and lower it in again.

Pack It Back

Turning the body · step 7

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7A — ENSURE YOUR G1 IS IN THE RIGHT TORSO ORIENTATION

1 Look straight down at the robot. You can SEE both circled black discs.

2 The body will not twist any further in that direction.

Both must be true. If you cannot see both discs, twist it back the other way and try again.

Turn the lower body until it stops.

Twist the body a full 180 degrees, until it stops — then check it against 7A above.

Pack It Back

What "packed" looks like · step 8

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This is what "packed" looks like.

Legs and arms folded in, buffers back over the limbs, remote and charger in their places. Compare with the photo you took when you opened the case, then close the lid.

Before you close it

- Remote control in its place
- Charger and transformer in the case
- Spare battery in the case
- Nothing loose on top of the robot

If anything goes wrong: hold L2 + B for 5 seconds, or double-click START.

If the robot falls: stop it, then press the battery button once and hold. Call Magnus.

Meet the Remote Control

Everything you ask the robot to do goes through this controller

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Photo: Unitree G1 two-handed remote controller. The printed card can vary between units — the card on YOUR remote is the authority.

THE PHYSICAL TOUR

Power on	Long-press the power button until the remote lights up. Once bound, it finds the robot on its own — but a new remote must be bound first, below.
Two sticks	Left stick moves the robot. Right stick turns it. First-timers: work the sticks in place before walking anywhere.
Shoulder buttons	L1, L2, R1, R2 are held as modifiers. "L2 + B" means hold L2, then click B.
Face buttons	A, B, X, Y and the arrows are the second half of every combo. See page 9 for all of them.
SELECT and START	SELECT starts the gesture combos. START stands it in place — and double-click START is an emergency stop.
Joysticks	They ship detached in the case. Screw each one on clockwise until tight before the first session.

FIRST TIME ONLY — bind the remote in the Unitree app, or it will not drive the robot

Power the robot on, join its Wi-Fi, open the Unitree app: Device > Data > Remote Control Binding > Change.
Enter the 6-digit ID from the white sticker on the remote, confirm, then power the remote on to pair it.

Dressing it in a T-shirt — two people, using the Clap command (2x X)

Put the shirt over the robot first. Double-press X: on the first clap slip one sleeve on, trigger it again for the other. One person works the remote, the other dresses the robot. Fingers out of the joints.

Remote Control Cheat Sheet

Copied from the card printed on your EDU remote

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GETTING UP AND BASIC STATES

L2 + B	Damping Mode — firm but soft. Hold 5 s = emergency stop.
L2 + X	Lie to Stand — our way up from the floor.
L2 + A	Squat Mode — use this before power-off.
L2 + ↑	Locked standing.
L2 + ↓	Seated position.
L2 + Y	Zero moment — fully floppy. Only when you mean it.

MOVING

R1 + X	Walking mode. Then START once = steps on the spot.
R1 + Y	Walking, upper body free to turn (advanced).
2x L2	Low speed. 2x L1 — High speed. Client demos: stay low.
R2 + A	Running. R2 + B — Climb mode. TRAINING REQUIRED — see below.

GESTURES

SELECT + A	Handshake. SELECT + Y — Wave.
SELECT + X	Reject. 2x Y — Face wave.
2x X	Clap — also how you dress it in a T-shirt (page 8).

DANCE MODE — BIG ARM SWINGS. EVERYONE 2 METRES BACK. SPOTTER READY.

R1 + B enters Dance Mode. In Dance Mode the emergency stop is double-click START.

R1 + SELECT Kung Fu · R1 + up Dance 1 · R1 + left Dance 2 · R1 + right Dance 3

R1 + down Roll Up · R2 + up Jeet Kune Do · R2 + left Twist

EMERGENCY — LEARN BOTH

Hold L2 + B for 5 seconds — the robot goes soft and lowers itself.

Double-click START — the fast stop, and the only one that works in Dance Mode.

TWO RULES THAT PROTECT THE ROBOT

Never take the G1 up stairs, and never use Climb Mode (R2 + B), without proper training first.

Always transport it in its case. Moving it uncased risks damaging the robot.

Always check against the card printed on your own remote.

Which Moves to Use

Pick from the green list. Everything else needs space and training

> **Everything in the second list first needs Dance Mode — R1 + B.**
> Inside Dance Mode the emergency stop changes: double-click START, not L2 + B.

RECOMMENDED FOR BEGINNERS

Small, predictable, and the robot stays where it is standing.

1	Blow a kiss	Double-click X
2	Wave hand	Hold SELECT + click Y
3	Handshake	Hold SELECT + click A
4	Face wave	Double-click Y

Keep hands and faces out of the arms' arc — they swing at handshake height, which is a child's head height.

NOT RECOMMENDED WITHOUT TRAINING

1	Kung Fu	R1 + SELECT	Large, fast movements. Needs the most open space you have, and can look aggressive to anyone walking past.
2	Jeet Kune Do	R2 + up	The same — large, fast, and easily misread by bystanders.
3	Roll Up	R1 + down	The robot rolls on the floor. Performed carelessly, this can damage the robot.
4	Dance 2	R1 + left	Takes far more floor space than people expect. Clear the area first.
5	Dance 3	R1 + right	Takes far more floor space than people expect. Clear the area first.

Before any move on the second list

2 metres clear on every side · audience briefed to stay back · a second person spotting · your thumb resting on START, because double-click START is the only stop in Dance Mode

Demo-Day Checklist

Print this page. Tick every box, in order.

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BEFORE YOU LEAVE BASE

- [ ] Robot battery fully charged, plus a charged spare (one battery lasts about 2 hours)
- [ ] Remote control fully charged. Joysticks screwed on tight.
- [ ] Case packed right — compare against your reference photo of the fold
- [ ] Everyone operating today has read the controller card (pages 8-9)

AT THE VENUE, BEFORE OPENING THE CASE

- [ ] Floor: flat, dry, hard. Never stairs, never steep slopes — and never Climb Mode.
- [ ] Robot travels in its case, every time. Moving it uncased risks damaging it.
- [ ] 2 metres of clear space on every side of the demo spot
- [ ] Two people present — one drives, one stands beside the robot
- [ ] Audience briefed: stay back, especially during stand-up and any dance moves

POWER-ON CHAIN

- [ ] Lay it flat, face and chest up, feet pointing the way it will walk
- [ ] Battery in at the side until it clicks, then click + hold to power on
- [ ] Wait about 1 minute: head light blue to flashing purple, voice says zero torque mode
- [ ] L2 + B Damping Mode, then L2 + X and help it up by its back

WRAP-UP

- [ ] L2 + A Squat Mode first, then power off. Never cut power on a standing robot.
- [ ] Battery out at the side, under the arm. Straight on charge back at base.
- [ ] Head in first, twist the body 180 degrees until you can see both black discs, fold legs and arms in
- [ ] Final look matches your reference photo, then close the case

Anytime, anything wrong: hold L2 + B for 5 seconds, or double-click START.

Then call Magnus. We would rather hear about it twice than not at all.

Glossary

Every term this guide uses, in plain words

Its back	the side with no face. You lift and steady the robot from here — one person on the back and shoulders, one on the thighs.
Boot	the one-minute self-start after power-on, done lying flat. Limbs stay floppy; it ends with the head light and the voice line.
Combo	two buttons together: hold the first, then click the second. "L2 + B" = hold L2, click B.
Damping Mode	L2 + B: the joints go from floppy to firm. The robot holds itself but still gives if you push it.
Lie to Stand	L2 + X: from flat on the floor the robot gets its feet under itself, crouches, then stands.
Squat Mode	L2 + A: the robot squats down. Always do this before power-off.
Dance Mode	R1 + B: pre-programmed performance moves. Arms swing wide; the stop here is double-click START.
Emergency stop	hold L2 + B for 5 seconds, or double-click START.
Face up	lying flat with the face and chest upward, eyes toward the ceiling.
Zero torque	every motor is off, so the robot cannot hold itself up at all. This is the state it boots into — the robot announces it out loud as "zero torque mode".
Transformer	the large power brick that ships with the charger. It is heavy and about the size of a brick — that is the right part.
Walking mode	R1 + X: the sticks drive the robot — left stick moves, right stick turns.