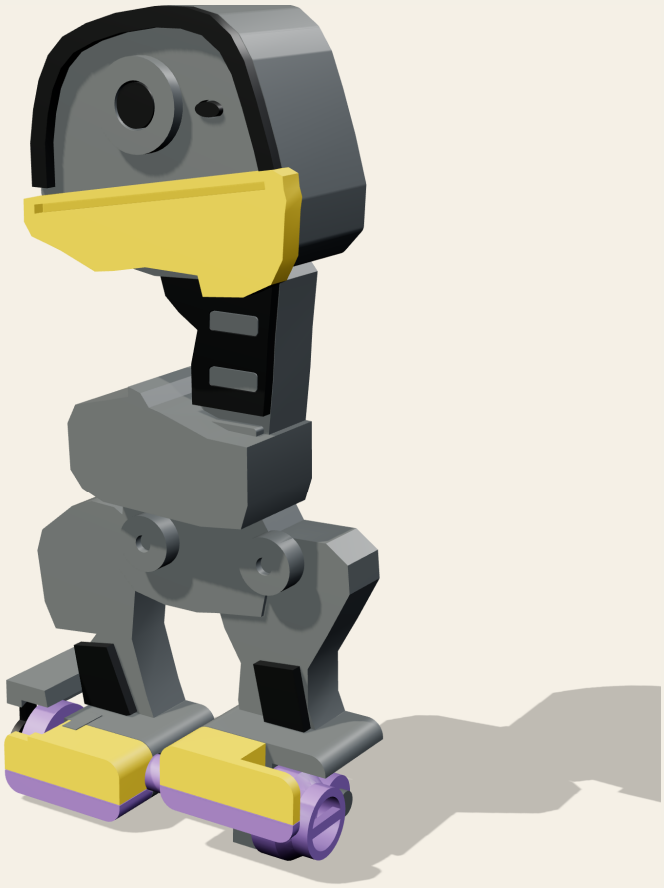
Microduck

A little turn. A little roll.



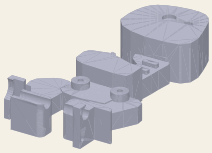
An 18 cm mechanical adaptation of the upright robot-duck reference. The legs stay still; the wheels carry the character forward.

Start with assembly on pages 2-4. Already assembled? Check the cord on page 4, then follow page 5.

Small parts and a tensioned cord: adult assembly and supervision. Keep away from children under 3. Running performance has not been physically tested.

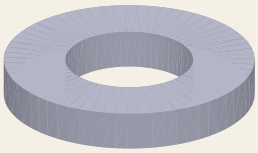
Meet all 20 pieces

Left and right below mean your left and right when facing the bill. The winding knob is on your right.

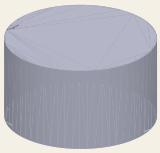


01 Frame

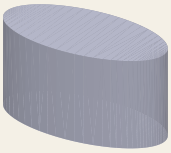
02 Head rim



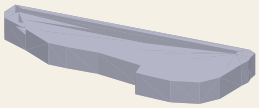
03 Eye ring



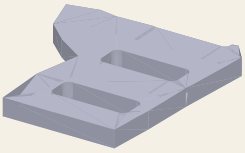
04 Dark eye



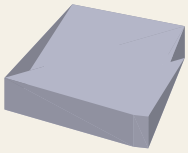
05 Oval sensor



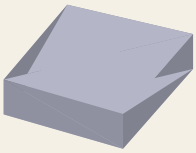
06 Bill



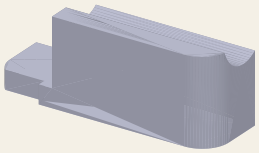
07 Neck cover



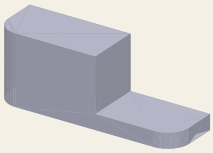
08 Left shin cover



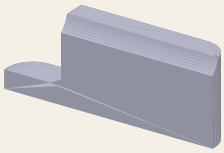
09 Right shin cover



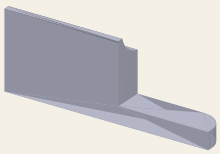
10 Left boot



11 Right boot

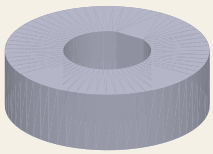


12 Left sole

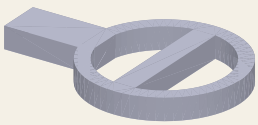


13 Right sole

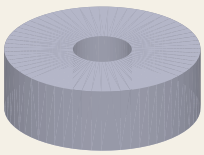
14 Axle + knob



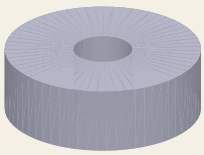
15 Left drive wheel



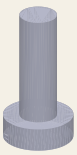
16 Fixed anchor



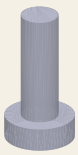
17 Left rear roller



18 Right rear roller



19 Left roller pin



20 Right roller pin

Also gather: one 240 mm length of 4 mm solid silicone cord, nominal 60 Shore A; temporary threading thread; scissors; and adhesive suitable for the plastic parts. These supplies are separate from the model files.

Part illustrations show shape, not relative size.

Build from the frame

Work with the cord removed. Dry-fit each part before bonding. Follow the adhesive label and allow its full cure time before winding.

1 Fit the face and covers

Seat the head rim around the head, the eye ring and dark eye on the round face seat, and the small oval sensor beside it. Fit the neck cover from the front BEFORE the bill. Bond only their mating faces.

2 Finish the legs first

Slide the left shin cover into its seat from the FRONT before installing the left drive wheel. Fit the right shin cover, then the matching boots and soles. Keep every wheel opening clear.

3 Capture the front axle

Insert the axle-and-knob part from the RIGHT. Slide the left drive wheel onto the matching flat on the shaft from the LEFT. Bond the wheel to the shaft only; keep adhesive out of the frame holes. Both front wheels must turn together.

4 Fit the anchor and rear rollers

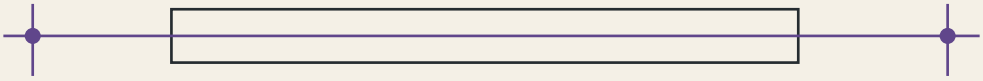
Insert the fixed anchor tab into the frame socket from BELOW and bond it. Put each rear roller in its rear pocket, then insert its pin. Bond each pin to the frame only; the roller must remain free on the pin.

Before adding cord: turn the front wheels together and spin each rear roller. If anything rubs or sticks, stop and correct it before winding. Do not force a jammed wheel.

One strand, two ties

FIXED ANCHOR

AXLE + KNOB



Cord route shown schematically; one strand, no folded loop.

1 Thread before tying

With the cord relaxed, use temporary thread to pull ONE 4 mm silicone strand through the hollow axle. Remove the thread. Thread before making either knot.

2 Tie each exterior crossbar

Take one full turn around the bar. For each backup half-hitch: loop the tail around the long cord, pass the tail through that loop, then pull snug. Repeat to make two half-hitches. Do the same at the other bar.

A
Full turn around bar

B
Loop tail around cord

C
Through loop; repeat

3 Leave tails; remove sag

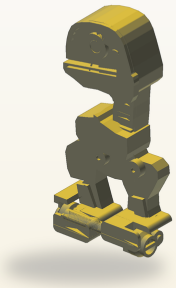
Keep knots outside both outer faces and leave at least 12 mm tails. Adjust until just taut, with no visible stretch. Secure each tail to its own standing cord, clear of floor and wheels.

Check ties before every use. If a knot catches or the cord slips, cracks or frays, do not wind. Reset (page 6), then retie or replace it. Do not add strands or use a stronger spring.

Hold. Wind. Release.

1 HOLD + WIND

2 SET DOWN



3 RELEASE

Grip frame; restrain side knob.

CLOCKWISE
Knob-end view

1 Hold the frame; lift the wheels

Keep fingers clear of the wheels. Look directly at the side knob and turn it CLOCKWISE. Start with one complete turn from relaxed. Never exceed TWO complete turns in total.

2 Keep hold while setting down

There is no click or latch to hold the wind. Restrain the knob continuously while placing all wheels on a level, clear floor. Point the bill into the clear space.

3 Let go and watch

Release the knob and frame. Stored cord twist drives the front wheels; the rear rollers follow. The character rolls toward its bill when grip and free rotation allow. Its legs do not step.

A stalled duck needs a reset, not more winding. Distance, grip and running life have not been physically tested; no travel distance is promised.

Leave the cord relaxed

1 Catch, lift, unwind

Hold the frame and restrain the knob. Lift every wheel clear of the floor. Let the knob unwind slowly under your fingers until the cord is relaxed. Keep fingers away from the moving wheels.

2 Check before another turn

Inspect the cord and ties, fixed anchor, wheel attachment and roller pins. Stop if any part is cracked or loose. Do not wind a damaged model. Keep hair, fingers and loose clothing clear of the mechanism.

IF SOMETHING GOES WRONG

No roll or a short roll

Reset. Check for caught tails, rubbing wheels and loose ties. Try a clean, level floor. Never add turns to overcome a stall.

Cord slips or looks worn

Reset fully. Untie both exterior crossbars and remove the cord. Fit the same cord specification using page 4; leave bonded joints assembled.

A wheel sticks or a joint moves

Stop. With the cord removed, check that each rear roller spins and both front wheels turn together. Repair the joint before using again.

Wipe with a dry soft cloth. Keep dry and away from heat. Store upright with the cord completely relaxed. Use on the floor, away from stairs and edges; do not drop, throw or pull the bill.