

QUICK ANNEAL FEEDER

Assembly Guide

FINAL v1.0 - ASSEMBLY GUIDE

ASSEMBLY GUIDANCE: This guide is written for a first-time assembler. Work through the steps in order and compare the part orientation with the photograph before tightening anything. Start screws gently by hand where possible. Never force a printed part, screw, connector or magnet into position. If something does not line up easily, stop and check the orientation before continuing. Only product specifications confirmed for this assembly are stated in this guide.

Assembly sequence at a glance

1. Mount motor to backplate.
2. Install magnets in wheel holder.
3. Install magnets in feed wheel with attracting polarity.
4. Fit wheel holder to motor shaft and install feed wheel.
5. Fit main frame to backplate.
6. Fit black funnel.
7. Route motor and power wiring.
8. Connect motor and power wires to controller board.
9. Route and connect power switch wiring.
10. Clip controller board and cover into housing.
11. Fit speed-control knob.
12. Install base magnets.
13. Install base pivot screws.
14. Mount frame to base and secure wiring.
15. Store measuring cap.
16. Final accessories check.

Step 1 - Mount the Motor to the Backplate

1. Lay the backplate flat with the motor mounting area facing upward.
2. Position the motor exactly as shown in the photographs. Make sure the motor sits flat in its locating area and that all four mounting holes line up.
3. Apply a small amount of standard medium-strength thread-locking compound (Loctite or equivalent) to the threads of each of the four mounting screws.
4. Insert all four screws before fully tightening any one screw. This helps keep the motor correctly aligned.
5. Tighten the screws evenly until the motor is firmly secured. The motor must sit squarely against the backplate and must not rock or move.

CHECK BEFORE CONTINUING: Apply standard medium-strength thread-locking compound (Loctite or equivalent) to all four motor mounting screws, and confirm that the motor sits flat against the backplate.



Motor positioned on the backplate.



Opposite side showing the four mounting screws.

Step 2 - Install the Magnets in the Wheel Holder

1. Use four 8 x 2 mm magnets for the wheel holder.
2. Identify the four round magnet recesses in the wheel holder.
3. Before installing the magnets, determine which face of each magnet must point upward. All four magnets in this holder must be installed with the same polarity.
4. Place one magnet over a recess and press it in straight. If needed, tap it gently until it is fully seated.
5. Repeat for the remaining three magnets, checking polarity every time before tapping the magnet into place.
6. When finished, all four magnets should sit evenly in their recesses and none should stand proud of the surface.

POLARITY CHECK: Use 8 x 2 mm magnets. All four magnets in the wheel holder must face the same way. Check each one before it is tapped fully into place.



Wheel holder with magnet recesses.



Wheel holder with magnets installed.

Step 3 - Install the Magnets in the Feed Wheel

1. Use 8 x 2 mm magnets in the feed wheel.
2. Identify the magnet recesses in the feed wheel.
3. Use the completed wheel holder from Step 2 as your polarity reference. Before pressing a feed-wheel magnet into place, hold it near the corresponding wheel-holder magnet.
4. The magnets must attract each other. If they repel, turn the feed-wheel magnet over before installation.
5. Once the correct polarity is confirmed, press or gently tap the magnet fully into its recess.
6. Repeat this check for every magnet. When complete, the feed wheel must be pulled toward the wheel holder, not pushed away from it.

POLARITY CHECK: Use 8 x 2 mm magnets. The feed-wheel magnets must **ATTRACT** the wheel-holder magnets. If they repel, turn the magnet over before installing it.

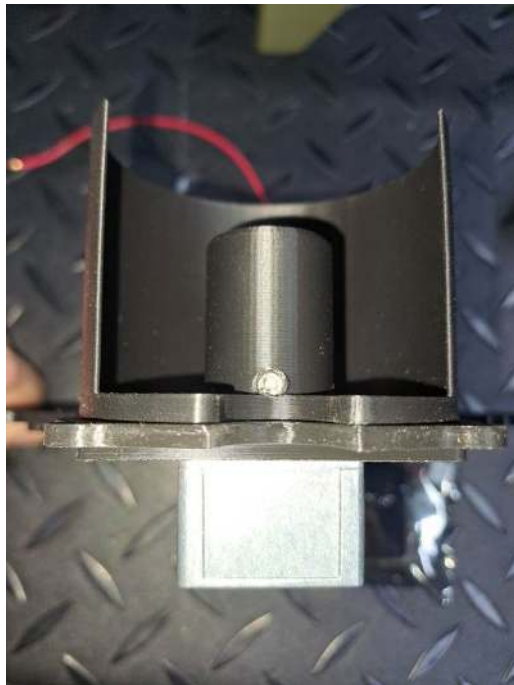


Feed wheel showing installed magnets.

Step 4 - Fit the Wheel Holder to the Motor Shaft and Install the Feed Wheel

1. Locate the flat machined section on the motor shaft. This flat is the surface that the grub screw must tighten against.
2. Slide the wheel holder over the motor shaft. Rotate the shaft or holder until the grub-screw hole is directly in line with the flat section of the shaft.
3. Tighten the grub screw gently until the wheel holder is secure on the shaft. Do not use excessive force.
4. Check that the holder is straight and does not wobble on the shaft.
5. Place the feed wheel onto the wheel holder. The magnets should pull the wheel into its normal seated position. Confirm that it sits centrally inside the circular guide.

DO NOT FORCE: Tighten the grub screw only onto the flat section of the motor shaft and only until the wheel holder is securely held.



Grub screw aligned with the flat on the motor shaft.



Feed wheel correctly installed.

Step 5 - Fit the Main Frame to the Backplate

1. Place the main frame over the motor/backplate assembly in the same orientation shown in the photographs.
2. Check that the frame sits around the motor correctly and that the frame mounting holes line up with the holes in the backplate.
3. Use the SHORTER screws for this connection. Start each screw first before tightening any of them fully.
4. Once all mounting screws are correctly engaged, pull the frame components into their proper seated position and tighten the screws evenly.
5. Check around the full edge of the backplate. It should sit flat against the frame without a gap caused by a trapped wire or misaligned part.

SCREW CHECK: Use the shorter screws to fasten the main frame to the backplate.



Main frame before installation.



Frame positioned around the backplate.

Step 6 - Fit the Black Funnel

1. Position the black funnel against its mounting area on the main frame exactly as shown.
2. Align the two mounting holes carefully. Do not force the black funnel sideways to make the holes line up.
3. Use the TWO LONGER screws for the black funnel. Start both screws before tightening either one fully.
4. Tighten the two screws until the black funnel is firmly attached to the frame.
5. Turn the assembly over and compare it with the reference photograph. The feed wheel should sit correctly inside the circular guide and the black funnel should be straight and properly seated.

SCREW CHECK: Use the two longer screws to fasten the black funnel.



Two long screws used to mount the black funnel.



Correct appearance after installation.

Step 7 - Route the Motor and Power Wires

1. Locate the side opening that leads into the controller housing.
2. Gently pull the motor wires toward this opening and feed them through it. Do not pull on the wires where they are soldered to the motor.
3. Take the power-adaptor wire and feed it through the same opening.
4. Arrange both wire sets so that they pass through the opening naturally, without sharp bends, twisting or tension.
5. Before continuing, check that no wire is trapped between the frame and backplate and that there is enough wire inside the controller housing to make the electrical connections.

WIRE CHECK: Wires must pass through the opening without being pinched, sharply bent or pulled tight.

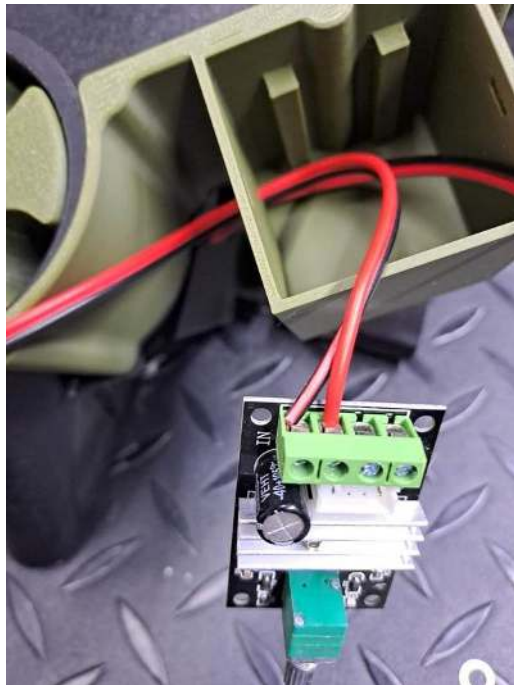


Motor and power wires routed through the same side opening.

Step 8 - Connect the Motor and Power Wires to the Controller Board

1. Hold the controller board so that the terminal markings can be read clearly. Do not rely only on wire colour; use the labels printed on the board.
2. Identify the four terminals marked POWER -, POWER +, MOTOR + and MOTOR -. The two positive (+) terminals are the two centre positions.
3. Insert each wire into its correct terminal. Make sure the stripped conductor enters the metal clamp and that insulation is not clamped instead of the conductor.
4. Tighten each terminal screw so the wire cannot pull out with a gentle tug.
5. Check all four connections a second time before applying power. MOTOR wires must be on the MOTOR terminals and POWER wires must be on the POWER terminals.

CRITICAL WIRING CHECK: Do not interchange MOTOR and POWER. Confirm all four board labels and polarities before power is connected.



Terminal block with wiring connected.



Board markings showing Power and Motor polarity.

Step 9 - Route and Connect the Power Switch Wiring

1. Feed the power-switch wiring through the opening in the controller cover as shown.
2. Loop the wiring neatly so that the connector can reach the socket on the controller board without stretching the wires.
3. Align the plug with the correct board socket before pushing it in. The connector should enter in the correct orientation without being forced.
4. Push the connector fully home and check that it is seated evenly.
5. Arrange the wiring so it remains inside the controller housing and clear of the feed wheel and all other moving parts.

WIRE CHECK: Keep all switch wiring inside the housing and clear of the feed wheel and other moving parts.



Switch wiring routed through the control cover.



Switch connector plugged into the controller board.

Step 10 - Install the Controller Board and Cover

1. Before fitting the cover, arrange the wiring neatly inside the housing. Pull excess wire gently back through the routing opening where required.
2. Make sure no wire lies underneath the controller board or across a locating edge where it could be pinched.
3. Guide the controller board into its locating position while bringing the control cover into place.
4. The board and cover should clip into place cleanly and sit flush with the housing. If significant force is needed, stop and check for trapped wires or incorrect alignment.
5. If the wire-routing opening is genuinely too small, enlarge only the plastic opening enough to give the wires safe clearance. If a soldering iron is used, keep the hot tip away from the wires and electronics and allow the plastic to cool before continuing.

FIT CHECK: The controller board and cover should clip into place without heavy force. If they do not, check for trapped wiring before modifying the opening.



Guide excess wiring into the housing while fitting the panel.



Control panel correctly seated.

Step 11 - Fit the Speed-Control Knob

1. Turn the metal speed-control shaft fully anticlockwise until it reaches its minimum position. Do not force it past its normal stop.
2. Align the speed-control knob with the shaft.
3. Press the knob onto the shaft until it is fully seated.
4. Turn the knob gently through its normal range and confirm that it moves smoothly and remains securely fitted.

POSITION CHECK: Turn the speed-control shaft fully anticlockwise before fitting the knob.



Speed-control knob fitted to the control panel.

Step 12 - Install the Base Magnets

1. Use 8 x 3 mm magnets for the base.
2. Place the base on a sturdy workbench with the section containing the magnet recesses overhanging the edge. This allows the magnet to be tapped in without the bench interfering.
3. Support the printed base close to the magnet recess you are working on.
4. Position an 8 x 3 mm magnet squarely over the recess.
5. Tap the magnet in gently, keeping it straight, until it is fully seated and flush with the base surface.
6. Repeat for all base magnets. Do not strike the printed base directly with unnecessary force.

MAGNET CHECK: Use 8 x 3 mm base magnets. Support the printed base close to each magnet recess while tapping the magnet in.



Support the base at the bench edge while tapping magnets in.



Base magnets fully installed and flush.

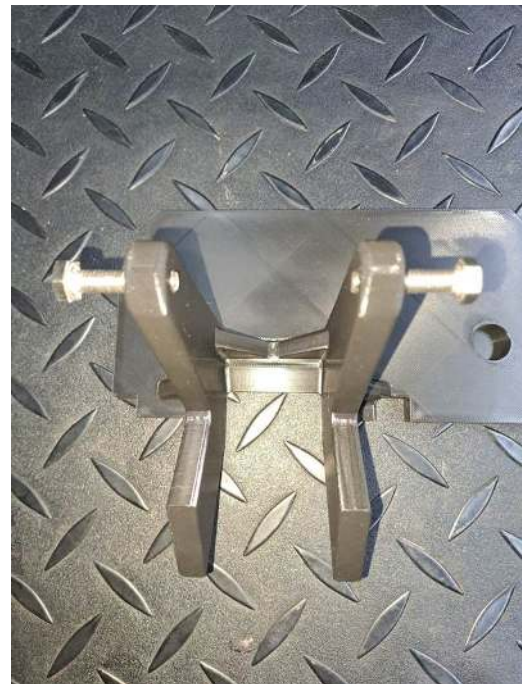
Step 13 - Install the Base Pivot Screws

1. Identify the two upper posts/arms on the base. These are the pivot mounting points for the feeder frame.
2. Insert one pivot screw through each upper post in the orientation shown in the photographs.
3. Turn each screw in far enough that it is correctly located and ready to engage with the feeder frame.
4. Do not tighten the pivot assembly fully at this stage. The Nyloc nuts are adjusted after the feeder frame is fitted in Step 14.

PIVOT CHECK: Fit the frame first, then tighten the Nyloc nuts until resistance is felt. The frame must move by hand and stay in position when released.



Side view of the pivot screw installation.

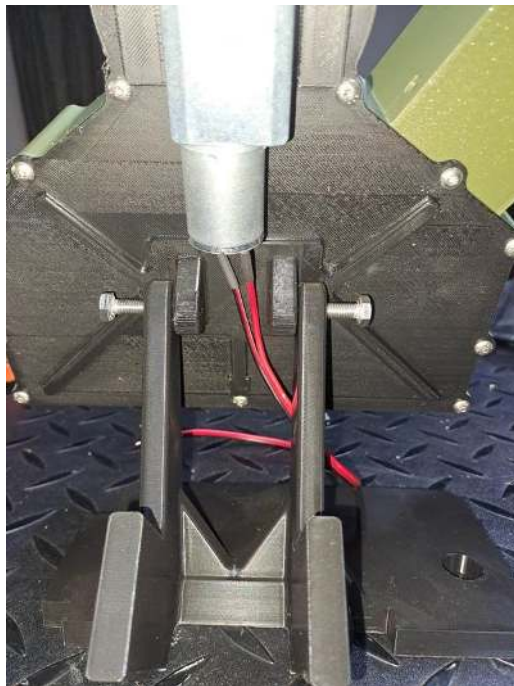


Both pivot screws installed through the upper posts.

Step 14 - Mount the Feeder Frame to the Base and Secure the Cables

1. Place the base on the work surface with the large circular hole on the RIGHT-HAND side, exactly as shown in the photograph.
2. Lift the feeder frame into the upright position and place it between the two base arms.
3. Align the frame mounting points with the two pivot screws and fit the Nyloc nuts to the pivot screws.
4. Tighten the Nyloc nuts evenly until definite resistance is felt when the feeder frame is tilted. The frame must still be adjustable by hand.
5. Check the adjustment: lift the feeder frame to a raised position and release it. It must remain in that position by itself. If the frame drops, tighten both Nyloc nuts slightly. If the frame is excessively difficult to move, loosen both nuts slightly. Repeat until the frame moves with controlled resistance and stays at the selected angle when released.
6. Route the motor and power cables down the side of the support arm. Keep the feeder frame in the upright position while securing the cables with the cable tie at the position shown.
7. Leave a visible loop of slack in the wiring. This slack is necessary so the frame can move without pulling on the motor wires or power lead.
8. Move the frame carefully through its full adjustment range. Confirm that the cables do not become tight, rub against a sharp edge, or become trapped between moving parts. Only then tighten the cable tie fully and trim it if required.

MOVEMENT CHECK: Adjust the Nyloc nuts so the frame moves with controlled resistance and stays where it is set. Leave enough cable slack for the full frame movement, and confirm no wire is pulled, pinched or trapped.



Frame mounted to base; large base hole on the right.



Cable tie position with wiring slack.

Step 15 - Store the Measuring Cap

1. Identify the dedicated measuring-cap storage position on the base.
2. When the measuring cap is not being used, place it into this storage position as shown.
3. Press it into place sufficiently to keep it with the unit. This prevents the measuring cap from being misplaced during normal use or transport.



Measuring cap stored in its dedicated base location.

Step 16 - Final Accessories Check

Before the completed Quick Anneal Feeder is packed or handed over, carry out a final parts check. Confirm that the feeder is complete and that the power supply/adaptor, measuring cap, supplied spare parts and any remaining supplied hardware are included. Compare the finished unit with the final-result photograph at the end of this guide.



Power supply and spare parts supplied with the feeder.

Completed Assembly - Final Result

Use the photograph below as the final visual reference. The completed Quick Anneal Feeder should have the same overall orientation: feed wheel correctly seated, black funnel aligned, controller cover fully installed, feeder frame secured to the base with the correct pivot resistance, and wiring routed without being trapped. If the assembly looks materially different from this reference, re-check the relevant assembly step.



Completed Quick Anneal Feeder - final assembled appearance