

Team Legit

Advanced Carbon Control Rod Kit (Medium)

Thank you for purchasing this Team Legit set of control hardware! It is the product of innumerable builds, pilot-hours, crashes and hanger-rash incidents. It is designed to provide zero-slop, rock-solid operation while still being feather-light. We hope our experience will help you on your aerial adventure!

These kits come in various sizes; you have chosen the **Medium** kit. It consists of 4mm diameter carbon tube and is suitable for use with “micro” through “mini” sized servos, or in any moderate-duty application.

Kit Specifications

Maximum control run: 300mm (11.8")
Minimum control run: 80mm (3.2")

Weight of an assembled control rod & horn:
150mm run: 8.1g (0.29oz)
300mm run: 9.5g (0.34oz)

Required for completion of kit

Glue (two-part epoxy is recommended)
Non-permanent threadlocker
Sandpaper
Hand saw or rotary cutting tool

Kit Contents

2x Carbon tubes
Instruction sheet

4x Tube couplers
4x Clevises
2x Ball links

5x Pins
5x C-Clips
2x M2-12mm screws
2x M2 nylon-insert lock nuts
2x M2 plain nuts

2x Control horn shafts
2x Control horn plates
2x Control horn eyelets
6x M2-20mm screws

Assembly Instructions

Follow these tips to achieve exemplary control performance and feel of your aircraft. You can also follow along with a **Video Tutorial** by visiting our YouTube page (youtube.com/FPVTeamLegit), or by scanning this QR code linking directly to the video:



Choosing kit components

This kit includes two choices of link style for your servos: **ball link** and **clevis**. Generally, ball links provide superior connection. However, because they mount off-axis of the servo arm, ball links can cause some servo arms to twist in the vertical axis under load. We recommend using ball links in conjunction with thicker, heavy-duty nylon servo arms and aluminum servo arms. For thinner nylon servo arms prone to twisting, a clevis will result in better connection.

At the control surface, a clevis should be used with the control horn eyelet. Because the eyelet can freely pivot in the vertical axis, a ball link should never be used here.

Cutting the carbon tube to length

First, mount the control horn to your aircraft's control surface and dry-fit your servo. The hardware

surrounding the carbon tube generally adds about 50mm (2”) of control run to the length of the tube itself once assembled. However, it is best to actually mount the ball links, clevises and couplers to verify the length of carbon tube required. The couplers’ threads will provide fine adjustment once assembled. **Take great care when cutting or sanding carbon fiber!** Do not handle carbon dust or consume it in any way. Always cut carbon outdoors and with proper protective equipment. Wash hands after handling carbon components. Carbon tube is most easily cut with a power rotary cutting tool. A small handsaw can also be used. Wrap masking tape around the tube before cutting to avoid splintering the carbon fiber.

Assembly process

- Mount the control horns to the aircraft’s control surfaces and cut tubes to length as described above.
- Once the carbon tubes are sized, lightly scuff the tube ends with sandpaper to promote glue adhesion. Sand the tubes further if they are slightly over-sized for the couplers. Then glue the couplers onto each end using a two-part epoxy of your choice. Other glues may also be acceptable.
- If using a **ball link** with servo: Mount a ball link to your servo arm. The thread of the ball link connection screw is M2. If using a nylon servo arm, the screw will easily self-tap. If using an aluminum arm with threads smaller than M2, the steel screw can also be used to self-tap with some effort. Take care not to over-widen the hole if using a drill. If using an aluminum servo arm with holes larger than M2, a different ball link (not included in kit) or different servo arm will be needed. Use an M2 nyloc nut to capture the connecting screw. Plain M2 nuts are also provided—apply non-permanent threadlocker if using a plain nut.
- If using a **clevis** with servo: Mount a clevis to your servo arm. The steel pins of the clevises are 1.6mm thick. They will press-fit into most nylon servo arms. If your servo arm has holes wider than 1.6mm, a different clevis (not included in kit) or different servo arm will be needed.
- Thread the carbon tube with glued couplers into the servo connector. If using an aluminum clevis, apply non-permanent threadlocker to dampen play between the metal threads.
- Thread an aluminum clevis onto the opposing coupler. Apply non-permanent threadlocker to dampen play between the metal threads. Now is the time for fine adjustment of control length. Connect this clevis to the control horn eyelet. An extra pin and C-clip is provided in case one is misplaced during assembly.
- You’re done! Remove excess screw length with a rotary tool or heavy wire snips. Repeat this process for your aircraft’s remaining control surfaces.

A note on servos...

A control setup can only be as precise and slop-free as the servo driving it. Correct assembly of this control rod kit may reveal your servo to have inherent vagueness, dead-zone or slop. A quality servo will not necessarily break the bank, but many popular choices in the hobby will prove to be a weak link. If you determine that an upgrade is due, we can help!

If you have any questions or comments regarding this kit, please don’t hesitate to contact us.

support@team-legit.com

(626) 386-5432

