

GR-RK1 Linear Actuator: Adjustments Guide

Warning: Be sure to make any position or rack mounting adjustments with power removed from the actuator. When re-connecting power to test, keep clear of the moving actuator.

Limit switches: Changing the start and end travel positions

Small switches inside the actuator automatically stop travel in one direction when they engage with slotted plastic blocks mounted to the rack gears, which we call limit trigger plates. The limit trigger plates can move back and forth along the length of their slot or be removed and replaced in any other position along the rack where 4mm threaded holes are available.

Each is attached with two M4 button-head screws, use a 2.5mm hex-key to loosen the screws and then you can either slide the trigger plate along its slot or remove the screws and replace the trigger plate somewhere else along the rack. **Ensure when replacing the trigger plates that they are mounted on the side of the rack facing the transparent side of the actuator body, as in the below picture.**

If the trigger plate you wish to move is inside the body of the actuator you may need to power the actuator away from that limit in order to gain access to it, if doing this make sure that your hands are clear when operating the actuator.



You will be able to see through the clear side of the actuator where the two limit switch plungers are located, adjust the positions of the trigger plates with these positions in mind. Be aware that the actuator can travel for some distance after it first touches the switch due to the inertia of the transmission so make an allowance for this when adjusting.



Rack gears: Increasing and decreasing travel distance

The rack gear sections are designed to be added and removed from one-another allowing you to tailor the stroke length and reach of the actuator to your application. Follow these steps when adding a section of rack:

1. Have ready one of the clamping sets, composed of one plain-hole metal plate, one threaded-hole metal plate and four M5 button-head screws. You will need a 3mm Allen/hexagon key for the screws.



2. **Ensure when adding the clamping plates that the button heads of the screws are on the side of the rack which faces the clear side of the main actuator unit.**

Thread two of the screws through the plain-hole metal plate, through the two 5mm holes in the end of the first rack gear, and into the threaded metal plate on the other side, leave these two screws loose for now.



3. Bring the second rack gear up against the first, put the two additional screws through the holes in second rack. The next part is the trickiest due to the tight tolerances needed between the racks: Using the Allen key to apply pressure on the screw while turning, try to engage the thread on the threaded clamp plate, you may need to adjust your grip and positioning a few times until it engages and then you can start to tighten. Once the threads of the two screws on the second rack are engaged you can then tighten those screws followed by the two screws on the first rack. Do a final pass with the Allen key to ensure all screws are well tightened.



It is recommended that oil is applied to the racks and clamp pieces every 4 months or so - this is not needed for mechanical lubrication but will help defend against corrosion (particularly in higher humidity environments). Wiping along the racks with a well-oiled rag should be sufficient for this purpose.

If you have any questions please contact us at support@gimsonrobotics.com