

**TECH TALK**

**Chain Length Adjustment**

On recumbents with an adjustable boom, it is necessary to adjust the chain length whenever the boom is adjusted. A good rule of thumb for leg extension is as follows: Adjust the boom so that you can lock your knee straight when your heel is about 1/2" from the pedal. When you start riding, and settle into your seat with your foot back to the regular riding position (ball of foot over pedal spindle), your knee should have a slight bend in it when the pedal is all the way forward. After adjusting the boom length, adjust the chain length as follows: You will need a chain tool!



First make sure you have enough chain for the "big / big" combination. (Largest chainring and largest cassette cog). The following must be done with your bike on a repair stand or a friend holding the bike so the rear wheel is off the ground. **Do not attempt to do this while riding because, if there is not enough chain, you will damage your bike.**

- 1) Shift into smallest cog on the cassette.
- 2) Shift to the largest chainring in the front.
- 3) Start shifting to larger cogs on the cassette and watch to make sure there is enough chain. If the chain length permits, continue until you have shifted to the largest cassette cog.
- 4) This is known as a "crossover gear." It is important that your chain is long enough to allow shifting into this combination and, due to the chain length, this is an acceptable gear to use on most recumbents



Next, break the chain using the quick link or your chain tool and unwind the chain from the rear derailleur pulleys. (Note: Chain must still be routed through the frame idlers.) With the chain on the largest sprockets, pull the two ends of the chain together. Add or remove enough chain links to achieve at least a ONE (but not more than TWO) LINK OVERLAP (see picture at left)

**Review BEFORE you cut the chain:**

- Route the chain over the BIGGEST front chainring.
- BYPASS the rear derailleur.
- Route the chain over the BIGGEST rear cassette cog.
- Make sure the chain is routed normally through any pulleys or idlers elsewhere on the bike.
- Add or remove links as needed.





After cutting the chain to the correct length, re-route the chain through the rear derailleur. Move the chain and derailleurs to the smallest chainring in the front and the smallest cog in the rear to allow for easier reconnection. After verifying that the chain is routed through the derailleurs, idlers and pulleys correctly, reconnect the two ends of the chain.



If all is done correctly, the rear derailleur should have just enough tension to keep the chain from rubbing on the derailleur itself (see picture) when the chain is on the smallest chainring in the front, and the smallest cog in the rear. **Note:** If your bike has a non-standard gear combination (i.e. REALLY large big chainring and REALLY small granny chainring) your derailleur may not be able to take up this slack. This is acceptable because there is no benefit from riding in the smaller (high gear) cogs when you are in your small chainring. However, you must have room to shift into the big/big combination as severe damage to your frame/derailleur/wheel can occur if your chain is too short.



**IMPORTANT FINAL CHECK --- WITH YOUR BIKE ON A BIKE STAND, TEST FOR ENOUGH CHAIN LENGTH AS FOLLOWS:**

With the chain on the smallest rear sprocket, shift the chain onto the largest front chainring. SLOWLY shift the rear gears until you reach the largest cog (or find out you can't). If the last gear (or two) are difficult, or it appears that the derailleur is stretched too far, DO NOT FORCE IT! - your chain is too short and you will need to add a link or two! Proper derailleur extension is shown at left (big/big gear combo).