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Hanging with worm gears

self.FTC

submitted 1 month ago by rohyourb0at 5205 SyBorgs

Hey guys. My team was wondering how we should utilize our (10:1) worm gear set for hanging. We want to use our six bar to hang but were contemplating whether to replace the driving gear(s) with the worm gear or not. Thanks & Merry Christmas!

5 comments

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[–] Dastyruck 4278 2 points 1 month ago

More details would be needed to fully determine whether or not you could hang with your 6 bar linkage. But, if your robot is fairly light, and your 6 bar isn't too long, hanging with it shouldn't be a problem with only one motor. The worm gear might make it so your arm wouldn't move when it wasn't powered, which you want if you plan on hanging with it.

I would make sure that with the gearing that you choose, that your robot could actually lift itself. I have seen quite a few teams attempt to hang and are unable to due to the lack of torque in their current gearing. If you give more details on your robot, I would be happy to help you figure out adequate gearing for your system.

permalink

- [–] rohyourb0at 5205 SyBorgs [S] 1 point 1 month ago

  Thanks for the quick reply, we're using two motors to power our six bar linkage so that's what I was having trouble with figuring out

  permalink parent

- [–] rohyourb0at 5205 SyBorgs [S] 1 point 1 month ago

  I'm unable to send pictures right now because I'm in Florida for vacation lol

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  - [–] Dastyruck 4278 1 point 1 month ago

    No problem, the easiest way to link two motors into one worm gear box is to add an additional gear onto the motor that is the input to the worm box and put a second gear of equal size onto the second motor and have both of these gears mesh. Both motors will be linked in a 1:1 ratio and you will get the torque from both motors into one worm box.

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[–] _TrafalgarLaw 1 point 1 month ago

Something you might want to watch out for is the warping of metal. If you put too much stress onto a single point of an axle (which is easily possible with a high gear ratio) your axle will warp, rendering it useless if you ever want to remove it or replace it.

I don't know how you set up your robot, but hanging should definitely be possible, you just need to be careful with how you distribute your force.

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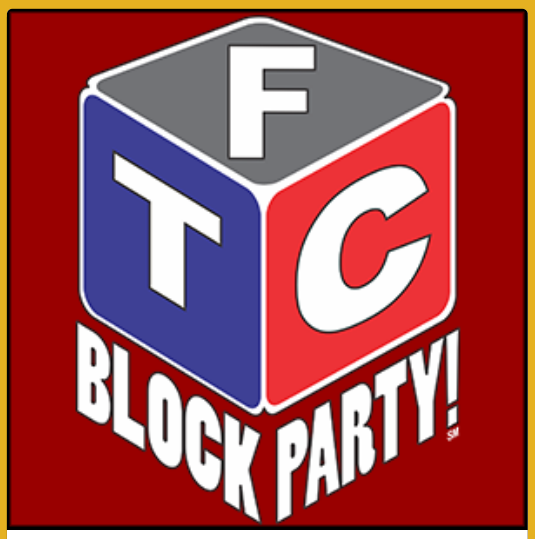

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