

Qualitative Motor Torque Tester

We would like to share a cheap way to qualitatively test motors. We didn't realize that after a long period of use the motors become weaker and weaker. It's not that they don't work, it's just that they don't have as much torque. It all started with our middle strafe motor not working. First we changed the internal gears but that didn't seem to be the problem. Even when we tested the motor manually and it seemed okay, it still didn't move our robot. After changing the motor 4 times we realized that the motor itself was weak. Since our team doesn't have a lot of money, we built this motor torque tester. It may not give an exact measurement, but it gives a good general idea.

The way it works is you write a simple program to turn the motor on. Then you slide the motor on to the axle on the motor tester. You hold it down since it's not screwed on. When you start the program, the motor will pull the rubberband back. If the motor has enough torque, it will pull the rubberband all the way back. If it does not have enough torque, it will only pull it about half way. If you're testing a high torque motor you can use a shorter rubberband or a spring. If you don't happen to have these Godzilla sized rubberbands, you can move the rubberband post closer to accommodate for smaller sized rubberbands.

That's part of the reason we like this. It's adjustable, easy to use, and dependable. Plus it's a good way to pick motors that have fairly equal torque for your drive train or arms. Best of all, it doesn't break the bank. It's for all these reasons we would like to share it with you today. We included CAD drawings designed on Autodesk at the beginning of the video, and pictures on this site to help you reverse engineer your own motor tester.