

# Mini Trash Truck Dumper

By Bryan Emerson

For my entry into the Vex Robotics Product Design Challenge I chose to create a robot to perform a simple household chore. This robot is called the Mini Trash Truck Dumper. This robot would drive around the house and dump smaller trash cans into a bag, so they can be taken to the large trashcan outside for pickup. Using this robot would also help add some fun entertainment to the mostly boring chore of taking out the trash.

The Mini Trash Truck Dumper uses a large grabbing mechanism to take hold of the trash can and lift it in the air. After that the heavy geared arm would lift the trash can upside down and dump it into a preloaded bag. Using many gears it can lift the sometimes very heavy trash can upside down. It has a simple design yet it is a very reliable robot to perform its purpose. In addition it has a tank tread drive system that can drive over many different surfaces. With the tank treads it has a pair of wheels on the dumping bay so when the center of gravity shifts it still can move around and not get hung up on the carpet or other flooring surfaces. Also a conveniently placed sensor provides protection from unfamiliar users lowering the lifting arm into the metal chassis. The softly padded grabbing claw protects delicate trash cans from damage.

This robot would provide a much safer and sanitary way to take out the trash. Also in future designs it could also be programmed to autonomously take out the trash without the users input. No longer would taking out the trash be a chore that young people would dislike. The Mini Trash Truck Dumper would change the way that we all look at the disposal of trash.