Shirt Stacker

1 Introduction

This document describes the shirt-stacking machine which I built. The shirt-stacking machine is capable of picking up shirts from my shirt folder and stacking them. All files for the shirt stacker can be found at `https://github.com/orangeturtle739/garmenttransporter/tree/master/Shirt%20stacker`.

2 Design

The shirt stacker consists of a rotating turntable and a spatula. The stacker picks up the shirt on the spatula, rotates and then drops the shirt. The spatula moves up and down using linear bearings. Figure 1 shows a rendering of the shirt stacker.

A SketchUp model of the shirt folder can be found at `https://github.com/orangeturtle739/garmenttransporter/blob/master/Shirt%20Folder/Design/Shirt%20Folder.skp`.

3 Electronics

Figure **??** shows a schematic of the shirt folder's circuit. Every servo has its own 6V power supply and the Arduino Uno has a 9V power supply. All of the power supplies have their own switches and all of the grounds are connected together.

4 Parts

I used TowerPro 9805BB servos because they are able to provide lots of torque. For the main switch (labeled "Button" in figure 1), I used a round push-on/push-off switch. For the Arduino switch and the servo switches, I used rocker switches.

5 Use

To use to shirt folder, install the program which can be found at `https://github.com/orangeturtle739/garmenttransporter/blob/master/Shirt%20Folder/Shirt_Folder/Shirt_Folder.ino`. After installing the program, turn the Arduino on. Press the main switch twice (turn it on then off again) to initialize the servos. Then, place the shirt onto the shirt folder and press the main switch. Once the bottom flap has be activated, the folder will wait. Pull the shirt onto the bottom flap and press the main switch again. This will cause the bottom flap to rotate one more time which will complete the shirt folding.

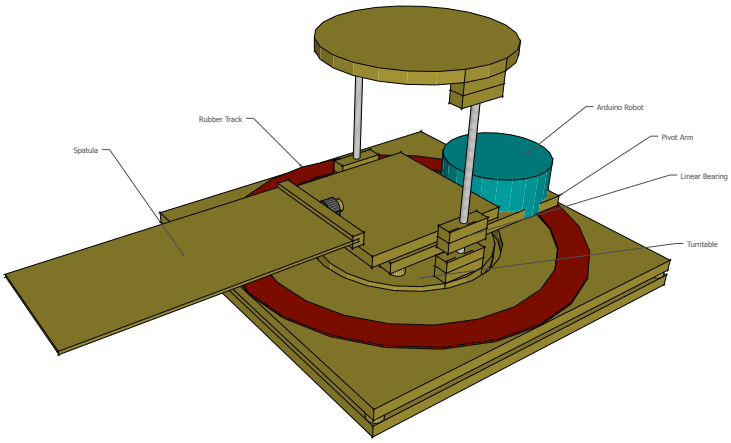

Figure 1: Top view of shirt folder.