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| **Target No.** | **Function** | **Target Value** |
| 1. | Idler Diameter | 2 in. |
| 2. | Idler Amount | 10 |
| 3. | Idler Length | Width of assembly line (1.5 ft) |
| 4. | Number of sensors | 2 |
| 5. | Capacitor max detection distance | 8 mm |
| 6. | Operation of controller through programming | Pass or fail |
| 7. | Photoelectric sensor max detection distance | 3 m |
| 8. | Inductive sensor max detection distance | 8 mm |

**Targets**

To test the values with numbers we will look at item dimensions before ordering and measure the dimensions of the parts we already have for the project. The items specification will impact the performances of the assembly line. For the programming of the controller, after the programing is completed, the controller will be connected to each device it will control and tested to make sure it functions correctly. The programming of the sensors and solenoids will update and be corrected as material detection testing continues.

The values seen in the table were determined by looking at the specifications of the parts we already have. For example, we already have two capacitive proximity sensors and the max detecting distance of each is 8 mm. That information is used to make sure the sensor will be able to reach the items that will need to be scanned and sorted.

Target 4 quantifies the number of sensors used to detect the different materials. This target ensures detections of certain materials placed on the conveyer belt. The specific sensors are being used because the sponsors previously purchased. Once the sensors are programmed to individual microcontrollers testing will be done to ensure sensors detections at various distances. The importance of this target is number 1, because without the detection of materials there will be no sorting to follow. Failure to meet the working of the targets will result in failure of sorting.

The tools we need to validate the design process are measurement tools like a caliper or ruler. Also, we will need wires and power sources to set up and test the controller and other components.

The most critical metrics are the detecting distances. This severely limits the position of those components and therefore limiting the physical design of the project.