16-681

CAD Familiarization Part 3

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**Description:**

The assembly drawn is the basic robot drive train with 5 unique parts provided in the assignment sheet.

**Parts List Table:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item No.** | **Part/Model No.** | **Description** | **Supplier** | **Quantity** |
| 1 | RS380 Motor | JOHNSON RS-380 Micro 380 DC Motor 12V~24V 13000RPM | BaneBots  Catalog ID: MS-RS380 | 2 |
| 2 | P60 Gearbox | Banebots P60 64:1 Gearbox, Max Torque 35 ft-lb, 1/2" Diameter Shaft | AndyMark  Catalog ID: am-2877 | 2 |
| 3 | Custom U-Channel Chassis | Custom U-Channel Chassis 15" Long, 1.5" Interior Width, 1.8" Exterior Width | Custom Made / 3D Printed | 1 |
| 4 | 10-32 Bolts | Passivated 18-8 Stainless Steel Pan Head Phillips Screw, 10-32 Thread, 1/2" Long | McMaster-Carr  Catalog ID: 91772A829 | 8 |
| 5 | 5-inch Diameter Rubber Wheels | High-Strength Rubber Wheel for 1/2" Axle, Soft, 5" Diameter x 1-1/2" Wide | McMaster-Carr  Catalog ID: 2319T771 | 2 |

**Isometric View:**

A computer screen shot of a machine

Description automatically generated

**Exploded View (Showing Part Numbers):**

A diagram of a machine parts

Description automatically generated

**Exploded View (Showing Mating Method):**

Diagram of a concentric wheel

Description automatically generated with medium confidence

Note: The “Lock” mating method for the chassis is referring to locking its location relative to the origin coordinate system. In the exploded view, I am only showing the mating methods for each distinct part. A full list is provided below so the exploded view diagram is not cluttered.

A screenshot of a computer program

Description automatically generated

**Three-View Perspective:**

Front:

A drawing of a wheel

Description automatically generated

Top:

A black and white drawing of a long rectangular object

Description automatically generated

Right:

A diagram of a circular object with numbers

Description automatically generated

**Cross Sectional:**

A drawing of a machine

Description automatically generated

Note: The critical mating sections shown are the concentric between the wheel and the gearbox, and the concentric between the gearbox and the motor.