

16-681

CAD Familiarization Part 3

Boxiang Fu

boxiangf

12/07/2024

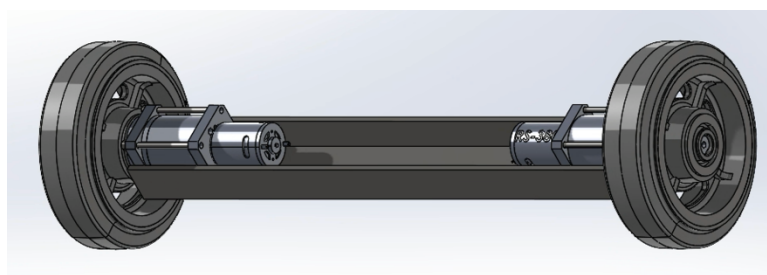
Description:

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

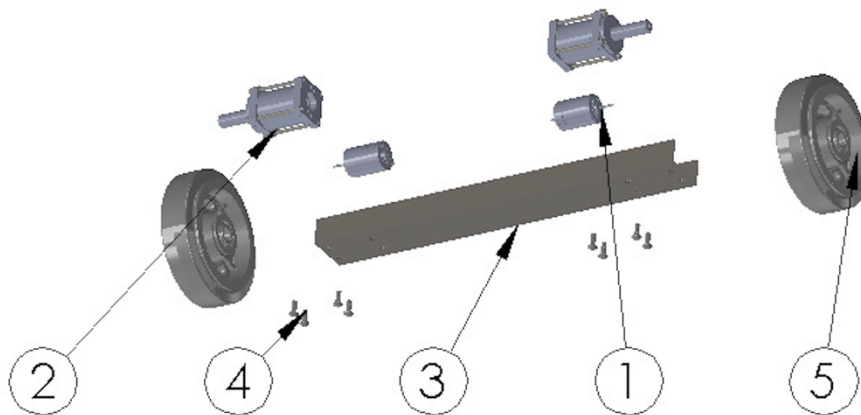
Parts List Table:

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

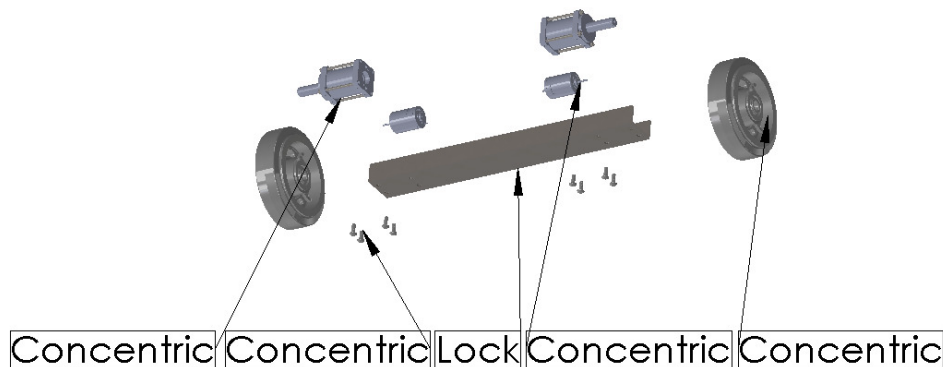
Isometric View:



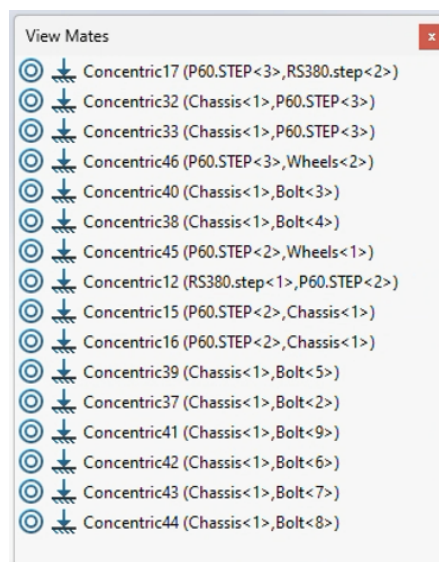
Exploded View (Showing Part Numbers):



Exploded View (Showing Mating Method):

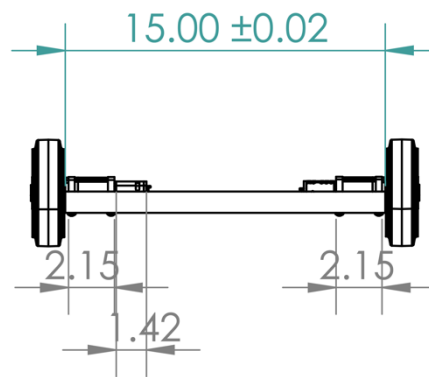


Note: The “Lock” mating method for the chassis is referring to locking its location relative to the origin coordinate system. In the exploded view, I am only showing the mating methods for each distinct part. A full list is provided below so the exploded view diagram is not cluttered.

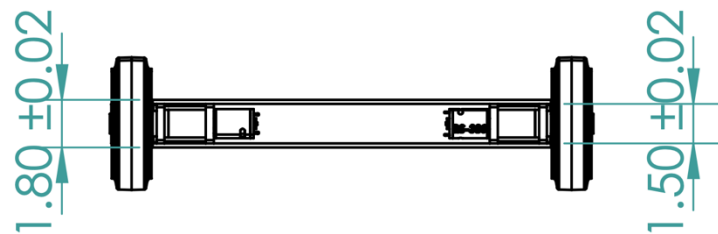


Three-View Perspective:

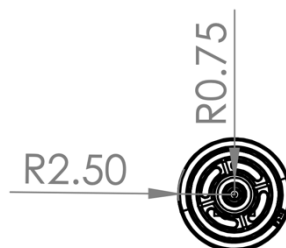
Front:



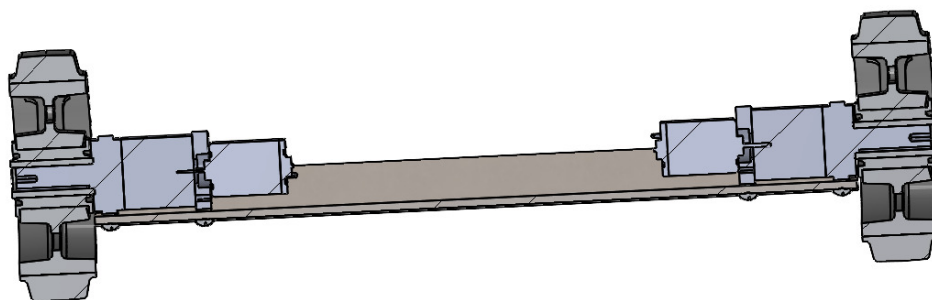
Top:



Right:



Cross Sectional:



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