

ENGR 3421: Robotics I

Mechanical Design

08/30/2022



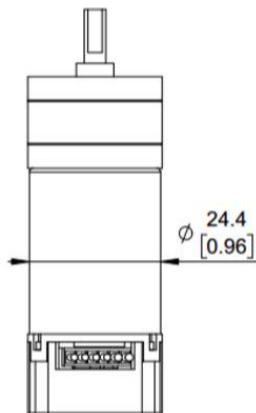
FreeCAD

- Download: <https://www.freecadweb.org/>
- Learning Resources: <https://www.youtube.com/c/FreeCADAcademy>

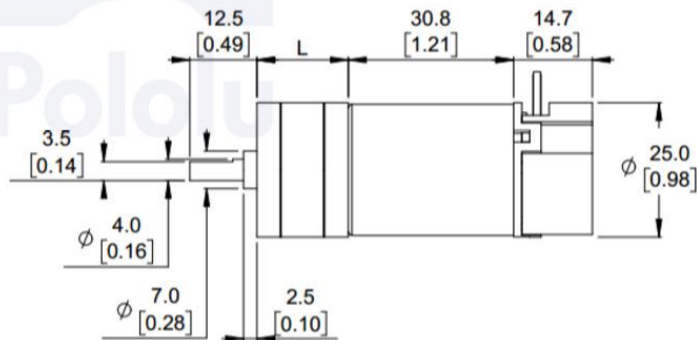
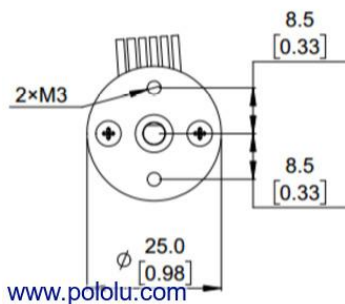
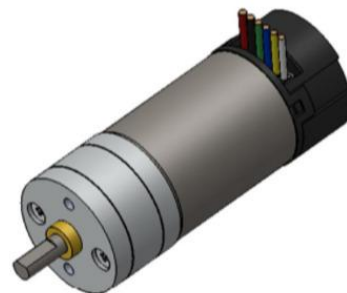
Partlist

- Motor: <https://www.pololu.com/product/4805>
- Motor Bracket: <https://www.amazon.com/dp/B07HHY2BJN>
- Caster Wheel: <https://www.amazon.com/dp/B072M9S2CQ>
- Motor Shaft Adaptor: <https://www.amazon.com/dp/B08M3N9SSG>
- Wheel: <https://www.amazon.com/dp/B01HCVYJ5Q>

Motor Dimensions



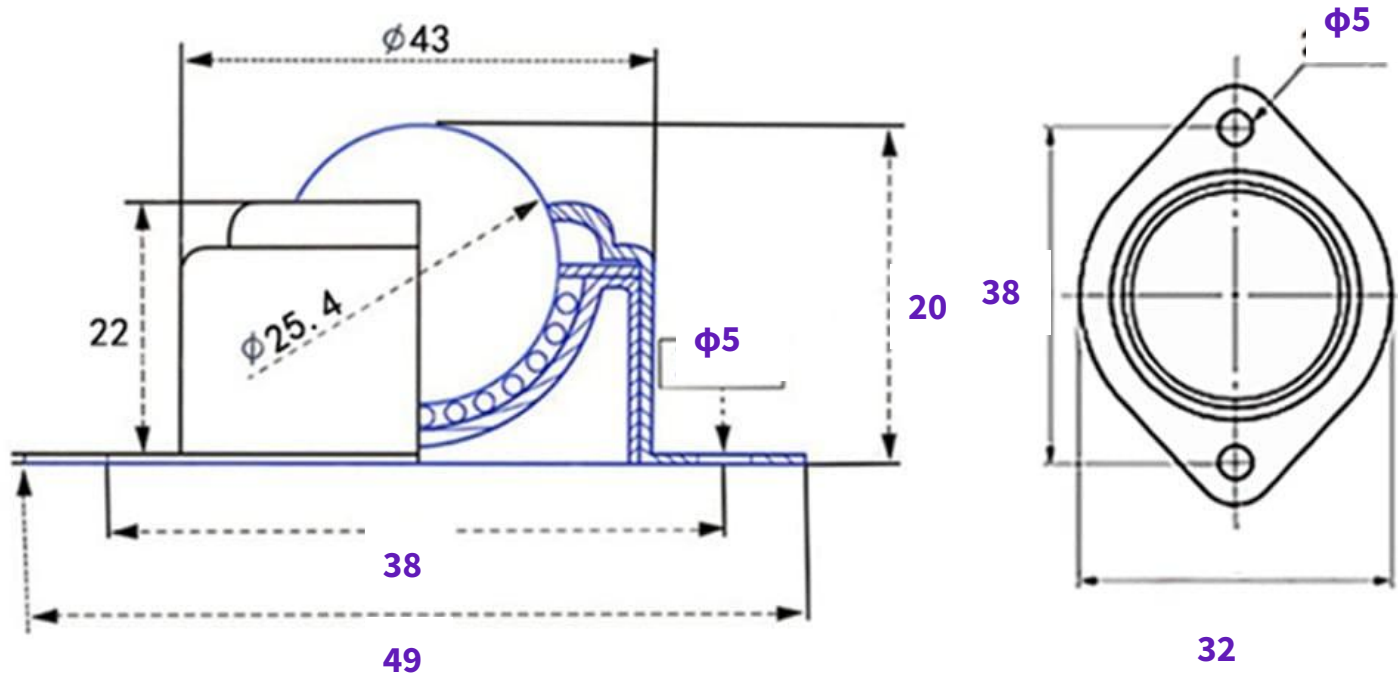
Gear ratio	L
4.4:1	17 mm [0.68 in]
9.7:1	19 mm [0.75 in]
20.4:1	19 mm [0.75 in]
34:1	21 mm [0.83 in]
47:1	21 mm [0.83 in]
75:1	23 mm [0.91 in]
99:1	23 mm [0.91 in]
172:1	25 mm [0.98 in]
227:1	25 mm [0.98 in]
378:1	27 mm [1.06 in]
499:1	27 mm [1.06 in]



Motor Bracket Dimensions



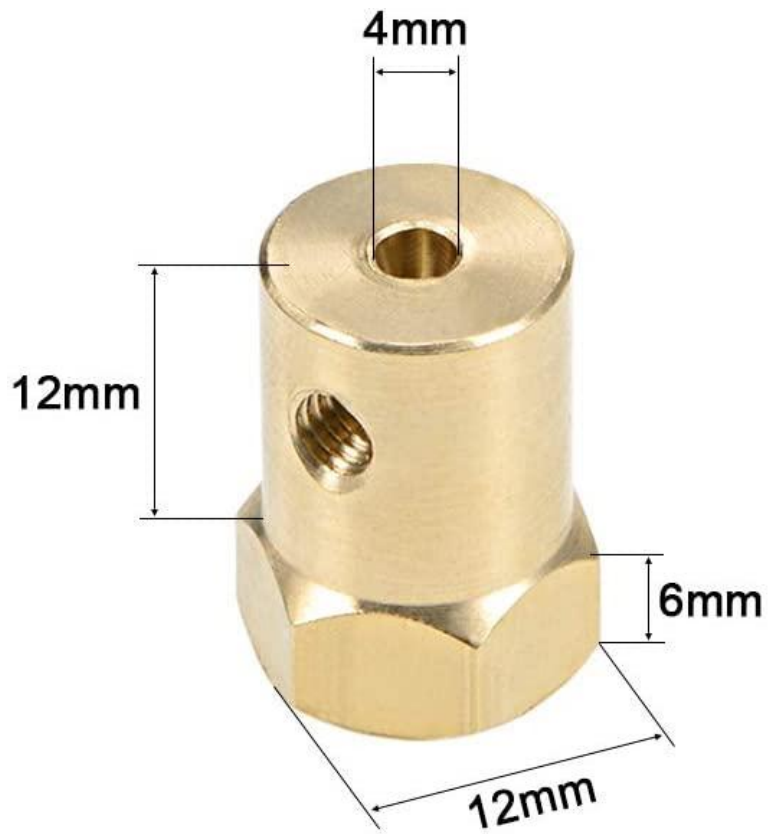
Caster Wheel Dimensions



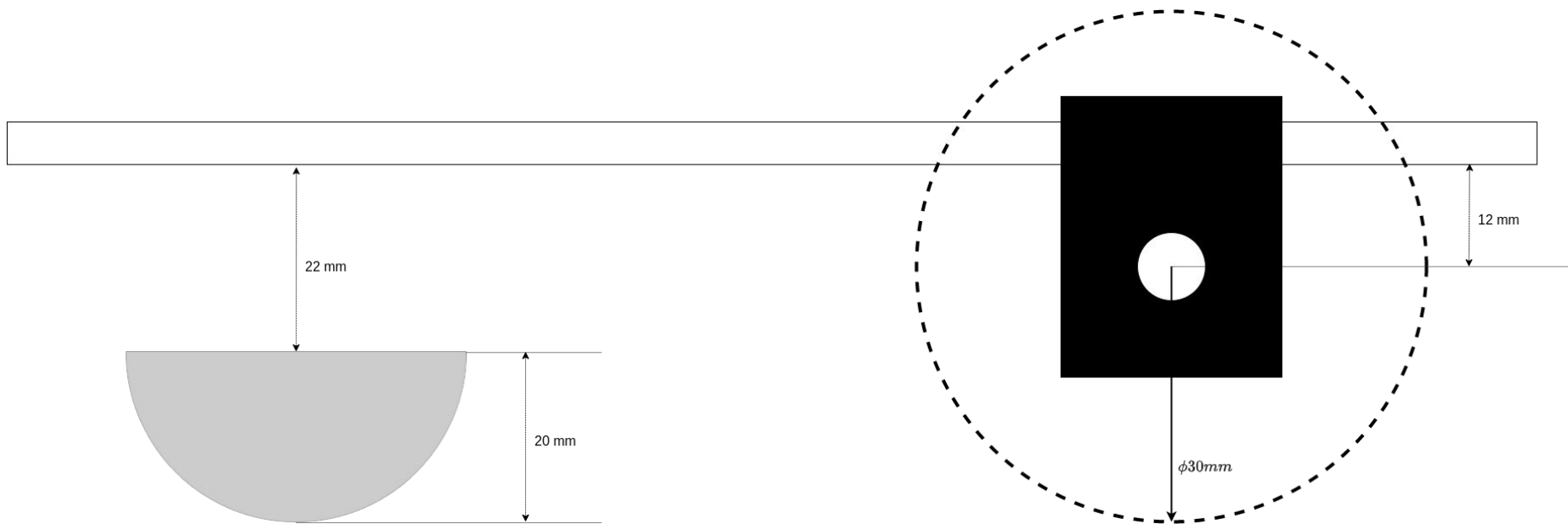
Wheel Dimensions



Motor Shaft Adaptor Dimensions



Padding



Makerspace @ Donaghey Hall

Make an appointment [here](#)