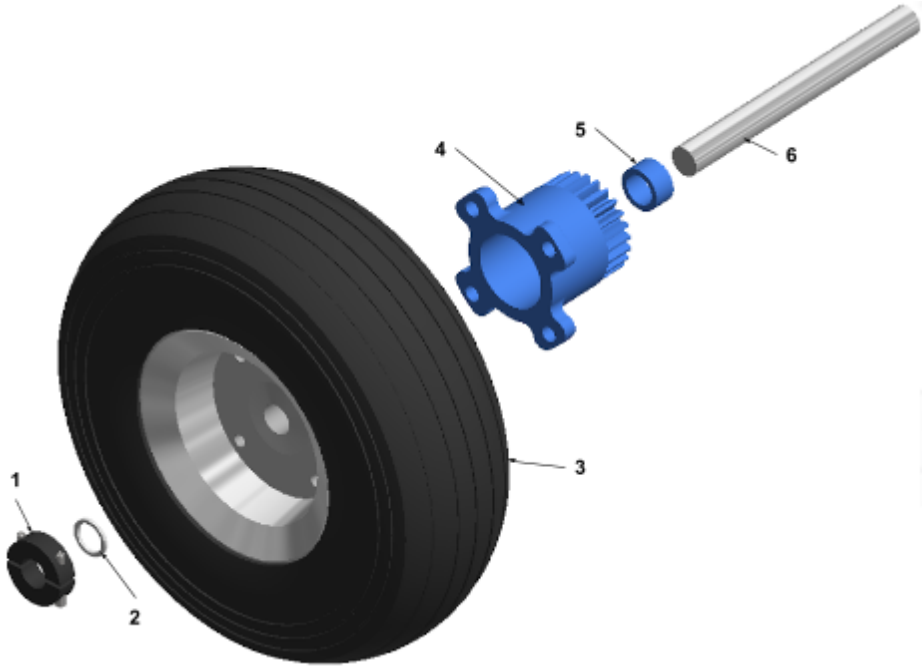
Axle assembly

Assemble the wheel and axle in this configuration.

The **wheel gear (4)** is bolted to the **wheel (3)**.

A **16mm collar (1)** is clamped flush with the outside end of the **16mm shaft (6)**.

The **small wheel spacer (2)** is slid onto the shaft, then the wheel, then the **large wheel spacer (5)**.



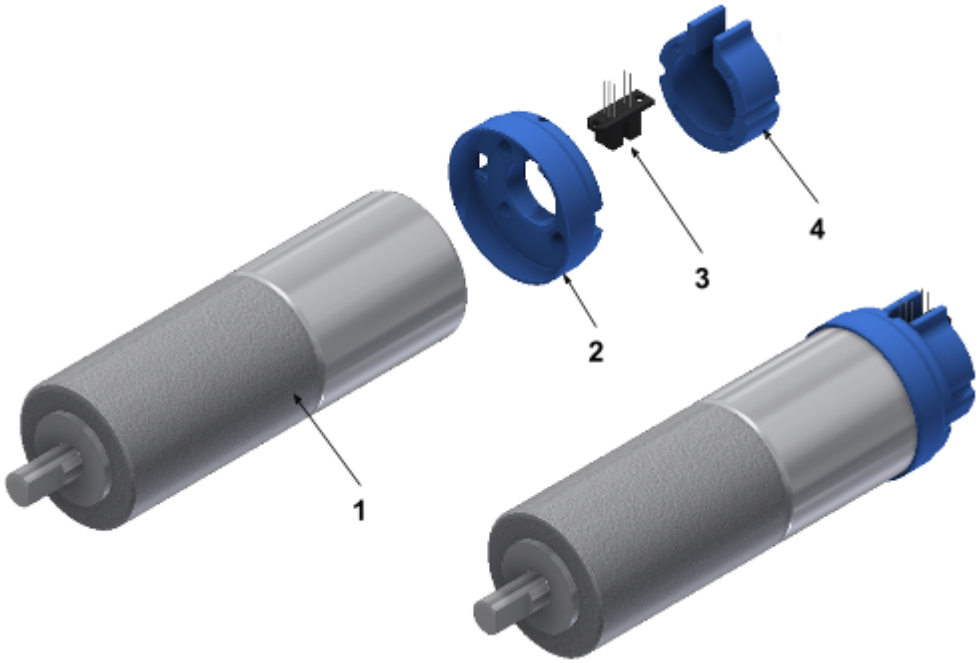
1. 16mm collar	Purchase
2. Wheel spacer small	Print
3. Wheel	Purchase
4. Wheel gear	Print
5. Wheel spacer large	Print
6. 16mm shaft	Purchase

Motor-encoder assembly

The **encoder mount (1)** is friction-fit to the rear end of the **motor (1)**.

The **encoder disc** slots into the **encoder (3)**, which fits into a slot in the encoder mount and is bolted in place.

The **encoder cap (4)** is bolted on top.



1. DC motor + gearbox	Purchase
2. Encoder mount	Print
3. Encoder	Purchase
4. Encoder cap	Print
Encoder disc (not shown)	Print

Wheel Mount

Each **wishbone (1)** has a **ball joint (3)** bolted to the end. The lower wishbone also has the **wishbone-suspension mount (7)** attached with the same bolt.

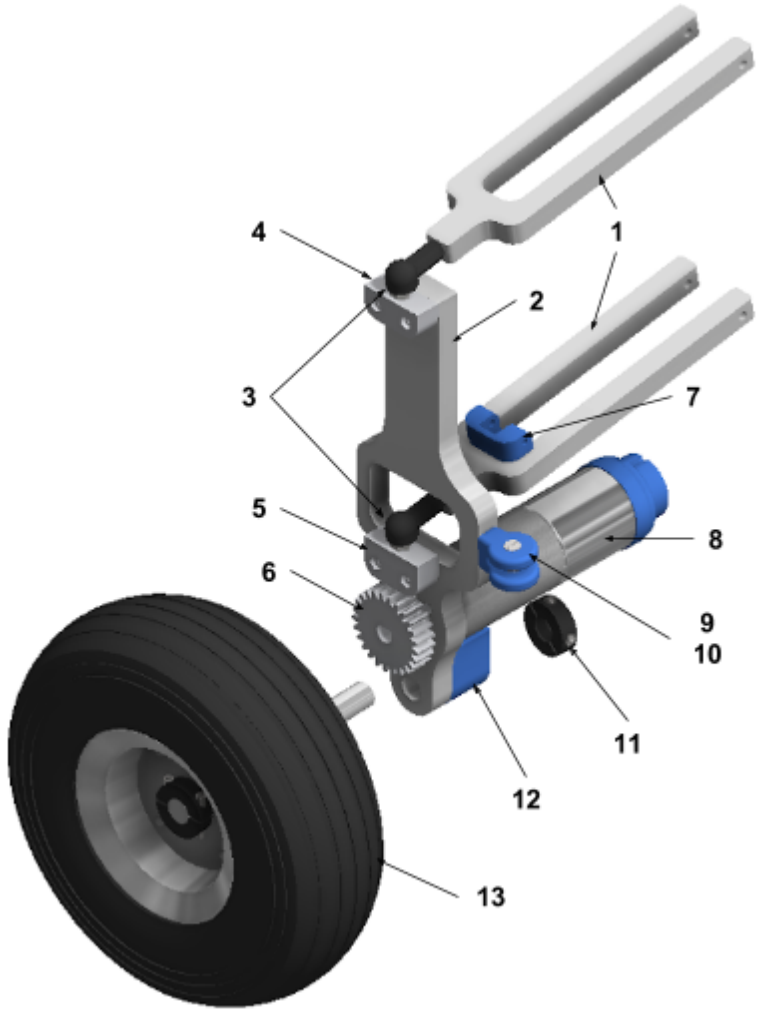
The ball joints are attached to the **steering knuckle (2)** using two brackets; the smaller **bracket A (4)**is at the top, while the larger **bracket B (5)** is at the bottom.

The steering will be attached using the **knuckle joint (9)** and a **barrel nut (10)**. This joint is bolted to the side of the steering knuckle.

The **motor-encoder assembly (8)** is bolted directly to the steering knuckle. The **motor cog (6)** is pressed onto the motor shaft.

The motor rests against the **motor rest (12)** which is also bolted to the steering knuckle.

Finally, the **wheel assembly (13)** is slid into place and held on with a **16mm collar (11)**.



1. Wishbone **x2**	Machine
2. Steering knuckle	Machine
3. 8mm ball joint **x2**	Purchase
4. Ball joint bracket A	Print
5. Ball joint bracket B	Print
6. Motor gear	Print
7. Wishbone-suspension mount	Print
8. Motor-encoder assembly	Assembly (see above)
9. Knuckle joint	Print
10. Barrel nut	Purchase
11. 16mm collar	Purchase
12. Motor rest	Print

13. Axle assembly	Assembly (see above)

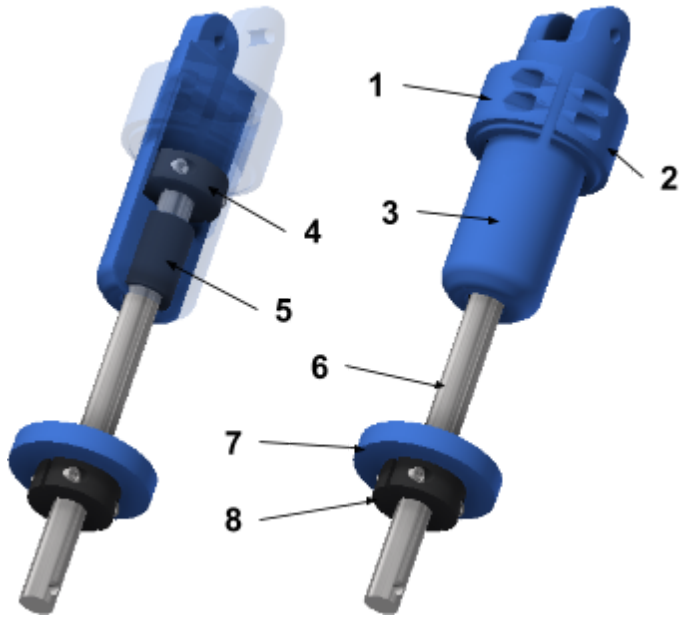
Suspension

A **linear bearing (5)** is slid onto the **shaft (6)** and a **collar (4)** secured on one end.

These are enclosed inside the two halves of the **piston (3)** which are then glued together.

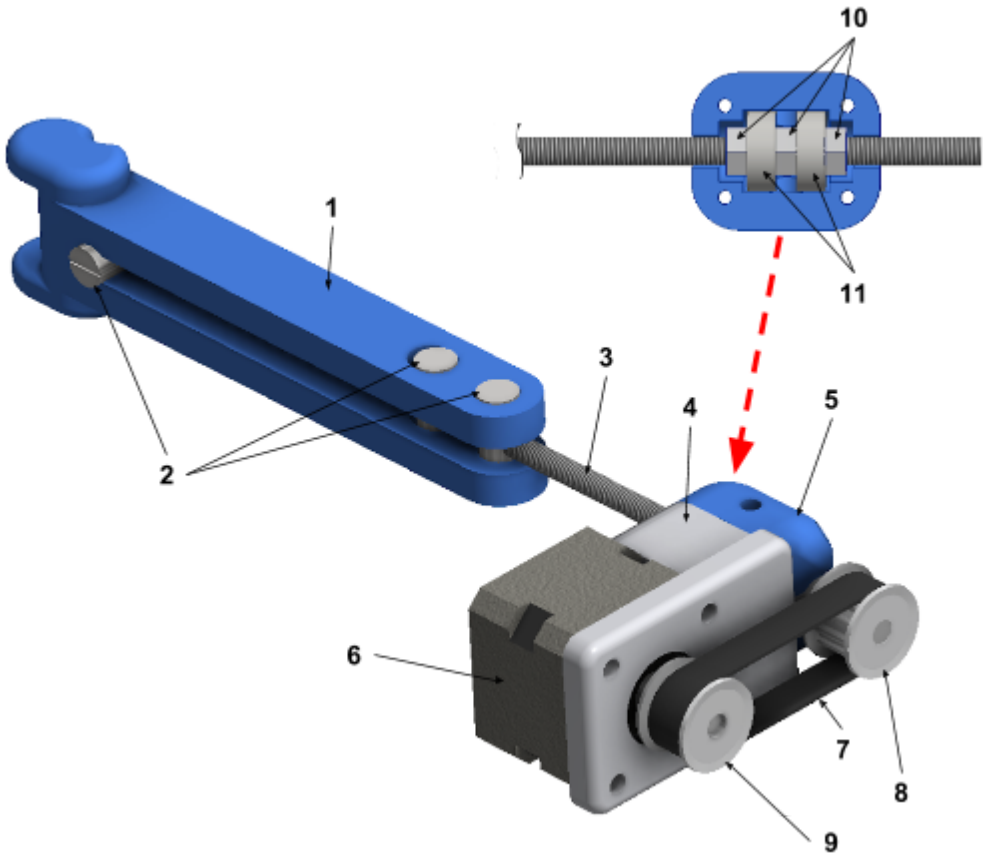
The **top clamp (1,2)** is secured at the top of the cylinder, and the **spring** slid on.

Below the spring, the **bottom clamp (7)** is secured with another **collar (8)**.



1. Top clamp A	Print
2. Top clamp B	Print
3. Piston casing **x2**	Print
4,8. 12mm Collar **x2**	Purchase
5. 12mm linear bearing	Purchase
6. 12mm shaft	Machine
7. Bottom clamp	Print
Spring (not shown)	Purchase

Steering



1. Actuator casing	Print
2. Barrel nut **x3**	Purchase
3. 6mm threaded rod	Machine
4. Actuator block (stepper)	Print
5. Actuator block (cover)	Print
6. Stepper motor	Purchase
7. Lmm timing belt	Purchase
8. 6mm timing pulley (rod)	Purchase
9. Zmm timing pulley (motor)	Purchase
10. 6mm nut	Purchase
11. 6mm bearing	Purchase