

Mini Chopper Lab

Theme: Gears

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Purpose



Often times when constructing something, you will need to change the direction that a rotating axle points. One way to do this is by using bevel gears or crown gears. This lab explores the use of both of these types of gears.

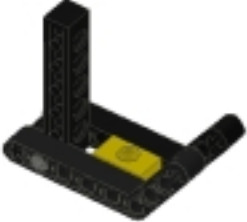

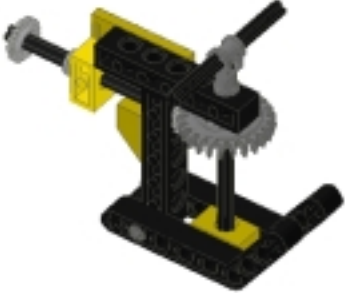



Constructing the Mini Chopper

Parts:

- 2 x 2 x 4 Plates
- 1 x 2 x 1 Inverted Slope Brick
- 1 x Technic Axle length 3
- 1 x Technic Axles length 6
- 3 x Technic Axles length 8
- 2 x 1 x 2 Technic Bricks with Holes
- 2 x 1 x 6 Technic Bricks with Holes
- 1 x Technic $\frac{1}{2}$ Smooth Bush
- 1 x Technic Connector with Axlehole
- 1 x 8 Tooth Technic Gear
- 2 x 12 Tooth Technic Bevel Gears
- 1 x 24 Tooth Technic Crown Gear
- 1 x 1 x 5 Technic Liftarm
- 2 x 1 x 9 Bent Technic Liftarms
- 1 x Technic $\frac{1}{2}$ Pin
- 1 x Technic Handle Pole Reverser
- 2 x Technic Ribbed Hoses

Instructions:

<p>1</p> 	<p>2</p> 
<p>Find a 1 x 9 bent liftarm and place it as shown</p>	<p>Attach a length 3 axle, a 1 x 6 block with holes, and a 2 x 1 block with a hole. Place a technic $\frac{1}{2}$ pin into the bottom of the 1 x 6 block.</p>

<p>3</p> 	<p>4</p> 
<p>Attach on the other side a 1 x 9 lift arm.</p>	<p>Place a length 6 axle through the connector with axle hole. Attach the connector to a length 8 axle and push the axle through a 6 x 1 block with holes. Secure the axle with a crown gear. Attach this assemble to the base with a 4 x 2 plate. Add a 2 x 1 inverted slope block as shown.</p>
<p>5</p> 	<p>6</p> 
<p>Add a 2 x 1 block with a hole on the plate. Push through the assembly a length 8 axle. Attach a 8 tooth gear to the axle next to the crown gear. Secure the axle with 1/2 smooth brush. Place near the end of the axle a bevel gear.</p>	<p>Attach a ribbed hose to the end of each side of the length 6 axle in the connector.</p>
<p>7</p> 	<p>7</p> 
<p>Insert a length 8 axle through a handle pole reverser. Place this through the end of a 1 x 5 lift arm. Secure it with a bevel gear at the end.</p>	<p>Attach this assembly as shown. Adjust the bevel gears so they mesh.</p>

