**Parts Required**

- Two Hole Plates
- Five 12in (300mm) Dowels
- One 10, 20, 40 and 50 Tooth Gear
- Two Stop Clips
- One #10 Washer

**Tools Required**

- Cutters: Multicutters, pruning shears or a saw
- Phillips Screwdriver
- Pliers or a wrench to grip #10 square Nuts
- Cutters: Multicutters, pruning shears or a saw

**1. Create the Frame**

Create the frame by cutting and inserting 4in (100mm) dowels into hole plate corners.

Tip: Make a mark on this dowel. It will be used as a reference.

**2. Ream the Frame**

Ream the holes in the frame in which dowels will need to spin freely.

Only Ream the holes shown with a

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No Reaming.
3. Gear It

Create a gear transmission as shown.

Caution:
Do not ream the Gear Holes
4. Optional Drive Shaft Brace

This optional (not included) brace can keep the drive shaft from flexing.

#10 Nuts and Washers

Perpendicular Block with reamed hole.

#10 x 1.5in (38mm) Bolt

The Gear Box is done!

Experiment. Improve It.

Now that you know how a gear box goes together, you can experiment and create your own design to best fit your turbine.