Oscillating Steam Engine
assembly instructions

General Assembly: This model was designed to be printed with a Makerbot Thing-O-Matic, however, it should print well with most any 3D printer without support. It is not recommended to re-scale the kit before printing. The kit was designed with a precision fit between parts for ease of assembly, and these tolerances will be lost if the kit is printed at a different scale. It is recommended that the builder examine the instructions carefully and do a dry test fit of parts before applying cement.

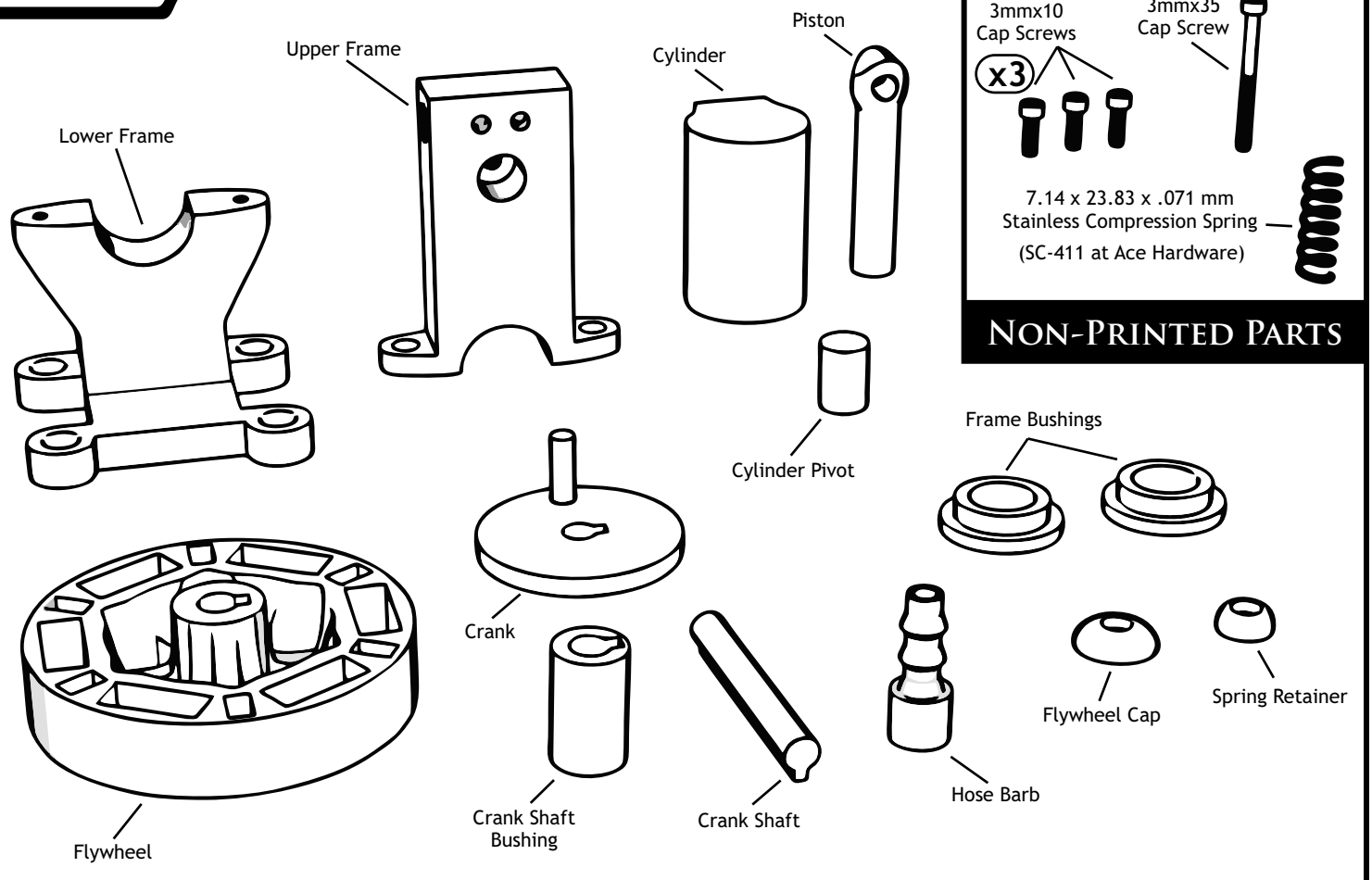
Preping Parts: The model has three main moving parts. The crank shaft, piston, and the cylinder. Cleaning up the surfaces of these parts is an important factor in getting the model to successfully run. If you skip these steps, it may result in poor engine performance.

Glueing Parts: A few parts require gluing indicated by this symbol.  Use an appropriate glue for your printed material.

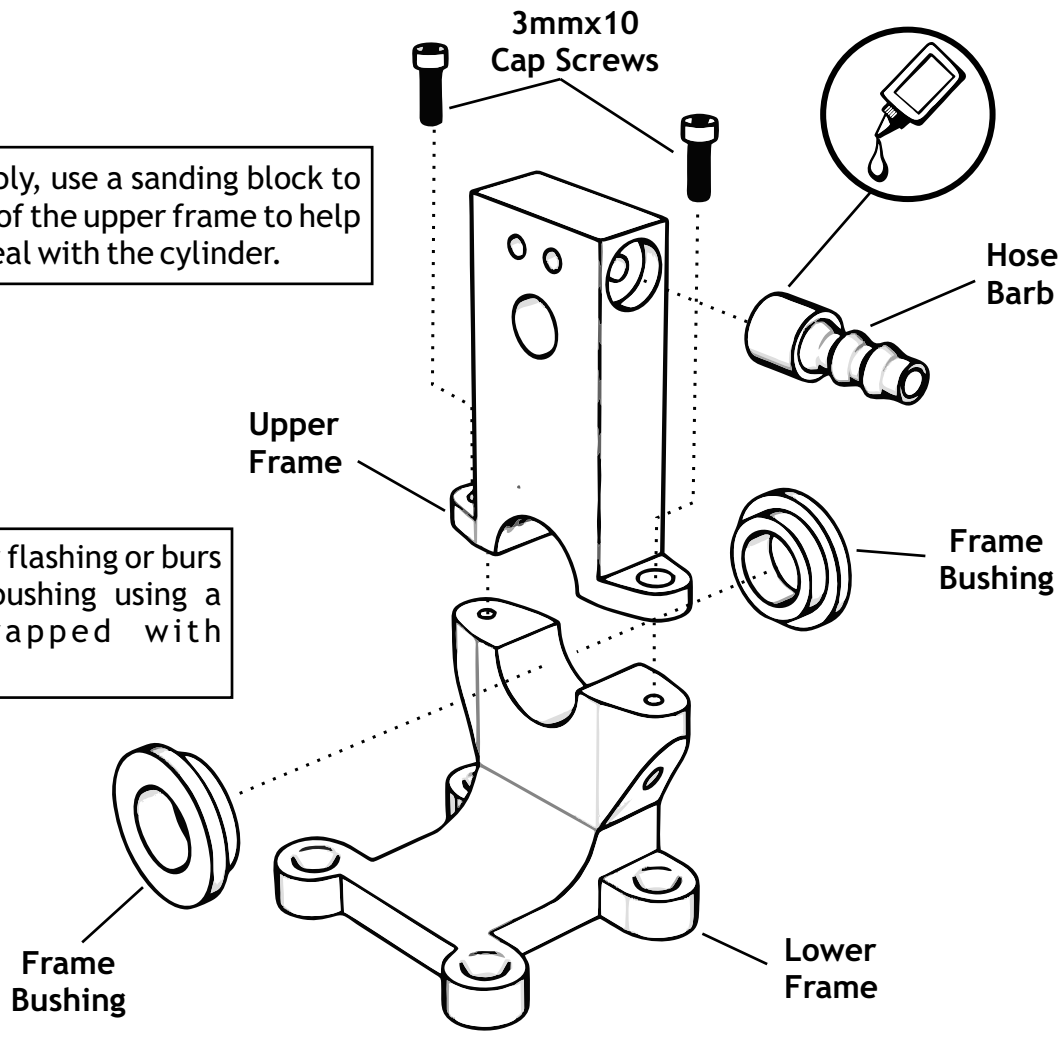
Lubrication: Any area that needs to be oiled will be indicated with this symbol.  Use a plastic-safe Multi-purpose 3-in-1 oil.

Thank you for downloading this kit, and if you have any questions, you can find me as CBABBAGE on Thingiverse.com or @charles_babbage on Twitter.

0: PARTS



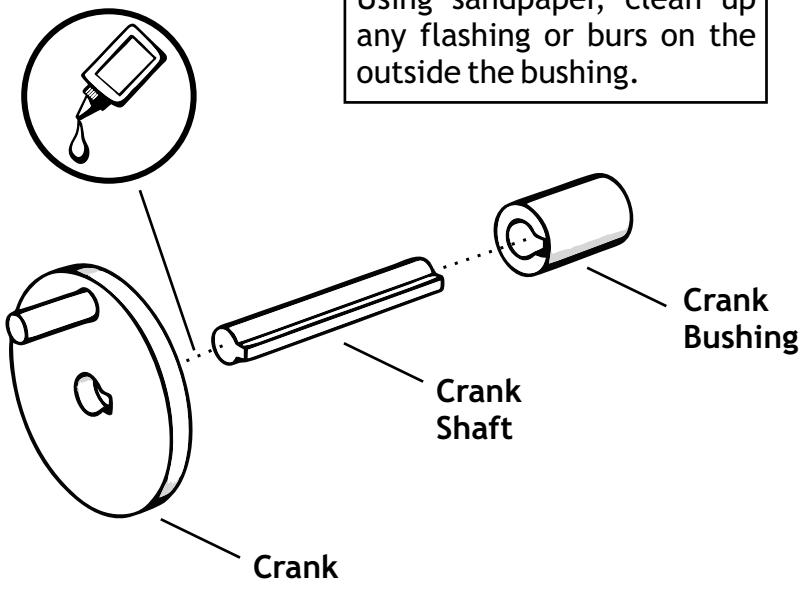
1 Frame



Before assembly, use a sanding block to sand the face of the upper frame to help create tight seal with the cylinder.

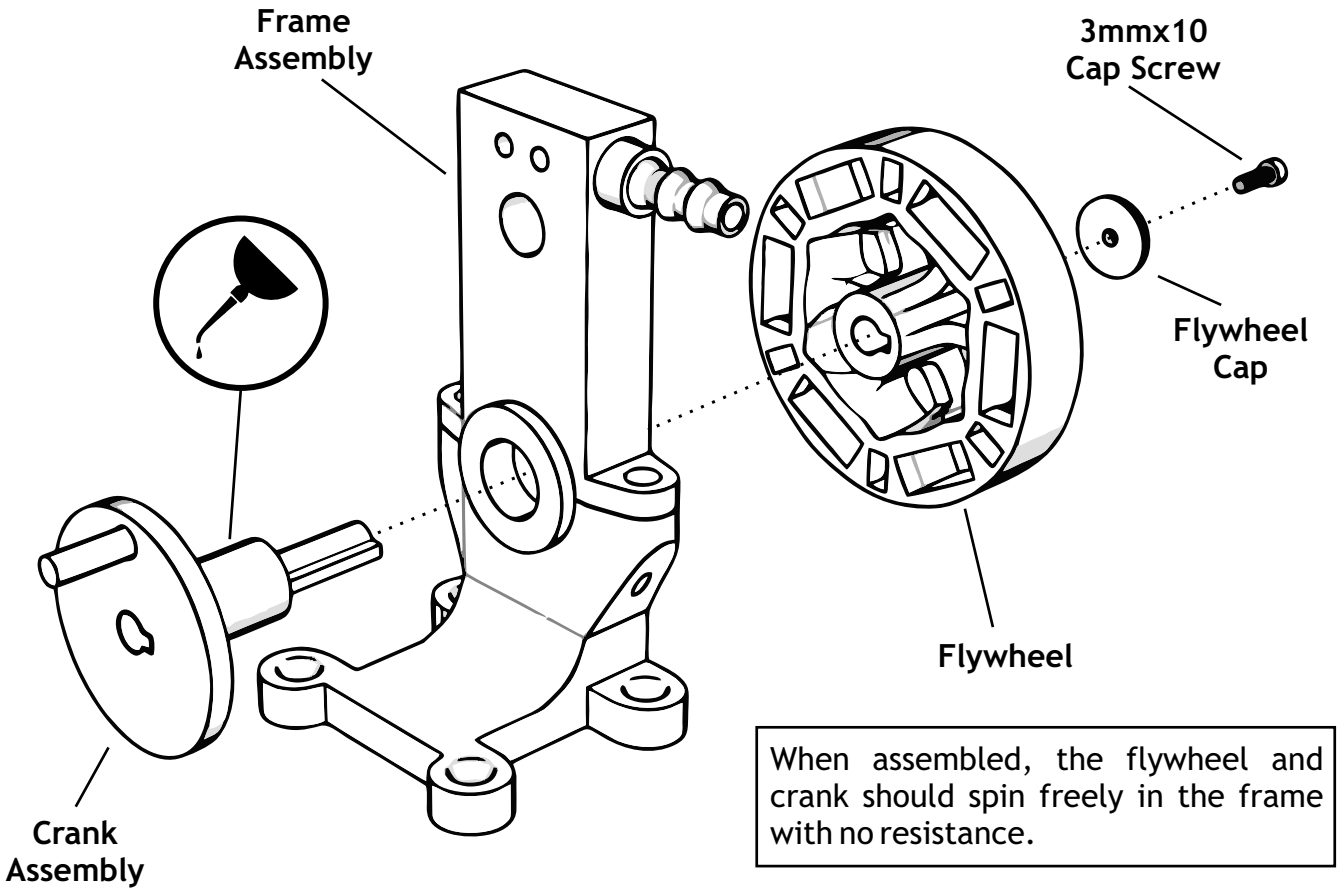
Clean up any flashing or burs inside the bushing using a dowel wrapped with sandpaper.

2 Crank



Using sandpaper, clean up any flashing or burs on the outside the bushing.

3 Flywheel

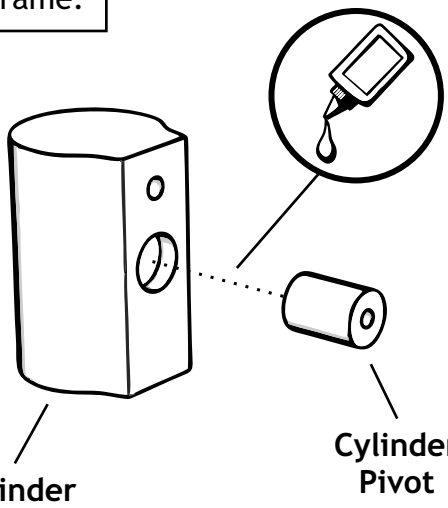


When assembled, the flywheel and crank should spin freely in the frame with no resistance.

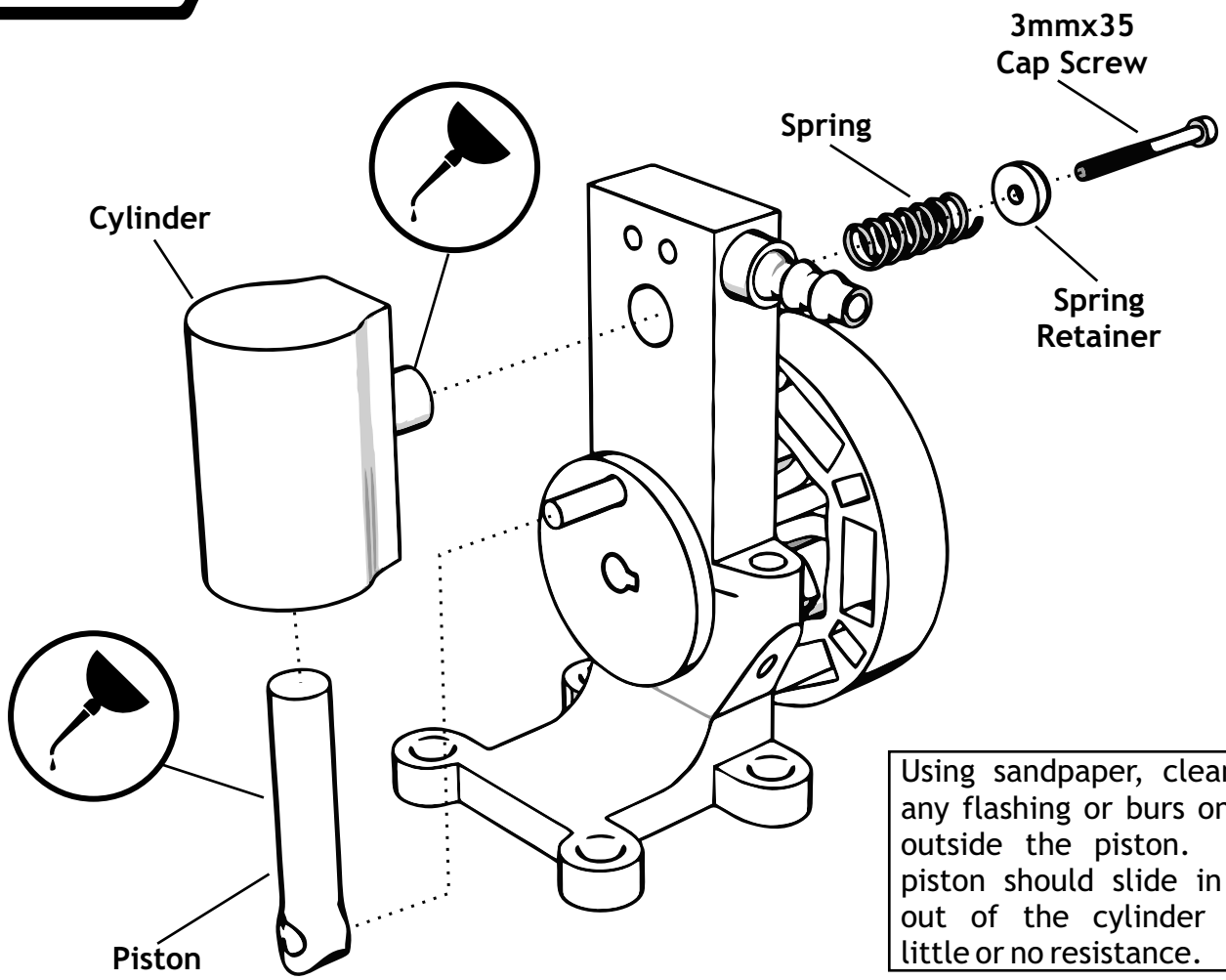
4 Cylinder

Before assembly, use a sanding block to sand the face of the cylinder to help create tight seal with the upper frame.

Clean up any flashing or burs inside the cylinder using a dowel wrapped with sandpaper.

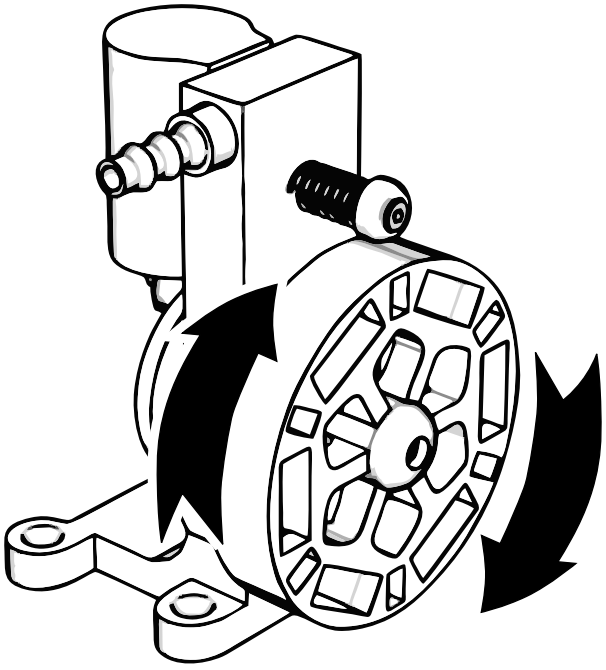


5 Piston



Using sandpaper, clean up any flashing or burs on the outside the piston. The piston should slide in and out of the cylinder with little or no resistance.

6 Running



This engine is designed to run clock-wise. Attach a 1/4 inch ID hose connected to a regulated air supply to the hose barb on the engine. With the air pressure set to 10 PSI, give the flywheel a spin in a clock-wise direction. I do not recommend running at a pressure higher that 20 PSI.

If you have trouble with the engine stalling at lower pressures, you can snap stacks of 5 pennies each, into the larger slots on the flywheel to help provide extra mass and an extra kick to the rotation.