

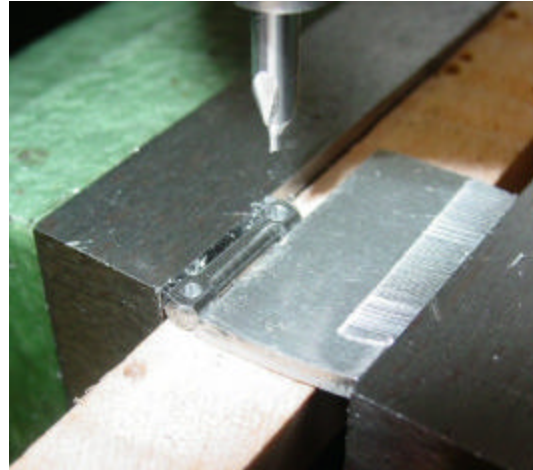
## Construction Notes for the Mini-1V CO2 compressed air engine.

9/24/2003

This is a set of photos and notes that should help better understand the parts and drawing used in this engine.



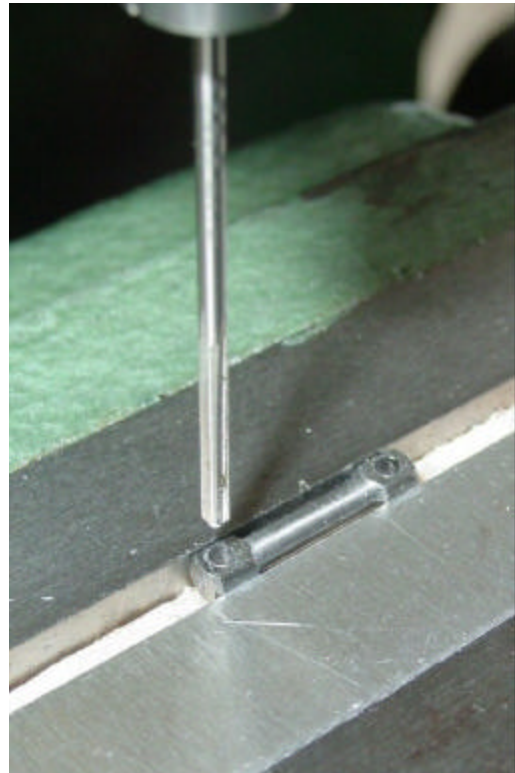
Mill inside of piston, keep 90° to pin hole.



Center drill



Mill flat sides on connecting rod.



Drill and ream connecting rod holes. Once these 2 parts were done I knew I could build the engine.

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First group of parts.



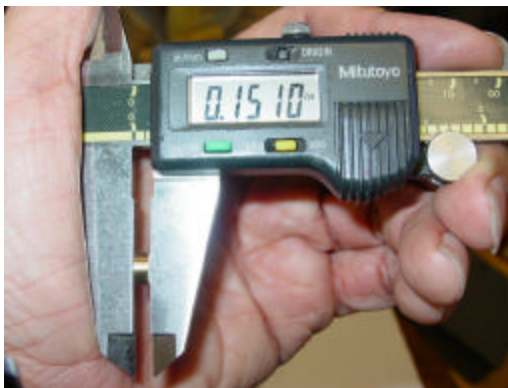
All the parts.



Use ball mill to make the socket for the valve ball.



Valve seat is sealed to cylinder by snug fit and LocTite.



The thickness of the ball in the seat is important.



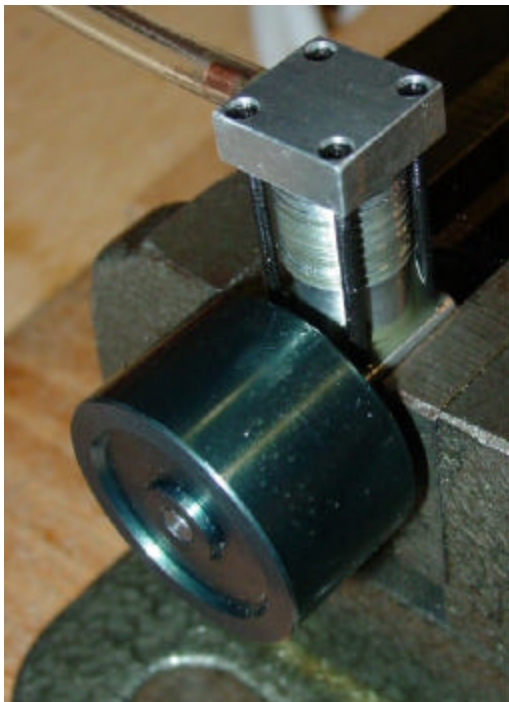
Ball in seat. The pin height should lift the ball about .015 at TDC.

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Crank end view.



Ready to run. Use lots of oil at first. Start with high pressures to keep it running, and then lower as the minutes pass.



It is the smallest I have built. I learned a lot about setup and clamping small parts. It has been a great project and it is opening the doors to several different ideas.



The fly wheel is too thick and the cylinder looks long. Things to keep in mind when the next one is built.