Construction of the Mobile Bike Pump

1st Prototype
Built in the UK. A-shape frame design. Photos available in my thesis
2\textsuperscript{nd} Prototype

Orange and White frame. A-shape frame replaced by seat post and seat tube combo for height adjustment. Built at Maya Pedal. Worked OK, but we refined the design a little in the 3\textsuperscript{rd} prototype to make it easier to build. Here are the photos:
**The Final Design!!**

I’ve matched up the photos (where applicable) with the steps in the instruction manual I’ve also sent you. Chrome finish frame. Frame design simplified for quicker manufacturing. Pump lateral adjustment simplified. Here are the photos:
If you see this cylindrical piece in any of the following photos, it shouldn’t be there. Its a motor that we used as a generator to charge a battery as the guy who bought this machine also wanted a generator, so we stuck both the pump and the generator on the same frame. It worked fine, but is not necessary to make the pump:
Step 1 – Make the Base of the Frame
Step 2 – Make the Sides of the Frame
Step 3 – Weld on Seat Tubes
Step 4 – Weld Nuts to Seat Posts
Step 5 – Make the Axle Grips
Step 6 – Make the Pump Guide Rails

Step 7 – Assemble the Parts
Step 8 – Cut the Slot in the Frame
Step 9 – Make the Pump Base
Step 10 – Cut Out the Pump’s Electric Motor
Step 11 – Cut the Slot into the Pump Casing
Step 12 – Cover the Roller in Rubber
Step 13 – Reassemble the Parts
Step 14 – Testing the System
Step 15 – Painting
General Photos of the Finished Machine