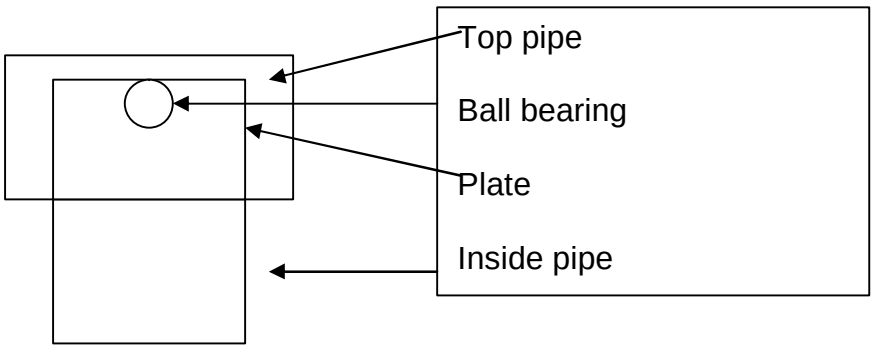
FRAME CONSTRUCTION

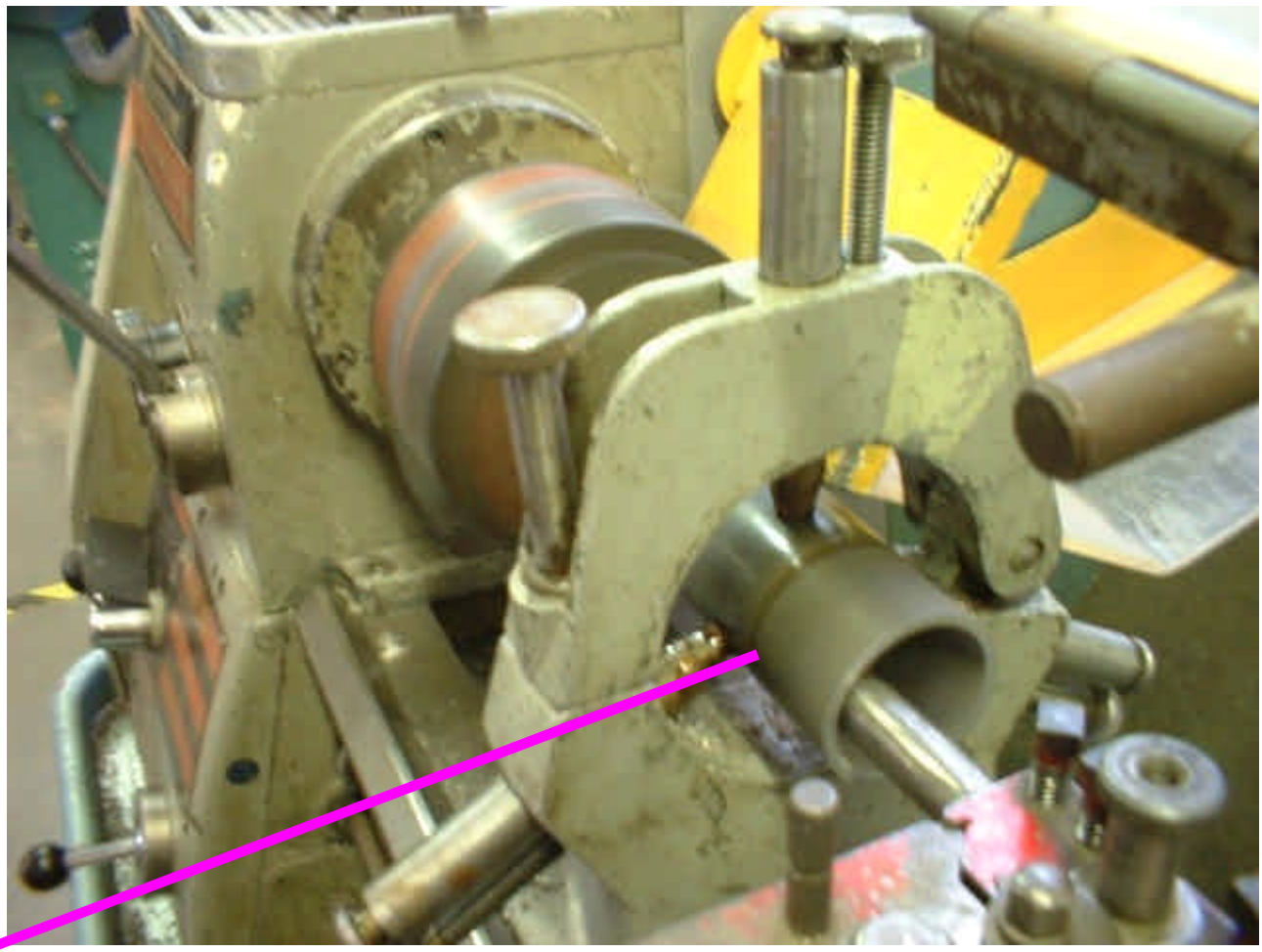
The frame that I chose to make was a basic simple one that is very strong and should hold up to the forces of the wind turbine blades vibrating and moving.

The fame of the turbine is made from box section that was also used on the tower.

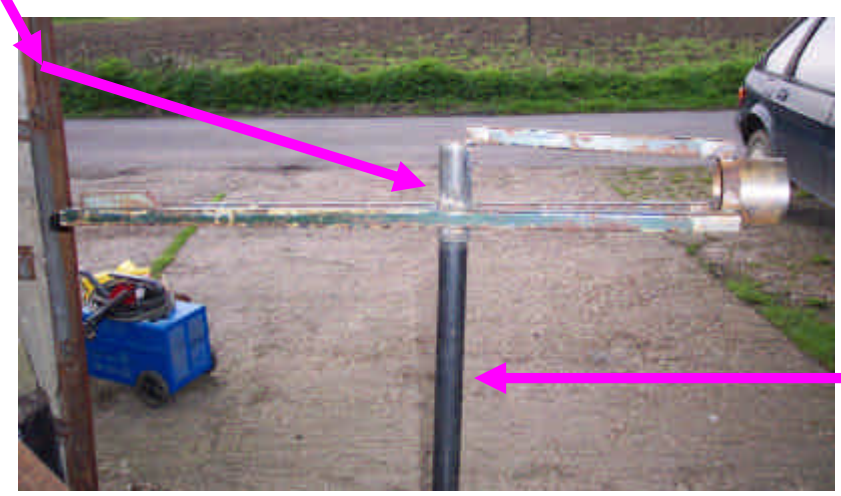
The frame needs a bearing on which the whole frame can turn on. This is needed to allow the blades to be pointed into the wind. To do this I did another simple deign that is strong and substantial. It is basically two bits of pipe one that slips into the other and a ball bearing in-between.



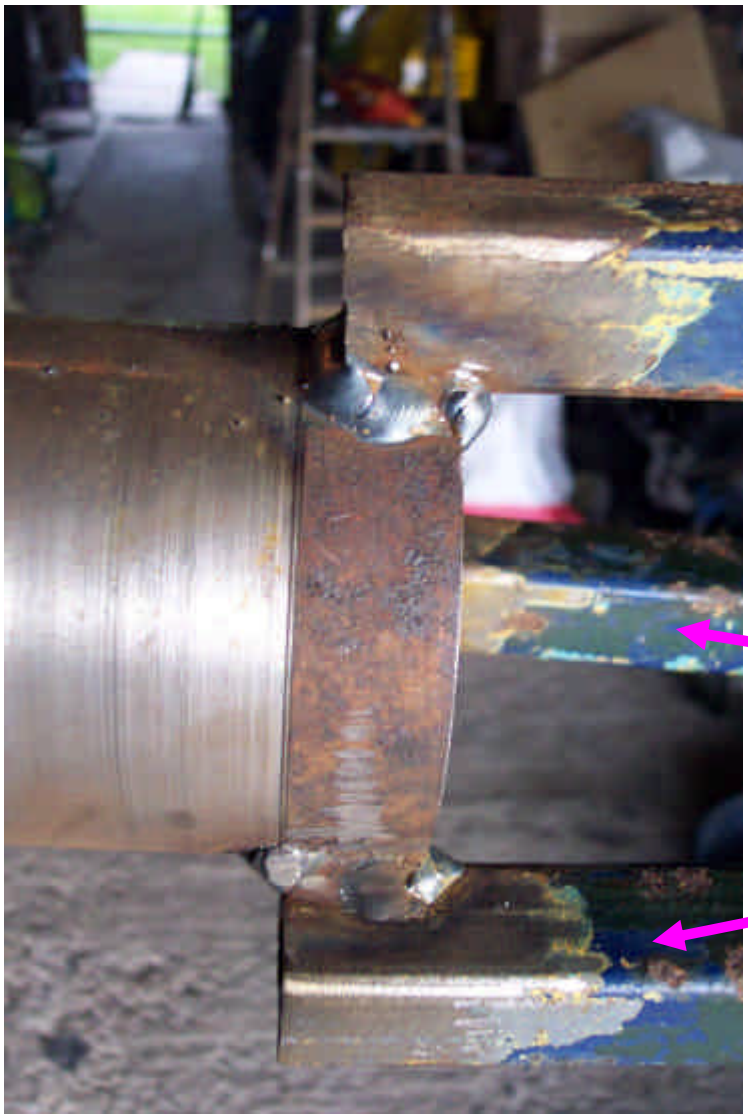
I used some pipe that wasn't a perfect match so I had to use the metal lathe to make the inside diameter wider so that the pipe would fit inside it.



Then the inner pipe had a plate welded to the top of it which would hold the ball bearing



The rest of the frame was welded together



These welds and triangular shape should make the whole frame very strong and able to comp with the vibration and the weight of the blades and the PMG.

Three brackets where welded on the en of the frame. These will

hold the laminates for the PMG. These slots where cut using a milling machine which makes them accurate and smooth.

This picture shows the top of the frame YAW bearing. I threaded a hole into the top of the bearing and installed a grease nipple, this

will make it a lot easier to pump grease into the bearing which will increase the life time of the bearing by reducing ware.

This picture shows the completed frame with a nice coat of metal paint that will stop rust and make the frame fade into the background more. The only thing to install now is a tail that will point the frame and the blades into the wind.

The main bearing of the PMG will sit in this pipe here.