
DOBBO'S

YORKSHIRE BITTER PROJECT

Objectives: to make a beer from ingredients entirely grown in Yorkshire.

Stages:

1. Grow the hops
2. Source the Barley from a Yorkshire farmer and malt the barley
3. Malt the barley
4. Make the beer
5. Drink the beer!



1. GROWING THE HOPS

We sourced some hop plants from www.essentiallyhops.co.uk. We got three varieties: Challenger, Fuggle and East Kent Golding. We got one of each. We constructed a trellace and grew them in the garden in Ampleforth. These got hit by a late frost in May and they were knocked back. But finally in September they did produce some lovely looking hop flowers.

We harvested in September and only got a very small amount of hops as you can see from the photograph. The disappointing thing here was that there was virtually no aroma. After investigating this we found out that this is because we have three girls. Once fertilised by a male hop plant then the flowers will take on more 'flavour'.

The action next year has to be that we need to put a boy in with the girls and let him work his magic.



1. MALTING THE BARLEY

I was kindly given a sack of 25Kg of barley from a friend of my wife's. Now we had to malt this - but how?

We needed to make a malting machine.



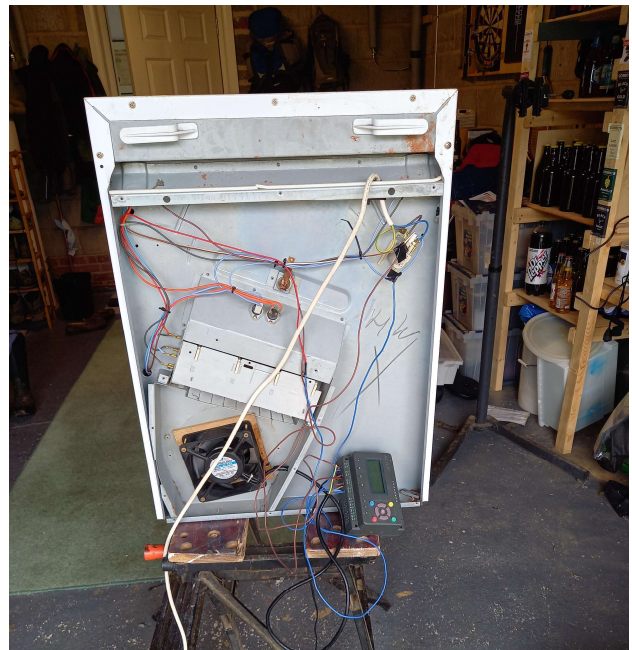
I bought an old drying machine off E-bay for £5.



I took it to bits and drew up the circuit



The fan and the drum induction motor were joined mechanically....



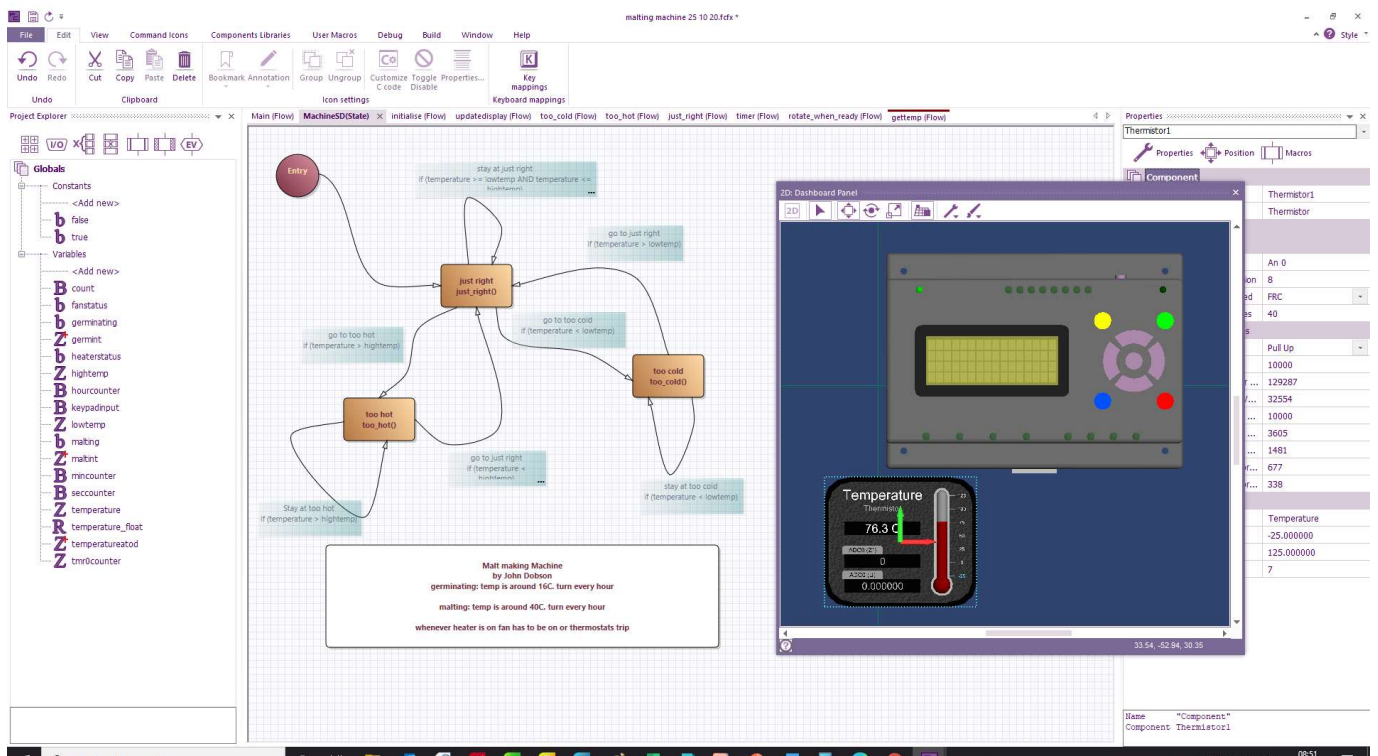
...so I cut the fan axle and replaced the fan with an electric one I had in an old box. The motor was not powerful. Turned out that the induction motor phase shift capacitor was a bit knackered and the machine perked up after I replaced it.



...I added a MIAC controller and programmed it up....I added a thermistor to it and so now I can control the drum rotation, the internal heater and the fan.



There are only two modes - germinating and malting. You select the mode using the keypad. I can control the fan, the heater and the drum rotation.



I used a software programme called Flowcode to create a computer program for the MIAC controller. created a state machine program and sent it to the MIAC.



I soaked 5Kg of malt for around 48 hours changing the water a few times. This rehydrated the barley.



I put this in the malting machine. It keeps the temperature around 15 degrees and rotates the drum every 10 minutes.



The end result was great - it malted perfectly.

Next we needed to raise the temperature to 40C to dry the barley. The machine managed this no problem.

Unfortunately there were a few problems in drying: the chits blocked the fan ducts and stopped airflow and the software routines did not control the fan properly so it did not dry out as well as it needed to.

TARGETS FOR NEXT SEASON

Get a boy hop plant

Get the drying right after malting

Brew!