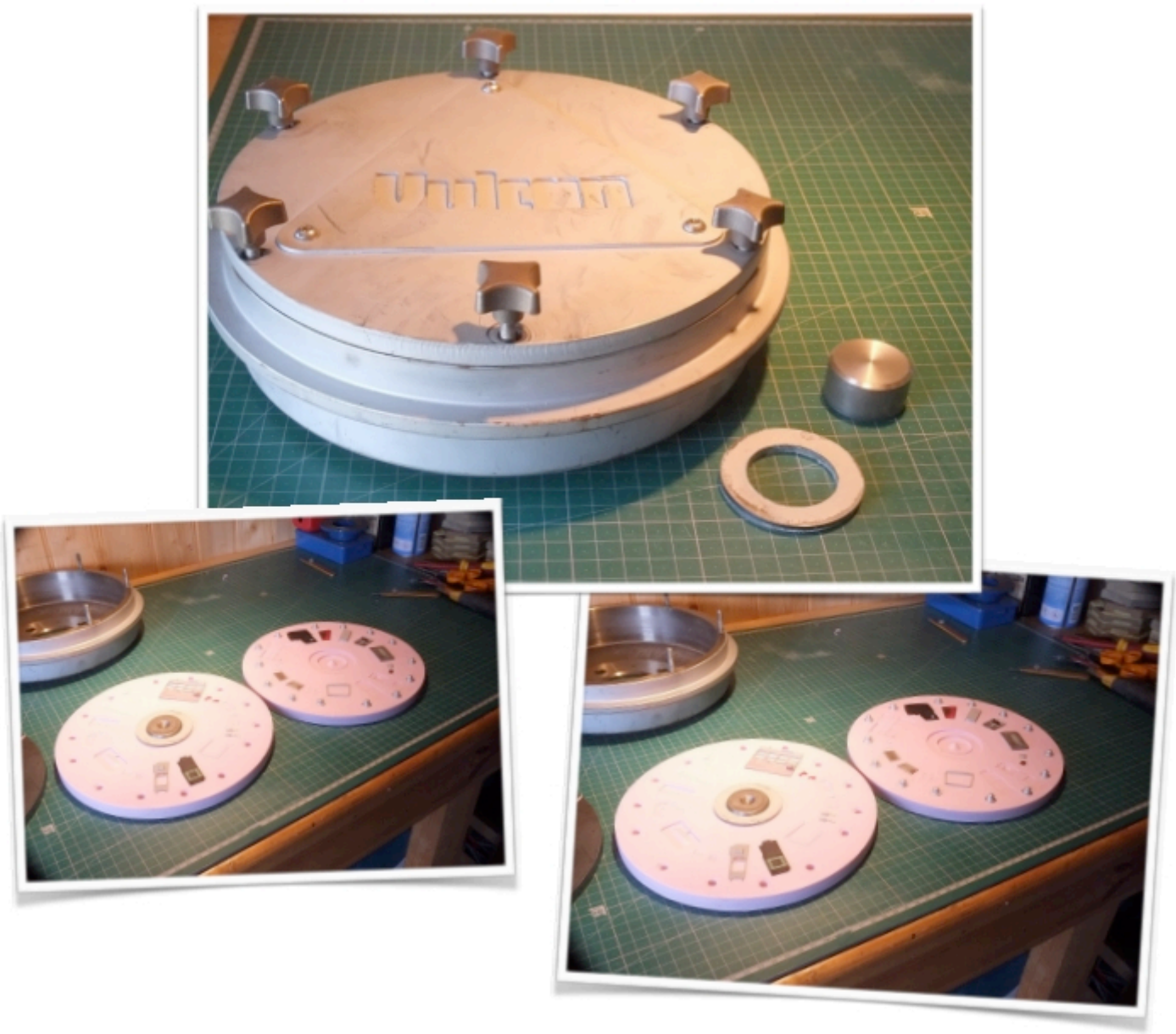
Paul
19 July 2019

# Step By Step

## Mould making using the Vulcan Mould Can

## Part 1

## Assembling the Mould



# The Project

## Model bus parts

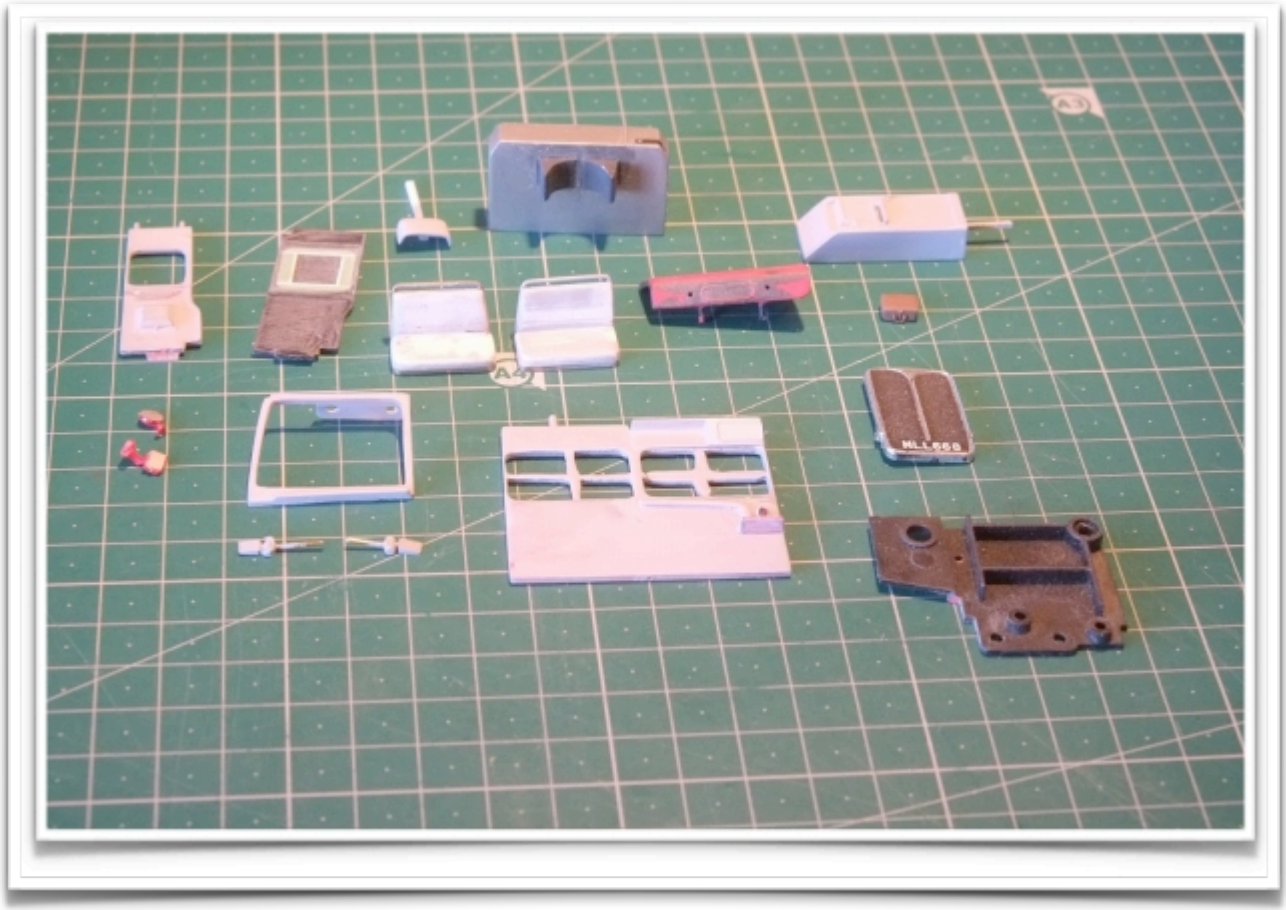


Fig 1

Figure 1 shows the project parts to be moulded, O gauge model bus parts for a bus model conversion, they are a mixture of materials including plasticard styrene and metal. Due to some of the patterns being plastic I have chosen low temp silicone as the moulding rubbers. This vulcanises at 90 degrees C and will not destroy the plastic masters also note the variety and shapes of the parts to be moulded.

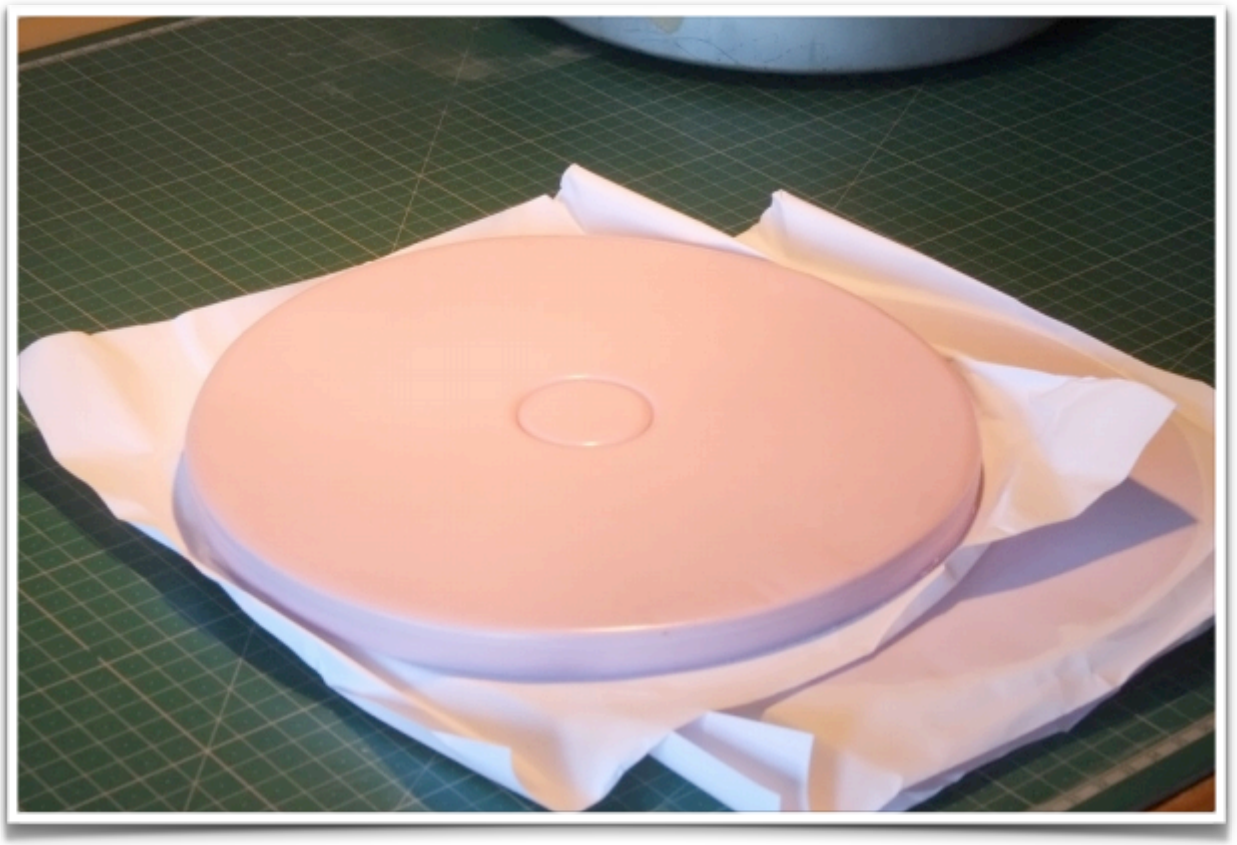


Fig 2

In fig 2 we see the discs I will be using they are our silicone low temp silcodisc rubbers. A pair of discs are required for each mould you make. I have ensured the work surface is clean so that no contaminants get into the discs whilst working.


Fig 3

Fig 3 shows the vulcan mould can, down sprue and the small gate form we will be using. I am using the small gate form in this case due to the size of parts to be moulded and I usually use this form in 90% of the moulds I make.

The down sprue is used in the top half of the mould to keep the aperture where the metal will pour open.

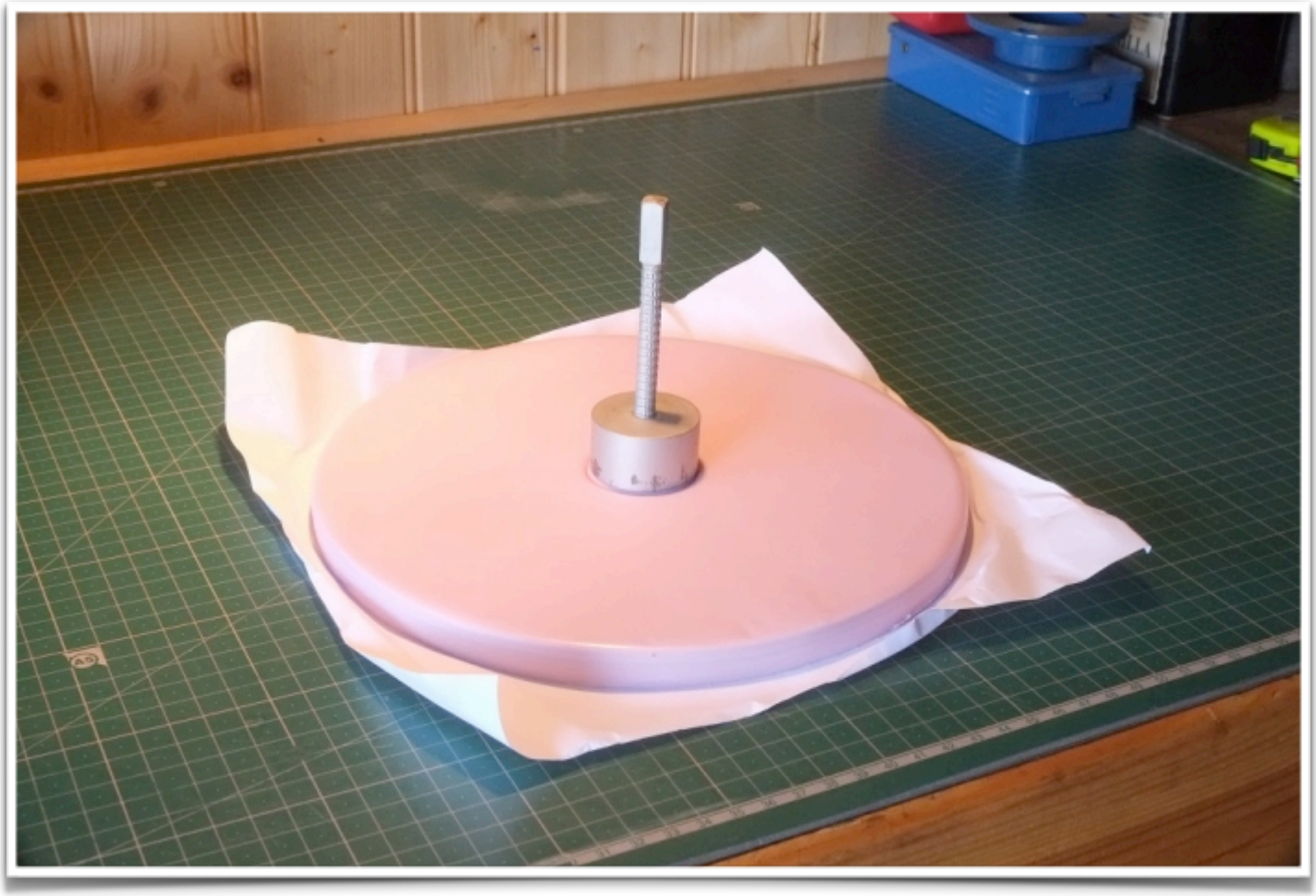


Fig 4

In fig 4 I am using a tool  to find the centre of the bottom mould half  it is important to work accurately, then using a pair of dividers I mark a pattern placement ring around the mould as in fig 5. This helps with placing masters nice and evenly around the mould.

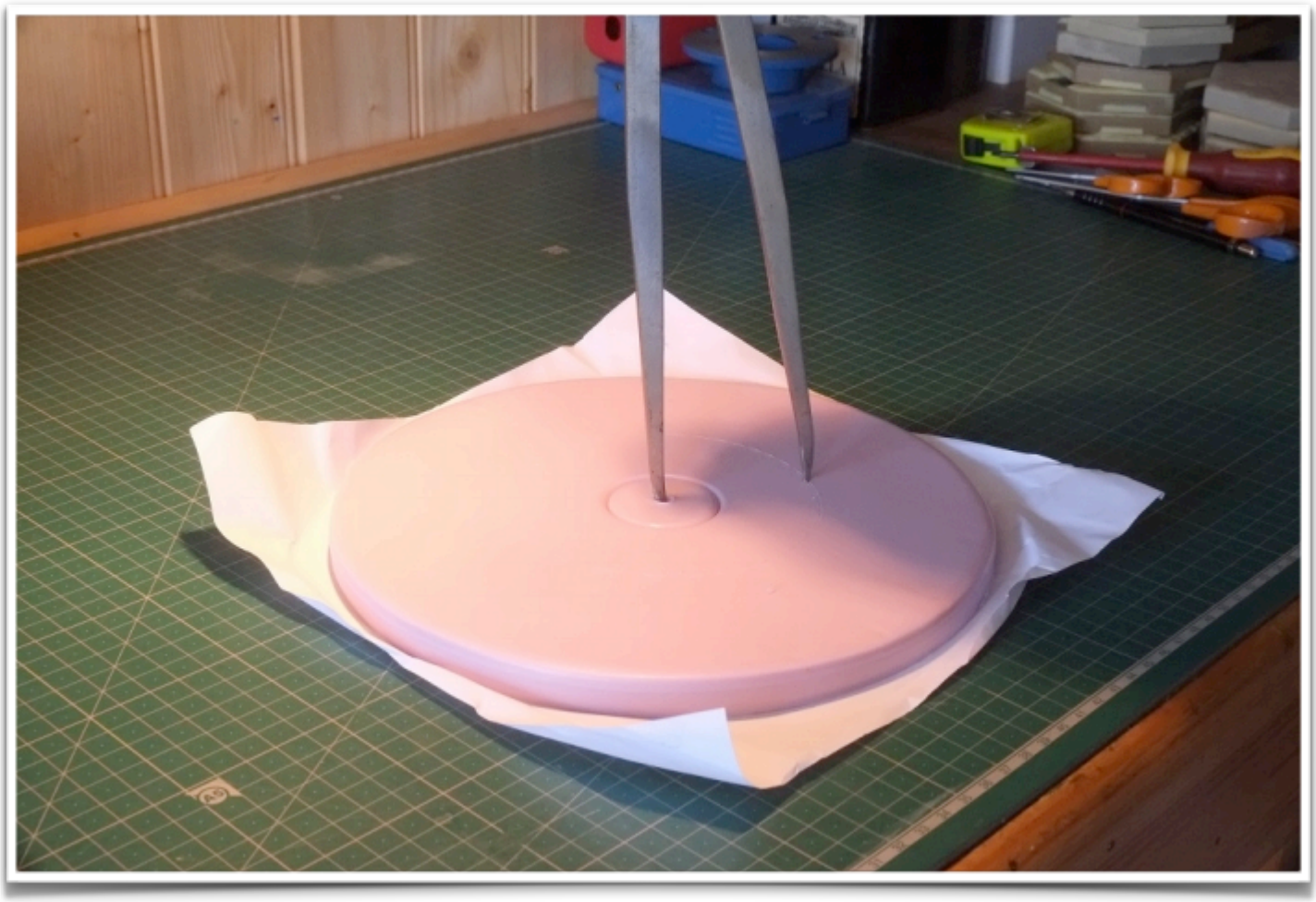


Fig 5

Fig 6

The next stage is to apply a coating of french chalk to the bottom mould half. This is applied using the dust bag, once it is applied all over the top surface you need to blow any excess off and just leave a light but thorough coating.

This acts as a release agent between the 2 mould halves if it is forgotten your mould will be just one piece of rubber with you patterns buried inside!

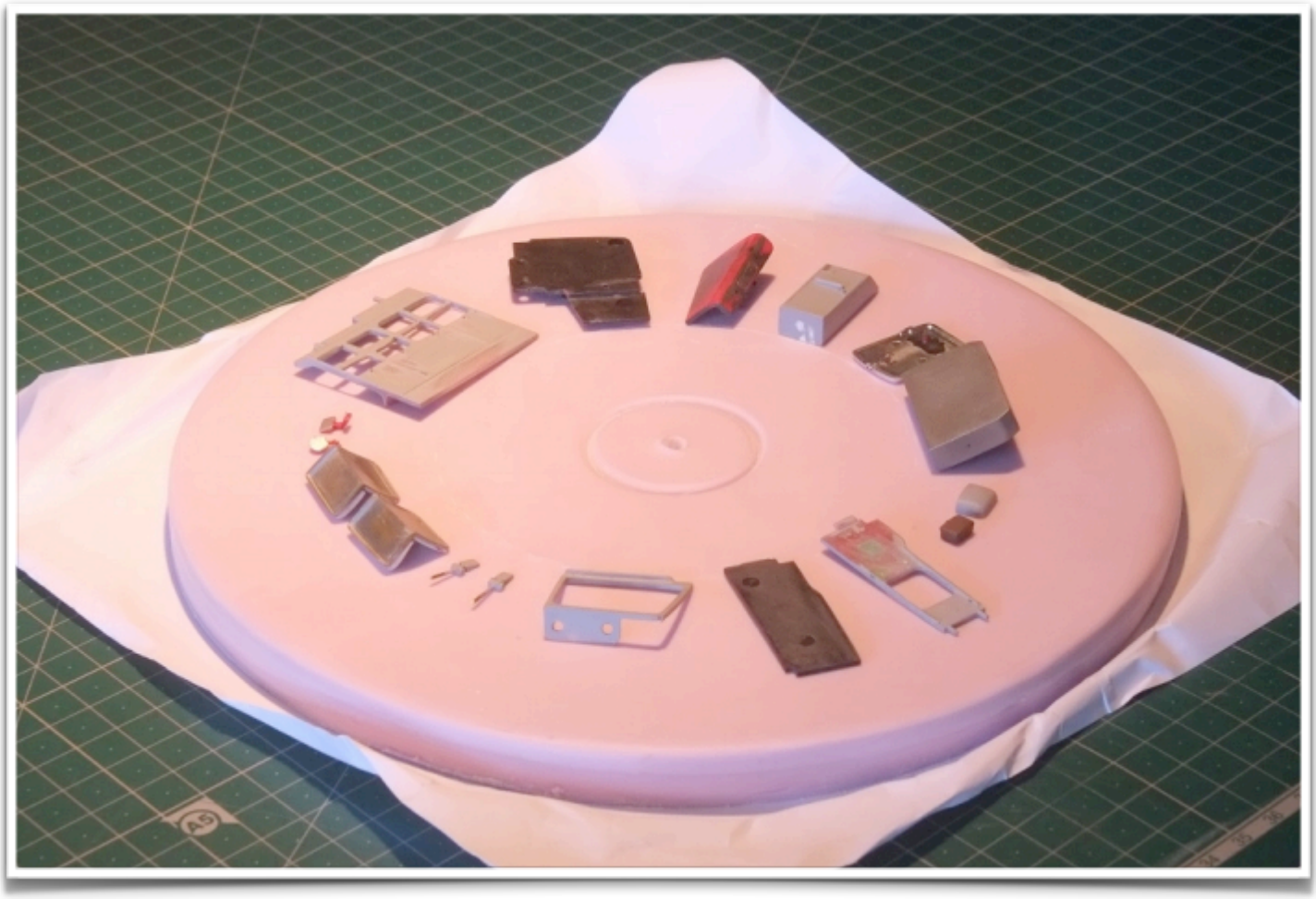


Fig 7

In fig 7 I have laid the patterns loosely around the mould to get an idea of placement, orientation and balance. Remember the line I scribed with the dividers? here it is used to help place your parts. Once I am happy with my layout I then proceed to press the parts into the mould as in fig 8.

I press them in approx half way noting where I want the part line to be.

Fig 8

Fig 8 shows the parts set into the mould.

Next we need to register the 2 mould halves and for this we use registration nuts.

Fig 9

These are the registration nuts these are important to making your mould properly register and minimise mould lines. The pointed end is placed into the rubber at intervals around your mould as in fig 10.

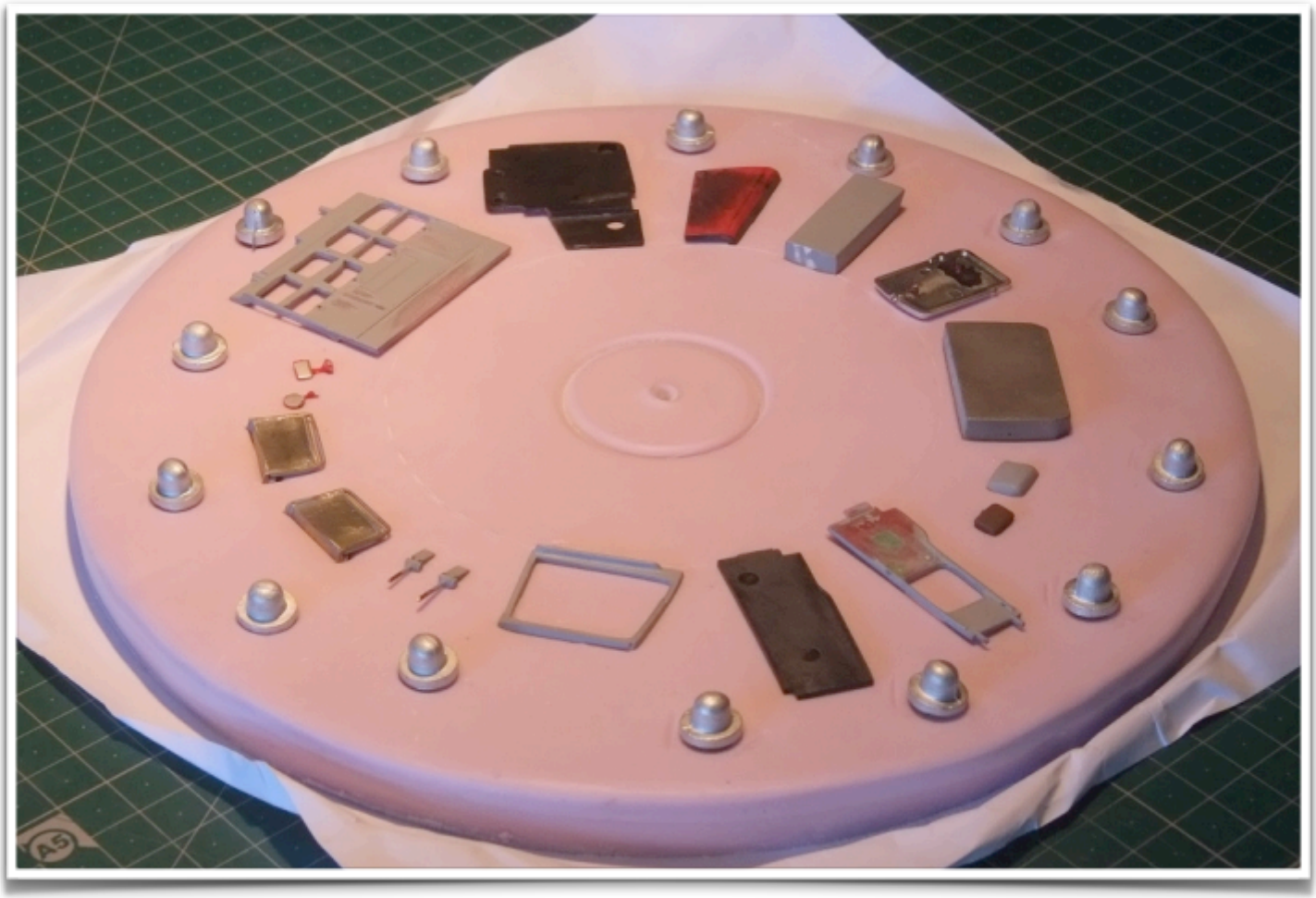


Fig 10

Fig 10 shows the mould nuts placed with the dome part facing up.

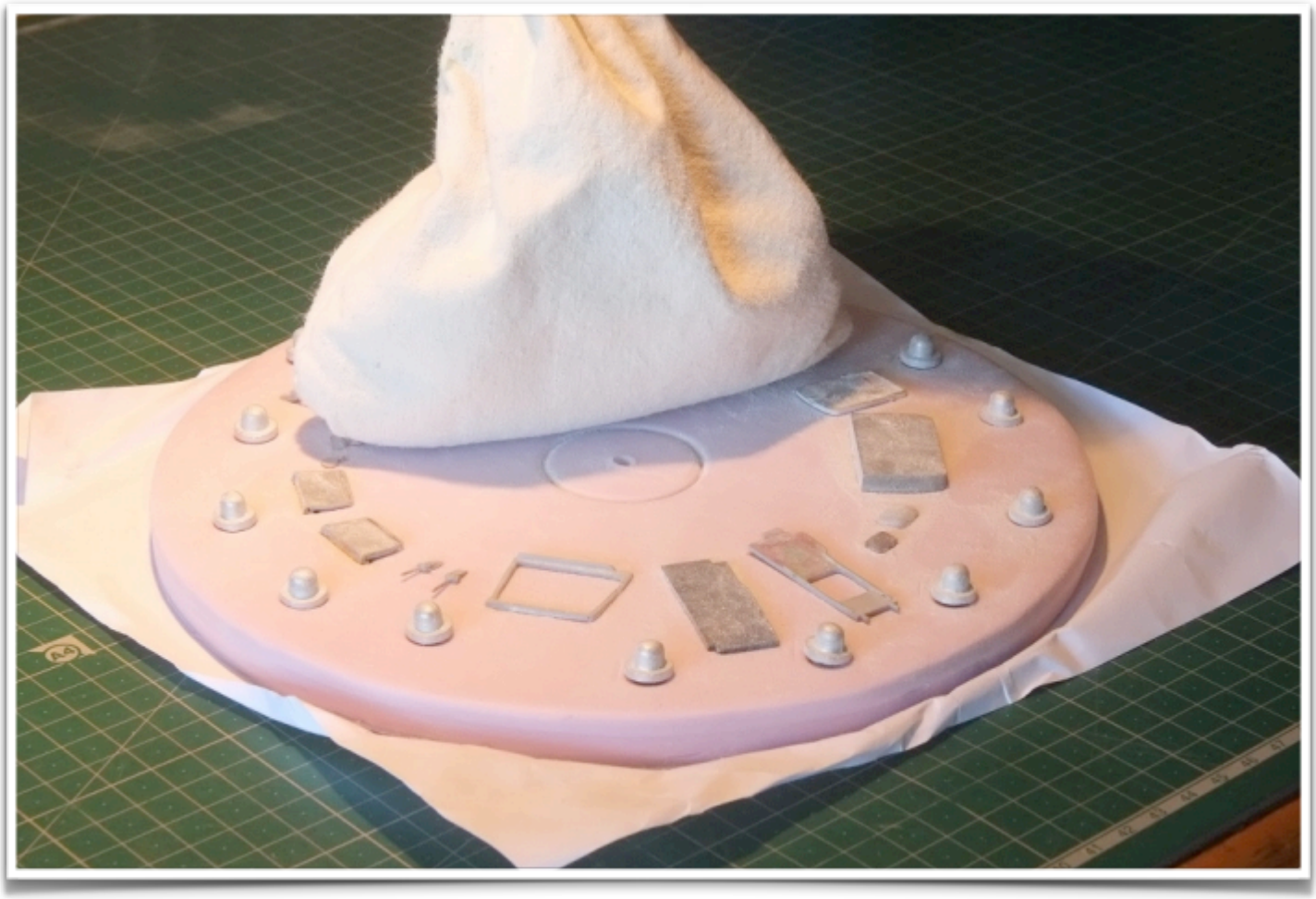


Fig 11

Another Dusting and blow of french chalk and we are ready to proceed to putting the mould into the can.


Fig 12

Before placing the bottom of the mould into the can I use a liberal spray of formula 6 silicone release spray all over the inner surfaces of the metal can.

I have found this better than french chalk for releasing the mould from the can after vulcanisation and the more times it is used in your can the slippier it becomes over time. You can of course use french chalk instead your choice.

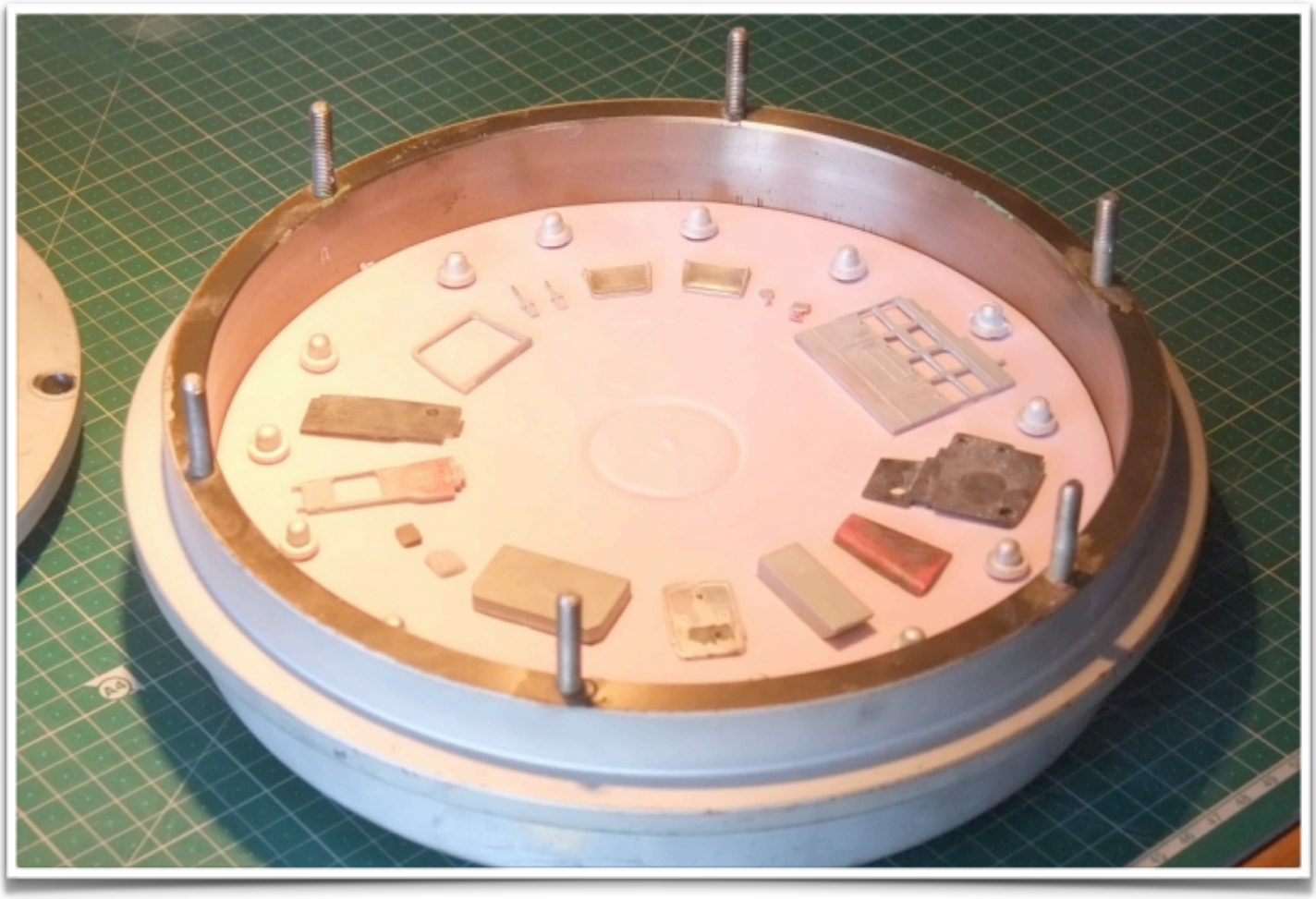


Fig 13

Fig 13 shows the mould bottom placed carefully into the can ensuring no air is trapped underneath.

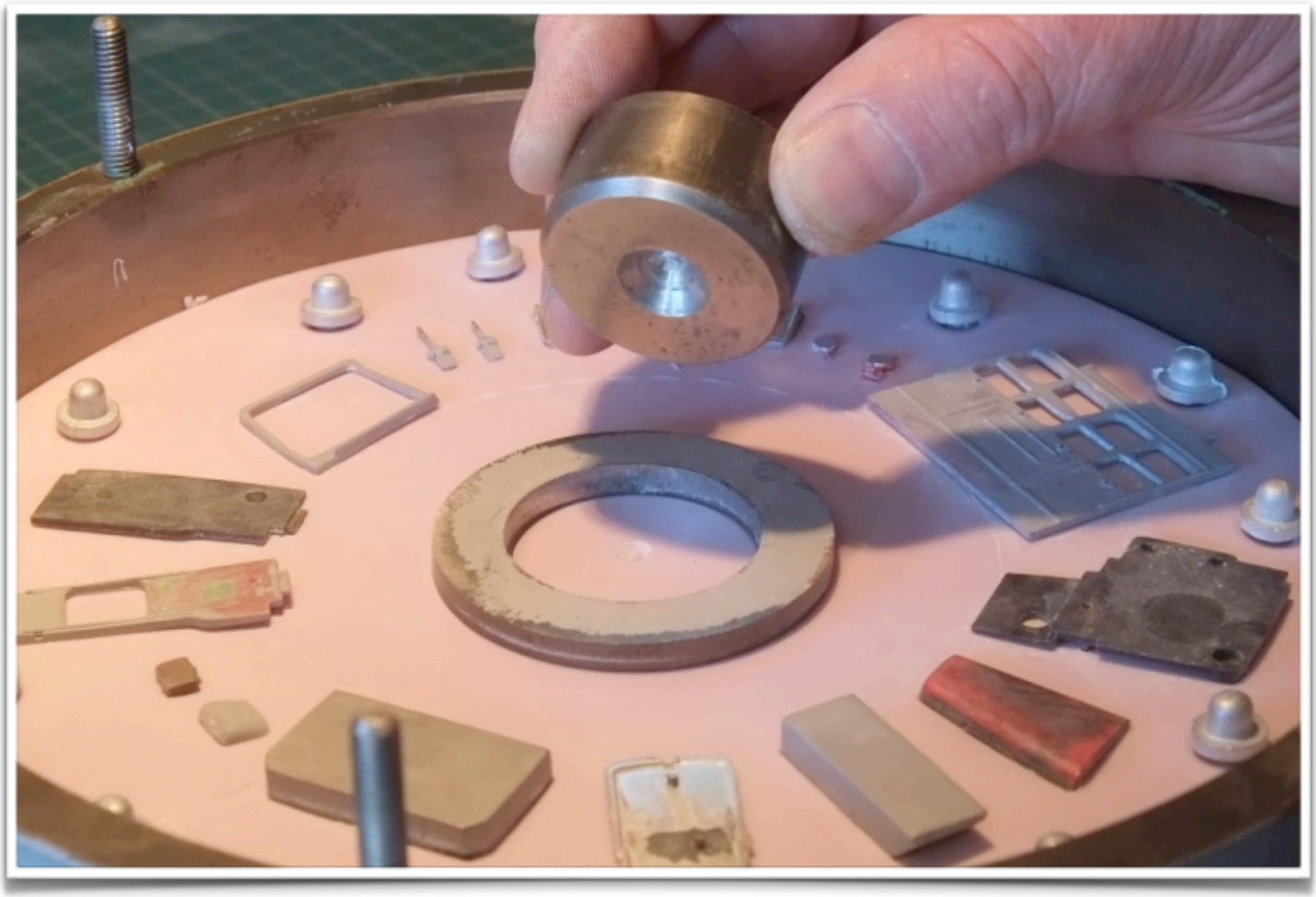


Fig 14

Placing the down sprue (chamfer side down) and gate form.

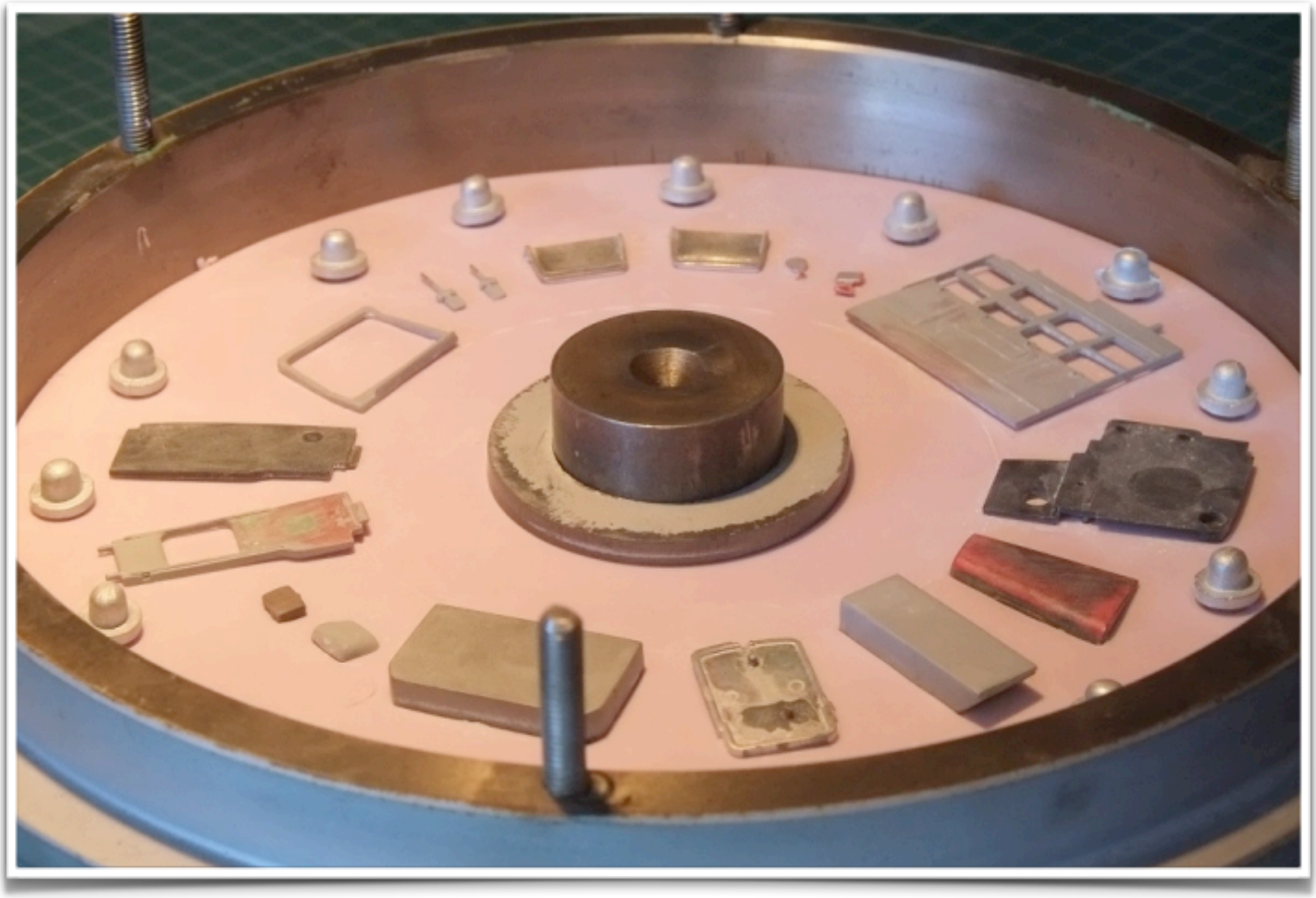


Fig 15

In place and ready for the top half of the mould.

Fig 16

In fig 16 I am removing the centre from the top mould half with a craft knife to go over the down sprue.

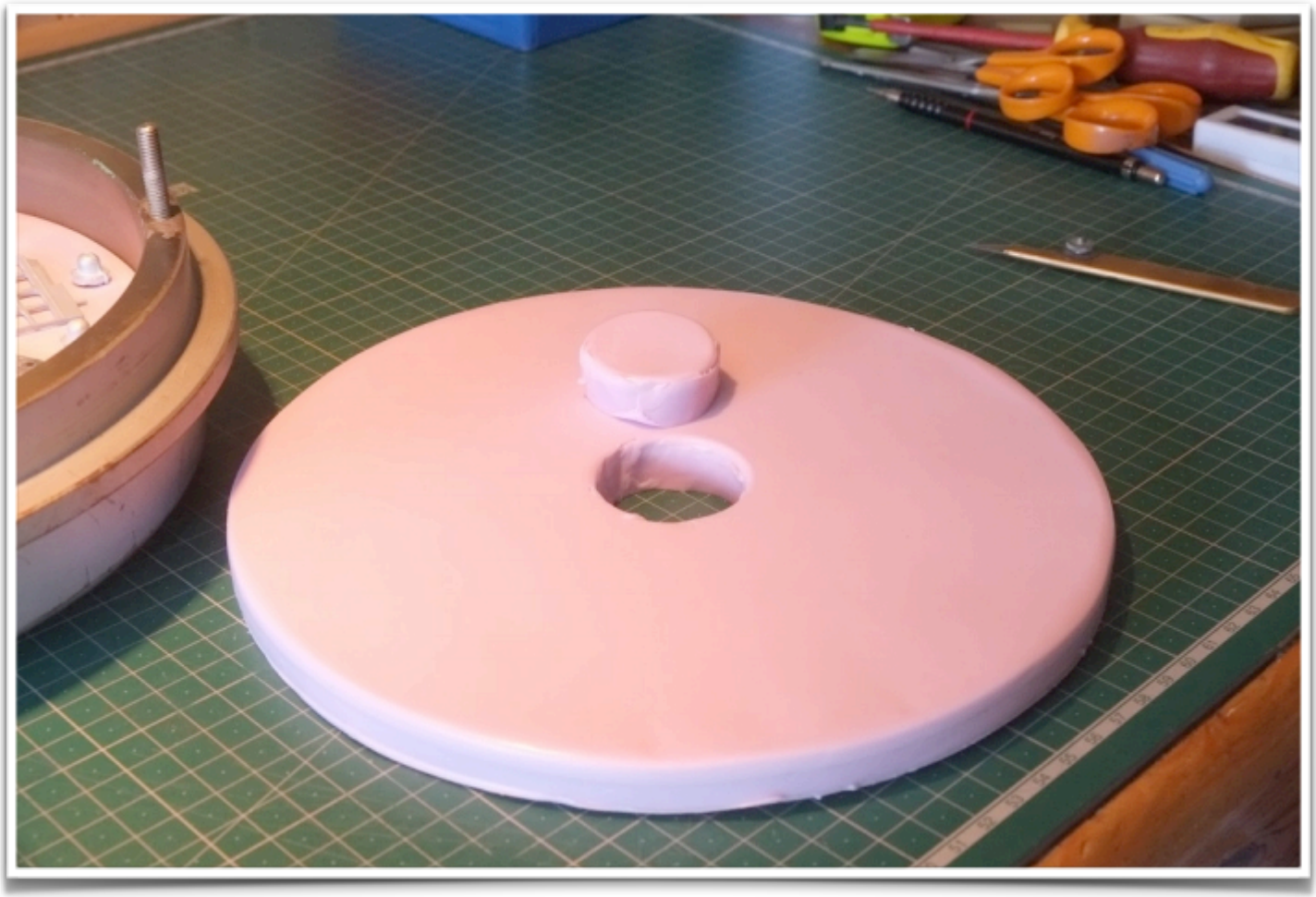


Fig 17

Centre removed.

fig 18

Once the centre has been removed I french chalk the whole of the top rubber, both sides and the hole

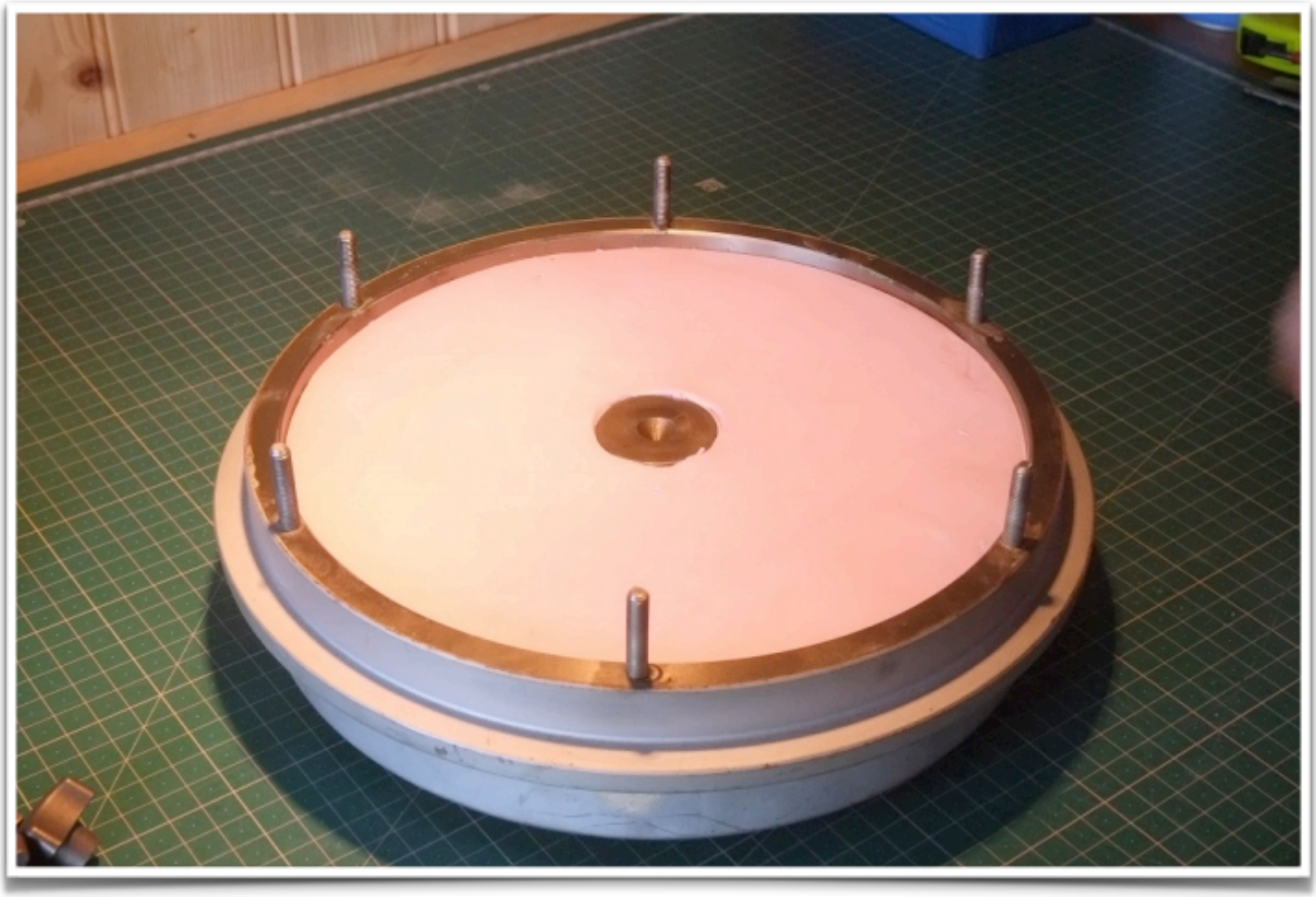


fig 19

In fig 19 I have carefully placed the top half of the mould into the can fitting it carefully over the down sprue and pushing any rubber away from the top of the sprue.

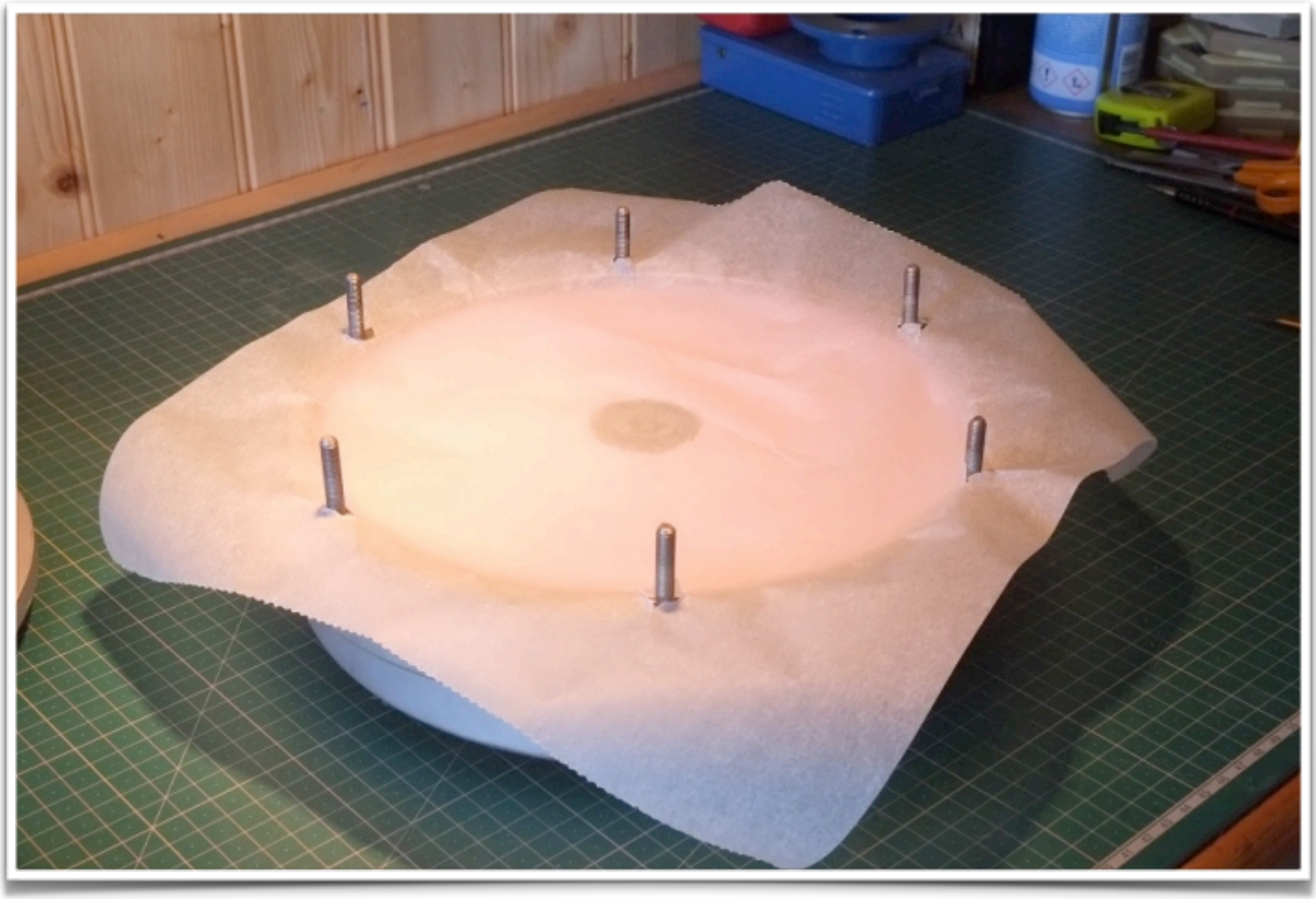


Fig 20

In fig 20 I have placed a paper gasket over the mould. For this I use silicone baking sheet some mould makers  I know use newspaper but I find baking sheet to be better. Note how I have located it on the studs of the can.

Fig 21

In fig 21 I have placed a 2mm shim disc on top of the paper and using both hands I carefully press it down nice and level.


Fig 22

Now I place the lid of the Vulcan in place.


Fig 23

Now using the clamp nuts I tighten the lid down making sure it goes down level. I use both hands to get these tight so there is no more turning can be achieved. Supplied with the Vulcan is a set of alternative clamp nuts which can be used with a spanner/ratchet  instead of the hand clamp nuts.

I prefer the feel of the hand nuts as it gives me more feedback on the correct tightness.

Remember vulcanisation needs both heat and pressure.

So tighten very tight

Ready for cooking!

Place in oven at 90 Degrees C for 90-120 mins

See Part 2 for de-moulding gate cutting and casting.