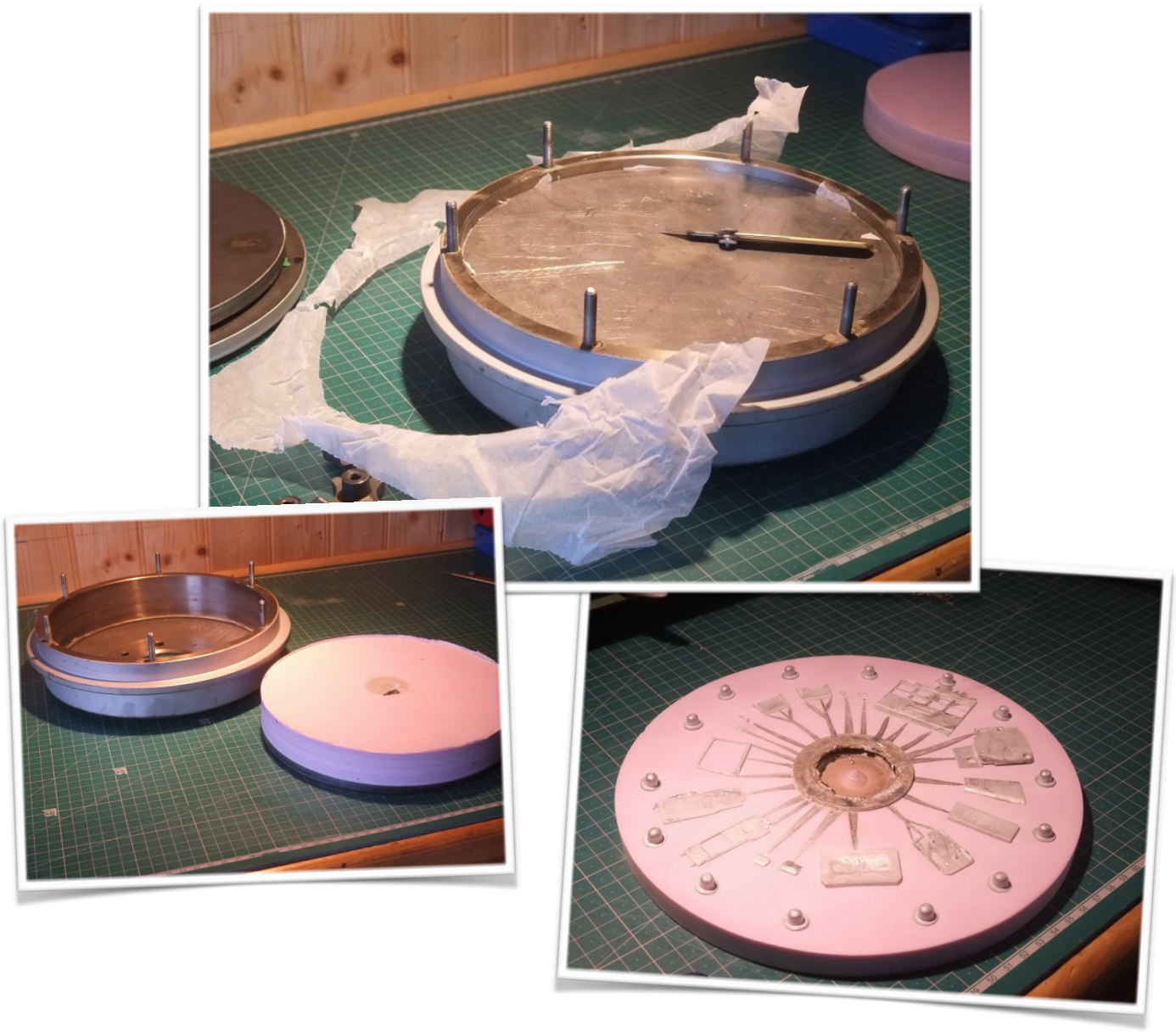
Paul
19 July 2019

Step By Step

Mould making using the Vulcan Mould Can

Part 2

De-Moulding Gates & Casting



The Project

Model bus parts

Fig 1

Figure 1 shows the mould can after cooking and allowed to fully cool down. Once cooled the mould and the can will contract to normal size and the clamp bolts will be easy to remove. To aid cooling I sometimes use a powerful air fan.which can fully cool a mould in about an hour. I do not advise de moulding a hot mould.

Fig 2

In fig 2 I have released the clamps and removed the lid carefully using a lever all around the edge. Sometimes you may see rubber which has come through the top with expansion this just needs trimming off.

Fig 3

In Fig 3 I am trimming away the excess paper and rubber from around the shim plate using a sharp craft knife.

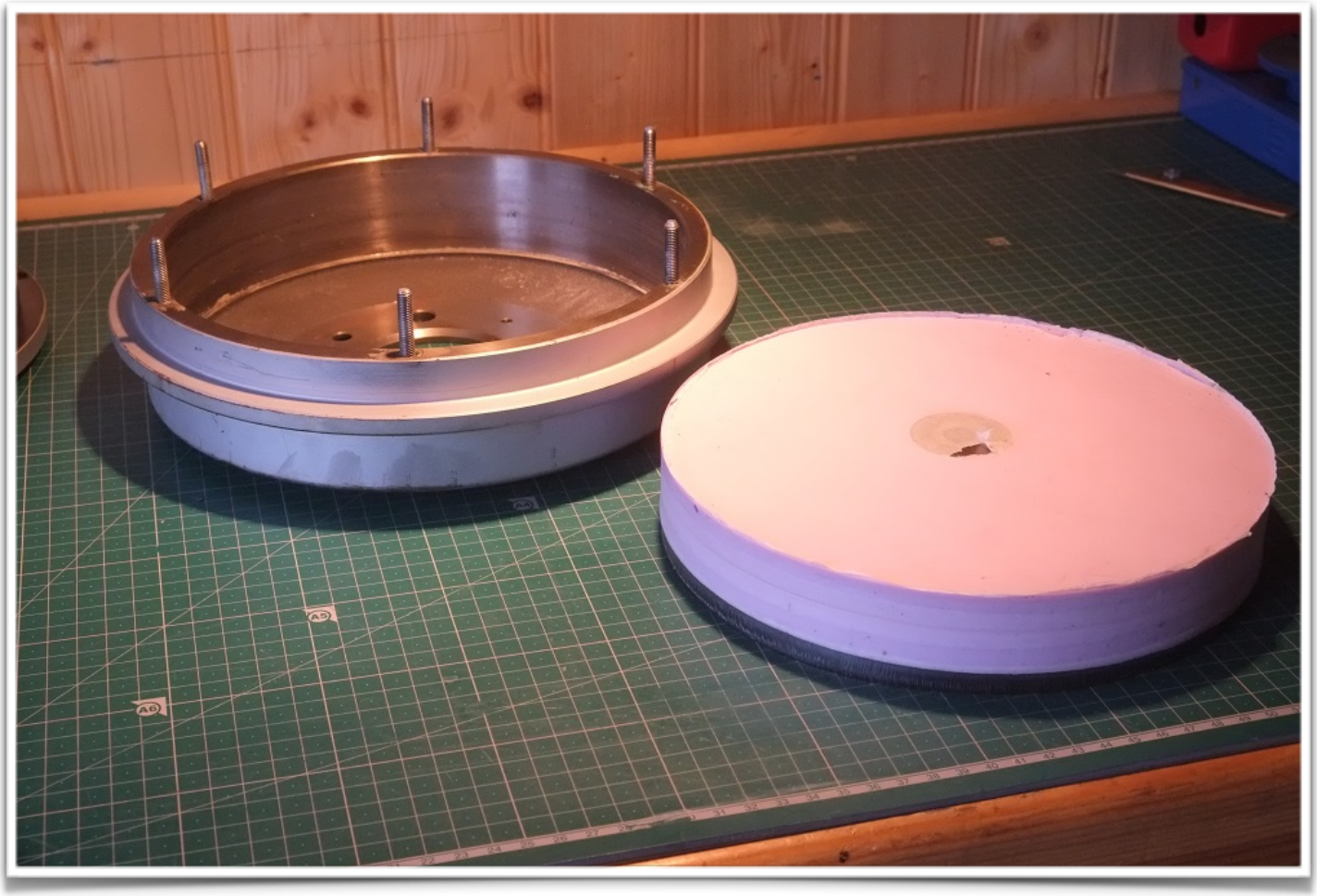


Fig 4

Fig 4 shows the mould released from the can. To do this remove the bottom plate of the can and tap out the mould using a mallet and drift.

Once out of the can the mould will want trimming up on both sides around the circumference this is to allow the mould to sit nice and flat on the casting machine plate.

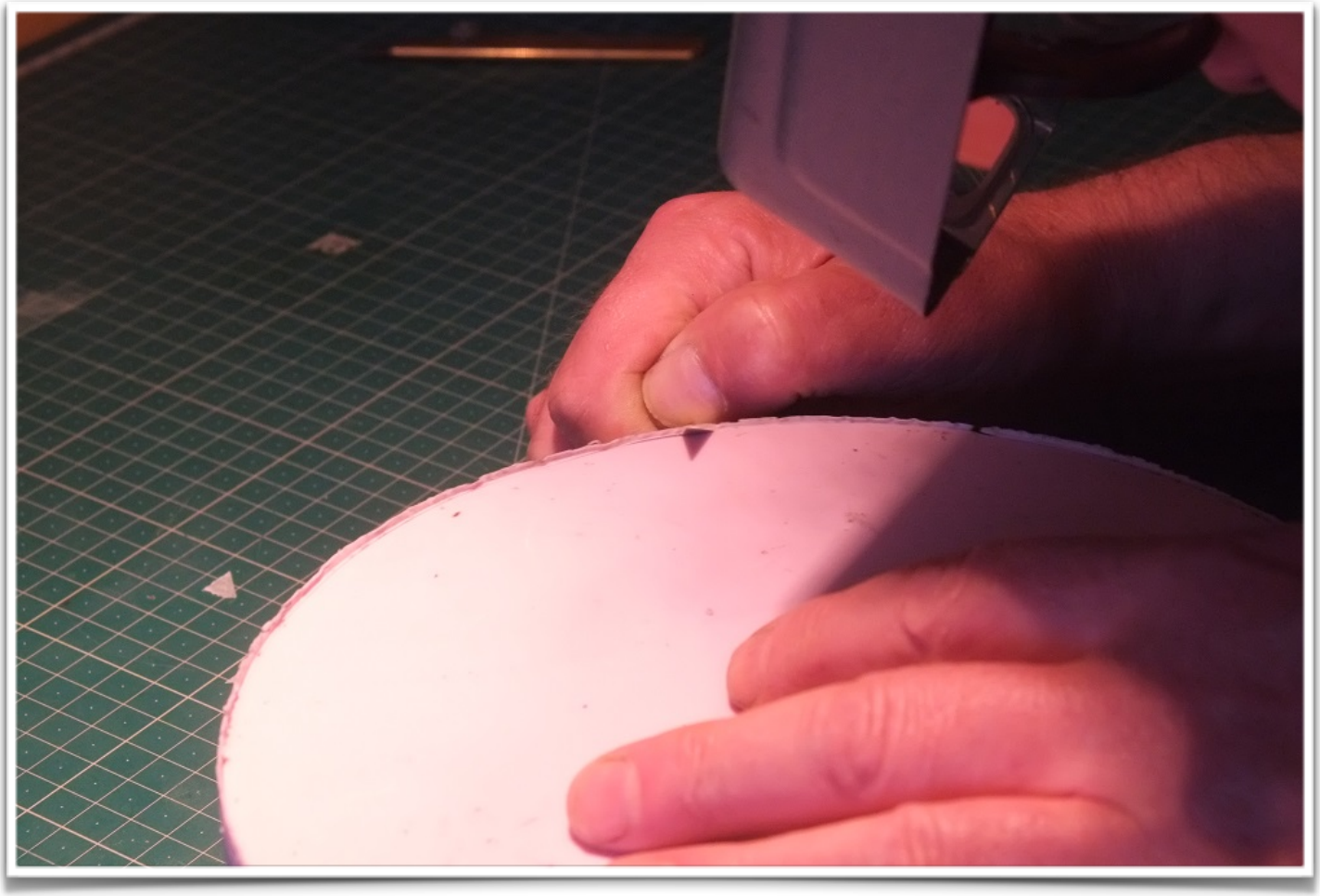


Fig 5

In Fig 5 I am shown here trimming the edges with a sharp craft knife. To aid this I put the mould on a small revolving table or lazy susan and hold the knife steady at an angle while slowly rotating the mould.

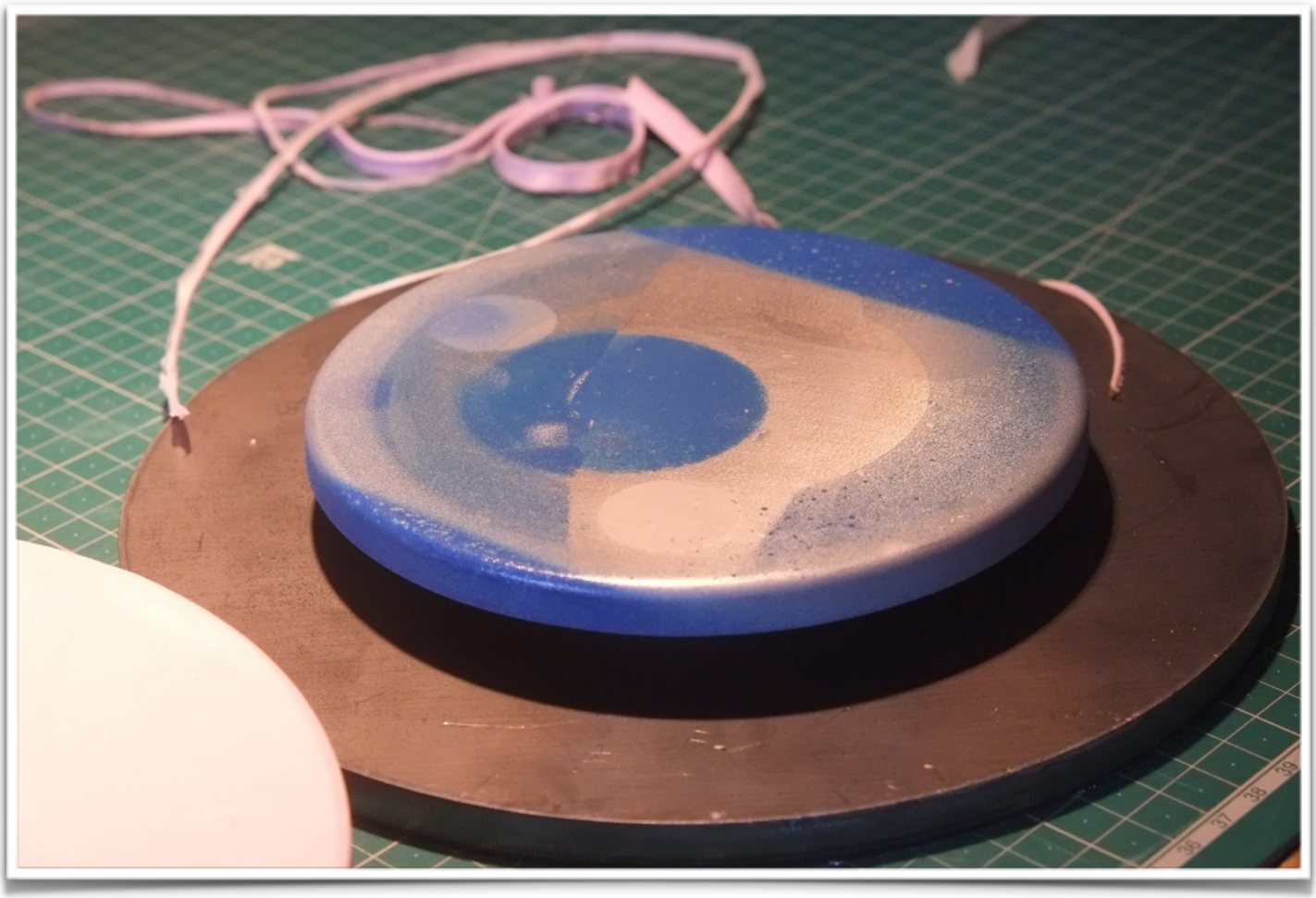


Fig 6

The small rotating table I use.

Fig 7

In fig 7 I am going around the part line with a small scraper all the way around to tease the mould apart

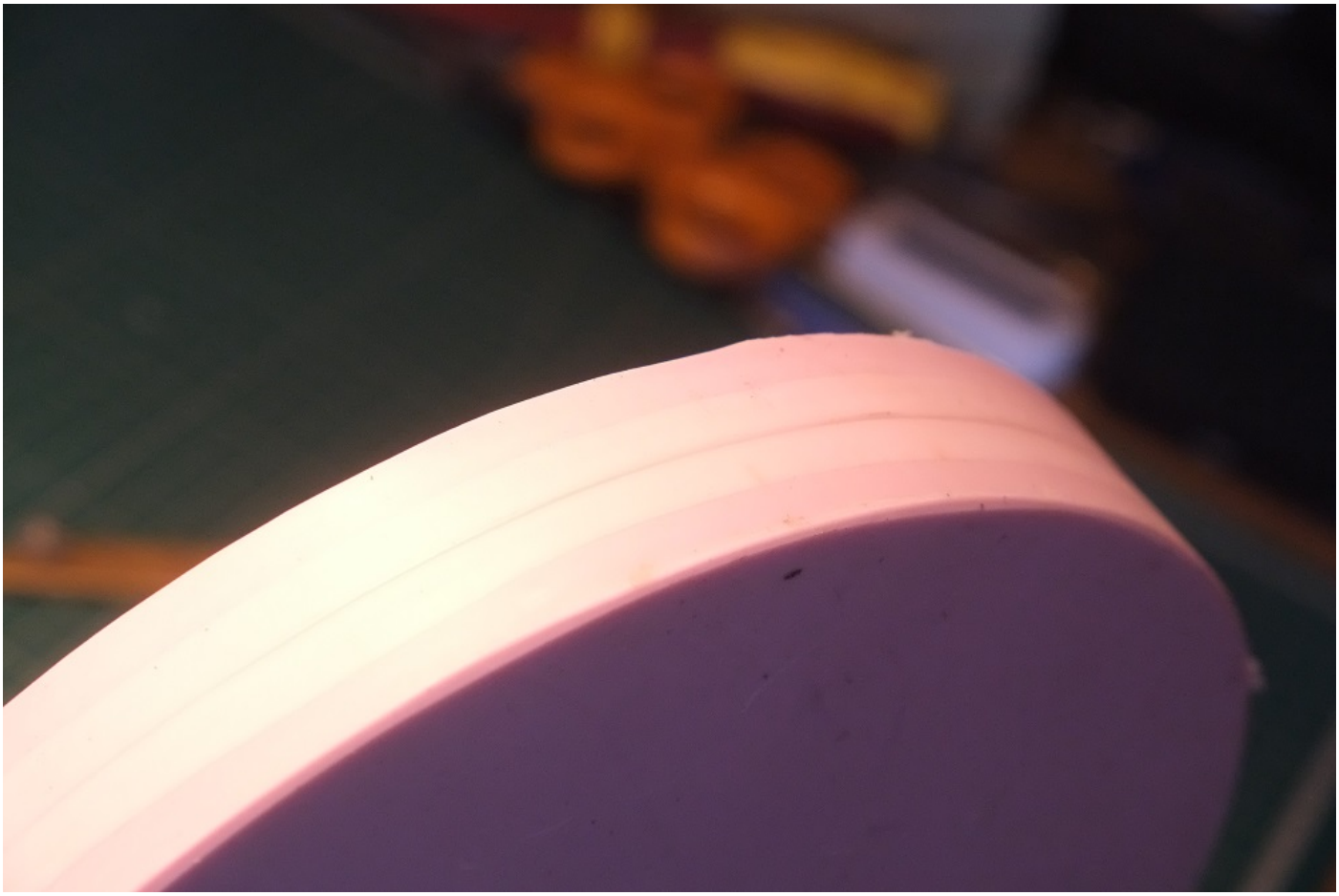


Fig 8

Fig 8 shows the part line which will be obvious due to the french chalk release agent.

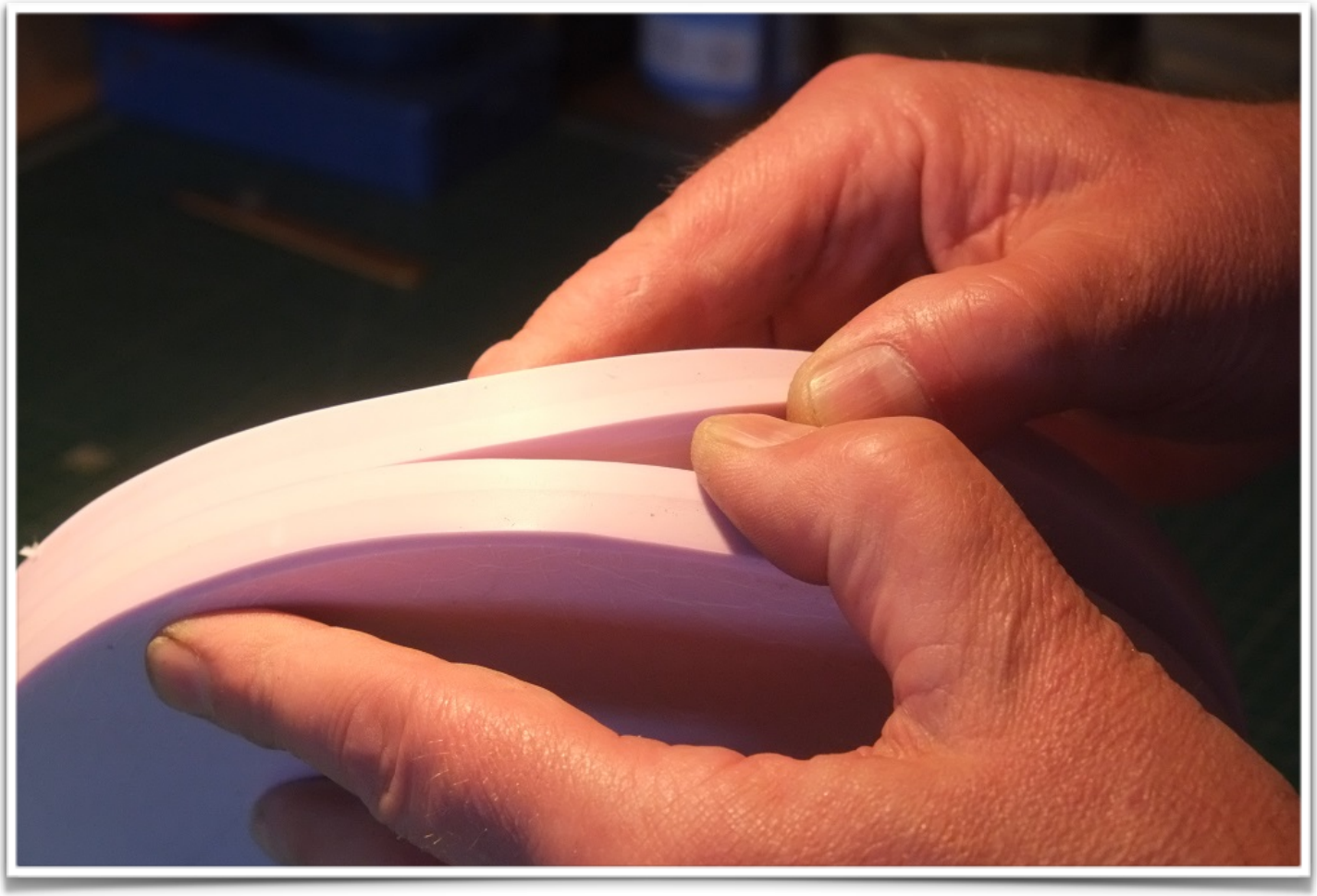


Fig 9

Now with the part line slightly opened working around the mould I am carefully separating the mould halves. It is important to work around the mould a bit at a time and not just pull it apart from one side only.

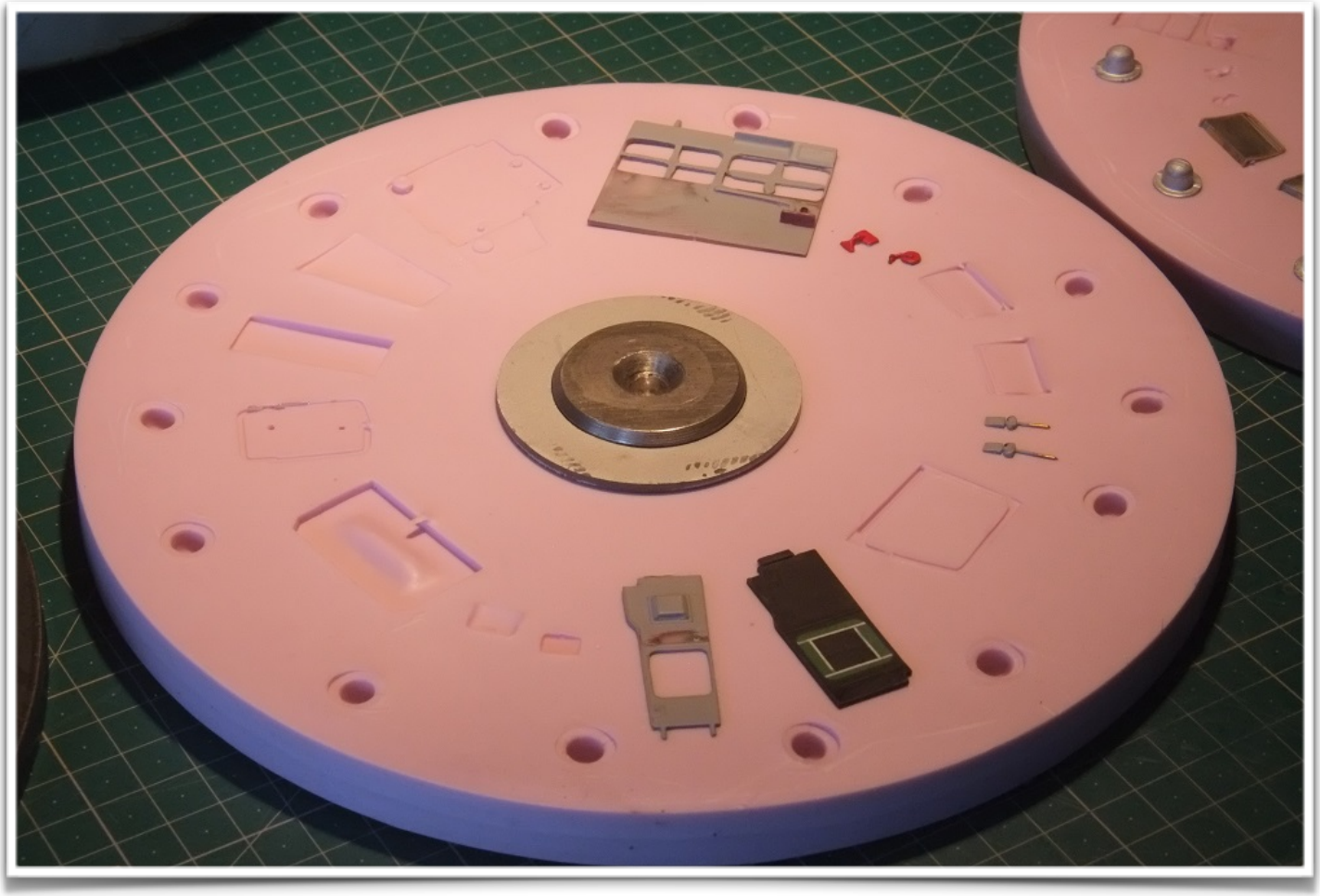


Fig 10

Here we have the mould separated. Now I take out the patterns, down sprue and gate form.

Fig 11

Here I am trimming any flaps of rubber around the filling hole and gate form. This is important as any stray rubber will impede the flow of metal. What you are after is nice smooth transitions for the metal to flow.

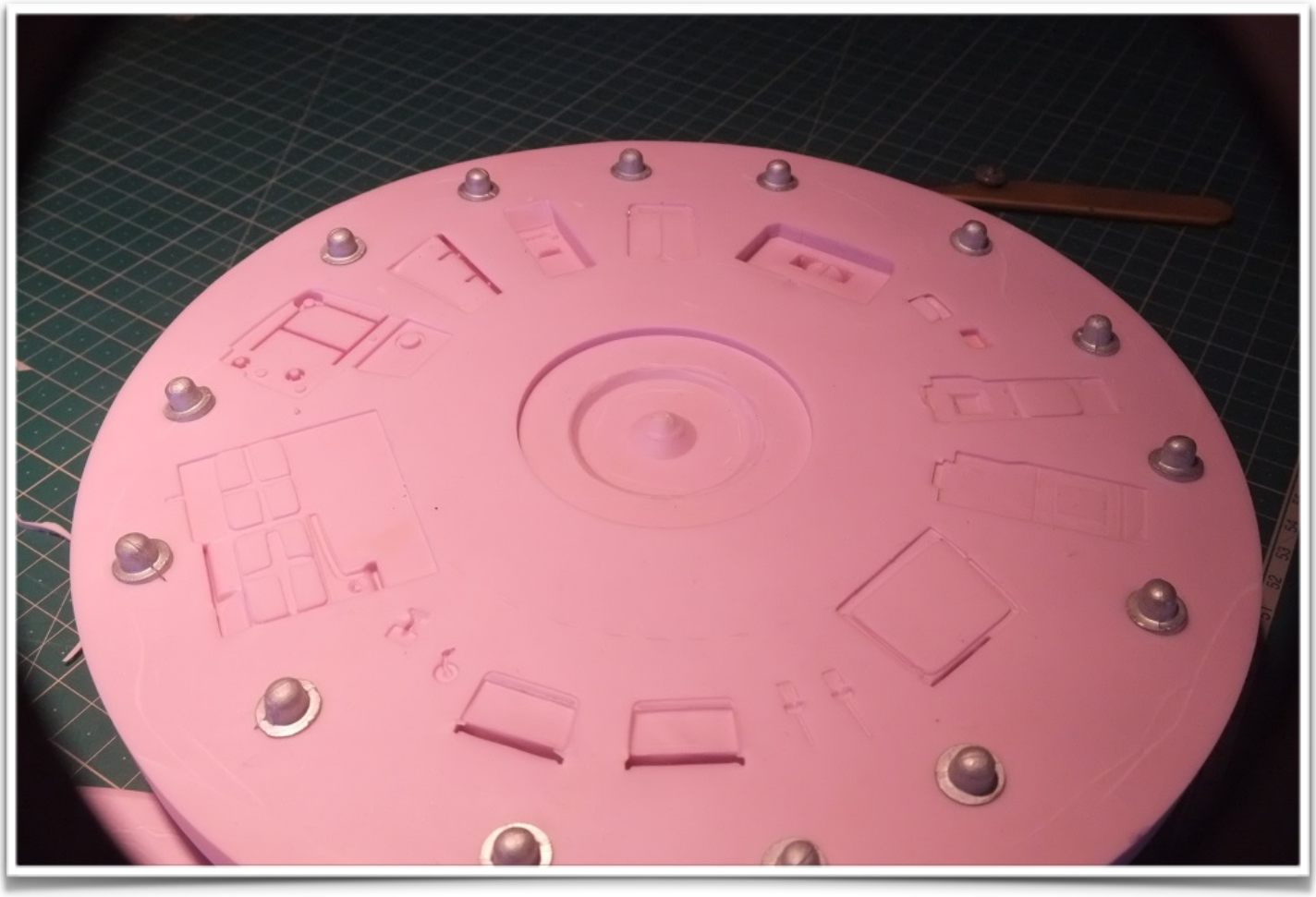


Fig 12

Here I have trimmed the bottom well.

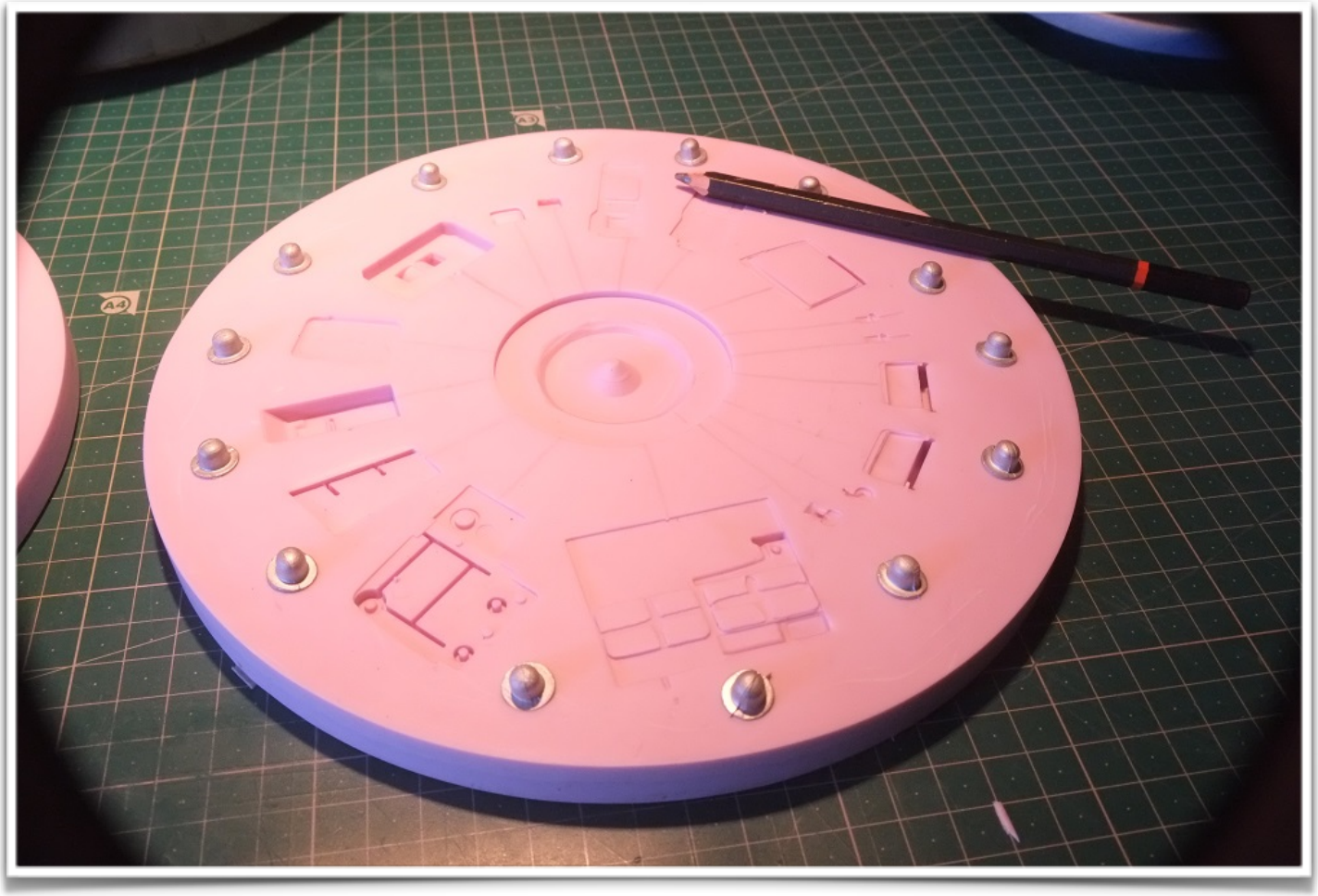


Fig 13

Before cutting the gates I use a pencil and mark their routes. Initially I cut 1 gate to the pattern impression but as you will see later further gates may be needed to fill the mould. A number of test spins and re gating is usual to get the mould to spin correctly

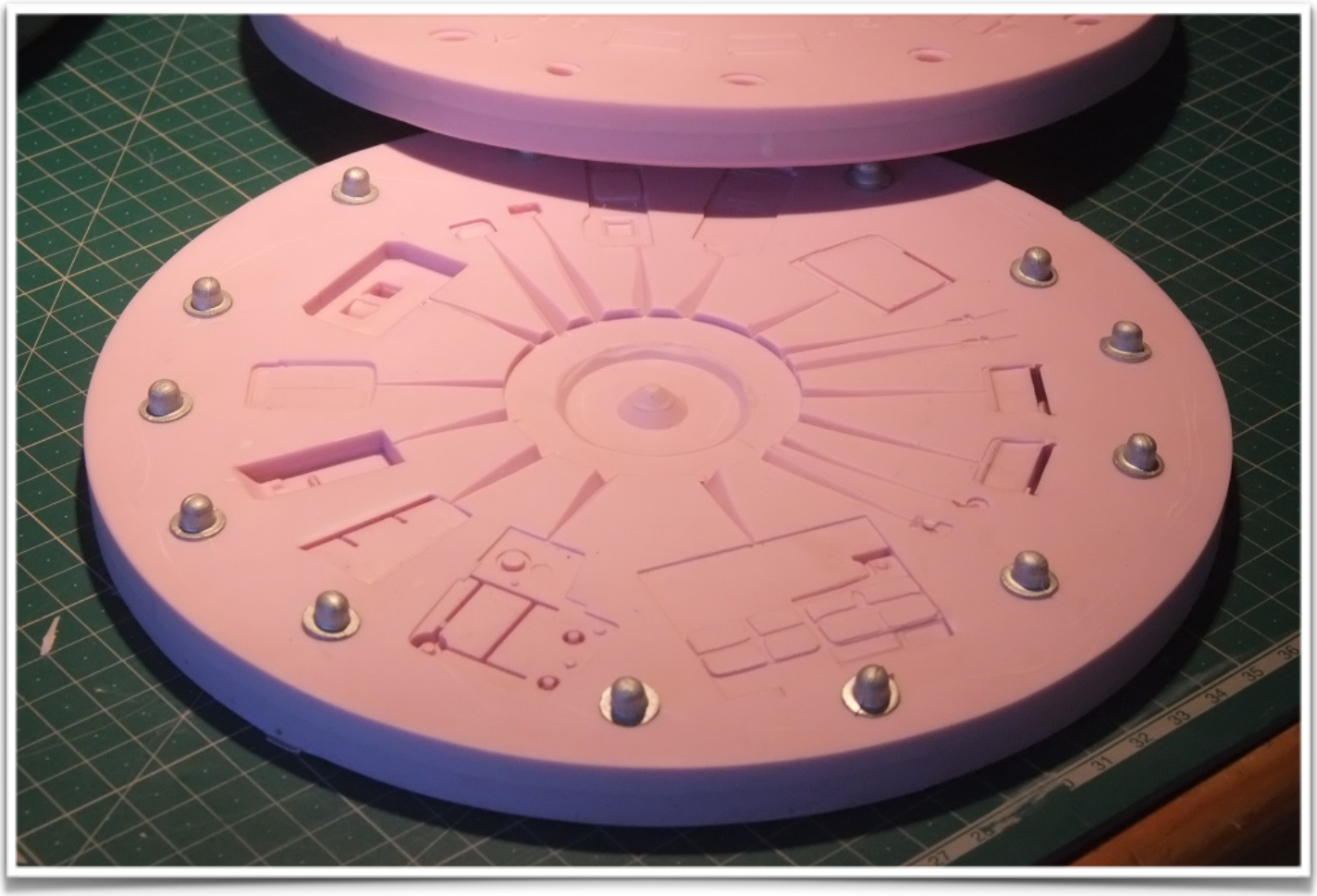


Fig 14

Figure 14 shows the gates cut. Note how they go from wide to very small as they enter the pattern impression.

Gate cutting will take practice but what you are after is nice clean cuts at approx 45 degree angles deep at the centre and getting finer towards the impression. Where it breaks into the impression you want what is called a kiss gate

Always use a new sharp blade for these.

Ok we are ready to do our first test spin.

Fig 15

Fig 15 shows the second spin you will notice I cut more feed gates to get the mould to fill correctly

I did not need any vents on this mould

When casting always use apply a light dusting of french chalk every other spin to aid metal flow and micro venting

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Finished parts

These were spun with lead rich metal I had on hand in the furnace, later I spun the parts with a tin rich metal for an even better finish.