

Case Studies

Lynar collaborate with Sims Engineering to manufacture Automated face mask Manufacturing Machine during Covid 19 Lockdown

Sean Murrells – Tool & Design Manager
sean.murrells@lynar.co.uk

1. Summary

Sims Engineering approached Lynar Manufacturing to help them make an automated face mask manufacturing machine, both companies being based locally in Harlow, Essex.

2. Introduction

During the recent Covid lockdown, requirements for face masks (as well as other PPE) are in high demand and Sims Engineering secured a vital contract to manufacture at least two new machines for their customer.

These automated machines are highly complex with fully integrated cutting, folding and assembly to produce a fold flat fabric mask.

Example of Final product:



3. Manufacturing requirements

Sims required a high precision punch and die to profile cut thin fabric used in the mask. The punch and die clearance had to be very small to ensure correct cutting of the cloth. This was less than 0.01mm overall clearance.

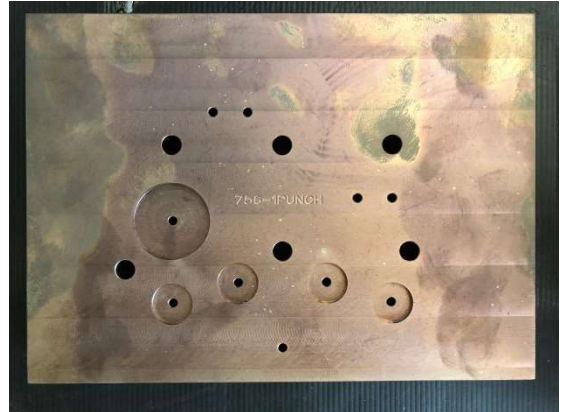
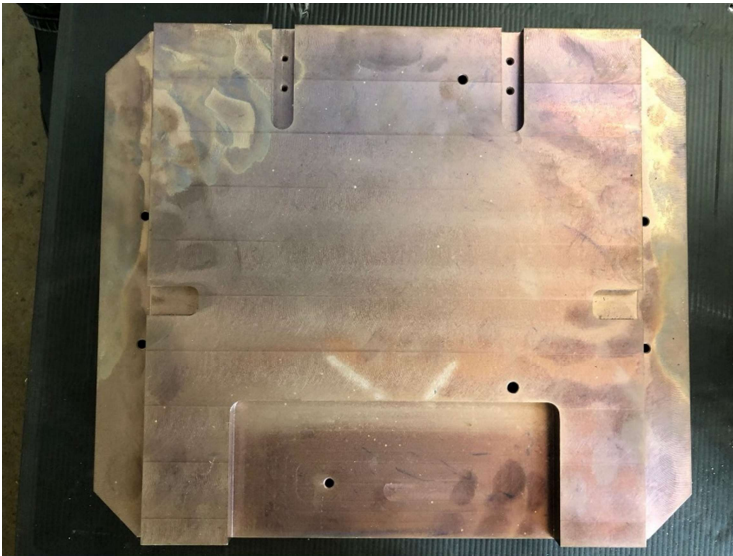
4. Design

The punch and die design were drawn in **3D Cad** using the latest Solidworks software. Punch and die blanks were free issued to Lynar after being 3d machined and full heat treated.

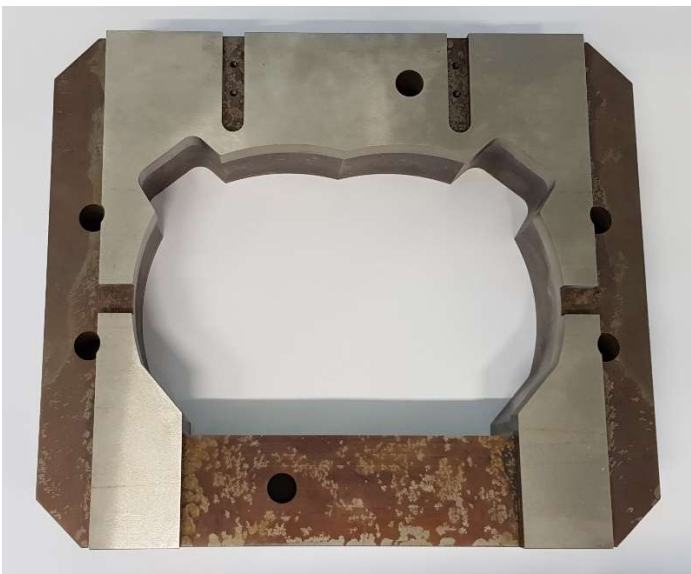
5. Wire Erosion

The punch and die were cut and double skimmed to produce the tight tolerances required using the latest state of the art Sodick VL600Q wire eroder. This operation was completed quickly utilising overnight cutting.

Pre-wire eroded Punch and die



Post-wire eroded Punch and die



6. Machine Assembly

The punch and die were then swiftly assembled into the machine as shown below utilising a high precision die set to house the punch and die. This cutting stage is a critical component of the machine which correctly worked first time; Thus, backing up Lynar's commitment to on time delivery and 100% quality targets.



7. Production

After minimal development of the machine overall, a small production run was approved by final customer.

9. Conclusion

A most technically difficult and skilled performance from both companies under extensive pressure and with skeleton crews.

A truly brilliant piece of engineering by two Essex companies contributing to saving lives during this difficult time.

10. Acknowledgements

Many thanks to:

SIMs Engineering Systems – Stuart Terrell – Factory Manager

<https://simsengineering.com/>



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