

Should you be 3D printing your jigs?

MEPCA spoke to 3DPINTUK's Managing Director, Nick Allen, to find out how additive manufacturing can offer an attractive alternative to traditional methods of jig production.

What are the practical/technical advantages of 3D printing a jig, over the more traditional approaches?

The major advantage is freedom of design. Generally, in traditional CNC milling of jigs or end of arm tooling, you're constrained by the milling bit, meaning overhangs and internal geometry can be difficult or impossible to produce. Often, this means that you have to manufacture a jig or tool in multiple parts, and then assemble after. This also means designs have to be more complex and design time is increased as well as manufacturing time. When you manufacture parts additively using selective laser sintering (SLS) there are none of these limitations. You can reduce your design time as well as print a part as one item, rather than a number of parts that have to be assembled after.

Weight reduction is another benefit. The Nylon used in SLS printing can be much lighter than Aluminium jigs while remaining incredibly strong. In addition, you can create hollow cavities to further reduce weight and stress on the arms.

How does the method compare from a cost perspective? And is it still a viable alternative if a company can currently mill their jigs in-house?

In terms of CNC, costs have been reported as much as 90% cheaper, but most of the time we hear that around 50-75% saving is achievable, especially when you consider design time savings. This is obviously dependant on the design of the part required.

If you have equipment in house, savings can still be made, especially in relation to freedom of design of the more complex items.



What is the process for a company that requires a jig?

To print with us, we require the design to be supplied to us in STL format – this is a 3D file a bit like a PDF and can be generated from any 3D CAD package. Files are uploaded through our website and if it meets our criteria we supply an instant quote – if it does not, it can be sent for manual review where we can help and offer advice.

We also have an app that is free to download and easy to use, it only requires the XYZ dimensions of your part – you can use this to check the cost of the part before you even start designing.

What is the typical turnaround time from commission to receiving a jig?

We have two turnaround times, our express service which takes 2-4 working days (95% of the time it takes 2 working days) or our

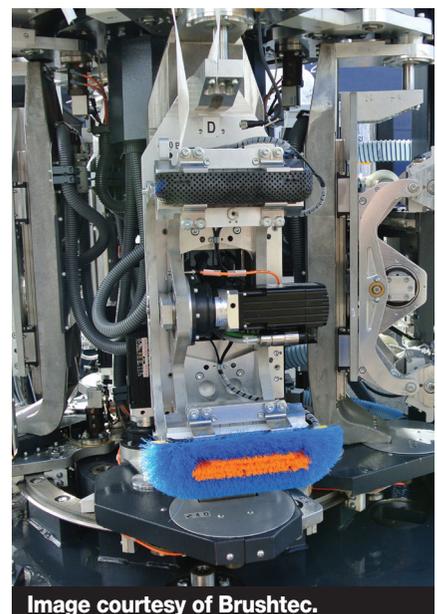


Image courtesy of Brushtec.

economy service which takes 8-10 working days – both are exactly the same other than the economy service is currently half price.

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