

3D printed medical devices achieve 24% cycle time reduction with Renishaw's TEMPUS™ technology



Time saved means lower cost per part



Part quality is unaffected



Challenge:

Renishaw's RenAM 500 series is already used worldwide for volume production of orthopaedic implants like these tibial trays (see image above), thanks to its cost-effectiveness and high-quality output. However, any reduction in cycle time means a lower cost per part for manufacturers, and ultimately a better return on their machine investment.



Solution:

TEMPUS technology is a new scanning algorithm for the RenAM 500 series of metal AM systems, which delivers a substantial increase in productivity without affecting part quality. By allowing the lasers to fire at the same time as the recoater is moving, TEMPUS technology can save up to 50% on build time (dependent on part geometry).



Outcome:

Using TEMPUS technology on a RenAM 500Q AM system, we reduced the cycle time of this tibial tray build from 4 hours, 52 minutes to 3 hours, 43 minutes - a 24% saving. With standard 8 hour shifts, and 5 working days a week, that time saving could equate to an extra 2,880 components a year produced by the same AM asset.

Part	Time: 4 lasers	Time: 4 lasers + TEMPUS technology	Time saving %
Tibial tray	4:52	3:43	24%

	4 laser system	4 lasers + TEMPUS technology	Increase %
Parts produced per year (based on one 8 hour shift per day, 5 days a week)	5,760	8,640	50%