

Angus 3D Solutions

PART NAME	Tight-clearance wrench
LOCATION	Scotland
MATERIAL	17-4PH Stainless Steel
APPLICATION	Tooling
INDUSTRY	Oil and gas

Angus 3D Solutions is a Scottish-based 3D scanning, 3D printing, and manufacturing service company. They help individuals, small businesses, and global companies across various industries create parts that are often impractical to fabricate using traditional manufacturing technologies. Recently, a company approached Angus 3D Solutions with an urgent request: a customer in the oil and gas industry needed specialized parts delivered to their offshore rig in 6 days. The customer had a new tool but couldn't assemble or test it because they didn't have the correct tight-clearance wrenches. The parts needed to be custom-made and shipped via the next available sea freight.

Angus 3D Solutions' end customer planned to use a conventional manufacturer to solve their customer's problem. But when they realized it would take the manufacturer 2-3 weeks to produce the wrenches, they decided to explore faster alternatives. That's when they reached out to Angus 3D Solutions. The team printed the tight-clearance wrenches in just 3 days with their Markforged Metal X system (versus a 10-day production time using laser powder bed fusion technology). This allowed the customer to deliver the wrenches to the offshore oil rig within the 6-day deadline, resulting in a savings of \$25K in freight costs for Angus 3D Solutions' customer, not to mention the potential savings of millions in unplanned downtime for the oil and gas customer.



In 2021, Markforged released Next Day Metal across its entire fleet of metal 3D printers. This over-the-air (OTA) software update lets users print the same high-quality parts in a fraction of the time. The increased production speed is key for manufacturers like Angus 3D Solutions who often get urgent, last-minute part requests. With Next Day Metal, companies can print parts such as tight-clearance wrenches overnight, reducing customer wait time by two days.