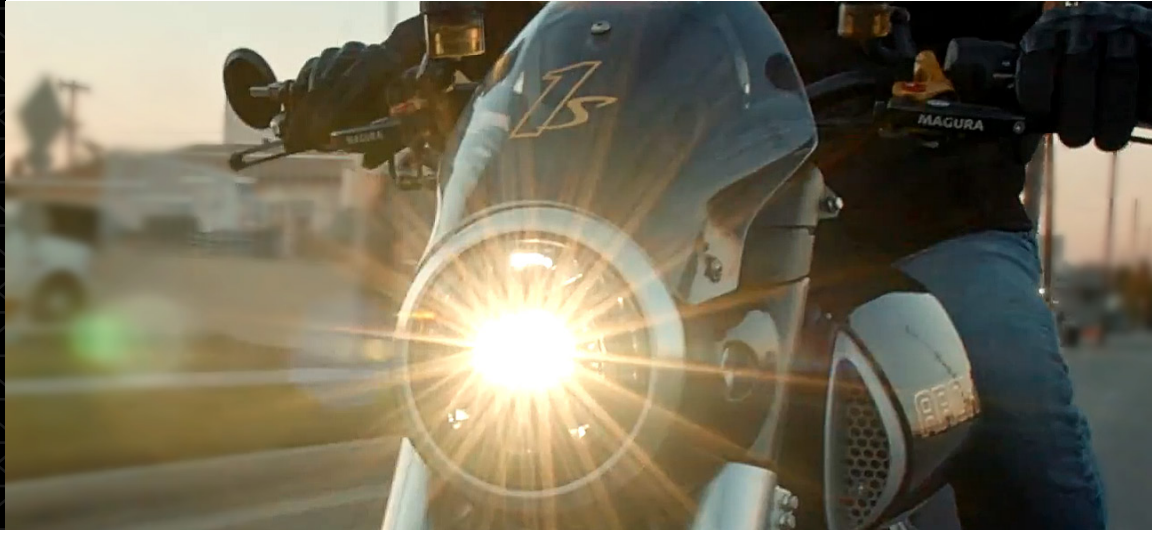


J.W. Speaker

Use Case – Manufacturing Fixtures

Customer Profile

Founded in 1935, J.W. Speaker Corporation makes high-performance lighting for automotive, powersports, transport, and industrial vehicles. The company specializes in developing innovative LED and emerging lighting technologies for OEM and aftermarket customers worldwide.

Challenge

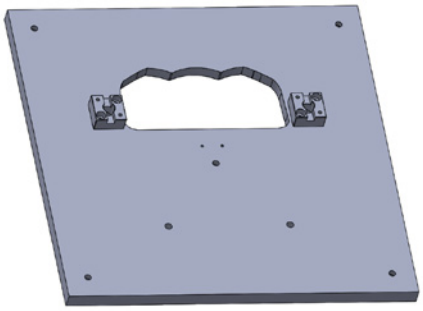
J.W. Speaker uses a variety of manufacturing tools to support its lighting production. Some tools, such as automation pallets and photometry fixtures, are relatively large and must be strong enough to handle heavier lighting products. These fixtures are typically machined from aluminum stock. However, with an annual requirement of 150 pallets, this approach is costly and time-consuming, relying on in-house or outsourced machining. J.W. Speaker engineers sought more control over production and a faster, more economical fabrication method.

Solution

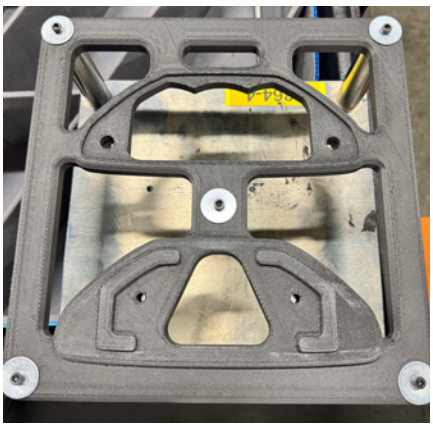
Instead of machining the fixtures, J.W. Speaker chose to 3D print them using a Stratasys F3300™ printer. The F3300 is a next-generation FDM® system that can print at twice the speed of legacy extrusion-based printers, enabling faster time-to-part. Its 10.2-cubic-foot build chamber is also able to accommodate the larger automation pallets, which measure 18 x 18 in. (46 x 46 cm). FDM® Nylon 12CF carbon fiber material provided the strength and rigidity necessary for the fixtures to handle the heavier parts.

Impact

3D printing the fixtures with the F3300 gave J.W. Speaker the design flexibility to produce optimized fixtures faster and for a lower cost than machining. The company realized $50,000 to $60,000 in cost savings on pallet production and $10,000 to $15,000 on photometry fixtures – savings that grow proportionally with annual fixture needs. J.W. Speaker also achieved a 78% time savings compared to in-house machining (9 hours vs. one week) and 89% compared to outsourcing (9 hours vs. two weeks), significantly reducing lead times.



A CAD rendering of the original pallet design.



The 3D printed pallet, built on the F3300 using Nylon 12CF.

Time Savings

78% to 89%

Cost Savings

$60k to $75k