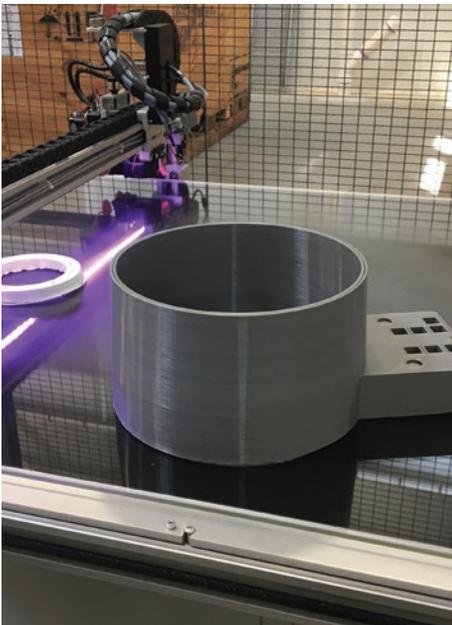


Beyond BIG | Progress Rail Case Study

3DP helps Global Manufacturer set up new Manufacturing Plant

Progress Rail has a new facility where they machine very large parts from expensive castings. They were interested in a 3D printer that had the capacity to mock up large parts which would then be used for setting up their machining tools and help develop metrology strategies and standards.

Why BIG



This facility specializes in machining extremely large parts, such as shafts 12" in diameter and castings that are four feet high and six to eight feet long. The engineers at Progress Rail were intending to make full size printed parts, but then realized that a quarter-scale model was just as useful, and easier to work with. Using this process, they succeeded in mocking up large parts utilizing a large format 3D printer from 3D Platform, which aided in the set-up their new manufacturing plant. These scaled-down versions reach approximately 700 mm in diameter.

Progress Rail *A Caterpillar Company*

Progress Rail, a Caterpillar company, is one of the largest integrated and diversified suppliers of railroad and transit system products and services worldwide. They make large off-highway vehicles for things like mining and construction, and are the world's premier provider of locomotive technology.

Kevin Friedrich, who was interviewed for this case study, is part of the Progress Rail community located in their new facility in Winston-Salem, NC.

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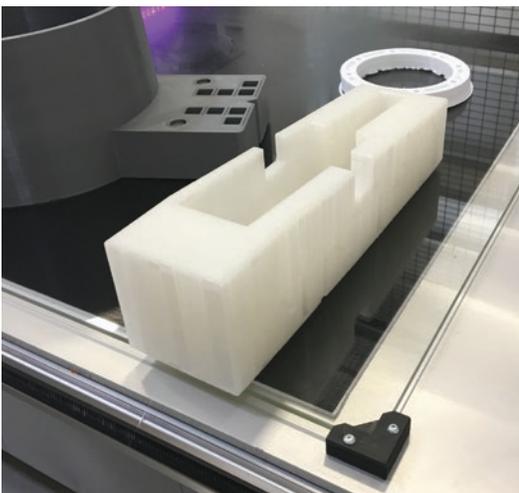
Why 3DP

Kevin Friedrich is part of the Progress Rail team located in Winston-Salem, NC. When asked about his reason for contacting 3DP and then incorporating their large-format 3D printer, his immediate response was "comfort level." He then went on to elaborate that his colleagues at the Illinois-based parent company, Caterpillar, Inc., had previously used 3DP Platform printers and had overwhelming positive reviews. The added benefit of a reasonable price point made it easy for Kevin to get the printer approved by management.



Results/ROI

While no specific ROI studies have been done regarding printer mock-ups, anecdotally the operators at Progress Rail have found their 3D printer very useful in its speed and efficiency, and has allowed them to produce custom parts for a variety of uses. Such benefits include project aids, mock-ups used for setting up machines, and the creation of metrology strategies.



Metrology is the science of measurement, and ensures there are standard and reliable units of measurements used all over the world.

Progress Rail utilizes a 3D printer to help them incorporate their '5S' system. 'Standardize' is considered one of the S's in the 5S system. Technicians at Progress Rail utilized 3D-printed mock-ups to help set up machines and develop a standard set of critical measurements for machining large parts. Another example of 5S are job aids, and can include something simple like a 3D printed wall mount for gauges. The mount solved the problem of the gauge taking up space on a bench top, getting in the way, or even becoming lost.

5S is a system for organizing spaces so work can be performed efficiently, effectively, and safely. This system, which is a part of Lean Manufacturing, was originally developed by the leaders of Toyota Motors. It focuses on a clean and organized workplace, which increases productivity and reduces injuries and costs.

Tips/Community

When the technicians at Progress Rail are trying something new and need additional guidance with their 3D printer or slicer settings, they have found that using 3DP's automated support portal to be very helpful. Technician Kevin Friedrich reiterated that, "3DP responds quickly and is able to help resolve any 3D printing difficulties that come up." In addition, Kevin recommends *Simplify 3D* printing software, in part for its ease of assistance from the user community.

One of the lessons learned is that sometimes you have to "print small to go big." In other words, by focusing on a more challenging section of a large print, potential issues can be solved ahead of the final print or cast, saving time, money and headaches.