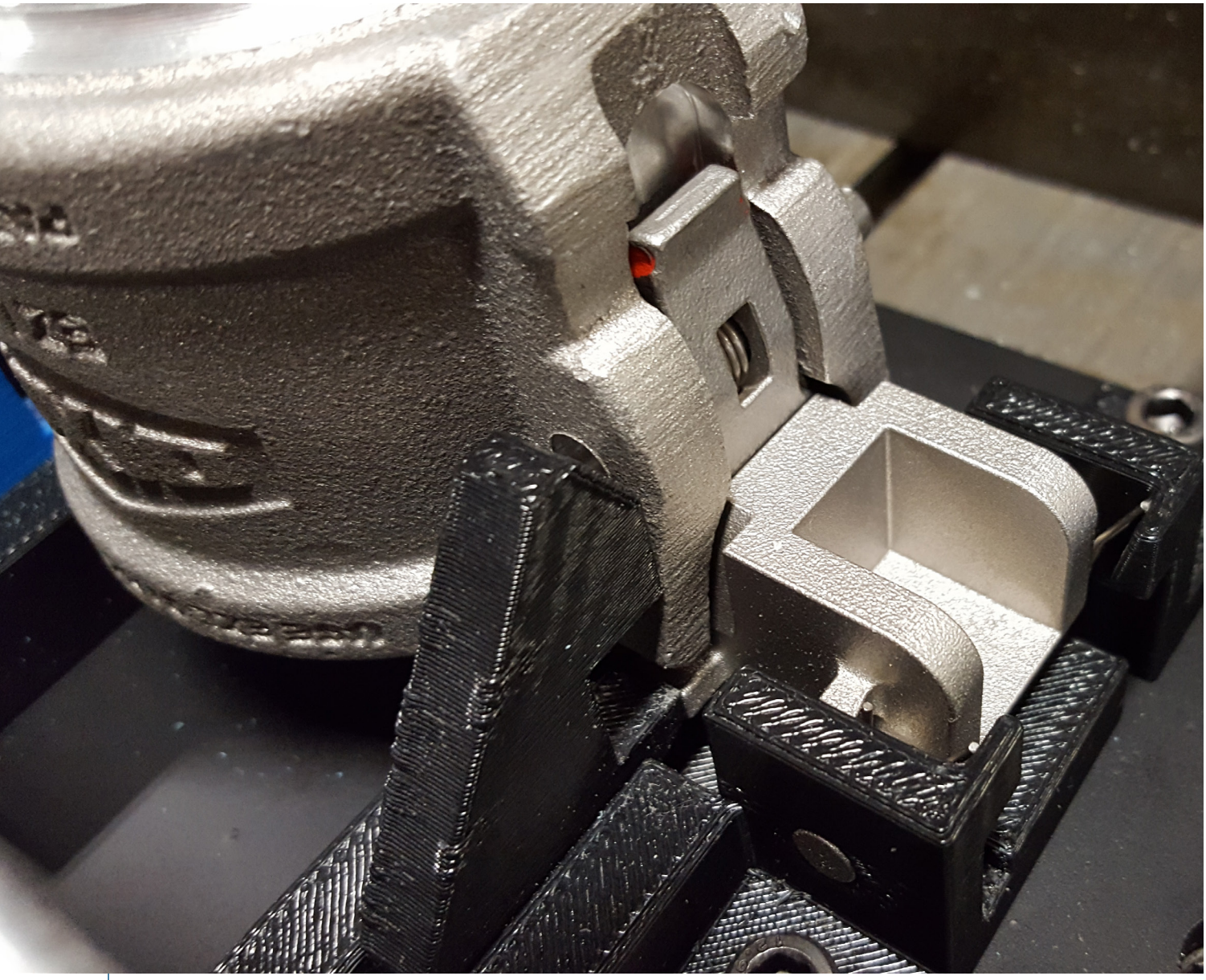
DASSAULT SYSTEMES

SOLIDWORKS

DIXON VALVE & COUPLING COMPANY

REACHING OPTIMAL MANUFACTURING SOLUTION QUICKLY AND EASILY WITH SOLIDWORKS AND XOMETRY



As part of its effort to automate production, the Dixon in-house automation team uses SOLIDWORKS design software and the Xometry add-in to shorten production time and reduce costs, as it did with the design, quoting, and ordering of this specialized fixture, that assists with assembly.

DIXON

The Right Connection®

Challenge:
Provide internal manufacturing and assembly automation team members with direct access to manufacturing services costing, methodology, and ordering information from within their 3D design environment.

Solution:
Add the free Xometry add-in to its SOLIDWORKS design software implementation, which includes SOLIDWORKS Professional mechanical design, SOLIDWORKS Premium mechanical design and analysis, SOLIDWORKS Electrical design, SOLIDWORKS Simulation Premium analysis, SOLIDWORKS Flow Simulation computational fluid dynamics (CFD) analysis, SOLIDWORKS Inspection, SOLIDWORKS Composer technical communication, and SOLIDWORKS PDM Standard product data management (PDM) software solutions.

Benefits:
- Cut fixture production time from weeks to days
- Determined cost and suitability of production approaches while designing
- Reduced fixture production costs
- Realized 24/7 access to manufacturing services

For over 100 years, Dixon Valve & Coupling has manufactured and supplied hose couplings, valves, dry-disconnects, swivels, and other fluid-transfer and control products. The company's global reach—with a dozen manufacturing centers worldwide—includes a broad range of products for the petroleum exploration, refining, transportation, chemical processing, food and beverage, steel, fire protection, construction, mining, and manufacturing industries.

With a strategic objective of developing solutions that make its products safer, leak-free, longer lasting, and always available, Dixon established its in-house automation team to automate production where it is justified. Unlike manufacturers that work only with partners to develop production machinery, Dixon management understands the value of incorporating its internal expertise into the design of manufacturing systems, according to Industrial Engineer J.R. Everett.

"The uniqueness and complexity of our parts don't lend themselves to working solely with production partners," Everett explains. "Our products involve different raw materials and constraints, and present unique challenges in manufacturing and tooling—challenges that our automation team is best equipped to overcome."

The Dixon automation team relies on SOLIDWORKS® 3D design software, which the company has used for 20 years. Since its initial SOLIDWORKS implementation, the manufacturer has acquired additional SOLIDWORKS solutions, including SOLIDWORKS Professional, SOLIDWORKS Premium, SOLIDWORKS Electrical design, SOLIDWORKS Simulation Premium analysis, SOLIDWORKS Flow Simulation, SOLIDWORKS Inspection, SOLIDWORKS Composer, and SOLIDWORKS PDM Standard software solutions.

Recently, Dixon added the free Xometry add-in to SOLIDWORKS software to support quoting, feedback, and ordering of manufacturing services from directly within the SOLIDWORKS CAD environment. "We often ask ourselves: 'What is the optimal manufacturing solution? What is the best way to make this part? What will it cost?'" Everett explains. "With the free Xometry add-in to SOLIDWORKS, we have 24/7 access to production pricing and ordering information inside SOLIDWORKS, and a way to obtain feedback about determining the best way to manufacture a part."

DESIGN ACCESS TO MANUFACTURING SERVICES

Using the Xometry add-in to SOLIDWORKS, Dixon's automation team can obtain estimates for manufacturing prototypes and parts, and place orders from within SOLIDWORKS software. There's no need to package up models, compose emails, or place orders manually. With round-the-clock access to rapid prototyping and manufacturing information, the company's automation team can more quickly and easily tap the tools it needs to develop automation solutions.

For example, when Dixon needed a specialized fixture to assist with an assembly operation that would be impossible to do by hand, the team used the Xometry add-in to SOLIDWORKS to 3D print the piece in stainless steel. "Instead of waiting two weeks after placing an order to receive the part, we were able to get a quote, place the order, and receive the part in a couple days—all without leaving SOLIDWORKS," Everett notes.

"Whether we are CNC machining, 3D printing, bending sheet metal, making urethane castings, or using other manufacturing methods, the Xometry add-in to SOLIDWORKS gives us access to the cost and manufacturability information that we need to develop automation systems efficiently and cost-effectively."

— J.R. Everett, Industrial Engineer

WEIGHING MANUFACTURING METHOD VS. COST

The Xometry add-in to SOLIDWORKS software also provides important feedback about the best manufacturing approach and related cost information. In the case of Dixon's assembly fixture, the initial quotes for CNC machining or 3D printing were close. "Because the fixture would be exposed to water during production, we knew that we needed to make it out of stainless steel," Everett explains.

"When we received the quotes and feedback through the Xometry add-in, we learned that the cost of 3D printing in metal is a factor of the volume," Everett continues. "So we reduced the volume of the fixture and the attendant cost. We use the Xometry add-in to SOLIDWORKS software to judge the affordability of a design while we are designing it, which allows us not only to gauge the cost of a decision but also to determine how and where to produce it."

FASTER ACCESS TO MANUFACTURING SERVICES DRIVES AUTOMATION

With 24/7 access to Xometry manufacturing services from within SOLIDWORKS, the Dixon automation team can more efficiently achieve its goals of automating the production of Dixon products. "The time that the Xometry add-in to SOLIDWORKS saves us certainly provides the agility that we need to fulfill our automation mission," Everett stresses.

"Just as critical as the time savings, however, is the understanding that we gain insights into the advantages and disadvantages of different production processes," Everett adds. "Whether we are CNC machining, 3D printing, bending sheet metal, making urethane castings, or using other manufacturing methods, the Xometry add-in to SOLIDWORKS gives us access to the cost and manufacturability information that we need to develop automation systems efficiently and cost-effectively."

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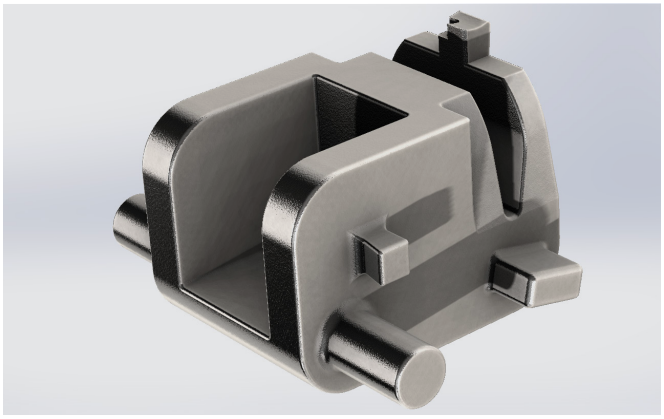

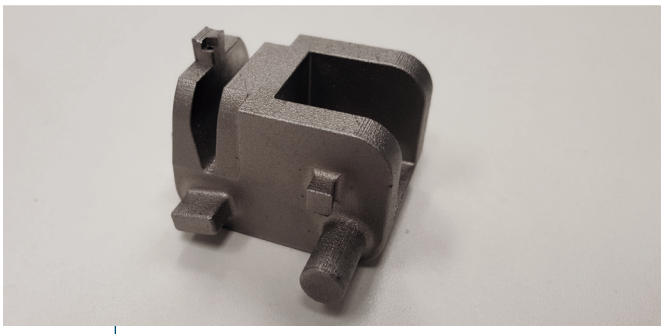

Using SOLIDWORKS software and the Xometry add-on, Dixon engineers can get important feedback about the best manufacturing approach and related cost information while designing inside the SOLIDWORKS environment, saving time and money by handling design, estimating, and ordering, all while designing in SOLIDWORKS.

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