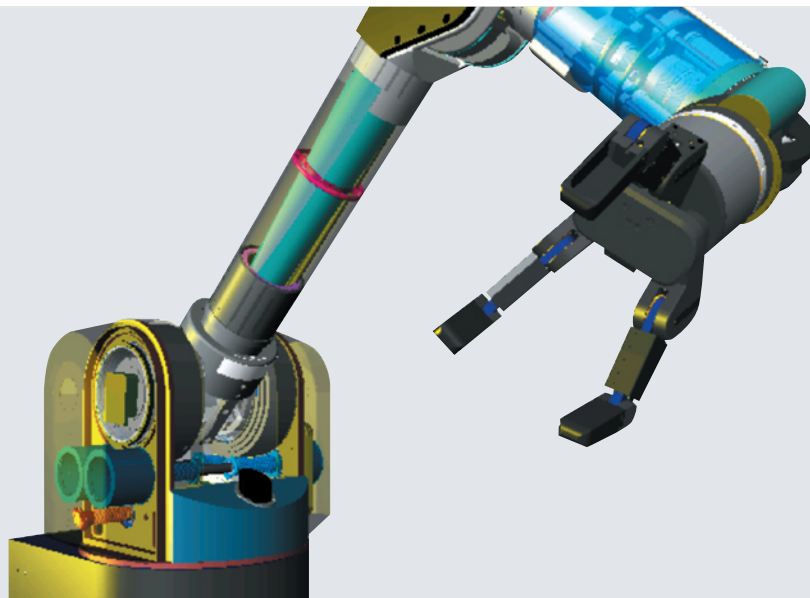


Barrett Technology, Inc.

HIGH-PERFORMANCE ROBOT MANUFACTURER DESIGNS FASTER IN 3D



Over 500 parts designed and assembled with SolidWorks

- Cut design review time in half
- Reduced manufacturing costs by nearly 50 percent
- Increased design speed by factor of four

Exacting precision and tight tolerances define the field of advanced robotics. Visualizing complex mechanisms effectively and computing part weights accurately are essential in creating these highly engineered products. Barrett Technology®, Inc. of Cambridge, Massachusetts has thrived on such challenges since its founding in 1988, consistently producing an array of innovative robots that outperform the competition.

Among Barrett's innovations is the first universal grasper compact enough to be attached to any commercial robotic arm. Weighing only one kilogram, the unique three-fingered robot hand performs a variety of manipulation tasks calling for a high degree of flexibility and function.

Seeking a more flexible approach to design

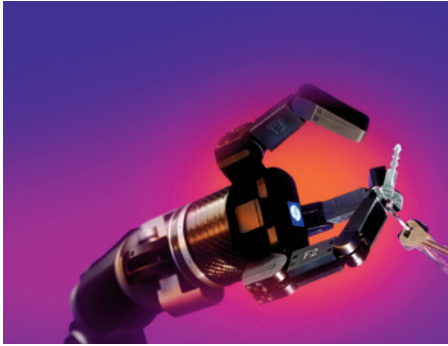
Initially, Barrett engineers created robotic designs manually, using line drawings and 2D CAD systems. But the designs could capture only a fraction of the part information and were difficult to interpret, which led to costly machining mistakes. Later, Barrett engineers tried a 3D wireframe system to capture more of the geometry, but the tool tripled the design time. Barrett needed a more efficient design process to remain competitive in an increasingly fast-paced arena. "Having finished several early product designs using 2D CAD, we urgently needed to find a better tool that could be adopted quickly and produce appreciable results," recalls William Townsend, president and CEO of Barrett Technology.

"When we started looking, price/performance was problematic," continues Townsend. "Most systems not only were expensive for us, but required high-cost computer hardware and came with shelves full of manuals. That's not a good sign when you're looking for fast adoption." SolidWorks® CAD software offered an ideal long-term solution to the small but growing company. A powerful Microsoft® Windows® solution, SolidWorks integrated seamlessly with Barrett Technology's standard office system. "Low cost of ownership and Windows compatibility were of paramount importance to us," says Townsend. "The intuitive Windows interface meant we wouldn't be tying up our engineers in extensive training."



“The ability to capture and communicate design intent through the SolidWorks solution has virtually cut our design reviews in half.”

Dan Norton, Product Engineer



Barrett three-fingered grasper and human-interactive arm

Delivering new models to customers faster

Since the adoption of SolidWorks, Barrett has seen a dramatic increase in development efficiency. According to Product Engineer Dan Norton, SolidWorks is helping engineers and designers deliver new orders and change orders faster than ever. “Component design and drawing that took 16 hours with our old systems now take only four hours,” he observes.

“SolidWorks was a strategic decision that has driven our R&D success to a higher level,” adds Norton. He cites the recent redesign of the WAM arm as a prime example. With SolidWorks, Barrett was able to reduce manufacturing costs dramatically. “The ability to capture and communicate design intent through the SolidWorks solution has virtually cut our design reviews in half,” concludes Norton. “Simply by making solid modeling possible at our designer’s PC, we’re able to design faster, help customers see solutions better, and easily use the model for analysis and manufacturing,” explains Townsend.

Taking the drudgery out of engineering

With SolidWorks, Barrett engineers no longer spend countless hours updating drawings and individual parts, scaling products and calculating mass properties when they would rather be designing. SolidWorks keeps complex assemblies up-to-date automatically, applies configuration rules for resizing, and monitors the effect of mass on each design improvement.

Townsend points to the latter feature as a significant advantage because it has helped Barrett build the first practical dextrous grasper where competitors’ attempts have failed. “Before SolidWorks, making a radical design change like doubling the payload capacity of one of our robots would have taken us years of design reengineering,” says Townsend. “Now we can rescale a complex design in months while the market opportunity is still hot, and at a fraction of the cost.”



Dassault Systèmes SolidWorks Corp.
300 Baker Avenue
Concord, MA 01742 USA
Phone: 1 800 693 9000
Outside the US: +1 978 371 5011
Email: info@solidworks.com
www.solidworks.com



Barrett Technology, Inc.
139 Main Street, Kendall Square
Cambridge, MA 02142 USA
Phone: +1-617-252-9000
www.barrett.com