

**PRESS RELEASE**

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09/12/2023

**Bosch Rexroth collaborates with the Da Vinci Science Center on new T-REX exhibit.**

For Immediate Use

**The project team revitalized and re-imagined a popular exhibit created years ago for the science center.**



There's a new dinosaur in town at the Da Vinci Science Center!

**Visitors to the science center will be able to bring the dinosaur to life using the same hydraulic technology that Rexroth developed to drive industrial and mobile machines, ranging from motors to pump systems, including controls.**

Some might say a T-Rex brought to life, others a hydraulic animatronic marvel. Visitors control various moving parts of the towering 8 ft. tall and 11 ft. long robotic dinosaur to observe the power and precision of hydraulic systems. Portions of the dinosaur's scenic shell are removed, exposing the inner hydraulic components in the head, hips, neck, and jaw.

The display uses a Rexroth XM42 motion controller that uses the MLC-H (MLC for Hydraulics) control package to provide position control for the hydraulic cylinders on the dinosaur. There are four axes of control: Hip Rotate, Jaw Open/Close, Head Nod, and Neck Turn. Each individual axis consists of a ctrlX Drive servo drive, an MS2N motor, an AZMB hydraulic pump and Rexroth hydraulic cylinder.

The MLC-H control uses a linear transducer to close the position loop with the hydraulic cylinder. Within this loop, the servo motor runs a velocity loop to turn the hydraulic pump, providing oil pressure/flow on one side of the cylinder or

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the other, providing linear motion on the cylinder to move the mechanism. A Rexroth CytroPac provides boost pressure for all for axes.

The users can actuate four different joysticks, one for each axis, to control the dinosaur. If no one is using the joysticks, the dinosaur reverts back to Auto mode where it runs 10 different motion profiles that are pre-programmed using the Rexroth MLC FlexProfile function. A ctrlX CORE provides a Node Red user interface for maintenance needs, along with providing flexibility for future enhancements such as a digital twin, camera tracking system, and other analytics on dinosaur performance.

Watch the video to see the dino in motion during commissioning at the Bethlehem, PA Rexroth plant. <https://youtu.be/9lYc1a4AMy4>



The multi-disciplinary team that worked on the project attended a special reception at the science center before the opening to the public. The exhibit is already popular on its opening weekend.

The Rexroth team that created the dinosaur comprised Application Engineers, Control/Design Engineers, Assembly Testing & Paint Technicians, Project Managers, Customer Service Representatives, Marketing, and Graphic Designers – a multidisciplinary example of STEAM in Action.

For more information about the T-REX or the group that worked on the dino project, contact Jon Frey at [jon.frey@boschrexroth-us.com](mailto:jon.frey@boschrexroth-us.com).

### **About Bosch Rexroth:**

*As one of the world's leading suppliers of drive and control technologies, Bosch Rexroth ensures efficient, powerful and safe movement in machines and systems of any size. The company*

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*bundles global application experience in the market segments of Mobile and Industrial Applications as well as Factory Automation. With its intelligent components, customized system solutions, engineering and services, Bosch Rexroth is creating the necessary environment for fully connected applications. Bosch Rexroth offers its customers hydraulics, electric drive and control technology, gear technology and linear motion and assembly technology, including software and interfaces to the Internet of Things. With locations in over 80 countries, more than 32,000 associates generated sales revenue of around 7.0 billion euros in 2022. [www.boschrexroth-us.com](http://www.boschrexroth-us.com).*

### **About Bosch:**

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*Additional information is available online at [www.bosch.com](http://www.bosch.com), [www.iot.bosch.com](http://www.iot.bosch.com), [www.bosch-presse.de](http://www.bosch-presse.de), [www.twitter.com/BoschPresse](https://www.twitter.com/BoschPresse).*

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