

# Boeing selects ESAB for Space Launch System Project

**Boeing (NYSE: BA) has selected ESAB AB as a partner in the manufacturing of fuel tank structures for NASA's new heavy-lift rocket, the Space Launch System (SLS).**

The SLS will be the largest American rocket ever built and will measure 200 feet taller than the entire space shuttle rocket assembly. The SLS will measure 384 feet in total length, with a weight of 6.5 million pounds. The construction of an assembly of this magnitude requires entirely new ways to fabricate, assemble and weld the main fuel tank structures.

Engineers and experts from ESAB have worked with Boeing and NASA for more than a year to develop the new Vertical Assembly Center (VAC), which is a giant orbital welding system that is capable of supporting the huge rocket fuel tank while circumferentially welding its sections together with the friction stir process. ESAB's construction of the VAC will be the largest welding machine of its type in history, and is the most precise part of the assembly.

The VAC is being designed, engineered and built at the ESAB facility in Laxå, Sweden and is supported by ESAB's North American Automation Division. The vertical tower assembly is being built in the United States using U.S. steel and component materials.

ESAB's level of friction stir technology expertise and strong operational and project management procedures were key factors in this selection.

Boeing worked with ESAB to employ friction stir welding technology on the Delta II and Delta IV rocket programs in the late 1990's and early 2000's. Friction stir welding uses a spinning tool with a great deal of pressure and torque to mix metals together without melting them. This allows users to fuse together hi-tech alloys that are difficult or impossible to join with conventional welding techniques.

Friction stir welding has the potential to change the way many common structures are built from passenger trains and airplanes to trucks, cars and electronics. The low heat input and high strength of automated friction stir welds provide opportunities for manufacturers to redesign their structures for lighter weight, lower cost and higher performance.



*Friction Stir Welding tool*

The SLS project is widely viewed as America's next-generation space program, with the goal of producing a rocket to transport people beyond Earth's orbit. Slated for launch in 2017, this expandable rocket has tremendous capabilities for transporting payload during deep space explorations.

"We are honored to be part of this historical project with the Boeing Space Launch System (SLS) team and NASA", said Ken Konopa, Vice President of Marketing for ESAB.

"ESAB is known as a developer of advanced welding technologies, and we are prepared to deliver those results as part of this next-generation space program".

ESAB AB is a recognized leader in the welding industry. From time-honored processes to revolutionary technologies, ESAB's filler metals, welding and cutting equipment and accessories bring solutions to customers around the globe. For more information about ESAB, visit [www.esab.com](http://www.esab.com)