

ASSEMBLY MAGAZINE

Assembly in Action: Rivets Ensure Quality Seat Assembly

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Among the products Lear Corp. (Southfield, MI) manufactures at its plant in Roscommon, MI, is the Pro-Tec PLuS self-aligning head restraint system, part of the seats the company provides for use in the Cadillac CTS sedan.

To join each restraint's "harp" frame and a pair of stamped steel brackets and plastic bushings, the company employs a customized Hydra workstation to install two Stavex all-steel breakstem rivets from Avdel North America (Stanfield, NC), a subsidiary of Acument Global Technologies.



Lear selected the Stavex fasteners over the threaded fastener and weld-nut approach, because the latter didn't offer the same repeatability. The brackets are a key part of a mechanism that pivots the seat's headrest up and forward in a rear-impact crash. The plastic bushings prevent noise and rattle under normal driving conditions.

In operation, when a harp arrives at the Avdel-made Hydra workstation, an operator sets it into a holding fixture, inserts the Stavex rivets into a pair of placing heads and sets a bracket with a bushing over each rivet.

The placing heads then close horizontally, simultaneously inserting the rivets and brackets into the holes of the harp. Afterward, they extract the stems and return to a home position.

The system includes a battery of sensors that monitor the force and distance of each riveting stroke to ensure correct and consistent settings. If a hole is too large or a part isn't quite right, the system will sense these problems and not insert a rivet.

If all process parameters fall within predetermined limits, the harp assembly is date and time stamped to facilitate traceability. The entire process takes about 22 seconds.

Stavex all-steel breakstem rivets include a unique crimp design that provides a wide grip range and creates a smooth bubble formation on the backside of the application. High shear strength, tensile strength and consistent clamp loads ensure strong, vibration-resistant joints.

The rivets can be used to fill irregular, oversized, slotted and misaligned holes. The rivets' enlarged bulbing tail means they are well suited for use with thin sheet materials. The Stavex rivets used in the Pro-Tec PLuS harp steel tubing application are 3/16 inch in diameter and about 5/8 inch long.

For more on rivets and other mechanical fasteners, call 704-888-7100 or visit www.avdel-global.com.