STANLEY®
Engineered Fastening

TUCKER™

Technology-Leading Automated Solutions for
No-Hole Fastening and Mechanical Joining

Stanley® Engineered Fastening work in close proximity with our customers to develop solutions that deliver outstanding application performance and best in class production efficiency.

Early collaboration during the design phase and complete understanding of the customer's challenge ensures that we can offer the best possible technical solution and the lowest total cost of ownership.

TUCKER™

No-hole Fastening System

Stud welding, Nut welding, Stud gluing.
Equipment and fasteners.

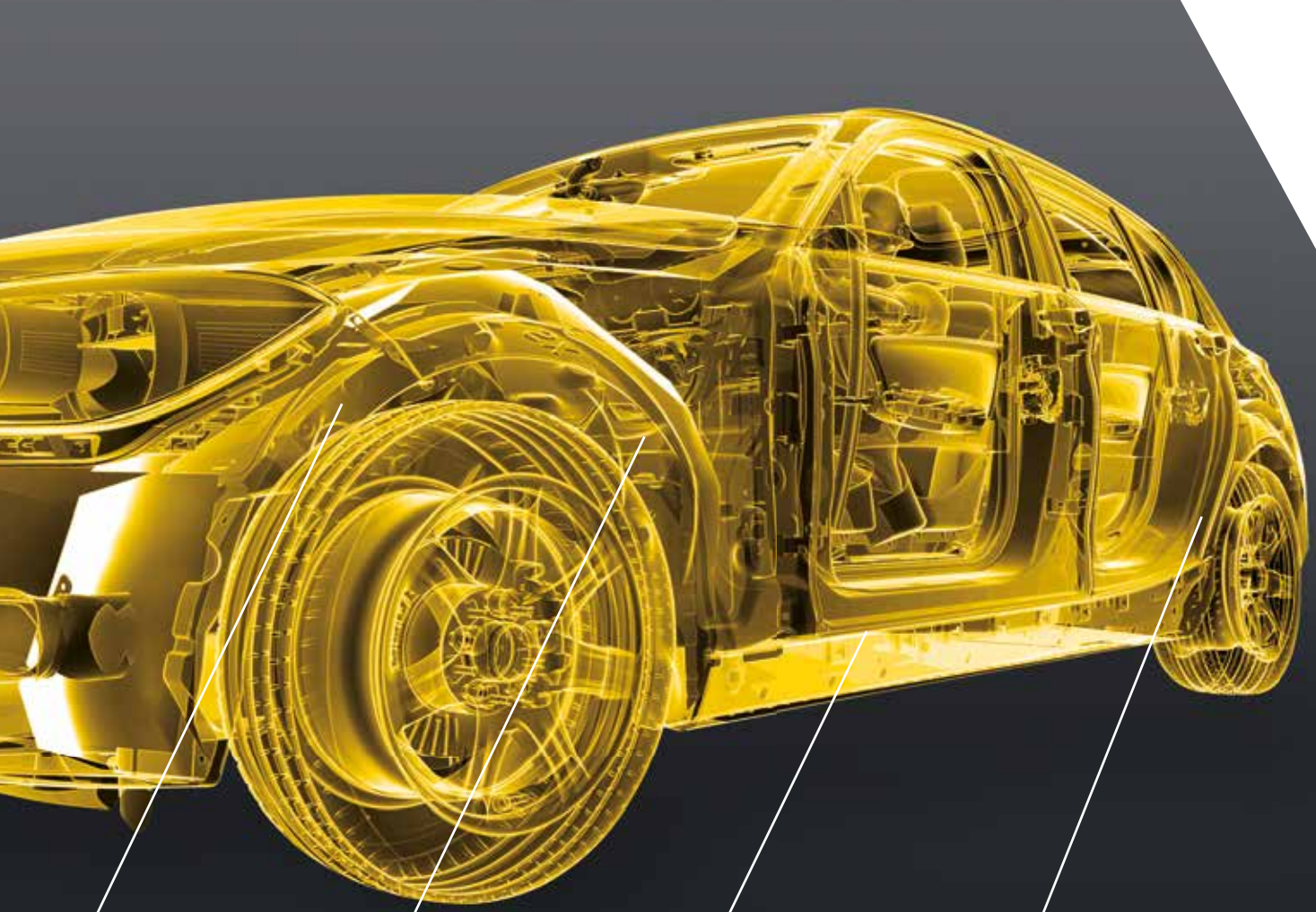
Mechanical Joining System

Self-pierce riveting.
Equipment and fasteners.

STANLEY®
Assembly Technologies

Torque Controlled Assembly

Precision threaded fastening and blind rivet applications.



AVDEL®

Sealing Plugs

Efficient sealing performance in powertrain, engine and gearbox.

INTEGRA™

Plastic Clips

Fluid routing, wiring harness, functional components and bus bars.

POP®

Blind Rivets and Rivet Nuts

Reliable fastening in soft, brittle and thin metals and plastics.

OPTIA™

Threaded components

Metal clips for interior panels, threaded inserts and anti-vibration solutions.

Stanley Engineered Fastening offer a full range of automotive fasteners and systems. Our engineering expertise in providing a complete application solution helps our customers to reduce complexity in the assembly process and improve production efficiency.

TUCKER™

No-hole Fastening

No-hole fastening consists of a plastic fastener, a metal stud, and the equipment required to attach the stud to the car body.
The process for attaching the stud can be arc welding, gluing or various other technologies. Tucker welding systems are used in automotive manufacturing worldwide in sheet materials like aluminum, stainless steel and steel as thin as 0.6mm.

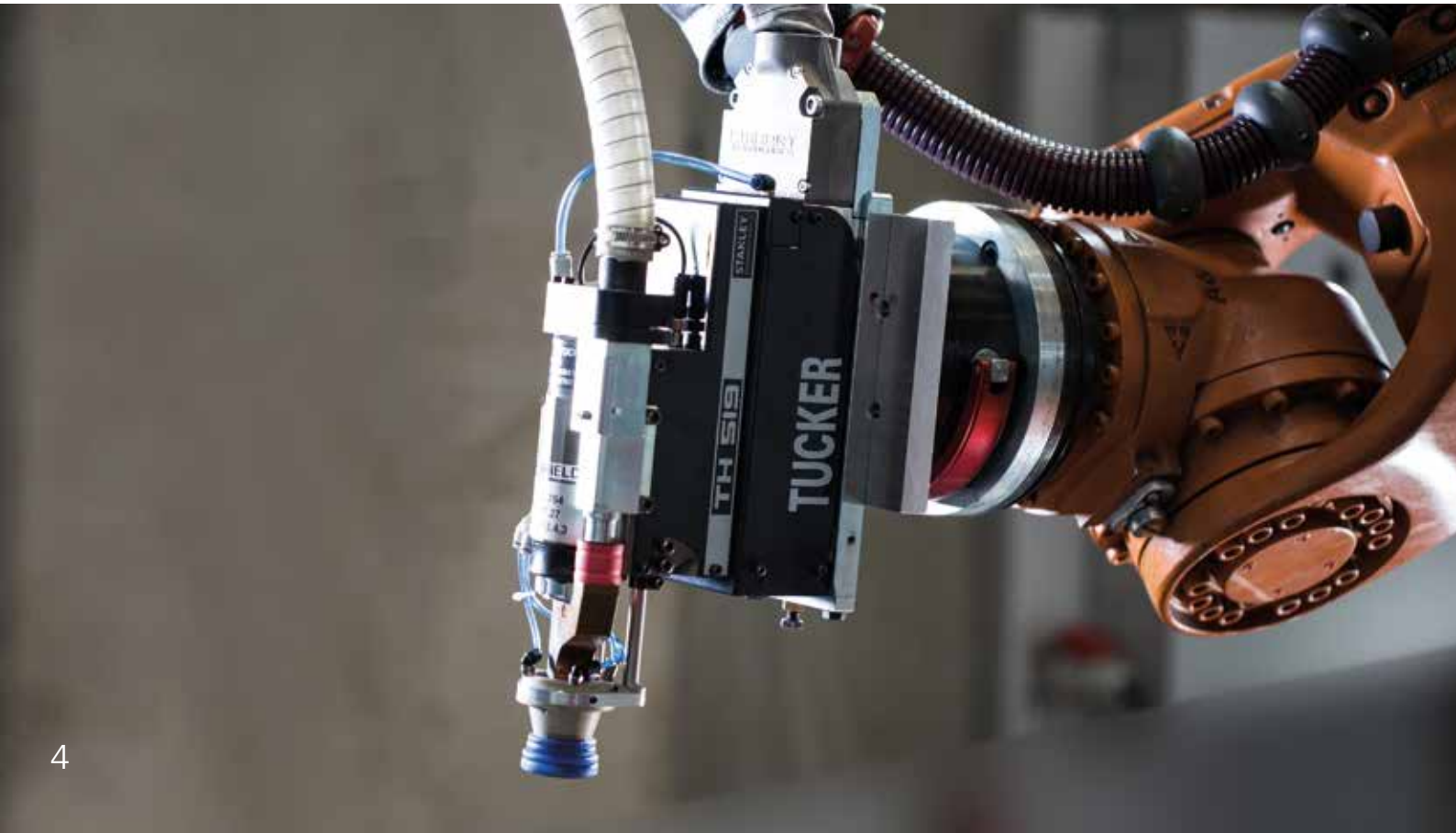
Stud Welding Equipment

SMPS based Tucker Stud Welding equipment with linear motor technology is characterized by process accuracy.

High operational reliability and compact design with automated (lateral) stud feed minimizes space required in a production facility.

Tucker Control and Energy Units provide real time measurement of all weld parameters and exceptional weld quality. The cost efficient unit can connect to up to 5 outlets.

Feeding unit provides non-aggressive separation and secure delivery to the feed tube. Optional feeding switch allows two studs with similar geometry to be fed to a single welding tool to improve production efficiency.



TUCKER™

Tucker Weld studs

The link between the carrier material and the components to be fastened.

- The Tucker range includes more than 600 standardized parts, many of which are suitable for multiple applications facilitating part reduction
- Several plating options are available for corrosion protection, and all Tucker studs deliver a 100% sealed join to eliminate leakage and manage NVH
- Stud materials: steel, aluminum, stainless steel
- Can be welded onto steel grades up to 1600 MPa and thicknesses from 0.6mm up, and various grades of Aluminum

Ring Flange Stud

General Assembly

Aluminum Stud

Grounding Stud

Specials

Nutfast

With Nutfast it is possible to leverage the same industry proven Tucker weld process to join nuts as well as studs - providing an internal thread on the car body. This includes automatic feeding capabilities.

The special geometry of Tucker Nuts and a large outer diameter create a highly secure positive bond to the base plate. The Tucker Nut is cold-forged, resulting in its very high internal strength. M5 to M10.

Weldfast

Fully automated feed to directly weld metal parts of any shape with only single sided access.

- No more contact surface for corrosion - joining without gaps
- Flat welded joint along almost the whole profile
- Cycle speed - up to six pieces per minute
- 1 bracket can replace up to 4 different parts
- Up to 75% of the spot welded bracket weight can be eliminated

Stud Gluing

The Tucker range also includes No-hole fastening system for non-weldable materials like Carbon Fiber Reinforced Polymers, glass and painted surfaces.

- Automated stud feeding and processing of glue studs with pre-applied adhesive
- Enables the use of full Integra® plastic clip portfolio
- All finishes must be able to withstand short time at 180°C

TUCKER™

Self-pierce Riveting

SPR technology is ideal to create a reliable join in lightweight materials which cannot be easily spot welded, including aluminumaluminum, aluminum-steel, and high-strength steel. The cold joining process generates no heat or emissions, and can often demonstrate twice the service life of traditional spot welds. Process data also can be checked in real time with digital quality control to avoid expensive rejects.

Extreme applications can also be solved with self-pierce riveting, including:

- Joining thick materials to thin
- Ultra-high strength materials
- Total sheet thickness of 9mm

Equipment

Tucker system offers a robust process to manage variation in material and maintain quality.

- Our electronic motor provides repeatable input regardless of operating temperature
- Instead of relying on a standard input force, our unique electronic monitoring system pushes rivets to a consistent head height
- Force-path measurement, sheet thickness and rivet length are all checked in real time with digital quality control
- Rivet switches, tool changer capabilities and die changers complete the product range, allowing highly flexible manufacturing lines
- High-speed spindle, rivet magazine and 7th axis functionalities deliver shortest possible cycle times

Tucker system offers improved cycle time to accelerate production capacity while maintaining reliability.

- High-speed spindle, rivet magazine and 7th axis functionalities deliver shortest possible cycle times
- Electronic tool control demands rivet feed immediately after punch clears channel
- Full-speed spindle motor for both forward and reverse movement
- Variable spindle positions on-demand and in-transit for faster application
- Fully-variable stroke and start position prepares spindle for the next rivet, often only a few millimeters away

Tucker system delivers lowest total cost of ownership.

- Tucker spindles offer variable mid-cycle adjustment to 0-80KN force, covering multiple different rivet applications towards lower cost and simplified assembly
- Run six spindles with one controller, increasing ROI and efficiency
- Fully-electronic spindle lowers system stress and downtime, delivering smooth force rather than hammering via hydraulic or flywheel – reducing maintenance cost

TUCKER™

Rivets and Applications

Standard C-style rivets cover the biggest variety of applications, perfect for the aluminum body shop

CDH rivets are designed for 3 or more layers of material and suit various multi-layer applications

HSS rivets are perfect for steel between 600 – 1000Mpa for example hood enclosures

UHSS rivets are for joining steel between 1000-1600Mpa such as A,B or C pillars

Duplex rivets are designed for Carbon Fiber Reinforced Polymers and extreme light weighting

Application Solution Expertise

Too often, automotive manufacturers are forced to compromise on rivet or joint specification to achieve production efficiencies related to equipment capability. Stanley Engineered Fastening works closely with automotive engineers to eliminate compromise, continuously evolving our Tucker systems to meet the demands of new materials and deliver high quality production as intended in the original design phase.

As a one stop solution center, Stanley Engineered Fastening provides Tucker equipment, fasteners, spare parts, technical services, intensive training programs, and application engineering support.

STANLEY
Engineered Fastening

Product Portfolios

AVDEL	INTEGRA	NELSON	OPTIA	POP	STANLEY Assembly Technologies	TUCKER
Structural Blind Fasteners	Plastic Components	Stud Welding	Threaded Fasteners	Non-structural Blind Fasteners	Specialist Assembly	Automated Fastener Systems







STANLEY
Engineered Fastening

Stanley Engineered Fastening — a division of Stanley Black and Decker — is the global leader in precision fastening and assembly solutions. Our industry-leading brands, Avdel®, Integra™, Nelson®, Optia™, POP®, Stanley® Assembly Technologies, and Tucker®, elevate what our customers create. Backed by a team of passionate and responsive problem-solvers, we empower engineers who are changing the world.

STANLEY ENGINEERED FASTENING FAMILY OF BRANDS

AVDEL INTEGRA NELSON OPTIA POP STANLEY Assembly Technologies TUCKER

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