

RIFAST® STM

FOR COMPONENTS WITH
THICKNESSES BETWEEN
0.6 AND 2.0 MM

RIFAST® STM+

FOR COMPONENTS WITH
THICKNESSES BETWEEN
2.0 AND 3.0 MM



OPTIMAL FIT & HIGH THICKNESS FIT SOLUTIONS – Technical Product Sheet

STM & STM+ SELF PIERCING NUT

The proven and reliable self piercing nut product line mechanically joined to metal components by means of automated insertion technology

› THE RIFAST® SYSTEMS ADVANTAGE

Systems expertise from designing, manufacturing clinch fasteners and automation equipment to consultation and realization in serial production

With over 25 years of expertise as a full system provider RIFAST® is the partner for developing economical solutions for reliable integration of mechanically joined clinch fasteners. The systems approach of clinch fasteners through automation equipment for in-die and off-line operations guarantees the optimal joint connection. The mechanical joining with the RIFAST® staking die designed to the customer component ensures consistent performance values in addition to eliminating thermal influences and distortions observed during welding.

› THE RIFAST® SELF PIERCING NUT ADVANTAGE

Compact, reliable, weight-optimized, secure, self piercing and watertight

With its compact, space-saving lightweight design, the RIFAST® self piercing nut is the proven and reliable solution for a wide range of applications. Whether this is with steels or aluminum alloys, the self piercing nut eliminates the need for the pre-hole operation in the component - reducing process time, while delivering a flat contact surface for attachment of mating parts (no protrusion on component underside after joining process). Depending on component material and thickness, watertight joining is possible - with no cracks on the functional element. The RIFAST® STM is the solution for components with thicknesses between 0.6 and 2.0 mm and the RIFAST® STM+ for components with thicknesses between 2.0 and 3.0 mm.



Application examples

RIFAST® STM & STM+
e.g. Body panels,
Doors and closures,
Box enclosures

TECHNICAL DATA

Thread Sizes	M5, M6, M8, M10, M12				
Strength Grade	10 (DIN EN ISO 898-2)				
Surface Coating	OEM-approved coatings				
RIFAST® Standard	WN 20330 (STM), WN 20370 (STM+)				
Tensile Strength	150 - 600 N/mm ²				
Component Materials	Steels, aluminum alloys				
Automation Equipment	Press, C-Frame (automatic or manual)				

Thread Size	M5	M6	M8	M10	M12
Application Thickness (mm)	0.6 - 3.0	0.6 - 3.0	0.6 - 3.0	1.2 - 3.0	2.0 - 3.0
Push-Out in 2.0 mm (kN) ¹	3.3	3.3	3.7	5.2	5.5
Torque-Out in 2.0 mm (Nm) ¹	12	18	42	90	118

¹ Performance values for reference, derived from destructive testing in a component made out of steel DC01 with a thickness of 2.0 mm by RIFAST® Application Engineering

Performance values for push-out and torque-out are dependent on the component material (steel, aluminum alloy, copper alloy), the application thickness and in combination with RIFAST® staking die. Performance values for other component materials and application thickness can be validated through RIFAST® Application Engineering.

MECHANICAL JOINING PROCESS AND CROSS-SECTION

POSITIONING

Punch
STM+
Component
Staking die

The component is positioned above the RIFAST® staking die. The RIFAST® STM/STM+ is placed in the punching position of the setting head.

INSERTION

The insertion operation is started. The hydraulic unit applies pressure to the RIFAST® STM/STM+ which punches a hole in the component. The RIFAST® STM/STM+ is pressed into the component.

FINAL STEP

The tool opens and the finished component can be removed.

Cross section RIFAST® STM+ M10 clinched in sheet steel DC04 with thickness of 3.0 mm