RIFAST® S-ENM

FOR COMPONENTS WITH WALL THICKNESSES BETWEEN 1.2 AND 2.4 MM

HIGH STRENGTH PLATTFORM – Technical Product Data Sheet

RIFAST® S-ENM SPECIAL CLINCHING NUT

The innovative series of clinching nuts for over-elastic screw connections for fully automated, mechanical joining in high-strength and ultra-high-strength steel components

THE RIFAST® SYSTEM ADVANTAGES

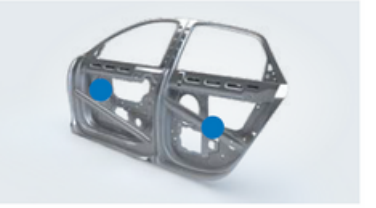
Systems expertise from designing, manufacturing clinch fasteners (studs, nuts), and automation equipment to consultation and realization in serial production

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 clinching fasteners through automation equipment for in-die and off-line operations guarantees the optimal joint connection. 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® S-ENM ADVANTAGES

Highest torque-out moments for over-elastic screw connections and watertight joints without complex hole preparation for high-strength and ultra-high-strength steel components

The RIFAST® special clinching nut is the perfect solution for high-strength and ultra-high-strength steels in car body construction. It is pressed into a round pilot hole without any further sheet metal preparation and ensures a flat screw-on surface for attachments (without protrusion on the underside of the component). Depending on the component material and wall thickness, a watertight connection is possible – without cracks in the functional element. The RIFAST® S-ENM is the solution for component wall thicknesses between 1.2 and 2.4 mm, meeting the very high requirements of electromobility in terms of surface pressure, connection strength, and water tightness.



Application examples
RIFAST® S-ENM
e.g., body structures,
chassis components,
and crash-relevant areas

TECHNICAL DATA

Thread Size	M8, M10
Strength Grade	10 (DIN EN ISO 898-2)
Surface Coating	OEM-approved coatings
Tensile Strength	1000 - 2000 N/mm^2
Component materials	High-strength and ultra-high-strength steels, press-hardened steel
Automation Equipment	Press, C-frame (automatic or manual)

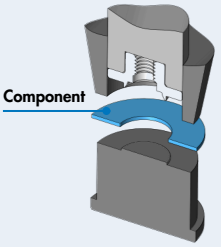
Thread Size	**M8**		**M10**
Application Thickness (mm)	1.2	1.4	1.6
Push-out (kN)[1]	2.0	2.0	2.0
Torque-out (Nm)[1]	62	62	125
Water Tightness	IPX7	IPX7	IPX7

[1]Performance values for reference, based on metal sheets made out of steel HCT980XD at the RIFAST® application lab

Performance values for push-out and torque-out are dependent on the component material, 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.

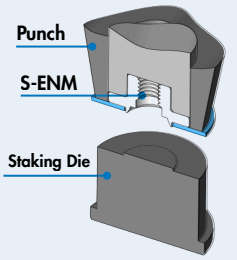
MECHANICAL JOINING PROCESS AND CROSS-SECTION

POSITIONING



The component is positioned at the insertion position above the staking die. Component has no contact with staking die.

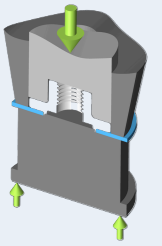
CLAMPING



The tool is closed.

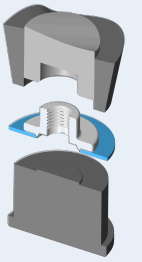
The RIFAST® S-ENM rests on the component above the die. The pressure pad of the punching head presses down on the component.

PRESSING

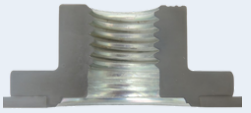


The plunger then presses the RIFAST® S-ENM into the component. During the insertion operation, it must be ensured that the RIFAST® ENM first lies on the component surface. and is subsequently pressed in.

FINAL STEP



In order to remove the component after the tool has opened again, the component must be raised at least by the height of the die shaping ring.



Cross-section RIFAST® S-ENM M10 clinched in sheet steel HCT980XD with wall thickness 1.6 mm.

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