OPTIMAL FIT SOLUTIONS – Technical Product Sheet

RIFAST® EPB STAKING BOLT

The robust and space-saving clinching bolt product line mechanically joined to thin 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® STAKING BOLT ADVANTAGE

Compact, reliable, weight-optimized, secure, dynamic loads and watertight

With its compact, space-saving lightweight design in standard sheet thicknesses, the RIFAST® staking bolt is the proven and reliable solution. Whether this is with steels or aluminum alloys, the staking bolt can be used for both static and dynamic load conditions on the joints. Available with different thread ends in accordance with DIN EN ISO 4753 and MAThread®. Depending on component material and thickness, watertight joining is possible - with no cracks on the functional element. The RIFAST® EPB is the solution for components with wall thicknesses between 0.75 and 2.5 mm.

Application examples
RIFAST® EPB
i.e. body panels, airbag and dashboard supports

TECHNICAL DATA

Thread Sizes	M5, M6, M8, M10, M12
Strength Grade	8.8, 9.8, 10.9 (DIN EN ISO 898-1)
Surface Coating	OEM-approved coatings
RIFAST® Standard	WN 10320 (EPB)
Tensile Strength	150 - 600 N/mm²
Component Materials	Steels, aluminum alloys
Automation Equipment	Press, C-Frame (automatic or manual)

Thread Size	**M5**	**M6**	**M8**	**M10**	**M12**
Application Thickness (mm)	0.75 - 2.5	0.75 - 2.5	0.75 - 2.5	1.2 - 2.5	1.2 - 2.5
Push-Out in 1.5 mm (kN)[1]	1.5	1.5	2.0	2.5	3.0
Torque-Out in 1.5 mm (Nm)[1]	9	15	25	60	90

[1] Performance values for reference, derived from destructive testing in a component made out of steel DC01 with a thickness of 1.5 mm by RIFAST® Application Engineering

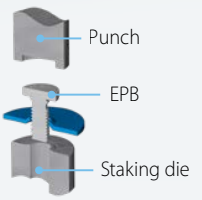
Performance values for push-out and torque-out are dependent on the component material (steel, aluminum alloy, copper alloy), the application thickness and in combination with RIFAST® staking die. Performance values for other component materials and application thickness can be validated through RIFAST®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

MECHANICAL JOINING PROCESS AND CROSS-SECTION

PREPARATION
with pre-hole operation

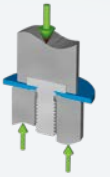
For a wall thickness of up to 2.00 mm the component is pre-domed and a pre-hole is pierced.

POSITIONING



The component is positioned above the RIFAST® staking die. RIFAST® EPB is placed in the insertion position.

INSERTION



During the insertion operation, the hydraulic unit applies pressure to the RIFAST® EPB which is subsequently pressed into the component.

FINAL STEP

The tool opens and the finished component can be removed.

Cross section RIFAST® EPB staked in aluminum 6000 series with wall thickness 1.2 mm