

HITSERT® Screwlock

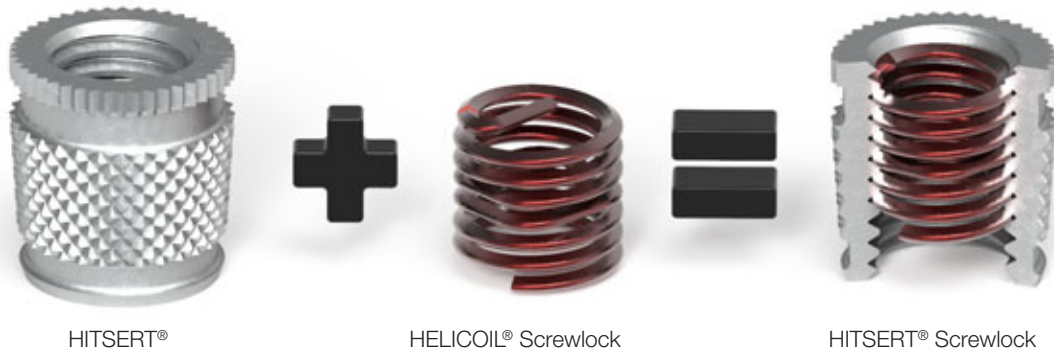
Precision thread insert for plastic components
with screw-locking

BÖLLHOFF

HITSERT® Screwlock – Precision thread insert for plastic components with screw-locking

Today's developments in the lightweight construction focus on customer added values, like weight reduction, short cycle times and self-locking fasteners.

Surely you are familiar with this situation: When under load, screwings tend to loosen. Load can be e.g. vibration, alternating load or general kinetic energy to be absorbed. In many applications, it is absolutely necessary to take precautions against unintentional loosening. As a specialist in fastening and assembly technology, we offer you HITSERT® Screwlock for these applications. An efficient combination of two fasteners. Proven technology you can rely on.



The HITSERT® Screwlock combines the advantages of an aluminium (EN AW 6061) HITSERT® 2 and a stainless steel HELICOIL® Screwlock* thread insert. These two elements match perfectly to provide considerable benefits for screwed connections with high requirements. Locking of the screw is achieved with a polygonal-shaped thread of the HELICOIL® Screwlock. These threads have a locking effect on the flanks of the screw or bolt to be screwed in. The result is an elastically resilient frictional locking mechanism with the bolt or screw resisting self-loosening and unscrewing.

Depending on the specific application, increased clamping torques can be achieved with several polygonal-shaped threads. The achieved clamping torques can be compared to the indications in the list of standards DIN 267 Part 15, ISO 2320 or adapted to your individual application.

Your benefits at a glance

- High pull-out values
- Very good mechanical properties in thermoplastics
- Minimised weight
- HELICOIL® resists up to 15 screw cycles and can be replaced for repair
- Meet different aerospace standards
 - Locking torque values according to NASM 8846
 - Testload values according to NASM 25027

* HELICOIL® Screwlock thread insert according to NASM 21209.

Thread inserts for thermal installation – HITSERT® Screwlock

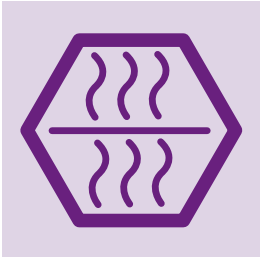
The thread insert is heated to the melting temperature of the plastic. As a result of the heat transfer upon insertion, the plastic is plasticised for a short time and flows into the undercut of the thread insert. Upon cooling, a low-stress interference is realised.

The advantages

- Ideal for thermoplastic parts
(e.g. PEI or PEEK for harsh environment)
- Especially designed for thermal inductive installation
- Screw-locked and low-tension anchoring
- High pull-out values
- Efficient installation due to single-spindle, multiple-spindle or automatic machines with preheating device



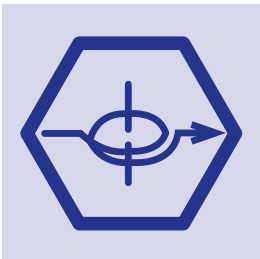
Installation method for HITSERT® Screwlock



Heat element welding – HEW

Heat element welding is an approved joining process to embed metal thread inserts into thermoplastic mouldings. It is a single-phase process in which contact heat is transferred through the metal insert to the joining zone of the plastic material.

During fusion of the plastic material in the area of the contact surface, joining is carried out. In this process, the plasticised mass is displaced into defined recesses and undercuts. That is how a form-closed joint results.

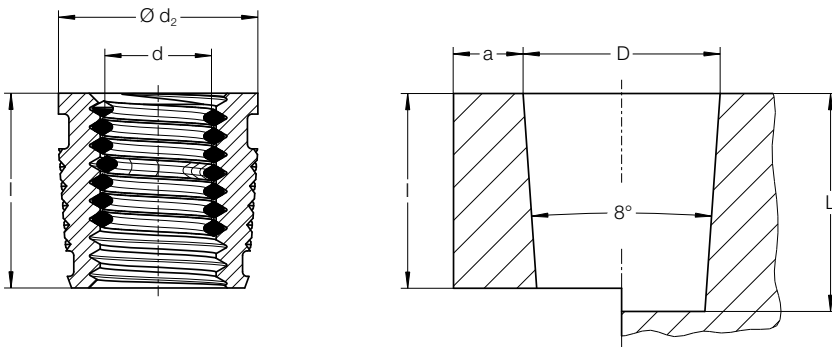


Electromagnetic resistance welding – ERW

ERW is a joining process developed by KVT Bielefeld (Germany) for joints of metal and thermoplastic components. An electromagnetic AC field heats the thread insert without contact and the contact surface of the plastic component is plasticised. In the simultaneous joining process, the fused material is displaced into recesses and interlocks.

Heating of metal elements of any size is executed within a very short time (approx. 2 – 6 sec.). After switching off power supply, accelerated cooling of the melt takes place allowing an installation accuracy of up to 0.05 mm.

Technical data



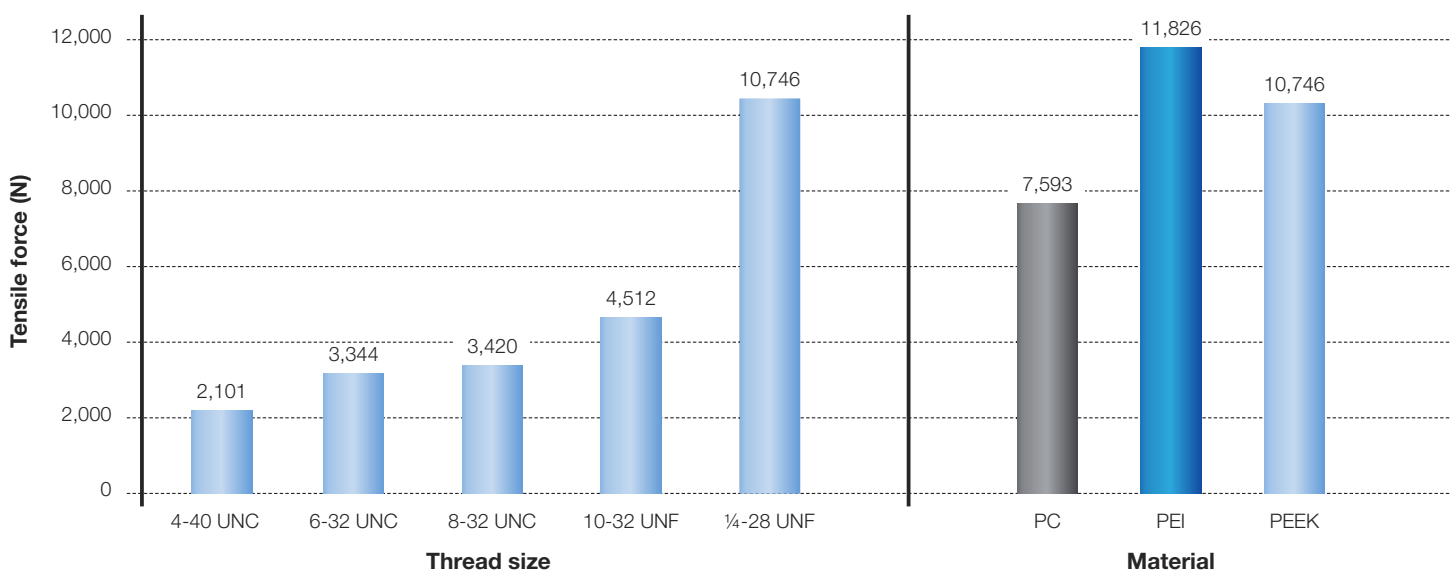
The variants

d	Order No.	l	d ₂	D ^{+0.1}	L _{min.}	a _{min.}	m (g)
4-40 UNC	0934 965 6001	5.3	5.89	5.8	6.3	1.5	0.3
6-32 UNC	0934 967 6001	6.5	7.00	6.9	7.5	2.0	0.5
8-32 UNC	0934 968 6001	7.5	7.00	6.9	7.5	2.0	0.6
10-32 UNF	0934 969 7001	8.6	8.60	8.5	9.4	2.5	1.0
¼-28 UNF	0934 974 7001	1.9	11.00	10.9	11.9	2.5	2.0

Technical information

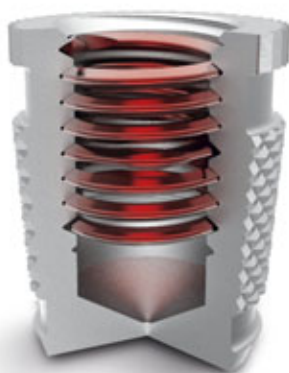
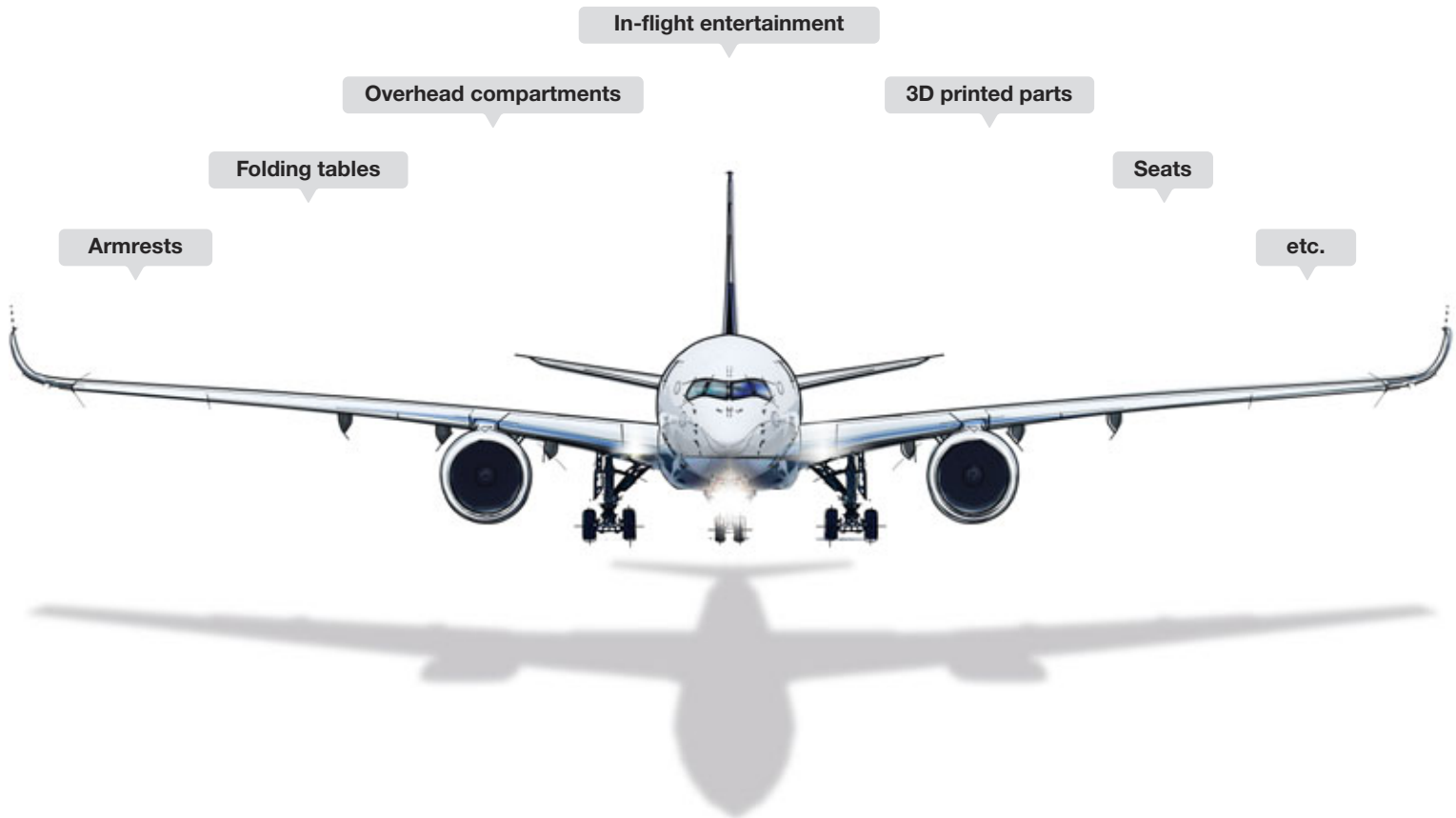
Tensile test PEEK

Tensile test ¼-28 UNF



Fields of applications

HITSERT® Screwlock can be used for several applications in the aerospace industry.



Options

We are also glad to develop innovative and creative solutions according to your special requirements. For example, the HITCERT® Screwlock manufactured by in-moulding technology with a blind hole thread.

Böllhoff International with companies in:

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Austria
Brazil
Canada
China
Czechia
France
Germany
Hungary
India
Italy
Japan
Mexico
Poland
Romania
Russia
Slovakia
South Korea
Spain
Switzerland
Thailand
Turkey
United Kingdom
USA

Apart from these 24 countries, Böllhoff supports its international customers in other important industrial markets in close partnership with agents and dealers.

Böllhoff Group
Please find your local contact on www.boellhoff.com
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