

# **b&m-TRIMNUT®**

Thread-forming nut



# Welcome at baier & michels



Group headquarters in an idyllic location  
in Ober-Ramstadt near Frankfurt

Dear customer  
Dear business partner

The globally oriented b&m group has built up a strong position as a partner for connection technology and C-parts management in the automotive industry. This is based on innovations in products, processes and systems, and confidence through competence, commitment and soundness.

New innovative products are being developed as problem solvers for customers in the field of technology. Our application engineers support customers with their requirements. A unique standardization tool with an online portal can substantially reduce the variety of parts the customer uses.

As a manufacturer, the b&m Group has the know-how to ensure very high and reliable product quality. With b&m Logistics, the b&m Group has a company that optimizes the customer supply chain worldwide through modern systems such as RFID.

Enjoy reading

**Peter Federolf**  
Managing Director

baier & michels, founded in 1932, has developed a strong position as a supplier of joining technology in the automotive industry and now employs more than 400 people worldwide. The Würth Group, to which b & m has belonged since 1973, provides additional financial stability with more than 74,500 employees and over 12,7 billion Euro in sales worldwide. baier & michels is now active in Europe, Asia and North America.



# Direct screwing connection

## WHY USE A DIRECT SCREWING CONNECTION?

**When making a direct screwing connection, the fastener produces a thread by being screwed on.**

An uninterrupted fiber course and the strain hardening of the material allows that the principle of non-chipping deformation produces a highly-resilient thread.

The thread thus produced is a metric ISO thread which is compatible with standardized parts. The thread formed in this way is without play and self-locking. An additional chemical screw patch is not required.

## ADVANTAGES: Direct screwing provides many advantages

- High process capability due to consistent screwing performance
- No tolerances between screws and self-formed threads
- The associated self-locking obviates the need for a locking patch
- Repairable and multiple screwable



Nut as thread-forming tool: Bolts before and after attaching the b&m TRIMNUT®

## b&m-TRIMNUT®: Thread-forming nut

- **Fastener and thread-forming tool**

- **Removes impact marks, rust and heavy soiling due to local deformation of damaged thread turns**



- **The functional principle works for screwing and unscrewing and ensures safe assembly / disassembly without destructive separation of the connection**

## Project Examples

**Battery holder: b&m-TRIMNUT® restores damaged threads.**



**Seat frame: b&m-TRIMNUT® connects centered components with “bare” bolts.**



# b&m-TRIMNUT®

The b&m-TRIMNUT® turns the thread-forming principle upside down. Not the screw, but the nut is the fastener and simultaneously a thread-forming tool.

Designed to remove welding splatters on welding studs or plating residue, the b&m-TRIMNUT® is also able to form a thread in conjunction with a pin geometry designed for this purpose.

The b&m TRIMNUT® enables the removal of impact points by local deformation of the damaged thread turns as well as the removal of rust and heavy soiling.

The functional principle works for screwing and unscrewing and ensures safe assembly and disassembly without destructive separation of the connection.

These innovative features mean that many of the challenges that designers used to face are now a thing of the past:

## DESIGNS:

The b&m-TRIMNUT® is manufactured as a flange nut similar to property class 10.9 to ensure correct positioning. It is available in the dimension range of M5 to M22. Other dimensions are available upon request.

## Process-safe screw connections

Residues in the thread due to processing cause screw connection problems in series assembly.



### CHALLENGE: Screwing problems in series assembly due to process-related residues in the thread

Due to production-related influences, undesirable disturbances in the screwing process occur time and again in the series assembly of components.



These include, for example, welding splatters during stud welding on zinc-plated sheet metals or thread turns added with coating media in cathoretic dip coatings. This often leads to downtimes or to costly reworking of the affected parts - but in many cases the entire component is rendered unusable or destroyed by a "seizure" of the nut.

## SOLUTION:

### Removal of weld splatter or plating residues

- The nut takes over the function of a tool - no additional operation necessary
- The module remains unrestrictedly usable: no ejection from series assembly necessary for reworking
- No "seizure" of the nut during the screwing process
- Coatings in the nominal layer thickness range are retained

# Repair solution for damaged threads



**CHALLENGE:**  
**Complex reworking or replacement of entire assemblies with threads that are no longer functional**

Damaged threads pose a major problem in the case of repairs, especially in the fields of crafts, agricultural and forestry technology, construction and earthmoving machinery, but also in automotive engineering.

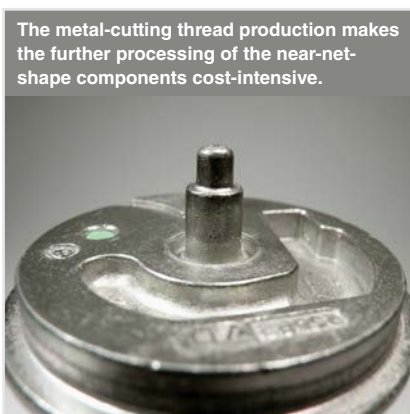


The accessibility of the threads concerned is often limited, so that the entire assembly has to be dismantled in the workshop. In addition, screw connections with damaged or rusty threads are often an “unsolvable” problem when replacing wearing parts, as the nuts can no longer be loosened.

**SOLUTION:**  
**Removal of impact points and making damaged threads movable**

- Removal of impact points by local deformation of the damaged thread turns
- Making the unusable thread movable - removes rust and heavy soiling
- No “seizure” of the nut during assembly of damaged threads
- Functional principle works when screwing on and off - ensures safe assembly / disassembly without destructive disconnection of the connection

# Joining without machining



**CHALLENGE:**  
**Cost-intensive further reworking of near-net-shape components due to cutting thread production**

Components, for example made of light metal die casting, can often be produced almost ready for installation (near-net-shape). However, the production of threads on such

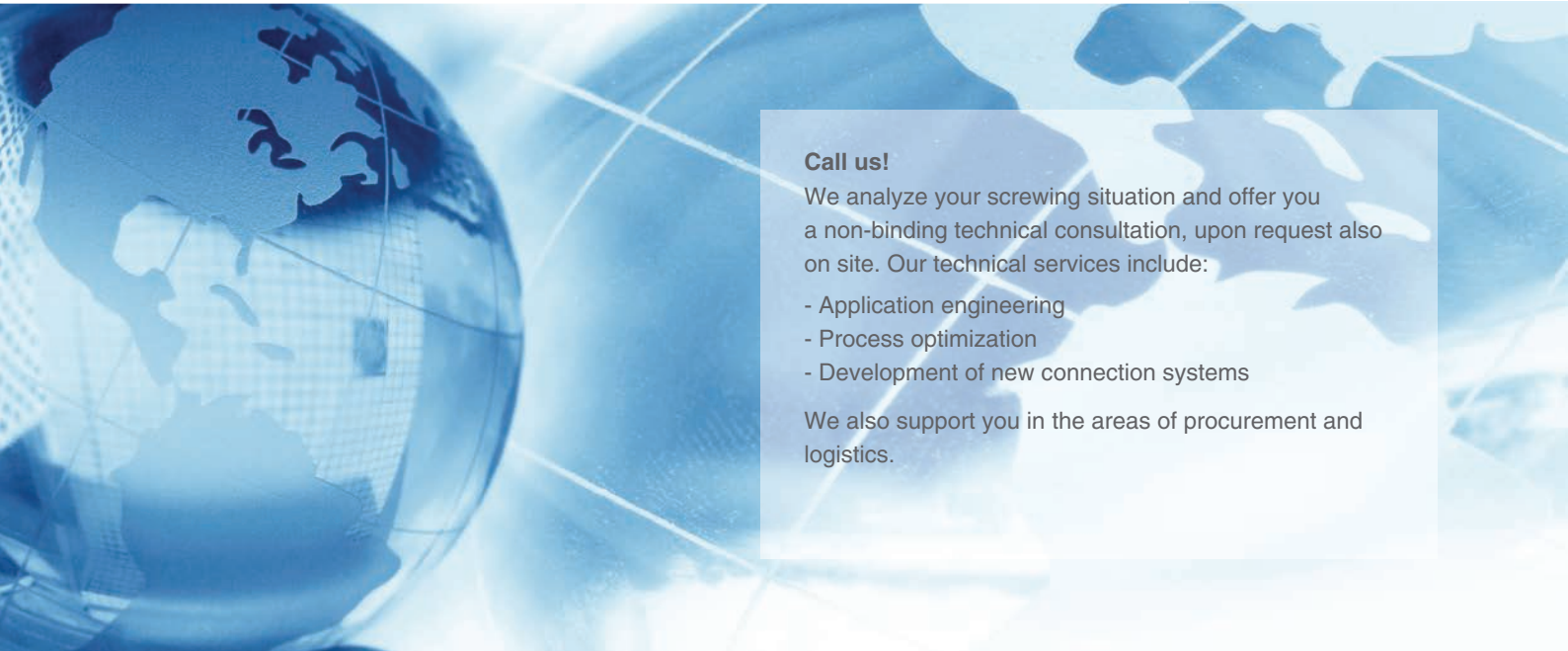


components usually requires an additional, cost-intensive machining process. In addition, these machined threads have comparatively low strengths. Possible damage to the finished machined parts during transport or handling can only be avoided by elaborate protective measures.

**SOLUTION:**  
**Applying bolt thread using thread-forming**

- Direct screwing by applying a metric coarse thread to suitably matched bolt geometry
- Securing of the screw connection by controlled self-locking
- Higher strength than with machined threads - thus unrestricted force and torque transferability
- Prevention of damage caused by thread generation only during component assembly

# baier & michels worldwide



## Call us!

We analyze your screwing situation and offer you a non-binding technical consultation, upon request also on site. Our technical services include:

- Application engineering
- Process optimization
- Development of new connection systems

We also support you in the areas of procurement and logistics.

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