

# Reach **Goals** with us your **2006**

## Success with fastenings

*Early cooperation is a factor of success – proven cost reduction throughout the value added chain – quality increased by greater process reliability.*

**(Forchtenberg). Prices are the result of costs. This simple formula is the basis on which Ubrig & Söhne, an industrial engineering company based in Heiligenhaus in Germany, has formed its company philosophy – to be included at an early stage in its customers' development processes. Together with its own suppliers, the company develops Integral solutions right from the start of the project. The result has paid off in many years of trust in the company's skills and expertise. Within the automotive industry Ubrig & Söhne is known as a company, which, by closely cooperating with experienced suppliers, makes no compromises on quality – even under extreme cost pressures.**

Confirming this philosophy, Mario Metzger, Product Manager at screw specialist Arnold Umformtechnik GmbH, Ubrig & Söhne's longstanding development partner, said: "throughout the 15 years we have worked with Ubrig & Söhne we have been involved at the earliest possible stage with new development projects." Since the beginning of the 1990s Ubrig & Söhne has been using Arnold Remform thread-forming screws for its fastenings. It was then that Ubrig started to carry out its component assembly with traditional screw fastenings on a bigger scale. Remform screws became the obvious choice due to their low screw-in torque and high overtorque. They complied with the



*Peter Langer,  
Ubrig Industrial  
Engineering*

### Plastic gains recognition

Together with Arnold Umformtechnik, Ubrig & Söhne has made its mark on the process of direct fastening into plastics. As they worked together, both companies had recognised at an early stage that plastic was increasingly in use as a material in the automotive industry. Its moulding capacity, the weight, and recyclability are all positive points in favour of the synthetic material. "The comparatively flexible material is particularly suitable for direct screw fasteners," commented Langer, explaining the decision to buy fasteners from Arnold. "Thread-forming screws are particularly advantageous where the core hole is pre-cast."

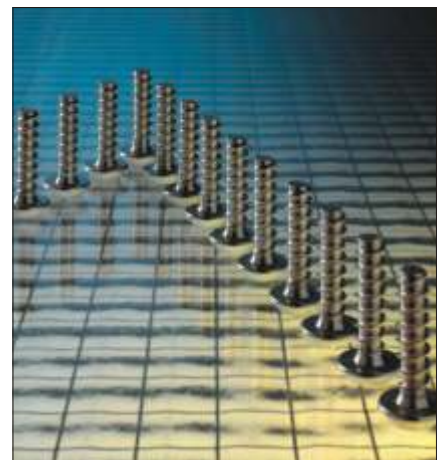
In close cooperation with the design engineers at Arnold, Ubrig & Söhne soon recognised that Remform fasteners in particular have a positive effect on costs. There is no need for inserts or inlays, so the cost of materials goes down. The high screw-in speed achieved and the fully automated casting of parts means that cycle times are short. Plant utilisation and productivity increase consistently. "The reduction in costs is running at over 60 percent compared

specified requirements profile to the fullest extent. And they are much less expensive than metric screw/nut fasteners. "At present around 80 percent of our screw fastenings are Remform products from Arnold," said Peter Langer of Ubrig Industrial Engineering.

with traditional fasteners", stated Langer, as he justified the decision to go for this type of fastener technology.

### New qualities

Such effects are the result of the special capacity of Remform screws to form the thread itself. The asymmetric thread geometry of Remform screws is constantly opening up new application fields on the product line at Ubrig &



*Direct screwing into plastic provides cost benefits without loss of quality.*

Söhne. The patented profile reduces the edge stresses that occur as the thread is formed. The flank angles, which diminish towards the crest of the thread, ensure that radial stress is reduced. This considerably reduces the risk of the boss splitting; at the same time Remform screws increase the safety of the joint. The flank that is averted away from the screw head has been provided with a radius. The steep side that has moved towards the head retains the plastic and raises the flank overlap. This guarantees high cross-thread forces while maintaining tensile force and torque. And the

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Lagerbügel DC A-Klasse

steep flank also ensures that the driving forces are transmitted axially – in the correct direction. Compared with 30-degree low angle screws the engineers at Ubrig & Söhne were able to prove strip load measurements and the difference between minimum overturn torque and maximum screw-in torque can often be well over 30 percent.

“Overall we are using a proportion of around 80 percent of direct screw fastenings in plastic – and it is rising”, continued Peter Langer. “This development will continue.” Together with the specialists at Arnold we are able to comply with the quality parameters set by the manufacturers, even under heavy cost pressure.”

The Arnold Group is a wholly owned subsidiary of the Würth Group, which, with over 50.000 employees and with 314 companies world-wide operates on a global basis with earnings of over 6 billion euros.

Arnold Umformtechnik GmbH is an SME with a production of around 3.5 billion screws every year. The company's specialty is the development and manufacture of thread-forming fasteners. The Taptite and Remform brands form a swarfless thread in drilled or cast holes, reducing assembly costs by up to 80 percent. On average there are 250 Arnold fasteners in every car produced in Germany. 50 percent of Arnold's total sales of 66 m. euros in 2005 is derived from the automotive industry. However customers from the electronics and consumer goods industries also make use not just of fasteners, but also the full range of services offered by Arnold – covering application-specific advice, development, production, and a full safety guarantee.

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