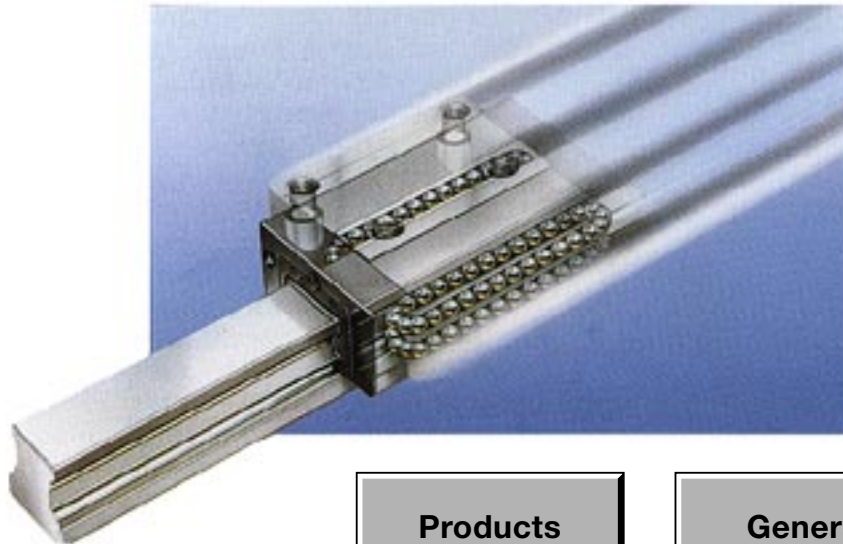
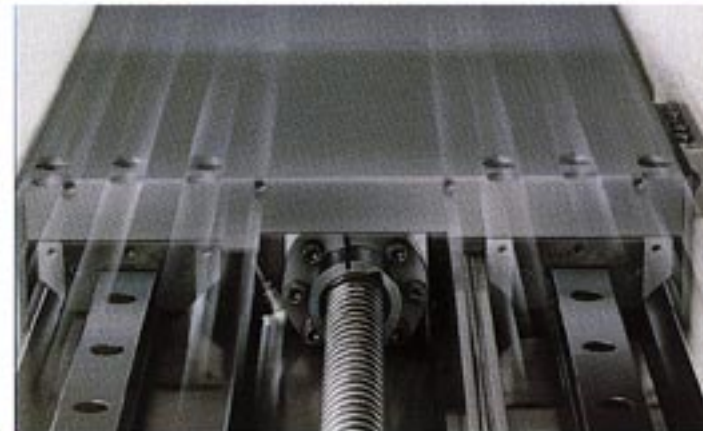
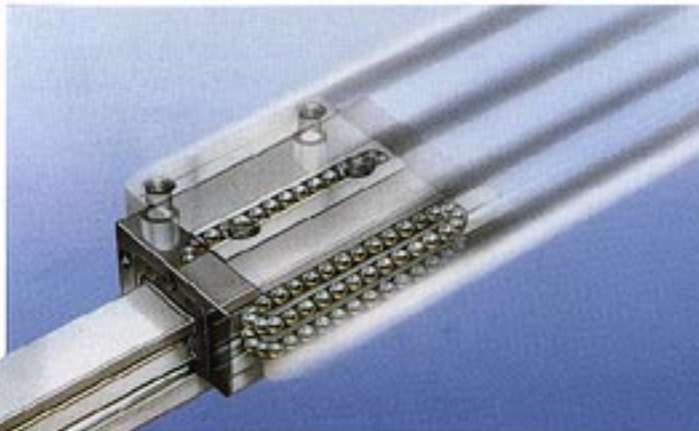
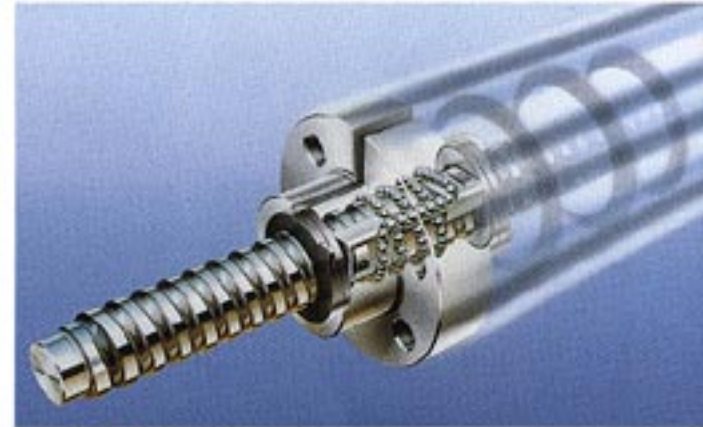




The STAR Product Range



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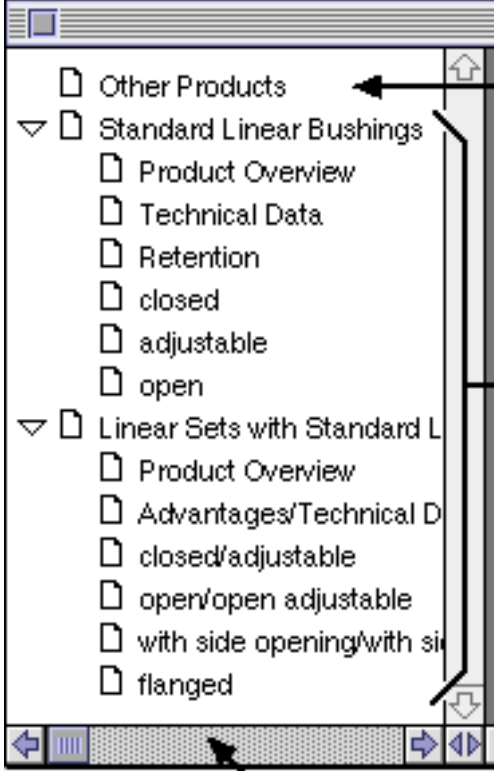
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		:			:		
		:			:		



Schweinfurt



South Schweinfurt



Volkach

Deutsche Star GmbH offers the widest and technologically most advanced range of components in linear motion technology that are particularly suited for machine-building and automation purposes. STAR has production locations in Schweinfurt (head office) and Volkach as well as manufacturing subsidiaries in France, the Republic



Meaux, France



Skibbereen, Ireland



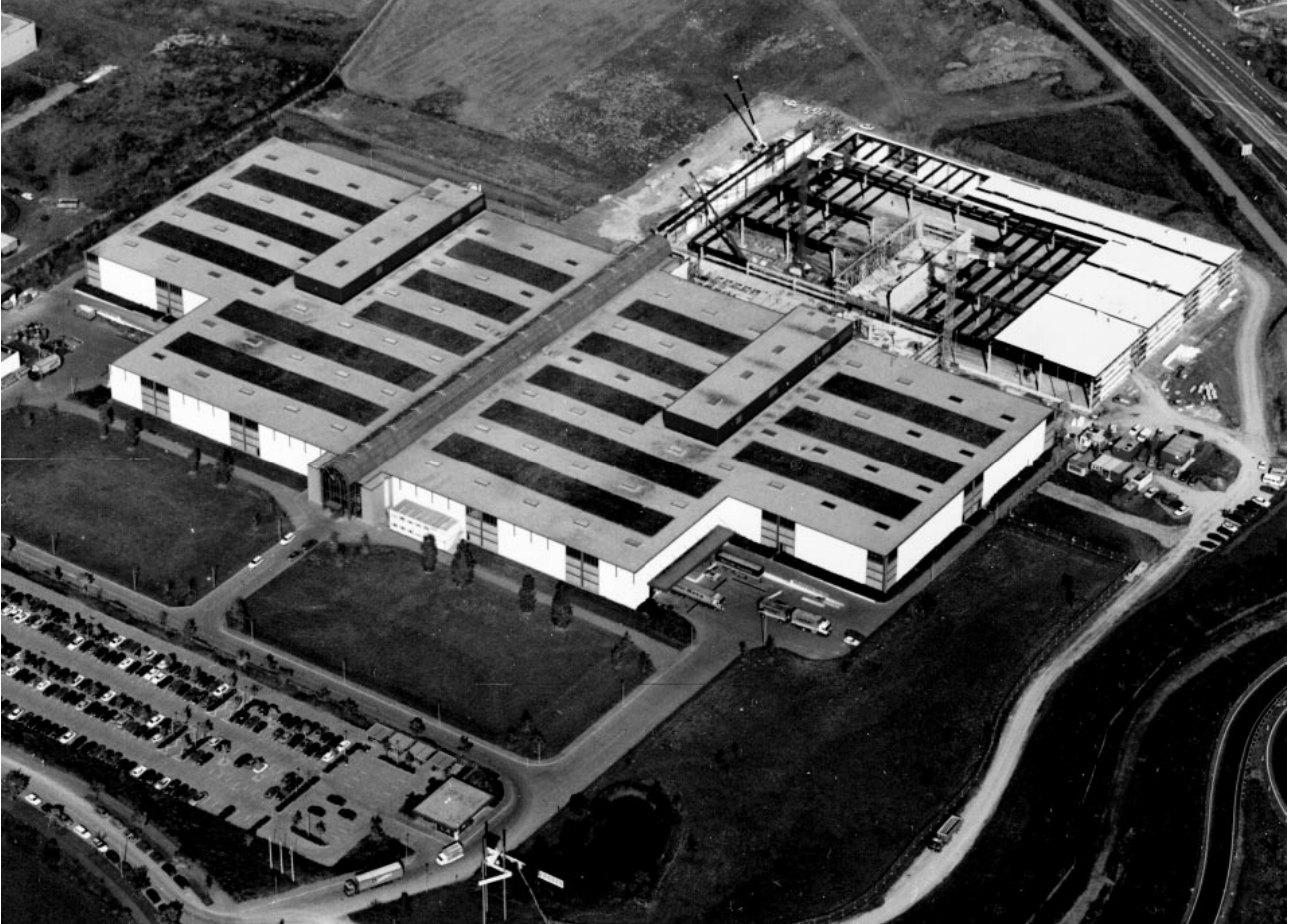
Charlotte, NC, USA

of Ireland, the USA and Taiwan. The company, founded in 1904 and now a member of the MANNESMANN group, has attained an internationally recognized level of expertise, born of decades of in-house development work supported by an expert tooling shop. STAR uses modern CNC machining centers to produce - often to its own patented designs - linear bushings and shafts, structural elements for linear motion systems, rail systems, precision ball screw assemblies, as well as ready-to-mount slides, tables and modules as feed units. Ball transfer units for conveying tasks, ball retainers, tolerance rings, and engineering components made of steel and plastic round off this versatile range of products. STAR is "small" enough to be able to respond to individual customer needs and large enough to supply cost-effective solutions in series production. Six wholly owned sales subsidiaries in Germany provide expert service within easy reach of the customer. Over 50 foreign subsidiaries and agencies serve the international market.

STAR - innovative and forward-looking.



Deutsche Star GmbH expands still further



Deutsche Star GmbH, a subsidiary of Mannesmann AG, Düsseldorf, is already having to add a large extension to its new South Schweinfurt factory that was completed only five years ago. Due to its tremendous expansion, this European market leader in linear motion systems is rapidly outgrowing the 27,000 square meters of production space built in 1990.

November 7, 1995 saw the topping-out ceremony for the 2nd construction phase that was started in July and will provide around 11,000 square meters of production space as well as about 3,000 square meters of staff facilities and office space for several technical departments.

Addressing some 200 guests at the topping-out ceremony, Werner Blaurock, Chairman of the Management Board of Deutsche Star GmbH, stated that the cost of building this extension would run to approximately DM 22 million.

Completion is scheduled for the spring of 1996. A figure many times higher than the construction cost will be invested in the present and coming years on procuring machinery and equipment, primarily for the manufacture of the extended range of **Profiled Rail Systems**. The extension to the factory will create more than 200 new jobs.

The existing buildings currently provide work for some 800 highly skilled employees, most of them involved in manufacturing products that had not even been conceived of at STAR five years ago. **Innovation** and intensive **export activity** in growing markets are the factors behind STAR's success. More than 400 new employees have been recruited since the beginning of 1994. The 160,000 square meter site still has room for about 35,000 square meters of production and office space in coming years.

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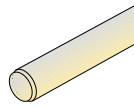
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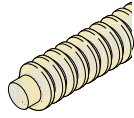


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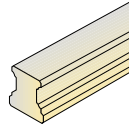
Inexpensive, high-quality, zinc-iron anti-corrosion coating for



Linear Bushings and Shafts



Precision Ball Screw Drives



Profiled Rail Systems

STAR-Resist

■ Star Resist is a cathodic anti-corrosion agent for steel bodies consisting of a zinc-iron coating and chromalisation. Cathodic corrosion protection is achieved by placing on the metal to be protected a protective layer of metals which are lower in the electrochemical series than the metal which is to be protected.

■ As the STAR Resist coating is applied to the finished component, the thickness of the coating has to arrive at the final dimensions.
(See "Technical Data")

Coated and uncoated steel rails after a salt spray fog test to DIN 50 021.



Uncoated: After one hour, there is already red rust on the underlying metal.

Coated: After 24 hours, there is neither white or red rust to be seen (no microscopic spots either).

The first few times something is transported along the rails, the coating in the contact area is compressed. The excess thickness is leveled and the surface becomes smoother. Due to the cathodic protective layer on the steel body,

the latter remains free of rust when it is slightly damaged and rolled on. With coated linear bushings, runner blocks and ball-screw nuts, the rolling elements are uncoated; they are protected by the lubricant.

Applications

STAR Resist coating is used when high humidity, a changing climate with condensation, hand sweat or similar influences can damage uncoated surfaces. Long parts such as rails, shafts or screws are protected with STAR Resist when oil or grease does not provide sufficient protection or the lubricant attracts dust and dirt which can be abrasive.

In many applications, it is sufficient to coat only the shaft, the guide rail or the spindle. STAR Resist coatings fulfil the requirements specified by the strictest present-day standard which permits a maximum Cr(VI) content of $0.3 \mu\text{g}/\text{cm}^2$ and therefore can be employed in a large variety of applications.

Chromalised zinc-iron coatings must not come into direct contact with food. For this type of application, STAR Tychochrome is suitable as an anti-corrosion agent. For use in a chemically hostile environment, for example with cooling lubricants, lyes and so on, please contact us for advice.

Advantages

- Inexpensive.
STAR Resist is less expensive than "stainless steel" (as per DIN 17230 or DIN 17440) or other comparable anti-corrosion methods such as hard chroming.
- No reduction of load capacity.
The load ratings are not reduced because of the coating.
- Ease of interchange.
Uncoated parts and coated parts can be easily interchanged.
- Cathodic corrosion protection.
Due to the protective effect of the cathodic protective layer, even small, bare areas of the basic material are protected against rust.
- Increased useful life.
Coated STAR products have a considerably longer useful life under corrosive conditions than uncoated products.

STAR-Resist – Technical data

• Composition:	Zinc-iron, approx. 0.5% iron with yellow chromalising.
• Thickness of coating before being rolled over: (roller tracks or ball tracks)	Approx. $5 \mu\text{m}$.
• Length of product:	Maximum 4 m.
• Hardness of coating:	Approx. 200 HV (hardness of the basic material greater than 700 HV).
• Thermal resistivity:	Up to $120 \text{ }^\circ\text{C}$.
• Resistance (before being rolled over):	168 hours resistance to formation of red rust. salt spray fog test to DIN 50 021 (ASTM B117).
• Special version:	Black chromalising on request.



THE EUROPEAN NETWORK FOR QUALITY SYSTEM ASSESSMENT AND CERTIFICATION

This is to state that

Deutsche Star GmbH
with its plants
Schweinfurt and Volkach

Ernst-Sachs-Straße 90
D - 97424 Schweinfurt

holds the Quality System Certificate

DQS -Reg. No.: 1617

*for the standard from the
ISO 9000 / EN 29000
series, and the scope as specified therein*

Signed for and on behalf of EQNet member

DQS Deutsche Gesellschaft zur Zertifizierung
von Qualitätsmanagementsystemen mbH

DATE

Validity of the
certificate:
April 15, 1994 to
April 14, 1997

MANAGING DIRECTOR

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Z E R T I F I K A T

Die

**DQS Deutsche Gesellschaft zur Zertifizierung
von Qualitätsmanagementsystemen mbH**

bescheinigt hiermit, daß das Unternehmen

**Deutsche Star GmbH
mit den Werken
Schweinfurt und Volkach**

**Ernst-Sachs-Straße 90
D - 97424 Schweinfurt**

ein

Qualitätsmanagementsystem

eingeführt hat und anwendet.

Durch ein Qualitätsaudit der DQS wurde der Nachweis erbracht,
daß dieses Qualitätsmanagementsystem die Forderungen der folgenden Norm erfüllt:

DIN ISO 9001

**Qualitätssicherungssysteme
Modell zur Darlegung der Qualitätssicherung
in Design/Entwicklung, Produktion, Montage und Kundendienst
(identisch mit ISO 9001 : 1987, EN 29 001 : 1987)**

Dieses Zertifikat ist gültig bis 14. April 1997

Zertifikat-Registrier-Nr.: 1617 - 01

Frankfurt am Main, 15. April 1994


PRÄSIDENT


GESCHÄFTSFÜHRER

Geschäftsstellen: D-60433 Frankfurt am Main, August-Schanz-Straße 21 D-10787 Berlin, Burggrafenstraße 6

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