FEDERAL MOGUL

Position N°1

New perspective on sliding bearings with DEVA®

Maintenance-free. Self-lubricating.
Protecting environment and resources.

DEVA

deva.bm®, deva.bm®/9P Hydro engineering: chain application

deva.bm®/9P

FEDERAL MOGUL

Position N°1

Prominent market profile

DEVA Head Office in Stadtallendorf

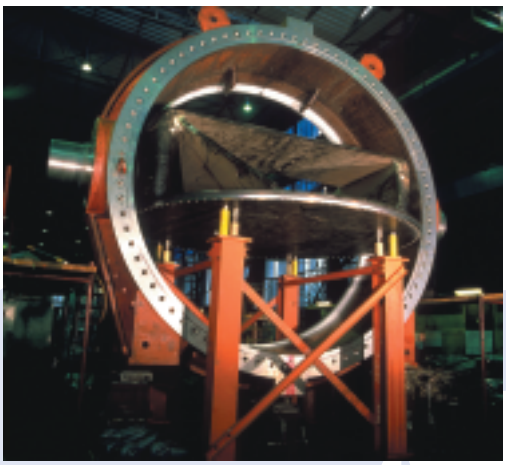
In countless industrial application sectors, the name DEVA® has a long-standing reputation and DEVA® maintenance-free, self-lubricating sliding bearings are indispensable. This is no coincidence. It is merely the continuation of a success story that began in the first half of the 20th century with the foundation of the Deventer Werke company in Stassfurt in the state of Saxony Anhalt and the development of a "solid material with solid lubricants" for non-lubricated packing rings.

Striking development

This laid the foundations for developments that continued in several stages, interrupted by World War II. In 1953, the company relocated to Stadtallendorf in the state of Hesse. In 1975, a merger took place with the English AE Group and the company was renamed Glacier GmbH–DEVA Werke. In 1989, AE Group was then integrated into the international T&N Group, which itself was purchased in 1998 by Federal-Mogul, an American group. Since then we have been part of this group as Federal-Mogul DEVA GmbH. In spite of extensive restructuring, our business growth has been far above average of the mechanical engineering sector.

Solid reputation

Today we are valued worldwide as a particularly good address for maintenance-free, self-lubricating sliding bearings fulfilling the highest standards in industrial applications. At our Stadtallendorf location, we use state-of-the-art equipment to develop and manufacture self-lubricating maintenance-free sliding bearings from 1–3500 mm in diameter. With our highly motivated team, we have one aim only: to constantly reaffirm the satisfaction of our customers, thus ensuring steady growth in demand for DEVA® products.



deva.bm®, deva.bm®/9P in hydro engineering: butterfly valve

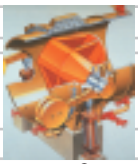
deva.bm®, deva.bm®/9P in water turbine construction: Pelton turbine: nozzle valve, jet deflector

deva.metal® in the iron and steel industry: tube rolling mill

* Sliding bearings

It is the task of sliding bearings to facilitate the lowest possible friction during operation in machines, reducing wear and tear. They also help increase efficiency, as up to 10 percent of energy is subject to loss through friction.

deva.bm®, deva.bm®/9P in water turbine construction: Francis turbine: regulating mechanism



deva.bm®, deva.bm®/9P in power station construction: main inlet valve

Ideas and action

We have always considered ourselves as partners of the industry, providing solutions and optimizations in a wide range of application fields. We always develop specific, individual solutions, tailored to the task in question. This demands a high degree of flexibility, skill and know-how, far-sightedness–now and in the future, even in our fast-moving times when today's knowledge can be outdated tomorrow. Which is why we are always working to better ourselves.
In addition, a broad range of existing possibilities is offered by our extensive range of standard DEVA® products. This resource often provides the ideal solution for a particular problem already.

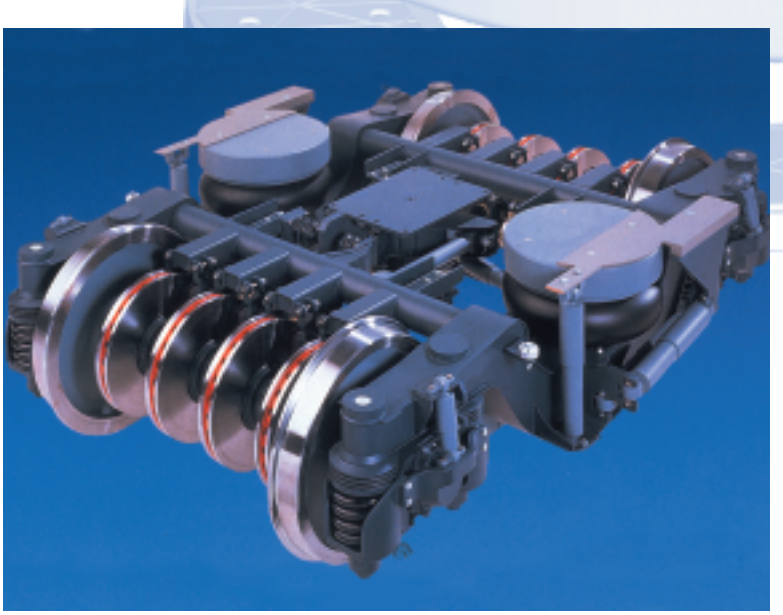
Power through synergy

At Federal-Mogul DEVA GmbH, we are well equipped in this respect. First, there are the synergies from our membership of the Federal-Mogul group: know-how transfer in research and development for new manufacturing techniques and materials; mutual use of distribution networks, as in sales networks where we provide e. g. distribution for our fellow group-member GLYCO; and enhanced consulting competence with local access worldwide.

Success through tradition

In addition, we have all the virtues that we have continued to develop from our time as a medium sized business: the courage for innovative products and new market strategies; an uncompromising attitude to quality; the fast, flexible response to customer needs, typical of compact homogenous companies, and of course, over half a century of product and industry know-how.
All this allows us to look confidently into the future, together with our customers. For there is one thing our partners in industry can continue to rely on: fair cooperation, for optimized solutions with DEVA® sliding bearings. This is how we are. This is how we think. This is how we act.

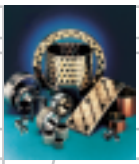
deva.metal®, deva.glide® in sluice construction: double lock: neck- and step bearings



deva.bm®, deva.tex® in rail vehicle engineering: bogie, stabilizers

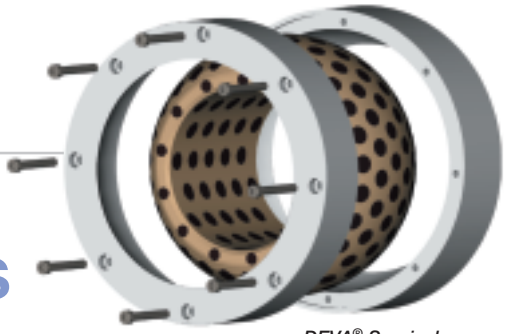
*GLYCO

Part of the group since 1980, with a wide range of sliding bearing products. In 1983, as Glyco-Metallwerke GmbH, it developed the world's first sputter bearing.



DEVA® product range

deva.bm®



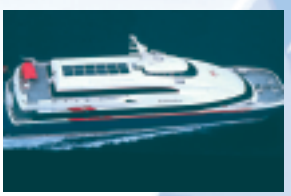
DEVA® Sperical sliding bearing

Position N°1

Strong brand and products

Our standards are high: DEVA® sliding bearings should fulfil even the strictest requirements, and be suited for use under even the most extreme conditions, from intense heat to icy cold,under water or in space.

DEVA®–a quality brand



deva.metal® in shipbuilding: gas turbine: expansion bearing

This high level of quality is safeguarded by our comprehensive quality management system for products, procedures and systems. We therefore fulfil the requirements for the ISO 9001;2000 and ISO/TS 16949,2002 as well as the, ISO 14001 and EMAS II norms. This guarantees DEVA® quality in all product ranges: **deva.metal®, deva.bm®, deva.bm®/9P, deva.glide®, deva.tex®** and **deva.eco®.**

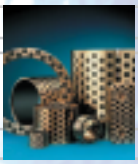
deva.glide® in bridge building: bascule bridge: main and auxiliary bearings

These products have several properties in common: high resistance to wear, low friction values, temperature and corrosion resistance, long life, economic efficiency and a high tolerance to contamination. Together with the overall diversity of application fields, these features characterize the DEVA® brand.

Exemplary product diversity

Beyond these similarities, however, the differences are starting in the material composition, application fields, forms and more. A few examples:
deva.metal® consists of a bronze, iron or nickel matrix and uniformly dispersed micro solid lubricants embedded in the metallic matrix. Successful applications range from iron- and steelworks and steam/gas turbines through to packaging machines.
By contrast, **deva.glide®** alloys consist of highly wear-resistant copper cast alloys with solid lubricant repositories uniformly spread over their sliding surfaces. Their uses are wide-ranging, from water engineering to offshore and rolling mill applications.
Depending on the manufacturing processes and the application requirements, there is a huge diversity of shapes. From an unprocessed sliding surface through to a complex cylindrical bush with cleaning or lubrication grooves, we can offer or develop the right bearing; for any application.
These and many other fine distinctions are what constitute the strength of the DEVA® brand–for the broadest range of solutions, with the diversity of the DEVA® sliding bearing range, always with the highest quality.

deva.metal®



deva.glide®

Service from A* via www* to Z*

Customer service depends on easy access. Which is why we have set up a close-knit service network for our customers in industry with around 40 branches and offices worldwide, eight of them in Germany alone.

Close at hand

This means there is always someone to talk to in easy reach if you need detailed information, or if you have a specific question, or even a pressing problem. Here are some examples of what we mean by service:

- 24-hour delivery of DEVA® standard parts from our warehouses.
- Qualified on-site advice in all matters relating to sliding bearings, from the selction of material to damage avoidance and bearing tests.
- Project planning and problem solving on site by DEVA® experts in close cooperation with the customer.
- Test rig checks for added safety.
- Staff training and instruction on site.

Quick as a flash

We also offer easy and direct customer access to large amounts of information over long distances via the Internet at www.deva.de:

- You can always order the latest DEVA® manuals, each focussing in detail on a specific series of sliding bearings.
- Under “Material Selection” there is a form that allows you to have the correct sliding bearing solution for a specific project calculated.
- Under “Contact” there is all you need to get in touch by e-mail.
- And under “Productrange”, you will find the full diversity of DEVA® down to the smallest detail.

Plenty of service, but it is only complete with one further element: consistent quality assurance and constant development of DEVA® sliding bearings, aimed exclusively at serving the needs of our customers. In our view, that is the ultimate in customer service.

deva.bm®, deva.bm®/9P in turbine construction: Kaplan turbine: rotor blade adjustment

deva.bm®, deva.glide® in hydro engineering: sector weir: regulator flap

deva.bm®, deva.bm®/9P in bridge building: suspension bridge: hanger bearings

***A-Z**

The DEVA® service package covers the whole range. From easy access to zero questions left.

***www**

The world’s most frequently used prefix, letting the cat out of the bag at the click of a mouse.

deva.glide® in offshore applications: outrigger: bearings in hinch mechanism

deva.tex®

Position N°1

A passion for innovation

The courage to create unusual, innovative solutions could almost be described as our birthright, having shaped the character of our company since the foundation of the original Deventer Werke.

Investment for innovation

But before such innovations can be realized, there must be a major willingness to invest, both in opening up the corresponding application fields and in research and development. For optimized materials design, from the development of entirely new materials to the combination of a wide range of materials with thorough compatibility testing. And during tough practical testing in the prospective application fields, often under extreme conditions, at high temperatures or under water.

This is the only way to ensure that materials development generates such high-performance combinations as deva.tex®, with its fibreglass-reinforced load-carrying outside layer and machinable sliding surface made of a special composite fibre material with solid lubricants, which achieves outstanding tribological properties. It is the only way to obtain this kind of unique solutions seen in the six current DEVA® sliding bearing series, all subject to constant development.

Innovation for the environment

Another important category is environmental innovations. Here, significant advances come from the DEVA® sliding bearings themselves, as they make the use and disposal of large quantities of conventional lubricants unnecessary in many cases. The DEVA® Environment Management programme, certified according to EN ISO 14001 and EMAS II, rounds off our innovative environmental record with the use of eco-friendly materials and an exemplary recycling system. All part of our passion for innovation.

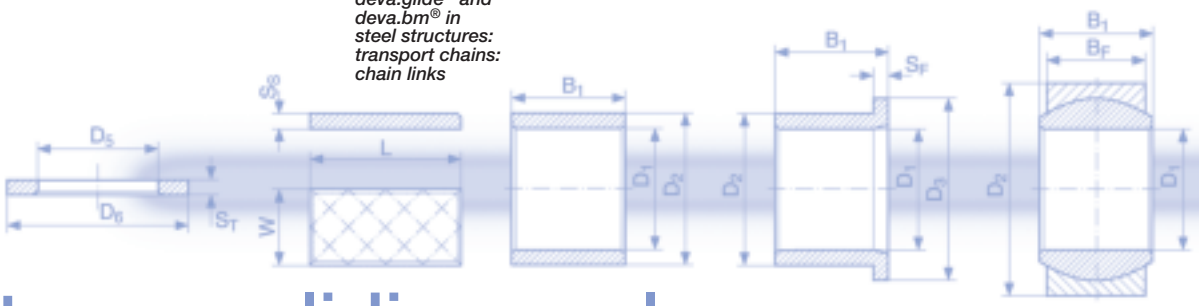
deva.bm®, deva.bm®/9P and deva.metal® in general hydro engineering: cleaning rake: chain links and drive elements

deva.metal®, deva.glide® and deva.bm® in steel engineering: bucket wheel excavator: chain support bearing

deva.bm®, deva.bm®/9P in the iron and steel industry: Bessemer converter: expansion bearing

deva.metal® in the iron and steel industry: blast furnace: furnace top bell; sealing package

deva.metal®, deva.glide® and deva.bm® in steel structures: transport chains: chain links



Snapshots on a sliding scale

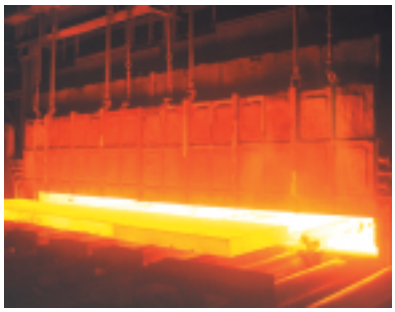
In a wide range of industrial application fields, DEVA® sliding bearings provide a completely new sliding experience.

Reliable, flexible, with top product quality guaranteed. The principle product segments at a glance:

World of hydro applicatons

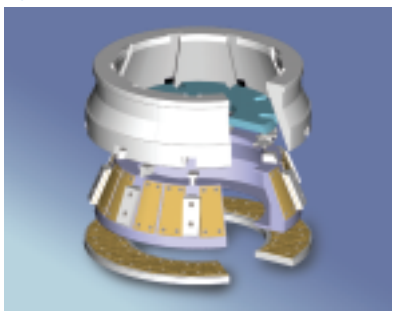
*In all fields of water management, from turbines to civil engineering, **deva.bm®, deva.bm®/9P, deva.metal®, deva.glide®** and **deva.tex®** make sure that everything flows with minimal maintenance and no environmental impact.*

Protecting steel



***deva.metal®, deva.bm®** and **deva.glide®** offer particularly effective protection against interruption of production in many sectors of the steel industry thanks to their maintenance-free properties.*

Tyres in shape

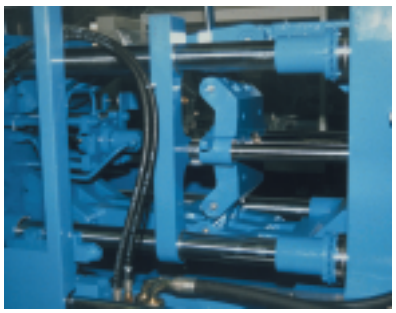


*Ideal for the special requirements of tyre profiles – solutions with **deva.bm®**.*

New impetus from the wind energy

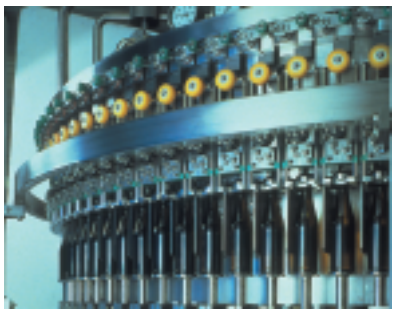
*Innovative wind power and alternative energies – with innovative diversity from **deva.bm®, deva.bm®/9P, deva.metal®** and **deva.tex®**.*

Injection moulding



*Seemingly tailor-made for use in injection moulding machines – **deva.bm®**.*

All engines go



*Across the entire engineering spectrum, ideal applications for all DEVA® sliding bearings, from **deva.metal®, deva.bm®, deva.bm®/9P, deva.glide®, deva.tex®** to **deva.eco®**.*

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