JOIN THE MARKETS OF
MOTION, DRIVE & AUTOMATION

IN GERMANY
4 - 8 April 2011
Hannover
Motion, Drive & Automation
Leading Trade Fair for Power Transmission and Control

IN TURKEY
17 - 20 March 2011
Istanbul
Win Part II
World of Industry Part II
3 International Trade Fairs for the Industry:
- Automation
- Electrotechnology
- Hydraulic & Pneumatic

IN RUSSIA
27 - 30 September 2011
Moscow
MDA Russia
International Trade Fair for Motion, Drive & Automation

IN INDIA
6 - 9 December 2011
Bangalore
MDA India
International Trade Fair for Motion, Drive & Automation

IN CHINA
25 - 28 October 2011
Shanghai
PTC Asia
Power Transmission and Control
International Trade Fair for Electrical and Mechanical Power Transmission, Fluid Power, Compressed Air Technology, Machine Parts, Bearings, Internal Combustion Engines and Gas Turbines

www.hannovermesse.de/worldwide
Dear readers!

This industry directory entitled “Power Transmission Engineering and Fluid Power – Motion, Drive and Automation” offers you a comprehensive overview of the technological and economic performance which these two German industries can deliver. Members of the VDMA (German Engineering Federation) present their problem-solving expertise in the form of both individual corporate profiles and tabular lists. The introductory editorial section of the directory describes the economic position of the power transmission engineering and fluid power industries and some technological factors and indicates where you can find further information.

We hope you find this directory informative and useful in helping you to find the German manufacturers who can meet your requirements!

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Economic position

With more than 111,000 employees, the German power transmission engineering and fluid power industries succeeded in 2009 in defending their leading position in the world market despite the economic crisis and provided fresh technical evidence of their claim to this position. With sales by value of around 19.6 billion Euros in 2010, these supplier industries are the largest segment within the German mechanical engineering industry. Following the dramatic fall in production in 2009 and the rapid recovery in 2010, the VDMA’s expectation for 2011 is once again definite growth and a continuation of positive developments.

Both industries have been increasing their exports for years – which demonstrates the faith which customers have in German cutting-edge technology. In both industries, Germany is the world’s largest supplier. Today, over a third of German engineering companies have manufacturing operations directly in the areas in which they sell, with a particular emphasis on China, India, Eastern Europe and the USA.

### Fluid Power exports from the most important exporting countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Share in % of total Fluid Power exports*</th>
<th>2009 Total Export Volume: 12.1 billion Euro</th>
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<tbody>
<tr>
<td>USA</td>
<td>12.2%</td>
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<tr>
<td>Japan</td>
<td>9.2%</td>
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<tr>
<td>Italy</td>
<td>5.2%</td>
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<tr>
<td>China</td>
<td>3.6%</td>
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<tr>
<td>France</td>
<td>3.0%</td>
<td></td>
</tr>
<tr>
<td>Taiwan</td>
<td>0.6%</td>
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<tr>
<td>Others</td>
<td>30.4%</td>
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*Source: VDMA and national statistical offices
*42 reporting countries

### Power Transmission exports from the most important exporting countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Share in % of total Power Transmission exports*</th>
<th>2009 Total Export Volume: 36.2 billion Euro</th>
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<tbody>
<tr>
<td>USA</td>
<td>7.5%</td>
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<td>Japan</td>
<td>11.8%</td>
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<tr>
<td>China</td>
<td>8.5%</td>
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<tr>
<td>Italy</td>
<td>6.9%</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>39.3%</td>
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</tr>
<tr>
<td>Germany</td>
<td>26.0%</td>
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</tbody>
</table>

*Source: VDMA and national statistical offices
*42 reporting countries
Customer groups

The power transmission engineering and fluid power industries have an important role as technological pioneers for industrial users, including those in the fields of automation, construction machinery, printing machinery, energy and environmental technology utilising wind or solar power, conveyor systems, woodworking machinery, plastics and rubber processing machinery, agricultural machinery, space travel and aviation, food and packaging machinery, shipbuilding and machine tools.

All over the world, these customers rely on German cutting-edge technology, distinguished as it is by reliability, sustainability, energy efficiency and thus high cost-effectiveness. This technology is application-oriented, is able to enhance existing customer products, for example by adding modern controllers and a high performance density, and plays a major role in ensuring that customers’ products deliver the required results. Power transmission engineering and fluid power offer energy-efficient solutions, thus guaranteeing low total cost of ownership. Customers throughout the world know this and place their faith in technology “Made in Germany.”
Operators of machines and installations expect high productivity, operational safety and reliability and system and component functionality which is optimised for the production process concerned. In order to meet and fulfil these requirements, suppliers in the power transmission engineering and fluid power industries must put their systems and components through carefully-planned development processes. New products must, for example, be dimensioned and optimised with appropriate simulation tools before the first physical prototype is built. Functionality must be optimised to a given production process. Customers must be sure that they are being offered the most efficient drives – no matter whether these are based on conventional solutions or, for example, hybrid technology. Dimensioning must be carried out in a way targeted at customers’ specific processes.

Further important trends include the mechatronisation of components and systems, modularisation and a use of materials and energy which minimises the impact on resources. The main challenge today, however, for both manufacturers and operators is energy efficiency in industrial processes, not least in view of energy costs. New business models are already being adopted on a large scale, for example intensified after-sales service and a greater focus on the total cost of ownership and condition monitoring systems.

It has proved advantageous that the technological leaders in the major client industries are located in Germany, as are the suppliers of the most important basic technologies (including open- and closed-loop control technology, sensors, visual design and production technology). The physical closeness and the synergetic business relations between suppliers and their client industries have led to a climate in which new technologies and applications are generated continually by technical progress.

In global competition, the power transmission engineering and fluid power industries benefit from their use of the latest technologies for all kinds of applications throughout the value creation chain. As the most important suppliers to the machine and installation construction industry, these two industries help to create a political environment in which climate and energy-policy objectives can be attained. They are ready and able to take on the challenges of changing markets, acting on the principle, more important than ever before, not least because of regional considerations, of “Think global, act local”.

Cutting-edge technology “Made in Germany”
Worldwide exhibition strategy for “Made in Germany” products

Users are now able to gather information on German power transmission engineering and fluid power at a number of industry-specific exhibitions throughout the world. Accordingly, the VDMA has worked with the exhibition organisers Deutsche Messe AG to define a convincing world-wide MDA exhibition policy. In Shanghai, China, the PTC ASIA – effectively the MDA ASIA – was inaugurated over 20 years ago, while in Bangalore and Mumbai the industry has been showing its products at the MDA INDIA. In 2010 the industry was able to celebrate its premiere in the Russian market with an exhibition in Moscow entitled ITFM/MDA RUSSIA. Moreover, for many years German companies have been participating in “WIN World of Industry II” with an MDA section in Istanbul, Turkey.

It has been immensely helpful that the Federal German Ministry of Trade and Technology has provided financial assistance for multi-company exhibition stands under the heading of “Made in Germany”. This allows customers from all over the world to see for themselves local displays – “on their doorstep”, so to speak – of the performance and capacity for innovation of German manufacturers.

www.ptc-asia.com
www.mda-india.com
www.mda-russia.com or www.itfm-expo.ru
www.win-fair.com
MDA and MobiliTec – two powerfully impressive exhibitions as part of the Hanover Fair

Motion, Drive & Automation (MDA)
With 13 international keynote exhibitions, the Hanover Fair 2011 will bring together key industrial technologies and thus create an event with a degree of horizontality unequalled anywhere else in the world. The concept of the Hanover Fair as a platform for the interaction of all participating industries and technologies is unique world-wide: Nowhere else can interested parties obtain information in such a comprehensive and integrated form as here. The most important industries show their strengths and offer interdisciplinary knowledge transfer which allows users to break through into adjacent technologies.

As part of this world-class keynote exhibition, MDA – Motion, Drive & Automation – is held every two years. At this, by far the most important exhibition of key components for industrial automation, interested parties can obtain information from around 1,300 exhibitors from 37 nations (figures for 2009) on the innovative concepts and solutions available from German manufacturers.

As the manufacturers of core components for all industrial applications, the companies producing power transmission engineering and fluid power products are among the most important suppliers of basic technologies to industry as a whole. The MDA is accordingly every two years the meeting point for designers, development engineers, researchers and company managers from the world’s capital goods industry. The upcoming event – in April 2011 – will once again take up future-oriented themes such as energy efficiency in industrial processes, condition monitoring systems, seal technology, component supply for wind power generators and automation technology. The centre of the discussion will be the MDA Forum in Hall 24 and the VDMA stand for its Power Transmission Engineering and Fluid Power Associations, linked to a joint VDMA member company stand.

www.hannovermesse.de/motion_drive_e
MDA and Mobilitec – two powerfully impressive exhibitions as part of the Hanover Fair

MobiliTec – International keynote exhibition for hybrid and electric drive technology, mobile energy storage devices and alternative mobility technologies

The undisputed central theme for the future is alternative drive technology. In recognition of the importance of this subject, a special exhibition has been created: Mobilitec. At its premiere in 2010, visitors were able to gather information on solution concepts from 91 exhibitors occupying a total stand area of 2,346 m². This exhibition brings together know-how from the fields of electric and hybrid drive technology, energy storage devices and charging technology as well as system control and power electronics and the associated production technologies. Many of the solution concepts shown at the exhibition are based on the results of projects conducted jointly by vehicle manufacturers, components suppliers and manufacturers of electric drives under the auspices of the Power Transmission Engineering Research Association (FVA) within the VDMA. All activities concerning e-mobility are concentrated in the joint network initiative E-MOTIVE.

The many thematic links to twelve further keynote exhibitions such MDA – Motion, Drive & Automation, Energy, Industrial Automation, etc. provide an optimum intensification of the information exchange process. Visitors have an ideal opportunity at Mobilitec to make contact with manufacturers of vehicles and mobile machinery, component suppliers, machine and plant constructors and electrical engineering companies. It is at this exhibition that company know-how from the automotive field relating to drive management, hybrid technology, sensors, etc. is available to all potential users. A good basis for discussions is offered by the joint E-MOTIVE stand and the Mobilitec user forum. In this forum, questions are presented and discussed concerning electromobility in the future, core concepts and pilot projects, electricity supply infrastructure, mobile energy storage devices, and the use of electricity from renewable sources.

Visitors to the exhibition thus have the opportunity to enter into a direct dialogue with experienced industry experts and at the same time form a personal picture of the status of development and innovation.

www.hannovermesse.de
www.e-motive.net
www.fva-net.de
VDMA offices outside Germany allow direct contact to be made with German manufacturers

Potential customers and others interested in German power transmission engineering and fluid power have an opportunity to gather information on the industry and the manufacturers within this and obtain details of addresses and contacts not only through this directory but also via the VDMA E-Market (www.vdma-e-market.de) and the VDMA’s international offices. These offices act as a link between German and Chinese, Indian, Russian and Japanese official bodies, associations and companies.

**China:**
VDMA Beijing Representative Office
Huateng Tower, Unit 1788, Jia 302, 3rd Area of Jinsong, Chaoyang District
BEIJING 100021
PEOPLE’S REPUBLIC OF CHINA
info@chinavdma.org

**India:**
VDMA Representative Office
GC 34, Sector III
Salt Lake City
KOLKATA 700106
INDIA
vdma@giascl01.vsnl.net.in

**Russian Federation:**
VDMA Russ Service OOO
Russian Liaison Office
Proest Serebryakowa, 6
MOSKAU 129343
RUSSIAN FEDERATION
info@vdma.ru

**Japan:**
VDMA German Engineering Federation
Japan Liaison Office
Higashi-Nakano 1-51-3-501
164-0003 TOKYO, NAKANO-KU
JAPAN
info@vdma-japan.com
Die Märkte werden neu verteilt, der Druck auf den Produktionsstandort Deutschland nimmt zu – gleichzeitig eröffnen sich neue Chancen für uns.

Je besser es uns gelingt, schneller als der Wettbewerb qualitativ hochwertige, individuell maßgeschneiderte Investitionsgüter zu liefern, desto erfolgreicher werden wir unsere Position international festigen und ausbauen.

Der Kongress, das Top-Forum für Entscheider aus der Investitionsgüterindustrie, informiert über pragmatische Lösungen für den deutschen Maschinen- und Anlagenbau.

Termin/Ort
9.–10. Mai 2011
Würzburg

www.vdma.org/ip
# List of German Suppliers

## Power Transmission Engineering
- Bearings
- Linear motion systems
- Gear motors – Frequency inverters
- Gears and gear units
- Spindle units/working spindles

## Hydraulics
- Cylinders
- Valves
- Pumps
- Motors
- Hydraulic transmission

## Pneumatics
- Manifold blocks
- Power units
- Hydraulic accumulators
- Heat exchangers/coolers
- Filters
- Piping and connectors
- Water hydraulics
- Hydraulic accessories
- Generator accessories
- Measuring, analysis devices
- Electrical equipment/electronics
- Services
  - Hydraulic test and simulation arrangements
  - Actuators
  - Valves and manifold assemblies
  - Compressed air
  - Sensors and monitoring equipment
  - Piping and connectors
  - Other pneumatic devices and accessories
  - Services

## Sealing Technology
- Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)

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<tr>
<th>Company Name</th>
<th>Website</th>
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<td><a href="http://www.amf.de">www.amf.de</a></td>
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<td>arco Armaturenfabrik Obrigheim GmbH &amp; Co. KG</td>
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<td>ARGUS Fluidtechnik GmbH</td>
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<td>AROS Hydraulik GmbH</td>
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<td>ATLANTA Antriebssysteme E.Seidenspinner GmbH &amp; Co. KG</td>
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<td>AVIT Hochdruck Rohrtechnik GmbH</td>
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<td>Baumüller Holding GmbH &amp; Co. KG</td>
<td><a href="http://www.baumue%D0%BB%D0%BB%D0%B5%D1%80.de">www.baumueллер.de</a></td>
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<td>Beckhoff</td>
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</table>
# List of German Suppliers

## Power Transmission Engineering

- **Berges Antriebstechnik GmbH & Co. KG**
  - [www.berges.de](http://www.berges.de)

- **Bikon-Technik GmbH**
  - [www.bikon.de](http://www.bikon.de)

- **Bockwoldt GmbH & Co. KG Getriebemotorenwerk**
  - [www.bockwoldt.de](http://www.bockwoldt.de)

- **Bolenz & Schäfer GmbH**
  - [www.bolenz-schaefer.de](http://www.bolenz-schaefer.de)

- **Boll & Kirch Filterbau GmbH**
  - [www.bollfilter.de](http://www.bollfilter.de)

- **Bosch Rexroth AG**
  - [www.boschrexroth.com](http://www.boschrexroth.com)

- **Bräutigam Antriebs- und Transportsysteme GmbH & Co. KG**
  - [www.braeutigam-gruppe.de](http://www.braeutigam-gruppe.de)

- **Dr. Breit GmbH**
  - [www.dr-breit.de](http://www.dr-breit.de)

- **David Brown Hydraulics Deutschland GmbH**
  - [www.davidbrownhydraulics.com](http://www.davidbrownhydraulics.com)

- **Bucher Hydraulics GmbH**
  - [www.bucherhydraulics.com](http://www.bucherhydraulics.com)

- **Bühlert Technologie GmbH & Co. KG**
  - [www.buehlert-technologie.de](http://www.buehlert-technologie.de)

- **Bürkert GmbH & Co. KG**
  - [www.buerkert.de](http://www.buerkert.de)

- **Camozi GmbH**
  - [www.camozi.de](http://www.camozi.de)

- **CEJN-Product GmbH**
  - [www.cejn.de](http://www.cejn.de)

- **CENTA Antriebe Kirsche GmbH**
  - [www.centa.info](http://www.centa.info)

- **Cerobear GmbH**
  - [www.cerobear.de](http://www.cerobear.de)

- **Chesterton International GmbH**
  - [www.chesterton-deutschland.com](http://www.chesterton-deutschland.com)

- **Cheitra GmbH**
  - [www.chetra.de](http://www.chetra.de)

- **CLAAS Industrietechnik GmbH**
  - [www.claas-industrietechnik.com](http://www.claas-industrietechnik.com)

- **CMD GmbH**

- **Comer Industries GmbH & Co. KG**
  - [www.comerindustries.com](http://www.comerindustries.com)

## Hydraulics

- **Berges Antriebstechnik GmbH & Co. KG**
  - [www.berges.de](http://www.berges.de)

- **Bikon-Technik GmbH**
  - [www.bikon.de](http://www.bikon.de)

- **Bockwoldt GmbH & Co. KG Getriebemotorenwerk**
  - [www.bockwoldt.de](http://www.bockwoldt.de)

- **Bolenz & Schäfer GmbH**
  - [www.bolenz-schaefer.de](http://www.bolenz-schaefer.de)

- **Boll & Kirch Filterbau GmbH**
  - [www.bollfilter.de](http://www.bollfilter.de)

- **Bosch Rexroth AG**
  - [www.boschrexroth.com](http://www.boschrexroth.com)

- **Bräutigam Antriebs- und Transportsysteme GmbH & Co. KG**
  - [www.braeutigam-gruppe.de](http://www.braeutigam-gruppe.de)

- **Dr. Breit GmbH**
  - [www.dr-breit.de](http://www.dr-breit.de)

- **David Brown Hydraulics Deutschland GmbH**
  - [www.davidbrownhydraulics.com](http://www.davidbrownhydraulics.com)

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  - [www.buerkert.de](http://www.buerkert.de)

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  - [www.camozi.de](http://www.camozi.de)

- **CEJN-Product GmbH**
  - [www.cejn.de](http://www.cejn.de)

- **CENTA Antriebe Kirsche GmbH**
  - [www.centa.info](http://www.centa.info)

- **Cerobear GmbH**
  - [www.cerobear.de](http://www.cerobear.de)

- **Chesterton International GmbH**
  - [www.chesterton-deutschland.com](http://www.chesterton-deutschland.com)

- **Cheitra GmbH**
  - [www.chetra.de](http://www.chetra.de)

- **CLAAS Industrietechnik GmbH**
  - [www.claas-industrietechnik.com](http://www.claas-industrietechnik.com)

- **CMD GmbH**

- **Comer Industries GmbH & Co. KG**
  - [www.comerindustries.com](http://www.comerindustries.com)
<table>
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<th>LIST OF GERMAN SUPPLIERS</th>
<th>13</th>
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| Manifold blocks | Power units | Hydraulic accumulators | Heat exchangers/coolers | Filters | Piping and connectors | Water hydraulics | Hydraulics accessories | Generator accessories | Measuring, analysis devices | Electrical equipment/electronics | Services | Hydraulic test and simulation arrangements | Actuators | Valves and manifold assemblies | Compressed air | Sensors and monitoring equipment | Piping and connectors | Other pneumatic devices and accessories | Services | Sealing Technology |
|------------------|-------------|------------------------|-------------------------|--------|----------------------|-----------------|------------------------|------------------------|-----------------------------|-----------------------------|---------|---------------------------------|----------|-----------------------------|-----------------|-------------------------------|----------------|-----------------------------|
| Berges Antriebstechnik GmbH & Co. KG |
| Böckwoldt GmbH & Co. KG Getriebemotorenwerk |
| Boll & Kirch Filterbau GmbH |
| Bosch Rexroth AG |
| Bräutigam Antriebs- und Transportsysteme GmbH & Co. KG |
| Breit GmbH |
| Brown Hydraulics Deutschland GmbH |
| Bucher Hydraulics GmbH |
| Bühler & Co. Inh. Kurt-Giesler-Stiftung |
| Bühler Technologies GmbH |
| Bürkert GmbH & Co. KG |
| Camozzi GmbH Pneumatic |
| CEJN-Product GmbH |
| CENTA Antriebe Kirschey GmbH |
| CEROBEAR GmbH |
| Chesterton International GmbH |
| Chetra GmbH Dichtungstechnik |
| CLAAS Industrietechnik GmbH |
| CMD GmbH |
| C. Otto Gehrckens GmbH & Co. KG |
| COMER GMBH |

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| Manifold blocks | Power units | Hydraulic accumulators | Heat exchangers/coolers | Filters | Piping and connectors | Water hydraulics | Hydraulics accessories | Generator accessories | Measuring, analysis devices | Electrical equipment/electronics | Services | Hydraulic test and simulation arrangements | Actuators | Valves and manifold assemblies | Compressed air | Sensors and monitoring equipment | Piping and connectors | Other pneumatic devices and accessories | Services | Sealing Technology |
|------------------|-------------|------------------------|-------------------------|--------|----------------------|-----------------|------------------------|------------------------|-----------------------------|-----------------------------|---------|---------------------------------|----------|-----------------------------|-----------------|-------------------------------|----------------|-----------------------------|
| Berges Antriebstechnik GmbH & Co. KG |
| Böckwoldt GmbH & Co. KG Getriebemotorenwerk |
| Boll & Kirch Filterbau GmbH |
| Bosch Rexroth AG |
| Bräutigam Antriebs- und Transportsysteme GmbH & Co. KG |
| Breit GmbH |
| Brown Hydraulics Deutschland GmbH |
| Bucher Hydraulics GmbH |
| Bühler & Co. Inh. Kurt-Giesler-Stiftung |
| Bühler Technologies GmbH |
| Bürkert GmbH & Co. KG |
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# List of German Suppliers

## Power Transmission Engineering

### Hydraulics

- **Bearing**
- **Linear motion systems**
- **Gear units – frequency inverters**
- **Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)**
- **Spindle units/working spindles**

## Pneumatics

- **Cylinders**
- **Valves**
- **Pumps**
- **Motors**
- **Water hydraulics**
- **Hydraulic accessories**
- **Generator accessories**
- **Measuring, analysis devices**
- **Electrical equipment/electronics**

## Sealing Technology

- **Hydraulic test and simulation arrangements**
- **Actuators**
- **Valves and manifold assemblies**
- **Compressed air**
- **Sensors and monitoring equipment**
- **Piping and connectors**
- **Other pneumatic devices and accessories**

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**Continental Techno Chemie GmbH**
www.contitech.de

**CSN Wichmann GmbH**
www.csn.eu

**Danaher Linear GmbH**
www.danaher.com

**Danfoss GmbH**
www.danfoss.com

**DEPAG SCHULZ GmbH u. Co. KG**
www.deprag.com

**DESch**
www.desch.de

**DIENES Apparatebau GmbH**
www.dienes.net

**Donaldson Filtration Deutschland GmbH**
www.donaldson.com

**DONIT TESNIT AG**
www.donittesnit.si

**DRUMAG GmbH Fluidtechnik**
www.specken-drumag.com

**Düsterloh Fluidtechnik GmbH**
www.duesterloh.de

**DV-B Drehverbindungen Bautzen GmbH**
www.dv-b.com

**EAAT GmbH Chemnitz**
www.eaat.de

**EagleBurgmann Germany GmbH & Co. KG**
www.eagleburgmann.com

**Eaton Fluid Power GmbH**
www.eaton.com

**ebm-papst Mulfingen GmbH & Co. KG**
www.emb-papst.com

**Eckerle Industrie-Elektronik GmbH**
www.eckerle.com

**Edelmann Gleitlagertechnik GmbH**
www.edelman-gleitlager.de

**Eich Rollenlager GmbH**
www.eich-rollenlager.de

**Eickhoff Antriebstechnik GmbH**
www.eickhoff-bochum.de

**Eisele Pneumatics GmbH**
www.eisele-pneumatics.de

**EMB Eifeler Maschinenbau GmbH**
www.emb-eifel.de

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**Participants**

- Continental
- CSN
- Danaher
- Danfoss
- Demag
- Deprag
- Diennes
- Dystalien
- Düsterloh
- Eaitschburgm.
- Eisa
- Echert
- Edermann
- Eich
- Eisele
- Emissions
- EMB
## List of German Suppliers

**Power Transmission Engineering**

- Bearings
- Linear motion systems
- Gear motors – Frequency inverters
- Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)
- Spindle units/working spindles

**Hydraulics**

- Cylinders
- Valves
- Pumps
- Motors
- Hydraulics
- Manifold blocks
- Power units
- Hydraulic accumulators
- Heat exchangers/coolers
- Filters
- Piping and connectors
- Water hydraulics
- Hydraulic accessories
- Generator accessories
- Measuring, analysis devices
- Electrical equipment/electronics
- Services

**Pneumatics**

- Actuators
- Valves and manifold assemblies
- Compressed air
- Sensors and monitoring equipment
- Piping and connectors
- Other pneumatic devices and accessories
- Services

**Sealing Technology**

- Electric equipment/electronics
- Services
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List of German Suppliers

www.vdma-e-market.com

Company profile on page
# List of German Suppliers

## Power Transmission Engineering
- **Bearings**
- **Linear motion systems**
- **Geared motors – frequency inverters**
- **Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)**
- **Spindle units/working spindles**

## Hydraulics
- **Cylinders**
- **Valves**
- **Pumps**
- **Motors**
- **Hydraulic transmission**

## Pneumatics
- **Manifold blocks**
- **Power units**
- **Hydraulic accumulators**
- **Heat exchangers/coolers**
- **Filters**
- **Piping and connectors**
- **Water hydraulics**
- **Hydraulic accessories**
- **Generator accessories**
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- **Piping and connectors**
- **Other pneumatic devices and accessories**
- **Services**

## Sealing Technology
- **Matrix**
- **Ant**

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**GKN Walterscheid GmbH**
- Company profile on page 56

**Gleitlager und Metallverarbeitung GmbH**
- www.gmo-gleitlager.de

**GLS Gleitlagerservice GmbH**
- www.gleitlagerservice.de

**GMN Paul Müller Industrie GmbH & Co. KG**
- www.gmn.de

**GPM Geräte-und Pumpenbau GmbH**
- www.gpm-merbelisrod.de

**GROB Antriebstechnik GmbH**
- www.gpm-merbelisrod.de

**Güdel GmbH**
- www.güdel.com

**Hafner-Pneumatik Krämer KG**
- www.hafner-pneumatik.de

**Haldex Hydraulics GmbH**
- www.haldex.com

**HALLITE GmbH**
- www.hallite.com

**Herbert Hänchen GmbH & Co. KG**
- www.haenchen.de

**HANSA-FLEX AG**
- www.hansa-flex.com

**Harmonic Drive AG**
- www.harmonicdrive.de

**HAUHINCO GmbH & Co. KG**
- www.hauhincog.de

**HAWE Hydraulik SE**
- www.hawe.de

**HCS Hydraulic Control Systems GmbH**
- www.h-c-s-gmbh.de

**HECKER WERKE GmbH**
- www.heckerwerke.de

**Hegra Lineare Führungssysteme und Teleskopschienen GmbH & Co. KG**
- www.hegra-linear.de

**Gebr. Held Hydrauliktechnik GmbH**
- www.held-hydraulik.de

**HERION & RAU Fluidtechnik GmbH**
- www.bar-control.de

**Herrenknecht AG**
- www.herrenknecht.de

**HEUTE + COMP. GmbH + Co. KG**
- www.heutecomp.de

**HEYNAU GearsProductionService GmbH**
- www.heynau.de
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#### Power Transmission Engineering
- Bearings
- Linear motion systems
- Gears and gear units
- Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)
- Spindle units/working spindles

#### Hydraulics
- Cylinders
- Valves
- Pumps
- Motors
- Hydraulic transmission

### Sealing Technology
- Hydraulic test and simulation arrangements
- Actuators
- Valves and manifold assemblies
- Compressed air
- Sensors and monitoring equipment
- Piping and connectors
- Other pneumatic devices and accessories

### Hydraulics

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# List of German Suppliers

## Power Transmission Engineering

### Hydraulics
- **Jahns-Regulatoren GmbH**
  - [Jahns-Hydraulik.de](http://www.jahns-hydraulik.de)
- **Jastram GmbH & Co KG**
  - [Jastram-group.com](http://www.jastram-group.com)
- **Jenaer Antriebstechnik GmbH**
  - [Jat-gmbh.de](http://www.jat-gmbh.de)
- **Jetter AG**
  - [Jetter.de](http://www.jetter.de)
- **John Crane GmbH**
  - [Johncrane.de](http://www.johncrane.de)
- **John Crane Bearing Technology GmbH**
  - [Johncrane.com](http://www.johncrane.com)
- **KACHELMANN GETRIEBE GmbH**
  - [Kachelmann.de](http://www.kachelmann.de)
- **Karberg & Hennemann GmbH & Co. KG**
  - [Cjc.de](http://www.cjc.de)
- **Kauermann KG**
  - [Kauermann.de](http://www.kauermann.de)
- **KAUTASIT-Gummitechnik GmbH**
  - [Kautasit.de](http://www.kautasit.de)
- **C.u.W. KELLER GmbH & Co. KG**
  - [Keller-getriebe.de](http://www.keller-getriebe.de)
- **Kern Technik GmbH & Co. KG**
  - [Kern-technik.de](http://www.kern-technik.de)
- **Kessler & Co. GmbH & Co. KG**
  - [Kessler-axles.com](http://www.kessler-axles.com)
- **Franz Kessler GmbH**
  - [Franz-kessler.de](http://www.franz-kessler.de)
- **KIMO Industrie-Elektronik GmbH**
  - [Kimo.de](http://www.kimo.de)
- **Maschinenbau Kitz GmbH**
  - [Mk-group.com](http://www.mk-group.com)
- **Klingelnberg GmbH**
  - [Klingelnberg.com](http://www.klingelnberg.com)
- **Klinger GmbH**
  - [Klinger.de](http://www.klinger.de)
- **Knocks Fluid Technik GmbH**
  - [Knocks.de](http://www.knocks.de)
- **K. u. A. Knödler GmbH**
  - [Knoedler-getriebe.de](http://www.knoedler-getriebe.de)
- **KNORR-BREMSE Systeme für Schienenfahrzeuge GmbH**
  - [Knorr-bremse.de](http://www.knorr-bremse.de)
- **KOEPFER Zahnrad- und Getriebetechnik GmbH**
  - [Koeper.com](http://www.koeper.com)
- **Konzelmann GmbH**
  - [Konzelmann-gmbh.de](http://www.konzelmann-gmbh.de)

### Pneumatics

- **List of German Suppliers**
  - [Company profile on page](http://www.vdma-e-market.com)

## Sealing Technology

- **Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)**
  - **Spindle units/working spindles**
  - **Cylinders**
  - **Valves**
  - **Pumps**
  - **Motors**
  - **Hydraulic test and simulation arrangements**
  - **Actuators**
  - **Valves and manifold assemblies**
  - **Compressed air**
  - **Sensors and monitoring equipment**
  - **Piping and connectors**
  - **Other pneumatic devices and accessories**

## Services

- **Measuring, analysis devices**
- **Electrical equipment/electronics**
- **Services**

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## List of German Suppliers

### Power Transmission Engineering

- **Bearings**
- **Linear motion systems**
- **Geared motors – frequency inverters**
- **Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)**
- **Spindle units/working spindles**

### Hydraulics

- **Manifold blocks**
- **Power units**
- **Hydraulic accumulators**
- **Heat exchangers/coolers**
- **Filters**
- **Piping and connectors**
- **Water hydraulics**
- **Hydraulic accessories**
- **Generator accessories**
- **Measuring, analysis devices**
- **Electrical equipment/electronics**
- **Hydraulic test and simulation arrangements**
- **Actuators**
- **Valves and manifold assemblies**

### Pneumatics

- **Compressed air**
- **Sensors and monitoring equipment**
- **Piping and connectors**
- **Other pneumatic devices and accessories**

### Sealing Technology

- **Bearings**
- **Linear motion systems**
- **Gears and gear units**
- **Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)**
- **Spindle units/working spindles**
- **Cylinders**
- **Valves**
- **Pumps**
- **Motors**
- **Hydrostatic transmission**

### List of Suppliers

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## List of German Suppliers

**Power Transmission Engineering**
- Hydraulics
- Pneumatics
- Sealing Technology
- Bearings
- Linear motion systems
- Geared motors – frequency inverters
- Gears and gear units
- Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)
- Spindle units/working spindles
- Cylinders
- Valves
- Pumps
- Motors
- Hydrostatic transmission

**Hydraulic Test and Simulation**
- Manifold blocks
- Power units
- Hydraulic accumulators
- Heat exchangers/coolers
- Filters
- Piping and connectors
- Hydraulic accessories
- Generator accessories
- Measuring, analysis devices
- Electrical equipment/electronics
- Hydraulic test and simulation arrangements

**Sealing Technology**
- Actuators
- Valves and manifold assemblies
- Compressed air
- Sensors and monitoring equipment
- Piping and connectors
- Other pneumatic devices and accessories
- Services

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**Suppliers**

| Kracht GmbH | www.kracht.eu |
| KS Gleitlager GmbH | www.kspg.com |
| KTR Kupplungstechnik GmbH | www.ktr.com |
| Kuhnke Automation GmbH & Co. KG | www.kuhnke.de |
| LANG-Magnetkupplungen Erwin A. LANG GmbH & Co. KG | www.ealang.com |
| Lenze SE | www.lenze.com |
| Liebherr-Component Technologies AG | www.liebherr.com/cp |
| LINAK GmbH | www.linak.de |
| Lincoln GmbH Zentralschmiersysteme | www.lincolnindustrial.de |
| LTK Lineartechnik Korb GmbH | www.lineartechnik-korb.com |
| LOCK ANTRIEBSTECHNIK GmbH | www.lockdrives.com |
| Lohrentz GmbH | www.lohrentz-gmbh.de |
| J. LORCH Ges. & Co. GmbH | www.lorch.de |
| LTi DRiVES GmbH | www.lt-i.com |
| Magnet-Schultz GmbH & Co. | www.magnet-schultz.com |
| MAHLE Filtersysteme GmbH Industriefiltration | www.mahle-industriefiltration.com |
| Mahr Metering Systems GmbH | www.mahr.com |
| Main-Metall Tribologie GmbH | www.main-metall.com |
| A.MANNESMANN MASCHINENFABRIK GmbH | www.amannesmann.de |
| MANN+HUMMEL GMBH | www.mann-hummel.com |
| Chr. Mayr GmbH + Co. KG | www.mayr.de |
| Merkel Freudenberg Fluidtechnic GmbH | www.merkel-freudenberg.de |

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**Supply Logistics**
- Manifold blocks
- Power units
- Hydraulic accumulators
- Heat exchangers/coolers
- Filters
- Piping and connectors
- Hydraulic accessories
- Generator accessories
- Measuring, analysis devices
- Electrical equipment/electronics
- Hydraulic test and simulation arrangements
- Actuators
- Valves and manifold assemblies
- Compressed air
- Sensors and monitoring equipment
- Piping and connectors
- Other pneumatic devices and accessories
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**Participants**

- List of German Suppliers
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- Sealing Technology
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- Linear motion systems
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## Hydraulics

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# List of German Suppliers

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- **Power Transmission Engineering**
  - Bearings
  - Linear motion systems
  - Geared motors – frequency inverters
  - Gears and gear units
  - Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)
  - Spindle units/working spindles
- **Hydraulics**
  - Cylinders
  - Valves
  - Pumps
  - Motors
  - Hydrostatic transmission
  - Manifold blocks
  - Power units
  - Hydraulic accumulators
  - Heat exchangers/coolers
  - Filters
  - Piping and connectors
  - Water hydraulics
  - Hydraulic accessories
  - Generator accessories
  - Measuring, analysing devices
  - Electrical equipment, electronics
  - Hydraulics tests and simulation arrangements
  - Valves and manifold assemblies
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  - Other pneumatic devices and accessories
  - Compressed air
  - Piping and connectors
- **Pneumatics**
  - Actuators
  - Valves and manifold assemblies
  - Sensors and measuring equipment
  - Compressed air
  - Piping and connectors
  - Other pneumatic devices and accessories
- **Sealing Technology**
  - Compressed air
  - Piping and connectors
  - Other pneumatic devices and accessories
  - Services

![List of German Suppliers](image-url)
## List of German Suppliers

### Power Transmission Engineering
- **Bearings**
- **Linear motion systems**
- **Geared motors – frequency inverters**

### Hydraulics
- **Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)**
- **Spindle units/working spindles**
- **Cylinders**
- **Valves**
- **Motors**
- **Hydraulic transmission**

### Pneumatics
- **Actuators**
- **Valves and manifold assemblies**
- **Compressed air**
- **Sensors and monitoring equipment**
- **Other pneumatic devices and accessories**
- **Services**

### Sealing Technology
- **Generator accessories**
- **Measuring, analysis devices**
- **Electrical equipment/electronics**
- **Services**

### Company Profiles

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## List of German Suppliers

### Power Transmission Engineering
- Bearings
- Linear motion systems
- Geared motors – frequency inverters
- Gears and gear units
- Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)
- Spindle units/working spindles
- Cylinders
- Valves
- Pumps
- Motors
- Hydrostatic transmission

### Hydraulics
- Manifold blocks
- Power units
- Hydraulic accumulators
- Heat exchangers/coolers
- Filters
- Piping and connectors
- Water hydraulics
- Hydraulic accessories
- Generator accessories
- Measuring, analysis devices
- Electrical equipment/electronics
- Services
- Hydraulic test and simulation arrangements

### Pneumatics
- Actuators
- Valves and manifold assemblies
- Compressed air
- Sensors and monitoring equipment
- Piping and connectors
- Other pneumatic devices and accessories
- Services

### Sealing Technology

### List of German Suppliers
# List of German Suppliers

## Power Transmission Engineering
- Bearings
- Linear motion systems
- Spindles
- Couplings
- Spindle units/working spindles
- Cylinders
- Valves
- Pumps

## Hydraulics
- Manifold blocks
- Power units
- Hydraulic accumulators
- Filters
- Heat exchangers/coolers
- Piping and connectors

## Pneumatics
- Cylinders
- Valves
- Pumps
- Motors
- Hydrostatic transmission

## Sealing Technology
- Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)
- Spindle units/working spindles
- Cylinders
- Valves
- Pumps

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# List of German Suppliers

## Power Transmission Engineering
- **Bearings**
- **Linear motion systems**
- **Cylindrical motors – frequency inverters**
- **Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)**
- **Spindle units/working spindles**

## Hydraulics
- **Manifold blocks**
- **Power units**
- **Hydraulic accumulators**
- **Heat exchangers/coolers**
- **Filters**
- **Piping and connectors**
- **Water hydraulics**
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- **Generator accessories**
- **Measuring, analysis devices**
- **Electrical equipment/electronics**
- **Services**
  - **Hydraulic test and simulation arrangements**
  - **Actuators**
  - **Valves and manifold assemblies**
  - **Compressed air**
  - **Sensors and monitoring equipment**
  - **Piping and connectors**
  - **Other pneumatic devices and accessories**
  - **Services**

## Pneumatics
- **Spool valves**
- **Percussion valves**
- **Pressure switches**
- **Flow control valves**
- **Pressure relief valves**
- **Check valves**
- **Two-stage valves**
- **Linear motion systems**
- **Cylinders**
- **Valves**
- **Pumps**
- **Motors**
- **Hydraulic transmission**

## Sealing Technology
- **Bearings**
- **Linear motion systems**
- **Geared motors – frequency inverters**
- **Gears and gear units**
- **Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)**
- **Spindle units/working spindles**
- **Cylinders**
- **Valves**
- **Pumps**
- **Motors**
- **Hydraulic transmission**

### List of German Suppliers

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<td>ThyssenKrupp Fördertechnik GmbH, Business Unit Materials Handling</td>
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<td>Trelleborg Sealing Solutions Germany GmbH</td>
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<td>VULKAN Kupplungs- und Getriebebau GmbH &amp; Co. KG</td>
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*Participant www.vdma-e-market.com Company profile on page*
# List of German Suppliers

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- Sun Hydraulik GmbH
- TEADIT International Produktions GmbH
- THIILENHAUS TECHNOLOGIES GMBH
- Thomas Magnete GmbH
- ThyssenKrupp Fördertechnik GmbH, Business Unit
- transresch Antriebssysteme Berlin GmbH
- Trelleborg Sealing Solutions Germany GmbH
- Dr. Erich TRETTER GmbH + Co.
- TRIES GmbH & Co. KG
- TSCHAN GmbH
- Hans Turck GmbH & Co. KG
- Joachim Uhing KG GmbH & Co.
- UKF Universal-Kugellager-Fabrik GmbH
- ULMAN Dichtungstechnik GmbH
- VAKOMA GmbH
- Voith Turbo GmbH & Co. KG
- Voith Turbo H + L Hydraulic GmbH & Co. KG
- Völkel Mikroelektronik GmbH
- VOSS Fluid GmbH
- Maschinenfabrik Walter Voss Fluidtechnik GmbH
- VOSWINKEL GmbH
- VULKAN Kupplungs- und Getriebebau GmbH & Co. KG
# List of German Suppliers

**Power Transmission Engineering**
- Bearings
- Linear motion systems
- Geared motors – frequency inverters
- Spindle units/working spindles

**Hydraulics**
- Cylinders
- Valves
- Pumps
- Motors
- Hydraulic transmission

**Pneumatics**
- Manifold blocks
- Power units
- Hydraulic accumulators
- Heat exchangers/coolers
- Filters
- Piping and connectors
- Water hydraulics
- Hydraulic accessories
- Generator accessories
- Measuring, analysis devices
- Electrical equipment/electronics
- Services

**Sealing Technology**
- Actuators
- Valves and manifold assemblies
- Compressed air
- Sensors and monitoring equipment
- Piping and connectors
- Other pneumatic devices and accessories
- Services

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### Power Transmission Engineering

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**Power Transmission Engineering**
- Hydraulics
- Pneumatics
- Sealing Technology

**Participant** www.vdma-e-market.com

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**Hydraulics**
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- Hydraulic accumulators
- Filters
- Piping and connectors
- Water hydraulic systems
- Hydraulic accessories
- Generator accessories
- Measuring, analysis devices
- Electrical equipment/electronics
- Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)
- Spindle units/working spindles
- Cylinders
- Valves
- Pumps
- Motors
- Hydrostatic transmission

**Pneumatics**
- Manifold blocks
- Power units
- Hydraulic accumulators
- Filters
- Piping and connectors
- Water hydraulic systems
- Hydraulic accessories
- Generator accessories
- Measuring, analysis devices
- Electrical equipment/electronics
- Transmission elements (couplings, clutches, brakes, chain and belt drives, etc.)
- Spindle units/working spindles
- Cylinders
- Valves
- Pumps
- Motors
- Hydrostatic transmission
- Compressed air
- Sensors and monitoring equipment
- Electrical equipment/electronics
- Services

**Sealing Technology**
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**Services**
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- Cylinders
- Valves
- Pumps
- Motors
- Hydrostatic transmission
- Compressed air
- Sensors and monitoring equipment
- Electrical equipment/electronics
- Services
ACE is the worldwide accepted specialist in the field of industrial damping technology – with distributors in 45 countries on all continents.

Since 1978 ACE is represented very successfully on the German market. Here alone 25 application engineers are working day by day on the improvement of ACE’s product range.

Customers of ACE benefit from elaborated solutions, useful innovations and exemplary service around the topic “damping technology”. Through the close co-operation with leading machine manufacturers the German ACE subsidiary established as a precursor of technical progress.

Top products improved by service
ACE develops, produces and distributes a wide range of damping products. That consists of industrial and safety shock absorbers, profile dampers, rotary dampers, industrial gas springs, hydraulic dampers and feed controls.

The products succeed especially in future-oriented businesses as there is virtually no better solution to decelerate moving masses fast, soft and precise.

The advantages for the customers are obvious:
• Competent personal counselling on site and by phone
• Individual dimensioning for the client
• Delivery of small quantities, even one piece without extra charge
• Elaborate accessory range
• Realistic prices
• Shortest delivery times

Additionally ACE supports the VDMA campaign “Pro Original” in the fight against piracy of products and is a partner of the Research Fund.

Managing Director: Jürgen Roland
Founded: 1978 (in Germany)
Staff in 2010: 68
Sales in 2009: 21 million Euro
Expected sales in 2010: 27 million Euro
Headquarters: Langenfeld/Rhine land, ICE train stations Cologne and Düsseldorf (30 min. by taxi and/or commuter train), Airport Düsseldorf International (20 min. by taxi), Motorway A44/A3, exit Solingen, A59 exit Langenfeld
Contact for Service and Sales: Phone +49 2173 9226-80
Distribution: Through an exhaustive network of ACE sales teams and distributors in Continental Europe, South America, Africa and the Middle East (see www.ace-ace.com)
Filtration
ARGO-HYTOS manufactures sophisticated filter solutions, mainly applied in hydraulic and lubrication systems as well as in transmissions, for the mobile and industrial hydraulic industry.

Next to customized developments, that are precisely tailored to customer individual requirements, ARGOSTHYTOS offers a comprehensive range of innovative standard solutions for a wide variety of sectors:

- suction filters
- return and return-suction filters
- pressure and high-pressure filters
- filling and ventilating filters
- filter accessories

Sensors & Measurement
Systems that provide reliable assessment of the condition of hydraulic fluids are the key feature of continuous fluid monitoring. Sensors and measurement technology from ARGOSHYTOS precisely target this range of tasks. Our fluid monitoring products comprise equipment and system solutions to enable online monitoring during continuous operation as well as analysis of bottled samples under laboratory conditions:

- portable oil diagnostic system
- stationary & portable particle monitor
- sensors for oil condition monitoring
- software to evaluate data and analyze trends

Fluid & Motion Control
ARGO-HYTOS’ expertise in control technology is gained from more than 60 years’ experience. We produce a wide range of valves, power units and integrated manifolds featuring all commonly used design features and functions, together with proportional valves and the associated control electronics:

- direct operated directional valves in CETOP 02 to CETOP 05 and pilot operated valves in CETOP 07 and CETOP 08
- valves subplate and sandwich type—flow control, pressure and check valves in CETOP 02 to CETOP 05
- cartridge valves
- direct operated proportional valves with compensator sandwich valve, in CETOP 02 to CETOP 05
- analog and digital electronic control units—on-board, or for installation in control cabinets
- power pack assembly kits
- customized control blocks

Our strength is to develop customized solutions based on tried-and-tested fundamental technologies, specifically adapted to each individual case.

Fluid Management
As well as reducing maintenance and servicing costs, efficient fluid management is also a key factor in improving the reliability, productivity and cost-effectiveness of the operation.

ARGO-HYTOS supplies application-oriented products for manual and automatic cleaning of hydraulic fluids:

- off-line filters
- off-line filter units
- oil service units
- dewatering units

ARGO-HYTOS GMBH
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Fax +49 7250 76-199
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E-Mail info.cz@argo-hytos.com
Internet www.argo-hytos.com

ARGO-HYTOS Pvt. Ltd., India
SF No. 82B/2B, 85/2, Sandegoundanpalayam, Kovilpalayam post, Pollachi taluk, Coimbatore district, Pincode – 642110, India
Phone/Fax +91 4259 259 254
E-Mail info.in@argo-hytos.com
Internet www.argo-hytos.com

Employees:
approximately 1,200 worldwide

Distribution:
14 distributions companies and over 100 worldwide distribution partnerships.

Over 60 years of experience in fluid technology.

ARGO-HYTOS distribution companies:
ARGO-HYTOS Hong Kong Ltd., China
info.hk@argo-hytos.com

ARGO-HYTOS Fluid Power Systems Co. Ltd., China
info.cn@argo-hytos.com

ARGO-HYTOS SARL, France
info.fr@argo-hytos.com

ARGO-HYTOS Ltd., Great Britain
info.uk@argo-hytos.com

ARGO-HYTOS Pvt. Ltd., India
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ARGO-HYTOS srl, Italy
info.it@argo-hytos.com

ARGO-HYTOS B.V., Netherlands
info.benelux@argo-hytos.com

ARGO-HYTOS Polska sp. z o.o., Poland
info.pl@argo-hytos.com

ARGO-HYTOS Nordic AB, Sweden
info.se@argo-hytos.com

ARGO-HYTOS Inc., USA
info.us@argo-hytos.com

Employees:
approximately 1,200 worldwide

Distribution:
14 distributions companies and over 100 worldwide distribution partnerships.

Over 60 years of experience in fluid technology.
ATLANTA Antriebssysteme
E. Seidenspinner GmbH & Co. KG
P.O. Box 1161
74301 Bietigheim-Bissingen
Germany
Phone +49 7142 7001-0
Fax +49 7142 7001-99
E-Mail info@atlantagmbh.de
Internet www.atlantagmbh.de

Managing Director:
Dipl.-Ing. (FH) K. Seidenspinner
Dipl.-Ing. (FH) K. Jäger
Dipl.-Wi.-Ing. (TU) R. Jost

Subsidiaries:
ATLANTA Drive Systems Inc.
1775 Route 34, Unit D-10
USA – Farmingdale, NJ 07727
Phone +1 800 505-1715
Fax +1 732 282-0450
E-Mail info@atlantadrives.com
Internet www.atlantadrives.com
ANP S.a.r.l.
40 Rue Eugene Dupuis
F – 94000 Creteil
Phone +33 156 71 1760
Fax +33 156 71 1764
E-Mail info@atlanta-neugart.com
Internet www.atlanta-neugart.com

ATLANTA Antriebssysteme
New production technologies require more and more complex drive systems and the components of these must optimally meet high design and quality requirements. ATLANTA accepted this challenge and keeps developing new and innovative products.

Racks
ATLANTA offers the probably widest range of racks actually available at the market.

**UHPC – Ultra High Precision Class**
- Q4 – Quality class 4: Module 5-12 straight and helical toothed, hardened teeth, ground on all surfaces, length up to 1000mm
- Q5 – Quality class 5: Module 2-4 helical toothed, hardened teeth, ground on all surfaces, length up to 1000mm
- NEW: StrongLine – complete case-hardened rack quality class 5 module 2-5, 60 % higher feed force

**HPC – High Precision Class**
- Q6 – Quality class 6: Module 2-12 straight and helical toothed, hardened teeth, ground on all surfaces, length up to 2000mm
- Q7 – Quality class 7: NEW Module 2-5 helical toothed, hardened teeth, ground on all surfaces, length up to 2000mm

**PC – Precision Class**
- Q8 – Quality class 8: NEW Module 2-5 helical toothed, hardened teeth, length up to 2000mm; Module 2-5 helical toothed quenched and tempered, milled teeth, length up to 1000mm

**BC – Basic Class**
- Q9 – Quality class 9: Module 1-10 straight and helical toothed, milled teeth, length up to 3000mm
- Q10 – Quality class 10: Module 1-10 straight toothed, Module 2-12 helical toothed, hardened teeth, length up to 3000mm

Right angle gear units with low backlash
The range of ATLANTA servo right angle gear units with output hollow shaft represents the widest actually available at market. This program allows the designer to solve just about any application requirements presented.

**NEW: StrongLine** – complete case-hardened rack quality class 5 module 2-5, 60 % higher feed force

**B (Basic)** – for simple servo applications:
Circumferential backlash < 12 angular minutes, normal rigidity, 90 % output torque

**E (Economy)** – economy-priced solution:
Circumferential backlash < 6 angular minutes, high rigidity, 100 % output torque – also available in conformity with ATEX!

**HP (High-Performance)** – the 58 series, time-tested over many years in practical operation:
circumferential backlash < 2 angular minutes, adjustable and re-adjustable, high rigidity, 100 % output torque – also available in conformity with ATEX!

**HT (High-Torque)** – new development for highest requirements as regards torque, rigidity and low-play feature: circumferential backlash < 1 angular minute, adjustable, highest rigidity, 150 % output torque, large hollow shaft, output flange acc. to EN ISO 9409-1-A available

**BG (bevel gear)** – a new development especially for applications requires high efficiency in combination with highest output torque:
circumferential backlash < 6 angular minutes, 150 % output torque, high rigidity

**High performance lifting gear units**
ATLANTA offers with 3 product lines the possibility to realise controlled lifting, lowering, feeding, tilting and swivelling motions with high precision, travelling speed and duty cycle.
- Standard screw-jack gearboxes are available for a static power range from 2kN to 100kN in standard and high-performance versions operated either by a non-rotating or a rotating trapezoidal-thread spindle.
- **NEW: HS** – High performance lifting gearboxes are especially developed for high travelling speed and high duty cycles. Available designs are rotating or non-rotating spindle and lifting cylinder for a power range between 10 and 100kN, all only with ball screw drives.
- **EH** – High thrust linear actuators for a power range between 20kN and 160kN are specially designed to meet high requirements as regards security, travelling speeds or duty cycles. Besides the variations using rotating or non-rotating trapezoidal-thread or ball-screw spindles the lifting-cylinder version is particularly suitable for use in rough industrial applications.
Barksdale – innovative products and custom made solutions
The name Barksdale represents high quality sensors and switches in the area of measurement and control functions. For nearly 50 years the company has developed in Germany custom made and future oriented solutions and is the market leader in the development and production of solid state pressure switches.

Barksdale is unique in offering both mechanical and electronic pressure switches. The newest mechanical pressure switch is the Series 8000, 9000 and the UDS1-V2 with its unique operating concept. Barksdale offers the widest range of pressure, level and temperature control for hydraulic power packs and becomes one of the leading specialists in this market segment. Proximity to the markets and the dialogue with the customers are the basis of Barksdale’s success.

By means of the world wide sales network as well as new developments and modifications of standard products our customers’ demands can be realized fast and individually. Of course a high demand with regard to the quality of our products, precision and On Time Delivery are of top priority. Whether in mobile or stationary hydraulics or in shipbuilding, mechanical engineering, power plants or medical technology, Barksdale takes care of a high safety standard in many markets.

Today Barksdale is a division of Crane Co., Stamford CT, a world wide operating mult corporative enterprise.

www.barksdale.de

The Baumüller Group, which is based in Nuremberg, is a leading manufacturer of electrical automation and drive systems. The planning, development, manufacturing and assembly of intelligent system solutions for mechanical engineering is undertaken by approx. 1,500 employees located at over 40 locations worldwide; from user interfaces and motion control software in accordance with PLCopen, software modules and controls to converters, electric motors and the entire service program for automation solutions. Service, installation, assembly and storage departments complete the service spectrum provided by Baumüller. Technical competence, innovative power, flexibility and absolute customer orientation are the distinguishing features of the Baumüller company philosophy. This is also reflected in the motto: “be in motion”.

Mechatronic Systems from a Single Source
At the same time, Baumüller always concentrates on the functional overall system and, as a result, has continuously developed itself from a component manufacturer into the mechatronic system provider. Customers profit from a correspondingly broad knowledge in the sectors of the industry. Long before the installation of the machine, a joint planning with the customer is conducted to work out a customer-specific solution and select the components. Specialists of the industry sector and application engineers support the field service during the collaboration with the customer.

www.baumueller.de
The company

Since 1972 BIKON-Technik GmbH has been developing new, releasable locking systems, also known as locking assemblies. They utilise the cylindrical and conical interference fit with two corresponding conical surfaces (BIKON = two cones). To date BIKON-Technik has been awarded over 90 patents worldwide in this field. Following nearly 40 years of experience, consultancy, and sales activities we can offer our clients applications-based know-how for industrial engineering solutions.

Product range

- over forty systems for the economic design of components
- shaft diameters from 6 to over 1,000 millimetres
- metric and imperial systems
- also available in stainless and nickel-plated designs
- over 3,500 special designs

Sales

An experienced partner for business on the international sectors we run a global direct sales network with short response times and an order handling system catering individually to our clients’ needs and requests.
Development

BIKON-Technik GmbH is one of the few developers in the field of releasable locking systems and therefore one of the pioneers on this sector as well. Our developments are generally aligned to our clients’ applications and the given requirements: just one reason that there is such a large number of product types and special designs. The following presents a selection of locking assemblies BIKON has developed and launched on the world market.

Example applications

BIKON 1003 (developed 1973)

BIKON 1006 (developed 1973)

DOBikon 1012

DOBikon 1015 (developed 1974)

BIKON 2006

Locking assembly for pulleys (1984) developed specifically for conveyor belt pulleys; today the standard in conveyors and other systems with high bending loading.

BIKON-FAHPS flange connector/coupling

Incl. BIKON-Hydropress (mechanical/hydraulic) locking assembly, shaft diameter: d = 540 mm, drive power: 2 x 2,500 kW

DOBikon 1012 / DOBikon 1013

Connection drive pulley
shaft diameter: d = 600 mm

DOBikon 2000

Connection wing adjustment in wind power station

DOBikon FKHPS

Flange coupling incl. Break Disk D = 1,000 mm
Mechanical speed adjustment in the output range of 0.25 to 200 kW.

Economic speed control has a crucial part to play wherever drive systems are found in machines and installations. At the permanent optimum efficiency of the motor, our mechanically infinitely variable speed V-belt transmissions convert the output potential to exactly the speed that is required at that precise moment.

Our series production includes the right system for almost all applications, whether it be normal or wide V-belt variable speed drives, single or double pulley drives, spring or cam pulleys, or ready-to-install assembly units that can be supplemented with three-phase AC motors and reduction gear units.

For precise speed adjustments with different requirements according to the technical conditions, there are spindle and angled adjustments with handwheel or dial handwheel, as well as hydraulic and electrical remote controls including speed indication units and speed sensors.

As the leading specialist, BERGES not only provides top-quality, perfected products, but also offers excellent advice on applications prior to purchase.

The appropriate system for all applications:

Optimally approved in many industrial areas.
The construction of one of the largest tide barriers in Europe, which is being built to protect the historically unique trade city Venice from flooding, is entering the critical phase. Since in summer 2009 Rexroth has put the hydraulics for a caisson transfer system into operation, it moves concrete blocks, each weighing up to 23,000 tons, to the loading station. They form the foundation of the “mobile” tide barrier, MOSE, that protects the Venetian lagoon from the spring tides of the Mediterranean.

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Reiner Leipold-Büttner
Dr. Stefan Spindler
Dr. Georg Hanen

Bosch Rexroth is one of the leading specialists worldwide in drive and control technology. Under the brand name Rexroth, the company supplies tailored solutions for driving, controlling and moving. Bosch Rexroth is a partner for industrial applications and factory automation, mobile applications and using renewable energies. The Drive & Control Company is the supplier of choice to more than 500,000 customers for high quality electrical, hydraulic, pneumatic and mechatronic components and systems. In more than 80 countries Rexroth is a reliable partner for its customers, supporting their production of safe and efficient machines and thereby contributing to the economical use of natural resources.

Multi-disciplinary know-how is the basis for innovative solutions that are used as components or customized systems. Because Rexroth offers a complete range of drives and controls, advice to customers is free of technological bias, resulting in the most appropriate solution for the task at hand. Rexroth technologies are used in all branches of industry. As system-level partner, service provider and supplier, Rexroth has a fund of knowledge in more than 30 industrial sectors. Comprehensive service offerings fortify Rexroth’s leading position worldwide as a partner for machine and system manufacturers.

In 2009, Bosch Rexroth achieved sales of around 4.1 billion Euro with 34,200 employees. The company was created in 2001 through the merger of Bosch Automationstechnik and Mannesmann Rexroth. The entrepreneurial tradition of both companies continues under one roof. In the case of the Rexroth family this extends back to 1795 and in the case of the Bosch family back to 1886.

St. Gotthard Railway Tunnel, Switzerland
Planetary drives from Rexroth ensure that the mole (nine meters in diameter) can work its way through the solid rock powerfully and continuously. From 2015 high-speed trains should be traveling along the two tracks of the world’s largest railway tunnel.

Bosch Rexroth. The Drive & Control Company
Bosch Rexroth is one of the leading specialists worldwide in drive and control technology. Under the brand name Rexroth, the company supplies tailored solutions for driving, controlling and moving. Bosch Rexroth is a partner for industrial applications and factory automation, mobile applications and using renewable energies. The Drive & Control Company is the supplier of choice to more than 500,000 customers for high quality electrical, hydraulic, pneumatic and mechatronic components and systems. In more than 80 countries Rexroth is a reliable partner for its customers, supporting their production of safe and efficient machines and thereby contributing to the economical use of natural resources.

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Fax +49 7742 7116
E-Mail info@bucherhydraulics.com
Internet www.bucherhydraulics.com

Managing Director: Daniel Waller
Founded: 1923
Sales: Worldwide through Bucher Hydraulics
  Sales Centers and Sales Partners
Competence Centers:
  Germany – Klettgau
  Germany – Remscheid
  Germany – Dachau
  Italy – Reggio Emilia
  Switzerland – Neuheim
  Switzerland – Frutigen
  USA – Elgin, IL
  USA – Grand Rapids, MI
Sales Centers:
  Austria – Neumarkt
  Canada – London
  China – Beijing
  China – Wujang City
  China – Shanghai
  China – Zhaoping
  France – Rixheim
  Germany – Klettgau
  Great Britain – Coventry
  India – Delhi
  Italy – Reggio Emilia
  Netherlands – Zoetermeer
  Switzerland – Frutigen
  USA – Kenosha, WI

The company
Bucher Hydraulics is an internationally leading provider of innovative drive and control technologies. Contributing high levels of technical expertise, we support our clients’ product development activities from the initial project phase to the finished machine. From planning to production, we can provide valuable help in creating very advanced machinery that features stringent technical demands and exacting quality standards.

Products and services
Components, sub-systems, and complete systems with emphases on: pumps, motors, valves, manifold control blocks, power units, and electronic control systems.

Customers in application areas
Bucher Hydraulics sets the standards in technology, quality, manufacturing, delivery performance, customer relations, and service. Bucher Hydraulics specialists have many years of experience in mobile machines and vehicles.

Bucher Hydraulics develops tailor-made and cost-effective applications that provide optimum performance in the areas of:
- Agricultural and forestry equipment
- Construction machines
- Mining machinery
- Transportation and materials handling
- Waste disposal and environmental management
- Municipal equipment
- Tractors
- Offshore / marine
- Power generation
- Lift / elevator hydraulics
Bühler Technologies GmbH is your specialist and supplier for components & customized solutions.

There is an ever increasing demand for effective product solutions for the design of modern power packs and lubrication systems. Low financial investment costs as well as low space requirements are equally important as reliable operation and low cost of ownership.

Since its foundation back in 1969 it has always been a major target for Bühler’s engineering team to provide products particularly designed for this market segment. The latest product development offers more proof of this vital focus. The new multi-terminal combines the basic functions needed in a power pack in just one compact unit.

The product range furthermore includes level and temperature controls, compact filter and cooling loops and thus opens the avenue for efficient Condition Monitoring. Today, Bühler is a recognised global supplier of a comprehensive range of accessories for the power pack and lubrication system markets.

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E-Mail info@buehler-technologies.com
Internet www.buehler-technologies.com

Bühler Technologies GmbH is your specialist for level- and temperature control, coolers and filtration.

Innovations for the fluid power industries

Competent
Innovative
Reliable

www.desch.de

DESCH Drive Technology
Smart Drive Solutions
Comprising areas ranging from power transmission through clutch technology (Power Transmission) to power conversion through gearbox solutions (Drive Technology) and service and machine diagnostics (Service Center), the company is able to offer innovative and customised drive and system solutions along the entire drive train. The business areas intermesh and complement one another, as illustrated by the planetary gear diagram.

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E-Mail info@desch.de
Internet www.desch.de

Subsidiary company
DESCH DPC GmbH & Co. KG
DESCH Canada Ltd.
DESCH Italia
DESCH China
The Drives Group of Demag Cranes & Components offers series-manufactured components for the materials handling and general mechanical engineering sectors. They are used in applications such as in cranes, distribution carriages, transport shuttles, roller and chain conveyors or turning mechanisms.

The product range includes:
- Travel unit components
- Brake and geared motors
- Microspeed units
- Frequency inverters
- Power supply lines

From components to systems: both standardised as well as tailored solutions can be implemented quickly and cost-effectively with the comprehensive range of components from the Demag modular line of products.

**Travel unit components**

**DRS wheel block**
Universal wheel block system with compact dimensions in finely graded sizes and load capacities from 2.75 t to 40 t. Versatile connection possibilities to support structures.

**LRS travel wheel system**
Robust, universal travel-wheel system for travel applications with wheel loads up to 6.5 t (at 100 m/min) and travel speeds up to 240 m/min. Two optional designs:
- Spheroidal-graphite cast iron travel wheel with two flanges, high load capacity and good rolling and damping characteristics
- Travel wheel with a Hydropur tyre for very good traction and quiet running characteristics

**RS wheel block system**
Wheel-block system for special applications in the high-temperature range up to 350 °C or of stainless design (RS 125).

**Demag RAE/RNE wheel sets**
Demag travel units for rail-guided travel applications in the heavy load range.

**Motors**
- Offset geared motors: 130 to 11,500 Nm
- Angular geared motors: 120 to 12,000 Nm
- Helical geared motors: 90 to 5,800 Nm
- Cylindrical-rotor motors: outputs up to 45 kW
- Conical-rotor brake motors: outputs up to 42 kW

**Frequency inverters**

**Dedrive Pro frequency inverters**
High-performance components from 1.5 to 560 kW for power supplies from 380 to 690 V for infinitely variable motions for travel, lifting, turning and slewing applications.

**Dedrive Compact frequency inverters**
Stopping and operating sequences to meet individual requirements for series AC motors with a motor shaft output from 0.75 to 55 kW.
PENTOSIN FLUIDS for Safety, Driving Fun and Comfort on All Roads of the World

PENTOSIN as a global player develops today already the fluid technologies which will be used in the vehicles of tomorrow. Whereas engine, gear-box, central hydraulic system, cooling system etc. are on latest technical level, all their functions depend on intelligent fluids. Only if hardware-system and fluid come together for common operation, outstanding performance can be achieved.

Taylor-made solutions for various technical requirements of the automotive industry

The PENTOSIN product program covers the broad spectrum of our customers’ requirements – ranging from the fluid development to factory filling and aftermarket. Our close cooperation with OEMs and system manufacturers within the framework of research and development enables us to elaborate tailor-made solutions for the various technical requirements. The symbiosis of quality, flexibility as well as being open for innovations and individual fluid solutions on one hand and the protection of environment and the natural resources on the other hand, is the key of success of the PENTOSIN company.

Development for progress

With efficiency and dynamic our R&D specialists are continuously working on different development projects – indeed a never ending job. There is never a Finish but always a Go On only. The Good of today will be substituted by the Better of tomorrow. Just to look at the double clutch gearbox oils PENTOSIN FFL-2, FFL-3, FFL-4, FFL-5 for example: Some years ago they were the great technical sensation, but also such high-tech fluids are subject to ongoing development to make sure that also in the vehicles of tomorrow and after tomorrow the hardware system and the fluid – each one unique – work together in technical harmony. Today 95% of all DCT equipped vehicles are already using PENTOSIN technology.

At the end of a long process-way the PENTOSIN product – DCTF in the test rig – is exposed to severe operating conditions. Once this longterm test is successfully finished, this product is approved as GENUINE PENTOSIN FLUID by the different automotive manufacturers for factory filling and aftermarket and is registered under their own part numbers.
There is a lot more to hydraulic connections than is shown in the catalogue.

There is hardly anything as important as good connections. For EMB as suppliers of high-grade hydraulic fittings this principle carries a double meaning as we have for 60 years regarded ourselves not as just suppliers of products but as our customers’ partners in fitting technology. We not only develop and manufacture connecting products that meet and exceed industrial quality standards but also all pertaining assembly units. Thanks to our experience, gained in a wide variety of different industries, and our compliance to manufacturing standards, EMB is regarded as being among the well-established range of suppliers of hydraulic fittings. Our day-to-day business focuses not only on the bulk sale of hydraulic components but also on attending to our customers’ individual problems on an overall basis. This ability coupled with our technically and economically optimised solutions from the project stage to series production make customers decide in favour of EMB.

Customised solutions

Every application is unique in its own way. With our customers, we have developed our product range to meet the challenges of industry, ensuring that quality and economical production remain at the forefront of our thinking. All our products meet or exceed current DIN, ISO and EN standards and guidelines. Thus, the EMB product range offers product diversity, safety and cost effective, solutions based on our customers specific demands. Whatever the application and the customer’s requirements are – users throughout the world rely on EMB.

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MAAG Gear

units
Built to last

With a MAAG Gear heavy-duty gear unit you can depend on its quality and reliability. Combining the latest technology with a compact design, it gives you unparalleled precision and ease of operation. From roller presses to ball mills, MAAG Gear units can be adapted to suit your requirements and quite simply last longer.

www.maaggear.com

About us
FLSmidth MAAG Gear is a global leader in high-quality, heavy-duty gear units for the cement and minerals industries. The company belongs to the successful FLSmidth Group, a listed Danish firm.

At the headquarters in Winterthur, Switzerland, over 100 employees work in development, design, finance and marketing. Production takes place in a modern plant equipped with new high-performance machines in Elblag, Poland, where over 160 employees manufacture gear units that satisfy the most demanding quality standards.

FLSmidth MAAG Gear (formerly MAAG Zahnrad AG) has many years of experience in manufacturing gear units. The company was founded in 1913 and quickly expanded into an international group. The first two-stage planetary gear unit for a horizontal mill in the cement industry was produced in 1966. Today, the product range includes various heavy-duty gear units for mills, and gear solutions for bucket wheel excavators and belt conveyors.

Products
FLSmidth MAAG Gear’s expertise is reflected in the uniqueness of MAAG Gear units: continuous performance, coupled with high precision and reliability. In addition, modular solutions and a compact design mean MAAG Gear units are simple to transport, install, operate and maintain. Each unit is specially manufactured to the client’s specifications.

FLSmidth MAAG Gear offers the following units for the cement industry:

For vertical mills:
- WPU two-stage gear unit
- WPV three-stage gear unit
- Atox gear units

For horizontal mills:
- LGD lateral gear drive
- CPU planetary gear unit
- Symetro gear units

For roller presses:
- PPU planetary gear unit

For bucket wheel excavators:
- KPB gear units

For horizontal mills:
- LGD lateral gear drive

Replacements:
- Gear units for all types of installation

MAAG Gear units for the mineral industry include:

For belt conveyors:
- KA/KB gear units

For bucket wheel excavators:
- KPB gear units

For horizontal mills:
- LGD lateral gear drive

Service
FLSmidth MAAG Gear pays special attention to a fast response time and is continually investing in the optimization of processes and the training of staff. The following types of services are offered:

- Installation and commissioning: One of FLSmidth MAAG Gear’s core areas of expertise
- Routine servicing: Signs of wear and tear can be observed and upcoming overhauls can be properly planned
- Visual inspection: Short inspection during ongoing operation
- Overhaul: The customer receives back a renewed and reliable gear unit
- Repair: Arriving fast and conducting the repair on site if possible is the main target

Whatever servicing work will be required, FLSmidth MAAG Gear is highly focused on satisfying the customer’s needs and on reducing downtime of the cement plant wherever possible. The 24/7 Service Hotline +41 79 61991-00 is always open to every customer.

Visit us! www.maaggear.com
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Festo is a leading world-wide supplier of automation technology. As a globally-oriented family company it has become the performance leader in its industry over the last 50 years, thanks to its innovations and problem-solving competence in all aspects of pneumatics as well as its unique range of industrial training and education programs.

Motion with air – Festo’s core competence
Festo’s trademarks are its innovations to maximise customer productivity, its global presence and its close customer partnerships. Its success is based on the simplest drive principle in the world: air. Pneumatics has become a key technology in automation and is Festo’s core competence. The company offers over 30,000 automation products, which can be tailored to specific customer needs in a variety of modular programs.

Innovative variety for the world of automation
Furthermore, Festo offers ready-to-install subsystems and tailor-made industry-specific solutions, which are reliable, flexible and fast. Festo gives answers with his Mechatronic Motion Solutions to topics like green production, energy, safety and conditioning monitoring.
With a complete range of services, Festo supports its customers throughout the entire value-creation chain – providing everything from detailed advice, help with the selection of the optimum products and systems and fast installation using the “plug and work” principle through to training and on-site servicing.

A key factor for this success, was the company’s unswerving dedication to satisfying customer needs with new products and services. Around 100 new products launched every year and some 2,900 patents world-wide are a clear indication of the company’s innovative strength. Festo invests 9.5% of its annual sales in basic research and development of new products and processes.

Wide range of training services tailored to industry needs
Festo has developed into a performance leader in the field of industrial training services. The company offers a comprehensive range of learning systems for industrial training and education.
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Fluitronics – centres for development and optimization of mobile hydraulics systems
Fluitronics GmbH is an independent electro-hydraulic manufacturer of compact hydraulic systems dedicated to the mobile machine market. By using their competent engineering staff the success is based on extensive liaison with the customer to improve mobile machinery efficiency, and performance. This can translate directly into lower energy consumption and minimized emissions. This project type developments for specific customer leads from medium to large batches into series productions. In addition, hydraulic motion and controls components are also offered as a package solution. The brand new and modern operation behind this philosophy is located in Krefeld, Germany – close to Dusseldorf Airport – with 70 skilled employees. The Engineering team is 30 strong in design, development, construction and sales department, all working closely for our customers optimum hydraulic solutions. Packaged and on time delivery service arranged.

Target markets:
Mobile hydraulics, serial devices and machines
Fluitronics customers are the leading machine manufacturers in the mobile field and serial industrial devices such as: Municipal vehicles, Construction machines and equipment, Agricultural machinery and Fork-lifts, as well as bigger series of power packs for bailers, compact presses and scissor lifts, all are widely equipped by Fluitronics. These machines and devices are worldwide used, and with the global perspective steadily increasing investments for infrastructure in energy, food and transportation secure a sustainable demand.

Hydraulic systems and key components offer
Manifold blocks assembly line: Individual hydraulic integrated circuit design into Manifold blocks in Aluminium for up to 250 bar or Steel up to 350 bar system pressure. They can be equipped with a large number of Screw-in or Slip-in Cartridge valves, CETOP valves, accumulator, filters and compact cylinder arranged equipment. All to customers needs and specification and thus reduce pipe work, fittings and leakage. Fluitronics manufacture, assemble and test Manifold blocks in large numbers. A system designed Manifold block can be supplied from 100 blocks or even more typical at around 1,000 blocks per annum. In a second assembly area, we have Compact Power units. The Electric Motors ranges up to 3 kW DC and up to 7.5 kW AC with bellhousing, coupling, hydraulic pump all mounted in reservoir. Control valves all in a compact space completing the unit. These units are designed for Tipper trucks, scissor lifts, waste compact machines, vehicle-lifting equipment or crushing machine equipment. As a new division Fluitronics manufactures high pressure radial piston pumps and respectively high pressure power packs. This world famous WIMMER piston pump is in Fluitronics production programme since the beginning of 2007. The WIMMER is a high-pressure pump, built in three sizes, up to 1,000 bar. These pumps are mainly used for tools supply out of high-pressure power units, hydraulic rock crushers, log splitters, demolition machinery and rescue jaws equipment. Besides Systems a quality range of exclusive distribution rights on specific pumps, motors, rotary actuators, valves and filtration products complete the basket and positions Fluitronics as a comprehensive supplier in the fluid power world.
Gefran designs and produces sensors, electronic components, servo drives and control systems for automation of industrial machines in a focus variety of industries. Gefran has been listed on the Milan Stock Exchange since June 1998, and on the STAR segment since 2001. Gefran’s know-how results from a continued focus on research and innovation, which benefits from a close collaboration with international universities, colleges and research centers.

Gefran at a glance

Gefran employs more than 800 highly trained and experienced employees and is with 7 manufacturing sites, 10 subsidiaries and over 80 authorised distributors worldwide present.

Products

- Sensors and transmitters for pressure, position, temperature and force
- AC inverter, servo drives, DC converter
- Control systems, Industrial-PCs and operator terminals
- I/O-Modules
- Temperature controller and indicator
- Solid state relays and power controllers

C. Otto Gehrckens GmbH & Co. KG

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Elastomer Seals from the Specialist

C. Otto Gehrckens GmbH & Co. KG – COG for short – is an independent manufacturer regarded throughout the industry as one of the leading providers of elastomer seals. COG dispatches consignments featuring a highly diversified range of materials, including FFKM, from Europe’s largest O-rings warehouse (more than 45,000 items in stock) and has been offering German premium quality, experience and innovative capability for more than 140 years. This midsize business never loses sight of its goals as it quickly develops new ideas and products which are strongly market-oriented for users in the seal technology.

COG at a Glance

- Founded in Pinneberg near Hamburg in 1867
- Independent family-owned company with more than 180 employees
- Europe’s largest O-ring warehouse (more than 45,000 items kept in stock for immediate delivery)
- Optimised delivery service using our modern logistics centre
- In-house compounding and compound development
- Close cooperation with leading raw material manufacturers
- Release certificates and approvals available for various materials for different industries, e.g. BFR, KTW, DVGW, NSF/ANSI 61, FDA, USP, etc.
- Very small series possible at favourable costs
- Tools available for more than 15,000 different O-ring dimensions
- In-house toolmaking
- Quality management per DIN EN ISO 9001
- Environment management per DIN EN ISO 14001
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Managing Director:
Robert H. Saunders (chairman)
Wolfgang Lemser
Employees: 900 in Europe
Headquarters:
GKN Service International GmbH
Nussbaumweg 19–21
51503 Rösrath
Germany
Distribution: worldwide

GKN Service International GmbH is a company of the GKN Land Systems Division, supplying the technology for applications for agriculture, construction, passenger cars and commercial vehicles, industry, military, marine and alternative energies.

The product
GKN distributes constant velocity driveshafts for industrial applications under the brand name LÖBRO. These are ideally suited for applications where unequal joint angles are encountered and low vibration generation is needed.

LÖBRO constant velocity driveshafts solve the vibration problems generated by cardan shafts and significantly reduce the radial and axial forces to the connecting bearings.

Main advantages of LÖBRO constant velocity driveshafts in brief:
• No oscillations and vibrations (low noise)
• Easy installation, maintenance-free
• High angle capability
• No additional slip device necessary in the intermediate shaft, plunge achieved within the joint
• Soft running plunge by rolling friction of the balls, even when torque is applied
• High speed applications
• Compact design, small rotation diameter, short length

Examples of applications are cars, filling machines, printing machines, soil compactors, marine propulsion, dynamometers, mill drives, pump drives, machine tools, glass manufacturing, textile machines, commercial vehicles, railroad equipment, wind turbines, military vehicles.

Choose the Original
Choose Success!

Be sure it’s original technology!

www.vdma.org/original
Hänchen Hydraulic Cylinders

Hänchen hydraulics products are the perfect symbiosis of fluid technology, electronics and software to form hydro mechatronics. Superfinishing of surfaces especially during honing, and consistent deployment of construction modules during development are among the core competencies of Herbert Hänchen GmbH & Co. KG. The second and third generation family run business employs some 200 employees in its headquarters near Stuttgart and a workshop in Oettingen, Bavaria. The company manufactures high quality hydraulic cylinders, hydraulics products and full scale plug & play linear drive system solutions.

Today Hänchen offers series solutions, while competitors still struggle with cost-intensive individual design and high prototyping risks. The patented floating annular gap seal Servofloat® and the hydrostatically supported piston rod guide Servobear® offer ultimate precision for high end hydraulic cylinders. The high quality solutions Servoslide® and Servocop® offer groundbreaking cost-effectiveness. Hänchen is open to new challenges including individual and special designs to blaze new technological trails.

This broad product range is exclusively designed and manufactured in Germany. An international sales network serves the global market: Hänchen offers contacts in 29 countries in Europe, America and Asia by subsidiaries and representatives. Thereby Hänchen reaches a customer base from various industries. All this is only feasible with a corporate philosophy that focuses on quality and innovation. Regular large scale investments, skilled employees and commitment in training and education form the basis for a successful future.

Your benefits
- Extraordinary reliability
- Optimum efficiency
- High reproducibility
- High precision parts
- Demanding dimensional accuracy
- Honed surfaces
- Low friction
- Minimum wear on cylinder and seal
- Comprehensive service
- High cost-effectiveness
- Extensive engineering capacities

Use cases
- Machinery and plant engineering
- Measuring and testing systems
- Chemical and plastics industry
- Automotive, aviation and railway industry
- Medicine technology and beverage industry
- Research institutes and universities
- Foundries and steel mills
- Regenerative energy

Hydraulic cylinders manage the pitch-control of wind turbines.

Product variety
- Catalogue cylinders:
  - Standard, normalised and test cylinders from various series
  - Diameters from 12 to 600 mm: Ratio-Test® series in mm increments
  - Stroke of up to 6,000 mm in mm increments
  - Permissible pressure from 120 to 300 bar
  - Up to 9,000 kN force
  - Speed of up to 4 m/s
  - With optionally integrated sensors
  - Various models, attachments and accessories
- Ratio-Drive®:
  - Full scale linear drive system solution including self-developed software
- Special cylinders
- Clamping device Ratio-Clamp®
- Pressure intensifiers
- Attachments and mounting parts

Hydraulic cylinder for the pressure die-casting systems, which are responsible for movements performed precisely and with great force of mould stamps and sliders as well as other bulky parts.
HANSA-FLEX AG

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28307 Bremen
Germany
Phone +49 421 48907-0
Fax +49 421 48907-48
E-Mail info@hansa-flex.com
Internet www.hansa-flex.com

Management board:
Thomas Armerding (Chairman)
Uwe Buschmann (Deputy Chairman)
Dieter H. Seidler (Executive Director Finance)

Founded: 1962
Employees in 2009: approx. 2,500
Sales in 2009: approx. Euro 275 million
Distribution: through worldwide system partners (see www.hansa-flex.com)
Branches: 858
FLEXXPRESS Service vehicles: 232
Customers: over 300,000

HANSA-FLEX AG

The truth is in oil

For years, HANSA-FLEX has been respected by companies from an enormous range of sectors as a professional partner in all questions related to the key technology of hydraulics. In this capacity, HANSA-FLEX covers the entire spectrum of fluid technology requirements. From A to Z. As a system partner, HANSA-FLEX is an expert in the entire fluid technology system, and integrates all services – from planning and consulting to engineering, plant construction and the supply of hydraulic connecting elements to commissioning of the machines and training for employees. And customers have global access to this offering – all over the world in over 350 agencies.

Oil is an important structural component of hydraulic systems. Contamination of any kind can damage machinery and bring it to a standstill. HANSA-FLEX believes that the best way to avoid this is through forethought and education. Because the cleanliness of oil is affected by a variety of factors. If oil is stored or mixed incorrectly, or simply due to aging, its effectiveness is impaired, because it loses viscosity for example, allowing the machine to become disastrously worn. The same applies for contaminated oil. Because: All hydraulic components in mobile or fixed hydraulic systems move on a film of oil less than ten μm thick. For the sake of comparison: A human hair is about 70 μm thick. This ultrathin oil film ensures that machines will operate smoothly, but in order to work the oil must be perfectly clean.

In fact, 75 percent of all malfunctions in hydraulic systems are caused by contamination in the oil. And since downtimes and stoppages are more than just irritations, HANSA-FLEX offers an intelligent solution with the Fluid Service. The fluid experts take oil samples directly from the machines and analyse them in their vehicle. For this, the oil samples are deposited on a filter membrane, sealed and examined under a microscope. It is often possible to see immediately how severely the oil is contaminated, and with what. In order to determine the exact purity class, a particle count needs to be carried out. This cannot be done with the naked eye and a microscope. So a special instrument is provided. This counts the dirt particles and displays the data obtained in a graphical table.

The advantage: The HANSA-FLEX experts can find out on site whether and to what degree the oil is contaminated. With this information, they can advise you on how to proceed. In this way, fluid replacement is decided by the actual condition of the oil, and it can be carried out on a cost-optimised basis. In addition, the fluid service offers specialised services such as assistance with “water in oil” situations, or conversion to bio-oils, which is being ordered by more and more cities and local authorities for mobile hydraulic systems. By calling in the Fluid Service, the insidious process of oil contamination can be halted permanently. This also reduces component wear and the risk of malfunctions and unscheduled machine stoppages.

HANSA-FLEX supports its customers from the development of the prototypes to their series production with ready-to-assemble kits.

The area-wide and rapid response FLEXXPRESS hydraulic service looks after all repairs – day and night. X-CODE has revolutionised the provision of spare parts – downtimes are therefore reduced to a minimum.

Expert advice and the provision of filter systems and oil maintenance ensure smooth operation.
Competence worldwide
Hawe Hydraulik offers hydraulic solutions for industrial applications and mobile machines. Customers get competent support on planning, designing, implementing and in service. Experiences of over 60 years successful development activity is the basis. Fast, reliable and on site support is provided by the headquarter in Munich/Germany, five German sales offices, 13 international daughter companies and 30 sales partners worldwide.

Quality products
The product range consists of constant and variable displacement pumps, hydraulic power packs, hydro pumps, valves, cylinders, hydraulic accessory and so on. Electronic components are exactly attuned to the hydraulic components and provide an easy control and remote diagnosis. In general the systems can be operated manually, hydraulically, pneumatically and by solenoids. All structural components that bear pressure are made of steel. This is the basis for a particular compact design, long service life, reliability and for an operation pressure up to 700 bar.

High power density for the industry
Compact components and a modular product concept will improve design and service of the machines. All hydraulically controllable movements of, for example, machine tools, presses and test rigs can be controlled by a compact hydraulic power pack with integrated fan and directly mounted valve bank. Depending on the requirements the valve bank consists of directional spool valves or leakage free seated valves.

Proportional control for mobile machines
Load-independent, stepless velocity of movement of mobile machines is performed by a proportional directional spool valve according to the Load-Sensing principle. There are manual and solenoid actuations available. Proportional directional spool valves with direct CAN-BUS interface facilitate easier actuation of complex systems and support speedier and safer installation. A complete hydraulic system for cranes, construction or drilling machines, forest tractors, etc will be customized and can consist of variable displacement axial piston pumps, directional spool valves, overcenter valves and a programmable logical valve control.
All over the world, the HIWIN brand is synonymous with linear technology. The product portfolio ranges from linear guideways to multi-axis automation systems driven by linear motors – all made by HIWIN.

HIWIN has state-of-the-art production facilities, highly qualified engineers, quality-assured manufacturing and assembly processes, using only high-quality materials to satisfy the demands of its customers.

**Linear Guideways**
With roller bearings or recirculating linear ball bearings, HIWIN linear guideways are renowned for their long service life, high guide accuracy, even loading capacity in all directions, straightforward installation and replacement and simple lubrication. Machine tools or automation – HIWIN has the right product.

**Linear Motors**
Linear motors are becoming increasingly popular for tasks requiring highly dynamic movements. Linear motors directly convert electrical energy into a linear movement. HIWIN supplies components, single axis systems, rotary tables or ready for operation multiple axis systems. All equipment is adapted to the usage conditions and developed and manufactured by HIWIN.

**Linear Modules**
Linear modules are the core element for positioning tasks and consist of a combination of ball screw and guide unit within a highly rigid U-shaped subbase. The motor or gears are secured directly to the module.

**Linear Actuators**
For linear movements on mobile and stationary constructions. HIWIN linear actuators are compact, lightweight and practically maintenance free. Electronic controls and manual keys complete the range.
The Hunger Hydraulic Group of Companies – Your Partner for Complete System Solutions

The Hunger Hydraulic Group, trading internationally in the metal and capital goods industries, is one of the leading manufacturers in the field of hydraulic engineering. For more than 60 years the company has been dedicated to problem solutions in the hydraulic and automotive fields that require intensive consulting services. In accordance with growing customer requirements the group of companies has diversified its product range and is nowadays represented by 14 companies in seven countries. Thanks to the cooperation of specialized group companies the customer can procure custom-made complete solutions which fulfill highest requirements even in extremely demanding applications. Hunger systems are employed worldwide in various applications, e.g. steel presses and mills, aluminum casting plants, offshore, hydroelectric dam projects, bridge construction, open pit mining, machine-tool manufacture, test bed engineering, renewable energies, building machinery, fire fighting equipment, environmental technology, trucks and large mobile cranes as well as air and spacecraft.

Range of Products

Hydraulics:

- Hydraulic cylinders (special, standard and telescopic cylinders)
- Surface coatings: Ceraplate, Ultraplate, Chrome
- Seals and bearing elements
- Spherical plain bearings and rod ends
- Rotary distributors and rotary actuators
- Hydraulic valves
- Hydraulic power packs
- Abrasives: honing stones and tools
- Commissioning and repair services
- Engineering and system development

Automotives:

- Fifth-wheel and trailer couplings
- Sheet metal processing: formed and punched parts

With specific arrangements of Hunger DFE standard elements, the most diverse requirements of hydraulics are covered. Reputable manufacturers in the construction machine field are not without reason using Hunger DFE products.
HYDAC International GmbH

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The HYDAC Group consists of twelve legally independent companies:
HYDAC Technology GmbH,
HYDAC Filtertechnik GmbH,
HYDAC Filter Systems GmbH,
HYDAC Fluidtechnik GmbH,
HYDAC System GmbH,
HYDAC International GmbH,
HYDAC Cooling GmbH,
HYDAC System GmbH,
HYDAC Service GmbH,
HYDAC Produktionstechnik GmbH,
all Sulzbach/Saar;
HYDAC Electronic GmbH,
Gersweiler/Saar;
HYDAC Accessories GmbH,
Dudweiler/Saar;
HYDAC Process Technology GmbH,
Neunkirchen/Saar.

Production sites are located overseas in Europe, Asia and North America.
Year of foundation: 1963

The HYDAC group in figures
Wherever fluid technology in connection with electronics and engineering is required, HYDAC is there to help. With 5,500 staff, 45 overseas branches and over 500 distributors worldwide, we are never far from our customers for engineering advice, delivery and service. Our exceptionally high proportion of 70 per cent export business serves to underline the global presence of HYDAC.

Product range
Components, sub-systems and complete systems for hydraulics, fluid technology, process engineering and environmental technology with main focus on filters for fluid technology, filters for process technology, fluid service, accumulator technology, compact hydraulics (cartridge valves, control blocks, compact units and cylinders).

Range of services
With its large service network HYDAC offers a comprehensive range of services in hydraulics worldwide, consisting of:
• Fluidservice
• Inspection service
• Maintenance service
• Repair service
• Installation service
• Optimisation service
Company Philosophy
All company divisions are focused on world market requirements. Quality, competitive prices, availability, service, advice, innovation, technology and proximity to the customer are the basis of our trading principles and influence the activities of each individual member of staff.

Field of applications
The wide product range is used in sectors from mechanical engineering, through process technology, the mobile sector, automation technology, to applications in the offshore sector, aerospace and energy technology.

Sales organisation
HYDAC products are sold via our own sales and service branches with distribution centres and sales and service partners worldwide. Our sales force is supported by technical sales staff in the product divisions at our headquarters.

In the global market we are able to meet customer requirements with local competence in the field of engineering and production.

www.hydac.com
Company Profile
Founded in 1990, Jenaer Antriebstechnik today develops and manufactures servo drives and mechatronical systems. Our core competence is the solution of customer specific drive problems. The application range is from cost-optimized positioning of high-precision rotational and linear axes to multi-axes-synchronous motion control. The ECOSTEP® principle developed by Jenaer Antriebstechnik makes a precise, fast motion with high duty cycles possible. And this more cost-effective than with a conventional AC servo motor.

Application Examples
Primary areas of application are electronics manufacturing machines, laser systems, mounting automates and handling systems. Essential for all these applications is high dynamic and high speed. A further field where our drives can show all their advantages is the automation of continuous processes, e.g. in printing machinery. In medical systems our drives handle e.g. the positioning of OR tables. In large telescopes our drive and control systems even allow a view to space.

Product Scope
- Multi-pole servo motors and servo amplifiers ECOSTEP®: Advantageous ratio between power loss and torque, ideal for a frequent start-stop operation.
- Servo amplifiers ECOVARIO®: Various interface options, e.g. CANOpen, EtherCAT, Ethernet, Proﬁbus, etc.
- Compact servo drives ECOMPACT®: Servo motor and servo amplifier in one: saves space in the cabinet, reduces the cabling effort.
- Low-pole servo motors ECOSPEED
- Linear motor modules ECOLIN®
- Stepper motors and stepper motor amplifier ECOSTEP®54
- Mechatronical systems, from single-axis to multi-axes, also rotary

The specialist for couplings
KTR Kupplungstechnik GmbH having its headquarters in Rheine produces and distributes flexible, non-shiftable couplings and hydraulic components for mechanical engineering. The company is one of the leading manufacturers in the field of drive technology worldwide. More than half of the couplings produced by KTR in Germany are exported. The main production takes place in the headquarters in Rheine employing approximately 300 out of a total of 800 employees worldwide. KTR Kupplungstechnik GmbH is a 100 % subsidiary company of F. Tacke GmbH & Co. KG. This is, in turn, entirely owned by the fourth generation of the family Tacke.

In 1938 the curved-tooth gear coupling® was developed by F. Tacke and from 1959 onwards the development of the BoWex® coupling as a maintenance-free, curved-tooth gear coupling® was distributed by the newly founded subsidiary company, KTR. Today, more than 50 years later, KTR is more innovative than ever, developing approximately 10,000 new customised product varieties for drive technology every year. With its extensive product portfolio KTR supplies to every kind of industry, amongst others marine and railway technology, construction machinery and machine tool industry and finally wind power technology, which is becoming more and more important. KTR is the market leader for drive components in windmills for the renewable energy industry.

The distribution network comprises 19 subsidiary companies and numerous sales partners throughout the world. KTR does not only produce at the headquarters in Rheine but also in USA, China and India. In this way it is assured that every customer request can be achieved within the shortest time possible, worldwide.
KACHELMANN – Your Partner for gearboxes

Gearboxes up to 20 t
- spur gearboxes
- bevel gearboxes
- planetary gearboxes
- worm gearboxes
- change speed gearboxes
- gearbox repair and overhaul
- worldwide service

Indexing gearbox for steel mill
Type 2 KE 173/4, i₁: 57:1, i₂: 23:1, i₃: 17:1, i₄: 7:1, Tₘₐₚ: 110,000 Nm, Weight: 17,000 kg

The Company:
KACHELMANN is an engineering and production company for gearboxes up to 20 tons. Established in 1894 as a forge and a specialist for cathedral clocks. The family owned company is now in the fourth generation a well known worldwide supplier of gearboxes.

The volume of technical know-how, developed within 100 years of experience, ensures optimal gear adjustment for our customers’ installations in all industrial branches.

As family run business, KACHELMANN invests constantly in the further development of the company and in the training of the employees. We put special attention on the training of young people and on the social responsibility connected to this.

The continual passing on of skills and strong performance in gearbox construction form the basis of our company.

Highly motivated employees and lean management ensure our customers reliable products and best quality.

Our Product:
The gearboxes are perfectly fitted to the customers installations for an optimal performance and efficiency. A successful partnership from construction to installation.

Coiling gearbox for rolling mill
Type E 1220 spez., input: P = 1,000 kN, Tₘₐₚ: 207,000 Nm, Weight: 24,000 kg

Gears
- spur gears up to m = 45; Ø 4,000 mm
- bevel gears up to m = 21; Ø 800 mm
- (also Klingelnberg-Zyklopalloid)
- worm gears up to m = 24; Ø 1,800 mm
- tooth racks up to m = 16

Calender gearbox for plastic foil
Type 3x610 SK, i: 55:1, Tₘₐₚ: 70,000 Nm, Weight: 8,000 kg

More at
www.kachelmann.de
Innovative solutions for drive and automation technology
With over 60 years experience in the field of drive technology, Lenze is one of the most innovative companies in the sector. Building on this wealth of experience alongside comprehensive knowledge of the application, Lenze is continuously developing itself into a provider of customer-oriented drive solutions and automation systems. With its research and development, Lenze is setting the benchmark in terms of implementing the requirements of the latest drive and automation tasks. In addition to the head office in Hameln, Lenze is represented in 60 countries worldwide with its own sales companies, development sites and production facilities, as well as a network of service partners.

Key focus on added value for customers
As specialist in drive and automation technology, Lenze uses its expertise and knowledge of the most varied technologies to develop the best possible overall solutions together with customers. In this way the potential to create added value for the customer, which has often gone unrecognised, will now be identified and fully utilised. This will result in added benefits for the customer, coming not only from technical solutions, but also from accompanying services and flexible responses to the individual situation. Know-how, products and service are the three key elements of Lenze’s solutions:

- Optimisation of drive and automation solutions
- Scalable products and services
- Individual solutions

Increasing the efficiency of material flow processes with tailor-made drive solutions

Optimisation of drive and automation solutions
Lenze offers its customers a thorough analysis of the particular drive or automation task and develops an optimum solution from both a technical and economic perspective.

Scalable products and services
Thanks to scalable products and services, Lenze customers are always provided with exactly what they need. Lenze’s philosophy consists in providing the customer with maximum flexibility at minimum expenditure.

Individual solutions
Individual product combinations up to fully assembled and pretested sub-systems simplify logistics and resource management, reduce the risk of failure and drive down the cost of purchasing for the customer.
System expertise from one source

For more than 60 years Liebherr has stood for sophisticated, practical products and services in a diverse range of technological fields: the company is one of the world’s largest construction machinery manufacturers. Its components and systems are also used in construction machinery applications outside the Liebherr group, as well as in wind turbines, maritime applications, mining equipment, automotive engineering, the aerospace sector and in transport technology.

The right solution for every need

The wide range of Liebherr components includes diesel engines, hydraulic pumps and motors, hydraulic cylinders, large diameter bearings, planetary gearboxes and winches, electrical machines, as well as electric and electronic controls and components. Parts and systems developed by Liebherr are particularly tough, and work safe and reliable in even the most extreme environmental conditions such as heat and dust, or maritime environments.

Highlights of the product range are the 12 cylinder V-diesel engines with up to 750 kW, mining cylinders with 5,000 mm stroke length, single-piece large diameter bearings with 6,000 mm in diameter, heavy-duty rope winches with an output torque of 2,500,000 Nm or complete electronic systems for machine operation.

System solutions from one source

Liebherr is able to design both the complete diesel-hydraulic and diesel-electric drive trains of mobile machinery. Depending on the requirement, individual components from the broad product selection can be extended up to the complete drive train. This creates system solutions with real conviction, which can be integrated into a whole range of applications.

Lifecycle-Management

For the mechanical and hydraulic drive train components Liebherr offers reconditioning in different stages from a specialised works – starting from repairs up to a complete reconditioning in the quality of new parts.
Applications
LINAK® systems are put to use in various applications, i.e. vehicle modification, industrial automation, solar tracking and many other segments in which a linear adjustment is necessary. LINAK linear actuator systems enable an easy and ergonomic adjustment in numerous functions in very diverse applications. The solutions originating from the LINAK TECHLINE™ programme are able to alleviate a wide array of tasks from many different fields of labour, i.e. through ergonomical lifting, cost-effective automation and ventilation. All LINAK products run through an intensive series of tests during the development phase. This thorough testing protects LINAK products against errors and malfunctions. Additionally all LINAK products are tested in accordance with the strictest industrial norms, before being shipped to buyers all over the world.

Controls
The controls activate a movement. At the touch of a button a signal is sent to the control box, causing motor activity which results in an adjustment motion of the actuator/actuators. LINAK controls are available in many different variations, i.e. hand controls, foot controls, panel controls and attendant control panels (ACP). All controls are available in the colours black or grey.

Control boxes
The control box ist the heart of an actuator system. It connects each component (actuator, control and ACP) with another and gives the impulse for motion/adjustment. LINAK offers different types of control boxes: the basic devices are able to retract and extract one or two actuators simultaneously whereas the more complex developed control boxes, containing micro processors, are able to mobilise synchronistically up to six actuators. The control boxes are available in the colours black and grey.

About LINAK
LINAK® headquarters is based in Gudum, Denmark where one of the most modern production facilities for actuator technology is situated. With more than 1,500 employees worldwide, LINAK has advanced to become a global leader in the development and manufacturing of electrical linear actuator systems. Since being founded in 1907 a lot has happened. As Bent Jensen, director and owner, took over the company in 1976, LINAK has gone through a remarkable development. LINAK offers their customers innovations, high-value quality and exceptional service.

LINAK GmbH is the largest European subsidiary of LINAK A/S Denmark. An experienced sales department, a local stock, which ensures prompt delivery, as well as a top-equipped service workshop complete an excellent customer service. Through close co-operation with our customers LINAK always finds distinct solutions and possibilities for new applications as well as their further development. 80 percent of LINAK products are customised solutions. Over the years LINAK has received praise, awards and prizes for their explosive growth, inventive products, social awareness and as a desired employer.
By optimising the hydraulics and electronic system Linde Hydraulics achieves a significant increase in tractive effort while consumption remains at the same level.

Turning Power into Motion.
Our fundamental driver is the requirement of our customers to transfer the power of the prime mover into movement efficiently. At the same time we constantly strive to reduce fuel consumption and CO₂ emission for our customers, whilst simultaneously achieving higher performance and more convenience. The drive concepts from Linde Hydraulics are based on a holistic system approach and thus help to increase the power density of modern working machines.

The solutions developed from this are just as multifaceted as the areas of application and the requirements on the drive systems. Thus with the hydrostatic drive systems the range of sophisticated convenience and safety functions is being increased through the further development of electronic controls. The controls are perfectly adapted to coordinate diesel engines, variable displacement pumps and motors in every situation. The installed power is ideally employed and fuel efficiently utilised. Further increases in efficiency can be achieved through the combination of hydraulic and electric drive components. Here Linde Hydraulics brings along extensive experience in the design and combination of electric drives and hydraulics.

Our sales engineers and technicians support you in optimizing your hydraulic systems. Any time. Worldwide. From the initial product idea to its realization. With daughter companies in Europe, the United States, South America and China, together with international representatives we are always where you need us: close to you. We accompany our customers from project engineering and prototype commissioning all the way through to the technical release for series production and training of your staff.

Furthermore, our service package includes competent after-sales service, parts availability within the shortest time, remanufacturing and repair of your hydraulic components in genuine Linde quality.

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Internet www.linde-hydraulics.com

Linde Hydraulics, a division of Linde Material Handling GmbH, employs approximately 2,000 staff in seven production locations in Germany and the Czech Republic.

Powerful, precise and efficient. With modern drive technology and competent support throughout all stages of machine design and construction Linde Hydraulics increases the efficiency of your hydraulic system. Here we offer the perfect drive solution for construction, mining, agricultural, forestry, municipal and material handling machines.

No matter if mobile machines or industrial applications are concerned, customer requirements like improved performance, precise machine control, dynamic travel behaviour and noise reduction determine the functionality of our products. These benefits are advantageous to both: our customers and the environment.

Our product range comprises hydraulic pumps and motors, directional control valves, electronic controls, peripheral equipment, hydraulic and electric axles, as well as electrical propel and pump drives, servo drives and power modules.

By optimising the hydraulics and electronic system Linde Hydraulics achieves a significant increase in tractive effort while consumption remains at the same level.

VT modular. The innovative modular valve building block system for free configuration of valve sizes and functions, from individual valves up to 12 actuators, with a flow of up to 600 l/min per individual valve.

Fixed Motors, Variable Displacement Motors and Pressure Regulating Motors
Variable Displacement Pumps and Self-Regulating Pumps
Directional Control Valves
Electronic Control Units
MAHLE Filtersysteme GmbH
Industriefiltration
Schleierbachweg 45
74613 Oehringen
Germany
Phone +49 7941 67-0
Fax +49 7941 67-23429
industriefiltration@mahle.com
www.mahle-industrialfiltration.com

MAHLE Industriefiltration has been producing high-quality industrial filters for fluid technology, air filtration, and process technology for many years. As an innovative, reliable development partner and supplier all over the world, MAHLE Industriefiltration is your expert partner in all areas of filtration and separation. MAHLE Industriefiltration is an independent service area with its own engineering, production, and sales team, integrated in the MAHLE Group, and thus is backed by the strength of a worldwide market leader.

The MAHLE Group is one of the top 30 automotive suppliers and the globally leading manufacturer of components and systems for the internal combustion engine and its peripherals. Around 43,000 employees work at over 100 production plants and eight research and development centers. In 2009, MAHLE generated sales in excess of EUR 3.9 billion.

Always the right filter – with MAHLE Industrial Filtration
As an innovative solutions partner, MAHLE Industrial Filtration has been producing high-quality industrial filters for fluid technology, air filtration, and process technology for many years. They are just as efficient and economical in the plant and machinery construction, chemical, pharmaceutical, and food industries as in environmental, drive, and energy technology, as well as maritime and mobile machinery systems. MAHLE Industrial Filtration continuously expands, opening up new potential, especially in the growth markets of food industry, power engineering, oil, gas, and chemistry.

As one of the world’s leading fluid technology partners, we provide machine builders and users of mobile and stationary hydraulic systems with highly effective filters and filter systems, units, and accessories to keep hydraulic and lubricant fluids clean.

Our filters, units, and systems for air filtration increase productivity, support product recycling, and contribute to increased environmental protection and workplace safety. Furthermore MAHLE Industrial Filtration offers reliable solutions for cost-effective mist separation of wash oil from exhaust air.

Our automatic filters have become indispensable in countless applications. They are used for gross through fine filtration of fluids, pastes, and similar materials, and for homogenization. The advantage to you is rational 24-hour, non-stop operation with automatic cleaning and disposal processes. The cosmetics, plastics, and paint industries rely on them, as do food producers and the petroleum industry.

For the mechanical processes of filtration and separation, we provide complete, tailored solutions, from oil separation, fuel and oil care, to process water, wastewater, and cooling water treatment.

Core competencies: – Fluid technology – Air filtration – Process technology – Separation technology
Innovations for your success
mayr®, well known for innovative and economic solutions, sets the standards for power transmission all over the world. Our uncompromising commitment to quality, together with close co-operation with our customers, is the secret of our success. Qualified engineers with the most modern resources in the design and development departments offer the most effective solutions to our customers.

Leading Technology
mayr® Power Transmission currently have more than 400 employees and produce a wide product range including mechanical and electric power transmission products. The parent company in Mauerstetten is located between Munich and the Lake Constance. Attractive, branch-optimised solutions which are always developed under the provision of cost reduction of the complete drive concept and increased productivity enabled mayr® to become technological leader in backlash-free servo clutches and safety brakes and world-wide market leader for mechanical torque limiters. The enterprise offers a wide range of products, including high-quality drive and control components and complete drive solutions, proven in numerous applications of the leading machine manufacturers.

The product range includes
• backlash-free shaft couplings
• torque limiting clutches
• electromagnetic clutches and brakes
• safety brakes
• DC-servo-drives

Application examples

Backlash-free torque limiting clutches in filling-equipment and packing-machines
Overload damage in production machines costs time and money. In the case of collisions at high speeds mechanical safety clutches are significantly faster than the integrated safety functions of drive controls. The backlash-free EAS®-clutch will have already disconnected the damaging energy in the drive system and prevented damage before the control device can even react to the overload.

Backlash-free clutches in printing machines
Printing machines belong to the production facilities which require extreme accuracy and reliability. Under such conditions mayr® backlash-free clutches are the first choice for the equipment of drive axes. The backlash-free safety clutches minimise damage and downtimes in case of production failures, the servo couplings connect shafts — even over large distances —, compensate shaft misalignments, transmit backlash-free torque and at the same time provide high torsional rigidity; ideal suppositions for optimum printing results.

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A New Name with Decades of Experience: Your Partner for Complete Drive Solutions — Comprehensive service from planning to maintenance

Moventas is one of the world’s leading specialists for mechanical drive solutions. Created from well-known manufacturers such as Valmet, Parkano Gears, Santasalo and Sauerwald, a competent group was formed under the holding Moventas Oy and is serving the market since the year 2005.

Today the company operates as a reliable partner with experience and industry know-how at various production and service locations in Finland, Germany, Sweden, Canada, China, Australia, Brazil and in the USA.

The principal areas of application for Moventas system solutions in drive technology are particularly in primary energy production with coal and wind, the paper and pulp industry, in the broad sphere of minerals and mining, in the process chain of sugar production as well as in the production of chipboards for the building industry.

Standard Solutions

Moventas has a broad spectrum of standard gears for the widest variety of industrial applications. The various series are modular in design and have been constantly developed and optimized over the years, while providing for a large range of performance. Thus the company offers Duetto spur gear and bevel helical gear units of up to 800,000 Nm as well as Quatro planetary gear units of up to 500,000 Nm, custom solutions up to 3,000,000 Nm are possible.
Customized Solutions
In addition to our standard solutions, the solutions developed in constant dialogue with our customers for special-purpose applications form an essential component of our range of products and services. The entire range of experience of our experts at Moventas is employed whenever a particularly sophisticated and custom-made technical solution is required, thus providing the customer with a clear competitive advantage for the respective product in the long run.

Service
At Moventas service is much more than simply maintenance and repair.

Our focus is placed on the entire life cycle of a system, and thus the function and performance of the entire plant is ensured on a long-term basis.

To put the focus on special industries and applications guarantees highest competence also for the understanding of the whole process. This is a clear competitive edge for the customer and his products.
Moog

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Moog’s Industrial Group designs and manufactures high performance motion control solutions combining electric, hydraulic, and hybrid technologies with expert consultative support in a range of applications including plastics, metal forming, power generation, test and simulation. We help performance-driven companies design and develop their next-generation machines.

The company, founded by William C. Moog based on his invention of the commercial servovalve, has been in existence for over 55 years. The company continues to grow in size, now employing more than 8,500 employees in 26 countries worldwide and offering motion control systems and products for some of the world’s most demanding applications.

Business Groups
Moog Industrial Group
Moog Components Group
Moog Aircraft Group
Moog Medical Devices Group
Moog Space and Defense Group

Collaboration is key
Moog application engineers always start with a motion control challenge, rather than a product. With our application know-how, collaborative approach and our world-class products we are able to provide tailored solutions that yield success for your application, no matter what the technology is.

- Hydraulic solutions
Moog Servovalves, Proportional Valves, Servocartridges, Actuators and Radial Piston Pumps can be found in a myriad of high performance applications. These include plastic injection and blow molding machines, metal forming presses, wind, gas and steam turbines for power generation, control systems on Formula One race cars, actuators on fatigue-testing systems, and control of flight simulators, among others.

- Electric solutions
Motion Control with electric technology is an alternative for more and more applications and Moog is on the forefront of developing high performance electric systems and products such as powerful servomotors, servodrives, actuators, slip rings and electronics. Applications as diverse as plastics machinery, tube-bending machines, gas turbines, down-hole drilling and flight simulators all benefit from Moog expertise and world-class products.

- Hybrid solutions
What if you could harness the best of both hydraulic and electric technologies in a single-unit closed-loop motion control solution for high-end applications? By incorporating the advantages of existing technologies – including modular flexibility and increased efficiency and cleanliness – into revolutionary solutions, we’re working hard to move beyond industry conventions to create more robust systems for tomorrow’s machines.

A global support
Delivering world-class motion control products and solutions means taking customer support far beyond the initial sale. Only Moog Global Support offers the quality, quick turnaround, expertise of trained technicians and global consistency expected by our customers. The goal of all of our services is to work with you to eliminate your downtime and increase your productivity.

We know our customers send their machines to the corners of the globe, and must ensure uptime in each and every installation.
Position Sensors for Cylinder Integration
Whether in servo-pneumatics, industrial or mobile hydraulics markets, Temposonics® position sensors are the ideal solution for high-precision, dynamic and reliable measurement. They offer a variety of application solutions due to their compact designs, measurement lengths from 25 mm to 20 m and various interfaces (analogue, CANbus, SSI, Profibus, EtherCAT, POWERLINK).

For direct stroke measurement in fluid cylinders, MTS has developed the rod design, which features a sensor rod contained within the piston. The sensor head accommodates the complete modular electronic interface with active signal conditioning and regarding sensor for mobile hydraulics is also integrated into the cylinder. A permanent magnet fixed at the piston head travels without contact along the sensor rod and relays the position through the housing wall.

Absolute, Non-contact Measuring Principle
Thanks to the magnetostrictive measuring principle, Temposonics® sensors do not require any maintenance or recalibration because they detect positions absolutely non-contact and without wearing on the sensor. The high-performance sensor electronics provide an output signal with a high signal-to-noise ratio. Due to the excellent signal quality, MTS transducers are extremely robust and deliver precise measuring results. The absolute measurement method ensures that the sensors are ready for operation immediately after start-up or after a breakdown. Temperature stability, resistance to shock and vibration, as well as electromagnetic compatibility are the reasons why Temposonics® sensors are the first choice.

Easy Replacement due to Modular Design
The modular design of the R- and G-Series sensors allows for easy replacement without breaking the cylinder’s high pressure seal. The sensor’s stainless steel rod becomes part of the cylinder while the electronic head and the sensing element can be removed fast and separately. Another reason why Temposonics® position sensors reduce maintenance costs and downtime significantly.

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Company Profile
For more than 35 years, MTS Sensor Technologie has been a specialized supplier in the field of magnetostrictive sensor technology. At its three company locations of Lüdenscheid (Germany), Tokyo (Japan), and Cary (USA), a staff of 280 employees are involved in the development, production and sales of technologically advanced position and level sensors. MTS provides worldwide project support, from prototype to production through a far-reaching network of highly qualified sales engineers and more than 90 distributors.
Move – Support – Secure

Innovative strength and customer focus

Research and development today are already oriented on tomorrow’s demands. Over 200 highly qualified employees react rapidly to our customers’ requirements and contribute to ÖLHYDRAULIK ALTENERDING’s design and fabrication competences.

Constant investment in pioneering technologies has turned us into a modern factory for producing customized hydraulic components.

Quality in all areas

First-class quality has top priority at ÖLHYDRAULIK ALTENERDING so naturally, it is also anchored in the corporate mission statement. Whether easy installation, optimal function or long service life – thanks to our progressive quality management systems and high degree of professional skill, our products meet the highest demands.

We are your flexible and reliable partner

As a competent special hydraulics manufacturer, we rise to a high challenge. Every product is specifically and individually designed and manufactured for the required application. We stand by our customers with our expertise, from the start to installation. Numerous renowned machinery manufacturers and industrial customers around the world trust the sophisticated products from ÖLHYDRAULIK ALTENERDING.

Industrial hydraulics

- Rotary handle controllers
- Batching units
- Counterweights
- Hydraulic clamping systems for log frame saws
- Radial-piston pumps
- Hand- and foot-operated pumps
- Cylinders for tool changers

Mobile hydraulics

- Outrigging cylinders
- Boom cylinders
- Extending cylinders
- Suspension cylinders
- Grab cylinders
- Counter weight cylinders
- Lift/tilt cylinders
- Hydraulic boom backstop cylinders
- Cabin lifting cylinders
- Locking cylinders for steering
- Steering rods
- Steering cylinders
- Dozer blade cylinders
- Axle locking cylinders
- Quick releases
- Vertical jacking cylinders
- Boom locking cylinders
- Locking cylinders
- Cylinders with slewing motors
- Special cylinders

Special hydraulics

- Brake cylinders
- Pressure intensifiers
- Spring intensifiers
- Valves
- Manifolds
For 85 years, Oilgear has been focused on the development and the manufacture of hydraulic components, industrial automation and drive systems for all fields of mechanical engineering, mobile machines and test benches. In the field of hydraulic components, Oilgear is specialized on axial piston pumps and special valves, e.g. prefill valves. In addition Oilgear offers a multitude of components for water-based and low viscosity pressure liquids.

In addition to assemblies, Oilgear customers can obtain, from a single source, complete systems for a broad range of applications, such as test benches, machine tools, civil constructions and presses. In the systems area, Oilgear develops customized solutions for drives, machine control and automation of industrial processes. The company’s objective is to meet the customers’ requirements by creating reliable and cost-effective systems. In addition, Oilgear supplies electro-technical system components, control software, operating panels, and databases for order input and analysis. In the after-market segment, Oilgear offers its customers numerous options from after-sales service and remote maintenance through to maintenance agreements looking after customers’ systems over their entire life cycle. Oilgear is also a competent partner for system modernisation.

Oilgear operates its own branches all over the world offering on-site assistance to customers with the solution of problems.

### Oilgear’s product range

**Axial piston pumps**
- Variable delivery 8–562 cm³/rev., max. 400 bar
- Fixed delivery 2.2–580 cm³/rev., max. 1,000 bar
- Servo valves
- Directional valves
- Cartridge valves
- Prefill valves

**Sub assemblies for machines**
- Pump/motor units
- Valve blocks
- Valve assemblies
- Drives
- Filter-Cooler stations
- Accumulator stations

**Customized systems, e.g. for**
- Applications in heavy industry, especially presses
- Applications in chemical industry, steel industry
- Civil constructions, as bascule bridges or navigation locks
- Applications for high water-based fluids
- Systems for stationary and mobile applications

**Test benches for**
- The automotive industry, as occupant or pedestrian safety
- Components, as power train, pumps, motors or cylinders

**Systems for low-viscous liquids such as water or HFA; Upgrading of assemblies, drives and entire machines; Control cabinets for medium voltage systems; Service and maintenance; Training**

**Electronic controls**
- Analogue, digital, software and hardware
- Visualization
- SPS
- Machine networking
- Databases

### Oilgear – engineered solutions
Parker offers the most comprehensive product portfolio, system solutions, global sales and service for all areas of motion, drive and fluid technology.

Parker Hannifin, the world’s leading diversified manufacturer of motion and control technologies and systems, has been one of the motion, drive and fluid technology market leaders for years. Valves, hoses, filters, controls, connectors, quick couplings, cylinders, motors, pumps, frequency converters, systems or generators – Parker offers the most comprehensive product range from a single source. With the brands Ermeto, Legris, Polyflex, Rectus, domnick hunter, Zander, Hiross and Origa, almost everything that moves also contains Parker technologies.

In addition to high-quality components and systems, Parker offers premier customer service combining global availability with regional presence. This is based on a partnership concept that enables the customer to work profitably anywhere at any time. Even in the planning stage, Parker develops specific system solutions together with the user and supports him with technical know-how. The Mobile Systems Team engineers offer support, e.g., in development and fine adjustment of new and existing hydraulics systems for mobile machines. The so-called GPP programme optimises existing machines and systems. The GPP programme certifies the systems, ensures leakage-free fluid connection systems at concurrent reduction of the connection components, selects connection with soft seal as best possible and shortens installation times.

Parker develops solutions to increase productivity with innovative, resource-protecting components in the interest of the customers, without forgetting about any environmental protection and sustainability requirements. Almost any industrial process can achieve energy savings.

The central contact point for the user is the Parker Sales Company in Kaarst. All activities around the supply of components and systems, as well as maintenance, assembly and commissioning on site are centrally coordinated.

The global Parker distributor network guarantees availability of Parker original products all over the world.

To protect the environment, Parker uses environmentally friendly materials such as chromium IV-free coatings and nitrosamine-free hoses.

Parker’s global distribution network guarantees availability of Parker original products all over the world.

Parker’s comprehensive range of filtration products increases system reliability and provides effective protection from contamination.
PIV Drives GmbH
80 years of experience in challenging drive technology

PIV Drives, founded in 1928 and now a part of Brevini Power Transmission, is on the cutting edge in the development of modular building kit systems such as the POSIRED 2 series for helical and bevel-helical gearboxes. This innovative solution brings benefits to customers in all industrial sectors. It allows customized solutions to be made from standard solutions in the shortest possible time while maintaining high quality and competitive costs.

The business unit Brevini Power Transmission of the holding Brevini Group combines all activities in the sector of drive technology with the product lines Brevini Riduttori, PIV Drives, PIV Posiplan and Brevini Winches. This company jointly offers a complete program of drive solutions: planetary gearboxes, helical and bevel-helical gearboxes, compact gearboxes and winches.

Optimal drive solutions from one source
The “High Power” series for medium and high torques is jointly developed and optimized by PIV and Brevini. It combines the high quality and reliability of the helical and bevel-helical gearboxes of the POSIRED series from PIV with the innovative technology and performance of the new planetary gearbox series S from Brevini.

Complete product program and worldwide service
With a planned sales of more than 400 million Euro for the year 2011 and more than 1,800 employees, the holding Brevini Group numbers among the market leaders in two significant industrial sectors: mechanical drive technology (Brevini Power Transmission) and hydraulic systems (Brevini Fluid Power).

PIV Drives for the year 2011 plans to achieve a sales of 70 million Euro with ca. 450 employees. With subsidiaries in the most important world markets, Brevini Power Transmission is an international company with strong competitive advantages: complete product offering, worldwide service, experience in every type of application, from self-moving machines to industrial plants.
We are a leading manufacturer of disks, brakes, clutches, combinations and system solutions for a multitude of applications. We are market leader in our core business segments.

As partner to our customers we are always trying to find optimum solutions for the total value added chain. Together we work out individual, customized configurations from logistical, technical and commercial perspectives. We want to work in partnership and on a long-term basis with our customers.

Ortlinghaus is a forward-looking company with a tradition in development and production. Our well-trained and highly motivated staff produces and markets our products worldwide based on over 100 years experience.

Innovation is the driving force in the success of our company. We are value-oriented in all divisions of our company. Our actions are geared towards an increase in the success of our customers.

Welcome to Ortlinghaus

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One company. Three established brands
to serve you.

Raja-Lovejoy GmbH manufactures and sells a wide range of couplings for stationary and mobile applications, rigid and dampened bellhousings for IEC and NEMA motors, as well as aluminium reservoirs, accessories and coolers.

On a worldwide basis we develop customized solutions for any application. Outstanding quality, optimized lead time and a variety of benefits for our partners as well as an excellent price-performance ratio: These are our claims and this is what our brands Raja®, Lovejoy® and NewCool® represent.

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About us

Competence in power transmission applications since 1946. For more than 60 years already, REICH-KUPPLUNGEN in Bochum has produced a wide range of torsionally flexible couplings. One of the outstanding features and essential quality factors is our in-house development and manufacture of elastomeric elements.

All power transmission elements are manufactured on ultramodern production facilities. In-house test benches and inspection facilities of highest technical standards warrant high-quality and long-life power transmission products of the REICH-KUPPLUNGEN brand.

Consistent further development of our products, the use of computer simulation and calculation systems, and decade-long expertise in this specific market sector and product category are decisive factors for the success of our products with a multitude of customers.

Backed by a team of about 110 employees, we are at your disposal when it comes to flexible and competent consultation, development and delivery of efficient solutions. Our worldwide sales and agency network assures that our products reach you in the quickest of time – wherever you are.

Production

REICH-KUPPLUNGEN operates its own in-house rubber manufacturing facility to achieve optimum quality and flexibility of our products. The rubber flexible elements are produced on most modern vulcanization presses by adopting the transfer method. Production is preceded by our own formulation development and by quality inspection and testing of the raw rubber mixtures in conformity with the most recent test and inspection procedures. Expertise combined with cleanliness and precision are warrants for the quality of our rubber-metal bonds. Every single rubber metal element undergoes 100% testing. It is the essential component of our high-quality and long-life couplings. With ultramodern manufacturing facilities such as CNC production centres, latest-state-of-the-art test benches, close contacts with technical universities, the cooperation with the Deutsches Institut für Kautschuktechnologie e. V. and the classification societies, we produce couplings that meet the most challenging of demands.

The company policy of REICH-KUPPLUNGEN embraces, first and foremost, principles such as flexibility, quality, prompt delivery and adaptability to the requirements of our customers. Challenge us!

Together with you, we solve your issues. Flexibly, promptly and expertly.

Your drive is our strength.
Your strength is our drive.
In 1873, RENK was founded in Augsburg as a mechanical workshop to manufacture any type of gears. Therefore the enterprise can look back on more than 135 years of experience and own development work in propulsion technology. Since 1923, RENK Aktiengesellschaft is a member of the MAN group, one of the leading European offerers of capital goods.

Today RENK is one of the worldwide acknowledged manufacturers of high-quality special gears, components of propulsion technology and test systems. RENK products excel by highest precision and reliability as well as excellent quality. Experience and creativity in development, design and manufacture guarantee RENK products a top position on the international market.

Production takes place at three plants in Germany as well as at associated companies in France, Switzerland and in the USA.

RENK is divided into four independent strategic company divisions:

Vehicle transmissions
Comprise the vehicle transmission division at the Augsburg plant and the French affiliated company SESM. RENK is the leading manufacturer of tracked vehicle transmissions worldwide. Moreover, the Augsburg-based associated company RENK Test System GmbH manufactures testing rigs. The company develops and builds ready-to-key test systems for development, manufacture and quality assurance of products of automotive, railways and aircraft industry. The test systems for genuine electric mobilities as well as for hybrid and combustion engines are used for permanent control of products and are also suitable for reproduction of test sequences.

Special gear units
The Augsburg plant is focused on the construction of special bull gears for marine and specific stationary applications whose performances reach values up to 140 MW and torques up to 15 million Nm. activities in the USA are handled by sales and service establishment RENK LABECO Test Systems.

Bearings
This business unit produces slide bearings as well as flexible couplings at the Hanover plant. The activities in bearing manufacture of the affiliated company RENK Corporation in the USA are part of this sector. RENK is also worldwide leading on the sector of electric machine bearings.

Standard gear units
The Rheine plant is specialized in the product ranges of general industrial and large marine gear units as well as in couplings of all design types.

In addition RENK produces multi-megawatt gear units for offshore wind plants.
Innovative achievements have made RINGSPANN one of the leading suppliers of Power Transmission and Workholding Technology. RINGSPANN customers include some of the most important international manufacturers of machine tools and systems particularly in the aerospace industry.

From our headquarters in Bad Homburg, Germany, a world-wide network of subsidiaries and sales agencies ensures, personal onsite service. Production and assembly plants in various countries provide rapid, reliable delivery.

With more than 60 years experience in research and design, RINGSPANN is a specialist in power transmission components and precision clamping devices. Professional application engineering guarantees RINGSPANN customers optimum technical and economical solutions in the following product-fields:

- Freewheels
- Brakes
- Shaft-Hub-Connections
- Torque and Force Limiters
- Couplings
- Precision Clamping Fixtures

RINGSPANN is totally committed via our Corporate Policy to customer service both now and in the future.
Renold is world leader in power transmission and chain technology. All products are of high quality and permanent product innovation. We are producing a wide range of precision engineering products and the principal activities are the manufacture and sales of industrial chains and related power transmission products. Permanent development of customised solutions up to consulting to the engineering with own engineers.

Combination of intelligent products creates efficiency
Renold Syno minimum lubrication high-performance roller chain from the Renold Engineering Group is proving to be a highly successful development. Major customers such as Ferrero and Volvo have learned to appreciate its advantages. What makes it so special is that the chain is continuously self-lubricating through oil impregnated bearings made of sintered steel. When a chain strand starts to move, the oil flows through a capillary effect to the surface of the connecting link and between hardened and tempered chain pins and bushes and thereby provides permanent lubrication to the most important point in the articulation of the chain. Time-consuming maintenance work and expensive production stoppages are just things of the past with these chains that Renold has been developing for a number of years.

In addition the long-life chain is also highly suitable for installation in applications where hygiene regulations must be strictly observed for products. A food safe, H1-approved lubricant makes this possible. Thus, the chain is suitable for use in the food and packaging, and the automotive production industrial sectors.

The maintenance-free Renold Syno can be combined with another solution that is available from Renold. Thanks to the use of a polymer bracket, which is attached to the extended pins of the chains, a special conveying solution can be achieved.

The bracket thanks using the proven Renold Klik-Top mechanism is quick to install. At the same time, this newly-developed elastomer bracket provides an excellent protection for fragile goods and a high degree of safety during the conveying process. The coating of the bracket can be specially produced in accordance with the customer's specification. In addition, the Renold Klik-Top mechanism also drastically reduces expensive repair times because instead of having to make repairs as with a conventional elastomer profile chain, the bracket can be exchanged within a minimal amount of time without having to remove the chain.

But the clip not only protects the goods that are being conveyed but also the chain itself. As the clip can be installed on the easily extended pins, it protects the articulation points of the chain from dirt and other impurities and thereby contributes to a longer chain working life. The Renold Syno maintenance-free, high performance roller chain is leading the way to standards of reliability that have never before been achieved. The variable polymer bracket provides an unprecedented variability. This combination saves time and money and minimises production stoppages. Renold products are leading the way to a direct increase in the efficiency of drive trains.
Rötelmann is the quality market leader in shut-off and control technology. The company was founded 1876 as a supplier to the mining industry. In 1963 the first ball valves were produced and today Rötelmann has the widest range of high pressure ball valves worldwide. The extensive program also contains needle valves, control valves, check valves, accumulator safety blocks and many other engineered unique products. There are numerous applications, where Rötelmann technology is used, not only in hydraulics. Customers in the chemical industry, steel industry, in instrumentation, ship building and many other industries trust the proverbial quality from Rötelmann.

In the beginning Rötelmann had been a trading company, production started in 1911. So in 2011 Rötelmann can celebrate “100 years Tradition and Innovation”. The vast range of catalogue components is only one part of the precise production. Rötelmann has also the reputation of finding solutions which are simple instead of complicated and solving the problem instead of only controlling it. About 50% of the turnover is made with specially designed products for customers in many industries all over the world. Meanwhile entire systems are developed, manufactured, approved, tested and delivered worldwide. Integration of electronics is not a challenge but daily routine. Pressure ratings of 1,500 bar and nominal diameters of 127 mm are only the limits of the standard range, special designs meet higher requirements.

Development and Design – We develop and design innovative and practice-oriented drive solutions for different applications and new technologies on customer demand. Production – From material cutting up to the ground cog wheel, the gear components run through the individual stations of our production. The production of our high-quality products is aligned flexibly by use of modern machines. Assembly and Service – Qualified and experienced specialists mount the high-quality gearboxes and support the customer at the start of operation at the final equipment location.

Application examples
The RS flat extruder gearboxes of the FEX- and FEL-type series are especially designed for the extrusion applied in the plastics industry as well as in recycling plants. They stand out due to their high power density and compact design. The type series range from a distance between axes of 125 mm up to 630 mm. The torques are arranged for a spectrum of 420 – 55,000 Nm with freely selectable gear ratio.

The spur gear unit for testing of hybrid motors allows a flexible connection of the test objects and convinces with its high efficiency due to the special teeth gearing.

\[ P = 115 \text{ kW} / T_{1\text{max}} = 550 \text{ Nm} / n_{1\text{max}} = 14,000 \text{ min}^{-1} / \eta_{\text{ges}} = 0.83 / m = 300 \text{ kg} \]

Certified to ISO 9001:2008
General manager: Gerhard Beer
A high level of safety and low operating costs are required in industrial gearboxes, construction and agricultural machinery, in conveying technology and vehicles, and in buildings. Our products are designed to meet the requirements of the high power densities and extreme loads of these applications, reliably, with a long operating life at high loads and with low maintenance requirements.

Wind Power
25 years of experience means that we have the right solution for all bearing positions in wind turbines. All customer requirements are considered as early as the project planning phase, right down to the smallest detail — our joint target during this process are low operating costs. In addition, we can provide condition monitoring systems, lubricants, and assembly and maintenance tools.

Heavy Industry
Our customers from the raw material recovery, preparation and processing, steel and non-ferrous metals, cellulose and paper, power plant and hydraulics sectors usually require “heavy duty” bearing solutions. Our extensive research and cooperation with these customers have allowed us to make our products more robust and significantly increase bearing operating life in this sector.

Production Machinery
Virtually all bearing support requirements in machine tools, printing, textile, wood processing or packaging machinery can be fulfilled by the product range offered by INA and FAG. Our range includes bearings for rotary tables and feed axes, linear guidance systems, high-precision bearings for main spindles as well as suitable direct drive technology from our subsidiary IDAM (INA Drives & Mechatronics).

Railway
Axlebox bearings and housings, bearings and components for traction motors and gearboxes, for railcar connectors and tilt technology, as well as doors are all part of our product range. More than a 100 years of close cooperation of manufacturers and operators secure our customers comprehensive technical expertise, high quality and products that are exactly matched to a specific application.

Consumer Products
Domestic appliances and sports equipment, electric power tools, motorcycles, electric motors, medical technology. Here too, rolling bearings ensure reliable operation at prices in line with the market. We offer not only deep groove ball bearings, drawn cup roller clutches and linear guidance systems, but also expert advice for users. The bottom line is that the end products have longer operating lives and higher levels of safety.
We provide movement.
SEW-EURODRIVE is movement, tradition, innovation, quality, and service all in one – we prove this to our customers every day and have done so for nearly 80 years. We do not just move countless conveyor belts, bottling plants, sports stadium roofs, gravel plants, assembly lines, processes in the chemical industry, your luggage at the airport, or even you on escalators; no, we also are moving ourselves. In our company, there is no such thing as standstill. Every day, nearly 500 researchers and developers are working on creating the future of drive automation and making it a little better. Collectively, over 13,000 employees around the world are moving to solve their tasks and optimize processes. This is how SEW-EURODRIVE has evolved throughout its history to become the market leader in the industry of drive automation with a turnover of roughly €1.57 billion.

The movement you need is created with various product solutions and drive systems. Depending on the requirement or the industry, SEW-EURODRIVE offers individual solutions from the comprehensive modular concept with gearmotors and frequency inverters, servo drive systems, decentralized drive systems, and industrial gear units.

The individual drive system, custom to your tasks
If you want to be successful you have to know the tasks and processes of your customers and industries. This is why SEW-EURODRIVE looks beyond the borders of drive engineering to find the solution that is ideal for you. With an oftentimes unconventional way to view and approach things, we have been setting the trends and standards in drive engineering for years. In this way, “engineered and made by SEW” has become a seal of quality in the world of drive engineering.

The solution for your task of tomorrow exists today at SEW-EURODRIVE – in our universal modular concept of gearmotors, control systems, software, service, and extensive accessories, the foundation is already in place to fulfill your requirements comprehensively and as quickly as possible. The uncompromising quality of our market-oriented products, all developed and constructed at our own plants, are the pillars of our commercial success.

“People do not need products, they need solutions.” True to this motto, SEW-EURODRIVE has decided to not only develop and produce gearmotors in-house but also supply the customized electronic solutions for these components. Only if the control systems are perfectly matched to the drives will there be an optimum flow. This setup gives developers, designers and planners of systems and projects drive solutions from one source that let them put in motion and efficiently control individual motion sequences or entire processes.

But good products alone are not everything in drive engineering – perfectly customized service is another essential part of the package. That's why at SEW-EURODRIVE, we provide both. Outstanding products and an integrative service range guarantee daily and continuous use of all drives. Worldwide. The SEW Service Organization ensures prompt delivery of complete drives and spare parts around the world, in many regions within 24 hours. Service at SEW-EURODRIVE, however, does not start only after the purchase. With our CDM® offer (Complete Drive Management) you will receive, among others, services in condition monitoring. Give us a try.

Managing Partners:
Rainer Blickle, Jürgen Blickle
Managing Directors:
Hans Sondermann, Managing Director Sales & Marketing
Johann Soder, Managing Director Technology
Founded: 1931
Employees (worldwide): Over 13,000
Sales (2009/2010 financial year): Approximately €1.57 billion
SICK AG
Erwin-Sick-Strasse 1
79183 Waldkirch
Germany
Phone +49 7681 202-0
Fax +49 7681 202-3863
E-Mail info@sick.de
Internet www.sick.com

Executive Board:
Dr. Robert Bauer (Chairman)
Reinhard Bösl
Markus Paschmann
Markus Vatter

Founded: 1946
Staff in 2009: 4,919
Sales in 2009: 596.8 million Euro

Subsidiaries:
Australia, Austria, Belgium/Luxembourg,
Brazil, Canada, China, Czech Republic,
Denmark, Finland, France, Germany
(Dresden, Hamburg, Meersburg, Donau-
eschingen), Great Britain, Hungary, India,
Israel, Italy, Japan, Korea, Mexico, Neth-
erlands, Norway, Poland, Romania, Rus-
sea, Singapore, Slovenia, Spain, Sweden,
Switzerland, Taiwan, Turkey, USA

Participations:
SICK OPTEX Co., Ltd., Japan
SICK Optic-Electronic Co., Taiwan
CMS Mikrosysteme GmbH, Germany
M.D. Micro Detectors S.p.A., Italy
Finlair S.p.A., Italy
Stegmann-Kwangwoo, Co. Ltd., Korea

Main branches:
Automotive industry, the electronics
and micro-electronics industry, handling
and storage technology, the packaging
industry, the food and beverages indus-
tries, machine and plant construction,
material handling, the printing and
paper industry, energy, environmental
and process instrumentation.

Sensors and sensor solutions for industrial
applications are the focus of activities for SICK AG. The
company is one of the technology and market
leaders, with a network of national and interna-
tional subsidiaries, numerous agencies and several
participations, both in manufacturing and logistics
as well as process automation.

Factory automation consists of products and solu-
tions for automation and safety technology and
also for detecting pressure, filling levels and tem-
perature. In the field of logistics automation, SICK
offers solutions for automatic identification of
bar codes and 2D codes as well as for the identifi-
cation of objects in logistical circulation using
RFID systems. In process automation, SICK is the
brand name for components and complete system
solutions for the gas analysis and flow rate meas-
urement.

Solutions for fluid power and power
transmission engineering
SICK offers a comprehensive range of sensors
for detecting pressure, filling levels, temperature
and throughput for customers in machine and
plant construction, as well as in the food and pack-
aging industries. In addition to robust, innovative
technologies, SICK solutions particularly focus on
small housings, simple plant integration and univer-
sal applicability. Typical areas of use are measure-
ment tasks in hydraulic and pneumatic systems,
handling systems, coolants, lubricants and oil-based
media; cleaning plants and packaging processes.
In addition to contact-based measurement process-
es, SICK offers non-contact technologies based on
ultrasonic and light speed-of-flight technologies for
filling level and throughput measurement.

The possibility of integrating several outputs in
a single sensor, and the use of IO Link is typical of
SICK solutions.

In the field of power transmission engineering,
the SICK provides advanced solutions for automat-
ic recording of route, angle and position. In particu-
ar, this includes, in addition to positioning drives,
rotative and linear encoders for diverse tasks and
motor feedback systems with HIPERFACE interface
technology, already established in the market.
The sensors are primarily used in industry, but au-
tomated stage technology in theatres and the
increasing use in solar parks and wind farms are
also applications related to power train engineer-
ing. In all areas concerned with recording piston
positions in pneumatic cylinders, SICK offers a
wide range of magnetic cylinder sensors. Versatili-
ty, high precision, simple assembly and safe
mounting in the most diverse types of slot demon-
strate the advantages of the devices. Constant
innovation within the product range also always
open new application possibilities – be it through
a cylinder sensor with two independent switching
points with the shortest travel, or be it exploiting
the advantages of the automation structures with
an IO link.

SICK – Sensor Intelligence.
More energy from wind

SKF with its five vital areas of engineering competence is one of the leading global suppliers of products, solutions and services within bearings and units, seals, mechatronics, services and lubrication systems. With this SKF offers a unique range of first-class know-how, innovative products and professional services for wind-turbine manufacturers and -operators.

By combining know-how within different technology areas we are able to provide reliable and highly efficient – often tailored – integrated solutions.

Designing competitive power through know-how

To be a SKF customer means that you also have access to our accumulated technical experience, collected during 100 years of cooperation with the world’s leading engineering companies.

As we are partner of nearly all well-known machine manufacturers, we are aware of what is important:

The SKF bearings and sealing solutions for wind turbines – gearbox, generator, main shaft, yaw and rotor arrangements – are based on a common quality concept for optimal interaction. For you, this means reliable operation and long service life.

With highly efficient systems for lubrication as well as the appropriate lubricants we can help you increase reliability and minimize your lubrication costs as well as environmental impact.

SKF is able to provide sealing solutions for all turbine areas like gearbox, generator, main shaft, yaw and rotor arrangements, based on our wide range of standard seals as well as custom engineered integrated sealing solutions.

Integrated on-line condition monitoring as well as remote monitoring services enable early diagnosis of potential failures. Consultancy and reliability services optimize overall turbine effectiveness, reducing downtime, maintenance and life cycle costs.

For you, this means reliable operation and long service life. We make sure, that our customers get more energy from wind.
The company
SMS Siemag has been engaged with the steel and nonferrous metals industries for more than 125 years. The companies within the group design and manufacture a complete range of plant and equipment for metallurgical, rolling, continuous casting, tube and copper technology. The manufacturing works in Hilchenbach are fully equipped with heavy duty machines for the production of the largest spur and helical spur gear units, Sieflex® gear-type couplings, Sieflex® gear-type self-aligning spindles and MORGOL® roll neck bearings.

Application examples of drive engineering for a wide range of applications
We primarily specialize in drives for the steel and nonferrous metals industries and equip all makes of plants. The individual components are designed and built to transmit the highest torques, among others in horizontal and vertical rolling mill stands for flat and long products, slab sizing presses, coilers for hot and cold strip as well as shears and levelers.

SMS Siemag heavy duty transmissions require little maintenance and can be relied on for round the clock operation.

Products
- Spur and helical spur gear units
- Pinion gear units
- Bevel and spur gear units
- Sieflex® gear-type self-aligning spindles
- Sieflex® gear-type couplings
- Special gear units up to 300 t total weight, output torques up to 8,000 kNm, drive capacities up to 20 MW, modules up to 40, up to 6,000 mm diameter, hardened and tempered, case hardened, single and double helical gearing
- Slipper type spindles
- Drop-in gear sets
- Spare parts for all products
- On-site service
- Condition Monitoring

Special features
- Optimal operationally-related design to DIN 3990 / ISO 6336
- Dynamic design of the complete drive system from motor to machine
- Dynamic simulation of the drive system and the plant, including electrics and automation
- High standard of quality through many years of experience in design and manufacture from one source
MORGOIL® Bearing
Specialist Department
MORGOIL® roll neck bearings enable hot and cold rolling mills for steel and nonferrous metals to meet the highest demands with regard to dimensional accuracy, flatness and surface quality of the products rolled.

Supplies and services of the MORGOIL®
Bearing Specialist Department
• Complete oil film bearings up to 70 MN radial force and 1,800 mm bearing race diameter
• Modernisations of oil film bearings: neck sleeves, hydrostatic bearing bushings, sealing systems, hydraulic bearing fastening systems
• Spare parts for MORGOIL® bearings, MESTA® bearings and other oil film bearings in OEM quality

• Repairs of neck sleeves and bearing bushings, chocks and hydraulic cylinders
• Basic data for chocks and roll necks
• Basic data for oil lubrication systems and pipelines
• After-sales services

Features
• Consulting in the planning of new and overhaul of existing bearings
• 32,000 bearings supplied and used in our own rolling mills and in those of competitors are proof of the quality and reliability of this type of bearing
• Optimal, operation-related design and specific further development guarantee the high standard of our roll neck bearings
• Use of the most modern manufacturing methods and more than 55 years of experience in the manufacture of MORGOIL® bearings, MESTA® bearings and components of other oil film bearings

Gear units and drive elements of a CSP® rolling mill with six mill stands
The complete mill operates at rolling speeds of 6.6 m/s with output torques up to 3,900 kNm. Each stand has a drive capacity of 12,000 kW and a rolling force of 50 MN. The drive system incorporates a total of four helical spur gear units, six pinion gear units, twelve Sieflex® gear-type self-aligning spindles with longitudinal compensation for axial shifting of the rolls, nine Sieflex® gear-type couplings and 24 MORGOIL® roll neck bearings.

Manufacturing of MORGOIL® bearings in our workshop in Hilchenbach

Site installation of the bottom backup roll of a heavy plate stand with MORGOIL® bearings 74”-76 KLX

MORGOIL® bearing 54”-76 KLX in a hot strip finishing mill

MEETING your EXPECTATIONS
HYDRAULIK UNION and its companies SIMPEX HYDRAULIK, PTL, IPM and ISAR HYDRAULIK have a 30-year track record of brand- and manufacturer-independent expertise and high quality in the fields of hydraulics, pneumatics and centralised lubrication technology. With their 14 locations, subsidiaries and operating sites in Germany and their three international branch offices, the companies of HYDRAULIK UNION offer their expertise in your vicinity. For you as our customer this means that our specialists are always close to you will find and provide the perfect solutions for you quickly – just where you need them. Having emerged from trading hydraulic components, our companies are now engaged in developing, manufacturing and commissioning hydraulic plants, aggregates, test stands and components for sensor- and servotechnology. In the field of centralised lubrication technology, our activities in technical modernisation of old plants and for new buildings are as much sought-after as our maintenance services. Another core competency of our group of enterprises is the repair and overhaul of hydraulic components of all kinds, independent of brands and manufacturers. With our customised solutions in fluid technology, we help our clients to move the world.

**Expertise where it’s needed**

**SPN Schwaben Präzision Fritz Hopf GmbH**

**SPN - Drive Technology in Perfection**

**Gear boxes:**
SPN supplies series of gear boxes like planetary-, spur-, worm- and bevel gear boxes. There is a wide experience in the field of customized gear boxes, which are designed as a combination of series gear boxes or which are developed completely new according to our customers’ specifications. The offered services thus extend from design and development to prototype testing and finally serial production. Where planetary gear boxes are concerned, SPN can supply several types and sizes up to a torque of 900 Nm. Various basic designs and configurations allow solutions which are perfectly suitable and cost-effective for all kinds of applications.

**Mechatronic systems:**
Often a drive system is more than just a gear box. SPN supplies complete solutions including control technology and measuring equipment from a single source. Additional to drive technology SPN also automates motions in other technological fields: turn-lift-units with independent turn- and lift-drives in combination with electro-mechanical high precision grippers serve as pick-and-place-units.

**Gears and racks:**
Our job order production includes high-precision toothing elements based on customers’ drawings such as gear wheels, racks, worm wheels and -shafts, bevel wheels and gear segments, at customers’ request hardened and ground. Furthermore high-quality parts are fabricated by turning, milling, and grinding.

**SPN – in order that finally things are going well.**
Competence is our strength

Our core business activity is the design and production of drive elements for mechanical engineering systems.

Our major strength is the development and production of one way clutches and backstops, which transmit torque by means of friction.

Stieber can reflect on numerous innovative developments during the course of the company’s history. Innovations that have made it the European market leader. Stieber proved its technical ability once again during the development and design of the largest backstop in the world, for example. This and other backstops or one way clutches are being successfully used even under the toughest conditions.

Stieber, part of the Altra Industrial Motion Group is – together with its sister companies Formsprag and Marland in the USA – the world market leader for overrunning clutches and backstops.

The company philosophy is total customer satisfaction. To achieve this, our processes undergo continual refinement. In addition, an internal monitoring process ensures that quality, timeliness and costs are always to the fore.

The principle

Overrunning clutches are directional couplings, which means they are engaged and disengaged automatically, depending on the relative direction of rotation of the driving and driven sides.

Practical applications of this principle:

- **Overrunning clutch**
  for multiple-machine drives or to separate the inertia of masses of a driven machine from the driving machine after it has been switched off.

- **Indexing clutch**
  which turns a shaft step by step, thus achieving indexed material feed or a variable speed.

- **Backstop**
  to prevent a machine shaft turning backwards. In this case the overrunning clutch is used as a brake.

Many customers put their trust in Stieber.

The application possibilities for Stieber overrunning clutches range from small office or fitness devices through to 2.5 MW heavy-duty machinery or conveyor belts 20 km long.

Many overrunning clutch designs have resulted from the application requirements of our customers, who have thus been able to find an optimum solution for their application using Stieber overrunning clutches.

Many leading machine manufacturers in a wide range of different areas of industry put their trust in Stieber.

For example:

- Gearboxes and Electric-Motors, Cooling pumps, Seed drilling machines, Round ball presses, Rolling mills, Industrial fans, Cold stamping machines, Power station technology, Print machinery, Textile machines, High-voltage switchgear, Roller coasters
We are driven by our will to achieve exceptional performance and services.

For decades, the Stromag-Group is a well-known engineering partner in the sector of mechanical drive technology. Attractive, tailored solutions which are favourable in costs, combined with high quality standard of our products assure optimum customer’s benefit.

In the sector of industrial disc brakes, particularly for the wind turbine market, Stromag France is leading. Clutches and flexible couplings, spring-applied brakes, discs and limit switches from Stromag play an important role on the world market. Particular emphasis is to be put on the special range of brakes for wet and dry operation as well as on solutions of torsional vibration problems in the drive line and on a service conceptions tailored to the customer’s requirements. A clear strategic focus on core applications results in short designing and delivery times. Extraordinary technical know-how is another strength creating the basis for a long-term relation to customers in partnership.

Markets
Stromag innovative products are tailored to customer’s requirements. They are used in nearly every type of mechanical drive. Drive solutions adapted to the customer’s construction optimise processes and minimise operational costs.

The main markets are:
- Off-Road
- Gearboxes
- Wind energy
- Crane systems
- Diesel sets and engines
- Steelmills
- Electric motors
- Service

Product Overview:

Clutches and brakes, electrically, hydraulically or pneumatically actuated, in series or special execution.

Highly-flexible couplings with linear characteristic or progressive characteristic for drives subject to torsional vibrations with adapted torsional spring stiffness and to balance offsets.

Spring-applied brakes, electrically, hydraulically or pneumatically released.

Disc brakes electromagnetically or hydraulically released for industrial applications.

Two in one
Combination of flexible coupling and electric or hydraulic clutch allowing the remote controlled engagement and disengagement of systems behind a diesel drive with simultaneous torsional vibration damping.

Limit switches for independent limitation of movements on lifting gears.

Discs and flat products
Innovative Drive Technology with a Tradition

For almost 80 years, the unique CYCLO drive principle has been the epitome of efficient and highly innovative drive solutions, reliability, long life cycles, and high load capacity while offering the needed precision. These benefits are leveraged in areas of use such as packing technology, materials handling, mining, medical technology, print technology, factory automation, and many others. Apart from standard applications, those requiring highest degrees of precision can also be served with the help of special, zero or low backlash gears, including robotics and mechanical handling.

Today, Sumitomo Cyclo Drive Germany, a subsidiary of Sumitomo Heavy Industries (SHI), provides their customers around the world with high-quality services. With annual revenues of over 6 billion USD worldwide, Sumitomo Heavy Industries is a market leader in drive technology in Japan and continues to expand their presence and market share under the global brand of Sumitomo Drive Technologies.

Sumitomo (SHI) Cycle Drive Germany GmbH, located in Markt Indersdorf, is SHI’s main European branch office. This office manages subsidiaries in France, Great Britain, Italy, Spain, and Sweden. In all other European countries, sales offices or distributors provide comprehensive service. The production facility at Markt Indersdorf was built specifically for the production of high-precision gears for use in the robotics and automation industries. It provides better service and optimal and reliable delivery to European customers.

Proven drive solutions from standard to custom

Sumitomo Cyclo Drive Germany offers their customers a comprehensive range of electrical and mechanical drive technologies.

- Robust and low-maintenance gears for all drive technology requirements
- Zero backlash gears for industrial automation and robotics
- Special CYCLO gears and planetary gears for centrifuges
- Very high reduction gears for telecommunications and energy equipment
- Gears with extremely long live cycles for conveyor equipment
- Gears with high shock load capacity for the steel and iron industry, mining, and cooling towers

Delivery programme

- CYCLO DRIVE 6000 gears and gear motors
- FINE CYCLO precision gears
- PPG and EPG type Servo planetary gears and gear motors
- Servo 100 and Servo 6000 low-backlash servo CYCLO gears and servo gearmotors
- Paramax 9000 series Industrial gears and gear motors
- HBB and HSM series Shaft mounted gears and gear motors
- BBB and Neo Hyponic series Bevel gears and gear motors
- Centrifuge gears
- Servo motors

Sumitomo Cyclo Drive Germany’s range of solutions encompasses standard drives out of the catalogue through to customer-specific modifications of proven products, including consulting, development, and manufacture of special gear units. And this all takes place under one roof, leveraging our almost 80 years of experience in drive technology.
TRIES GmbH & Co.KG
Hydraulik-Elemente Ehingen

Röntgenstrasse 10
89584 Ehingen
Germany
Phone +49 7391 5809-0
Fax +49 7391 5809-50
E-Mail info@tries.de
Internet www.tries.de

Fields of Business
Development and production of hydraulic elements, valves and aggregates for the engineering and automotive industries
Established: 1964
Sector: Hydraulic elements
Number of employees: 150
Managing Partner: Manfred Tries
Executive Managers: Thomas Zimmer, Roland Stirmlinger
Location: Ehingen

TRIES is the top address for innovative solutions.

TRIES in Ehingen has been developing and producing hydraulic elements since 1964. Back then, just as today, inventive engineers were creating sophisticated products to the highest technological standards. Innovative technologies, reliable quality as well as partnerships and collaborations with our customers allow us to produce creative solutions of high complexity.

Our development engineers always strive for more and never settle for second-best solutions. This is also part of the TRIES company philosophy. We adopt this attitude when supporting and advising our customers, and we naturally encourage our employees and trainees to share this idea. This has made us into one of the leading suppliers of hydraulic elements.

VAKOMA GmbH
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39110 Magdeburg
Germany
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E-Mail vakoma@vakoma.de
Internet www.vakoma.de

VAKOMA GmbH is a medium-sized undertaking of mechanical engineering with its domicile in Magdeburg/Germany and roots dating back to the year 1869. The company is a specialized manufacturer for custom-tailored technical solutions in the field of heavy gearboxes and drive systems, especially for turbo compressors, mill and furnace drives. Performances include development, design and implementation of modern solutions for drive systems in cement works, raw material production etc.

Application examples: Adaptable gearboxes for use in cement-furnace gear mechanisms of the types DDD4640 and DD3170 with variable speeds, and cement-mill gearboxes of the types D3200, D3500, D3600 and ZM1600, without foundation modifications and with savings in erection time of up to 50%.

Services: Planning, design, manufacture and erection of components for individual drive solutions, measurements and exploration for gear repairs, customer consultation for development of efficient drive solutions, on-site service for all products, world-wide network for supply of spare parts.

Gearbox, type 4640V/1
Our Product Range

Standard Series
WALTHER-PRÄZISION offers an extensive range of standard couplings for various applications. The standard programme comprises quick couplings in nominal sizes from 2 mm to 100 mm (1/16–4 inches) with pressure ranges from vacuum to 2,000 bar (30,000 psi). A large number of materials and valve systems are available.

Customised Solutions
In addition to the standard series WALTHER-PRÄZISION designs and manufactures quick couplings, with specially tailored types and materials to suit any particular application:
- SIPable and CIPable couplings
- Couplings with proximity switches
- Loading couplings
- Emergency separation couplings
- Couplings for direct connection to standardised counterparts
- Heat transfer oil couplings (310 °C / 590 °F)
- Steam couplings (250 °C / 480 °F)
- Couplings for offshore applications
- Docking systems
- Tool change systems for industrial robots
- Automatically operated multi-couplings
- Manually operated multi-couplings

Certificates
- DIN EN ISO 9001
- EN ISO 13485 (medical technology)
- EN 9100 P2 (aerospace and aviation)
- KTA 1401 (nuclear technology)
- QSP 4a (quality management programme)

Approvals
- ATEX (explosion protection)
- DVGW (gas, water)
- FDA (pharmaceutical and medical industries, foods)
- SAE J 2600 (automotive, hydrogen refuelling)
- DIN EN 60068-2-14 (automotive, microhydrualics)
- TA Luft to VDI 2440 (Germany’s Technical Instructions on Air Quality control)
- DIN EN 10204-3.1 (certificate of inspection)
- DIN EN 61373 (rail vehicles)
- DNV type approvals (shipping, offshore)

Our highly trained consultants are present in many countries on all continents offering advice and service to customers and distributing our products.

Some examples from our range of couplings

Clean break coupling of the CT series with emergency separation device
WEBER-HYDRAULIK GmbH

Heilbronner Strasse 30
74363 Güglingen
Germany
Phone +49 7135 71-0
Fax +49 7135 71-310
E-Mail info@weber.de
Internet www.weber-hydraulik.com

Facts
Establishment of company by Emil Weber in 1939. Still 100% owned by the family. Today WEBER-HYDRAULIK Group employs about 1,000 people in Germany and abroad with a yearly turnover of almost € 200 million. Each year more than 2 million cylinders, pumps and jacks and about 200,000 control units, valves and power units are produced. The management system is certified acc. to DIN EN ISO 9001:2000, DIN EN ISO 14001, ISO/TS 16949.
Managing Director: Bernhard Herzig

The Company
WEBER-HYDRAULIK Group unites together with FLUID TEAM and LOG HYDRAULIK to a specialist for customised and functionally reliable hydraulic solutions. The Group develops high quality cylinders, control units, valves and power units for the market of mobile machinery for series production as well as for stationary hydraulics. Analysis, individual consulting, competent engineering, up-to-date production systems, reliable logistics. With long-term experience, as well as competitive processes WEBER-HYDRAULIK Group designs custom-tailored solutions and offers its customers outstanding advantages.

Business sectors and solutions
WEBER-HYDRAULIK Group offers solutions for the mobile and stationary hydraulic market. The focus here is on different types of commercial vehicles as well as industrial machinery. With our long, successful track record in development and production of components, supported by a proven system expertise, our solutions comprise of

- Cylinders: Actuators, load and steering cylinders, suspension cylinders, tilt cab systems, hydraulic jacks
- Valves: Proportional, poppet, standard and miniature valves as well as customised valve solutions
- Control units: range of materials from aluminium, steel or stainless steel
- Hydraulic power units: from compact powerpacks for mobile hydraulics to special power units for industrial hydraulics
- System solutions

References: AGCO, Daimler, John Deere, Liebherr, Linde, MAN, Mitsubishi Caterpillar, Bär Cargolift, DANA, Trumpf Pressen, Lemken, Schmidt, Mulag, HAMM, Jungheinrich, Volvo, Scania
more than just an electronics company.
Founded in 1999 as a sole proprietorship the company has evolved and established itself in the European market and beyond with the development and sale of special electronic modules for all – proportional controlled – hydraulic applications. The technologically-optimized solutions are based on many years of experience in the hydraulics field and have been further developed in close cooperation with the clients. W.E.St. Elektronik GmbH offers an extensive product line for all typical applications, from simple power amplifiers to p/Q regulated press control systems, up to 30-axes closed loop synchronization control systems. Custom-made developments for the clients are one of the strengths and many products for well-known hydraulic manufacturers are being equipped with "brand labels". Premium quality, extremely short delivery times, flexibility, as well as fast assistance in case of emergencies – without the usual red tape – is what keeps the customers very satisfied.

Besides electronic products, W.E.St. Elektronik GmbH also offers competent support in the application of proportional control valves, starting with the calculation of the axis up to the simulation of the entire control system.

Application areas
The sophisticated design does not only address one specific application area but rather focuses on the universal use. Although, emphasis is put on industrial applications, however, the power amplifiers can be found in mobile as well as marine applications (GL approval).

A compact and robust design is what W.E.St. Elektronik uses for its product line. Extensive experiences in the field of electronics as well as hydraulics make highly efficient products possible. At the same time, modern microcontroller technology offers solutions which were not feasible only a few years ago or came with an exorbitant price tag attached.

Products
The wide range of products can be divided in the following categories:

• Analogue and digital power amplifiers, universally adaptable, for the control of various proportional control valves. The completely digital modules distinguish themselves through their high flexibility and fault diagnosis.
• Positioning modules are optimized for fast moving cycles and highly dynamic control systems.
• Pressure controlling with pressure valves, control valves and variable displacement pumps with simple and robust control behaviour.
• Synchronization modules for synchronized control systems in bypass or as synchronized/position control system up to 30 axes.
• Control systems for various displacement pumps and servo pumps.
• Fieldbus connections for most of the W.E.St. control modules. The products support CAN Bus, DeviceNet, Profibus and various Ethernet versions.

In particular, digital parameterizable control systems depend on user interfaces, easy to learn and very user-friendly. The software WPC-300 Version 3.0 does not only support the parameter options, but the remote control mode, the process data monitor, and the oscilloscope ensure a fast and trouble-free start-up process of the entire system.
Acknowledged technological expertise, high quality and extremely long lifespan and a tradition of innovativeness are the mainstays of WITTENSTEIN AG’s success. Our company is a setter and promoter of trends in the development, production and marketing of high-tech equipment. WITTENSTEIN products are used to manufacture cars, package babies’ nappies and control flight simulators and aircraft. They are found in machines, robotic systems, the packaging industry, materials handling and process engineering, medical technology, stage technology, the aerospace sector and even at the bottom of the sea.

In only a few years the company has grown to become innovation leader and the world’s premier manufacturer of low-backlash planetary gearheads. Over 1,000,000 of these high-precision drive elements are currently in action around the globe. Innovative hypoid gearheads and mechanical system solutions for Rack-and-Pinion Systems and coupling connections likewise provide unprecedented design freedom. The product portfolio is rounded off with integrated, electromechanical, rotary and linear servo systems as well as miniaturised servo motors.

WITTENSTEIN AG is a non-listed public limited company that is still owned by the Wittenstein family. In each of the last few fiscal years, the company has regularly recorded double-figure growth rates. 85 percent of all products sold are less than five years old. Every tenth euro is spent on, and 16 percent of employees engaged in, research and development.
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The Power Transmission Engineering and Fluid Power Associations within the VDMA support their 390 member companies and the customers of these with:

- Market information – matched to the needs of the industry
- Trade fairs and exhibitions – in Germany and the rest of the world
- Publicity work – with press releases and web pages
- Representation of technical interests – in national and international standards committees and through VDMA position papers

The link to the VDMA – the German Engineering Federation with around 3,000 members – also means that we can offer access via the other VDMA Associations and local associations to contacts and information relating to all the major client industries. Outside Germany, the first ports of call are the VDMA Representative Offices.

Joint research is conducted by the ample resources of the Power Transmission Engineering Research Association (FVA, www.fva-net.de) and the Fluid Power Research Fund (www.vdma.org/fluid). In the field of international cooperation, the two Associations provide the General Secretaries of the European sector committees EUROTRANS (www.euro-trans.org) and CETOP (www.cetop.org) and act as the secretariat for international fluid power statistics.

The VDMA E-Market (www.VDMA-e-market.com) offers access to products and services as well as facilities for comparing the products of different suppliers. The software is based on categories developed in certain cases by the VDMA itself and allows research in accordance with reliable criteria, resulting in a high hit rate and good detail accuracy.

www.vdma-e-market.com/en
www.vdma.org/ant
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