ZIMMER GROUP – THE KNOW-HOW FACTORY

NEW TECHNOLOGY, COMPONENTS, BUSINESS DIVISIONS AND LOCATIONS ACROSS THE GLOBE – OUR COMPANIES HAVE BECOME STRONG AND OUR RANGE OF PRODUCTS HAS GROWN MORE DIVERSE.

THE NEW ZIMMER GROUP UMBRELLA BRAND HELPS GIVE YOU DIRECTION AMONG THIS NEW DIVERSITY. IT COMBINES THE COMPANIES ZIMMER GMBH, ZIMMER KUNSTSTOFFTECHNIK, ZIMMER DAEMPFUNGSSYSTEME AS WELL AS BENZ WERKZEUGSYSTEME INTO ONE PARTNER FOR YOUR PROJECTS: THE KNOW-HOW FACTORY.

CHALLENGE US. DISCOVER THE ENTIRE WORLD OF ZIMMER GROUP! IF YOU HAVE QUESTIONS ABOUT THE NEW ZIMMER GROUP AND OUR TECHNOLOGY, WE WOULD BE HAPPY TO ANSWER THEM.

THE FULL PRODUCT LINE.

BRAZIL, ARGENTINA, BOUHNA, CHILE, ECUADOR, GUAYANA, PARAGUAY, PERU, URUGUAY, VENEZUELA:
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CAMBODIA, INDONESIA, LAOS,
MALAYSIA, THAILAND, VIETNAM, AUSTRALIA,
NEW ZEALAND:
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www.zimmer-group.com

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F +49 305 856 9273
info.us@zimmer-group.com
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NEW TECHNOLOGY, COMPONENTS, BUSINESS DIVISIONS AND LOCATIONS ACROSS THE GLOBE – OUR COMPANIES HAVE BECOME STRONG AND OUR RANGE OF PRODUCTS HAS GROWN MORE DIVERSE.

THE NEW ZIMMER GROUP UMBRELLA BRAND HELPS GIVE YOU DIRECTION AMONG THIS NEW DIVERSITY. IT COMBINES THE COMPANIES ZIMMER GMBH, ZIMMER KUNSTSTOFFTECHNIK, ZIMMER DAEMPFUNGSSYSTEME AS WELL AS BENZ WERKZEUGSYSTEME INTO ONE PARTNER FOR YOUR PROJECTS: THE KNOW-HOW FACTORY.

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THE FULL PRODUCT LINE.

www.zimmer-group.com

Additional global sales partners of Zimmer Group can be found at http://www.zimmer-group.de/en/mainmenu/kontakt/ansprechpartner-weltweit
WE HAVE SUCCEEDED FOR YEARS BY OFFERING OUR CUSTOMERS INNOVATIVE AND INDIVIDUALIZED SOLUTIONS. ZIMMER HAS GROWN CONTINUOUSLY AND TODAY WE HAVE REACHED A NEW MILESTONE: THE ESTABLISHMENT OF THE KNOW-HOW FACTORY. IS THERE A SECRET TO OUR SUCCESS?

**Foundation.** Excellent products and services have always been the foundation of our company’s growth. Zimmer is a source of ingenious solutions and important technical innovations. This is why customers with high expectations for technology frequently find their way to us. When things get tricky, Zimmer Group is in its best form.

**Style.** We have an interdisciplinary approach to everything we do, resulting in refined process solutions in six technology fields. This applies not just to development but to production. Zimmer Group serves all industries and stands ready to resolve even the most unique and highly individualized problems. Worldwide.

**Motivation.** Customer orientation is perhaps the most important factor of our success. We are a service provider in the complete sense of the word. With Zimmer Group, our customers have a single, centralized contact for all of their needs. We approach each customer’s situation with a high level of competence and a broad range of possible solutions.
TECHNOLOGIES

HANDLING TECHNOLOGY

MORE THAN 30 YEARS OF EXPERIENCE AND INDUSTRY KNOWLEDGE: OUR PNEUMATIC, HYDRAULIC AND ELECTRICAL HANDLING COMPONENTS AND SYSTEMS ARE GLOBAL LEADERS.

Components. More than 2,000 standardized grippers, swivel units, robotic accessories and much more. We offer a complete selection of technologically superior products that are ready for rapid delivery.

Semi-standard. Our modular approach to design enables custom configurations and high rates of innovation for process automation.

DAMPING TECHNOLOGY

INDUSTRIAL DAMPING TECHNOLOGY AND SOFT CLOSE PRODUCTS EXEMPLIFY THE INNOVATION AND PIONEERING SPIRIT OF THE KNOW-HOW FACTORY.

Industrial damping technology. Whether standard or customized solutions, our products stand for the highest cycle rates and maximum energy absorption with minimal space requirements.

Soft Close. Development and mass production of pneumatic and fluid dampers with extraordinary quality and rapid delivery.

OEM and direct. Whether they need components, returning mechanisms or complete production lines – we are the trusted partner of many prestigious customers.

LINEAR TECHNOLOGY

WE DEVELOP LINEAR COMPONENTS AND SYSTEMS THAT ARE INDIVIDUALLY ADAPTED TO OUR CUSTOMERS’ NEEDS.

Clamping and braking elements. We offer you more than 4,000 types for profiled and round rails as well as for a variety of guide systems from all manufacturers. It makes no difference whether you prefer manual, pneumatic, electric or hydraulic drive.

Flexibility. Our clamping and braking elements ensure that movable components such as Z-axes or machining tables maintain a fixed position and that machines and systems come to a stop as quickly as possible in an emergency.
PROCESS TECHNOLOGY

MAXIMUM EFFICIENCY IS ESSENTIAL FOR SYSTEMS AND COMPONENTS USED IN PROCESS TECHNOLOGY. HIGH-LEVEL CUSTOM SOLUTIONS ARE OUR TRADEMARK.

A rich reservoir of experience. Our know-how ranges from the development of materials, processes and tools through product design to production of series products.

Deep production capabilities. The Zimmer Group pairs these capabilities with flexibility, quality and precision, even when making custom products.

Series production. We manufacture demanding products out of metal (MIM), elastomers and plastics with flexibility and speed.

MACHINE TECHNOLOGY

ZIMMER GROUP DEVELOPS INNOVATIVE METAL, WOOD AND COMPOSITE MATERIAL PROCESSING TOOL SYSTEMS FOR ALL INDUSTRIES. NUMEROUS CUSTOMERS CHOOSE US AS THEIR SYSTEMS AND INNOVATION PARTNER.

Knowledge and experience. Industry knowledge and a decades-long development partnership in exchangeable assemblies, tool interfaces and systems make us bound for new challenges around the world.

Components. We deliver numerous standard components from stock and develop innovative, customized systems for OEM and end customers – far beyond the metal and wood processing industries.

Variety. Whether you have machining centers, lathes or flexible production cells, the power tools, holders, assemblies and drilling heads of Zimmer Group are ready for action.

SYSTEM TECHNOLOGY

ZIMMER GROUP IS ONE OF THE LEADING SPECIALISTS IN THE DEVELOPMENT OF CUSTOMIZED SYSTEM SOLUTIONS WORLDWIDE.

Customized. A team made up of more than 20 experienced designers and project engineers develop and produce customized solutions for special tasks in close collaboration with end customers and system integrators. It doesn’t matter if it is a simple gripper and handling solution or a complex system solution.

Solutions. These system solutions are used in many industries, from mechanical engineering to the automotive and supplier industries to plastics engineering and consumer goods industries, all the way to foundries. The Know-how Factory helps countless companies to thrive competitively by increasing automation efficiency.
Anschluss

IO-Link

SHOCK ABSORBER WITH SPIRAL GROOVE TECHNOLOGY

SUPERIOR LOCKING

A WIDE VARIETY OF MEDIA TRANSFER

STEEL LINEAR GUIDE

INTEGRATED VALVE TECHNOLOGY

INTEGRATED SENSORS

IO-LINK

ADVANCED CONTROL MODULE

INTEGRATED VALVE TECHNOLOGY

INTEGRATED SENSORS

IO-LINK

ADVANCED CONTROL MODULE

STEEL LINEAR GUIDE
HANDLING TECHNOLOGY
GRIPPER TECHNOLOGY HIGHLIGHTS

OUR EXPERTISE – YOUR ADVANTAGES

“The Universal One”

► Up to 30% more gripping force than the Benchmark
► 10% higher static forces and torques than the Benchmark
► Gripper fingers up to 10% longer than the Benchmark
► Gripper finger weight up to 15% higher than the Benchmark
► Sealed IP64 guide/IP67 protector version (with sealing air)
► Protected against corrosion
► Up to 30 million cycles without maintenance

DURABLE

Our product portfolio is coordinated to the needs of our customers and provides the perfect solution for any application. The 5000 series provides you with a comprehensive worry-free package – including corrosion protection, IP67 and 30 million cycles without maintenance.

UNIVERSAL

Mechatronic grippers make any type of production more flexible. Since 1992, they have been an established part of our supply product range, as they combine maximum performance with simple operation. The 5000 series combines features from pneumatics, electrical systems and hybrid technology.

PRECISE

We have been continually developing and improving our grippers since 1980. These years of experience are reflected in each gripper, and especially in our premium GPP5000 universal grippers.

All Information just a click away  www.zimmer-group.com
**HANDLING TECHNOLOGY**

**GRIPPERS**

### 2-JAW PARALLEL GRIPPERS

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of installation sizes</th>
<th>Stroke per jaw</th>
<th>Gripping force</th>
<th>Weight</th>
<th>IP class</th>
<th>Maintenance free (max.)</th>
<th>Life (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPP1000</td>
<td>8</td>
<td>4 mm - 16 mm</td>
<td>100 N</td>
<td>0.16 kg - 0.20 kg</td>
<td>30</td>
<td>2 million cycles</td>
<td></td>
</tr>
<tr>
<td>MGP800</td>
<td>8</td>
<td>1 mm - 12 mm</td>
<td>6 N - 400 N</td>
<td>0.008 kg - 0.46 kg</td>
<td>40</td>
<td>10 million cycles</td>
<td></td>
</tr>
<tr>
<td>GP400</td>
<td>9</td>
<td>3 mm - 30 mm</td>
<td>85 N - 19,275 N</td>
<td>0.08 kg - 18.9 kg</td>
<td>40</td>
<td>10 million cycles</td>
<td></td>
</tr>
<tr>
<td>GPP5000</td>
<td>11</td>
<td>2.5 mm - 45 mm</td>
<td>140 N - 2,925 N</td>
<td>0.08 kg - 50 kg</td>
<td>64/67</td>
<td>30 million cycles</td>
<td></td>
</tr>
</tbody>
</table>

### ELECTRICAL

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of installation sizes</th>
<th>Stroke per jaw</th>
<th>Gripping force</th>
<th>Weight</th>
<th>IP class</th>
<th>Maintenance free (max.)</th>
<th>Life (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPPH8000</td>
<td>1</td>
<td>62.5 mm - 150 mm</td>
<td>2,000 N</td>
<td>14.9 kg - 21.3 kg</td>
<td>54</td>
<td>5 million cycles</td>
<td></td>
</tr>
<tr>
<td>GEPH6000IL</td>
<td>2</td>
<td>80 mm</td>
<td>60 N - 2,400 N</td>
<td>0.76 kg - 2.6 kg</td>
<td>40/54</td>
<td>5 million cycles</td>
<td></td>
</tr>
</tbody>
</table>

### 3-JAW CONCENTRIC GRIPPERS

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of installation sizes</th>
<th>Stroke per jaw</th>
<th>Gripping force</th>
<th>Weight</th>
<th>IP class</th>
<th>Maintenance free (max.)</th>
<th>Life (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEP9000</td>
<td>2</td>
<td>2 mm - 4 mm</td>
<td>11 N - 50 N</td>
<td>0.25 kg - 0.57 kg</td>
<td>40</td>
<td>30 million cycles</td>
<td></td>
</tr>
<tr>
<td>GEP2000</td>
<td>3</td>
<td>10 mm - 16 mm</td>
<td>50 N - 500 N</td>
<td>0.79 kg - 1.66 kg</td>
<td>40</td>
<td>10 million cycles</td>
<td></td>
</tr>
<tr>
<td>GEP5000</td>
<td>3</td>
<td>6 mm - 10 mm</td>
<td>540 N - 1,900 N</td>
<td>0.79 kg - 1.66 kg</td>
<td>64</td>
<td>30 million cycles</td>
<td></td>
</tr>
</tbody>
</table>

### ELECTRICAL

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of installation sizes</th>
<th>Stroke per jaw</th>
<th>Gripping force</th>
<th>Weight</th>
<th>IP class</th>
<th>Maintenance free (max.)</th>
<th>Life (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GED5000</td>
<td>3</td>
<td>6 mm - 10 mm</td>
<td>540 N - 1,900 N</td>
<td>1.09 kg - 2.33 kg</td>
<td>64</td>
<td>30 million cycles</td>
<td></td>
</tr>
</tbody>
</table>

### 2-JAW ANGULAR GRIPPERS

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of installation sizes</th>
<th>Stroke per jaw</th>
<th>Gripping force</th>
<th>Weight</th>
<th>IP class</th>
<th>Maintenance free (max.)</th>
<th>Life (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GZ1000</td>
<td>3</td>
<td>3° - 10°</td>
<td>62 N - 315 N</td>
<td>0.015 kg - 0.125 kg</td>
<td>30</td>
<td>10 million cycles</td>
<td></td>
</tr>
<tr>
<td>MGW800</td>
<td>8</td>
<td>37.5°</td>
<td>5 N - 325 N</td>
<td>0.01 kg - 0.45 kg</td>
<td>30</td>
<td>10 million cycles</td>
<td></td>
</tr>
</tbody>
</table>
GRIPPERS

GG1000
- Number of installation sizes: 4
- Stroke per jaw: 20°
- Gripping force: 2,910 N - 29,110 N
- Weight: 1,3 kg - 13 kg
- IP class: 40
- Maintenance free (max.): 10 million cycles

GPW5000
- Number of installation sizes: 3
- Stroke per jaw: 10° / 20°
- Gripping force: 1,330 N - 14,500 N
- Weight: 0,9 kg - 12,1 kg
- IP class: 64
- Maintenance free (max.): 30 million cycles

2-JAW RADIAL GRIPPERS

GK
- Number of installation sizes: 6
- Stroke per jaw: 90°
- Gripping force: 70 N - 4,250 N
- Weight: 0,1 kg - 4,1 kg
- IP class: 20
- Maintenance free (max.): 10 million cycles

GG4000
- Number of installation sizes: 6
- Stroke per jaw: 90°
- Gripping force: 430 N - 4,000 N
- Weight: 0,25 kg - 4,5 kg
- IP class: 64
- Maintenance free (max.): 10 million cycles

GRIPPERS FOR SPECIAL TASKS

INTERNAL GRIPPERS

PNEUMATIC

LGS
- Number of installation sizes: 25

LG1000
- Full stroke in Ø: 1 mm - 16 mm

LGG
- Gripper hole diameter: 4 mm - 135,5 mm
- Weight: 0,031 kg - 2,7 kg

OUTER O-RING ASSEMBLY GRIPPERS

PNEUMATIC

GS
- Number of installation sizes: 4
- O-ring Ø: 4 mm - 130 mm
- Expanding force: 240 N - 1,450 N
- Weight: 0,51 kg - 5,4 kg

GSI

NEEDLE GRIPPERS

PNEUMATIC

ST
- Number of installation sizes: 4
- Adjustable needle stroke: 0 mm - 6 mm
- Weight: 0,21 kg - 0,45 kg

SCH

ELECTRICAL

GEN9100
- Adjustable needle stroke: 0 mm - 2 mm
- Weight: 0,33 kg
- IP class: 50

MAGNETIC GRIPPERS

PNEUMATIC

HM1000
- Number of installation sizes: 4
- Adhesive force (max.): 27 N - 450 N
- Weight: 0,06 kg - 2,2 kg

HEM1000
- Number of installation sizes: 4
- Adhesive force (max.): 40 N - 720 N
- Weight: 0,09 kg - 1,3 kg

ROTARY GRIPPERS

2-JAW ANGULAR ROTARY GRIPPERS

PNEUMATIC

DGK
- Stroke per jaw: 90°
- Gripping force: 150 N
- Weight: 0,55 kg

2-JAW PARALLEL ROTARY GRIPPERS

PNEUMATIC

DGP400
- Stroke per jaw: 4 mm
- Gripping force: 115 N - 155 N
- Weight: 0,44 kg - 0,48 kg

MAGNETIC GRIPPERS

PNEUMATIC

ELECTRICAL

GRIPPERS

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HANDLING TECHNOLOGY
SWIVEL AND ROTARY MODULES

OUR EXPERTISE – YOUR ADVANTAGES

“Superior”
► Up to 100% more performance than the Benchmark
Superior end position damping lets you swivel more mass in the shortest amount of time, increasing your machine’s component output.
► Large center bore
Reduce the interference contours in your application by placing your power supply line directly through the middle of the rotary flange.
► More than 100% higher radial bearing load than the Benchmark
The generously scaled bearings stand for robustness and long service life and provide the highest process reliability for your application.

HIGH-PERFORMANCE
When it comes to swiveling, the shortest possible cycle time is the first priority. Our in-house developed shock absorbers with spiral groove technology provide the market’s best end position damping – perfect for our high-performance swivel units with their extremely short cycle times.

TRIED AND TESTED
As a pioneer from the very beginning, we are offering you a comprehensive product range that is constantly raising the bar. In addition to the world’s first shock-absorbed angle pivot unit, we also developed products such as the first flat swivel unit with a locking middle position.

ROBUST
Generously scaled bearings make it possible for our units to handle a great deal. Where others may lose a tooth now and then, we can offer you a virtually wear-free gear drive with external stops.
## SWIVEL AND ROTARY MODULES

### Rotor Cylinder

**PNEUMATIC**

<table>
<thead>
<tr>
<th>PRN</th>
<th>Number of installation sizes: 9</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Swivel angle:</td>
</tr>
<tr>
<td></td>
<td>90° - 270°</td>
</tr>
<tr>
<td></td>
<td>Torque:</td>
</tr>
<tr>
<td></td>
<td>0.15 Nm - 247 Nm</td>
</tr>
<tr>
<td></td>
<td>Weight:</td>
</tr>
<tr>
<td></td>
<td>0.04 kg - 12.5 kg</td>
</tr>
<tr>
<td></td>
<td>IP class:</td>
</tr>
<tr>
<td></td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>Maintenance free (max.):</td>
</tr>
<tr>
<td></td>
<td>1.5 million cycles</td>
</tr>
</tbody>
</table>

### Flat Swivel Units

**PNEUMATIC**

<table>
<thead>
<tr>
<th>MSF</th>
<th>Number of installation sizes: 3</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Swivel angle:</td>
</tr>
<tr>
<td></td>
<td>90° - 180°</td>
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<tr>
<td></td>
<td>Torque:</td>
</tr>
<tr>
<td></td>
<td>0.3 Nm - 1.2 Nm</td>
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<tr>
<td></td>
<td>Weight:</td>
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<tr>
<td></td>
<td>0.17 kg - 0.46 kg</td>
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<tr>
<td></td>
<td>IP class:</td>
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<tr>
<td></td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Maintenance free (max.):</td>
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<table>
<thead>
<tr>
<th>SF</th>
<th>Number of installation sizes: 6</th>
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<tbody>
<tr>
<td></td>
<td>Swivel angle:</td>
</tr>
<tr>
<td></td>
<td>0° - 180°</td>
</tr>
<tr>
<td></td>
<td>Torque:</td>
</tr>
<tr>
<td></td>
<td>1.5 Nm - 130 Nm</td>
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<tr>
<td></td>
<td>Weight:</td>
</tr>
<tr>
<td></td>
<td>0.6 kg - 41.1 kg</td>
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<td></td>
<td>IP class:</td>
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<td>64</td>
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<tr>
<td></td>
<td>Maintenance free (max.):</td>
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<td></td>
<td>10 million cycles</td>
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### Electrical

**DES**

<table>
<thead>
<tr>
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<td>Swivel angle:</td>
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<td>unlimited</td>
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<tr>
<td></td>
<td>Torque:</td>
</tr>
<tr>
<td></td>
<td>12 Nm - 64 Nm</td>
</tr>
<tr>
<td></td>
<td>Weight:</td>
</tr>
<tr>
<td></td>
<td>4 kg - 15.9 kg</td>
</tr>
<tr>
<td></td>
<td>IP class:</td>
</tr>
<tr>
<td></td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>Maintenance free (max.):</td>
</tr>
<tr>
<td></td>
<td>5 million revs</td>
</tr>
</tbody>
</table>

### Angle Pivot Units

**PNEUMATIC**

<table>
<thead>
<tr>
<th>SWM1000</th>
<th>Number of installation sizes: 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Swivel angle:</td>
</tr>
<tr>
<td></td>
<td>90°</td>
</tr>
<tr>
<td></td>
<td>Torque:</td>
</tr>
<tr>
<td></td>
<td>10 Nm - 64 Nm</td>
</tr>
<tr>
<td></td>
<td>Weight:</td>
</tr>
<tr>
<td></td>
<td>0.65 kg - 3.5 kg</td>
</tr>
<tr>
<td></td>
<td>IP class:</td>
</tr>
<tr>
<td></td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Maintenance free (max.):</td>
</tr>
<tr>
<td></td>
<td>10 million cycles</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SW</th>
<th>Number of installation sizes: 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Swivel angle:</td>
</tr>
<tr>
<td></td>
<td>180°</td>
</tr>
<tr>
<td></td>
<td>Torque:</td>
</tr>
<tr>
<td></td>
<td>1.5 Nm - 120 Nm</td>
</tr>
<tr>
<td></td>
<td>Weight:</td>
</tr>
<tr>
<td></td>
<td>1.2 kg - 48.2 kg</td>
</tr>
<tr>
<td></td>
<td>IP class:</td>
</tr>
<tr>
<td></td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>Maintenance free (max.):</td>
</tr>
<tr>
<td></td>
<td>10 million cycles</td>
</tr>
</tbody>
</table>
HANDLING TECHNOLOGY
ROBOT ACCESSORIES

OUR EXPERTISE – YOUR ADVANTAGES

► Secure hold during pressure drop
   A redundant system, created by the combination of a spring accumulator and a self-locking mechanism, guarantees a safe machine

► Extremely flat design
   This structure reduces the moment load for your robot to a minimum and makes it possible to use smaller and more affordable sizes

► Inexhaustible variety of media transfer systems
   No matter which medium you would like to transmit, we will draw from our wealth of experience in implementing projects and find a solution to suit your needs

VARIETY
Do you want to custom-build your machine and have freedom in media transmission? Working with us allows you to select from a wide variety of standardized energy elements. We are also experienced to develop a custom solution for you.

STANDARDIZED
The height of the structure reduces the load capacity of your robot. That is why our robotic components form structures with minimal height and can be combined together without additional adapter plates. Direct mounting onto the robot takes place using the mounting flange in accordance with EN ISO 9409-1.

SAFE
Production safety is a priority for us. That is why our tool changers offer you maximum reliability, with the integrated sensor technology, the spring installed for maintaining force and the extremely robust, line contacting locking bolts.
## ROBOT ACCESSORIES

### CHANGE

<table>
<thead>
<tr>
<th>Description</th>
<th>Accessory</th>
<th>Pneumatic energy transfer</th>
<th>Electrical energy transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK31 - TK80</td>
<td>Recommended handling weight: 5 kg - 50 kg</td>
<td>Optional via energy element</td>
<td></td>
</tr>
</tbody>
</table>

### TRANSMIT

<table>
<thead>
<tr>
<th>Description</th>
<th>Accessory</th>
<th>Pneumatic energy transfer</th>
<th>Electrical energy transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK125</td>
<td>Recommended handling weight: 200 kg</td>
<td>8 ports</td>
<td>4 pin + PE</td>
</tr>
</tbody>
</table>

### PNEUMATIC

<table>
<thead>
<tr>
<th>Description</th>
<th>Accessory</th>
<th>Pneumatic energy transfer</th>
<th>Electrical energy transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK40 - TK160</td>
<td>Recommended handling weight: 20 kg - 300 kg</td>
<td>4 - 10 ports</td>
<td>Optional via energy element</td>
</tr>
</tbody>
</table>

### COMPENSATE

<table>
<thead>
<tr>
<th>Description</th>
<th>Accessory</th>
<th>Pneumatic energy transfer</th>
<th>Electrical energy transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK160 - TK200</td>
<td>Recommended handling weight: 500 kg - 1,000 kg</td>
<td>Optional via energy element</td>
<td>Optional via energy element</td>
</tr>
</tbody>
</table>

### PROTECT

<table>
<thead>
<tr>
<th>Description</th>
<th>Accessory</th>
<th>Pneumatic energy transfer</th>
<th>Electrical energy transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK50 - TK125</td>
<td>Recommended handling weight: 6 kg - 150 kg</td>
<td>6 mm - 23 mm</td>
<td>9° - 12.5°</td>
</tr>
</tbody>
</table>

### ENERGY ELEMENTS

### ELECTRICAL / COMMUNICATION

<table>
<thead>
<tr>
<th>Description</th>
<th>Accessory</th>
<th>Pneumatic energy transfer</th>
<th>Electrical energy transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK125</td>
<td>Recommended handling weight: 15 kg - 200 kg</td>
<td>4 - 8 ports</td>
<td>4 pin + PE</td>
</tr>
</tbody>
</table>

### FLUID

<table>
<thead>
<tr>
<th>Description</th>
<th>Accessory</th>
<th>Pneumatic energy transfer</th>
<th>Electrical energy transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK160</td>
<td>Recommended handling weight: 8 ports</td>
<td>4 - 12 pin</td>
<td></td>
</tr>
</tbody>
</table>

### ANGLE FLANGE

<table>
<thead>
<tr>
<th>Description</th>
<th>Accessory</th>
<th>Pneumatic energy transfer</th>
<th>Electrical energy transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK125</td>
<td>Recommended handling weight: 15 kg - 200 kg</td>
<td>4 - 8 ports</td>
<td>4 pin + PE</td>
</tr>
</tbody>
</table>

---

**HWR2000**

HWR:

- **Recommended handling weight**: TK31 - TK80 (5 kg - 50 kg)
- **Pneumatic energy transfer**: Optional via energy element
- **Electrical energy transfer**: 8 ports

**WWR1000**

- **Recommended handling weight**: TK40 - TK160 (20 kg - 300 kg)
- **Pneumatic energy transfer**: 4 - 10 ports
- **Electrical energy transfer**: Optional via energy element

**WWR**

- **Recommended handling weight**: TK40 - TK160 (20 kg - 300 kg)
- **Pneumatic energy transfer**: 4 - 10 ports
- **Electrical energy transfer**: Optional via energy element

**FGR**

- **Recommended handling weight**: TK40 - TK160 (7 kg - 75 kg)
- **Deflection in X/Y**: 2 mm - 10 mm

**CSR**

- **Recommended handling weight**: TK50 - TK125 (6 kg - 150 kg)
- **Z-axis deflection**: 6 mm - 23 mm
- **Horizontal deflection +/-**: 9° - 12.5°

**DVR1000**

- **Recommended handling weight**: TK40 - TK160 (500 kg - 1,000 kg)
- **Pneumatic energy transfer**: Optional via energy element
- **Electrical energy transfer**: Optional via energy element

**WER**

- For transmitting signal and load currents

**WFR**

- Suitable for more than 40 different robot types and combinable with 16 different grippers for machine loading

---

**All Information just a click away**  
www.zimmer-group.com
**HRC FROM THE EXPERTS**

Zimmer Group is a pioneer and one of the world’s leading manufacturers of components in the area of human/robot collaboration. We develop our products in pursuit of our goal to increase the efficiency of work processes by fostering the type of collaboration between humans and machines that makes optimal use of their potential.

---

### 2-JAW PARALLEL GRIPPERS

<table>
<thead>
<tr>
<th>COOPERATIVE</th>
<th>ELECTRICAL</th>
</tr>
</thead>
</table>
| HRC-EP-017388 | Stroke per jaw: 60 mm  
Gripping force: 820 N  
Weight: 1.8 kg  
IP class: 40  
Maintenance free (max.): 5 million cycles |

Safety functions STO + mechanical self-locking mechanism in case of power failure

---

<table>
<thead>
<tr>
<th>COLLABORATIVE</th>
<th>ELECTRICAL</th>
</tr>
</thead>
</table>
| HRC-EP-014654 | Stroke per jaw: 60 mm  
Gripping force (max.): < 140 N  
Weight: 2.0 kg  
IP class: 40  
Maintenance free (max.): 5 million cycles |

Safety functions STO + mechanical self-locking mechanism in case of power failure + safety gripper jaws prevent the excess of 140 N

---

| HRC-EP-027988 | Stroke per jaw: 10 mm  
Gripping force (max.): < 140 N  
Weight: 0.68 kg  
IP class: 40  
Maintenance free (max.): 10 million cycles |

Mechanical self-locking mechanism in case of power failure

---

<table>
<thead>
<tr>
<th>PNEUMATIC</th>
</tr>
</thead>
</table>
| HRC-PP-048748 | Stroke per jaw: 6 mm  
Gripping force (max.): < 140 N  
Weight: 0.76 kg  
IP class: 40  
Maintenance free (max.): 10 million cycles |

Gripping force safety device in case of pressure failure via integrated spring

---

### 2-JAW ANGULAR GRIPPERS

<table>
<thead>
<tr>
<th>PNEUMATIC</th>
</tr>
</thead>
</table>
| HRC-PW-055639 | Stroke per jaw: 37.5°  
Gripping force (max.): < 140 N  
Weight: 0.82 kg  
IP class: 40  
Maintenance free (max.): 10 million cycles |

Gripping force safety device in case of pressure failure via integrated spring

---

**HANDLING TECHNOLOGY**

**HUMAN ROBOT COLLABORATION**
Simple operation

► The operation of our Industrie 4.0 components has now been integrated into the control system of the robots from YASKAWA and Universal Robots. The integration of additional manufacturers is in progress and can be requested as needed. The components can be set up manually using the robot control panel and integrated into the program sequence. The intuitive operating interface allows the user to activate the entire IO-Link gripper portfolio from Zimmer Group and uses all pneumatic, electrical, hybrid, servoelectric and digital components on the robots.

Because simple is just better

► This integration makes it possible to use application profiles flexibly and to adjust and save the device parameters very easily. Complete implementation and commissioning takes only a few minutes. Furthermore, Zimmer HMI supports condition monitoring or predictive maintenance of the components.

IO-Link, the interface of Industrie 4.0 components

► IO-Link is the first standardized IO-technology worldwide for communication from the control system to the lowest level of automation. This IO-Link standard is used as a fieldbus-independent point-to-point connection. Zimmer Group uses IO-Link to integrate intelligent components into virtually any automation environment.

Easily installed with many advantages

► IO-Link is easy to install and integrate. Moreover, it reduces and standardizes wiring effort. A standardized, unshielded 5-wire cable is sufficient for producing the point-to-point connection. Previous investments are protected as a result of keeping tried-and-tested cabling structures and compatibility with your existing, conventional wiring.

HMI using the example of Universal Robots
HANDLING TECHNOLOGY
ROBOT MODULES

Tool changer
Energy elements

Adapter plate
Angle flange

Adapter plate
Adapter plates
Modular Construction System

HRC COMPONENTS
CONVENTIONAL COMPONENTS

www.zimmer-group.com ▶ All Information just a click away
HANDLING TECHNOLOGY
SERIES AT A GLANCE

LINEAR MODULES

<table>
<thead>
<tr>
<th>PNEUMATIC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SHX</td>
<td>Stroke: 15 mm - 300 mm, Force: 40 N - 950 N</td>
</tr>
<tr>
<td>LI</td>
<td></td>
</tr>
<tr>
<td>LS</td>
<td></td>
</tr>
<tr>
<td>LSX</td>
<td></td>
</tr>
<tr>
<td>HZ</td>
<td></td>
</tr>
</tbody>
</table>

SEPARATORS

<table>
<thead>
<tr>
<th>PNEUMATIC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>VEG</td>
<td>Stroke per plunger: 10 mm - 60 mm, Extension force: 40 N - 220 N</td>
</tr>
<tr>
<td>VE</td>
<td></td>
</tr>
</tbody>
</table>

ELECTRICAL

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>VEE9200</td>
</tr>
</tbody>
</table>

CUTTING TONGS

<table>
<thead>
<tr>
<th>PNEUMATIC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ZK1000</td>
<td>Closing torque: 54 Nm - 400 Nm</td>
</tr>
<tr>
<td>ZK</td>
<td>Stroke per jaw: 4.25&quot; - 13&quot;</td>
</tr>
<tr>
<td></td>
<td>Screw diameter (max.): 11 mm</td>
</tr>
</tbody>
</table>

BALL JOINTS

<table>
<thead>
<tr>
<th>MANUAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>KG</td>
<td>Swivel angle: 30°</td>
</tr>
<tr>
<td></td>
<td>Materials: Steel, aluminum</td>
</tr>
</tbody>
</table>

HANDLING TECHNOLOGY
VACUUM COMPONENTS

MCS MODULAR CONSTRUCTION SYSTEM

The modular construction system (MCS) can be used to create a workpiece specific solution without increased engineering efforts. This is made possible by the modular individual components. The product portfolio includes profiles, compensation modules, suction cup mounts as well as gripper fingers that guarantee a secure grip of the workpiece during motion.
PRECISE, LOW-VIBRATION DAMPING

SPIRAL GROOVE TECHNOLOGY

STAINLESS DESIGN

PRECISE, LOW-VIBRATION DAMPING

SPECIALY DEVELOPED PROFILE

HIGH ENERGY ABSORPTION

TPC HIGH-PERFORMANCE PLASTIC

LARGE LOAD CARRYING CAPACITY

DURABILITY

HIGH ENERGY ABSORPTION
INDUSTRIAL DAMPING TECHNOLOGY
POWERSTOP TECHNOLOGY HIGHLIGHTS

OUR EXPERTISE – YOUR ADVANTAGES
► Low-vibration and precise braking due to the constantly narrowing spiral groove
► Low wear and long service live thanks to hydrostatic piston guide
► Corrosion protection from using stainless steel

SPIRAL GROOVE TECHNOLOGY

The unique spiral groove technology is a defining feature of PowerStop industrial shock absorbers. In contrast with conventional industrial shock absorbers with throttle bores, the constantly tapering spiral groove causes precise, low-vibration shock absorption. The PowerStop industrial shock absorber achieves maximum energy absorption with the smallest installation space through optimal utilization.

CONVENTIONAL SOLUTION
THROTTLE MECHANISM

HIGH-END SOLUTION – THE ZIMMER GROUP
POWERSTOP SHOCK ABSORBER
SPIRAL GROOVE TECHNOLOGY

OIL RESERVE

The shock absorbers of the High Energy series are appropriately filled with oil so that the volume compensation spring is under pre-load. Automatic readjustment of the spring compensates for oil loss, which results in a long service life.
INDUSTRIAL DAMPING TECHNOLOGY
BASICSTOP TECHNOLOGY HIGHLIGHTS

OUR EXPERTISE – YOUR ADVANTAGES

► TPC high-performance plastic:
  ▶ High durability and resistance against media*
  ▶ No swelling, embrittlement or decomposition of the material, as is the case with rubber*
  ▶ Wide temperature range
► High damping percentage and high energy absorption in the smallest space
► Reliable return behavior
► Increased life cycle in comparison to rubber buffers
► Usability independent of velocity
► 100% recyclable due to thermoplastic properties

* For chemical and media resistance, please refer to the Damping Technology catalog or www.zimmer-group.com

PROFILE DAMPING

► The BasicStop profile dampers feature high-performance TPC plastic and a specifically developed profile.
► BasicStop acquires its unique properties after receiving a special treatment. These properties allow it to absorb maximum amounts of energy even under the toughest conditions, while also achieving high damping rates.

DAMPING VS. SPRING RETURN

► Conventional rubber buffers only have a very small damping percentage and are more of a spring than a damper. Use of these buffers hardly removes any kinetic energy from the system, which in turn can cause damage to the system.
► This is where the BasicStop brand profile dampers are setting new standards in the realm of material damping with their high damping percentage.

Emergency stop protection in the movement axis of a spindle tailstock
End position damping in the linear axes of production modules from ELHA
Machine door damping in a machining center

www.zimmer-group.com ➤ All Information just a click away
# INDUSTRIAL DAMPING TECHNOLOGY
## THE SERIES AT A GLANCE

## INDUSTRIAL SHOCK ABSORBERS

<table>
<thead>
<tr>
<th></th>
<th>POWERSTOP</th>
<th>BASICSTOP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STANDARD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ENERGY</strong></td>
<td>Size: M8 - M45</td>
<td>Height: 11 mm - 109 mm</td>
</tr>
<tr>
<td></td>
<td>Stroke: 5 mm - 25 mm</td>
<td>Stroke: 5 mm - 56 mm</td>
</tr>
<tr>
<td></td>
<td>Energy absorption (max.): 1.5 Nm - 350 Nm</td>
<td>Energy absorption (max.): 2.0 Nm - 2.950 Nm</td>
</tr>
<tr>
<td><strong>HIGH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ENERGY</strong></td>
<td>Size: M4 - M45</td>
<td>Damping percentage (max.): 75 %</td>
</tr>
<tr>
<td></td>
<td>Stroke: 3 mm - 50 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Energy absorption (max.): 0.5 Nm - 1.200 Nm</td>
<td></td>
</tr>
<tr>
<td><strong>AXIAL</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>STANDARD</strong></td>
<td>Height: 53 mm - 252 mm</td>
<td>Height: 23 mm - 88 mm</td>
</tr>
<tr>
<td></td>
<td>Stroke: 30 mm - 198 mm</td>
<td>Stroke: 15 mm - 60 mm</td>
</tr>
<tr>
<td></td>
<td>Energy absorption (max.): 4.50 Nm - 17.800 Nm</td>
<td>Energy absorption (max.): 1.2 Nm - 290 Nm</td>
</tr>
<tr>
<td></td>
<td>Damping percentage (max.): 65 %</td>
<td>Damping percentage (max.): 60 %</td>
</tr>
<tr>
<td><strong>ADVANCED</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RADIAL</strong></td>
<td>Height: 23 mm - 88 mm</td>
<td></td>
</tr>
<tr>
<td><strong>STANDARD</strong></td>
<td>Stroke: 15 mm - 60 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Energy absorption (max.): 1.2 Nm - 290 Nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Damping percentage (max.): 60 %</td>
<td></td>
</tr>
</tbody>
</table>

## SHOCK ABSORBER SELECTION GUIDE

- **Calculate and select shock absorbers quicker**
  Calculation, selection guide and configurator

- **Clearly arranged selection guide**
  Easy to go from the right load case to the suitable damper

- **Smart solution – available on mobile devices**
DAMPING TECHNOLOGY SOFT CLOSE
TECHNOLOGY HIGHLIGHTS

OUR FOCUS IS ON THE CUSTOMER

In our development department, the air friction and fluid dampers are not just adapted to customer requirements and constantly being optimized. We also search for innovative solutions for a wide variety of industries. This increases the diversity of the product portfolio and the associated solution options. Our highly professional automation department also enables us to take a rational approach to mass producing products to the industry standard on our own systems. We work in close coordination with our quality team to produce products at the highest level. No damper leaves the plant before undergoing a quality check. At the same time, our sales department is experiencing continuous growth in order to give the utmost attention to the requirements and wishes of our customers around the world and to utilize market development for new products.

AIR FRICTION DAMPERS

“The classic”

► The primary distinguishing feature of our air friction dampers is their longevity. Our ideas have been tested and proven in real-world applications and are protected by patents.

► The damping process with an air friction damper is characterized by a braking phase with a short stop and then a transition into the return phase.

► All air frictioned dampers have similar characteristics. They exhibit nearly parallel movement at various load bearing capacities.

FLUID DAMPERS

“High performance”

► Fluid dampers have also been an integral part of Zimmer Group’s product range for many years. Our fluid dampers exhibit a high level of dependability and great load bearing capacity.

► The damping process with a fluid damper is characterized by an almost seamless transition from the braking phase to the return phase without stopping in between the two phases.

► The characteristics differ between linear, linear-constant or S-curve characteristics depending on the fluid damper being used.
DAMPING OF DRAWERS

Components of drawers
- Drawer damping has securely established itself as an indispensable standard.
- The Zimmer Group specializes in drawer damping and supplies you with optimal comfort for your products at the highest level.
- Our individual dampers for drawer damping feature a multitude of options for integration into customer systems. Due to the high adaptability of our designs, we offer a wide range of standard products as well as customer-specific solutions.

Precise – adaptable – tested

DAMPING OF SLIDING DOORS

Sliding door dampers
- Sliding doors are increasingly attracting attention in the residential, working and sleeping areas due to their ever increasing potential for space-saving applications.
- The Zimmer Group offers the newest technology for this growing market.
- Due to their high adaptability, our components for sliding door damping are easily integrated into our customers’ railing system.

Intelligent – efficient – reliable

DAMPING OF LIDS

Fluid dampers for lids
- Closing is often associated with “slamming”. The Zimmer Group uses its fluid dampers to get rid of this association.
- The defining features of our dampers for lid damping are their adaptability and the wealth of available variants.
- Our fluid dampers are groundbreaking in this regard. Various dimensions, force or damping characteristics – we offer the perfect fluid damper to suit your needs.

Small – strong – robust – adaptable

DAMPING OF HINGES

Dampers for hinges
- The high-performance dampers from Zimmer Group for damping hinges are retrofit solutions that are easy to integrate.
- Users particularly appreciate the VOLPINO’s easy handling of customizable damping force, which can be adjusted to the door weight after assembly.
- The BELLINO is appealing due to its ability to be integrated into (very) tight installation spaces.

Powerful – flexible – sophisticated

All Information just a click away  ◄  www.zimmer-group.com
PLUS CONNECTION
INTEGRATED QUICK EXHAUST VALVE
AVAILABLE FOR ALL GUIDE RAILS AND SIZES

WEDGE-TYPE GEAR
SPRING ACCUMULATOR

ONE FUNCTIONAL COMPONENT
HIGHEST STIFFNESS
INTEGRATED EMERGENCY BRAKE FUNCTION
LINEAR TECHNOLOGY
TECHNOLOGY HIGHLIGHTS

OUR EXPERTISE – YOUR ADVANTAGES
More than 20 years of development and market experience have yielded more than 4,000 standardized products.
► Very high holding force on small dimensions
► High positional accuracy
► High stiffness
► PLUS connection for increased holding forces

WEDGE-TYPE GEAR – TRIED-AND-TESTED FOR OVER 20 YEARS
► In the field of clamping and braking on profile rail and round shaft, Zimmer Group with their wedge-type gear has been the pioneer.
► All pneumatic elements are equipped with a tried-and-tested wedge-type gear for the highest power transmission and market-leading numbers of cycles over 5 million (B10d value).

ONE FUNCTIONAL COMPONENT – HIGHEST STIFFNESS
► The newest LBHS series once again demonstrates technological expertise.
► A hydraulic braking element consisting of a single functional component that does not contain any moving parts and generates all braking and holding forces solely through the inherent tension of the base body. It promises the highest stiffness and quickest response times.

SELECTION GUIDE – OVER 20,000 COMBINATIONS
► Select clamping and braking elements quicker
   Suitable for over 20,000 rail and carriage combinations
► Clearly arranged selection assistance
   Direct technical data access + CAD download
► Smart solution – available on mobile devices
   Direct access anytime at http://www.zimmer-group.com/en/plt
LINEAR TECHNOLOGY
THE SERIES AT A GLANCE

PROFILE RAIL GUIDES

<table>
<thead>
<tr>
<th>MANUAL</th>
<th>PNEUMATIC</th>
<th>CLAMPING AND BRAKING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NO</td>
<td>NC</td>
</tr>
<tr>
<td></td>
<td>HK</td>
<td>MK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MKS</td>
</tr>
<tr>
<td></td>
<td>LKP</td>
<td>LKPS</td>
</tr>
<tr>
<td></td>
<td>MINIHK</td>
<td>MCP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MCPS</td>
</tr>
</tbody>
</table>

Holding force up to 2,000 N
Holding force up to 2,250 N
Holding force up to 3,300 N
Holding force up to 4,700 N
Holding force up to 7,700 N (9,200 N)
Holding force up to 2,500 N
Holding force up to 1,900 N
Holding force up to 1,900 N
Holding force up to 300 N
Holding force up to 550 N
Holding force up to 700 N

HOLDING FORCE
The holding force is the maximum force that can be generated in the axial direction. The specified holding forces are tested on every clamping and braking unit before delivery using a slightly lubricated rail (ISO VG 68). Using other oil or lubricating substances can influence the coefficient of friction, which can cause a loss of holding force in individual cases.

F = max. holding force
### Profile Rail Guides

<table>
<thead>
<tr>
<th>HYDRAULIC</th>
<th>ELECTRICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLAMPING</strong></td>
<td><strong>CLAMPING AND BRAKING</strong></td>
</tr>
<tr>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>KWH</td>
<td>KBH</td>
</tr>
<tr>
<td>Holding force up to 46,000 N</td>
<td>Holding force up to 46,000 N</td>
</tr>
<tr>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>LBHS</td>
<td>LKE</td>
</tr>
<tr>
<td>Holding force up to 15,000 N</td>
<td>Holding force up to 1,800 N</td>
</tr>
<tr>
<td>Narrow</td>
<td>Standard</td>
</tr>
</tbody>
</table>

### Circular and Shaft Guides

<table>
<thead>
<tr>
<th>MANUAL</th>
<th>PNEUMATIC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLAMPING</strong></td>
<td><strong>CLAMPING AND BRAKING</strong></td>
</tr>
<tr>
<td>N</td>
<td>NC</td>
</tr>
<tr>
<td>HKR</td>
<td>MKR</td>
</tr>
<tr>
<td>Holding force up to 2,000 N</td>
<td>Holding force up to 1,850 N</td>
</tr>
<tr>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>MKRS</td>
<td>RBPS</td>
</tr>
<tr>
<td>Holding force up to 1,650 N</td>
<td>Holding force up to 52,000 N</td>
</tr>
<tr>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>TPS</td>
<td></td>
</tr>
<tr>
<td>Holding torque static up to 770 Nm</td>
<td>Rotary</td>
</tr>
</tbody>
</table>

**N (bistable):** Remains fixed in the current position

**NO (Normally Open):** Open at loss of pressure

**NC (Normally Closed):** Closed at loss of pressure
GEOMETRIC FREEDOM

MATERIAL FREEDOM

SERIES PRODUCTION
PROCESS TECHNOLOGY
MIM TECHNOLOGY

OUR EXPERTISE – YOUR ADVANTAGES

- Cost-effective series production of complex metallic components
- Up to 65% less expensive than conventional production processes
- Material freedom: Low alloy steels, stainless steels, HSS steels as well as carbides, titanium and titanium/tungsten alloys
- Series production of components with 0.3 g - 150 g part weight
- Complex parts with wall thicknesses up to 0.2 mm can be implemented
- Holes, inner and outer threading, undercuts and gear teeth are possible
- Mechanical strength and workability of workpieces equal to conventional manufacturing processes
- Control of part hardness during the sintering process
- Geometric freedom in developing your components or assemblies
- Part development or design support from a highly experienced development team
- Injection-molded, milled or 3D-printed parts as a part basis

FEEDSTOCK

Metal powder, binder

Raw material consists of approximately 60% the respective metal powder by volume and 40% a binder, which is a mixture of polymers and waxes. The homogeneous mixture of all of the components is of critical importance.

INJECTION MOLDING

Green part

The binder portion is melted at a high temperature and the highly viscous mass of metal powder and binder is then pressed into the shape of the respective component. The workpieces created from the metal powder and binder are called the green part.

DEBINDING

Brown part

The majority of the binder is removed from the green parts. The remaining binder is vaporized out of the component at a temperature between 400°C and 900°C. The metal particles combine by forming what are called sintering necks, giving the part sufficient stability.

SINTERING

Metal part

The parts are condensed at high temperatures, usually above 1,000°C. The respective temperature profile in the sinter furnace heavily depends on the material and the component geometry. This process step must be carefully adjusted for each part geometry and material.

All Information just a click away ➔ www.zimmer-group.com
## MATERIAL CHARACTERISTICS

### Low alloy steels

<table>
<thead>
<tr>
<th>Material No.</th>
<th>sintered</th>
<th>hardened</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>FN02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AISI</td>
<td>DIN</td>
<td>Tensile strength N/mm²</td>
<td>Hardness HV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>260</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td></td>
<td>460</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td></td>
<td>380</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td></td>
<td>700</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,350</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,6523</td>
<td>650</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,7225</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,6565</td>
<td>130</td>
</tr>
</tbody>
</table>

### Stainless steels

<table>
<thead>
<tr>
<th>Material No.</th>
<th>sintered</th>
<th>hardened</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>AISI</td>
<td>DIN</td>
<td>Tensile strength N/mm²</td>
<td>Hardness HV</td>
</tr>
<tr>
<td>17-4PH</td>
<td>1.4542</td>
<td>800</td>
<td>320</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(32 HRC)</td>
<td>(32 HRC)</td>
</tr>
<tr>
<td>316L</td>
<td>1.4404</td>
<td>450</td>
<td>120</td>
</tr>
<tr>
<td>420W</td>
<td>1.4028</td>
<td>800</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(55 HRC)</td>
<td>(55 HRC)</td>
</tr>
<tr>
<td>440C mod.</td>
<td>mod. 1.4125</td>
<td>780</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(35 HRC)</td>
<td>(35 HRC)</td>
</tr>
</tbody>
</table>

### Tool steels

<table>
<thead>
<tr>
<th>Material No.</th>
<th>sintered</th>
<th>hardened</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>AISI</td>
<td>DIN</td>
<td>Tensile strength N/mm²</td>
<td>Hardness HV</td>
</tr>
<tr>
<td>M2</td>
<td>1.3343</td>
<td>1,200</td>
<td>520</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(50 HRC)</td>
<td>(50 HRC)</td>
</tr>
</tbody>
</table>

### Titanium alloys

<table>
<thead>
<tr>
<th>Material No.</th>
<th>sintered</th>
<th>Eigenschaften</th>
</tr>
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<tbody>
<tr>
<td>AISI</td>
<td>DIN</td>
<td>Tensile strength N/mm²</td>
</tr>
<tr>
<td>Ti grade 2</td>
<td>3.7035</td>
<td>340</td>
</tr>
<tr>
<td>Ti6Al4V (grade 5)</td>
<td>3.7165</td>
<td>850</td>
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### Tungsten heavy metals

<table>
<thead>
<tr>
<th>Material No.</th>
<th>sintered</th>
<th>hardened</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>AISI</td>
<td>DIN</td>
<td>Tensile strength N/mm²</td>
<td>Hardness HV</td>
</tr>
<tr>
<td>W-22Fe33Ni</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Carbides

<table>
<thead>
<tr>
<th>Material No.</th>
<th>sintered</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>AISI</td>
<td>DIN</td>
<td>Transverse rupture strength N/mm²</td>
</tr>
<tr>
<td>WC0,8Co10</td>
<td></td>
<td>4,000</td>
</tr>
</tbody>
</table>
PROCESS TECHNOLOGY
PLASTIC INJECTION MOLDING

We are in our element when the task involves complicated plastic injection molding. It enables us to demonstrate our full range of expertise through the close interaction of development, design, moldmaking, injection molding production and assembly. We process all typical plastics, such as semi-crystalline thermoplastics like POM, PE, PP, PA, PBT and PET as well as amorphous thermoplastics like ABS, PC, PEEK, PMMA, PS and SAN along with all common blends. Even wood/plastic composites (WPCs) with 70% wood fiber content for the furniture industry can be processed. This also applies to high-performance plastics such as PEEK with or without fillers such as glass fibers or glass beads. We offer all of the technically feasible variations, such as modifying the hardness grades and coloration or using special blends with specific improvements to chemical, mechanical or thermal properties. Laser-markable surfaces or increased UV protection for outdoor applications are no problem for us. As a supplier for the automotive industry, machine construction, automation, medical technology, the furniture industry, device technology and the construction industry, we strive to make our customers’ applications more effective. Our moldmaking is subject to virtually zero limitations. We are even capable of implementing complex solutions such as valve-in-valve configurations or unscrewing units. The maximum part weight is 450 g in our 200-ton injection molding systems.

PROCESS TECHNOLOGY
ELASTOMER TECHNOLOGY

The production volume we can provide, as with the dimensions we can produce, is nearly limitless; we can produce almost any volume desired. From special singlepiece solutions to medium-sized small-scale production to large series production with more than 10,000 pieces. We supply practically everything that can be implemented using the transfer molding (TM) or injection transfer molding (ITM) process, including insert parts like threaded inserts, springs and any other parts made of plastics or metals, which we also machine on request. The transfer molding method is suitable for manufacturing low part quantities with low implementation times and at attractive prices. The injection transfer molding method is ideal for large quantities. We have NBR, silicone, EPDM, FPM, PU, TPU, TPE or polymethane available to us as materials and we can process them in any Shore hardness available on the market. And the workpiece dimensions are just as varied, running the gamut from pinhead-sized components to workpieces with a volume of several liters. Whether big or small: There is hardly any limit to the component complexity we can provide.
COMPACT
HIGH POWER DENSITY

FLEXIBILITY AND
PERFORMANCE CAPABILITY

MODULARITY AND
FLEXIBILITY

PRECISION AND
REPEATABILITY

PROCESS RELIABILITY
It is not without reason that multi-axis machining is considered the elite of machining processes. Its complexity requires a great deal of competence with the utilized technologies. But the results are worth the effort: Even complex parts can be completed with extraordinary surface quality, and with high dimensional and shape precision, with just one clamping operation. This results in high efficiency thanks to the reduction of process steps and increased flexibility thanks to the elimination of the set-up times of conventional systems. In addition to standard systems, we also develop special solutions on a customer-specific basis. This means that systems suitable for virtually any desirable application are created based on your custom requirements.

The individual modules move with very high dynamics and precision on a defined travel path. This path implements the high-precision mechanical movement using a linear guide in conjunction with a gear rack drive. The transfer of bus signals or electrical energy takes place via hidden sliding contacts. Depending on the requirement profile, one or more shuttles per transport order can move, either independently or with electronic coupling, synchronously on a travel path of any length at speeds of 0 - 2 m/s and with a positioning accuracy of 0.05 mm. The maximum load of the individual modules is 100 kg. The continuous circulation of the modules on the travel path is achieved by a direction change using a high-performance converter.

Zimmer Group has developed a completely new and highly innovative category of automation components. In the case of the Modular Transport System, this is a modularly structured, fully connected and freely scalable system of transport units for a wide variety of application profiles in the area of automation and linked production.
OUR EXPERTISE – YOUR ADVANTAGES

Maximum repeatability and precision

The Zimmer Group zero-point clamping system features a repeatability of 0.005 mm. Thanks to its very high clamping force and the consistent use of tempered tool steels, the system provides a high precision, torsion resistant base that also stabilizes fragile parts that tend to vibrate during processing.

Increased process reliability

The zero-point clamping system eliminates errors during milling, rotating, wire or die eroding, flat or cylindrical grinding, drilling, laser processing and measuring. The maintenance-free design also contributes to the superior process reliability.

WITHOUT ZERO POINT SYSTEM

<table>
<thead>
<tr>
<th>Machine running time</th>
<th>Set-up of workpiece</th>
</tr>
</thead>
</table>

WITH ZERO POINT SYSTEM

<table>
<thead>
<tr>
<th>Machine running time</th>
<th>Additional free machining capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change of pallet</td>
<td></td>
</tr>
<tr>
<td>Ready the workpiece</td>
<td></td>
</tr>
<tr>
<td>on a pallet when</td>
<td></td>
</tr>
<tr>
<td>not processing</td>
<td></td>
</tr>
</tbody>
</table>

CONFIGURATION

In order to best redirect the forces of the device to be clamped, the displayed arrangement of pins is recommended. This arrangement makes it possible to compensate for geometry errors that emerge from production tolerances or thermal expansion:

Configuration with one zero-point clamping system

The centering pin gets the position in all three directions of the Cartesian coordinate system X, Y and Z. As a result, it forms the zero-point for the device to be secured in place.

Configuration with two zero-point clamping systems

The sword pin can compensate for a change in length in one direction while absorbing the forces in the other two directions. It must be positioned so that it can support the moments applied around the centering pin in the Z direction.

Configuration with four or more zero-point clamping systems

The retention pin can only absorb forces in the Z direction. It compensates for changes in length in the X and Y direction.
PRODUCT ADVANTAGES

► Patented locking piston

► Stainless
The housing parts are made of stainless steel – contact parts are hardened and thus wear-free

► Integrated rotation prevention as standard
A drive pin can be inserted into the clamping module to counteract torque in the direction of the plunger axis.

► Easy insertion of the clamping pins due to optimum, conical lead-in chamfers
Burring is prevented
The pin will be centered automatically even if positioned at a slant

► Integrated flat-surface cleaning for models with positioning check

<table>
<thead>
<tr>
<th>Model</th>
<th>Min. operating pressure [bar]</th>
<th>Clamping force [kN]</th>
<th>Clamping force with PLUS connection [kN]</th>
<th>Rotation prevention</th>
<th>Positioning check</th>
<th>Flat-surface cleaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPN060EL</td>
<td>4 / 6</td>
<td>2.5 / 4</td>
<td>4.5 / 7.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPN060EL with positioning check</td>
<td>4 / 6</td>
<td>2.5 / 4</td>
<td>4.5 / 7.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPN110EL</td>
<td>4 / 6</td>
<td>4 / 7</td>
<td>10 / 15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPN110EL with positioning check</td>
<td>4 / 6</td>
<td>4 / 7</td>
<td>10 / 15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPN138EL</td>
<td>4 / 6</td>
<td>9 / 18</td>
<td>22.5 / 42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPN138EL with positioning check</td>
<td>4 / 6</td>
<td>9 / 18</td>
<td>22.5 / 42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPN195EL</td>
<td>4 / 6</td>
<td>20 / 30</td>
<td>50 / 80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPN195EL with positioning check</td>
<td>4 / 6</td>
<td>20 / 30</td>
<td>50 / 80</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

APPLICATION EXAMPLES

Machining center  Exchangeable assemblies  Clamping plate in a metal-cutting machine

All Information just a click away  www.zimmer-group.com
MACHINE TOOLING TECHNOLOGY
CLAMPING SYSTEM FOR INJECTION MOLDING MACHINES

OUR EXPERTISE – YOUR ADVANTAGES
► Short machine setup times as a result of a significantly shortened changeover process
► An accelerated clamping procedure compared to traditional clamping methods
► Tool savings (centering ring/thermal insulation panel)
► A more cost-effective solution than comparable competing systems
► The use of thermal insulation panels and aluminum tools is possible
► Low height of the changing device: 30 mm or 36 mm with thermal insulation panels
► Existing tools can be retrofitted easily
► Secure and precise change process and easy tool storage

MINIMAL MACHINE SETUP TIMES – MAXIMUM PRODUCTIVITY
In modern production processes, factors like efficiency and flexibility are increasingly important. This poses a neverending challenge to injection molding companies who want to fulfill an increasing number of requests for smaller batch sizes, lower inventories and just-in-time deliveries.

Minimizing machine setup times and saving time in the retooling process are major factors in achieving flexible production processes, bringing greater productivity and value to mature operations.
Motor spindles
As key components in machining centers, machine tools and end-of-arm applications, guarantee optimal value creation thanks to maximum precision, productivity, availability and a long service life. They are critical for the performance of the machine and the quality of machined pieces. Compact power packages with high power density and high-precision bearings are essential for achieving high speeds and excellent true-running characteristics. The Zimmer Group product line comprises both air and fluid-cooled motor spindles for wood, aluminum and plastics processing as well as fluid-cooled motor spindles for metal cutting. The spindles stand out for their extremely high reliability, superior power density and a wide range of compatibility.

C-axes
For a high number of automation tasks, it is necessary to rotate a workpiece or tool in position. The requirements for C-axes are varied: The focus lies on fast, precise movement, uniform motion, high repeatability, precise end position damping and low maintenance requirements.

Tool
Tool interface on high-frequency spindles compatible with all conventional market standards, e.g. HSK F63, HSK C32 or Solidfix S3.
### MOTOR SPINDLES

#### HIGH-FREQUENCY SPINDLES FOR WOOD*

**AIR-COOLED**

<table>
<thead>
<tr>
<th>Model</th>
<th>Power</th>
<th>Speed (max.)</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSL01-09-02-00-A</td>
<td>1.13 kW</td>
<td>9,000 U/min</td>
<td>5 Nm</td>
</tr>
<tr>
<td>HFL04-24-12-00-A</td>
<td>3.6 kW</td>
<td>24,000 U/min</td>
<td>3 Nm</td>
</tr>
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</table>

**WATER-COOLED**

<table>
<thead>
<tr>
<th>Model</th>
<th>Power</th>
<th>Speed (max.)</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>HFL06-24-35-00-A</td>
<td>6 kW</td>
<td>24,000 U/min</td>
<td>4.4 Nm</td>
</tr>
<tr>
<td>HFL08-24-35-00-A</td>
<td>8 kW</td>
<td>24,000 U/min</td>
<td>6 Nm</td>
</tr>
<tr>
<td>HFL12-24-35-00-A</td>
<td>12 kW</td>
<td>24,000 U/min</td>
<td>9.5 Nm</td>
</tr>
</tbody>
</table>

#### HIGH-FREQUENCY SPINDLES FOR METAL

**WATER-COOLED**

<table>
<thead>
<tr>
<th>Model</th>
<th>Power</th>
<th>Speed (max.)</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>HFW17-14-00-00-A</td>
<td>17 kW</td>
<td>14,000 U/min</td>
<td>55 Nm</td>
</tr>
<tr>
<td>HFW25-14-05-00-A</td>
<td>25 kW</td>
<td>14,000 U/min</td>
<td>80 Nm</td>
</tr>
<tr>
<td>HFW48-06-05-00-A</td>
<td>48 kW</td>
<td>6,000 U/min</td>
<td>153 Nm</td>
</tr>
<tr>
<td>HFW60-06-07-00-A</td>
<td>60 kW</td>
<td>6,000 U/min</td>
<td>764 Nm</td>
</tr>
</tbody>
</table>

#### C-AXES

Drive: Planetary gear, worm gear (including wing drive)
Torque (max.): 30 - 130 Nm
Translation: i = 1/1,837 - i = 100/1
Lubrication: Grease lubrication, oil lubrication

#### 5-AXIS HEADS

**90° ORTHOGONAL**

Power: 9 - 24 kW  
Speed (max.): 24,000 U/min  
Torque: 9 - 38 Nm  

**50° CARDANIC**

Power: 9 - 24 kW  
Speed (max.): 24,000 U/min  
Torque: 9 - 38 Nm  

---

* wood, plastic head, lightweight metal and composite
ZIMMER GROUP IS ONE OF THE LEADING SPECIALISTS IN THE AREA OF SYSTEMS SOLUTIONS IN THE WORLD. WE OFFER YOU SOPHISTICATED SYSTEM SOLUTIONS FOR ALMOST EVERY TASK, IN VIRTUALLY ALL INDUSTRIES AND APPLICATIONS. IT DOESN’T MATTER IF IT IS A SIMPLE GRIPPER AND HANDLING SOLUTIONS OR A COMPLEX SYSTEM SOLUTION.

As an industry partner with many years of experience, we are intimately familiar with the requirements of modern production systems, whether in mechanical engineering, the automotive and supplier industries, foundries or in the electronics, plastics or the consumer goods sectors. Zimmer system solutions allow us to equip any make of robot optimally and significantly increase the functionality and efficiency of your robots. The extensive expert solutions of our System Technology department, with their experienced team of project engineers, designers and manufacturers, has been valued by our customers for 30 years. Our systems are the result of a close collaboration with end customers and integrators built on trust. Zimmer System Technology has specially tailored production and assembly areas with a high degree of production depth. This means that we can guarantee flexible, quick implementation of your project at any time. The Zimmer Group has traditionally worked for a series of core industries that have benefited from our extensive experience and recognized development expertise for decades. We would be happy to speak with you about specific applications in new growth industries. We are well equipped for the development of new concepts. Together, we will be able to find the right solutions.

WE DESIGN, ASSEMBLE, CHECK AND DOCUMENT CONNECTION-READY SYSTEM SOLUTIONS. WE ARE NEVER SATISFIED WITH JUST FINDING ANY SOLUTION. INSTEAD, WE AIM TO FIND THE BEST SOLUTION FOR EACH CUSTOMER.

► Connection-ready system solutions reduce your design and project-management costs
► Developed specifically for your application
► 100% tested
► Included detailed documentation
► Our experience from executing more than 7,000 system solutions ensures that you get the functionality you need without compromising cost security
► 10 million maintenance-free cycles provide maximum system availability
► Optimized dimensioning of components reduces gripper weight, optimizes dimensioning of the robot itself and thereby minimizes cycle times
► Implementation of additional functions like cameras, sensors, measurement sensors and screw functions reduces your costs and optimizes your application

SYSTEM SHOWROOM

Over the years, our designers have implemented over 7,000 custom-made and standardized system solutions. Our online showroom can give you an overview on the wide variety of these solutions, which will allow you to considerably reduce your design and production costs. Take a look and discover what the Zimmer Group can make possible!
SYSTEM TECHNOLOGY
AUTOMOTIVE INDUSTRY

Our system solutions have been used by all major automobile manufacturers for decades. First and foremost, our portfolio includes gripping and handling solutions for all areas of the power train, for example, camshafts and crankshafts, cylinder blocks and heads, gear and chassis parts, as well as tires, wheels and rims. Zimmer Group’s System Technology also offers solutions for the production of electric vehicles, such as handling and assembly tasks for the fully-automatic production of battery cells and battery packs.

SYSTEM TECHNOLOGY
CONSUMER GOODS INDUSTRY

The production of consumer goods in areas with high wages can only be made profitable with a high degree of automation. Here, Zimmer Group’s system solutions provide a crucial contribution to efficient production. Whether in the drink and food industry or the medical and pharmaceutical industry, whether during packaging, palletizing or filling, you can package coffee capsules, handle yogurt cups or palletize chocolate cartons, for example, in cycles that last mere seconds on our hygienic, high-speed systems.

SYSTEM TECHNOLOGY
ELECTRONICS INDUSTRY

The electronics industry is characterized by the highest degree of cost pressure and very short product life cycles. The fastest cycle times and production facilities with the highest availability are understandably necessary here, and are the key to commercial success. Whether in the production of cell phones, the installation of power electronics, the electrification of drive trains or in custom device construction, the Zimmer Group supports you with competent engineering and state-of-the-art production.
The tooling machine trend is also going in the direction of increasing automation. We offer you space-saving automation solutions on robots, machines or directly in the work area. Featuring, of course, components that are perfectly sealed against chips and cooling lubricants. You receive automation solutions from Zimmer Group that integrate seamlessly into your existing machines and systems and deliver strong performance – even under difficult working conditions.

The plastics industry is shaped by short product life cycles. Tool-specific components must therefore pay themselves off within the shortest amount of time, or be able to be used for the next model line. To that end, we supply you with components like removal grippers, insertion grippers, external feeders and separators that are used on injection molding machines and thermoforming machines. In so doing, we also integrate additional functions into our solutions, such as lettering, test steps or packaging operations.

The components used in foundries are governed by stringent requirements. They must withstand high temperatures, abrasive dust, aggressive media and loads caused by machining operations. The Zimmer Group has extensive experience in these areas. From handling filigree sand cores to sampling from the glowing blast furnace, our systems deliver maximum performance and master all challenges in automated processes in the foundry and forging industry.
GETTING IT RIGHT FROM START TO FINISH: STRIVE TO BE MUCH MORE THAN JUST A MANUFACTURER OF PRODUCTS. INSTEAD, WE WANT TO ACCOMPANY YOU THROUGH THE ENTIRE PRODUCT LIFECYCLE, FROM START TO FINISH. THIS STARTS WITH EXTENSIVE CONSULTATION ON THE SELECTION OF A NEW PRODUCT, CONTINUES WITH UPKEEP AND MAINTENANCE AND INCLUDES A HOTLINE AND REPAIR OR REPLACEMENT. OUR TEAM NEVER STOPS IMPROVING HOW WE DELIVER OUR SERVICE AND THEY CONTINUALLY SEEK NEW WAYS TO OPTIMIZE SERVICE THROUGH OUR SUBSIDIARIES IN THE AGE OF GLOBALIZATION.

SERVICE ON-SITE
At your request, our experienced service personnel are happy to visit you on-site to carry out service operations or offer professional consultation.

SERVICE AGREEMENTS
You are looking for security and support in the lifecycle process to ensure your ability to make long-term plans for your products and production capabilities. We are offering the corresponding service agreements to guarantee that you are not left without support in the event of damage or defects.

SPARE PARTS SERVICE
Manufacturer quality at fair prices, discussed and delivered with the appropriate level of skill. That is what we are offering. We know about the life time of machines and, as a rule, take this into account by offering much longer periods of spare part availability than are legally required.

HOTLINE
Not every concern requires an immediate repair or replacement. Our highly qualified employees are available to you by telephone to provide guidance and resources.

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THE KNOW-HOW FACTORY