

THE KNOW-HOW FACTORY



THE KNOW-HOW FACTORY

ZIMMER GROUP **COMMITTED TO OUR CUSTOMERS**

WE HAVE SUCCEEDED FOR YEARS BY OFFERING OUR CUSTOMERS INNOVATIVE AND INDIVIDUALIZED SOLUTIONS. ZIMMER HAS BEEN GROWING CONTINUOUSLY AND HAS RECENTLY 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 areas of technology. This applies not just to development but also 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. Even our decision to identify ourselves as Zimmer Group reflects this reality. With Zimmer Group, our customers now have a single, centralized contact for all of their needs. We approach each customer's situation with a high level of expertise and a broad range of possible solutions.



Ammer-group.com **PRODUCT ADVANTAGES** Adjustable gripping force If the gripping forces are too high, this can damage your tools! You can optimally adjust the gripping force to your workpiece by means of the integrated rotary switch or over the control system via IO-Link. The grippers are equipped with a mechanical self-locking mechanism to prevent the loss of the workpiece in the event of power failure. Simple activation It is your choice whether you want to control the gripper by means of I/O ports - like a valve - or if you prefer the version with IO-Link. Both have one thing in common: they are easy to integrate into your control system.

THE COMPACT ELECTRIC **GEP2000 SERIES**



GEP2000 WITH IO-LINK: FUTURE-PROOF INTELLIGENCE

In the IO-Link version, the gripper offers all the system-specific advantages of IO-Link. After connecting a single cable, which is used to supply power and transmit control and status data, the gripper can exchange data and signals with the higher-level control system. Parameters such as gripping force and gripping speed are defined centrally. Part detection is also possible in a range of +/- 0.05 mm for a tolerance range that can be taught to any value. IO-Link, however, opens up new horizons for expanded diagnostic functions and predictive maintenance.



DIGITAL I/O: AS SIMPLE AS A PNEUMATIC VALVE

In the I/O version, the grippers operate as simply as a conventional pneumatic valve. The gripper opens when it receives a control signal, and the jaws are closed when it receives another one. No movement occurs without a signal. If you need to query the gripper position, this can be done using magnetic field sensors, for which two grooves are already provided in the gripper. We have developed a comfortable solution for how to adjust the maximum gripping force: It can be adjusted directly on the gripper using a rotary switch in four stages. Quick and easy.



DIGITAL I/O WITH ANALOG OUTPUT: ACCURATELY RECORD THE JAW POSITION

For applications where you need more precise information about the position of the gripper jaws, Zimmer Group offers a digital I/O version with analog sensing. An analog sensor, which outputs a voltage of between 0 and 10 volts depending on the jaw position, is already integrated into the grippers. This voltage can be evaluated using an analog card in the higher-level control system, making it possible to detect workpieces with high precision.

YOUR BENEFITS IN DETAIL

GEP2010 INSTALLATION SIZE

	► Technical data					
Order No.	GEP2010IL-00-A	GEP2010IO-00-A	GEP2010IO-05-A			
Control	⊘ IO -Link	I/O	I/O			
Integrated position sensing	Using process data	No	analog 0 to 10 V			
Stroke per gripper jaw [mm]	10	10	10			
Weight [kg]	0.31	0.31	0.31			
Max./min. gripping force [N]	50/200	50/200	50/200			

GEP2013 INSTALLATION SIZE

	Technical data		
Order No.	GEP2013IL-00-A	GEP2013IO-00-A	GEP2013IO-05-A
Control	⊘ IO -Link	I/O	I/O
Integrated position sensing	Using process data	No	analog 0 to 10 V
Stroke per gripper jaw [mm]	13	13	13
Weight [kg]	0.54	0.54	0.54
Max./min. gripping force [N]	90/360	90/360	90/360

GEP2016 INSTALLATION SIZE

	Technical data	► Technical data						
Order No.	GEP2016IL-00-A	GEP2016IO-00-A	GEP2016IO-05-A					
Control	⊘ IO -Link	I/O	I/O					
Integrated position sensing	Using process data	No	analog 0 to 10 V					
Stroke per gripper jaw [mm]	16	16	16					
Weight [kg]	0.9	0.9	0.9					
Max./min. gripping force [N]	125/500	125/500	125/500					

THE COMPACT ELECTRIC **GEP2000 SERIES**

NEW ELECTRIC ASSEMBLY GRIPPERS

The new, electric grippers from the GEP2000 series round out our current gripper portfolio. In addition, the single-cable solution reduces installation work to a minimum. Due to their small design, they are intended primarily for assembly tasks and for handling small parts. Grippers in this series, which were launched with three models at Motek 2017, offer adjustable gripping forces between 50 N and 500 N and jaw strokes of between 10 mm and

16 mm to handle these tasks. The grippers, which have a mechanical self-locking mechanism to prevent the loss of the workpiece in the event of power failure, are equipped with an integrated control system and are available in three control versions. With IO-Link, with digital I/O and with digital I/O in conjunction with an analog output for sensing the jaw positions.

MECHANICS WITH UNBEATABLE ROBUSTNESS

In addition, the GEP2000 series features cutting edge mechanics. The grippers are extremely robust and reliable because their housing is made of hard anodized aluminum, and the developers have designed the grippers with a flat guide, which has been tried and tested for decades. This means that the grippers can handle all tasks involving the assembly and handling of small parts, and they can handle 10 million cycles without maintenance. The grippers are sealed in accordance with IP40, and their high replacement accuracy allows for rapid replacements at any time without any significant production interruption. They can

be mounted on three sides, which offers the advantage that the gripper can be rotated to face the desired cable outlet, thus minimizing interference contours. The grippers in the GEP2000 series are powered by 24 V DC, and the gripper jaws are able to operate with a current draw of less than 500 mA. The current draw only increases to 2 A for a few milliseconds at the moment of start-up, when the mechanical self-locking mechanism is released and the motor must be brought up to speed. This is a current that all conventional IO-Link masters can supply.



5000 PRODUCT RANGE GENERAL INFORMATION

THE BEST OF BOTH WORLDS

The various drive options, outstanding performance data, comprehensive standard equipment and the integration compatibility with other products on the market ensure that the components from the 5000 product range are the ideal solution for any application, no matter the level of sophistication.

The entire range of this interchangeability is reflected in the option to both perform an upgrade from a pneumatic version to an electric and the option to carry out a 1:1 replacement of grippers from other manufacturers. The drilling patterns are designed to ensure that this can be achieved without any issues. Thus, users who are ready to exchange their grippers can easily upgrade to the new top-of-the-line Zimmer Group products and take advantage of the outstanding features of premium grippers.

Zimmer Group uses the user-friendly IO-Link communication system to connect the electric or hybrid variants to the central machine control system. The device setting data can either be entered here directly or taught. It can be stored centrally and transmitted to other grippers without any issues. When replacing a gripper, its setting data can be transmitted to the new gripper quickly and without errors to ensure the maximum possible machine availability. In addition, IO-Link offers numerous options for extended diagnostics and preventive maintenance so that grippers and other components can be replaced or maintenance can be carried out as soon as signs of wear are noticed - long before a failure occurs.









5000 PRODUCT RANGE GPP/GPD5000 SERIES



UNIVERSAL, POWERFUL, DURABLE

The grippers were designed for true universal use and offer an array of features that are unique on the market in this form and composition. They are fast, boast high gripping forces and long finger lengths, are corrosion-protected and the standard version has IP64 sealing, providing a maximum of 30 million cycles.

Despite their excellent performance data and a wealth of product features, the bottom line is that the premium grippers still offer an outstanding price/performance ratio. As a result, they are a highly attractive alternative to other products on the market, even from an economic perspective.

GPP/GPD5000 SERIES

	Technical data	
Order No.	GPP5000 series	GPD5000 series
Number of installation sizes	11	11
Stroke per gripper jaw [mm]	2.5 - 45	2.5 - 45
Min./max. gripping force [N]	140/26950	310/72500
Max. length of gripper fingers [mm]	60 - 400	60 - 250
Operating temperature [°C]	-10 to +130	-10 to +130
Protect. class per IEC 60529	IP64 / IP67	IP64 / IP67
Weight [kg]	0.08 - 50	0.14 - 99.9



5000 PRODUCT RANGE GPW5000 SERIES



ANGULAR GRIPPER FOR THE MOST DIFFICULT REQUIREMENTS

The grippers from the GPW5000 series offer kinematics that are robust enough to manage 30 million cycles without maintenance. The central joint was dimensioned to be just as sturdy as the jaw linkages.

The angular grippers are suited for practically any application, but their high force makes them perfect for gripping shafts. For these tasks, a shaft support with two prisms can be attached, ensuring that even heavy workpieces can be handled with complete safety and pressed solidly into the support during gripping.

GPW5000 SERIES

	► Technical data*						
Order No.	GPW5008NC-00-A	GPW5008NC-20-A	GPW5013NC-00-A	GPW5013NC-20-A	GPW5025NC-00-A	GPW5025NC-20-A	
Stroke per gripper jaw [°]	+15/-2	+15/-2	+15/-2	+15/-2	+15/-2	+15/-2	
Max. gripping force during closing (at 0°) [Nm]	1450	1450	4200	4200	14500	14500	
Max. length of gripper fingers [mm]	115	115	185	185	265	265	
Operating temperature [°C]	-10 to +90	-10 to +130	-10 to +90	-10 to +130	-10 to +90	-10 to +130	
Protect. class per IEC 60529	IP64	IP64	IP64	IP64	IP64	IP64	
Weight [kg]	0.9	0.9	3	3	12.1	12.1	



5000 PRODUCT RANGE GPP/GPD5000IL SERIES





THE BEST OF BOTH WORLDS

The new 5000 premium gripper series has been expanded through the addition of a pneumatic-electric hybrid gripper. This new variant keeps the pneumatic-electric option open for the 5000 gripper series. It is the ideal solution for users who want to leap into the world of Industrie 4.0 gripping while still incorporating a highly reliable pneumatic drive unit into their processes.

The IL variant is equipped with an integrated pneumatic valve, which is controlled via IO-Link. Since there is no longer a fixed hose connection between the valve and piston that needs to be filled or emptied for each cycle, the grippers' reaction time is greatly reduced. This means that they are substantially faster than other pneumatic grippers and, as such, more than live up to their standard as the premier grippers on the market today.

Hybrid grippers help you save in three ways. Firstly, they feature a simple connection concept with an air hose and connection cable. This eliminates the need to use the valve terminal that is typically required. Secondly, they are substantially more energy efficient than all other conventional grippers thanks to an integrated valve and a state-of-the-art integrated control system. The third aspect is significant savings thanks to cost-efficient predictive maintenance, therefore leading to enhanced cost efficiency and production availability.

YOUR BENEFITS IN DETAIL

GPP5000IL SERIES

	► Technical data*						
Order No.	GPP5006N-IL-10-A	GPP5006NC-IL-10-A	GPP5006NO-IL-10-A	GPP5006S-IL-10-A	GPP5006SC-IL-10-A	GPP5006SO-IL-10-A	
Stroke per gripper jaw [mm]	6	6	6	3	3	3	
Closing/opening grip force [N]	330/360	455/-	- /485	740/800	1020/-	- /1080	
Protect. class per IEC 60529	IP64	IP64	IP64	IP64	IP64	IP64	
Weight [kg]							
Order No.	GPP5008N-IL-10-A	GPP5008NC-IL-10-A	GPP5008NO-IL-10-A	GPP5008S-IL-10-A	GPP5008SC-IL-10-A	GPP5008SO-IL-10-A	
Stroke per gripper jaw [mm]	8	8	8	4	4	4	
Closing/opening grip force [N]	520/560	710/—	- /750	1150/1240	1580/-	- /1670	
Protect. class per IEC 60529	IP64	IP64	IP64	IP64	IP64	IP64	
Weight [kg]							
Order No.	GPP5010N-IL-10-A	GPP5010NC-IL-10-A	GPP5010NO-IL-10-A	GPP5010S-IL-10-A	GPP5010SC-IL-10-A	GPP5010SO-IL-10-A	
Stroke per gripper jaw [mm]	10	10	10	5	5	5	
Closing/opening grip force [N]	885/945	1260/-	- /1320	1940/2080	2750/-	-/2890	
Protect. class per IEC 60529	IP64	IP64	IP64	IP64	IP64	IP64	
Weight [kg]							

GPD5000IL SERIES

	Technical da	► Technical data*						
Order No.	GPD5006N-IL-10-A	GPD5006NC-IL-10-A	GPD5006NO-IL-10-A	GPD5006S-IL-10-A	GPD5006SC-IL-10-A	GPD5006SO-IL-10-A		
Stroke per gripper jaw [mm]	6	6	6	3	3	3		
Closing/opening grip force [N]	740/800	1020/-	- /1080	1620/1750	2240/-	-/2370		
Protect. class per IEC 60529	IP64	IP64	IP64	IP64	IP64	IP64		
Weight [kg]	0.48	0.58	0.58	0.48	0.58	0.58		
Order No.	GPD5008N-IL-10-A	GPD5008NC-IL-10-A	GPD5008NO-IL-10-A	GPD5008S-IL-10-A	GPD5008SC-IL-10-A	GPD5008SO-IL-10-A		
Stroke per gripper jaw [mm]	8	8	8	4	4	4		
Closing/opening grip force [N]	1260/1340	1690/—	- /1770	2780/2960	3730/-	-/3910		
Protect. class per IEC 60529	IP64	IP64	IP64	IP64	IP64	IP64		
Weight [kg]	0.83	1	1	0.83	1	1		
Order No.	GPD5010N-IL-10-A	GPD5010NC-IL-10-A	GPD5010NO-IL-10-A	GPD5010S-IL-10-A	GPD5010SC-IL-10-A	GPD5010SO-IL-10-A		
Stroke per gripper jaw [mm]	10	10	10	5	5	5		
Closing/opening grip force [N]	2290/2400	3140/-	-/3250	5050/5280	6930/-	- /7160		
Protect. class per IEC 60529	IP64	IP64	IP64	IP64	IP64	IP64		
Weight [kg]	1.45	1.9	1.9	1.45	1.9	1.9		

^{*} All values measured at 6 bar

5000 PRODUCT RANGE GPP/GPD5000IL SERIES

GUIDE QUALITIES

The grippers from the 5000 series are equipped with an extremely durable, coated steel-in-steel profile groove guide, which is the reason for their practically unbeatable durability and high gripping forces. These steel-steel-profile groove guides continually demonstrate that they are extremely robust and hold their own when compared to any competing product, even those that feature

gripper jaws operating in aluminum guides. Essentially, there is no need to discuss the advantages of pure steel guides because throughout industry and in mechanical engineering, steel-steel guides are the absolute, unbeatable standard. This has been demonstrated for hundreds of years.

IO-LINK INSIDE

Zimmer Group uses the user-friendly IO-Link communication system to connect the electric variants to the central machine control system. The device setting data can either be entered here directly or taught.

It can be stored centrally and transferred to other grippers without any issues. When replacing a gripper, its setting data can be transmitted to the new gripper quickly and without errors to ensure the maximum possible machine availability.



5000 PRODUCT RANGE GEP/GED5000 SERIES



POSITIONING ACCURACY

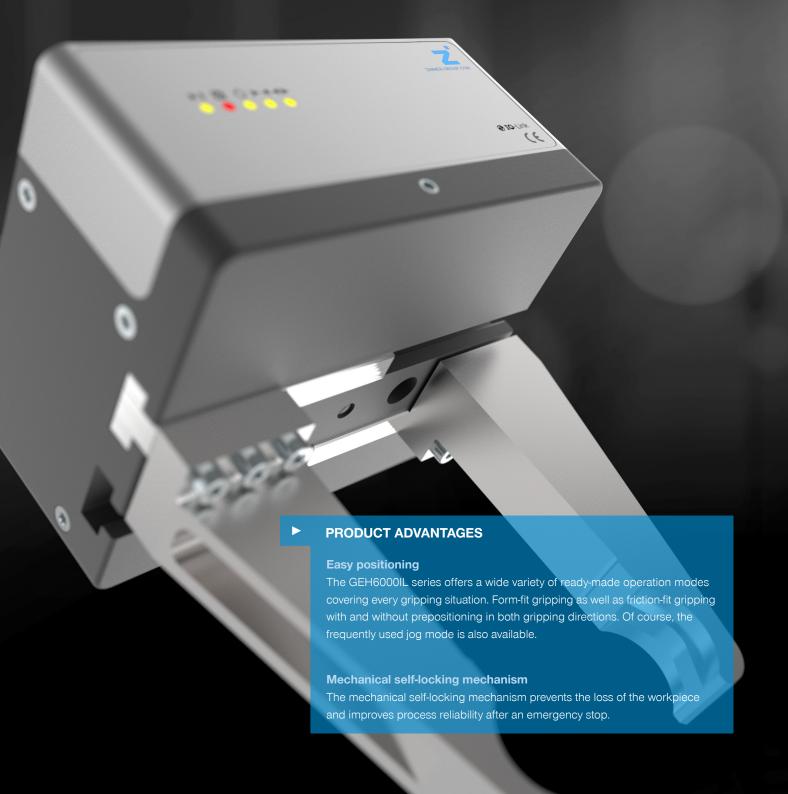
The electric grippers from the 5000 series have the same outstanding mechanical capabilities as their pneumatic counterparts. The gripping forces and opening/closing times for the two versions are almost identical. In addition to a control system, a Hall sensor for determining the absolute jaw position is also integrated in the electric version. The control system makes it possible to teach the gripper directly or to adjust its gripping force on the housing using a small control panel.

GEP5000 SERIES

	Technical data						
Order No.	GEP5006IO-00-A	GEP5006IL-00-A	GEP5008IO-00-A	GEP5008IL-00-A	GEP5010IO-00-A	GEP5010IL-00-A	
Control	I/O	⊘ IO -Link	I/O	⊘ IO -Link	I/O	⊘ IO -Link	
Stroke per gripper jaw [mm]	6	6	8	8	10	10	
Closing/opening grip force [N]	540/960	540/960	800/1450	800/1450	1200/1900	1200/1900	
Protect. class per IEC 60529	IP64	IP64	IP64	IP64	IP64	IP64	
Weight [kg]	0.79	0.79	1.16	1.16	1.66	1.66	

GED5000 SERIES

	► Technical data						
Order No.	GED5006IO-00-A	GED5006IL-00-A	GED5008IO-00-A	GED5008IL-00-A	GED5010IO-00-A	GED5010IL-00-A	
Control	1/0	O IO-Link	I/O	O IO-Link	I/O	⊘ IO -Link	
Stroke per gripper jaw [mm]	6	6	8	8	10	10	
Closing/opening grip force [N]	540/960	540/960	800/1450	800/1450	1200/1900	1200/1900	
Protect. class per IEC 60529	IP64	IP64	IP64	IP64	IP64	IP64	
Weight [kg]	1.09	1.09	1.66	1.66	2.33	2.33	



COMPACT AND FUTURE-PROOF **GEH6000IL SERIES**



EASY TO INTEGRATE

The GEH6000IL is equipped with an integrated control system and therefore no longer requires an external controller, eliminating expensive special cables between the controller and the gripper. In addition, it is equipped with a brushless, electronically commutated DC motor, which is virtually unaffected by wear and thus offers excellent operating safety. Owing to a modified construction of the gripping technology, the full gripping force is available at all times in force mode.

EASY TO USE

IO-Link offers outstanding advantages in that it can be used to connect intelligent sensors and actuators to any higher-level control system regardless of the previously selected architecture of the fieldbus and control system. For the grippers of the GEH6000IL series, this means that it is possible to adjust the gripping force or the gripping speed using the central control system. It is also possible to select 32 pre-programmed application data records, or to alter and store them based on the respective application. Current and future demands for a flexible and compact gripper that is easy to integrate are now fulfilled.

YOUR BENEFITS IN DETAIL

GEH6000IL SERIES

	Technical data	*		
Order No.	GEH6040IL-03-B	GEH6060IL-03-B	GEH6140IL-03-B	GEH6180IL-03-B
Control	♦ IO -Link	② IO -Link	♦ IO -Link	② IO -Link
Stroke per gripper jaw (adjustable)	40	60	40	80
Min. gripping force [Nm]	100	100	150	150
Max. gripping force [Nm]	1250	1250	2400	2400
Max. length of gripper fingers [mm]	100	100	160	160
Operating temperature [°C]	+5 to +50	+5 to +50	+5 to +50	+5 to +50
Protect. class per IEC 60529	IP54	IP54	IP54	IP54
Weight [kg]	0.7	0.9	1.9	2.6

COMPACT AND FUTURE-PROOF GEH6000IL SERIES

OPERATION MODES WITH ADJUSTABLE COMPLEXITY

In addition to the obvious advantages of the integrated controller and the simple activation via IO-Link, the Zimmer Group developers have listened carefully to customers and integrated simple user profiles into the GEH6000IL series. The GEH6000IL series offers a wide variety of ready-made operation modes covering every gripping situation: Form-fit gripping as well as friction-fit gripping

with and without prepositioning in both gripping directions. Of course, the frequently used jog mode is also available. The integrated controller of the GEH6000IL series has a series of settings stored for every operation mode, simplifying the use of the gripper in practice.

OUTSTANDING VALUES

The GEH6000IL gripper series convinces – thanks to its high power density. For example, the GEH6040IL weighs only 760 g and offers a gripping force of up to 1250 N. All this in combination with the integrated controller, the user-friendliness of the activation via IO-Link and the high movement speed of up to 60 mm/s make this series a price/performance winner in its class.



HMI

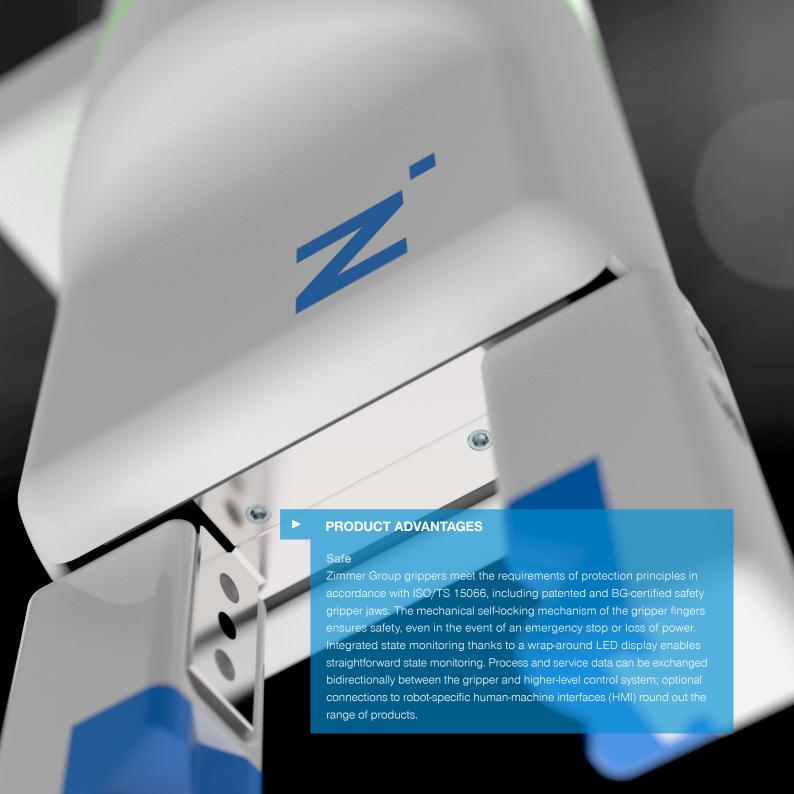
HUMAN MACHINE INTERFACE

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. Use of this solution is being expanded to other manufacturers 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 use all pneumatic, electric, hybrid, servoelectric and digital components on the robots.





HRC HUMAN-ROBOT COLLABORATION

HUMAN, ROBOT!

Human-robot collaboration opens up new possibilities for efficient, flexible and optimized production. Conflicting market requirements have to be taken into account such as increased depth of customization amid shortening product lifecycles. Cooperation and collaboration between humans and robots can create far-reaching potential under these circumstances. Both resources are making optimal use of their unique possibilities, creating new jobs for the future as a result. Zimmer Group grippers form the link between the workpiece and the robot here.







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 AMID THIS NEW DIVERSITY.

IT COMBINES THE COMPANIES ZIMMER GMBH, ZIMMER KUNSTSTOFFTECHNIK, ZIMMER DAEMPFUNGSSYSTEME
AS WELL AS BENZ WERKZEUGSYSTEME INTO ONE PARTNER FOR YOUR PROJECT: 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.

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