

Handling
Technology

Handling Technology construction kit
for Universal Robots

THE KNOW-HOW FACTORY

HUMAN-ROBOT COLLABORATION

EASY TO INTEGRATE – EASY TO HANDLE

What is human-robot collaboration?

Do you still use your Finnish cell phone from ten years ago? – No? Exactly - Our life changes, our demands change, our world changes. The demographic development in industrial countries will lead to comprehensive changes in the working world in coming years. In the future, people will collaborate more and more with robots or have their work supported by robots. Making this vision of a collaborating working world a reality not only requires a new type of reliable robot with overload limiters, comprehensive sensors and quickly reacting control systems. It is also necessary for the tool at the end of the robot to meet extensive requirements in relation to work safety, working environment, the use of operating equipment, certification and acceptance, etc. The guidelines regarding the safety requirements for industrial robots, ISO 10218, and their technical specification, ISO/TS 15066, currently describe the types of collaboration. Even though these regulations are currently valid, they are being revisited by both DIN and CEN in the context of collaborative use of robots. That's why a product developed for this purpose should go beyond the current requirements. The HRC gripper series from Zimmer Group have been designed in accordance with BG/DGUV recommendations.

HRC from the experts

As a pioneer and one of the world's leading manufacturers of HRC components, the Zimmer Group is making special developments for this work environment to reduce the physical load on workers, reduce monotonous work steps to prevent accidents and increase the efficiency of work steps through the collaboration of the best from both worlds: man and machine.

Easy to integrate

Not only is one of the world's best HRC grippers available for your Universal Robots, but also a modular construction system specially matched to your model. This provides a broad selection of grippers and handling components with corresponding accessories, so that you don't have to worry about compatibility and integration. Of course, in this robot tool building kit are the HRC and Industrie 4.0 components included. This will open up numerous advantages: Easy to install, easy to configure, easy to operate, advanced diagnostics and preventive maintenance as well as the ability to make replacements while operation is in progress.

Easy to handle

The components are operated either using the central control system or, as is the case for most components, using the integrated control panel or via an app. The app offers users maximum flexibility when creating, storing and restoring device parameters and also provides assistance during diagnostics/preventive maintenance. Furthermore, the HRC grippers and GEH6000IL gripper series offer the user practical, pre-programmed movement profiles, which can be adjusted to the individual requirements of the gripping application with just a few mouse clicks. This ensures that complete implementation and commissioning are possible for any user within just a few minutes.

HMI

INDUSTRIE 4.0 COMPONENTS

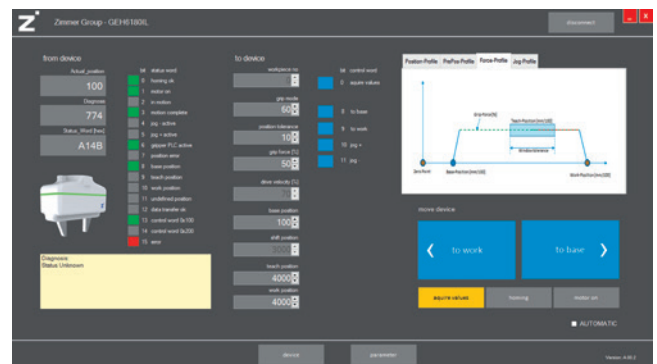
► Simple operation

Operating Industrie 4.0 components from the Zimmer Group is just as easy and flexible as the installation. What originally applied primarily for industrial control systems is now also available for robots. In doing so, operation is integrated completely into the robot control system. As a result, the Zimmer Group components can now be configured manually using the robot control panel directly and integrated into the robot program sequence. An external PLC control system is not required to do this. The Universal Robot specialists oriented themselves toward the already known Zimmer HMI to create a uniform, intuitive user interface for the user. The user can control the complete IO-Link gripper portfolio from the Zimmer Group using this tailor-made complete system and can use pneumatic, electrical, servo-electric as well as digital Zimmer Group components with the innovative UR-Robots.



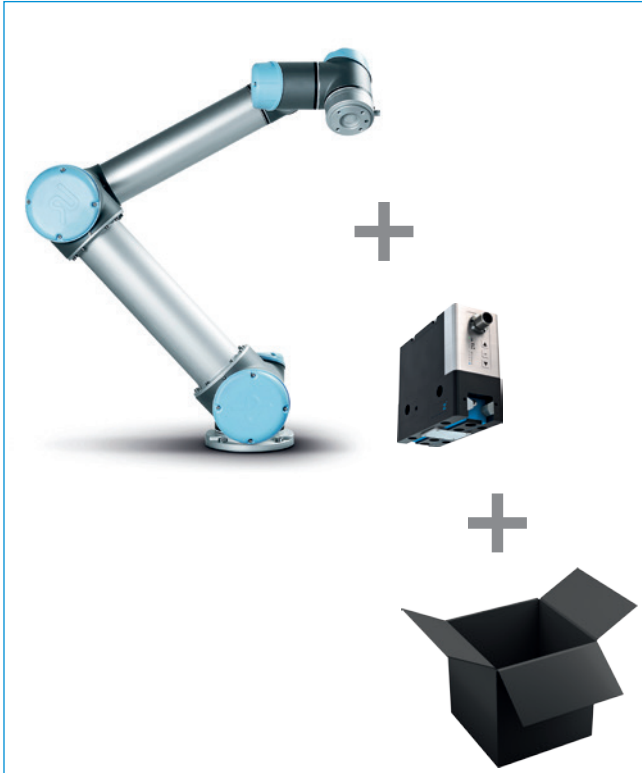
► Because simple is simply better

This integration makes it possible for the user to enable maximum levels of flexibility and straightforward adaptation, storage and restoring device parameters during the creation of new application-specific profiles. Furthermore, Zimmer HMI supports condition monitoring or predictive maintenance of the components. This makes it possible for any user to implement and commission the Zimmer Group components within a few minutes. This simplifies the interaction of robots and handling components considerably.



HMI CONFIGURATION OPTION PACKAGE

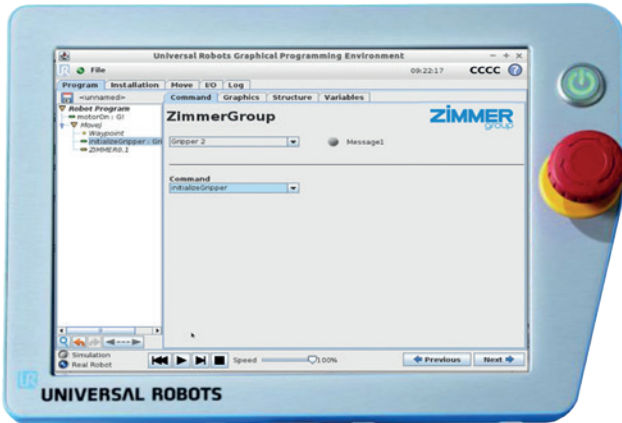
EASY TO INTEGRATE – EASY TO USE



ZIMMER READY TO USE PACKAGE

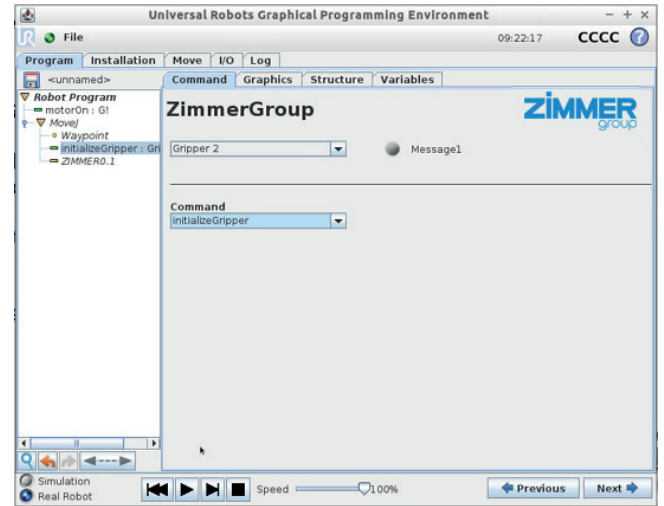
► Maximum performance included

The combination of Zimmer Group components, the Zimmer Ready to use package and UR robots ensures the easiest integration as well as intuitive operation.



MAINPAGE

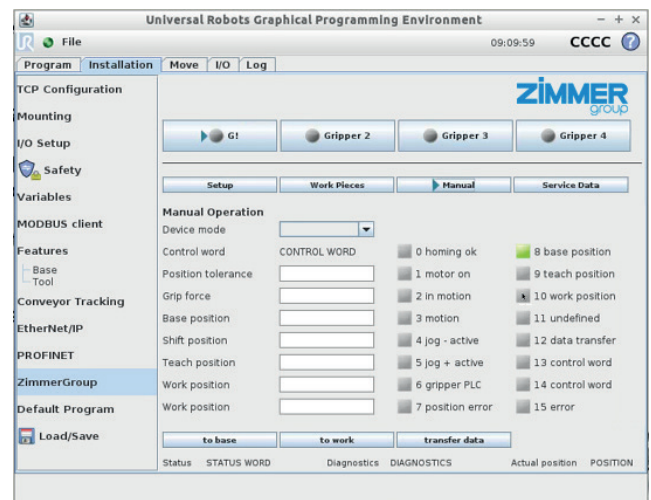
- Start page to select the configuration and HMI



CONFIGURATION

- Graphic component selection

Simple assignment of Zimmer Group grippers to the robot

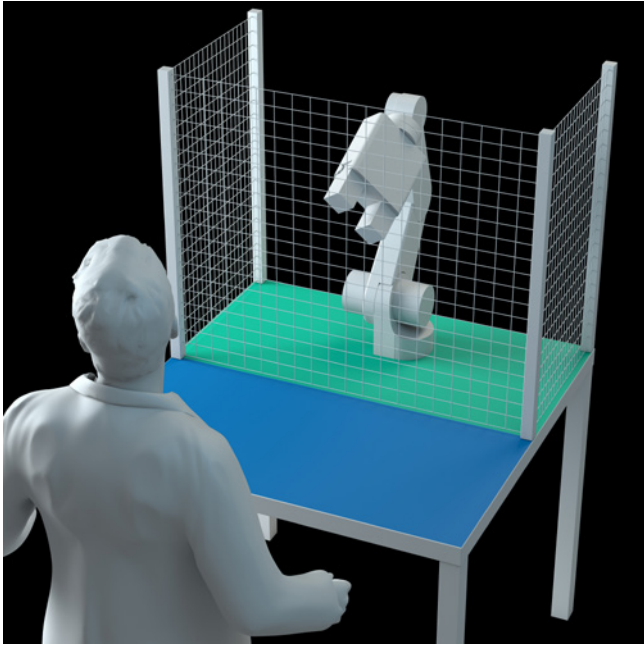


HUMAN - ROBOT

DIFFERENT FORMS OF INTERACTION

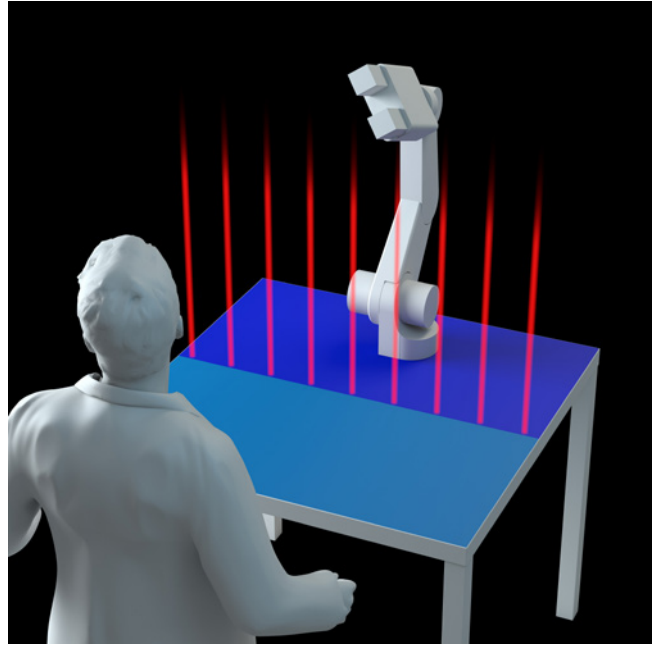
CONVENTIONAL COMPONENTS

► AUTOMATION CELL



► SEPARATED WORKING AREAS

► COEXISTING



► ROBOT RECOGNIZES WORKER

WORK PIECE RECEPTION IN THE SECURED AREA

ALL GRIPPING SYSTEMS USEABLE

ALL GRIPPING SYSTEMS USEABLE

SEPARATED WORKING AREAS

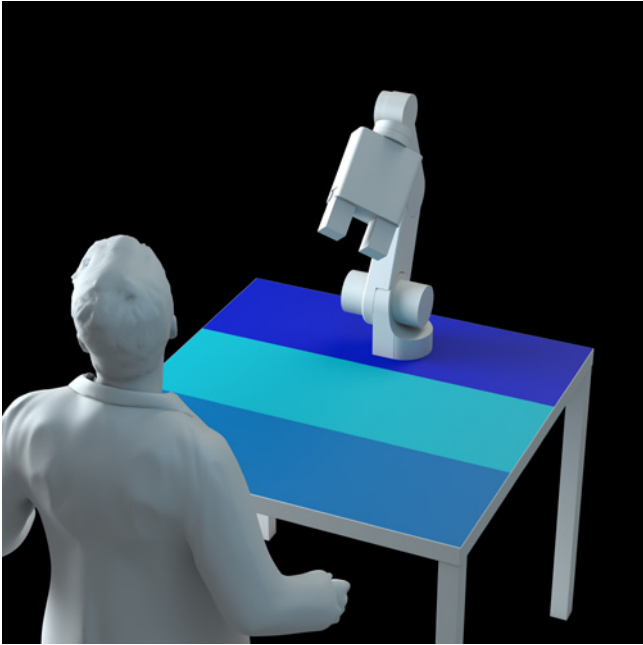
DECODED WORK

NO TOUCHING NEEDED

MAX. SPEED

HRC - COMPONENTS

► COOPERATION

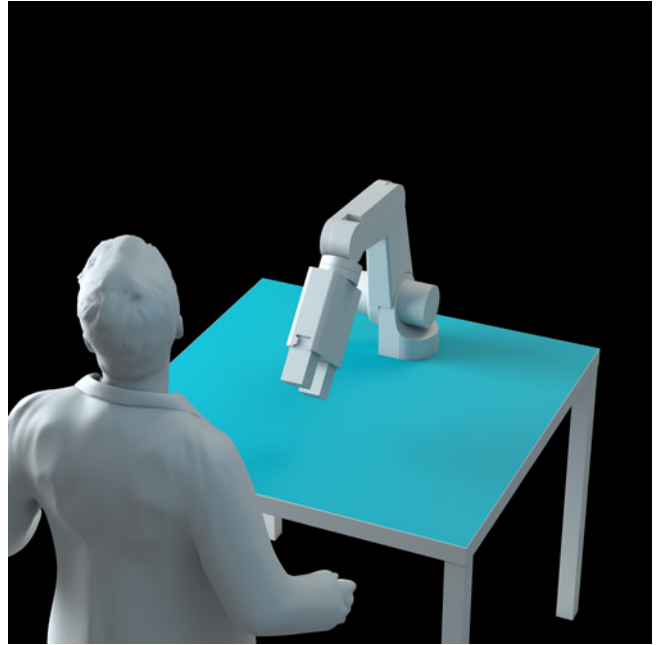


► INTERFERENCE ZONES

GRIPPERS WITH SPECIAL MRK GEOMETRY

- Safe holding of the workpiece also at Power failure

► COLLABORATION



► SAME WORKING AREAS

RECORDING IN THE SECURED AREA

GRIPPERS WITH SPECIAL HRC GEOMETRY + SAFE CAPACITY

- Safe holding of the workpiece also at Power failure
- Control limited to max. 140N according to ISO TS15066, redundant protection via patented safety jaws

SAME WORKING AREAS

COUPLED WORK

TOUCHING NEEDED

REDUCED SPEED

ROBOTS

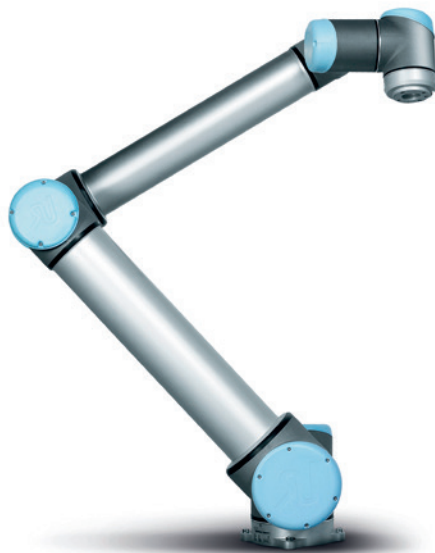
UNIVERSAL ROBOT



► UR3



► UR5



► UR10



UR3 = ZUB000009
UR5 = ZUB000010
UR10 = ZUB000011



Universal Robots



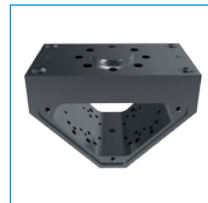
Tool Changer
HWR2050



Energy Elements



Adapter Plate



Angle Flange



Adapter Plate



Adapter Plates



MCS

HRC COMPONENTS

CONVENTIONAL COMPONENTS



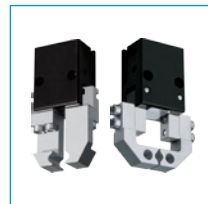
IO-Link
Series GEH6060IL-02



IO-Link
Series GPP5000
Series GPD5000
Series GEP5000
Series GED5000



Series GPP1000



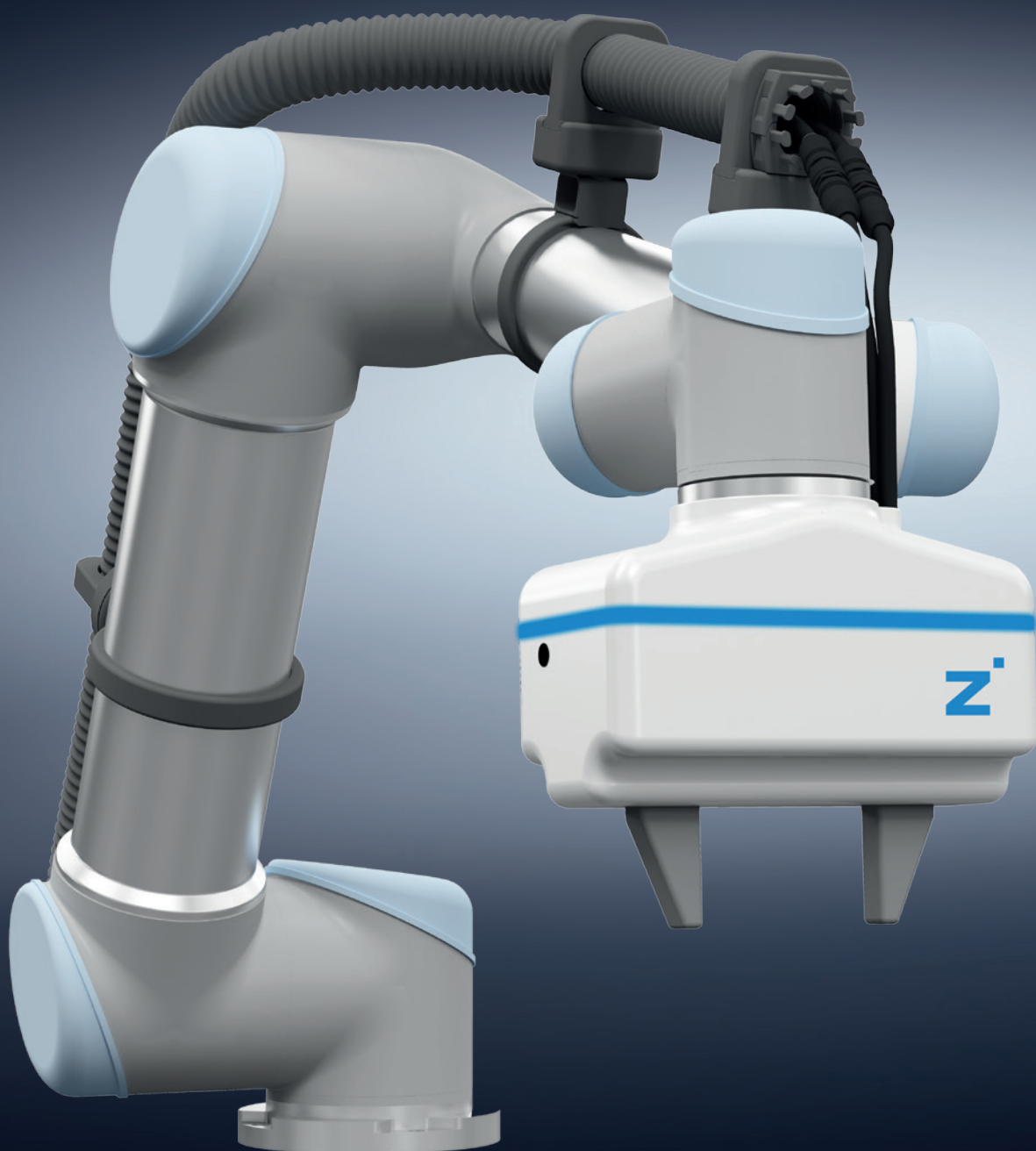
Series MGP800
Series MGW800



Series GH6000
Series GZ1000
Series ZK1000
Series LG1000
Series HM1000
Series SO-431
Suction Cups



IO-Link
Series GEH6000IL



HRC GRIPPERS

UNIVERSAL ROBOTS

▶ PRODUCT ADVANTAGES



IO-Link

“Gripper by the HRC experts”

- ▶ One of the first human-robot collaboration grippers worldwide
- ▶ Bruise protection by safety jaws with mechanical gripping force limitation
- ▶ Engineered according to BG/DGUV recommendation
- ▶ Safety Torque Off on Board (STO)
- ▶ Fulfills the safety principles according to ISO/TS 15066***
- ▶ 360° LED status indicator
- ▶ 5 million maintenance-free cycles
- ▶ Integrated sensing via IO-Link
- ▶ Self locking mechanism

▶ TECHNICAL DATA

	COLLABORATIVE			COOPERATIVE	
suitable for	▶ UR3	▶ UR5	▶ UR10	▶ UR5	▶ UR10
Order no.	-	GEH6060IL-02-A-02	GEH6060IL-02-A-03	GEH6060IL-02-A-05	GEH6060IL-02-A-06
Integrated safety jaws	-	Yes	Yes	No	No
Drive	-	BLDC motor	BLDC motor	BLDC motor	BLDC motor
Stroke per jaw, adjustable [mm]	-	60	60	60	60
Nominal gripping force [N]*	-	120	120	750	750
Gripping force min. [N]	-	45	45	45	45
Gripping force max. [N]	-	<140**	<140**	950	950
Self limitation	-	mechanical	mechanical	mechanical	mechanical
Permissible weight per jaw max [kg]	-	0.3	0.3	0.25	0.25
Length of the gripper fingers max. [mm]	-	42,5	42,5	80	80
Max. movement speed per gripper finger [mm/s]	-	60	60	60	60
Repetition accuracy +/- [mm]	-	0.05	0.05	0.05	0.05
Operating temperature min. [°C]	-	+5	+5	+5	+5
Operating temperature max. [°C]	-	+50	+50	+50	+50
Protection to IEC 60529	-	IP40	IP40	IP40	IP40
Weight [kg]	-	1.7	1.7	1.6	1.6

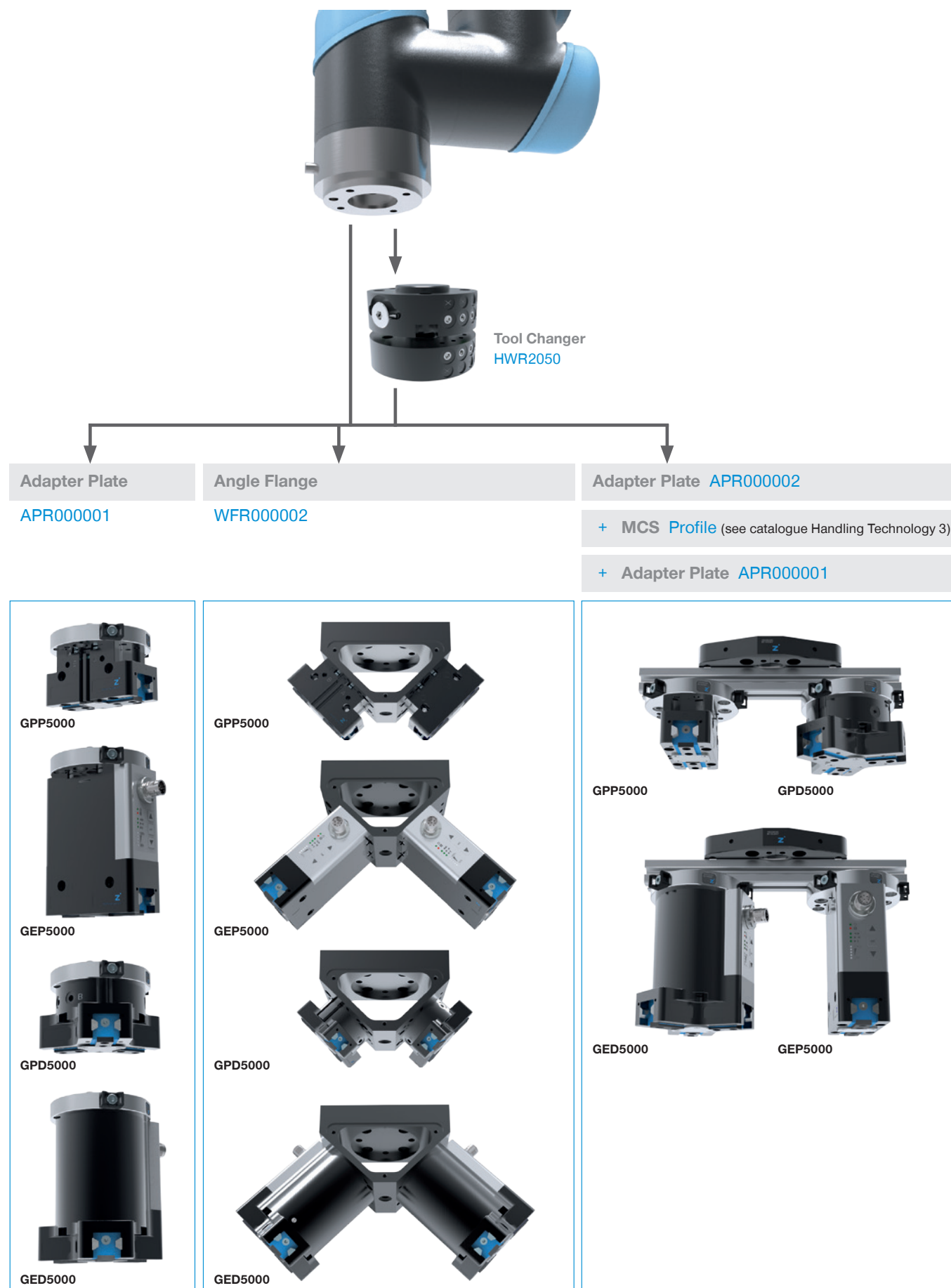
* depending on the selected motion profile, gripping position and rigidity of the gripping jaws respectively gripping goods

** safety jaws for mechanical gripping force limitation

*** only valid for models with integrated safety jaws

ROBOT TOOL BUILDING KIT

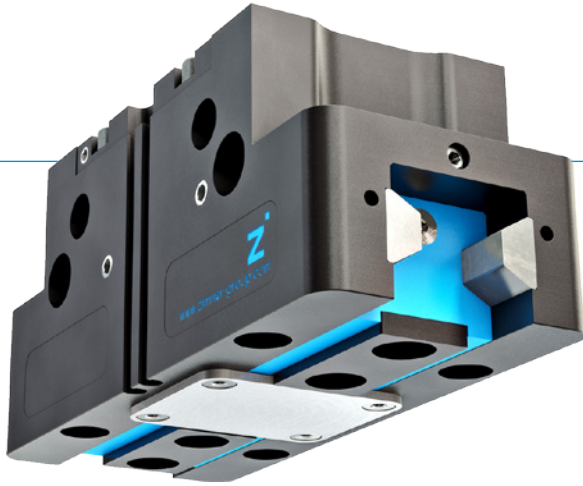
ADAPTATION OPTIONS SERIES 5000



2-JAW PARALLEL GRIPPERS

SERIES GPP5000

► PRODUCT ADVANTAGES



“The Universal One”

- Up to 30% more gripping force than the benchmark
- 10% more static forces and moments than the benchmark
- Gripper fingers up to 10% longer than the benchmark
- Gripper fingers weight up to 15% higher than the benchmark
- Sealed guide IP64 / Protector version IP67 (with purged air)
- Protected against corrosion
- Up to 30 million cycles without maintenance

► TECHNICAL DATA

Installation size	► Technical Data*	
	GPP5004**	GPP5006**
Stroke per jaw [mm]	2 - 4	3 - 6
Gripping force in closing [N]	200 - 600	330 - 1020
Gripping force in opening [N]	215 - 630	360 - 1080
Gripping force secured by spring min. [N]	80	125
Closing time [s]	0.015 - 0.025	0.15 - 0.025
Opening time [s]	0.015 - 0.025	0.15 - 0.035
Permissible weight per jaw max [kg]	0.2	0.4
Length of the gripper fingers max. [mm]	80	100
Repetition accuracy +/- [mm]	0.01	0.01
Operating pressure min. [bar]	3	3
Operating pressure max. [bar]	8	8
Operating temperature [°C]	-10 ... +130	-10 ... +130
Air volume per cycle [cm³]	5 - 12	11 - 24
Protection to IEC 60529	IP64 / IP67	IP64 / IP67
Weight [kg]	0.16 - 0.30	0.28 - 0.44

* All data measured at 6 bar

** Variants and recommended accessories see current main catalogue handling technology 1

HOW TO ORDER CORRECTLY

- The product order numbers are arranged according to this diagram:

Order no.	GPP5010	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-A
Basis version	N				
High force	S				
For external gripping, self-locking, spring closing		C			
For internal gripping, self-locking, spring opening		O			
temperature-resistant version to 130 °C				20	
Protector version IP67 for use in adverse environments (with purged air)				21	
temperature-resistant protector version IP67 for use in adverse environments (with purged air) to 130 °C				24	

2-JAW PARALLEL GRIPPERS

SERIES GEP5000

▶ PRODUCT ADVANTAGES



“ALL in ONE”

- ▶ Approximately the same gripping force as a comparable pneumatic gripper
- ▶ Self locking mechanism in case of power drop
- ▶ Same connection hole patterns as a comparable pneumatic gripper
- ▶ Plug and play – single-cable solution, supports incredibly easy control using I/O signals or IO-Link
- ▶ Integrated ACM control module - option of configuring gripping force, travel time and switching points
- ▶ Protected from corrosion and sealed in accordance with IP64
- ▶ Brushless DC motor – up to 30 million cycles without maintenance

▶ TECHNICAL DATA

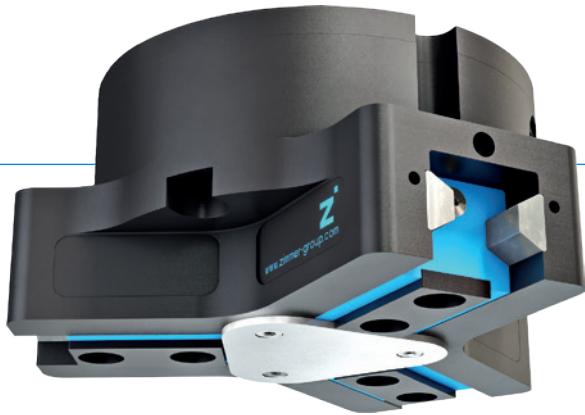
Order no.	▶ Technical Data	
	GEP5006IO-00-A	GEP5006IL-00-A
Control	IO	IO-Link
Stroke per jaw [mm]	6	6
Gripping force min. [N]	540	540
Gripping force max. [N]	960	960
Travel time min. [s]	0.13	0.13
Travel time max. [s]	0.22	0.22
Drive	BLDC motor	BLDC motor
Self locking mechanism	mechanical	mechanical
Control time [s]	0.035	0.035
Permissible weight per jaw max [kg]	0.4	0.4
Length of the gripper fingers max. [mm]	100	100
Repetition accuracy +/- [mm]	0.01	0.01
Voltage [V]	24	24
Current consumption max. [A]	5	5
Operating temperature [°C]	5 ... 50	5 ... 50
Protection to IEC 60529	IP64	IP64
Weight [kg]	0.79	0.79

* Variants and recommended accessories see current main catalogue handling technology 1

3-JAW CONCENTRIC GRIPPERS

SERIES GPD5000

► PRODUCT ADVANTAGES



“The Universal One”

- Up to 30% more gripping force than the benchmark
- 10% more static forces and moments than the benchmark
- Gripper fingers up to 10% longer than the benchmark
- Gripper fingers weight up to 15% higher than the benchmark
- Sealed guide IP64 / Protector version IP67 (with purged air)
- Protected against corrosion
- Up to 30 million cycles without maintenance

► TECHNICAL DATA

Installation size	► Technical Data*	
	GPD5004**	GPD5006**
Stroke per jaw [mm]	2 - 4	3 - 6
Gripping force in closing [N]	460 - 1430	740 - 2240
Gripping force in opening [N]	500 - 1520	800 - 2370
Gripping force secured by spring min. [N]	190	280
Closing time [s]	0.018 - 0.028	0.18 - 0.38
Opening time [s]	0.018 - 0.028	0.18 - 0.38
Permissible weight per jaw max [kg]	0.2	0.4
Length of the gripper fingers max. [mm]	80	100
Repetition accuracy +/- [mm]	0.01	0.01
Operating pressure min. [bar]	3	3
Operating pressure max. [bar]	8	8
Operating temperature [°C]	-10 ... +130	-10 ... +130
Air volume per cycle [cm³]	11 - 21	22 - 43
Protection to IEC 60529	IP64 / IP67	IP64 / IP67
Weight [kg]	0.27 - 0.41	0.48 - 0.71

* All data measured at 6 bar

** Variants and recommended accessories see current main catalogue handling technology 1

HOW TO ORDER CORRECTLY

- The product order numbers are arranged according to this diagram:

Order no.	GPD5010	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-A
Basis version	N				
High force	S				
For external gripping, self-locking, spring closing		C			
For internal gripping, self-locking, spring opening		O			
temperature-resistant version to 130 °C				20	
Protector version IP67 for use in adverse environments (with purged air)				21	
temperature-resistant protector version IP67 for use in adverse environments (with purged air) to 130 °C				24	

3-JAW CONCENTRIC GRIPPERS

SERIES GED5000

▶ PRODUCT ADVANTAGES



“ALL in ONE”

- ▶ Approximately the same gripping force as a comparable pneumatic gripper
- ▶ Self locking mechanism in case of power drop
- ▶ Same connection hole patterns as a comparable pneumatic gripper
- ▶ Plug and play – single-cable solution, supports incredibly easy control using I/O signals or IO-Link
- ▶ Integrated ACM control module - option of configuring gripping force, travel time and switching points
- ▶ Protected from corrosion and sealed in accordance with IP64
- ▶ Brushless DC motor – up to 30 million cycles without maintenance

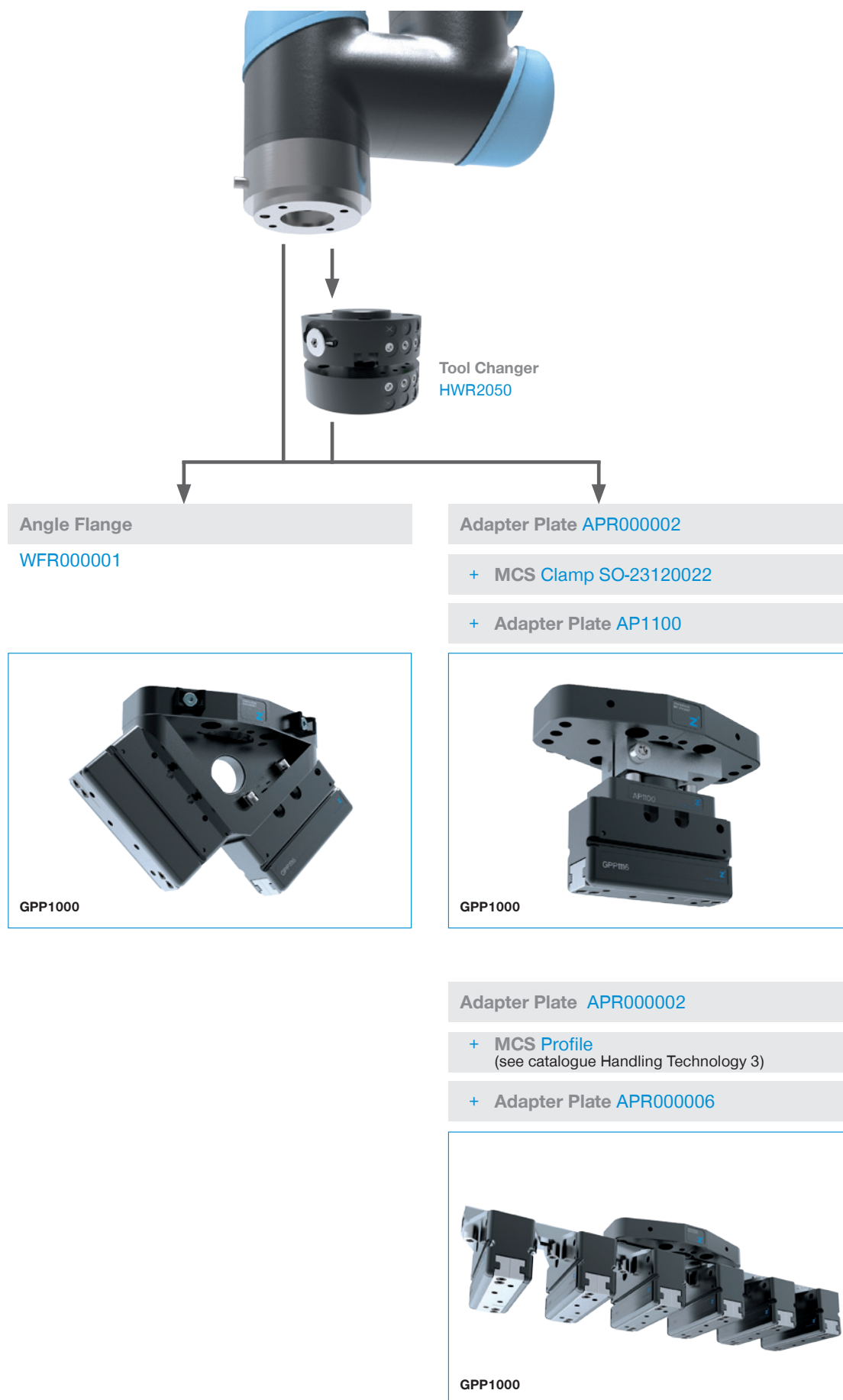
▶ TECHNICAL DATA

Order no.	▶ Technical Data	
	GED5006IO-00-A	GED5006IL-00-A
Control	IO	IO-Link
Stroke per jaw [mm]	6	6
Gripping force min. [N]	540	540
Gripping force max. [N]	960	960
Travel time min. [s]	0.13	0.13
Travel time max. [s]	0.22	0.22
Drive	BLDC motor	BLDC motor
Self locking mechanism	mechanical	mechanical
Control time [s]	0.035	0.035
Permissible weight per jaw max [kg]	0.4	0.4
Length of the gripper fingers max. [mm]	100	100
Repetition accuracy +/- [mm]	0.01	0.01
Voltage [V]	24	24
Current consumption max. [A]	5	5
Operating temperature [°C]	5 ... 50	5 ... 50
Protection to IEC 60529	IP64	IP64
Weight [kg]	1.09	1.09

* Variants and recommended accessories see current main catalogue handling technology 1

ROBOT TOOL BUILDING KIT

ADAPTATION OPTIONS SERIES GPP1000



2-JAW PARALLEL GRIPPERS

SERIES GPP1000

► PRODUCT ADVANTAGES



“Cost-effective”

- Parallel gripper with an unbeatable price/performance ratio
- Gripper jaw set and fixation material included
- Can be configured for spring opening or spring closing
- One installation size, three strokes: 4, 8 and 16 mm per gripper jaw
- Gripping force of 100 N
- Service life of up to 2 million cycles

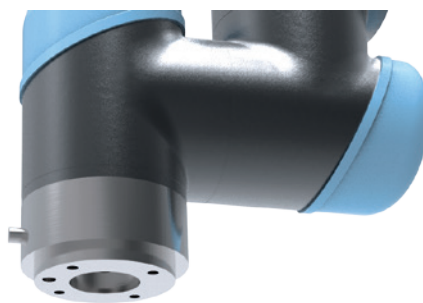
► TECHNICAL DATA

Order no.	► Technical Data*		
	GPP1104CO-00-A	GPP1108CO-00-A	GPP1116CO-00-A
Stroke per jaw [mm]	4	8	16
Grip force in grip direction min. [N]	100	100	100
Travel time in gripping direction [ms]	20	25	30
Reset time using spring [ms]	30	40	100
Permissible weight per jaw max [kg]	0.10	0.10	0.10
Repetition accuracy +/- [mm]	0.05	0.05	0.05
Operating pressure [bar]	2 ... 6	2 ... 6	2 ... 6
Operating temperature [°C]	5 ... +60	5 ... +60	5 ... +60
Air volume per cycle [cm³]	1.4	2.7	5.6
Protection to IEC 60529	IP30	IP30	IP30
Weight [kg]	0.16	0.17	0.20

* All data measured at 6 bar

ROBOT TOOL BUILDING KIT

ADAPTATION OPTIONS SERIES MGP-MGW



Tool Changer
HWR2050



Adapter Plate [APR000002](#)

+ [MCS Clamp](#)
(see catalogue Handling Technology 3)

+ Adapter Plate [R000004/5](#)



MGP800

Adapter Plate [APR000002](#)

+ [MCS Profile + Clamp](#)
(see catalogue Handling Technology 3)

+ Adapter Plate [APR000004/5](#)



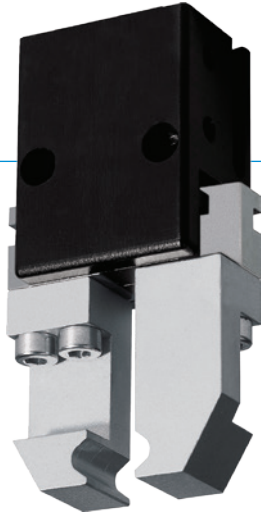
MGW800

MGW800

2-JAW PARALLEL GRIPPERS

SERIES MGP800

► PRODUCT ADVANTAGES



“The powerful”

► Over 40% more powerful than the benchmark

Optimisation of weight and force reduces your application costs since all components can have a smaller scale

► Gripper jaws up to 50% longer than the benchmark

The highest force and torque measurement enables flexible use for maximum dynamics

► Failure-free continuous operation

Our uncompromising “Made in Germany” quality guarantees up to 10 million maintenance-free gripping cycles

► TECHNICAL DATA

Installation size	► Technical Data*			
	MGP803N**	MGP804**	MGP806**	MGP808**
Stroke per jaw [mm]	3	4	6	8
Gripping force in closing [N]	35	60 - 90	100 - 140	170 - 220
Gripping force in opening [N]	40	65	120	190
Gripping force secured by spring min. [N]	-	-	-	-
Closing time [s]	0.01	0.02	0.02	0.04
Opening time [s]	0.01	0.02 - 0.04	0.02 - 0.04	0.04 - 0.06
Repetition accuracy +/- [mm]	0.025	0.025	0.025	0.02
Operating pressure min. [bar]	3	3	3	3
Operating pressure max. [bar]	8	8	8	8
Operating temperature min. [°C]	5	5	5	5
Operating temperature max. [°C]	+80	+80	+80	+80
Air volume per cycle [cm³]	0.8 - 1.1	1.9 - 2.5	4.2 - 5.4	8.4 - 11.3
Protection to IEC 60529	IP40	IP40	IP40	IP40
Weight [kg]	0.025	0.05 - 0.07	0.1 - 0.11	0.16 - 0.18

*All data measured at 6 bar

**Recommended accessories see current main catalogue handling technology 1

HOW TO ORDER CORRECTLY

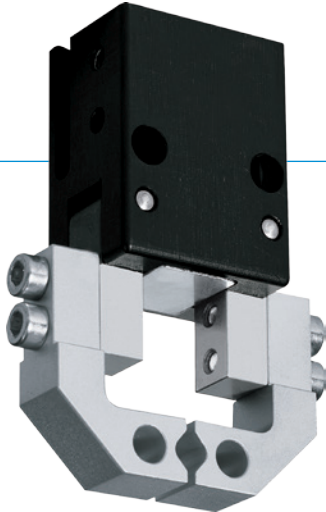
- The product order numbers are arranged according to this diagram:

Order no.	MGP803N	<input type="checkbox"/>		
For external gripping, self-locking, spring closing		C		

2-JAW ANGULAR GRIPPERS

SERIES MGW800

► PRODUCT ADVANTAGES



“The economical”

► Concentration on the essentials

The most economic type of gripping: This is how you reduce your production costs

► High moment load

The optimally designed angular gear box provides the highest durability for your application

► Failure-free continuous operation

Our uncompromising “Made in Germany” quality guarantees up to 10 million maintenance-free gripping cycles

► TECHNICAL DATA

Installation size	► Technical Data*			
	MGW803**	MGW804**	MGW806**	MGW808**
Stroke per jaw [mm]	37.5	37.5	37.5	37.5
Gripping force in closing [N]	33 - 49	51 - 72	91 - 118	148 - 190
Gripping force in opening [N]	38	59	110	168
Gripping force secured by spring min. [N]	0.1	-	0.25	0.45
Closing time [s]	0.01	0.02	0.02	0.02
Opening time [s]	0.01 - 0.02	0.02 - 0.03	0.02 - 0.04	0.02 - 0.04
Repetition accuracy +/- [mm]	0.05	0.05	0.05	0.05
Operating pressure min. [bar]	3	3	3	3
Operating pressure max. [bar]	8	8	8	8
Operating temperature min. [°C]	5	5	5	5
Operating temperature max. [°C]	+80	+80	+80	+80
Air volume per cycle [cm³]	0.64 - 1	1.4 - 2	2.4 - 3.4	8.1 - 10.5
Protection to IEC 60529	IP30	IP30	IP30	IP30
Weight [kg]	0.025 - 0.04	0.05 - 0.08	0.1 - 0.12	0.18 - 0.19

*All data measured at 6 bar

**Recommended accessories see current main catalogue handling technology 1

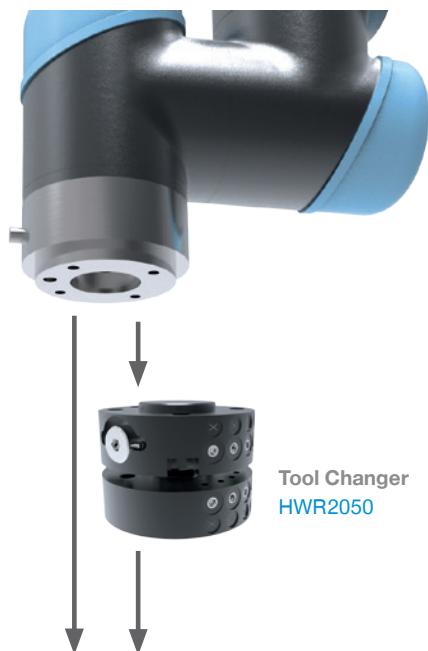
HOW TO ORDER CORRECTLY

- The product order numbers are arranged according to this diagram:

Order no.	MGW803N	<input type="checkbox"/>		
For external gripping, self-locking, spring closing		C		

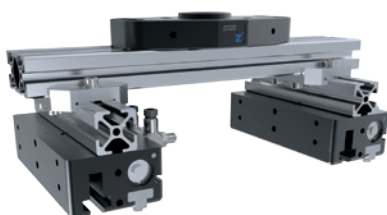
ROBOT TOOL BUILDING KIT

ADAPTATION OPTIONS



Adapter Plate [APR000002](#)

+ [MCS Profile](#) + [Clamp](#) (see catalogue Handling Technology 3)



GH6000



GZ1000



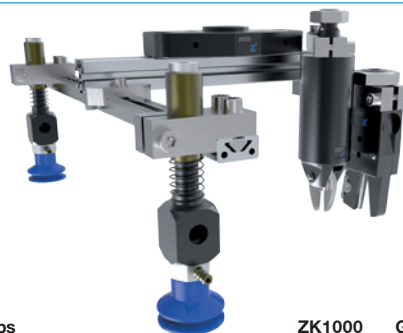
LG1000



HM1000



SO-431



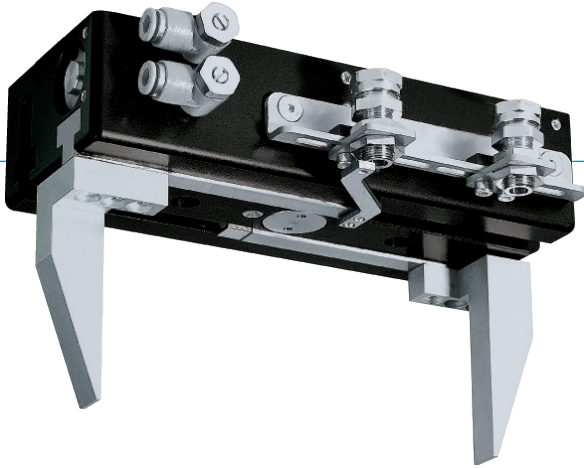
Suction Cups

ZK1000

GZ1000

2-JAW PARALLEL GRIPPERS WITH LONG STROKE SERIES GH6000

► PRODUCT ADVANTAGES



“The robust”

► Gripper jaws may be up to 25% longer in comparison to the benchmark

The highest force and torque measurement enables flexible for maximum dynamics

► Over 30% more powerful than the benchmark

Optimisation of weight and force reduces your application costs since all components can have a smaller scale

► Failure-free continuous operation

Our uncompromising “Made in Germany” quality guarantees up to 10 million maintenance-free gripping cycles

► TECHNICAL DATA

Order no.	► Technical Data*			
	GH6020-B**	GH6040-B**	GH6060-B**	GH6080-B**
Stroke per jaw [mm]	20	40	60	80
Gripping force in closing [N]	150	155	155	155
Gripping force in opening [N]	120	130	130	130
Closing time [s]	0.1	0.2	0.25	0.3
Opening time [s]	0.1	0.2	0.25	0.3
Repetition accuracy +/- [mm]	0.05	0.05	0.05	0.05
Operating pressure min. [bar]	3	3	3	3
Operating pressure max. [bar]	8	8	8	8
Operating temperature min. [°C]	5	5	5	5
Operating temperature max. [°C]	+80	+80	+80	+80
Air volume per cycle [cm³]	12	20	30	40
Protection to IEC 60529	IP40	IP40	IP40	IP40
Weight [kg]	0.3	0.47	0.6	0.75

*All data measured at 6 bar

**Recommended accessories see current main catalogue handling technology 1

2-JAW ANGULAR GRIPPERS

SERIES GZ1000

► PRODUCT ADVANTAGES



“The top of the line”

► Unique quality meets functionality

This is one of the best angular grippers on the market, enabling you to make your application more cost-effective and functional

► Variable attachment

Decide for yourself whether you want use screws, lock-nuts or a toolkit clamping system for fastening

► Sensing with process reliability

Unlike many other established products on the market, you can even differentiate between “Component present” and “Component not present”

► Up to 10 million cycles without maintenance

► TECHNICAL DATA

Installation size	► Technical Data*		
	GZ1020**	GZ1030**	GZ1040**
Stroke per jaw [°]	8	11	10
Gripping force in closing [N]	62	130	315
Closing moment [Nm]	0.5	1.6	4.4
Closing time [s]	0.01	0.02	0.02
Opening time [s]	0.02	0.03	0.04
Operating pressure min. [bar]	2	2	2
Operating pressure max. [bar]	6	6	6
Operating temperature min. [°C]	5	5	5
Operating temperature max. [°C]	+80	+80	+80
Air volume per cycle [cm³]	0.25	0.9	2
Gripper finger with integrated sensor	Yes / No	Yes / No	Yes / No
Protection to IEC 60529	IP30	IP30	IP30
Weight [kg]	0.015 - 0.03	0.046 - 0.063	0.105 - 0.125

*All data measured at 6 bar

** Recommended accessories see current main catalogue handling technology 1

CUTTING TONGS

SERIES ZK1000

▶ PRODUCT ADVANTAGES



▶ Extremely lightweight

This light weight generally allows the use of a smaller moving axis, reducing the overall costs of the application in the process

▶ Integrated magnetic field sensing

One of the few cutting tongs on the market that can have its position queried and transferred to the control system with process reliability

▶ Decide for yourself!

Sprue or steel wire: The variety of cutting geometries and materials ensure you always find the correct cuttings

▶ TECHNICAL DATA

Order no.	▶ Technical Data*			
	ZK1030**	ZK1036**	ZK1045**	ZK1065**
Stroke per jaw [°]	4.25	5	8.5	13
Gripping moment in closing [Nm]	14	40	98	400
Closing time [s]	0.01	0.04	0.06	0.1
Opening time [s]	0.1	0.15	0.2	0.4
Operating pressure min. [bar]	2	2	2	2
Operating pressure max. [bar]	6	6	6	6
Operating temperature min. [°C]	5	5	5	5
Operating temperature max. [°C]	+80	+80	+80	+80
Air volume per cycle [cm³]	5	9.2	32	130
Weight [kg]	0.08	0.13	0.24	0.67
Possible cutting diameters				
possible cut-Ø max. plastics [mm]	2	4	7	11
possible cut-Ø max. hard-plastic [mm]	-	2.6	5	8
possible cut-Ø max. copper [mm]	1	1.6	2.6	6
possible cut-Ø max. steel [mm]	0.5	1	2	4
possible cut-Ø max. piano wire [mm]	0.3	0.5	1	-

* All data measured at 6 bar

** Recommended accessories see current main catalogue handling technology 1

INTERNAL GRIPPER

SERIES LG1000

► PRODUCT ADVANTAGES



► Individually adjustable

The design of the gripper enables you to grip not only cylindrical gripping surfaces, but also conical and square ones with process reliability

► Integrated air or vacuum feedthrough

Use this option for applications such as leak tests, purging or vacuuming your part

► Surface protection provided by silicone membrane

In addition to covering a vast range of gripper hole diameters, the membrane provides ideal protection from damage

► TECHNICAL DATA

Installation size	► Technical Data*			
	LG1008**	LG1010**	LG1012**	LG1015**
Operating temperature [°C]	5 ... 80	5 ... 80	5 ... 80	5 ... 80
Retract time / Extend time [s]	0.2	0.2	0.2	0.2
Grip diameter max. [mm]	10.5	13	15.5	18.5
Grip diameter min. [mm]	8	10	12.5	15
Total stroke in Ø [mm]	2.5	3	3	3.5
Max. slip force [N]	53	53	58	58
Operating pressure min. [bar]	4	4	4	4
Operating pressure max. [bar]	6	6	6	6
Operating temperature min. [°C]	5	5	5	5
Operating temperature max. [°C]	+80	+80	+80	+80
Air volume per cycle [cm³]	0.7	0.7	0.7	0.7
Weight [kg]	0.028 - 0.032	0.029 - 0.033	0.034 - 0.036	0.037 - 0.041

*All data measured at 6 bar

**Recommended accessories see current main catalogue handling technology 1

MAGNETIC GRIPPER

SERIES HM1000

► PRODUCT ADVANTAGES



► **Secure hold during EMERGENCY STOP**

Magnets attached to springs ensure your workpiece remains secure, even during a drop in pressure

► **Contact plate that increases friction value**

The replaceable O-ring ensures the high dynamics in your application and protection of your workpiece

► **Residual holding force < 1N**

The demagnetised contact surface safeguards the process reliability of dropping off your workpiece

► TECHNICAL DATA

► Technical Data	
Order no.	HM1030NC*
Max. adhesive force [N]	27
Operating pressure min. [bar]	3
Operating pressure max. [bar]	8
Operating temperature min. [°C]	5
Operating temperature max. [°C]	+80
Air volume per cycle [cm³]	3.5
Weight [kg]	0.06

*Recommended accessories see current main catalogue handling technology 1

GRIPPER FINGERS

SERIES SO-431

► PRODUCT ADVANTAGES



- Mounting with standard 20 mm dia. clamp, suitable for all common gripping systems
- Hart-Coated® gripper jaws for optimum wear protection

► TECHNICAL DATA

► Technical Data	
Order no.	SO-43120090
Swivel angle [°]	90
Torque [Ncm]	90
Compressed-air max. [bar]	6
Working range [°C]	+5 - +90

SUCTION CUPS

OVERVIEW OF SERIES

► TECHNICAL DATA



Series	SERIES SM	SERIES SGF	SERIES NS	SERIES SFK	SERIES SF
Vacuum force theoretical [N] *	<0,1 - 77	2 - 1042	6 - 628	36 - 101	6 - 443
Lifting force [N]	-	-	-	11 - 28	2,2 - 90
Volume [cm³]	0,01 - 2,6	0,02 - 89	0,3 - 41	3,8 - 10,4	0,5 - 166
Sizes	1 - 35	6 - 130	10 - 100	24 - 40	10 - 85

* at 0.8 bar Vacuum



Series	SERIES SFO	SERIES OV	SERIES SR/SK	SERIES SPO	SERIES SP
Vacuum force theoretical [N] *	15 - 139	2 - 240	7 - 112	1318	274 - 1232
Lifting force [N]	3,5 - 35	-	-	-	-
Volume [cm³]	0,9 - 20,4	0,2 - 11,8	3 - 63	221	55 - 277
Sizes	8x25 - 25x75	3x10 - 35x100	12 - 50	80x230	80 - 160

* at 0.8 bar Vacuum

► AVAILABLE MATERIALS

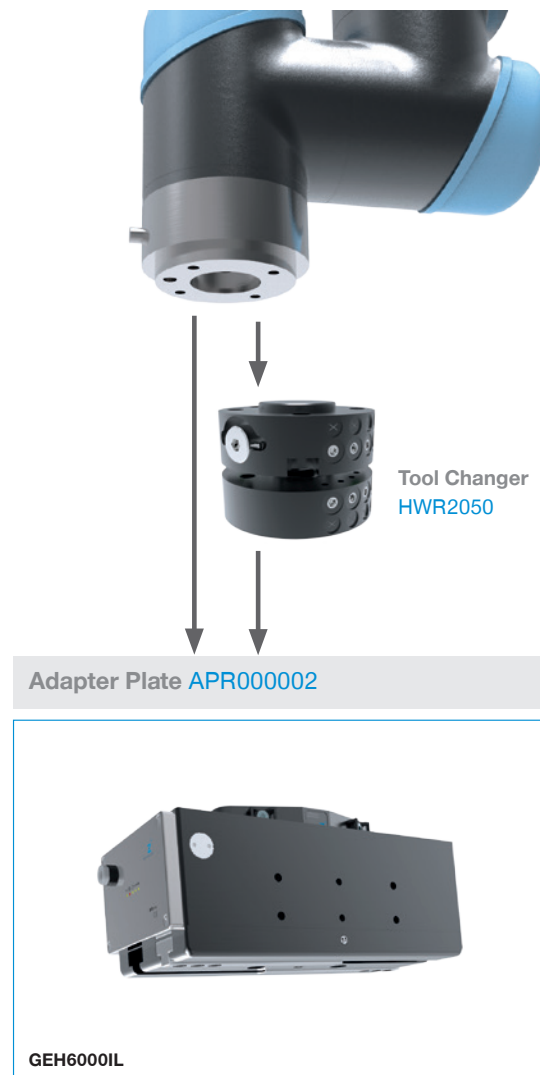
Abbreviation	► Suction cup material					
	NBR	NBR-AS	SI	SI tempered	SI-AS	TPU
Usual name	Nitrile rubber		Caoutchouc silicone			Polyurethan
Resistance to wear	2	2	3	3	3	1
Resistance to oil and grease	1	1	3	3	3	2
Resistance to weathering and ozone	3	3	1	1	1	2
Resistance to fuel	2	2	4	4	4	2
Resistance to Alcohol	1	3	1	2	3	1
Resistance to solvents	3	3	3	3	3	4
Suitability for food use	4	4	2	1	3	4
Low tendency to mark	4	4	1	1	1	2
Specific resistance [Ωxcm]	-	≤10 ⁷	-	-	≤10 ⁷	-
Operating temperature [°C]	-20 - +110	-20 - +110	-55 - +180	-55 - +180	-20 - +150	-30 - +/-90
Shore hardness [A]	65 +/- 3	65 +/- 3	60 +/- 5	60 +/- 5	55 +/- 5	82 +/- 5
Colour / Identifier	black	black	blue	white	black	red

Abbreviation	► Material for round cord SP / SPO	
	EPDM	
Usual name	Foam rubber	
Resistance to wear	2	
Resistance to oil and grease	1	
Resistance to weathering and ozone	3	
Resistance to fuel	2	
Resistance to Alcohol	1	
Resistance to solvents	3	
Suitability for food use	4	
Low tendency to mark	4	
Specific resistance [Ωxcm]	-	
Operating temperature [°C]	-30 - +80	
Shore hardness [A]	15 +/- 5	
Colour / Identifier	black	

1 - very good
2 - good
3 - satisfactory
4 - adequate

ROBOT TOOL BUILDING KIT

ADAPTATION OPTIONS SERIES GEH6000IL



2-JAW PARALLEL GRIPPERS

SERIES GEH6000IL

► PRODUCT ADVANTAGES



“Highest performance”

- 5 million maintenance-free cycles
- Integrated sensing via IO-Link
- Self locking mechanism
- The highest power density on the market

A superior proportion of gripping force to mass, volume and price enables you to have the maximum level of process reliability and cost optimization in the smallest amount of space

► Servo drive with integrated controller

Brushless drive technology, position, speed and force control in combination with a self locking mechanism guarantee the highest amount of functionality

► IO-Link on board

In addition to the unshielded single-cable solution, the future-proof, hot-pluggable activation provides you with a wide variety of travel profiles for easy implementation into your control system

► TECHNICAL DATA

Installation size	► Technical Data		
	GEH6060IL-03-A	GEH6140IL-03-A	GEH6180IL-03-A
Drive	BLDC motor	BLDC motor	BLDC motor
Stroke per jaw, adjustable [mm]	60	40	80
Nominal gripping force [N] *	1000	1800	1800
Gripping force min. [N]	60	100	100
Gripping force max. [N] **	1250	2400	2400
Self locking mechanism	mechanical	mechanical	mechanical
Permissible weight per jaw max [kg]	0.3	1	1
Length of the gripper fingers max. [mm]	100	160	160
Max. movement speed per gripper finger [mm/s]	60	50	50
Repetition accuracy +/- [mm]	0.05	0.05	0.05
Operating temperature min. [°C]	+5	+5	+5
Operating temperature max. [°C]	+50	+50	+50
Protection to IEC 60529	IP40	IP54	IP54
Weight [kg]	0.9	1.9	2.6

*Max. peak current ≤ 5 A

**Max. peak current ≤ 7.5 A

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