

# HANDLING TECHNOLOGY

## OVERVIEW OF SERIES

2-JAW PARALLEL GRIPPERS	Stroke per jaw	Gripping force	Gripper finger length
<b>PNEUMATIC</b>			
Series GPP5000	2 mm - 45 mm	140 N - 26950 N	60 mm - 400 mm
Series GPP5000AL	2.5 mm - 25 mm	85 N - 4710 N	55 mm - 225 mm
Series GP400	2 mm - 30 mm	85 N - 19275 N	50 mm - 300 mm
Series DGP400	4 mm	115.0 N - 155.0 N	60 mm
Series MGP800	1 mm - 12 mm	6 N - 400 N	20 mm - 110 mm
Series GP	3 mm - 13 mm	8.4 N - 5250 N	20 mm - 90 mm
Series GP200	6 mm - 40 mm	160 N - 4500 N	90 mm - 250 mm
Series MGH8000	10 mm - 100 mm	60 N - 800 N	125 mm - 250 mm
Series GH6000	20 mm - 200 mm	150 N - 3400 N	150 mm - 400 mm
Series GH7000	65 mm - 100 mm	8000 N	650 mm
Series GPH8000	60 mm - 220 mm	900 N - 3300 N	450 mm - 900 mm
<b>PNEUMATICALLY INTELLIGENT</b>			
Series GPP5000IL	3 mm - 25 mm	330 N - 9130 N	85 mm - 310 mm
<b>ELECTRICAL</b>			
Series GEP5000	6 mm - 10 mm	980 N - 1520 N	100 mm - 160 mm
Series REP2000	10 mm	145 N	60 mm
Series GEP2000	6 mm - 20 mm	145 N - 500 N	60 mm - 120 mm
Series GEH6000IL	40 mm - 80 mm	180 N - 1800 N	100 mm - 160 mm
Series GEH8000	60 mm - 150 mm	2000 N - 3200 N	300 mm - 600 mm
3-JAW CONCENTRIC GRIPPERS	Stroke per jaw	Gripping force	Gripper finger length
<b>PNEUMATIC</b>			
Series GPD5000	2 mm - 45 mm	310 N - 72500 N	60 mm - 310 mm
Series GPD5000AL	2.5 mm - 16 mm	310 N - 9490 N	55 mm - 215 mm
Series GD300	2 mm - 30 mm	200 N - 34150 N	50 mm - 250 mm
Series MGD800	1 mm - 12 mm	30 N - 1420 N	25 mm - 125 mm
Series GD	8.5 mm - 26.5 mm	24 N - 530 N	
Series GD500	30 mm - 60 mm	1300 N - 2480 N	300 mm - 400 mm
<b>PNEUMATICALLY INTELLIGENT</b>			
Series GPD5000IL	3 mm - 25 mm	740 N - 22850 N	85 mm - 310 mm
<b>ELECTRICAL</b>			
Series GED5000	6 mm - 10 mm	980 N - 1520 N	100 mm - 160 mm
Series GED6000IL	40 mm	165 N - 1700 N	100 mm - 160 mm
2-JAW ANGULAR GRIPPERS	Stroke per jaw	Gripping force	Gripper finger length
<b>PNEUMATIC</b>			
Series GPW5000	15 °	1450 N - 14500 N	115 mm - 265 mm
Series MGW800	37.5 °	5 N - 325 N	10 mm - 90 mm
Series GZ1000	8 ° - 11 °	62 N - 315 N	30 mm - 40 mm
Series GK	90 °	70 N - 4250 N	75 mm - 125 mm
Series DGK	90 °	150.0 N	100 mm
Series GG4000	20 ° - 90 °	430 N - 4000 N	65 mm - 175 mm

Weight	Maintenance free (max.)	IP class	Clean room class	UL	CE	UKCA	LABS	REACH	RoHS
0.081 kg - 50 kg	30 million	IP64 / IP64 / IP67 / IP67	5 / 6				●	●	●
0.078 kg - 7.5 kg	15 million	IP40	4				●	●	●
0.076 kg - 17 kg	10 million	IP40					●	●	●
0.44 kg - 0.47 kg	1.5 million	IP40					●	●	●
0.008 kg - 0.46 kg	10 million	IP40	6				●	●	●
0.033 kg - 1.4 kg	10 million	IP30					●	●	●
0.44 kg - 8.3 kg	10 million	IP40					●	●	●
0.37 kg - 7.1 kg	10 million	IP54					●	●	●
0.33 kg - 24 kg	10 million	IP40 / IP54					●	●	●
33 kg - 37 kg	10 million	IP64					●	●	●
5.7 kg - 51 kg	5 million	IP54					●	●	●
0.45 kg - 11 kg	30 million	IP64		●	●	●	●	●	●
0.79 kg - 1.6 kg	30 million	IP64		●	●	●	●	●	●
1 kg - 1.1 kg		IP40 / IP54		●	●	●	●	●	●
0.18 kg - 1.3 kg	10 million	IP40 / IP54	2	●	●	●	●	●	●
0.74 kg - 3.6 kg	5 million	IP40 / IP54	3 / 4	●	●	●	●	●	●
9.1 kg - 32 kg	10 million	IP54		●	●	●	●	●	●
Weight	Maintenance free (max.)	IP class	Clean room class	UL	CE	UKCA	LABS	REACH	RoHS
0.14 kg - 100 kg	30 million	IP64 / IP67	6				●	●	●
0.14 kg - 7.7 kg	15 million	IP40	4				●	●	●
0.14 kg - 26 kg	10 million	IP40					●	●	●
0.025 kg - 1.9 kg	10 million	IP40	6				●	●	●
0.08 kg - 2.7 kg	10 million	IP40					●	●	●
7.3 kg - 34 kg	10 million	IP40					●	●	●
0.76 kg - 19 kg	30 million	IP64		●	●	●	●	●	●
1.1 kg - 2.3 kg	30 million	IP64		●	●	●	●	●	●
2.8 kg - 4.9 kg	5 million	IP54	4	●	●	●	●	●	●
Weight	Maintenance free (max.)	IP class	Clean room class	UL	CE	UKCA	LABS	REACH	RoHS
0.92 kg - 12 kg	30 million	IP64					●	●	●
0.011 kg - 0.45 kg	10 million	IP30					●	●	●
0.024 kg - 0.17 kg	2 million	IP30					●	●	●
0.096 kg - 4.1 kg	10 million	IP20					●	●	●
0.49 kg	1.5 million	IP20					●	●	●
0.25 kg - 4.7 kg	10 million	IP64					●	●	●

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## OVERVIEW OF SERIES

### GRIPPERS FOR SPECIFIC TASKS

#### PNEUMATIC

<b>O-ring assembly grippers, outer</b>	<b>Opening stroke adjustable per jaw</b>	<b>Opening force</b>	<b>Recommended O-ring diameter</b>
Series GS	1.6 mm - 10 mm	300 N - 1450 N	4 mm - 150 mm
<b>Magnetic gripper</b>			<b>Retention force max.</b>
Series HM1000			27 N - 450 N
<b>Magnetic gripper</b>			<b>Retention force min.</b>
Series HPM2000			60 N
<b>Internal gripper</b>	<b>Total stroke in Ø</b>	<b>Gripping moment in opening</b>	<b>Gripping diameter min.</b>
Series LGS	1.0 mm	0.5 Nm - 3.0 Nm	4.0 mm - 6.0 mm
<b>Internal gripper</b>	<b>Total stroke in Ø</b>	<b>Slip force max.</b>	<b>Gripping diameter min.</b>
Series LG1000	2.5 mm - 3.5 mm	53 N - 58 N	8.0 mm - 15 mm
<b>Internal gripper</b>	<b>Total stroke in Ø</b>	<b>Gripping force in extraction</b>	<b>Clamping diameter d min.</b>
Series LGG	2.5 mm - 16.0 mm	100 N - 3500 N	15.0 mm - 119.5 mm
<b>Needle gripper</b>	<b>Needle stroke adjustable</b>	<b>Number of needles</b>	<b>Needle diameter</b>
Series ST	0 mm - 2 mm	20 piece - 40 piece	0.7 mm
Series SCH	0 mm - 6 mm	4 piece	1.2 mm - 3 mm
<b>External gripper</b>	<b>Gripping force in closing</b>	<b>Gripping diameter min.</b>	<b>Gripping diameter max.</b>
Series RG	350 N - 1000 N	0 mm - 10 mm	28 mm - 58 mm
<b>HRC GRIPPER</b>	<b>Stroke per jaw</b>	<b>Gripping force</b>	<b>Gripper finger length</b>
Series HRC	10 mm	190 N	80 mm

### SWIVEL- AND ROTARY MODULES

#### PNEUMATIC

<b>Flat Swivel Units</b>	<b>Swivel angle</b>	<b>Torque</b>	<b>Pneumatic energy transfer</b>
Series SF-C	-90 / 0 / +90°   0-180°   180°   90°	1.5 Nm - 130 Nm	4 / 8
Series MSF	90 / 180°	0.3 Nm - 1.2 Nm	2 / 2
<b>Rotary Cylinders</b>	<b>Swivel angle</b>	<b>Starting Angle</b>	<b>Torque</b>
Series PRN	100°   180°   270°   280°   90°	40°   45°   90°	0.15 Nm - 247 Nm
<b>Rotary Cylinders</b>	<b>Swivel angle</b>	<b>Torque outer blade</b>	<b>Torque inner blade</b>
Series SH	360°	2.73 Nm - 7.2 Nm	0.59 Nm - 2.35 Nm
<b>Angle Pivot Units</b>	<b>Swivel angle</b>	<b>Torque</b>	<b>Pneumatic energy transfer</b>
Series SW	180°	1.5 Nm - 120 Nm	4 / 8
<b>Angle Pivot Units</b>	<b>Swivel angle</b>	<b>Swivel angle regulable +/-</b>	<b>Torque 0°</b>
Series SWM1000	90°	3°	10 Nm - 150 Nm
<b>Swivel Jaws</b>	<b>Swivel angle</b>	<b>Swivel angle regulable +/-</b>	<b>Torque per jaw</b>
Series SB	90 / 180°	3°	0.1 Nm - 1.6 Nm
Series SBZ	180°   90°	3°	1.2 Nm - 57 Nm

#### ELECTRICAL

<b>Rotary Modules</b>	<b>Rotation angle</b>	<b>Nominal torque</b>	<b>Electrical energy transfer</b>
Series DES	unlimited	7 Nm - 50 Nm	12x2A / 12x120V DC   12x2A / 12x48V DC



Weight	Maintenance-free cycles max.	IP class	Clean room class			
0.53 kg - 6.2 kg	5 million	IP30		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
0.059 kg - 2.2 kg	5 million	IP30		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
0.35 kg - 0.36 kg		IP54		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
0.08 kg - 0.47 kg		IP40		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
0.028 kg - 0.035 kg		IP54		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
0.035 kg - 2.3 kg		IP54		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
0.2 kg - 0.49 kg	5 million	IP30		•	•	•
0.35 kg - 0.47 kg	5 million	IP30		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
0.28 kg - 0.86 kg		IP67		•	•	•
<b>Weight</b>	<b>Maintenance free (max.)</b>	<b>IP class</b>	<b>Clean room class</b>			
0.68 kg - 0.99 kg	10 million	IP40		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
0.64 kg - 42 kg	10 million	IP64		•	•	•
0.18 kg - 0.52 kg	10 million	IP41		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
0.04 kg - 13 kg	1.5 million	IP54		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
0.54 kg - 1.2 kg	1.5 million	IP54		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
1.3 kg - 50 kg	10 million	IP64		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
1 kg - 5.5 kg	10 million	IP30		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
0.22 kg - 2.8 kg	10 million	IP54		•	•	•
0.47 kg - 27 kg	10 million	IP54		•	•	•
<b>Weight</b>	<b>Maintenance-free cycles max.</b>	<b>IP class</b>	<b>Clean room class</b>			
3.8 kg - 18 kg		IP54		•	•	•

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## OVERVIEW OF SERIES

### LINEAR ACTUATORS

#### PNEUMATIC

Linear Cylinders	Stroke	Pressure force max.	Retraction force
Series SHX	7 mm - 50 mm	100 N - 170 N	100 N
Series LI	15 mm - 300 mm	80 N - 950 N	80 N - 950 N
Series LS	25 mm - 50 mm	40 N - 100 N	30 N - 85 N
Series LSF	50 mm - 100 mm	265 N	220 N
Series LSX	50 mm - 200 mm	265 N - 750 N	220 N - 680 N
Series HZ	50 mm - 100 mm	720 N	600 N

#### ELECTRICAL

Compact axes	Stroke, can be controlled	Rated feed force Fx	Max. feed force Fx
Series AC	100 mm - 150 mm	75 N - 150 N	170 N - 270 N

### CUTTING TONGS

#### PNEUMATIC

	Stroke per jaw	Gripping moment in closing	Air volume per cycle
Series ZK1000	2.1 ° - 6.5 °	14 Nm - 400 Nm	5 cm <sup>3</sup> - 130 cm <sup>3</sup>
Series ZK	7.5 ° - 9 °	54 Nm - 110 Nm	10 cm <sup>3</sup> - 73 cm <sup>3</sup>

### SEPARATORS

#### PNEUMATIC

	Stroke per tapped rod	Force in extend	Force in retract
Series VEG	10 mm - 60 mm	40 N - 220 N	30 N - 170 N
Series VE	10 mm - 60 mm	40 N - 220 N	30 N - 170 N

### ACCESSORIES

<b>Rubber Jaw Pads</b>	<b>Ø d1</b>	<b>Material</b>	<b>Operating temperature max.</b>
Series DG	6m6 mm	NBR / Silicone	120 ° - 200 °
<b>Hard Jaw Inserts</b>		<b>Ø d1</b>	<b>Ø d2</b>
Series GR		12,7 mm - 19 mm	M6 mm
<b>Hard Jaw Inserts, Floating</b>		<b>Ø d1</b>	<b>Ø d2</b>
Series J		12n6 mm	M3 mm
<b>Rubber Jaw Liners</b>		<b>Material</b>	<b>Operating temperature max.</b>
Series GU		NBR / Silicone	120 ° - 200 °
<b>Rubber Coated Tape</b>	<b>Size</b>	<b>Material</b>	<b>Material thickness</b>
Series KF	500 x 100 mm	Impregnated cotton fabric with special coating	0.48 mm
<b>Epoxy Jaw Compound</b>			
Series BGM			
<b>Jaw Cups for Epoxy Jaw Compound</b>		<b>Ø d1</b>	<b>Ø d2</b>
Series BN		6 mm - 20 mm	M3 mm
<b>Rubber Moulding Compound</b>	<b>Shore hardness level after hardening (ISO 868)</b>	<b>Sealed</b>	<b>Tensile strength (ISO 37)</b>
Series GU800	80 Shore	1.00 g/cm <sup>3</sup>	8 MPA N/mm <sup>2</sup>
<b>Jaw Extensions</b>			
Series GBV			
<b>Ball Joints</b>		<b>Swivel angle</b>	<b>Material</b>
Series KG		30°	Aluminium hard anodized / Steel
<b>Rotary Distributors</b>	<b>Air feed-through</b>	<b>Max. acceleration</b>	<b>Maximum speed</b>
Series DV	2 piece - 4 piece	22 m/s <sup>2</sup>	720 m/s <sup>2</sup>
<b>Angle flange</b>			
Series WFR			



Weight	Maintenance-free cycles max.	IP class	Clean room class
0.075 kg - 0.24 kg	10 million	IP54	• • •
0.15 kg - 7.2 kg	10 million	IP54	• • •
0.14 kg - 0.39 kg	10 million	IP40	• • •
1.2 kg - 1.3 kg	10 million	IP40	• • •
0.9 kg - 6.6 kg	10 million	IP40	• • •
2 kg - 2.4 kg	10 million	IP40	• • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
2 kg - 5.1 kg		IP40	• • • • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
0.11 kg - 0.71 kg	5 million	IP30	• • •
0.8 kg - 2.1 kg	5 million	IP40	• • •

Weight	Maintenance free (max.)	IP class	Clean room class
0.076 kg - 0.82 kg	10 million	IP40	• • •
0.16 kg - 1.5 kg	10 million	IP40	• • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
0.003 kg - 0.03 kg			• • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
0.005 kg - 0.02 kg			• • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
0.008 kg - 0.11 kg			• • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
0.02 kg - 0.44 kg			• • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
0.03 kg - 0.04 kg			• • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
0.47 kg			• • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
0.001 kg - 0.006 kg			• • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
1.1 kg			• • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
0.13 kg - 1.3 kg			• • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
0.098 kg - 2.2 kg			• • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
0.43 kg - 0.54 kg			• • •

Weight	Maintenance-free cycles max.	IP class	Clean room class
0.3 kg - 1 kg			• • •