

Superior Clamping and Gripping



Sales Manual

MPG-plus

11/2010



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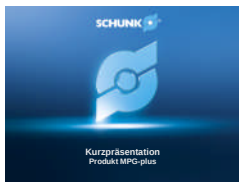
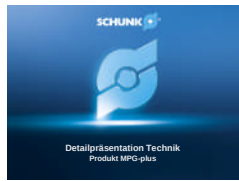
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1 General information on the product

1.1 Market launch

The MPG-plus miniature parallel gripper was introduced officially for the first time as the successor to the MPG at Automatica 2010 in Munich.

1.2 Available documentation on the product

Print	Intranet	Media
Gripper catalog	Key information sheet KIB	Short presentation
		
Flyer		Detailed presentation
		
Operating manual		
		

1.3 Product description / positioning

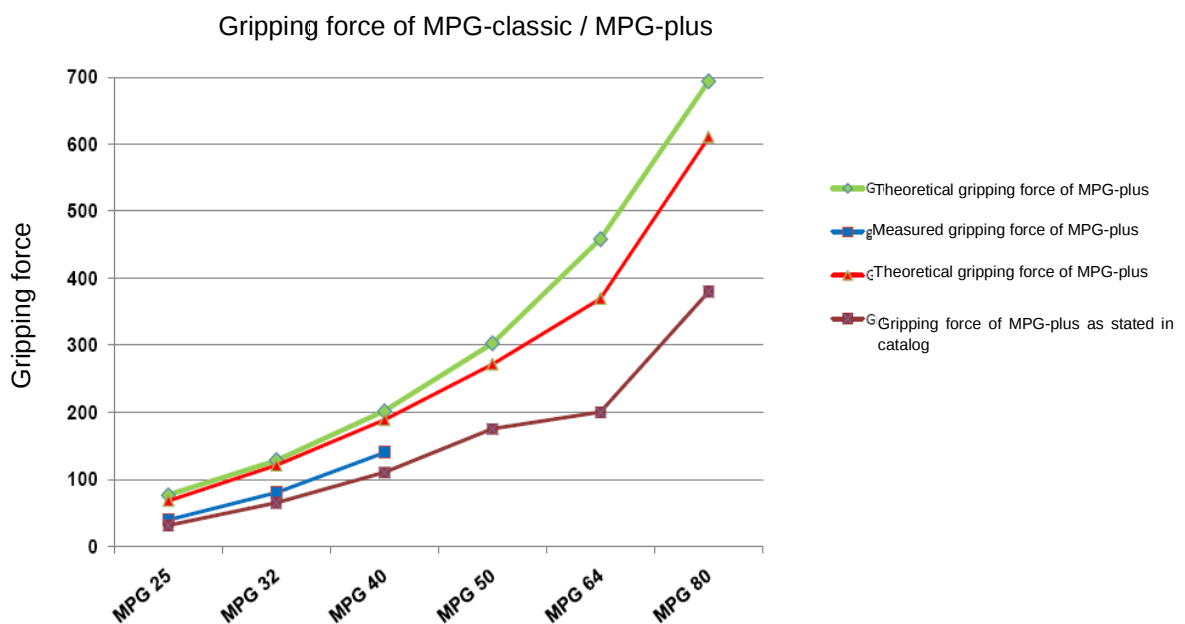
In comparison to competition grippers that require the same input, the MPG-plus gripper for small components achieves a considerably higher output by virtue of its technological advantages. The new MPG-plus small-part gripper provides a level of performance which was previously unattainable in minimal space and opens up new perspectives in the miniaturization of handling systems. Smaller grippers can be used as a result of the greater gripping forces achieved at the same volume to mass ratio, which means more compact automated systems with a smaller energy consumption can be built.

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The MPG-plus with its combination of oval piston drive and roller guide guarantees a high level of efficiency. The gripper is therefore equipped for high force and torque absorption. This enables longer gripper fingers and higher gripping forces to be used with the same sized module. A plus point for design engineers and users is that they can plan on using smaller sizes whilst having identical force requirements. Compared to the previous MPG, which had already set the benchmark in small part handling, the gripping force achieved with the size 40 has increased from **110 to 140 N**, thus an increase by as much as **25 %**. The maximum permissible finger length is then 60 mm instead of 40 mm. In other words: Those who until now have used a size 50 MPG can now implement size 40 using the MPG-plus.

Gripping forces of MPG-classic compared with MPG-plus



Piston surface of MPG-classic	113	201	314	452	616	1018
Piston surface of MPG-plus	127	214	336	505	764	1157
Theoretical gripping force of MPG-classic	68	121	188	271	369	611
Theoretical gripping force of MPG-plus	76	128	202	303	458	694
Gripping force of MPG-classic as stated in catalog	31	65	110	175	200	380
Measured gripping force of MPG-plus	39	80	140			
% (measured) to MPG-classic	26	23	27			
Efficiency of MPG-plus	0,51	0,62	0,69			

Specifications: piston surface mm²; gripping force N

1.4 Brief overview of technical data



Sizes
25 ... 80



Weight
0.06 kg ... 1.22 kg



Gripping force
38 N ... 540 N



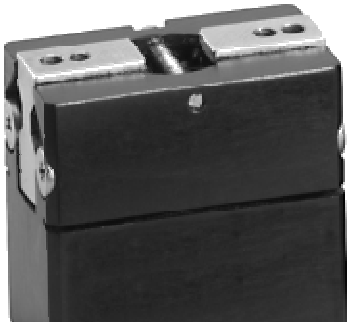
Stroke per jaw
3 mm ... 14 mm



Workpiece weight
0.19 kg ... 2.15 kg

2 Competitive situation

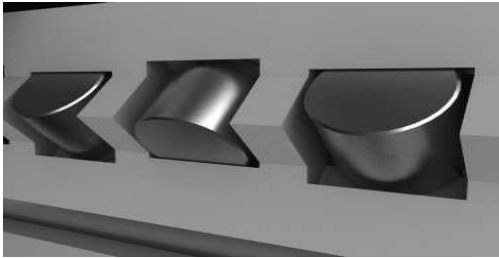
2.1 Brief overview of competitors' products

Festo HGPC	Röhm RPM
	
Sommer MGP	Afag UG
	

2.2 Competitor comparison

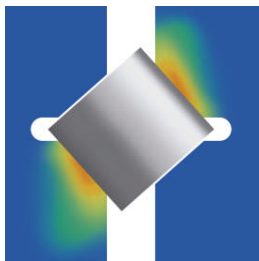
	MPG+	RPM	MGP	HGPC	UG
PRODUCT-SPECIFIC					
Field of application	Essentially the same applications as the MPG. Normal to slightly dirty environments. Gripper for small components	Only dry, clean environments.	Clean to slightly dirty working environments.	Clean to slightly dirty working environments.	Clean to slightly dirty environments.
	+++	+	+	+	+
Guide	Improved roller guide. More rollers being used owing to the smaller distance between the junction rollers and, resulting from this, an improved basic load rating by up to 30 % .	Double-pin drive by means of double-acting piston. Bearing via roller guide. Bearings are pre-loaded against lateral play.	Flat guide, gripper jaws made of ground steel.	Double-acting cylinder with positively guided motion sequence.	Pneumatic cylinder with relay lever to jaws.
	+++	++	+	+	+
Scope of delivery	Manufacturer's declaration and operating manual. Standard assembly material.	Documentation, start-up	Centering sleeves and normal documentation.	Centering sleeves included in the scope of delivery.	Centering sleeves in the scope of delivery along with normal written documentation.
	+	+	+	+	++
Warranty	Currently, the standard 24 months.	Standard 24 months	24 months	24 months	24 months
	+	+	+	+	+
Service life	Sizes 20-32, 10 million Sizes 40-64, 8 million (minimum values)	Normal application, 5 million cycles and with permanent maintenance, more than 10 million cycles.	Maintenance-free up to 10 million cycles.	Currently unknown.	Maintenance-free up to 20 million cycles.
	+++	++	+++	+	++
Sizes	7 sizes (25 to 80)	3 sizes	8 sizes	3 sizes (12 to 20)	4 sizes (UG 16 to UG 25)
	+++	+	+++	+	++
Product age structure	Launched 2002	Not known	Not known	Not known	Not known
	++	+	+	+	+

3 Unique selling point



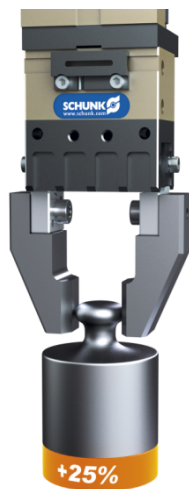
(1) Roller guide

Highly efficient junction roller guide which has a considerably higher level of efficiency compared with a ball bearing-mounted guide. The basic load rating was improved by up to 30 % as well as the life span.



(2) Clearance

The load was distributed over two lines. The spaces were reduced between the junction rollers, which means that the number of junction rollers can be increased whilst having improved absorption of the moment of force at the same time.



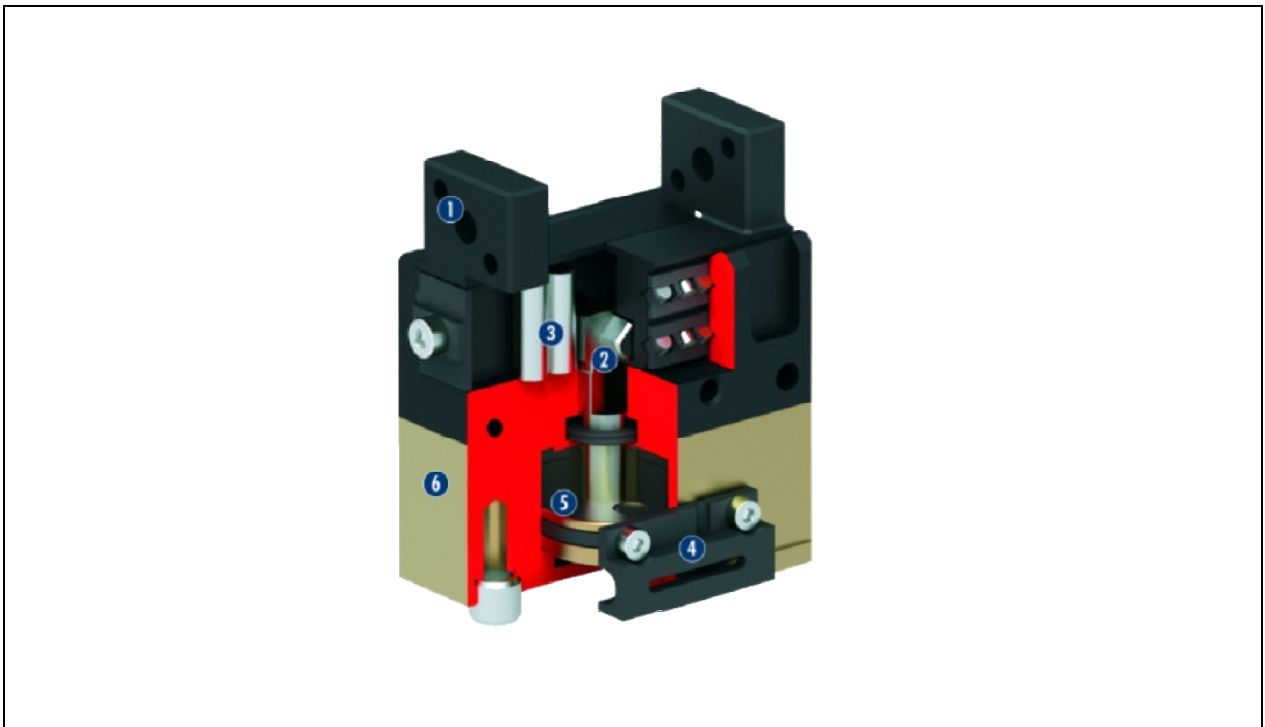
(3) Increase in gripping force

Despite having the same amount of space, the gripping force was able to be increased by 25% by using these measures. This means smaller grippers with increased gripper performance and, in the broader sense, smaller systems used in the field of automation.

4 Other product features

- Monitoring via programmable magnetic switch
- Weight-reduced design
- Shortened cycle time
- Basis MPG proven a thousand times over
- Increased load rating for the guide
- Varied mounting options (via centering sleeves, using the side and base for screwing down and screw-mounting) for max. flexibility/standardization
- ABV add-on valves as accessories/option
- Improved efficiency by using a roller guide as opposed to the usual sliding guides

4.1 Functional description of the MPG-plus



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- (1) Base jaw for adapting the workpiece-specific gripper fingers
- (2) Wedge-hook design for high force transmission and centric gripping
- (3) Roller guide for improved service life and absorption of the moment of force
- (4) Sensor systems can be used individually via brackets on the housing
- (5) Oval piston drive for optimum use of the space in the gripper housing. Larger piston surface and therefore higher gripping forces possible
- (6) Steel housing cover with flexible assembly options for accessories, e.g. sensors or direct attachment of valves

5 Price positioning

The MPG-plus is positioned at a high price level for larger sizes (as from MPG-plus 64) in comparison with the competition.

Price range

	Schunk MPG-plus	RPM	MGP	HGPC	UG
Prices Date: 2010	235.00 € - 432.00 € (without gripping force)	€	€	214.00 € - 430.00 €	

An analysis in regard of the utility value and the price/performance ratio resulting from this cannot be shown until evaluation of the use-of-potential analysis, which has not yet been created. The following applies for the calculation of the price/performance ratio:

$$\text{Price/performance ratio} = \frac{\text{Product utility index}}{\text{Price}}$$

The price/performance ratio must be determined after the evaluation and will then be added to the Sales manual.

- (7) Base jaw for adapting the workpiece-specific gripper fingers
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Cost effectiveness / Customer benefits	Line of argument
• Greater gripping forces achieved at the same volume to mass ratio; this means smaller grippers can be used. • A higher maximum permissible finger length; this means deeper engagement lengths and more flexible system designs possible. • Compact and inexpensive position monitoring possible; this means reliable processes. • Weight-reduced design; this means greater dynamics for both the gripper itself and also the primary handling system. • Weight-reduced design; this means less energy consumption needed to move the gripper on a primary handling system. • Higher level of efficiency thanks to the roller guide; this means reduced energy consumption and higher performance.	• SCHUNK offers its customers worldwide service as well as worldwide availability of its products through its foreign subsidiaries. • SCHUNK is approved by many automobile manufacturers; this does not apply to the competition. The customer therefore has fewer costs in planning and engineering design since he/she only needs to concentrate on one manufacturer and does not have to constantly obtain individual releases. • Prerequisite for the correct product recommendation is a systematic requirements analysis. Use SCHUNK know-how to meet the correct product choice for the respective customer requirements. • Have a shot at removing comparability by using a customer-specific service package (mix of product, accessories, and service). • In the event of confrontations as regards prices, each AD can independently decide whether a reduction of up to 25% is feasible; price reductions extending beyond this must first be approved by the respective area sales manager or the business unit manager.

7 Limitations of the product

The following SWOT illustration shows again briefly a comparison of the strengths and weaknesses of the MPG-plus product.

The **strengths** of the MPG-plus product clearly lie in the improved **gripping force** by up to **25 %** in the same amount of space. At the same time, along with the improved load rating value, this represents the **unique selling point** for the MPG-plus. Another advantage is based on the

fact that smaller grippers can be used in an automation solution with the same or improved gripping force especially in small series. (as from MPG-plus 32)

Strengths Very good power density in comparison with the competition. With 7 sizes, comprehensive covering for gripper segment. The improved junction roller guide offers a longer service life with a higher basic load rating and use of longer gripper fingers.	Weaknesses Loss of selectivity within market segments due to the further distribution of MPG-Classic when set against the new MPG-plus.
Opportunities The equipment as regards accessories (especially for sensors) is better than that of the competition. Furthermore, the MPG-plus exhibits innovative potential as regards accessories such as the planned valve mounting box.	Threads Relatively speaking, the competitors' offerings are not in short supply in this segment (small part handling).

The MPG-plus does not exhibit any true **weaknesses**. However, the required market pressure could be missing within the market if customers prefer the MPG Classic (which is offered at the same time) to the MPG-plus also in regard of the price. In practical terms, this means that Sales should always actively point to the technically improved functions (clear product advantages when compared with the MPG-Classic). **Opportunities** will become apparent for the MPG-plus through the innovative accessory attributes such as the position sensor, proximity switch, or the unique combination options with a valve box (available from the beginning of 2011, not for all series). This potential is not offered by the most important competitors. A real **threat** is not expected to be posed against the MPG-plus as it is definitely leading the way in one of the most important categories, the gripping force. Contact person

Your contact person at Product Management is Marcel Nagel (+49-7133-103-2561)