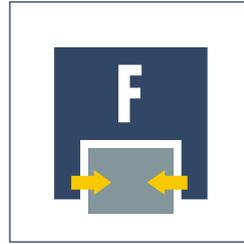




Size
100



Weight
35 kg



Gripping force
10,000 N

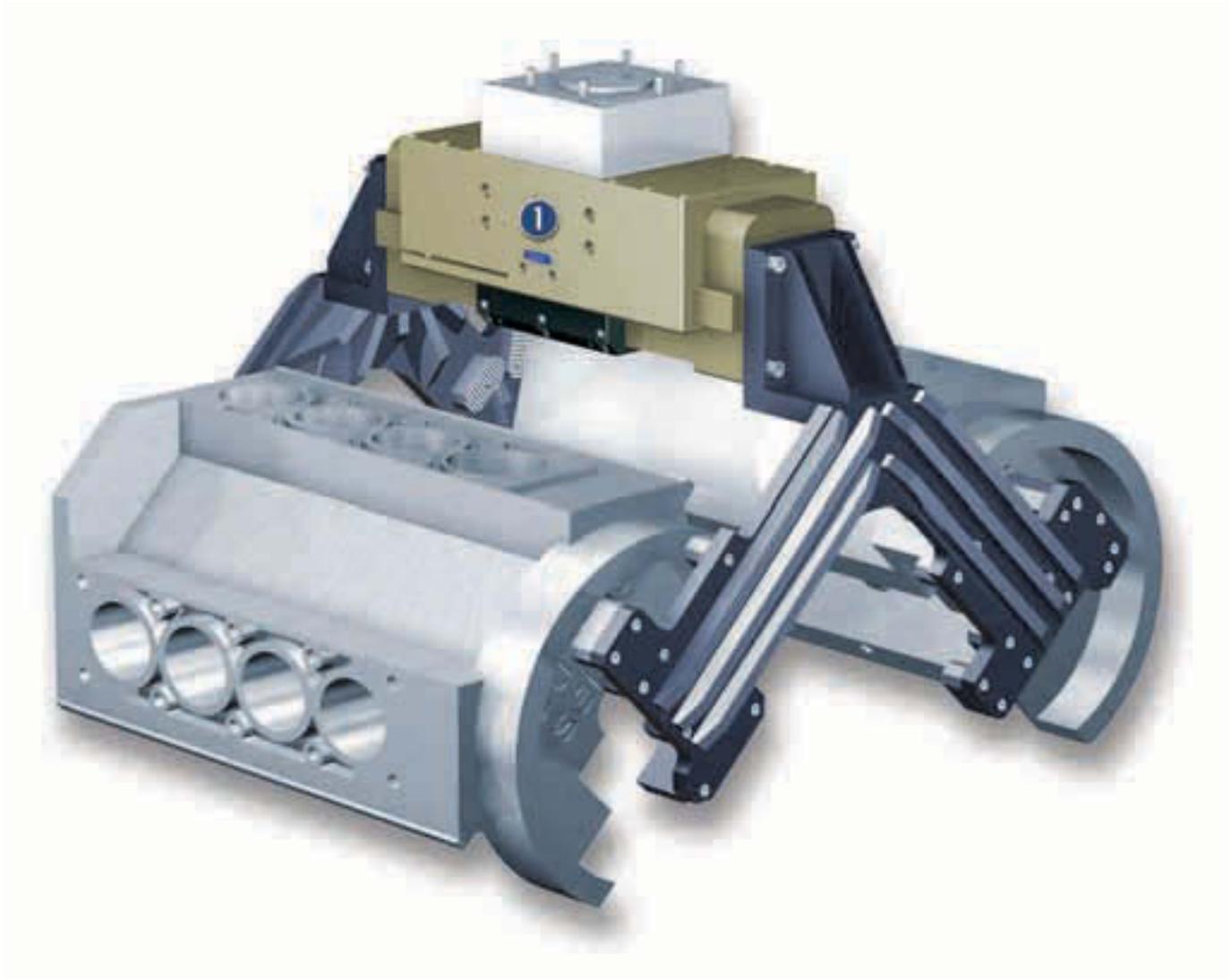


Stroke per finger
100 mm



Workpiece weight
50 kg

Application example



Gripper unit for heavy V8 engine blocks.

1 SPG 100
2-Finger Heavy-load Gripper

Heavy-load Gripper

Sturdy 2-finger parallel gripper for heavy components and a broad part range, equipped with robust guides and therefore suitable for high gripping forces and maximum moments.

Area of application

Suitable for clean working environments, covers a broad range of parts thanks to its long jaw stroke and high gripping forces for heavy workpieces

Your advantages and benefits

Robust guidance

for precise handling

High maximum moments

suitable for the use of long gripper fingers

High efficiency

through direct drive

Mounting on three sides in three mounting directions

for universal and flexible gripper assembly

Air supply via hose-free direct connection or screw connections

for the flexible supply of compressed air in all automation systems



General information on the series

Working principle

Directly driven base jaws, synchronized by rack and pinion

Housing material

Aluminum alloy, hard-anodized

Base jaw material

Aluminum alloy, hard-anodized, with steel strips

Actuation

Pneumatic, with filtered compressed air (10 µm): Dry, lubricated or non-lubricated
Pressure medium: Required quality class of compressed air according to DIN ISO 8573-1: Quality class 4

Warranty

24 months

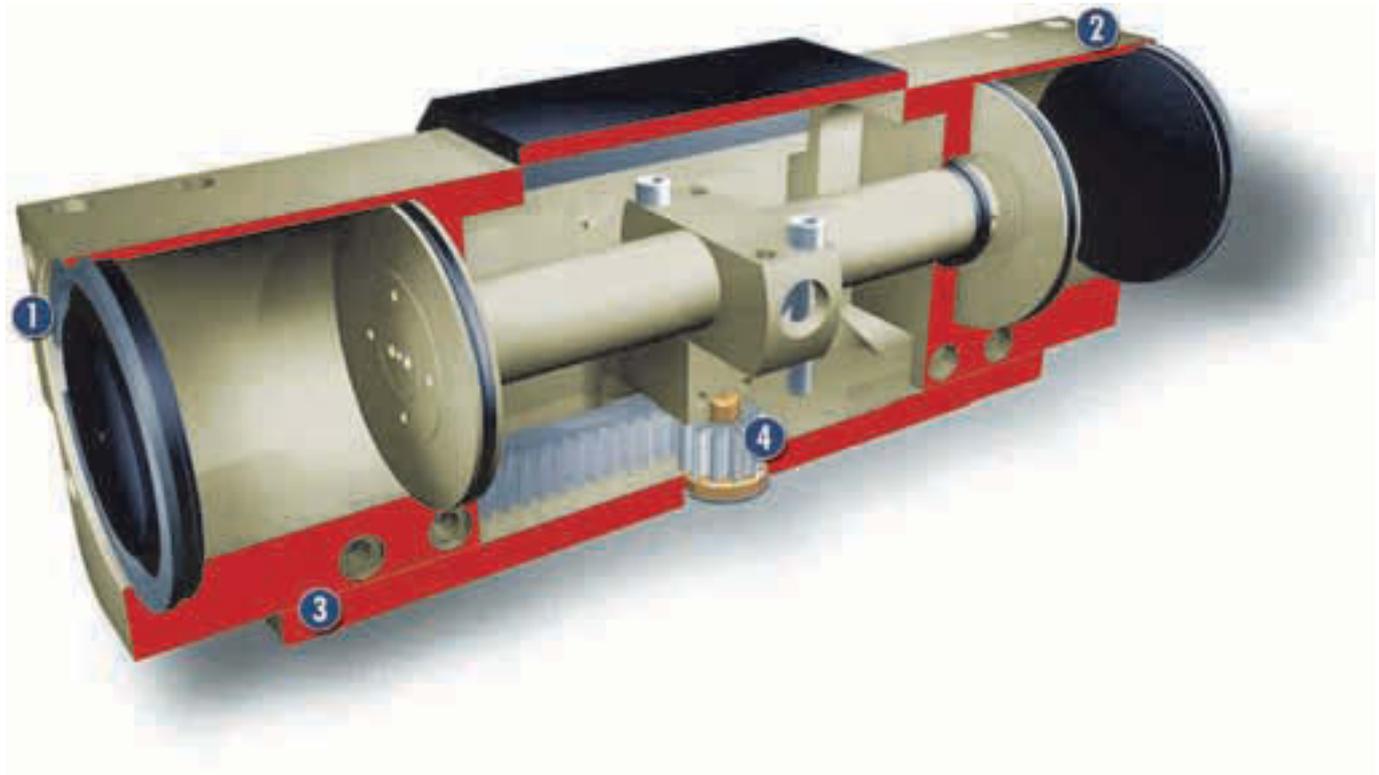
Scope of delivery

Centering sleeves, cupped-type lubricating nipples, O-rings for direct connection, assembly and operating manual with manufacturer's declaration

Gripping force safety device

with integrated pressure maintenance valve for version with ID 302120, external pressure maintenance valve can be retrofitted in the version with ID 302121.

Sectional diagram



1 Guidance
precise gripping through high load bearing guide with minimum play

2 Base jaws
for the connection of workpiece-specific gripper fingers

3 Housing
weight-reduced through the use of a hard-anodized, high-strength aluminum alloy

4 Kinematics
rack and pinion principle for centric gripping, even with long strokes

Function description

The base jaws, arranged in a line, are introduced with compressed air directly by the fixed piston, which causes them to open and close. The base jaws are synchronized by the internal rack and pinion arrangement. The direct flow of force enables a high degree of efficiency and therefore very high gripping forces.

Options and special information

Four TM6 lubricating nipples on either side for relubricating the base jaws and two purge air connections are already provided. The SPG 100 (ID 302121) with reduced opening and closing times of 1.5 s does not feature an integrated pressure maintenance valve as a gripping force safety device.

Accessories

SCHUNK accessories – the suitable complement for the highest level of functionality, reliability and controlled production of all automation modules.

Centering sleeves



Fittings



MMS magnetic switch



IN inductive proximity switches



Quentes plastic inserts



W/WK/KV/GK sensor cables



HKI gripper pads



V sensor distributors



SDV-P pressure maintenance valves



① For the exact size of the required accessories, availability of this size and the designation and ID, please refer to the additional views at the end of the size in question. You can find more detailed information on our accessory range in the "Accessories" catalog section.

General information on the series

Gripping force

is the arithmetic total of the gripping force applied to each base jaw at distance P (see illustration), measured from the upper edge of the gripper.

Finger length

is measured from the upper edge of the gripper housing in the direction of the main axis.

Repeat accuracy

is defined as the spread of the limit position after 100 consecutive strokes.

Workpiece weight

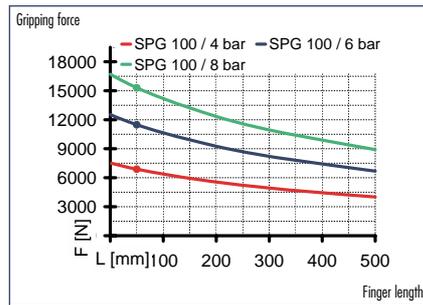
The recommended workpiece weight is calculated for a force-type connection with a coefficient of friction of 0.1 and a safety factor of 2 against slippage of the workpiece on acceleration due to gravity g. Considerably heavier workpiece weights are permitted with form-fit clamping.

Closing and opening times

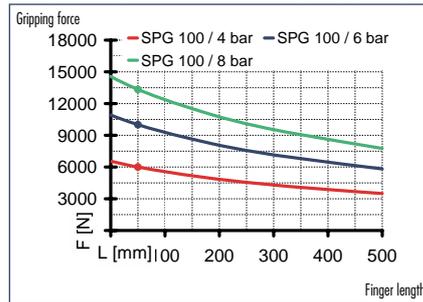
Closing and opening times are purely the times that the base jaws or fingers are in motion. Valve switching times, hose filling times or PLC reaction times are not included in the above times and must be taken into consideration when determining cycle times.



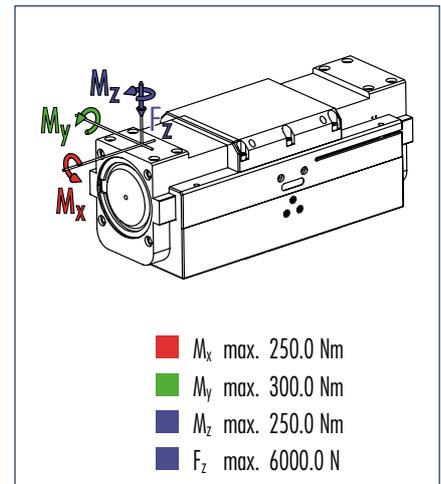
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



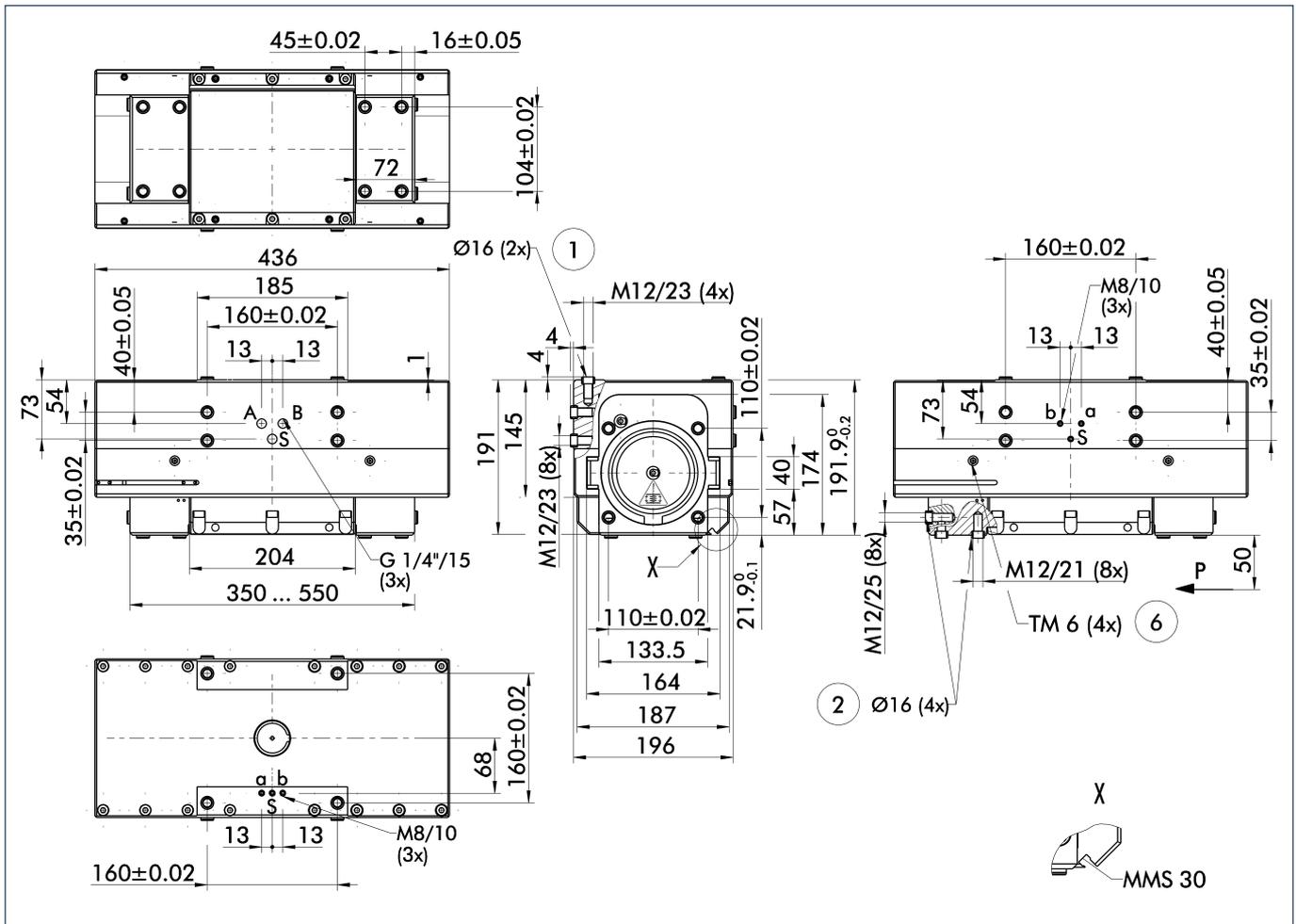
① Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description	SPG 100		
	ID	0302121	0302120
Stroke per finger	[mm]	100.0	100.0
Closing force	[N]	10000.0	10000.0
Opening force	[N]	11480.0	11480.0
Weight	[kg]	35.0	35.0
Recommended workpiece weight	[kg]	50.0	50.0
Air consumption per double stroke	[cm ³]	4600.0	4600.0
Nominal pressure	[bar]	6.0	6.0
Minimum pressure	[bar]	2.0	2.0
Maximum pressure	[bar]	8.0	8.0
Closing time	[s]	1.5	3.0
Opening time	[s]	1.5	3.0
Max. permitted finger length	[mm]	500.0	500.0
Max. permitted weight per finger	[kg]	15.0	15.0
IP rating		30	30
Min. ambient temperature	[°C]	-10.0	-10.0
Max. ambient temperature	[°C]	90.0	90.0
Repeat accuracy	[mm]	0.1	0.1

① The closing and opening times of the SPG 100 (ID 0302121) can be further reduced by fitting rapid ventilation valves to the air connections. However, care must be taken to ensure that the jaw movement occurs without any hitting or bouncing.

Main views

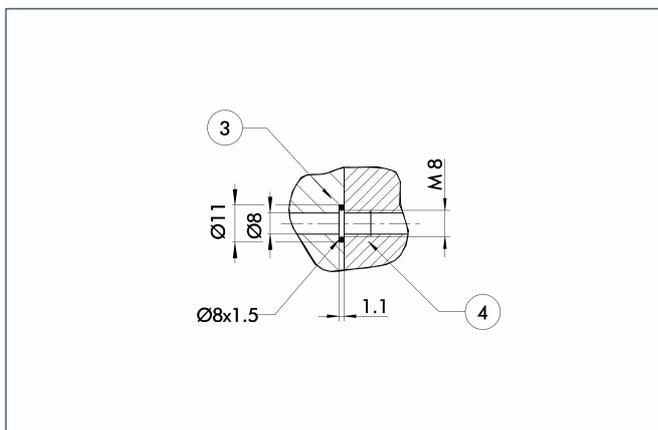


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

① An external SDVP pressure maintenance valve can be used as a gripping force safety device for I.D. and O.D. gripping (see "Accessories" catalog section for the SPG 100 (ID 0302121)).

- A,a Main/direct connection, gripper opening
- B,b Main/direct connection, gripper closing
- S,s Air purge connection or bleeder ventilation hole
- ① Gripper connection
- ② Finger connection
- ⑥ Lubricating nipple connection

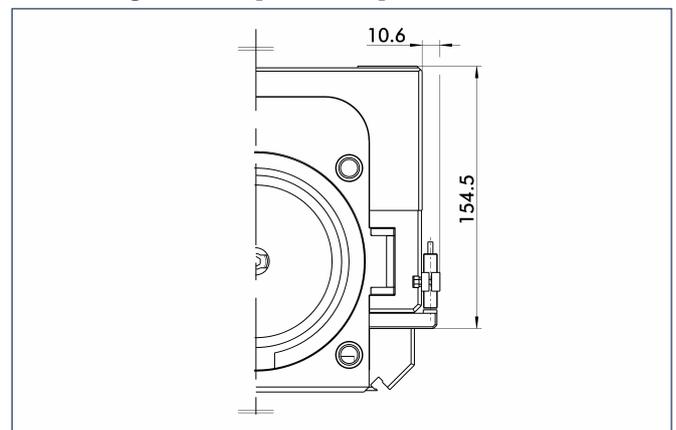
Hoseless direct connection



- ③ Adapter
- ④ Gripper

The direct connection is used for supplying compressed air to the gripper without vulnerable hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

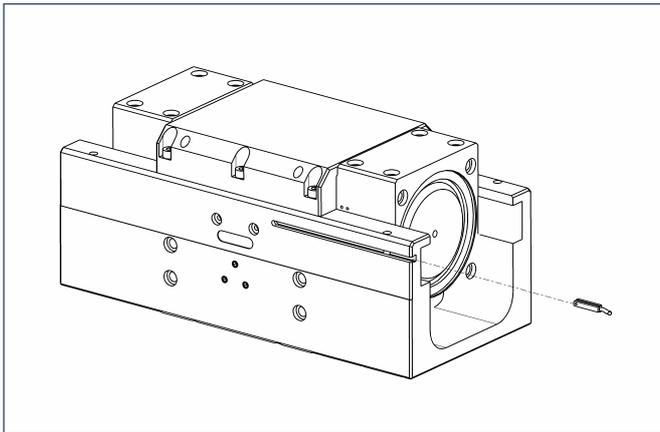
Mounting kit for proximity switch



The mounting kit consists of switch cams, brackets and the associated mounting screws. The proximity switches must be ordered separately.

Description	ID
HG-SPG 100	0300765

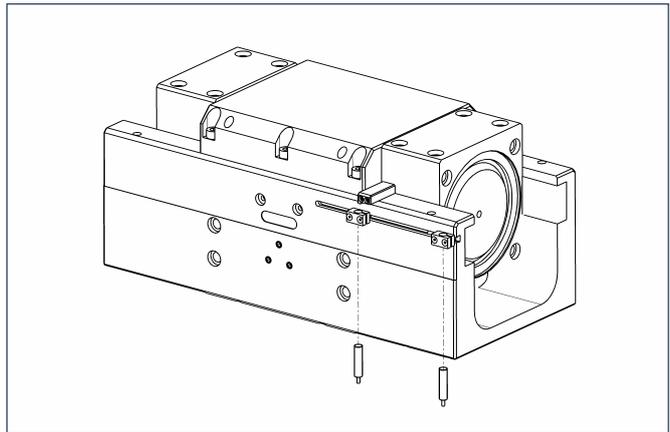
Sensor system



End position monitoring: Electronic magnetic switches, for mounting in C-slot

Description	ID	Recommended product
MMS 30-S-M12-PNP	0301571	
MMS 30-S-M8-PNP	0301471	•
MMSK 30-S-PNP	0301563	

- ① Two sensors (NO contacts) are required for each gripper, plus extension cables as an option.



End position monitoring: Inductive proximity switches, mounted with mounting kit

Description	ID	Recommended product
HG-SPG 100	0300765	
IN 80/S-M12	0301578	
IN 80/S-M8	0301478	•
IN-B 80/S-M8	0301477	
INK 80/S	0301550	
INK 80/SL	0301579	

- ① Two sensors (NO contacts) are required for each gripper, plus extension cables as an option.

Extension cables for proximity switches/magnetic switches

Description	ID
GK 3-M8	0301622
KV 10-M12	0301596
KV 10-M8	0301496
KV 20-M12	0301597
KV 20-M8	0301497
KV 3-M12	0301595
KV 3-M8	0301495
WK 3-M8	0301594
WK 5-M8	0301502

- ① Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.



You can find more detailed information and individual parts of the above-mentioned accessories in the "Accessories" catalog section.

