

Pneumatic • 2-Finger Parallel Gripper • Long-stroke Gripper



Sizes 30 .. 50



Weight 2.65 kg .. 9.7 kg



Gripping force 510 N .. 2650 N



Stroke per finger 30 mm .. 50 mm



Workpiece weight 2.55 kg .. 11.5 kg

Application example



Assembly unit for intermediate sleeves in various diameters. The unit has collision protection to prevent damages.

PFH 30 2-Finger Parallel Gripper with workpiece-specific gripper fingers

(1)



OPS 100 collision and overload protection



Long-stroke Gripper

2-Finger parallel gripper with long jaw stroke for large parts and/or a broad range of parts

Area of application

Clean to slightly dirty environments

Your advantages and benefits

Robust guidance for the precise handling of all kinds of workpieces

High maximum load capabilities suitable for the use of long gripper fingers

Rack and pinion principle for centric gripping

Mounting from two sides in three screw 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

Pneumatic double piston system synchronized by rack and pinion principle

Housing material Aluminum alloy, hard-anodized

Base jaw material Steel

Actuation

Pneumatic, with filtered compressed air (10 μ m): Dry, lubricated or non-lubricated Pressure medium: Requirements on quality of the compressed air according to DIN ISO 8573-1: 6 4 4.

Warranty

24 months

Scope of delivery Brackets for proximity switches, centering sleeves, O-rings for direct connection, assembly and operating manual with manufacturer's declaration

Maintenance of gripping force

possible with SDV-P pressure maintenance valve



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Sectional diagram





Base jaws for the connection of workpiece-specific gripper fingers



Dirt cover protects against rough contamination along the entire length of the guide



Guidance for precise gripping with minimum play and high load capacity



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Kinematics

rack and pinion principle for centric gripping



Housing

weight-reduced through the use of a hardanodized, high-strength aluminum alloy

Function description

The application of pressure on the opposite piston sets the base jaws, each of which is guided by a carrier on the piston, in motion. The jaw stroke is synchronized by means of rack and pinion kinematics.

Options and special information

Gripper with guide cover to protect against rough contamination. Gripper available on request as a special unit with double stroke but with the same gripping forces.



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Accessories

Accessories from SCHUNK the suitable supplement for maximum functionality, reliability and performance of all automation modules.









IN inductive proximity switches









HKI gripper pads

SDV-P pressure

maintenance valves





V sensor distributors



FPS flexible position sensor



() 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 will 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 blanks

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 gripping.

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.



PFH 50

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Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



Moments and forces apply per base jaw and may occur simultaneously. My 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 reduce.

Technical data

Description		PFH 50	PFH 50-100	PFH 50-AS	PFH 50-IS
:	ID	0302050	0302053	0302051	0302052
Stroke per finger	[mm]	50.0	100.0	50.0	50.0
Closing force	[N]	2600.0	2600.0	2770.0	
Opening force	[N]	2330.0	2330.0		2500.0
Min. gripping force through spring	[N]			170.0	170.0
Weight	[kg]	9.6	12.6	9.7	9.7
Recommended workpiece weight	[kg]	13.0	13.0	13.0	11.65
Air consumption per double stroke	[cm ³]	603.0	1205.0	603.0	603.0
Nominal pressure	[bar]	6.0	6.0	6.0	6.0
Minimum pressure	[bar]	2.0	2.0	5.0	5.0
Maximum pressure	[bar]	8.0	8.0	6.5	6.5
Closing time	[S]	0.6	1.0	0.5	0.7
Opening time	[s]	0.7	1.2	0.8	0.6
Closing/opening time with spring only	[S]			0.8	0.8
Max. permitted finger length	[mm]	250.0	250.0	200.0	200.0
Max. permitted weight per finger	[kg]	4.0	4.0	4.0	4.0
IP class		41	41	41	41
Min. ambient temperature	[°[]	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature	[°[]	90.0	90.0	90.0	90.0
Repeat accuracy	[mm]	0.05	0.05	0.05	0.05



PFH 50

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Main views



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

- (1) The SDV-P pressure maintenance valve can also be used (see "Accessories" catalog section) for I.D. or O.D. gripping as an alternative or in addition to the spring-loaded, mechanical gripping force safety device.
- A,a Main/direct connection, gripper opening
- B,b Main/direct connection, gripper closing
- S,s Air purge or ventilation hole
- 1 Gripper connection
- Finger connection
- (28) Through-bore

Hose-free direct connection



(4) Gripper

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

PFH 50-100 (double stroke)



(9) For screw connection diagram, see basic version

The PFH 50-100 is a version with a stroke of double length.



PFH 50

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Intermediate jaws



1 Gripper connection

(2) Finger connection

The optional intermediate jaws produce a symmetrical, centered screw connection diagram. This facilitates the design and manufacture of customized top jaws.

Description	Material	Scope of delivery	ID
ZBH 50	16 MnCr 5	2	0300222

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



Sensor system



End position monitoring:

Inductive proximity switches, for direct mounting

Description	ID	Recommended product
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
INK 80-S	0301550	

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

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			

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

Extension cables for proximity switches/magnetic switches Description ID KA BGO8-L 3P-0300-PNP 0301622 KA BW08-L 3P-0300-PNP 0301594 KA BW08-L 3P-0500-PNP 0301502 KA BW12-L 3P-0300-PNP 0301503 KA BW12-L 3P-0500-PNP 0301507 KV BW08-SG08 3P-0030-PNP 0301495 KV BW08-SG08 3P-0100-PNP 0301496 KV BW08-SG08 3P-0200-PNP 0301497 0301595 KV BW12-SG12 3P-0030-PNP KV BW12-SG12 3P-0100-PNP 0301596 KV BW12-SG12 3P-0200-PNP 0301597

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.

