

# PFH 200

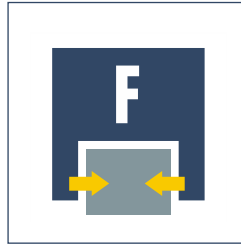
Pneumatic · 2-Finger Parallel Grippers · Long-stroke Grippers



Sizes  
200



Weight  
23.5 kg



Gripping force  
2200 N



Stroke per finger  
200 mm



Workpiece weight  
14.7 kg

## Application example



Gripper unit for handling car and truck rims. Special fingers enable the secure gripping of pre-machined and finished parts.

1 PFH 200 2-Finger Long-stroke Gripper

2 Special fingers for rim handling

3 19-inch rim with five holes for wheel bolts

### Long-stroke Gripper

2-Finger parallel gripper with long jaw stroke for a very broad range of parts

#### Area of application

Clean to slightly dirty working environments, especially suitable for the handling of motor vehicle rims

#### Your advantages and benefits

##### Robust guidance

for the precise handling of all kinds of workpieces

##### High moment 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 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

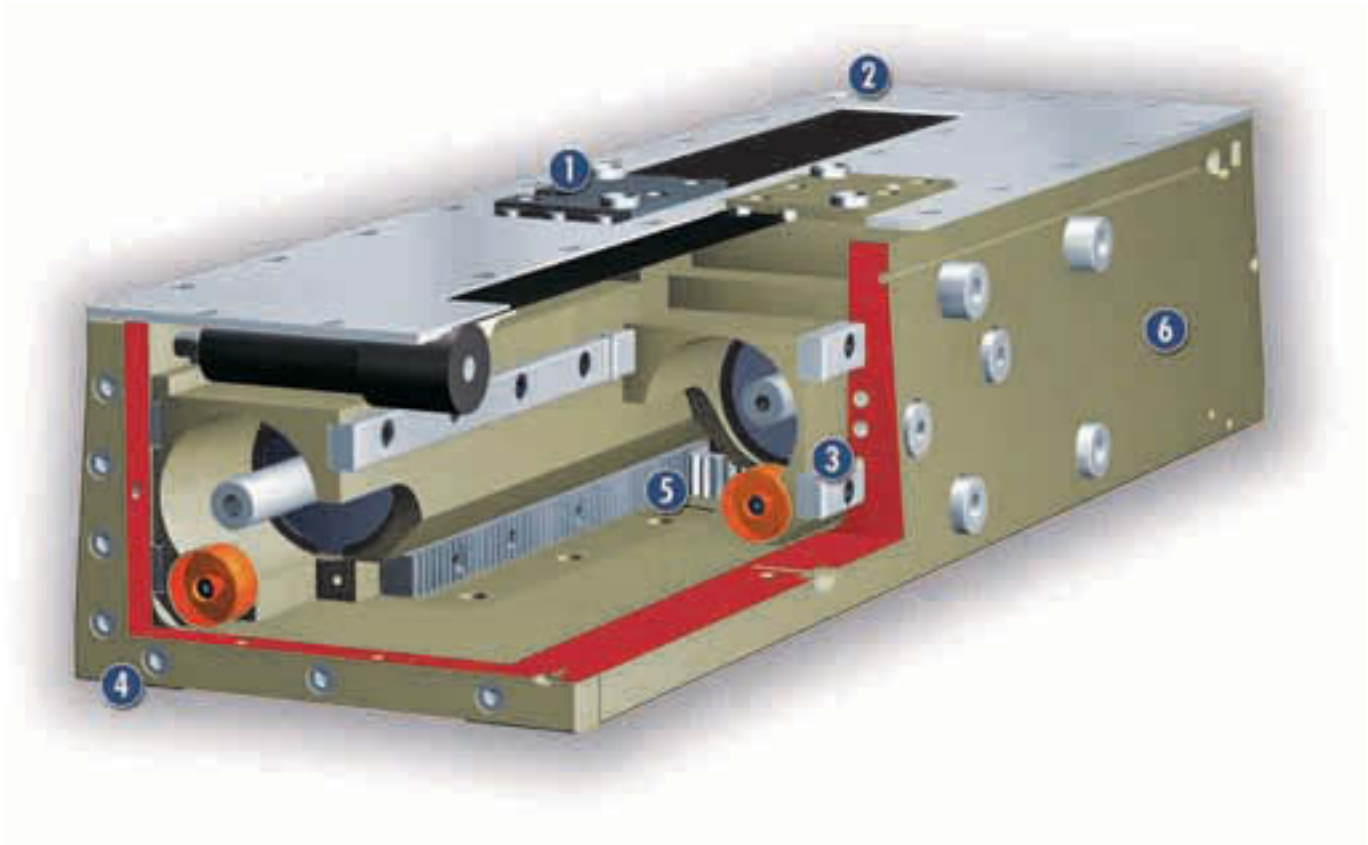
##### Scope of delivery

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

### Sectional diagram



- 1 Base jaws**  
for the connection of workpiece-specific gripper fingers
- 2 Dirt cover**  
protects against rough contamination along the entire length of the guide
- 3 Guidance**  
for precise gripping with minimum play and high load-bearing capacity
- 4 Centering and mounting possibilities**  
for universal gripper mounting
- 5 Kinematics**  
rack and pinion principle for centric gripping
- 6 Housing**  
Sturdy, one-piece U-section

### Function description

The base jaws form the piston areas, while the pistons themselves are fixed. The application of pressure on the opposite piston area in each case sets the base jaws in motion. The end of the stroke is dampened by elastomer.

### Options and special information

The gripper was specially developed for handling automotive wheel rims. It is capable of gripping rims from 13" to 21", but can also be used for handling other large workpieces. Units with manual stroke adjustment and versions with shorter and longer strokes are available on request.

### 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



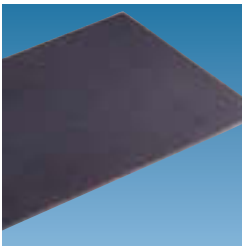
Quentes plastic inserts



W/WK/KV/GK sensor cables



HKI gripper pads



SDV-P pressure maintenance valves



V sensor distributors



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

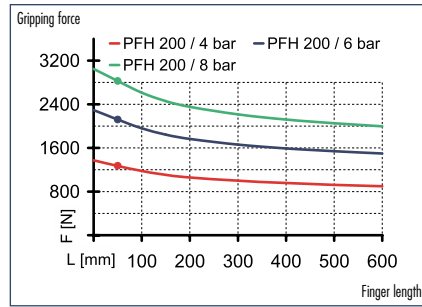
Closing and opening times are purely the times that the base jaws or fingers are in motion. Valve switching times, hose filling times or PLC reaction times are not included in the above times and must be taken into consideration when determining cycle times.

# PFH 200

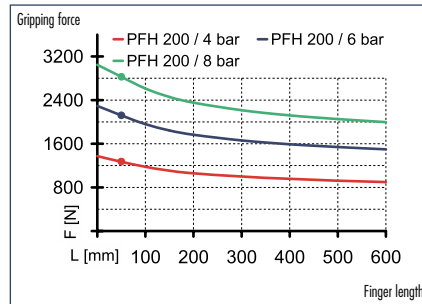
## Pneumatic · 2-Finger Parallel Grippers · Long-stroke Grippers



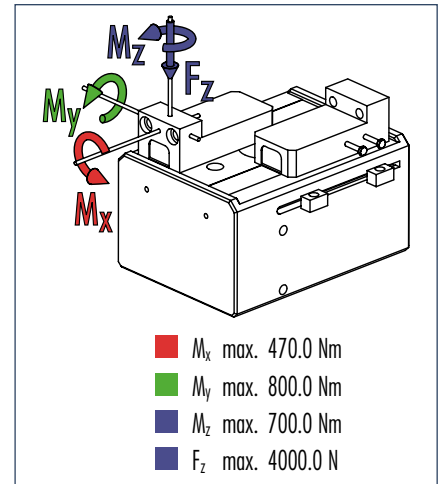
### Gripping force, I.D. gripping



### Gripping force, O.D. gripping



### Finger load

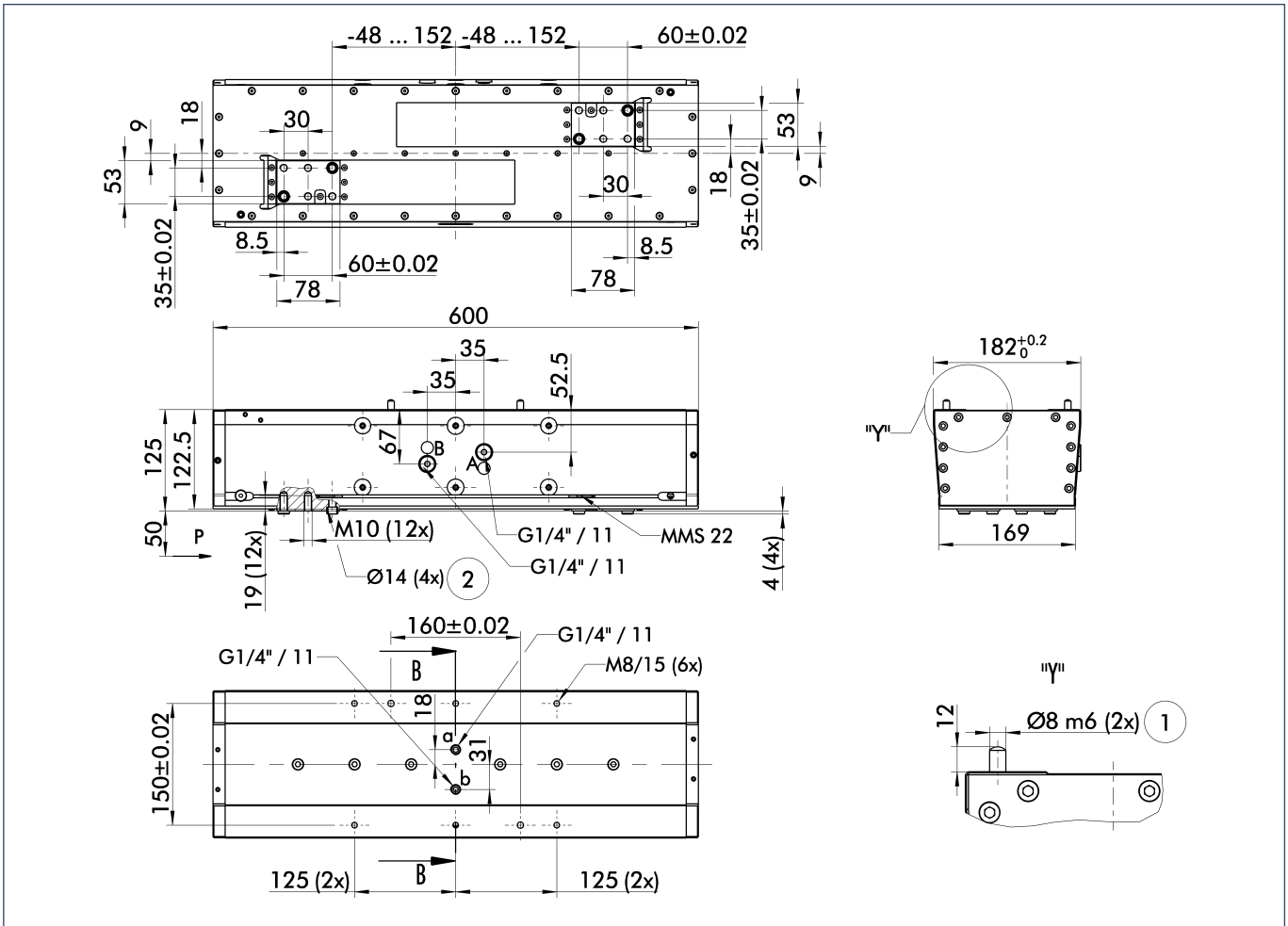


ⓘ Moments and forces apply per base jaw and may occur simultaneously.  $M_y$  may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting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

## Technical data

Description		PFH 200
	ID	0302020
Stroke per finger	[mm]	200.0
Closing force	[N]	2200.0
Opening force	[N]	2200.0
Weight	[kg]	23.5
Recommended workpiece weight	[kg]	14.7
Air consumption per double stroke	[cm <sup>3</sup> ]	1990.0
Nominal pressure	[bar]	6.0
Minimum pressure	[bar]	2.0
Maximum pressure	[bar]	8.0
Closing time	[s]	0.9
Opening time	[s]	0.9
Max. permitted finger length	[mm]	600.0
Max. permitted weight per finger	[kg]	8.0
IP class		30
Min. ambient temperature	[°C]	-10.0
Max. ambient temperature	[°C]	90.0
Repeat accuracy	[mm]	0.02

### Main views

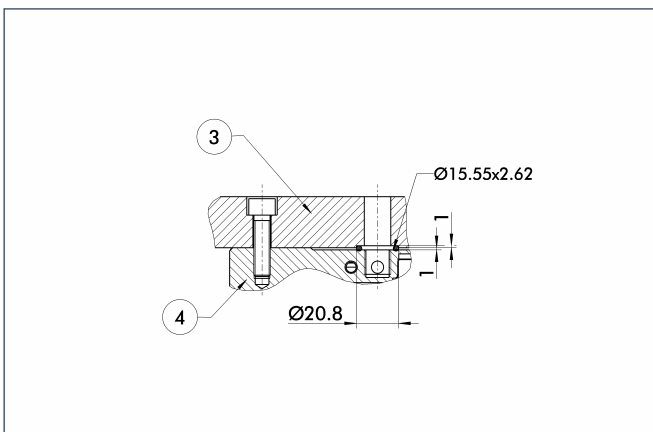


The drawing shows the gripper in the basic version with open jaws, the dimensions do not include the options described below.

- A,a Main/direct connection, gripper opening
- B,b Main/direct connection, gripper closing
- ① Gripper connection
- ② Finger connection

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.

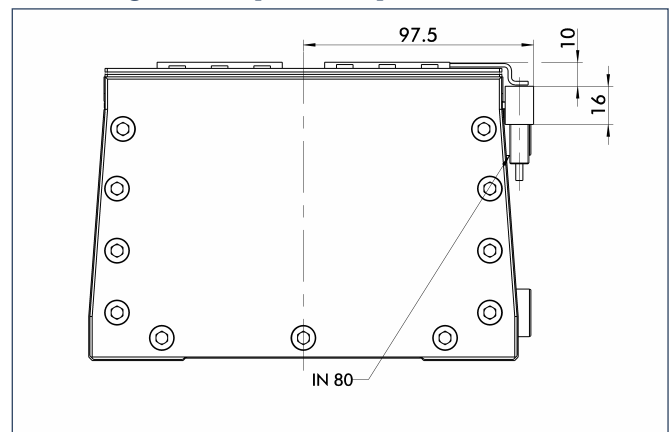
### Hoseless direct connection



- 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.

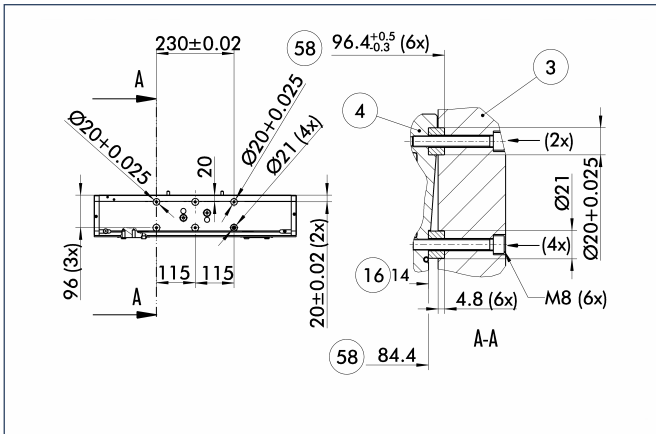
### Mounting kit for proximity switch



The mounting kit enables 2 inductive proximity switches to be fitted. The kit is fitted in the sensor slot of the slotted switch.

Description	ID
HG-PFH 150-300	0300770

### Mounting kit for side mount



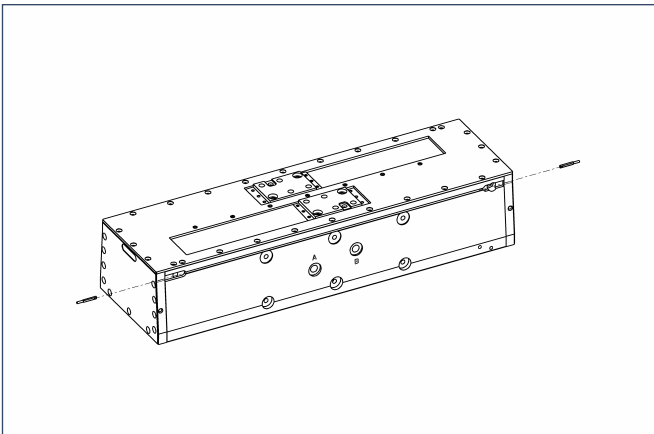
- ③ Adapter
- ④ Gripper
- 16 Max. depth of engagement
- 58 Distance from center of gripper

The mounting kit for side mount (ID: 0302024) enables proximity switches to be mounted to the side of the gripper so that they are parallel and centered.



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

### Sensor system



#### End position monitoring:

##### Electronic magnetic switches, for mounting in C-slot

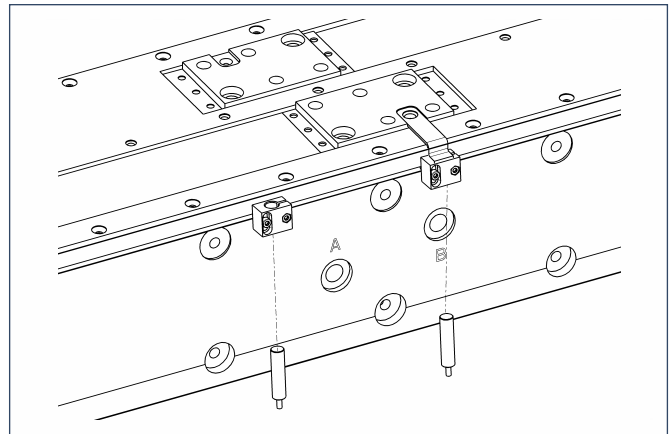
Description	ID	Recommended product
MMS 22-S-M5-NPN	0301455	
MMS 22-S-M5-NPN-SA	0301461	
MMS 22-S-M5-PNP	0301454	
MMS 22-S-M5-PNP-SA	0301460	
MMS 22-S-M8-NPN	0301451	
MMS 22-S-M8-NPN-SA	0301457	
MMS 22-S-M8-PNP	0301450	•
MMS 22-S-M8-PNP-SA	0301456	
MMSK 22-S-NPN	0301453	
MMSK 22-S-NPN-SA	0301459	
MMSK 22-S-PNP	0301452	
MMSK 22-S-PNP-SA	0301458	

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-M5-PNP / NPN	0301652
GK 3-M8	0301622
KV 10-M8	0301496
KV 20-M8	0301497
W 3-M5-PNP / NPN	0301650
WK 3-M8	0301594
WK 3-M8 NPN	0301602
WK 5-M8	0301502
WK 5-M8 NPN	9641116

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



#### End position monitoring:

##### Inductive proximity switches, mounted with mounting kit

Description	ID	Recommended product
HG-PFH 150-300	0300770	
IN 80/S-M12	0301578	
IN 80/S-M8	0301478	•
INK 80/S	0301550	
INK 80/SL	0301579	

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



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