

Loadable. Precise. Reliable.

Centric Gripper PZV

The multi-finger gripper for applications, in which two or three fingers are insufficient

Field of Application

4-finger centric grippers have advantages over the usual centric grippers, for example when cylindrical workpieces are being stored in tablets. The PZV handles the workpieces in a controlled, process-reliable manner despite the interfering contours.

Advantages – Your benefits

Robust multi-tooth guidance for precise handling

Wedge-hook principle for high power transmission and synchronized gripping

Air supply via hose-free direct connection or screw connections for flexible pressure supply in all automated systems

Comprehensive sensor accessory program for versatile querying possibilities and stroke position control



Sizes
Quantity: 5



Weight
0.5 .. 10 kg



Gripping force
570 .. 6900 N



Stroke per jaw
4 .. 16 mm

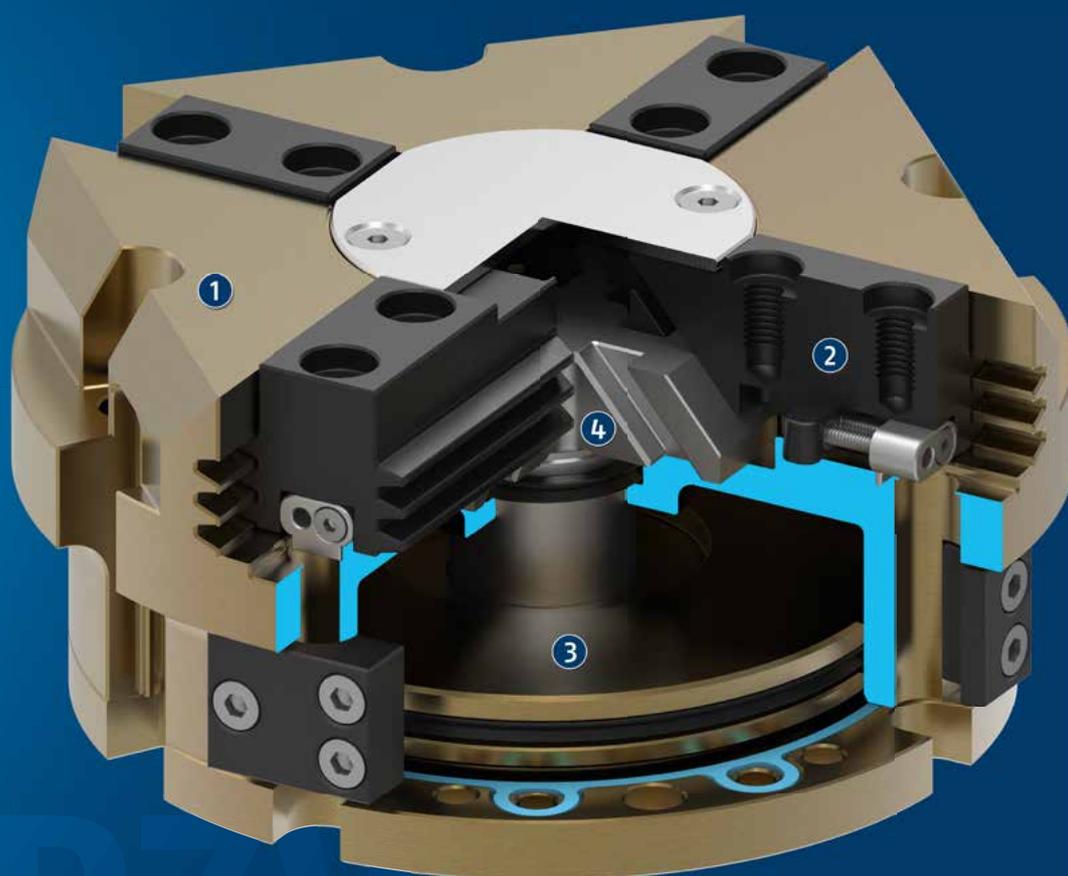


Workpiece weight
2.8 .. 34.5 kg



Functional Description

The piston is moved up and down by compressed air.
The angled active surfaces of the wedge-hook produce a synchronized, centric jaw movement.



- ① **Housing**
Is weight-optimized due to the use of high-strength aluminum alloy
- ② **Multi-tooth guidance**
For mounting high loads onto the base jaw
- ③ **Drive**
Through pneumatic double piston system
- ④ **Wedge-hook principle**
For high force transmission and centric gripping

General Notes about the Series

Operating principle: Wedge-hook kinematics

Housing material: Aluminum alloy, anodized

Base jaw material: Steel

Actuation: Pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4]

Warranty: 36 months

Longlife: 30 years functional warranty (details can be found online)

Scope of delivery: Brackets for proximity switches, centering sleeves, O-rings for direct connection, assembly instructions (operating manual with declaration of incorporation is available online)

Gripping force maintenance: Possible with pressure maintenance valve SDV-P

Gripping force: Is the arithmetic sum of the individual force applied to each jaw at distance P (see illustration)

Finger length: Is measured from the reference surface as the distance P in direction to the main axis.

The maximum permissible finger length applies until the nominal operating pressure is achieved. With higher pressures, the finger length must be reduced proportionally to the nominal operating pressure.

Repeat accuracy: Is defined as a distribution of the end position for 100 consecutive strokes.

Workpiece weight: Is calculated for force-fit gripping with a coefficient of static friction of 0.1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity g. For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

Closing and opening times: Are purely the times that the base jaws or fingers are in motion. Valve switching times, hose fill times, or PLC reaction times are not included, and are to be considered when cycle times are calculated.

Application Example

Centering and rotary unit for the precise picking up, orientation, and subsequent joining of square materials.

- ① Multi-finger gripper PZV
- ② Collision sensor OPS
- ③ Swivel unit SRU-plus
- ④ Universal linear module Beta



SCHUNK offers more ...

The following components make the product PZV even more productive – the suitable addition for the highest functionality, flexibility, reliability, and process safety.



Rotary feed-through



Tolerance compensation unit



Pressure maintenance valve



Jaw quick-change system



Inductive proximity switch



Magnetic switch



Flexible position sensor



Finger blank

① Further information on these products can be found on the following product pages or at schunk.com. Please contact us: SCHUNK technical hotline +49-7133-103-2696

Options and special Information

Intermediate sizes are available on request. Please note that the four-finger grip is an umbrella term, and may lead to a two or three-finger grip in certain cases.

Pressure reduction in case of a two-finger application of the PZV 160 and 200: The operating pressure must be reduced to a maximum of 5 bar when using the 4-finger centric gripper PZV 160 and 200 as a (double) 2-finger parallel gripper.

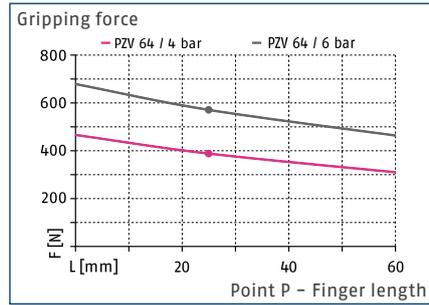
Integrated air purge connection: Impedes the ingress of dirt into the inside of the gripper

PZV 64

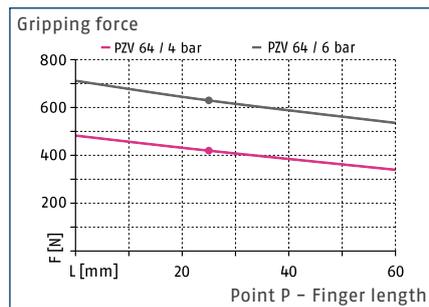
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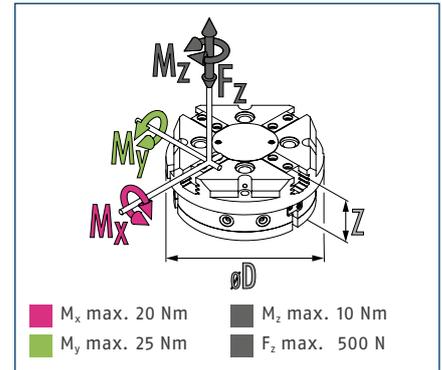
Gripping force O.D. gripping



Gripping force I.D. gripping



Dimensions and maximum loads



① The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself.

Technical data

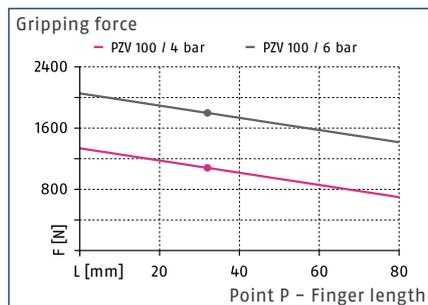
Description		PZV 64
ID		0304000
Stroke per jaw	[mm]	4
Closing/opening force	[N]	570/630
Weight	[kg]	0.5
Recommended workpiece weight	[kg]	2.8
Fluid consumption double stroke	[cm ³]	25
Min./nom./max. operating pressure	[bar]	2/6/8
Min./max. air purge pressure	[bar]	0.5/1
Closing/opening time	[s]	0.02/0.02
Max. permissible finger length	[mm]	64
Max. permissible mass per finger	[kg]	0.18
Protection class IP		40
Min./max. ambient temperature	[°C]	5/90
Repeat accuracy	[mm]	0.01
Dimensions Ø D x Z	[mm]	76 x 41.3

① It may take a few 100 gripping cycles until the full gripping force (as indicated in the data table) will be available.

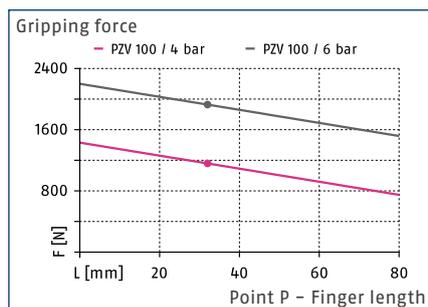
More detailed, up-to-date information on the SCHUNK product including drawings, CAD data, and operating manuals are available online at: schunk.com/pzv



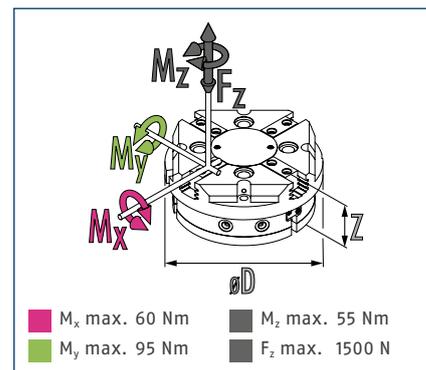
Gripping force O.D. gripping



Gripping force I.D. gripping



Dimensions and maximum loads



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Technical data

Description		PZV 100
ID		0304002
Stroke per jaw	[mm]	8
Closing/opening force	[N]	1800/1900
Weight	[kg]	1.6
Recommended workpiece weight	[kg]	9
Fluid consumption double stroke	[cm ³]	120
Min./nom./max. operating pressure	[bar]	2/6/8
Min./max. air purge pressure	[bar]	0.5/1
Closing/opening time	[s]	0.04/0.04
Max. permissible finger length	[mm]	80
Max. permissible mass per finger	[kg]	0.6
Protection class IP		40
Min./max. ambient temperature	[°C]	5/90
Repeat accuracy	[mm]	0.01
Dimensions $\varnothing D \times Z$	[mm]	112 x 55

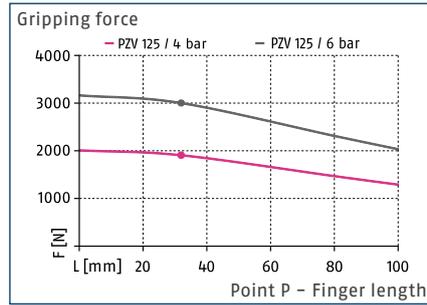
① It may take a few 100 gripping cycles until the full gripping force (as indicated in the data table) will be available.

PZV 125

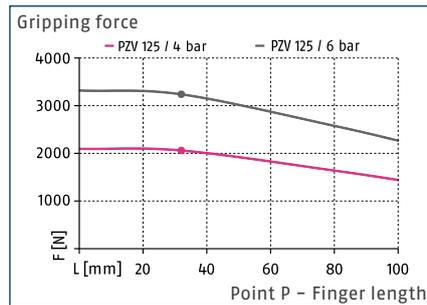
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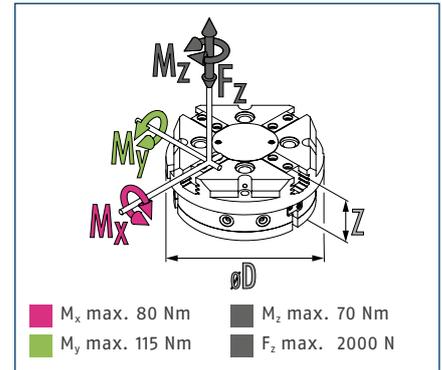
Gripping force O.D. gripping



Gripping force I.D. gripping



Dimensions and maximum loads



① The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself.

Technical data

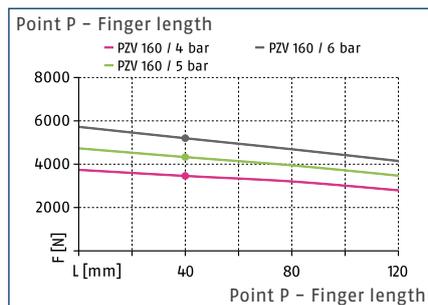
Description		PZV 125
ID		0304003
Stroke per jaw	[mm]	10
Closing/opening force	[N]	3000/3230
Weight	[kg]	2.3
Recommended workpiece weight	[kg]	15
Fluid consumption double stroke	[cm ³]	230
Min./nom./max. operating pressure	[bar]	2/6/8
Min./max. air purge pressure	[bar]	0.5/1
Closing/opening time	[s]	0.1/0.1
Max. permissible finger length	[mm]	100
Max. permissible mass per finger	[kg]	1.1
Protection class IP		40
Min./max. ambient temperature	[°C]	5/90
Repeat accuracy	[mm]	0.01
Dimensions $\varnothing D \times Z$	[mm]	144 x 63

① It may take a few 100 gripping cycles until the full gripping force (as indicated in the data table) will be available.

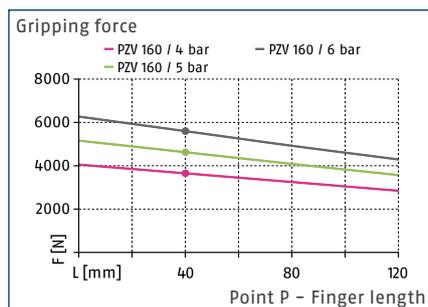
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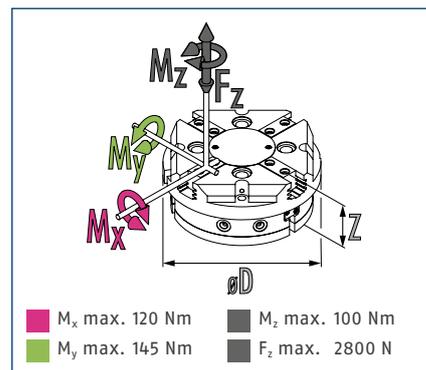
Gripping force O.D. gripping



Gripping force I.D. gripping



Dimensions and maximum loads



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Technical data

Description		PZV 160
ID		0304004
Stroke per jaw	[mm]	13
Closing/opening force	[N]	5200/5600
Weight	[kg]	5.5
Recommended workpiece weight	[kg]	26
Fluid consumption double stroke	[cm ³]	520
Min./nom./max. operating pressure	[bar]	2/6/6
Min./max. air purge pressure	[bar]	0.5/1
Closing/opening time	[s]	0.1/0.1
Max. permissible finger length	[mm]	120
Max. permissible mass per finger	[kg]	2.1
Protection class IP		40
Min./max. ambient temperature	[°C]	5/90
Repeat accuracy	[mm]	0.01
Dimensions $\varnothing D \times Z$	[mm]	178 x 80.7

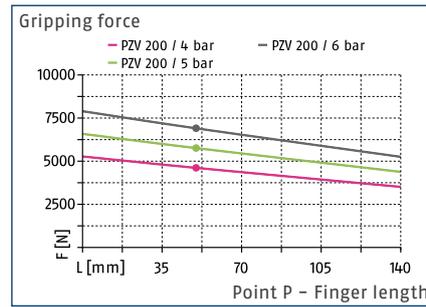
① It may take a few 100 gripping cycles until the full gripping force (as indicated in the data table) will be available. The operating pressure must be reduced to a maximum of 5 bar when using the 4-finger centric gripper PZV 160 and 200 as a (double) 2-finger parallel gripper.

PZV 200

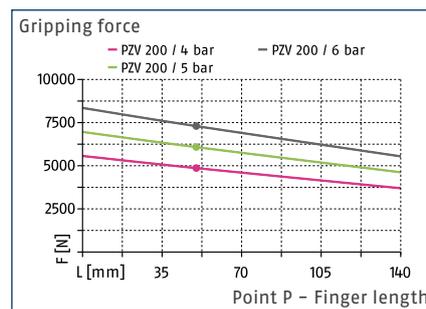
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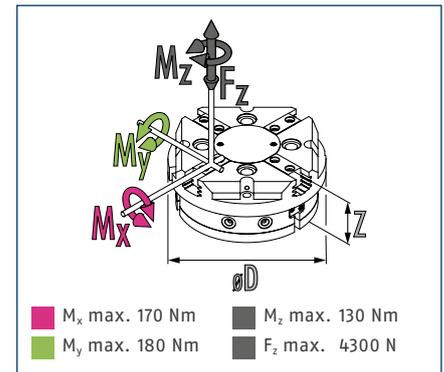
Gripping force O.D. gripping



Gripping force I.D. gripping



Dimensions and maximum loads



① The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself.

Technical data

Description		PZV 200
ID		0304005
Stroke per jaw	[mm]	16
Closing/opening force	[N]	6900/7300
Weight	[kg]	10
Recommended workpiece weight	[kg]	34.5
Fluid consumption double stroke	[cm ³]	1040
Min./nom./max. operating pressure	[bar]	2/6/6
Min./max. air purge pressure	[bar]	0.5/1
Closing/opening time	[s]	0.15/0.15
Max. permissible finger length	[mm]	140
Max. permissible mass per finger	[kg]	3.5
Protection class IP		40
Min./max. ambient temperature	[°C]	5/90
Repeat accuracy	[mm]	0.02
Dimensions Ø D x Z	[mm]	217 x 96

① It may take a few 100 gripping cycles until the full gripping force (as indicated in the data table) will be available. The operating pressure must be reduced to a maximum of 5 bar when using the 4-finger centric gripper PZV 160 and 200 as a (double) 2-finger parallel gripper.

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