

Superior Clamping and Gripping



# **Product Information**

Gripper for small components MPC

# Easy. Economical. Cost-effective. Gripper for small components MPC

Easily built up 2-finger parallel gripper with good price-performance ratio

# Field of application

Gripping of small to mid-sized workpieces in low-contamination environments with reduced requirements in terms of precision and lifespan and for shorter system run times

# **Advantages - Your benefits**

**Cost-efficient basic gripper with basic functionalities** specially suitable for simple applications in small components handling

**Series with six unit sizes** for a broad range of applications from small to mid-sized workpieces

**Technically and financially compatible sensor system** for a simple, functional gripping system completely from a single source

Housing and guidance made of high-strength aluminum therefore exposed to high physical loads and is weight optimized







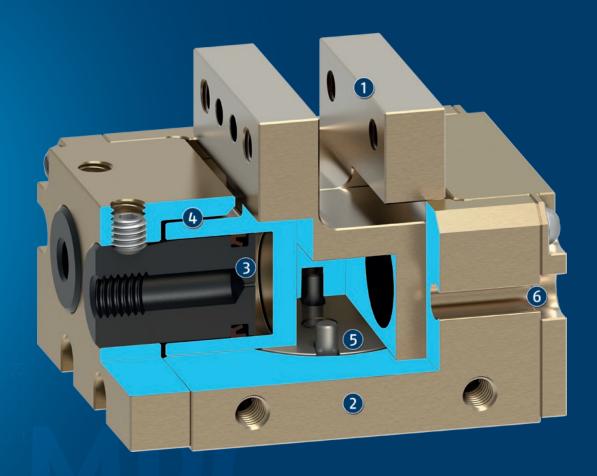






# **Functional description**

The base jaws are actuated with compressed air by the fixed piston and in turn the gripper is opened or closed. The kinematics synchronizes the movement of the base jaws.



- Base Jaw
   for the connection of workpiece-specific gripper fingers
- ② Housing is weight-optimized due to the use of high-strength aluminum alloy
- 3 Drive through pneumatic double piston system

- Guidance
  Price-attractive flat guidance
- Synchronization of base jaws for centric gripping
- Sensor systemDouble-sided C-slot for the use of magnetic sensors

# General notes about the series

Operating principle: synchronized double piston

Warranty: 12 months

**Maintenance and repair:** is not envisaged. The gripper is maintenance-free. In the event of a defect, the entire gripper is replaced.

**Scope of delivery:** Accessory kit with centering pins, 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).

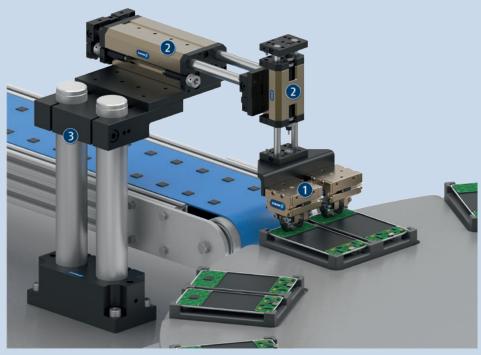
**Finger length:** is measured from the reference surface as the distance P in direction to the main axis.

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**

Pick & place application with double gripper for mounting electronic components on end products for the communications and electronics industry

- Gripper for small components MPC
- 2 Linear module KLM
- 3 Pillar assembly system

# SCHUNK offers more ...

The following components make the product MPC even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.











Linear module

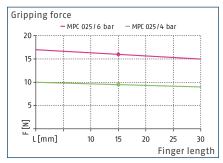
Rotation unit

Pressure maintenance valve

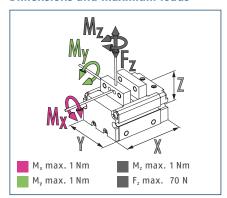
Magnetic switches

For more 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





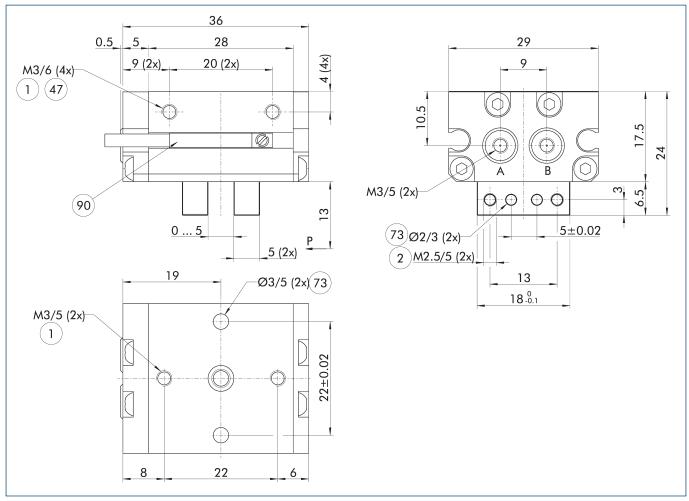
# **Dimensions and maximum loads**



The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M<sub>y</sub> may arise in addition to the moment generated by the gripping force itself.

# Technical data

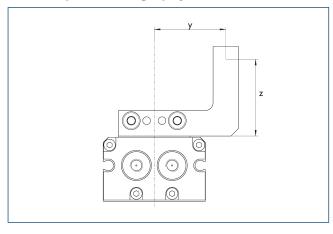
Description		MPC 025
ID		1343461
Stroke per jaw	[mm]	2.5
Closing/opening force	[N]	16/16
Weight	[kg]	0.05
Recommended workpiece weight	[kg]	0.08
Fluid consumption double stroke	[cm³]	0.5
Min./nom./max. operating pressure	[bar]	2/6/8
Closing/opening time	[s]	0.03/0.03
Max. permissible finger length	[mm]	30
Max. permissible mass per finger	[kg]	0.034
Protection class IP		30
Min./max. ambient temperature	[°C]	5/60
Repeat accuracy	[mm]	0.02
Dimensions X x Y x Z	[mm]	36.5 x 29 x 17.5

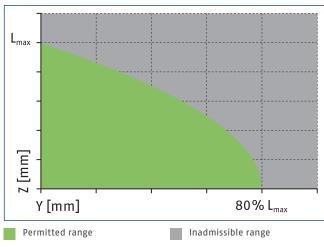


The drawing shows the basic version of the gripper with open jaws.

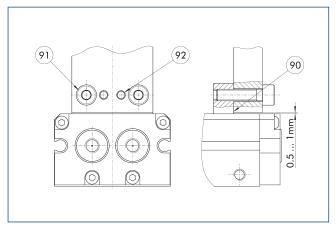
- A Main connection open gripper
- B Main connection close gripper
- 1 Gripper connection
- 2 Finger connection
- (47) on both sides
- 73 Fit for centering pins
- 90 Sensor J02...

# Maximum permitted finger projection



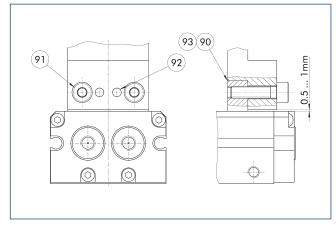


 $L^{\text{max}}$  is equivalent to the maximum permitted finger length, see the technical data table.



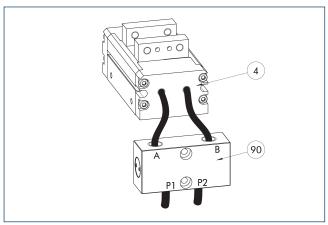
- 90 Support of the top jaws at the base jaw
- (91) Fastening screws
- 92) Cylindrical pins

# Jaw design I.D. gripping



- 90 Support of the top jaws at the base jaw
- 91) Fastening screws
- 92 Cylindrical pins
- @3 Dimensions of steps can be seen in the main view of the MPC

# SDV-P pressure maintenance valve



(4) Grippers

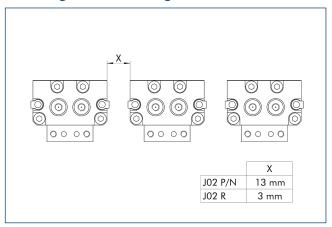
90 SDV-P pressure maintenance valve

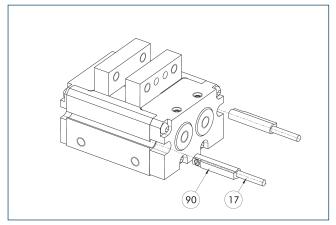
The SDV-P pressure maintenance valve ensures in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained.

Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance	e valve	
SDV-P 04	0403130	6
Pressure maintenance	e valve with a	ir bleed screw
SDV-P 04-E	0300120	6

① In order to achieve the specified closing and opening time for each gripper variant, the recommended hose diameter must be used. The direct allocation of the respective variant of the gripper for the respective SDV-P can be found at schunk.com.

#### Monitoring for stacked arrangements





(17) Cable outlet

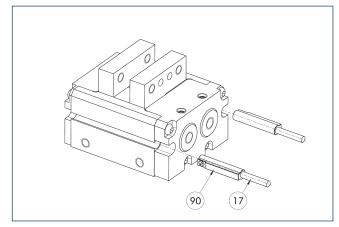
90 Magnetic switch J02

Position monitoring with one position per sensor, can be mounted in C-slot. Available in the types NPN (J02N) and PNP (J02P), and with open cable end (2M) or cable plug (Q8). Further information can be found in the product's catalog chapter.

Description	ID
Magnetic switches	
J02N-2M	1353058
J02N-Q8	1353073
J02P-2M	1353035
J02P-Q8	1353072

Two sensors are required for each unit, as well as optional extension cables. Please consider the minimum permissible bending radii for sensor cables.

# Reed switch JO2R



(17) Cable outlet

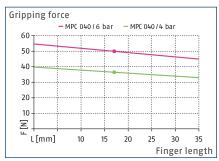
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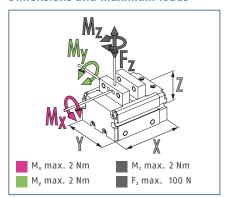
Description	ID
Reed switch JO2R	
J02R-2M	1353064
J02R-Q8	1353087

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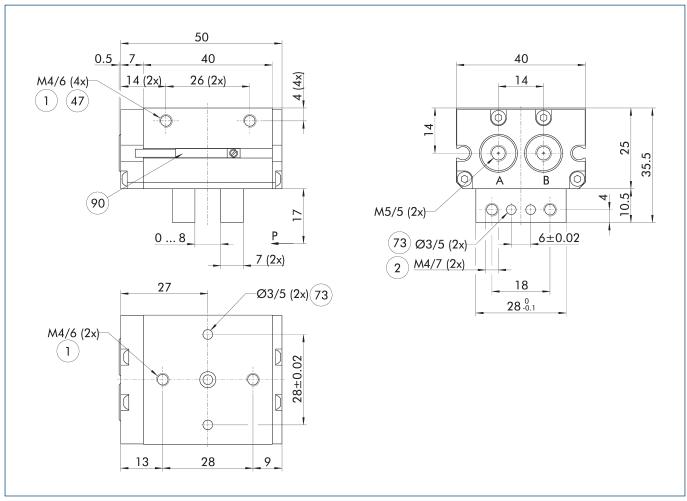
# **Dimensions and maximum loads**



The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M<sub>y</sub> may arise in addition to the moment generated by the gripping force itself.

# Technical data

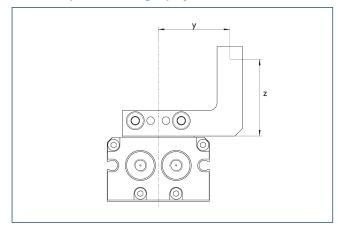
Description		MPC 040
ID		1343463
Stroke per jaw	[mm]	4
Closing/opening force	[N]	50/50
Weight	[kg]	0.14
Recommended workpiece weight	[kg]	0.25
Fluid consumption double stroke	[cm³]	1.3
Min./nom./max. operating pressure	[bar]	2/6/8
Closing/opening time	[s]	0.05/0.05
Max. permissible finger length	[mm]	35
Max. permissible mass per finger	[kg]	0.055
Protection class IP		30
Min./max. ambient temperature	[°C]	5/60
Repeat accuracy	[mm]	0.02
Dimensions X x Y x Z	[mm]	55.5 x 40 x 25

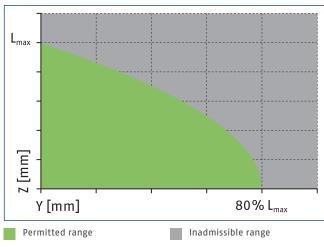


The drawing shows the basic version of the gripper with open jaws.

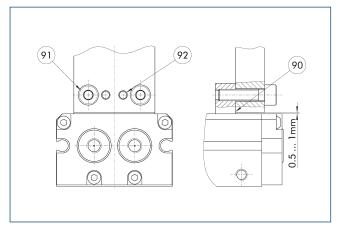
- A Main connection open gripper
- B Main connection close gripper
- 1 Gripper connection
- 2 Finger connection
- (47) on both sides
- 73 Fit for centering pins
- 90 Sensor J02...

# Maximum permitted finger projection



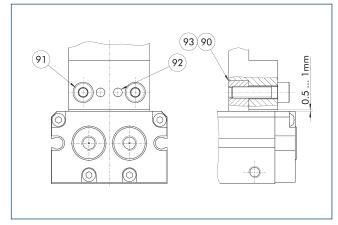


 $L^{\text{max}}$  is equivalent to the maximum permitted finger length, see the technical data table.



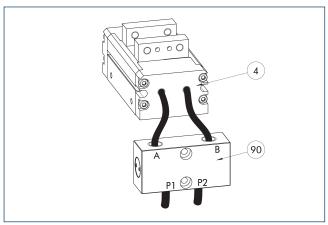
- 90 Support of the top jaws at the base jaw
- **91** Fastening screws
- (92) Cylindrical pins

#### Jaw design I.D. gripping



- 90 Support of the top jaws at the base jaw
- 91) Fastening screws
- 92 Cylindrical pins
- @3 Dimensions of steps can be seen in the main view of the MPC

# SDV-P pressure maintenance valve



(4) Grippers

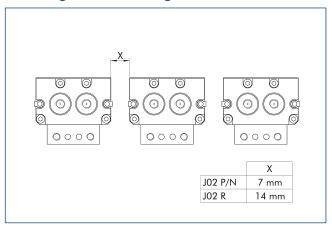
90 SDV-P pressure maintenance valve

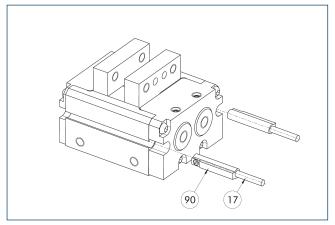
The SDV-P pressure maintenance valve ensures in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained.

Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance	e valve	
SDV-P 04	0403130	6
Pressure maintenance	e valve with a	ir bleed screw
SDV-P 04-E	0300120	6

① In order to achieve the specified closing and opening time for each gripper variant, the recommended hose diameter must be used. The direct allocation of the respective variant of the gripper for the respective SDV-P can be found at schunk.com.

#### Monitoring for stacked arrangements





(17) Cable outlet

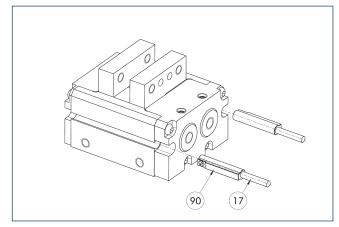
90 Magnetic switch J02

Position monitoring with one position per sensor, can be mounted in C-slot. Available in the types NPN (J02N) and PNP (J02P), and with open cable end (2M) or cable plug (Q8). Further information can be found in the product's catalog chapter.

Description	ID
Magnetic switches	
J02N-2M	1353058
J02N-Q8	1353073
J02P-2M	1353035
J02P-Q8	1353072

Two sensors are required for each unit, as well as optional extension cables. Please consider the minimum permissible bending radii for sensor cables.

# Reed switch JO2R



(17) Cable outlet

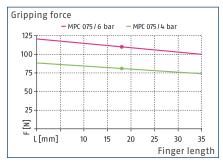
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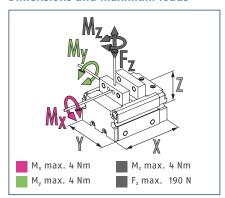
Description	ID
Reed switch JO2R	
J02R-2M	1353064
J02R-Q8	1353087

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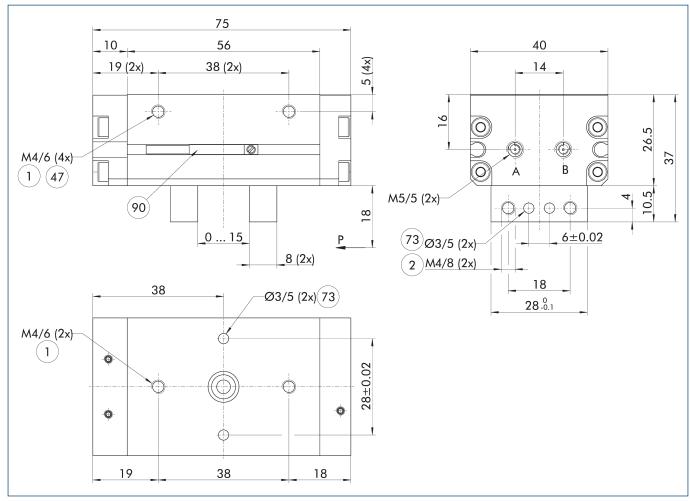
# **Dimensions and maximum loads**



The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M<sub>y</sub> may arise in addition to the moment generated by the gripping force itself.

# Technical data

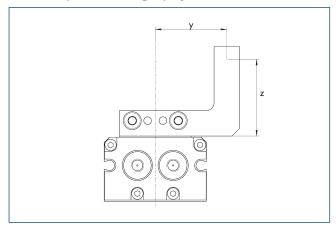
Description		MPC 075
ID		1343465
Stroke per jaw	[mm]	7.5
Closing/opening force	[N]	110/110
Weight	[kg]	0.21
Recommended workpiece weight	[kg]	0.55
Fluid consumption double stroke	[cm³]	4
Min./nom./max. operating pressure	[bar]	2/6/8
Closing/opening time	[s]	0.06/0.06
Max. permissible finger length	[mm]	35
Max. permissible mass per finger	[kg]	0.072
Protection class IP		30
Min./max. ambient temperature	[°C]	5/60
Repeat accuracy	[mm]	0.02
Dimensions X x Y x Z	[mm]	75 x 40 x 26.5

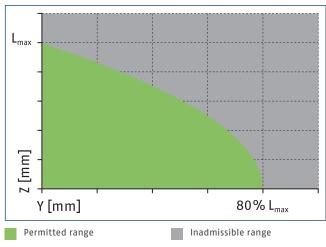


The drawing shows the basic version of the gripper with open jaws.

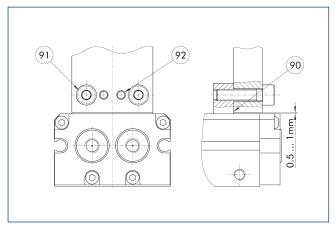
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- 1 Gripper connection
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- (47) on both sides
- 73 Fit for centering pins
- 90 Sensor J02...

# Maximum permitted finger projection



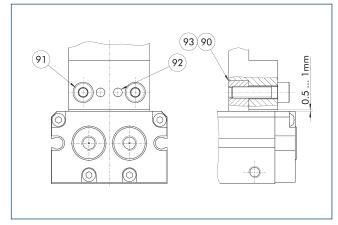


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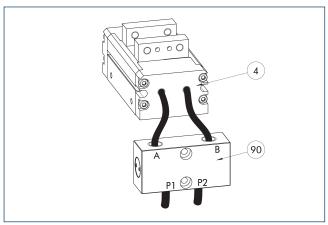
- 90 Support of the top jaws at the base jaw
- (91) Fastening screws
- (92) Cylindrical pins

#### Jaw design I.D. gripping



- 90 Support of the top jaws at the base jaw
- (91) Fastening screws
- 92 Cylindrical pins
- @3 Dimensions of steps can be seen in the main view of the MPC

# SDV-P pressure maintenance valve



(4) Grippers

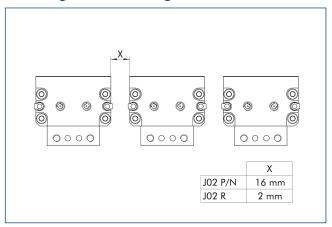
90 SDV-P pressure maintenance valve

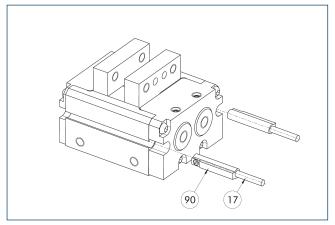
The SDV-P pressure maintenance valve ensures in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained.

Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance	e valve	
SDV-P 04	0403130	6
Pressure maintenance	e valve with a	ir bleed screw
SDV-P 04-E	0300120	6

① In order to achieve the specified closing and opening time for each gripper variant, the recommended hose diameter must be used. The direct allocation of the respective variant of the gripper for the respective SDV-P can be found at schunk.com.

#### Monitoring for stacked arrangements





(17) Cable outlet

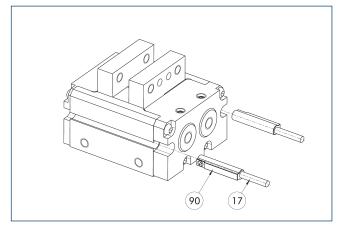
90 Magnetic switch J02

Position monitoring with one position per sensor, can be mounted in C-slot. Available in the types NPN (J02N) and PNP (J02P), and with open cable end (2M) or cable plug (Q8). Further information can be found in the product's catalog chapter.

Description	ID
Magnetic switches	
JO2N-2M	1353058
J02N-Q8	1353073
J02P-2M	1353035
J02P-Q8	1353072

Two sensors are required for each unit, as well as optional extension cables. Please consider the minimum permissible bending radii for sensor cables.

# Reed switch JO2R



(17) Cable outlet

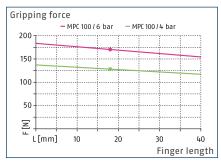
90 Reed switch JO2R

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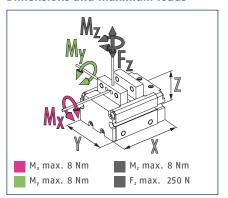
Description	ID
Reed switch JO2R	
J02R-2M	1353064
J02R-Q8	1353087

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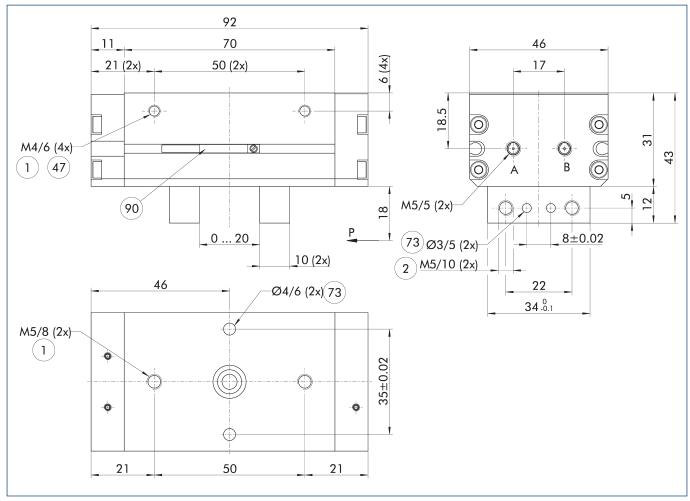
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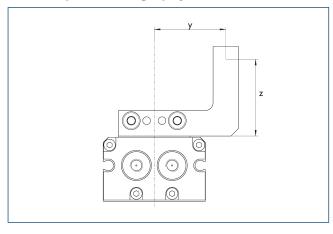
Description		MPC 100
ID		1343466
Stroke per jaw	[mm]	10
Closing/opening force	[N]	170/170
Weight	[kg]	0.34
Recommended workpiece weight	[kg]	0.85
Fluid consumption double stroke	[cm³]	8
Min./nom./max. operating pressure	[bar]	2/6/8
Closing/opening time	[s]	0.09/0.09
Max. permissible finger length	[mm]	40
Max. permissible mass per finger	[kg]	0.13
Protection class IP		30
Min./max. ambient temperature	[°C]	5/60
Repeat accuracy	[mm]	0.02
Dimensions X x Y x Z	[mm]	92 x 46 x 31

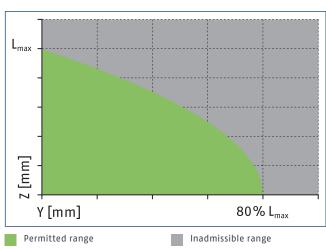


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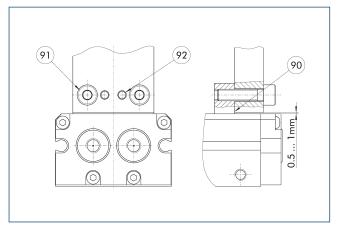
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# Maximum permitted finger projection



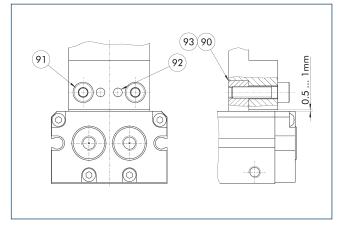


 $L^{\text{max}}$  is equivalent to the maximum permitted finger length, see the technical data table.



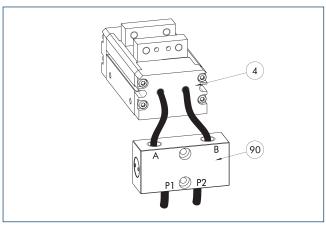
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# Jaw design I.D. gripping



- 90 Support of the top jaws at the base jaw
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# SDV-P pressure maintenance valve



(4) Grippers

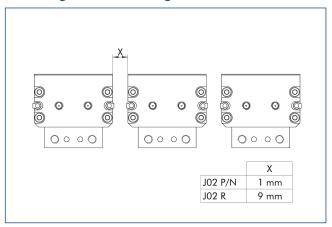
90 SDV-P pressure maintenance valve

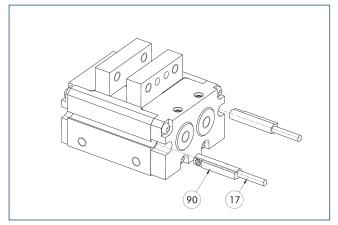
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#### Monitoring for stacked arrangements





(17) Cable outlet

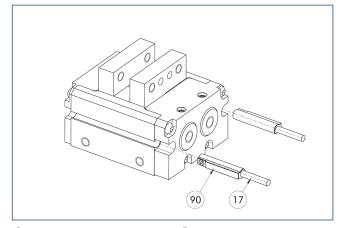
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# Reed switch JO2R



(17) Cable outlet

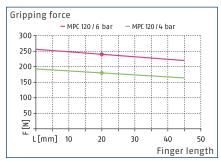
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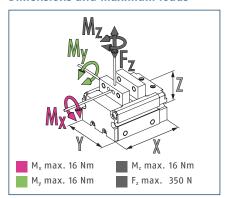
Description	ID
Reed switch JO2R	
J02R-2M	1353064
J02R-Q8	1353087

Two sensors are required for each unit, as well as optional extension cables. Please consider the minimum permissible bending radii for sensor cables.





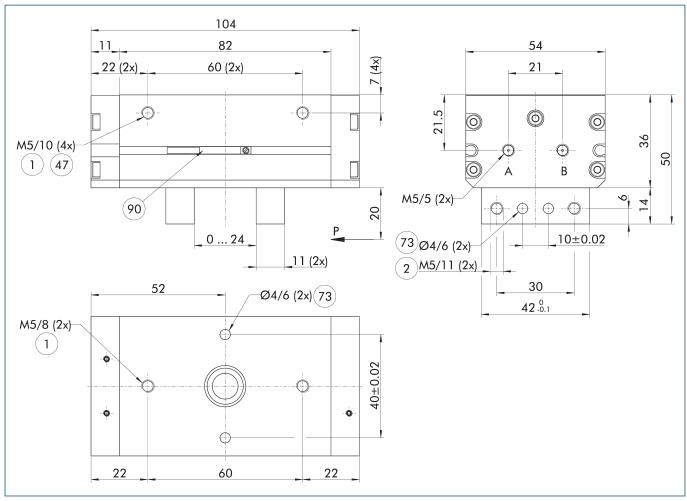
# **Dimensions and maximum loads**



The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M<sub>y</sub> may arise in addition to the moment generated by the gripping force itself.

# Technical data

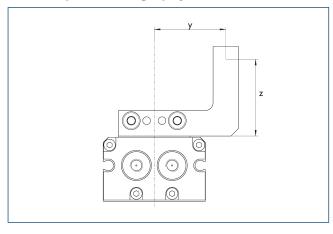
Description		MPC 120
ID		1343468
Stroke per jaw	[mm]	12
Closing/opening force	[N]	240/240
Weight	[kg]	0.54
Recommended workpiece weight	[kg]	1.2
Fluid consumption double stroke	[cm³]	14
Min./nom./max. operating pressure	[bar]	2/6/8
Closing/opening time	[s]	0.1/0.1
Max. permissible finger length	[mm]	45
Max. permissible mass per finger	[kg]	0.19
Protection class IP		30
Min./max. ambient temperature	[°C]	5/60
Repeat accuracy	[mm]	0.02
Dimensions X x Y x Z	[mm]	104 x 54 x 36

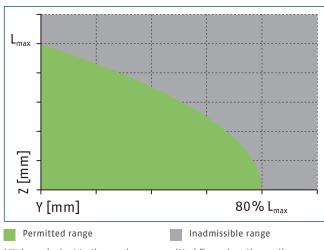


The drawing shows the basic version of the gripper with open jaws.

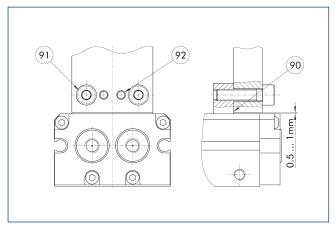
- A Main connection open gripper
- B Main connection close gripper
- 1 Gripper connection
- 2 Finger connection
- (47) on both sides
- 73 Fit for centering pins
- 90 Sensor J02...

# Maximum permitted finger projection



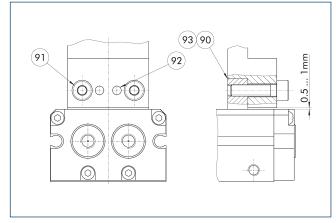


 $L^{\text{max}}$  is equivalent to the maximum permitted finger length, see the technical data table.



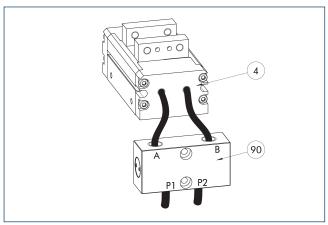
- 90 Support of the top jaws at the base jaw
- (91) Fastening screws
- (92) Cylindrical pins

# Jaw design I.D. gripping



- 90 Support of the top jaws at the base jaw
- (91) Fastening screws
- 92 Cylindrical pins
- (93) Dimensions of steps can be seen in the main view of the MPC

# SDV-P pressure maintenance valve



(4) Grippers

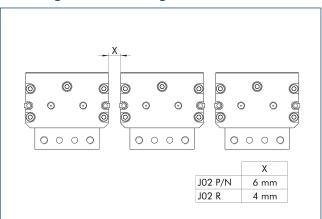
90 SDV-P pressure maintenance valve

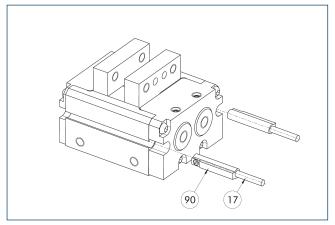
The SDV-P pressure maintenance valve ensures in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained.

Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance	e valve	
SDV-P 04	0403130	6
Pressure maintenance	e valve with a	ir bleed screw
SDV-P 04-E	0300120	6

① In order to achieve the specified closing and opening time for each gripper variant, the recommended hose diameter must be used. The direct allocation of the respective variant of the gripper for the respective SDV-P can be found at schunk.com.

#### Monitoring for stacked arrangements





(17) Cable outlet

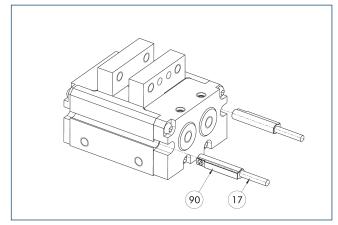
90 Magnetic switch J02

Position monitoring with one position per sensor, can be mounted in C-slot. Available in the types NPN (J02N) and PNP (J02P), and with open cable end (2M) or cable plug (Q8). Further information can be found in the product's catalog chapter.

Description	ID
Magnetic switches	
J02N-2M	1353058
J02N-Q8	1353073
J02P-2M	1353035
J02P-Q8	1353072

Two sensors are required for each unit, as well as optional extension cables. Please consider the minimum permissible bending radii for sensor cables.

# Reed switch JO2R



(17) Cable outlet

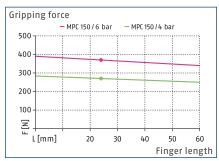
90 Reed switch J02R

Position monitoring with one position per sensor, can be mounted in C-slot. Available as a reed switch, and with open cable end (2M) or cable connector (Q8). Further information can be found in the product's catalog chapter.

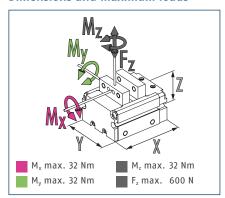
Description	ID
Reed switch JO2R	
J02R-2M	1353064
J02R-Q8	1353087

① Two sensors are required for each unit, as well as optional extension cables. Please consider the minimum permissible bending radii for sensor cables.





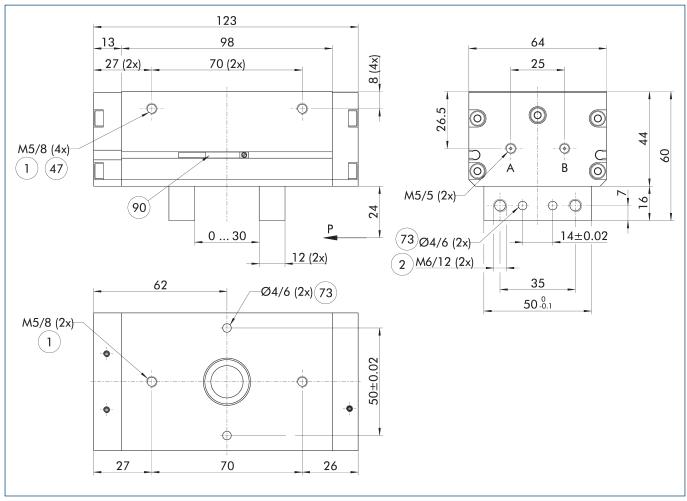
# **Dimensions and maximum loads**



The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M<sub>y</sub> may arise in addition to the moment generated by the gripping force itself.

# Technical data

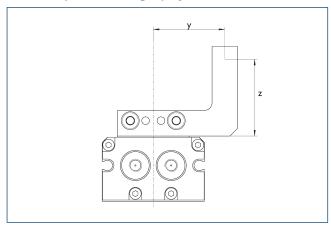
Description		MPC 150
ID		1343470
Stroke per jaw	[mm]	15
Closing/opening force	[N]	370/370
Weight	[kg]	0.94
Recommended workpiece weight	[kg]	1.85
Fluid consumption double stroke	[cm³]	25
Min./nom./max. operating pressure	[bar]	2/6/8
Closing/opening time	[s]	0.11/0.11
Max. permissible finger length	[mm]	60
Max. permissible mass per finger	[kg]	0.32
Protection class IP		30
Min./max. ambient temperature	[°C]	5/60
Repeat accuracy	[mm]	0.02
Dimensions X x Y x Z	[mm]	123 x 64 x 44

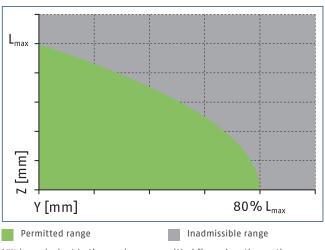


The drawing shows the basic version of the gripper with open jaws.

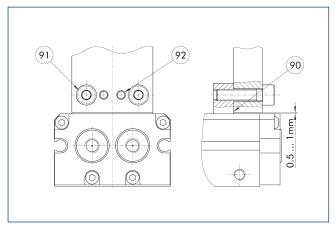
- A Main connection open gripper
- B Main connection close gripper
- 1 Gripper connection
- 2 Finger connection
- (47) on both sides
- 73 Fit for centering pins
- 90 Sensor J02...

# Maximum permitted finger projection



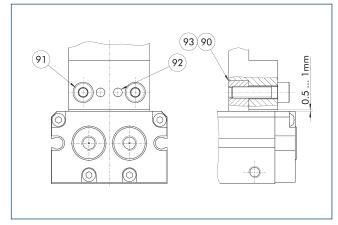


 $L^{\text{max}}$  is equivalent to the maximum permitted finger length, see the technical data table.



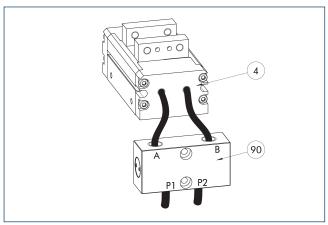
- 90 Support of the top jaws at the base jaw
- **91** Fastening screws
- (92) Cylindrical pins

#### Jaw design I.D. gripping



- 90 Support of the top jaws at the base jaw
- **91** Fastening screws
- 92 Cylindrical pins
- (93) Dimensions of steps can be seen in the main view of the MPC

# SDV-P pressure maintenance valve



(4) Grippers

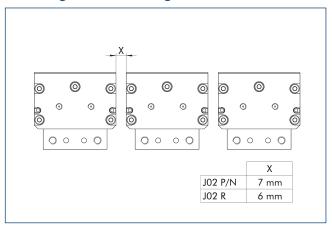
90 SDV-P pressure maintenance valve

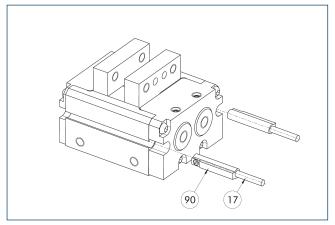
The SDV-P pressure maintenance valve ensures in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained.

Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance	e valve	
SDV-P 04	0403130	6
Pressure maintenance	e valve with a	ir bleed screw
SDV-P 04-E	0300120	6

① In order to achieve the specified closing and opening time for each gripper variant, the recommended hose diameter must be used. The direct allocation of the respective variant of the gripper for the respective SDV-P can be found at schunk.com.

#### Monitoring for stacked arrangements





(17) Cable outlet

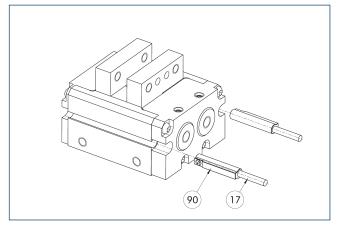
90 Magnetic switch J02

Position monitoring with one position per sensor, can be mounted in C-slot. Available in the types NPN (J02N) and PNP (J02P), and with open cable end (2M) or cable plug (Q8). Further information can be found in the product's catalog chapter.

Description	ID
Magnetic switches	
J02N-2M	1353058
J02N-Q8	1353073
J02P-2M	1353035
J02P-Q8	1353072

Two sensors are required for each unit, as well as optional extension cables. Please consider the minimum permissible bending radii for sensor cables.

# Reed switch JO2R



(17) Cable outlet

90 Reed switch J02R

Position monitoring with one position per sensor, can be mounted in C-slot. Available as a reed switch, and with open cable end (2M) or cable connector (Q8). Further information can be found in the product's catalog chapter.

Description	ID
Reed switch JO2R	
J02R-2M	1353064
J02R-Q8	1353087

Two sensors are required for each unit, as well as optional extension cables. Please consider the minimum permissible bending radii for sensor cables.

# SCHUNK GmbH & Co. KG Spann- und Greiftechnik

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