



Superior Clamping and Gripping



Product Information

Universal gripper JGP-P 40

JGP-P

Universal gripper

Reliable. Loadable. Alternative.

JGP-P universal gripper

Universal 2-finger parallel gripper with T-slot guidance and the optimum price-performance ratio

Field of application

Optimum standard solution for many fields of application. Universal application in clean and slightly dirty surroundings in machine building and plant building industry, assembly and handling as well as automotive industry.

Advantages – Your benefits

A firm focus on the essentials for maximum profitability

Sturdy T-slot guidance for the precise handling of different workpieces

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

Maximum piston surface area for maximum gripping forces

Wedge-hook design for high power transmission and synchronized 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 universal and flexible gripper assembly



Sizes
Quantity: 10



Weight
0.08 .. 17.2 kg



Gripping force
180 .. 8200 N



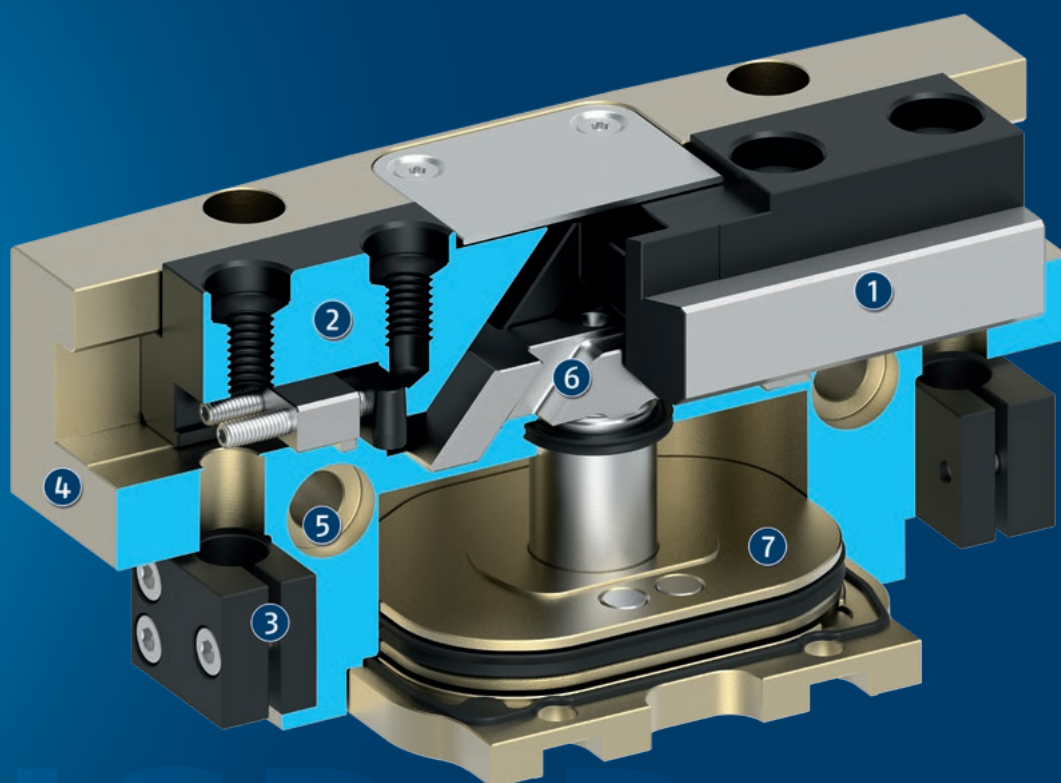
Stroke per jaw
2 .. 35 mm



Workpiece weight
0.9 .. 33 kg

Functional description

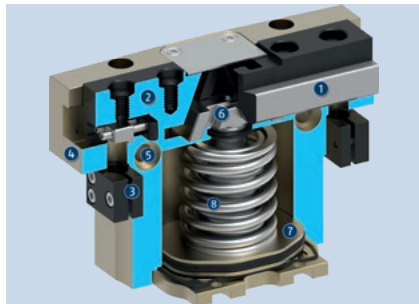
The piston is moved up and down by compressed air.
The angled active surfaces of the wedge-hook produce a synchronized, parallel jaw motion.



- ① **T-slot guidance**
loadable, robust base jaw guidance for extremely long gripper fingers
- ② **Base Jaw**
with standardized screw connection diagram for the connection of the workpiece-specific gripper fingers
- ③ **Bracket for sensors**
Brackets for proximity switches and adjustable control cams in the housing
- ④ **Housing**
is weight-optimized due to the use of high-strength aluminum alloy
- ⑤ **Centering and mounting possibilities**
for universal assembly of the gripper
- ⑥ **Wedge-hook design**
for high power transmission and minimal wear as a result of larger diagonal pull surfaces
- ⑦ **Piston**
Maximum force through maximum surface of drive piston

Detailed functional description

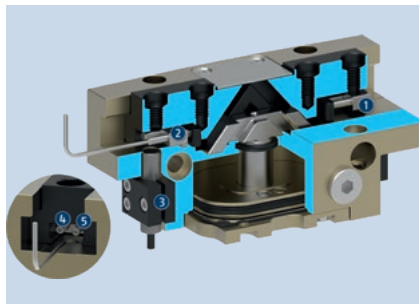
Gripping force maintenance version AS/IS



The mechanical gripping force maintenance device ensures that a minimum clamping force will be applied even if there is a drop in pressure. In the AS version this acts as a closing force, and in the IS version as an opening force. The image shows the AS version. The gripping force maintenance can also be used to increase the gripping force or for one-way gripping.

- ❶ T-slot guidance
- ❷ Base Jaw
- ❸ Bracket for sensors
- ❹ Housing
- ❺ Centering and mounting possibilities
- ❻ Wedge-hook design
- ❼ Piston
- ❽ Gripping force maintenance device

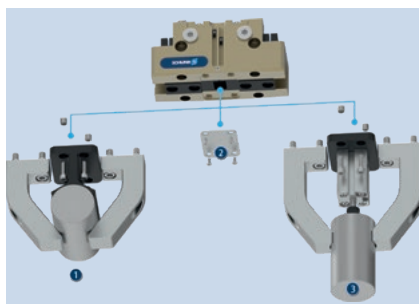
Settings of the control cams during monitoring with inductive proximity switches



Monitoring with inductive proximity switch can be performed as standard from size 64. In delivery state, the positions "gripper open" and "gripper closed" are preset with the control cams. The inductive sensors must be ordered separately and are slid into the housing up to the stop and clamped. In order to monitor any other position, such as "workpiece gripped" for example, both control cams can be individually set in the respective base jaws.

- ❶ Control cam preset for "gripper closed" position
- ❷ Control cam preset for "gripper open" position
- ❸ Holder with clamping screw for fixing the sensor
- ❹ Clamping screw for process-reliable fixing of the adjusted switching point
- ❺ Adjusting screw for setting any switching point

Optional mounting possibility under the cover sheet for customer-specific additional structure



In delivery state, a cover sheet is mounted to the gripper. This can be removed if necessary. Under the cover sheet are threads and fittings for mounting customer-specific designs for implementing additional functions.

- ❶ Additional centering or support of the workpiece
- ❷ The cover plate (can be removed)
- ❸ Ejector with external cylinder attached to the gripper

General notes about the series

Operating principle: Wedge gear with surface power transmission

Housing material: Aluminum

Base jaw material: Steel

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

Warranty: 24 months

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 device: possible by using the version with mechanical gripping force maintenance or pressure maintenance valve SDV-P

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

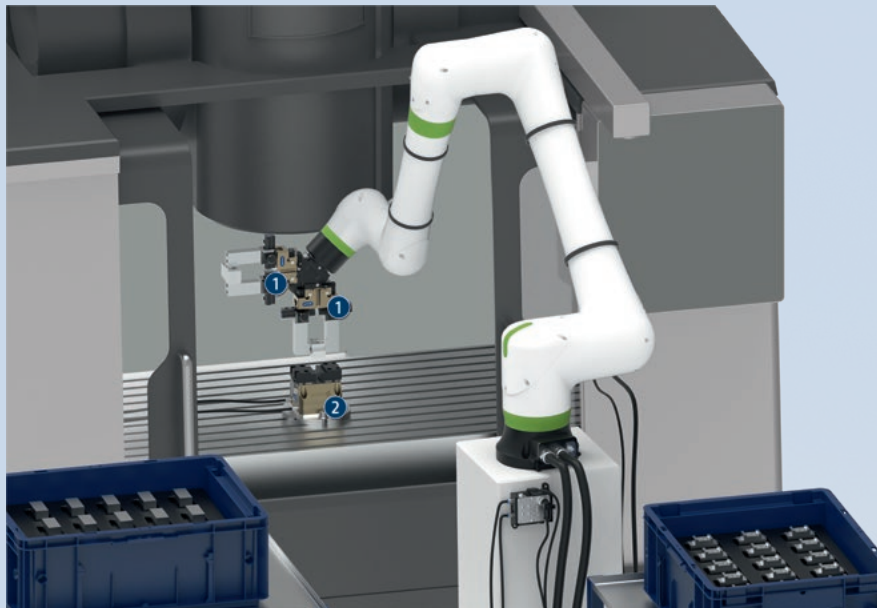
Finger length: is measured from the reference surface as the distance P in direction to the main axis.

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

Loading and unloading of a machine tool optimized for the cycle time. By using two grippers on the robot, the machine tool can be loaded automatically in a way that is optimized for the cycle time, and productivity can be increased. After the finished part has been removed from the first gripper, the automated clamping force block is cleaned of coolant and chips via the integrated blow-off nozzle of the double gripper. After that, the second gripper can directly insert the unmachined part and the machining process can be started. The finished part is then deposited and the next unmachined part is picked up again in parallel with the machining of the workpiece.

- ❶ 2-finger parallel gripper JGP-P
- ❷ TANDEM PGS3 clamping force block

SCHUNK offers more ...

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



Rotary unit



Quick change system



Compensation unit



Linear module



Jaw quick-change system



Finger blank



Pressure maintenance valve



Universal intermediate jaw



Flexible position sensor



Analog position sensor



Magnetic switches



Inductive proximity switches

① For more information on these products can be found on the following product pages or at schunk.com.

Options and special information

Gripping force maintenance version AS/IS: The mechanical gripping force maintenance version ensures minimum gripping force even in the event of a pressure drop. In the AS/S version this acts as a closing force, in the IS version as an opening force.

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

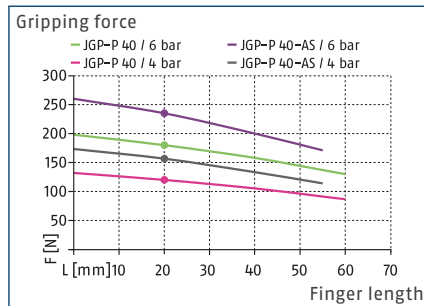
Additional versions: Do you have further requirements for the gripper JGP-P? Then look for the compatible gripper model PGN-plus-P. The premium gripper PGN-plus-P already offers additional options and variants by default.

JGP-P 40

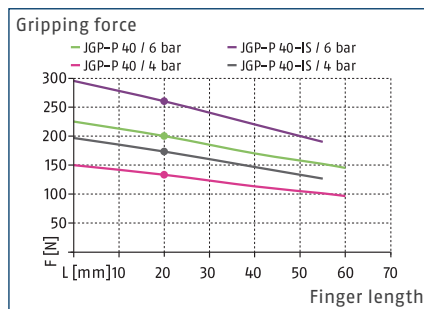
Universal gripper



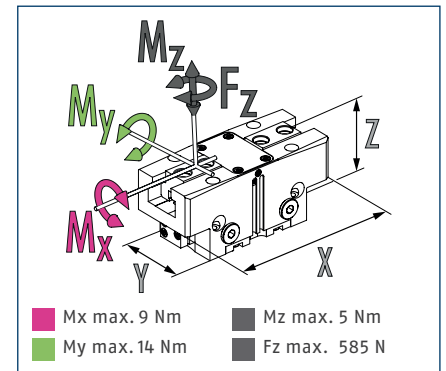
Gripping force O.D. gripping



Gripping force I.D. gripping



Dimensions and maximum loads



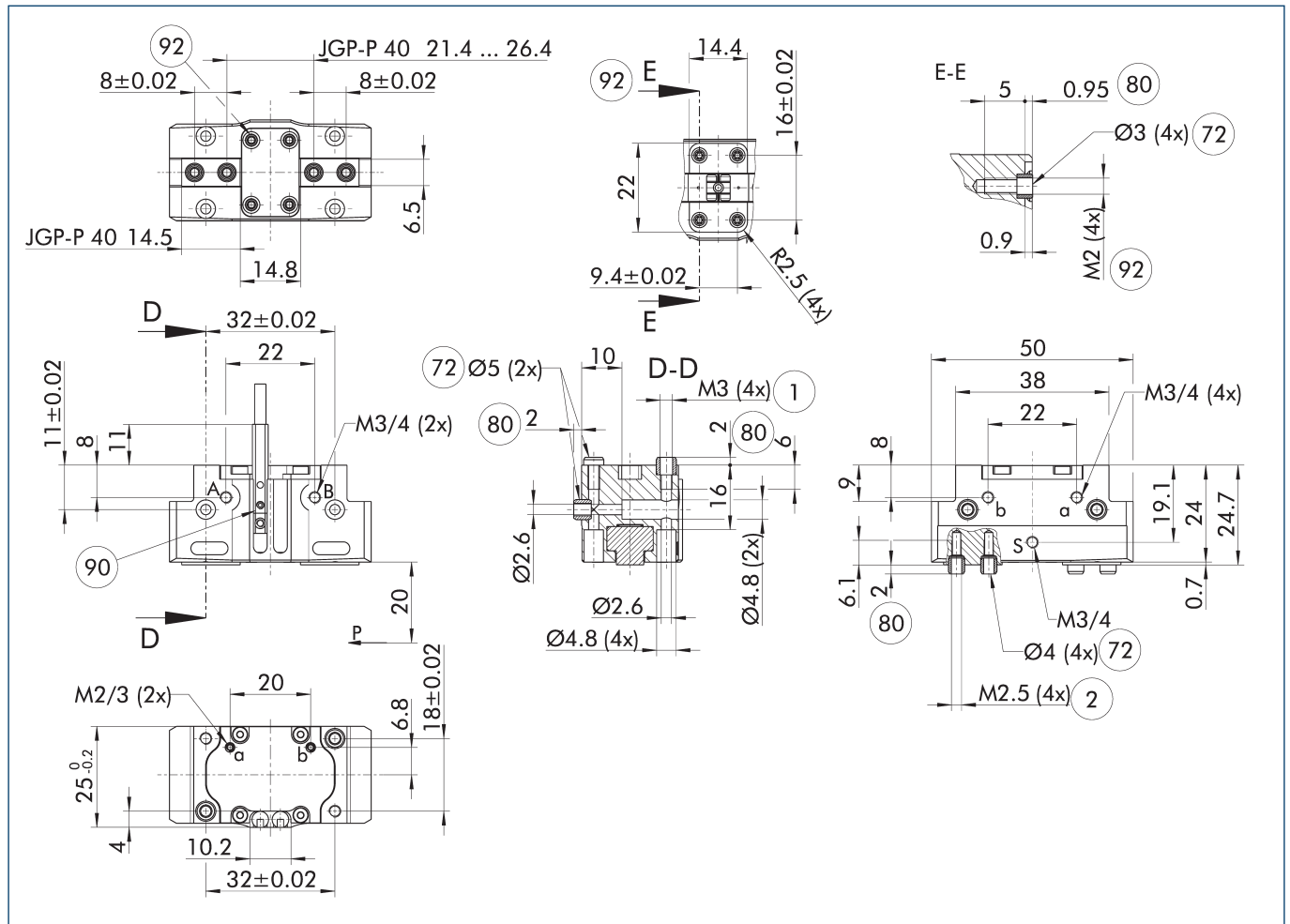
① The indicated moments and forces are statical values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Description		JGP-P 40	JGP-P 40-AS	JGP-P 40-IS
ID		1460247	1460248	1460249
Stroke per jaw	[mm]	2.5	2.5	2.5
Closing/opening force	[N]	180/200	235/-	-/260
Min. spring force	[N]		55	60
Weight	[kg]	0.08	0.1	0.1
Recommended workpiece weight	[kg]	0.9	0.9	0.9
Fluid consumption double stroke	[cm³]	4	8	10
Min./nom./max. operating pressure	[bar]	2.5/6/8	4/6/6.5	4/6/6.5
Min./max. air purge pressure	[bar]	0.5/1	0.5/1	0.5/1
Closing/opening time	[s]	0.015/0.015	0.015/0.03	0.03/0.015
Closing/opening time with spring	[s]		0.03	0.03
Max. permissible finger length	[mm]	60	55	55
Max. permissible mass per finger	[kg]	0.1	0.1	0.1
IP protection class		40	40	40
Min./max. ambient temperature	[°C]	5/90	5/90	5/90
Repeat accuracy	[mm]	0.01	0.01	0.01
Dimensions X x Y x Z	[mm]	50 x 25 x 24.7	50 x 25 x 33.7	50 x 25 x 33.7

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

Main view



The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

① The SDV-P pressure maintenance valve can also be used for I.D. or O.D. gripping alternatively or in addition to the spring-loaded, mechanical gripping force maintenance device (see catalog section on accessories).

A, a Main / direct connection, gripper opening

B, b Main / direct connection, gripper closing

S Air purge connection

① Gripper connection

② Finger connection

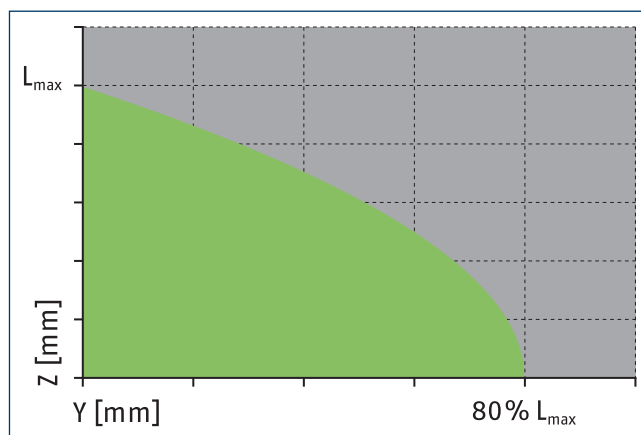
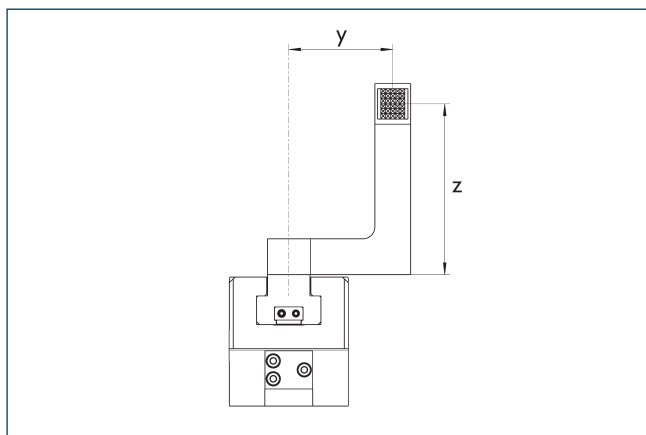
72 Fit for centering sleeves

80 Depth of the centering sleeve hole in the counter part

90 Sensor MMS 22..

92 Screw connection with centering for customized mounting (these centering sleeves are not included in the scope of delivery)

Maximum permitted finger projection

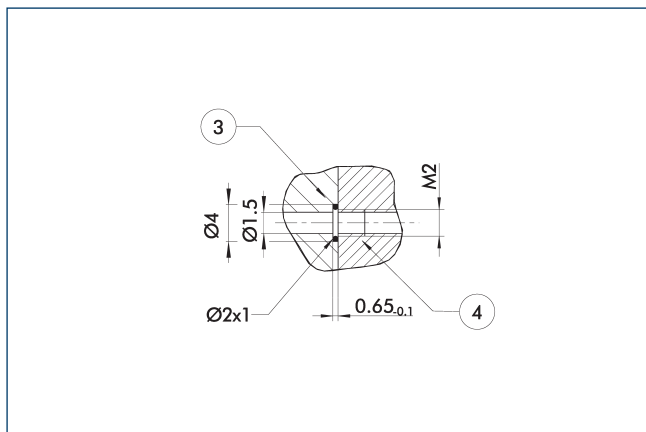


■ Permitted range

■ Inadmissible range

L_{max} is equivalent to the maximum permitted finger length, see the technical data table.

Hose-free direct connection M2

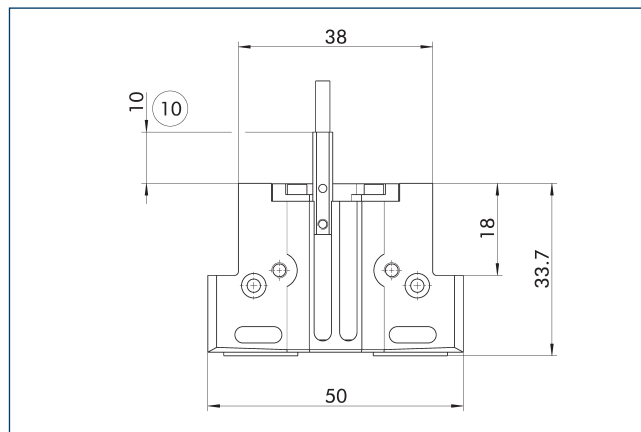


③ Adapter

④ Grippers

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

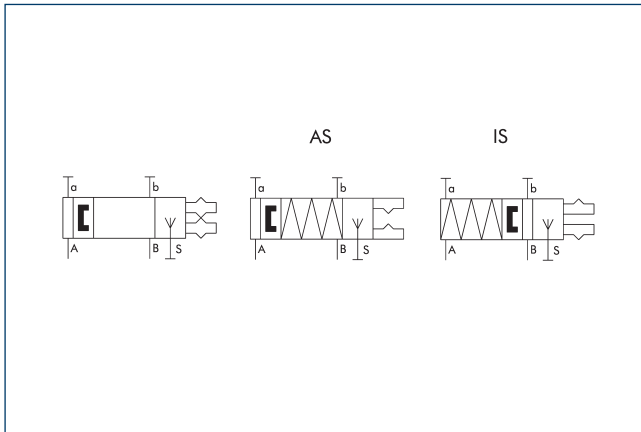
Gripping force maintenance device AS / IS



⑩ Projection applies only for AS version

The mechanical gripping force maintenance device ensures that a minimum clamping force will be applied even if there is a drop in pressure. This acts as closing force in the AS / S version, and as opening force in the IS version. Besides this, the gripping force maintenance device can be used to increase the gripping force or for single actuated gripping.

Electronic symbol according to DIN ISO 1219



A, a Main / direct connection,
gripper opening

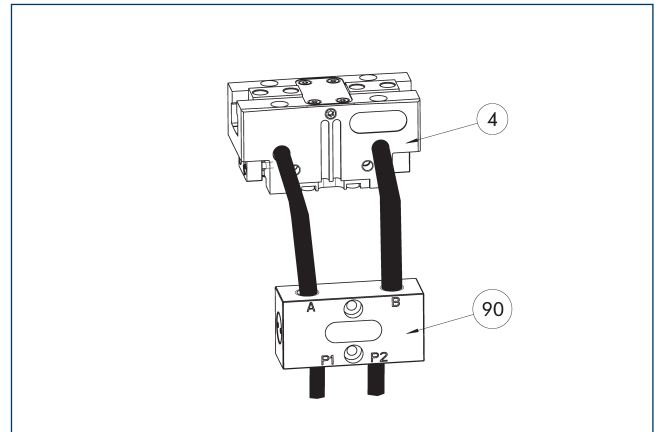
B, b Main / direct connection,
gripper closing

S Air purge connection

The circuit symbol shows the connection options and the function of the pneumatic gripper. "A" and "B" are the main connections of the gripper for opening and closing. "a" and "b" are optional direct connections for opening and closing without interference-prone hosing. "S" describes the optional air purge connection, which impedes the ingress of dirt into the gripper.

① SCHUNK also provides ECAD data for your design. You can choose between direct access via your EPLAN-Electric P8 software or download using the EPLAN Data Portal. Further information can be found on the SCHUNK website.

SDV-P pressure maintenance valve



④ Grippers

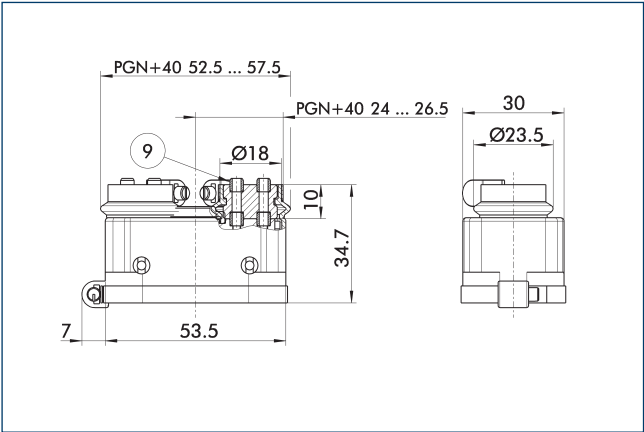
⑨⑩ SDV-P pressure maintenance
valve

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 valve		
SDV-P 04	0403130	6
Pressure maintenance valve with air 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.

Protective cover HUE PGN-plus 40



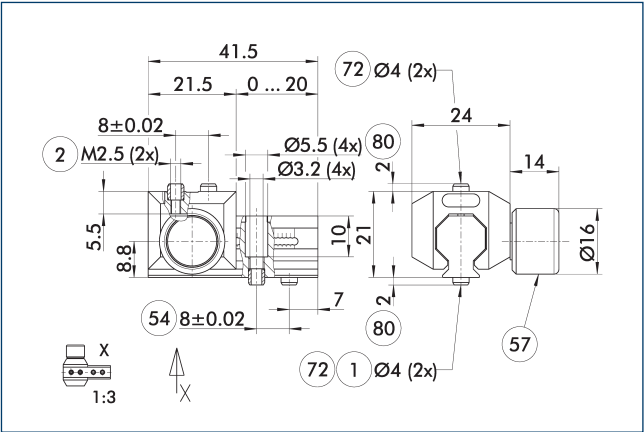
⑨ For mounting screw connection diagram, see basic version

The HUE protective cover fully protects the gripper against external influences. The cover is suitable for applications of up to IP65 if an additional sealing of the cover bottom is provided. For detailed information, please see the HUE series. The connection diagram shifts by the height of the intermediate jaw.

Description	ID	IP protection class
Protection cover		
HUE PGN-plus 40	0371490	65

① The HUE protective cover is not suitable for use on grippers with gripping force maintenance. An inductive monitoring of the gripper in connection with the HUE protective cover is not possible. SCHUNK recommends the use of magnetic sensors that are approved for the respective gripper variant.

UZB 40 universal intermediate jaw



- ① Gripper connection
- ② Finger connection
- ⑤4 Optional right or left connection
- ⑤7 Locking
- ⑦2 Fit for centering sleeves
- ⑧0 Depth of the centering sleeve hole in the counter part

The drawing shows the UZB universal intermediate jaw.

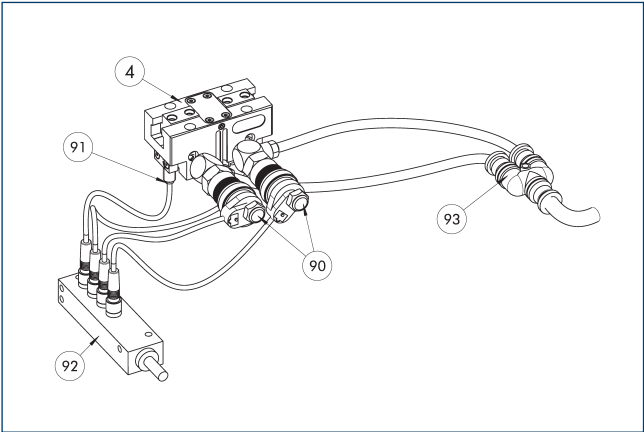
Description	ID	Grid dimension
		[mm]
Universal intermediate jaw		
UZB 40	0300040	1
Finger blank		
ABR-PGZN-plus 40	0300008	
SBR-PGZN-plus 40	0300018	

Fields of application

Series	Size	Variant	Suitability
JGP-P	40	-1 (6 bar)	■■■■
JGP-P	40	-1-AS / -1-IS (6 bar)	■■■□
Legend			
■■■■	Can be combined without restrictions		
■■■□	Use with restrictions (see loading limits)		
□□□□	cannot be combined		

The load limits for describing the application limits can be found in the catalog chapter of the corresponding accessories. If the operating pressure is higher than 6 bar, suitability for use above the application limits must be checked.

Attachment valves



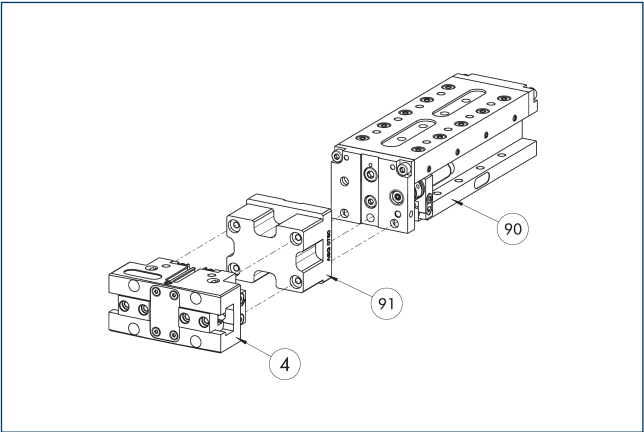
- ④ Grippers
- ⑨② Sensor distributor
- ⑨① Micro valves
- ⑨③ Y distributor
- ⑨① Sensor

The set of attachment valves reduces the compressed air consumption as there is no need to ventilate or bleed the supply lines. This can also reduce cycle time. The hose-free direct assembly of the micro valves reduces the hosing effort for the gripper. To further simplify electrical connection of the valves and sensors, their signals can be bundled via an optional distributor.

Description	ID	Often combined
Attachment valve		
ABV-MV15-M3	0303322	
ABV-MV15-M3-V2-M8	0303384	
ABV-MV15-M3-V4-M8	0303354	●
ABV-MV15-M3-V8-M8	0303355	

① A set of attachment valves ABV is required per actuator. The ABV set contains two 3/2 micro valves, an Y-distributor for compressed air supply and optionally a sensor distributor with two, four or eight inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

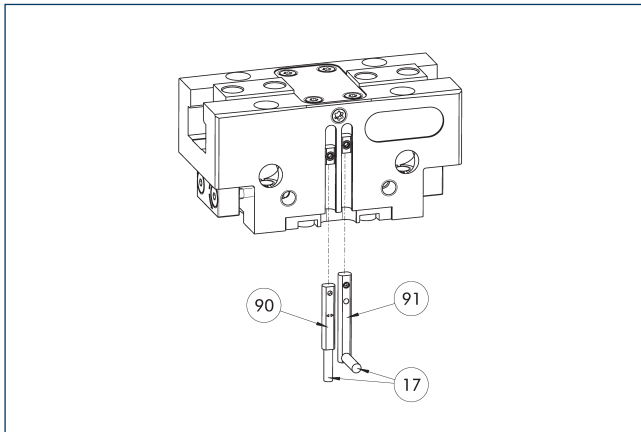
Modular Assembly Automation



- ④ Grippers
- ⑨① ASG adapter plate
- ⑨① CLM/KLM/LM/ELP/ELM/ELS/HLM linear modules

Grippers and linear modules can be combined with standard adapter plates from the modular assembly system. For more information see our main catalog "Modular Assembly Automation".

Electronic magnetic switch MMS



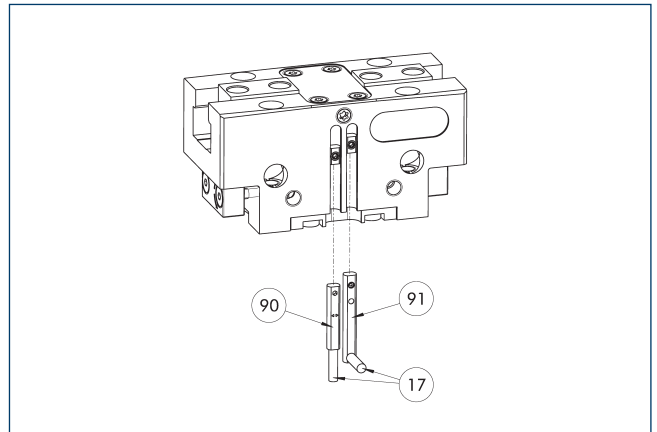
- ①⑦ Cable outlet ⑨① Sensor MMS 22 ..-PI1-...-SA
 ⑨⑦ Sensor MMS 22 PI1-...

End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
clip for plug/socket		
CLI-M8	0301463	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

Programmable magnetic switch MMS 22-PI1



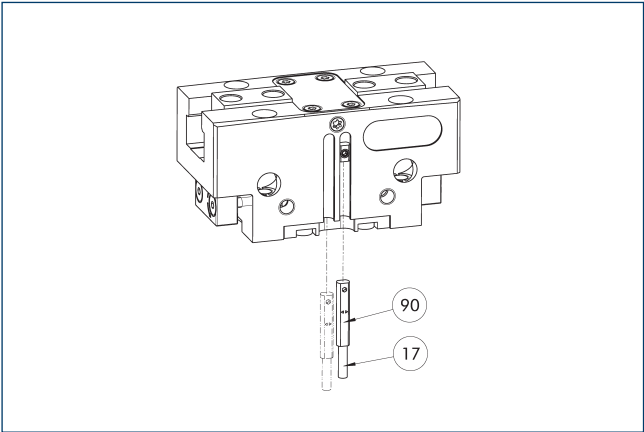
- ①⑦ Cable outlet ⑨① Sensor MMS 22 ..-PI1-...-SA
 ⑨⑦ Sensor MMS 22 PI1-...

Position monitoring with one programmable position per sensor and integrated electronic system in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	Often combined
Programmable magnetic switch		
MMS 22-PI1-S-M8-PNP	0301160	●
MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switch with lateral cable outlet		
MMS 22-PI1-S-M8-PNP-SA	0301166	●
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switch with stainless steel housing		
MMS 22-PI1-S-M8-PNP-HD	0301110	●
MMSK 22-PI1-S-PNP-HD	0301112	

- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

Programmable magnetic switch MMS 22-PI2



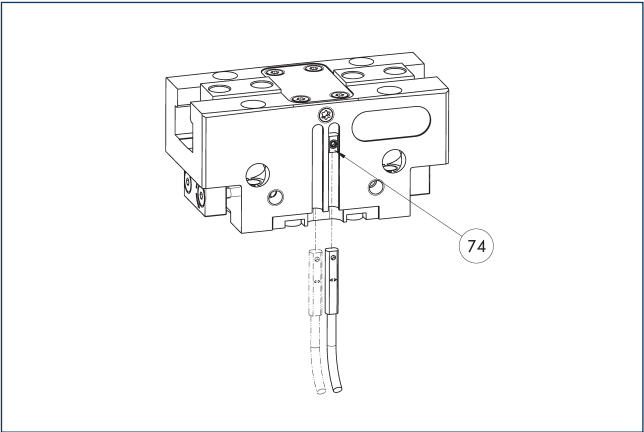
17 Cable outlet 90 MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics built into the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	Often combined
Programmable magnetic switch		
MMS 22-PI2-S-M8-PNP	0301180	●
MMSK 22-PI2-S-PNP	0301182	
Programmable magnetic switch with lateral cable outlet		
MMS 22-PI2-S-M8-PNP-SA	0301186	●
MMSK 22-PI2-S-PNP-SA	0301188	
Programmable magnetic switch with stainless steel housing		
MMS 22-PI2-S-M8-PNP-HD	0301130	●
MMSK 22-PI2-S-PNP-HD	0301132	

- ① One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

MMS-P programmable magnetic switch



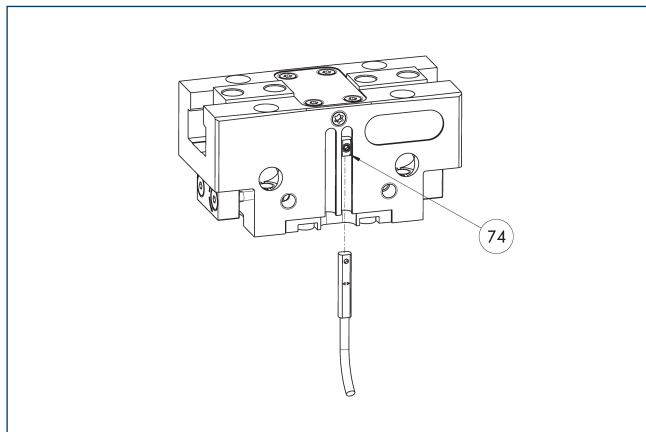
74 Limit stop for sensor

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

- ① One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

MMS-A analog position sensor



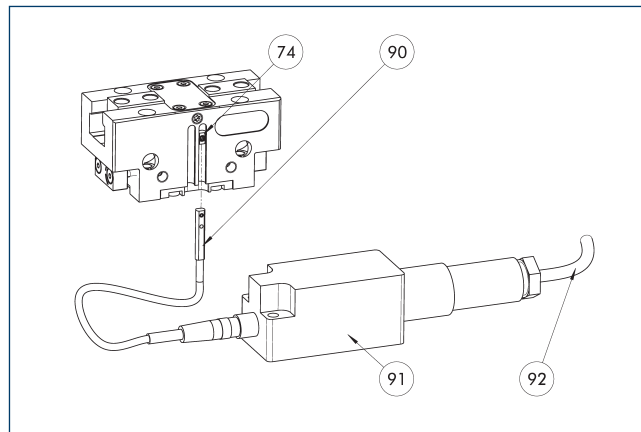
74 Limit stop for sensor

No-contact measuring, analog multi-position monitoring for any number of positions.

Description	ID	
Analog position sensor		
MMS 22-A-10V-M08	0315825	
MMS 22-A-10V-M12	0315828	

① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

Flexible position sensor with MMS-A



74 Limit stop for sensor

90 MMS 22-A-... sensor

91 FPS-F5 evaluation electronic

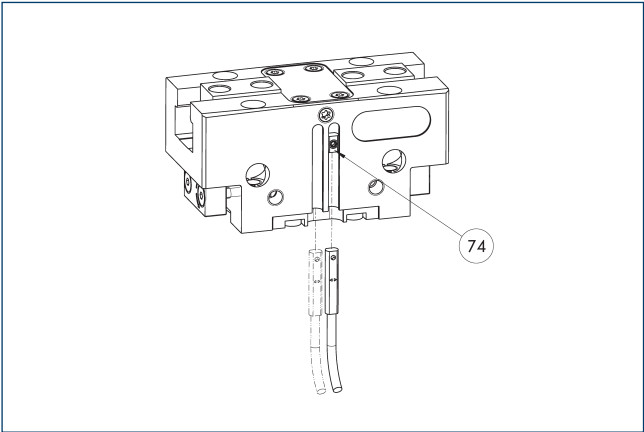
92 Connection cables

Flexible position monitoring of up to five positions.

Description	ID	
Analog position sensor		
MMS 22-A-05V-M08	0315805	
Evaluation electronics		
FPS-F5	0301805	
Connection cables		
KA BG16-L 12P-1000	0301801	

① When using an FPS system, one MMS 22-A-05V and one electronic processor (FPS-F5) are required per each gripper, as well as a mounting kit (AS), if listed. Cable extensions (KV) are optionally available – see catalog chapter "Accessories."

Programmable magnetic switch MMS-IO-Link



74 Limit stop for sensor

Sensor for multi-position monitoring through detection of the complete gripper stroke. The sensor is mounted directly in the C-slot of the gripper. Sensor programming on the gripper takes place via the IO-Link interface or the MT magnetic teach tool (included in scope of delivery). An IO-Link master is required for operation.

Description	ID	
Programmable magnetic switch		
MMS 22-IO-Link-M08	0315830	
MMS 22-IO-Link-M12	0315835	

- ① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.



SCHUNK GmbH & Co. KG
Spann- und Greiftechnik

Bahnhofstr. 106 - 134
D-74348 Lauffen/Neckar
Tel. +49-7133-103-0
Fax +49-7133-103-2399
info@de.schunk.com
schunk.com

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