



Superior Clamping and Gripping



Product Information

Universal gripper JGP 50

JGP

Universal gripper

Loadable. Reliable. Compact.

Universal gripper JGP

Universal 2-finger parallel gripper of the compact class with T-slot guidance and best cost-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

Compact dimensions and low weight for minimal interfering contours in handling

High maximum moments possible suitable for using long gripper fingers

Wedge-hook design for high power transmission and synchronized gripping

Comprehensive sensor accessories for monitoring and control of the stroke position

Mounting from two gripper sides for universal and flexible gripper assembly

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



Sizes
Quantity: 10



Weight
0.08 .. 17.5 kg



Gripping force
123 .. 7400 N



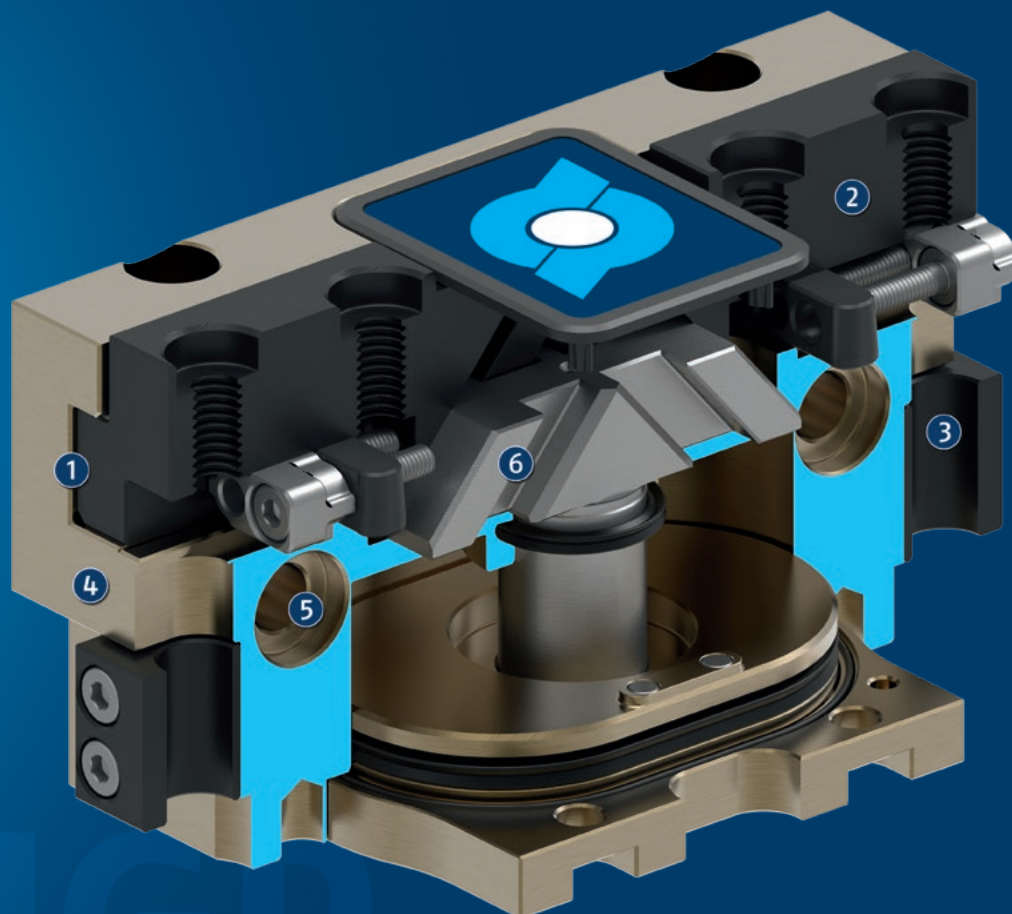
Stroke per jaw
2 .. 35 mm



Workpiece weight
0.62 .. 30 kg

Functional description

The oval piston is moved up or 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**
for the connection of workpiece-specific gripper fingers
- ③ **Sensor system**
Proximity switch can be assembled without mounting kit

- 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 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: 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).

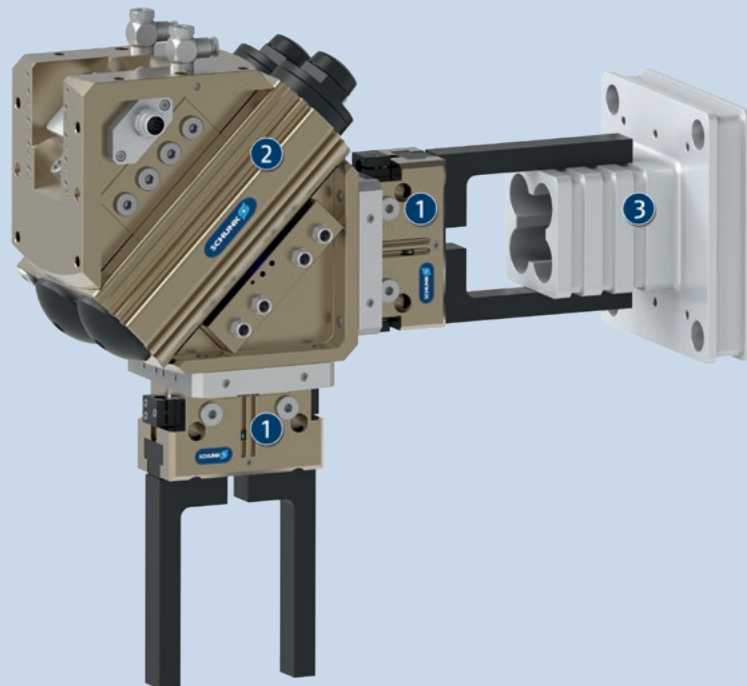
Finger length: is measured from the reference surface as the distance P in direction to the main axis.

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

Swivel head with double parallel gripper for simultaneous loading and unloading of workpieces in a machine.

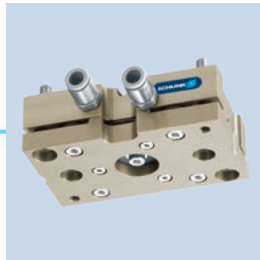
- 1 2-finger parallel gripper JGP with workpiece-specific gripper fingers
- 2 Swivel head SRH-plus
- 3 Workpiece

SCHUNK offers more ...

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



Compensation unit



Tolerance compensation unit



Manual change system



Pressure maintenance valve



Analog position sensor



Finger blank



Jaw quick-change system



Universal intermediate jaw



Flexible 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. Please contact us: SCHUNK technical hotline +49-7133-103-2696

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/IS version this acts as a closing force, in the IS version as an opening force.

The JGP series is especially suitable for economic handling solutions and distinguishes by its high cost-benefit ratio.

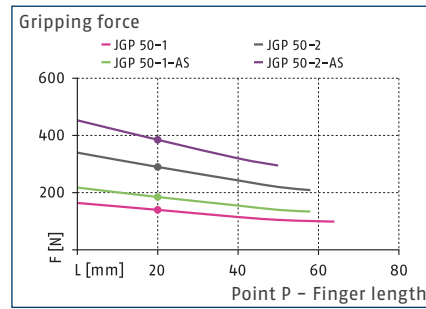
Integrated air purge connection: impedes the ingress of dirt into the inside of the gripper

JGP 50

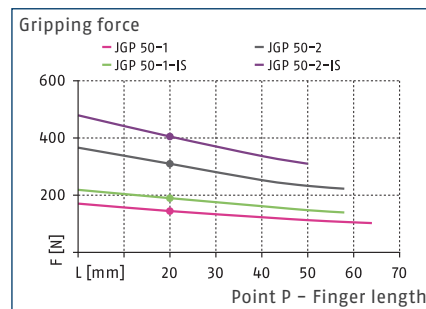
Universal gripper



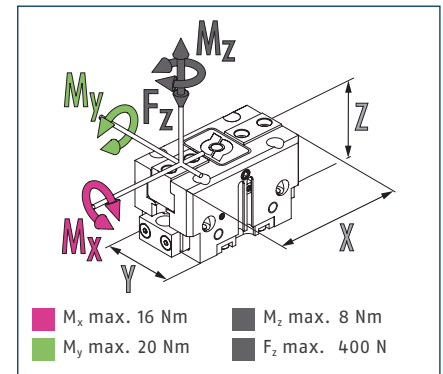
Gripping force O.D. gripping



Gripping force I.D. gripping



Dimensions and maximum loads



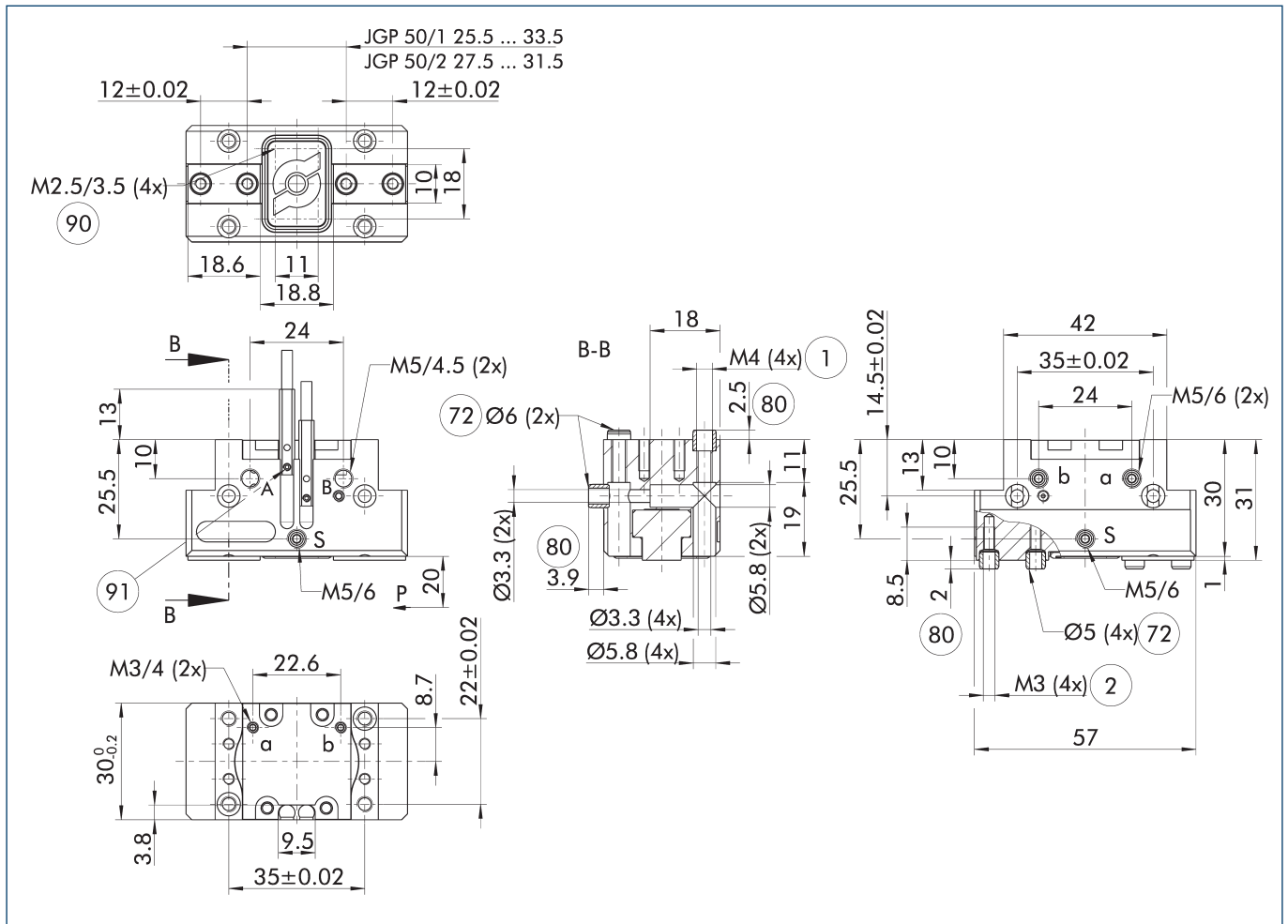
① The indicated moments and forces are static values, apply for each base jaw and should not appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Characterization		JGP 50-1	JGP 50-2	JGP 50-1-AS	JGP 50-2-AS	JGP 50-1-IS	JGP 50-2-IS
ID		0308610	0308615	0308611	0308616	0308612	0308617
Stroke per jaw	[mm]	4	2	4	2	4	2
Closing/opening force	[N]	140/145	290/310	185/-	385/-	-/190	-/405
Min. spring force	[N]			45	95	45	95
Weight	[kg]	0.15	0.15	0.2	0.2	0.2	0.21
Recommended workpiece weight	[kg]	0.7	1.45	0.7	1.45	0.7	1.45
Fluid consumption double stroke	[cm ³]	5	5	8.5	8.5	11	11
Min./nom./max. operating pressure	[bar]	2.5/6/8	2.5/6/8	4/6/6.5	4/6/6.5	4/6/6.5	4/6/6.5
Min./max. air purge pressure	[bar]	0.5/1	0.5/1	0.5/1	0.5/1	0.5/1	0.5/1
Closing/opening time	[s]	0.02/0.02	0.02/0.02	0.02/0.03	0.02/0.03	0.03/0.02	0.03/0.02
Closing/opening time with spring	[s]			0.05	0.05	0.05	0.05
Max. permissible finger length	[mm]	64	58	58	50	58	50
Max. permissible mass per finger	[kg]	0.18	0.18	0.18	0.18	0.18	0.18
IP protection class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90	5/90	5/90
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01	0.01	0.01
Dimensions X x Y x Z	[mm]	57 x 30 x 32	57 x 30 x 32	57 x 30 x 47	57 x 30 x 47	57 x 30 x 47	57 x 30 x 47

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

⑧① Depth of the centering sleeve hole in the counter part

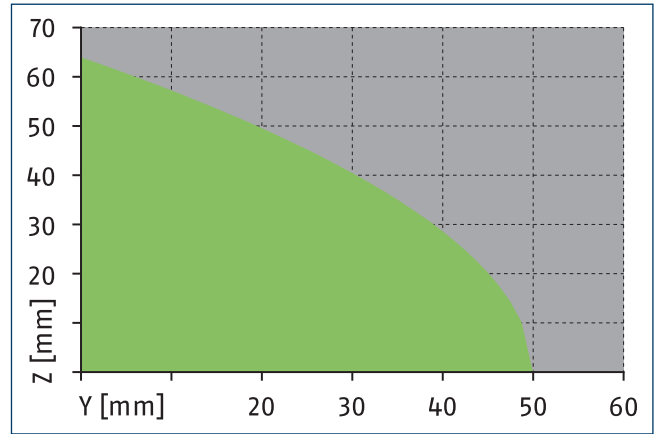
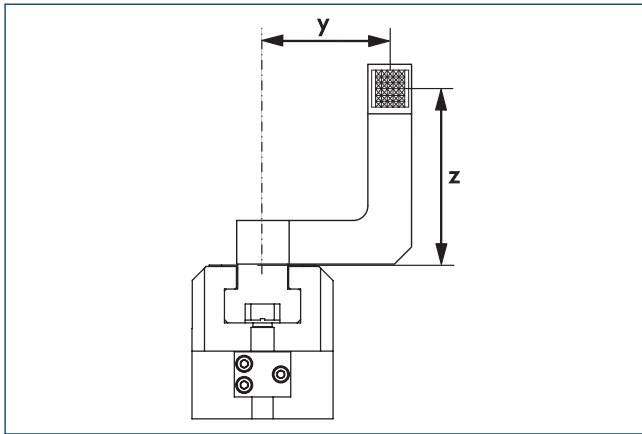
⑨① Thread below the cover for fastening external attachments

⑨① Sensor MMS 22..

JGP 50

Universal gripper

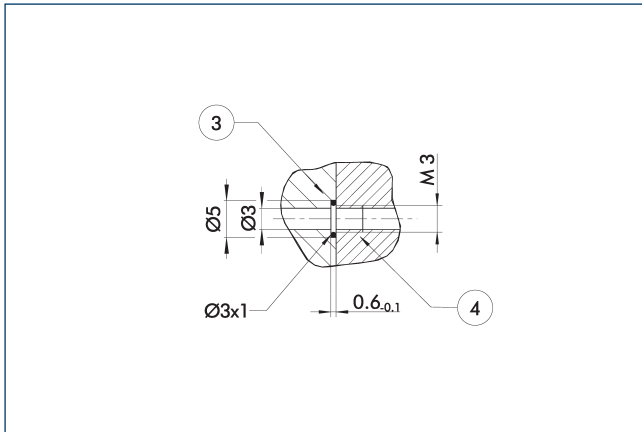
Maximum permitted finger projection



■ Permitted range ■ Inadmissible range

The curve applies for stroke version 1. For other versions, the curve must be parallelly off-set to the max. permissible finger length.

Hose-free direct connection M3

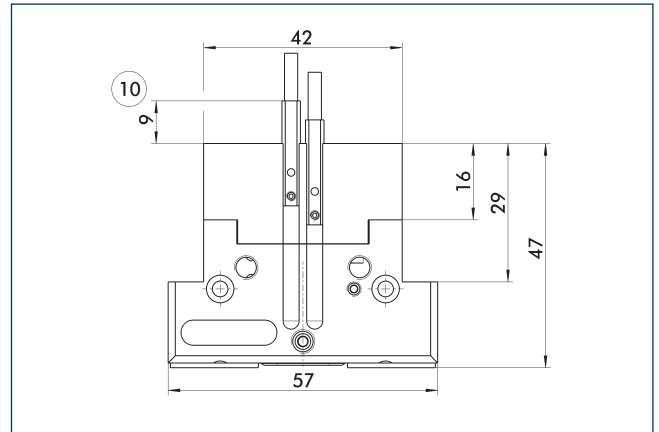


③ Adapter

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.

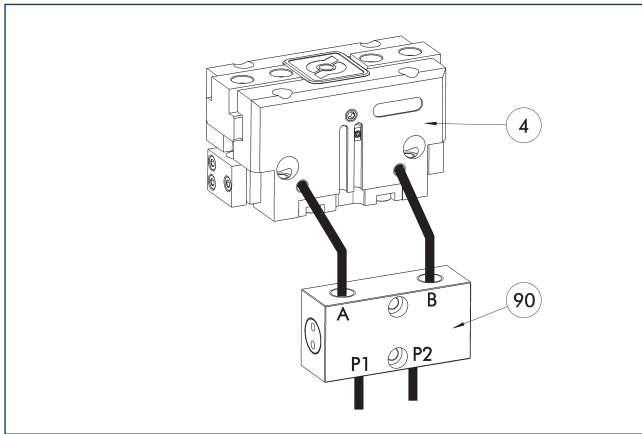
Gripping force maintenance device AS / IS



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.

SDV-P pressure maintenance valve



④ Grippers

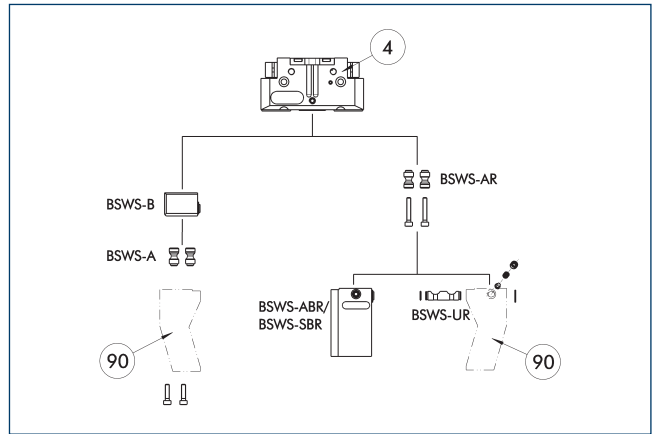
⑨⑩ SDV-P pressure maintenance valve

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.

Characterization	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.

BSWS jaw quick-change jaw systems



④ Grippers

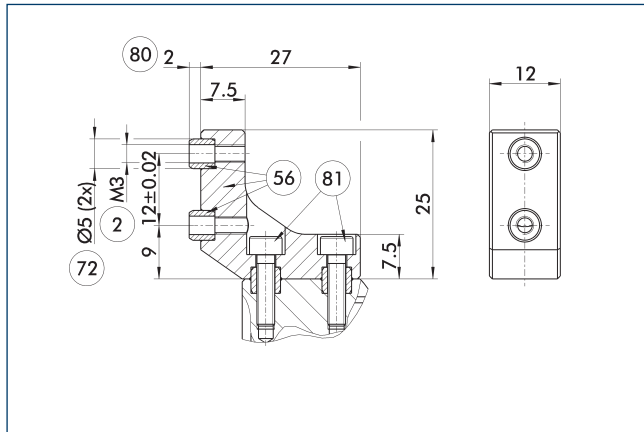
⑨⑩ Customized gripper fingers

There are various jaw quick-change systems available for the gripper. For detailed information, please refer to the corresponding product.

Characterization	ID	Scope of delivery
Jaw quick-change system adapter plate		
BSWS-A 50	0303020	2
BSWS-AR 50	0300091	2
Quick-change jaw system base		
BSWS-B 50	0303021	1
Jaw quick-change system finger blank		
BSWS-ABR-PGZN-plus 50	0300071	1
BSWS-SBR-PGZN-plus 50	0300081	1
Jaw quick-change system locking mechanism		
BSWS-UR 50	0302990	1

① Only systems that are listed in the table, can be used.

ZBA-L-plus 50 intermediate jaws

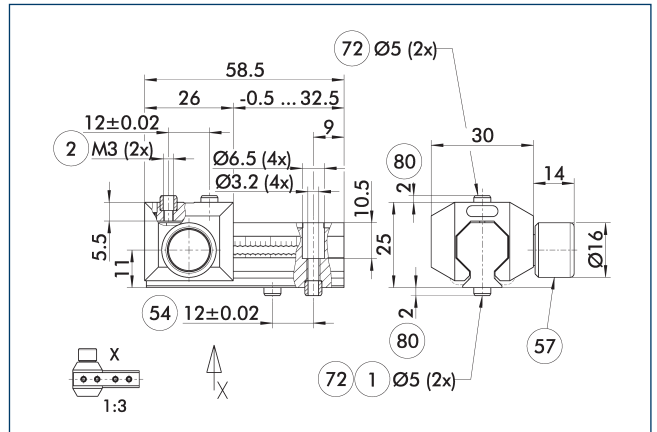


- ② Finger connection
- ⑤⑥ Included in the scope of delivery
- ⑦② Fit for centering sleeves
- ⑧⑩ Depth of the centering sleeve hole in the counter part
- ⑧① Not included in the scope of delivery

The optional ZBA-L-plus intermediate jaws allow the screw connection diagram of the top jaws to be rotated by 90°. This makes it easier to design and produce top jaws (particularly for long versions) because no deep through-bores are required.

Characterization	ID	Material	Finger interface	Scope of delivery
Intermediate jaw				
ZBA-L-plus 50	0311712	Aluminum	PGN-plus 50	1

UZB 50 universal intermediate jaw

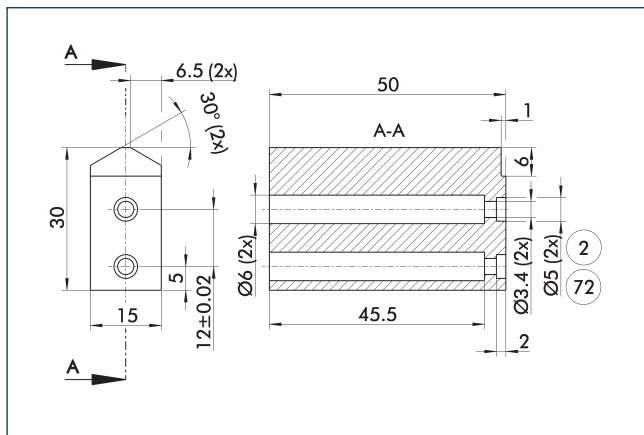


- ① Gripper connection
- ② Finger connection
- ⑤④ Optional right or left connection
- ⑤⑦ Locking
- ⑦② Fit for centering sleeves
- ⑧⑩ Depth of the centering sleeve hole in the counter part

The drawing shows the UZB universal intermediate jaw.

Characterization	ID	Grid dimension
		[mm]
Universal intermediate jaw		
UZB 50	0300041	1.5
Finger blank		
ABR-PGZN-plus 50	0300009	
SBR-PGZN-plus 50	0300019	

Finger blank ABR- / SBR-PGZN-plus 50

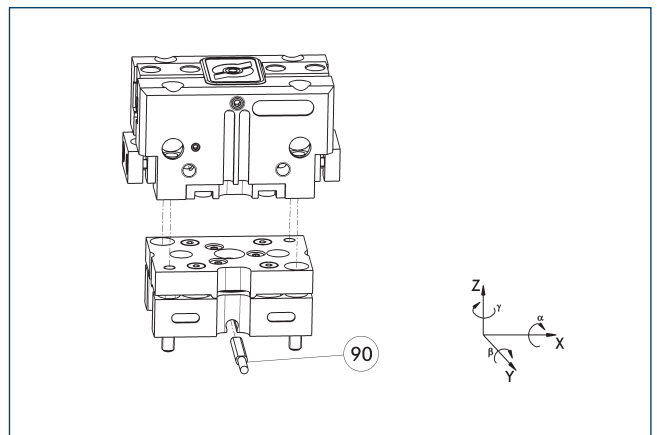


- ② Finger connection
- ⑦② Fit for centering sleeves

The drawing shows the finger blank which can be reworked by the customer.

Characterization	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 50	0300009	Aluminum	1
SBR-PGZN-plus 50	0300019	Steel	1

Tolerance compensation unit TCU

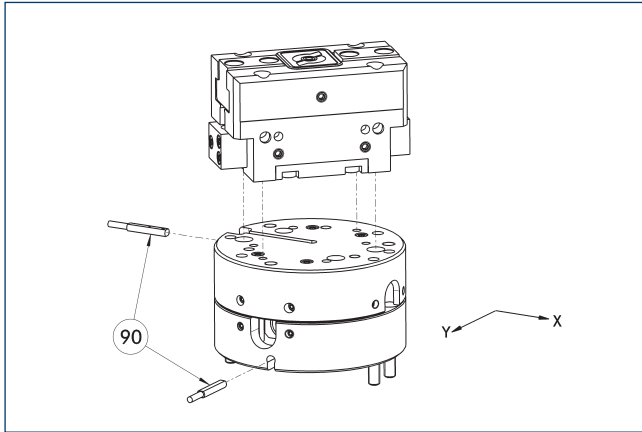


- ⑨⑩ Monitoring of locking

Grippers can be directly mounted without an adapter plate. Tolerance compensation unit and gripper have an identical screw connection diagram. Therefore the tolerance compensation units can be assembled later. Please consider the additional assembly height of the tolerance compensation unit. For details please refer to our catalog robot accessories.

Characterization	ID	Locking	Deflection
Compensation unit			
TCU-P-050-3-0V	0324757	no	±1°/±1°/±1,5°

Compensation unit AGE-F

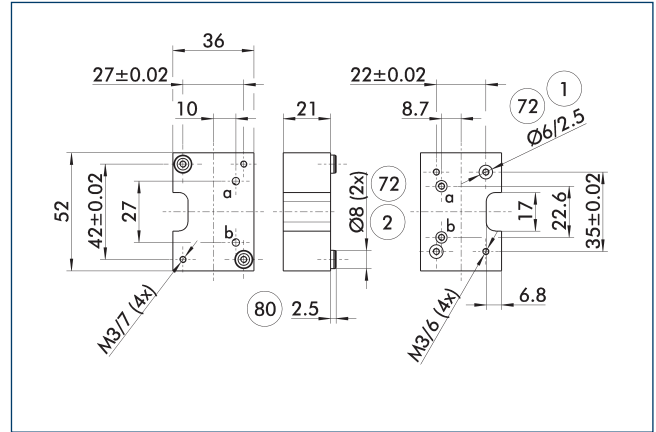


90 Monitoring

Grippers can be directly mounted without an adapter plate. For details see our catalog Gripping or Robot Accessories.

Characterization	ID	Compensation XY	Reset force	Often combined
		[mm]	[N]	
Compensation unit				
AGE-F-XY-040-1	0324920	± 2	3	
AGE-F-XY-040-2	0324921	± 2	4	
AGE-F-XY-040-3	0324922	± 2	4.5	●

Adapter plate for PGN-plus 50



1 Robot-side connection

72 Fit for centering sleeves

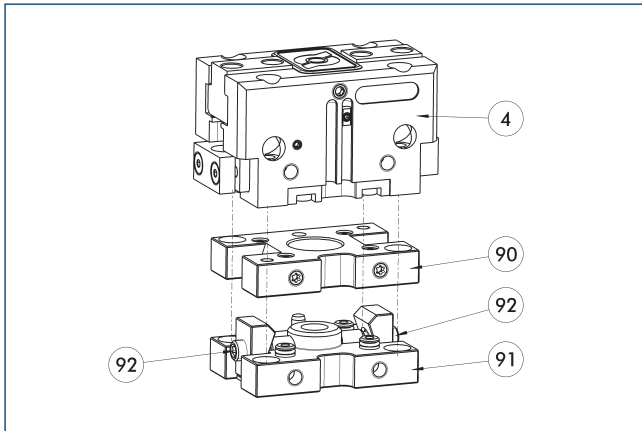
2 Tool-side connection

80 Depth of the centering sleeve hole in the counter part

The adapter plate has integrated air feed-throughs in order to be able to use the hose-free direct connection of the appropriate gripper.

Characterization	ID
Tool side	
A-CWA-064-050-P	0305768

Compact change system for grippers



4 Grippers

91 CWK compact change master

90 CWA compact change adapter

92 Locking mechanism

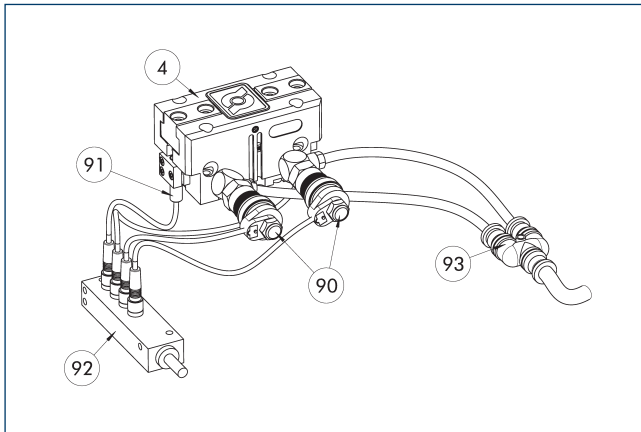
Grippers can be directly mounted without an adapter plate. For details see our catalog Gripping or Robot Accessories.

Characterization	ID
Tool side	
A-CWA-064-050-P	0305768
CWA compact change adapter	
CWA-050-P	0305751
CWK compact change master	
CWK-050-P	0305750

JGP 50

Universal gripper

Attachment valves



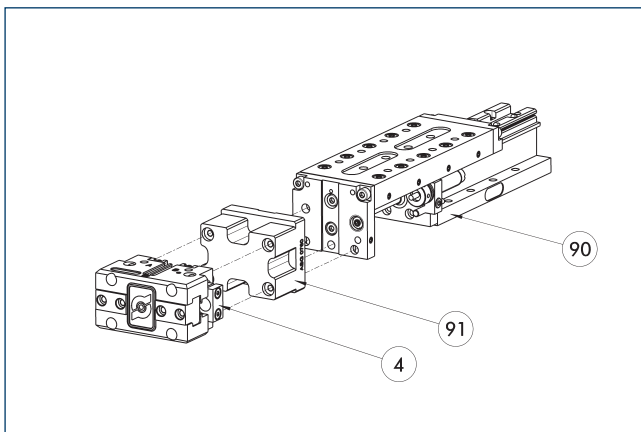
- ④ Grippers
- ⑨② Sensor distributor
- ⑨① Micro valves
- ⑨③ Y distributor
- ⑨① Sensor

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.

Characterization	ID	Often combined
Attachment valve		
ABV-MV15-M5	0303323	
ABV-MV15-M5-V2-M8	0303386	
ABV-MV15-M5-V4-M8	0303356	●
ABV-MV15-M5-V8-M8	0303357	

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.

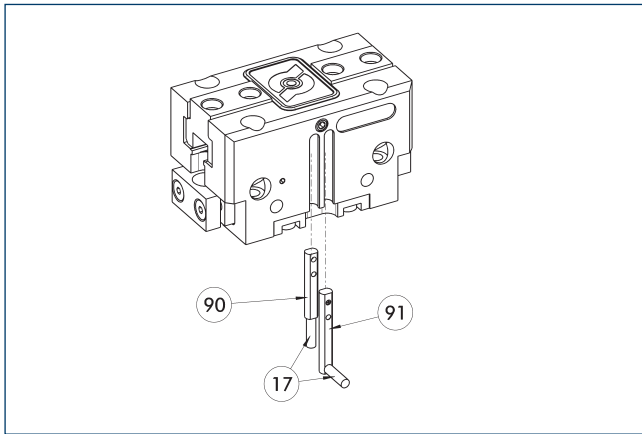
Modular Assembly Automation



- 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



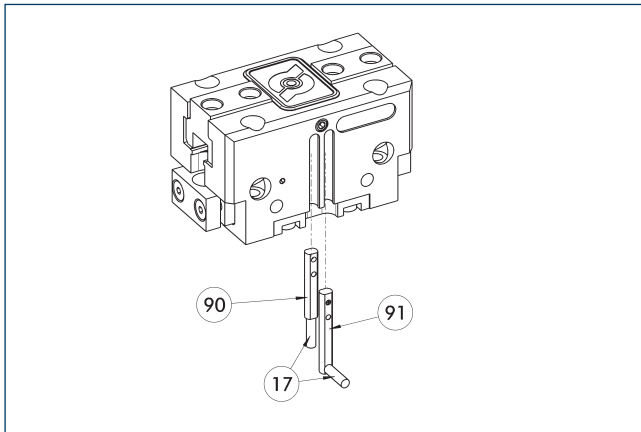
- 17 Cable outlet
- 90 Sensor MMS 22..
- 91 Sensor MMS 22...-SA

End position monitoring for mounting in the C-slot.

Characterization	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	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
clip for plug/socket		
CLI-M8	0301463	
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	
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



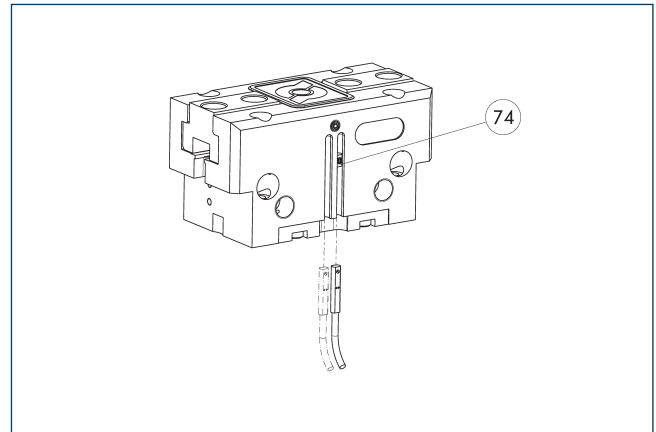
- ①7 Cable outlet
- ①91 Sensor MMS 22 ..-PI1-...-SA
- ①90 Sensor MMS 22 PI1-...

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.

Characterization	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.

MMS-P programmable magnetic switch



- ①74 Limit stop for sensor

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

Characterization	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
clip for plug/socket		
CLI-M8	0301463	
Connection cables		
KA BG08-L 4P-0500	0307767	●
KA BG08-L 4P-1000	0307768	
KA BW08-L 4P-0500	0307765	
KA BW08-L 4P-1000	0307766	
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.

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