



Superior Clamping and Gripping



Product Information

Universal gripper PGN-plus-E 80

Reliable. Robust. Flexible.

Universal gripper PGN-plus-E

Universal electric 2-finger parallel gripper with permanent lubrication, high gripping force, and a high maximum moment due to the use of a multi-tooth guidance.

Field of application

Optimal standard solution for many fields of application.
For universal use in clean to slightly dirty environments.

Advantages – Your benefits

Robust multi-tooth guidance for precise handling

High maximum moments possible suitable for using long gripper fingers

Lubricant pockets in the multi-tooth guidance ensure process reliability and extended maintenance intervals

Brushless DC servomotor for almost wear-free use and a long service life

Control via digital I/O for easy commissioning and rapid integration into existing systems.

Four-step adjustable gripping force for simple adaption to sensitive workpieces

Mounting from two sides in three screw directions for universal and flexible gripper assembly

Integrated sensor system and comprehensive sensor accessory program for versatile querying possibilities and stroke position monitoring

Control via IO-Link enables the prepositioning of the gripper finger and the evaluation of the gripper condition



Sizes
Quantity: 2



Weight
1.01 .. 1.85 kg



Gripping force
530 .. 810 N



Stroke per jaw
8 .. 10 mm

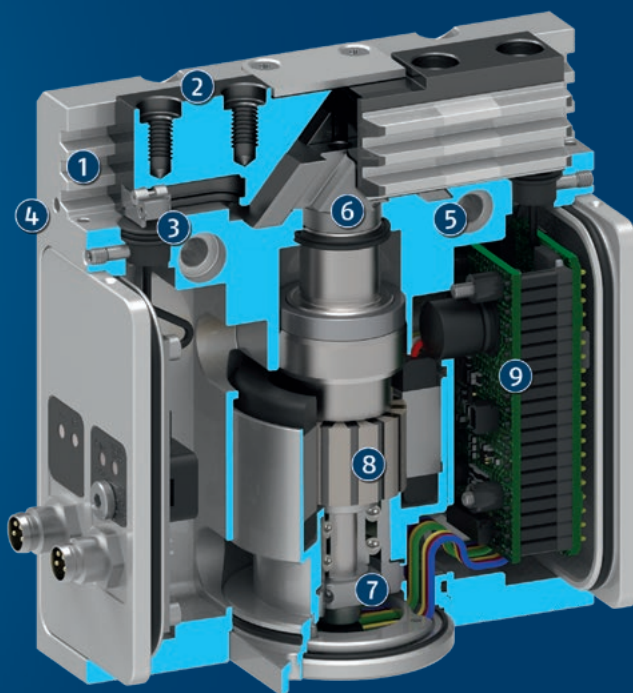


Workpiece weight
2.85 .. 4.05 kg

Functional description

The brushless servomotor forces the wedge-hook up or down via a ball-and-screw spindle drive. Through its angled active surfaces, the wedge-hook transforms this motion into the horizontal, synchronous

movement of the base jaws.



① Multi-tooth guidance

Maximum service life due to lubricant pockets in the robust multi-tooth guidance, and absorption of high forces and torques by means of the large guidance support

② Base Jaw

with standardized screw connection diagram for the connection of the workpiece-specific gripper fingers

③ Sensor system

Integrated 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 Spindle nut

transforms the rotational movement into the axial movement of the wedge-hook

⑧ Drive

Brushless DC servomotor

⑨ Control electronics

Integrated control and power electronics for decentralized control of the servomotor

General notes about the series

Operating principle: Wedge gear with surface power transmission

Housing material: Aluminum alloy, coated

Base jaw material: Steel

Actuation: servo-electric, via brushless DC servomotor

Warranty: 24 months

Scope of delivery: Accessory pack with centering sleeves and assembly and operating manual with declaration of incorporation

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.

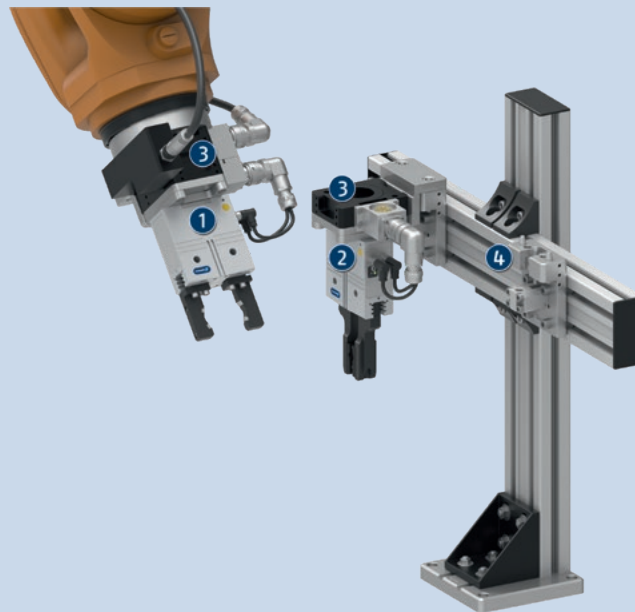
Repeat accuracy (gripping): defined as the spread of the actual position at 100 consecutive closing or opening movements on a rigid workpiece or a fixed workpiece stop under constant conditions.

Repeat accuracy (positioning, unidirectional): defined as the spread of the actual position of the base jaws after 100 consecutive movements to a target position from the same direction under constant conditions.

Repeat accuracy (positioning, bi-directional): defined as the spread of the actual position of the base jaws after 100 consecutive movements to a target position from both directions under constant conditions.

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. PLC reaction times are not included in the above-mentioned times and must be taken into consideration when determining cycle times.



Application example

Handling tool in machining centre for loading and unloading of raw material and workpieces with tool changer for the grippers. For storing the changer there are storage racks in use.

① 2-finger parallel gripper PGN-plus-E for handling of raw material

② 2-finger parallel gripper PGN-plus-E for processed workpieces

③ Electric tool changing system EWS

④ Storage rack for tool changer SWM

SCHUNK offers more ...

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



Quick change system



Rotation unit



Linear module



Pillar assembly system



Magnetic switches



Finger blank



Jaw quick-change system



Room gantry

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

Options and special information

Manually adjustable gripping force: With an integrated rotary switch, the gripping force can be adjusted in four stages – 100%, 75%, 50%, and 25%.

Integrated sensor system: Two end positions can be monitored via integrated inductive proximity switches.

Optional status monitoring via external sensor system: The status of the gripper can also be monitored by optional external sensors.

KA connection cable: Connection cables with an angled or a straight female connector can be ordered to connect the gripper with the power supply and higher-level control system.

IO-Link: Version for positioning the gripper fingers and positional feedback over the entire stroke.

digital I/O: Version for opening/closing of gripper with integrated proximity switches for detecting the two positions.

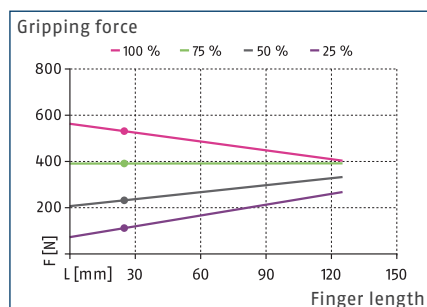
Dustproof version SD: absolutely dustproof, increased degree of protection against ingress of materials.

PGN-plus-E 80

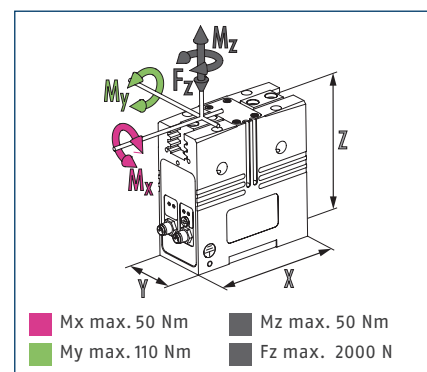
Universal gripper



Gripping force



Dimensions and maximum loads

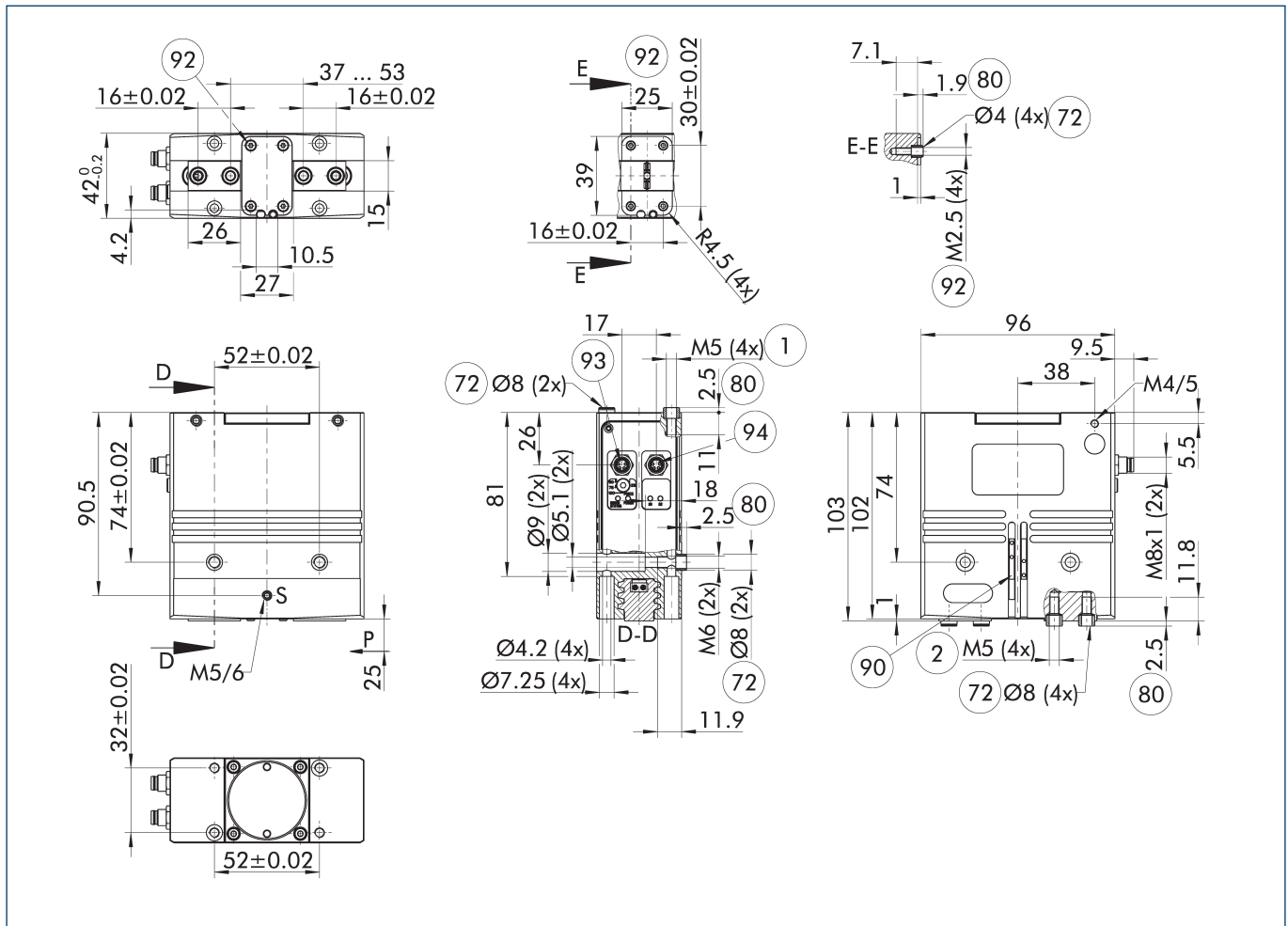


① The indicated moments and forces are static values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Description		PGN-plus-E 80-1	PGN-plus-E 80-1-SD
ID		0318832	1358026
General operating data			
Stroke per jaw	[mm]	8	8
Min./max. gripping force	[N]	110/530	110/530
Recommended workpiece weight	[kg]	2.85	2.85
Max. permissible finger length	[mm]	125	125
Max. permissible mass per finger	[kg]	0.6	0.6
Repeat accuracy (gripping)	[mm]	0.01	0.01
Closing/opening time	[s]	0.26/0.26	0.26/0.26
Weight	[kg]	1.01	1.08
Min./max. ambient temperature	[°C]	5/55	5/55
IP protection class		40	64
Cleanroom class ISO 14644-1:2015		5	5
Noise emission	[dB(A)]	<70	<70
Dimensions X x Y x Z	[mm]	96 x 42 x 103	116.5 x 42 x 108.5
Electrical operating data			
Nominal voltage	[V]	24	24
Nominal current	[A]	0.7	0.7
Max. current	[A]	1.5	1.5
Controller electronics		integrated	integrated
Communication interface		digital I/O	digital I/O
Number of digital I/O		2/2	2/2
Options and their characteristics			
Version with IO-Link		1327621	1358027
Specification		V1.1	V1.1
Transmission rate		COM2	COM2
Port		Class B	Class B
Repeat accuracy (positioning, unidirectional)	[mm]	0.01	0.01
Repeat accuracy (positioning, bi-directional)	[mm]	0.15	0.15

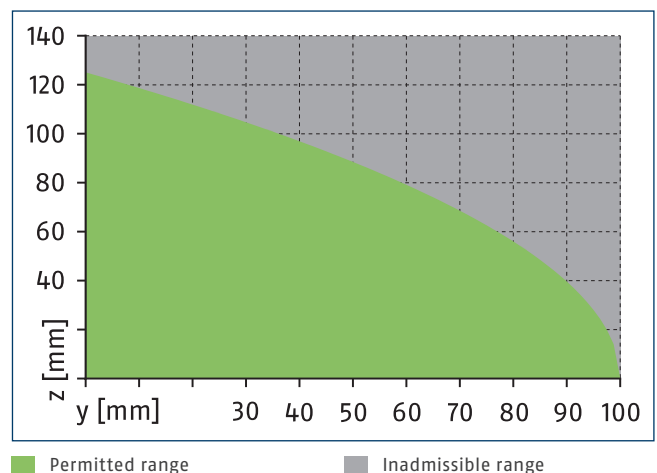
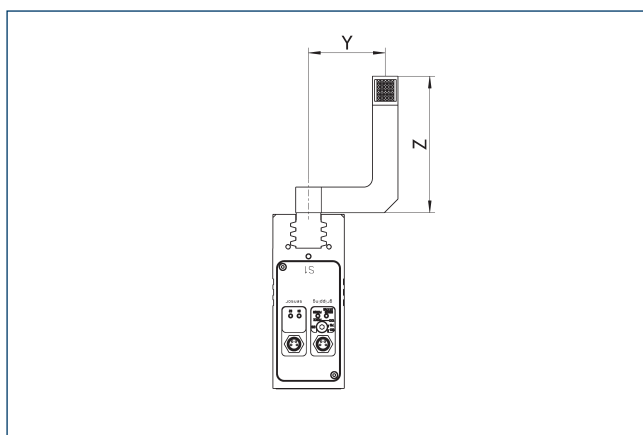
Main view



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

- | | |
|---|--|
| ① Gripper connection | ⑨② Screw connection with centering for customized mounting (these centering sleeves are not included in the scope of delivery) |
| ② Finger connection | ⑨③ M8, 4-pole (control) |
| ⑦② Fit for centering sleeves | ⑨④ M8, 4-pole (sensors) |
| ⑧① Depth of the centering sleeve hole in the counter part | |
| ⑨① Sensor MMS 22.. | |

Maximum permitted finger projection



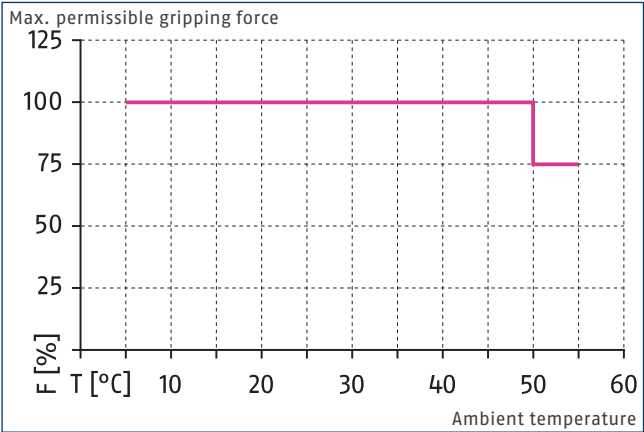
■ Permitted range

■ Inadmissible range

PGN-plus-E 80

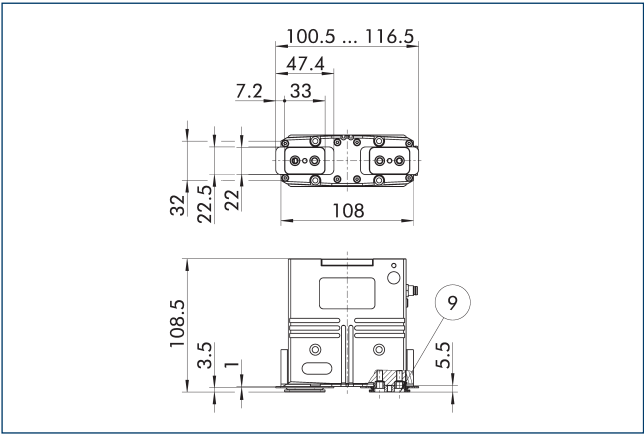
Universal gripper

Derating*



*The diagram shows the maximum admissible setting for gripping force depending on the ambient temperature.

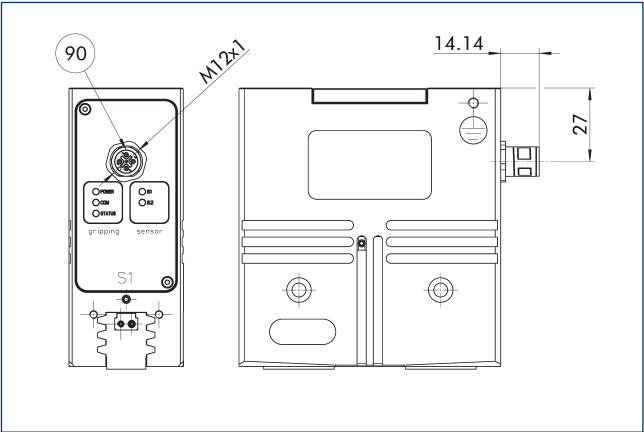
Dustproof version



9 For mounting screw connection diagram, see basic version

The "dustproof" option increases the degree of protection against penetrating substances. The assembly diagram shifts by the height of the intermediate jaw. The finger length is still measured from the upper edge of the gripper housing.

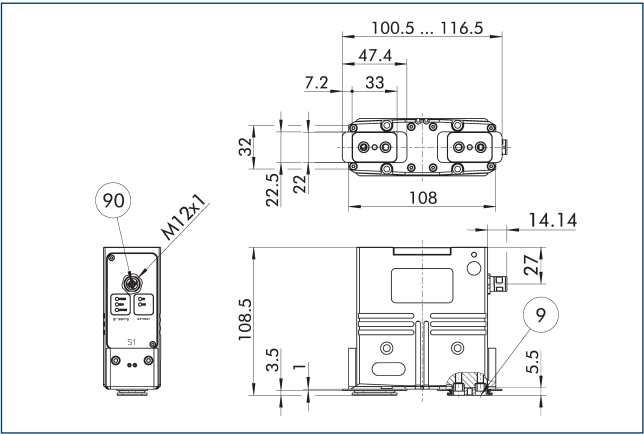
I0-Link version I0L



90 M12, 5-pin

The position of the gripper fingers and the gripping force can be set flexibly on the I0-link version. The drawing shows dimensional changes of the I0-Link version compared to the basic version found in the main view.

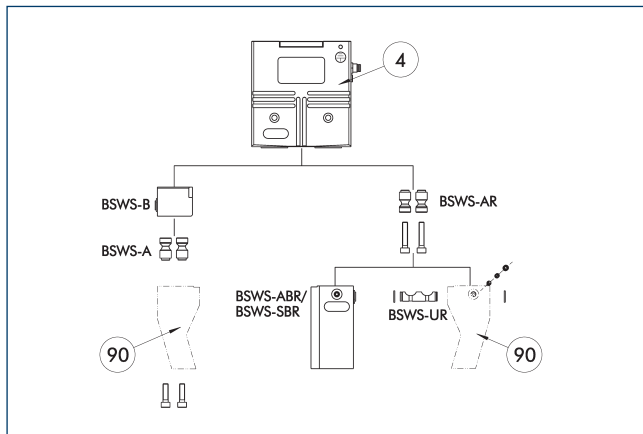
Dustproof version with I0-Link



9 For mounting screw connection 90 M12, 5-pin diagram, see basic version

The drawing shows dimensional changes of the I0-Link version with the "dustproof" option compared to the basic version shown in the main view.

BSWS jaw quick-change jaw systems



④ Grippers

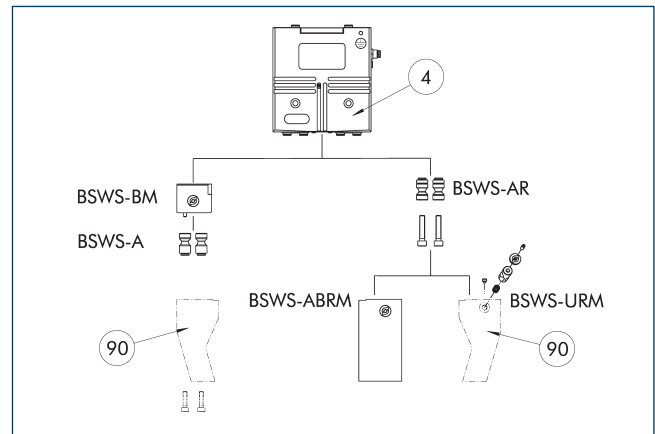
⑨ Customized gripper fingers

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

Description	ID	Scope of delivery
Jaw quick-change system adapter pin		
BSWS-A 80	0303024	2
BSWS-AR 80	0300093	2
Quick-change jaw system base		
BSWS-B 80	0303025	1
Jaw quick-change system finger blank		
BSWS-ABR-PGZN-plus 80	0300073	1
BSWS-SBR-PGZN-plus 80	0300083	1
Jaw quick-change system locking mechanism		
BSWS-UR 80	0302992	1

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

Jaw quick-change system BSWS-M



④ Grippers

⑨ Customized gripper fingers

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

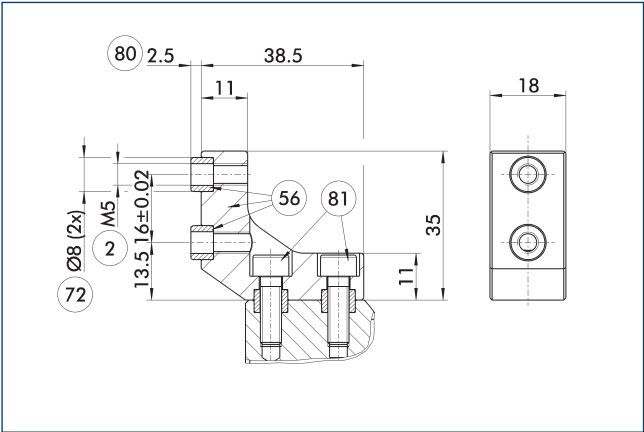
Description	ID	Scope of delivery
Jaw quick-change system adapter pin		
BSWS-A 80	0303024	2
BSWS-AR 80	0300093	2
Quick-change jaw system base		
BSWS-BM 80	1313901	1
Jaw quick-change system finger blank		
BSWS-ABRM-PGZN-plus 80	1420852	1
Jaw quick-change system locking mechanism		
BSWS-URM 80	1398402	1

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

PGN-plus-E 80

Universal gripper

ZBA-L-plus 80 intermediate jaws

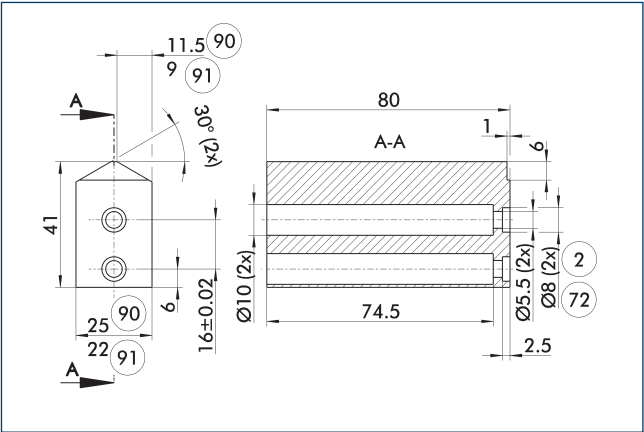


- 8 Finger connection
- 56 Included in the scope of delivery
- 72 Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part
- 81 Not included in the scope of delivery

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.

Description	ID	Material	Finger interface	Scope of delivery
Intermediate jaw				
ZBA-L-plus 80	0311732	Aluminum	PGN-plus 80	1

Finger blanks ABR- / SBR-PGZN-plus 80

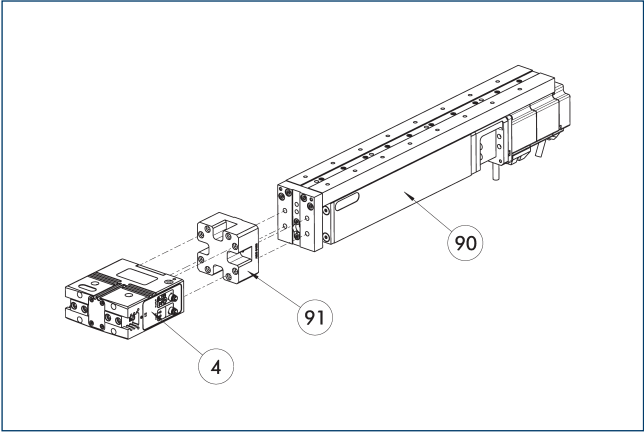


- 8 Finger connection
- 72 Fit for centering sleeves
- 90 ABR-PGZN-plus
- 91 SBR-PGZN-plus

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 80	0300011	Aluminum	1
SBR-PGZN-plus 80	0300021	Steel	1

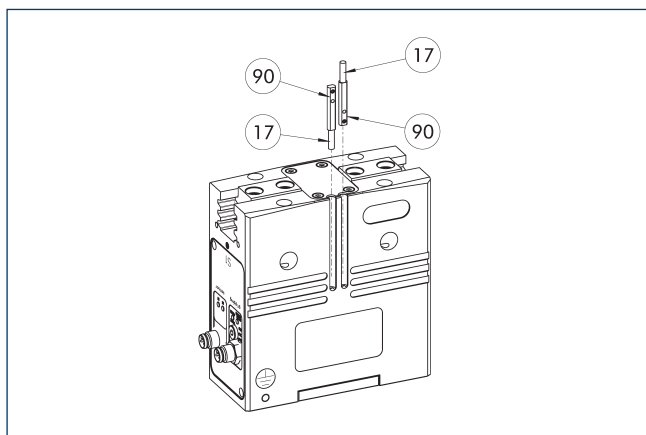
Modular Assembly Automation



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

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

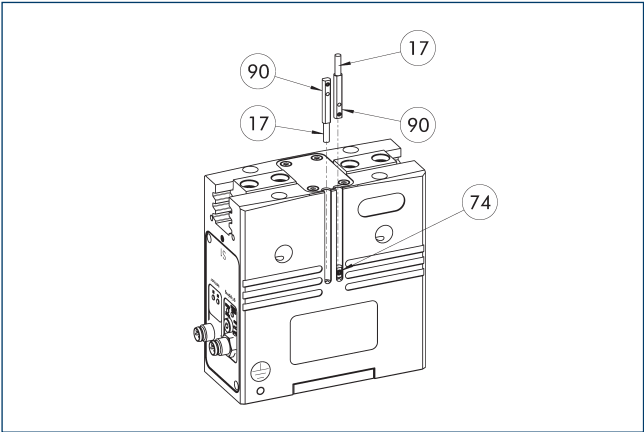
⑨⑩ Sensor MMS 22..

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	
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



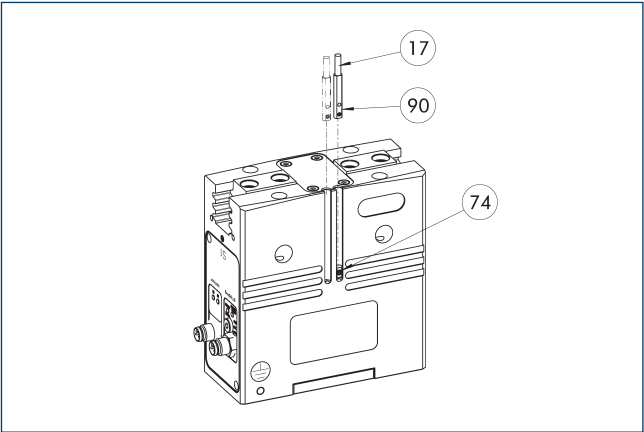
- 17 Cable outlet
- 90 Sensor MMS 22 PI1-...
- 74 Limit stop for sensor

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 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



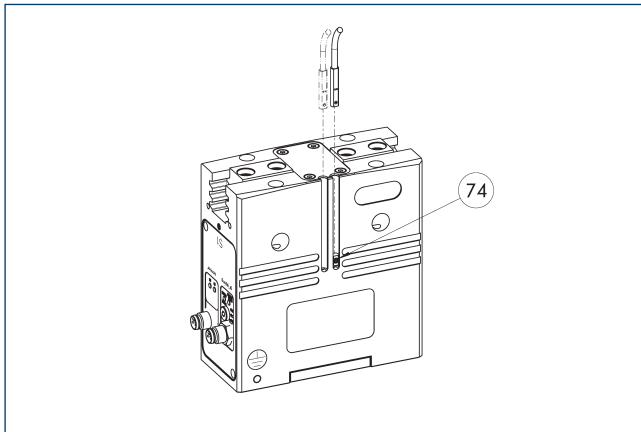
- 17 Cable outlet
- 90 MMS 22...-PI2-... sensor
- 74 Limit stop for sensor

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 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



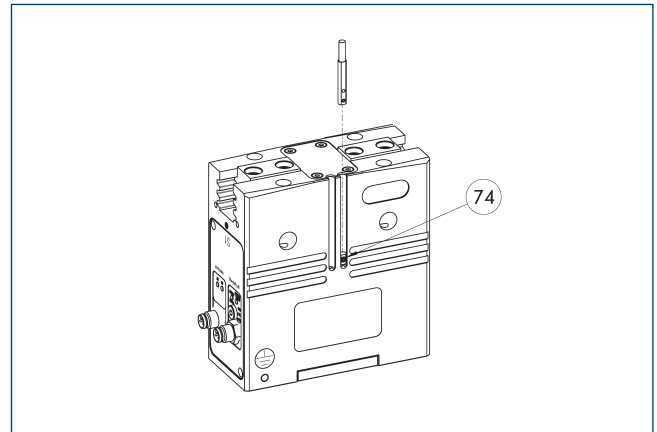
74 Limit stop for sensor

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



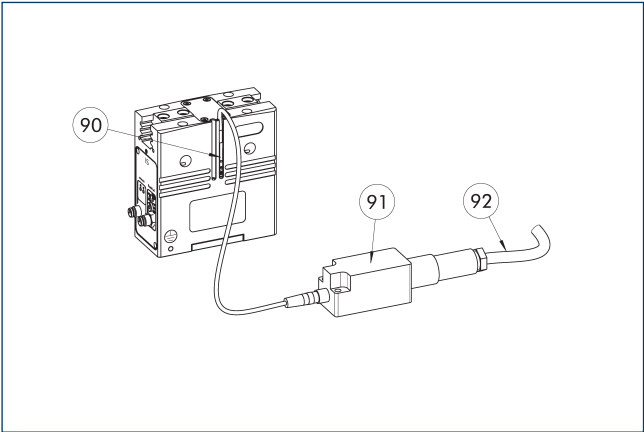
74 Limit stop for sensor

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



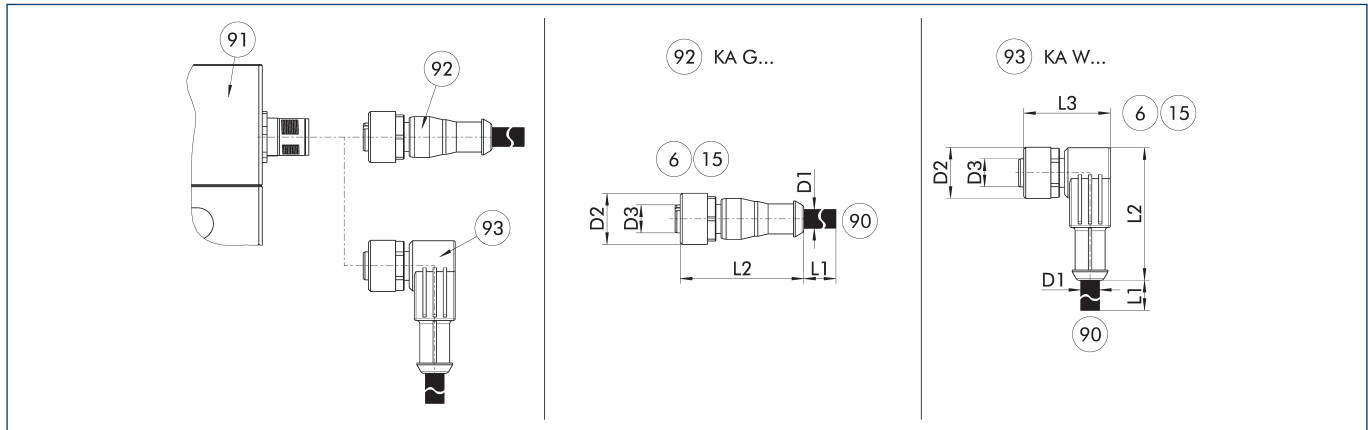
- 90 MMS 22-A-... sensor
- 91 FPS-F5 evaluation electronic
- 92 Connection cables

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	

- ⓘ When using an FPS system, an MMS 22-A-05V, and evaluation electronics (FPS-F5) are required for each gripper. An M16 connector is included in the scope of delivery of the FPS-F5, which can optionally be replaced by the connection cable.

IO-Link connection cable



KA G... Connection cable with straight socket
KA W... Connection cable with angular socket

⑥ Connection module side
⑮ Socket
⑨⑩ SAC connection cable with open wire strands

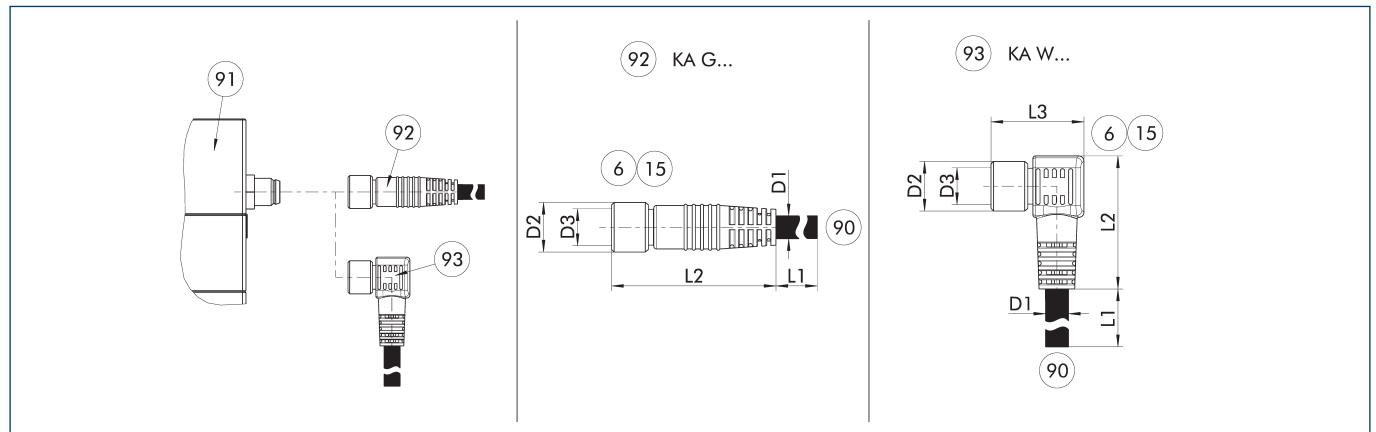
⑨① Connection plug component
⑨② Cable with straight female connector
⑨③ Cable with angled female connector

The connection cable is ideal for connecting the corresponding components to the control system. The connection cable has a 5-pin M12 socket on one side, and open wire strands on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

Description	ID	L1 [m]	D1 [mm]	L2 [mm]	D2 [mm]	L3 [mm]	D3
IO-Link connection cable – drag chain and torsion-compatible							
KA GLN1205-IOL-00500-A	1387207	5	4.8	38	15		M12
KA GLN1205-IOL-01000-A	1387209	10	4.8	38	15		M12
KA WLN1205-IOL-00500-A	1387210	5	4.8	39	15	28	M12
KA WLN1205-IOL-01000-A	1387211	10	4.8	39	15	28	M12

① Please observe the min. bending radius for cable track-compatible cables or the max. torsion angle for torsion-compatible cables. These are generally 10 times the cable diameter or +/- 180°/m.

Connection cables



KA G... Connection cable with straight socket
KA W... Connection cable with angular socket

⑥ Connection module side
⑮ Socket
⑨⑩ SAC connection cable with open wire strands

⑨① Connection plug component
⑨② Cable with straight female connector
⑨③ Cable with angled female connector

The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

Description	ID	L1 [m]	D1 [mm]	L2 [mm]	D2 [mm]	L3 [mm]	D3	Often combined
Connection cable – suitable for drag chains and a high torsion resistance								
KA GLN0804-IO-00200-A	1310371	2	4.8	33.7	10		M8	
KA GLN0804-IO-00500-A	1310375	5	4.8	33.7	10		M8	●
KA GLN0804-IO-01000-A	1310379	10	4.8	33.7	10		M8	
KA WLN0804-IO-00200-A	1310372	2	4.8	27.9	10	18.9	M8	
KA WLN0804-IO-00500-A	1310376	5	4.8	27.9	10	18.9	M8	
KA WLN0804-IO-01000-A	1310381	10	4.8	27.9	10	18.9	M8	

① Please observe the min. bending radius for cable track-compatible cables or the max. torsion angle for torsion-compatible cables. These are generally 10 times the cable diameter or +/- 180°/m.



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Spann- und Greiftechnik

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