Superior Clamping and Gripping

Product data sheet

Universal gripper PGL-plus-P

Flexible. Robust. Safe.

Universal Gripper PGL-plus-P

Universal 2-finger parallel gripper with a large jaw stroke, integrated sensor system and high payload due to use of a multi-tooth guidance

Field of application

Pneumatic universal gripper for handling a wide variety of workpieces in different applications. The encapsulated and sealed design makes the gripper suitable for both clean and dirty environments.

Advantages – Your benefits

Secure, certified gripping force maintenance, GripGuard Holds the gripped workpiece safely and also ensures a permanent gripping force of min. 80% in case of pressure drop. It also ensures that no dangerous, spontaneous jaw movements can occur in the event of a pressure drop.

Integrated sensor system for precise and process-reliable monitoring of the complete gripper stroke via IO-Link

Large jaw stroke enables flexible handling of a wide range of parts

Dirt protected due to IP 64 as standard and the metal-encapsulated, additionally sealed design at the base jaws

Robust interior multi-tooth guidance for high moments and use of long gripper fingers

With food-compliant lubrication as standard as a solution for an easy entry into medical technology, lab automation, pharmaceutical and food industry. The requirements of EN 1672-2:2020 are not fully met.

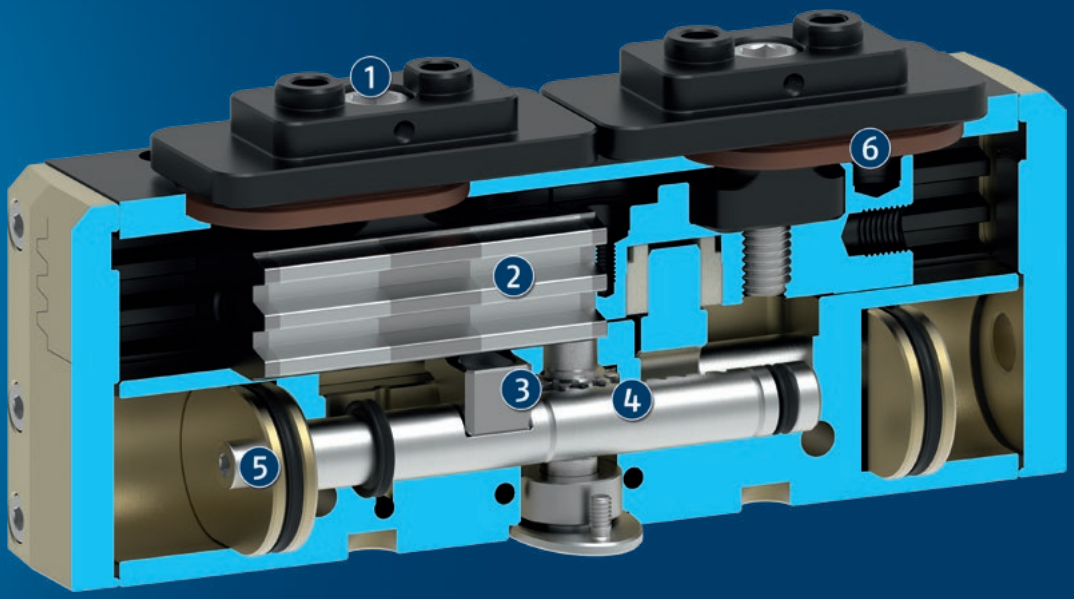
Fastening on two gripper sides in four screw directions for universal and flexible gripper assembly

Air supply via hose-free direct connection or screw connections for universal and flexible gripper assembly

Sizes	Weight	Gripping force	Stroke per jaw	Workpiece weight
Quantity: 5	0.46 .. 7.9 kg	145 .. 1900 N	10 .. 25 mm	0.72 .. 7 kg

Functional description

By applying pressure to the opposing drive pistons, the multi-tooth guided base jaws are directly driven via a drive type fastening. The jaw stroke is synchronized by means of rack-and-pinion kinematics. This ensures powerful and centric opening and closing of the gripper.



① **Base jaw**
with standardized screw connection diagram for the connection of the workpiece-specific gripper fingers The centering sleeves are attached so that they cannot be lost when exchanging fingers

② **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

③ **driver**
Direct power transmission of the drive pistons to the gripper fingers via a robust drive type fastening

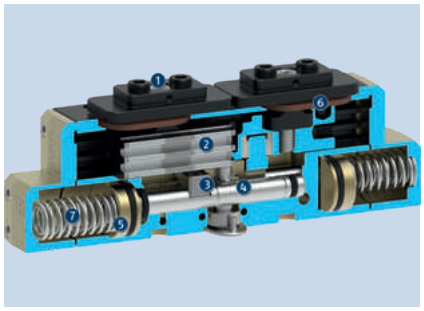
④ **Kinematics**
The gear rack-and-pinion kinematics ensure synchronization of the base jaws and centric clamping

⑤ **Pneumatic drive piston**
Maximum power generation through two oval pneumatic pistons

⑥ **Dust cover**
The entire circumference of the gripper is encapsulated with metal and additionally sealed with a lip seal at the base jaws so that it is suitable for universal use, even in dirty environments.

Detailed functional description

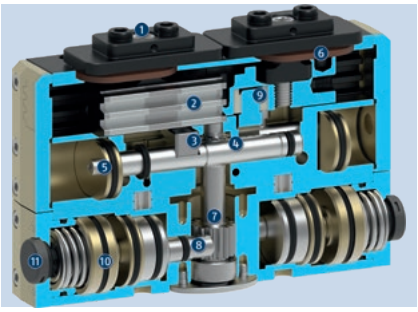
Gripping force maintenance version AS/IS



Conventional gripping force maintenance via springs also ensures a minimum gripping force in case of a pressure drop. In the AS variant this acts as a closing force, and in the IS variant as an opening force. The image shows the AS variant. The gripping force maintenance can also be used to increase the gripping force or for single actuated gripping.

1. Base jaw
   with standardized screw connection diagram for the connection of the workpiece-specific gripper fingers The centering sleeves are attached so that they cannot be lost when exchanging fingers
2. 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
3. driver
   Direct power transmission of the drive pistons to the gripper fingers via a robust drive type fastening
4. Kinematics
   The gear rack-and-pinion kinematics ensure synchronization of the base jaws and centric clamping
5. Pneumatic drive piston
   Maximum power generation through two oval pneumatic pistons
6. Dust cover
   The entire circumference of the gripper is encapsulated with metal and additionally sealed with a lip seal at the base jaws so that it is suitable for universal use, even in dirty environments.
7. Gripping force maintenance by means of a pressure spring
   Conventional gripping force maintenance via springs also ensures a minimum gripping force in case of a pressure drop. In the AS variant this acts as a closing force, and in the IS variant as an opening force. The image shows the AS variant. The gripping force maintenance can also be used to increase the gripping force or for single actuated gripping.

GripGuard: secure, certified gripping force maintenance version ASC/ISC



Secure GripGuard gripping force maintenance also ensures a permanent min. gripping force of 80%, even in case of a pressure drop. In the ASC variant this acts as a closing force, in the ISC variant as an opening force. Compared to conventional gripping force maintenance via springs, this GripGuard variant thereby ensures a significantly higher gripping force. In addition, the gripping force maintenance is constant over the entire jaw stroke. There is also no risk of injury with this gripper, as the base jaws do not move uncontrollably in the event of pressure drop. This simplifies the risk assessment, since gripping force maintenance is already certified as a safety function (PLd Cat. 3).

1. Base jaw
2. Multi-tooth guidance
3. driver
4. Kinematics
5. Pneumatic drive piston
6. Dust cover
7. Pinion shaft
   The one-piece pinion shaft connects the pinion of the jaw synchronization with the mechanics of safe gripping force maintenance.
8. Clamping element
   In the event of a pressure drop where a workpiece is not gripped, the clamping element will prevent the pinion from rotating. This prevents any potentially dangerous movements of the gripper fingers.
9. Elastomer
   In the event of a pressure drop while gripping the workpiece, the gripping force accumulated in the elastomer (energy storage) will retain the workpiece securely. The clamping element prevents the gripper fingers from opening in such cases.
10. Spring-loaded pneumatic piston
    In normal gripper operation, the pneumatic piston is always actuated with compressed air. This does not require a separate air supply. In the event of a malfunction, i.e. a sudden pressure drop, the piston is pushed back via the spring assembly and the clamping element blocks the pinion shaft so that movement of the gripper fingers is no longer possible
11. Pressure compensating valve
    The pressure compensation valve ensures any excess pressure that has accumulated inside can escape to the outside. At the same time, it prevents dirt or liquids from entering the inside from the outside.

Certified gripping force maintenance

DGUV Test
HM 220107
Sicherheit geprüft
tested safety
dguv.de/pruefzeichen

The certificate was issued by the German Social Accident Insurance (DGUV). The DGUV test certificate confirms the secure GripGuard gripping force maintenance in case of a power failure for the gripper series PGL-plus-P in the versions ASC and ISC. The gripping systems comply with the relevant provisions of Directive 2006/42/EC (Machinery Directive). The safety function is implemented with category 3 and PLd according to EN ISO 13849-1:2015.

Integrated sensor system IOL

The gripper variant "IOL" with integrated sensor system enables precise and process-reliable monitoring of the complete gripper stroke via IO-Link. There is no longer any need for separate procurement, installation and adjustment of additional, externally mounted sensors. In addition to IO-Link standards such as temperature display and process parameters, this integrated sensor system offers two additional modes as standard that are perfectly tailored to gripping applications: Gripping Point Mode and Gripping Range Mode. Up to eight workpieces (positions or ranges) can be stored directly in the sensor profile. Tolerance and hysteresis values are already stored in the sensor profile, but can be set individually if required. However, due to the default values, this is not necessary in most cases.
In SIO mode, this gripper variant can also be used without an IO-Link master to interrogate two freely adjustable switching points. The positions "gripper open" and "gripper closed" are preset and can be individually adjusted by the customer.

External sensor system with magnetic switches

For monitoring with magnetic switches, the gripper is equipped with two sensor slots. There is a choice of different sensors: 1-point switches, 2-point switches or else compact analog sensors for mounting in the C-slot. The image shows the "gripper open" and "gripper closed" position query with two MMS 22 sensors.

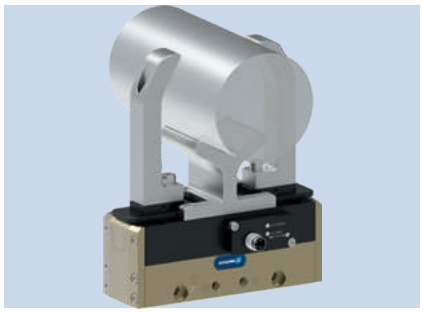
External sensor system with inductive proximity switches

The "IN" gripper variant is supplied with the pre-assembled attachment kit for two inductive proximity switches. The positions "gripper open" and "gripper closed" are preset. Proximity switches must be ordered separately and are slid into the housing as far as the stop and clamped. Both sensors can be set individually to monitor any other position such as "workpiece gripped" for example. Optionally, another attachment kit for two additional inductive proximity switches can be inserted at the back of the gripper, so that a total of four sensors can be mounted.

Precision version P

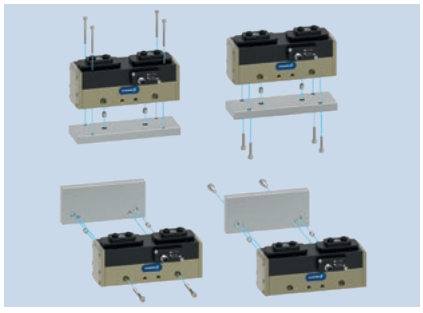
With the "P" precision version of the gripper, the base jaws are reworked on the fully assembled gripper. As a result, tolerance-related deviations can be compensated and the most precise position, form and location tolerances can be achieved. This enables highly precise gripping applications or positionally accurate change of grippers without any re-alignment.

Optional mounting options for customized add-ons



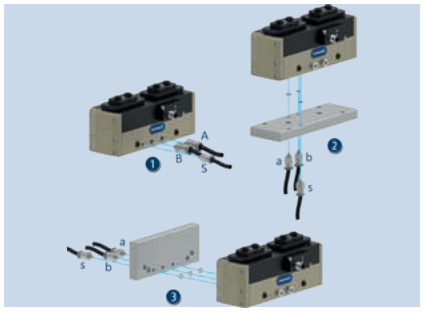
On the top of the gripper, four threads and fits are available. If required, these can be used to fasten customized designs or implement additional functions. The image shows an example of a design with additional centering or support of a workpiece.

Centering and mounting options for gripper assembly



The gripper can be installed on two sides and in four screw directions. This allows universal and flexible mounting of the gripper in all conceivable arrangements.

Pneumatic connections for the power supply



The gripper can be flexibly supplied with compressed air on three sides.

1. At the front via the main air connections A and B by means of air connections and pneumatic hoses. Air purge can be optionally created via S.
2. At the bottom via direct connections a and b, by means of tubeless direct connection and using the O-rings supplied. The pneumatic supply is then via the adapter plate. Air purge can be optionally created via s.
3. At the rear side via direct connections a and b, by means of tubeless direct connection and using the O-rings supplied. The pneumatic supply is then via the adapter plate. Air purge can be optionally created via s.

General notes about the series

Operating principle: Dual piston drive with gear rack and pinion synchronization

Housing material: Aluminum

Base jaw material: Steel

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

Warranty: 36 months

Scope of delivery: Gripper in the ordered variant, accessory kit (centering sleeves, O-rings for direct connection/detailed contents see operating manual) and safety information. Product-specific instructions can be downloaded at schunk.com/downloads-manuals.

Gripping force maintenance: via certified, safe gripping force maintenance version or conventionally via the variant with springs or via SDV-P pressure maintenance valve

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.

Detectable workpiece difference: specifies the smallest distinguishable difference between two gripped workpieces. The value applies at 6 bar, 23 °C, finger length at distance P and operation without air purge. Deviating parameters can influence the accuracy.

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 movement times of the base jaws only, without application-specific gripper fingers. Valve switching times, hose fill times, or PLC reaction times are not included, and are to be considered when cycle times are calculated.

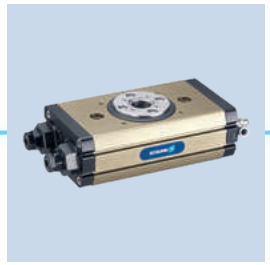
Application example

In addition to ordinary handling processes, the robust and dirt-protected universal gripper PGL-plus-P can also be used to hold workpieces during simple machining operations. In the example shown, a workpiece is being held between the gripper fingers. A robot moves the workpiece along a stationary deburring spindle for deburring. The connected air purge prevents dirt from entering the gripper.

1. Universal Gripper PGL-plus-P
2. Deburring spindle RCV
3. Pneumatic file tool CRT

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

Pressure maintenance valve

Inductive proximity switch

Magnetic switches

Jaw quick-change system

Finger blank

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

Options and special information

Secure gripping force maintenance ASC/ISC: The secure, certified GripGuard gripping force maintenance also ensures a min. gripping force of 80% even in case of a pressure drop. In the ASC variant this acts as a closing force, in the ISC variant as an opening force.
Gripping force maintenance version AS/IS: The conventional version for gripping force maintenance via springs also ensures a minimum gripping force in case of a pressure drop. In the AS variant this acts as a closing force, and in the IS variant as an opening force.
High-temperature version V: for use in hot environments
Precision version P: for the highest accuracy
Integrated sensor system IOL: The integrated sensor system enables precise and process-reliable monitoring of the complete gripper stroke via IO-Link.
External sensor system: Instead of the gripper version with integrated sensor system, conventional external sensors can also be used. Various magnetic switches and inductive proximity switches are available.
Additional versions: Various options can be combined with each other.
Integrated air purge connection: impedes the ingress of dirt into the inside of the gripper In combination with air purge, this increases the protection class from IP 64 to IP 67
Food-grade lubrication: The product contains food-compliant lubricants as standard. The requirements of EN 1672-2:2020 are not fully met. The relevant NSF certificates are available at https://info.nsf.org/USDA/Listings.asp using the lubricant information in the operating manual.

Order example PGL-plus-P

PGL-plus-P 13 - AS - V - P - IOL

Description
PGL-plus-P

Size
10 = 10 mm stroke per jaw
13 = 13 mm stroke per jaw
16 = 16 mm stroke per jaw
20 = 20 mm stroke per jaw
25 = 25 mm stroke per jaw

Gripping force maintenance
without gripping force maintenance
AS = outside diameter gripping with spring
IS = inner diameter gripping with spring
ASC4 = GripGuard: certified secure O.D. gripping (4 bar operating pressure)
ASC6 = GripGuard: certified secure O.D. gripping (6 bar operating pressure)
ISC4 = GripGuard: certified secure I.D. gripping (4 bar operating pressure)
ISC6 = GripGuard: certified secure I.D. gripping (6 bar operating pressure)

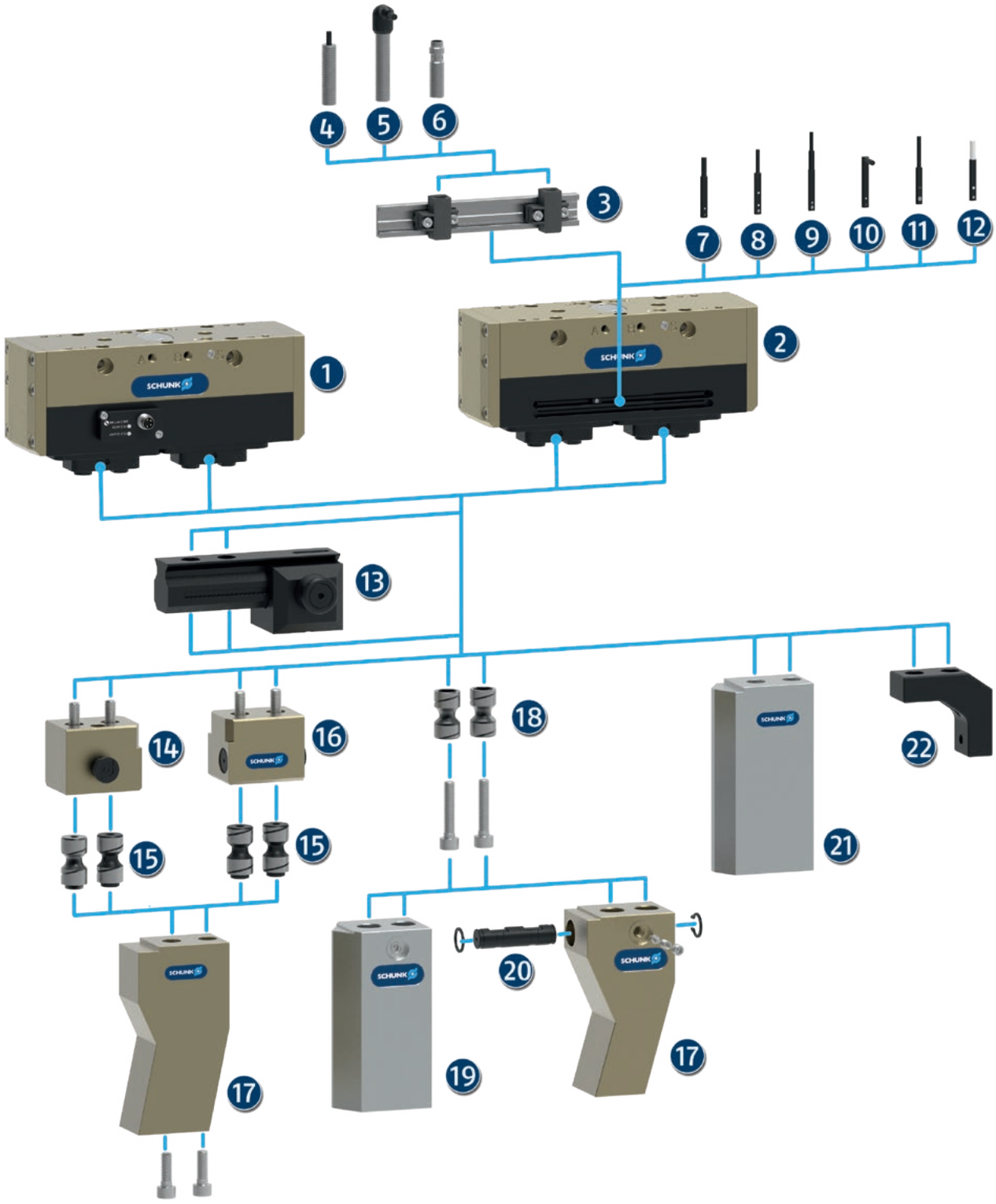
Temperature range
5 - 90 °C (IOL max. 70 °C)
V = High-temperature version 5 - 130 °C

Precision
Standard
P = Precision version

Communication interface/sensor monitoring
without sensors (prepared for MMS)
IN = without sensors (mounted attachment kit for IN 80)
IOL = IO-Link communication (with integrated sensors)

SCHUNK gripper PGL-plus-P

Overview Accessories



1 **PGL-plus-P-IOL**
Universal 2-finger parallel gripper with a large jaw stroke, integrated sensor system and high payload due to use of a multi-tooth guidance

2 **PGL-plus-P**
Universal 2-finger parallel gripper with a large jaw stroke and high payload due to use of multi-tooth guidance

Sensor system

3 **AS-IN 80**
Mounting kit for inductive proximity switch

4 **IN ...**
Inductive proximity switch with molded cable and straight cable outlet

5 **IN ...-SA**
Inductive proximity switch with molded cable and laberal cable outlet

6 **IN-C 80**
Inductive proximity switch, directly pluggable

7 **MMS 22**
Magnetic switch with straight cable outlet for monitoring a position

MMS 22-PI1
Magnetic switch with straight cable outlet for monitoring a freely programmable position

8 **MMS 22-PI2**
Magnetic switch with straight cable outlet for monitoring two freely programmable position

9 **MMS 22-PI1-HD**
MMS 22-PI1 in robust design

MMS 22-PI2-HD
MMS 22-PI2 in robust design

10 **MMS 22-SA**
Magnetic switch with lateral cable outlet for monitoring a position

MMS 22-PI1-SA
Magnetic switch with side cable outlet for monitoring a freely programmable position

11 **MMS 22-IOL**
Magnetic switch for detecting the gripper jaw position with IO-Link communication

12 **MMS-A**
Analog magnetic switch with straight cable outlet for measuring the gripper jaw position with analog output and teach function

Finger Accessories

13 **UZB**
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

14 **BSWS-BM**
Quick-change base with integrated locking mechanism for fast change of top jaws using a hexagon socket wrench

15 **BSWS-A**
Adapter pin of the jaw quick-change system for adaptation to the customized finger

16 **BSWS-B**
Quick-change base with integrated locking mechanism for fast change of top jaws using a hexagon socket wrench

17 **Customized fingers**

18 **BSWS-AR**
Adapter pin of the jaw quick-change system for fast, manual change of top jaws

19 **BSWS-ABR**
Finger blank made of aluminum with interface to the jaw quick-change system

BSWS-SBR
Finger blank made of steel with interface to the jaw quick-change system

20 **BSWS-UR**
Locking mechanism for the integration of the jaw quick-change system into customized fingers

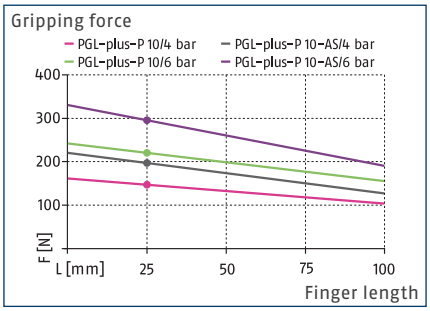
21 **ABR/SBR**
Finger blanks made of steel or aluminum with standardized screw connection diagram

22 **ZBA**
Intermediate jaws for reorientation of the mounting surface

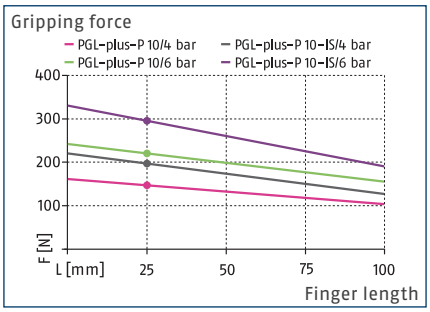
PGL-plus-P 10

Universal gripper

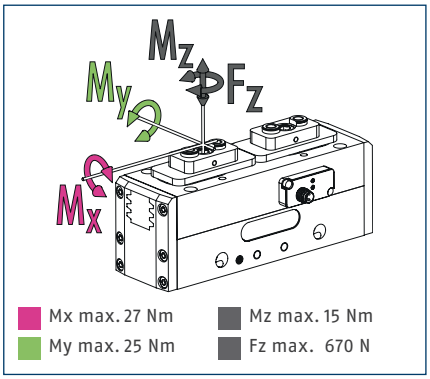
Gripping force O.D. gripping



Gripping force I.D. gripping



Max. loads



ⓘ 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 PGL-plus-P

Description		PGL-plus-P 10-IOL	PGL-plus-P 10-AS-IOL	PGL-plus-P 10-IS-IOL	PGL-plus-P 10	PGL-plus-P 10-AS	PGL-plus-P 10-IS
ID		1476610	1476611	1476612	1476489	1476525	1476526
Stroke per jaw	[mm]	10	10	10	10	10	10
Closing/opening force	[N]	220/220	295/-	-/295	220/220	295/-	-/295
Min./max. spring force	[N]		75/110	75/110		75/110	75/110
Weight	[kg]	0.46	0.5	0.5	0.46	0.5	0.5
Recommended workpiece weight	[kg]	1.1	1.1	1.1	1.1	1.1	1.1
Cylinder volume per double stroke	[cm³]	12	17	16	12	17	16
Min./nom./max. operating pressure	[bar]	2.5/6/8	4/6/6.5	4/6/6.5	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	0.5/1	0.5/1	0.5/1
Closing/opening time	[s]	0.04/0.04	0.03/0.06	0.06/0.03	0.04/0.04	0.03/0.06	0.06/0.03
Closing/opening time with spring	[s]		0.06	0.06		0.06	0.06
Max. permissible finger length	[mm]	100	100	100	100	100	100
Max. permissible weight per finger	[kg]	0.2	0.2	0.2	0.2	0.2	0.2
Protection class IP (without/with air purge)		64/67	64/67	64/67	64/67	64/67	64/67
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/90	5/90	5/90
Repeat accuracy	[mm]	0.03	0.03	0.03	0.03	0.03	0.03
Min./nominal/max. operating voltage	[V DC]	18/24/30	18/24/30	18/24/30			
Nominal current	[A]	0.2	0.2	0.2			
Cable connector		M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin			
Communication interface/ specification		IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1			
Transmission rate		COM2	COM2	COM2			
Port		Class A	Class A	Class A			
Detectable workpiece difference		Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm			
Options and their characteristics							
High-temperature version					1512470	1512471	1512472
Min./max. ambient temperature	[°C]				5/130	5/130	5/130
Precision version		1476849	1476850	1476851	1476653	1476654	1476655
with pre-assembled attachment kit for IN					1476574	1476575	1476576
Precision version/inductive sensor version					1476709	1476543	1476710

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

PGL-plus-P 10

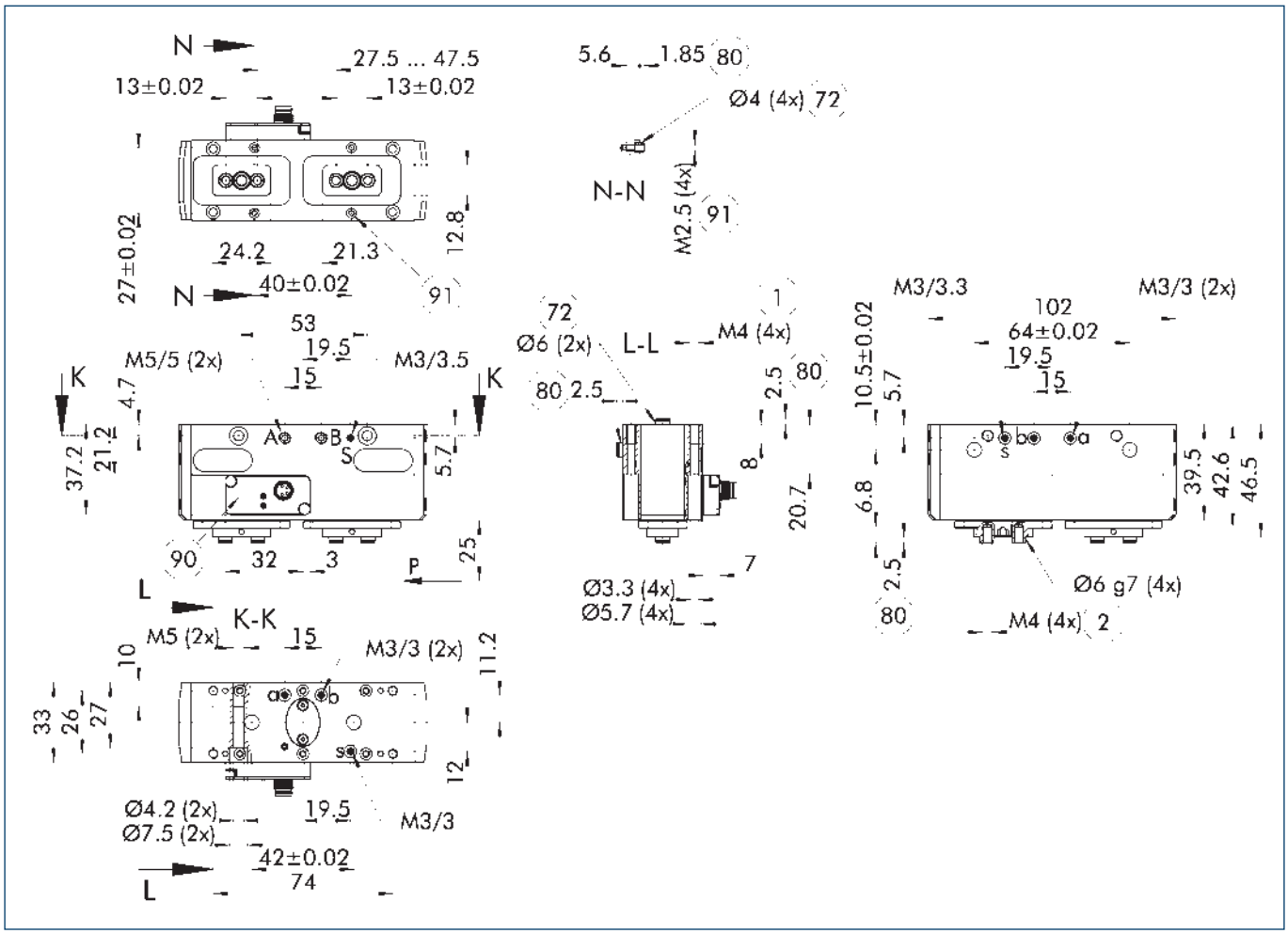
Universal gripper

Technical data PGL-plus-P with safe gripping force maintenance

Description		PGL-plus-P 10-ASC6	PGL-plus-P 10-ISC6	PGL-plus-P 10-ASC4	PGL-plus-P 10-ISC4
ID		1476529	1476550	1476527	1476528
Stroke per jaw	[mm]	10	10	10	10
Closing/opening force	[N]	220/220	220/220	145/145	145/145
Secured opening/closing force in case of pressure loss	[N]	176/-	-/176	116/-	-/116
Weight	[kg]	0.75	0.75	0.75	0.75
Recommended workpiece weight	[kg]	1.1	1.1	0.72	0.72
Cylinder volume per double stroke	[cm³]	13	13	13	13
Min./nom./max. operating pressure	[bar]	5.5/6/6.5	5.5/6/6.5	3.5/4/6.5	3.5/4/6.5
Min./max. air purge pressure	[bar]	0.5/1	0.5/1	0.5/1	0.5/1
Closing/opening time	[s]	0.04/0.04	0.04/0.04	0.04/0.04	0.04/0.04
Max. permissible finger length	[mm]	100	100	100	100
Max. permissible weight per finger	[kg]	0.2	0.2	0.2	0.2
Protection class IP (without/with air purge)		64/67	64/67	64/67	64/67
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90
Repeat accuracy	[mm]	0.03	0.03	0.03	0.03
Options and their characteristics					
Precision version		1476658	1476659	1476656	1476657
Version with IO-Link		1476615	1476616	1476613	1476614
Min./nominal/max. operating voltage	[V DC]	18/24/30	18/24/30	18/24/30	18/24/30
Nominal current	[A]	0.2	0.2	0.2	0.2
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/70
Cable connector		M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin
Communication interface/ specification		IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1
Transmission rate		COM2	COM2	COM2	COM2
Port		Class A	Class A	Class A	Class A
Detectable workpiece difference		Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm
with pre-assembled attachment kit for IN		1476579	1476580	1476577	1476578
Precision version/inductive sensor version		1476713	1476714	1476711	1476712
Precision version/version with IO-Link		1476854	1476855	1476852	1476853
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/70

ⓘ 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.

ⓘ As an alternative/in addition to spring-assisted mechanical gripping force maintenance, the SDV-P pressure maintenance valve can be used for I.D. and O.D. gripping (see "Accessories" section of catalog).

A, a Main / direct connection, gripper opening

B, b Main / direct connection, gripper closing

S, s Air purge, main, direct connection

(1) Gripper connection

(2) Finger connection

(72) Fit for centering sleeves

(80) Depth of the centering sleeve hole in the counter part

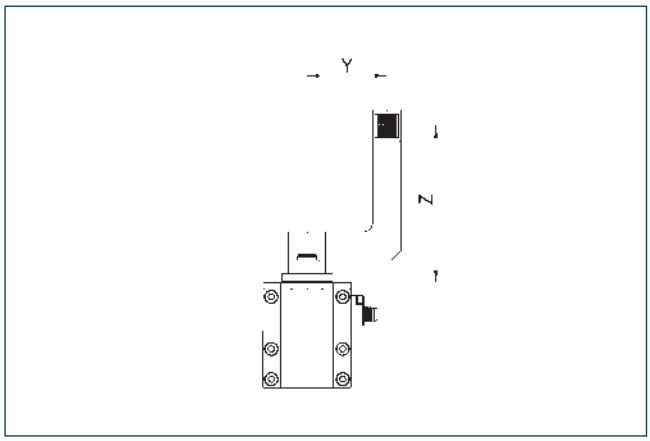
(90) Integrated sensor system IOL with M8 connector, A-coded, 4-pin

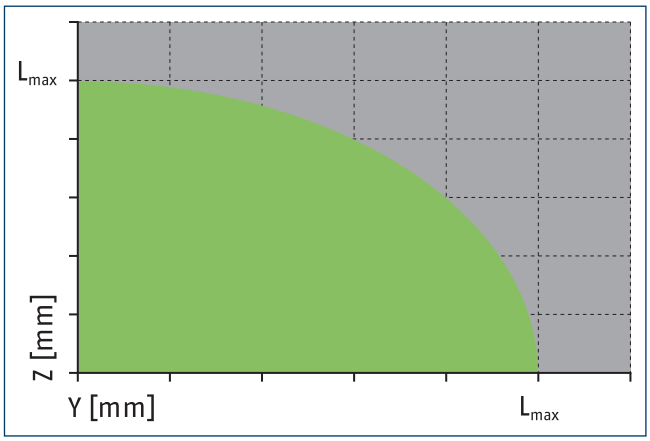
(91) Screw connection with fittings for customized assembly (these centering sleeves are not included in the scope of delivery)

PGL-plus-P 10

Universal gripper

Maximum permitted finger projection



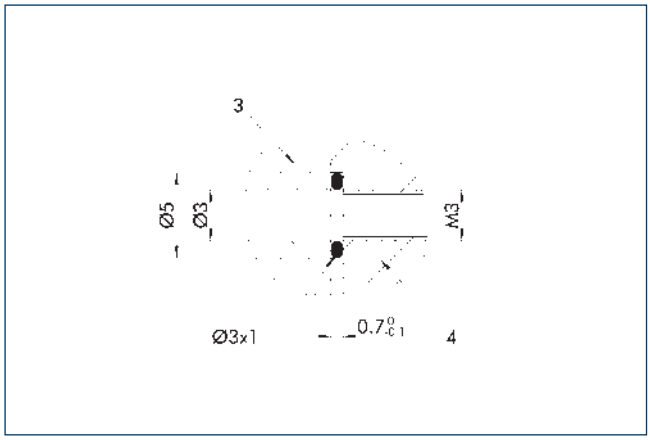


Permitted range

Inadmissible range

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

Hose-free direct connection M3

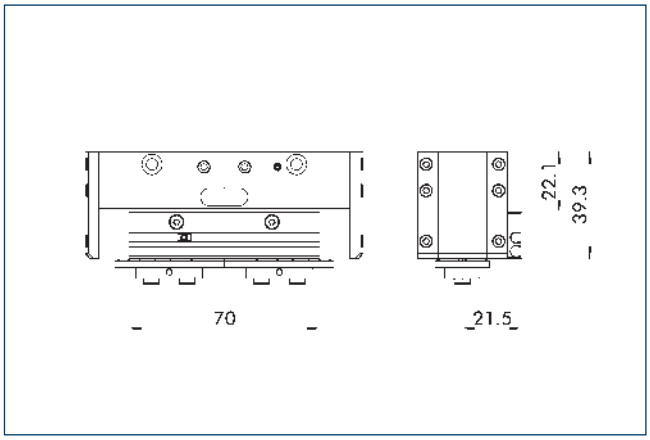


③ Adapter

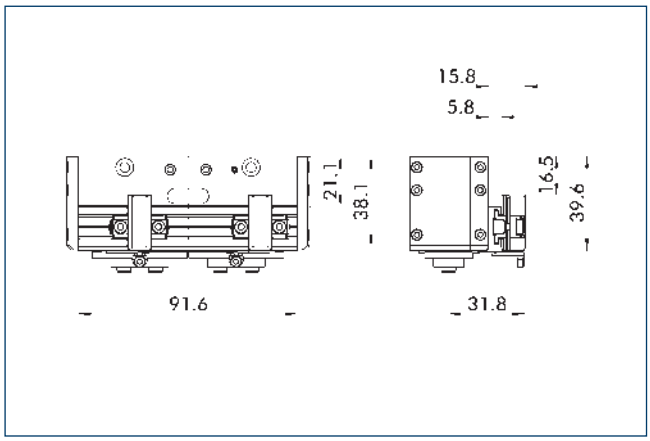
④ Grippers

The direct connection is used for compressed air supply without error-prone tubing.

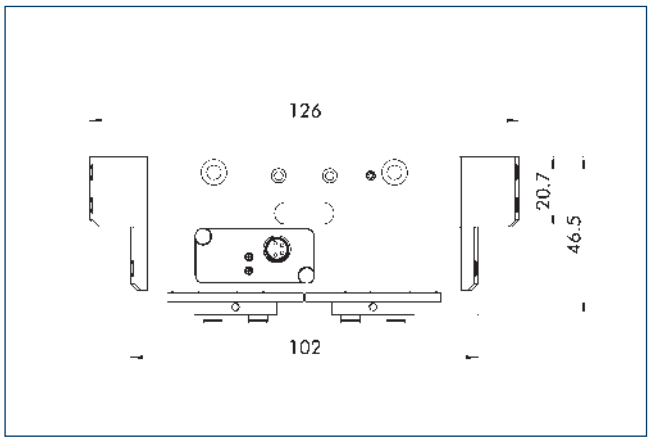
Gripper monitoring with magnetic switches



Gripper monitoring with inductive proximity switches IN

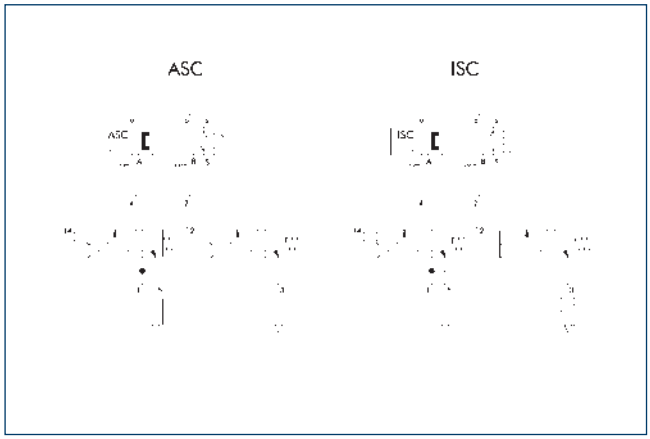


Gripping force maintenance version AS/IS



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 variant this acts as a closing force, in the IS variant as an opening force Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

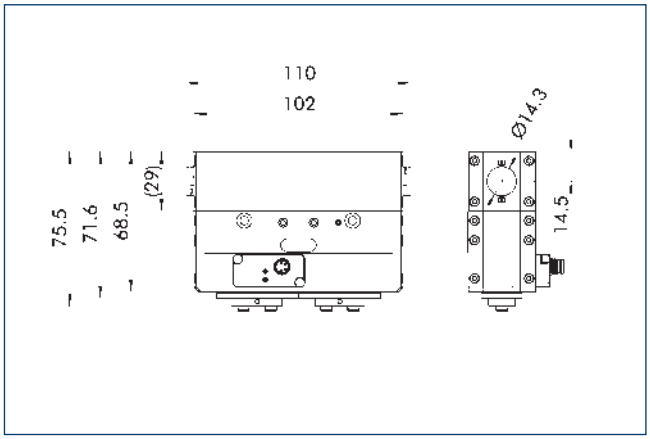
GripGuard: secure, certified gripping force maintenance ASC/ISC



Grippers with ASC or ISC gripping force maintenance are generally controlled with a 2x3/2-directional control valve.

ⓘ Be sure to observe the control sequence in the operating manual.

GripGuard: secure, certified gripping force maintenance ASC/ISC

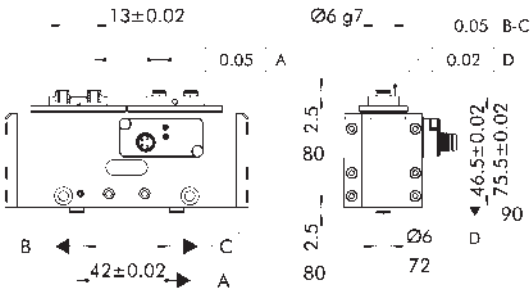


Secure gripping force maintenance also ensures a permanent gripping force of min. 80%, even in case of a pressure drop. In the ASC variant this acts as a closing force, in the ISC variant as an opening force.

PGL-plus-P 10

Universal gripper

Precision version



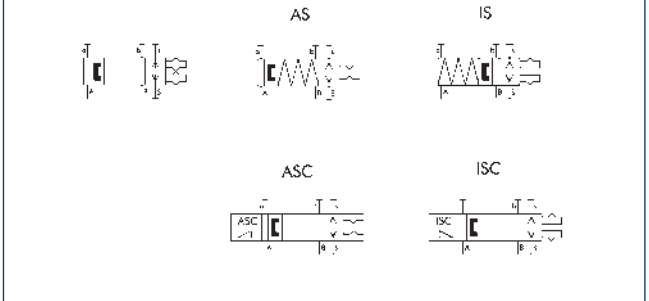
(72) Fit for centering sleeves

(80) Depth of the centering sleeve hole in the counter part

(90) For version ASC/ISC

The indicated tolerances just refer to the variants of precision versions shown in the chart of technical specifications. All other variants of precision versions are available on request.

Electronic symbol according to DIN ISO 1219



A, a Main / direct connection, gripper opening

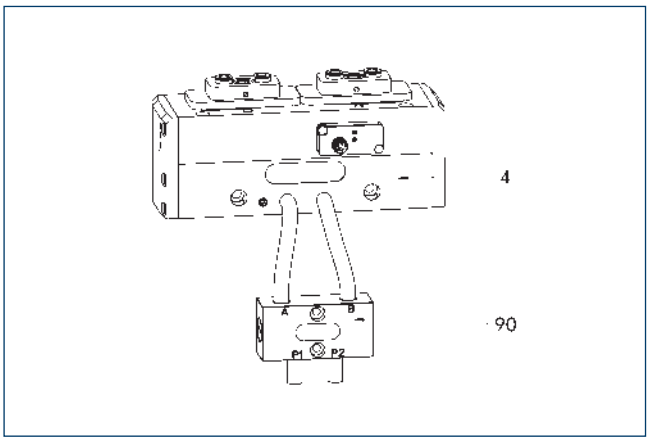
B, b Main / direct connection, gripper closing

S, s Air purge, main, direct 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" and "s" describe the optional air purge connection, which impedes the ingress of dirt into the gripper.

ⓘ 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

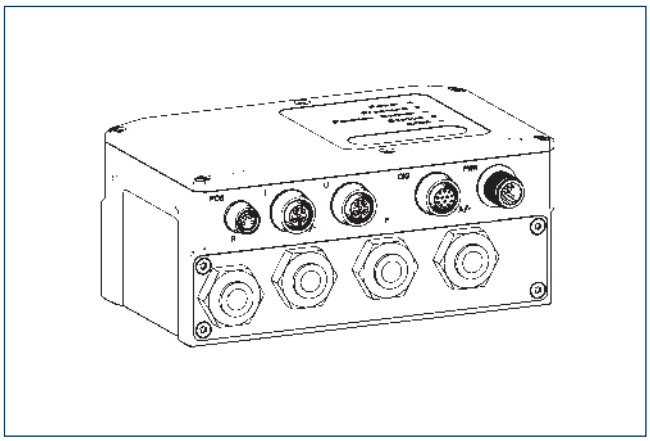
⑨⓪ SDV-P pressure maintenance valve

The SDV-P pressure maintenance valves ensure in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained. The pressure maintenance valve must not be used in combination with the ASC and ISC variants.

Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance valve		
SDV-P 04	0403130	6
SDV-P 07	0403131	8
Pressure maintenance valve with air bleed screw		
SDV-P 04-E	0300120	6
SDV-P 07-E	0300121	8

ⓘ 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.

Pneumatic positioning device PPD

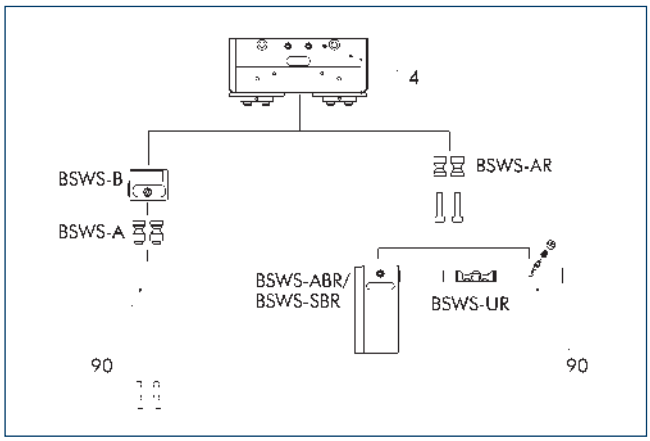


The PPD allows flexibility in all applications with pneumatic grippers through free positioning, gripping force and speed adjustment.

Description	ID	
Pneumatic positioning device		
PPD 10-IOL	1540698	
Adapter		
A GGN0804-1204-A	1540691	
IO-Link connection cable		
KA GGN1205-1212-IOL-00100-A	1540697	
Voltage supply connection cable - cable track compatible		
KA GLN12B05-LK-01000-A	1540660	
Cable extension		
KV GGN0804-IO-00150-A	1540662	
KV GGN0804-IO-00300-A	1540663	
Assembly set		
Assembly set PPD	1540705	

ⓘ In addition to the PPD, a position sensor (SCHUNK IO-Link sensor or analog sensor (4...20 mA)) is required.

BSWS jaw quick-change jaw systems



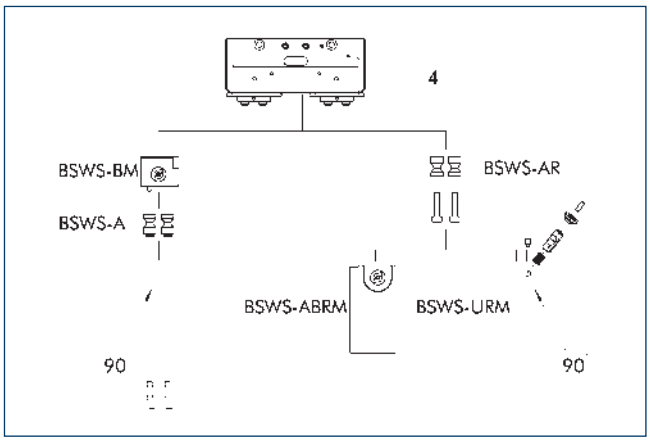
④ Grippers ⑨⓪ Customized gripper fingers

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 64	0303022	2
BSWS-AR 10	1515447	2
Quick-change jaw system base		
BSWS-B 64	0303023	1
Jaw quick-change system finger blank		
BSWS-ABR-PGZN-plus 64	0300072	1
BSWS-SBR-PGZN-plus 64	0300082	1
Jaw quick-change system locking mechanism		
BSWS-UR 64	0302991	1

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Jaw quick-change system BSWS-M



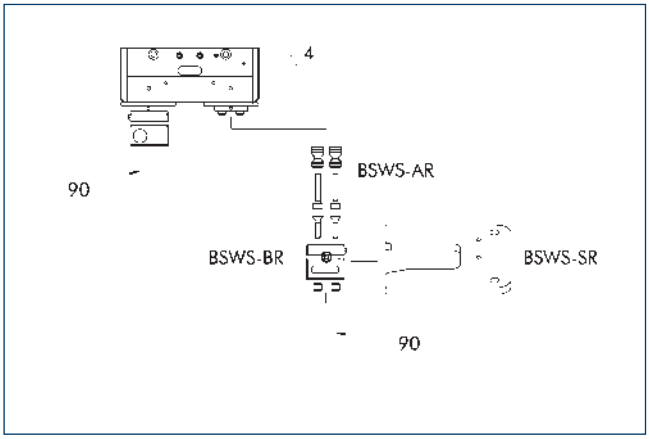
④ Grippers ⑨⓪ Customized gripper fingers

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 64	0303022	2
BSWS-AR 10	1515447	2
Quick-change jaw system base		
BSWS-BM 64	1313900	1
Jaw quick-change system finger blank		
BSWS-ABRM-PGZN-plus 64	1420851	1
Jaw quick-change system locking mechanism		
BSWS-URM 64	1398401	1

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Jaw quick-change system BSWS-R



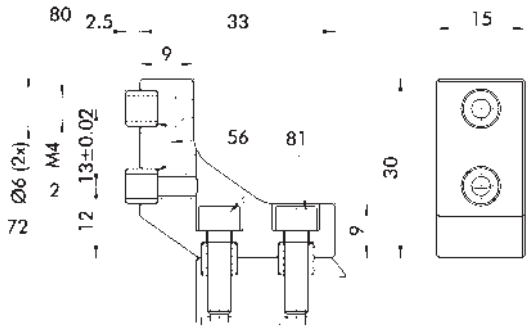
④ Grippers ⑨⓪ Customized gripper fingers

If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Description	ID	Scope of delivery
Jaw quick-change system		
BSWS-AR 10	1515447	2
Quick-change jaw system base		
BSWS-BR 64	1555914	1
Storage system		
BSWS-SR 64	1555950	1
Attachment kit for proximity switch		
AS-IN40-BSWS-SR 50/64	1561455	1
Inductive proximity switch		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	
INK 40-S	0301555	

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

ZBA-L-plus 64 intermediate jaws



② 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

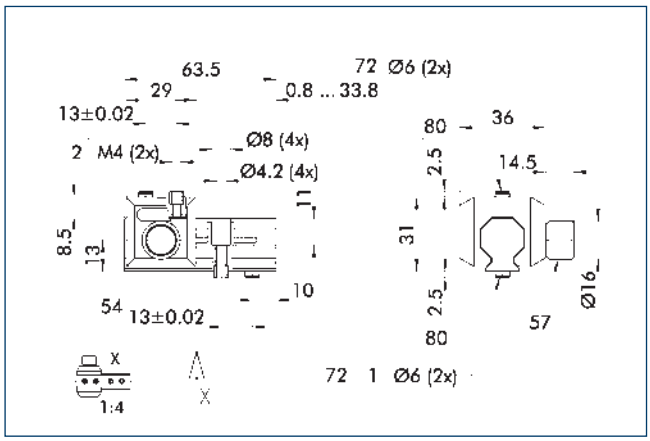
The optional ZBA-L-plus intermediate jaws allow the screw connection diagram of the top jaws to be rotated by 90°. This makes it easier to design and produce top jaws (particularly for long versions) because no deep through-bores are required.

Description	ID	Material	Finger interface	Scope of delivery
Intermediate jaw				
ZBA-L-plus 64	0311722	Aluminum	PGN-plus 64	1

PGL-plus-P 10

Universal gripper

UZB 64 universal intermediate jaw



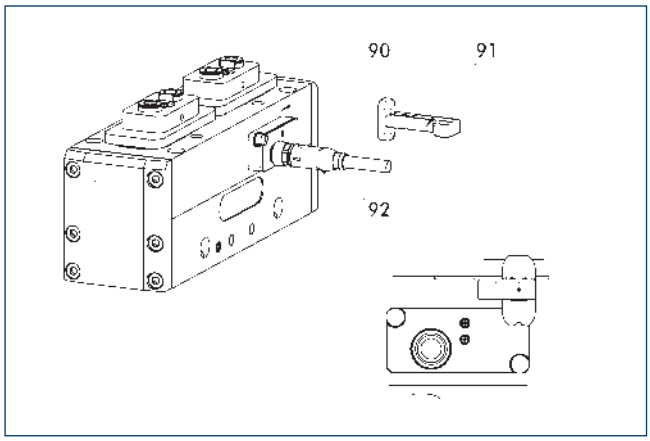
(1) Gripper connection
(2) Finger connection
(54) Optional right or left connection
(57) Locking
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part

The drawing shows the UZB universal intermediate jaw.

Description	ID	Grid dimension
		[mm]
Universal intermediate jaw		
UZB 64	0300042	1.5
Finger blank		
ABR-PGZN-plus 64	0300010	
SBR-PGZN-plus 64	0300020	

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked.

Sensor Teaching Tool



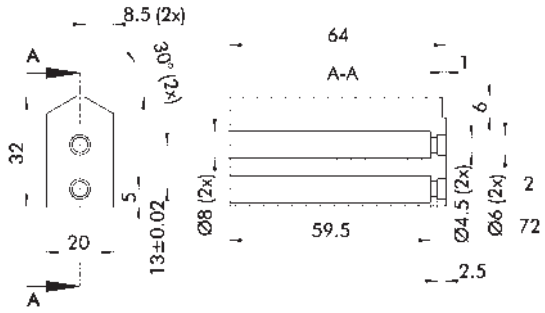
(90) Gripper with integrated sensor system IOL
(91) Sensor Teaching Tool
(92) Connection cables

If the gripper with integrated sensors (PGL-plus-P...-IOL) is operated in SIO mode without an IO-Link master, a separate magnetic teaching tool will be required.

Description	ID	
Sensor Teaching Tool		
MT-MMS 22-PI	0301030	

ⓘ The magnetic teaching tool and the connection cable must be ordered as optional accessories.

Finger blanks ABR/SBR-PGZN-plus 64



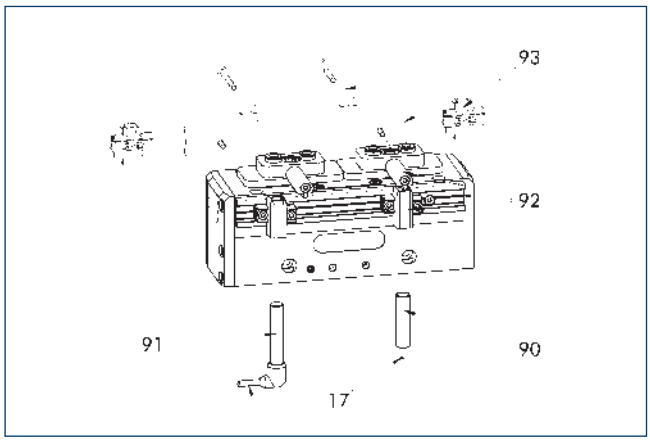
(2) Finger connection
(72) Fit for centering sleeves

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 64	0300010	Aluminum (3.4365)	1
SBR-PGZN-plus 64	0300020	Steel (1.7131)	1

ⓘ When finger blanks are used, the closing stroke of individual gripper series may be limited. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

IN 80 inductive proximity switches



(17) Cable outlet
(90) Sensor IN ...
(91) Sensor IN..-SA
(92) Attachment kit for monitoring with two inductive proximity switches
(93) Optional rear mounting of another attachment kit for two additional proximity switches

End position monitoring can be mounted with an attachment kit. Alternatively, the sensors can be directly mounted on the IN gripper variant.

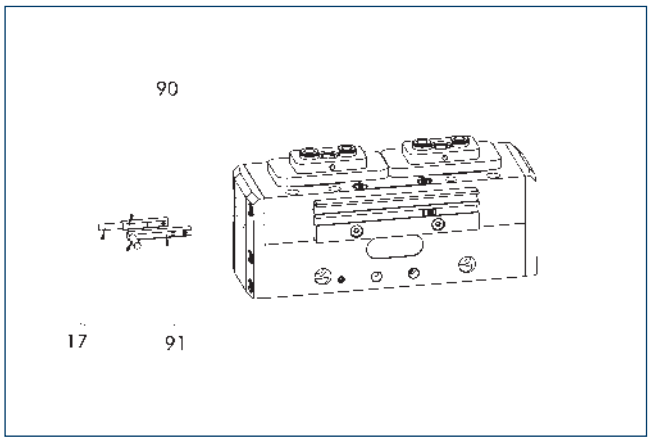
Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PGL-plus-P 10	1499614	
Inductive proximity switch		
IN 80-0-M12	0301588	
IN 80-0-M8	0301488	
IN 80-SL-M12	0301529	
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-B 80-S-M12	0301479	
IN-C 80-S-M8-PNP	0301475	
INK 80-0	0301551	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with lateral cable outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	●
INK 80-S-SA	0301566	

ⓘ Two sensors (closer/S) are required for each unit and extension cables are available as an option. This attachment kit needs to be ordered optionally as an accessory. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

PGL-plus-P 10

Universal gripper

Electronic magnetic switch MMS



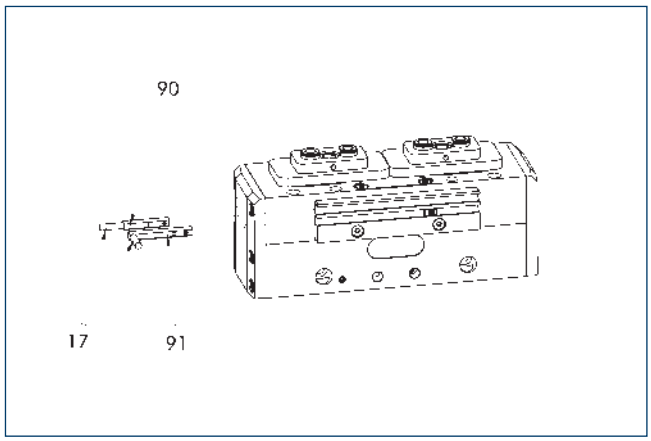
(17) Cable outlet
(91) Sensor MMS 22...-SA
(90) Sensor MMS 22..

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	
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 connector/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	

ⓘ 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



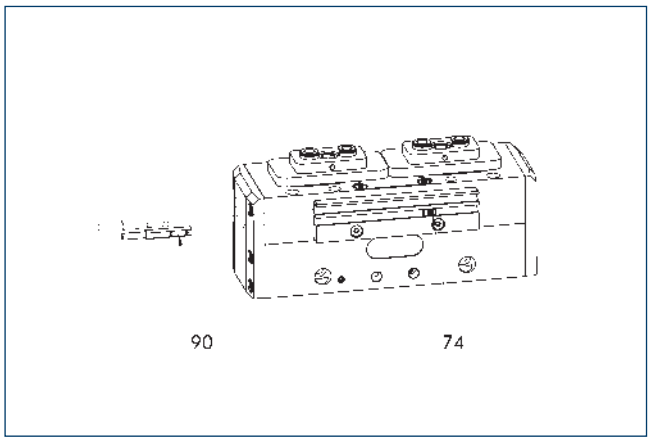
(17) Cable outlet
(91) Sensor MMS 22 ..-PI1-...-SA
(90) Sensor MMS 22 PI1-...

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, ID 0301030) 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	

ⓘ 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



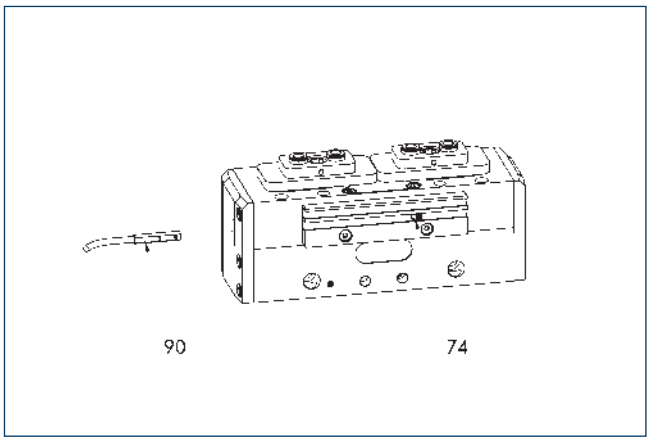
(74) Limit stop for sensor (90) MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) 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	

ⓘ 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.

Analog position sensor MMS-A



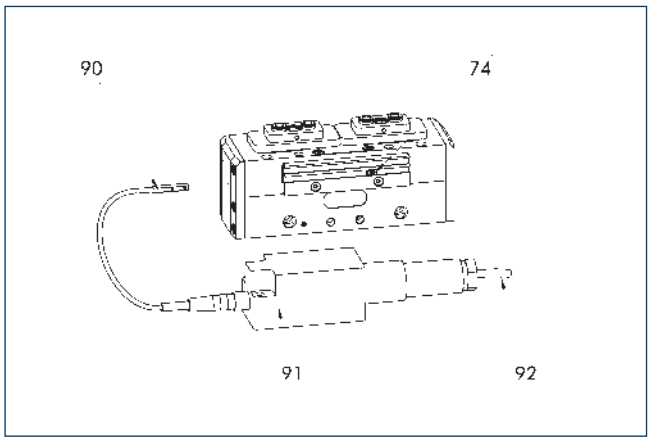
(74) Limit stop for sensor (90) MMS 22-A-... sensor

Non-contact measuring, analog multi-position monitoring for any number of positions, easy to assemble in the C-slot. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) 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 chart provided, teaching is only possible with the ST teaching tools.

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

ⓘ 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



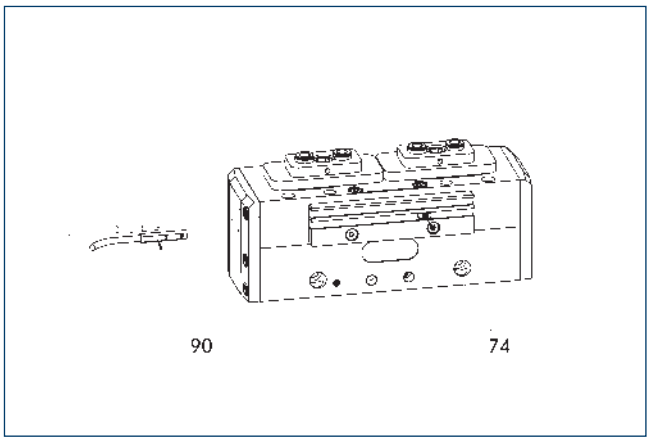
(74) Limit stop for sensor
(91) FPS-F5 evaluation electronic
(90) MMS 22-A-... sensor
(92) Connection cables

Flexible position monitoring of up to five positions. Sensor can be taught using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) or ST plug teaching tool (optional). If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	
Analog position sensor		
MMS 22-A-05V-M08	0315805	
Evaluation electronics		
FPS-F5	0301805	
Sensor Teaching Tool		
MT-MMS 22-PI	0301030	
Connection cables		
KA BG16-L 12P-1000	0301801	

ⓘ When using an FPS system, one MMS 22-A-05V and one evaluation electronics (FPS-F5) are required per each gripper, as well as an attachment kit (AS), if listed. On option, cable extensions (KV) are available – see catalog chapter "Accessories."

Programmable magnetic switch MMS-IO-Link



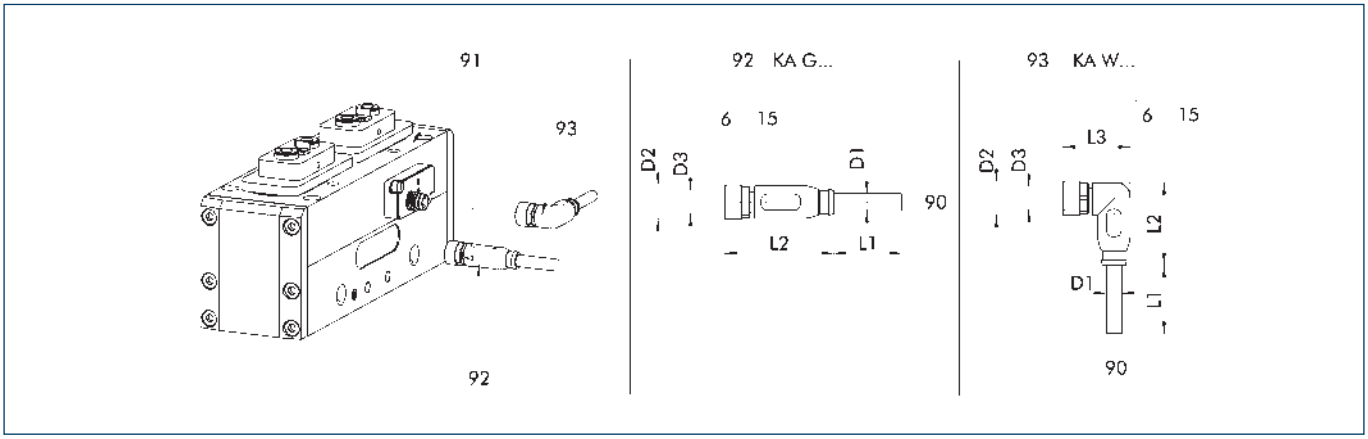
(74) Limit stop for sensor
(90) Sensor MMS 22-IOL-...

Sensor for multi-position monitoring through detection of the complete gripper stroke. The sensor is mounted directly in the C-slot of the gripper. The sensor is programmed for the gripper via the IO-Link interface, Magnet teaching tool MT (included in scope of delivery; ID 0301030) or the ST plug teaching tool (not included in scope of delivery; ID 0301026). An IO-Link master is required for operation.

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

ⓘ 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.

Connection cables



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

(6) Lubricating nipple connection
(15) Sealing bolt
(90) Cable end with straight connector
(91) Gripper with integrated sensor system IOL
(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.

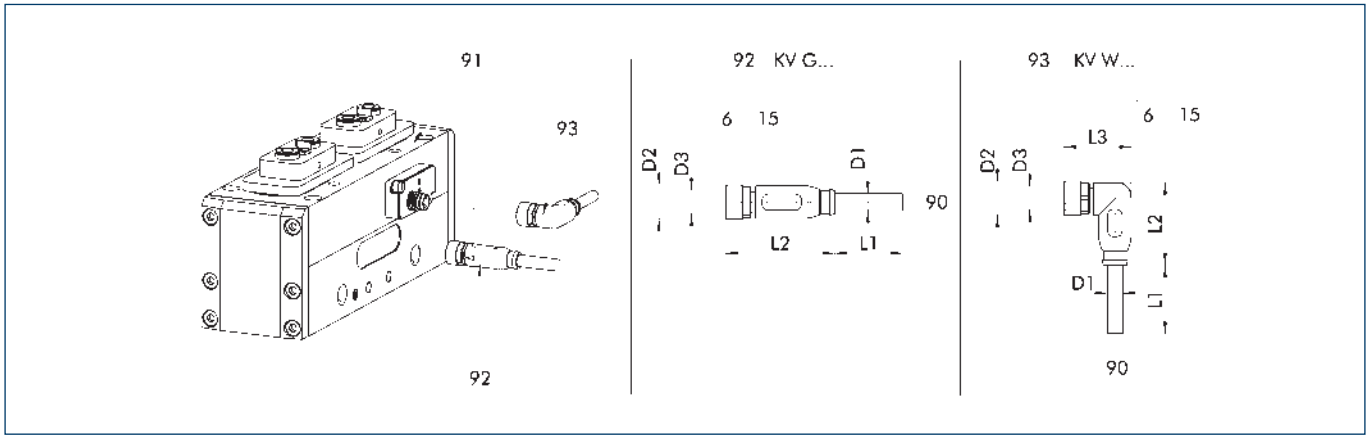
Description	ID	L1	D1	L2	D2	L3	D3	Often combined
		[m]	[mm]	[mm]	[mm]	[mm]		
Voltage supply/signals connection cable - drag chain and torsion resistant, M8 socket, straight								
KA GLN0804-I0-00200-A	1310371	2	4.8	33.7	10		M8	
KA GLN0804-I0-00500-A	1310375	5	4.8	33.7	10		M8	●
KA GLN0804-I0-01000-A	1310379	10	4.8	33.7	10		M8	
KA GLN0804-I0-02000-A	1442994	20	4.5	32	10		M8	
Voltage supply/signals connection cable - drag chain and torsion resistant, M8 socket, angled								
KA WLN0804-I0-00200-A	1310372	2	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-00500-A	1310376	5	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-01000-A	1310381	10	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-02000-A	1442996	20	4.5	25	10	20	M8	

ⓘ 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.

PGL-plus-P 10

Universal gripper

Cable extension



KV G... Cable extension with straight socket

KV W... Cable extension with angled socket

(6) Lubricating nipple connection

(15) Sealing bolt

(90) Cable end with straight connector

(91) Gripper with integrated sensor system IOL

(92) Cable with straight female connector

(93) Cable with angled female connector

The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M12 connector with a straight design on the other side. The cable extensions are suitable for use in the drag chain and in torsion applications.

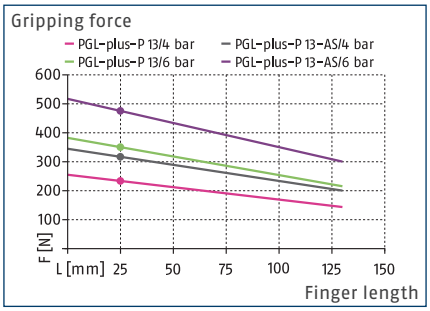
Description	ID	L1	D1	L2	D2	L3	D3
		[m]	[mm]	[mm]	[mm]	[mm]	
Cable extension							
KV GGN0804-1204-I0-00500-A	1505830	5	4.5	32	10		M8
KV GGN0804-1204-I0-01000-A	1505832	10	4.5	32	10		M8
KV WGN0804-1204-I0-00500-A	1505803	5	4.5	25	10	20	M8
KV WGN0804-1204-I0-01000-A	1505806	10	4.5	25	10	20	M8

ⓘ 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.

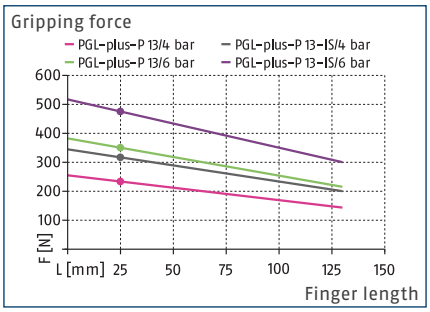
PGL-plus-P 13

Universal gripper

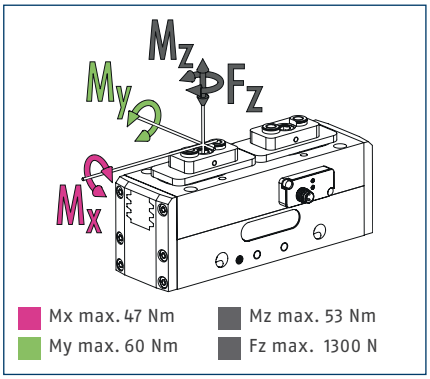
Gripping force O.D. gripping



Gripping force I.D. gripping



Max. loads



ⓘ 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 PGL-plus-P

Description		PGL-plus-P 13-IOL	PGL-plus-P 13-AS-IOL	PGL-plus-P 13-IS-IOL	PGL-plus-P 13	PGL-plus-P 13-AS	PGL-plus-P 13-IS
ID		1476617	1476618	1476619	1476520	1476551	1476552
Stroke per jaw	[mm]	13	13	13	13	13	13
Closing/opening force	[N]	350/350	475/-	-/475	350/350	475/-	-/475
Min./max. spring force	[N]		125/170	125/170		125/170	125/170
Weight	[kg]	0.8	0.85	0.85	0.8	0.85	0.85
Recommended workpiece weight	[kg]	1.8	1.8	1.8	1.8	1.8	1.8
Cylinder volume per double stroke	[cm³]	20	30	25	20	30	25
Min./nom./max. operating pressure	[bar]	2.5/6/8	4/6/6.5	4/6/6.5	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	0.5/1	0.5/1	0.5/1
Closing/opening time	[s]	0.07/0.07	0.06/0.11	0.11/0.06	0.07/0.07	0.06/0.11	0.11/0.06
Closing/opening time with spring	[s]		0.09	0.10		0.09	0.10
Max. permissible finger length	[mm]	130	130	130	130	130	130
Max. permissible weight per finger	[kg]	0.4	0.4	0.4	0.4	0.4	0.4
Protection class IP (without/with air purge)		64/67	64/67	64/67	64/67	64/67	64/67
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/90	5/90	5/90
Repeat accuracy	[mm]	0.03	0.03	0.03	0.03	0.03	0.03
Min./nominal/max. operating voltage	[V DC]	18/24/30	18/24/30	18/24/30			
Nominal current	[A]	0.2	0.2	0.2			
Cable connector		M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin			
Communication interface/ specification		IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1			
Transmission rate		COM2	COM2	COM2			
Port		Class A	Class A	Class A			
Detectable workpiece difference		Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm			
Options and their characteristics							
High-temperature version					1512477	1512478	1512479
Min./max. ambient temperature	[°C]				5/130	5/130	5/130
Precision version		1476856	1476857	1476858	1476660	1476661	1476662
with pre-assembled attachment kit for IN					1476581	1476582	1476583
Precision version/inductive sensor version					1476812	1476813	1476544

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

PGL-plus-P 13

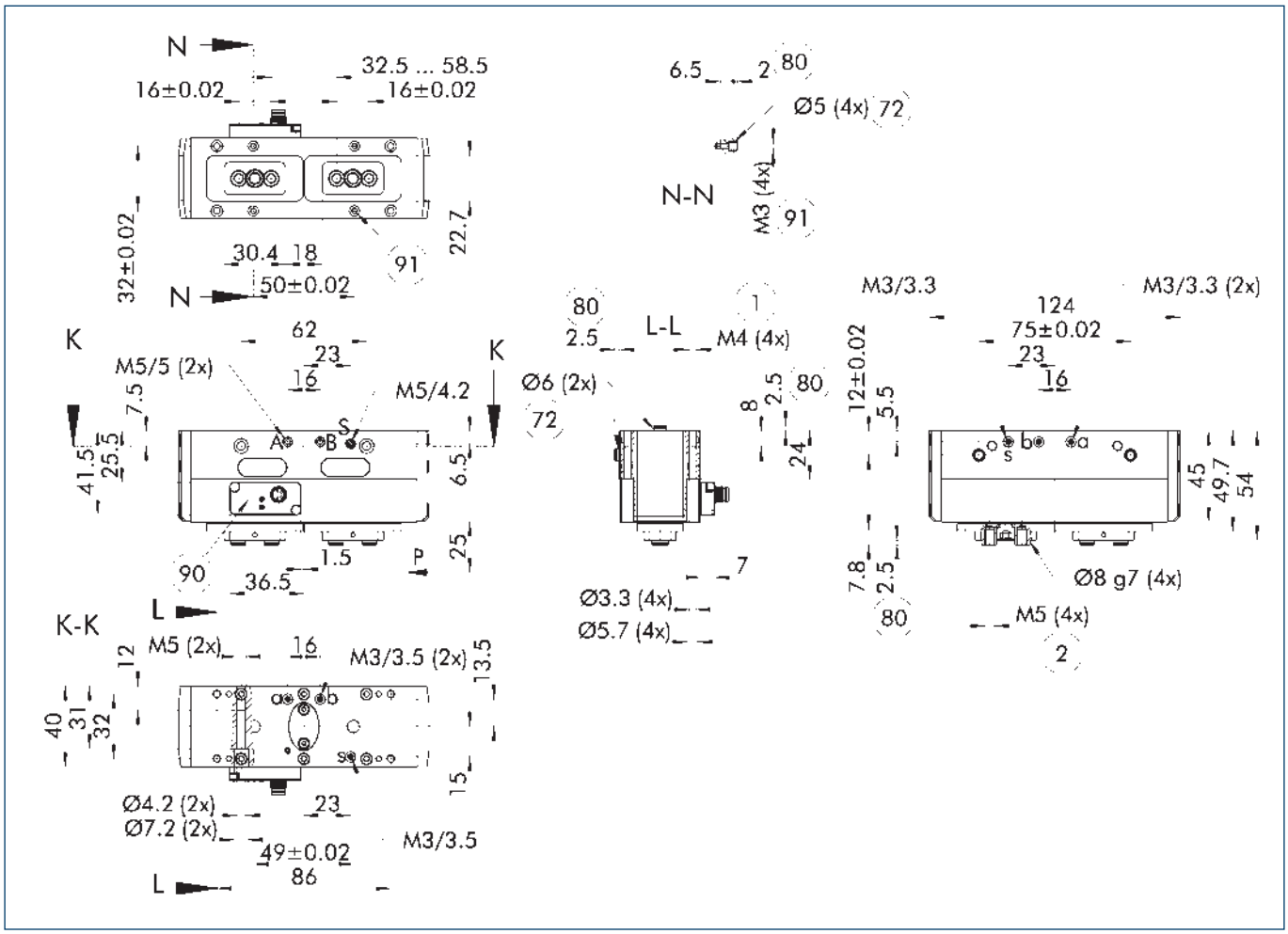
Universal gripper

Technical data PGL-plus-P with safe gripping force maintenance

Description		PGL-plus-P 13-ASC6	PGL-plus-P 13-ISC6	PGL-plus-P 13-ASC4	PGL-plus-P 13-ISC4
ID		1476555	1476556	1476553	1476554
Stroke per jaw	[mm]	13	13	13	13
Closing/opening force	[N]	350/350	350/350	230/230	230/230
Secured opening/closing force in case of pressure loss	[N]	280/-	-/280	184/-	-/184
Weight	[kg]	1.3	1.3	1.3	1.3
Recommended workpiece weight	[kg]	1.8	1.8	1.2	1.2
Cylinder volume per double stroke	[cm³]	20	20	20	20
Min./nom./max. operating pressure	[bar]	5.5/6/6.5	5.5/6/6.5	3.5/4/6.5	3.5/4/6.5
Min./max. air purge pressure	[bar]	0.5/1	0.5/1	0.5/1	0.5/1
Closing/opening time	[s]	0.07/0.07	0.07/0.07	0.07/0.07	0.07/0.07
Max. permissible finger length	[mm]	130	130	130	130
Max. permissible weight per finger	[kg]	0.4	0.4	0.4	0.4
Protection class IP (without/with air purge)		64/67	64/67	64/67	64/67
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90
Repeat accuracy	[mm]	0.03	0.03	0.03	0.03
Options and their characteristics					
Precision version		1476665	1476545	1476663	1476664
Version with IO-Link		1476548	1476622	1476620	1476621
Min./nominal/max. operating voltage	[V DC]	18/24/30	18/24/30	18/24/30	18/24/30
Nominal current	[A]	0.2	0.2	0.2	0.2
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/70
Cable connector		M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin
Communication interface/ specification		IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1
Transmission rate		COM2	COM2	COM2	COM2
Port		Class A	Class A	Class A	Class A
Detectable workpiece difference		Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm
with pre-assembled attachment kit for IN		1476586	1476587	1476584	1476585
Precision version/inductive sensor version		1476816	1476817	1476814	1476815
Precision version/version with IO-Link		1476861	1476862	1476859	1476860
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/70

ⓘ 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.

ⓘ As an alternative/in addition to spring-assisted mechanical gripping force maintenance, the SDV-P pressure maintenance valve can be used for I.D. and O.D. gripping (see "Accessories" section of catalog).

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

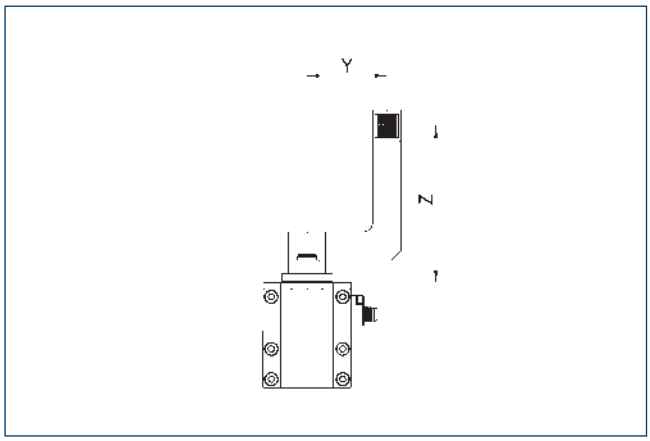
(90) Integrated sensor system IOL with M8 connector, A-coded, 4-pin

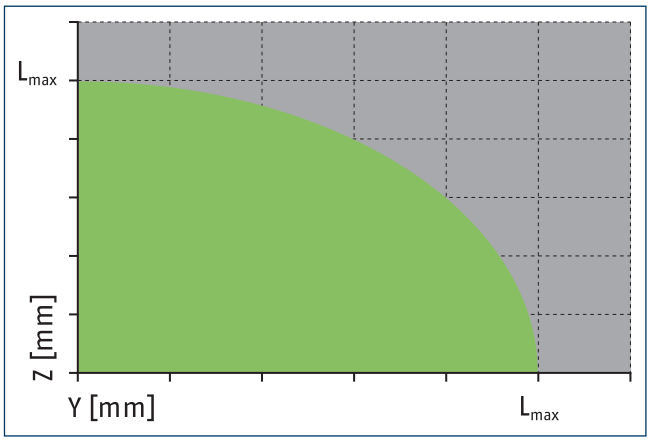
(91) Screw connection with fittings for customized assembly (these centering sleeves are not included in the scope of delivery)

PGL-plus-P 13

Universal gripper

Maximum permitted finger projection



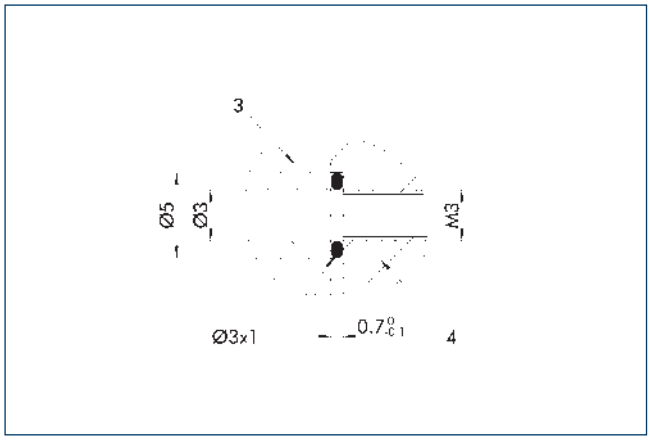


Permitted range

Inadmissible range

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

Hose-free direct connection M3

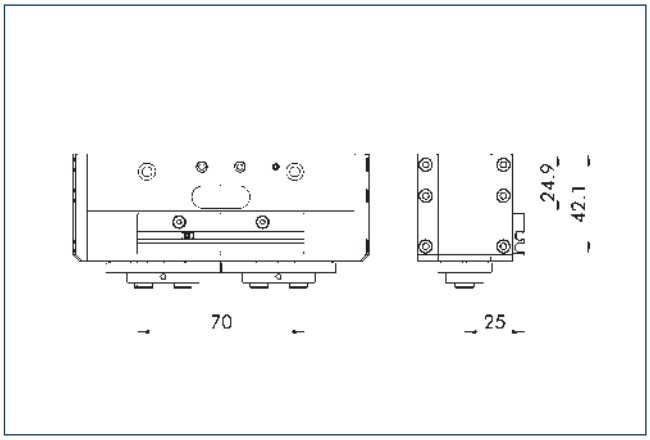


③ Adapter

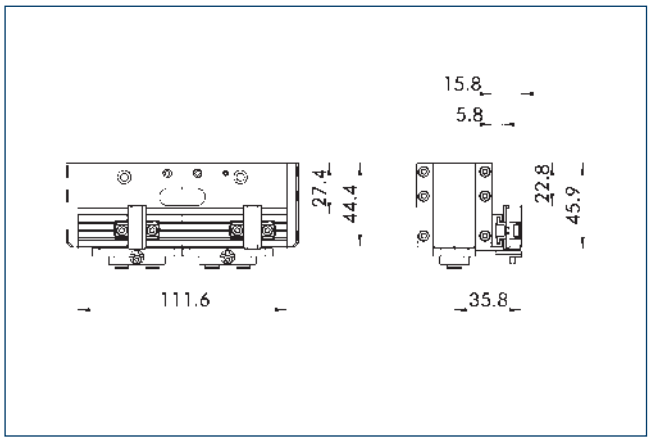
④ Grippers

The direct connection is used for compressed air supply without error-prone tubing.

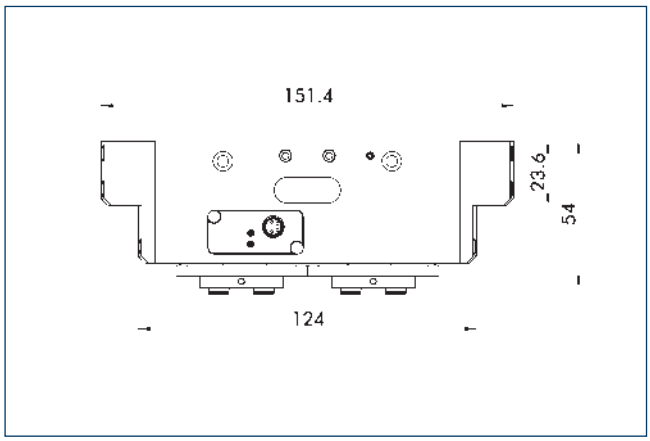
Gripper monitoring with magnetic switches



Gripper monitoring with inductive proximity switches IN

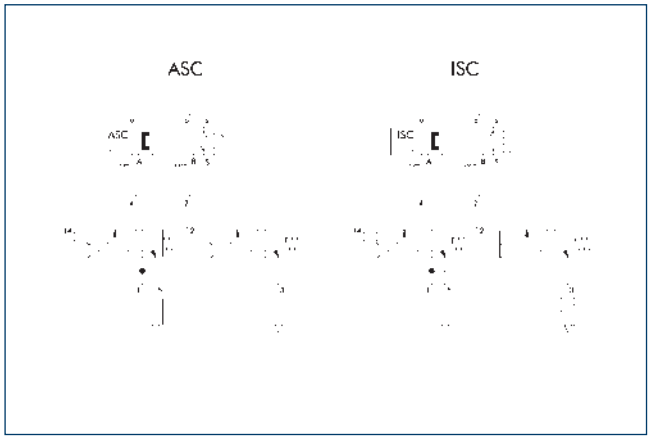


Gripping force maintenance version AS/IS



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 variant this acts as a closing force, in the IS variant as an opening force Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

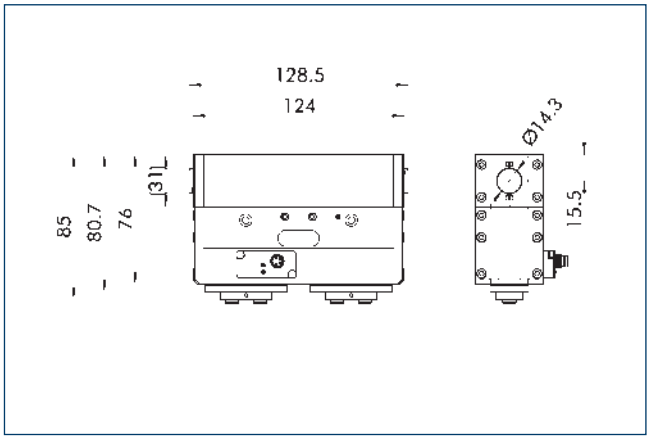
GripGuard: secure, certified gripping force maintenance ASC/ISC



Grippers with ASC or ISC gripping force maintenance are generally controlled with a 2x3/2-directional control valve.

ⓘ Be sure to observe the control sequence in the operating manual.

GripGuard: secure, certified gripping force maintenance ASC/ISC

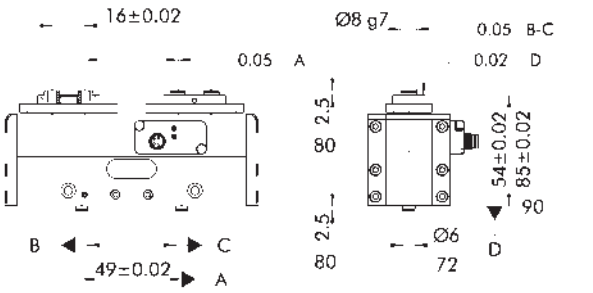


Secure gripping force maintenance also ensures a permanent gripping force of min. 80%, even in case of a pressure drop. In the ASC variant this acts as a closing force, in the ISC variant as an opening force.

PGL-plus-P 13

Universal gripper

Precision version



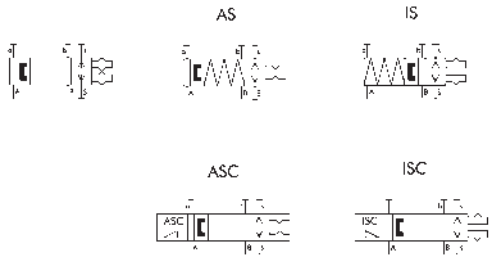
(72) Fit for centering sleeves

(80) Depth of the centering sleeve hole in the counter part

(90) For version ASC/ISC

The indicated tolerances just refer to the variants of precision versions shown in the chart of technical specifications. All other variants of precision versions are available on request.

Electronic symbol according to DIN ISO 1219



A, a Main / direct connection, gripper opening

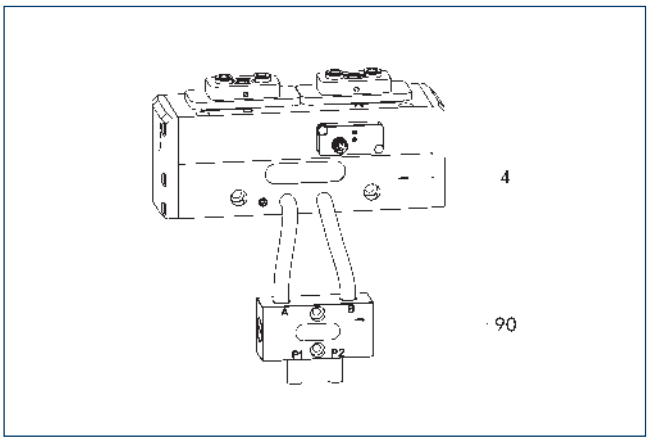
B, b Main / direct connection, gripper closing

S, s Air purge, main, direct 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" and "s" describe the optional air purge connection, which impedes the ingress of dirt into the gripper.

ⓘ 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

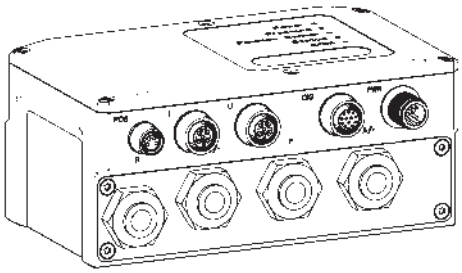
⑨⓪ SDV-P pressure maintenance valve

The SDV-P pressure maintenance valves ensure in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained. The pressure maintenance valve must not be used in combination with the ASC and ISC variants.

Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance valve		
SDV-P 04	0403130	6
SDV-P 07	0403131	8
Pressure maintenance valve with air bleed screw		
SDV-P 04-E	0300120	6
SDV-P 07-E	0300121	8

ⓘ 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.

Pneumatic positioning device PPD



The PPD allows flexibility in all applications with pneumatic grippers through free positioning, gripping force and speed adjustment.

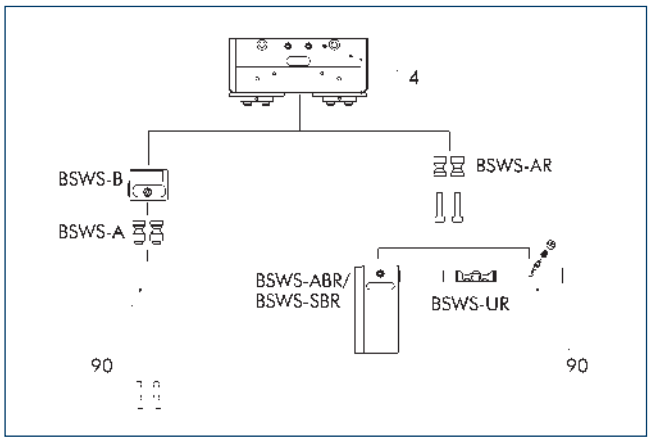
Description	ID	
Pneumatic positioning device		
PPD 10-IOL	1540698	
Adapter		
A GGN0804-1204-A	1540691	
IO-Link connection cable		
KA GGN1205-1212-IOL-00100-A	1540697	
Voltage supply connection cable - cable track compatible		
KA GLN12B05-LK-01000-A	1540660	
Cable extension		
KV GGN0804-IO-00150-A	1540662	
KV GGN0804-IO-00300-A	1540663	
Assembly set		
Assembly set PPD	1540705	

ⓘ In addition to the PPD, a position sensor (SCHUNK IO-Link sensor or analog sensor (4...20 mA)) is required.

PGL-plus-P 13

Universal gripper

BSWS jaw quick-change jaw systems



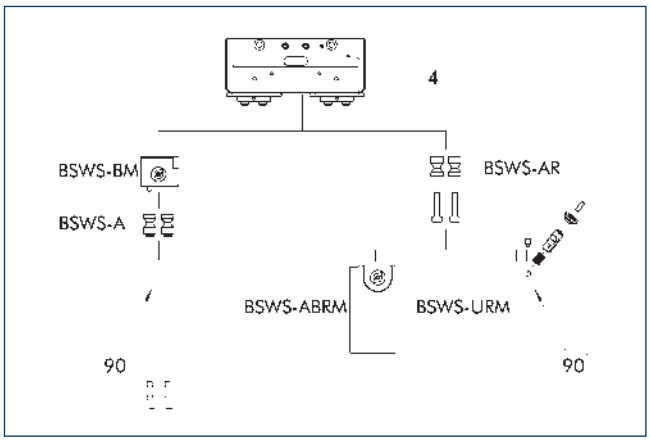
④ Grippers ⑨⓪ Customized gripper fingers

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 13	1515448	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

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Jaw quick-change system BSWS-M



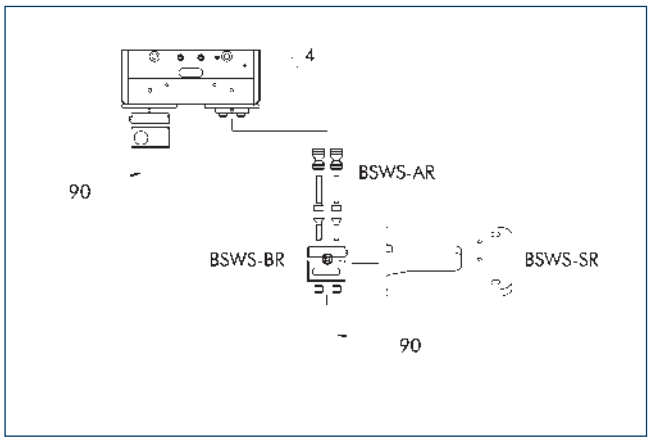
④ Grippers ⑨⓪ Customized gripper fingers

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 13	1515448	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

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Jaw quick-change system BSWS-R



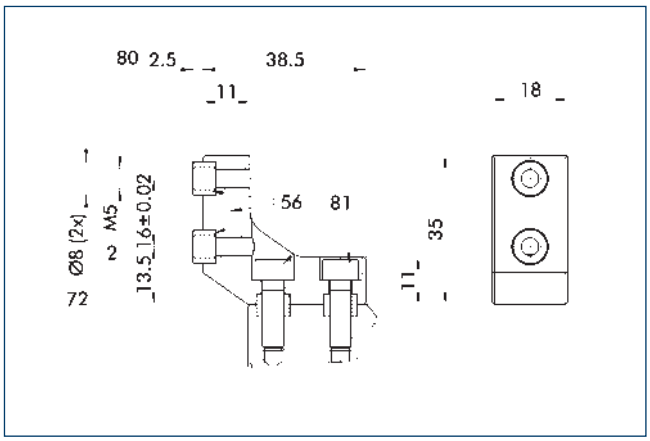
④ Grippers ⑨⓪ Customized gripper fingers

If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Description	ID	Scope of delivery
Jaw quick-change system		
BSWS-AR 13	1515448	2
Quick-change jaw system base		
BSWS-BR 80	1555917	1
Storage system		
BSWS-SR 80	1555951	1
Attachment kit for proximity switch		
AS-IN40-BSWS-SR 80/100	1561458	1
Inductive proximity switch		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	
INK 40-S	0301555	

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

ZBA-L-plus 80 intermediate jaws



② 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

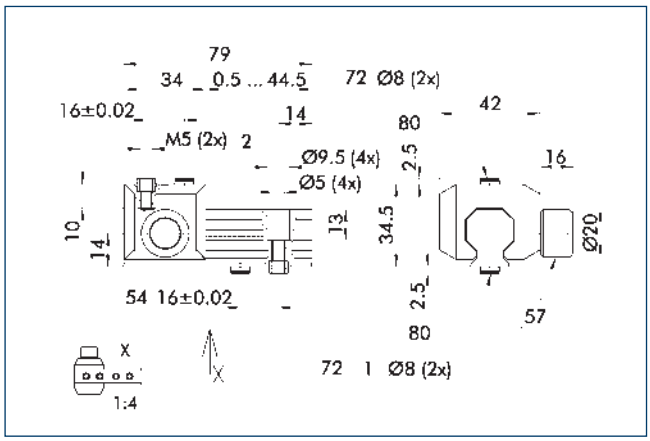
The optional ZBA-L-plus intermediate jaws allow the screw connection diagram of the top jaws to be rotated by 90°. This makes it easier to design and produce top jaws (particularly for long versions) because no deep through-bores are required.

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

PGL-plus-P 13

Universal gripper

UZB 80 universal intermediate jaw



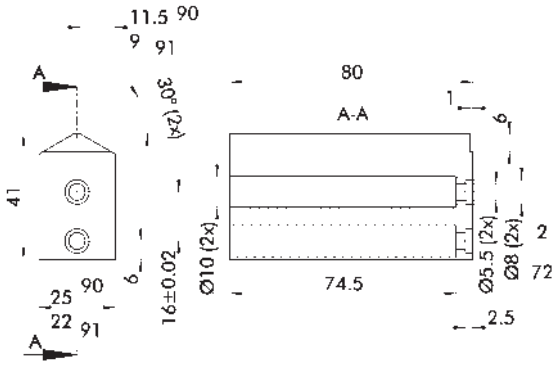
(1) Gripper connection
(2) Finger connection
(54) Optional right or left connection
(57) Locking
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part

The drawing shows the UZB universal intermediate jaw. The fully removable UZB-S slide (can also be ordered separately) allows for a quick jaw change.

Description	ID	Grid dimension
		[mm]
Universal intermediate jaw		
UZB 80	0300043	2
Finger blank		
ABR-PGZN-plus 80	0300011	
SBR-PGZN-plus 80	0300021	
Slide for universal intermediate jaw		
UZB-S 80	5518271	2

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked.

Finger blanks ABR/SBR-PGZN-plus 80



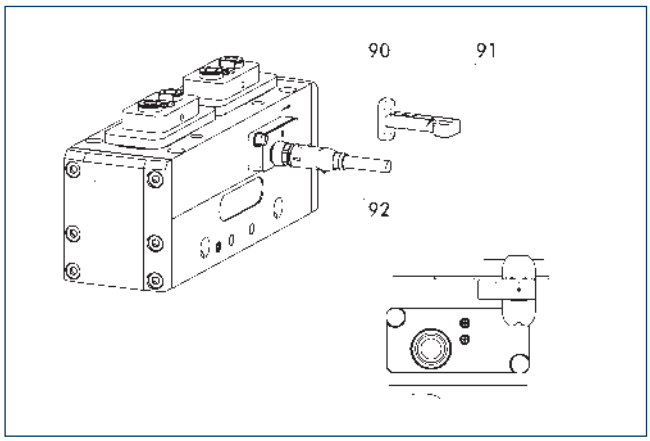
(2) Finger connection
(72) Fit for centering sleeves
(90) ABR-PGZN-plus
(91) SBR-PGZN-plus

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 (3.4365)	1
SBR-PGZN-plus 80	0300021	Steel (1.7131)	1

ⓘ When finger blanks are used, the closing stroke of individual gripper series may be limited. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Sensor Teaching Tool



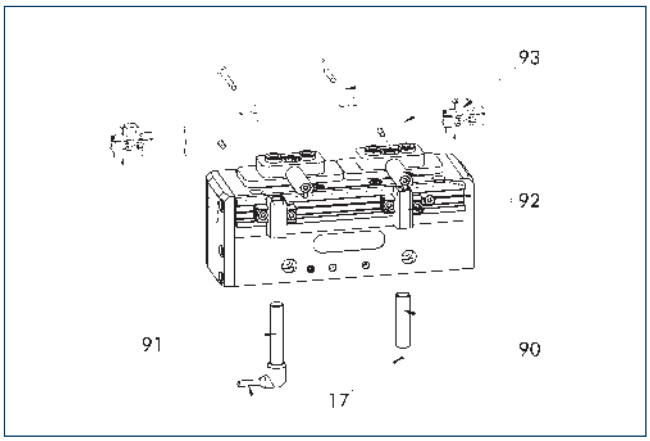
(90) Gripper with integrated sensor system IOL
(91) Sensor Teaching Tool
(92) Connection cables

If the gripper with integrated sensors (PGL-plus-P...-IOL) is operated in SIO mode without an IO-Link master, a separate magnetic teaching tool will be required.

Description	ID	
Sensor Teaching Tool		
MT-MMS 22-PI	0301030	

ⓘ The magnetic teaching tool and the connection cable must be ordered as optional accessories.

IN 80 inductive proximity switches



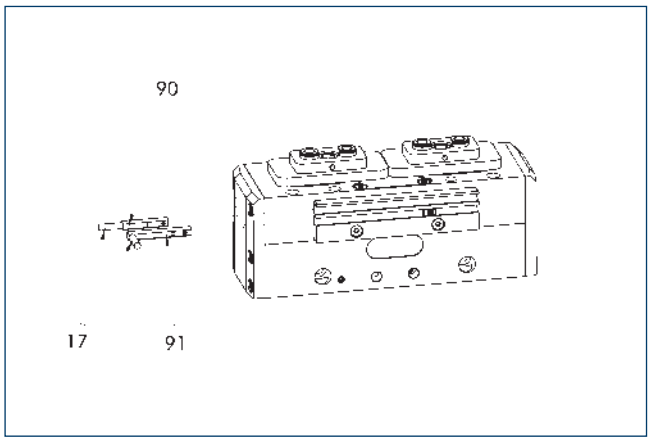
(17) Cable outlet
(90) Sensor IN ...
(91) Sensor IN..-SA
(92) Attachment kit for monitoring with two inductive proximity switches
(93) Optional rear mounting of another attachment kit for two additional proximity switches

End position monitoring can be mounted with an attachment kit. Alternatively, the sensors can be directly mounted on the IN gripper variant.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PGL-plus-P 13	1499623	
Inductive proximity switch		
IN 80-0-M12	0301588	
IN 80-0-M8	0301488	
IN 80-SL-M12	0301529	
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-B 80-S-M12	0301479	
IN-C 80-S-M8-PNP	0301475	
INK 80-0	0301551	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with lateral cable outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	●
INK 80-S-SA	0301566	

ⓘ Two sensors (closer/S) are required for each unit and extension cables are available as an option. This attachment kit needs to be ordered optionally as an accessory. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

Electronic magnetic switch MMS



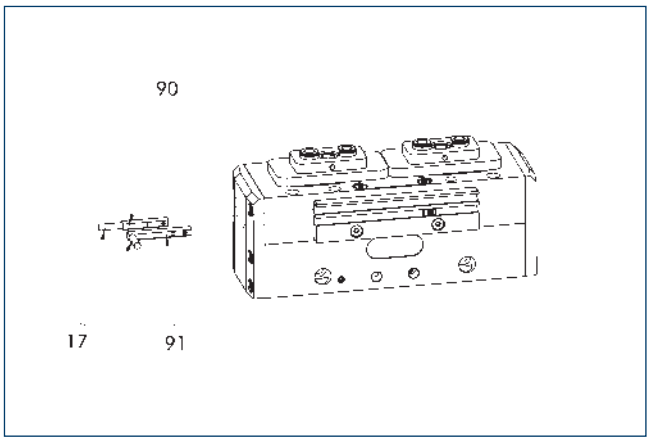
(17) Cable outlet
(90) Sensor MMS 22..
(91) Sensor MMS 22...-SA

End position monitoring for mounting in the C-slot.

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 connector/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	

ⓘ 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



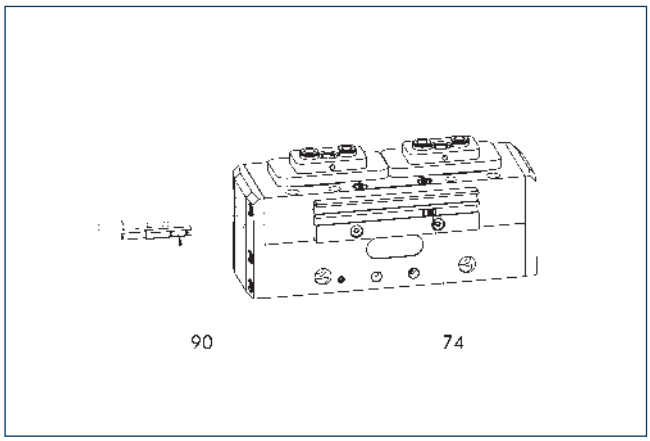
(17) Cable outlet
(90) Sensor MMS 22 PI1-...
(91) Sensor MMS 22 ..-PI1-...-SA

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, ID 0301030) 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	

ⓘ 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



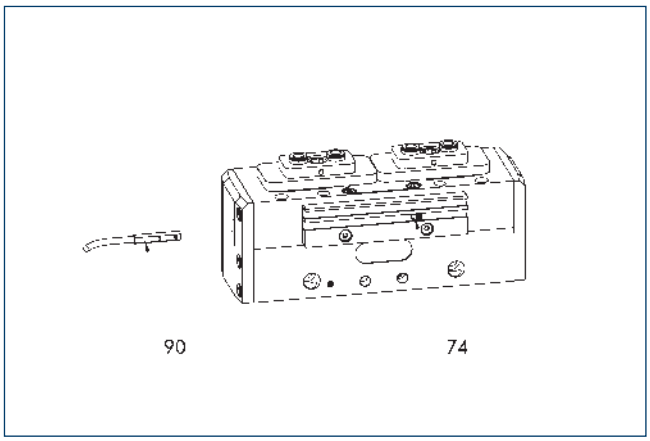
(74) Limit stop for sensor (90) MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) 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	

ⓘ 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.

Analog position sensor MMS-A



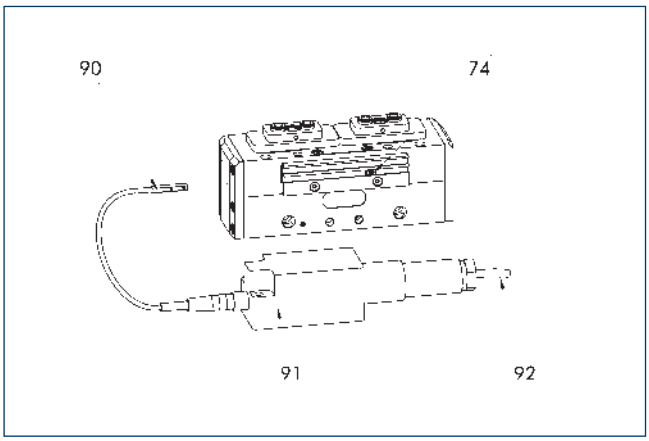
(74) Limit stop for sensor (90) MMS 22-A-... sensor

Non-contact measuring, analog multi-position monitoring for any number of positions, easy to assemble in the C-slot. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) 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 chart provided, teaching is only possible with the ST teaching tools.

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

ⓘ 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



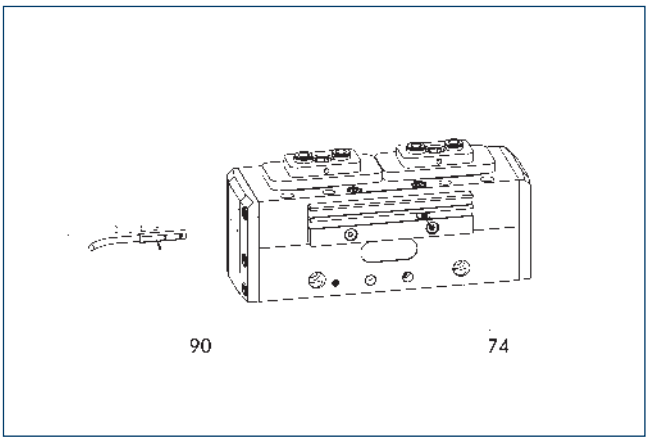
(74) Limit stop for sensor
(90) MMS 22-A-... sensor
(91) FPS-F5 evaluation electronic
(92) Connection cables

Flexible position monitoring of up to five positions. Sensor can be taught using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) or ST plug teaching tool (optional). If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	
Analog position sensor		
MMS 22-A-05V-M08	0315805	
Evaluation electronics		
FPS-F5	0301805	
Sensor Teaching Tool		
MT-MMS 22-PI	0301030	
Connection cables		
KA BG16-L 12P-1000	0301801	

ⓘ When using an FPS system, one MMS 22-A-05V and one evaluation electronics (FPS-F5) are required per each gripper, as well as an attachment kit (AS), if listed. On option, cable extensions (KV) are available – see catalog chapter "Accessories."

Programmable magnetic switch MMS-IO-Link



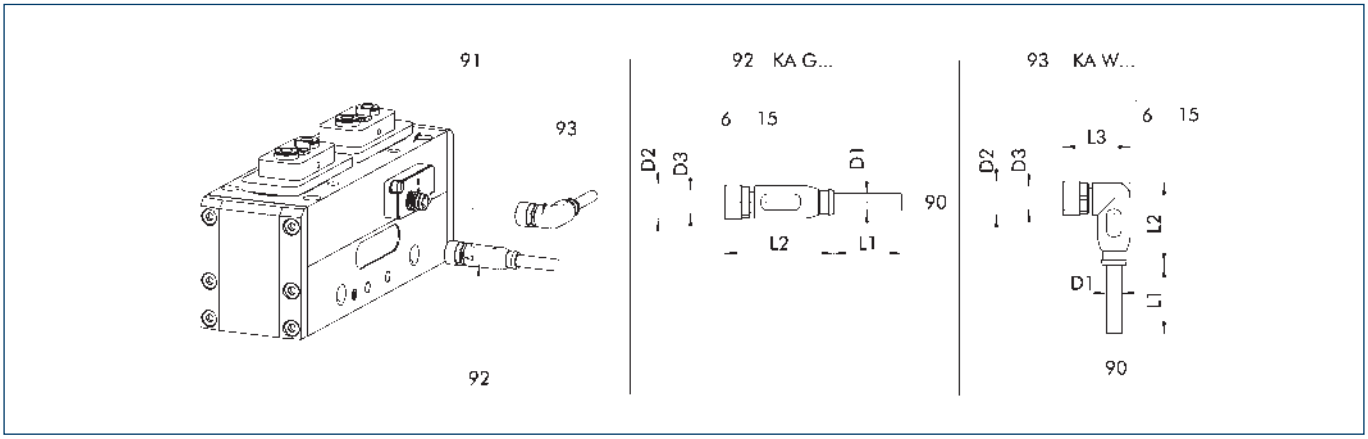
(74) Limit stop for sensor
(90) Sensor MMS 22-IOL-...

Sensor for multi-position monitoring through detection of the complete gripper stroke. The sensor is mounted directly in the C-slot of the gripper. The sensor is programmed for the gripper via the IO-Link interface, Magnet teaching tool MT (included in scope of delivery; ID 0301030) or the ST plug teaching tool (not included in scope of delivery; ID 0301026). An IO-Link master is required for operation.

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

ⓘ 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.

Connection cables



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

(6) Lubricating nipple connection
(15) Sealing bolt
(90) Cable end with straight connector
(91) Gripper with integrated sensor system IOL
(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.

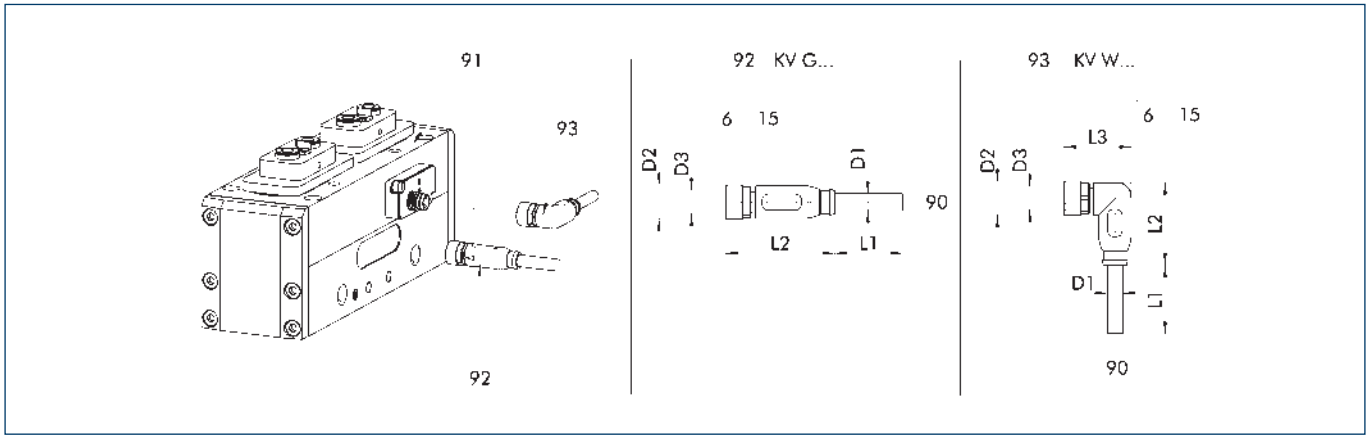
Description	ID	L1	D1	L2	D2	L3	D3	Often combined
		[m]	[mm]	[mm]	[mm]	[mm]		
Voltage supply/signals connection cable - drag chain and torsion resistant, M8 socket, straight								
KA GLN0804-I0-00200-A	1310371	2	4.8	33.7	10		M8	
KA GLN0804-I0-00500-A	1310375	5	4.8	33.7	10		M8	●
KA GLN0804-I0-01000-A	1310379	10	4.8	33.7	10		M8	
KA GLN0804-I0-02000-A	1442994	20	4.5	32	10		M8	
Voltage supply/signals connection cable - drag chain and torsion resistant, M8 socket, angled								
KA WLN0804-I0-00200-A	1310372	2	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-00500-A	1310376	5	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-01000-A	1310381	10	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-02000-A	1442996	20	4.5	25	10	20	M8	

ⓘ 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.

PGL-plus-P 13

Universal gripper

Cable extension



KV G... Cable extension with straight socket

KV W... Cable extension with angled socket

(6) Lubricating nipple connection

(15) Sealing bolt

(90) Cable end with straight connector

(91) Gripper with integrated sensor system IOL

(92) Cable with straight female connector

(93) Cable with angled female connector

The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M12 connector with a straight design on the other side. The cable extensions are suitable for use in the drag chain and in torsion applications.

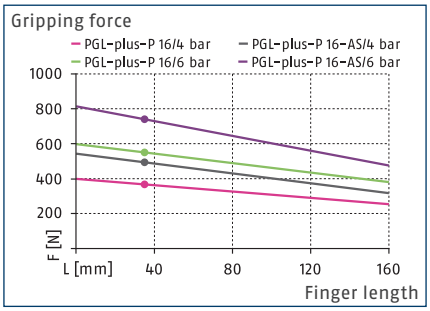
Description	ID	L1	D1	L2	D2	L3	D3
		[m]	[mm]	[mm]	[mm]	[mm]	
Cable extension							
KV GGN0804-1204-I0-00500-A	1505830	5	4.5	32	10		M8
KV GGN0804-1204-I0-01000-A	1505832	10	4.5	32	10		M8
KV WGN0804-1204-I0-00500-A	1505803	5	4.5	25	10	20	M8
KV WGN0804-1204-I0-01000-A	1505806	10	4.5	25	10	20	M8

ⓘ 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.

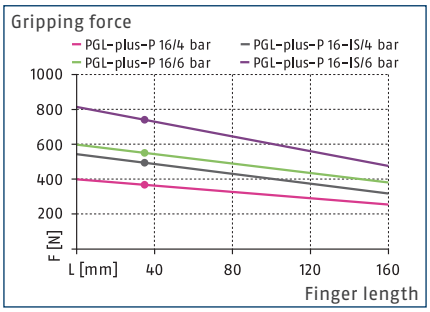
PGL-plus-P 16

Universal gripper

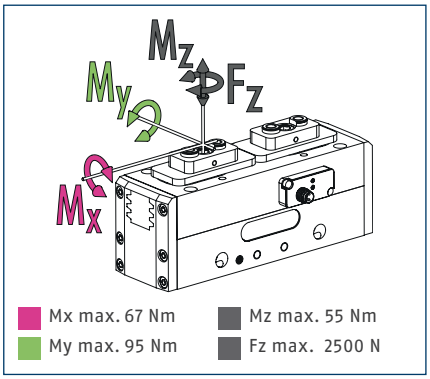
Gripping force O.D. gripping



Gripping force I.D. gripping



Max. loads



ⓘ 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 PGL-plus-P

Description		PGL-plus-P 16-IOL	PGL-plus-P 16-AS-IOL	PGL-plus-P 16-IS-IOL	PGL-plus-P 16	PGL-plus-P 16-AS	PGL-plus-P 16-IS
ID		1476623	1476624	1476625	1476521	1476557	1476558
Stroke per jaw	[mm]	16	16	16	16	16	16
Closing/opening force	[N]	550/550	740/-	-/740	550/550	740/-	-/740
Min./max. spring force	[N]		190/260	190/260		190/260	190/260
Weight	[kg]	1.4	1.5	1.5	1.4	1.5	1.5
Recommended workpiece weight	[kg]	2.8	2.8	2.8	2.8	2.8	2.8
Cylinder volume per double stroke	[cm³]	48	59	54	48	59	54
Min./nom./max. operating pressure	[bar]	2.5/6/8	4/6/6.5	4/6/6.5	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	0.5/1	0.5/1	0.5/1
Closing/opening time	[s]	0.1/0.1	0.1/0.16	0.16/0.1	0.1/0.1	0.1/0.16	0.16/0.1
Closing/opening time with spring	[s]		0.17	0.17		0.17	0.17
Max. permissible finger length	[mm]	160	160	160	160	160	160
Max. permissible weight per finger	[kg]	0.7	0.7	0.7	0.7	0.7	0.7
Protection class IP (without/with air purge)		64/67	64/67	64/67	64/67	64/67	64/67
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/90	5/90	5/90
Repeat accuracy	[mm]	0.03	0.03	0.03	0.03	0.03	0.03
Min./nominal/max. operating voltage	[V DC]	18/24/30	18/24/30	18/24/30			
Nominal current	[A]	0.2	0.2	0.2			
Cable connector		M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin			
Communication interface/ specification		IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1			
Transmission rate		COM2	COM2	COM2			
Port		Class A	Class A	Class A			
Detectable workpiece difference		Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm			
Options and their characteristics							
High-temperature version					1512484	1512485	1512486
Min./max. ambient temperature	[°C]				5/130	5/130	5/130
Precision version		1476863	1476864	1476865	1476668	1476669	1476680
with pre-assembled attachment kit for IN					1476588	1476589	1476590
Precision version/inductive sensor version					1476818	1476819	1476830

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

PGL-plus-P 16

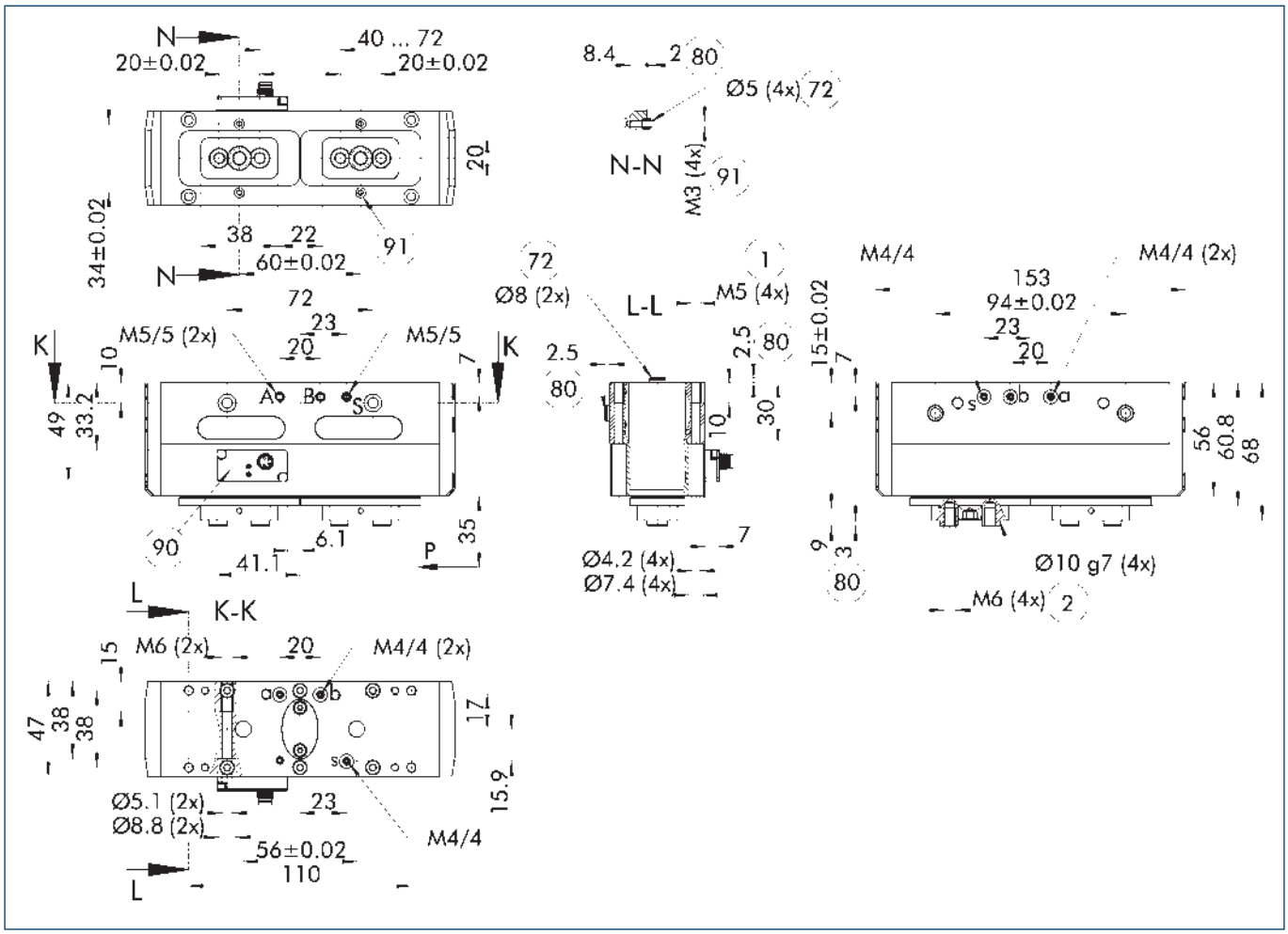
Universal gripper

Technical data PGL-plus-P with safe gripping force maintenance

Description		PGL-plus-P 16-ASC6	PGL-plus-P 16-ISC6	PGL-plus-P 16-ASC4	PGL-plus-P 16-ISC4
ID		1476561	1476562	1476559	1476560
Stroke per jaw	[mm]	16	16	16	16
Closing/opening force	[N]	550/550	550/550	365/365	365/365
Secured opening/closing force in case of pressure loss	[N][kN]	440/-	-/440	290/-	-/290
Weight	[kg]	2.2	2.2	2.2	2.2
Recommended workpiece weight	[kg]	2.75	2.75	1.8	1.8
Cylinder volume per double stroke	[cm³]	50	50	50	50
Min./nom./max. operating pressure	[bar]	5.5/6/6.5	5.5/6/6.5	3.5/4/6.5	3.5/4/6.5
Min./max. air purge pressure	[bar]	0.5/1	0.5/1	0.5/1	0.5/1
Closing/opening time	[s]	0.1/0.1	0.1/0.1	0.1/0.1	0.1/0.1
Max. permissible finger length	[mm]	160	160	160	160
Max. permissible weight per finger	[kg]	0.7	0.7	0.7	0.7
Protection class IP (without/with air purge)		64/67	64/67	64/67	64/67
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90
Repeat accuracy	[mm]	0.03	0.03	0.03	0.03
Options and their characteristics					
Precision version		1476683	1476684	1476681	1476682
Version with IO-Link		1476628	1476629	1476626	1476627
Min./nominal/max. operating voltage	[V DC]	18/24/30	18/24/30	18/24/30	18/24/30
Nominal current	[A]	0.2	0.2	0.2	0.2
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/70
Cable connector		M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin
Communication interface/ specification		IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1
Transmission rate		COM2	COM2	COM2	COM2
Port		Class A	Class A	Class A	Class A
Detectable workpiece difference		Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm
with pre-assembled attachment kit for IN		1476593	1476594	1476591	1476592
Precision version/inductive sensor version		1476833	1476834	1476831	1476832
Precision version/version with IO-Link		1476868	1476869	1476866	1476867
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/70

ⓘ 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.

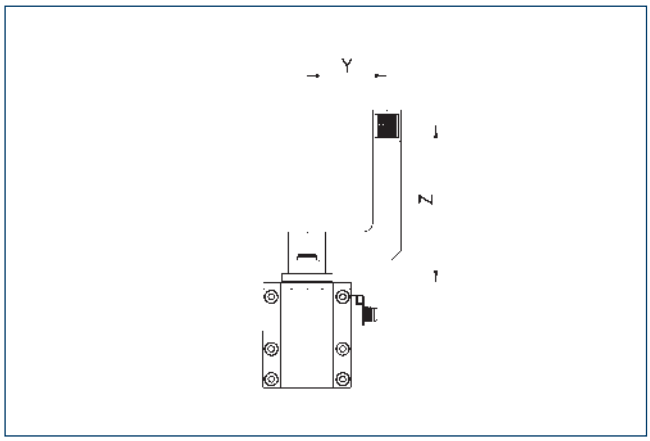
ⓘ As an alternative/in addition to spring-assisted mechanical gripping force maintenance, the SDV-P pressure maintenance valve can be used for I.D. and O.D. gripping (see "Accessories" section of catalog).

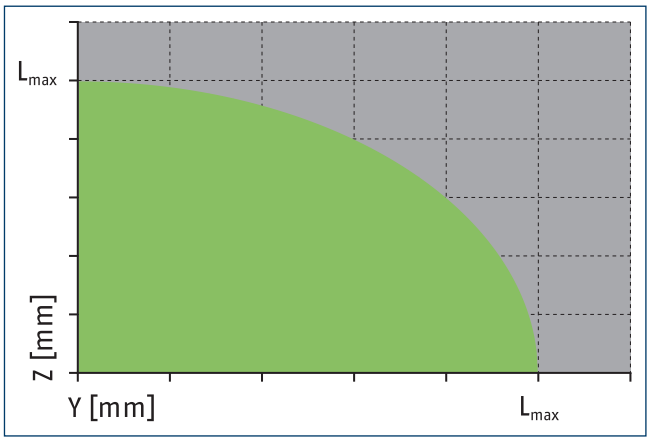
A, a Main / direct connection, gripper opening
B, b Main / direct connection, gripper closing
S Air purge connection
(1) Gripper connection
(2) Finger connection
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(90) Integrated sensor system IOL with M8 connector, A-coded, 4-pin
(91) Screw connection with fittings for customized assembly (these centering sleeves are not included in the scope of delivery)

PGL-plus-P 16

Universal gripper

Maximum permitted finger projection



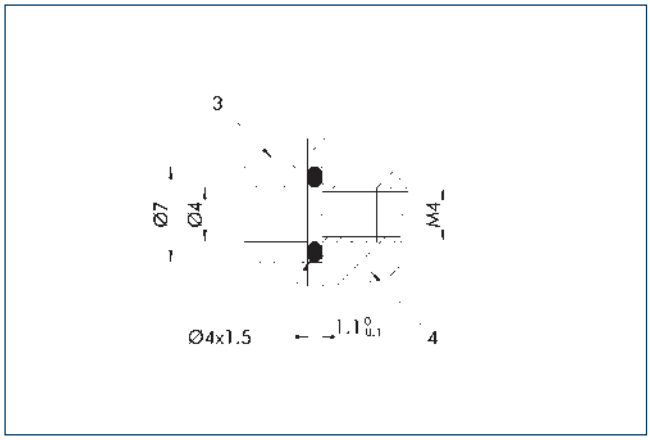


Permitted range

Inadmissible range

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

Hose-free direct connection M4

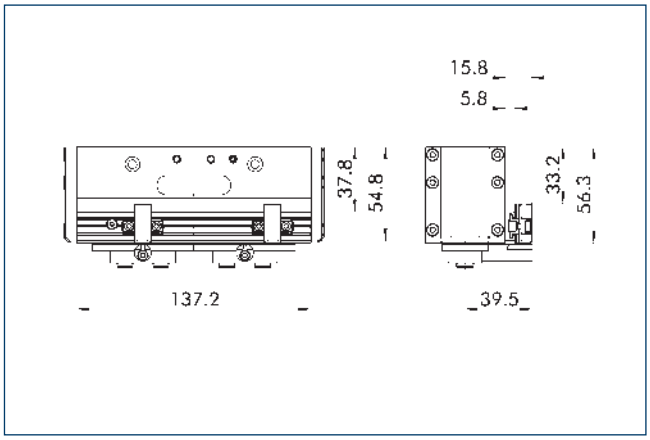


③ Adapter

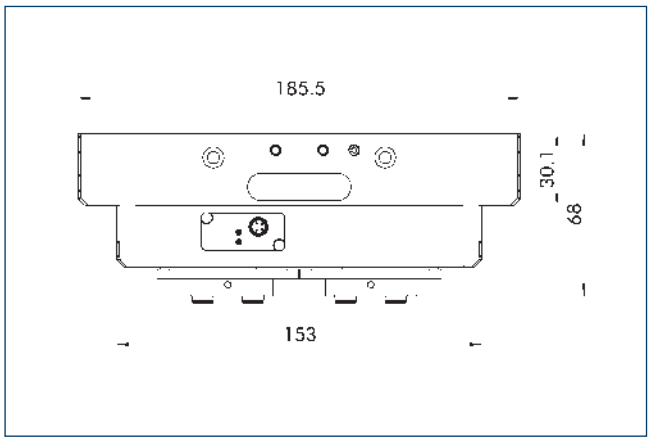
④ Grippers

The direct connection is used for compressed air supply without error-prone tubing.

Gripper monitoring with inductive proximity switches IN

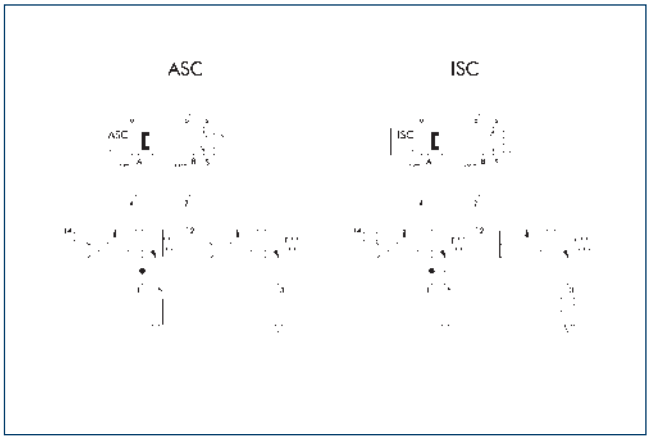


Gripping force maintenance version AS/IS



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 variant this acts as a closing force, in the IS variant as an opening force Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

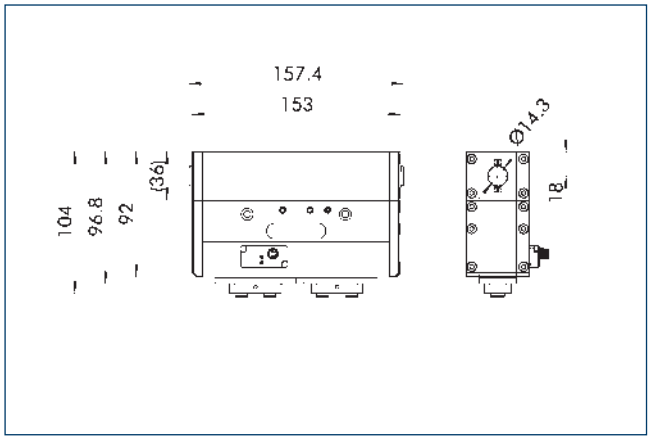
GripGuard: secure, certified gripping force maintenance ASC/ISC



Grippers with ASC or ISC gripping force maintenance are generally controlled with a 2x3/2-directional control valve.

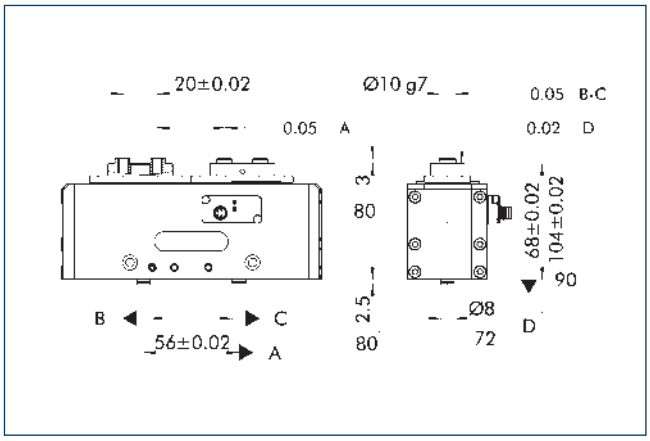
ⓘ Be sure to observe the control sequence in the operating manual.

GripGuard: secure, certified gripping force maintenance ASC/ISC



Secure gripping force maintenance also ensures a permanent gripping force of min. 80%, even in case of a pressure drop. In the ASC variant this acts as a closing force, in the ISC variant as an opening force.

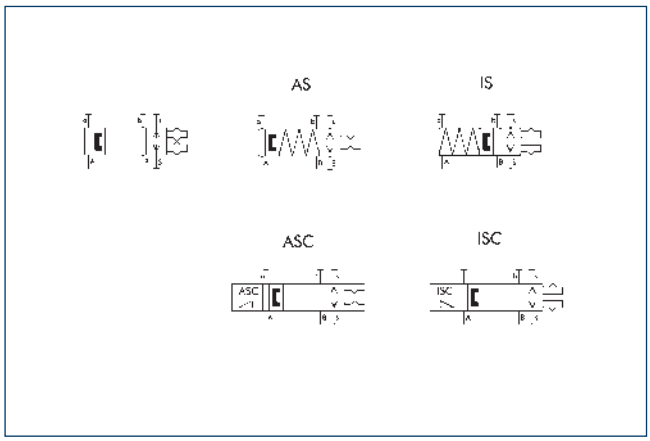
Precision version



(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(90) For version ASC/ISC

The indicated tolerances just refer to the variants of precision versions shown in the chart of technical specifications. All other variants of precision versions are available on request.

Electronic symbol according to DIN ISO 1219



A, a Main / direct connection, gripper opening

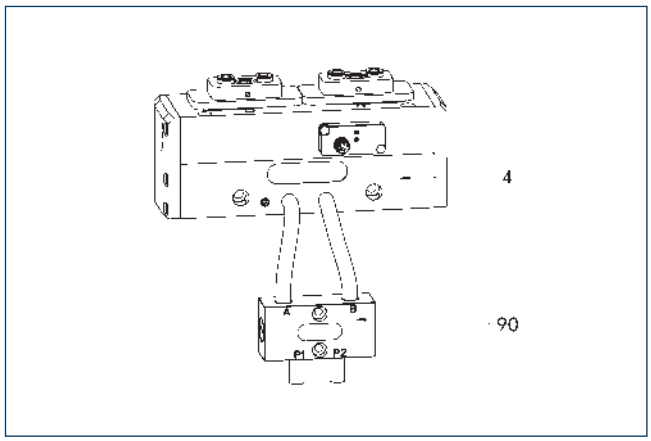
B, b Main / direct connection, gripper closing

S, s Air purge, main, direct 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" and "s" describe the optional air purge connection, which impedes the ingress of dirt into the gripper.

ⓘ 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

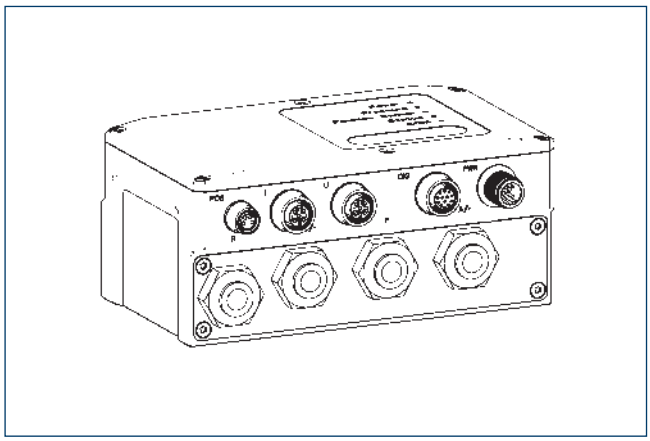
⑨⓪ SDV-P pressure maintenance valve

The SDV-P pressure maintenance valves ensure in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained. The pressure maintenance valve must not be used in combination with the ASC and ISC variants.

Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance valve		
SDV-P 04	0403130	6
SDV-P 07	0403131	8
Pressure maintenance valve with air bleed screw		
SDV-P 04-E	0300120	6
SDV-P 07-E	0300121	8

ⓘ 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.

Pneumatic positioning device PPD

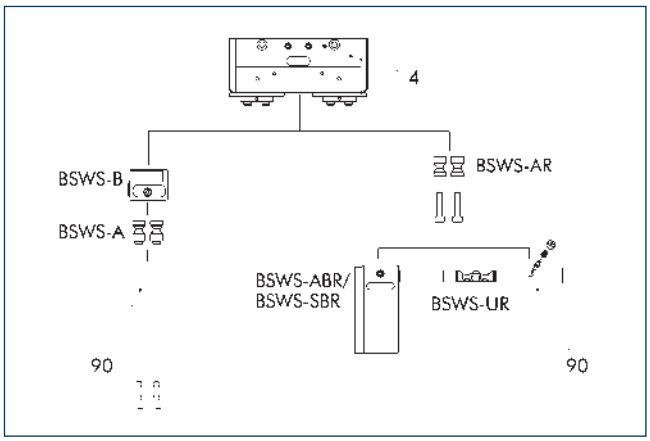


The PPD allows flexibility in all applications with pneumatic grippers through free positioning, gripping force and speed adjustment.

Description	ID	
Pneumatic positioning device		
PPD 10-IOL	1540698	
Adapter		
A GGN0804-1204-A	1540691	
IO-Link connection cable		
KA GGN1205-1212-IOL-00100-A	1540697	
Voltage supply connection cable - cable track compatible		
KA GLN12B05-LK-01000-A	1540660	
Cable extension		
KV GGN0804-IO-00150-A	1540662	
KV GGN0804-IO-00300-A	1540663	
Assembly set		
Assembly set PPD	1540705	

ⓘ In addition to the PPD, a position sensor (SCHUNK IO-Link sensor or analog sensor (4...20 mA)) is required.

BSWS jaw quick-change jaw systems



(4) Grippers (90) Customized gripper fingers

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

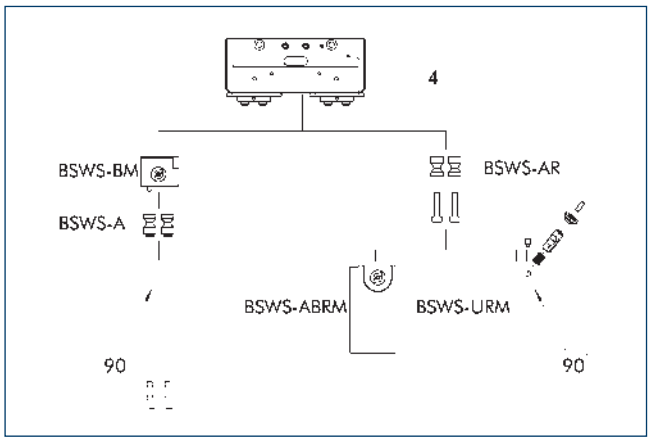
Description	ID	Scope of delivery
Jaw quick-change system adapter pin		
BSWS-A 100	0303026	2
BSWS-AR 16	1515470	2
Quick-change jaw system base		
BSWS-B 100	0303027	1
Jaw quick-change system finger blank		
BSWS-ABR-PGZN-plus 100	0300074	1
BSWS-SBR-PGZN-plus 100	0300084	1
Jaw quick-change system locking mechanism		
BSWS-UR 100	0302993	1

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

PGL-plus-P 16

Universal gripper

Jaw quick-change system BSWS-M



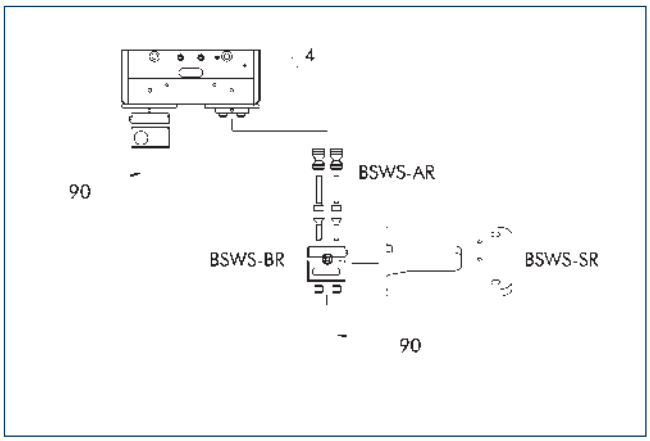
④ Grippers ⑨⓪ Customized gripper fingers

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 100	0303026	2
BSWS-AR 16	1515470	2
Quick-change jaw system base		
BSWS-BM 100	1313902	1
Jaw quick-change system finger blank		
BSWS-ABRM-PGZN-plus 100	1420853	1
Jaw quick-change system locking mechanism		
BSWS-URM 100	1398403	1

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Jaw quick-change system BSWS-R



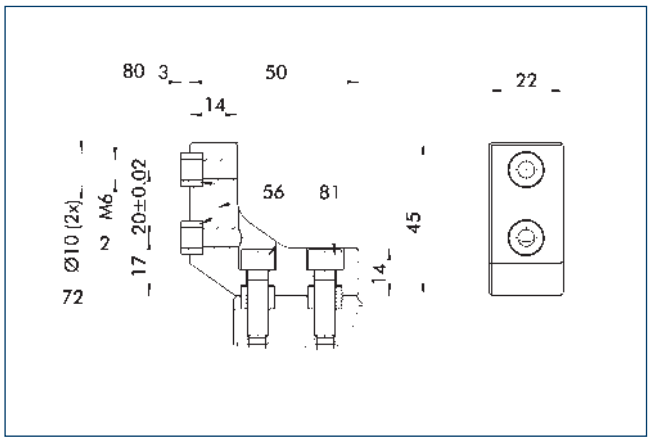
④ Grippers ⑨⓪ Customized gripper fingers

If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Description	ID	Scope of delivery
Jaw quick-change system		
BSWS-AR 16	1515470	2
Quick-change jaw system base		
BSWS-BR 100	1555933	1
Storage system		
BSWS-SR 100	1555959	1
Attachment kit for proximity switch		
AS-IN40-BSWS-SR 80/100	1561458	1
Inductive proximity switch		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	
INK 40-S	0301555	

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

ZBA-L-plus 100 intermediate jaws

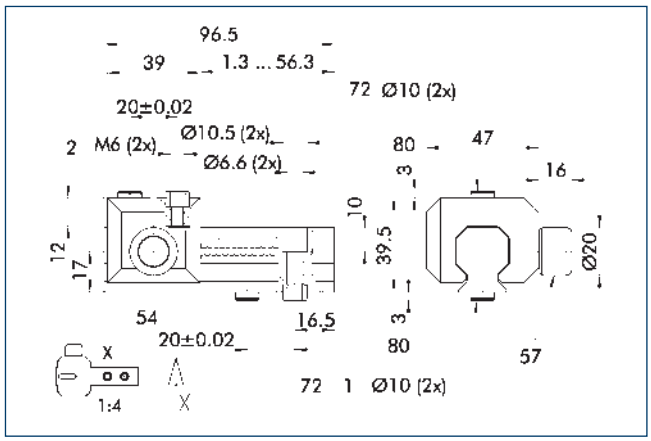


(2) Finger connection
(56) Included in the scope of delivery
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(81) Not included in the scope of delivery

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 100	0311742	Aluminum	PGN-plus 100	1

UZB 100 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. The fully removable UZB-S slide (can also be ordered separately) allows for a quick jaw change.

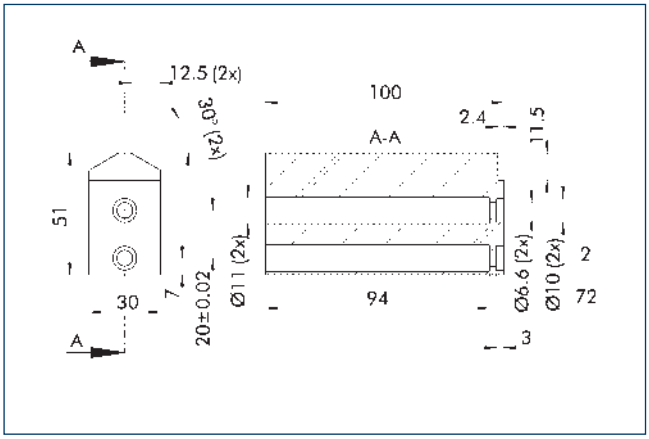
Description	ID	Grid dimension
		[mm]
Universal intermediate jaw		
UZB 100	0300044	2.5
Finger blank		
ABR-PGZN-plus 100	0300012	
SBR-PGZN-plus 100	0300022	
Slide for universal intermediate jaw		
UZB-S 100	5518272	2.5

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked.

PGL-plus-P 16

Universal gripper

Finger blanks ABR/SBR-PGZN-plus 100



(2) Finger connection

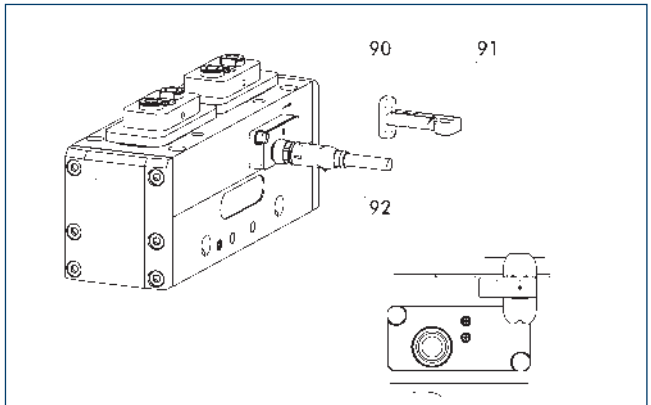
(72) Fit for centering sleeves

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 100	0300012	Aluminum (3.4365)	1
SBR-PGZN-plus 100	0300022	Steel (1.7131)	1

ⓘ When finger blanks are used, the closing stroke of individual gripper series may be limited. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Sensor Teaching Tool



(90) Gripper with integrated sensor system IOL

(91) Sensor Teaching Tool

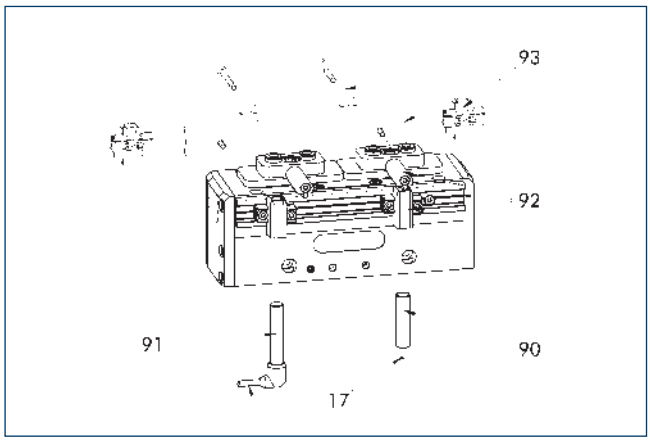
(92) Connection cables

If the gripper with integrated sensors (PGL-plus-P...-IOL) is operated in SIO mode without an IO-Link master, a separate magnetic teaching tool will be required.

Description	ID	
Sensor Teaching Tool		
MT-MMS 22-PI	0301030	

ⓘ The magnetic teaching tool and the connection cable must be ordered as optional accessories.

IN 80 inductive proximity switches



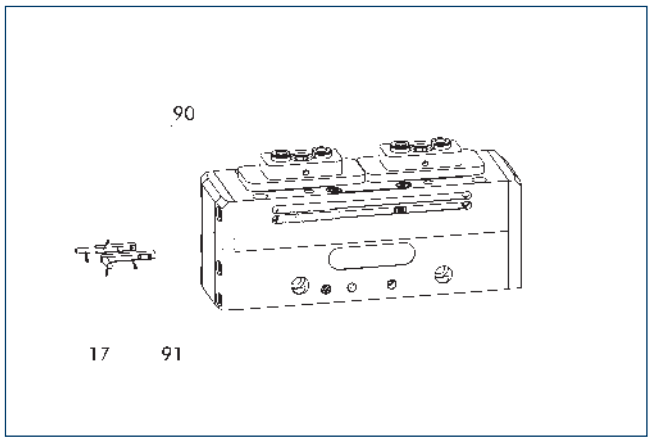
(17) Cable outlet
(90) Sensor IN ...
(91) Sensor IN..-SA
(92) Attachment kit for monitoring with two inductive proximity switches
(93) Optional rear mounting of another attachment kit for two additional proximity switches

End position monitoring can be mounted with an attachment kit. Alternatively, the sensors can be directly mounted on the IN gripper variant.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PGL-plus-P 16	1499627	
Inductive proximity switch		
IN 80-0-M12	0301588	
IN 80-0-M8	0301488	
IN 80-SL-M12	0301529	
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-B 80-S-M12	0301479	
IN-C 80-S-M8-PNP	0301475	
INK 80-0	0301551	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with lateral cable outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	●
INK 80-S-SA	0301566	

ⓘ Two sensors (closer/S) are required for each unit and extension cables are available as an option. This attachment kit needs to be ordered optionally as an accessory. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

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.

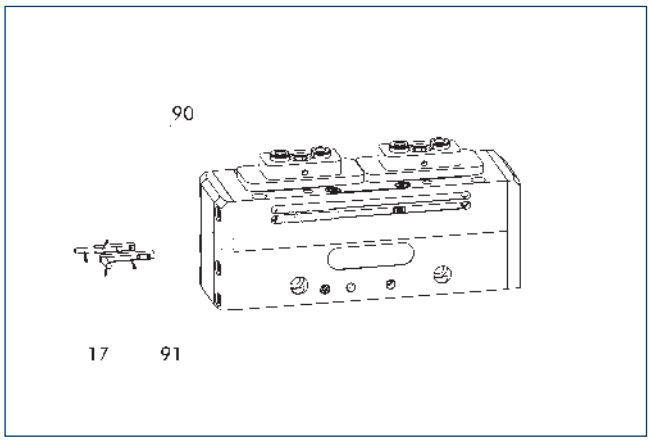
Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Clip for connector/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	

ⓘ 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.

PGL-plus-P 16

Universal gripper

Programmable magnetic switch MMS 22-PI1



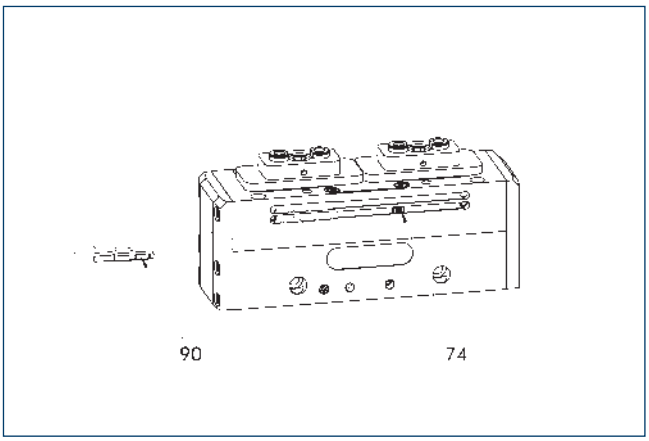
(17) Cable outlet
(91) Sensor MMS 22 ..-PI1-...-SA
(90) Sensor MMS 22 PI1-...

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, ID 0301030) 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	

ⓘ 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



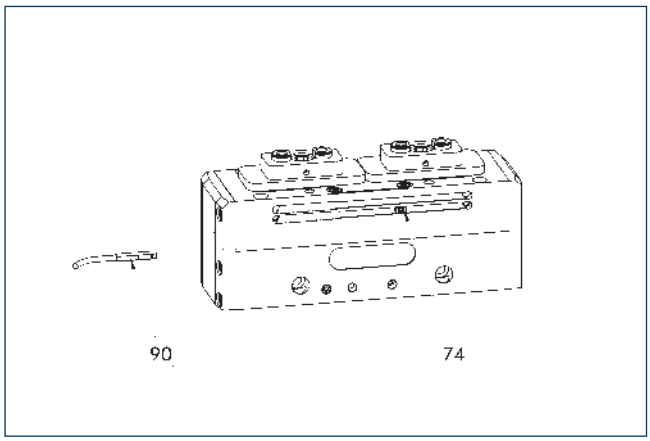
(74) Limit stop for sensor
(90) MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) 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	

ⓘ 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.

Analog position sensor MMS-A



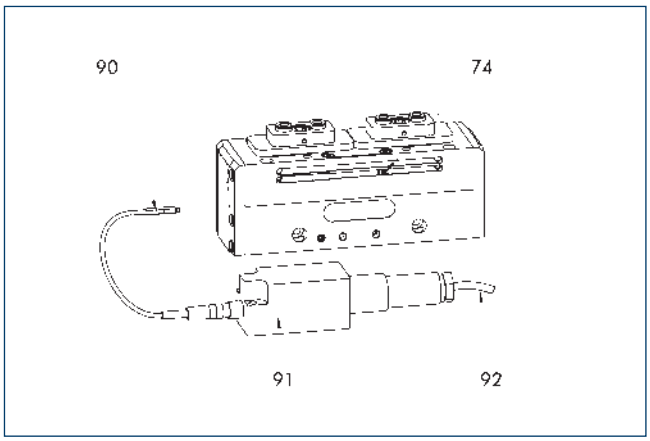
(74) Limit stop for sensor
(90) MMS 22-A-... sensor

Non-contact measuring, analog multi-position monitoring for any number of positions, easy to assemble in the C-slot. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) 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 chart provided, teaching is only possible with the ST teaching tools.

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

ⓘ 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



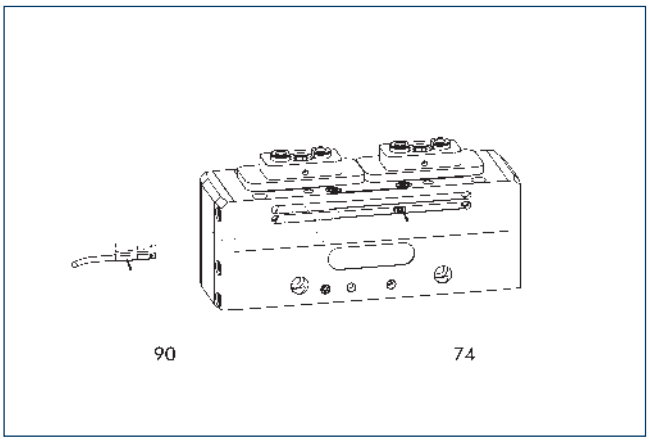
(74) Limit stop for sensor
(90) MMS 22-A-... sensor
(91) FPS-F5 evaluation electronic
(92) Connection cables

Flexible position monitoring of up to five positions. Sensor can be taught using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) or ST plug teaching tool (optional). If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	
Analog position sensor		
MMS 22-A-05V-M08	0315805	
Evaluation electronics		
FPS-F5	0301805	
Sensor Teaching Tool		
MT-MMS 22-PI	0301030	
Connection cables		
KA BG16-L 12P-1000	0301801	

ⓘ When using an FPS system, one MMS 22-A-05V and one evaluation electronics (FPS-F5) are required per each gripper, as well as an attachment kit (AS), if listed. On option, cable extensions (KV) are available – see catalog chapter "Accessories."

Programmable magnetic switch MMS-IO-Link



74 Limit stop for sensor

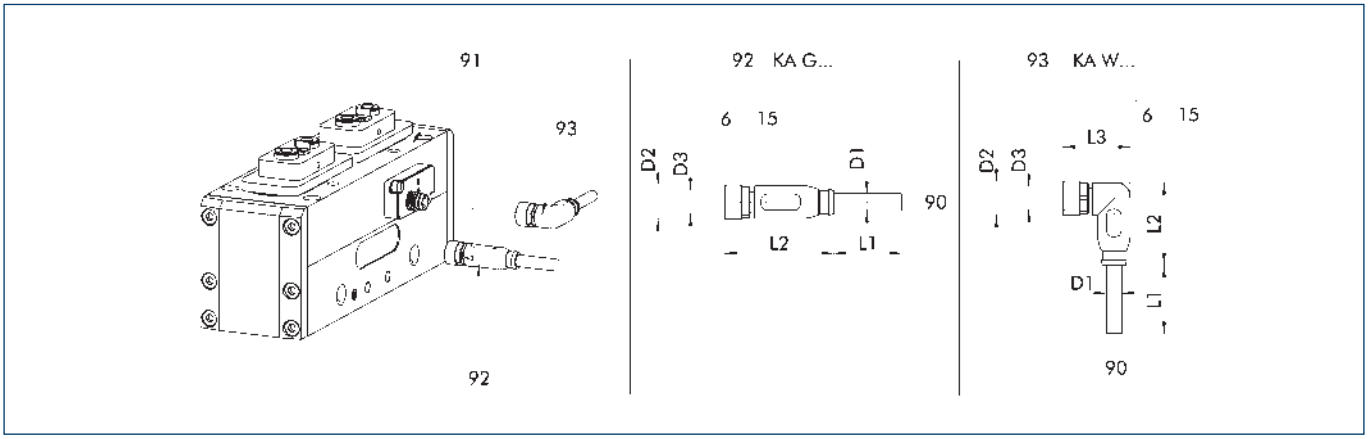
90 Sensor MMS 22-IOL-...

Sensor for multi-position monitoring through detection of the complete gripper stroke. The sensor is mounted directly in the C-slot of the gripper. The sensor is programmed for the gripper via the IO-Link interface, Magnet teaching tool MT (included in scope of delivery; ID 0301030) or the ST plug teaching tool (not included in scope of delivery; ID 0301026). An IO-Link master is required for operation.

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

ⓘ 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.

Connection cables



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

(6) Lubricating nipple connection
(15) Sealing bolt
(90) Cable end with straight connector
(91) Gripper with integrated sensor system IOL
(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.

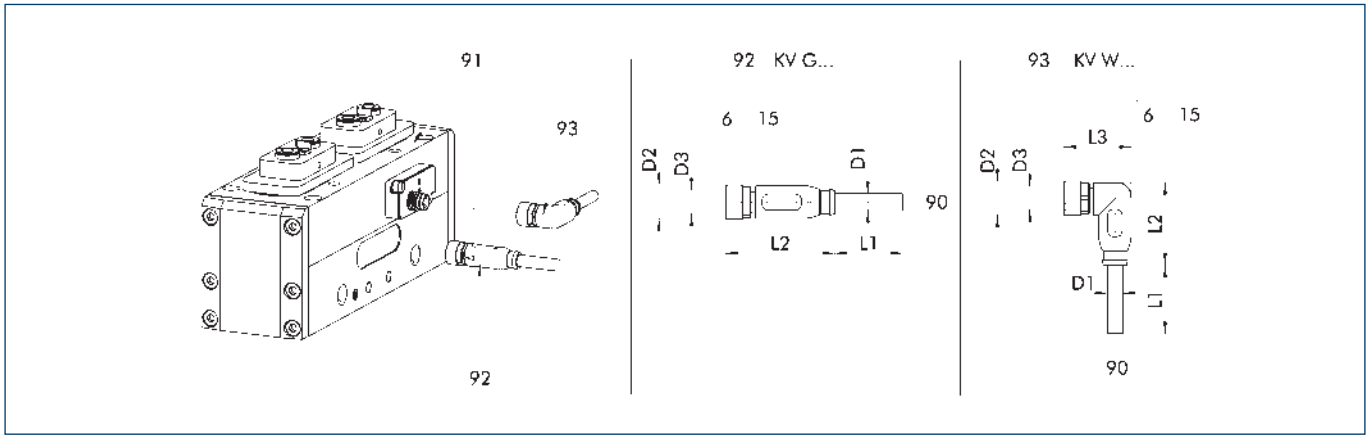
Description	ID	L1	D1	L2	D2	L3	D3	Often combined
		[m]	[mm]	[mm]	[mm]	[mm]		
Voltage supply/signals connection cable - drag chain and torsion resistant, M8 socket, straight								
KA GLN0804-I0-00200-A	1310371	2	4.8	33.7	10		M8	
KA GLN0804-I0-00500-A	1310375	5	4.8	33.7	10		M8	●
KA GLN0804-I0-01000-A	1310379	10	4.8	33.7	10		M8	
KA GLN0804-I0-02000-A	1442994	20	4.5	32	10		M8	
Voltage supply/signals connection cable - drag chain and torsion resistant, M8 socket, angled								
KA WLN0804-I0-00200-A	1310372	2	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-00500-A	1310376	5	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-01000-A	1310381	10	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-02000-A	1442996	20	4.5	25	10	20	M8	

ⓘ 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.

PGL-plus-P 16

Universal gripper

Cable extension



KV G... Cable extension with straight socket

KV W... Cable extension with angled socket

(6) Lubricating nipple connection

(15) Sealing bolt

(90) Cable end with straight connector

(91) Gripper with integrated sensor system IOL

(92) Cable with straight female connector

(93) Cable with angled female connector

The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M12 connector with a straight design on the other side. The cable extensions are suitable for use in the drag chain and in torsion applications.

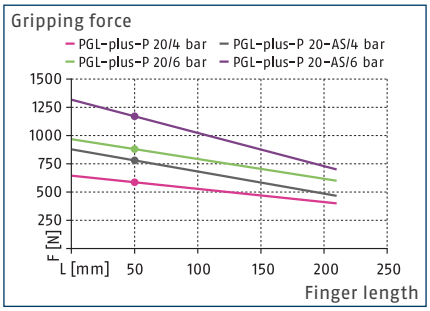
Description	ID	L1	D1	L2	D2	L3	D3
		[m]	[mm]	[mm]	[mm]	[mm]	
Cable extension							
KV GGN0804-1204-I0-00500-A	1505830	5	4.5	32	10		M8
KV GGN0804-1204-I0-01000-A	1505832	10	4.5	32	10		M8
KV WGN0804-1204-I0-00500-A	1505803	5	4.5	25	10	20	M8
KV WGN0804-1204-I0-01000-A	1505806	10	4.5	25	10	20	M8

ⓘ 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.

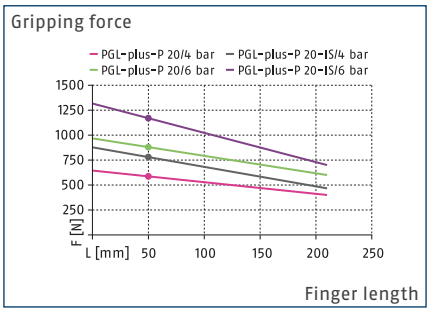
PGL-plus-P 20

Universal gripper

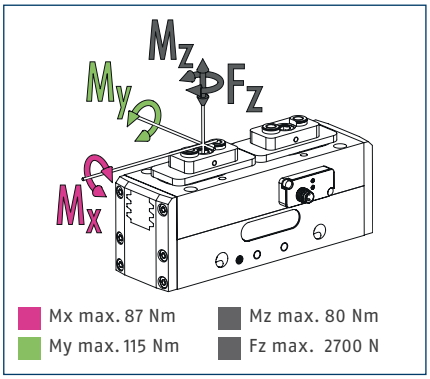
Gripping force O.D. gripping



Gripping force I.D. gripping



Max. loads



ⓘ 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 PGL-plus-P

Description		PGL-plus-P 20-IOL	PGL-plus-P 20-AS-IOL	PGL-plus-P 20-IS-IOL	PGL-plus-P 20	PGL-plus-P 20-AS	PGL-plus-P 20-IS
ID		1476640	1476641	1476642	1476522	1476563	1476565
Stroke per jaw	[mm]	20	20	20	20	20	20
Closing/opening force	[N]	880/880	1170/-	-/1170	880/880	1170/-	-/1170
Min./max. spring force	[N]		290/470	290/470		290/470	290/470
Weight	[kg]	2.7	3	3	2.7	3	3
Recommended workpiece weight	[kg]	4.4	4.4	4.4	4.4	4.4	4.4
Cylinder volume per double stroke	[cm³]	50	82	76	50	82	76
Min./nom./max. operating pressure	[bar]	2.5/6/8	4/6/6.5	4/6/6.5	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	0.5/1	0.5/1	0.5/1
Closing/opening time	[s]	0.17/0.17	0.15/0.3	0.3/0.15	0.17/0.17	0.15/0.3	0.3/0.15
Closing/opening time with spring	[s]		0.25	0.25		0.25	0.25
Max. permissible finger length	[mm]	210	210	210	210	210	210
Max. permissible weight per finger	[kg]	1.3	1.3	1.3	1.3	1.3	1.3
Protection class IP (without/with air purge)		64/67	64/67	64/67	64/67	64/67	64/67
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/90	5/90	5/90
Repeat accuracy	[mm]	0.03	0.03	0.03	0.03	0.03	0.03
Min./nominal/max. operating voltage	[V DC]	18/24/30	18/24/30	18/24/30			
Nominal current	[A]	0.2	0.2	0.2			
Cable connector		M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin			
Communication interface/ specification		IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1			
Transmission rate		COM2	COM2	COM2			
Port		Class A	Class A	Class A			
Detectable workpiece difference		Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm			
Options and their characteristics							
High-temperature version					1512491	1512492	1512493
Min./max. ambient temperature	[°C]				5/130	5/130	5/130
Precision version		1476870	1476871	1476872	1476685	1476686	1476687
with pre-assembled attachment kit for IN					1476596	1476597	1476598
Precision version/inductive sensor version					1476835	1476836	1476837

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

PGL-plus-P 20

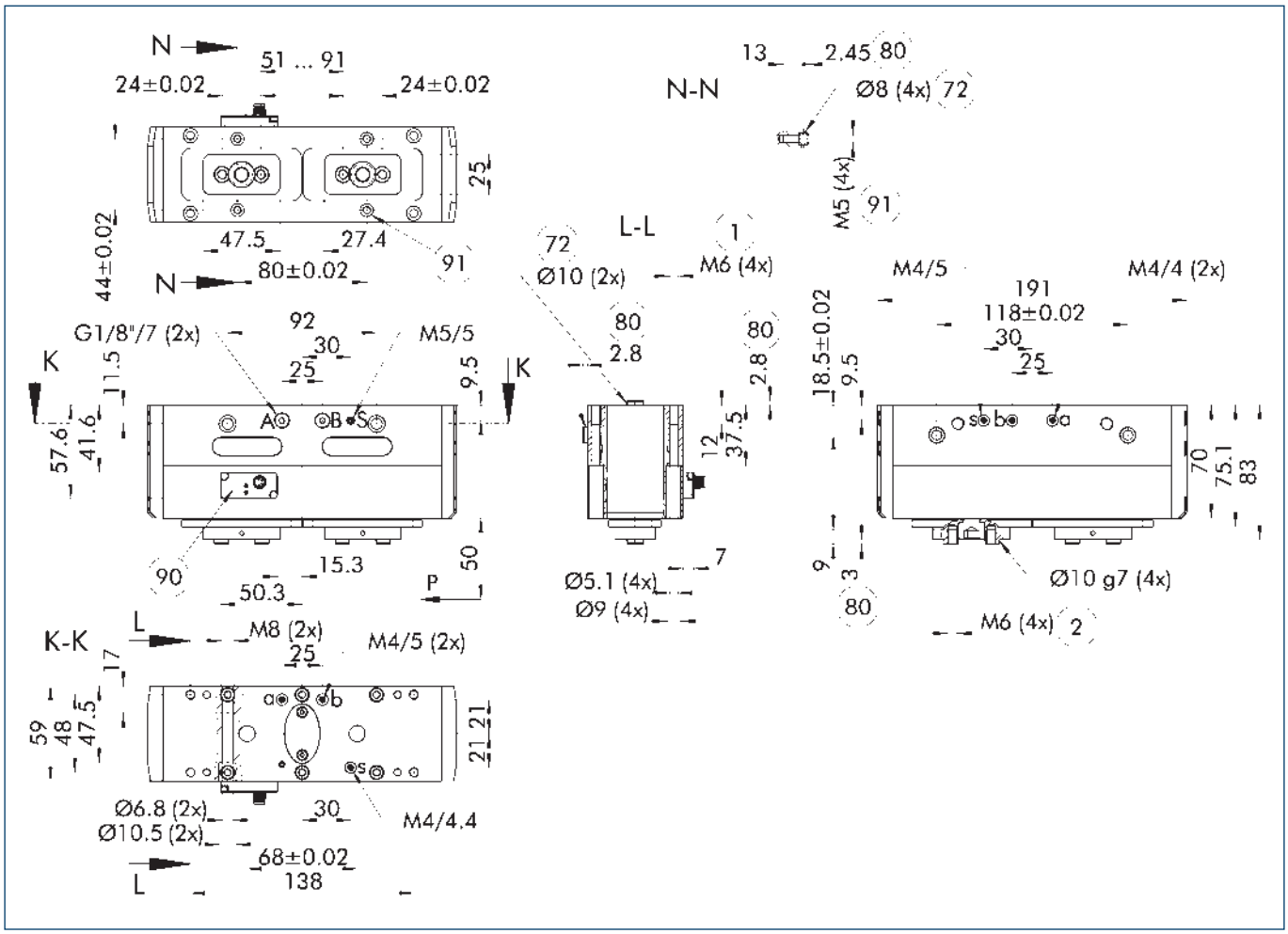
Universal gripper

Technical data PGL-plus-P with safe gripping force maintenance

Description		PGL-plus-P 20-ASC6	PGL-plus-P 20-ISC6	PGL-plus-P 20-ASC4	PGL-plus-P 20-ISC4
ID		1476541	1476568	1476566	1476567
Stroke per jaw	[mm]	20	20	20	20
Closing/opening force	[N]	880/880	880/880	585/585	585/585
Secured opening/closing force in case of pressure loss	[N]	700/-	-/700	465/-	-/465
Weight	[kg]	4.2	4.2	4.2	4.2
Recommended workpiece weight	[kg]	4.4	4.4	2.9	2.9
Cylinder volume per double stroke	[cm³]	52	52	52	52
Min./nom./max. operating pressure	[bar]	5.5/6/6.5	5.5/6/6.5	3.5/4/6.5	3.5/4/6.5
Min./max. air purge pressure	[bar]	0.5/1	0.5/1	0.5/1	0.5/1
Closing/opening time	[s]	0.17/0.17	0.17/0.17	0.17/0.17	0.17/0.17
Max. permissible finger length	[mm]	210	210	210	210
Max. permissible weight per finger	[kg]	1.3	1.3	1.3	1.3
Protection class IP (without/with air purge)		64/67	64/67	64/67	64/67
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90
Repeat accuracy	[mm]	0.03	0.03	0.03	0.03
Options and their characteristics					
Precision version		1476700	1476701	1476688	1476689
Version with IO-Link		1476645	1476646	1476643	1476644
Min./nominal/max. operating voltage	[V DC]	18/24/30	18/24/30	18/24/30	18/24/30
Nominal current	[A]	0.2	0.2	0.2	0.2
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/70
Cable connector		M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin
Communication interface/ specification		IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1
Transmission rate		COM2	COM2	COM2	COM2
Port		Class A	Class A	Class A	Class A
Detectable workpiece difference		Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm
with pre-assembled attachment kit for IN		1476601	1476602	1476599	1476600
Precision version/inductive sensor version		1476840	1476841	1476838	1476839
Precision version/version with IO-Link		1476875	1476876	1476873	1476874
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/70

ⓘ 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.

ⓘ As an alternative/in addition to spring-assisted mechanical gripping force maintenance, the SDV-P pressure maintenance valve can be used for I.D. and O.D. gripping (see "Accessories" section of catalog).

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

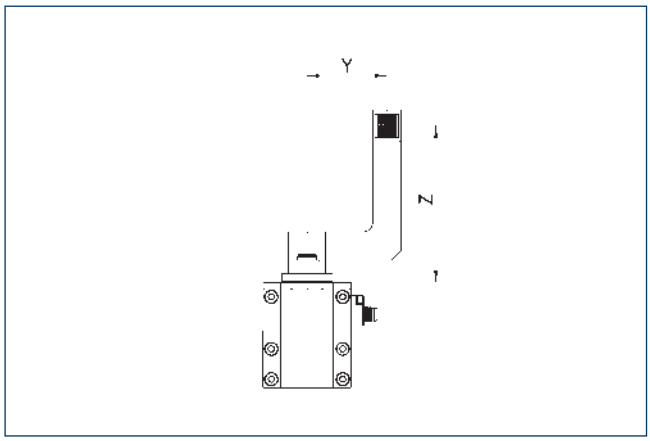
(90) Integrated sensor system IOL with M8 connector, A-coded, 4-pin

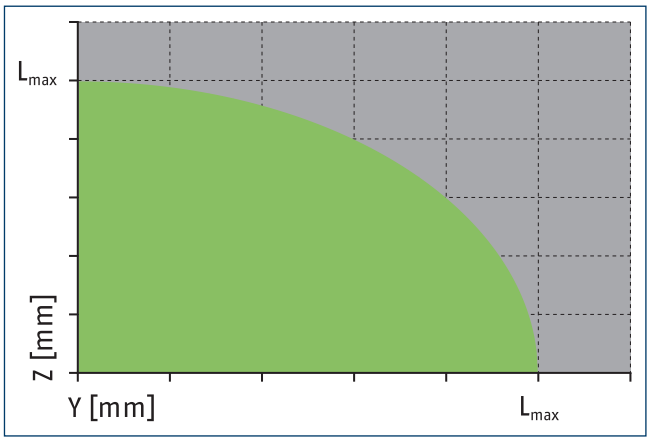
(91) Screw connection with fittings for customized assembly (these centering sleeves are not included in the scope of delivery)

PGL-plus-P 20

Universal gripper

Maximum permitted finger projection



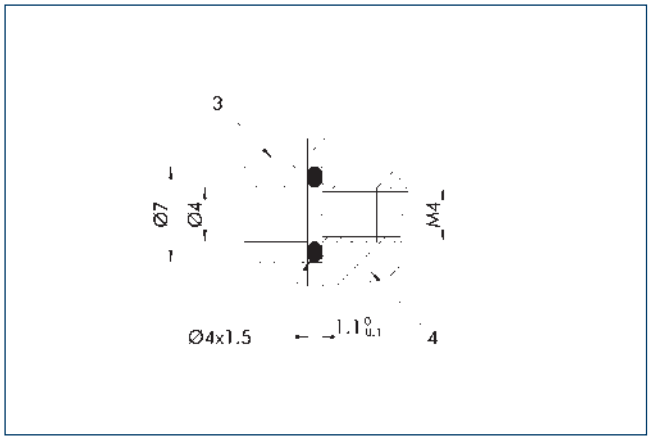


Permitted range

Inadmissible range

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

Hose-free direct connection M4

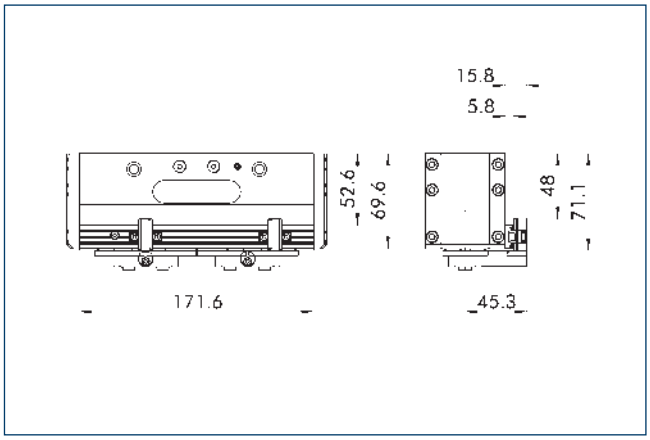


③ Adapter

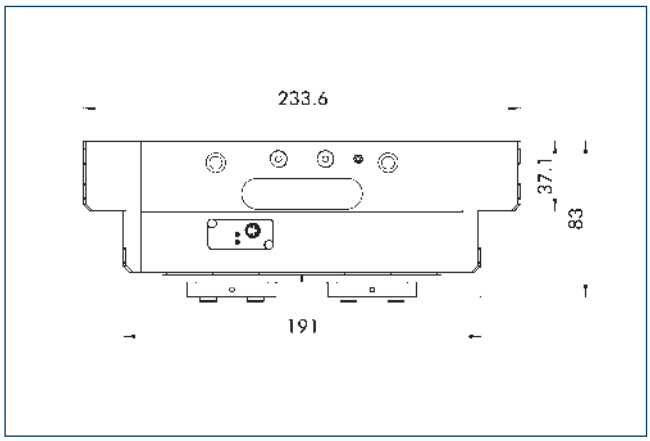
④ Grippers

The direct connection is used for compressed air supply without error-prone tubing.

Gripper monitoring with inductive proximity switches IN

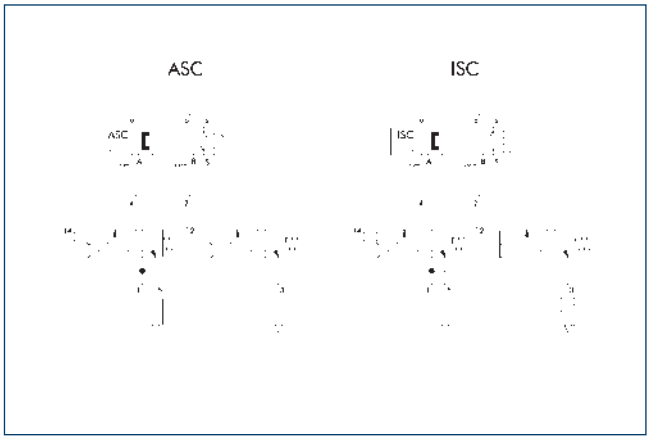


Gripping force maintenance version AS/IS



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 variant this acts as a closing force, in the IS variant as an opening force Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

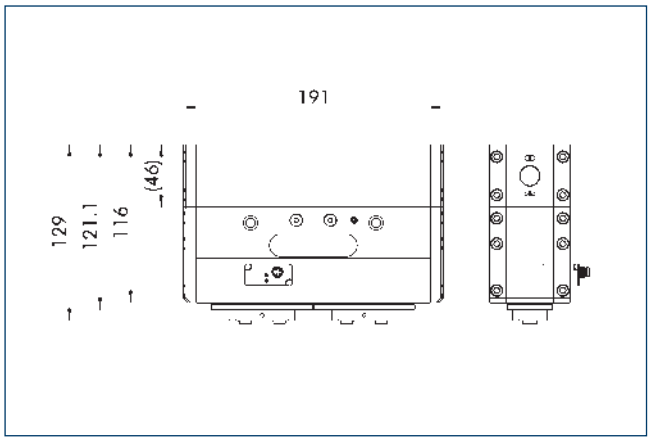
GripGuard: secure, certified gripping force maintenance ASC/ISC



Grippers with ASC or ISC gripping force maintenance are generally controlled with a 2x3/2-directional control valve.

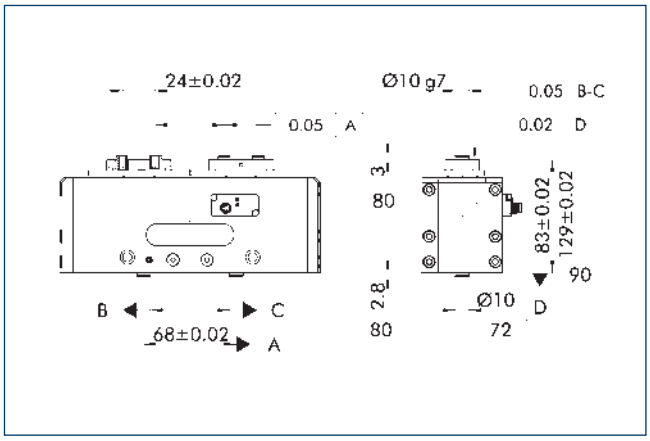
ⓘ Be sure to observe the control sequence in the operating manual.

GripGuard: secure, certified gripping force maintenance ASC/ISC



Secure gripping force maintenance also ensures a permanent gripping force of min. 80%, even in case of a pressure drop. In the ASC variant this acts as a closing force, in the ISC variant as an opening force.

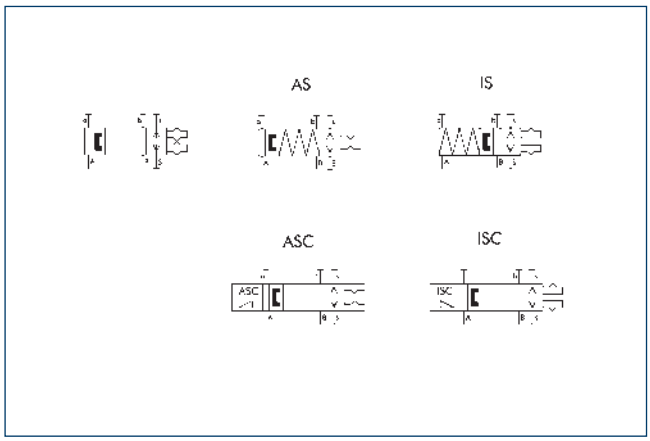
Precision version



(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(90) For version ASC/ISC

The indicated tolerances just refer to the variants of precision versions shown in the chart of technical specifications. All other variants of precision versions are available on request.

Electronic symbol according to DIN ISO 1219



A, a Main / direct connection, gripper opening

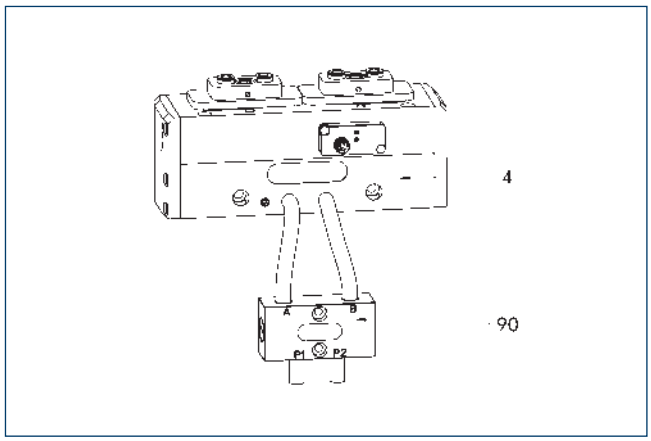
B, b Main / direct connection, gripper closing

S, s Air purge, main, direct 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" and "s" describe the optional air purge connection, which impedes the ingress of dirt into the gripper.

ⓘ 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

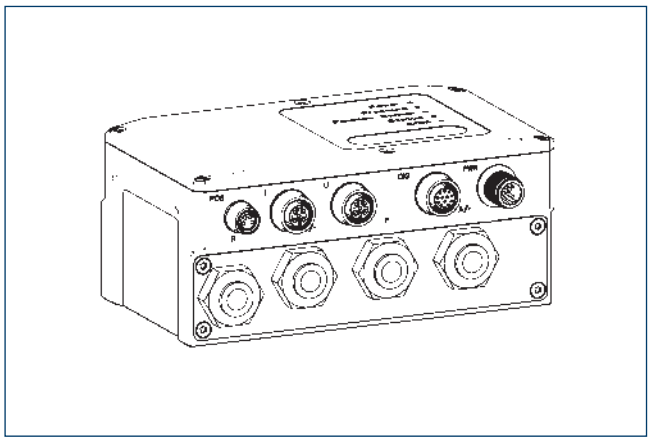
⑨⓪ SDV-P pressure maintenance valve

The SDV-P pressure maintenance valves ensure in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained. The pressure maintenance valve must not be used in combination with the ASC and ISC variants.

Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance valve		
SDV-P 04	0403130	6
SDV-P 07	0403131	8
Pressure maintenance valve with air bleed screw		
SDV-P 04-E	0300120	6
SDV-P 07-E	0300121	8

ⓘ 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.

Pneumatic positioning device PPD

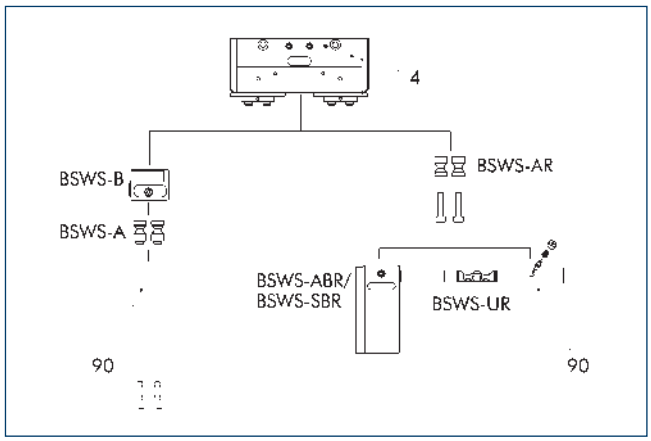


The PPD allows flexibility in all applications with pneumatic grippers through free positioning, gripping force and speed adjustment.

Description	ID	
Pneumatic positioning device		
PPD 20-IOL	1540700	
Adapter		
A GGN0804-1204-A	1540691	
IO-Link connection cable		
KA GGN1205-1212-IOL-00100-A	1540697	
Voltage supply connection cable - cable track compatible		
KA GLN12B05-LK-01000-A	1540660	
Cable extension		
KV GGN0804-IO-00150-A	1540662	
KV GGN0804-IO-00300-A	1540663	
Assembly set		
Assembly set PPD	1540705	

ⓘ In addition to the PPD, a position sensor (SCHUNK IO-Link sensor or analog sensor (4...20 mA)) is required.

BSWS jaw quick-change jaw systems



(4) Grippers (90) Customized gripper fingers

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

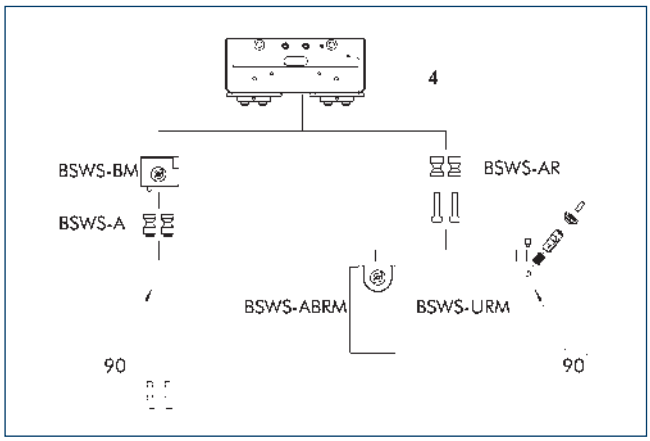
Description	ID	Scope of delivery
Jaw quick-change system adapter pin		
BSWS-A 125	0303028	2
BSWS-AR 20	1515474	2
Quick-change jaw system base		
BSWS-B 125	0303029	1
Jaw quick-change system finger blank		
BSWS-ABR-PGZN-plus 125	0300075	1
BSWS-SBR-PGZN-plus 125	0300085	1
Jaw quick-change system locking mechanism		
BSWS-UR 125	0302994	1

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

PGL-plus-P 20

Universal gripper

Jaw quick-change system BSWS-M



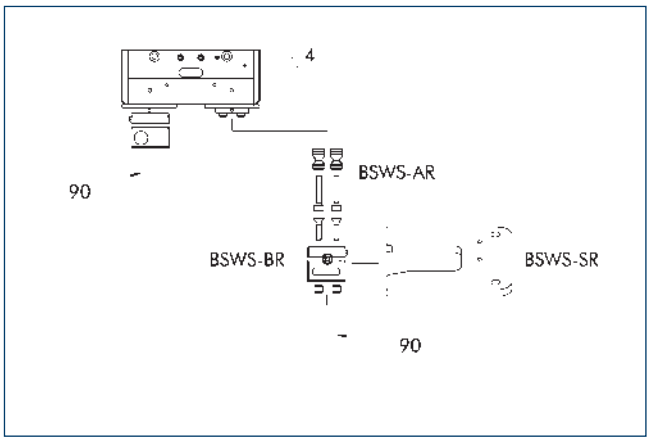
④ Grippers ⑨⓪ Customized gripper fingers

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 125	0303028	2
BSWS-AR 20	1515474	2
Quick-change jaw system base		
BSWS-BM 125	1302006	1
Jaw quick-change system finger blank		
BSWS-ABRM-PGZN-plus 125	1420854	1
Jaw quick-change system locking mechanism		
BSWS-URM 125	1398404	1

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Jaw quick-change system BSWS-R



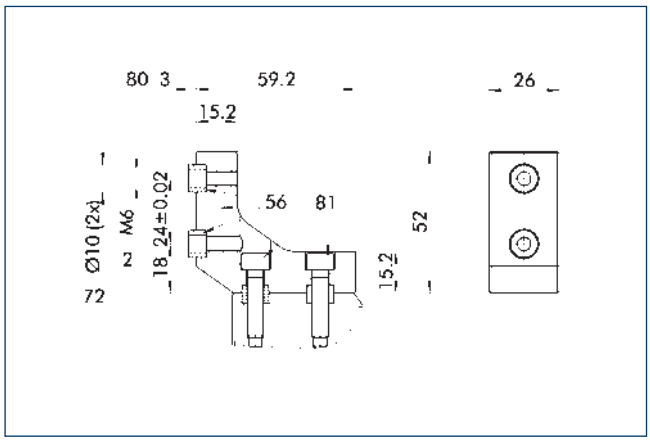
④ Grippers ⑨⓪ Customized gripper fingers

If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Description	ID	Scope of delivery
Jaw quick-change system		
BSWS-AR 20	1515474	2
Quick-change jaw system base		
BSWS-BR 125	1555937	1
Storage system		
BSWS-SR 125	1555972	1
Attachment kit for proximity switch		
AS-IN80-BSWS-SR 125/160	1561467	1
Inductive proximity switch		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 80-S	0301550	

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

ZBA-L-plus 125 intermediate jaws

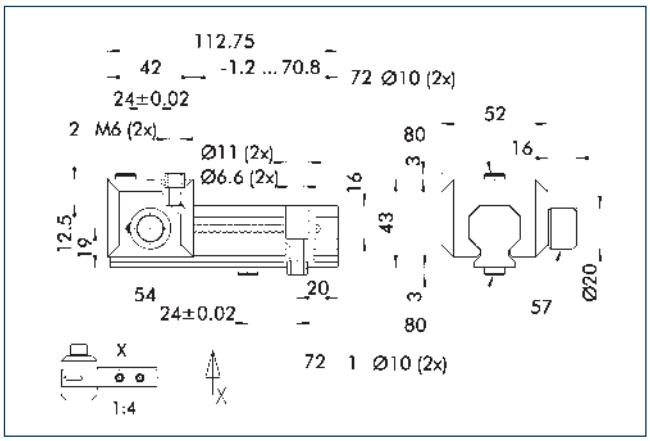


(2) Finger connection
(56) Included in the scope of delivery
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(81) Not included in the scope of delivery

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 125	0311752	Aluminum	PGN-plus 125	1

UZB 125 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. The fully removable UZB-S slide (can also be ordered separately) allows for a quick jaw change.

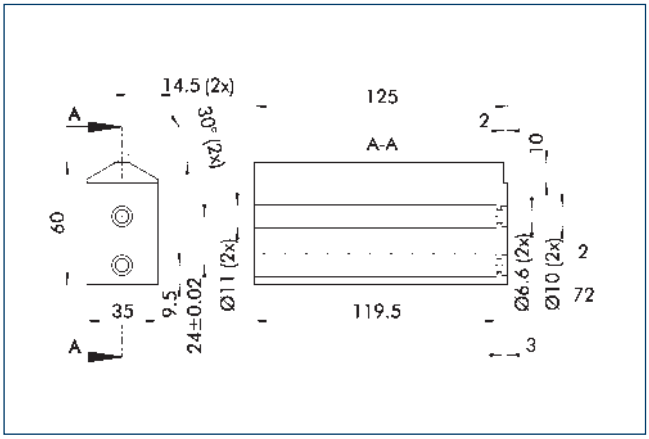
Description	ID	Grid dimension
		[mm]
Universal intermediate jaw		
UZB 125	0300045	3
Finger blank		
ABR-PGZN-plus 125	0300013	
SBR-PGZN-plus 125	0300023	
Slide for universal intermediate jaw		
UZB-S 125	5518273	3

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked.

PGL-plus-P 20

Universal gripper

Finger blanks ABR/SBR-PGZN-plus 125



(2) Finger connection

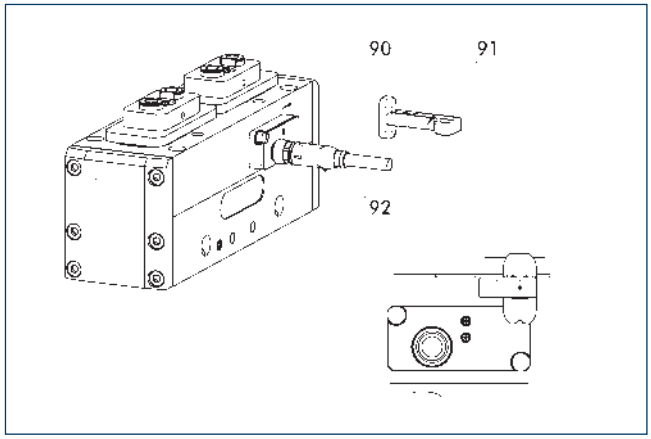
(72) Fit for centering sleeves

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 125	0300013	Aluminum (3.4365)	1
SBR-PGZN-plus 125	0300023	Steel (1.7131)	1

ⓘ When finger blanks are used, the closing stroke of individual gripper series may be limited. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Sensor Teaching Tool



(90) Gripper with integrated sensor system IOL

(91) Sensor Teaching Tool

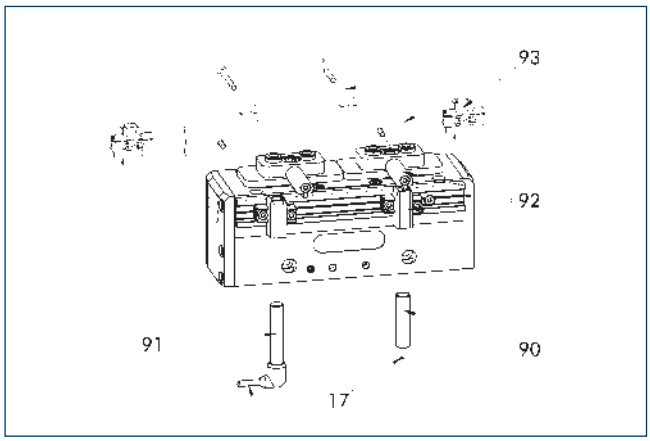
(92) Connection cables

If the gripper with integrated sensors (PGL-plus-P...-IOL) is operated in SIO mode without an IO-Link master, a separate magnetic teaching tool will be required.

Description	ID	
Sensor Teaching Tool		
MT-MMS 22-PI	0301030	

ⓘ The magnetic teaching tool and the connection cable must be ordered as optional accessories.

IN 80 inductive proximity switches



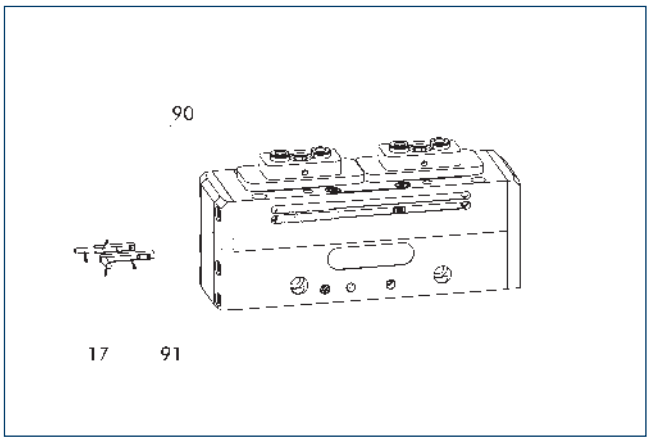
(17) Cable outlet
(90) Sensor IN ...
(91) Sensor IN..-SA
(92) Attachment kit for monitoring with two inductive proximity switches
(93) Optional rear mounting of another attachment kit for two additional proximity switches

End position monitoring can be mounted with an attachment kit. Alternatively, the sensors can be directly mounted on the IN gripper variant.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PGL-plus-P 20	1499629	
Inductive proximity switch		
IN 80-0-M12	0301588	
IN 80-0-M8	0301488	
IN 80-SL-M12	0301529	
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-B 80-S-M12	0301479	
IN-C 80-S-M8-PNP	0301475	
INK 80-0	0301551	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with lateral cable outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	●
INK 80-S-SA	0301566	

ⓘ Two sensors (closer/S) are required for each unit and extension cables are available as an option. This attachment kit needs to be ordered optionally as an accessory. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

Electronic magnetic switch MMS



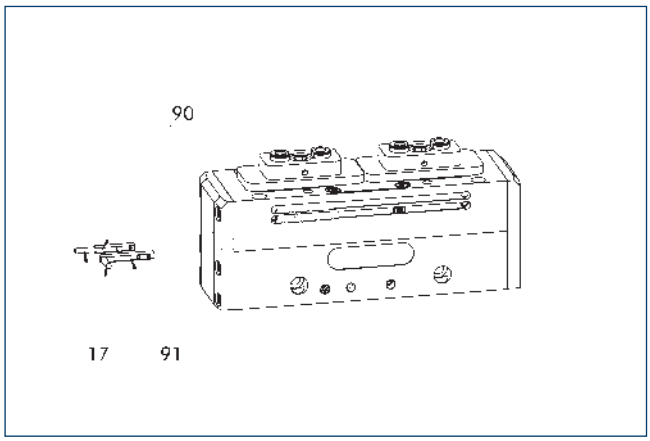
(17) Cable outlet
(90) Sensor MMS 22..
(91) Sensor MMS 22...-SA

End position monitoring for mounting in the C-slot.

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 connector/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	

ⓘ 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



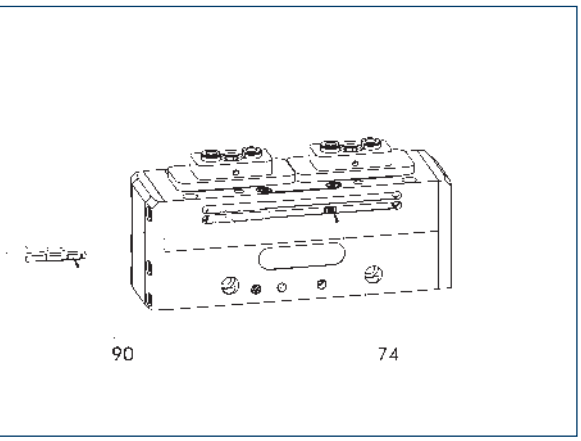
(17) Cable outlet
(91) Sensor MMS 22 ..-PI1-...-SA
(90) Sensor MMS 22 PI1-...

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, ID 0301030) 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	

ⓘ 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



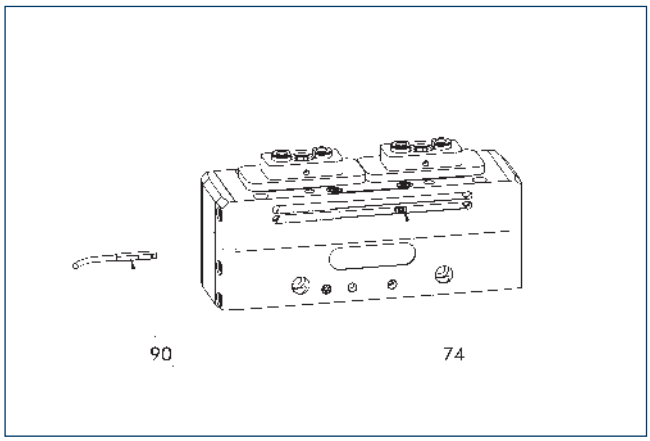
(74) Limit stop for sensor
(90) MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) 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	

ⓘ 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.

Analog position sensor MMS-A



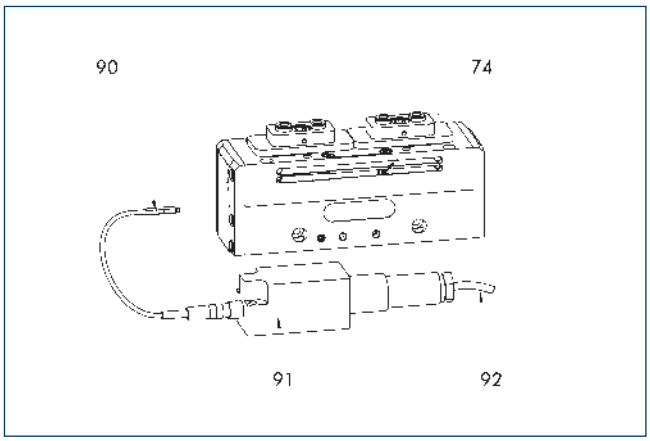
(74) Limit stop for sensor
(90) MMS 22-A-... sensor

Non-contact measuring, analog multi-position monitoring for any number of positions, easy to assemble in the C-slot. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) 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 chart provided, teaching is only possible with the ST teaching tools.

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

ⓘ 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



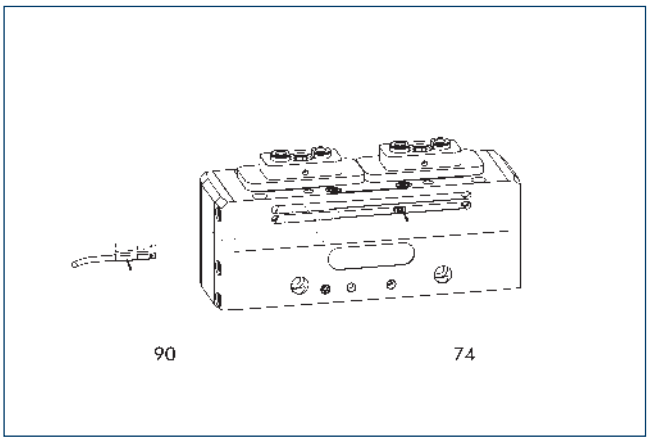
(74) Limit stop for sensor
(90) MMS 22-A-... sensor
(91) FPS-F5 evaluation electronic
(92) Connection cables

Flexible position monitoring of up to five positions. Sensor can be taught using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) or ST plug teaching tool (optional). If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	
Analog position sensor		
MMS 22-A-05V-M08	0315805	
Evaluation electronics		
FPS-F5	0301805	
Sensor Teaching Tool		
MT-MMS 22-PI	0301030	
Connection cables		
KA BG16-L 12P-1000	0301801	

ⓘ When using an FPS system, one MMS 22-A-05V and one evaluation electronics (FPS-F5) are required per each gripper, as well as an attachment kit (AS), if listed. On option, cable extensions (KV) are available – see catalog chapter "Accessories."

Programmable magnetic switch MMS-IO-Link



74 Limit stop for sensor

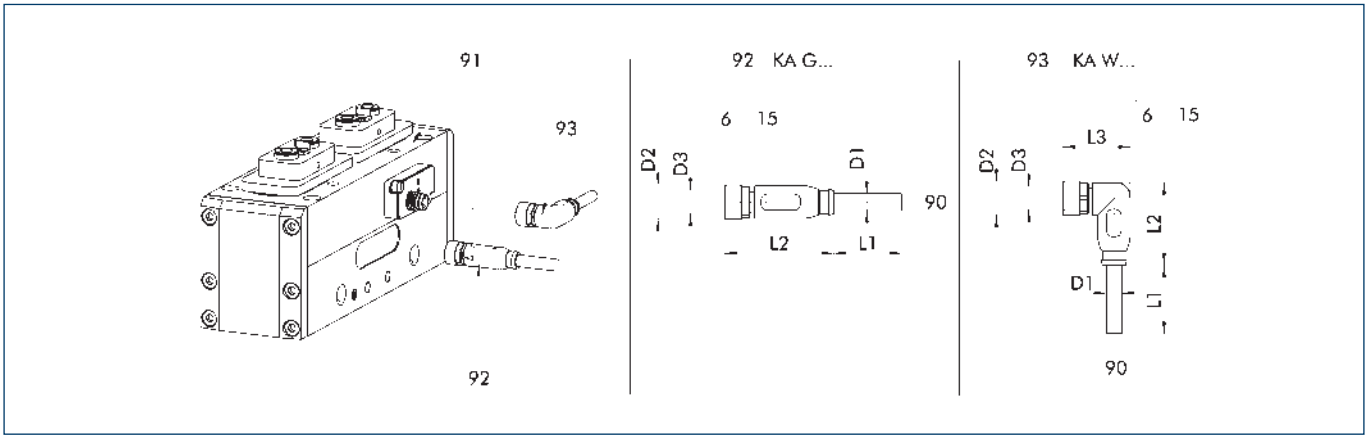
90 Sensor MMS 22-IOL-...

Sensor for multi-position monitoring through detection of the complete gripper stroke. The sensor is mounted directly in the C-slot of the gripper. The sensor is programmed for the gripper via the IO-Link interface, Magnet teaching tool MT (included in scope of delivery; ID 0301030) or the ST plug teaching tool (not included in scope of delivery; ID 0301026). An IO-Link master is required for operation.

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

ⓘ 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.

Connection cables



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

(6) Lubricating nipple connection
(15) Sealing bolt
(90) Cable end with straight connector
(91) Gripper with integrated sensor system IOL
(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.

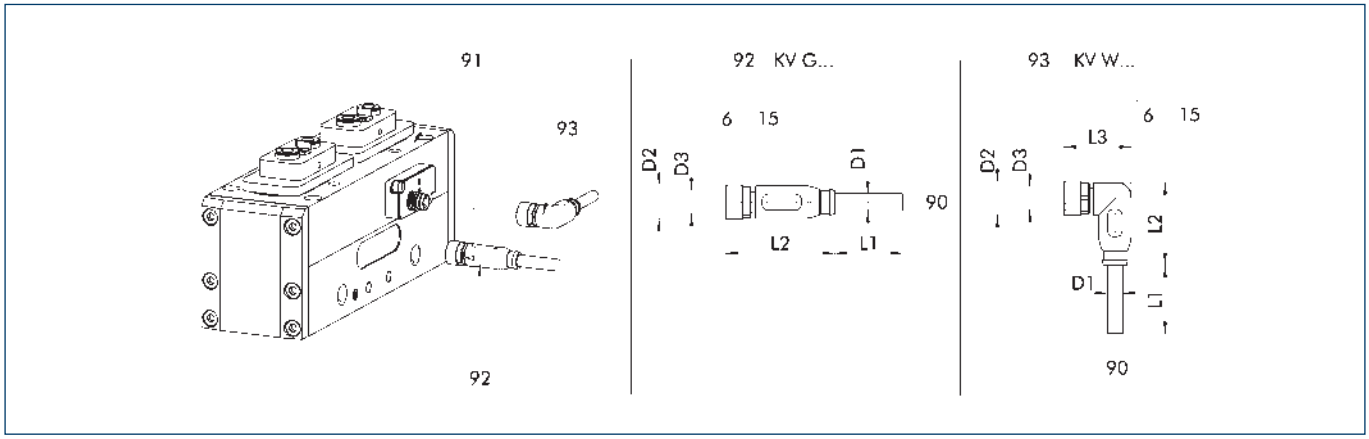
Description	ID	L1	D1	L2	D2	L3	D3	Often combined
		[m]	[mm]	[mm]	[mm]	[mm]		
Voltage supply/signals connection cable - drag chain and torsion resistant, M8 socket, straight								
KA GLN0804-I0-00200-A	1310371	2	4.8	33.7	10		M8	
KA GLN0804-I0-00500-A	1310375	5	4.8	33.7	10		M8	●
KA GLN0804-I0-01000-A	1310379	10	4.8	33.7	10		M8	
KA GLN0804-I0-02000-A	1442994	20	4.5	32	10		M8	
Voltage supply/signals connection cable - drag chain and torsion resistant, M8 socket, angled								
KA WLN0804-I0-00200-A	1310372	2	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-00500-A	1310376	5	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-01000-A	1310381	10	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-02000-A	1442996	20	4.5	25	10	20	M8	

ⓘ 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.

PGL-plus-P 20

Universal gripper

Cable extension



KV G... Cable extension with straight socket

KV W... Cable extension with angled socket

(6) Lubricating nipple connection

(15) Sealing bolt

(90) Cable end with straight connector

(91) Gripper with integrated sensor system IOL

(92) Cable with straight female connector

(93) Cable with angled female connector

The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M12 connector with a straight design on the other side. The cable extensions are suitable for use in the drag chain and in torsion applications.

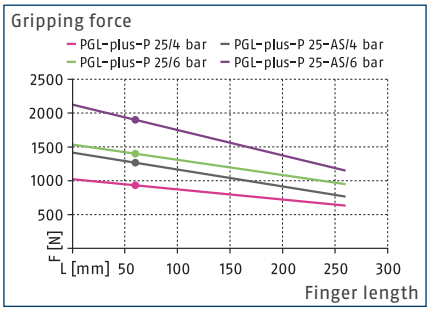
Description	ID	L1	D1	L2	D2	L3	D3
		[m]	[mm]	[mm]	[mm]	[mm]	
Cable extension							
KV GGN0804-1204-I0-00500-A	1505830	5	4.5	32	10		M8
KV GGN0804-1204-I0-01000-A	1505832	10	4.5	32	10		M8
KV WGN0804-1204-I0-00500-A	1505803	5	4.5	25	10	20	M8
KV WGN0804-1204-I0-01000-A	1505806	10	4.5	25	10	20	M8

ⓘ 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.

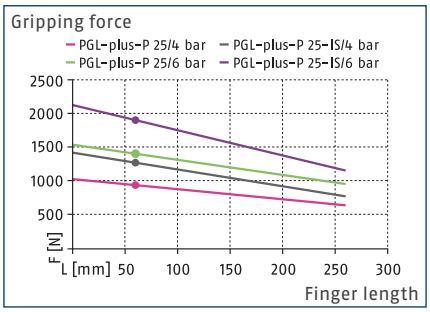
PGL-plus-P 25

Universal gripper

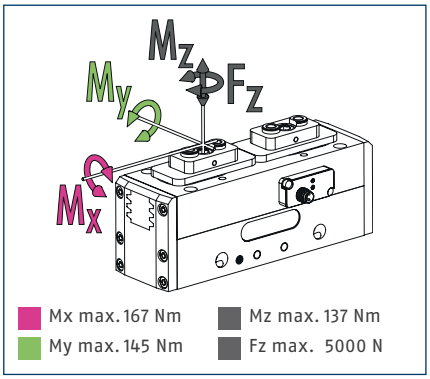
Gripping force O.D. gripping



Gripping force I.D. gripping



Max. loads



ⓘ 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 PGL-plus-P

Description		PGL-plus-P 25-IOL	PGL-plus-P 25-AS-IOL	PGL-plus-P 25-IS-IOL	PGL-plus-P 25	PGL-plus-P 25-AS	PGL-plus-P 25-IS
ID		1476647	1476648	1476649	1476523	1476569	1476570
Stroke per jaw	[mm]	25	25	25	25	25	25
Closing/opening force	[N]	1400/1400	1900/-	-/1900	1400/1400	1900/-	-/1900
Min./max. spring force	[N]		500/730	500/730		500/730	500/730
Weight	[kg]	5.1	5.6	5.8	5.1	5.6	5.8
Recommended workpiece weight	[kg]	7	7	7	7	7	7
Cylinder volume per double stroke	[cm³]	195	330	290	195	330	290
Min./nom./max. operating pressure	[bar]	2.5/6/8	4/6/6.5	4/6/6.5	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	0.5/1	0.5/1	0.5/1
Closing/opening time	[s]	0.2/0.2	0.25/0.35	0.35/0.25	0.2/0.2	0.25/0.35	0.35/0.25
Closing/opening time with spring	[s]		0.35	0.35		0.35	0.35
Max. permissible finger length	[mm]	260	260	260	260	260	260
Max. permissible weight per finger	[kg]	2.4	2.4	2.4	2.4	2.4	2.4
Protection class IP (without/with air purge)		64/67	64/67	64/67	64/67	64/67	64/67
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/90	5/90	5/90
Repeat accuracy	[mm]	0.03	0.03	0.03	0.03	0.03	0.03
Min./nominal/max. operating voltage	[V DC]	18/24/30	18/24/30	18/24/30			
Nominal current	[A]	0.2	0.2	0.2			
Cable connector		M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin			
Communication interface/ specification		IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1			
Transmission rate		COM2	COM2	COM2			
Port		Class A	Class A	Class A			
Detectable workpiece difference		Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm			
Options and their characteristics							
High-temperature version					1512498	1512499	1512500
Min./max. ambient temperature	[°C]				5/130	5/130	5/130
Precision version		1476877	1476878	1476879	1476702	1476703	1476704
with pre-assembled attachment kit for IN					1476603	1476604	1476605
Precision version/inductive sensor version					1476842	1476843	1476844

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

PGL-plus-P 25

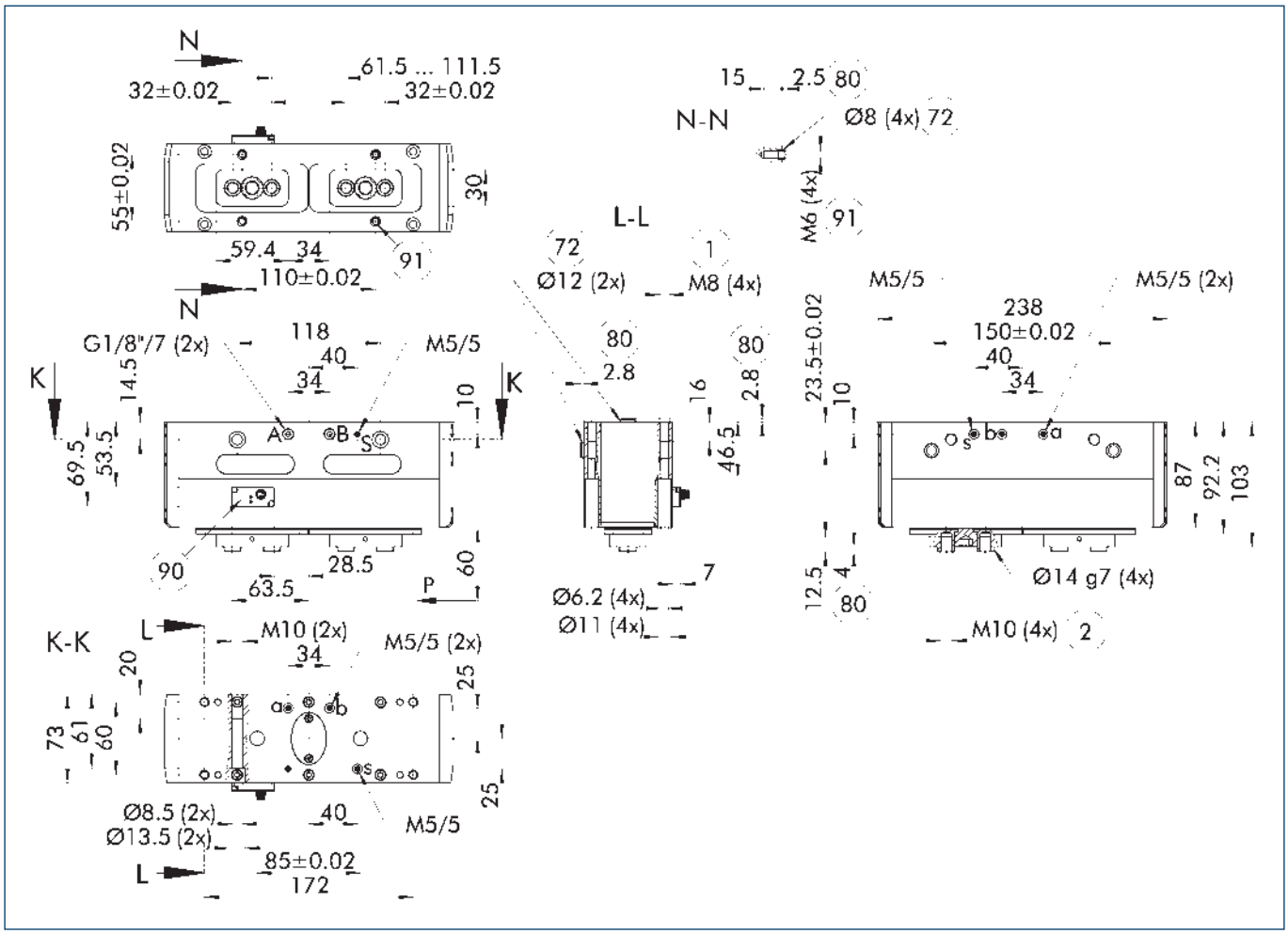
Universal gripper

Technical data PGL-plus-P with safe gripping force maintenance

Description		PGL-plus-P 25-ASC6	PGL-plus-P 25-ISC6	PGL-plus-P 25-ASC4	PGL-plus-P 25-ISC4
ID		1476573	1476546	1476571	1476572
Stroke per jaw	[mm]	25	25	25	25
Closing/opening force	[N]	1400/1400	1400/1400	930/930	930/930
Secured opening/closing force in case of pressure loss	[N]	1100/-	-/1100	740/-	-/740
Weight	[kg]	7.9	7.9	7.9	7.9
Recommended workpiece weight	[kg]	7	7	7	7
Cylinder volume per double stroke	[cm³]	200	200	200	200
Min./nom./max. operating pressure	[bar]	5.5/6/6.5	5.5/6/6.5	3.5/4/6.5	3.5/4/6.5
Min./max. air purge pressure	[bar]	0.5/1	0.5/1	0.5/1	0.5/1
Closing/opening time	[s]	0.2/0.2	0.2/0.2	0.2/0.2	0.2/0.2
Max. permissible finger length	[mm]	260	260	260	260
Max. permissible weight per finger	[kg]	2.4	2.4	2.4	2.4
Protection class IP (without/with air purge)		64/67	64/67	64/67	64/67
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90
Repeat accuracy	[mm]	0.03	0.03	0.03	0.03
Options and their characteristics					
Precision version		1476707	1476708	1476705	1476706
Version with IO-Link		1476651	1476652	1476650	1476547
Min./nominal/max. operating voltage	[V DC]	18/24/30	18/24/30	18/24/30	18/24/30
Nominal current	[A]	0.2	0.2	0.2	0.2
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/70
Cable connector		M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin
Communication interface/ specification		IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1	IO-Link/V1.1
Transmission rate		COM2	COM2	COM2	COM2
Port		Class A	Class A	Class A	Class A
Detectable workpiece difference		Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm	Up to 0.1 mm
with pre-assembled attachment kit for IN		1476608	1476609	1476606	1476607
Precision version/inductive sensor version		1476847	1476848	1476845	1476846
Precision version/version with IO-Link		1476882	1476883	1476880	1476881
Min./max. ambient temperature	[°C]	5/70	5/70	5/70	5/70

ⓘ 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.

ⓘ As an alternative/in addition to spring-assisted mechanical gripping force maintenance, the SDV-P pressure maintenance valve can be used for I.D. and O.D. gripping (see "Accessories" section of catalog).

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

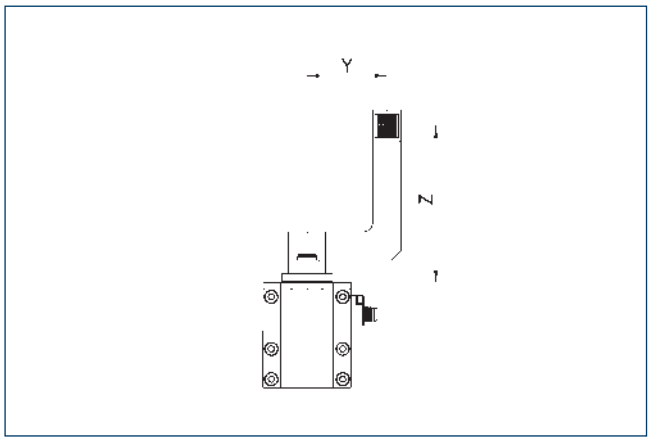
(90) Integrated sensor system IOL with M8 connector, A-coded, 4-pin

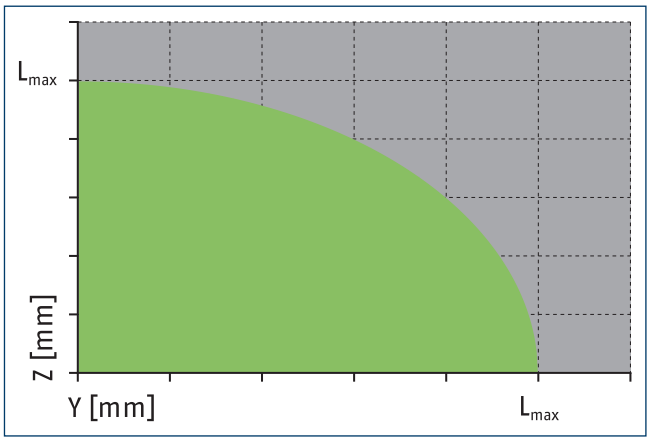
(91) Screw connection with fittings for customized assembly (these centering sleeves are not included in the scope of delivery)

PGL-plus-P 25

Universal gripper

Maximum permitted finger projection



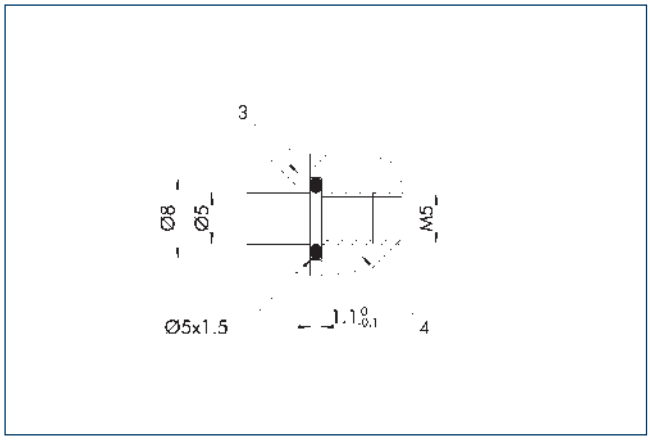


Permitted range

Inadmissible range

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

Hose-free direct connection M5

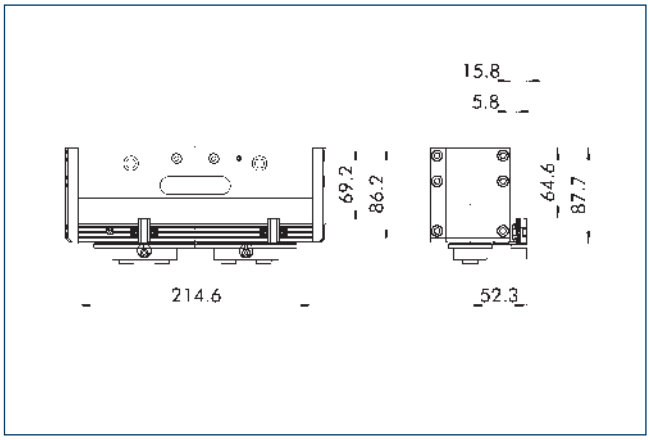


③ Adapter

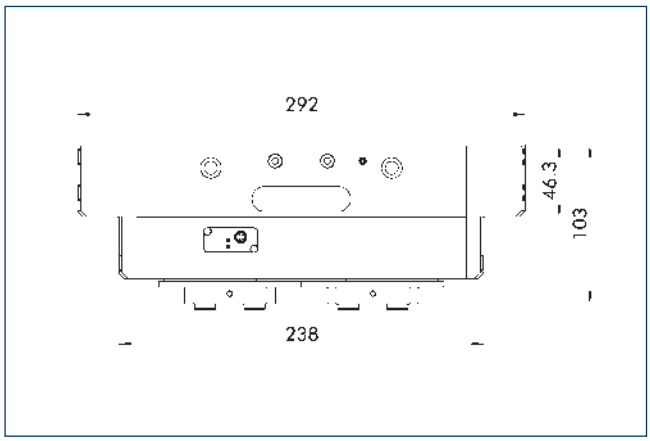
④ Grippers

The direct connection is used for compressed air supply without error-prone tubing.

Gripper monitoring with inductive proximity switches IN

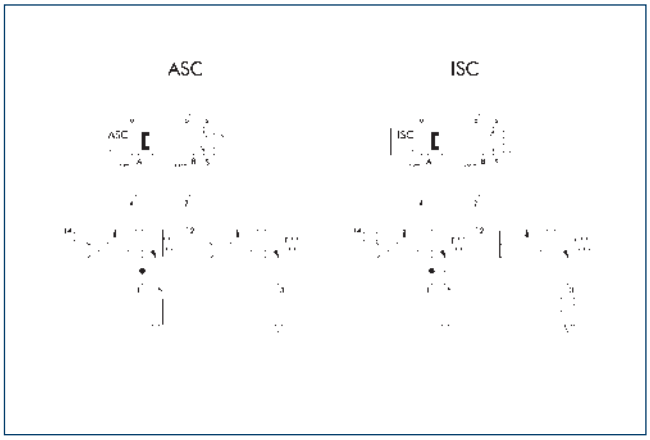


Gripping force maintenance version AS/IS



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 variant this acts as a closing force, in the IS variant as an opening force Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

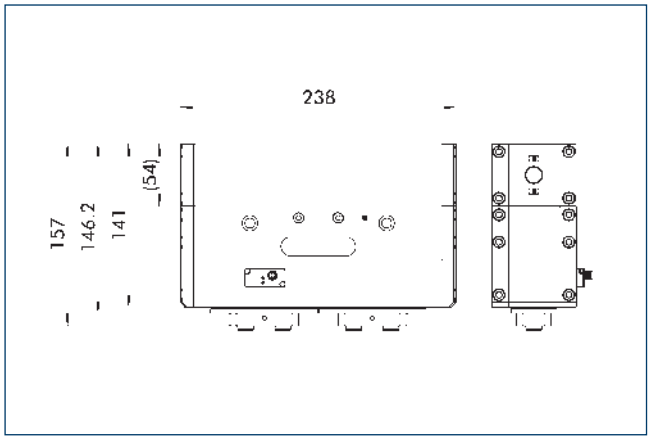
GripGuard: secure, certified gripping force maintenance ASC/ISC



Grippers with ASC or ISC gripping force maintenance are generally controlled with a 2x3/2-directional control valve.

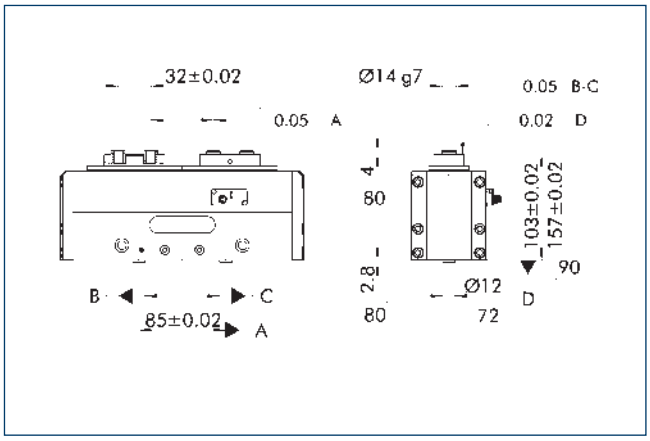
ⓘ Be sure to observe the control sequence in the operating manual.

GripGuard: secure, certified gripping force maintenance ASC/ISC



Secure gripping force maintenance also ensures a permanent gripping force of min. 80%, even in case of a pressure drop. In the ASC variant this acts as a closing force, in the ISC variant as an opening force.

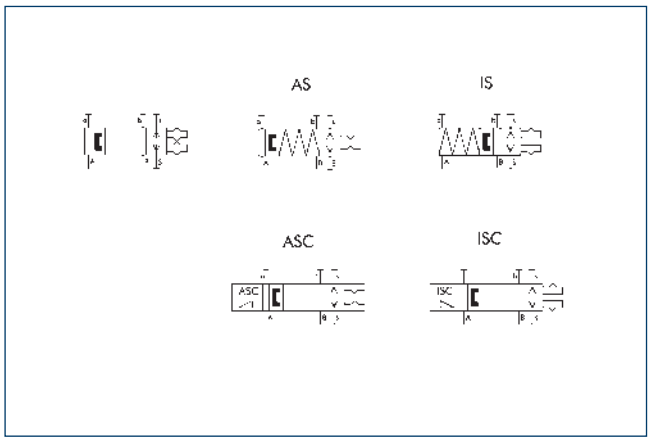
Precision version



(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(90) For version ASC/ISC

The indicated tolerances just refer to the variants of precision versions shown in the chart of technical specifications. All other variants of precision versions are available on request.

Electronic symbol according to DIN ISO 1219



A, a Main / direct connection, gripper opening

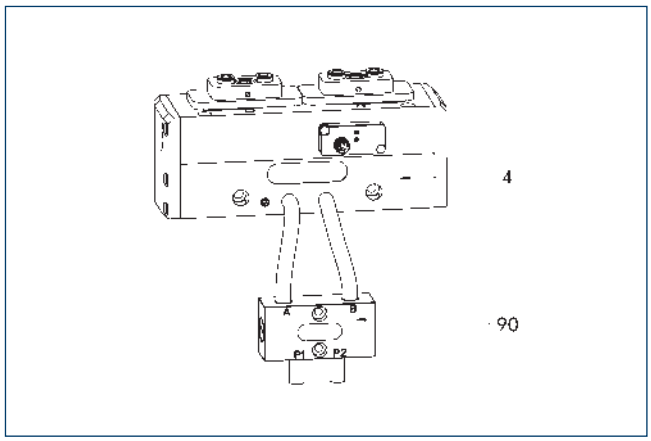
B, b Main / direct connection, gripper closing

S, s Air purge, main, direct 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" and "s" describe the optional air purge connection, which impedes the ingress of dirt into the gripper.

ⓘ 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

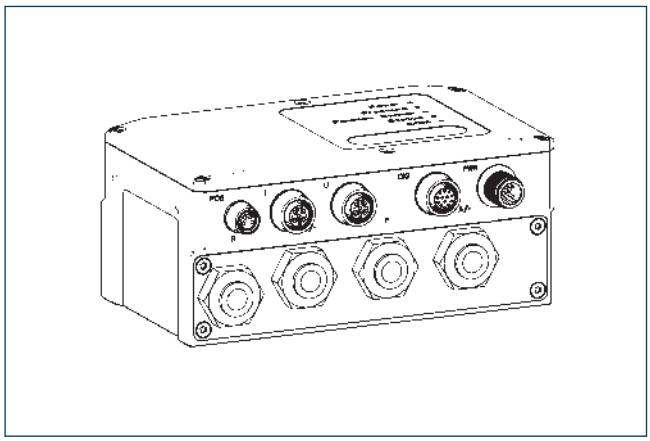
⑨⓪ SDV-P pressure maintenance valve

The SDV-P pressure maintenance valves ensure in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained. The pressure maintenance valve must not be used in combination with the ASC and ISC variants.

Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance valve		
SDV-P 04	0403130	6
SDV-P 07	0403131	8
Pressure maintenance valve with air bleed screw		
SDV-P 04-E	0300120	6
SDV-P 07-E	0300121	8

ⓘ 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.

Pneumatic positioning device PPD

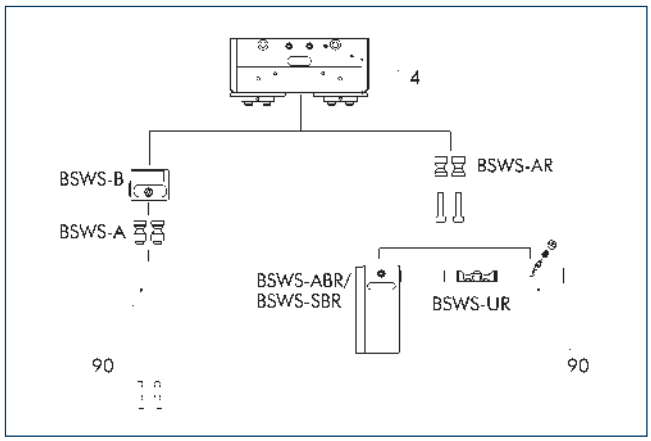


The PPD allows flexibility in all applications with pneumatic grippers through free positioning, gripping force and speed adjustment.

Description	ID	
Pneumatic positioning device		
PPD 20-IOL	1540700	
Adapter		
A GGN0804-1204-A	1540691	
IO-Link connection cable		
KA GGN1205-1212-IOL-00100-A	1540697	
Voltage supply connection cable - cable track compatible		
KA GLN12B05-LK-01000-A	1540660	
Cable extension		
KV GGN0804-IO-00150-A	1540662	
KV GGN0804-IO-00300-A	1540663	
Assembly set		
Assembly set PPD	1540705	

ⓘ In addition to the PPD, a position sensor (SCHUNK IO-Link sensor or analog sensor (4...20 mA)) is required.

BSWS jaw quick-change jaw systems



④ Grippers ⑨⓪ Customized gripper fingers

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

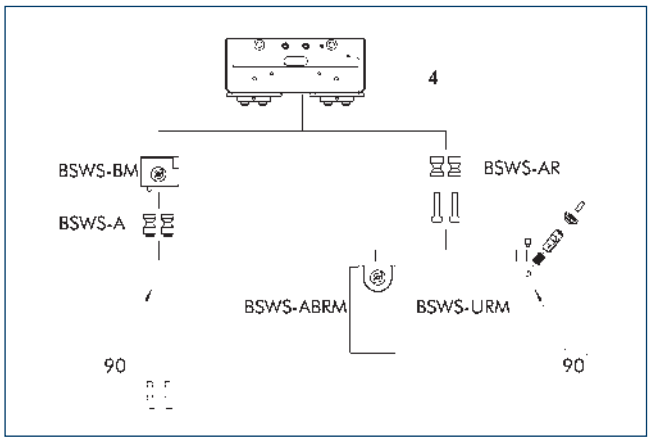
Description	ID	Scope of delivery
Jaw quick-change system adapter pin		
BSWS-A 160	0303030	2
BSWS-AR 25	1515477	2
Quick-change jaw system base		
BSWS-B 160	0303031	1
Jaw quick-change system finger blank		
BSWS-ABR-PGZN-plus 160	0300076	1
BSWS-SBR-PGZN-plus 160	0300086	1
Jaw quick-change system locking mechanism		
BSWS-UR 160	0302995	1

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

PGL-plus-P 25

Universal gripper

Jaw quick-change system BSWS-M



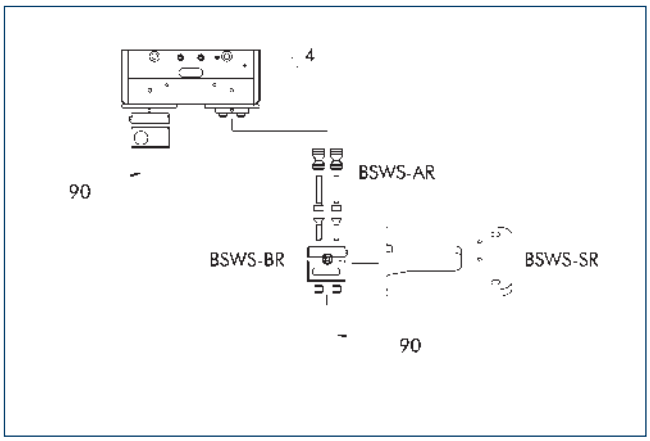
④ Grippers ⑨⓪ Customized gripper fingers

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 160	0303030	2
BSWS-AR 25	1515477	2
Quick-change jaw system base		
BSWS-BM 160	1418962	1
Jaw quick-change system finger blank		
BSWS-ABRM-PGZN-plus 160	1420855	1
Jaw quick-change system locking mechanism		
BSWS-URM 160	1420541	1

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Jaw quick-change system BSWS-R



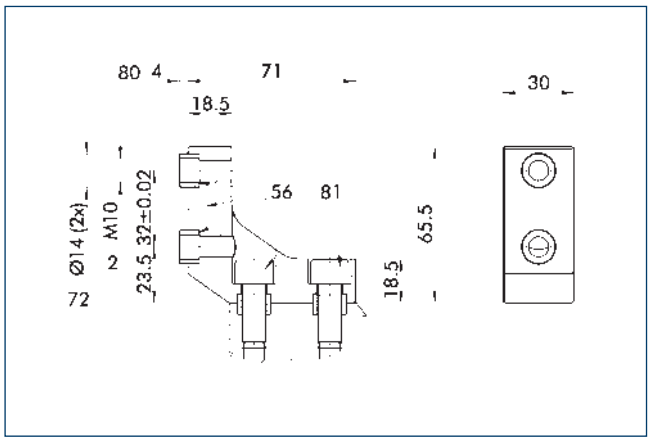
④ Grippers ⑨⓪ Customized gripper fingers

If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used. In the PGL-plus-P gripper series, the use of finger blanks with jaw quick-change system results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Description	ID	Scope of delivery
Jaw quick-change system		
BSWS-AR 25	1515477	2
Quick-change jaw system base		
BSWS-BR 160	1555940	1
Storage system		
BSWS-SR 160	1555974	1
Attachment kit for proximity switch		
AS-IN80-BSWS-SR 125/160	1561467	1
Inductive proximity switch		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 80-S	0301550	

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

ZBA-L-plus 160 intermediate jaws

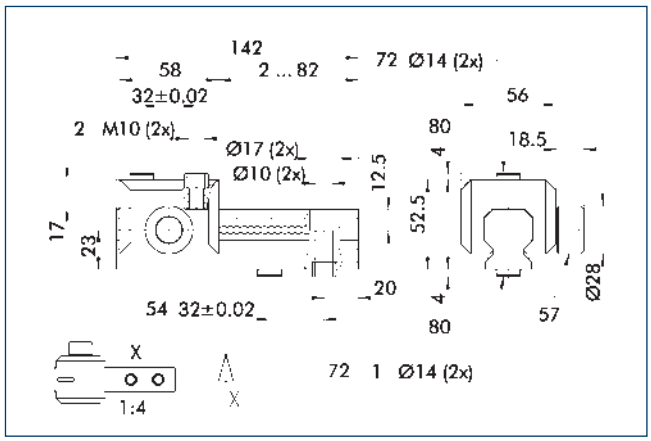


(2) Finger connection
(56) Included in the scope of delivery
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(81) Not included in the scope of delivery

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 160	0311762	Aluminum	PGN-plus 160	1

UZB 160 universal intermediate jaw



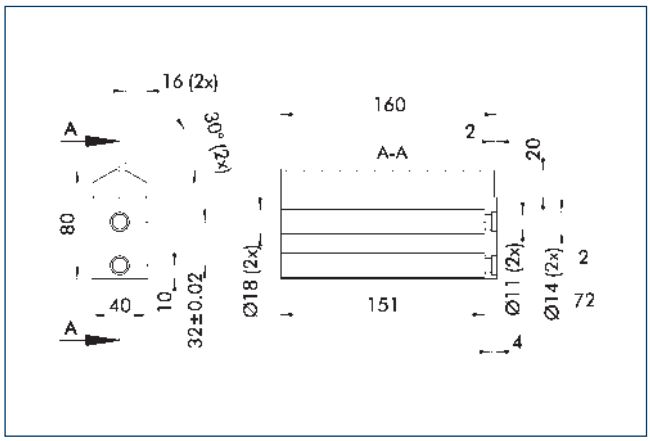
(1) Gripper connection
(2) Finger connection
(54) Optional right or left connection
(57) Locking
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part

The drawing shows the UZB universal intermediate jaw. The fully removable UZB-S slide (can also be ordered separately) allows for a quick jaw change.

Description	ID	Grid dimension
		[mm]
Universal intermediate jaw		
UZB 160	0300046	4
Finger blank		
ABR-PGZN-plus 160	0300014	
SBR-PGZN-plus 160	0300024	
Slide for universal intermediate jaw		
UZB-S 160	5518274	4

ⓘ If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked.

Finger blanks ABR/SBR-PGZN-plus 160



(2) Finger connection

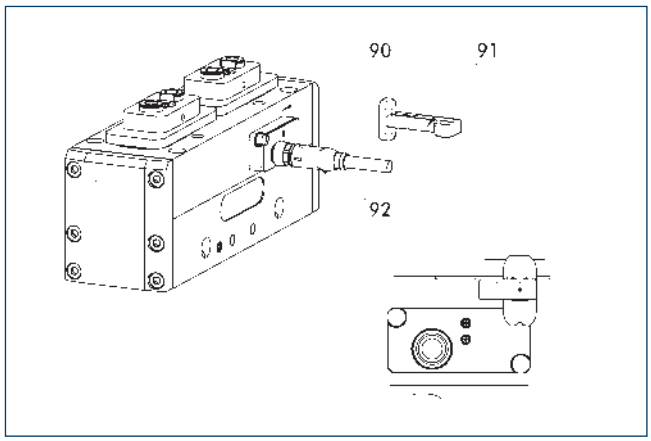
(72) Fit for centering sleeves

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 160	0300014	Aluminum (3.4365)	1
SBR-PGZN-plus 160	0300024	Steel (1.7131)	1

ⓘ When finger blanks are used, the closing stroke of individual gripper series may be limited. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Sensor Teaching Tool



(90) Gripper with integrated sensor system IOL

(91) Sensor Teaching Tool

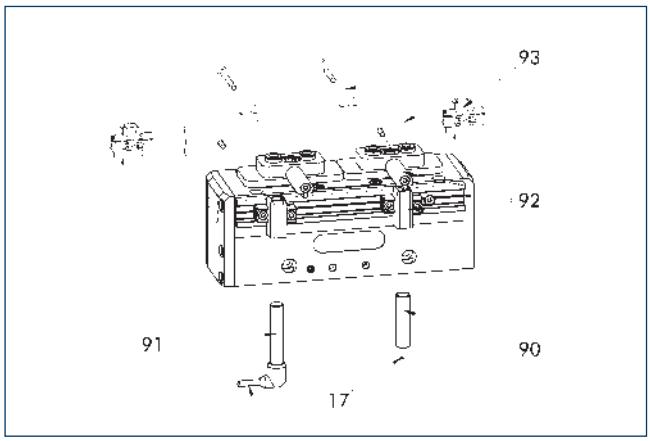
(92) Connection cables

If the gripper with integrated sensors (PGL-plus-P...-IOL) is operated in SIO mode without an IO-Link master, a separate magnetic teaching tool will be required.

Description	ID	
Sensor Teaching Tool		
MT-MMS 22-PI	0301030	

ⓘ The magnetic teaching tool and the connection cable must be ordered as optional accessories.

IN 80 inductive proximity switches



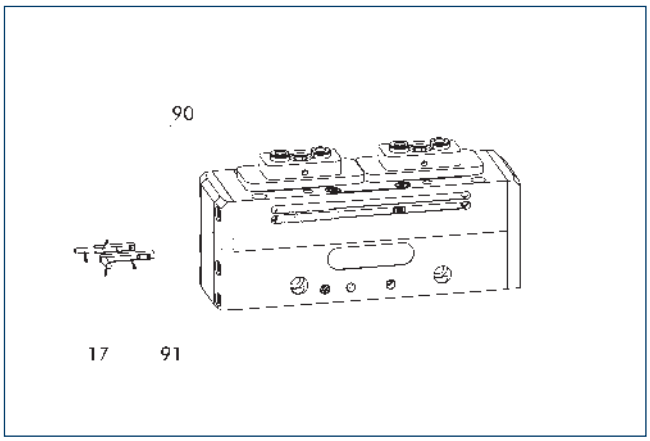
(17) Cable outlet
(90) Sensor IN ...
(91) Sensor IN..-SA
(92) Attachment kit for monitoring with two inductive proximity switches
(93) Optional rear mounting of another attachment kit for two additional proximity switches

End position monitoring can be mounted with an attachment kit. Alternatively, the sensors can be directly mounted on the IN gripper variant.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PGL-plus-P 25	1499634	
Inductive proximity switch		
IN 80-0-M12	0301588	
IN 80-0-M8	0301488	
IN 80-SL-M12	0301529	
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-B 80-S-M12	0301479	
IN-C 80-S-M8-PNP	0301475	
INK 80-0	0301551	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with lateral cable outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	●
INK 80-S-SA	0301566	

ⓘ Two sensors (closer/S) are required for each unit and extension cables are available as an option. This attachment kit needs to be ordered optionally as an accessory. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

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.

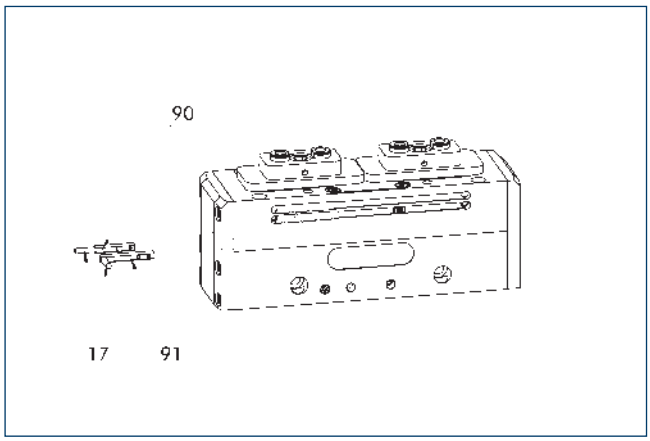
Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Clip for connector/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	

ⓘ 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.

PGL-plus-P 25

Universal gripper

Programmable magnetic switch MMS 22-PI1



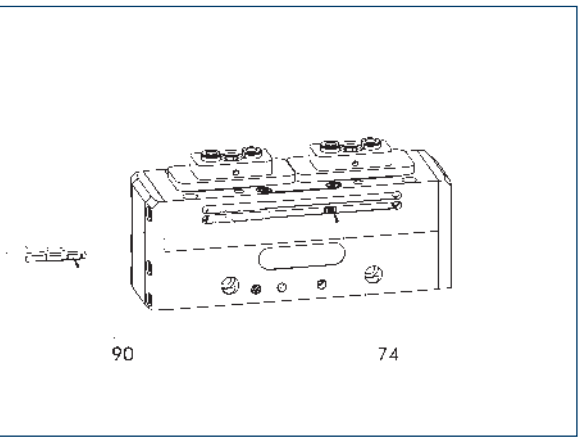
(17) Cable outlet
(91) Sensor MMS 22 ..-PI1-...-SA
(90) Sensor MMS 22 PI1-...

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, ID 0301030) 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	

ⓘ 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



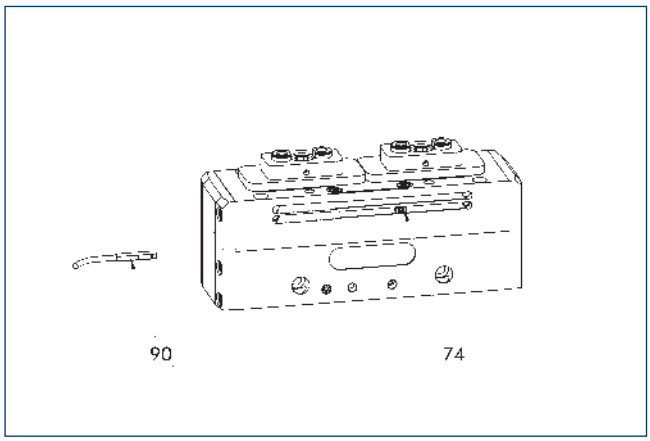
(74) Limit stop for sensor
(90) MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) 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	

ⓘ 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.

Analog position sensor MMS-A



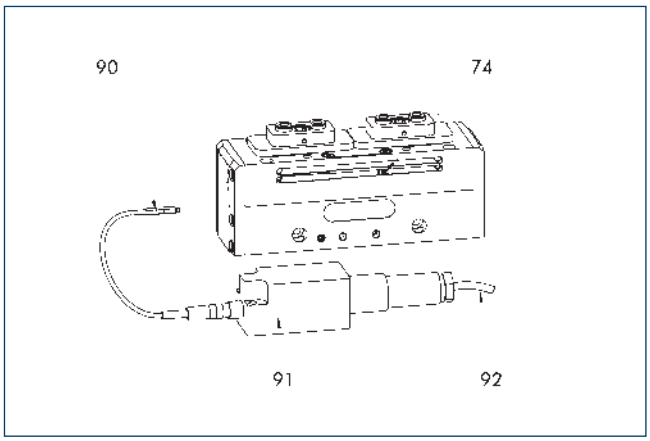
(74) Limit stop for sensor
(90) MMS 22-A-... sensor

Non-contact measuring, analog multi-position monitoring for any number of positions, easy to assemble in the C-slot. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) 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 chart provided, teaching is only possible with the ST teaching tools.

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

ⓘ 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



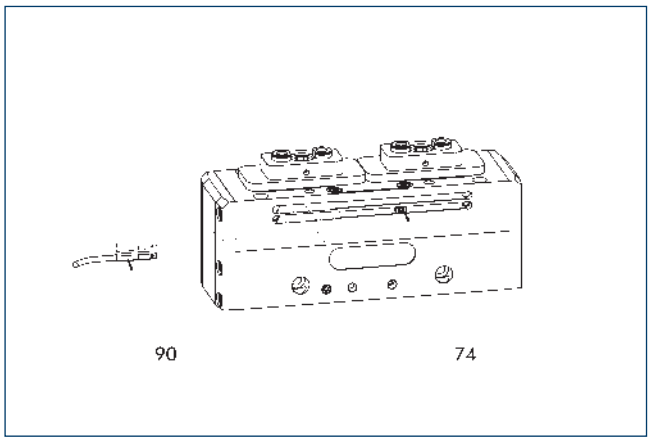
(74) Limit stop for sensor
(90) MMS 22-A-... sensor
(91) FPS-F5 evaluation electronic
(92) Connection cables

Flexible position monitoring of up to five positions. Sensor can be taught using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) or ST plug teaching tool (optional). If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	
Analog position sensor		
MMS 22-A-05V-M08	0315805	
Evaluation electronics		
FPS-F5	0301805	
Sensor Teaching Tool		
MT-MMS 22-PI	0301030	
Connection cables		
KA BG16-L 12P-1000	0301801	

ⓘ When using an FPS system, one MMS 22-A-05V and one evaluation electronics (FPS-F5) are required per each gripper, as well as an attachment kit (AS), if listed. On option, cable extensions (KV) are available – see catalog chapter "Accessories."

Programmable magnetic switch MMS-IO-Link



(74) Limit stop for sensor

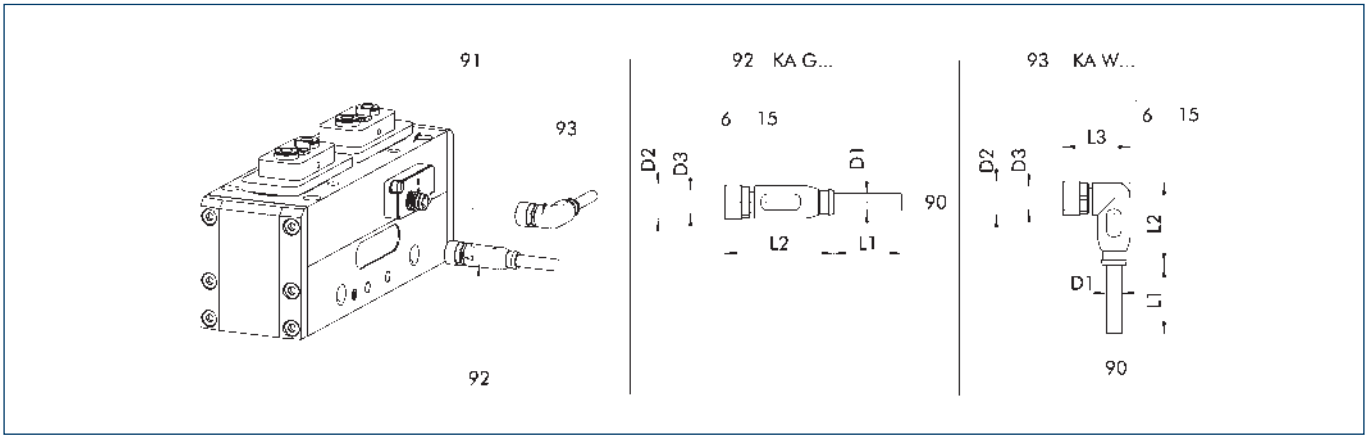
(90) Sensor MMS 22-IOL-...

Sensor for multi-position monitoring through detection of the complete gripper stroke. The sensor is mounted directly in the C-slot of the gripper. The sensor is programmed for the gripper via the IO-Link interface, Magnet teaching tool MT (included in scope of delivery; ID 0301030) or the ST plug teaching tool (not included in scope of delivery; ID 0301026). An IO-Link master is required for operation.

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

ⓘ 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.

Connection cables



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

(6) Lubricating nipple connection
(15) Sealing bolt
(90) Cable end with straight connector
(91) Gripper with integrated sensor system IOL
(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.

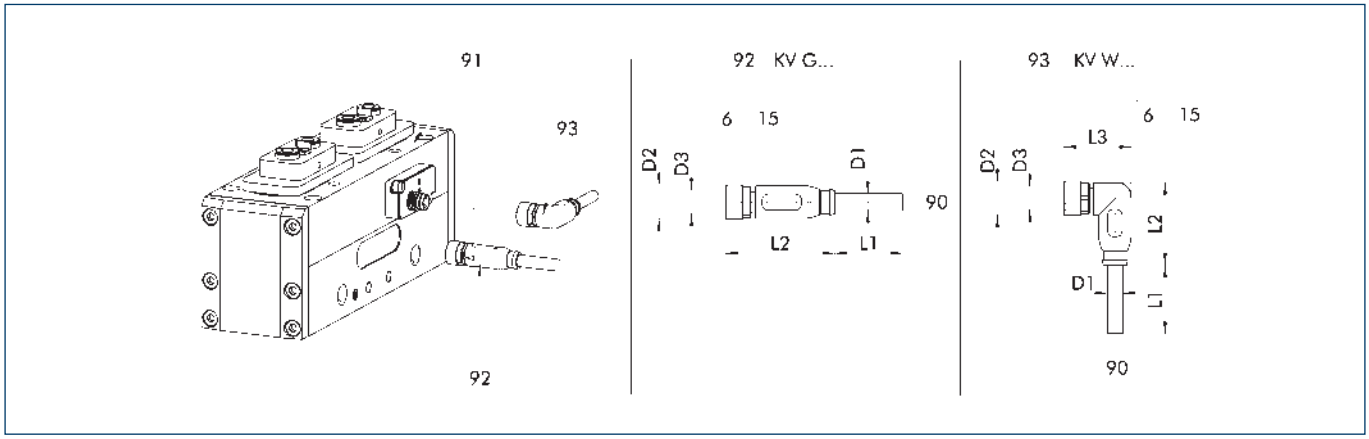
Description	ID	L1	D1	L2	D2	L3	D3	Often combined
		[m]	[mm]	[mm]	[mm]	[mm]		
Voltage supply/signals connection cable - drag chain and torsion resistant, M8 socket, straight								
KA GLN0804-I0-00200-A	1310371	2	4.8	33.7	10		M8	
KA GLN0804-I0-00500-A	1310375	5	4.8	33.7	10		M8	●
KA GLN0804-I0-01000-A	1310379	10	4.8	33.7	10		M8	
KA GLN0804-I0-02000-A	1442994	20	4.5	32	10		M8	
Voltage supply/signals connection cable - drag chain and torsion resistant, M8 socket, angled								
KA WLN0804-I0-00200-A	1310372	2	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-00500-A	1310376	5	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-01000-A	1310381	10	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-02000-A	1442996	20	4.5	25	10	20	M8	

ⓘ 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.

PGL-plus-P 25

Universal gripper

Cable extension



KV G... Cable extension with straight socket

KV W... Cable extension with angled socket

(6) Lubricating nipple connection

(15) Sealing bolt

(90) Cable end with straight connector

(91) Gripper with integrated sensor system IOL

(92) Cable with straight female connector

(93) Cable with angled female connector

The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M12 connector with a straight design on the other side. The cable extensions are suitable for use in the drag chain and in torsion applications.

Description	ID	L1	D1	L2	D2	L3	D3
		[m]	[mm]	[mm]	[mm]	[mm]	
Cable extension							
KV GGN0804-1204-I0-00500-A	1505830	5	4.5	32	10		M8
KV GGN0804-1204-I0-01000-A	1505832	10	4.5	32	10		M8
KV WGN0804-1204-I0-00500-A	1505803	5	4.5	25	10	20	M8
KV WGN0804-1204-I0-01000-A	1505806	10	4.5	25	10	20	M8

ⓘ 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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