



Superior Clamping and Gripping



Product Information

Universal gripper EZN

Robust. Flexible. Strong.

EZN universal gripper

Servo-electric 3-finger centric gripper with high gripping force and high maximum moment due to multi-tooth guidance

Field of application

Optimal standard solution for many areas of application; flexible use due to controllable gripping force, position, and speed

Advantages – Your benefits

Drive design of servomotor for flexible use

With external electronics for simple integration into existing servo-controlled concepts via Profibus-DP, or CAN bus

Pre-positioning capability to reduce cycle times through a short working stroke

Robust multi-tooth guidance for precise handling

High maximum moments possible suitable for using long gripper fingers

Fastening at one gripper side in two screw directions for universal and flexible gripper assembly



Sizes
Quantity: 2



Weight
0.98 .. 2.48 kg



Gripping force
500 .. 800 N



Stroke per jaw
6 .. 10 mm

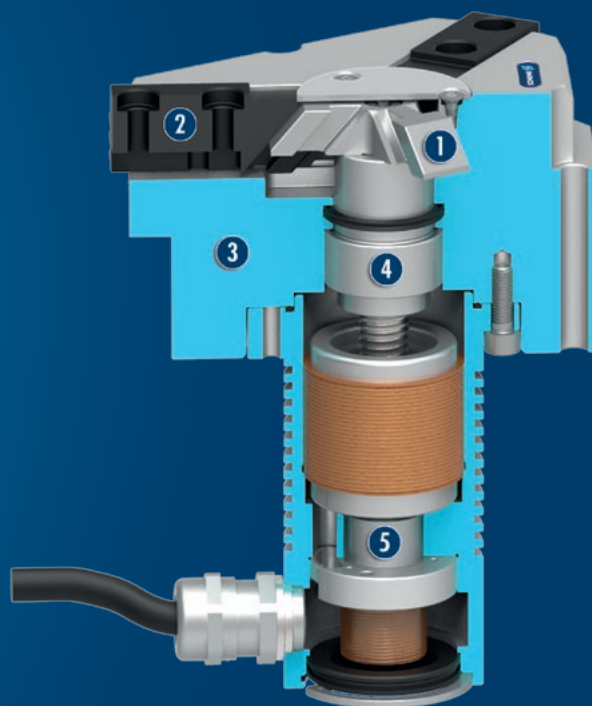


Workpiece weight
2.5 .. 4 kg

Functional description

The spindle nut which is mounted on bearings, transfers the rotary motion of the servomotor into an axial motion.

The oblique surfaces of the wedge hook generate a synchronous jaw movement.



① **Wedge-hook design**
for high force transmission and centric gripping

② **Base Jaw**
with multiple-tooth guidance for precise gripping even
with long gripper fingers

③ **Housing**
Weight-optimized due to the use of high-strength
aluminum alloy

④ **Spindle nut**
transforms the rotational movement into the axial
movement of the wedge-hook

⑤ **Drive**
DC servomotor with resolver

CAD data, operating manuals and other current product documents can be found online.

General notes about the series

Operating principle: Wedge-hook kinematics

Housing material: Aluminum alloy, coated

Base jaw material: Steel

Actuation: servo-electric, via brushless DC servomotor and spindle drive

Warranty: 24 months

Scope of delivery: Accessory pack with centering sleeves, centering pins and assembly and operating manual with declaration of incorporation. An external ECM controller is required for operation of the EZN gripper. Connection cables are also required for the EZN-S plug version. The controller and connection cable are optionally available and are not included in the scope of delivery.

Gripping force: is the arithmetic total of the gripping force applied to each gripper jaw at distance P (see illustration).

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

Repeat accuracy: is defined as the spread of the end position during 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: Minimum closing and opening times are only the movement times of the base jaws or fingers at max. speed, max. acceleration without electrical restrictions (maximum current) and observance of the maximum permissible mass per finger.

Nominal Currents: can be permanently actuated. With regard to all the currents which are ranging above the nominal current up to the maximum current, the notes of the individual product documentation has to be respected.



Application example

Connection via adapters to robots for handling different components – a complete application solution without

pneumatics.

① EZN servo-electric 3-finger centric gripper

SCHUNK offers more ...

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



Controller



Jaw quick-change system



Force-measuring jaws



Finger blanks



Protection cover

① Additional information regarding the products can be found on the following product pages or at www.schunk.com. Please contact us for further information: SCHUNK technical hotline +49-7133-103-2696

Options and special information

Control via external ECM controller: The electrical control of the gripper takes place via the separately available ECM controller. Connection of the controller to the higher level servo controlled concept can take place via Profibus or CAN bus. Both communication interfaces ensure simple integration into the higher level control system and enable the design of industrial bus topologies.

Plug version EZN-S: Plug version EZN-S is available for the ECM controller in addition to the standard variant with 5 m attached connection cable. The gripper has a 30 cm cable and stepped Y-plug in this version. Drag-chain-compatible or robot-compatible power and sensor cables have to be ordered separately.

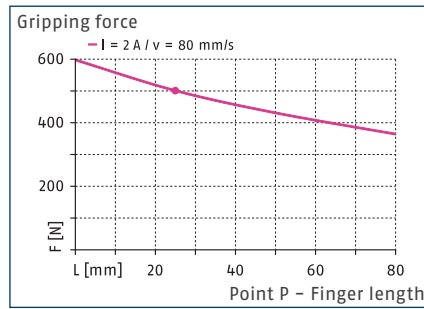
Dust-tight version SD: absolutely dust-tight, increased degree of protection against the penetration of materials.

EZN 64

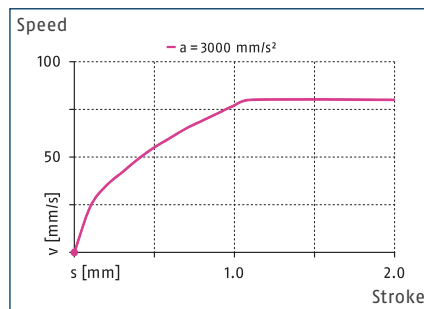
Universal gripper



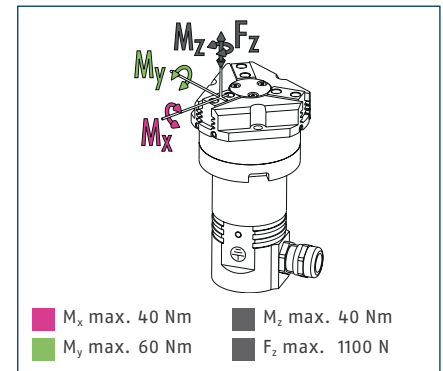
Gripping force



Speed



Finger load



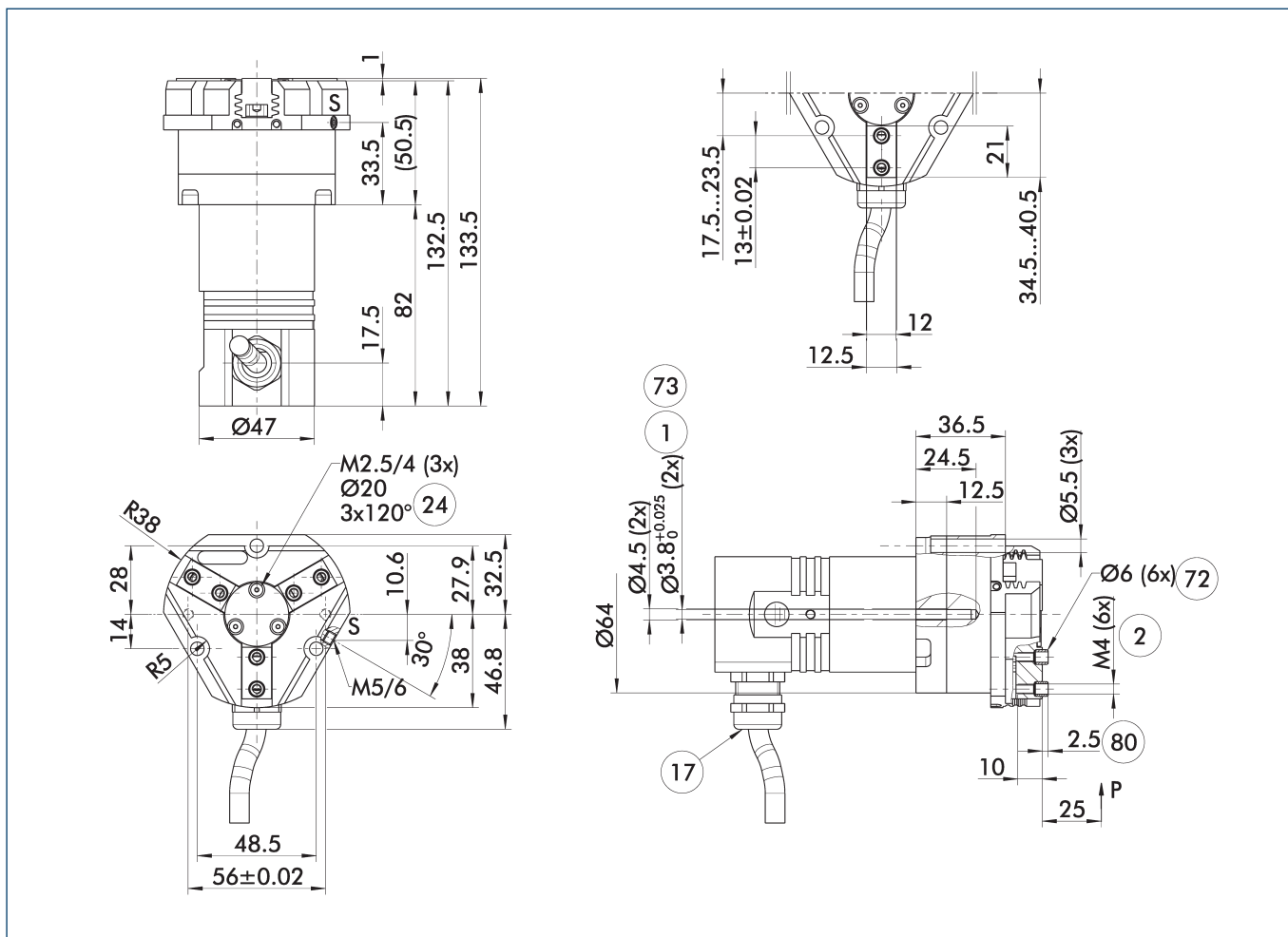
① The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself.

Technical data

Description		EZN 64	EZN 64-S
ID		0306110	0306113
General operating data			
Stroke per jaw	[mm]	6	6
min. / max. gripping force	[N]	140/500	140/500
recommended workpiece weight	[kg]	2.5	2.5
max. admissible finger length	[mm]	80	80
max. admissible weight per finger	[kg]	0.35	0.35
Repeat accuracy	[mm]	± 0.01	± 0.01
min. / max. air purge pressure	[bar]	0.5/1	0.5/1
Closing/opening time	[s]	0.25/0.25	0.25/0.25
max. speed	[mm/s]	80	80
max. acceleration	[mm/s ²]	3000	3000
Weight	[kg]	0.98	0.98
min./max. ambient temperature	[°C]	5/55	5/55
Protection class IP		41	41
Electrical operating data			
Nominal voltage	[V]	24	24
Nominal current	[A]	2	2
max. current	[A]	4	4
Controller electronics		external	external
Controller type		ECM-EZN064	ECM-EZN064
Communication interface		see ECM controller	see ECM controller
Options and their characteristics			
Dust-tight version		37306110	37306113
Protection class IP		64	64
Weight	[kg]	1.08	1.08

① Plug version EZN-S is available for the ECM controller in addition to the standard variant with 5 m attached connection cable. The gripper has a 30 cm cable and stepped Y-plug in this version. Drag-chain-compatible or robot-compatible power and sensor cables have to be ordered separately.

Main view



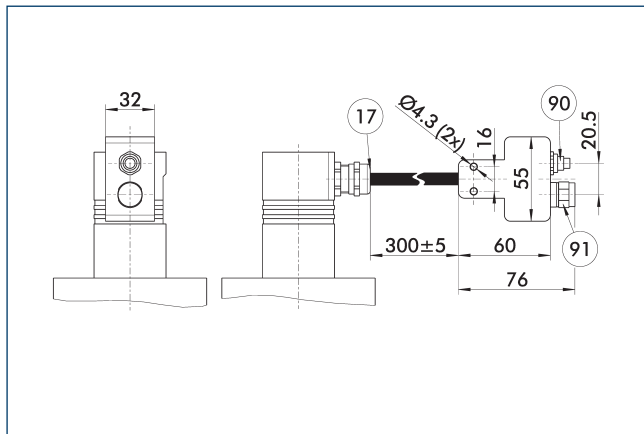
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

- ① Gripper connection
- ② Finger connection
- ⑬ Cable outlet
- ⑭ Bolt circle
- ⑰ Fit for centering sleeves
- ⑰③ Fit for centering pins
- ⑰⑧ Depth of the centering sleeve hole in the counter part
- S Air purge connection

EZN 64

Universal gripper

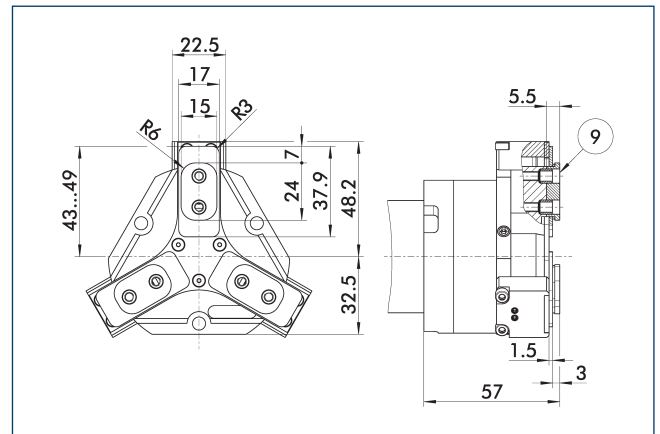
Plug version



- ①⑦ Cable outlet
- ①⑨ Motor plug (M17) for power cable
- ①⑩ Sensor plug (M12) for sensor cable

The drawing shows the plug version. It comprises a Y-plug and approximately 30 cm of cable between the module and plug.

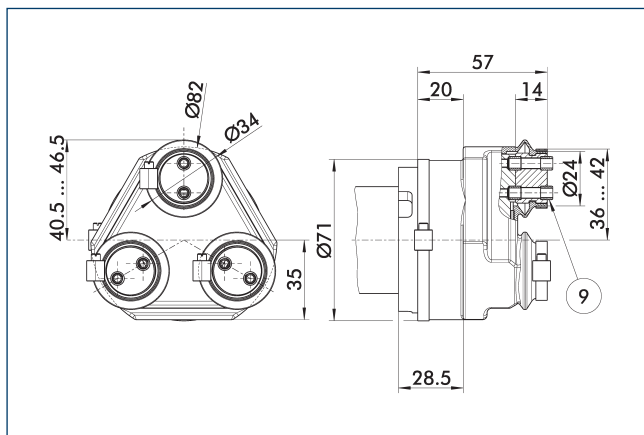
Dust-tight version



- ①⑨ For mounting screw connection diagram, see basic version

The dust cover option increases the protection against external particles. The assembly diagram shifts by the height of the intermediate jaw. The finger length is still measured from the upper edge of the gripper housing.

Protective cover HUE EZN-S 64

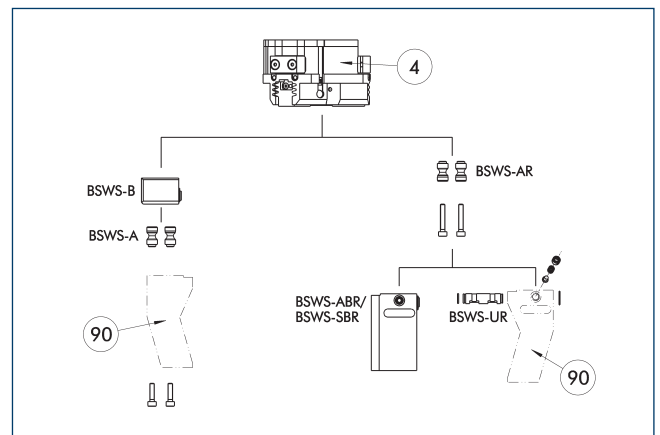


- ①⑨ For mounting screw connection diagram, see basic version

The HUE protective cover fully protects the gripper against external influences. The cover is rated up to IP65 if an additional sealing of the cover bottom is provided as part of the application. The connection diagram shifts by the height of the intermediate jaw.

Description	ID	Protection class IP
Protection cover		
HUE EZN 64	0307043	65

BSWS jaw quick-change jaw systems



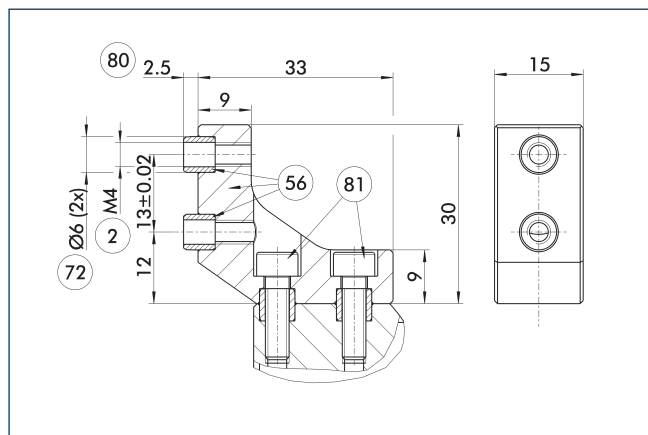
- ①④ Grippers
- ①⑩ Customized gripper fingers

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

Description	ID	
Quick-change jaw system adapter		
BSWS-A 64	0303022	
BSWS-AR 64	0300092	
Quick-change jaw system base		
BSWS-B 64	0303023	
Finger blanks with quick-change jaw system		
BSWS-ABR-PGZN-plus 64	0300072	
BSWS-SBR-PGZN-plus 64	0300082	
Quick-change Jaw System reversed		
BSWS-UR 64	0302991	

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

ZBA-L-plus 64 intermediate jaws

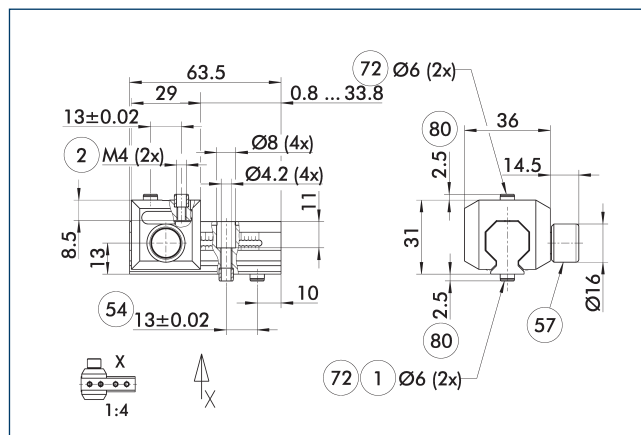


- ② Finger connection
- ⑤⑥ Included in the scope of delivery
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part
- ⑧① Not included in the scope of delivery

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 jaws				
ZBA-L-plus 64	0311722	Aluminum	PGN-plus 64	1

UZB 64 universal intermediate jaw

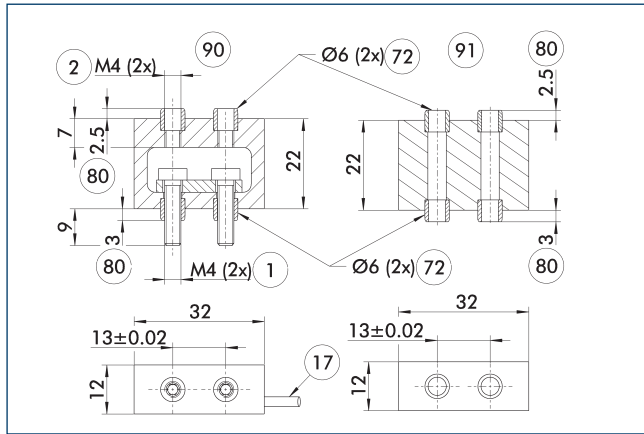


- ① Gripper connection
- ② Finger connection
- ⑤④ Optional right or left connection
- ⑤⑦ Locking
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part

The drawing shows the UZB universal intermediate jaw.

Description	ID	Grid dimension
Universal intermediate jaw		
UZB 64	0300042	1.5
Finger blanks		
ABR-PGZN-plus 64	0300010	
SBR-PGZN-plus 64	0300020	

Force-measuring jaws FMS-ZBA/ ZBP 64



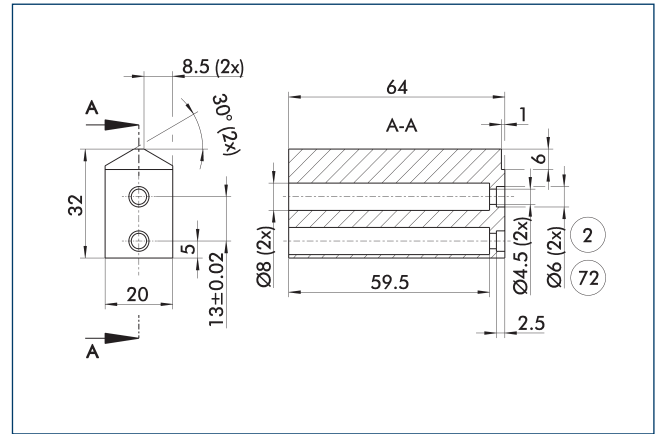
- ① Gripper connection
- ② Finger connection
- ①⑦ Cable outlet
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part
- ⑨① Active intermediate jaws
- ⑩① Passive intermediate jaws

Force-measuring jaws measure gripping forces, but can also determine workpiece weights or dimensional deviations. There are active and passive intermediate jaws (FMS-ZBA or FMS-ZBP). At least one active force-measuring jaw is required per gripper, the rest can be passive. For each active jaw, a FMS-A1 evaluation unit and a FMS-A connection cable are required.

Description	ID	Often combined
Active intermediate jaws		
FMS-ZBA 64	0301832	
Passive intermediate jaws		
FMS-ZBP 64	0301833	
Connection cables		
FMS-AK0200	0301820	●
FMS-AK0500	0301821	
FMS-AK1000	0301822	
FMS-AK2000	0301823	
Evaluation electronics		
FMS-A1	0301810	

① Due to the screw length, the FMS system can not be used in combination with the option dust-proof (SD) of the gripper. Please note that the admissible force range of the force measuring jaw (see catalog chapter FMS) should not be exceeded for the chosen gripper version.

Finger blanks ABR- / SBR-PGZN-plus 64

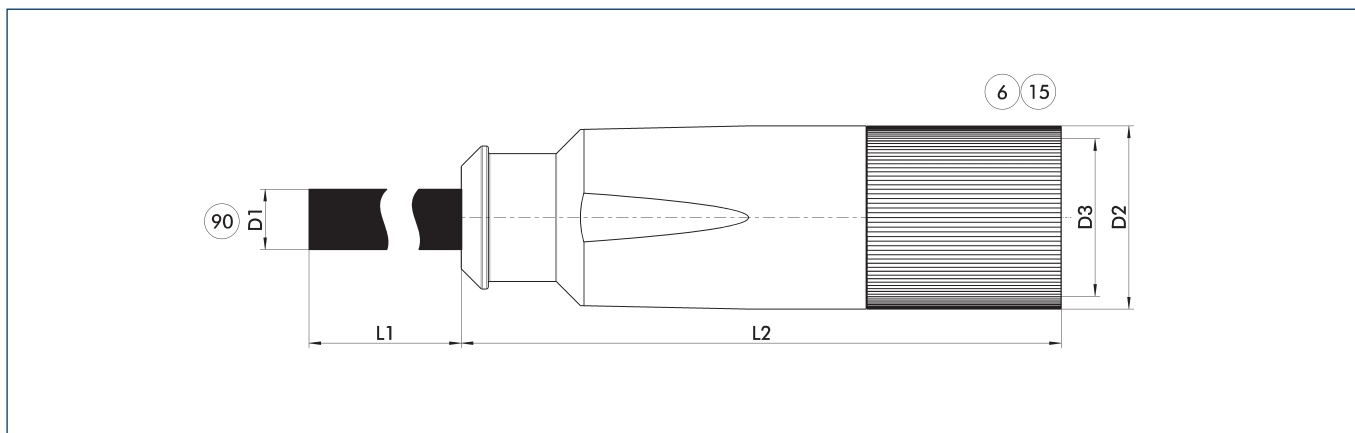


- ② Finger connection
- ⑦② Fit for centering sleeves

Finger blanks for customized remachining.

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-PGZN-plus 64	0300010	Aluminum	1
SBR-PGZN-plus 64	0300020	16MnCr5	1

Power cable



Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.

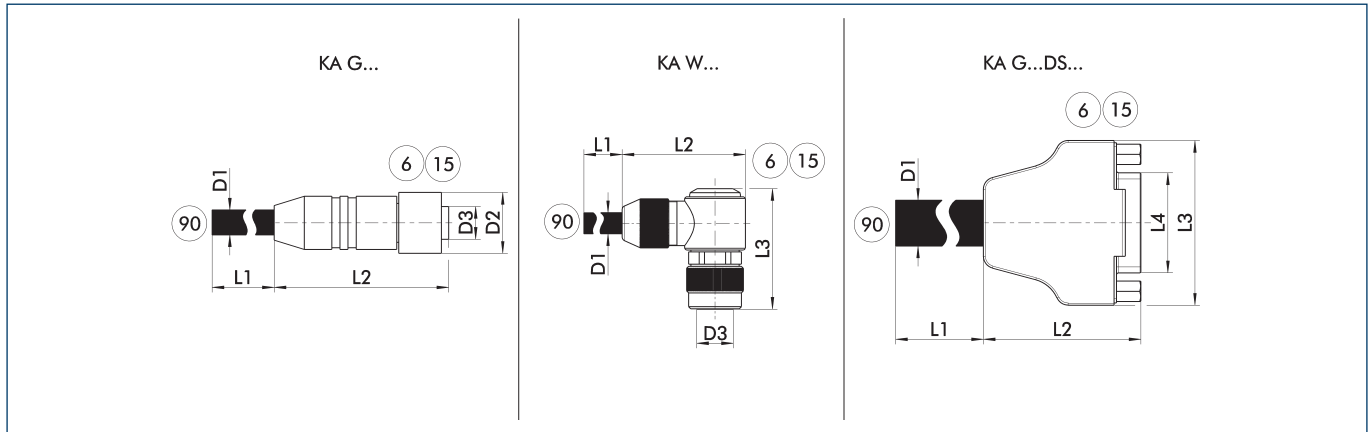
- ⑥ Connection module side
- ⑮ Socket

- ⑨⑩ Prefabricated to connect to the higher-level components

Description	ID	L1 [m]	D1 [mm]	L2 [mm]	D2 [mm]	D3
Power cable for SCHUNK ECM - cable track compatible						
KA GLN1707-LK-00500-7	0306480	5	8.4	54	21	M17
KA GLN1707-LK-01000-7	0306481	10	8.4	54	21	M17
KA GLN1707-LK-01500-7	0306482	15	8.4	54	21	M17
KA GLN1707-LK-02000-7	0306483	20	8.4	54	21	M17
Power cable für SCHUNK ECM - torsion compatible						
KAR GLN1707-LK-00500-7	0306485	5	8.2	54	21	M17
KAR GLN1707-LK-01000-7	0306486	10	8.2	54	21	M17
KAR GLN1707-LK-01500-7	0306487	15	8.2	54	21	M17
KAR GLN1707-LK-02000-7	0306488	20	8.2	54	21	M17

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

Encoder cable



KA G... encoder cable with straight plug
 KA W... encoder cable with angled plug
 KA G...DS... Sub D encoder cable

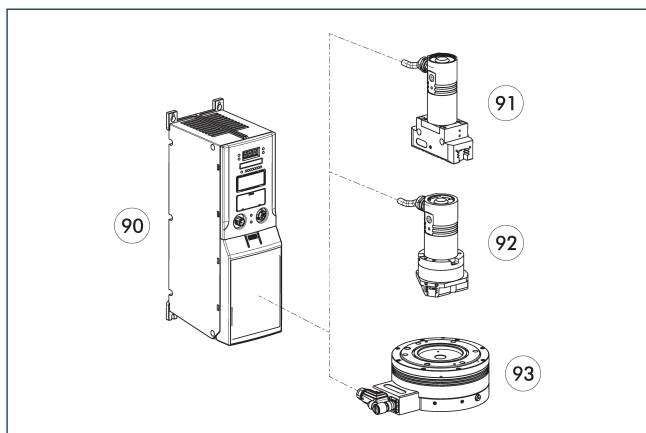
⑥ Connection module side
 ⑮ Socket
 ⑨⑩ Prefabricated for connection to the drive controller

Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.

Description	ID	L1	D1	L2	D2	D3
		[m]	[mm]	[mm]	[mm]	
Sensor cable for SCHUNK ECM - cable track compatible						
KA GLN1208-GK-00500-7	0306470	5	9.7	57	20	M12
KA GLN1208-GK-01000-7	0306471	10	9.7	57	20	M12
KA GLN1208-GK-01500-7	0306472	15	9.7	57	20	M12
KA GLN1208-GK-02000-7	0306473	20	9.7	57	20	M12
Sensor cable for SCHUNK ECM - torsion compatible						
KAR GLN1208-GK-00500-7	0306475	5	8.6	57	20	M12
KAR GLN1208-GK-01000-7	0306476	10	8.6	57	20	M12
KAR GLN1208-GK-01500-7	0306477	15	8.6	57	20	M12
KAR GLN1208-GK-02000-7	0306478	20	8.6	57	20	M12

ⓘ 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.

SCHUNK ECM Drive controller



- 90 Controller 92 EZN 3-finger centric gripper
 91 EGN 2-finger parallel gripper 93 ERS universal rotary module

The drive controller can be used for the rotary unit ERS 48V as well as for the grippers EGN and EZN. It is available with the communication interfaces Profinet, Profibus and CAN-Bus.

Description	Power supply (logic) [V]	Power supply (load) [V]
Controller		
ECM – EZN 64	24	24

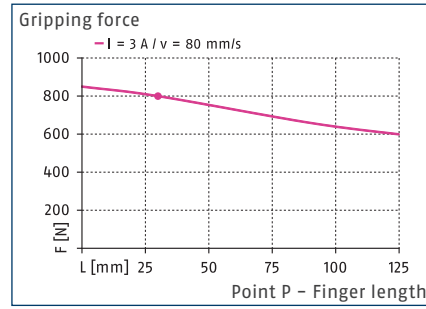
- ⓘ We will be happy to help you select the right controller. Please contact us for assistance.

EZN 100

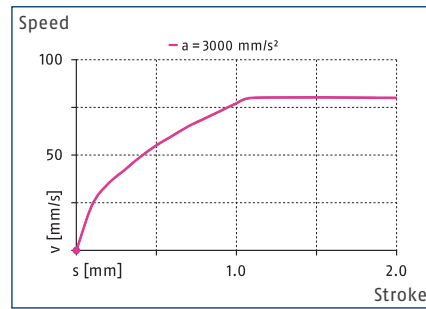
Universal gripper



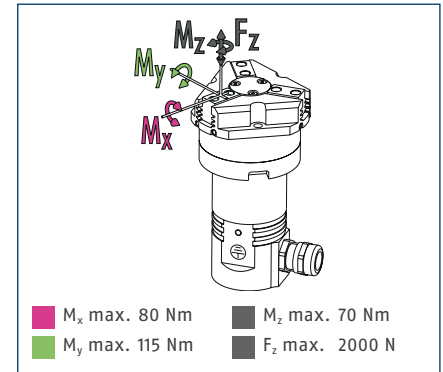
Gripping force



Speed



Finger load



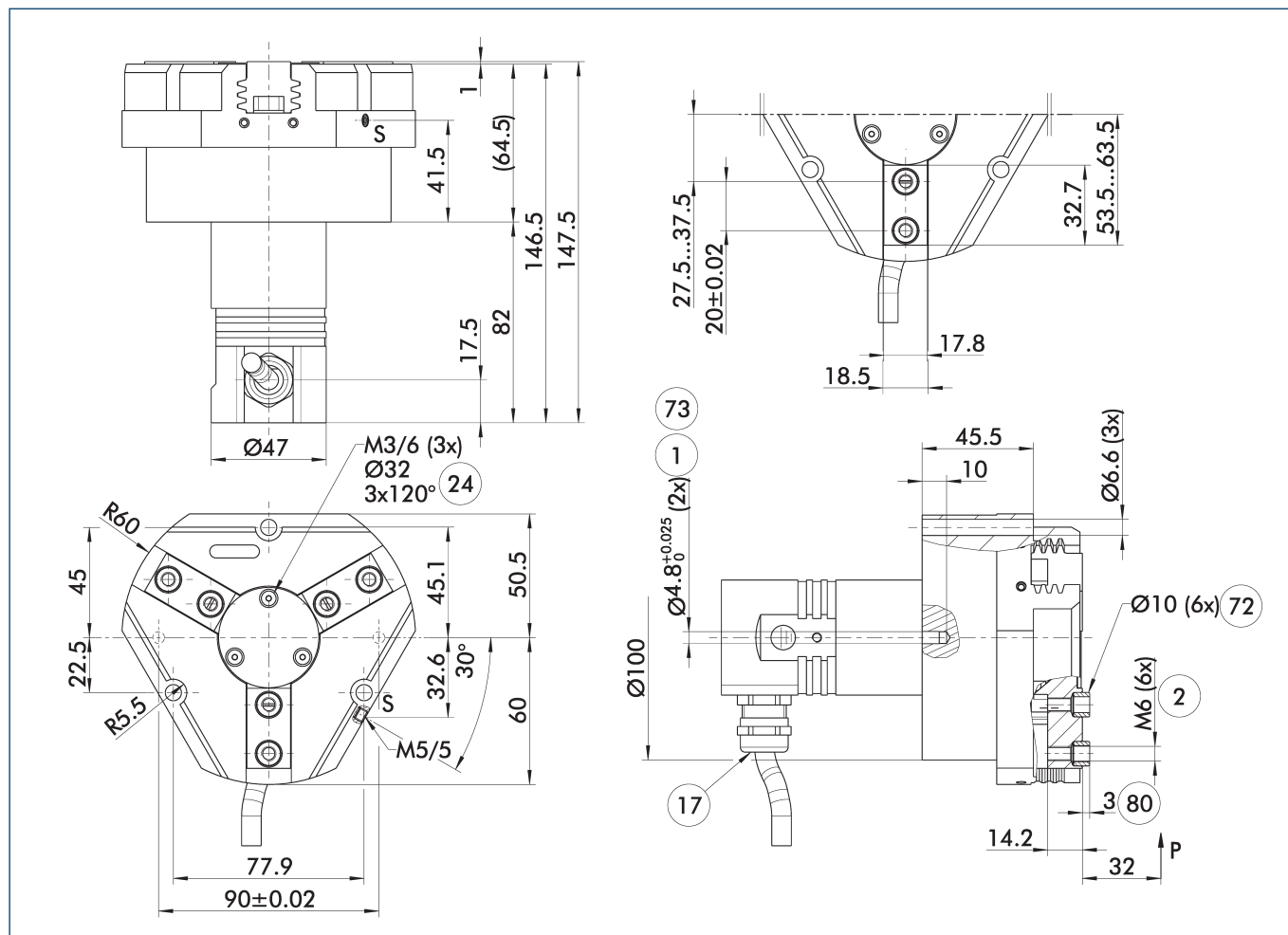
① The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself.

Technical data

Description		EZN 100	EZN 100-S
ID		0306112	0306114
General operating data			
Stroke per jaw	[mm]	10	10
min. / max. gripping force	[N]	300/800	300/800
recommended workpiece weight	[kg]	4	4
max. admissible finger length	[mm]	125	125
max. admissible weight per finger	[kg]	1.1	1.1
Repeat accuracy	[mm]	± 0.01	± 0.01
min. / max. air purge pressure	[bar]	0.5/1	0.5/1
Closing/opening time	[s]	0.4/0.4	0.4/0.4
max. speed	[mm/s]	80	80
max. acceleration	[mm/s ²]	3000	3000
Weight	[kg]	2.3	2.3
min./max. ambient temperature	[°C]	5/55	5/55
Protection class IP		41	41
Electrical operating data			
Nominal voltage	[V]	24	24
Nominal current	[A]	3	3
max. current	[A]	4	4
Controller electronics		external	external
Controller type		ECM-EZN100	ECM-EZN100
Communication interface		see ECM controller	see ECM controller
Options and their characteristics			
Dust-tight version		37306112	37306114
Protection class IP		64	64
Weight	[kg]	2.48	2.48

① Plug version EZN-S is available for the ECM controller in addition to the standard variant with 5 m attached connection cable. The gripper has a 30 cm cable and stepped Y-plug in this version. Drag-chain-compatible or robot-compatible power and sensor cables have to be ordered separately.

Main view



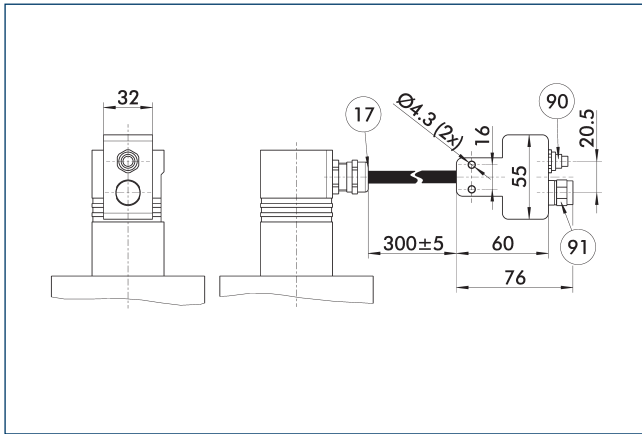
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

- ① Gripper connection
- ② Finger connection
- ⑬ Cable outlet
- ⑭ Bolt circle
- ⑰ Fit for centering sleeves
- ⑰③ Fit for centering pins
- ⑰⑧ Depth of the centering sleeve hole in the counter part
- S Air purge connection

EZN 100

Universal gripper

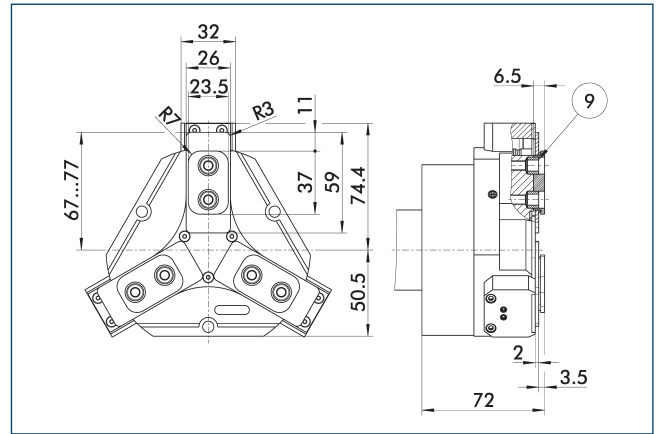
Plug version



- ①⑦ Cable outlet
- ①⑨ Motor plug (M17) for power cable
- ①⑩ Sensor plug (M12) for sensor cable

The drawing shows the plug version. It comprises a Y-plug and approximately 30 cm of cable between the module and plug.

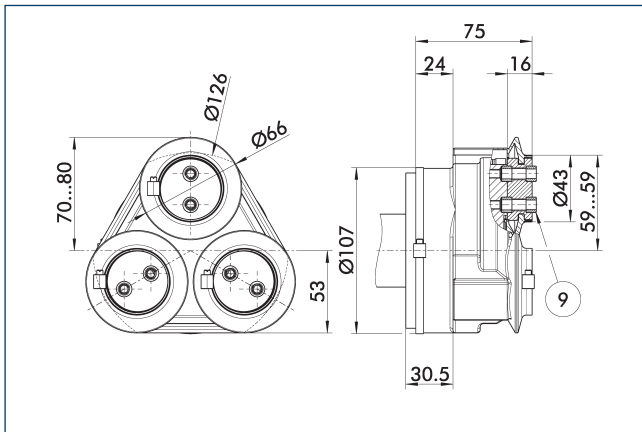
Dust-tight version



- ①⑨ For mounting screw connection diagram, see basic version

The dust cover option increases the protection against external particles. The assembly diagram shifts by the height of the intermediate jaw. The finger length is still measured from the upper edge of the gripper housing.

Protective cover HUE EZN-S 100

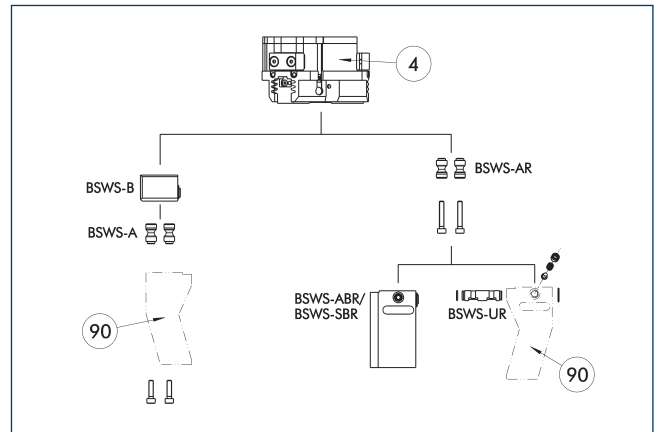


- ①⑨ For mounting screw connection diagram, see basic version

The HUE protective cover fully protects the gripper against external influences. The cover is rated up to IP65 if an additional sealing of the cover bottom is provided as part of the application. The connection diagram shifts by the height of the intermediate jaw.

Description	ID	Protection class IP
Protection cover		
HUE EZN 100	0307044	65

BSWS jaw quick-change jaw systems



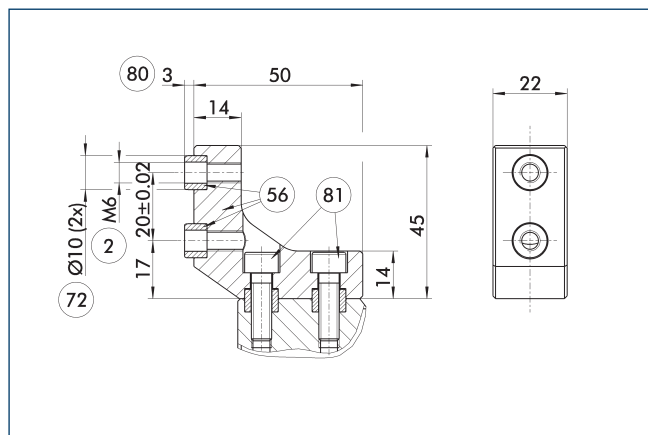
- ①④ Grippers
- ①⑩ Customized gripper fingers

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

Description	ID	
Quick-change jaw system adapter		
BSWS-A 100	0303026	
BSWS-AR 100	0300094	
Quick-change jaw system base		
BSWS-B 100	0303027	
Finger blanks with quick-change jaw system		
BSWS-ABR-PGZN-plus 100	0300074	
BSWS-SBR-PGZN-plus 100	0300084	
Quick-change Jaw System reversed		
BSWS-UR 100	0302993	

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

ZBA-L-plus 100 intermediate jaws

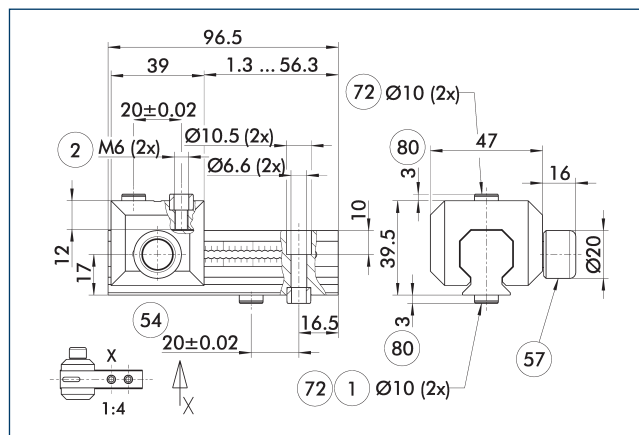


- ② Finger connection
- ⑤⑥ Included in the scope of delivery
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part
- ⑧① Not included in the scope of delivery

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 jaws				
ZBA-L-plus 100	0311742	Aluminum	PGN-plus 100	1

UZB 100 universal intermediate jaw

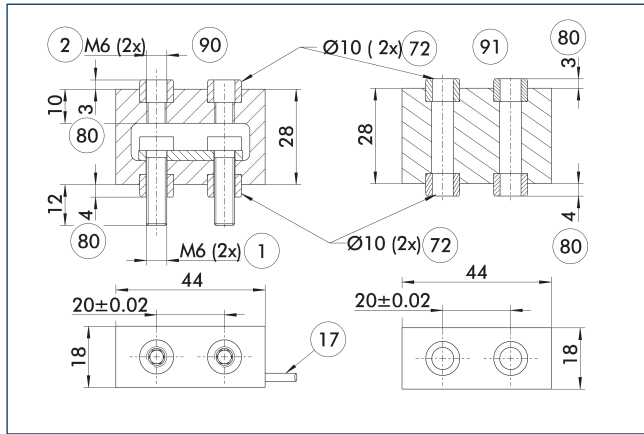


- ① Gripper connection
- ② Finger connection
- ⑤④ Optional right or left connection
- ⑤⑦ Locking
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part

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
UZB-S 100	5518272	2.5
Finger blanks		
ABR-PGZN-plus 100	0300012	
SBR-PGZN-plus 100	0300022	

Force-measuring jaws FMS-ZBA/ ZBP 100



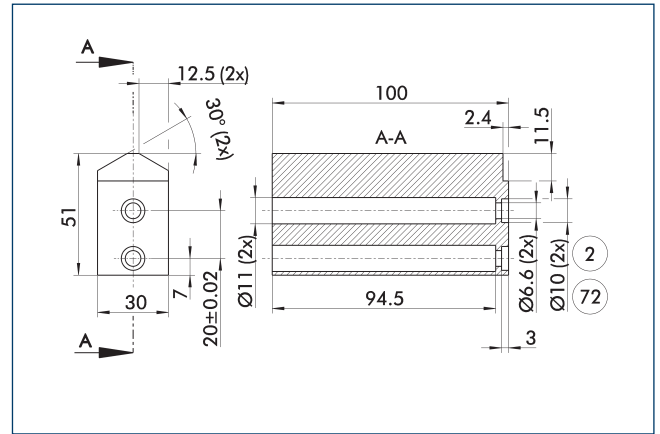
- ① Gripper connection
- ② Finger connection
- ①⑦ Cable outlet
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part
- ⑨① Active intermediate jaws
- ⑨② Passive intermediate jaws

Force-measuring jaws measure gripping forces, but can also determine workpiece weights or dimensional deviations. There are active and passive intermediate jaws (FMS-ZBA or FMS-ZBP). At least one active force-measuring jaw is required per gripper, the rest can be passive. For each active jaw, a FMS-A1 evaluation unit and a FMS-A connection cable are required.

Description	ID	Often combined
Active intermediate jaws		
FMS-ZBA 100	0301836	
Passive intermediate jaws		
FMS-ZBP 100	0301837	
Connection cables		
FMS-AK0200	0301820	●
FMS-AK0500	0301821	
FMS-AK1000	0301822	
FMS-AK2000	0301823	
Evaluation electronics		
FMS-A1	0301810	

- ① Due to the screw length, the FMS system can not be used in combination with the option dust-proof (SD) of the gripper. Please note that the admissible force range of the force measuring jaw (see catalog chapter FMS) should not be exceeded for the chosen gripper version.

Finger blanks ABR- / SBR-PGZN-plus 100

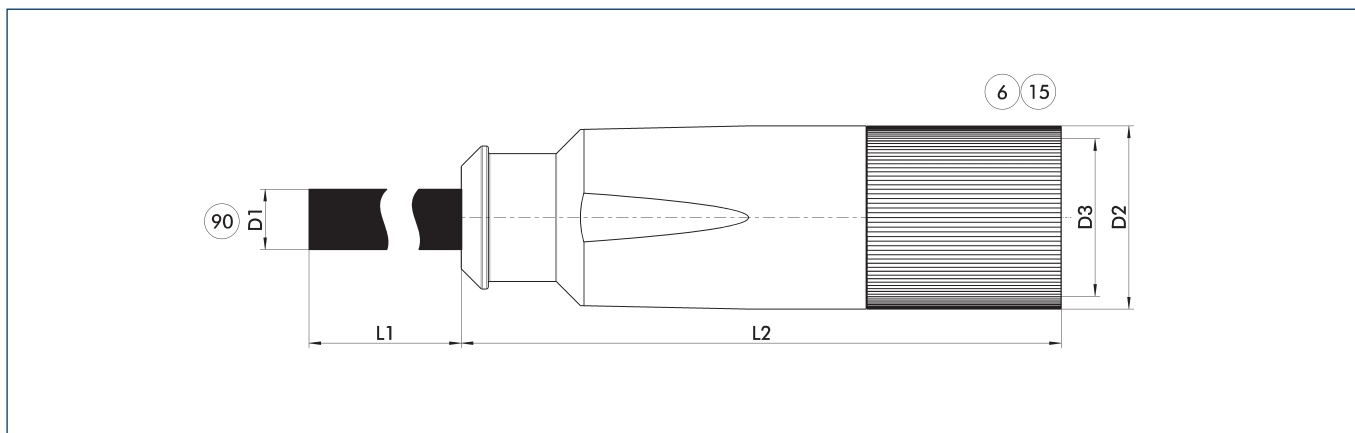


- ② Finger connection
- ⑦② Fit for centering sleeves

Finger blanks for customized remachining.

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-PGZN-plus 100	0300012	Aluminum	1
SBR-PGZN-plus 100	0300022	16MnCr5	1

Power cable



Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.

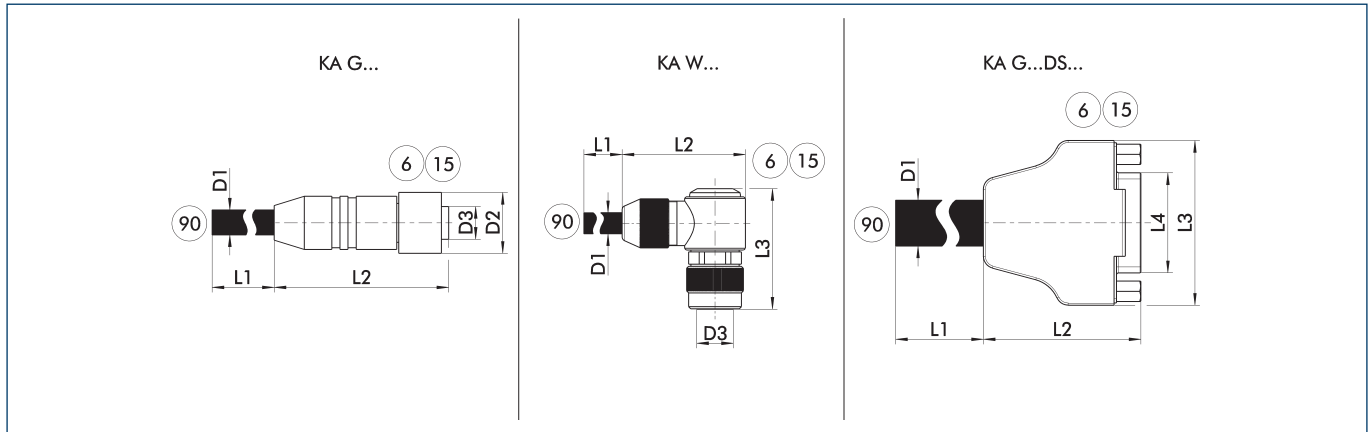
- ⑥ Connection module side
- ⑮ Socket

- ⑨⑩ Prefabricated to connect to the higher-level components

Description	ID	L1 [m]	D1 [mm]	L2 [mm]	D2 [mm]	D3
Power cable for SCHUNK ECM - cable track compatible						
KA GLN1707-LK-00500-7	0306480	5	8.4	54	21	M17
KA GLN1707-LK-01000-7	0306481	10	8.4	54	21	M17
KA GLN1707-LK-01500-7	0306482	15	8.4	54	21	M17
KA GLN1707-LK-02000-7	0306483	20	8.4	54	21	M17
Power cable für SCHUNK ECM - torsion compatible						
KAR GLN1707-LK-00500-7	0306485	5	8.2	54	21	M17
KAR GLN1707-LK-01000-7	0306486	10	8.2	54	21	M17
KAR GLN1707-LK-01500-7	0306487	15	8.2	54	21	M17
KAR GLN1707-LK-02000-7	0306488	20	8.2	54	21	M17

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

Encoder cable



KA G... encoder cable with straight plug
 KA W... encoder cable with angled plug
 KA G...DS... Sub D encoder cable

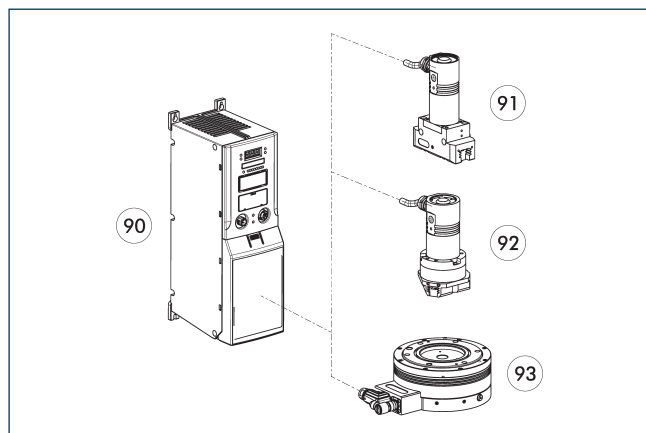
⑥ Connection module side
 ⑮ Socket
 ⑨⑩ Prefabricated for connection to the drive controller

Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.

Description	ID	L1	D1	L2	D2	D3
		[m]	[mm]	[mm]	[mm]	
Sensor cable for SCHUNK ECM - cable track compatible						
KA GLN1208-GK-00500-7	0306470	5	9.7	57	20	M12
KA GLN1208-GK-01000-7	0306471	10	9.7	57	20	M12
KA GLN1208-GK-01500-7	0306472	15	9.7	57	20	M12
KA GLN1208-GK-02000-7	0306473	20	9.7	57	20	M12
Sensor cable for SCHUNK ECM - torsion compatible						
KAR GLN1208-GK-00500-7	0306475	5	8.6	57	20	M12
KAR GLN1208-GK-01000-7	0306476	10	8.6	57	20	M12
KAR GLN1208-GK-01500-7	0306477	15	8.6	57	20	M12
KAR GLN1208-GK-02000-7	0306478	20	8.6	57	20	M12

ⓘ 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.

SCHUNK ECM Drive controller



- 90 Controller 92 EZN 3-finger centric gripper
 91 EGN 2-finger parallel gripper 93 ERS universal rotary module




The drive controller can be used for the rotary unit ERS 48V as well as for the grippers EGN and EZN. It is available with the communication interfaces Profinet, Profibus and CAN-Bus.

Description	Power supply (logic) [V]	Power supply (load) [V]
Controller		
ECM – EZN 100	24	24

- ⓘ We will be happy to help you select the right controller. Please contact us for assistance.

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J. Lehmann

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