



Superior Clamping and Gripping



Product Information

Universal gripper EGI 40

Intelligent. Sensitive. Reliable.

Gripper for small components EGI

Servo-electric 2-finger parallel gripper with sensitive gripping force control and long stroke

Field of application

Versatile, highly flexible gripper for great part variety and sensitive components in clean environments

Advantages – Your benefits

Gripping force control for the delicate gripping of sensitive workpieces

Long and freely programmable stroke for flexible workpiece handling

Almost complete gripping force maintenance with minimal brake retardation for a high process reliability

Browser-based integrated web server For easy and intuitive commissioning, parameterization, and functional test of the gripper (applies to PROFINET and EtherNet/IP only)

Fully integrated control and power electronics for creating a decentralized control system

Connectors in industrial standard for easy electrical connection



Sizes
Quantity: 2



Weight
1.02 .. 1.55 kg



Gripping force
70 .. 100 N



Stroke per jaw
40 .. 57.5 mm

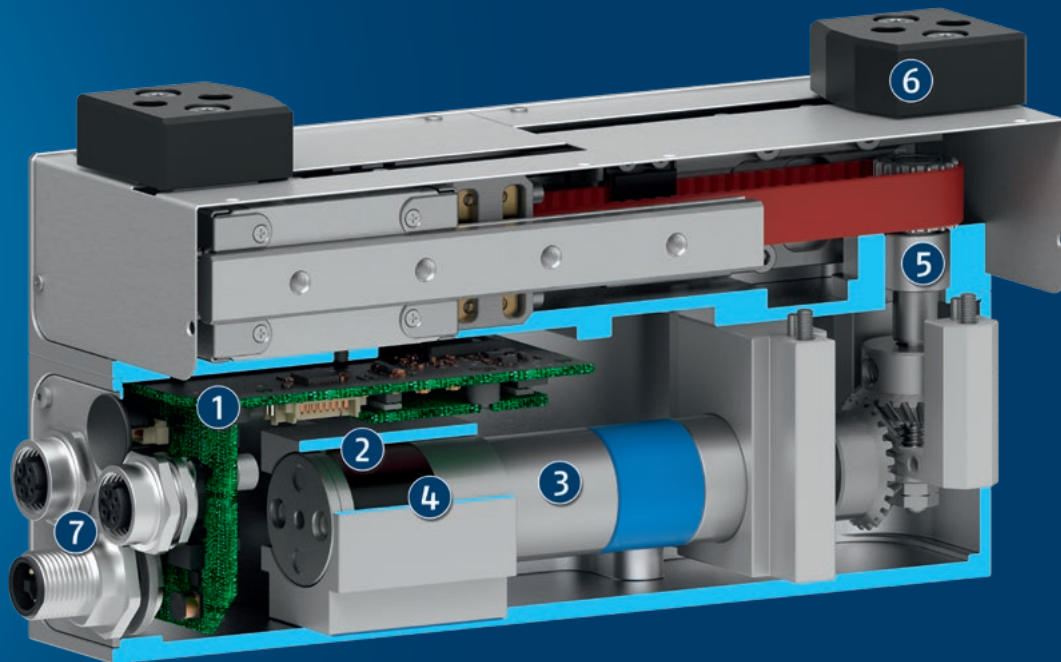


Workpiece weight
0.35 .. 0.5 kg

Functional description

The brushless servomotor drives the toothed belt drive via the bevel gear. The base jaws mounted on the profiled rail guides are connected to the toothed belt. The rotary motion is transferred into a linear movement of the base

jaws via the gear and the toothed belt. A brake installed in gripper size 80 ensures that the gripping force is maintained.



- ① **Integrated electronics**
Integrated control and power electronics for decentralized control of the servomotor
- ② **Encoder**
for gripper positioning and position evaluation
- ③ **Drive**
DC servomotor with planet gear
- ④ **Brake**
for maintaining gripping force and position in the event of shutdowns and power failures
- ⑤ **Kinematics**
Power transmitted by servo motor via bevel gear and synchronization via toothed belt
- ⑥ **Finger connection**
for the connection of workplace-specific gripper fingers
- ⑦ **Electrical connection**
for connection of power supply and communication

General notes about the series

Actuation: servo-electric, via brushless DC servomotors

Warranty: 24 months

Scope of delivery: DVD with assembly and operating manual, declaration of incorporation, accessory kit with centering sleeves, device description files.

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

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

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

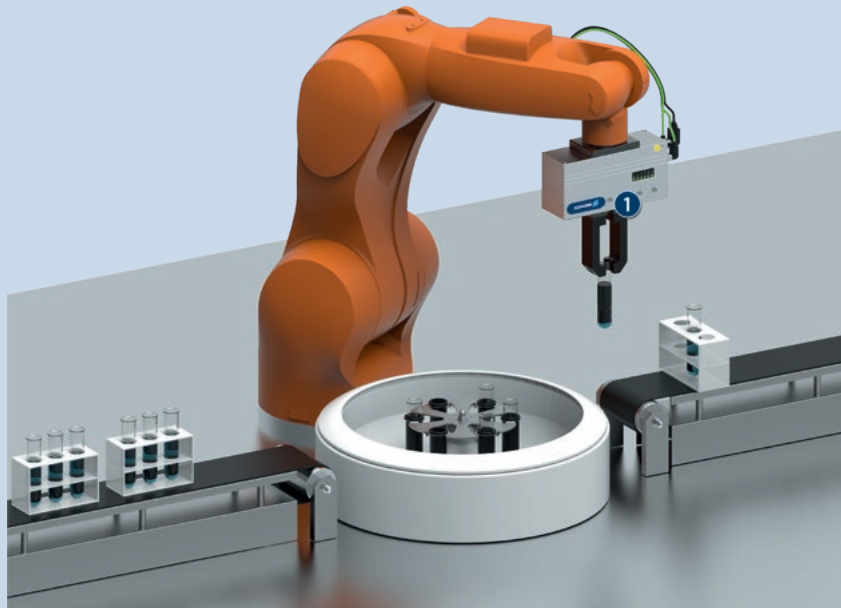
Repeat accuracy (positioning, bi-directional): defined as the spread of the actual position of the base jaws after 100 consecutive movements to a target position from both directions under constant conditions.

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

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 merely the movement times of the base jaws or fingers at max. speed, max. acceleration, without current limitation (maximum current), and observance of the maximum permissible mass per finger.

Typical cycle time: is the time of a typical gripping cycle with pre-positioned gripper fingers 3 mm shortly before contacting the workpiece; this includes time intervals for closing and opening the gripper and for holding the workpiece. Idle times and times for locking and releasing the brake (EGI 80 only) are also taken into account.



Application example

Electric gripping unit for loading and unloading a centrifuge with test tubes and simultaneously transferring the workpiece carrier in a laboratory.

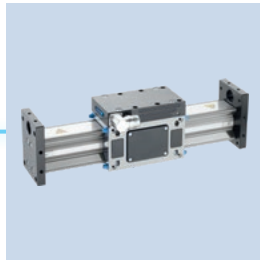
① Gripper for small components EGI

SCHUNK offers more ...

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



Rotation unit



Linear module



Quick change system



Jaw quick-change system



Power cable



Communication cables



Finger blank

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

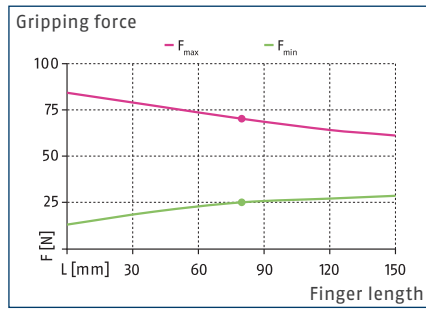
Options and special information

Gripping force maintenance device: In the event of a voltage drop, more than 90% of the originally applied gripping force can be reliably maintained due to a combination of electrical holding brake and the preliminary clamping of the elastic element. The gripping force maintenance cannot cover any safety functions, and is only integrated in the gripper in size 80.

Base jaw interface: The interface of the base jaws corresponds to that of the universal gripper PGN-plus-P. This means that the extensive range of finger accessories for the PGN-plus-P can also be used for this gripper, taking into account the interfering contours, and the application limits that apply.

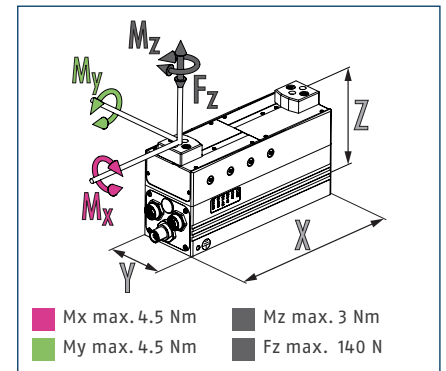


Gripping force



① When specifying the minimum or maximum gripping force via the programming interface, the displayed force values result on the workpiece, depending on the finger length.

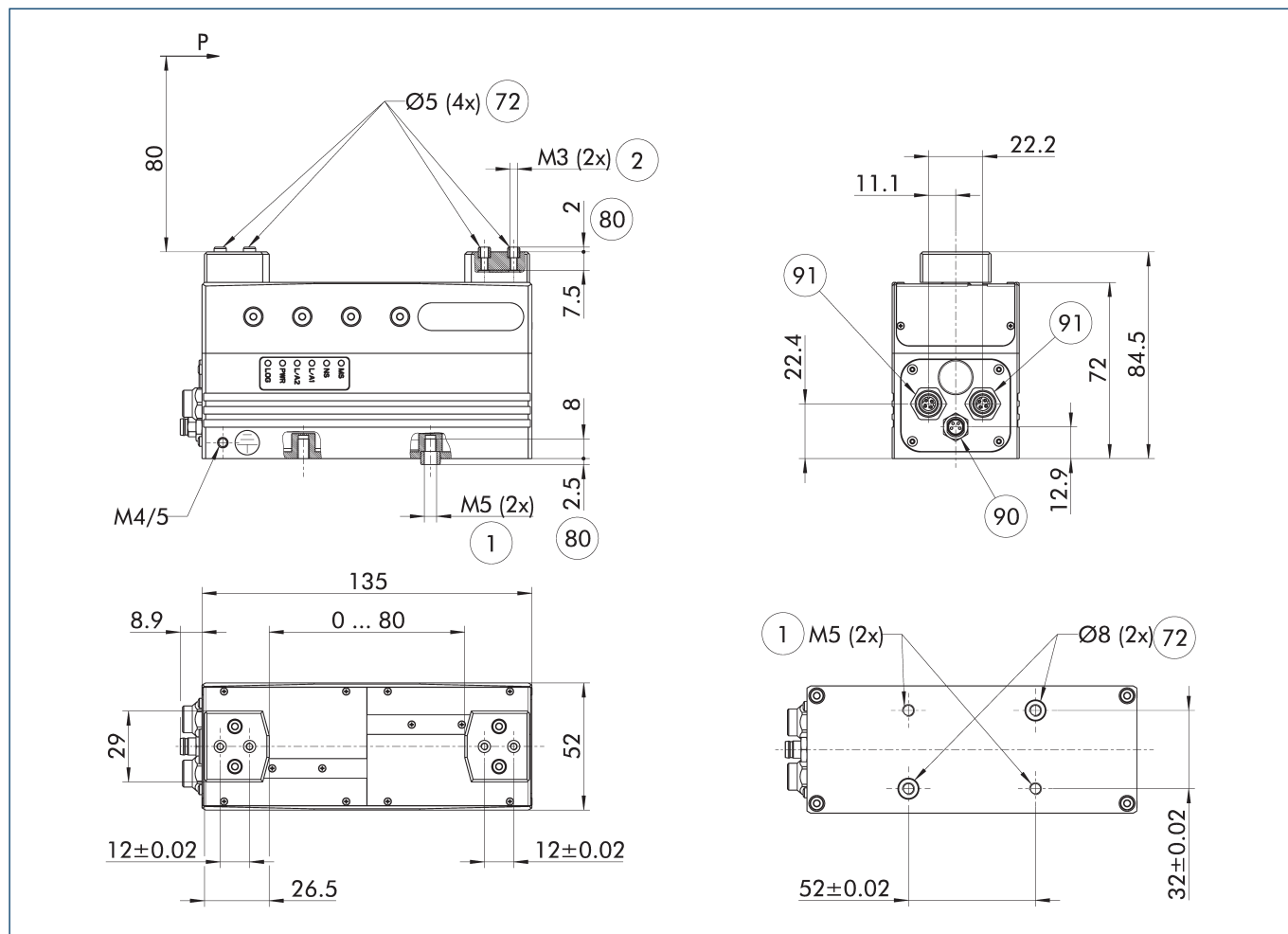
Dimensions and maximum loads



① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

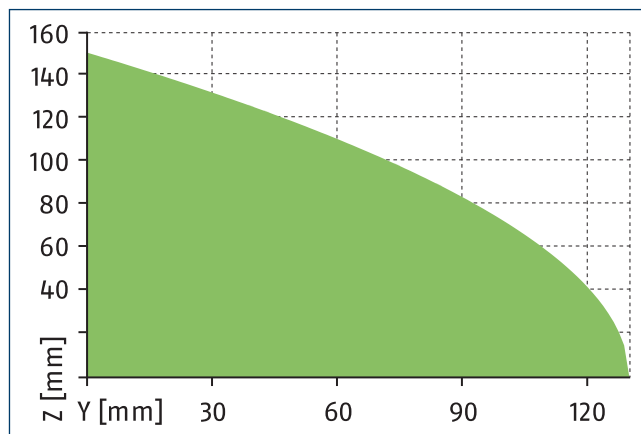
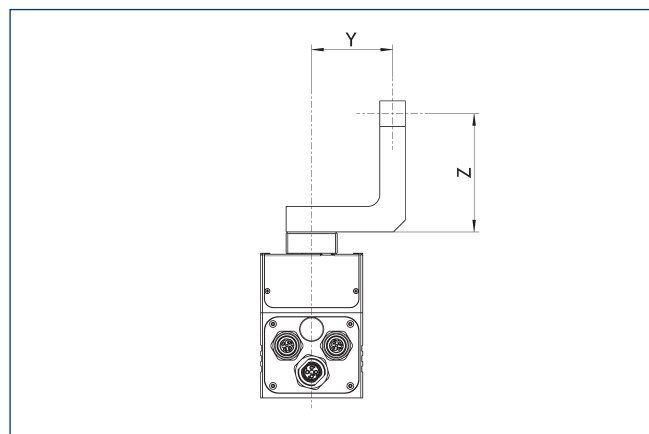
Technical data

Description		EGI 040-PN	EGI 040-EI	EGI 040-EC
ID		1474377	1474382	1474383
General operating data				
Stroke per jaw	[mm]	40	40	40
Min./max. gripping force	[N]	25/70	25/70	25/70
Gripping force maintenance device		not present	not present	not present
Recommended workpiece weight	[kg]	0.35	0.35	0.35
Max. permissible finger length	[mm]	150	150	150
Max. permissible mass per finger	[kg]	0.2	0.2	0.2
Repeat accuracy (gripping)	[mm]	0.03	0.03	0.03
Repeat accuracy (positioning, unidirectional)	[mm]	0.06	0.06	0.06
Repeat accuracy (positioning, bi-directional)	[mm]	0.3	0.3	0.3
Closing/opening time	[s]	1/1	1/1	1/1
Typical cycle time	[s]	0.6	0.6	0.6
Max. speed	[mm/s]	100	100	100
Max. acceleration	[mm/s ²]	2000	2000	2000
Weight	[kg]	1.02	1.02	1.02
Min./max. ambient temperature	[°C]	5/55	5/55	5/55
IP protection class		20	20	20
Noise emission	[dB(A)]	<70	<70	<70
Cleanroom class ISO 14644-1:2015		5	5	5
Dimensions X x Y x Z	[mm]	135 x 52 x 84.5	135 x 52 x 84.5	135 x 52 x 84.5
Electrical operating data				
Controller electronics		integrated	integrated	integrated
Nominal voltage	[V]	24	24	24
Communication interface		PROFINET	EtherNet/IP	EtherCAT
Performance class		IRT		
Max. current power	[A]	0.7	0.7	0.7
Max. current logic	[A]	0.25	0.25	0.25

Main view


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

- | | |
|---|---|
| ① Gripper connection | ⑨⑩ M8 connector, A-coded (voltage supply) |
| ② Finger connection | ⑨① M8 socket, D-coded (communication) |
| ⑦② Fit for centering sleeves | |
| ⑧⑩ Depth of the centering sleeve hole in the counter part | |

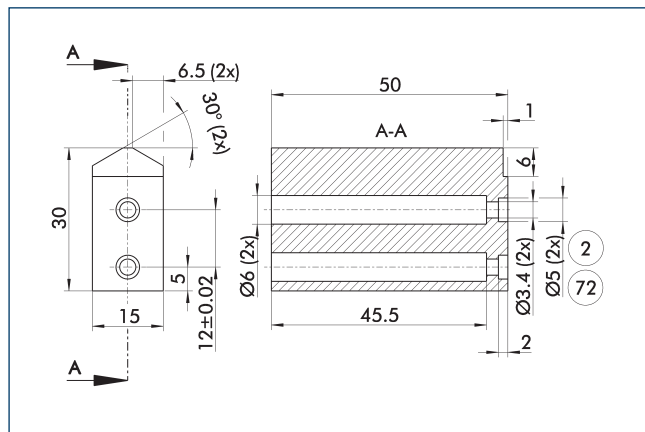
Maximum permitted finger projection


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

⑨⑩ Customized gripper fingers

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

Finger blank ABR- / SBR-PGZN-plus 50



⑦2 Fit for centering sleeves

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

The diagram illustrates the BSWS system components and their connection to the main unit (4). The main unit (4) is a rectangular device with a control panel featuring a digital display and several buttons. It is connected to four sub-components via a central bus line:

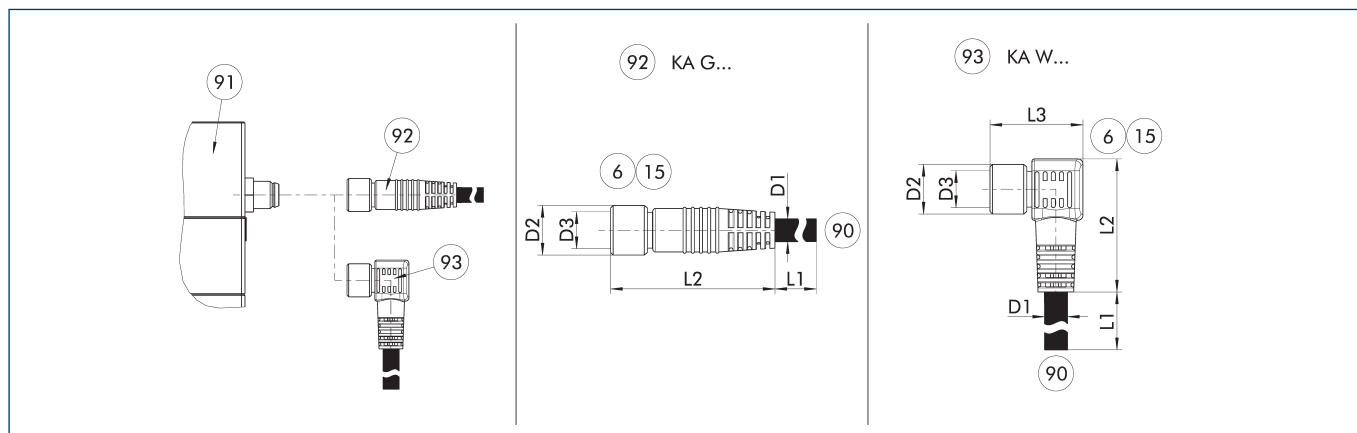
- BSWS-BM**: A component with a circular sensor and a small display, connected to the main unit.
- BSWS-A**: A component with two vertical sensors, connected to the main unit.
- BSWS-AR**: A component with two vertical sensors, connected to the main unit.
- BSWS-ABRM**: A component with a circular sensor and a small display, connected to the main unit.
- BSWS-URM**: A component with a circular sensor and a small display, connected to the main unit.

Each sub-component is also connected to a common ground line, which is labeled with the number 90. The ground line is represented by a horizontal line with a vertical line connecting it to the ground symbol (a triangle with a horizontal line).

⑨⑩ Customized gripper fingers

Description	ID	Scope of delivery
Jaw quick-change system adapter pin		
BSWS-A 50	0303020	2
BSWS-AR 50	0300091	2
Quick-change jaw system base		
BSWS-BM 50	1313899	1
Jaw quick-change system finger blank		
BSWS-ABRM-PGZN-plus 50	1420850	1
Jaw quick-change system locking mechanism		
BSWS-URM 50	1380614	1

Connection cables



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

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

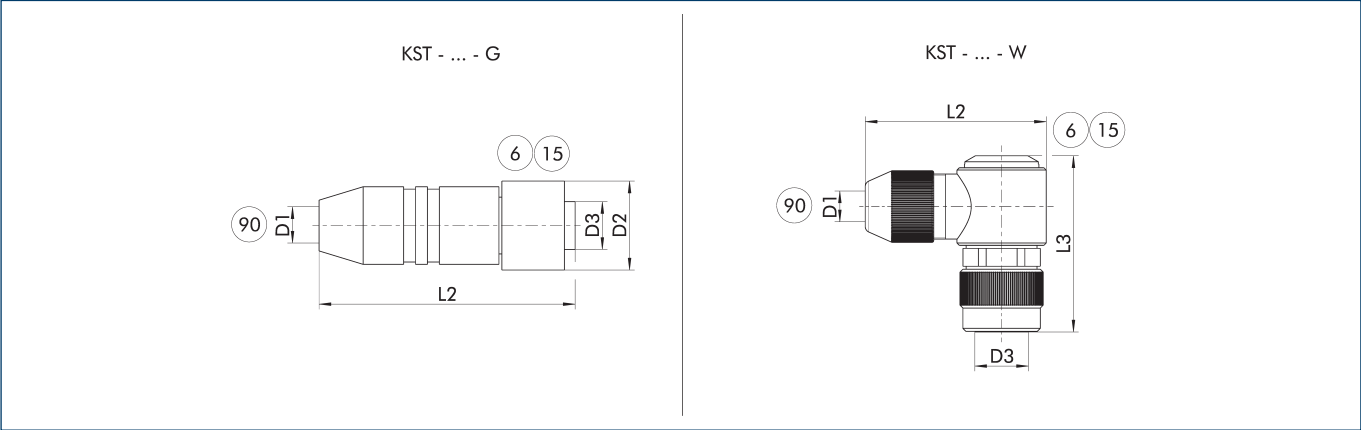
⑨① Connection plug component
 ⑨② Cable with straight female connector
 ⑨③ Cable with angled female connector

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

Description	ID	L1 [m]	D1 [mm]	L2 [mm]	D2 [mm]	L3 [mm]	D3
Connection cable – suitable for drag chains and a high torsion resistance							
KA GLN0804-IO-00200-A	1310371	2	4.8	33.7	10		M8
KA GLN0804-IO-00500-A	1310375	5	4.8	33.7	10		M8
KA GLN0804-IO-01000-A	1310379	10	4.8	33.7	10		M8
KA GLN0804-IO-02000-A	1442994	20	4.5	32	10		M8
KA WLN0804-IO-00200-A	1310372	2	4.8	27.9	10	18.9	M8
KA WLN0804-IO-00500-A	1310376	5	4.8	27.9	10	18.9	M8
KA WLN0804-IO-01000-A	1310381	10	4.8	27.9	10	18.9	M8
KA WLN0804-IO-02000-A	1442996	20	4.5	25	10	20	M8

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

Power supply plug-in connector



- KST - ... - G

Connection plug with straight outlet
- KST - ... - W

Connection plug with angular outlet
- 6

Connection module side
- 15

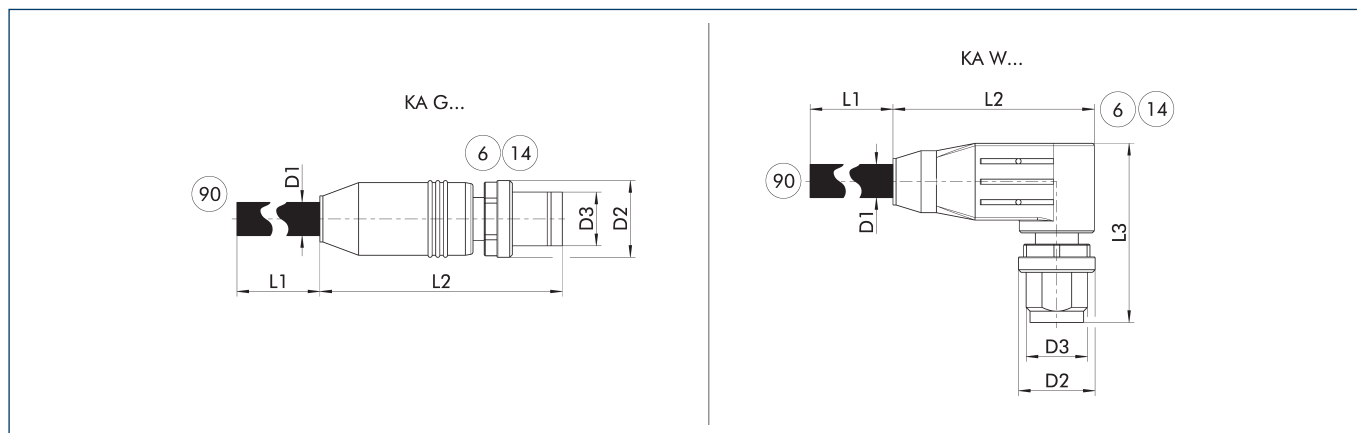
Socket
- 90

D1 – max. diameter connection cable

The plug connectors are used to connect the SCHUNK product to the voltage supply. A customer cable can be used for this. The individual wire strands are clamped using screw connections in the plug connector.

Description	ID	D1 (max.)	L2	D2	L3	D3
		[mm]	[mm]	[mm]	[mm]	
Cable connector						
KST-M8-G 4P	31001445	5	50	12		M8
KST-M8-W 4P	1451015	5	41.9	13	32.5	M8

① For the connection cable, a cross-section for each individual wire strand of 0.14 mm² is recommended. Please refer to the product documentation for information about max. cable length and min. wire cross section.

Communication cables


KA G... Straight plug connector

KA W... Angular plug connector

(6) Connection module side

(14) Connector

(90) Cable ends with second plug connector

The communication cables are suitably assembled for the mechatronic products from SCHUNK and can be used for the PROFINET, EtherNET/IP and EtherCAT communication interfaces. They always have an M8 plug connector on the module side (D-coded, connector). The plug connectors are designed straight (KA G...) or angled (KA W...) on the module side. On the second side, the cables either have a straight M8/M12 plug connector (D-coded, connector) or an RJ45 plug connector.

Description	ID	L1	D1	L2	D2	L3	D3
		[m]	[mm]	[mm]	[mm]	[mm]	
Communication cable, M8 plug connector to M12 plug connector – cable track- and torsion-compatible							
KA-GGN-08D04-12D04-ET-00500	1442997	5	6.7	41	10		M8
KA-WGN-08D04-12D04-ET-00500	1443004	5	6.7	29	10	26	M8
Communication cable, M8 plug connector to M8 plug connector – cable track- and torsion-compatible							
KA-GGN-08D04-08D04-ET-00070	1443002	0.7	6.7	41	10		M8
Communication cable, M8 plug connector to RJ45 plug connector – cable track- and torsion-compatible							
KA-GGN-08D04-RJ45-ET-00500	1442998	5	6.7	41	10		M8
KA-WGN-08D04-RJ45-ET-00500	1443010	5	6.7	29	10	26	M8

① Please observe the min. bending radius for cable track-compatible cables or the max. torsion angle for torsion-compatible cables. These are generally 10 times the cable diameter or +/- 180°/m. Please refer to the product documentation for information about max. cable length and min. wire cross section.



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