

Flexible. High Performance Density. Bus Capable.

PEH Long-stroke Gripper

Servo-electric 2-finger parallel gripper with large jaw stroke for large parts and diverse parts spectrum

Field of Application

Universal highly flexible gripper for large diversity of parts in clean to slightly contaminated work environment

Advantages – Your benefit

Gripping force regulation in a range of 100 N – 1,800 N for powerful gripping of a wide variety of workpieces

Large stroke of 200 mm for flexible workpiece handling

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

Versatile actuation options for simple integration into existing servo-controlled concepts via Profibus-DP, or CAN bus

Solid guides for the precise handling of all kinds of workpieces

High maximum moments possible suitable for using long gripper fingers

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



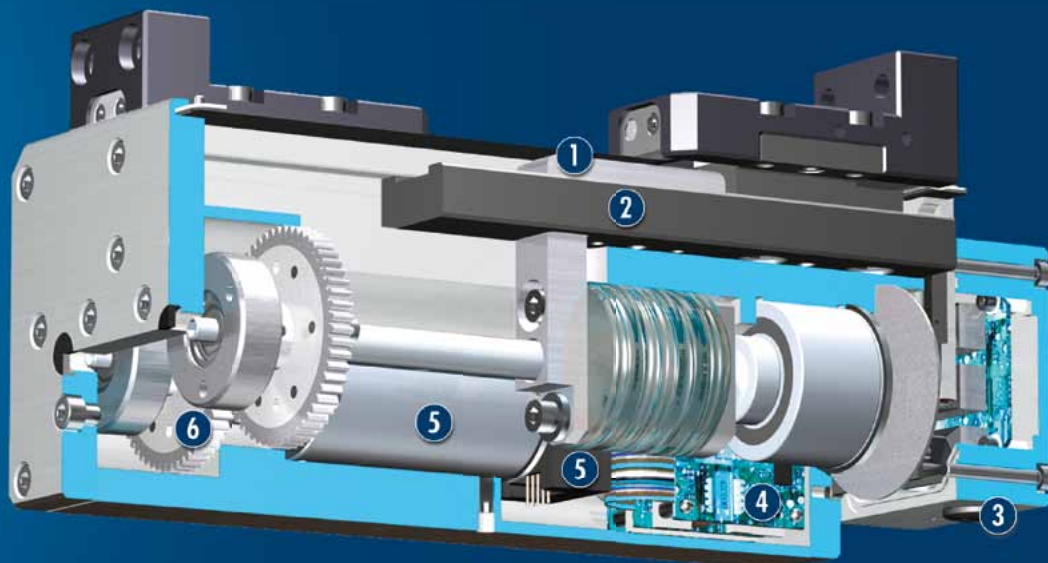
 <p>Sizes Quantity: 3</p>	 <p>Weight 5.4 .. 16.8 kg</p>	 <p>Gripping force 750 .. 1800 N</p>	 <p>Stroke per jaw 60 .. 100 mm</p>	 <p>Workpiece weight 2 .. 9 kg</p>
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Functional Description

The brushless servo motor drives the ball screw via a toothed belt drive.
A base jaw is moved by means of a carrier on the spindle.

The jaw stroke is synchronized by means of rack and pinion kinematics.



① Kinematics

Rack and pinion principle for centric gripping

② Sliding guide

for precise gripping with minimal play at a high load capacity

③ DMI connection cap

Electrical connection for energy supply and communication

④ Control electronics

Integrated control and power electronics for decentralized actuation of the servomotor

⑤ Drive

Brushless DC servomotor with hall-effect sensors and encoder

⑥ Gear mechanism

Force transmission from the servomotor to the drive spindle

CAD data, operating manuals and other current product documents are available at www.schunk.com

General Notes about the Series

Operating principle: Spindle drive, synchronized by rack and pinion principle

Housing material: Aluminum alloy, DNC coating

Base jaw material: Steel

Actuation: servo-electric, via brushless DC servomotor

Warranty: 24 months (details, general terms and conditions and operating manuals can be downloaded at www.schunk.com)

Scope of delivery: Enclosed pack with centering sleeves, assembly and operating manual with declaration of incorporation, DVD with SCHUNK software and commissioning assistant, functional module for control via Siemens S7-300 / 400. A DMI or MMI electric cap is required for operation of the gripper. This is not included in the scope of delivery and must be ordered separately.

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

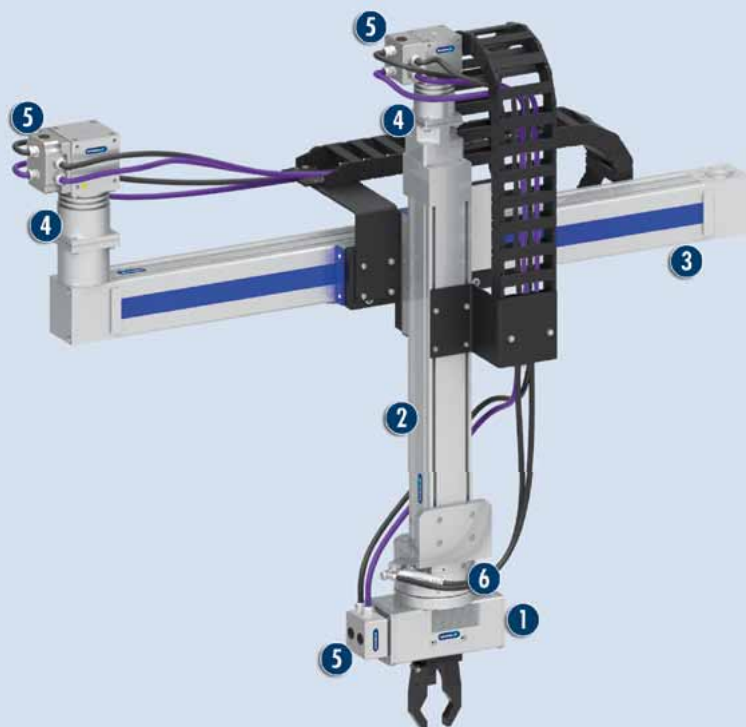
Finger length: is measured from the upper edge of the gripper housing in the direction of the main axis. The breach of the max. permitted finger length can bring higher abrasion.

Repeat accuracy: is defined as the spread of the limit position after 100 consecutive strokes.

Workpiece weight: is calculated for a force-fit connection with a coefficient of friction of 0.1 and a safety factor of 2 against slippage of the workpiece on acceleration due to gravity g. Considerably heavier workpiece weights are permitted with form-fit gripping.

Closing and opening times: Minimum closing and opening times are only the movement times of the base jaws at max. speed, max. acceleration without electrical restrictions (maximum current) and observance of the maximum permissible mass per finger.

Nominal currents: may be permanently applied. The information in the respective product documentation must be observed for all current levels beyond the rated current up to the maximum current.



Application example

Fully electrically driven gantry axis for loading and depalettizing of various components with a large variance

① PEH Long-stroke Gripper

② Vertical Axis with spindle drive HSB Beta

③ Linear Axis with toothed-belt drive HSB Beta

④ Servo-electric Drive with Gear PDU

⑤ DMI Connection Cap

⑥ Rotary Module with ERS Torque Motor

SCHUNK offers more ...

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



Centering Sleeves



DMI Connection Cap



MMI Connection Cap



Power- / and Data Cable



PW electrical Rotary Pan-Tilt Actuator



PR Rotary Unit electric



PG Universal Gripper



PDU Rotary Unit electric



PSM servo-electric Drive

① Further 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

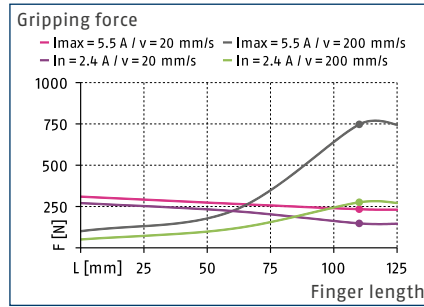
Integrated electronics: The electrical control of the gripper takes place via the fully integrated control and power electronics. Therefore, no additional external control units are required for the module.

Easy integration: There is a varied range of interfaces available, such as Profibus-DP or CAN bus as methods of communication. This enables the assembly of industrial bus networks and ensures easy integration into existing control systems.

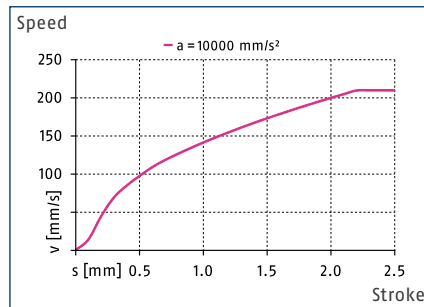
Connection caps DMI and MMI: The DMI or MMI connection caps are available for connection of the gripper to the voltage supply or superordinate control unit. They are not included in the scope of delivery and must be ordered separately.



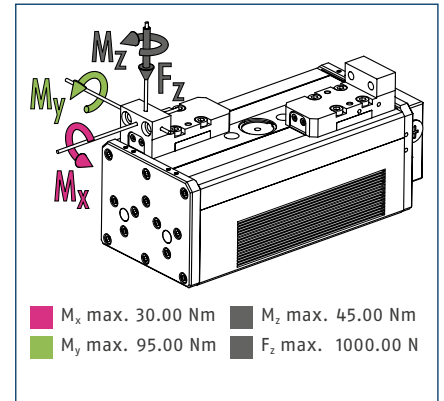
Gripping force



Speed



Finger load



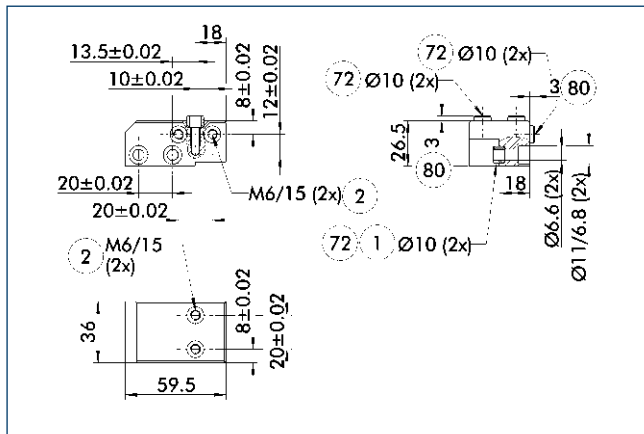
① The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M_y may occur in addition to the torque generated by the gripping force.

Technical data

Description		PEH 30
ID		0306060
General operating data		
Stroke per jaw	[mm]	60
min. / max. gripping force	[N]	150/750
Recommended workpiece weight	[kg]	2
max. permitted finger length	[mm]	125
max. permitted weight per finger	[kg]	2
Repeat accuracy	[mm]	±0.05
Closing- / opening time	[s]	1/1
max. speed	[mm/s]	210
max. acceleration	[mm/s ²]	10000
Weight	[kg]	5.4
min. / max. ambient temperature	[°C]	5/45
IP class		41
Electrical operating data		
Controller electronics		integrated
Nominal voltage	[V DC]	24
Nominal current	[A]	2.4
max. power supply	[A]	8
Communication interface		Profibus, CAN bus, Digital I/O
Profibus interface	[Mbit/s]	1.5
CAN interface	[Mbit/s]	1
Number of digital inputs/outputs		4/4
Parametrized interface		RS232

① The recommended workpiece weight was calculated for the maximum gripping force. The maximum gripping force can be achieved at max. speed and with max. current, which may only be applied temporarily. Please contact SCHUNK technical sales for further enquiries.

ZBA PHF 30 intermediate jaws

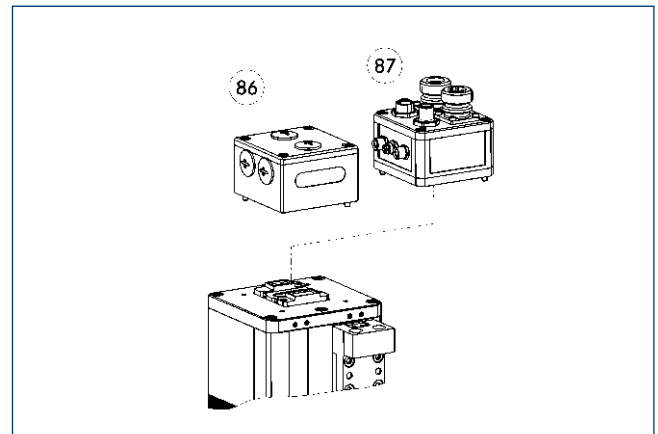


- ① Gripper connection
- ② Finger connection
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the mating part

Optionally intermediate jaws can be used, enabling direct connection and alignment of top jaws and various standard accessories in Z-direction.

Description	ID	Material	Scope of delivery
Intermediate jaws			
ZBA-PFH 30	0300220	Aluminum	2

Connection caps



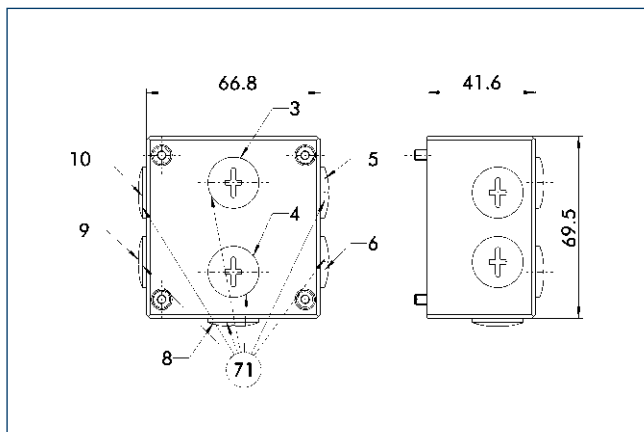
- ⑧⑥ DMI connection cap
- ⑧⑦ MMI connection cap

The DMI or MMI connection caps are required for connection of the modules to the voltage supply or superordinate control unit. For the DMI the connection of the cable wires takes place via connection terminals. The MMI enables convenient connection via plug connector.

Description	ID	
Connection caps		
DMI 070-V05-B	0307732	
MMI 070-V05-E-CN	0307500	
MMI 070-V05-D-CN	0307501	
MMI 070-V05-E-PB	0307502	
MMI 070-V05-D-PB	0307503	

① Further information and accessories can be found in the following displays.

DMI connection cap

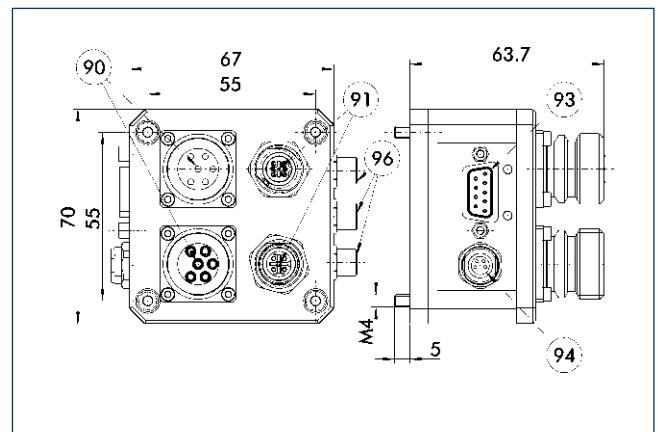


- ⑦① M16x1.5 for cable guide penetrating screw connection

For the DMI the connection of the cable wires takes place via connection terminals. The DMI is prepared for Profibus and CAN bus communication interfaces.

Description	ID	
Connection caps		
DMI 070-V05-B	0307732	

MMI connection cap

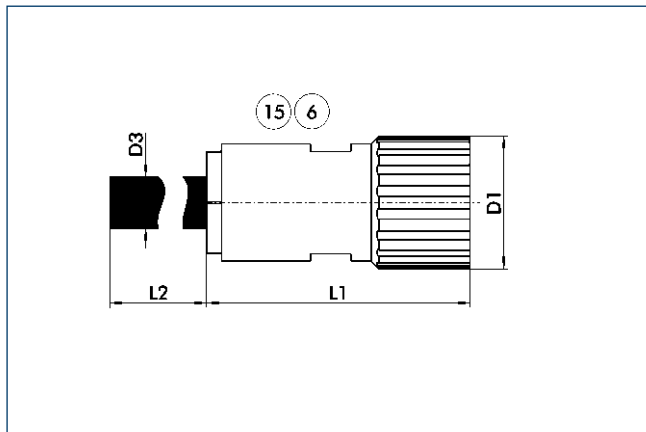


- ⑨① Connection power supply (logic / load)
- ⑨② Connection fieldbus M12
- ⑨③ Parametrized interface RS232
- ⑨④ Connection power supply service box (SSB)
- ⑨⑥ Connection ext. M8 limit switch or digital I/Os

The MMI is available with digital inputs and outputs (D) or prepared for external limit switches (E). The MMI is optionally available with the Profibus (PB) or CAN bus (CB) communication interfaces.

Description	ID	
Connection caps		
MMI 070-V05-E-CN	0307500	
MMI 070-V05-D-CN	0307501	
MMI 070-V05-E-PB	0307502	
MMI 070-V05-D-PB	0307503	

Power cable for SCHUNK MMI



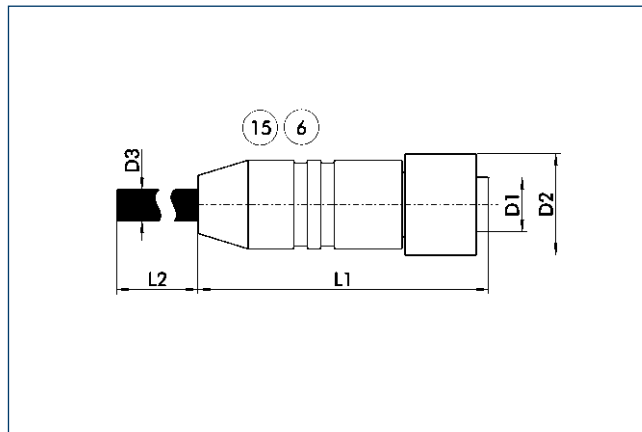
⑥ Connection module side ⑮ Socket

The power cable for the MMI connection cab is available in various lengths (L2). The power cable has an M23 connection plug on the module side. The cable can be optionally fitted with a matching mating plug (GG) or open wires (GL) on the other side.

Description	ID	L ₂ [m]	D ₁
Power cable for SCHUNK MMI			
KA GGN2304-LK-00150-H	0349874	1.5	M23
KA GGN2304-LK-00300-H	0349875	3	M23
KA GGN2304-LK-00500-H	0349876	5	M23
KA GGN2304-LK-01000-H	0349877	10	M23
KA GLN2304-LK-00150-H	0349870	1.5	M23
KA GLN2304-LK-00300-H	0349871	3	M23
KA GLN2304-LK-00500-H	0349872	0.5	M23
KA GLN2304-LK-01000-H	0349873	1	M23

① Please observe the bending radius (7.5 times the cable diameter).

CAN bus cable



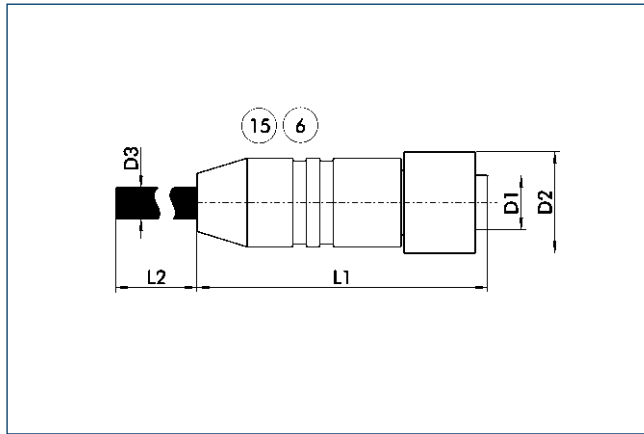
⑥ Connection module side ⑮ Socket

The CAN bus cable is pre-assembled for our mechatronic modules with MMI connection cap and the RPH rotary module. It has an M12 connector plug on both sides.

Description	ID	L ₂ [m]	D ₁
CAN bus cable			
KA GGN1204-CN-00150-A	0349770	1.5	M12
KA GGN1204-CN-00300-A	0349771	3	M12
KA GGN1204-CN-00500-A	0349772	5	M12
KA GGN1204-CN-01000-A	0349773	10	M12

① Please observe the bending radius (7.5 times the cable diameter).

Profibus cable



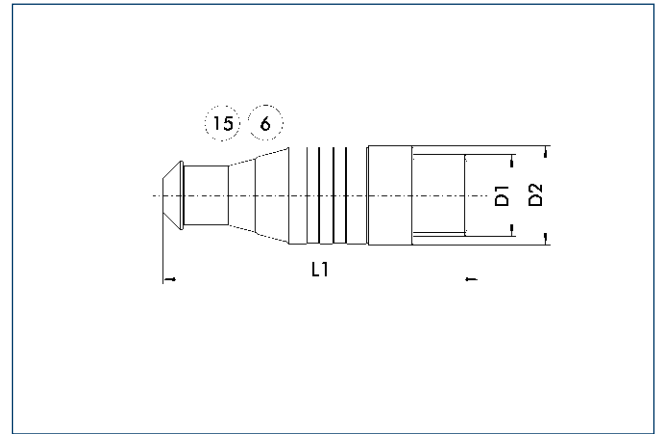
⑥ Connection module side ⑮ Socket

The Profibus cable is pre-assembled for our mechatronic modules with MMI connection cap and PRH rotary module. It has an M12 connector plug on both sides.

Description	ID	L ₂ [m]	D ₁
Profibus cable			
KA GGN1204-PB-00150-A	0349750	1.5	M12
KA GGN1204-PB-00300-A	0349751	3	M12
KA GGN1204-PB-00500-A	0349752	5	M12
KA GGN1204-PB-01000-A	0349753	10	M12

① Please observe the bending radius (7.5 times the cable diameter).

Terminators



⑥ Connection module side ⑮ Socket

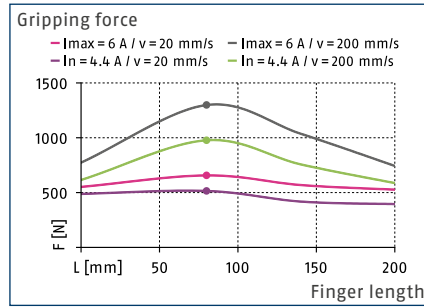
The ST terminating resistors are provided for the termination of the bus string directly at the SCHUNK module. The terminating resistors are available for the Profibus (RB) or CAN bus (CN) bus systems.

Description	ID	D ₁
Terminators		
ST SG1204-CN-A-A	0349660	M12
ST SG1204-PB-A-A	0349650	M12

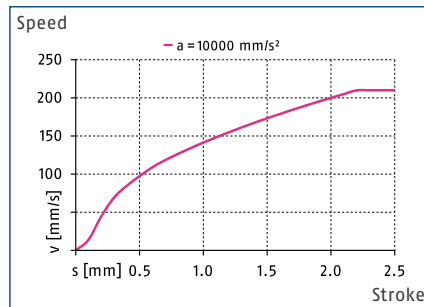
① A suitable terminator must be mounted on the last module in the CAN or Profibus line.



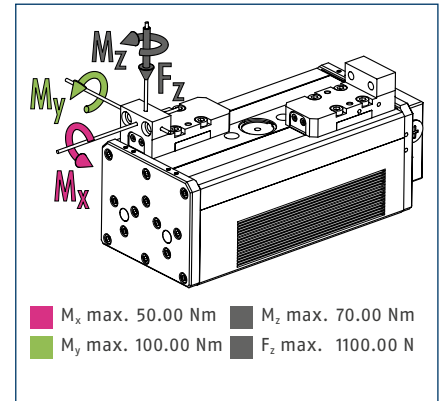
Gripping force, O.D. gripping



Speed



Finger load



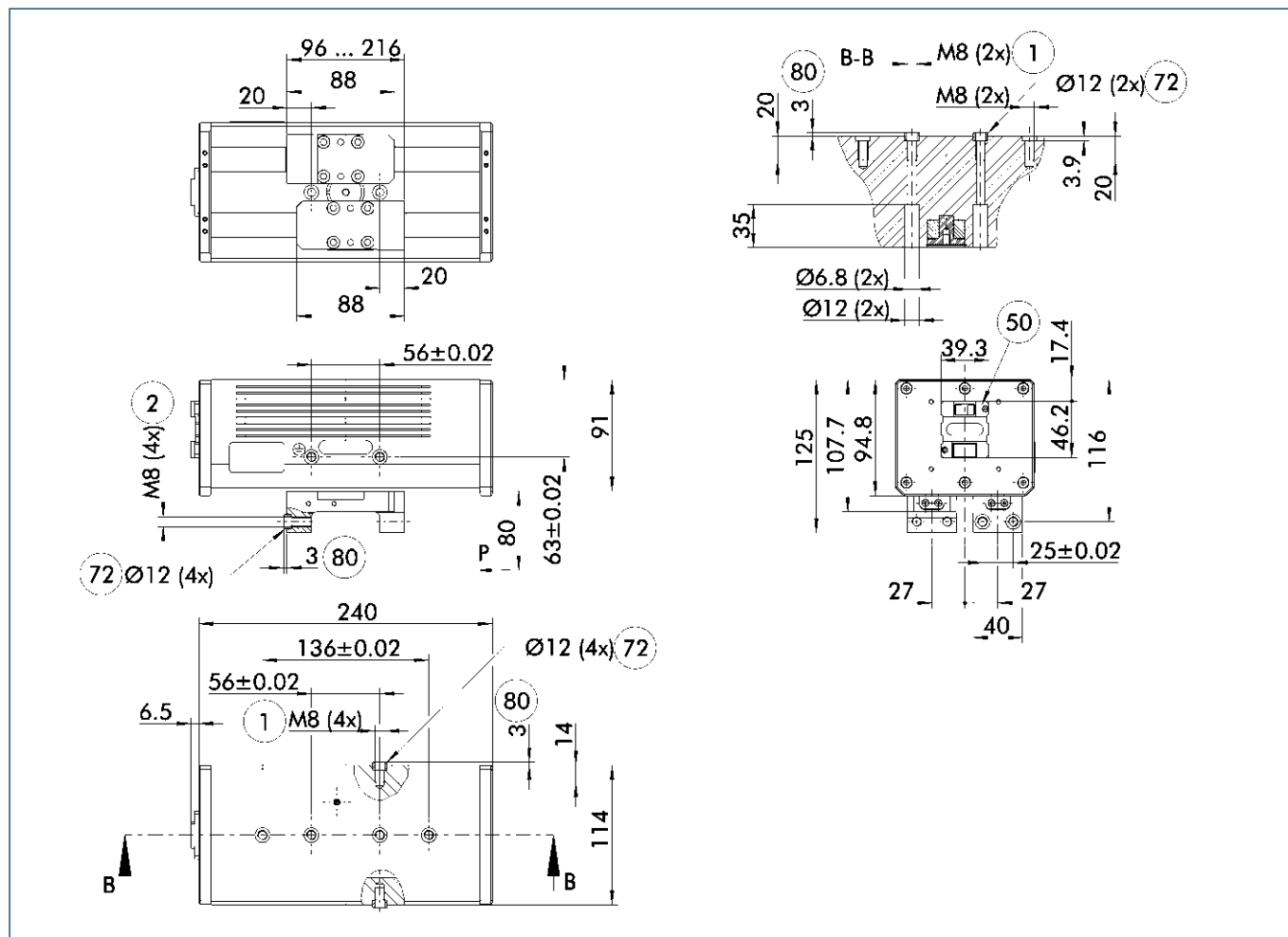
① The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M_y may occur in addition to the torque generated by the gripping force.

Technical data

Description		PEH 40
ID		0306062
General operating data		
Stroke per jaw	[mm]	60
min. / max. gripping force	[N]	150/1300
Recommended workpiece weight	[kg]	4
max. permitted finger length	[mm]	200
max. permitted weight per finger	[kg]	3
Repeat accuracy	[mm]	±0.05
Closing- / opening time	[s]	1/1
max. speed	[mm/s]	210
max. acceleration	[mm/s²]	10000
Weight	[kg]	7.8
min. / max. ambient temperature	[°C]	5/55
IP class		41
Electrical operating data		
Controller electronics		integrated
Nominal voltage	[V DC]	24
Nominal current	[A]	4.4
max. power supply	[A]	12.4
Communication interface		Profibus, CAN bus, Digital I/O
Profibus interface	[Mbit/s]	1.5
CAN interface	[Mbit/s]	1
Number of digital inputs/outputs		4/4
Parametrized interface		RS232

① The recommended workpiece weight was calculated for the maximum gripping force. The maximum gripping force can be achieved at max. speed and with max. current, which may only be applied temporarily. Please contact SCHUNK technical sales for further enquiries.

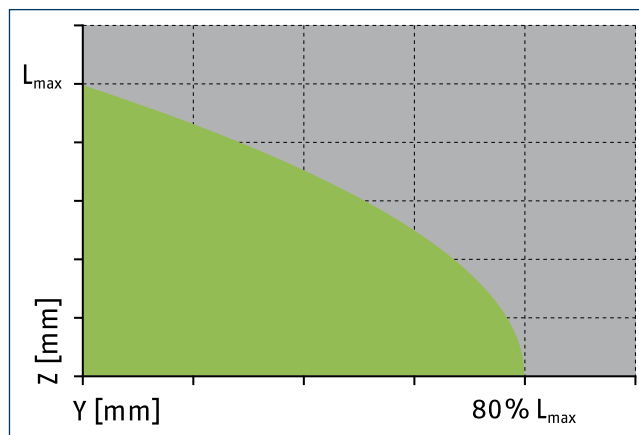
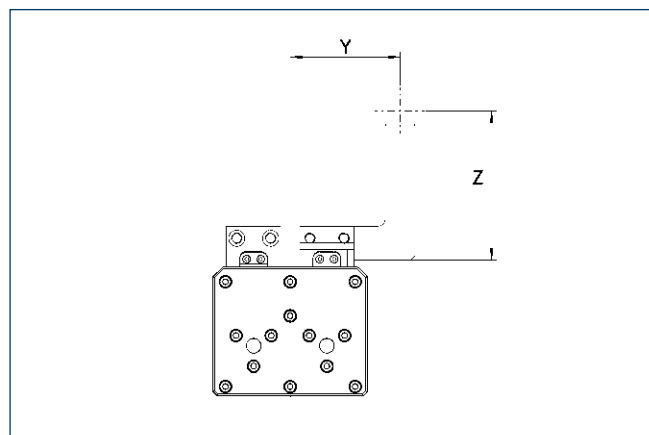
Main view



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
- ⑤0 Electrical connection
- ⑦2 Fit for centering sleeves
- ⑧0 Depth of the centering sleeve hole in the mating part

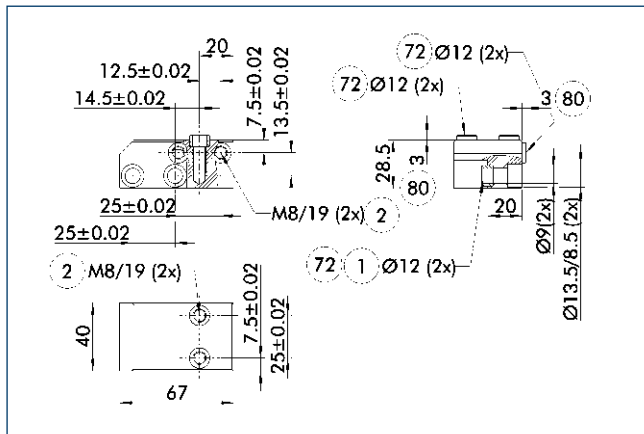
Maximum permitted finger projection



■ Permitted range ■ Inadmissible range

L_{max} is equivalent to the maximum permitted finger length, see the chart of technical specifications.

ZBA PFH 40 intermediate jaws

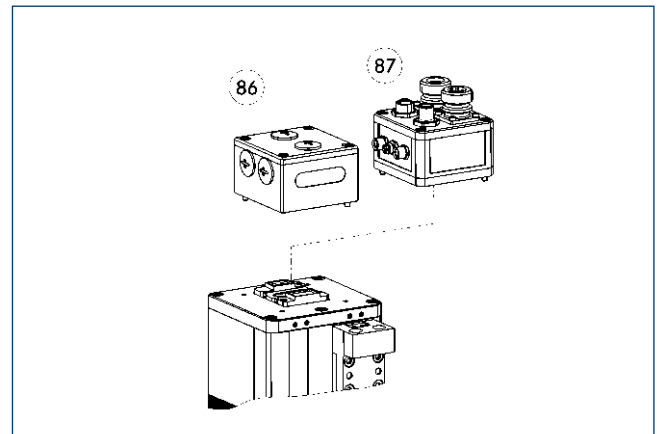


- ① Gripper connection
- ② Finger connection
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the mating part

Optionally intermediate jaws can be used, enabling direct connection and alignment of top jaws and various standard accessories in Z-direction.

Description	ID	Material	Scope of delivery
Intermediate jaws			
ZBA-PFH 40	0300221	Aluminum	2

Connection caps



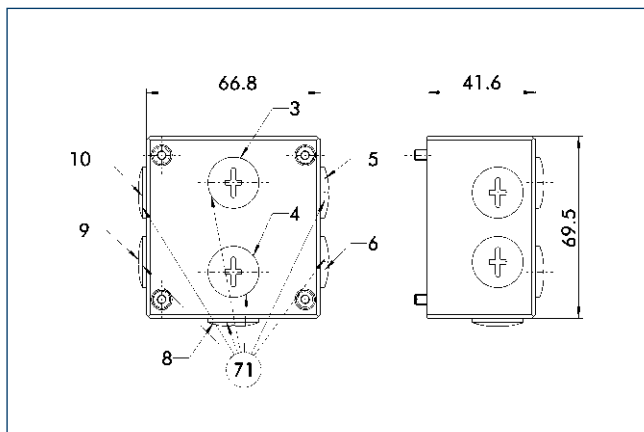
- ⑧⑥ DMI connection cap
- ⑧⑦ MMI connection cap

The DMI or MMI connection caps are required for connection of the modules to the voltage supply or superordinate control unit. For the DMI the connection of the cable wires takes place via connection terminals. The MMI enables convenient connection via plug connector.

Description	ID	
Connection caps		
DMI 070-V05-B	0307732	
MMI 070-V05-E-CN	0307500	
MMI 070-V05-D-CN	0307501	
MMI 070-V05-E-PB	0307502	
MMI 070-V05-D-PB	0307503	

① Further information and accessories can be found in the following displays.

DMI connection cap

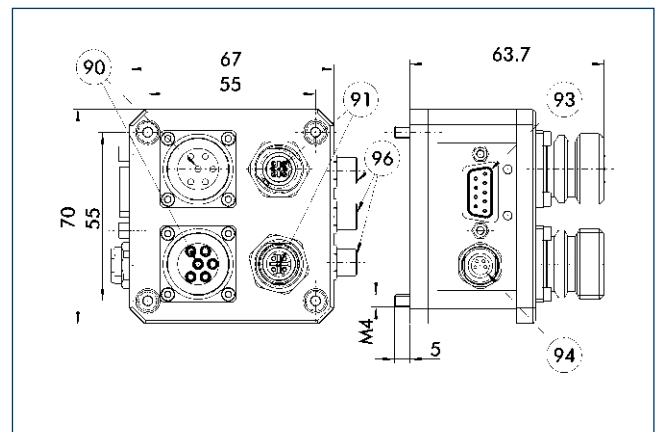


- ⑦① M16x1.5 for cable guide penetrating screw connection

For the DMI the connection of the cable wires takes place via connection terminals. The DMI is prepared for Profibus and CAN bus communication interfaces.

Description	ID	
Connection caps		
DMI 070-V05-B	0307732	

MMI connection cap

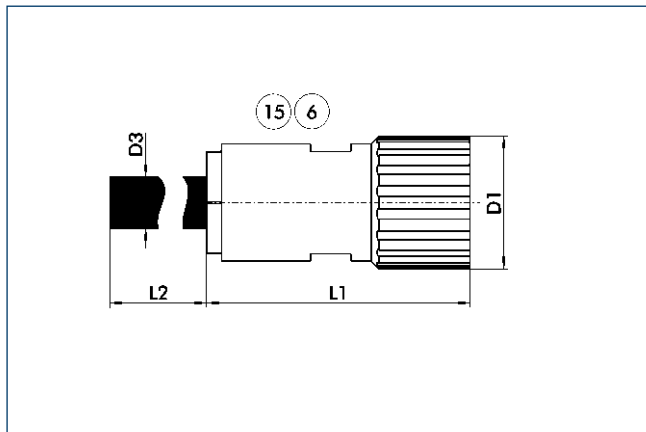


- ⑨① Connection power supply (logic / load)
- ⑨② Connection fieldbus M12
- ⑨③ Parametrized interface RS232
- ⑨④ Connection power supply service box (SSB)
- ⑨⑥ Connection ext. M8 limit switch or digital I/Os

The MMI is available with digital inputs and outputs (D) or prepared for external limit switches (E). The MMI is optionally available with the Profibus (PB) or CAN bus (CB) communication interfaces.

Description	ID	
Connection caps		
MMI 070-V05-E-CN	0307500	
MMI 070-V05-D-CN	0307501	
MMI 070-V05-E-PB	0307502	
MMI 070-V05-D-PB	0307503	

Power cable for SCHUNK MMI



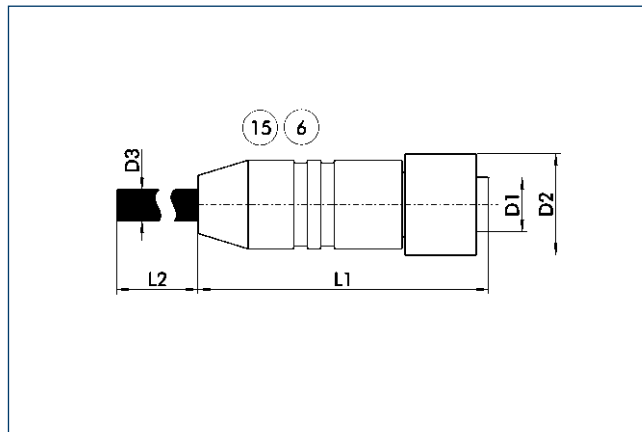
⑥ Connection module side ⑮ Socket

The power cable for the MMI connection cab is available in various lengths (L2). The power cable has an M23 connection plug on the module side. The cable can be optionally fitted with a matching mating plug (GG) or open wires (GL) on the other side.

Description	ID	L ₂ [m]	D ₁
Power cable for SCHUNK MMI			
KA GGN2304-LK-00150-H	0349874	1.5	M23
KA GGN2304-LK-00300-H	0349875	3	M23
KA GGN2304-LK-00500-H	0349876	5	M23
KA GGN2304-LK-01000-H	0349877	10	M23
KA GLN2304-LK-00150-H	0349870	1.5	M23
KA GLN2304-LK-00300-H	0349871	3	M23
KA GLN2304-LK-00500-H	0349872	0.5	M23
KA GLN2304-LK-01000-H	0349873	1	M23

① Please observe the bending radius (7.5 times the cable diameter).

CAN bus cable



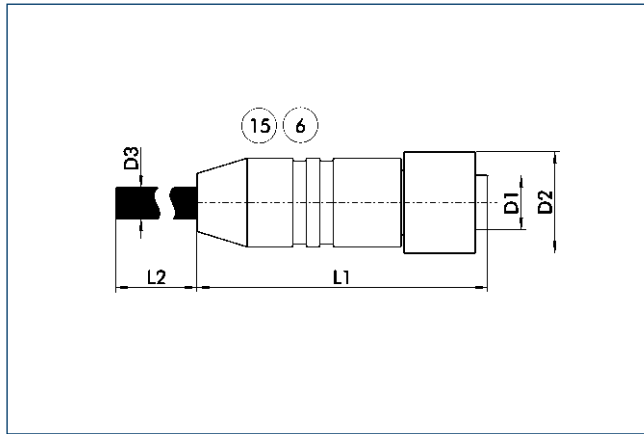
⑥ Connection module side ⑮ Socket

The CAN bus cable is pre-assembled for our mechatronic modules with MMI connection cap and the RPH rotary module. It has an M12 connector plug on both sides.

Description	ID	L ₂ [m]	D ₁
CAN bus cable			
KA GGN1204-CN-00150-A	0349770	1.5	M12
KA GGN1204-CN-00300-A	0349771	3	M12
KA GGN1204-CN-00500-A	0349772	5	M12
KA GGN1204-CN-01000-A	0349773	10	M12

① Please observe the bending radius (7.5 times the cable diameter).

Profibus cable



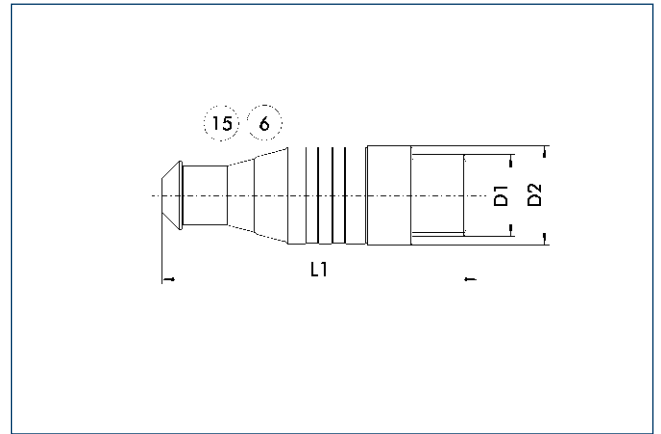
⑥ Connection module side ⑮ Socket

The Profibus cable is pre-assembled for our mechatronic modules with MMI connection cap and PRH rotary module. It has an M12 connector plug on both sides.

Description	ID	L ₂ [m]	D ₁
Profibus cable			
KA GGN1204-PB-00150-A	0349750	1.5	M12
KA GGN1204-PB-00300-A	0349751	3	M12
KA GGN1204-PB-00500-A	0349752	5	M12
KA GGN1204-PB-01000-A	0349753	10	M12

① Please observe the bending radius (7.5 times the cable diameter).

Terminators

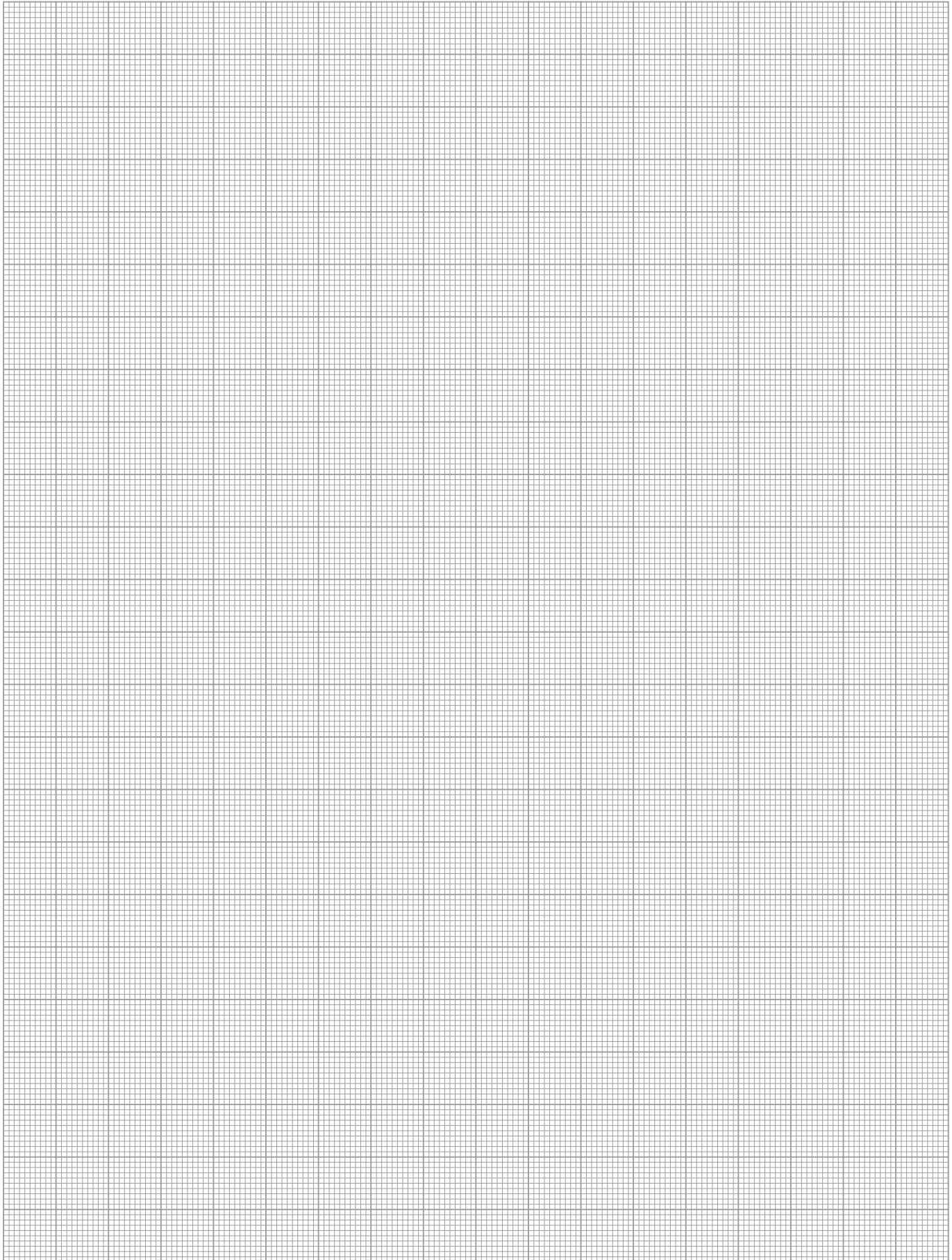


⑥ Connection module side ⑮ Socket

The ST terminating resistors are provided for the termination of the bus string directly at the SCHUNK module. The terminating resistors are available for the Profibus (RB) or CAN bus (CN) bus systems.

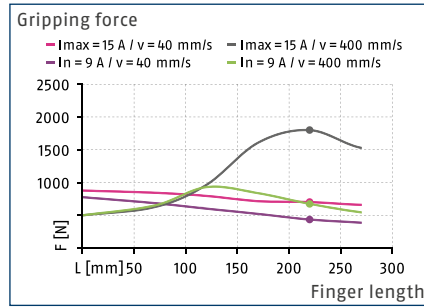
Description	ID	D ₁
Terminators		
ST SG1204-CN-A-A	0349660	M12
ST SG1204-PB-A-A	0349650	M12

① A suitable terminator must be mounted on the last module in the CAN or Profibus line.

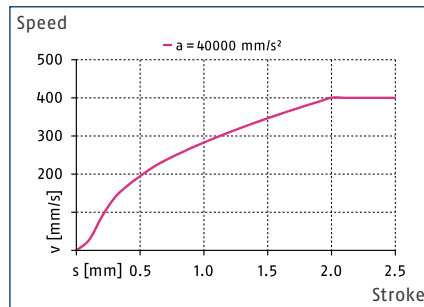




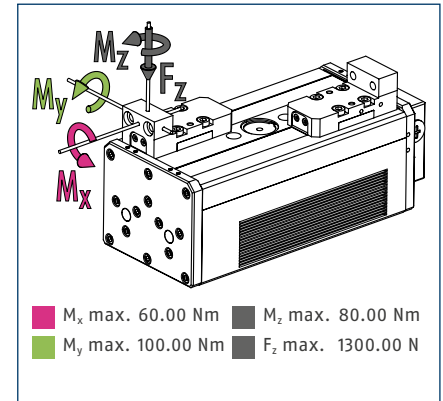
Gripping force, O.D. gripping



Speed



Finger load



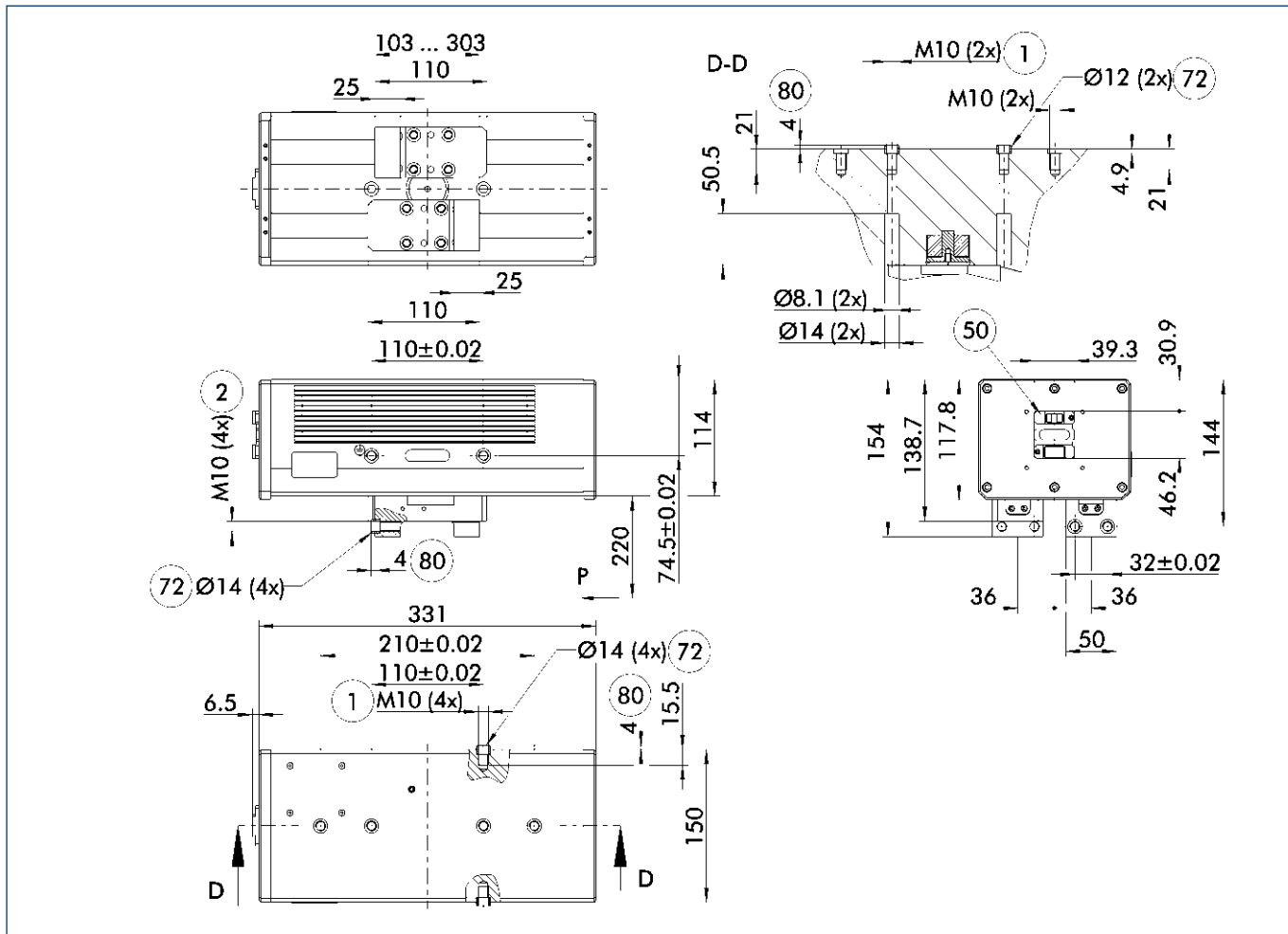
① The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M_y may occur in addition to the torque generated by the gripping force.

Technical data

Description		PEH 50
ID		0306064
General operating data		
Stroke per jaw	[mm]	100
min. / max. gripping force	[N]	150/1800
Recommended workpiece weight	[kg]	9
max. permitted finger length	[mm]	270
max. permitted weight per finger	[kg]	4
Repeat accuracy	[mm]	±0.05
Closing- / opening time	[s]	1.5/1.5
max. speed	[mm/s]	400
max. acceleration	[mm/s²]	40000
Weight	[kg]	16.8
min. / max. ambient temperature	[°C]	5/45
IP class		41
Electrical operating data		
Controller electronics		integrated
Nominal voltage	[V DC]	24
Nominal current	[A]	10
max. power supply	[A]	25
Communication interface		Profibus, CAN bus, Digital I/O
Profibus interface	[Mbit/s]	1.5
CAN interface	[Mbit/s]	1
Number of digital inputs/outputs		4/4
Parametrized interface		RS232

① The recommended workpiece weight was calculated for the maximum gripping force. The maximum gripping force can be achieved at max. speed and with max. current, which may only be applied temporarily. Please contact SCHUNK technical sales for further enquiries.

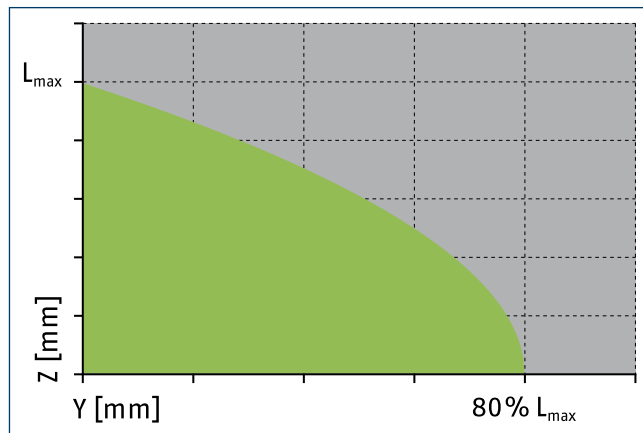
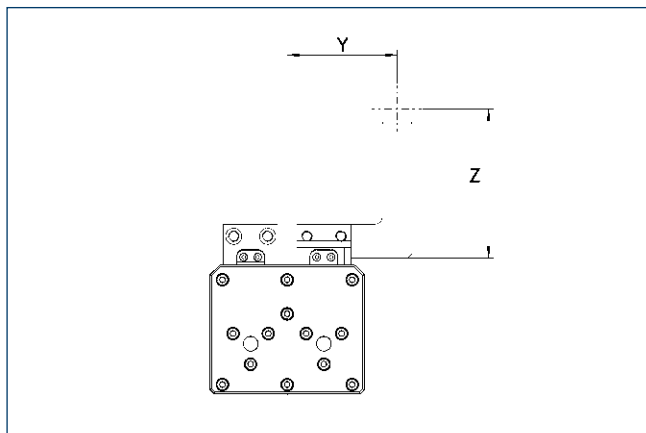
Main view



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
- ⑤ Electrical connection
- ⑦ Fit for centering sleeves
- ⑧ Depth of the centering sleeve hole in the mating part

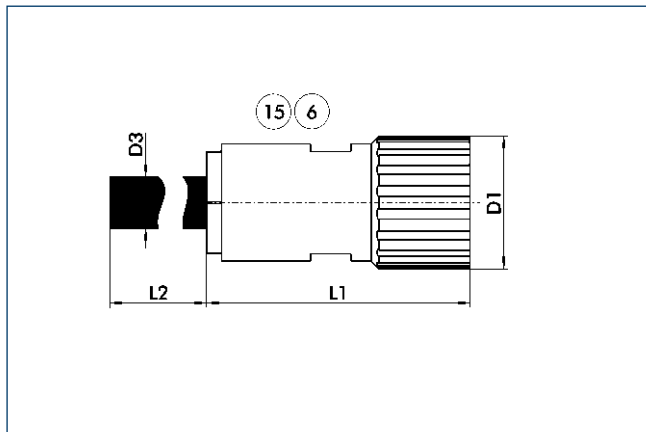
Maximum permitted finger projection



- Permitted range
- Inadmissible range

L_{max} is equivalent to the maximum permitted finger length, see the chart of technical specifications.

Power cable for SCHUNK MMI



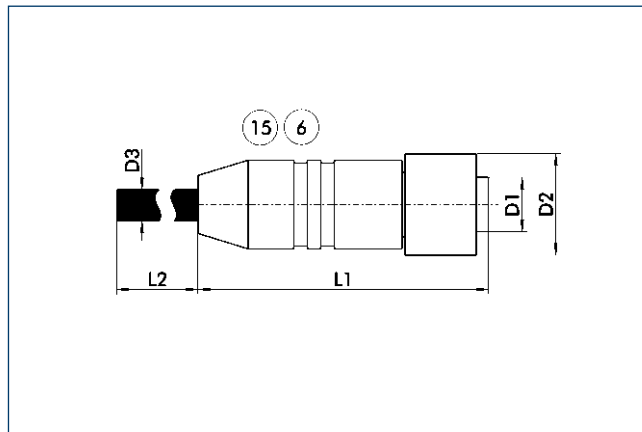
⑥ Connection module side ⑮ Socket

The power cable for the MMI connection cab is available in various lengths (L2). The power cable has an M23 connection plug on the module side. The cable can be optionally fitted with a matching mating plug (GG) or open wires (GL) on the other side.

Description	ID	L ₂ [m]	D ₁
Power cable for SCHUNK MMI			
KA GGN2304-LK-00150-H	0349874	1.5	M23
KA GGN2304-LK-00300-H	0349875	3	M23
KA GGN2304-LK-00500-H	0349876	5	M23
KA GGN2304-LK-01000-H	0349877	10	M23
KA GLN2304-LK-00150-H	0349870	1.5	M23
KA GLN2304-LK-00300-H	0349871	3	M23
KA GLN2304-LK-00500-H	0349872	0.5	M23
KA GLN2304-LK-01000-H	0349873	1	M23

① Please observe the bending radius (7.5 times the cable diameter).

CAN bus cable



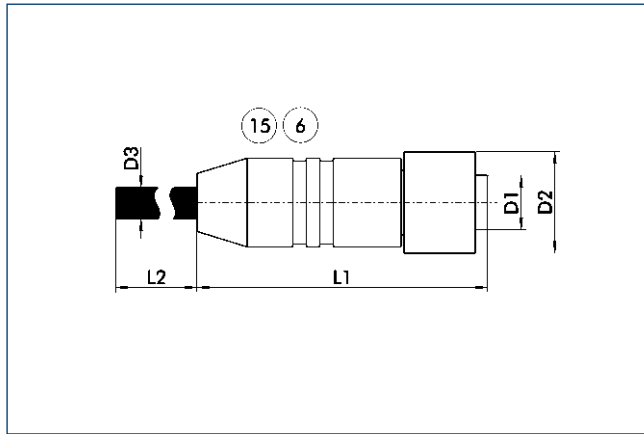
⑥ Connection module side ⑮ Socket

The CAN bus cable is pre-assembled for our mechatronic modules with MMI connection cap and the RPH rotary module. It has an M12 connector plug on both sides.

Description	ID	L ₂ [m]	D ₁
CAN bus cable			
KA GGN1204-CN-00150-A	0349770	1.5	M12
KA GGN1204-CN-00300-A	0349771	3	M12
KA GGN1204-CN-00500-A	0349772	5	M12
KA GGN1204-CN-01000-A	0349773	10	M12

① Please observe the bending radius (7.5 times the cable diameter).

Profibus cable



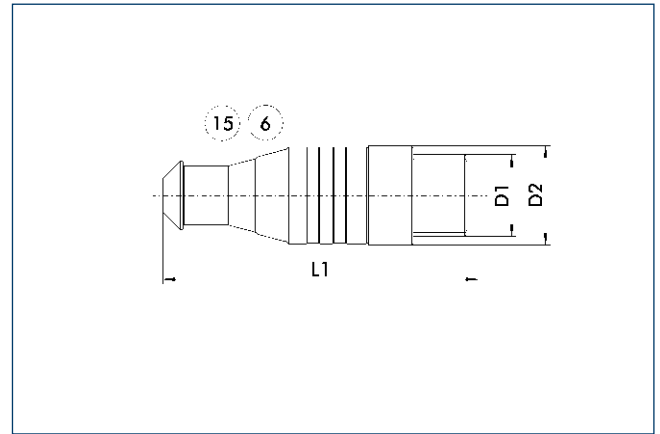
⑥ Connection module side ⑮ Socket

The Profibus cable is pre-assembled for our mechatronic modules with MMI connection cap and PRH rotary module. It has an M12 connector plug on both sides.

Description	ID	L ₂ [m]	D ₁
Profibus cable			
KA GGN1204-PB-00150-A	0349750	1.5	M12
KA GGN1204-PB-00300-A	0349751	3	M12
KA GGN1204-PB-00500-A	0349752	5	M12
KA GGN1204-PB-01000-A	0349753	10	M12

① Please observe the bending radius (7.5 times the cable diameter).

Terminators



⑥ Connection module side ⑮ Socket

The ST terminating resistors are provided for the termination of the bus string directly at the SCHUNK module. The terminating resistors are available for the Profibus (RB) or CAN bus (CN) bus systems.

Description	ID	D ₁
Terminators		
ST SG1204-CN-A-A	0349660	M12
ST SG1204-PB-A-A	0349650	M12

① A suitable terminator must be mounted on the last module in the CAN or Profibus line.

