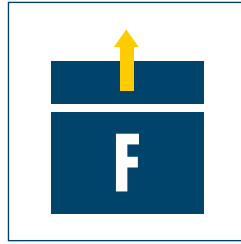




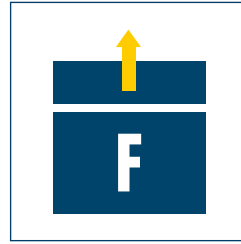
Sizes
64 .. 100



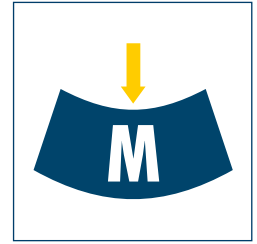
Weight
1.25 kg .. 4.9 kg



Piston force (extending)
130 N .. 430 N

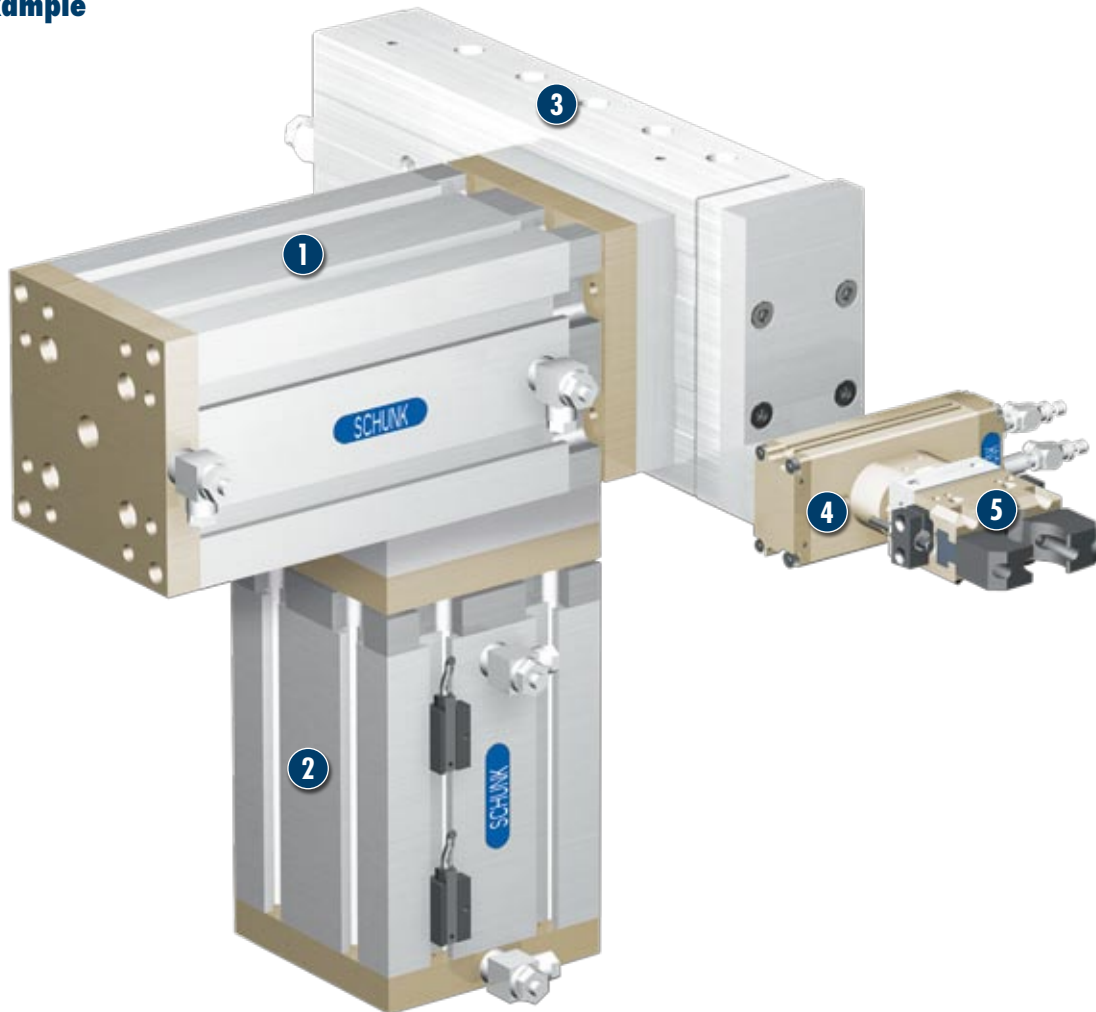


Piston force (retracting)
100 N .. 310 N



Bending moment
11 Nm .. 23 Nm

Application example



Triple-axis automatic insertion unit with additional rotational axis for rapid loading and unloading with workpiece rotation.

- 1 Linear unit PHE 100-120
- 2 Linear unit PHE 100-80
- 3 Mini-slide FST-S 25-120

- 4 Rotary actuator MRU 12.1-E-4
- 5 2-finger parallel gripper PGN 50-1

Stroke module

Linear unit with integrated air feed-through and high bearing load capacity in terms of bending and torsion moments.

Area of application

Any applications where a short linear stroke movement is required

Your advantages and benefits

Three different strokes per size

resulting in 9 different standard variations

Integrated hose-free air feed-through up to 8 bar

eliminating any unnecessary hoses

Ball bushing guide

Double ball bushing guide, with minimal play and low friction

Mounting, in addition to conventional screw-mounting, also possible using groove and T-nut

For universal assembly

Hose-free direct connection for air feed-through

for specific adaptation of the unit in all automation solutions.



General information about the series

Working principle

Pneumatic piston actuation, direct transmission, combined with ball bushing guide

Housing material

Aluminum, hard-anodized

Guide rods

Steel, ground

Actuation

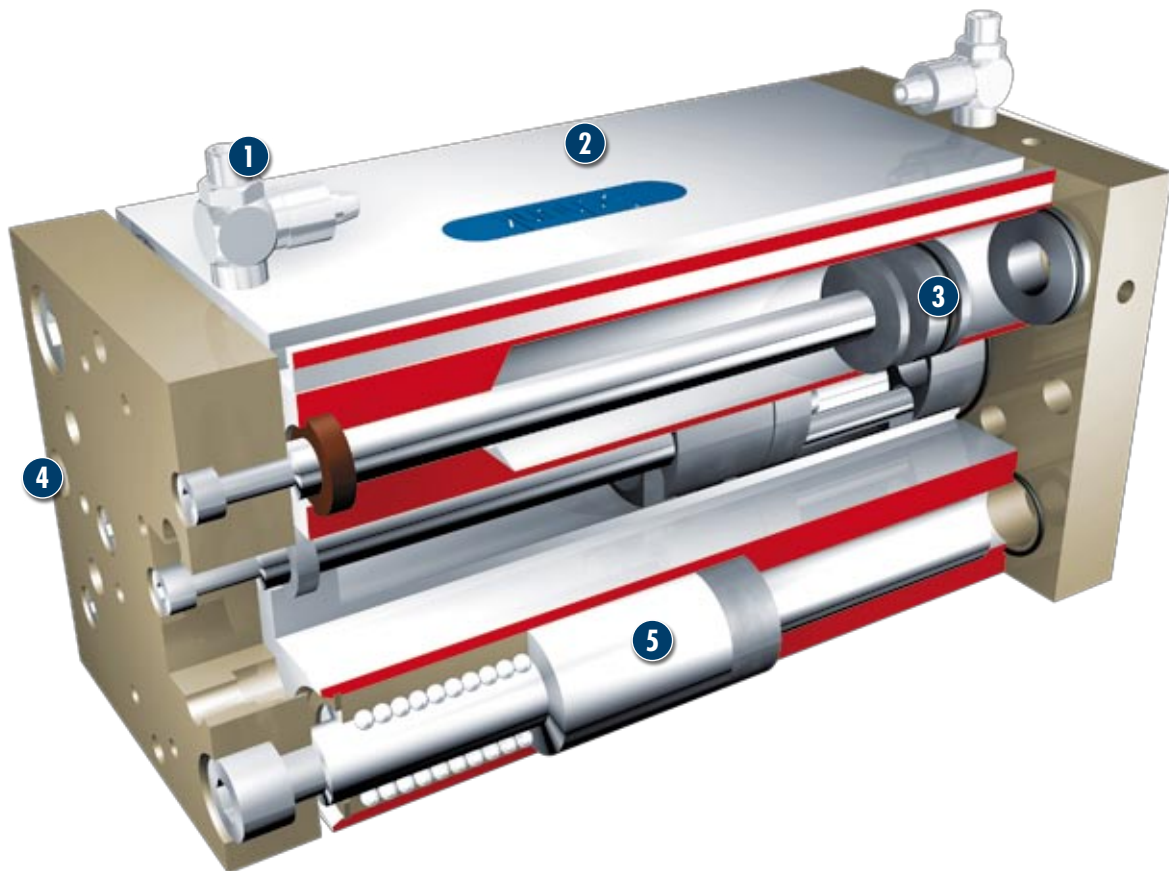
Pneumatic, using filtered compressed air (10 µm): dry, lubricated, or non-lubricated
Pressurizing medium: requirements for compressed air quality class according to DIN ISO 8573-1: Quality class 4

Scope of delivery

Includes flow control couplings, T-nuts, O-rings for direct connection, operating and assembly instructions with manufacturer's declaration

For production reasons, the colors may vary from those shown in the catalog.

Sectional diagram of function



- 1 Flow control couplings**
For adjusting the stroke speeds to ensure a long lifetime
- 3 Drive**
Powerful cylinder piston rods
- 5 Ball bushing guide**
Double ball bushing guide, with minimal play and low friction
- 2 Housing**
Weight-reduced through the use of a hard-anodized, high-strength aluminum alloy
- 4 Centering and mounting options**
For universal assembly

Description of function

The linear unit is powered by pneumatic pistons and guided by two opposite guide rods. The two rods move in low-friction ball bushings. The telescopic moving air feed-throughs are fitted inside the unit and provide the connection between the housing and the face plate including media connection.

Options and special information

The PHE series is available with special strokes on request.

Accessories

Accessories from SCHUNK – the suitable companion for the best functionality, reliability, and controlled production for all automation components.

Fittings



MMS magnetic switch



KA/KV sensor cable



V sensor distributor



SDV-P pressure maintenance valves



① Please see the side views at the end of the respective size for information concerning specific sizes, availability, designation, and ID numbers. You can find more information about our accessories range in the “Accessories” section of the catalog.

General information about the series

Repeat accuracy

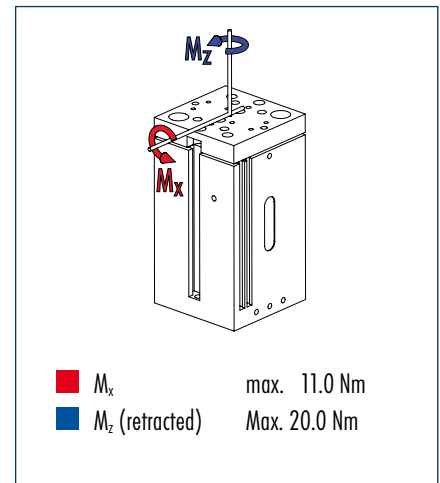
This is defined as the distribution of the end positions of 100 successive strokes.

Standard adapter plates

Standard adapter plates for direct mounting of the MPG-40 are available on request.



Moment load



Technical data

Designation		PHE 64-20	PHE 64-40	PHE 64-60
	ID no.	0300974	0300975	0300976
Piston force	[N]	130.0	130.0	130.0
Retraction force	[N]	100.0	100.0	100.0
Stroke	[mm]	20.0	40.0	60.0
Mass	[kg]	1.25	1.6	1.8
Max. permissible torsion moment (extended)	[Nm]	10.0	6.0	4.0
Fluid consumption for double stroke	[cm ³]	15.0	30.0	35.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
Max. permissible operating pressure	[bar]	8.0	8.0	8.0
Stroke time (extending)	[s]	0.2	0.2	0.25
IP rating		42	42	42
Min. operating temperature	[°C]	5.0	5.0	5.0
Max. operating temperature	[°C]	60.0	60.0	60.0
Number of air feed-throughs		2	2	2
Max. permissible pressure in air feed-through	[bar]	8.0	8.0	8.0
Repeat accuracy	[mm]	0.1	0.1	0.1

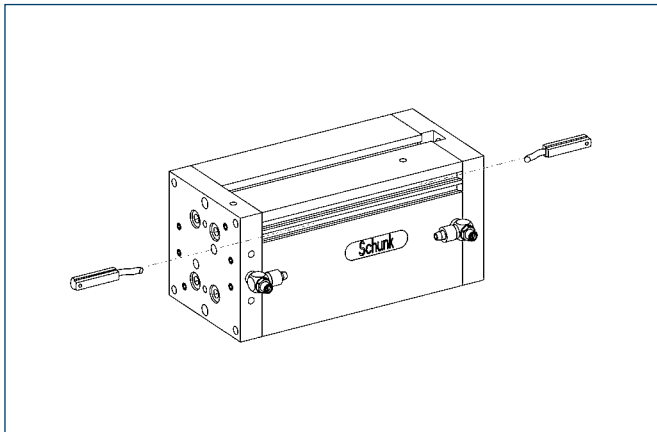
Technical drawing of the PHE 64-20 heat exchanger, showing three views: front, side, and detail. The drawing includes dimensions for overall size (64x64x11), internal structure (54x32x10), and various mounting and connection points. A table at the bottom right provides length specifications for different models.

PHE	l min±0.5	max±0.5	l1	l2	l3
64 - 20	111	131	80	38	21
64 - 40	148	188	117	58	38
64 - 60	168	228	137	78	38

- ① Linear unit connection
- ② Assembly connection
- ②5 Air feed-through
- ②6 T-nut
- ②7 Mounting groove for T-nuts
- ⑤2 End position damping set screw

The drawing shows which rotating point of the lever arm is used as a reference for calculating the bending moment.

Sensor systems



End position monitoring:

Electronic magnetic switch, to be installed in C-slot.

Designation	ID no.	Recommended product
MMS 30-S-M12-PNP	0301571	
MMS 30-S-M8-PNP	0301471	•
MMSK 30-S-PNP	0301563	

❗ Two sensors (closer/S) are required for each linear unit, as well as an optional extension cable.

Extension cable for proximity switch / magnetic switch

Designation	ID no.
KA BG08-L 3P-0300-PNP	0301622
KV BW12-SG12 3P-0100-PNP	0301596
KV BW08-SG08 3P-0100-PNP	0301496
KV BW12-SG12 3P-0200-PNP	0301597
KV BW08-SG08 3P-0200-PNP	0301497
KV BW12-SG12 3P-0030-PNP	0301595
KV BW08-SG08 3P-0030-PNP	0301495
KA BW08-L 3P-0300-PNP	0301594
KA BW08-L 3P-0500-PNP	0301502

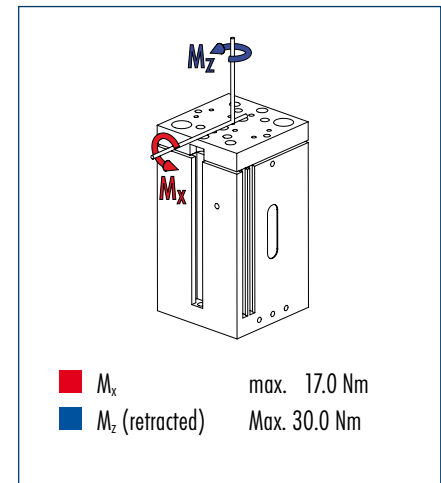
KV = Cable extension, KA = Cable connection, G = Straight plug, W = Right-angle plug,
L = Wire strands, S = Plug, B = Socket, 4P = 4 pins

❗ For sensor cables, note the minimum permissible bending radii.
These are generally 35 mm.

 You can find further information and components for the accessories mentioned here in the “Accessories” section of the catalog.



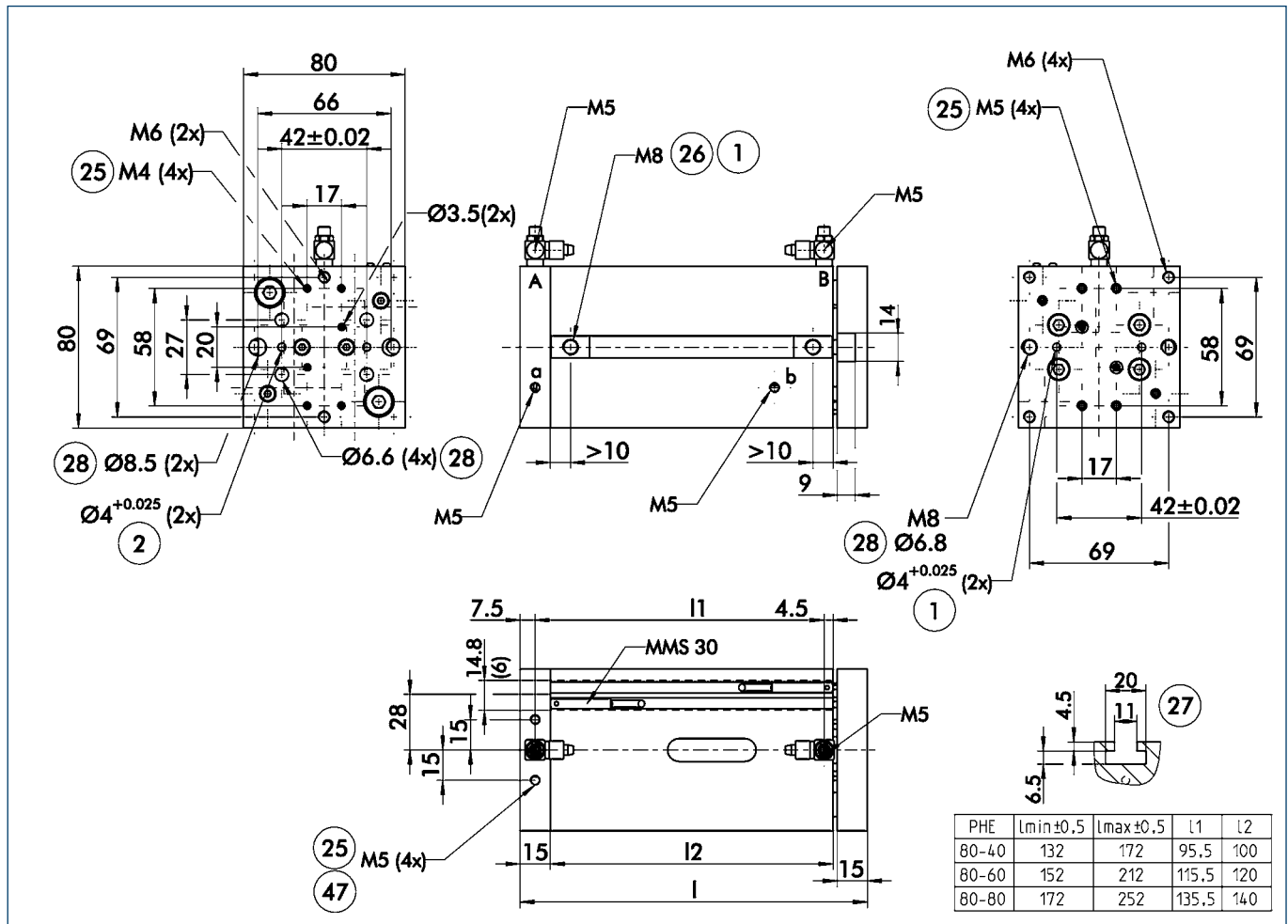
Moment load



Technical data

Designation		PHE 80-40	PHE 80-60	PHE 80-80
	ID no.	0300977	0300978	0300979
Piston force	[N]	250.0	250.0	250.0
Retraction force	[N]	200.0	200.0	200.0
Stroke	[mm]	40.0	60.0	80.0
Weight	[kg]	2.3	2.55	2.8
Max. permissible torsion moment (extended)	[Nm]	7.0	4.0	3.0
Fluid consumption for double stroke	[cm ³]	46.0	69.0	92.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
Max. permissible operating pressure	[bar]	8.0	8.0	8.0
Stroke time (extending)	[s]	0.3	0.35	0.4
IP rating		42	42	42
Min. ambient temperature	[°C]	5.0	5.0	5.0
Max. ambient temperature	[°C]	60.0	60.0	60.0
Number of air feed-throughs		4	4	4
Max. permissible pressure in air feed-through	[bar]	8.0	8.0	8.0
Repeat accuracy	[mm]	0.1	0.1	0.1

Main views

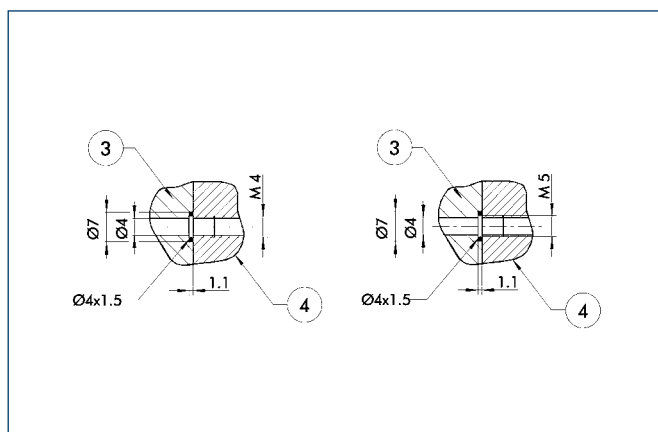


① The SDV-P pressure maintenance valve can be used to hold the position in case of a loss of pressure (see "Accessories" section of catalog).

A,a Main and direct connection, extend linear unit
B,b Main and direct connection, retract linear unit

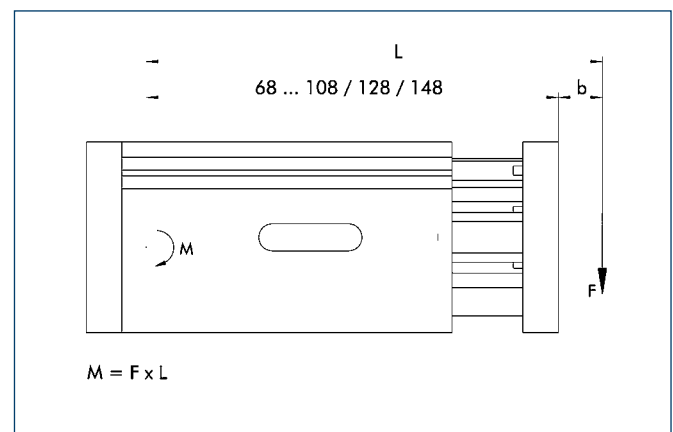
- ① Linear unit connection
- ② Assembly connection
- ②⑤ Air feed-through
- ②⑥ T-nut
- ②⑦ Mounting groove for T-nuts
- ②⑧ Through-bore
- ④⑦ On both sides

Hose-free direct connection



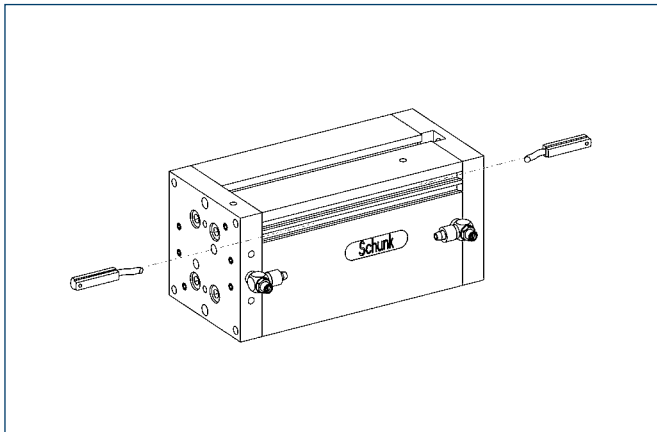
- ③ Adapter
- ④ Linear unit

Bending moment



The drawing shows which rotating point of the lever arm is used as a reference for calculating the bending moment.

Sensor systems



End position monitoring:

Electronic magnetic switch, to be installed in C-slot.

Designation	ID no.	Recommended product
MMS 30-S-M12-PNP	0301571	
MMS 30-S-M8-PNP	0301471	•
MMSK 30-S-PNP	0301563	

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KV BW08-SG08 3P-0100-PNP	0301496
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KV BW08-SG08 3P-0200-PNP	0301497
KV BW12-SG12 3P-0030-PNP	0301595
KV BW08-SG08 3P-0030-PNP	0301495
KA BW08-L 3P-0300-PNP	0301594
KA BW08-L 3P-0500-PNP	0301502

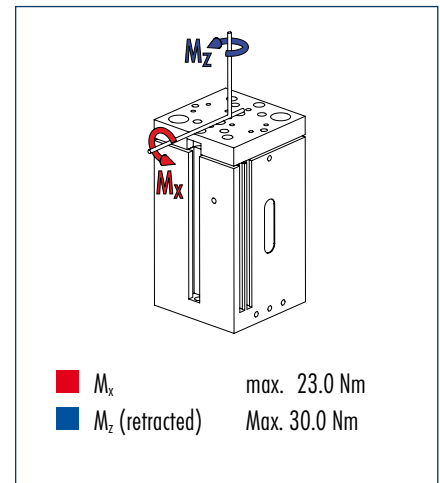
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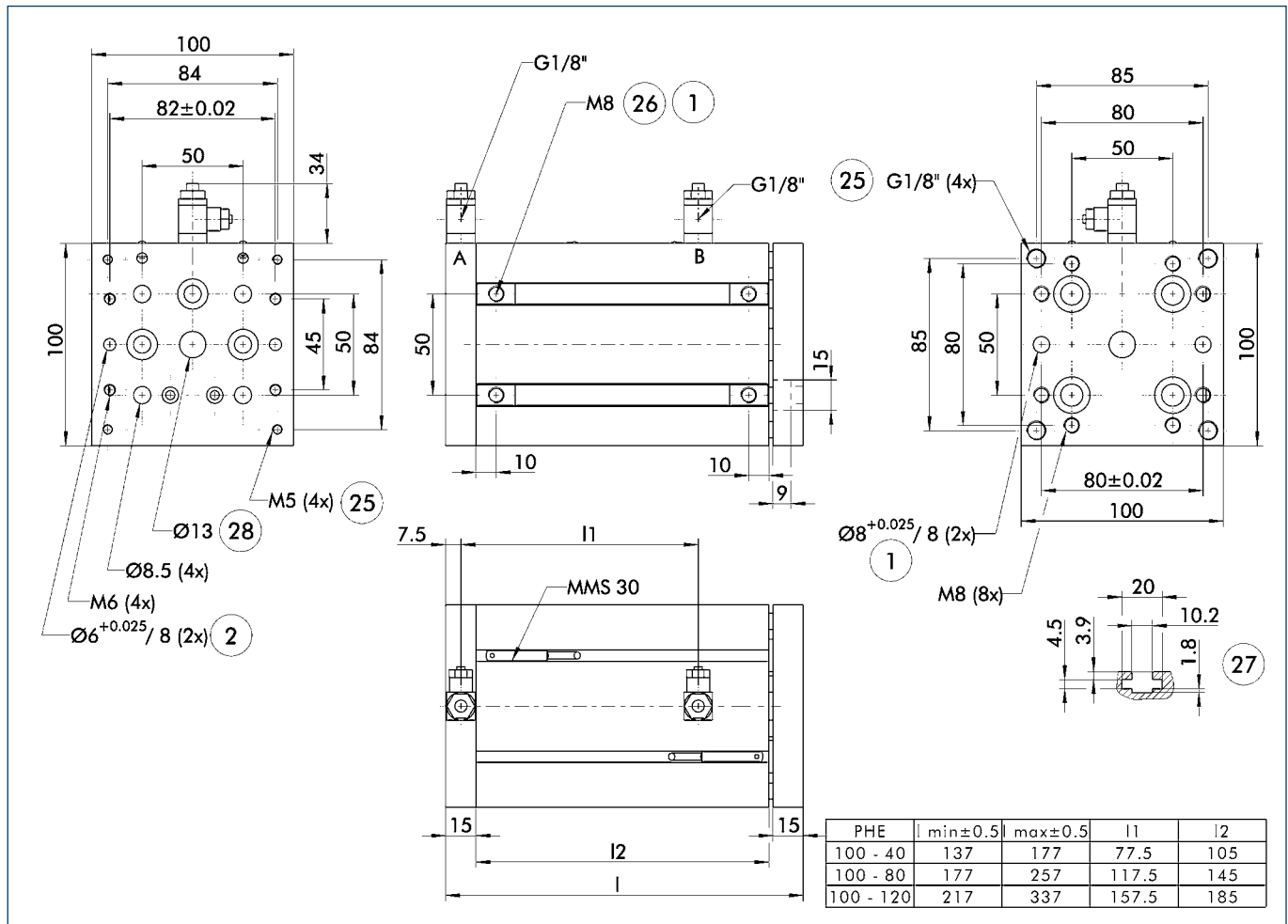
Moment load



Technical data

Designation		PHE 100-40	PHE 100-80	PHE 100-120
	ID no.	0300980	0300985	0300990
Piston force	[N]	430.0	430.0	430.0
Retraction force	[N]	310.0	310.0	310.0
Stroke	[mm]	40.0	80.0	120.0
Weight	[kg]	3.5	4.2	4.9
Max. permissible torsion moment (extended)	[Nm]	7.0	4.0	3.0
Fluid consumption for double stroke	[cm ³]	58.0	116.5	175.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
Max. permissible operating pressure	[bar]	8.0	8.0	8.0
Stroke time (extending)	[s]	0.15	0.25	0.8
IP rating		42	42	42
Min. ambient temperature	[°C]	5.0	5.0	5.0
Max. ambient temperature	[°C]	60.0	60.0	60.0
Number of air feed-throughs		4	4	4
Max. permissible pressure in air feed-through	[bar]	8.0	8.0	8.0
Repeat accuracy	[mm]	0.1	0.1	0.1

Main views

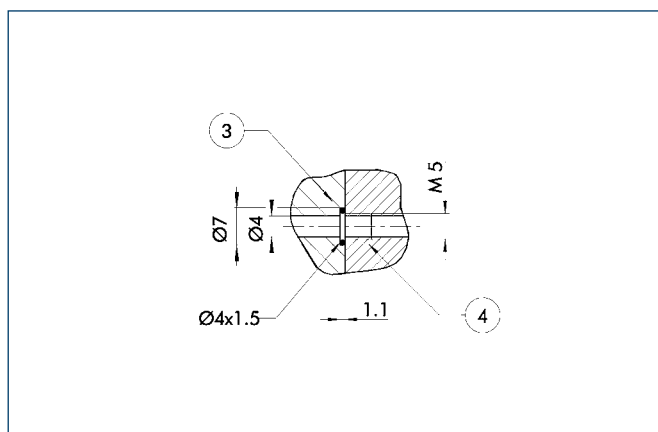


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B,b Main and direct connection, retract linear unit

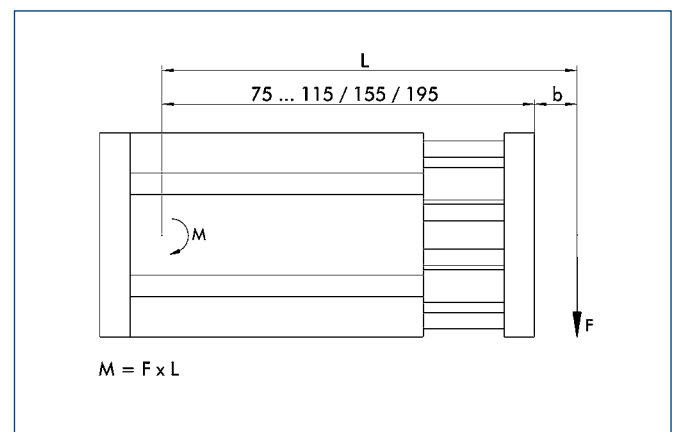
① Linear unit connection
② Assembly connection
②⑤ Air feed-through
②⑥ T-nut
②⑦ Mounting groove for T-nuts
②⑧ Through-bore

Hose-free direct connection



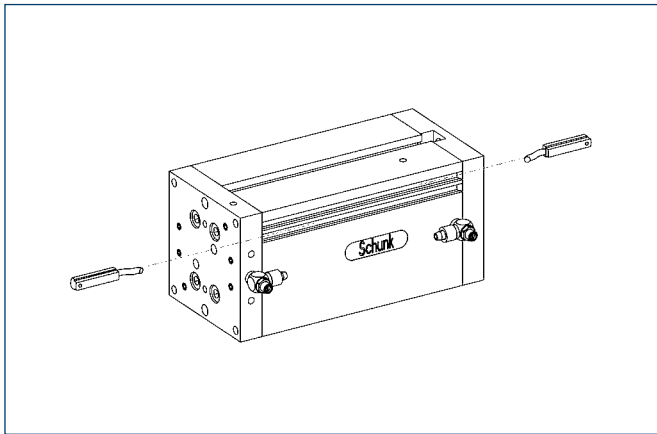
③ Adapter
④ Linear unit

Bending moment



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Sensor systems



End position monitoring:

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KV BW12-SG12 3P-0030-PNP	0301595
KV BW08-SG08 3P-0030-PNP	0301495
KA BW08-L 3P-0300-PNP	0301594
KA BW08-L 3P-0500-PNP	0301502

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L = Wire strands, S = Plug, B = Socket, 4P = 4 pins

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These are generally 35 mm.