

LINEAR GUIDE CLAMPING ELEMENT PRODUCT MANUAL

ALM INTELLIGENT TECHNOLOGY (SUZHOU) CO., LIMITED



COMPANY⁺ PROFILE

Established in year of 2009,ALM manufactures and supplies high quality linear motion components for customers in fields of aircraft, satellite,medical, Instrumentation, Robotics, Automobile, Electrical & Electronics, Textile, Medical, Food & Beverages, General Industry and so on.

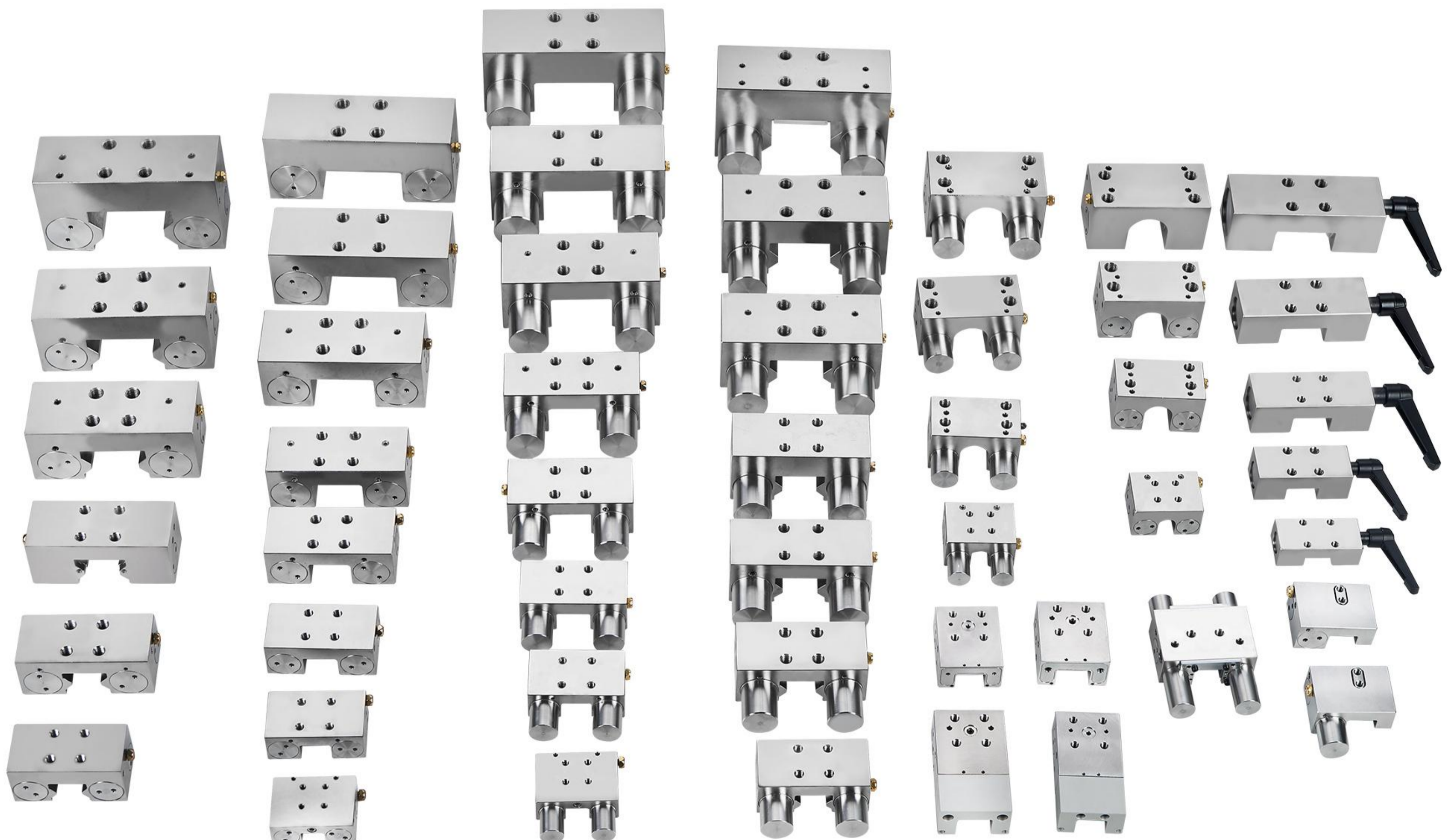
We focus on constant product development.Linear rail clamp element is one of ALM main product series and very popular among high-end customers.

ALM has a strong R&D team and focus on new technology research, manufacturing process improvement and quality assurance system improvement of linear clampers.After introducing and absorbing advanced technologies from industrialized countries such as Germany and Japan, a precision production line has been established for mass production of various types of guide rail brakes.

Clamping element is a device for position locking or emergency braking by directly clamping the shaft parts.

The shaft parts that can be clamped are round shaft,square shaft,linear guide and so on.

The main purpose of clamping element:fixed sliding table,precision positioning,preventing vibration and improving rigidity.Some clamping elements can also be used as emergency braking devices.



Pneumatic normally open clamping element



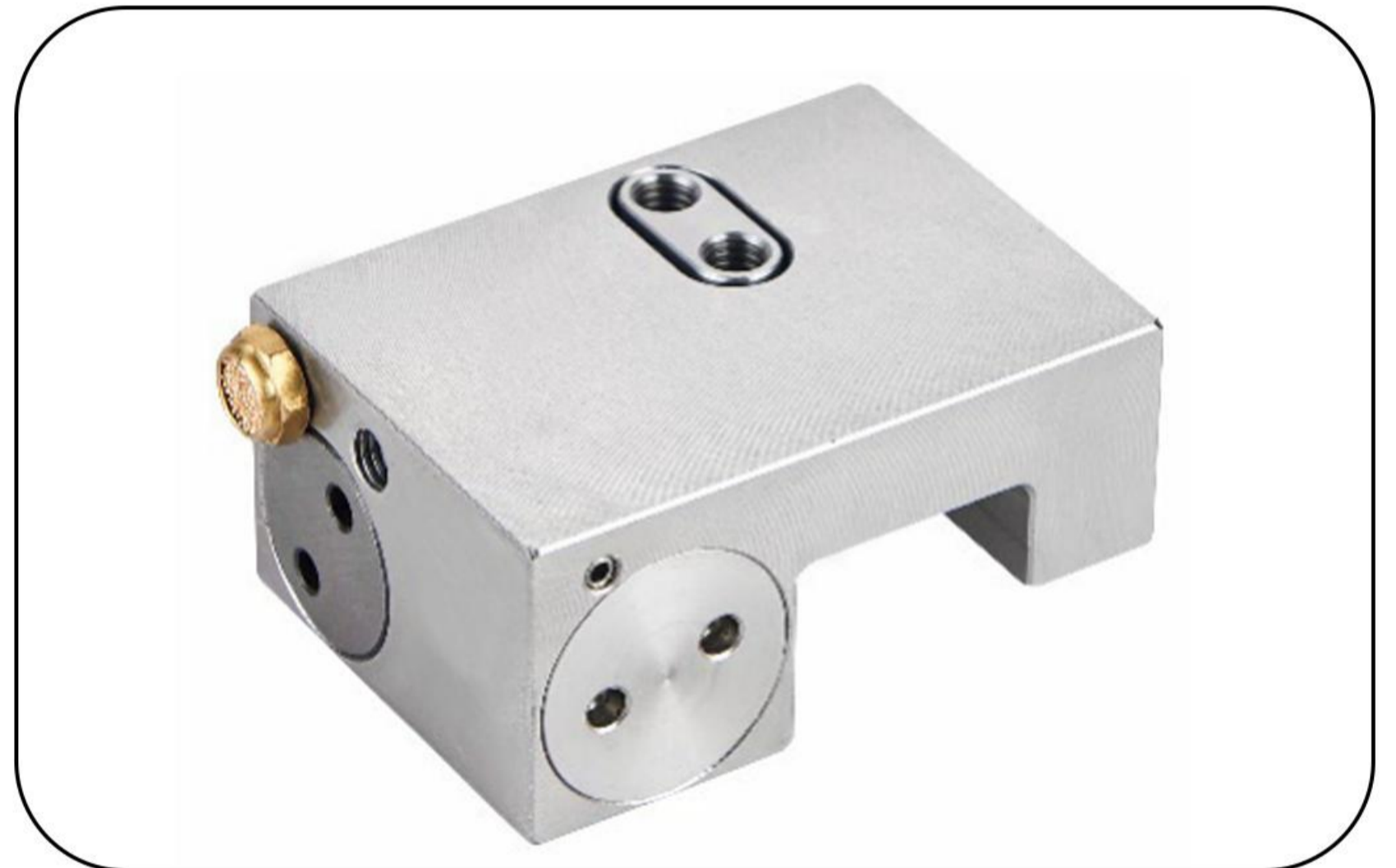
AK-B Ball Guide Pneumatic
Normally Open Type



AK-R Roller Guide Pneumatic
Normally Open Type



XK-B Ball Guide Pneumatic
Normally Open Slender Type



DK-B Ball Guide Pneumatic
Normally Open Single Cylinder Type



Pneumatic normally open clamping element features

- It has the functions of fixing the slide table, precise positioning, preventing vibration and improving rigidity.
- When there is air pressure, the linear guide is clamped; when there is no air pressure, the clamping is released.
- The surface of the clamping element main body is nickel-plated and has good rust resistance.
- Novel design, compact structure and strong clamping force.

Model	Rated holding force (N)	Air consumption {ℓ/cycle (ANR) }
AK15B	650	0.011
AK20B	1000	0.019
AK25B · AK25R	1200	0.021
AK30B · AK30R	1750	0.03
AK35B · AK35R	2000	0.03
AK45B · AK45R · AK55R	2250	0.04
AK55B · AK65B · AK65R	3000	0.07
XK15B	550	0.025
XK20B	850	0.04
XK25B	1100	0.055
DK20B	700	0.015
YK12 · YK16	650	0.015
YK20	1000	0.019
YK25	1200	0.021
YK30	1750	0.03

Note: The data in the table are values at 0.6MPa air pressure. The holding force is proportional to the air pressure within the working pressure range.

Working parameters

Working pressure	0.2~0.6MPa
Response time	≤0.06 s
Use temperature	0°C~70°C
Clamping Service life	5 million times

Note: Laboratory data for reference, the data may differ due to different working conditions during actual use.

Pneumatic Normally Open Clamping Element

Model Number Of AK Series:

AK 25 11 B — H — L
 ① ② ③ ④ ⑤ ⑥

① Clamping element type

- AK: Conventional type, pneumatic normally open type, suitable for linear guide and square shafts
- XK: Slender type, pneumatic normally open type, suitable for linear guide and square shafts
- DK: single cylinder type, pneumatic normally open type, suitable for linear guide and square shafts

② Linear guide sizes

15 , 20 , 25 , 30 , 35 , 45 , 55 , 65

③ Product series number

Some models have series numbers

④ Linear guide types

B: Ball linear guide , square shaft R: Roller linear guide

⑤ Whether clamping elements are equipped with spacer

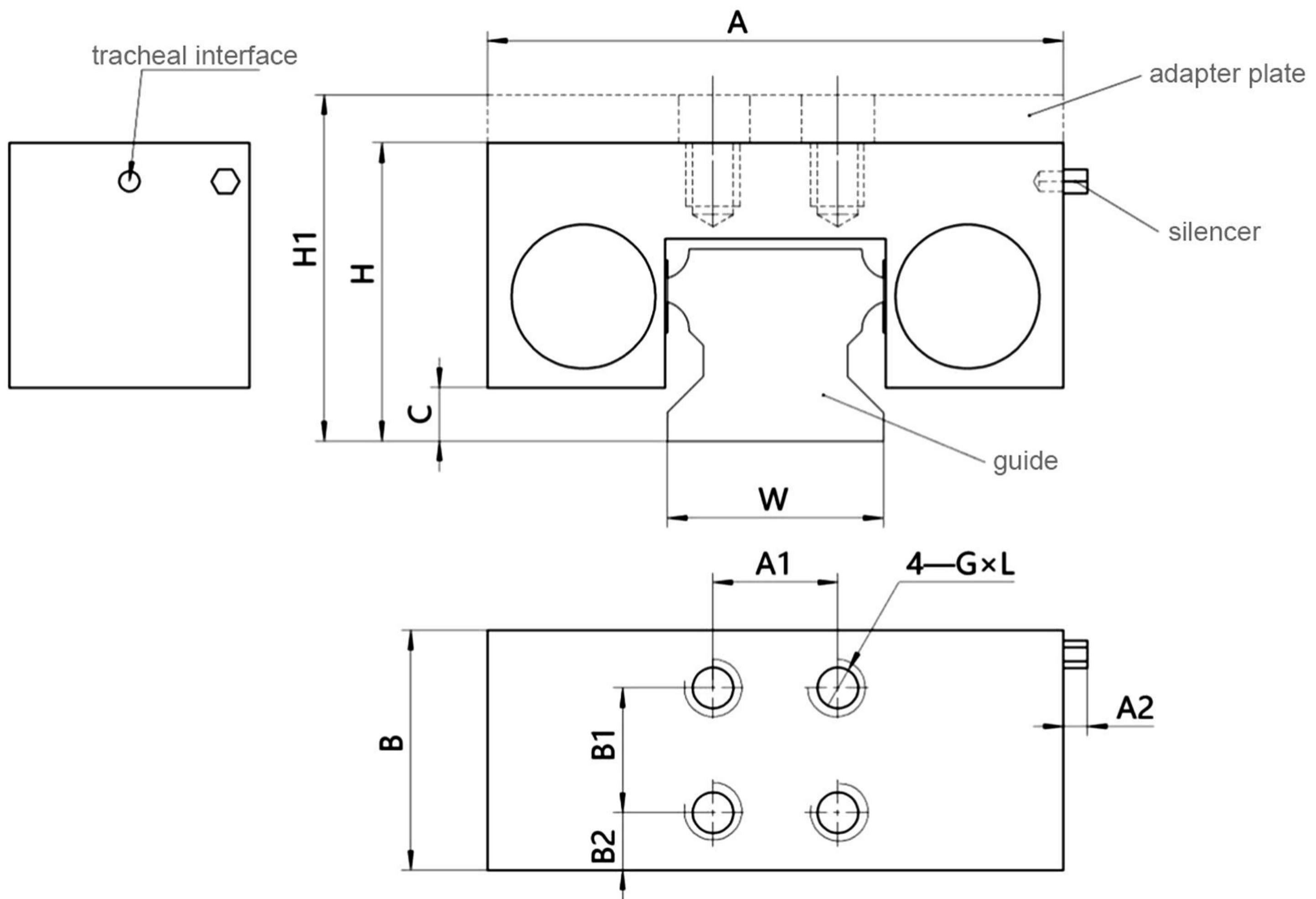
H: with spacer plate None: Standard type

- **Note:** If H is marked after ① clamping element category, which means that the height of clamping element is equal to the standard type plus heightening spacer dimension, such as AKH25R, only some models are made this way.

⑥ Installation position of air pipe joint and muffler

- DK: Single-cylinder type does not need to select position, they are all on the left side
- L: Place clamping element mounting surface upward, facing the left-hand side of the cylinder
- None: Place clamping element side upward, facing the right-hand side of the cylinder
- AL: Place clamping element mounting surface upward, facing the front left side of cylinder,
X K slender model only
- AR: Place clamping element mounting surface upward, facing the front right side of cylinder,
X K slender model only

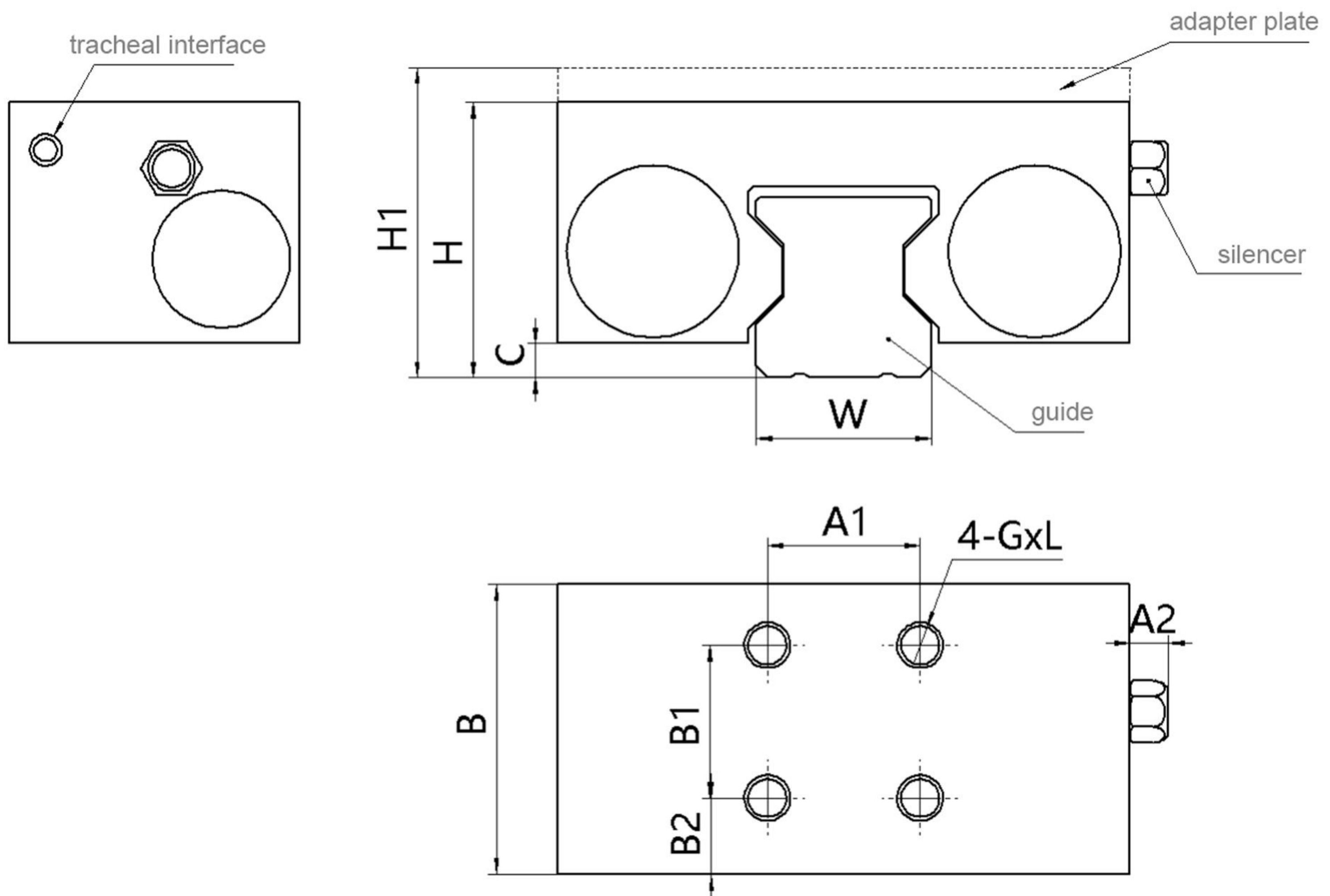
AK-B ball guide pneumatic normally open dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	H	H1	C	G	L
AK15B	15	55	15	5	39	15	15.5	24	28	2.5	M4	4.5
AK20B	20	66	20	5	38	20	8.5	30	~	4	M5	6
AK25B	23	75	20	5	38	20	10	36	40	5.5	M6	8
AK2511B	23	75	20	5	35	20	5	36	40	8	M6	8
AK30B	28	90	22	5	42	22	8.5	42	45	7	M8	8
AK35B	34	100	24	5	42	24	9	48	55	7	M8	10
AK45B	45	120	26	5	50	26	12	60	70	9	M10	15
AK55B	53	136	30	5	50	30	10	70	80	14	M10	16
AK65B	63	146	30	5	50	30	10	90	~	22	M10	16

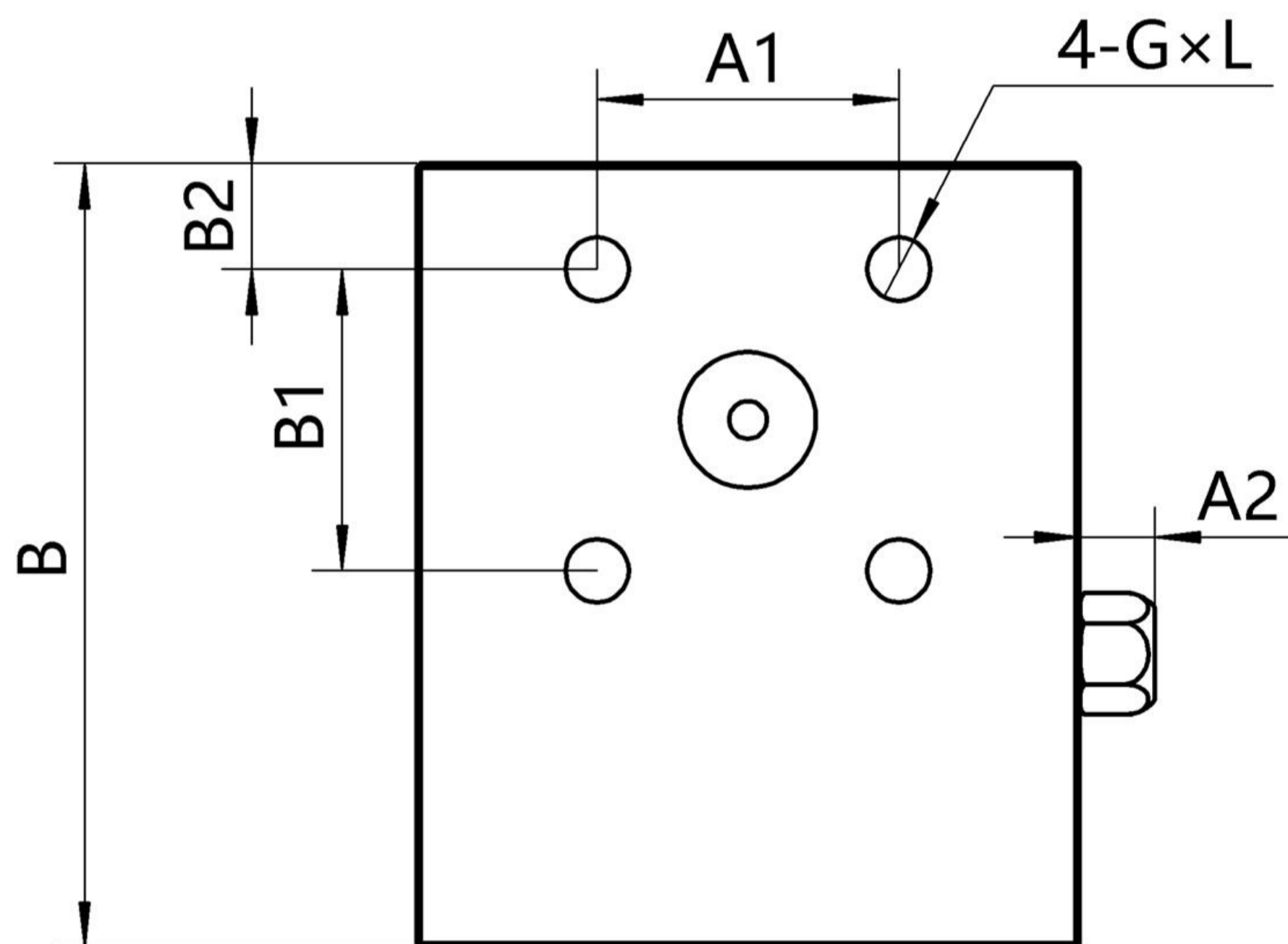
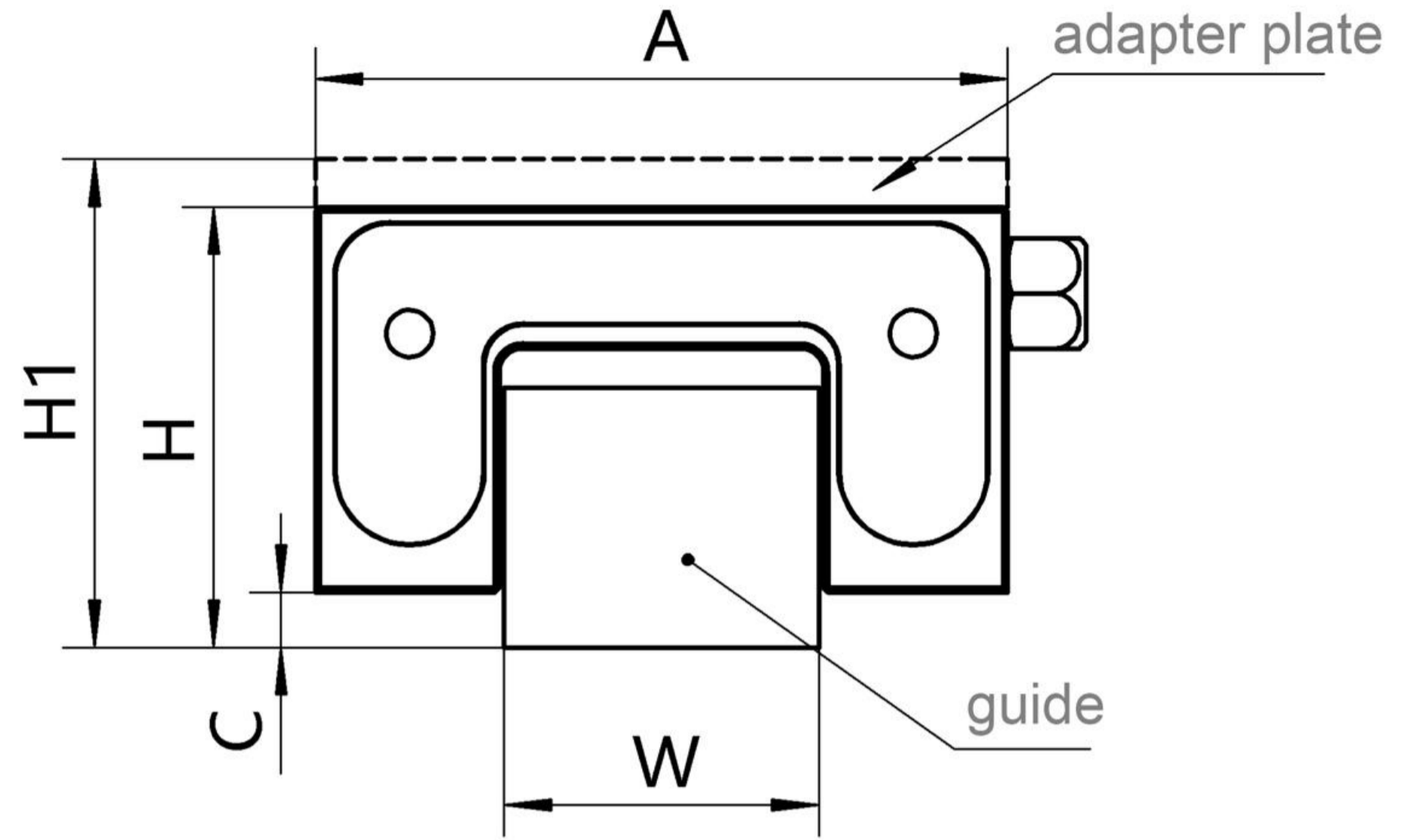
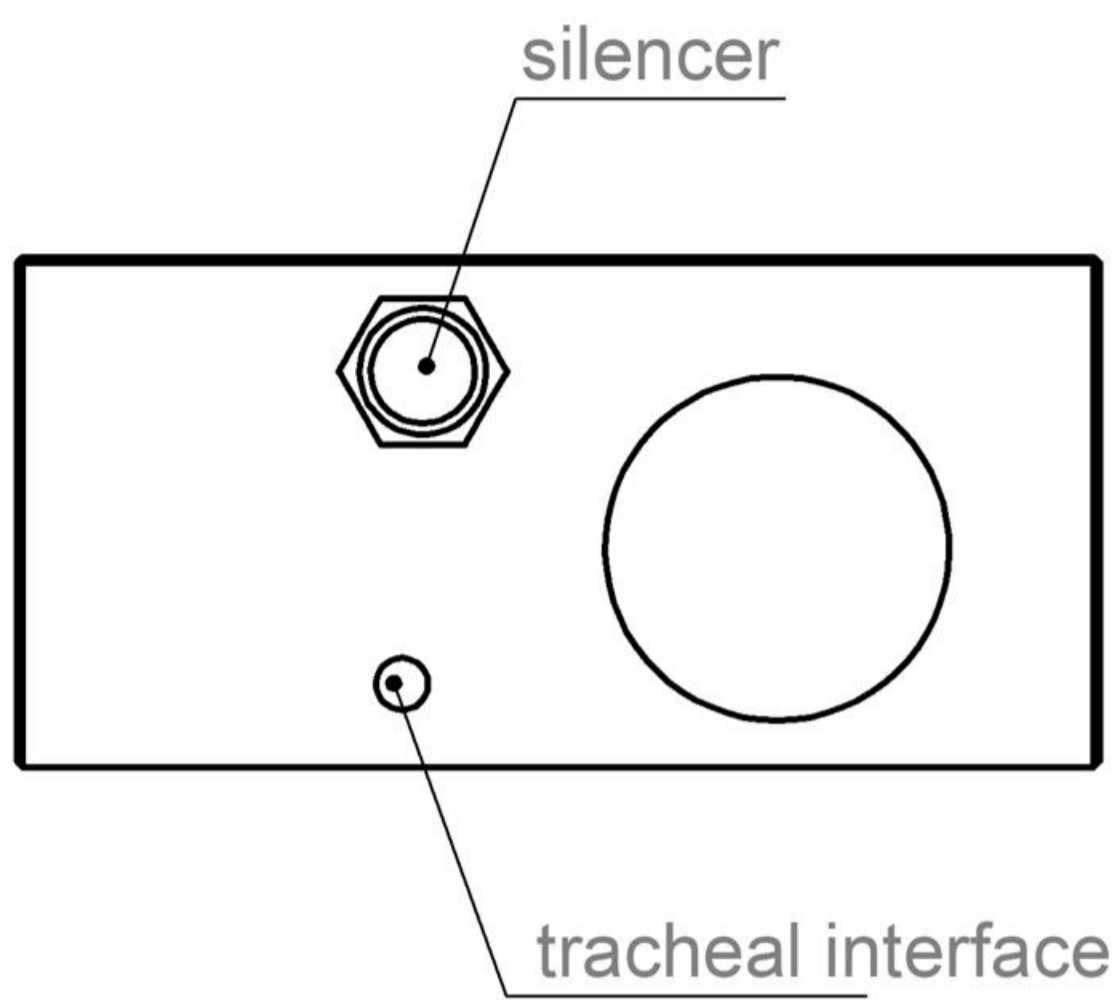
AK-R roller guide pneumatic normally open dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	H	H1	C	G	L
AK25R	23	75	20	5	38	20	10	36	40	4.5	M6	7
AKH25R	23	75	20	5	38	20	10	40	~	4.5	M6	8
AK30R	28	90	22	5	41	22	9.5	42	45	5	M8	9
AKH30R	28	90	22	5	41	22	9.5	45	~	5	M8	9
AK35R	34	100	24	5	41	24	8.5	48	55	5	M8	10
AKH35R	34	100	24	5	41	24	8.5	55	~	5	M8	10
AK45R	45	120	26	5	50	26	12	60	70	8.5	M10	15
AK55R	53	128	30	5	50	30	10	70	80	10	M10	17
AK65R	63	138	30	5	50	30	10	90	~	13	M10	19

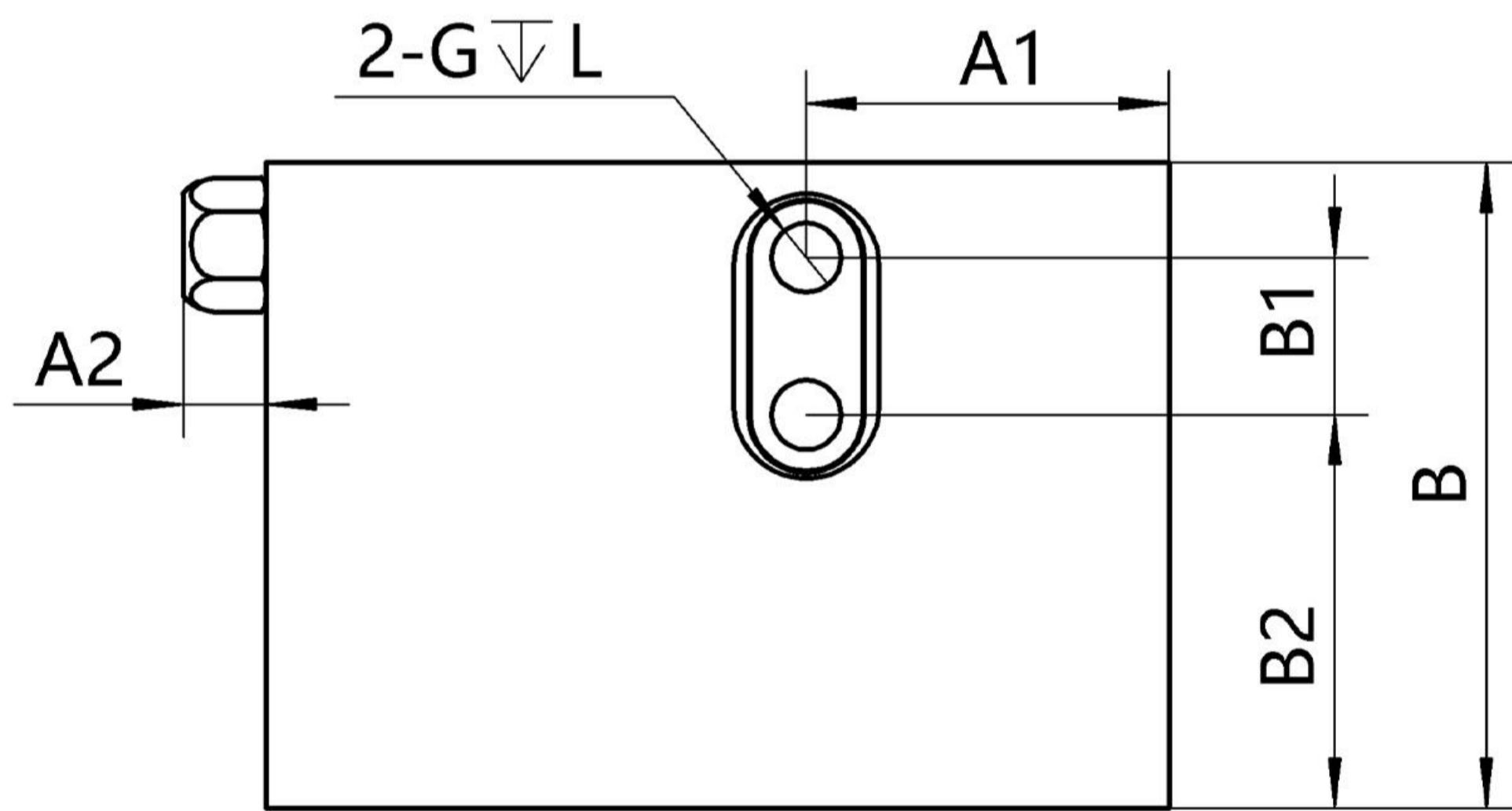
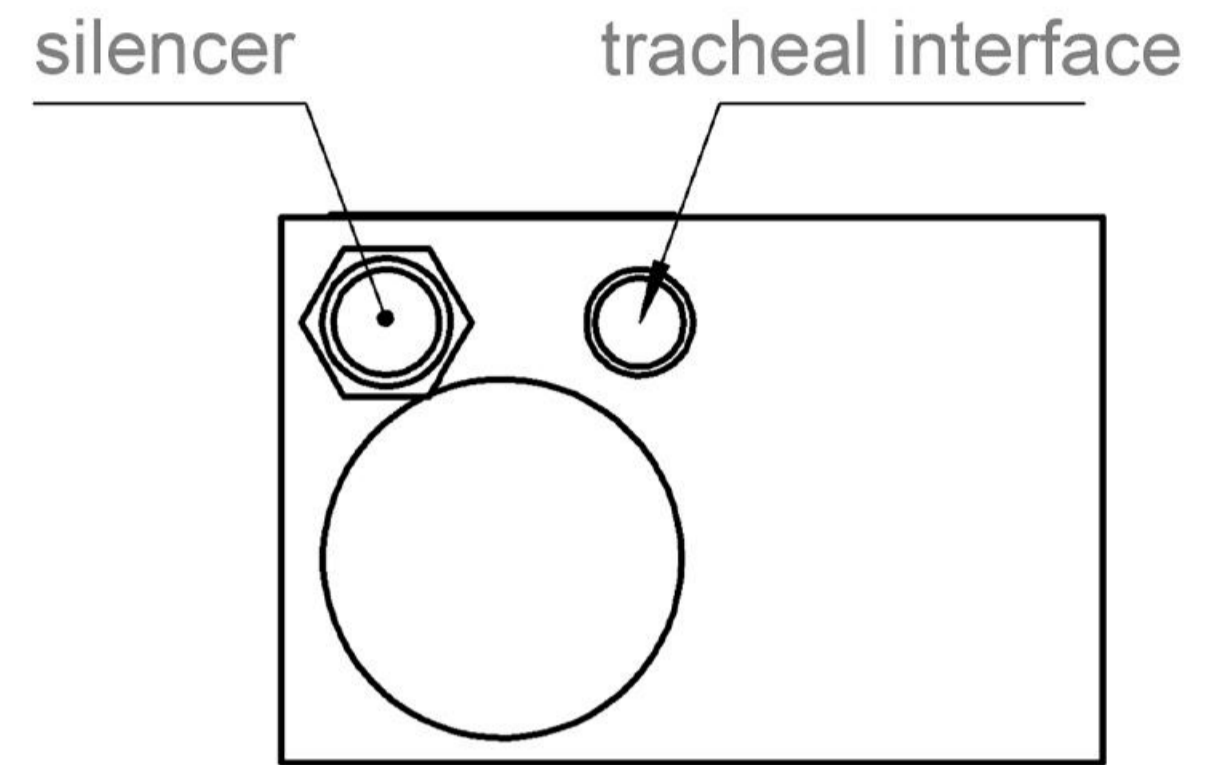
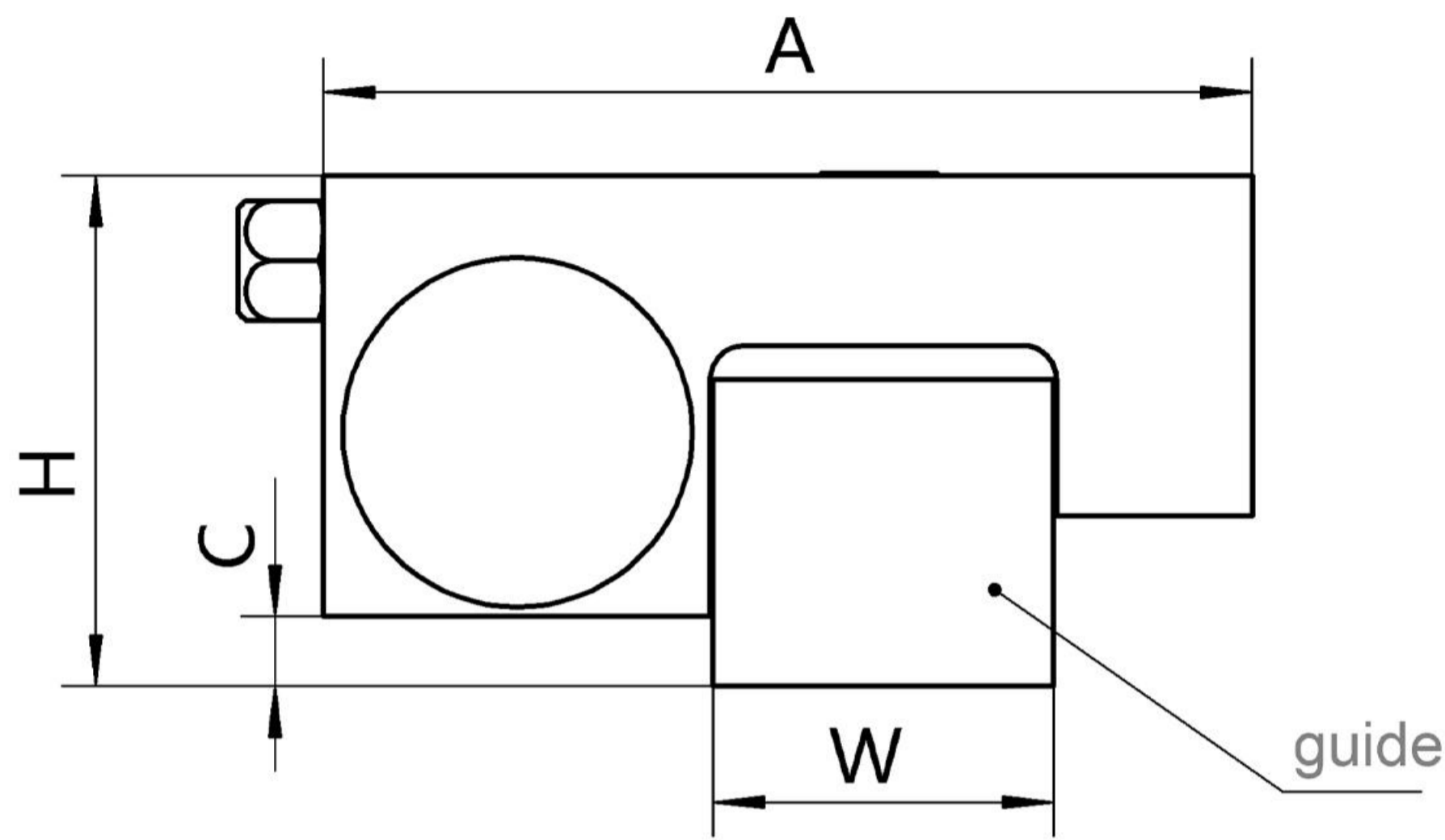
XK-B ball guide pneumatic normally open slender type dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	H	H1	C	G	L
XK15B	15	34	15	5	49	15	8.5	24	28	3.3	M4	4.5
XK20B	20	44	20	5	52	20	7	28	/	3.5	M5	5.5
XK25B	23	48	20	5	52	20	7	36	40	7.5	M6	6.5

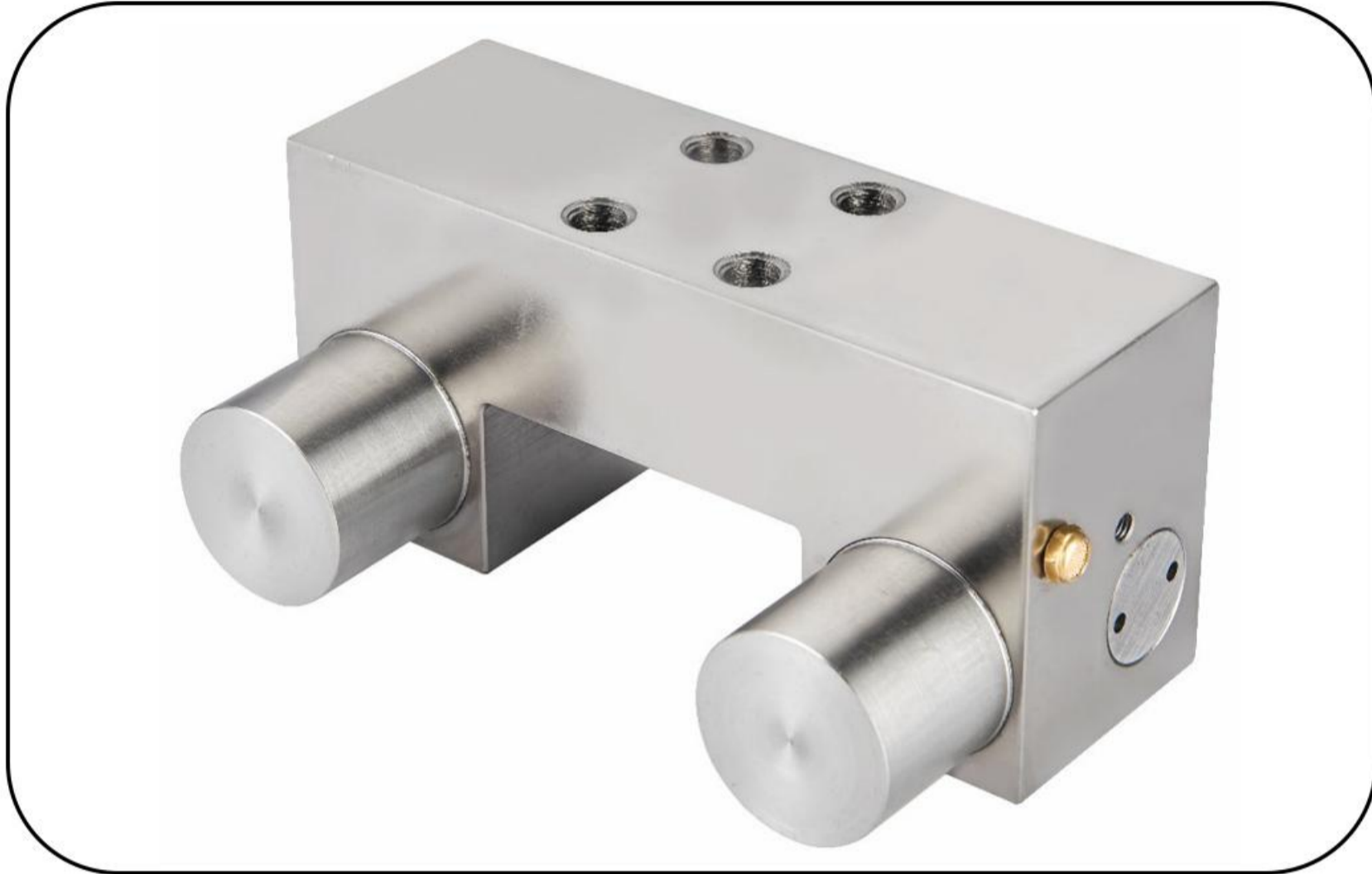
DK-B ball guide pneumatic normally open single cylinder type dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	H	C	G	L
DK20B	20	54.5	21.8	5	39	9.5	23.7	30	4	M5	6.5

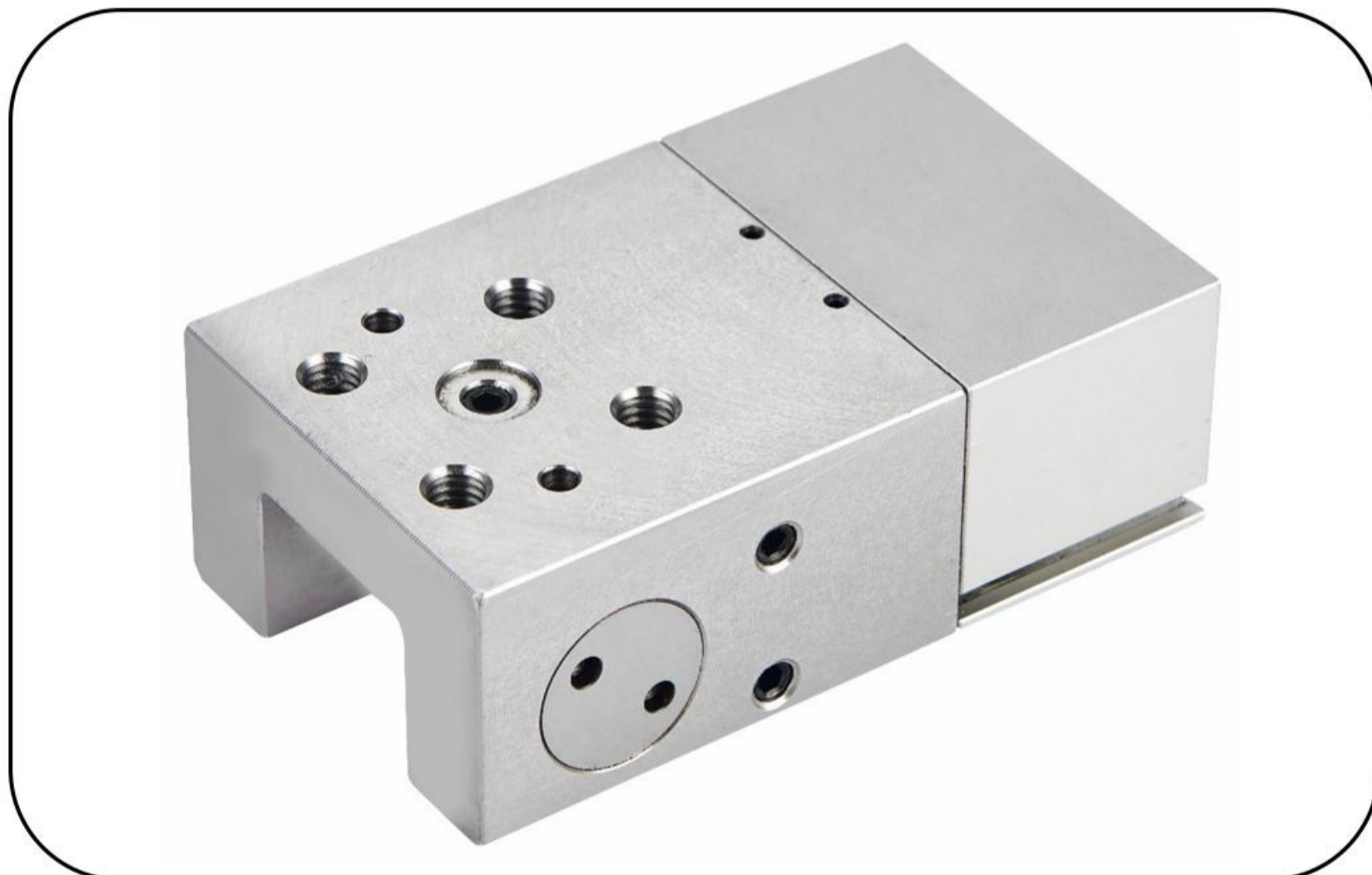
Pneumatic normally closed clamping element



AKS-B Ball Guide Pneumatic
Normally Closed Type



AKS-R Roller Guide Pneumatic
Normally Closed Type



XKS-B Ball Guide Pneumatic
Normally Closed Slender Type

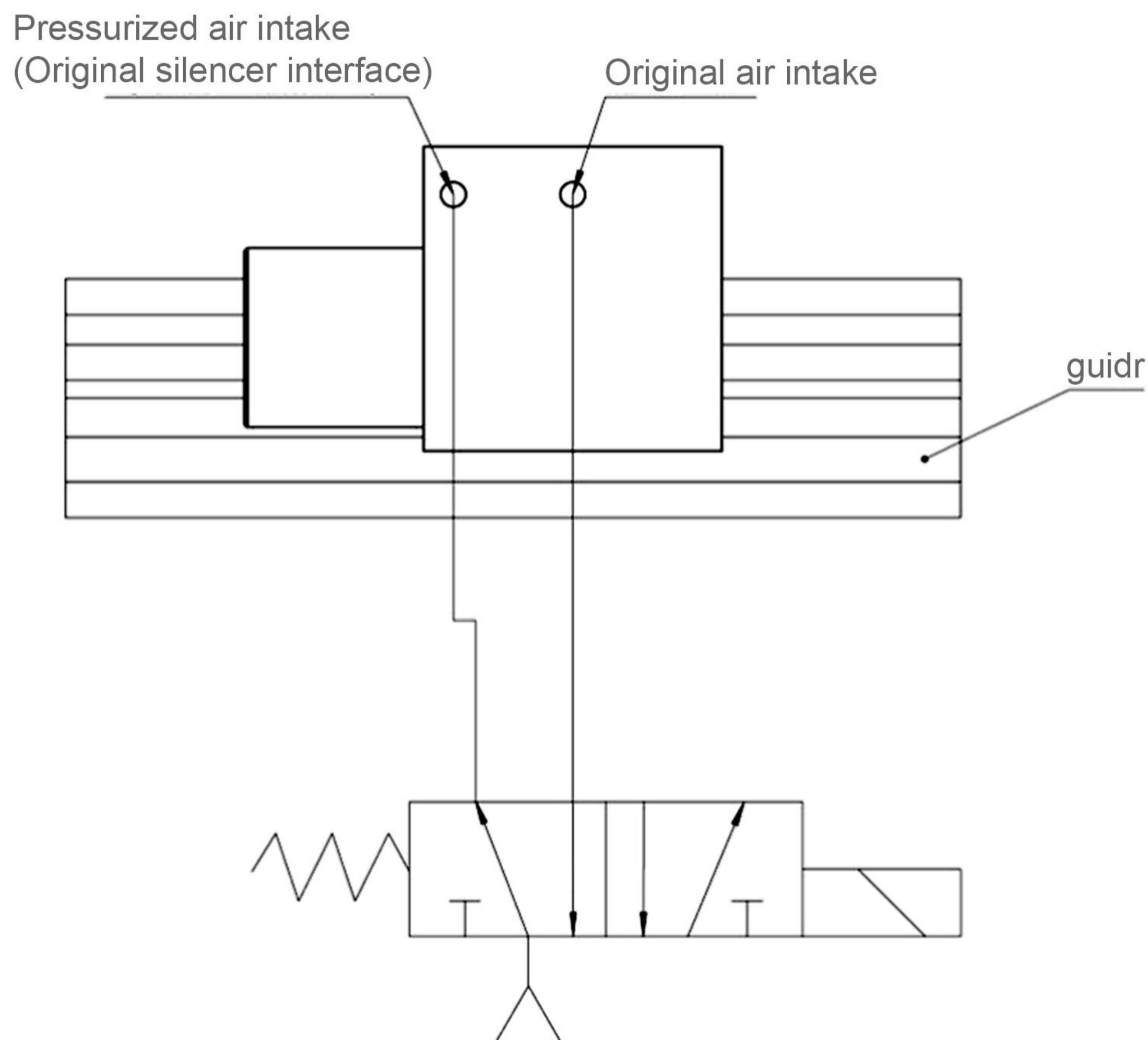


DKS-B Ball Guide Pneumatic
Normally Closed Single
Cylinder Type



Pneumatic normally closed clamping element features

- It has the functions of fixed sliding table, precise positioning, preventing vibration and improving rigidity..
- When there is air pressure, the clamping is released; when there is no air pressure, the linear guide is clamped by spring force.
- The surface of the clamping element main body is nickel-plated and has good rust resistance.
- Depending on the holding force requirements of the mechanism, standard connections or pressurized connections can be used. Pressurized connection: The holding force of the spring plus the holding force generated by air pressure.
- Pressurized connection method
 1. Remove the muffler.
 2. Connect pipejoints, air pipes, solenoid valves
 3. Supply air and start the solenoid valve, and check the clamping and opening status of clamping element.



Standard type rated holding force (0.55Mpa)

Model/0.55Mpa	Rated holding force(N)		Air consumption (ℓ/cycle (ANR))	
	Standard connection	pressurized connection	Standard connection	pressurized connection
AKS15B	400	1050	0.011	0.035
AKS20B · YKS20	600	1300	0.019	0.064
AKS25B · AKS25R · YKS25	750	1400	0.021	0.07
AKS30B · AKS30R · YKS30	1050	2600	0.03	0.12
AKS35B · AKS35R	1250	3250	0.03	0.13
AKS45B · AKS45R	1450	3300	0.07	0.3
AKS55B · AKS55R	1450	3300	0.07	0.3
AKS65B · AKS65R	1450	3300	0.07	0.3
XKS15B	400	/	0.025	/
XKS20B	650	/	0.04	/
XKS25B	750	/	0.054	/
DKS20B	500	1100	0.015	0.056
YKS12 · YKS16	350	900	0.02	0.065

Note: The pressurized connection data is the value at 0.55MPa air pressure.

0.4MPa low pressure type rated holding force

Model/0.4Mpa	Rated holding force(N)		Air consumption (ℓ/cycle (ANR))	
	Standard connection	pressurized connection	Standard connection	pressurized connection
AKS15B	300	650	0.011	0.035
AKS20B · YKS20	500	1200	0.015	0.05
AKS25B · AKS25R · YKS25	650	1300	0.016	0.05
AKS30B · AKS30R · YKS30	850	1600	0.03	0.09
AKS35B · AKS35R	1100	1900	0.03	0.1
AKS45B · AKS45R	1350	2000	0.07	0.2
AKS55B · AKS55R	1350	2000	0.07	0.2
AKS65B · AKS65R	1350	2000	0.07	0.2
XKS15B	300	/	0.025	/
XKS20B	450	/	0.04	/
XKS25B	550	/	0.054	/
DKS20B	400	1000	0.01	0.038
YKS12 · YKS16	300	600	0.015	0.05

Note: The pressurized connection data is the value at 0.4MPa air pressure.

0.3MPa Low-pressure type rated holding force

Model/0.3Mpa	Rated holding force(N)		Air consumption (ℓ/cycle (ANR))	
	Standard connection	pressurized connection	Standard connection	pressurized connection
AKS15B	250	550	0.011	0.035
AKS20B · YKS20	350	810	0.015	0.05
AKS25B · AKS25R · YKS25	350	880	0.016	0.05
AKS30B · AKS30R · YKS30	750	1220	0.03	0.09
AKS35B · AKS35R	850	1800	0.03	0.1
AKS45B · AKS45R	1100	1850	0.07	0.2
AKS55B · AKS55R	1100	1850	0.07	0.2
AKS65B · AKS65R	1100	1850	0.07	0.2
YKS12 · YKS16	180	460	0.015	0.05

Note:pressurized connection data is the value at 0.3MPa air pressure

Working parameters

Model	AKS-0.05MPa	AKS-0.04MPa	AKS-0.03MPa
Open air pressure	0.55MPa	0.4MPa	0.3MPa
Max working pressure	0.6MPa		
Response time	≤0.06s		
Operating temperature	0°C~70°C		
Clamping Service life	5 million times		

Note: Laboratory data for reference,data may differ due to different working conditions during actual use.

Pneumatic Normally Closed Clamping Element

Model Number Of AKS Series:

AKS 25 11 B — H — 04 — L
 ① ② ③ ④ ⑤ ⑥ ⑦

① Clamping element type

- AKS: Conventional type, pneumatic normally closed type, suitable for linear guide and square shafts
- XKS: Slender type, pneumatic normally closed type, suitable for linear guide and square shafts.
- DKS: Single cylinder type, pneumatic normally closed type, suitable for linear guide and square shafts

② Linear guide sizes

15 , 20 , 25 , 30 , 35 , 45 , 55 , 65

③ Product series number

Some models have serial numbers

④ Linear guide types

B: Ball linear guide , square shaft R: Roller linear guide

⑤ Whether clamping elements are equipped with spacer

H: with spacer plate None: Standard type

- **Note:** If H is marked after ① clamping element category, which means that the height of clamping element is equal to the standard type plus heightening spacer dimension, such as A KSH45B, only some models are made this way.

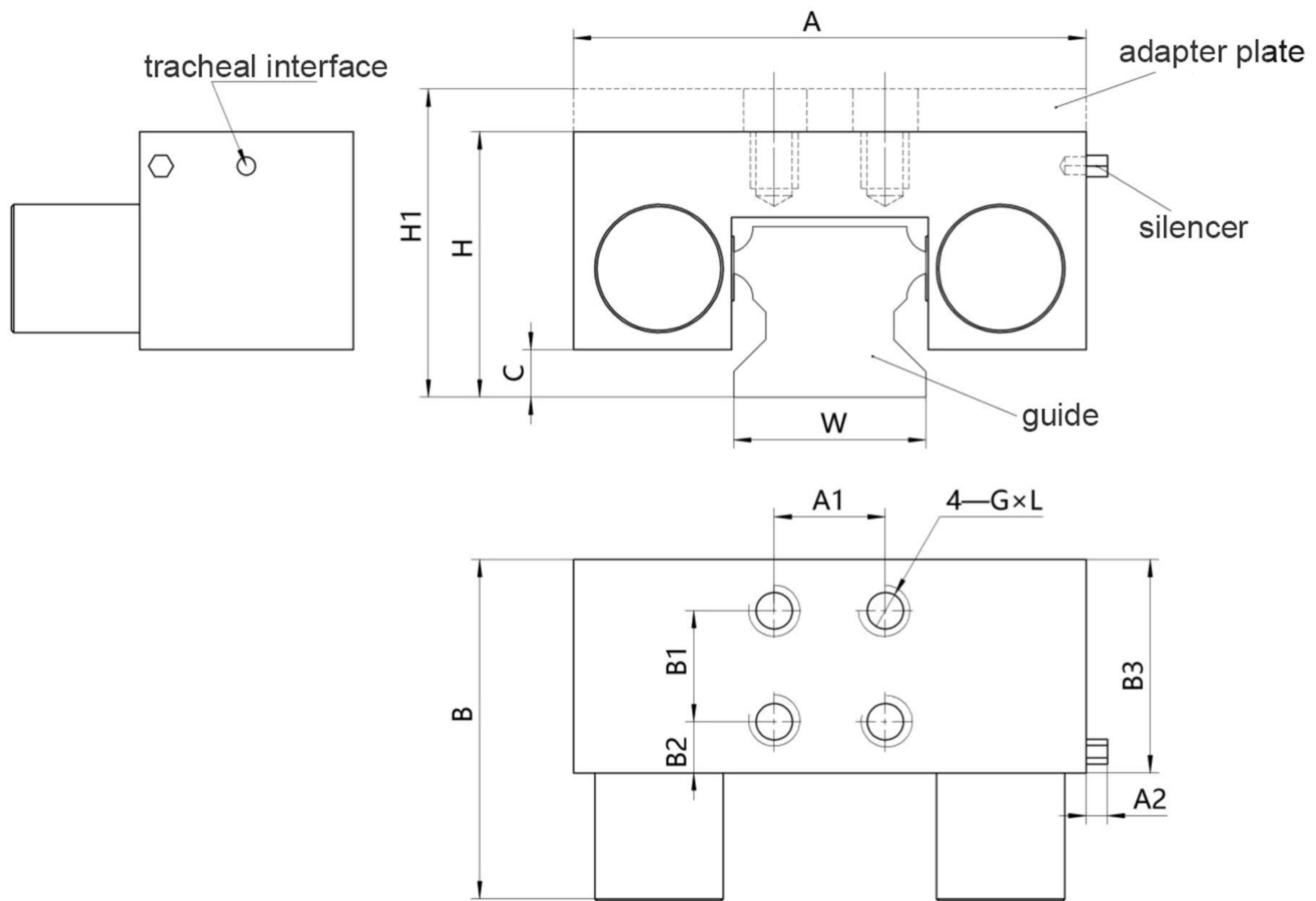
⑥ Opening air pressure

- 03: Low pressure type, opening air pressure is 0.3MPa
- 04: Low pressure type, opening air pressure is 0.4MPa
- None: Standard type, opening air pressure is 0.55MPa

⑦ Installation position of air pipe joint and muffler

- DKS: Single-cylinder type does not need to select position, they are all on the left side
- L: Place clamping element mounting surface upward, facing the left-hand side of the spring cylinder
- None: Place clamping element mounting surface upward, facing the right- hand side of the spring cylinder

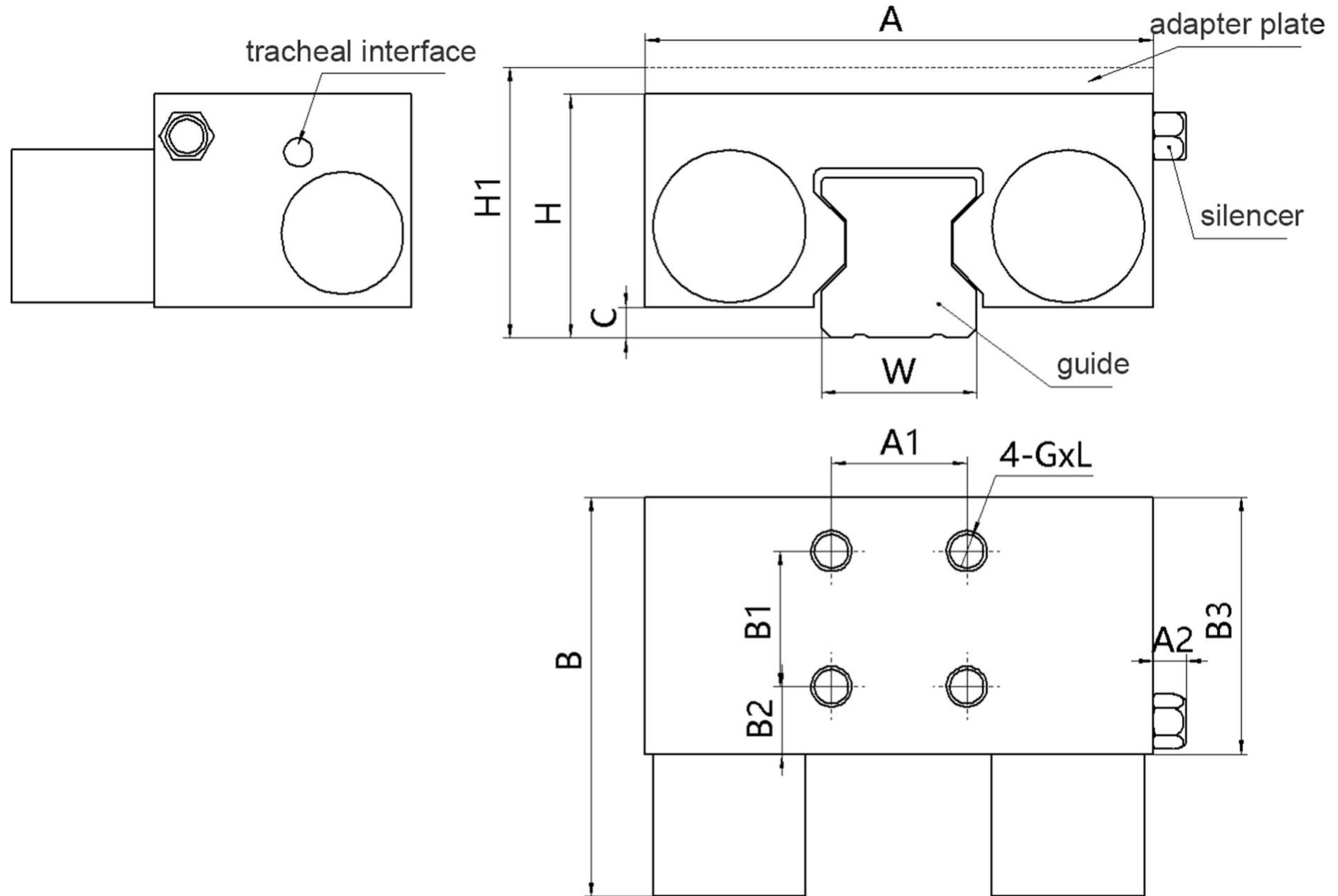
AKS-B Ball guide pneumatic normally closed type dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	B3	H	H1	C	G	L
AKS15B	15	55	15	5	60	15	15.5	39	24	28	2.5	M4	4.5
AKS20B	20	66	20	5	59	20	8.5	38	30	/	4	M5	6
AKS25B	23	75	20	5	59	20	10	38	36	40	5.5	M6	8
AKS2511B	23	75	20	5	56	20	5	35	36	40	8	M6	8
AKS30B	28	90	22	5	70	22	8.5	42	42	45	7	M8	8
AKS35B	34	100	24	5	70	24	9	42	48	55	7	M8	10
AKS45B	45	120	26	5	82	26	12	50	60	70	9	M10	15
AKS55B	53	136	30	5	82	30	10	50	70	80	14	M10	16
AKS65B	63	146	30	5	82	30	10	50	90	/	22	M10	16

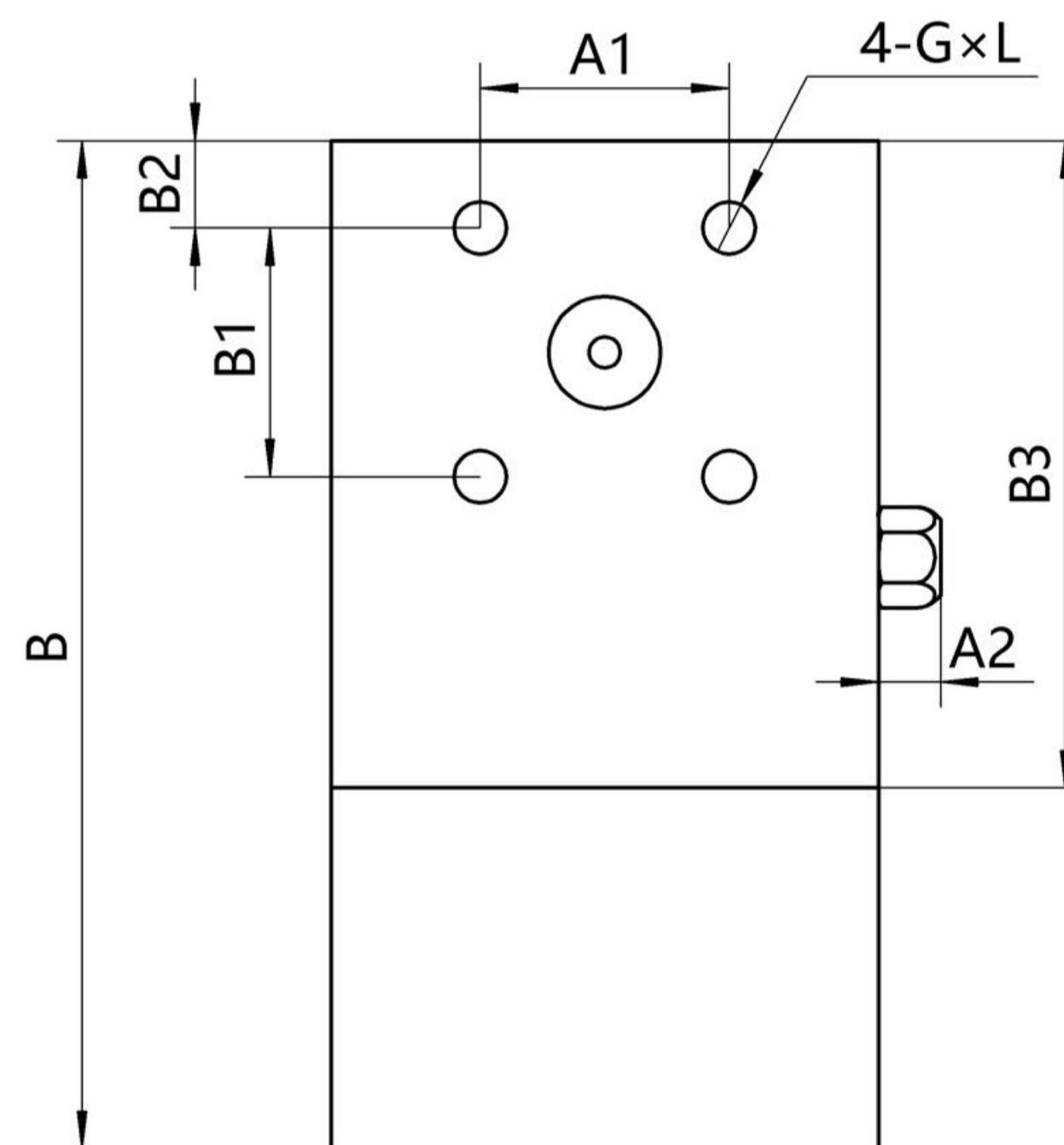
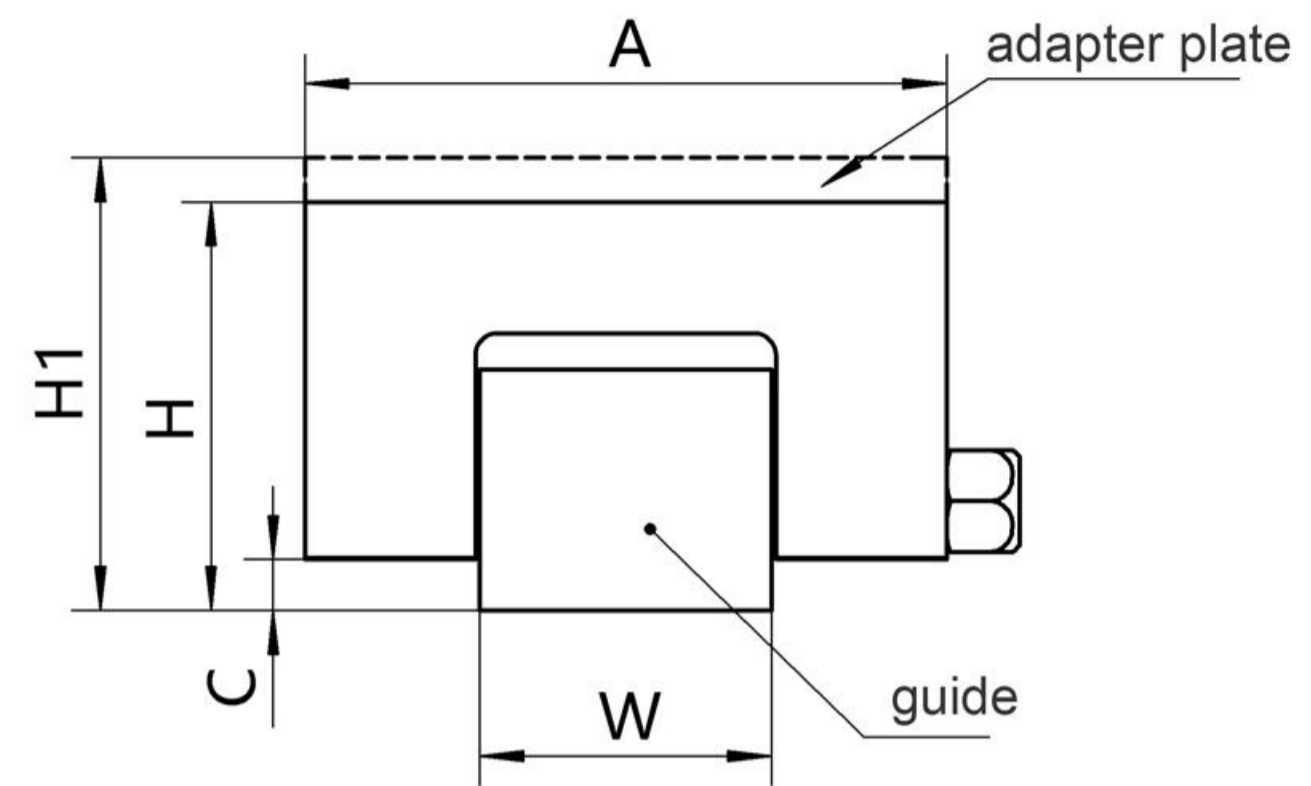
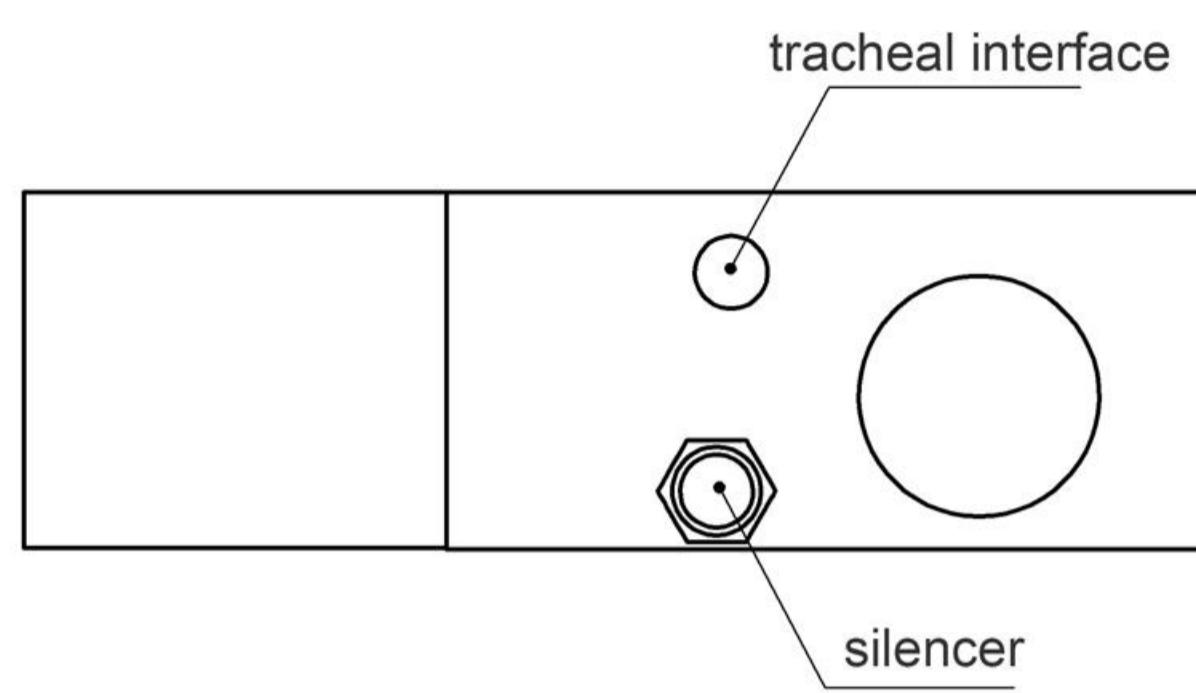
AKS-R Roller guide pneumatic normally closed dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	B3	H	H1	C	G	L
AKS25R	23	75	20	5	59	20	10	38	36	40	4.5	M6	7
AKSH25R	23	75	20	5	59	20	10	38	40	/	4.5	M6	8
AKS30R	28	90	22	5	68.5	22	9.5	41	42	45	5	M8	9
AKSH30R	28	90	22	5	68.5	22	9.5	41	45	/	5	M8	9
AKS35R	34	100	24	5	68.5	24	8.5	41	48	55	5	M8	10
AKSH35R	34	100	24	5	68.5	24	8.5	41	55	/	5	M8	10
AKS45R	45	120	26	5	82	26	12	50	60	70	8.5	M10	15
AKS55R	53	120	30	5	82	30	10	50	70	80	10	M10	17
AKS65R	63	138	30	5	82	30	10	50	90	/	13	M10	19

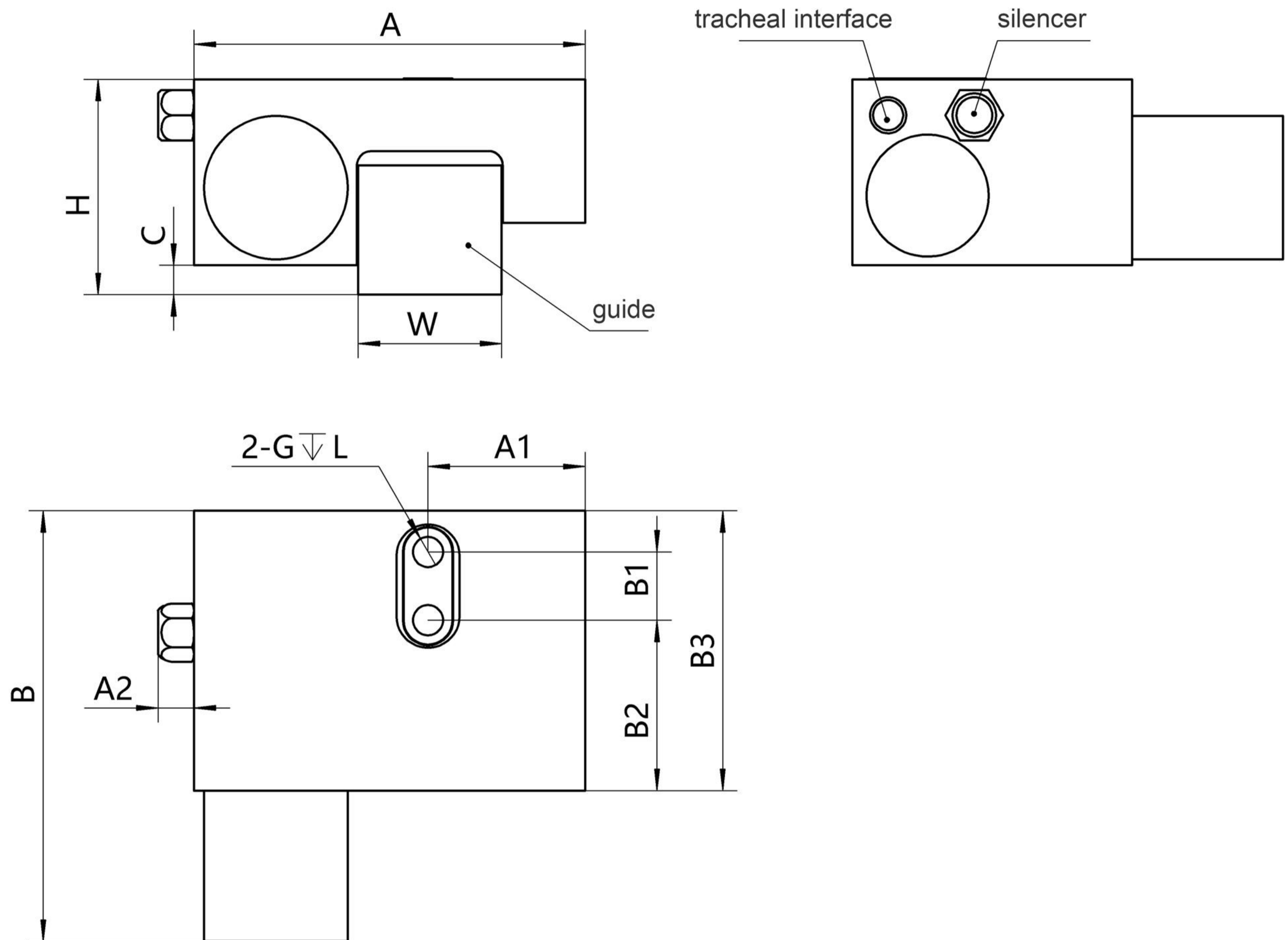
AKS-R Roller guide pneumatic normally closed dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	B3	H	H1	C	G	L
XKS15B	15	34	15	5	76	15	8.5	49	24	28	3.3	M4	4.5
XKS20B	20	44	20	5	81	20	7	52	28	/	3.5	M5	5.5
XKS25B	23	48	20	5	81	20	7	52	36	40	7.5	M6	6.5

DKS-B Ball guide pneumatic normally closed single cylinder type dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	B3	H	C	G	L
DKS20B	20	54.5	21.8	5	60	9.5	23.7	39	30	4	M5	6.5

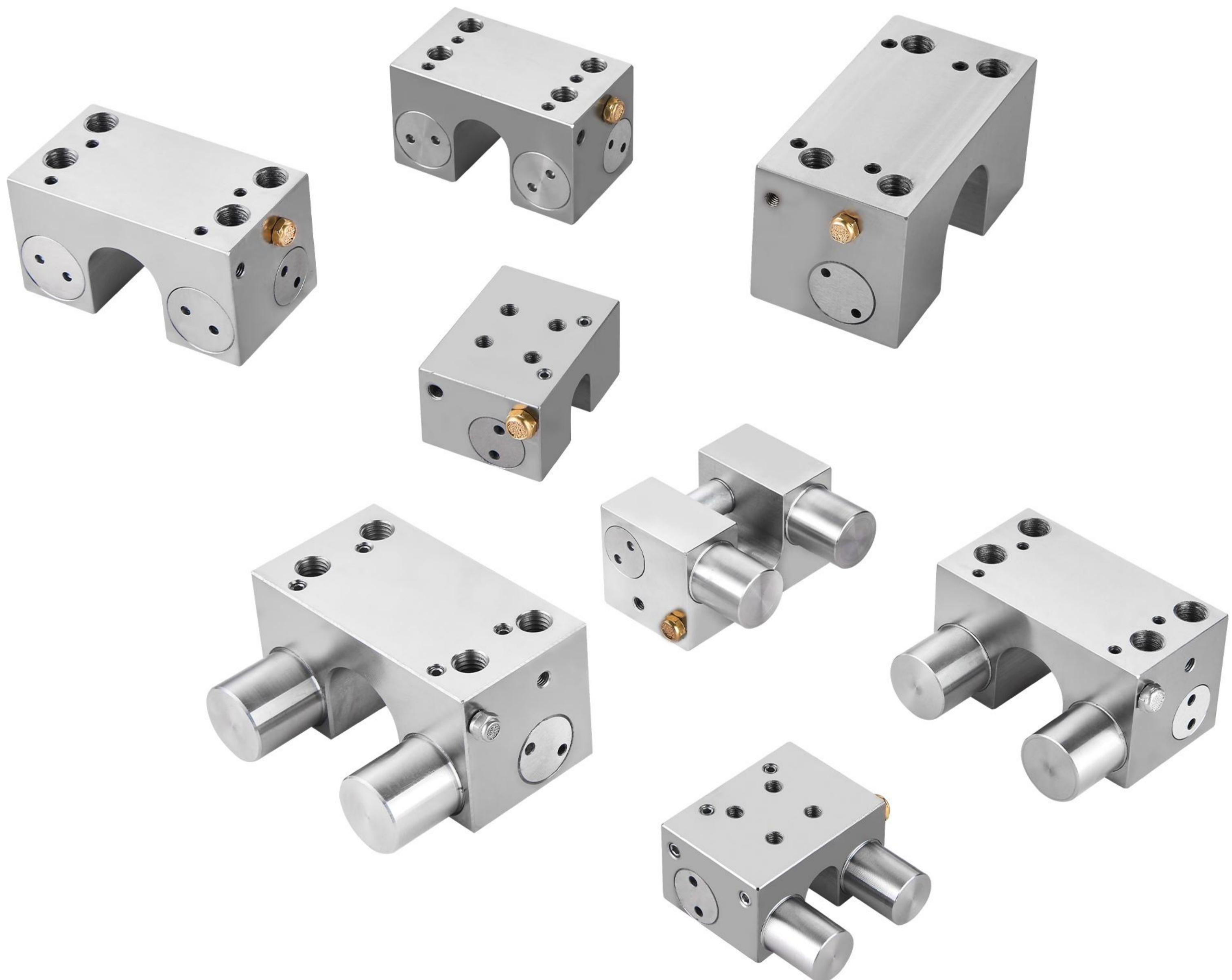
pneumatic clamping element for round shaft



YK-Round Shaft Pneumatic
Normally Open Type



YKS-Round Shaft Pneumatic
Normally Closed Type



YK- Round Shaft Pneumatic Normally Open Type

Model Number Of YK Series:

<u>YK</u>	<u>12</u>	<u>11</u>	<u>L</u>
①	②	③	④

① **Clamping element type**

- YK: Pneumatic normally open type, suitable for linear round shaft

② **Applicable shaft diameter**

12 , 16 , 20 , 25 , 30

③ **Product series number**

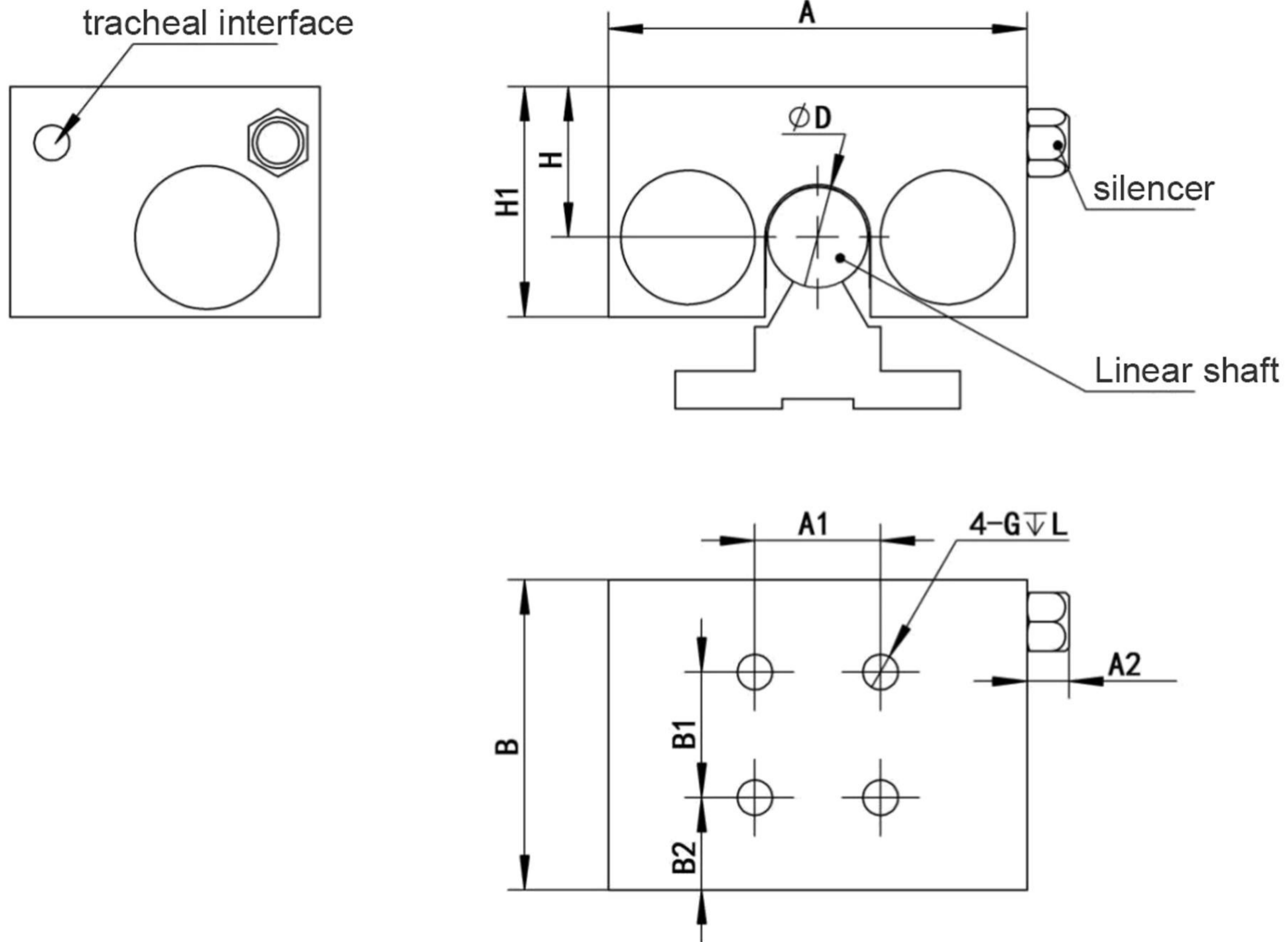
Some models have series numbers

④ **Installation position of air pipe joint and muffler**

L: Place clamping element mounting surface upward, facing the left hand side of the cylinder

None: Place clamping element mounting surface upward, facing the right hand side of the cylinder

YK Round shaft pneumatic normally open type dimension



Unit: mm

Model	D	A	A1	A2	B	B1	B2	H	H1	G	L
YK12	12	50	15	5	37	15	11	18	27.5	M5	6
YK16	16	54	15	5	37	15	11	22	31.5	M5	6
YK20	20	66	45	5	38	18	13	25	38	M8	10
YK25	25	77	60	5	42	20	14	29	42	M10	12
YK30	30	92	68	5	48	25	13.5	34.8	48.5	M10	14

YKS Round Shaft Pneumatic Closed Type

Model Number Of YKS Series:

YKS
12
11—
04—
L

①
②
③
④
⑤

① Clamping element type

- YKS: Pneumatic normally closed type, suitable for linear round shafts

② Applicable shaft diameter

12 , 16 , 20 , 25 , 30

③ Product series number

Some models have series numbers

④ Open air pressure

03: Low pressure type, opening pressure is 0.3MPa

04: Low pressure type, opening pressure is 0.4MPa

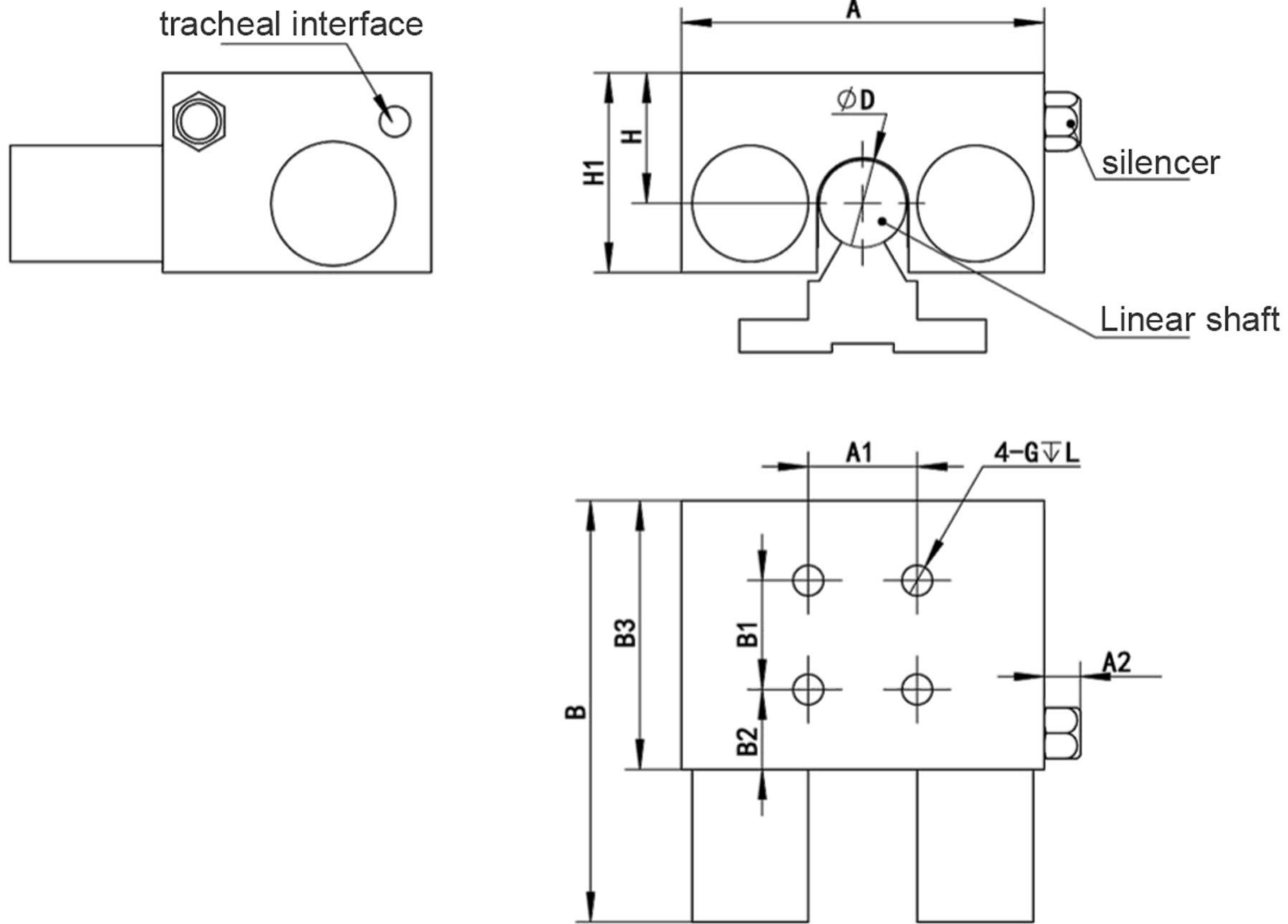
None: Standard type, opening pressure is 0.55MPa

⑤ Installation position of air pipe joint and muffler

L: Place clamping element mounting surface upward, facing the left hand side of the spring cylinder

None: Place clamping element mounting surface upward, facing the right hand side of the spring cylinder.

YKS Round shaft pneumatic closed type dimension



Unit: mm

Model	D	A	A1	A2	B	B1	B2	B3	H	H1	G	L
YKS12	12	50	15	5	58	15	11	37	18	27.5	M5	6
YKS16	16	54	15	5	58	15	11	37	22	31.5	M5	6
YKS20	20	66	45	5	59	18	13	38	25	38	M8	10
YKS25	25	77	60	5	63	20	14	42	29	42	M10	12
YKS30	30	92	68	5	76	25	13.5	48	34.8	48.5	M10	14

SD Manual type clamping element



SD Manual Type

Manual Clamping Element Features

- It has the functions of fixing the slide table, precise positioning, preventing vibration.
- Clamping by rotating the handle.
- The clamping element main body surface is nickel-plated, which has good rust resistance.
- Novel design and compact structure.

Manual Type Clamping Element

Model Number Of SD Series:

SD 25 01 — H
 ① ② ③ ④

① Clamping element type

- SD: Manual type

② Linear guide sizes

15 , 20 , 25 , 30 , 35 , 45

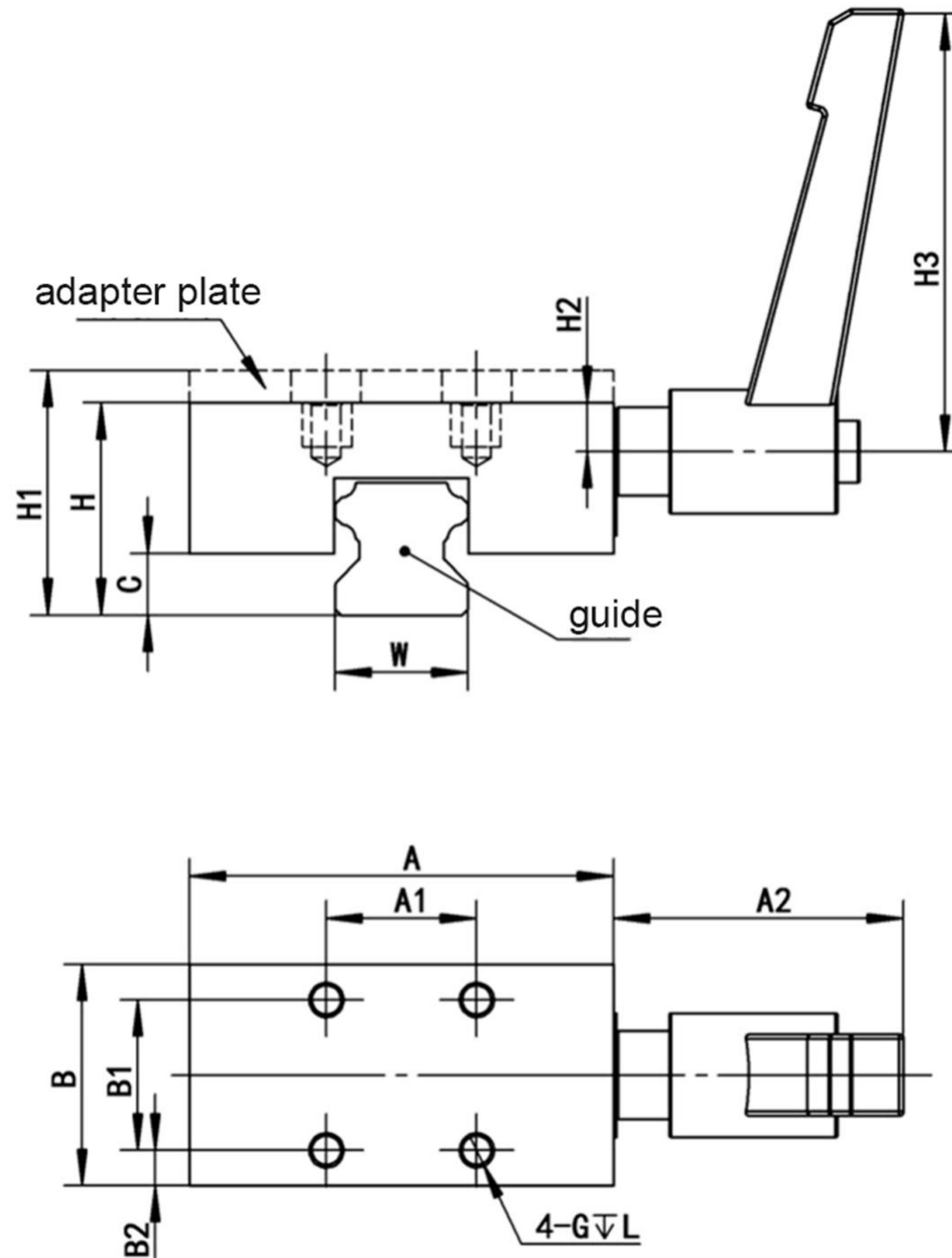
③ Product series number

④ Whether clamping elements are equipped with spacer

H: with spacer plate

None: Standard type

Manual clamping element dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	H	H1	H2	H3	C	G	L
SD1501	15	47	17	33	25	17	4	24	28	4.8	50	7	M4	5
SD2001	20	60	20	33	28	20	4	30	/	6.7	50	10	M5	6
SD2002	20	60	15	33	24	15	4.5	30	/	6.7	50	10	M5	6
SD2501	23	70	20	33	30	20	5	36	40	9.8	50	9.5	M6	7
SD3001	28	90	20	44	34	20	7	42	45	9.2	63	12	M6	8
SD3501	34	100	24	44	38	24	7	48	55	11	63	16	M8	10
SD4501	45	120	26	44	26	26	9	60	70	13	63	18	M10	14

Installation Method

- Install the clamping element on the linear guide in the unclamped state. Make sure that the contact surface of the clamping element does not touch the linear guide when it moves.
- Pre-tighten the clamping element on the sliding table by installing the bolts, do not tighten them completely.
- Clamp and release the linear guide more than 8 times.
- In the state of clamping the linear guide, use a torque wrench to tighten the bolts according to the recommended tightening torque.

Boit type	Recommended tightening torque(N.m)
M4	2.8
M5	5.5
M6	9.5
M8	22
M10	45

Note: Please use bolts with strength grade above 8.8.

- Release the clamp and make sure the clamping element is not in contact with the linear guide, base, etc

Precautions

- It is recommended to install clamping elements on all linear guide to avoid unbalance loading.
- There are spacer blocks between the clamping mechanisms of the normally closed pneumatic clamping element. Do not remove the spacer blocks except when installing.
- Do not clamping the clamping element without inserting the linear guide.
- Some clamping element dimensions are larger than the linear block, so please avoid interference with other parts during design.
- Do not use the face or side of the clamping element for positioning

Air Dielectric And Air Pipe Requirements

- The air dielectric used by the clamping element should be dried and filtered. According to the
- standard JB/T 5967- 2007 《Air Dielectric Quality Grade for Pneumatic Components And Systems 》 ,the recommended air dielectric quality grade for the clamping element is 223.
- The larger the outer diameter of the air pipe,the shorter the reaction time. It is recommended to use an air pipe with an outer diameter of not less than 6mm (for rail sizes $\leq 20\text{mm}$, the outer diameter of the air pipe is not less than 4mm).
- Try to shorten the piping length. The shorter the pipe length, the shorter the response time.



The product dimensions, shapes, features and other data listed in this catalog may be changed due to technical improvements. Please consult the sales staff in detail before placing an order.

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