

NATECH

LINEAR GUIDE CLAMPING ELEMENT PRODUCT MANUAL

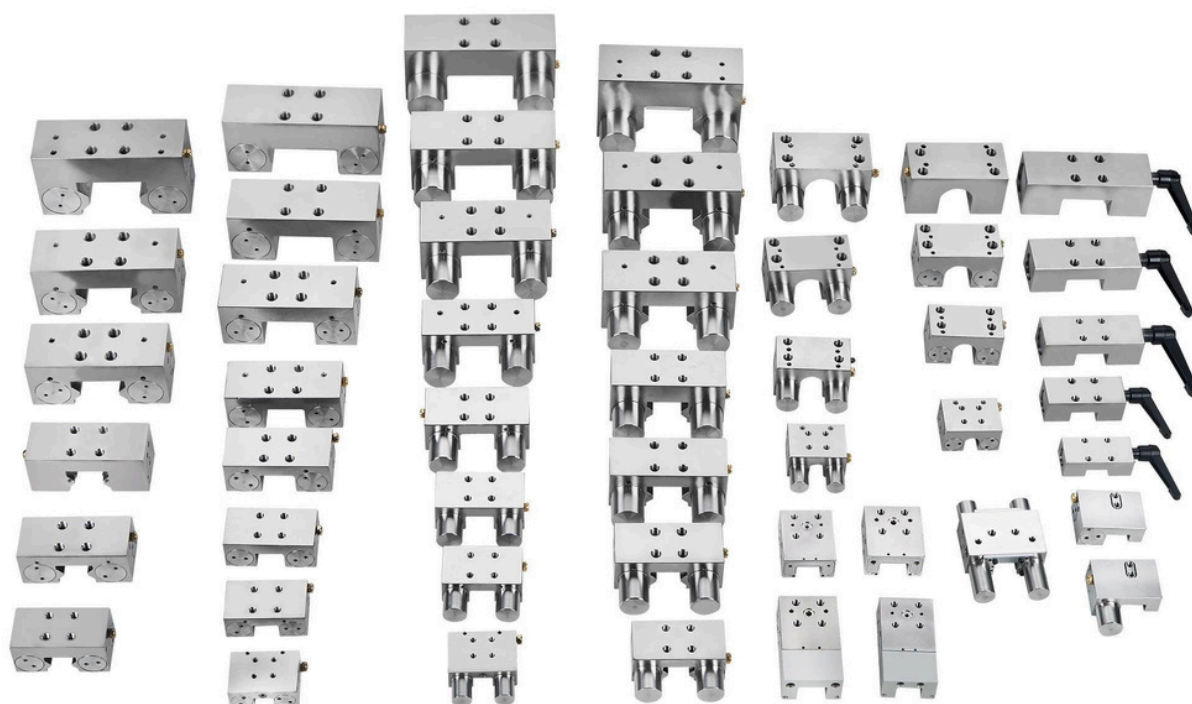


COMPANY+ PROFILE

NATECH is a brand known for its professional approach to development, production management and technical support in the field of linear motion components. The NATECH product range includes key items such as:

- linear guides
- ball screws and nuts
- rail and shaft clamps
- linear bearings
- racks and pinions
- linear modules
- zero-backlash jaw couplings
- slewing bearings
- slewing drives
- linear actuators

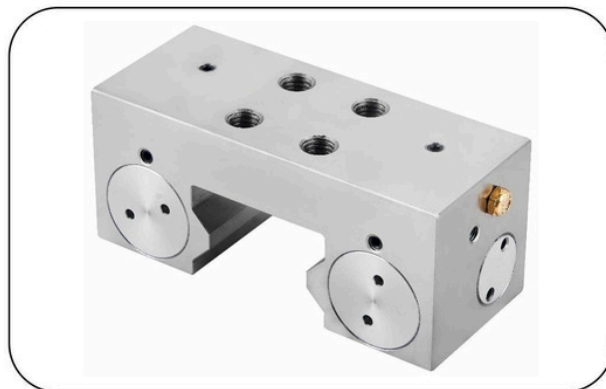
NATECH products are widely used in industrial machinery, as well as medical, food-processing, packaging, textile and printing equipment. NATECH linear guides stand out for their high positioning accuracy, low wear and full compatibility with HIWIN guides, which ensures easy installation and replacement.



Pneumatic normally open clamping element



**NK-B Ball Guide Pneumatic
Normally Open Type**



**NK-R Roller Guide Pneumatic
Normally Open Type**



**NX-B Ball Guide Pneumatic
Normally Open Slender Type**



**ND-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) }
NK15B	650	0.011
NK20B	1000	0.019
NK25B • NK25R	1200	0.021
NK30B • NK30R	1750	0.03
NK35B • NK35R	2000	0.03
NK45B • NK45R • NK55R	2250	0.04
NK55B • NK65B • NK65R	3000	0.07
NX15B	550	0.025
NX20B	850	0.04
NX25B	1100	0.055
ND20B	700	0.015
ND-B12 • NY16	650	0.015
NY20	1000	0.019
NY25	1200	0.021
NY30	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	0.2~0.6 MPa
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 NK Series:

NK
①
25
②
11
③
B - H - L
④
5
⑤
6
⑥

① Clamping element type

- NK: Conventional type, pneumatic normally open type, suitable for linear guide and square shafts
- NX: Slender type, pneumatic normally open type, suitable for linear guide and square shafts
- ND: 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

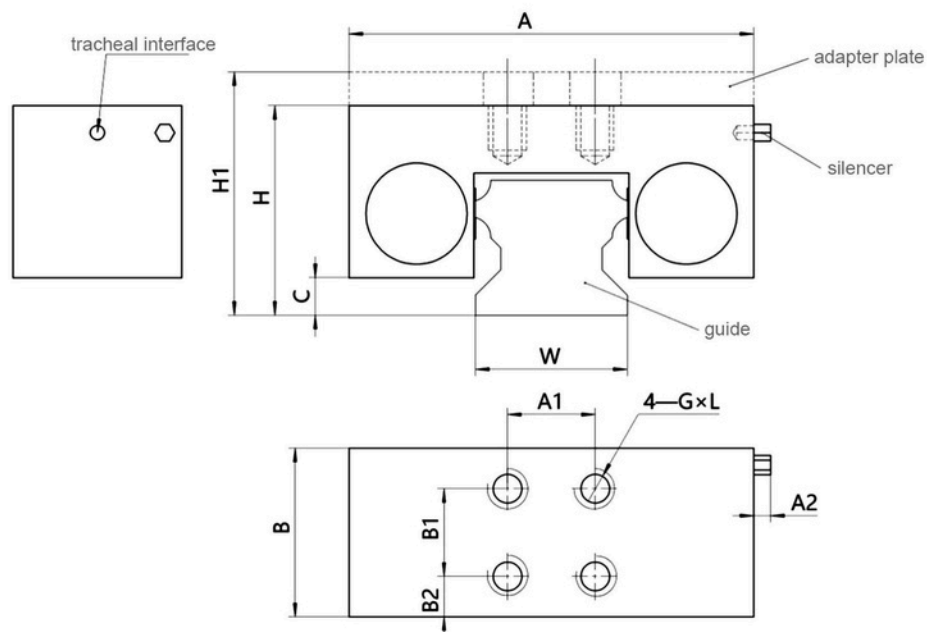
None: Standard type

- Note: If H is marked after G) clamping element category, which means that the height of clamping element is equal to the standard type plus heightening spacer dimension, such as FKH25R, only some models are made this way.

⑥ Whether clamping elements are equipped with spacer

- ND: 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,
NK slender model only
- AR: Place clamping element mounting surface upward, facing the front right side of cylinder,
NK slender model only

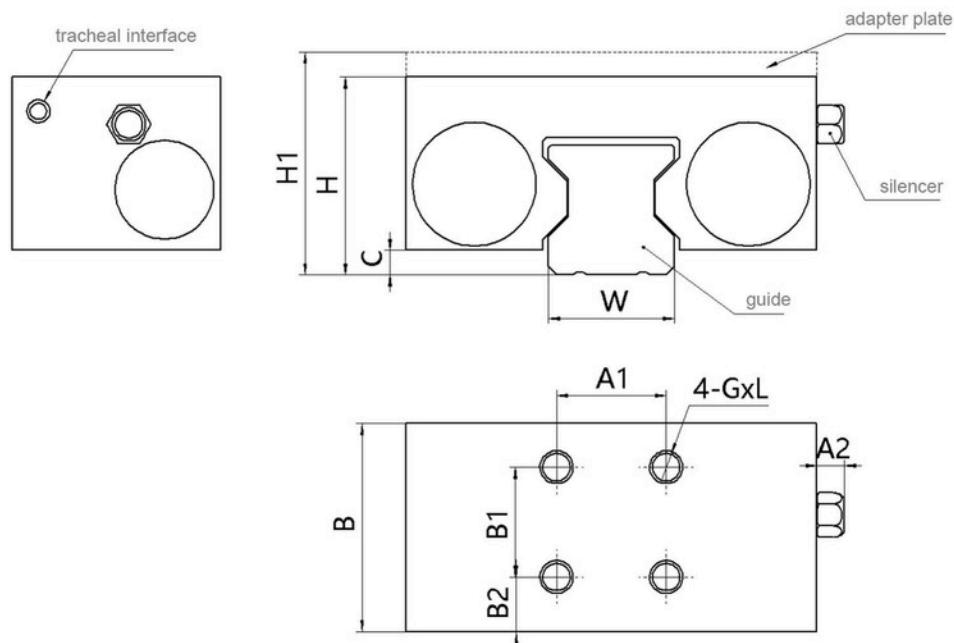
NK-B ball guide pneumatic normally open dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	H	H1	C	G	L
NK15B	15	55	15	5	39	15	15.5	24	28	2.5	M4	4.5
NK20B	20	66	20	5	38	20	8.5	30	~	4	M5	6
NK25B	23	75	20	5	38	20	10	36	40	5.5	M6	8
NK2511B	23	75	20	5	35	20	5	36	40	8	M6	8
NK30B	28	90	22	5	42	22	8.5	42	45	7	M8	8
NK35B	34	100	24	5	42	24	9	48	55	7	M8	10
NK45B	45	120	26	5	50	26	12	60	70	9	M10	15
NKSSB	53	136	30	5	50	30	10	70	80	14	M10	16
NK65B	63	146	30	5	50	30	10	90	~	22	M10	16

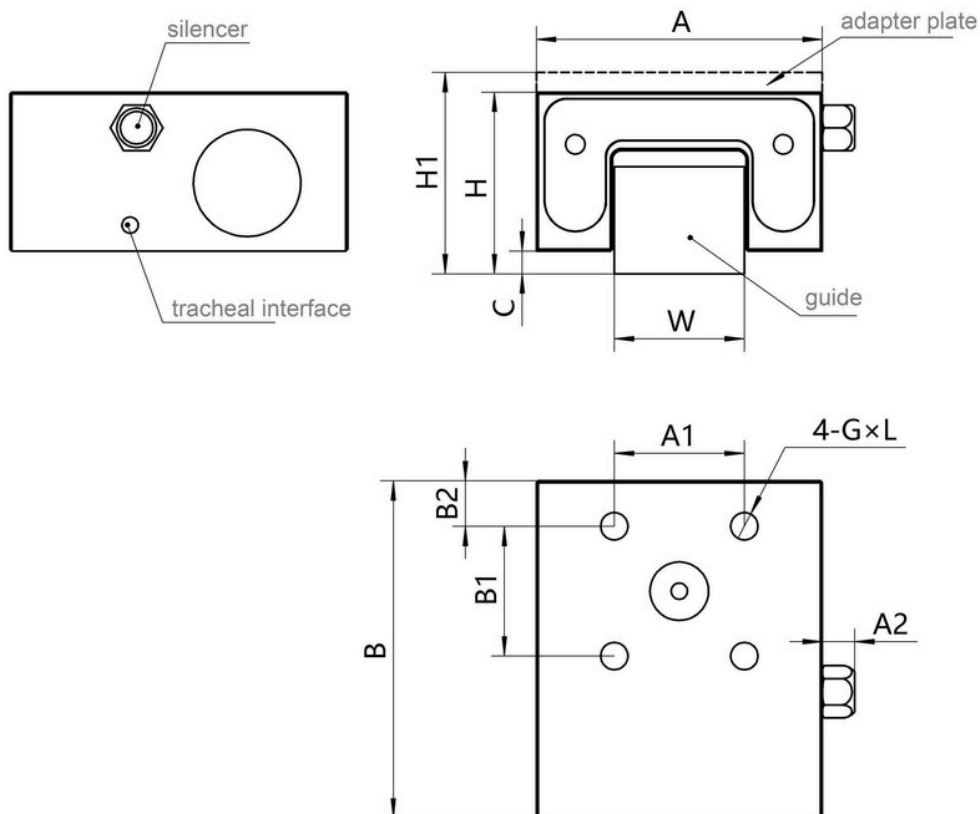
NK-R roller guide pneumatic normally open dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	H	H1	C	G	L
NK25R	23	75	20	5	38	20	10	36	40	4.5	M6	7
NKH25R	23	75	20	5	38	20	10	40	~	4.5	M6	8
NK30R	28	90	22	5	41	22	9.5	42	45	5	M8	9
NKH30R	28	90	22	5	41	22	9.5	45	~	5	M8	9
NK35R	34	100	24	5	41	24	8.5	48	55	5	M8	10
NKH35R	34	100	24	5	41	24	8.5	55	-	5	M8	10
NK45R	45	120	26	5	50	26	12	60	70	8.5	M10	15
NK55R	53	128	30	5	50	30	10	70	80	10	M10	17
NK65R	63	138	30	5	50	30	10	90	~	13	M10	19

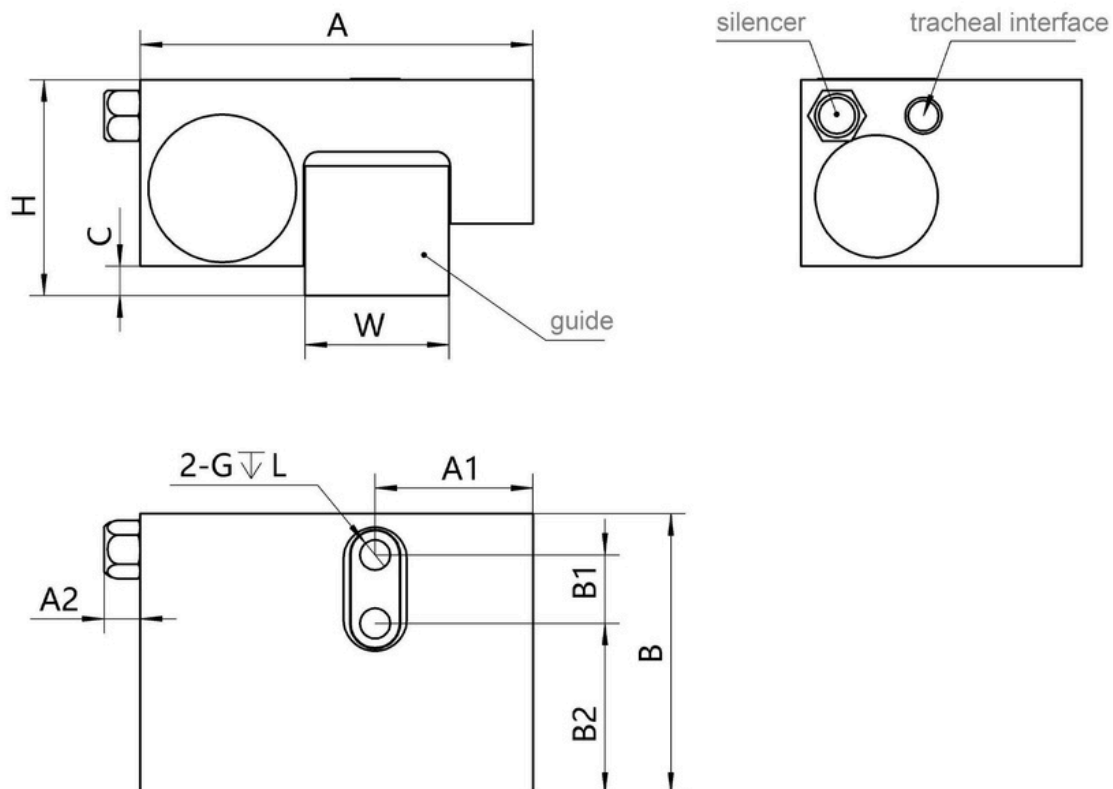
NK-B ball guide pneumatic normally open slender type dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	H	H1	C	G	L
NK15B	15	34	15	5	49	15	8.5	24	28	3.3	M4	4.5
NK20B	20	44	20	5	52	20	7	28	~	3.5	M5	5.5
NK25B	23	48	20	5	52	20	7	36	40	7.5	M6	6.5

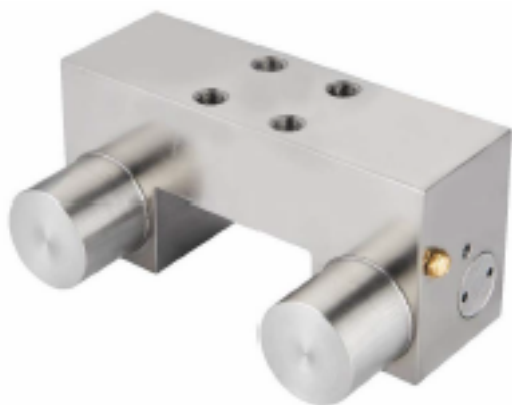
ND-B ball guide pneumatic normally open single cylinder type dimension



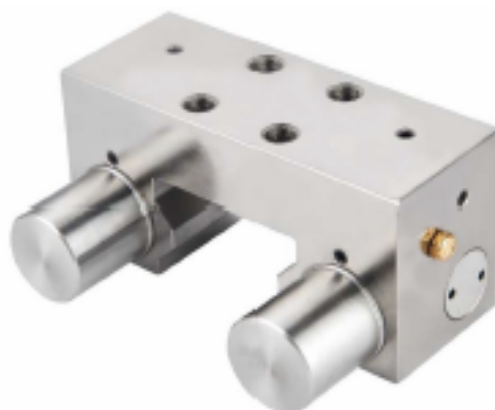
Unit: mm

Model	W	A	A1	A2	B	B1	B2	H	C	G	L
ND20B	20	54.5	21.8	5	39	9.5	23.7	30	4	M5	6.5

Pneumatic normally closed clamping element



NKS-B Ball Guide Pneumatic Normally Closed Type



NKS-R Roller Guide Pneumatic Normally Closed Type



NXS-B Ball Guide Pneumatic Normally Closed Slender Type

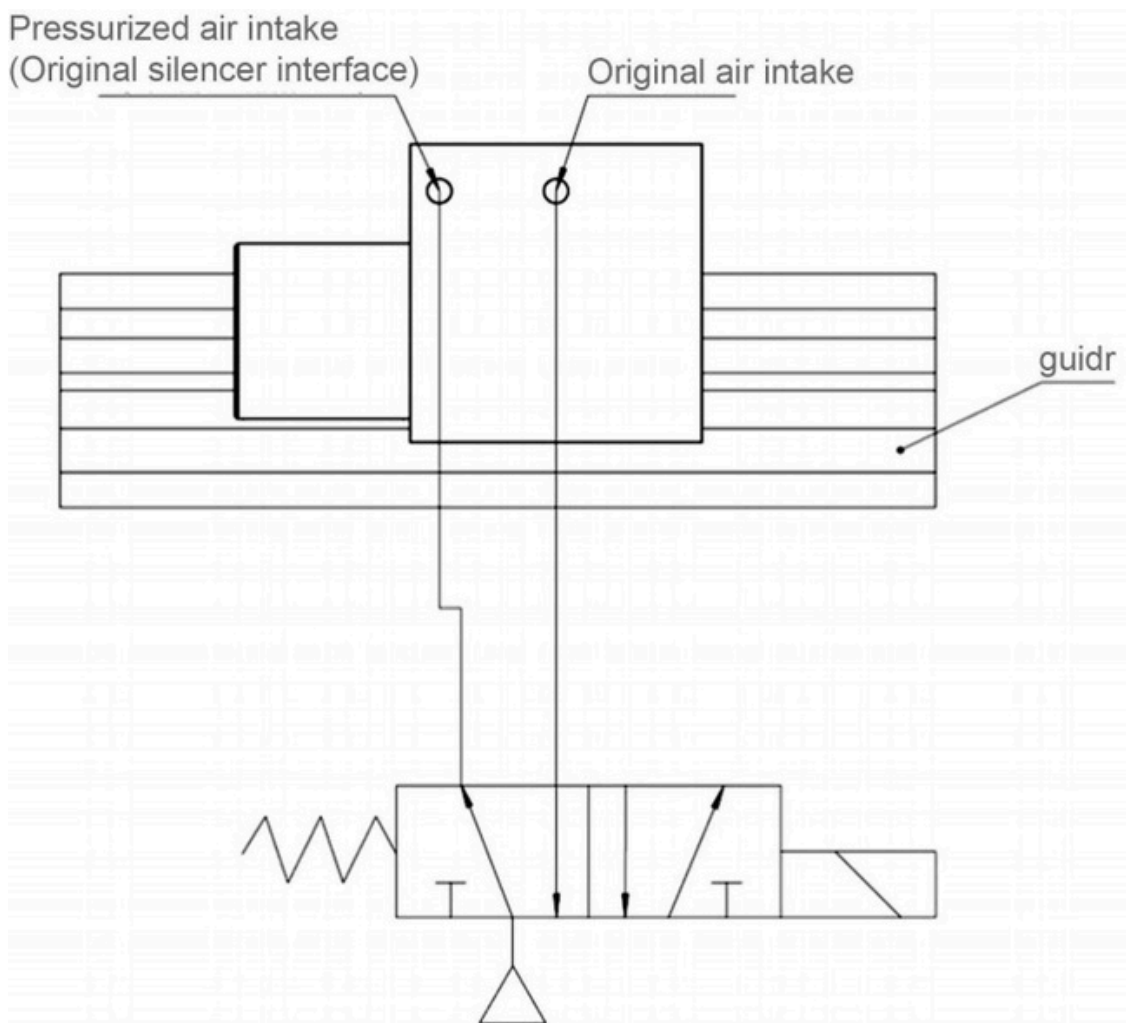


NDS-B Ball Guide Pneumatic Normally Closed Single Cylinder Type



Pneumatic normally closed clamping element features

- ① It has the functions of fixed sliding table, precise positioning, preventing vibration and improving rig.
- ② When there is air pressure, the clamping is released; when there is no air pressure, the linear guide is clamp.
- ③ The surface of the clamping element main body is nickel-plated and has good rust resistance.
- ④ 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.
- ⑤ **Pressurized connection method**
 - Remove the muffler
 - Connect pipe joints, air pipes, solenoid valves
 - 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
NKS15B	400	1050	0.011	0.035
NKS20B · NYS20	600	1300	0.019	0.064
NKS25B · NKS25R · NYS25	750	1400	0.021	0.07
NKS30B · NKS30R · NYS30	1050	2600	0.03	0.12
NKS35B · NKS35R	1250	3250	0.03	0.13
NKS45B · NKS45R	1450	3300	0.07	0.3
NKS55B · NKS55R	1450	3300	0.07	0.3
NKS65B · NKS65R	1450	3300	0.07	0.3
NXS15B	400	/	0.025	/
NXS20B	650	/	0.04	/
NXS20B	750	/	0.054	/
NDS20B	500	1100	0.015	0.056
NYS12 · NYS16	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
NKS15B	300	650	0.011	0.035
NKS20B · NYS20	500	1200	0.015	0.05
NKS25B · NKS25R · NYS25	650	1300	0.016	0.05
NKS30B · NKS30R · NYS30	850	1600	0.03	0.09
NKS35B · NKS35R	1100	1900	0.03	0.1
NKS45B · NKS45R	1350	2000	0.07	0.2
NKS55B · NKS55R	1350	2000	0.07	0.2
NKS65B · NKS65R	1350	2000	0.07	0.2
NXS15B	300	/	0.025	/
NXS20B	450	/	0.04	/
NXS25B	550	/	0.054	/
NDS20B	400	1000	0.01	0.038
NYS12 · NYS16	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
NKS15B	250	550	0.011	0.035
NKS20B • NYS20	350	810	0.015	0.05
NKS25B • NKS25R • NYS25	350	880	0.016	0.05
NKS30B • NKS30R • NYS30	750	1220	0.03	0.09
NKS35B • NKS35R	850	1800	0.03	0.1
NKS45B • NKS45R	1100	1850	0.07	0.2
NKS55B • NKS55R	1100	1850	0.07	0.2
NKS65B • NKS65R	1100	1850	0.07	0.2
NYS12 • NYS16	180	460	0.015	0.05

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

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

Model	FKSO.SSMPa	FKS-0.4MPa	FKS-0.3MPa
Open air pressure	0.55MPa	0.4 MPa	0.3MPa
Max working pressure		0.6 MPa	
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:

NKS 25 11 B - H - 04 - L
① ② ③ ④ ⑤ ⑥ ⑦

① Clamping element type

- NKS: Conventional type, pneumatic normally closed type, suitable for linear guide and square shafts
- NXS: Slender type, pneumatic normally closed type, suitable for linear guide and square shafts
- NDS: 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 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 NKSH45B, only some models are made this way.

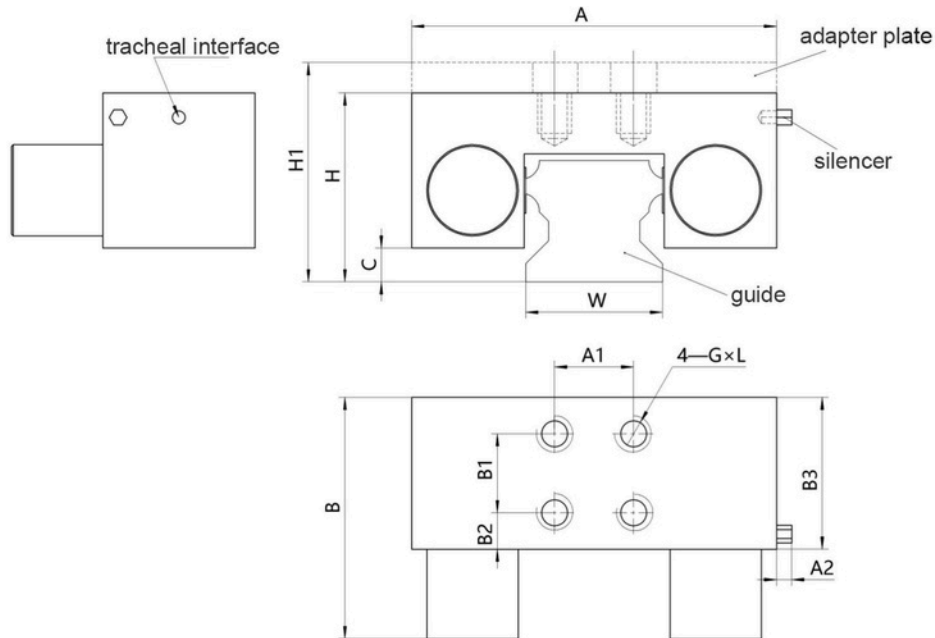
⑥ Opening air pressure

- 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

- NDS: 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

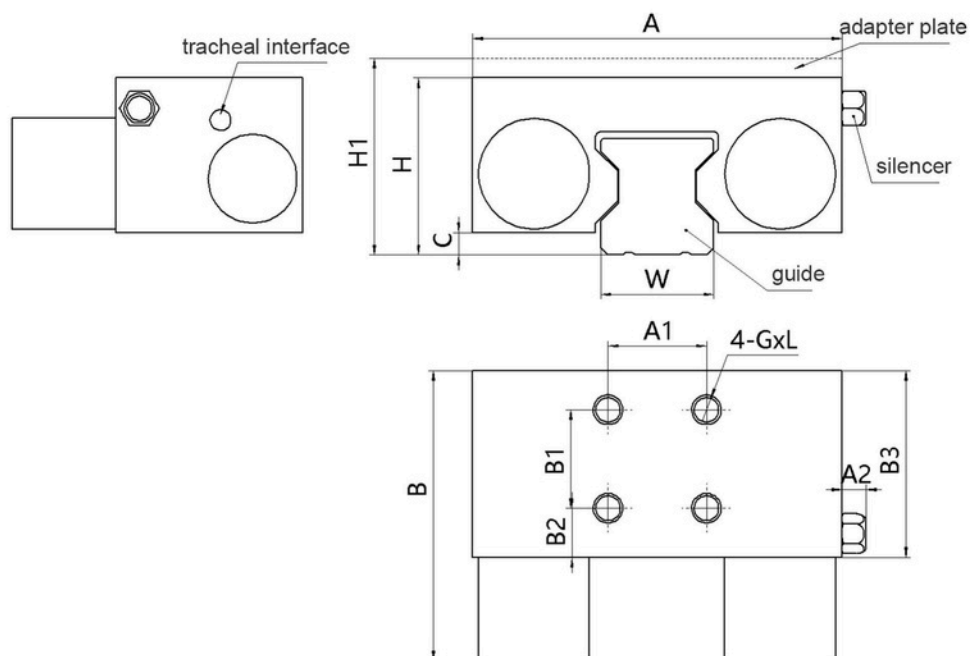
NKS-B Ball guide pneumatic normally closed type dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	H	H1	C	G	L
NKS15B	15	55	15	5	60	15	15.5	24	28	2.5	M4	4.5
NKS20B	20	66	20	5	59	20	8.5	30	/	4	M5	6
NKS25B	23	75	20	5	59	20	10	36	40	5.5	M6	8
NKS2511B	23	75	20	5	56	20	5	36	40	8	M6	8
NKS30B	28	90	22	5	70	22	8.5	42	45	7	M8	8
NKS35B	34	100	24	5	70	24	9	48	55	7	M8	10
NKS45B	45	120	26	5	82	26	12	60	70	9	M10	15
NKSSSB	53	136	30	5	82	30	10	70	80	14	M10	16
NKS65B	63	146	30	5	82	30	10	90	/	22	M10	16

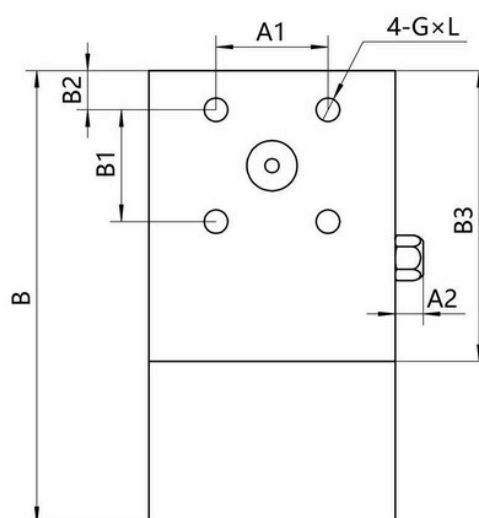
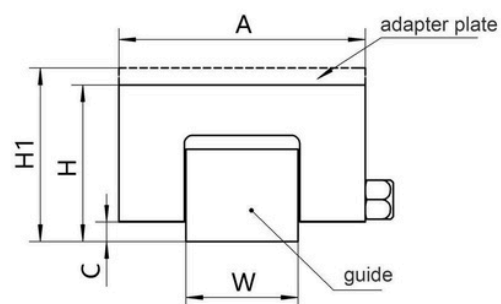
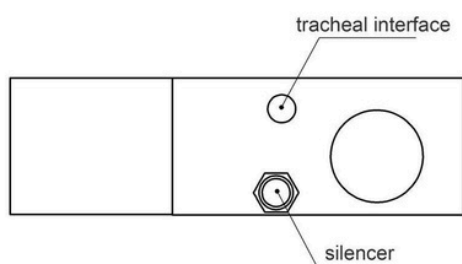
NKS-R Roller guide pneumatic normally closed dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	H	H1	C	G	L
NKS25R	23	75	20	5	59	20	10	36	40	4.5	M6	7
NKSH25R	23	75	20	5	59	20	10	40	/	4.5	M6	8
NKS30R	28	90	22	5	68.5	22	9.5	42	45	5	M8	9
NKSH30R	28	90	22	5	68.5	22	9.5	45	/	5	M8	9
NKS35R	34	100	24	5	68.5	24	8.5	48	55	5	M8	10
NKSH35R	34	100	24	5	68.5	24	8.5	55	/	5	M8	10
NKS45R	45	120	26	5	82	26	12	60	70	8.5	M10	15
NKS55R	53	120	30	5	82	30	10	70	80	10	M10	17
NKS65R	63	138	30	5	82	30	10	90	/	13	M10	19

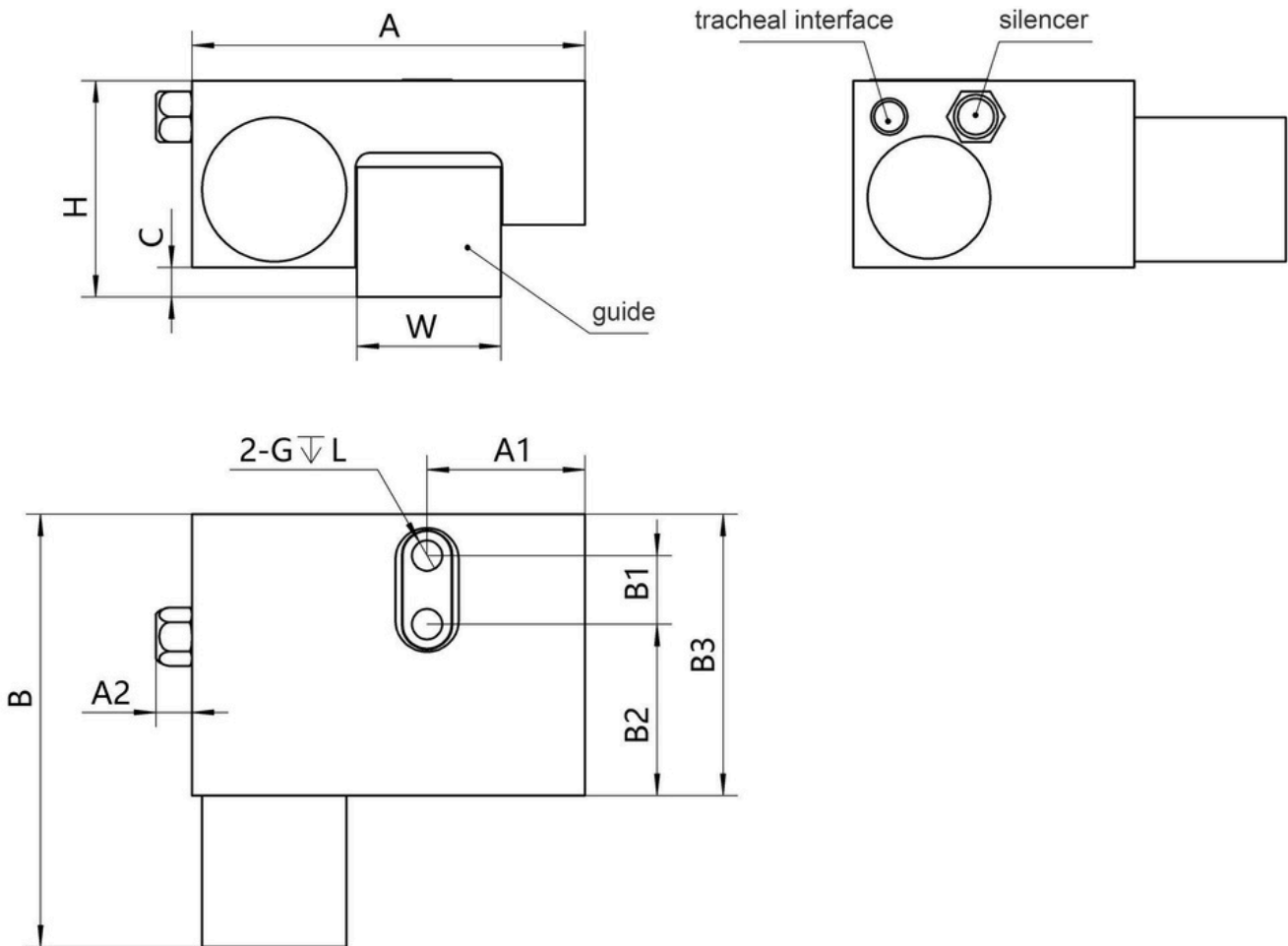
NKS-R Roller guide pneumatic normally closed dimension



Unit: mm

Model	W	A	A1	A2	B	B1	B2	H	H1	C	G	L
NXS15B	15	34	15	5	76	15	8.5	24	28	3.3	M4	4.5
NXS20B	20	44	20	5	81	20	7	28	/	3.5	M5	5.5
NXS25B	23	48	20	5	81	20	7	36	40	7.5	M6	6.5

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



Unit: mm

Model	W	A	A1	A2	B	B1	B2	H	C	G	L
NDS20B	20	54.5	21.8	5	60	9.5	23.7	39	4	M5	6.5

Pneumatic clamping element for round shaft



NY-Round Shaft Pneumatic Normally Open Type



NYS-Round Shaft Pneumatic Normally Closed Type



NY- Round Shaft Pneumatic Normally Open Type

Model Number Of NY Series:



① Clamping element type

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

② Applicable shaft diameter

12, 16, 20, 25, 30

③ Product series number

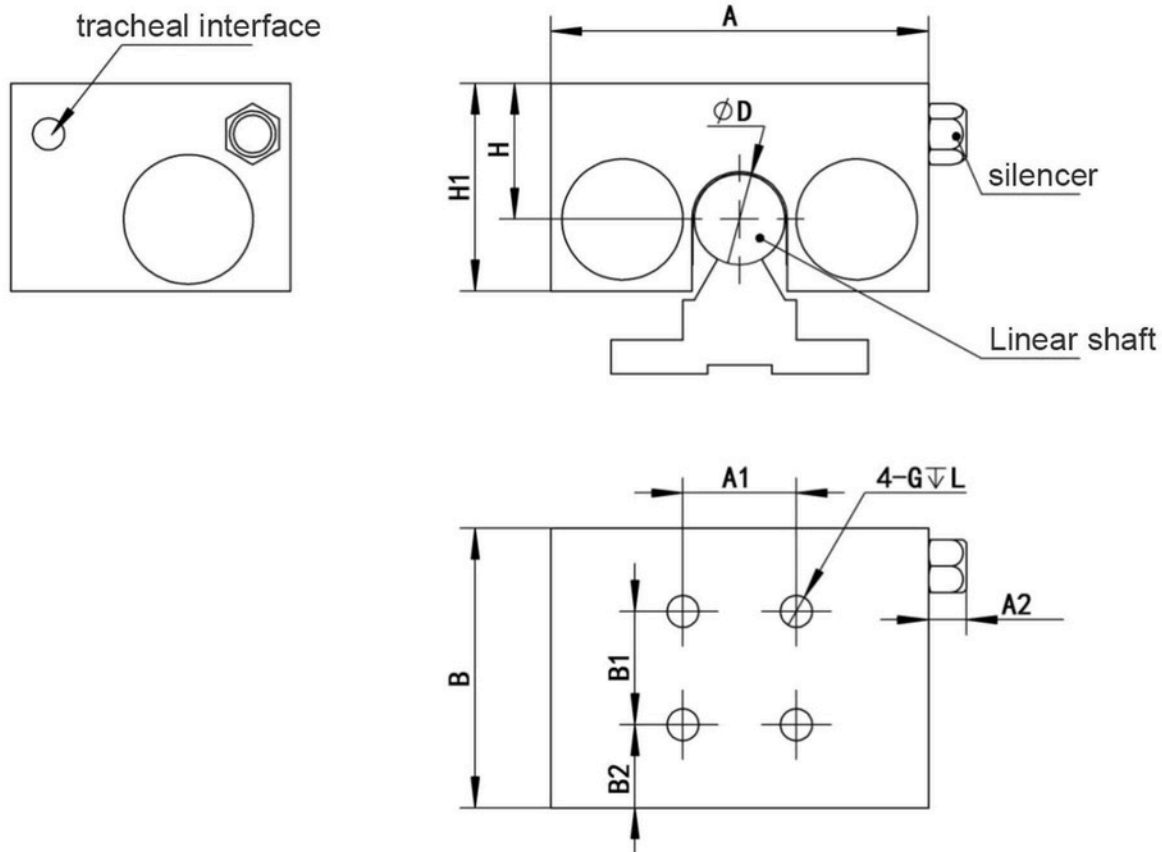
Some models have series numbers

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

NY Round shaft pneumatic normally open type dimension



Unit: mm

Model	D	A	A1	A2	B	B1	B2	H	H1	G	L
NY12	15	55	15	5	60	15	15.5	24	28	M4	4.5
NY16	20	66	20	5	59	20	8.5	30	/	M5	6
NY20	23	75	20	5	59	20	10	36	40	M6	8
NY25	23	75	20	5	56	20	5	36	40	M6	8
NY30	28	90	22	5	70	22	8.5	42	45	M8	8

NYS Round Shaft Pneumatic Closed Type

Model Number Of NYS Series:

NYS 12 11 - 04 - L
① ② ③ ④ ⑤

① Clamping element type

- NYS: 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

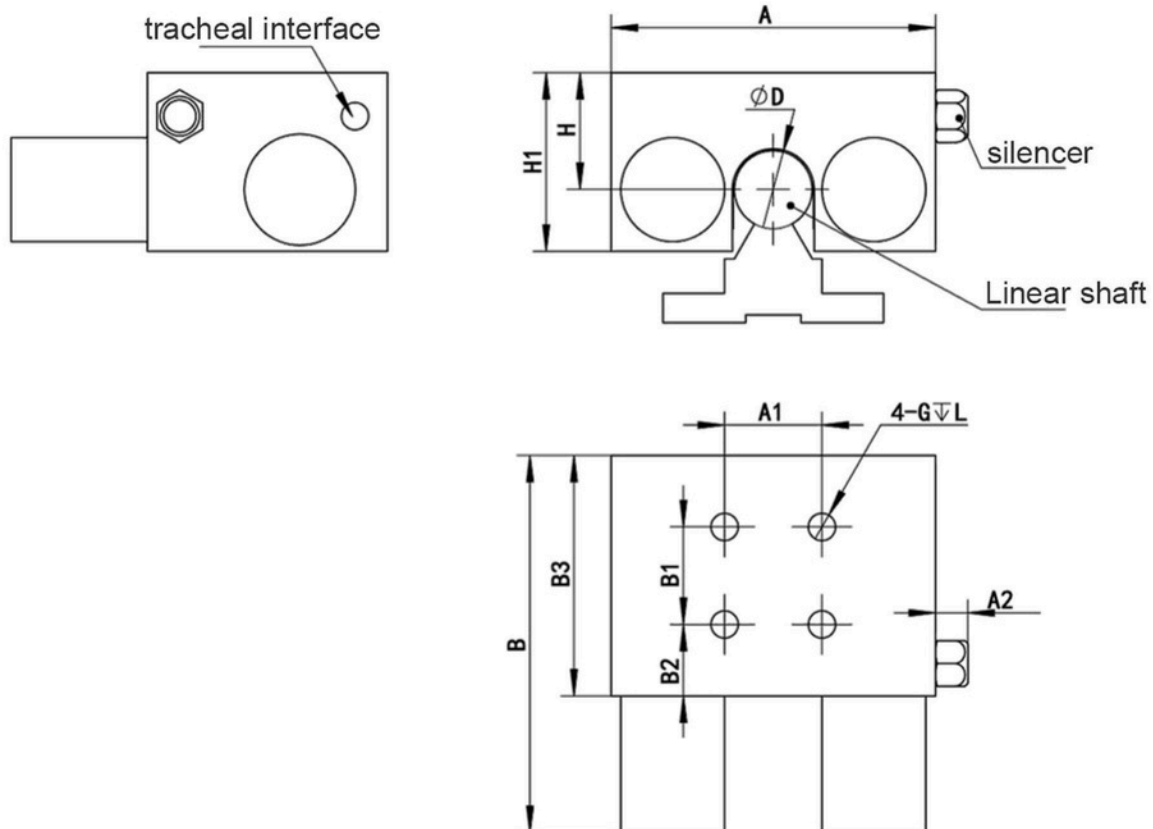
None: Standard type, opening pressure is 0.55MPa

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.

NYS Round shaft pneumatic closed type dimension



Unit: mm

Model	D	A	A1	A2	B	B1	B2	H	H1	G	L
NYS12	12	50	15	5	58	15	11	37	18	M5	6
NYS16	16	54	15	5	58	15	11	37	22	M5	6
NYS20	20	66	45	5	59	18	13	38	25	M8	10
NYS25	25	77	60	5	63	20	14	42	29	M10	12
NYS30	30	92	68	5	76	25	13.5	48	34,8	M10	14

ND Manual type clamping element



ND 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 ND Series:

<u>ND</u>	<u>25</u>	<u>01</u>	<u>- H</u>
①	②	③	④

① Clamping element type

- SO: Manual type

② Linear guide sizes

15, 20, 25, 30, 35, 45

③ Product series number

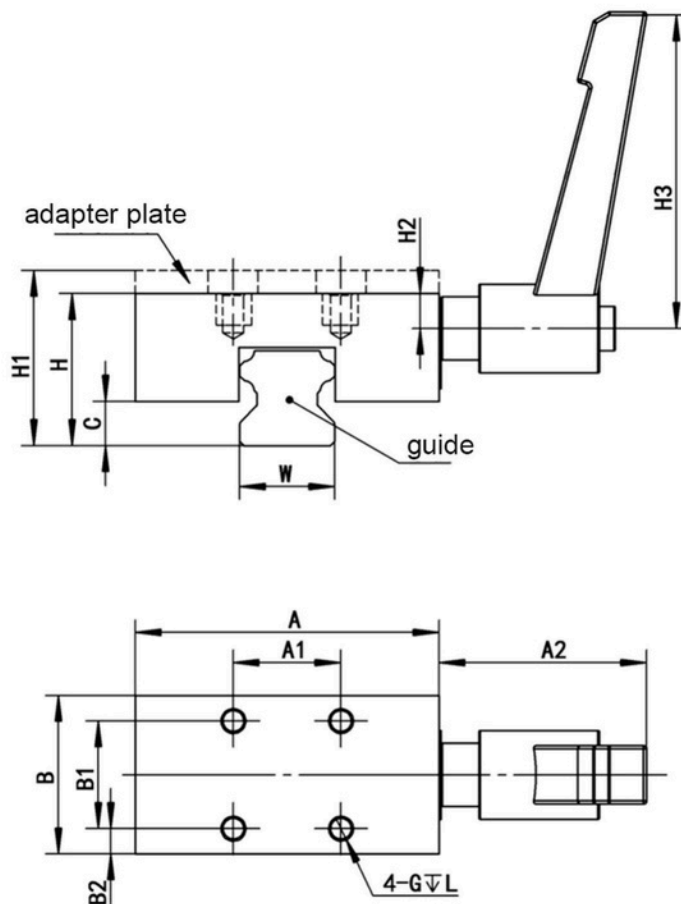
Some models have series numbers

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
ND1501	15	47	17	33	25	17	4	24	28	4.8	50	7	M4	5
ND2001	20	60	20	33	28	20	4	30	/	6.7	50	10	M5	6
ND2002	20	60	15	33	24	15	4.5	30	/	6.7	50	10	M5	6
ND2501	23	70	20	33	30	20	5	36	40	9.8	50	9.5	M6	7
ND3001	28	90	20	44	34	20	7	42	45	9.2	63	12	M6	8
ND3501	34	100	24	44	38	24	7	48	55	11	63	16	M8	10
ND4501	45	120	26	44	26	26	9	60	77	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

Clamping element type

- 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 clamp 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: 520mm, 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.