

Straight column ball lock zero locator and accessories

A positioning unit module that integrates high precision and high clamping force



Straight column ball lock zero locator series

 <p>LQNC-2 Thread concealed type P11</p>	 <p>LQNC Air pressure storage type (without orientation) P12</p>	 <p>LQNC-D Air pressure storage type (with orientation) P13</p>
 <p>LQFLD/LQFLS Flange installation type P14</p>	 <p>LQ-TMS Desktop installation type P15</p>	 <p>LSD Manual installation type P16</p>
 <p>LQNCZ Embedded automation type P17</p>	 <p>LQFLZ Flange type automation type P18</p>	 <p>LQ-TMJ Tabletop type with sensor P19~20</p>
 <p>LQFLJ Tabletop type with sensor P21</p>	 <p>LQNCZ-K Concealed locator P22</p>	

Straight column ball lock zero locator series

 <p>DWJT Positioning zipper P29</p>	 <p>DXJT Directional zipper P29</p>	 <p>SJJT Locking zipper P30</p>
 <p>BHJT Protect the plug P30</p>	 <p>FDJT-X-20 Directional floating zipper P31</p>	 <p>FDJT-S-20 Locking floating rivets P31</p>

Threaded Built-in Mounting Type



Product features:

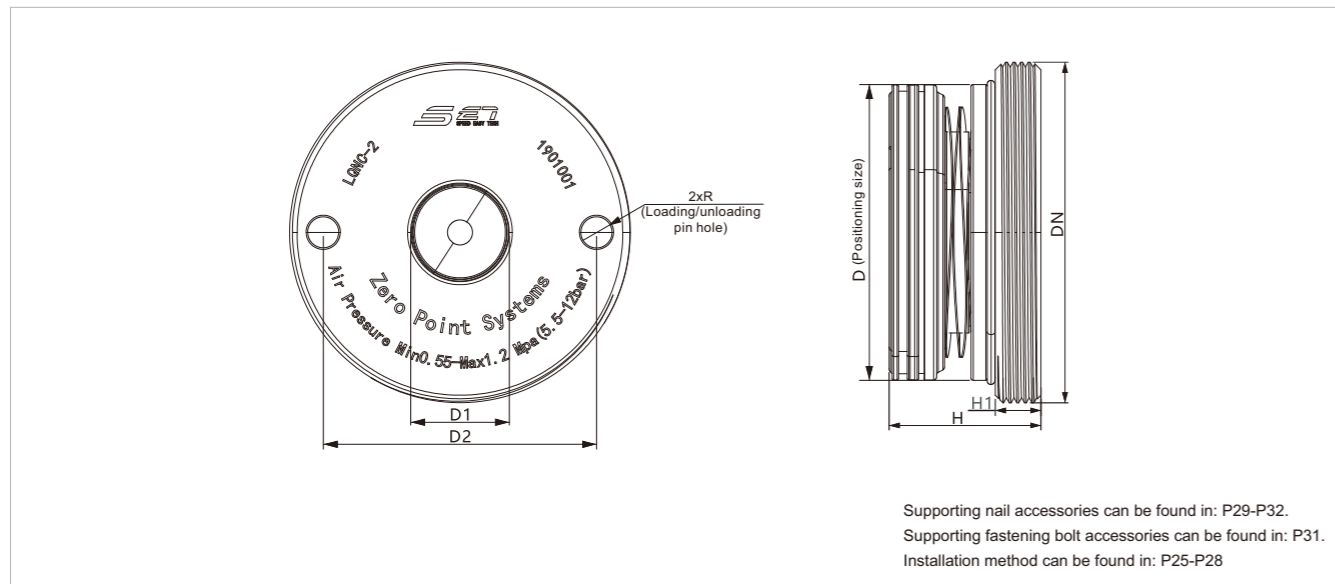
- Air pressure unlocking, spring mechanical locking;
- Material: hardened stainless steel;
- Surface and piston hardening treatment;
- Repeated positioning accuracy < 0.005mm;
- When used, the pressure source can be cut off, and the clamping force is stable.

Applicable industry:

- Suitable for handling, automation industry;
- Suitable for non-metal cutting field.



Outline dimensions:



Main parameter table:

Order Number	Unlocking method	clamping force (kN)	Tension force (kN)	Blow air	Weight (kg)
LQNC-2	Gas pressure	1.25	5	√	0.15

√ Capable of blowing air

Order Number	DN	ØD (h6)	ØD1	D2	H	H1 (±0.005)	ØR
LQNC-2	M45×1	39	13	36	20	6	4.1

Pneumatic Built-in Mounting Type

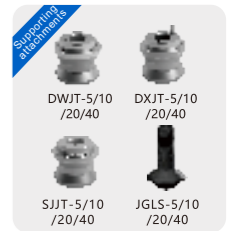


Product features:

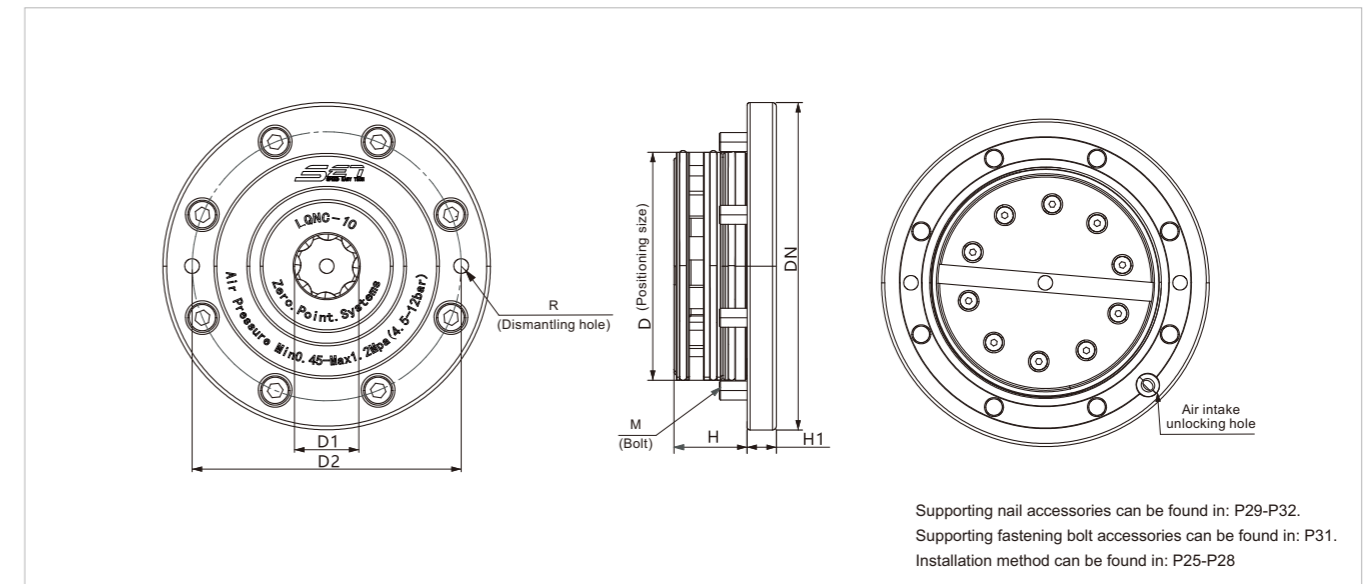
- Air pressure unlocking, spring mechanical locking;
- Material: hardened stainless steel;
- Surface and piston hardening treatment;
- Repeated positioning accuracy < 0.005mm;
- When used, the pressure source can be cut off, and the clamping force is stable.

Applicable industry:

- Suitable for the processing industry that need to reduce the time of fixture replacement;
- Suitable for metal or non-metal cutting fields.



Outline dimensions:



Main parameter table:

Order Number	Unlocking method	clamping force (kN)	Tension force (kN)	Blow air	Weight (kg)
LQNC-5	Gas pressure	5	13	√	0.5
LQNC-10	Gas pressure	10	25	√	1.4
LQNC-20	Gas pressure	17	55	√	2.6
LQNC-40	Gas pressure	40	105	√	4.2

√ Capable of blowing air

Order Number	ØDN	ØD (h6)	ØD1	ØD2	H	H1 (±0.005)	M	R
LQNC-5	78	58	18	65	21.5	8.5	8xM4	2xM4
LQNC-10	112	78	22	92	25	10	8xM6	2xM6
LQNC-20	138	102	32	115	34	15	8xM6	2xM6
LQNC-40	172	127	40	143	45	18	8xM8	2xM8



Pneumatic Built-in Mounting Type with Angle Orientation

Product features:

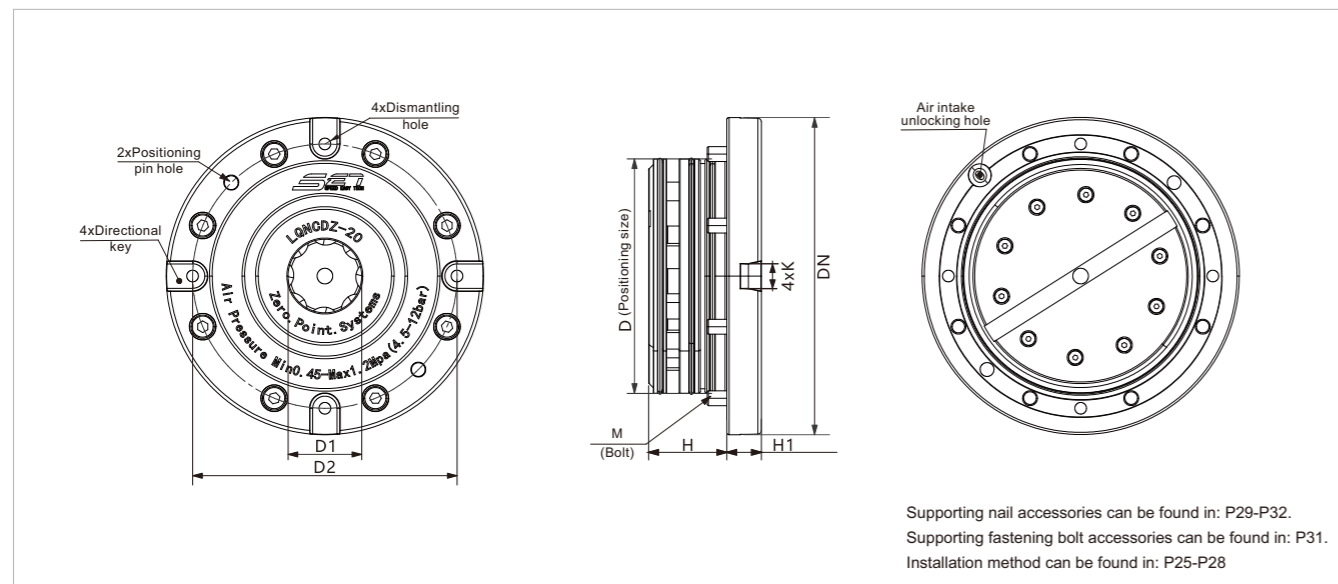
- Pneumatic unlock, spring mechanical locking;
- Material: hardened stainless steel;
- Repeated positioning accuracy < 0.005mm;
- Angular positioning, can be used by a single;
- When used, the pressure source can be cut off and the clamping force is stable.

Applicable industry:

- Suitable for the processing industry that need to reduce the time of fixture replacement;
- Suitable for metal or non-metal cutting fields.



Outline dimensions:



Main parameter table:

Order Number	Unlocking method	clamping force (kN)	Tension force (kN)	Blow air	Weight (kg)
LQNCD-5	Gas pressure	5	13	√	0.5
LQNCD-10	Gas pressure	10	25	√	1.4
LQNCD-20	Gas pressure	17	55	√	2.6
LQNCD-Z-20	Gas pressure	17	55	√	2.6
LQNCD-Z-40	Gas pressure	40	105	√	4.2

√ Capable of blowing air

Order Number	∅DN	∅D	∅D1	∅D2	H	H1 (±0.005)	M	K
LQNCD-5	78	58	18	65	21.5	8.5	8×M4	6
LQNCD-10	112	78	22	92	25	10	8×M6	8.14
LQNCD-20	138	102	32	115	34	15	8×M6	10.14
LQNCD-Z-20	138	102	32	115	34	15	8×M6	Cone key
LQNCD-Z-40	172	127	40	143	45	18	8×M8	Cone key



Flange Mounting Type

Product features:

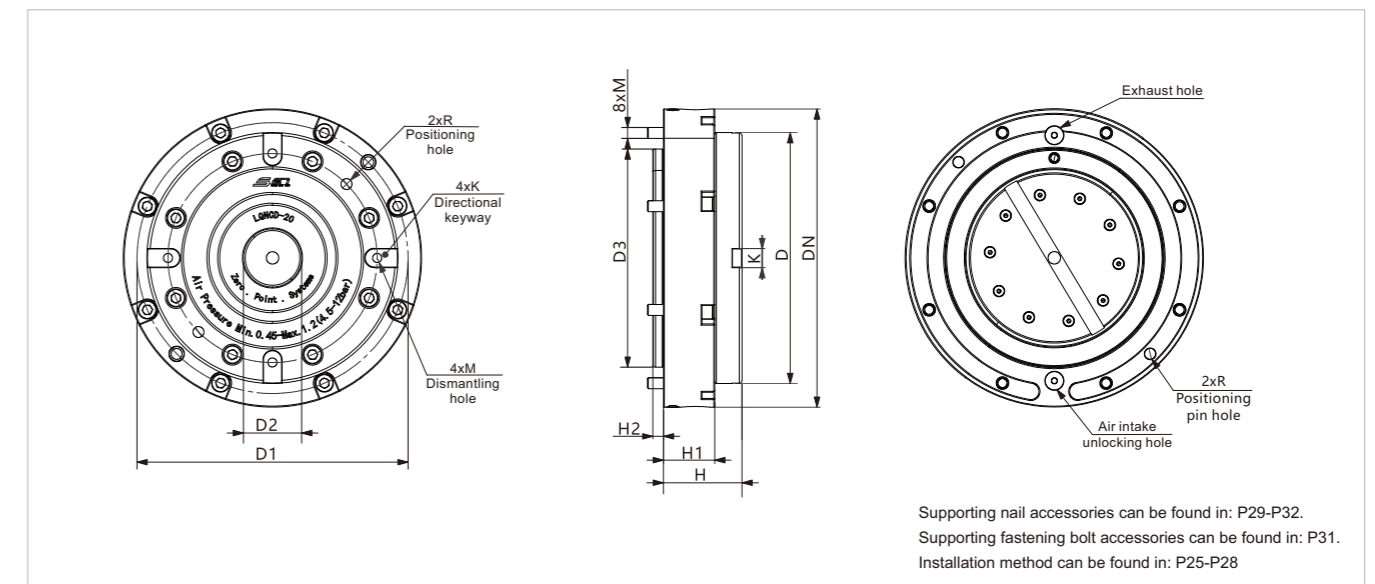
- Air pressure unlocking, spring mechanical locking;
- Material: Hardened stainless steel;
- Repetitive positioning accuracy<0.005mm;
- The product is an assembly, making installation easier;
- The substrate used during installation is thinner and lighter in thickness.

Applicable industry:

- Suitable for the processing industry that need to reduce the time of fixture replacement;
- Suitable for metal or non-metal cutting fields.



Outline dimensions:



Main parameter table:

Order Number	Unlocking method	clamping force (kN)	Tension force (kN)	Blow air	Weight (kg)
LQFLD-10	Gas pressure	10	25	※	4.3
LQFLD-20	Gas pressure	17	55	※	8.8
LQFLS-10	Gas pressure	10	25	※	4.3
LQFLS-20	Gas pressure	17	55	※	8.8

※ The blowing function is an optional item

Order Number	∅DN	∅D	∅D1	∅D2	∅D3 (h7)	H	H1	H2	M	∅R	K
LQFLD-10	140	112	127	22	100	35.5	25	5.8	M6	8	8.14
LQFLD-20	164	138	149	32	120	43.2	28.2	5.8	M6	6	10.14
LQFLS-10	140	112	127	22	100	35.5	25	5.8	M6	8	/
LQFLS-20	164	138	149	32	120	43.2	28.2	5.8	M6	6	/

Desktop installation type



Product features:

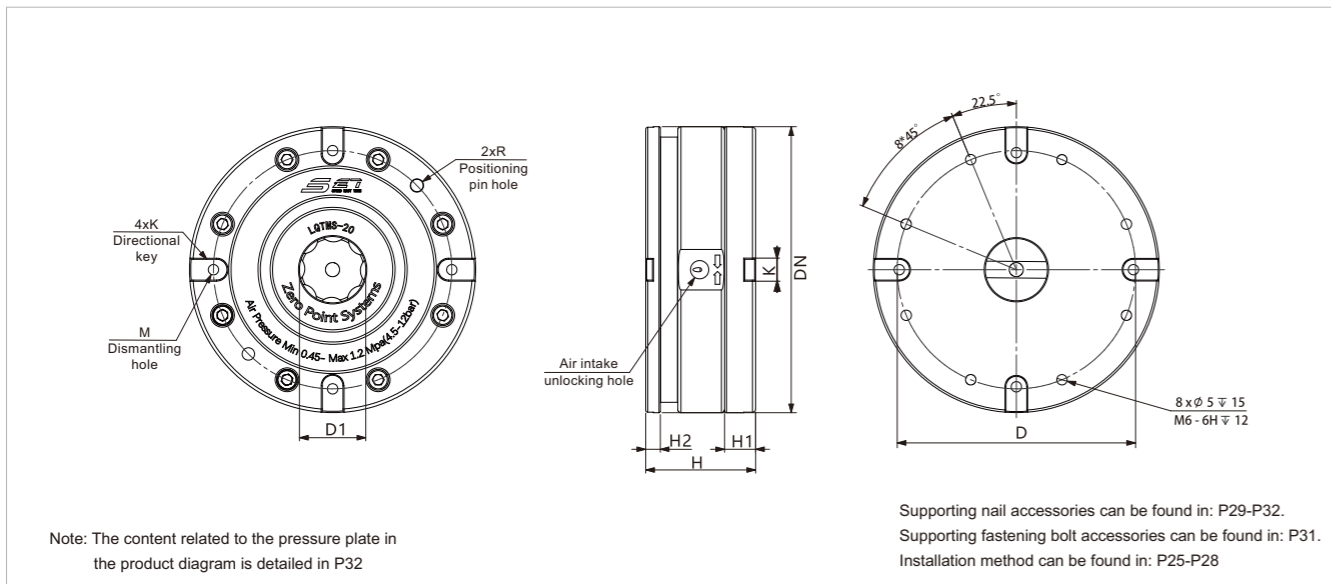
- Air pressure unlocking, spring mechanical locking;
- Material: Hardened stainless steel;
- Repetitive positioning accuracy<0.005mm;
- Install directly on the T-shaped workbench through customized pressure plates;
- When in use, the pressure source can be cut off, and the clamping force is stable.

Applicable industry:

- Suitable for the processing industry that need to reduce the time of fixture replacement;
- Suitable for metal or non-metal cutting fields.



Outline dimensions:



Main parameter table:

Order Number	Unlocking method	clamping force (kN)	Tension force (kN)	Blow air	Weight (kg)
LQTMS-5	Gas pressure	5	13	※	0.9
LQTMS-10	Gas pressure	10	25	※	2.6
LQTMS-20	Gas pressure	17	55	※	5.8

※ The blowing function is an optional item

Order Number	∅DN	∅D	∅D1	H	H1	H2	R	M	K
LQTMS-5	78	65	18	33.5	8.5	4.5	4	4xM4	/
LQTMS-10	112	92	22	38	10	5.5	5	4xM6	/
LQTMS-20	138	115	32	53	15	7	6	4xM6	10

Manual installation type



Product features:

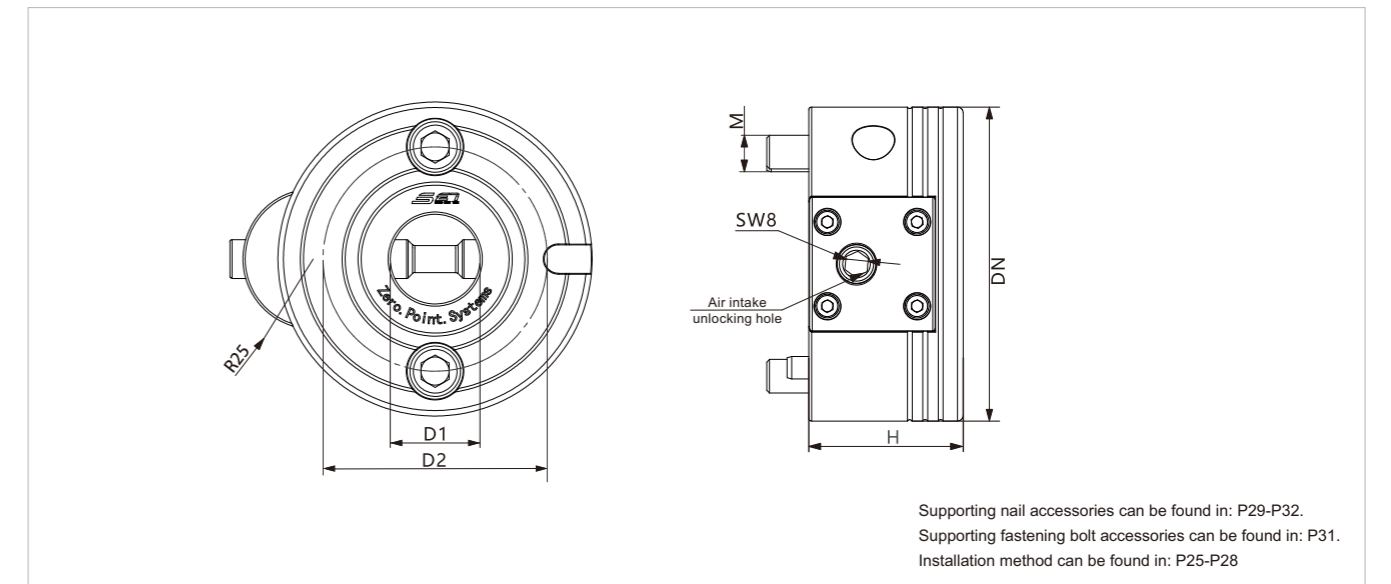
- Manually enter the clamping or relaxing state;
- Material: Hardened stainless steel;
- Surface and piston hardening treatment;
- Repetitive positioning accuracy<0.01mm.

Applicable industry:

- Suitable for the processing industry that need to reduce the time of fixture replacement;
- Suitable for metal or non-metal cutting fields.



Outline dimensions:



Main parameter table:

Order Number	Unlocking method	clamping force (kN)	Tension force (kN)	Operating torque (N·m)	Weight (kg)
LSD-10	Manual operation	10	25	30	3.3
LSD-20	Manual operation	17	55	50	6.6
LSD-40	Manual operation	40	105	70	9.6

订货编号	∅DN	∅D1	∅D2	H	M
LSD-10	112	32	80	55	2xM12
LSD-20	138	32	90	55	2xM12
LSD-40	148	40	102	78	4xM12



Concealed automatic installation type

Product features:

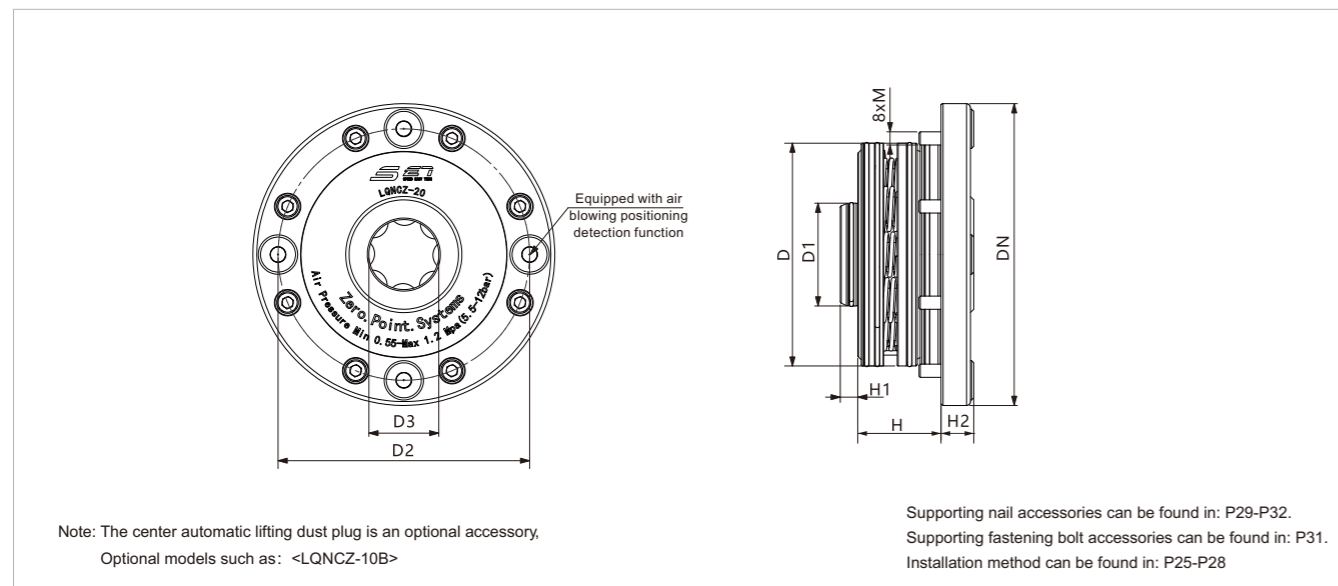
- Air pressure unlocking, spring mechanical locking;
- Material: Hardened stainless steel;
- Repetitive positioning accuracy<0.005mm;
- Optional center automatic lifting dust cover to prevent iron filings from entering;
- The center and surrounding areas automatically rise and spread debris to maintain cleanliness;
- Equipped with a positioning and relaxation detection interface.

Applicable industry:

- Suitable for automated pallet replacement in flexible production lines;
- Suitable for metal or non-metal cutting fields.



Outline dimensions:



Main parameter table:

Order Number	Unlocking method	clamping force (kN)	Tension force (kN)	Blow air	Weight (kg)
LQNCZ-10	Gas pressure	10	25	√	1.4
LQNCZ-20	Gas pressure	17	55	√	2.7

√ Capable of blowing air

Order Number	∅DN	∅D (h7)	∅D1	∅D2	∅D3	H	H1	H2 (±0.005)	M
LQNCZ-10	112	78	36	92	22	30	7.5	10	M6
LQNCZ-20	138	102	47	115	32	38	8.3	15	M6



Flange type automation type

Product features:

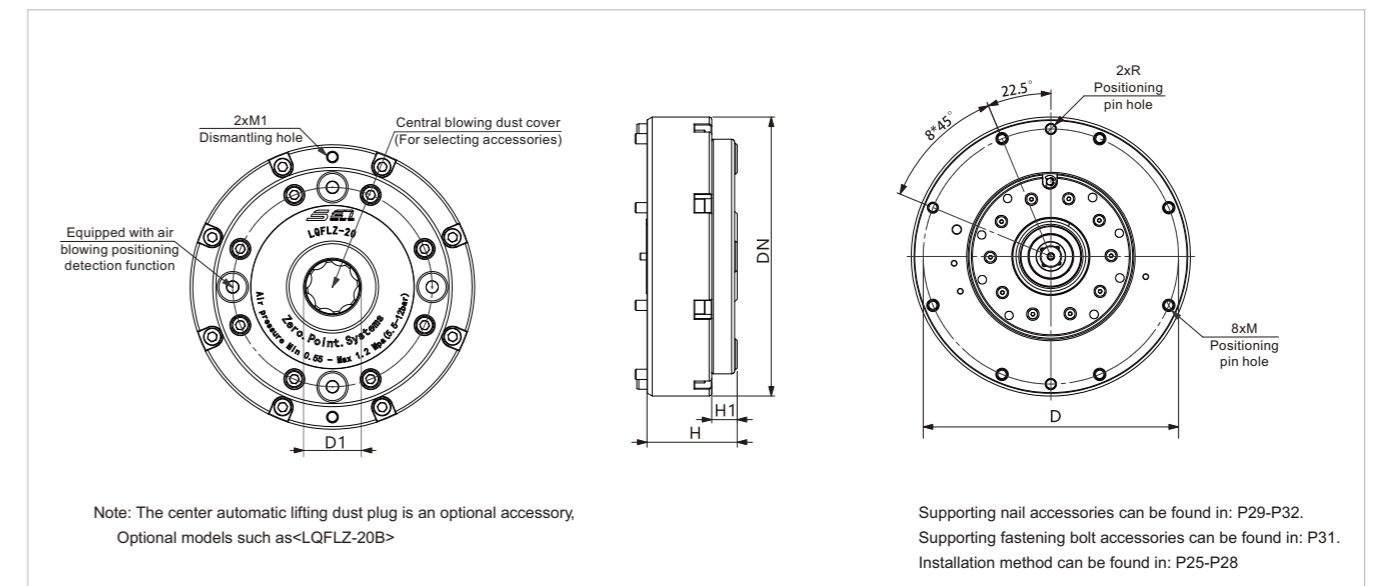
- Air pressure unlocking, spring mechanical locking;
- Material: Hardened stainless steel;
- Repetitive positioning accuracy<0.005mm;
- Optional center automatic lifting dust cover to prevent iron filings from entering;
- The center and surrounding areas automatically rise and spread debris to maintain cleanliness;
- Equipped with a positioning and relaxation detection interface.

Applicable industry:

- Suitable for automated replacement of pallets in flexible production lines;
- Suitable for metal or non-metal cutting fields.



Outline dimensions:



Main parameter table:

Order Number	Unlocking method	clamping force (kN)	Tension force (kN)	Blow air	Weight (kg)
LQFLZ-20	Gas pressure	17	55	√	6.9

√ Capable of blowing air

Order Number	∅DN	∅D	∅D1	H	H1 (±0.005)	∅R	M	M1
LQFLZ-20	164	150	32	53	15	6	M6	M8



Tabletop type with sensor

Product features:

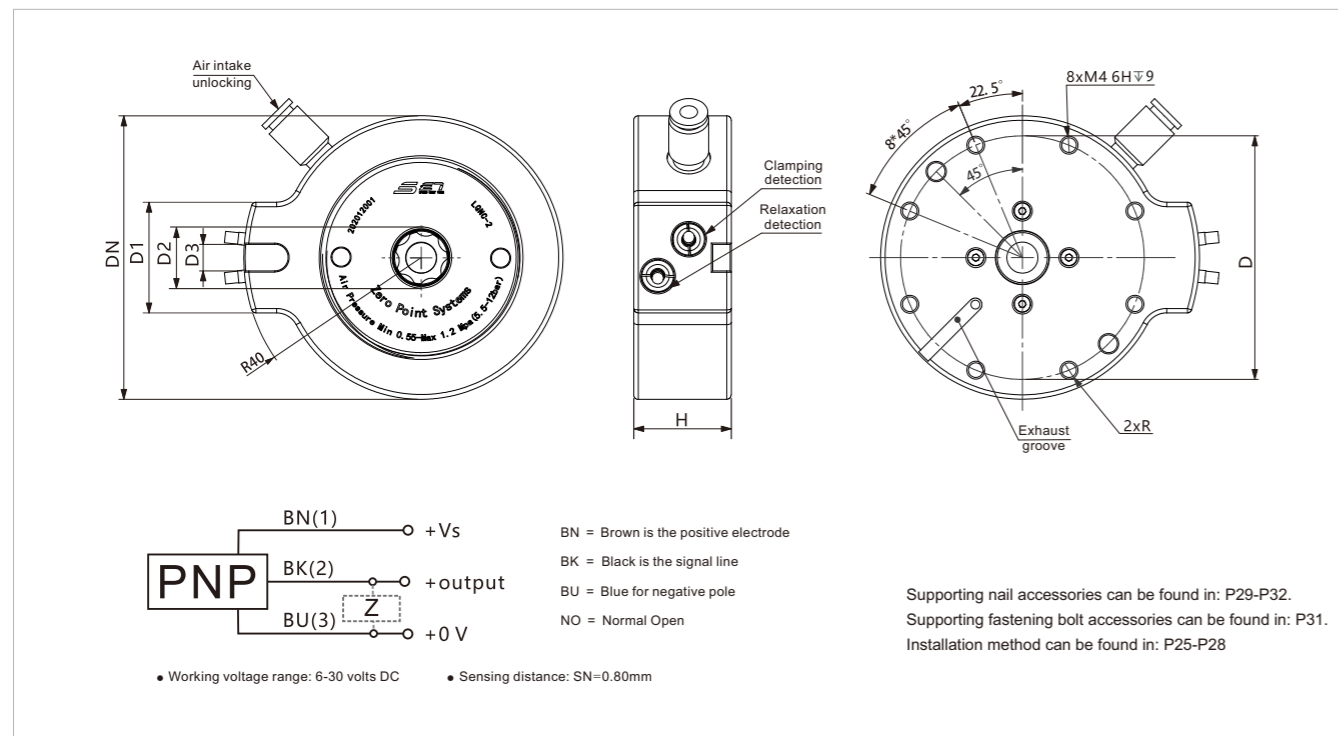
- Air pressure unlocking, spring mechanical locking;
- Material: Hardened stainless steel;
- Repetitive positioning accuracy<0.005mm;
- With clamping and loosening detection interface, output PNP signal;
- When in use, the pressure source can be cut off, and the clamping force is stable.

Applicable industry:

- Suitable for the field of automated handling and grabbing;
- Suitable for mold changing and welding production lines;
- Suitable for processing industries that require reducing fixture replacement time.



Outline dimensions:



Main parameter table:

Order Number	Unlocking method	clamping force (kN)	Tension force (kN)	Blow air	Weight (kg)
LQTMJ-2	Gas pressure	1.25	5	×	0.65

× Capable of blowing air

Order Number	ØDN	ØD	D1	ØD2	D3	H	ØR
LQTMJ-2	64	55	25	13	6	22	4



Tabletop type with sensor

Product features:

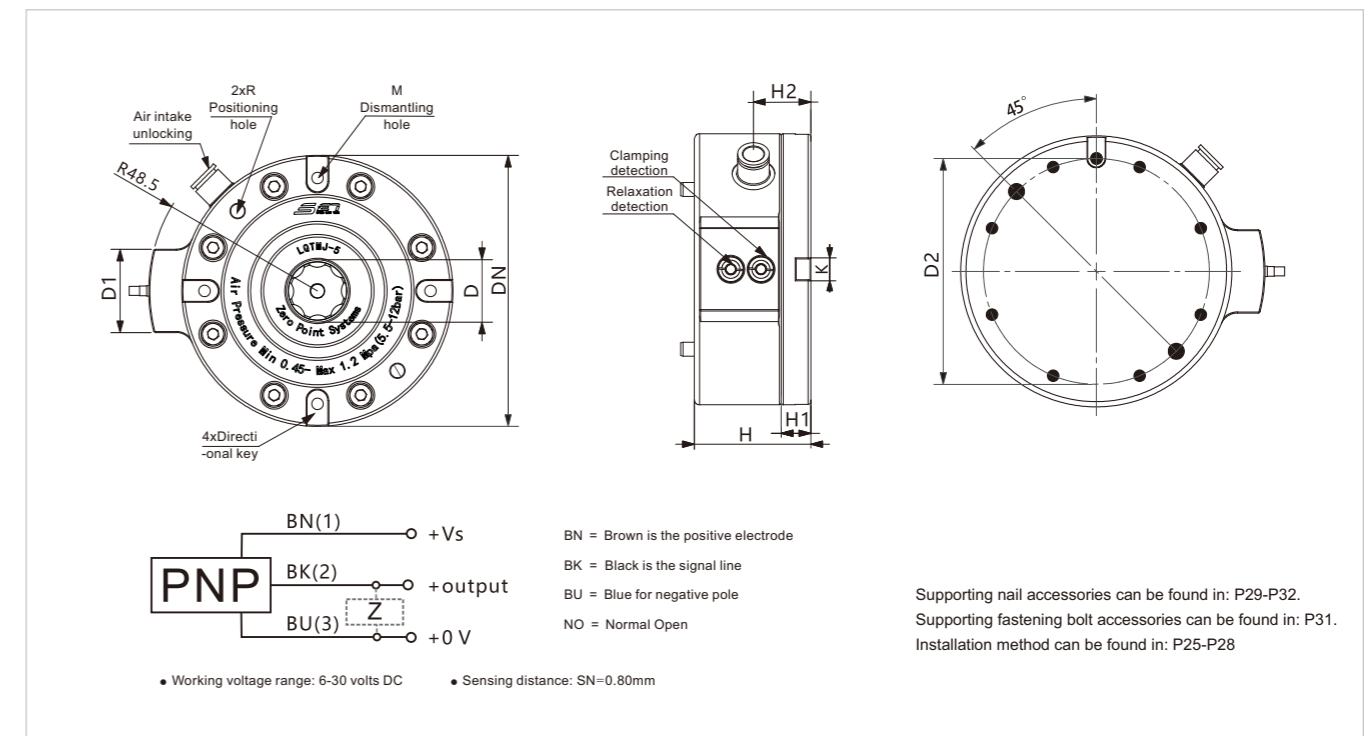
- Air pressure unlocking, spring mechanical locking;
- Material: Hardened stainless steel;
- Repetitive positioning accuracy<0.005mm;
- With clamping and loosening detection interface, output PNP signal;
- When in use, the pressure source can be cut off, and the clamping force is stable.

Applicable industry:

- Suitable for the field of automated handling and grabbing;
- Suitable for mold changing and welding production lines;
- Suitable for processing industries that require reducing fixture replacement time.



Outline dimensions:



Main parameter table:

Order Number	Unlocking method	Clamping force (kN)	Tension force (kN)	Blow air	Weight (kg)
LQTMJ-5	Gas pressure	5	13	×	1.2

× Capable of blowing air

Order Number	ØDN	ØD	D1	ØD2	H (\pm 0.015)	H1 (\pm 0.005)	H2	M	ØR
LQTMJ-5	78	18	24	65	33.5	8.5	16.5	4xM4	4

Flange type with sensor



Product features:

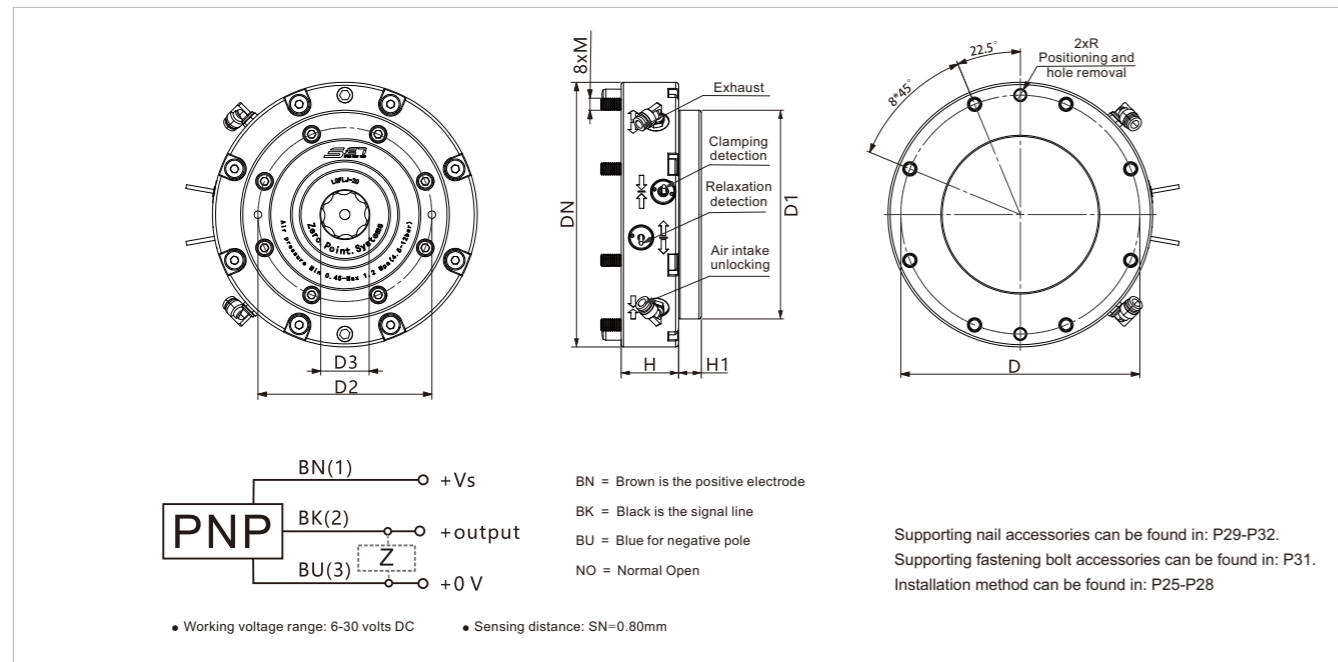
- Air pressure unlocking, spring mechanical locking;
- Material: Hardened stainless steel;
- Repetitive positioning accuracy<0.005mm;
- With clamping and loosening detection interface, output PNP signal;
- When in use, the pressure source can be cut off, and the clamping force is stable.

Applicable industry:

- Suitable for the field of automated handling and grabbing;
- Suitable for mold changing and welding production lines;
- Suitable for processing industries that require reducing fixture replacement time.



Outline dimensions:



Main parameter table:

Order Number	Unlocking method	Clamping force (kN)	Tension force (kN)	Blow air	Weight (kg)
LQFLJ-20	Gas pressure	17	55	※	8.5
LQFLJ-40	Gas pressure	40	105	※	11.5

※ The blowing function is an optional item

Order Number	∅DN	∅D	∅D1	∅D2	∅D3	H	H1 (±0.005)	M	∅R
LQFLJ-20	175	158	138	115	32	38	15	M8	8
LQFLJ-40	212	190	172	143	40	45	18	M10	10

Concealed automatic zero point locator



Product features:

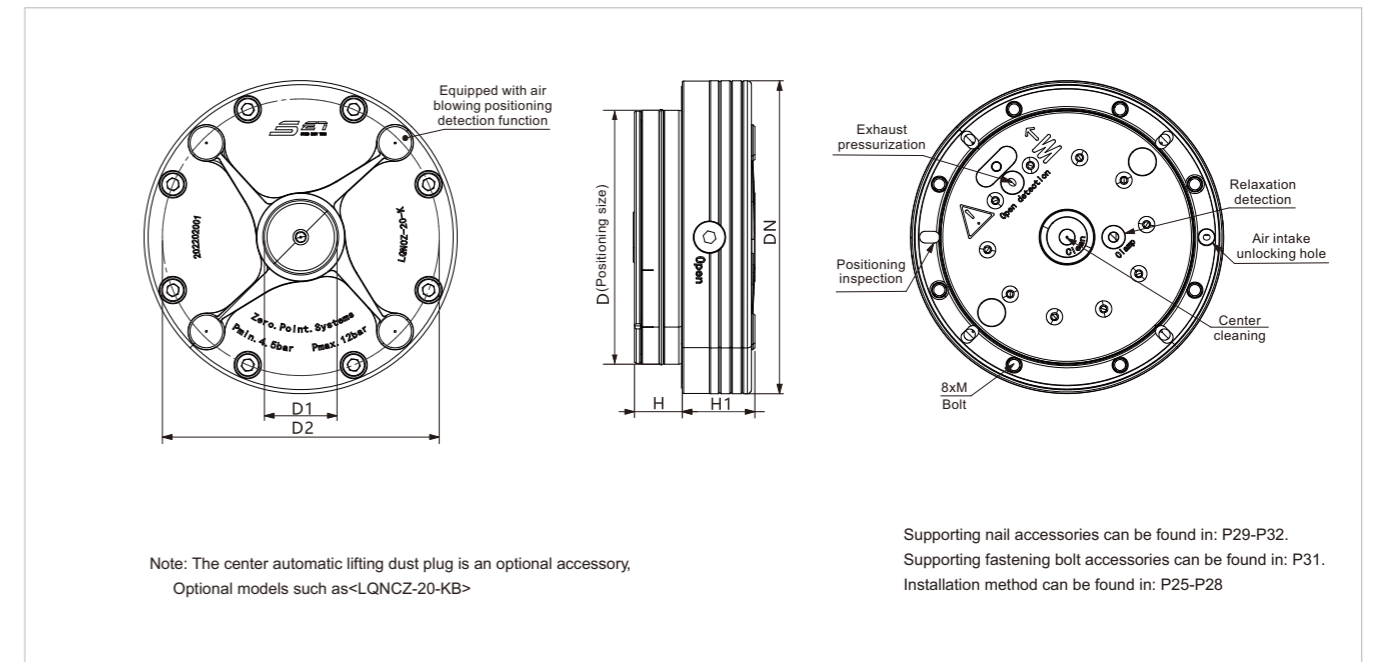
- Air pressure unlocking, spring mechanical locking;
- Material: Hardened stainless steel;
- Repetitive positioning accuracy<0.005mm;
- Surrounding protrusions are in contact, and each protrusion is clean;
- Equipped with exhaust boost and in place relaxation detection function;
- It has a central cleaning function to prevent iron filings from entering;
- The overall design adopts a fully sealed design, with no piston leakage.

Applicable industry:

- Suitable for processing industries that require reducing fixture replacement time,
- Suitable for the field of automation.



Outline dimensions:



Main parameter table:

Order Number	Unlocking method	Clamping force (kN)	Tension force (kN)	Blow air	Weight (kg)
LQNCZ-20-K	Gas pressure	17	55	√	4.25
LQNCZ-40-K	Gas pressure	40	105	√	5.8
LQNCZ-60-K	Gas pressure	52	130	√	8.2

√ Capable of blowing air

Order Number	∅DN	∅D (k7)	∅D1	∅D2	H	H1 (±0.005)	M
LQNCZ-20-K	138	112	32	122	21.1	32	M6
LQNCZ-40-K	172	140	40	152	25	38	M8
LQNCZ-60-K	188	150	48	166	25	39	M8

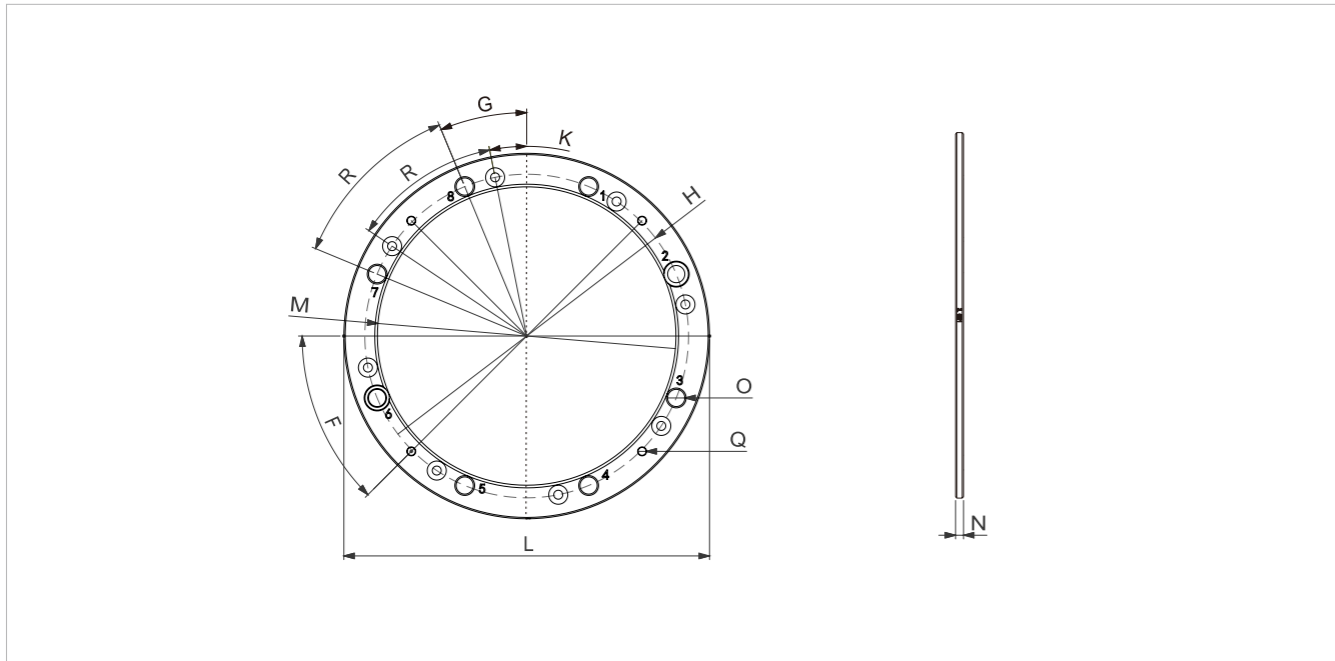
Gasket (K series specific)



Product features:

- Fine tune the height of the K series locator.

Outline dimensions:



Main parameter table:

Order Number	R	G	K	Ø H	Ø M	F	O	Q	ØL ^{-0.05} -0.1	N ±0.002	Weight (kg)
TZDP-20-K	8*45°	22.5°	11.25°	122	112.5	45°	8-Ø 6.5	4-Ø3	138	3	0.0123
TZDP-40-K	8*45°	22.5°	11.25°	152	142	45°	8-Ø 8.5	4-Ø3	172	3	0.14
TZDP-60-K	8*45°	22.5°	11.25°	166	150.5	45°	8-Ø 8.5	4-Ø3	187	4	0.026

Straight column ball lock zero locator accessory

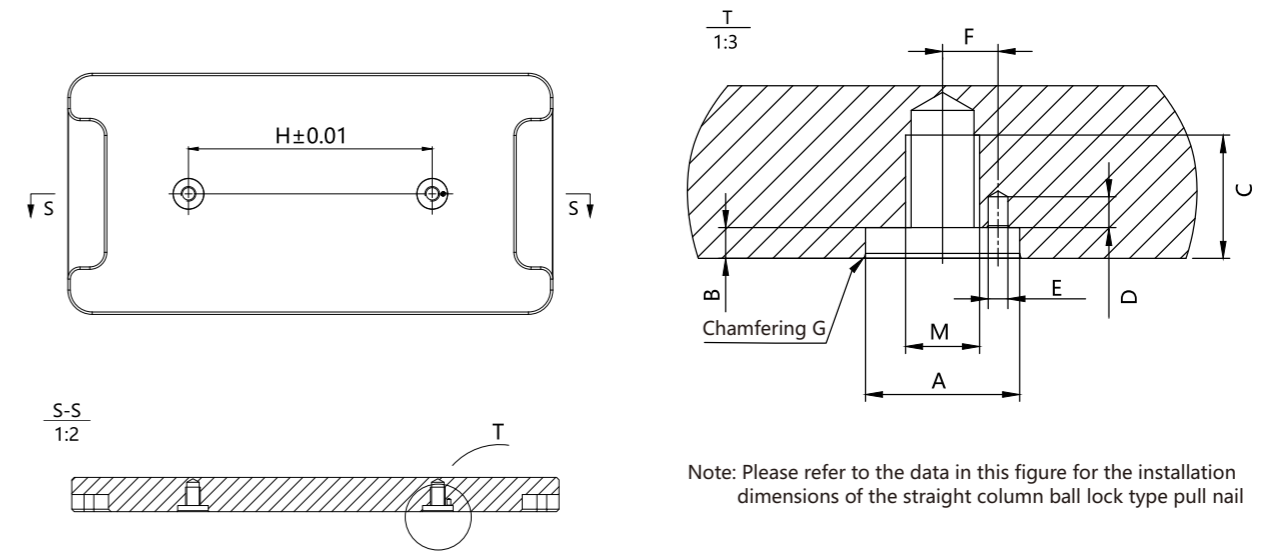
A positioning unit module that integrates high precision and high clamping force



Installation diagram of two station pull nails:



Two station nail installation dimension diagram:

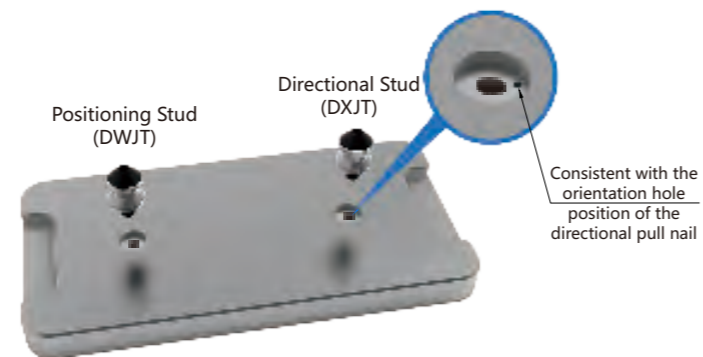


Installation diagram of two station pull nails:

There is only one installation method for two station stud installation:

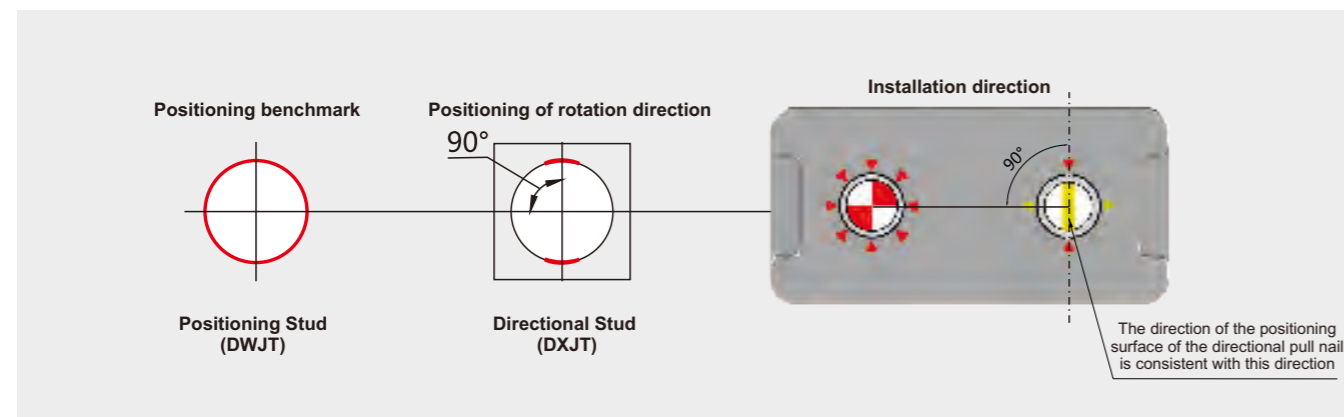
- Two types of rivets are required: one positioning rivet (DWJT) and one directional rivet (DXJT).
- Method: Install directional rivets (DXJT) into the installation slots with small holes on the switching board, and position rivets (DWJT) into another installation slot.

Example as shown in the figure:



Main parameter table:

Order Number	Ø A (0/+0.01mm)	B (+0.1mm)	C (min)	D	ØE (+0.1mm)	F (±0.04mm)	G	H	M	
Positioning stud	DWJT-2	10	2.4	12	/	/	/	0.5°15'	80	M6
	DWJT-5	14	3.2	13	/	/	/	0.5°15'	100	M8
	DWJT-10	15	3.2	15	/	/	/	0.5°15'	200	M8
	DWJT-20	25	5.2	24	/	/	/	1°15'	200	M12
	DWJT-40	30	6.2	26.5	/	/	/	1°15'	200	M16
Directional pull nail	DXJT-2	10	2.4	12	4	2.2	4.5	0.5°15'	80	M6
	DXJT-5	14	3.2	13	4	2.2	5.5	0.5°15'	100	M8
	DXJT-10	15	3.2	15	4	2.2	5.75	0.5°15'	200	M8
	DXJT-20	25	5.2	24	5	3.2	9	1°15'	200	M12
	DXJT-40	30	6.2	26.5	7	3.2	11.5	1°15'	200	M16



Installation diagram of four station pull nail

- ▲ This distribution pattern is suitable for general production environments.
- ▲ Positioning rivets serve to limit the degrees of freedom in the X and Y directions and become reference points;
- ▲ Directional rivets only limit the degree of freedom in the direction of rotation,
- ▲ The locking pull pin only serves to increase the clamping force,
- ▲ This can ensure the complete positioning of the entire tray and avoid over positioning.



Distribution of selectable zero point positioning rivets

- ▲ This distribution that only uses directional rivets,
- ▲ Suitable for use in environments with significant temperature effects,
- ▲ The center point always maintains its position unchanged,
- ▲ But this distribution requires a very high degree of positional accuracy for the installation holes of the rivets.

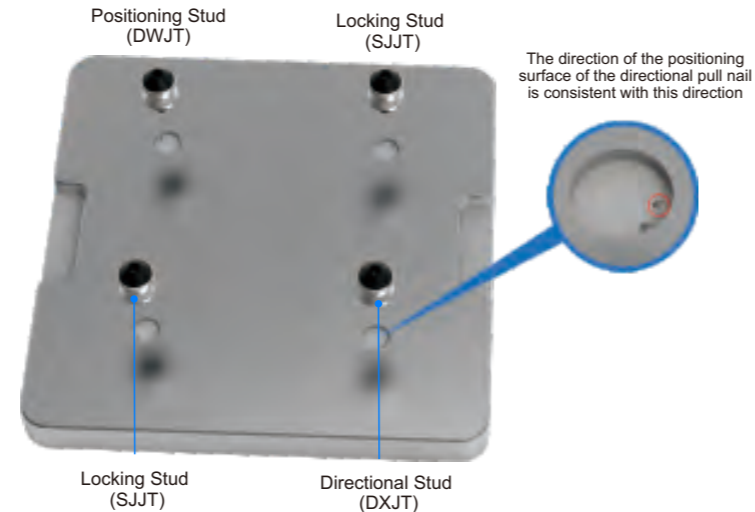
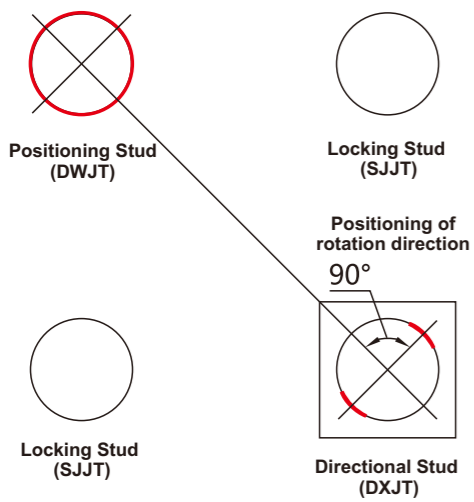


- ① Positioning stud
- ② Directional pull nail
- ③ Lock the zipper
- ② Directional pull nail

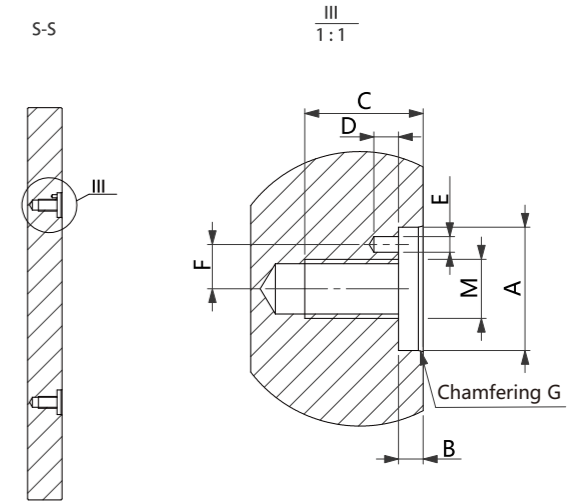
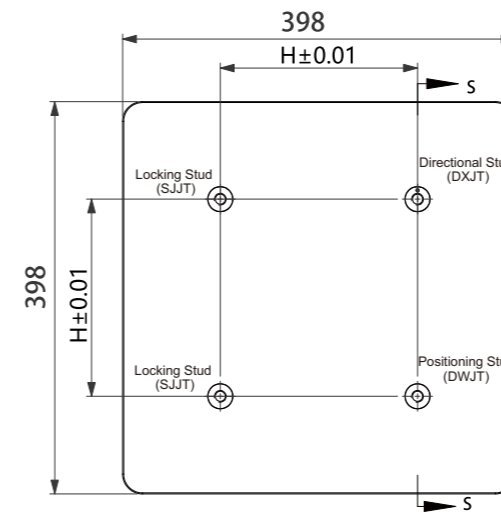
Installation diagram of four station pull nail

- ▲ There are two installation methods for four station stud installation:
- ▲ Method: Three types of rivets are required, one bidirectional positioning rivet (DWJT) and one unidirectional positioning pin rivet (DXJT), and two locking rivets (SJT).
- ▲ As shown in the figure below: Install the one-way positioning pull nail into the installation slot with two small holes on the dry switching board, so that the line connecting the two convex points of the one-way positioning pull nail is in a 90° state with the side of the switching board

Positioning benchmark



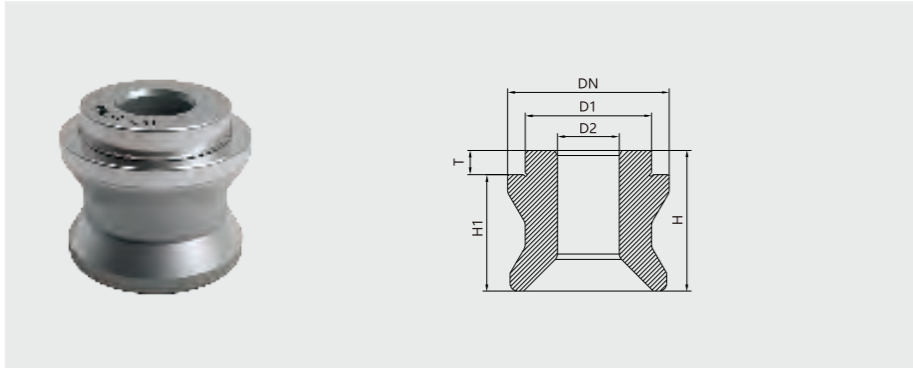
四工位拉钉安装尺寸图:



Note: Please refer to the data in this figure for the installation dimensions of the straight column ball lock type pull nail

Main parameter table:

订货编号	Ø A (0/+0.01mm)	B (+0.1mm)	C (min)	D	ØE (+0.1mm)	F (±0.04mm)	G	H	M	
Positioning stud	DWJT-2	10	2.4	12	/	/	/	0.5*15°	80	M6
	DWJT-5	14	3.2	13	/	/	/	0.5*15°	100	M8
	DWJT-10	15	3.2	15	/	/	/	0.5*15°	200	M8
	DWJT-20	25	5.2	24	/	/	/	1*15°	200	M12
	DWJT-40	30	6.2	26.5	/	/	/	1*15°	200	M16
Directional pull nail	DXJT-2	10	2.4	12	4	2.2	4.5	0.5*15°	80	M6
	DXJT-5	14	3.2	13	4	2.2	5.5	0.5*15°	100	M8
	DXJT-10	15	3.2	15	4	2.2	5.75	0.5*15°	200	M8
	DXJT-20	25	5.2	24	5	3.2	9	1*15°	200	M12
	DXJT-40	30	6.2	26.5	7	3.2	11.5	1*15°	200	M16
Lock the zipper	SJJT-2	10	2.4	12	/	/	/	0.5*15°	80	M6
	SJJT-5	14	3.2	13	/	/	/	0.5*15°	100	M8
	SJJT-10	15	3.2	15	/	/	/	0.5*15°	200	M8
	SJJT-20	25	5.2	24	/	/	/	1*15°	200	M12
	SJJT-40	30	6.2	26.5	/	/	/	1*15°	200	M16



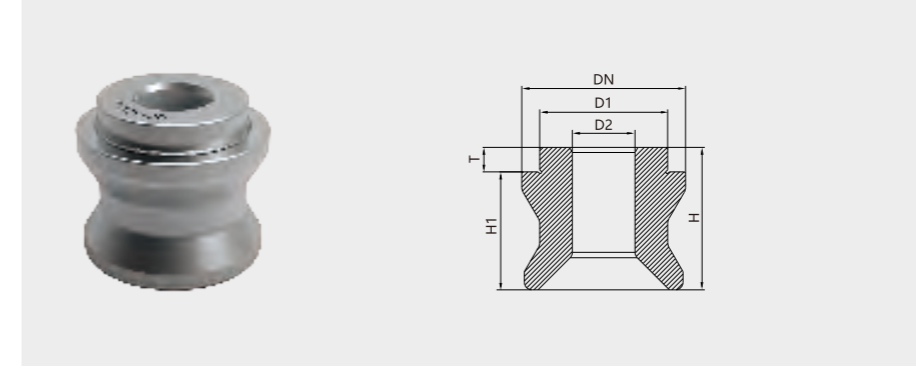
Positioning stud

Product features:

- High precision requirements, surface hardening treatment;
- Plays a role in restricting free rotation in the X/Y direction during use;
- Suitable for straight column ball lock type zero locator.

Main parameter table:

Order Number	Ø DN	Ø D1 (-0.002/-0.01)	Ø D2	H	H1	T	Weight (g)
DWJT-2	13	10	6.2	11	8.9	2.1	6
DWJT-5	18	14	8.2	15.5	12.8	2.7	16
DWJT-10	22	15	8.3	19.3	16.3	3	30
DWJT-20	32	25	12.2	28	23	5	105
DWJT-40	40	30	16.3	34	29	5	188



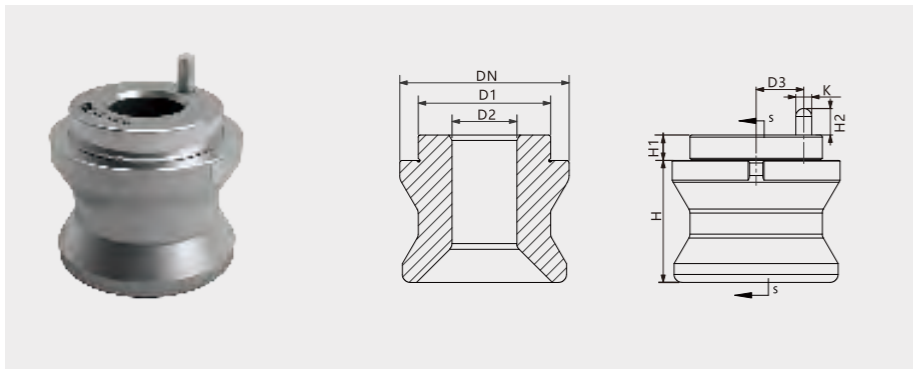
Lock the zipper

Product features:

- Surface hardening treatment plays a role in increasing tension force;
- Ensure that the positioning tray is fully positioned to avoid over positioning;
- Suitable for straight column ball lock type zero locator.

Main parameter table:

Order Number	Ø DN	Ø D1 (-0.002/-0.01)	Ø D2	H	H1	T	Weight (g)
SJJT-2	12.9	10	6.2	11	8.9	2.1	6
SJJT-5	17.9	14	8.2	15.5	12.8	2.7	16
SJJT-10	21.9	15	8.3	19.3	16.3	3	30
SJJT-20	32.0	25	12.0	28	23	5	105
SJJT-40	40.0	30	16.3	34	29	5	188



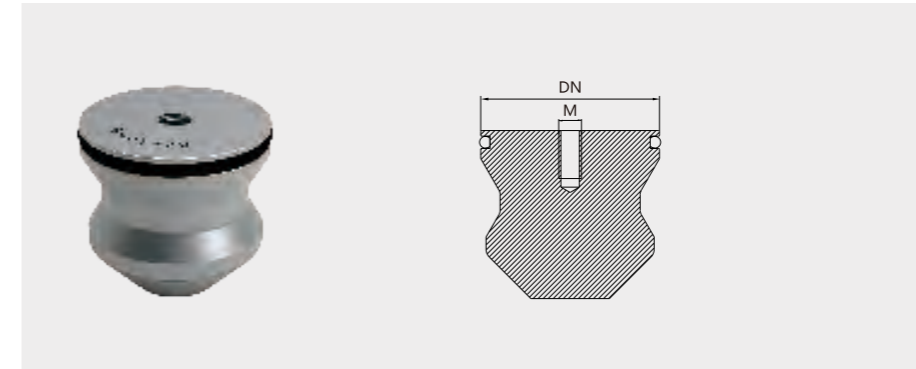
Directional pull nail

Product features:

- Surface hardening treatment;
- Only restricting rotational freedom, serving as a directional function;
- The angle between the guide hole and the positioning edge is 90°, please refer to (P25-26) for details. Suitable for straight column ball lock type zero locator.

Main parameter table:

Order Number	Ø DN	Ø D1 (h6)	Ø D2	D3	H	H1	H2	K	Weight (g)
DXJT-2	13	10	6.2	4.5	8.9	2.1	2.5	2.2	8
DXJT-5	18	14	8.2	5.5	12.8	2.7	3	2.2	16
DXJT-10	22	15	8.3	5.75	16.3	3	3	2.0	30
DXJT-20	32	25	12.2	9	23	5	5	3.0	105
DXJT-40	40	30	16.3	11.5	29	5	4	3.0	188



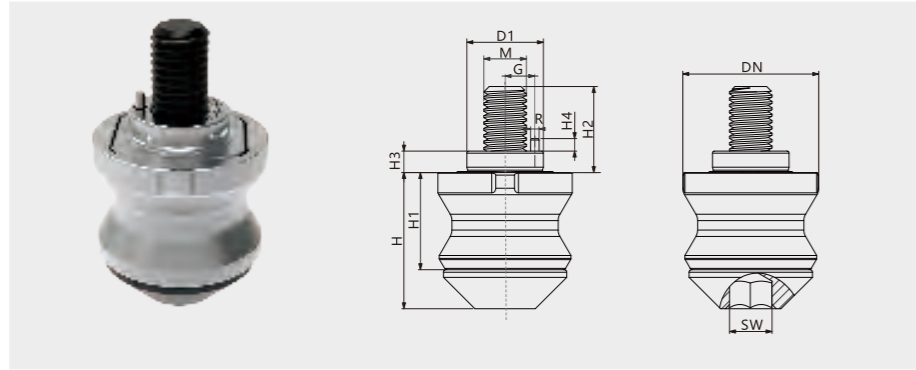
Protect the plug

Product features:

- Material: Aluminum;
- Prevent debris from entering the inactive zero positioning unit;
- Suitable for straight column ball lock type zero locator.

Main parameter table:

Order Number	Ø DN	M	Weight (g)
BHJT-2	12.8	M4	3
BHJT-5	17.8	M5	8
BHJT-10	21.8	M6	18
BHJT-20	31.8	M6	45
BHJT-40	39.8	M8	63

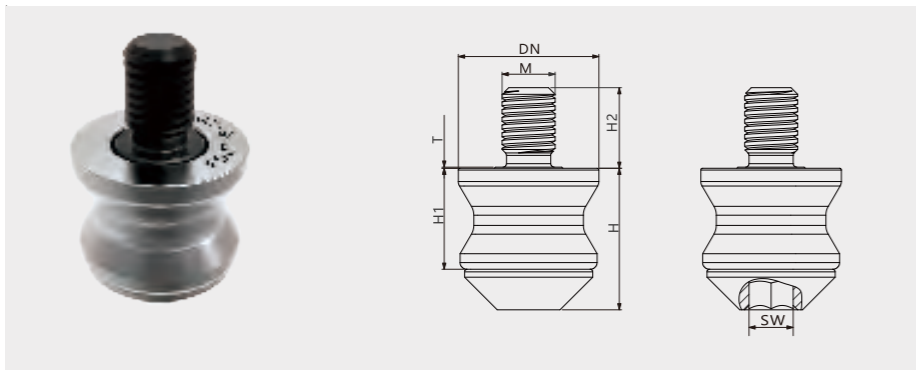


Positioning stud

Product features:

- High precision requirements, surface hardening treatment;
- Plays a role in restricting free rotation in the X/Y direction during use;
- The floating compensation amount is +0.5mm;
- Applied to the position adjustment of large parts,

Order Number	Ø DN	ØD1 (h7)	H	H1	H2	H3	H4	ØR	M	G	SW	Floating amount (mm)	Weight (g)
FDJT-X-20	32	18	32.05	22.85	20.25	5	3	2	M10	7	SW10	±0.5	154

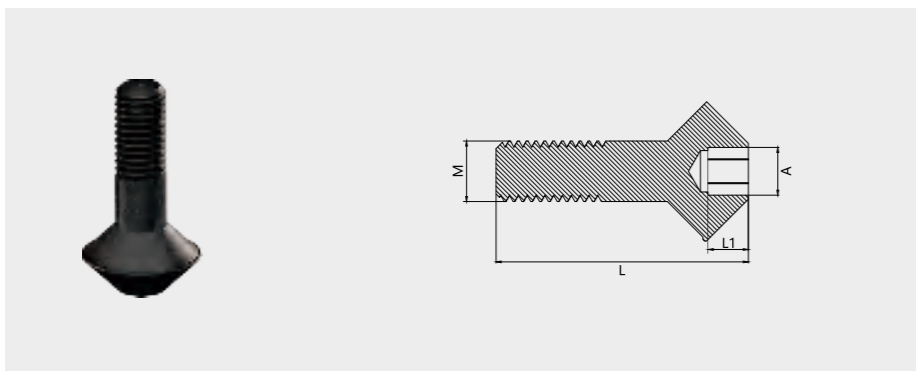


Locking floating rivets

Product features:

- Surface hardening treatment;
- The floating compensation amount is ± 0.5mm;
- Even if there is a deviation in positioning, it can still enter smoothly;
- Applied to the position adjustment of large parts.

Order Number	Ø DN	M	T ^{+0.1} ₀	H	H1	H2	SW	Floating amount (mm)	Weight (g)
FDJT-S-20	31.8	M12	0.25	32.05	22.85	18.25	SW10	±0.5	152

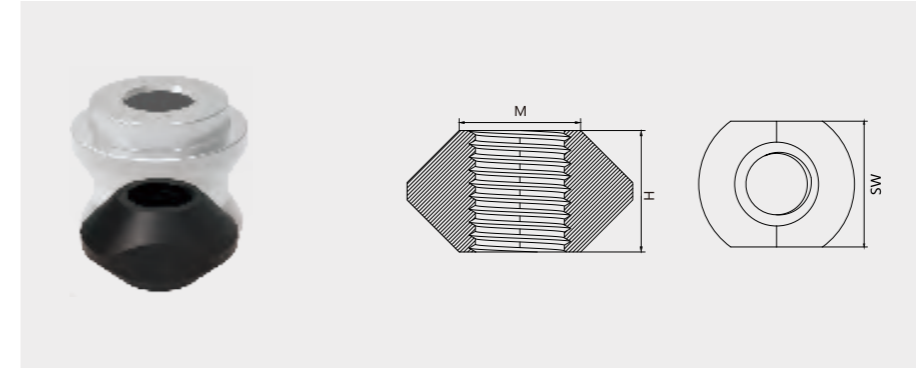


Tighten the bolts

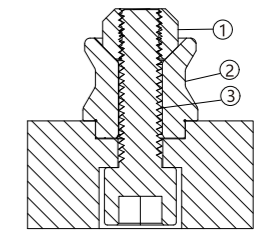
Product features:

- Intensity level 12.9;
- Suitable for straight column ball lock type zero locator.

Order Number	L	L1	M	A	Weight (g)
JGLS-2	23	3.5	M6	SW4	5
JGLS-5	30	5	M8	SW5	13
JGLS-10	37	6	M8	SW6	20
JGLS-20	50	8	M12	SW8	63
JGLS-40	65	10	M16	SW12	135

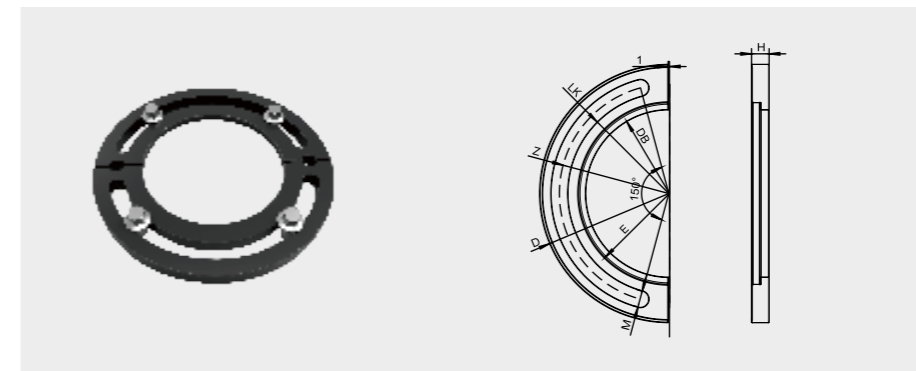


Tighten the nut



- ① Tighten the nut
- ② Lock the zipper
- ③ Tighten bolts

Order Number	M	SW	H	Weight (g)
JGLM-2	M6	8	4	2
JGLM-5	M8	10	6	3
JGLM-10	M8	14	8	8
JGLM-20	M12	21	14	26
JGLM-40	M16	23	16	32



Fixed flange

Product features:

- Fixed flanges are used to install LQTMS on machine tool workbenches;
- Suitable for workbenches with different T-slot sizes.

Installation diagram of fixed flange:



Installation Example



Tabletop style

Order Number	ØD	ØDB	ØLK	ØL	M	H	ØE	Supporting bolts
GDFL-5	120	69.5	88	96.5	8.5	9	79.4	M8
GDFL-10	170	100	127	167.5	10.5	11.5	113	M10
GDFL-20	198	128	155	137.5	12.5	13.5	139	M12