

Free Mount Cylinder: Non-rotating Rod Type Single Acting, Spring Return/Extend **CUK Series**

ø6, ø10, ø16, ø20, ø25, ø32

How to Order

CUK 10 [] - 15 S - []

With auto switch **CDUK 10 [] - 15 S - M9BW [] - []**

- Built-in magnet
- Non-rotating rod type
- Bore size

6	6 mm
10	10 mm
16	16 mm
20	20 mm
25	25 mm
32	32 mm
- Port thread type

Symbol	Type	Bore size
Nil	M5 x 0.8	ø6, ø10, ø16, ø20, ø25
	Rc 1/8	ø32
TN	NPT 1/8	ø32
TF	G 1/8	ø32
- Standard stroke (mm)

ø6, ø10, ø16	5, 10, 15
ø20, ø25, ø32	5, 10, 15
- Action

S	Single acting, Spring return
T	Single acting, Spring extend
- Auto switch

Nil	Without auto switch
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- Number of auto switches

Nil	2 pcs.
S	1 pc.
- Made to Order
* Refer to page 651 for the Made to Order specifications.

Built-in Magnet Cylinder Model
If a built-in magnet cylinder without an auto switch is required, there is no need to enter the symbol for the auto switch.
(Example): CDUK20-10S

Applicable Auto Switches/Refer to pages 1575 to 1701 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)				Pre-wired connector	Applicable load		
					DC	AC	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)		IC circuit	Relay, PLC	
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				M9PV	M9P	●	●	●	○	○		
				2-wire				M9BV	M9B	●	●	●	○	○		
				3-wire (NPN)				M9NVV	M9NV	●	●	●	○	○		
	Diagnostic indication (2-color indicator)			2-wire	M9PWV	M9PW	●	●	●	○	○	○	IC circuit			
					M9BWW	M9BW	●	●	●	○	○	○	—			
					Water resistant (2-color indicator)	3-wire (NPN)	M9NAV*1	M9NA*1	○	○	●	○	○	IC circuit		
						3-wire (PNP)	M9PAV*1	M9PA*1	○	○	●	○	○	IC circuit		
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	24 V	12 V	100 V or less	A96V	A96	●	—	●	—	—	IC circuit	—
				2-wire				A93V*2	A93	●	●	●	●	—	—	Relay, PLC
								A90V	A90	●	—	●	—	—	—	IC circuit

*1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance.

Consult with SMC regarding water resistant types with the above model numbers.

*2 1 m type lead wire is only applicable to D-A93.

* Lead wire length symbols: 0.5 m Nil (Example) M9NW
 1 m M (Example) M9NWM
 3 m L (Example) M9NWL
 5 m Z (Example) M9NWZ

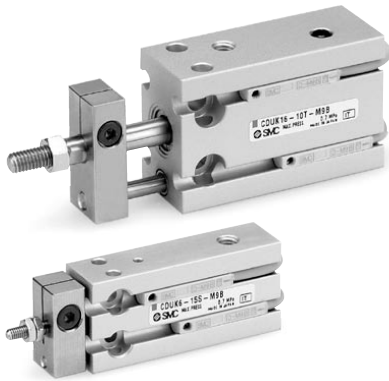
* Solid state auto switches marked with "○" are produced upon receipt of order.

* Since there are applicable auto switches other than the above, refer to page 678 for details.

* For detail about auto switches with pre-wired connector, refer to pages 1648 and 1649.

* Auto switches are shipped together but not assembled.

Free Mount Cylinder: Non-rotating Rod Type Single Acting, Spring Return/Extend **CUK Series**



Specifications

Bore size (mm)	6	10	16	20	25	32
Fluid	Air					
Proof pressure	1.05 MPa					
Maximum operating pressure	0.7 MPa					
Minimum operating pressure	0.23 MPa	0.18 MPa		0.16 MPa		
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)					
Lubrication	Non-lube					
Piston speed	50 to 500 mm/s					
Cushion ^{Note 1)}	Rubber bumper on both ends					
Rod end thread	Male thread					
Stroke length tolerance	+1.0 0 mm					
Rod non-rotating accuracy ^{Note 2)}	±0.8°			±0.5°		

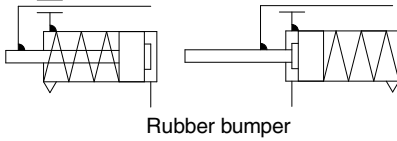
Note 1) ø6: With auto switch, single rubber bumper

Note 2) No load: Rod at retracted

Symbol

Single acting,
Spring return

Single acting,
Spring extend



Rubber bumper

Standard Stroke

Bore size (mm)	Standard stroke (mm)
6, 10, 16, 20, 25, 32	5, 10, 15

Minimum Stroke for Auto Switch Mounting

No. of auto switches mounted	Applicable auto switch		
	D-A9□, D-A9□V	D-M9□, D-M9□V	D-M9□W, D-M9□WV
1 pc.	5	5	5
2 pcs.	10	5	10



Made to Order Specifications
[Click here for details](#)

Symbol	Specifications
-XC22	Fluororubber seals
-XC34	Non-rotating plate with workpiece mounting screw (No extended part on the rod end)

Weight/(): Denotes the values with D-A93.

Model	Stroke (mm)		
	5	10	15
C(D)UK6-□ ^S _T	28 (33)	31 (41)	34 (44)
C(D)UK10-□ ^S _T	43 (48)	47 (57)	55 (65)
C(D)UK16-□ ^S _T	60 (85)	66 (90)	81 (111)
C(D)UK20-□ ^S _T	113 (147)	124 (164)	153 (193)
C(D)UK25-□ ^S _T	212 (266)	229 (288)	271 (330)
C(D)UK32-□ ^S _T	331 (404)	357 (435)	422 (500)

* For the auto switch weight, refer to page 1575.

Tightening Torque

When mounting a CUK single acting series, refer to page 624.

Theoretical Output

Specifications are the same as single acting, spring return/spring extend type (CU series). Refer to page 636.

Spring Reaction Force

Refer to page 1900 (Table (3): Spring Reaction Force).

Auto Switch Mounting Position

For the auto switch mounting position of CDUK series single acting, spring return/spring extend, refer to page 641, since specification are the same as standard type, single acting, spring return/spring extend type.

Allowable Rotational Torque

Make sure that rotational torque is not applied to the piston rod of the CUK series single acting type cylinder. If the rotation torque were applied unavoidably, refer to page 643.

Moisture Control Tube IDK Series



When operating an actuator with a small diameter and a short stroke at a high frequency, the dew condensation (water droplet) may occur inside the piping depending on the conditions. Simply connecting the moisture control tube to the actuator will prevent dew condensation from occurring. For details, refer to [the IDK series in the Best Pneumatics No. 6](#).

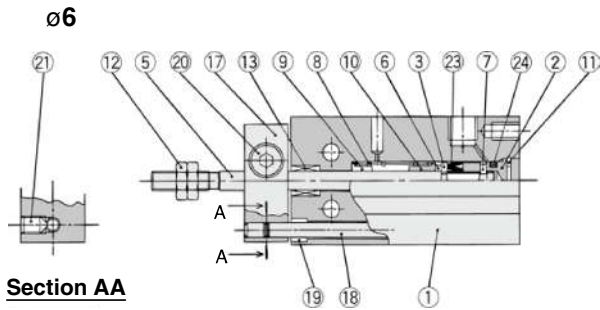
CUJ
CU
CQS
JCQ
CQ2
RQ
CQM
CQU
MU

D-□
-X□
Technical Data

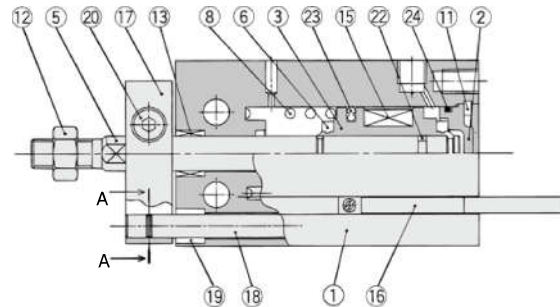
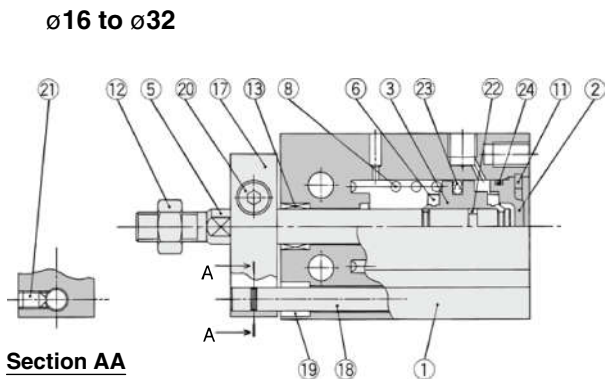
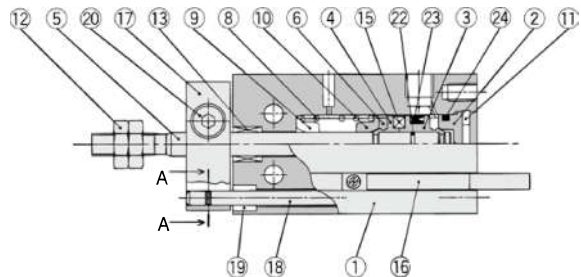
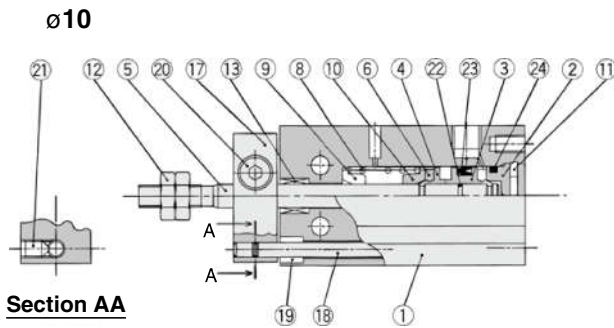
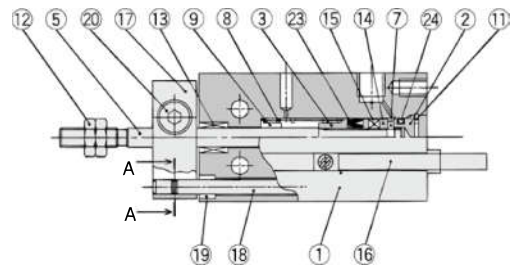
CUK Series

Construction

Single acting, Spring return



With auto switch



Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Head cover	Brass	ø6 to ø10, Electroless nickel plated
		Aluminum alloy	ø16 to ø32, Chromated
3	Piston	Brass	ø6
		Aluminum alloy	ø10 to ø32, Chromated
4	Piston	Aluminum alloy	ø10
5	Piston rod	Stainless steel	
6	Bumper A	Urethane	
7	Bumper B	Urethane	
8	Return spring	Piano wire	Zinc chromated
9	Spring seat	Brass	
10	Spring seat	Brass	

Component Parts

No.	Description	Material	Note
11	Retaining ring	Carbon tool steel	Phosphate coated
12	Rod end nut	Carbon steel	Chromated
13	Bushing	Bearing alloy	
14	Magnet holder	Brass	ø6
15	Magnet	—	
16	Auto switch	—	
17	Non-rotating plate	Aluminum alloy	Nickel plated
18	Guide rod	Stainless steel	
19	Bushing	Bearing alloy	
20	Hexagon socket head cap screw	Carbon steel	Chromated
21	Hexagon socket head set screw	Carbon steel	Chromated
22	Piston gasket	NBR	
23*	Piston seal		
24*	Gasket		

Replacement Parts: Seal Kit

Kit no.	Bore size (mm) / Part no.				
	10	16	20	25	32
	CU10S-PS	CU16S-PS	CU20S-PS	CU25S-PS	CU32S-PS

* Seal kit includes 23, 24. Order the seal kit, based on each bore size.

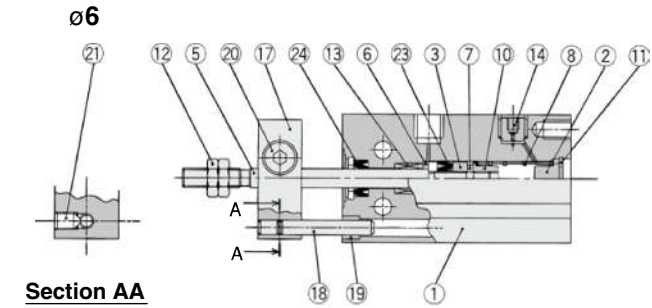
* Seal kit includes a grease pack (10 g).

Order with the following part number when only the grease pack is needed.

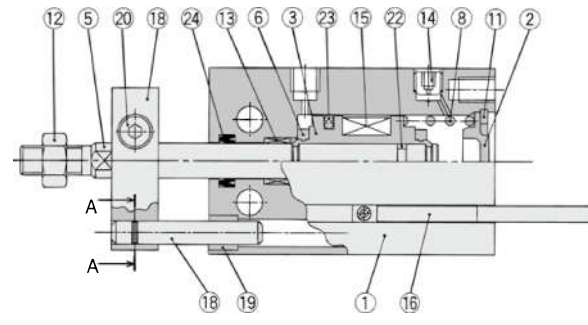
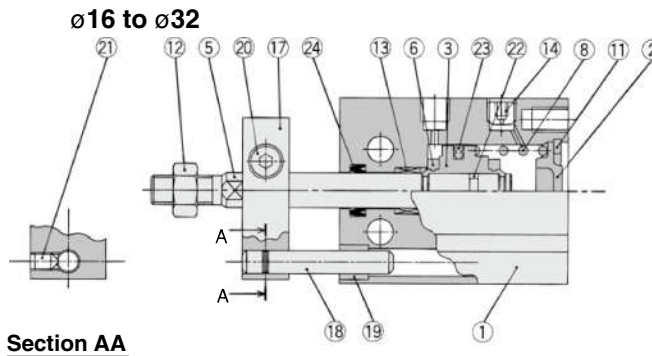
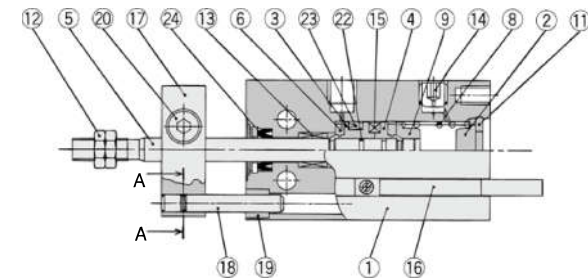
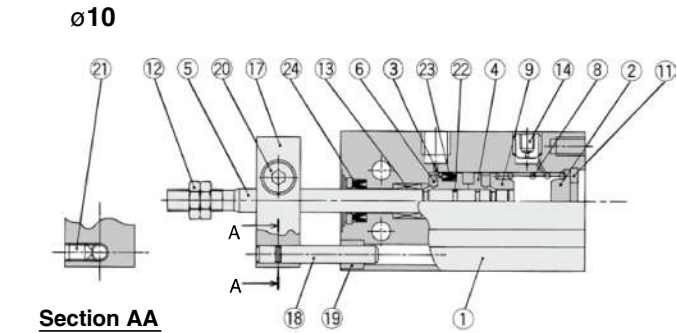
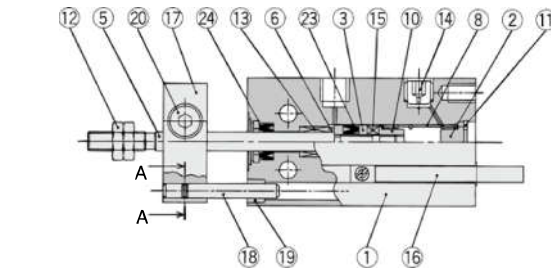
Grease pack part number: GR-S-010 (10 g)

Construction

Single acting, Spring extend



With auto switch



Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Head cover	Brass	$\phi 6$ to $\phi 10$, Electroless nickel plated
		Aluminum alloy	$\phi 16$ to $\phi 32$, Chromated
3	Piston	Brass	$\phi 6$
		Aluminum alloy	$\phi 10$ to $\phi 32$, Chromated
4	Piston	Aluminum alloy	$\phi 10$, Chromated
5	Piston rod	Stainless steel	
6	Bumper A	Urethane	
7	Bumper B	Urethane	
8	Return spring	Piano wire	Zinc chromated
9	Spring seat	Brass	
10	Stopper	Brass	$\phi 6$
11	Retaining ring	Carbon tool steel	Phosphate coated

Component Parts

No.	Description	Material	Note
12	Rod end nut	Carbon steel	Chromated
13	Bushing	Bearing alloy	
14	Plug with fixed orifice	Alloy steel	Black dyed
15	Magnet	—	
16	Auto switch	—	
17	Non-rotating plate	Aluminum alloy	Nickel plated
18	Guide rod	Stainless steel	
19	Bushing	Bearing alloy	
20	Hexagon socket head cap screw	Carbon steel	Black zinc chromated
21	Hexagon socket head set screw	Carbon steel	Black zinc chromated
22	Piston gasket	NBR	
23*	Piston seal		
24*	Rod seal		

Replacement Parts: Seal Kit

Kit no.	Bore size (mm) / Part no.				
	10	16	20	25	32
	CU10T-PS	CU16T-PS	CU20T-PS	CU25T-PS	CU32T-PS

* Seal kit includes 23, 24. Order the seal kit, based on each bore size.

* Seal kit includes a grease pack (10 g).

Order with the following part number when only the grease pack is needed.

Grease pack part number: GR-S-010 (10 g)

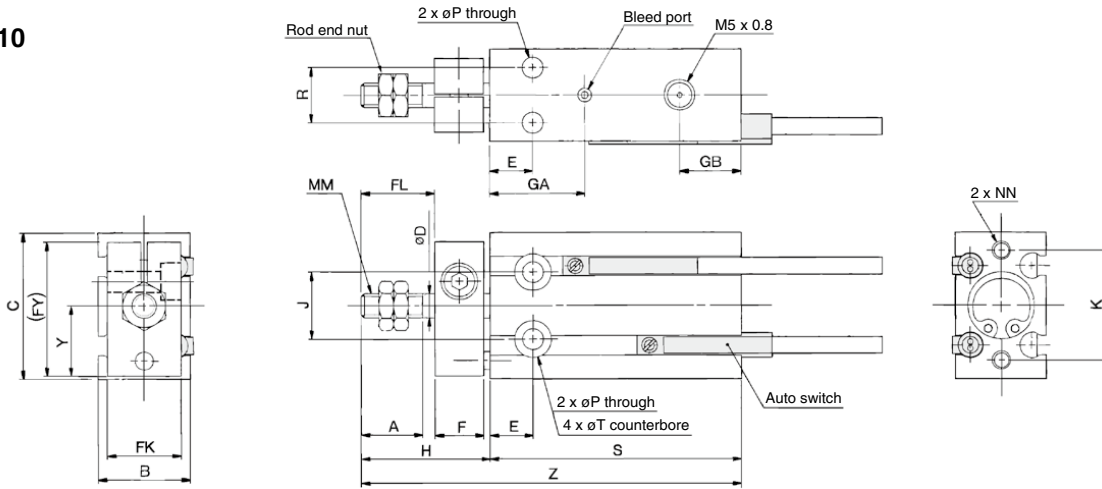
CUJ
CU
CQS
JCQ
CQ2
RQ
CQM
CQU
MU

D-
-X
Technical Data

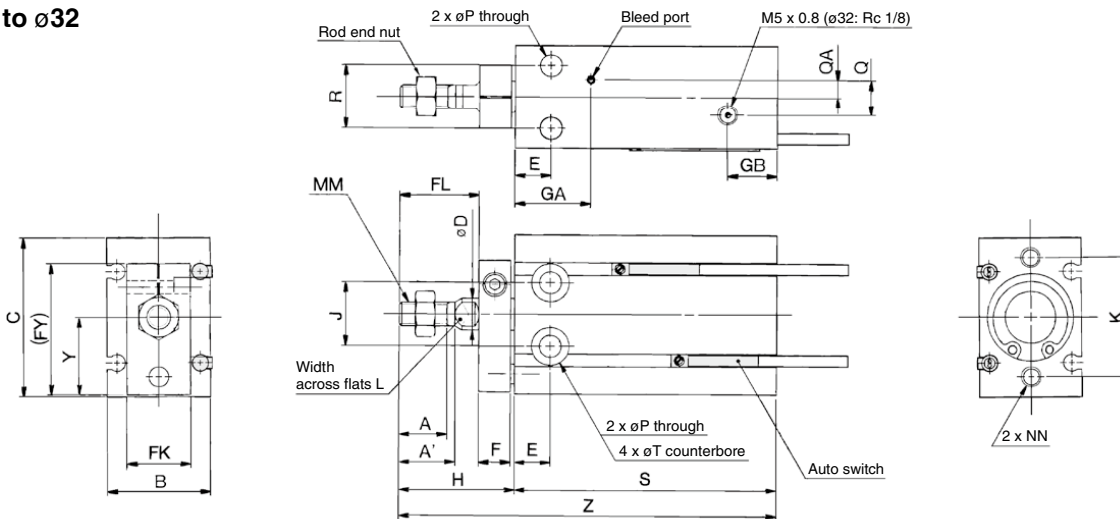
CUK Series

Dimensions: Non-rotating Rod Type; Single Acting, Spring Return

ø6, ø10



ø16 to ø32



Rod End Nut/Accessory Material: Carbon steel

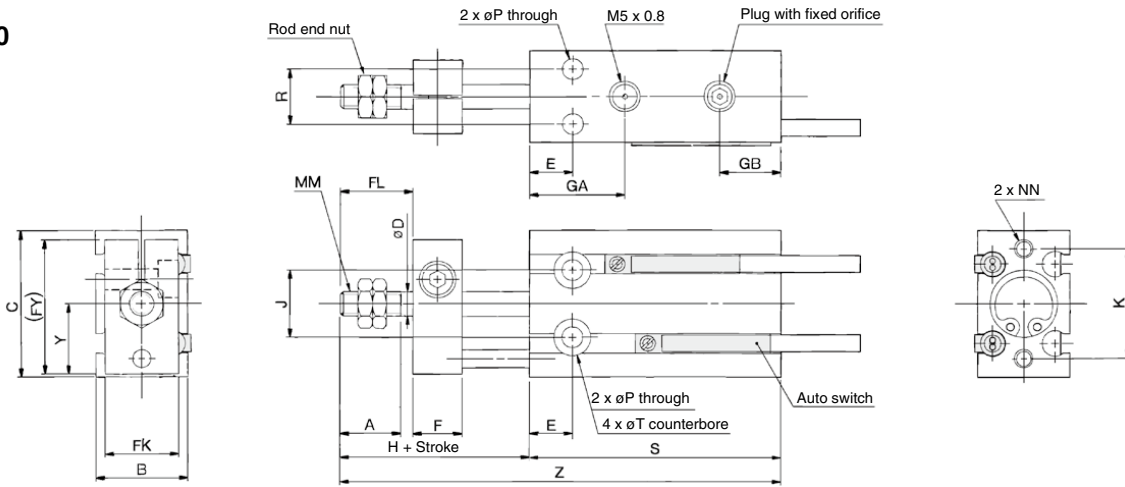
Part no.	Applicable bore size (mm)	d	H ₁	B ₁	C ₁
NTP-006	6	M3 x 0.5	1.8	5.5	6.4
NTP-010	10	M4 x 0.7	2.4	7	8.1
NTJ-015A	16	M5 x 0.8	4	8	9.2
NT-015A	20	M6 x 1.0	5	10	11.5
NT-02	25	M8 x 1.25	5	13	15.0
NT-03	32	M10 x 1.25	6	17	19.6

Bore size (mm)	A	A'	B	C	D	E	F	FL	FK	FY	GA	GB	H	J	K	L	MM	NN
6	7	—	13	22	3	7	8	9	11	20.5	15	10	18	10	17	—	M3 x 0.5	M3 x 0.5 depth 5
10	10	—	15	24	4	7	8	12	12	22	16.5	10	21	11	18	—	M4 x 0.7	M3 x 0.5 depth 5
16	11	12.5	20	32	6	7	8	17	13	28	16.5	11.5	26	14	25	5	M5 x 0.8	M4 x 0.7 depth 6
20	12	14	26	40	8	9	8	20	16	33	19	12.5	29	16	30	6	M6 x 1.0	M5 x 0.8 depth 8
25	15.5	18	32	50	10	10	10	22	20	43.5	21.5	13	33	20	38	8	M8 x 1.25	M5 x 0.8 depth 8
32	19.5	22	40	62	12	11	12	29	24	51.5	23	12.5	42	24	48	10	M10 x 1.25	M6 x 1.0 depth 9

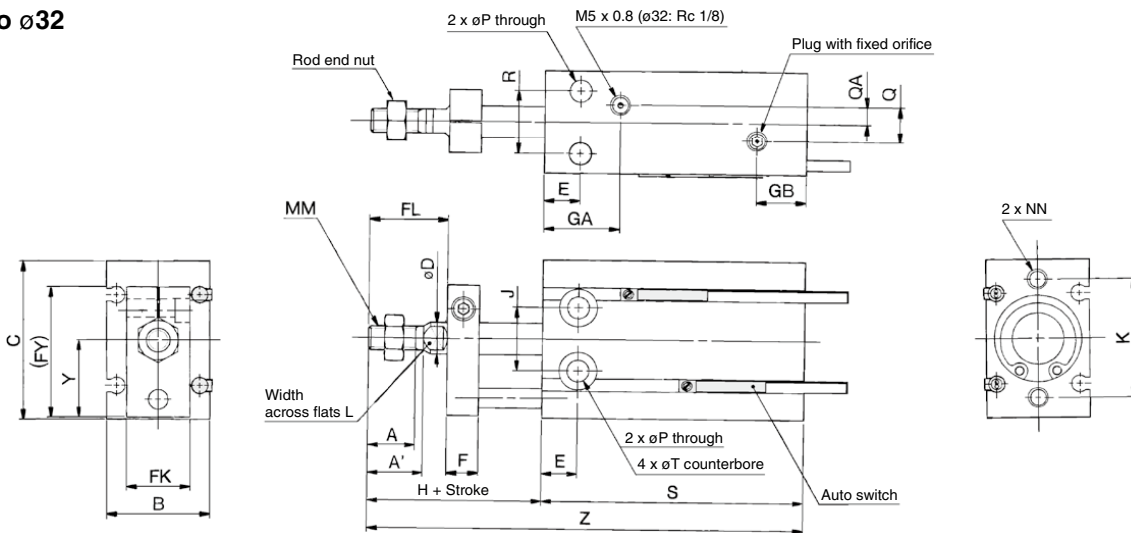
Bore size (mm)	P	Q	QA	R	T	Y	Without auto switch						With auto switch					
							S			Z			S			Z		
							5 st	10 st	15 st	5 st	10 st	15 st	5 st	10 st	15 st	5 st	10 st	15 st
6	3.2	—	—	7	6 depth 4.8	10.5	38	43	48	56	61	66	38	43	48	56	61	66
10	3.2	—	—	9	6 depth 5	11.5	41	46	56	62	67	77	41	46	56	62	67	77
16	4.5	4	2	12	7.6 depth 6.5	15.5	35	40	50	61	66	76	45	50	60	71	76	86
20	5.5	9	4.5	16	9.3 depth 8	19.5	41	46	56	70	75	85	51	56	66	80	85	95
25	5.5	9	4.5	20	9.3 depth 9	24.5	45	50	60	78	83	93	55	60	70	88	93	103
32	6.6	13.5	4.5	24	11 depth 11.5	30.5	47	52	62	89	94	104	57	62	72	99	104	114

Dimensions: Non-rotating Rod Type; Single Acting, Spring Extend

ø6, ø10

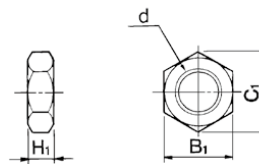


ø16 to ø32



Rod End Nut/Accessory Material: Carbon steel

Part no.	Applicable bore size (mm)	d	H ₁	B ₁	C ₁
NTP-006	6	M3 x 0.5	1.8	5.5	6.4
NTP-010	10	M4 x 0.7	2.4	7	8.1
NTJ-015A	16	M5 x 0.8	4	8	9.2
NT-015A	20	M6 x 1.0	5	10	11.5
NT-02	25	M8 x 1.25	5	13	15.0
NT-03	32	M10 x 1.25	6	17	19.6



Bore size (mm)	A	A'	B	C	D	E	F	FL	FK	FY	GA	GB	H	J	K	L	MM	NN
6	7	—	13	22	3	7	8	9	11	20.5	15	10	18	10	17	—	M3 x 0.5	M3 x 0.5 depth 5
10	10	—	15	24	4	7	8	12	12	22	16.5	10	21	11	18	—	M4 x 0.7	M3 x 0.5 depth 5
16	11	12.5	20	32	6	7	8	17	13	28	16.5	11.5	26	14	25	5	M5 x 0.8	M4 x 0.7 depth 6
20	12	14	26	40	8	9	8	20	16	33	19	12.5	29	16	30	6	M6 x 1.0	M5 x 0.8 depth 8
25	15.5	18	32	50	10	10	10	22	20	43.5	21.5	13	33	20	38	8	M8 x 1.25	M5 x 0.8 depth 8
32	19.5	22	40	62	12	11	12	29	24	51.5	23	12.5	42	24	48	10	M10 x 1.25	M6 x 1.0 depth 9

Bore size (mm)	P	Q	QA	R	T	Y	Without auto switch						With auto switch					
							S			Z			S			Z		
							5 st	10 st	15 st	5 st	10 st	15 st	5 st	10 st	15 st	5 st	10 st	15 st
6	3.2	—	—	7	6 depth 4.8	10.5	38	43	48	61	71	81	38	43	48	61	71	81
10	3.2	—	—	9	6 depth 5	11.5	41	46	56	67	77	92	41	46	56	67	77	92
16	4.5	4	2	12	7.6 depth 6.5	15.5	45	50	60	76	86	101	45	50	60	76	86	101
20	5.5	9	4.5	16	9.3 depth 8	19.5	41	46	56	75	85	100	51	56	66	85	95	110
25	5.5	9	4.5	20	9.3 depth 9	24.5	45	50	60	83	93	108	55	60	70	93	103	118
32	6.6	13.5	4.5	24	11 depth 11.5	30.5	47	52	62	94	104	119	57	62	72	104	114	129

- CUJ
- CU
- CQS
- JCQ
- CQ2
- RQ
- CQM
- CQU
- MU

- D-□
- X□
- Technical Data