

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

Series *CUK*



ø6, ø10, ø16, ø20, ø25, ø32

How to Order

Without auto switch CUK 10 [] 15 S

With auto switch CDUK 10 [] 15 S M9B []

Number of auto switches

Nil	2 pcs.
S	1 pc.

Auto switch

Nil	Without auto switch
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* Refer to the table below for applicable auto switches.
* Auto switches are shipped together but not assembled.

Action

S	Single acting, Spring return
T	Single acting, Spring extend

Standard stroke (mm)

ø6, ø10, ø16	5, 10, 15
ø20, ø25, ø32	

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
	Rc1/8	ø32
TN	NPT1/8	ø32
TF	G1/8	ø32

Applicable Auto Switches/Refer to page 68 to 72 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)	3 (L)	5 (Z)		IC circuit	Relay, PLC	
															24 V
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96	●	●	—	—	IC circuit	—
				2-wire	24 V	12 V	100 V	A93V	A93	●	●	—	—	—	Relay, PLC
						5 V, 12 V	100 V or less	A90V	A90	●	●	—	—	—	IC circuit
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				M9PV	M9P	●	●	○	○	IC circuit	
				2-wire				M9BV	M9B	●	●	○	○	—	
				3-wire (NPN)				F9NVV	F9NW	●	●	○	○	IC circuit	
				3-wire (PNP)				F9PVV	F9PW	●	●	○	○	IC circuit	
				2-wire				F9BVV	F9BW	●	●	○	○	—	

* Lead wire length symbols: 0.5 m.....Nil (Example) M9N
3 m.....L (Example) M9NL
5 m.....Z (Example) M9NZ

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

* Normally closed (NC=b contact), solid states switches (Model D-F9G, F9H) are also available. For detail, refer to page 7-9-23 in Best Pneumatics 2004 Vol. 7 catalog.
* For detail about auto switches with pre-wired connector, refer to page 7-9-36 in the Best Pneumatics 2004 Vol. 7 catalog.

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



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 ⁽¹⁾	Rubber bumper on both ends					
Rod end thread	Male thread					
Thread tolerance	JIS Class 2					
Stroke length tolerance	+1.0 0 mm					
Rod non-rotating accuracy ⁽²⁾	±0.8°			±0.5°		

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

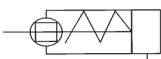
Note 2) No load: Rod at retracted

Standard Stroke

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

JIS Symbol

Single acting,
Spring return



Single acting,
Spring extend



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-F9□W, D-F9□WV
1 pc.	5	5	5
2 pcs.	10	5	10

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 68 to 72.



Made to Order Specifications
(For details, refer to page 43, 44.)

Symbol	Specifications
-XC22	Seals made of fluorine rubber
-XC34	Threaded for mounting a work on non-rotating plate (No protrusion from the edge of rod)

Tightening Torque

When mounting a CUK single acting series, refer to page 3.

Theoretical Output

Specifications are the same as single acting, spring return/spring extend type (Series CU). Refer to page 14.

Spring Reaction Force

For the reactive force of spring return, refer to page 7-12-3 in Best Pneumatics 2004 Vol. 7 catalog.

Auto Switch Mounting Position

For the auto switch mounting position of CUK series single acting, spring return/spring extend, refer to page 19 to 20, since specification are the same as standard type, single acting, spring return/spring extend type.

Allowable Rotational Torque

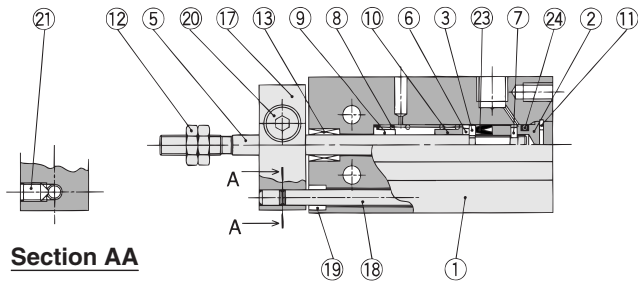
Make sure that rotational torque is not applied to the piston rod of the CUK series single acting type cylinder. If the rotation torque were applied unavoidably, refer to page 22.

Series CUK

Construction

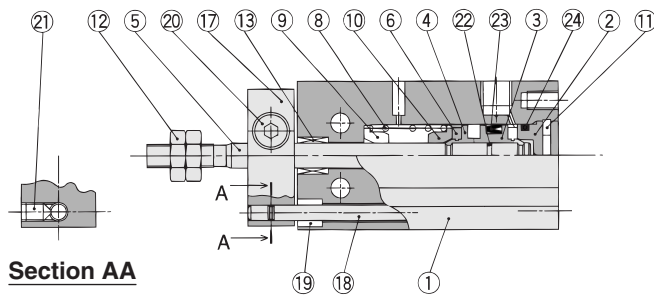
Single acting, Spring return

ø6



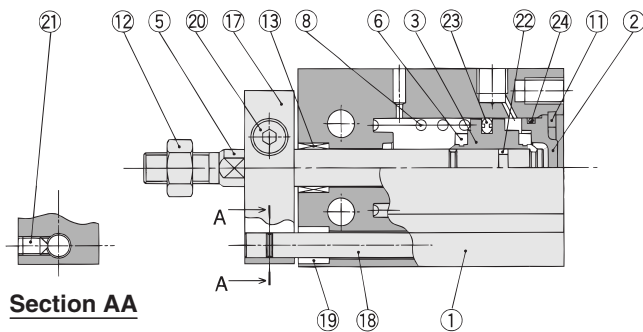
Section AA

ø10



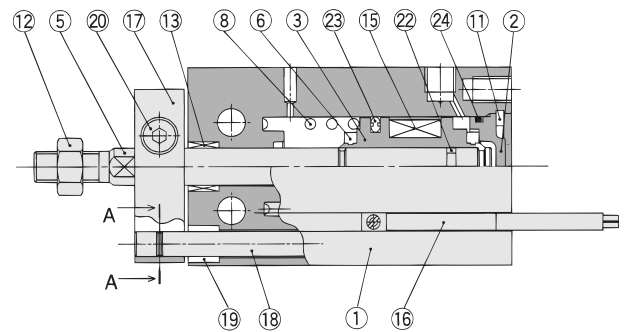
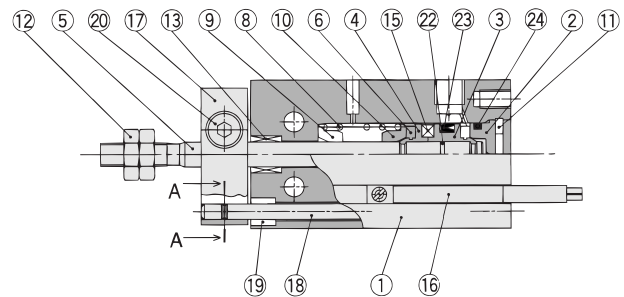
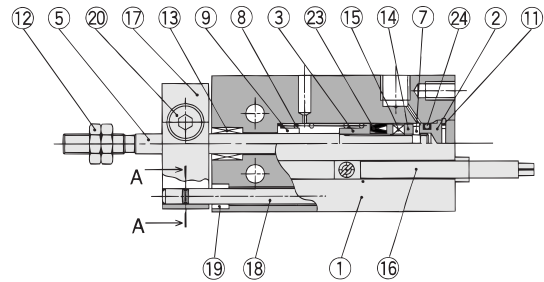
Section AA

ø16 to ø32



Section AA

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, Clear chromated
3	Piston	Brass	ø6 to ø10
		Aluminum alloy	ø16 to ø32, Chromated
4	Piston	Brass	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	Snap ring	Carbon tool steel	Phosphate coated
12	Rod end nut	Carbon steel	Nickel plated
13	Bushing	Oil-impregnated sintered alloy	
14	Magnet holder	Brass	ø6
15	Magnet	Magnetic material	
16	Auto switch	—	
17	Non-rotating plate	Aluminum alloy	Nickel plated
18	Guide rod	Stainless steel	
19	Bushing	Oil-impregnated sintered alloy	Black zinc chromated
20	Hexagon socket head cap screw	Carbon steel	Black zinc chromated
21	Hexagon socket head set screw	Carbon steel	
22	Piston gasket	NBR	
23*	Piston seal		
24*	Gasket		

Replacement Parts: Seal Kit

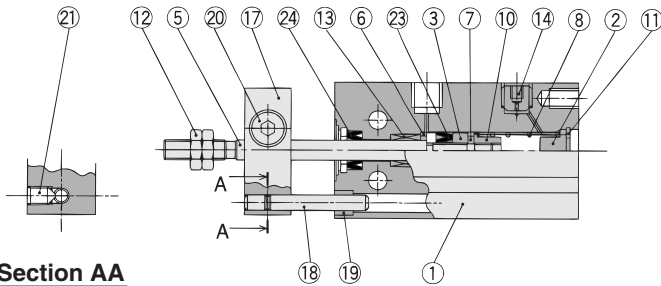
Kit no.	Bore size (mm) / Part no.				
	10	16	20	25	32
	CU10S-PS	CU16S-PS	CU20S-PS	CU25S-PS	CU32S-PS

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

Construction

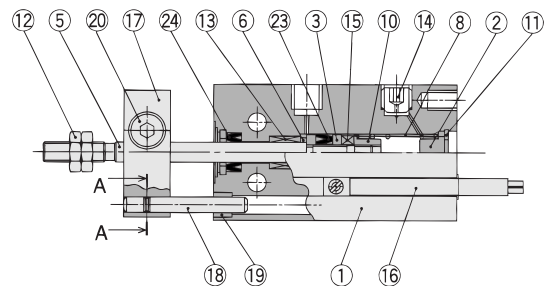
Single acting, Spring extend

ø6

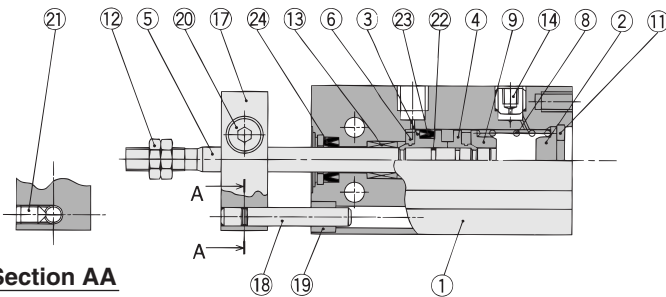


Section AA

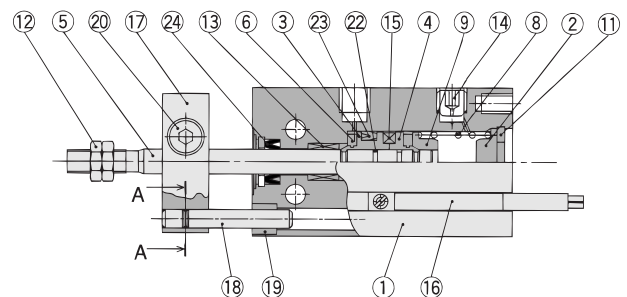
With auto switch



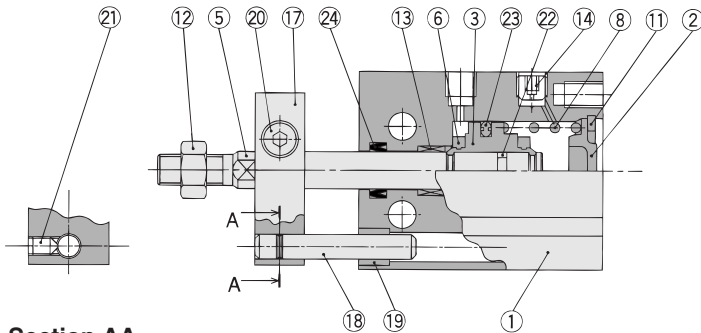
ø10



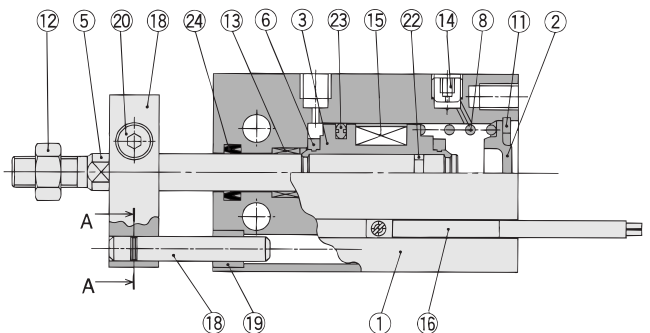
Section AA



ø16 to ø32



Section AA



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, Clear chromated
3	Piston	Brass	ø6 to ø10
		Aluminum alloy	ø16 to ø32, Chromated
4	Piston	Brass	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	stopper	Brass	ø6
11	Snap ring	Carbon tool steel	Phosphate coated

Component Parts

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

Replacement Parts: Seal Kit

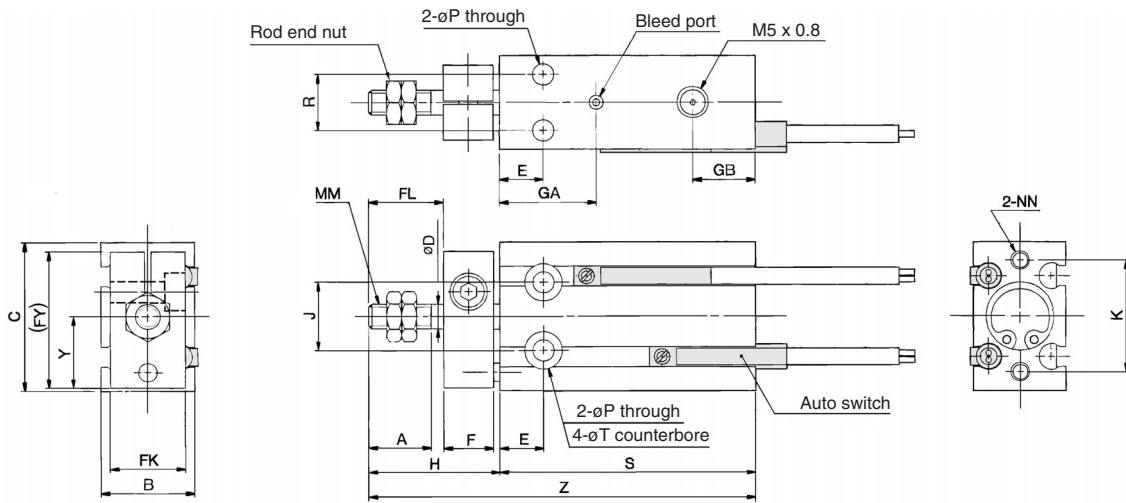
Kit no.	Bore size (mm) / Part no.				
	10	16	20	25	32
	CU10T-PS	CU16T-PS	CU20T-PS	CU25T-PS	CU32T-PS

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

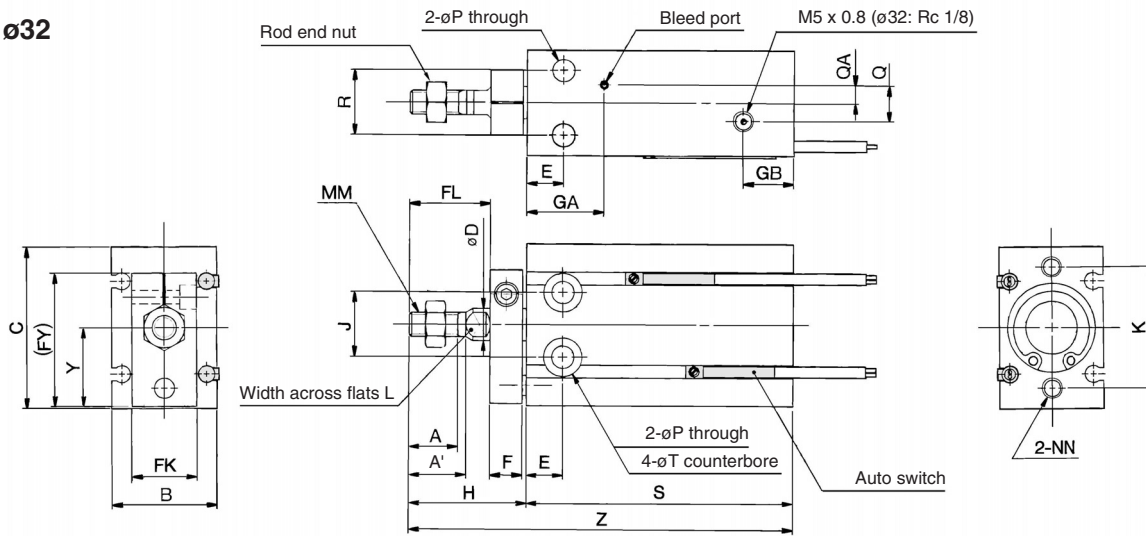
Series CUK

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

ø6, ø10

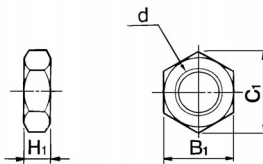


ø16 to ø32



Rod End Nut/Accessory

Material: Carbon steel



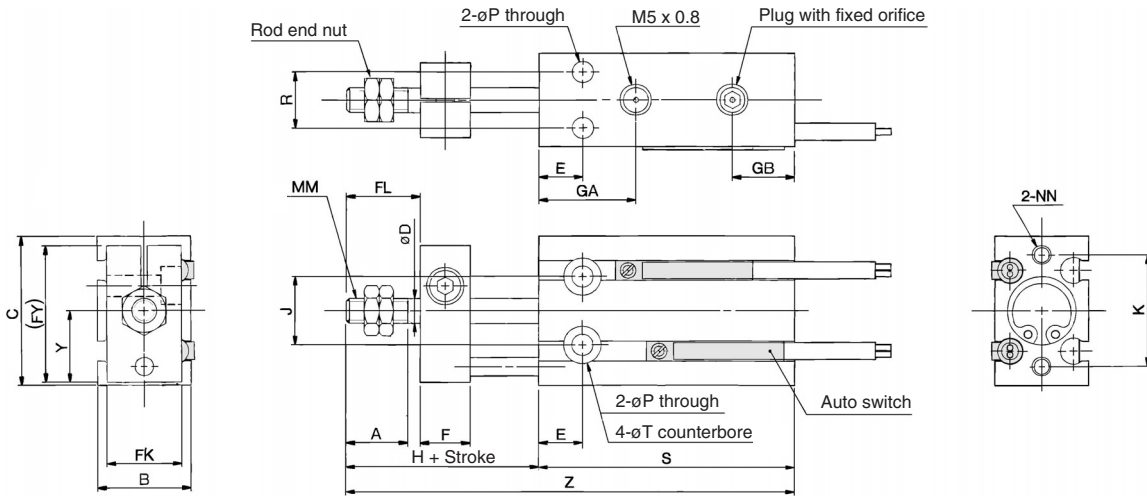
Part no.	Applicable bore size (mm)	d	H ₁	B ₁	C ₁
NTP-006	6	M3 x 0.5	1.8	5.5	6.4
NTP-010	10	M4 x 0.7	2.4	7	8.1
NTJ-015A	16	M5 x 0.8	4	8	9.2
NT-015A	20	M6 x 1.0	5	10	11.5
NT-02	25	M8 x 1.25	5	13	15.0
NT-03	32	M10 x 1.25	6	17	19.6

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

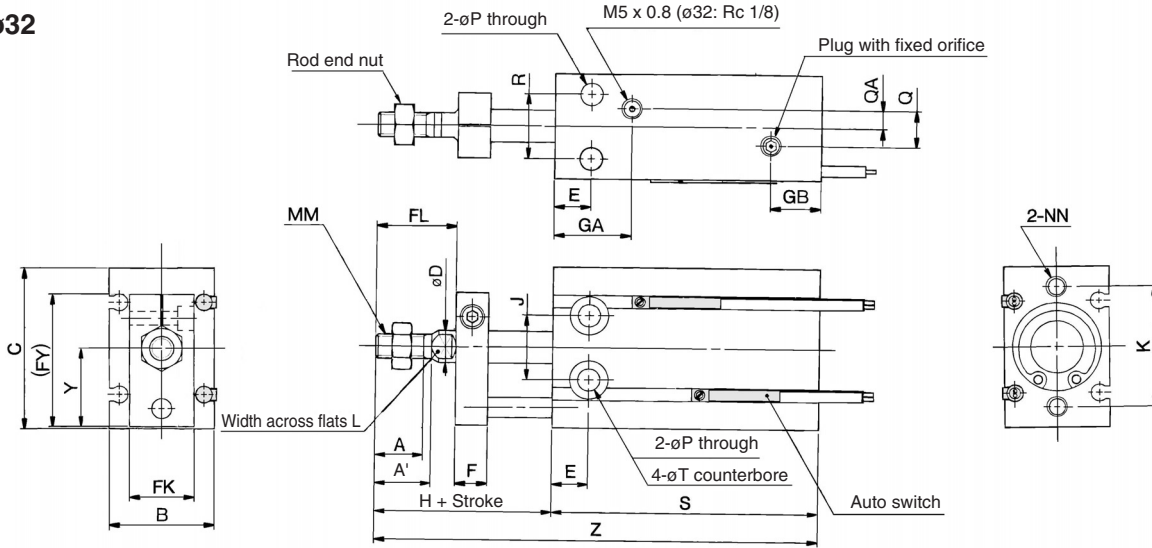
Bore size (mm)	P	Q	QA	R	T	Y	Without auto switch						With auto switch					
							S			Z			S			Z		
							5 st	10 st	15 st	5 st	10 st	15 st	5 st	10 st	15 st	5 st	10 st	15 st
6	3.2	—	—	7	6 depth 4.8	10.5	38	43	48	56	61	66	38	43	48	56	61	66
10	3.2	—	—	9	6 depth 5	11.5	41	46	56	62	67	77	41	46	56	62	67	77
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

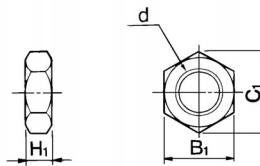


ø16 to ø32



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