

# Z

## Series

Pen-shaped air cylinder





Z series



Z series



Non-rotating type / Z□U series

**Standard type / Z Series**

∅2.5, ∅4 -----	B3
∅6, ∅10, ∅16 -----	B7




**Non-rotating type / Z□U Series**


∅10, ∅16 -----	B23
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<b>Accessories</b> -----	B21
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# Z series

Pen-shaped air cylinder


		Standard Z series		Non-rotatinType Z□U series
		∅2.5, ∅4	∅6, ∅10, ∅16	∅10, ∅16
				
Action	Double-acting		<input type="checkbox"/>	<input type="checkbox"/>
	Single-acting (Spring return)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Single-acting (Spring extend)		<input type="checkbox"/>	<input type="checkbox"/>
Cushion	Damper cushion		<input type="checkbox"/>	<input type="checkbox"/>
	Without cushion	<input type="checkbox"/>		
Mounting	One side nose mounting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	One side foot mounting		<input type="checkbox"/>	<input type="checkbox"/>
	Flange mounting		<input type="checkbox"/>	<input type="checkbox"/>
	Female clevis		<input type="checkbox"/>	<input type="checkbox"/>
Clevis	M type reed switch		<input type="checkbox"/>	<input type="checkbox"/>
	M type proximity switch		<input type="checkbox"/>	<input type="checkbox"/>



**B.4**



**B.7**



**B.23**

## Accessories

**Standard** •Nose nut •Rod end nut •Pin

**Optional** •Rod end female clevis •Rod end male clevis •Rear hinge

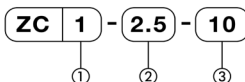
# Z series

Air Cylinder / Standard Type(Single acting)

∅2.5, ∅4



## Ordering Instructions



### ① Action

Single-acting spring return

### ② Bore(mm)

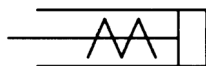
2.5 : ∅2.5

4 : ∅4

### ③ Stroke A(mm)

Bore	Stroke
∅2.5	5, 10
∅4	5, 10

## JIS Label



Single acting (Spring return)

Value shown in this catalog is shown in SI unit. However, value within this output table is in generic unit. Use the following formula to convert to SI unit :

Pressure Y(MPa) =

$X(\text{kgf/cm}^2) \times 9.80665 \times 10^{-2}$

Force Y(N) =

$X(\text{kgf}) \times 9.80665$

## Specifications

Action	Unit	Single-acting
Fluid		Non-lubricated air
Pressure range	MPa[kgf/cm <sup>2</sup> ]	0.35~0.7[3.6~7.1]
Temperature range	°C	5~60
Proof pressure	MPa[kgf/cm <sup>2</sup> ]	1.05[10.7]
Piston speed range	mm/s	50~500
Cushion		Unavailable
Piston Stroke allowance	mm	$\begin{matrix} +1.0 \\ 0 \end{matrix}$
Mounting		Base mounting (Standard)

Note: converted to SI unit: 0.1Mpa = 1.02kgf/cm<sup>2</sup>

## Standard Stroke

(Unit: mm)

Bore	Standard stroke	Max. stroke
∅2.5	5, 10	10
∅4	5, 10	10

## Spring Tension

(Unit: kgf)

Bore(mm)	Stroke = 0	Max. stroke
∅2.5	0.06	0.12
∅4	0.15	0.29

## Theoretical Output(Out stroke)

(Unit: kgf)

Bore (mm)	Operating pressure(kgf/cm <sup>2</sup> )			
	4	5	6	7
∅2.5	0.19	0.24	0.29	0.34
∅4	0.50	0.62	0.75	0.87

Note: Effective output = Theoretical output x 0.85

Output of a single acting cylinder is calculated by subtracting the spring tensile strength.

## Cylinder Mass

(Unit: g)

Bore(mm)	Stroke(mm)	
	5	10
∅2.5	1.5	2
∅4	4.5	5

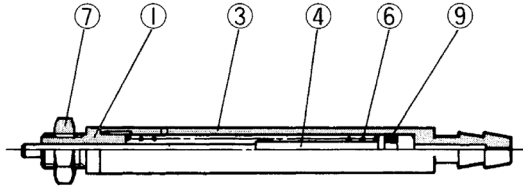
## Accessories

Name		Nose mounting (Standard)
Standard	Nose nut	○
	Rod end nut	○ (Not provided for ∅2.5)

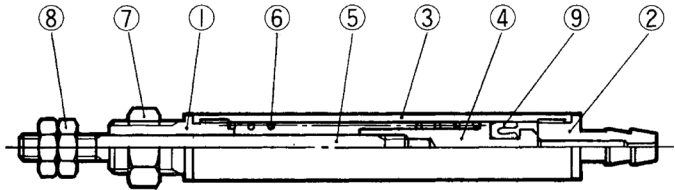
## Applicable Tube

Type of tube	Material	Size(mm)		Tube model No.
		O.D.	I.D.	
Millimeter size	Nylon	4	2.5	100U04

## ZC1-2.5-□



## ZC1-4-□



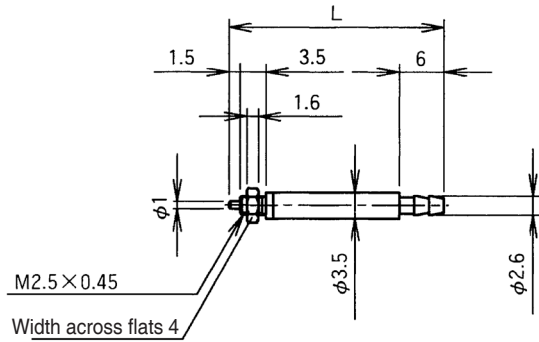
## List of Parts

No.	Name
1	Rod cover
2	Head cover
3	Cylinder tube
4	Piston
5	Piston rod
6	Return spring
7	Nose nut
8	Rod end nut
9	Piston cushion

ZC1-2.5-□

(Unit: mm)

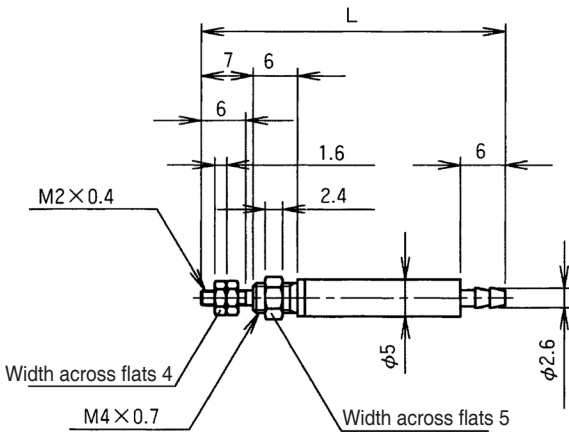
Z Series



L	
5st	10st
29	38

ZC1-4-□

(Unit: mm)



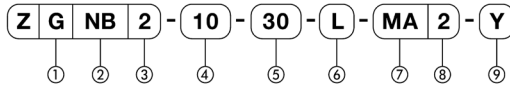
L	
5st	10st
41	50

# Z series

Air Cylinder / Standard Type

∅6, ∅10, ∅16

## Ordering Instructions



### ① Magnet

C: No magnet (switch unavailable)

G: With built-in magnet (switch available)

### ② Port position

No label : At right angles to piston axis  
(Standard)

NB : In direction of piston axis

### ③ Action

2: Double-acting, single rod

1: Single-acting (Spring return)

0: Single-acting (Spring extend)

### ④ Bore (mm)

6 : ∅6

10: ∅10

16: ∅16

### ⑤ Stroke (mm)

Bore	Stroke
∅6	15, 30, 45, 60
∅10	15, 30, 45, 60
∅16	15, 30, 45, 60

## Model No. of Switch Mounting Bracket

Bore (mm)	M type switch
∅6	Z6-MJ
∅10	Z10-MJ
∅16	Z16-MJ

### ⑥ Mounting

N : One side nose mounting

L : One side foot mounting

A : Flange mounting

W : Female clevis (Except ∅6)

### ⑦ Sensor switch type

No label	No switch		
MA	MA-1	(AC110V, DC24V)	M type reed switch
MB	MD-1	(DC24V)	
MC	MD-3	(DC5, 6V)	
MD	MR	(AC, DC5-110V)	
ME	MA-2L	(AC110V)	
MF	MA-2H	(AC220V)	M type proximity switch
MG	MT-3	(DC5-30V)	
MH	MT-3U	(DC5-30V)	
MJ	MT-2	(DC24V)	
MK	MT-2U	(DC24V)	

### ⑧ Number of switches

No label : No switch

2 : With 2 units

1 : With 1 unit

### ⑨ Accessories

No mark: With rod end nut

Y : Rod end female clevis

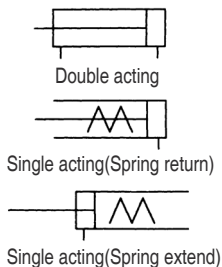
I : Rod end male clevis

## Model No. of Mounting Bracket

Bore (mm)	∅6	∅10	∅16
Foot mounting	Z6-L	Z10-L	Z16-L
Flange mounting	Z6-A	Z10-A	Z16-A
Rear hinge	Z6-BY	Z10-BY	Z16-BY



JIS Label



Value shown in this catalog is shown in SI unit. However, value within this output table is in generic unit. Use the following formula to convert to SI unit :

Pressure :  
 $Y(\text{MPa}) = X(\text{kgf/cm}^2) \times 9.80665 \times 10^{-2}$   
 Force :  
 $Y(\text{N}) = X(\text{kgf}) \times 9.80665$

Spring Tension (Unit: kgf)

Bore(mm)	At stroke 0	At max stroke
∅6	0.2	0.53
∅10	0.3	0.55
∅16	0.67	1.3

Head Cover Port Position

In case of nose mounting, the head cover port position would differ depending on the type :

No mark	
	At right angles to piston axis(Standard)
NB	
	In direction of piston axis

Specifications

Action	Unit	Double-acting	Single-acting	
Fluid		Non-lubricated air (Lubricated air)		
Pressure range	∅6	MPa (kgf/cm <sup>2</sup> )	0.12~0.7 (1.2~7.1)	0.3~0.7 (3.1~7.1)
	∅10, ∅16	MPa (kgf/cm <sup>2</sup> )	0.1~0.7 (1~7.1)	0.15~0.7 (1.5~7.1)
Proof pressure	MPa (kgf/cm <sup>2</sup> )	1.05 (10.7)		
Temperature range	°C	5~60		
Piston speed range	mm/s	50~500		
Cushion		Built-in gasket		
Piston stroke allowance	mm	+1.0 0		
Mounting		Nose mounting, Foot mounting, Flange mounting, Female clevis		

Accessories

Name		Nose mounting	Foot mounting	Mounting flange	Female clevis
Standard	Nose nut	○	○	○	-
	Rod end nut	○	○	○	○
	Clevis pin	-	-	-	○
	Air chuck	○	○	○	○
Optional	Rod end female clevis	○	○	○	○
	Rod end male clevis	○	○	○	○
	Rear hinge	-	-	-	○
		Except for ∅6			

Standard Stroke(Out stroke) (Unit: mm)

Acting	Bore	Standard Stroke	Max. Stroke
Double acting	∅6	15, 30, 45, 60	100
	∅10		150
	∅16		
Single acting	∅6	15, 30, 45, 60	60
	∅10		90
	∅16		

Theoretical Output(Out stroke) (Unit: kgf)

Bore (mm)	Operating pressure					
	2	3	4	5	6	7
∅6	0.57	0.84	1.12	1.40	1.68	1.96
∅10	0.57	2.36	3.14	3.93	4.71	5.50
∅16	4.02	6.03	8.04	10.05	12.06	14.07

Note: Effective output = Theoretical output x 0.85  
 The output of single acting cylinder is calculated by subtracting the spring tension.



**Single acting**

(Unit: g)

Bore (mm)	Mounting	Stroke(mm)			
		15	30	45	60
∅6	Nose mounting	18	20	23	26
	Female clevis	24	27	29	32
∅10	Nose mounting	27	34	41	48
	Female clevis	40	47	54	61
∅16	Nose mounting	54	68	82	96
	Female clevis	86	100	114	128

**Double acting**

(Unit: g)

Bore (mm)	Mounting	Stroke(mm)			
		15	30	45	60
∅6	Nose mounting	16	18	19	21
	Female clevis	22	24	25	27
∅10	Nose mounting	28	32	36	40
	Female clevis	42	45	49	53
∅16	Nose mounting	53	61	69	77
	Female clevis	86	93	101	109

**Model With Switch****M Type Reed Switch****Lead Wire Type**

Model No.	Rated voltage(V)	Rated current range(mA)	Pilot lamp (Lights up at ON)	Application
MA-1	AC110	5-45	○	Relay / PLC
	DC24	5-45		
MD-1	DC24	25-65	○	Relay
MD-3	DC5.6	Max.50(Inductive load) Max.300(Resistive load)	○	IC circuit
MR	AC 5-110 DC 5-110	Max.50(Inductive load) Max.300(Resistive load)	Without indicator light	Relay / PLC
MA-2L	AC100/110	5-150	○	Relay
MA-2H	AC200/220	5-150	○	Relay

**M Type Proximity Switch****Lead Wire Type**

Model No.	Rated voltage (V)	Rated current range(mA)	Pilot lamp (Lights up at CN)	Application
MT-2 MT-2U	DC24 (DC10-30)	5-100	○	Relay / PLC
MT-3 MT-3U	DC5-30	5-200	○	Relay / PLC IC circuit

**Minimum Stroke With M Type Switch**(Unit: mm)

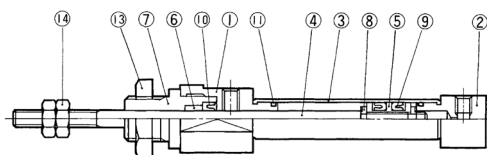
Bore	Number of switches		
	With 2 units (On the same surface)	With 2 units (On different surface)	With 1 unit
∅6	40	15	15
∅10			
∅16			

Note: The MA-2L is the same as the MA-1 except that MA-2L is also equipped with protective circuit SS-2L.

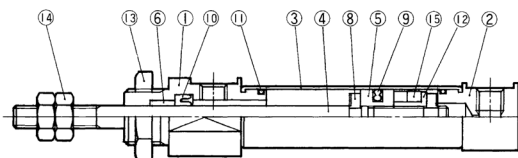
The MA-2H is the same as the MA-1 except that MA-2H is also equipped with protective circuit SS-2H.

**Double acting (Indecomposable)**

∅6



∅10, ∅16

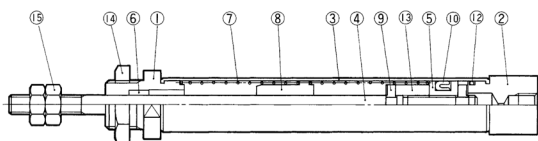


No.	Name	No.	Name	No.	Name
1	Rod cover	6	Bearing	11	O-ring
2	Head cover	7	Bearing bush	12	Magnet holder
3	Cylinder tube	8	Damper cushion	13	Nose nut
4	Piston	9	Piston parking	14	Rod end nut
5	Piston rod	10	Rod parking	15	Magnet

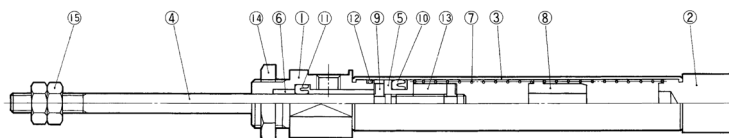
Note: Can't be disassembled.

**Single acting (Indecomposable)**

Spring return



Spring extend



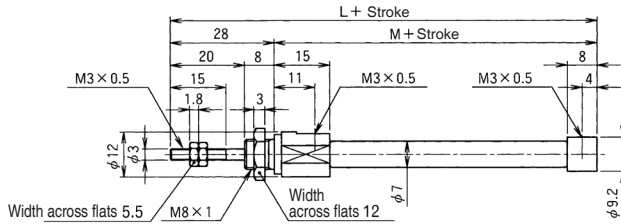
No.	Name	No.	Name	No.	Name
1	Rod cover	6	Bearing	11	Rod parking
2	Head cover	7	Return spring	12	O-ring
3	Cylinder tube	8	Spring base	13	Collar
4	Piston	9	Gasket cushion	14	Nose nut
5	Piston rod	10	Piston parking	15	Rod end nut

Note: Can't be disassembled.

Double-acting  $\varnothing 6 / \square 2-6$

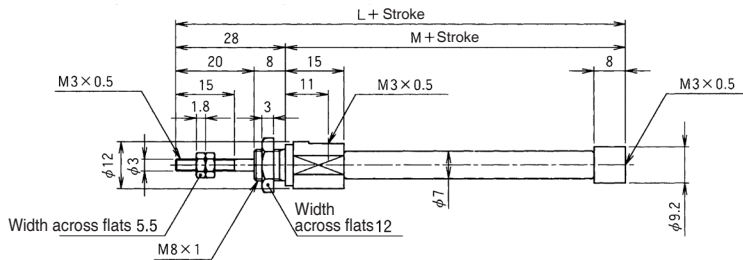
(Unit: mm)

One side nose mounting / N

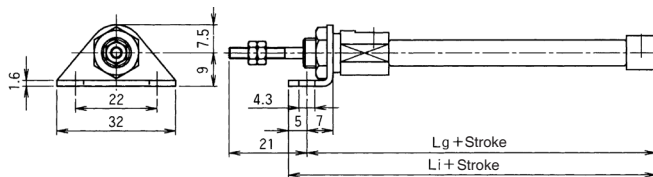


	L	M
Type G	77	49
Type C	70	42

One side nose mounting / N port position NB ( $\square NB2$ )

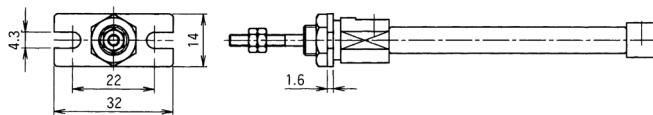


One side foot mounting / L



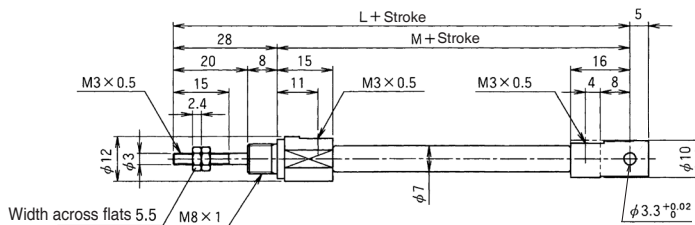
	Lg	Li
Type G	56	60
Type C	49	53

Flange mounting / A

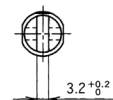


Clevis mounting / W

(Clevis mounting with c ring and latch)



	L	M
Type G	85	57
Type C	78	50

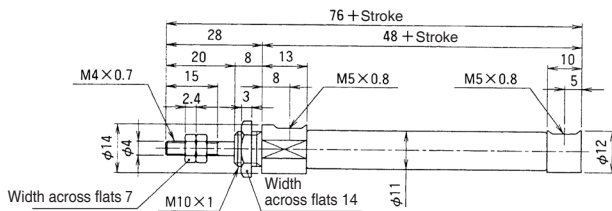


Note: The minimum standard is 15 mm stroke.

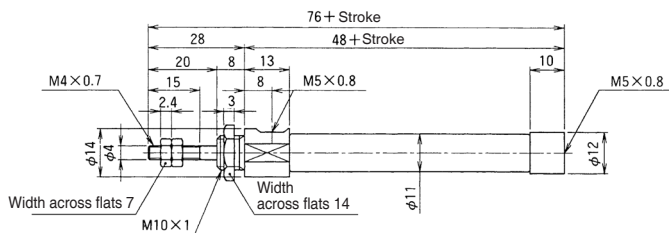
Double-acting  $\varnothing 10$  / ZG2-10

(Unit: mm)

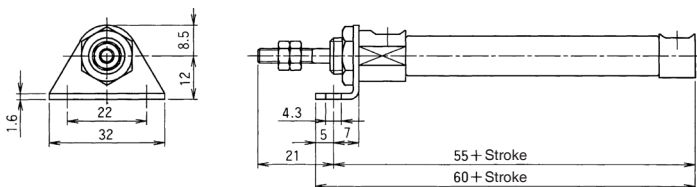
One side nose mounting / N



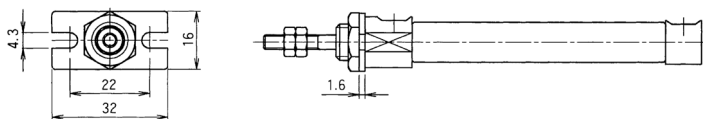
One side nose mounting / N port position NB (Z□NB2)



One side foot mounting / L

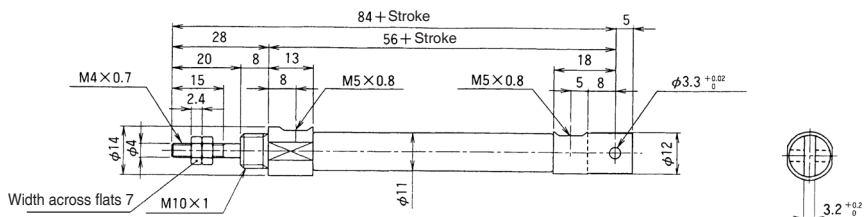


Flange mounting / A



Clevis mounting / W

(Clevis mounting with c ring and latch)

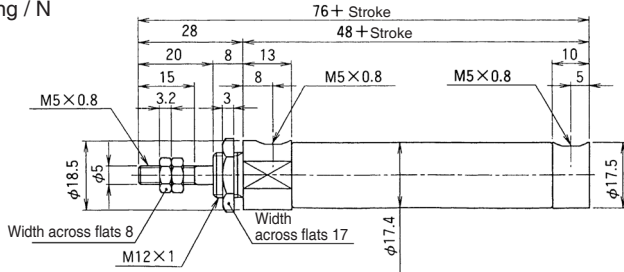


Note: The minimum standard is 15 mm stroke.

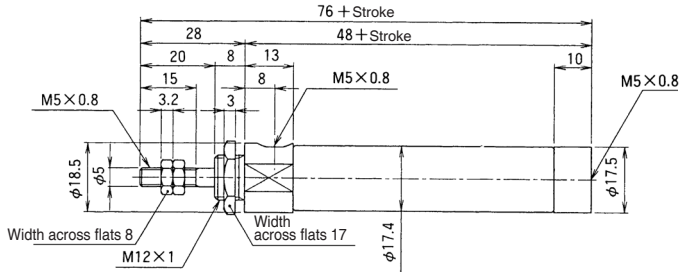
Double-acting  $\varnothing 16$  / ZG2-16

(Unit: mm)

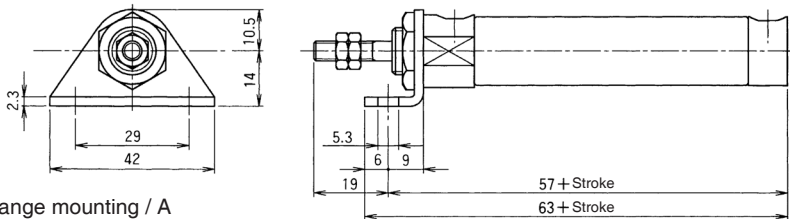
One side nose mounting / N



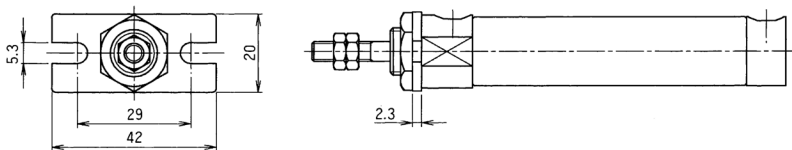
One side nose mounting / N port position NB (Z□NB2)



One side foot mounting / L

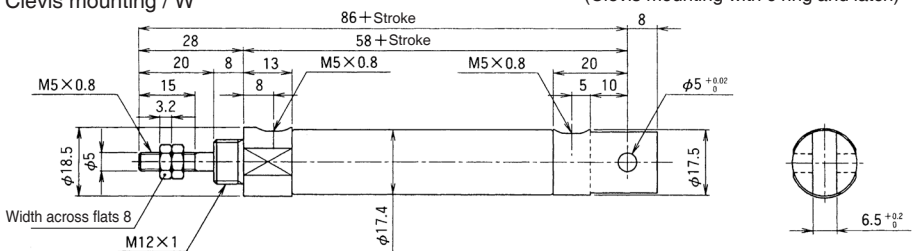


Flange mounting / A



Clevis mounting / W

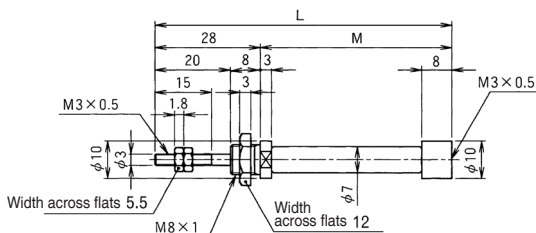
(Clevis mounting with c ring and latch)



Note: The minimum standard is 15 mm stroke.

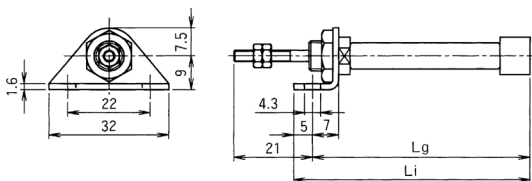
Single-acting spring return type  $\varnothing 6 / Z\Box 1-6$ 

(Unit: mm)

One side nose mounting / N Port position NB ( $Z\Box NB1$ )

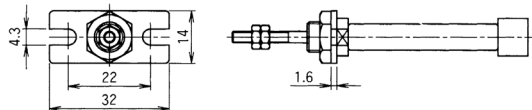
		15 st	30 st	45 st	60 st
L	Type C	79	106	133	160
	Type G	86	113	140	167
M	Type C	51	78	105	132
	Type G	58	85	112	139

## One side foot mounting / L



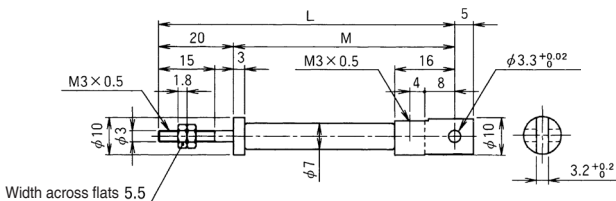
		15 st	30 st	45 st	60 st
Lg	Type C	58	85	112	139
	Type G	65	92	119	146
Li	Type C	63	90	117	144
	Type G	70	97	124	151

## Flange mounting / A



## Clevis mounting / W

(Clevis mounting with c ring and latch)



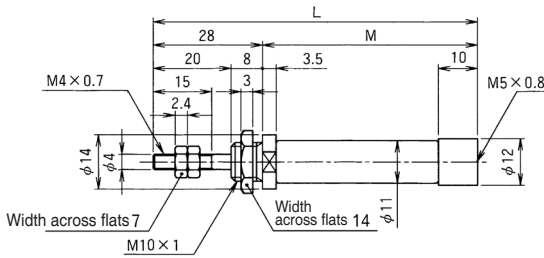
		15 st	30 st	45 st	60 st
L	Type C	79	106	133	160
	Type G	96	113	140	167
M	Type C	59	86	113	140
	Type G	66	93	120	147

Note: The minimum standard is 15 mm stroke.

Single-acting spring return type  $\varnothing 10 / Z\Box 1-10$

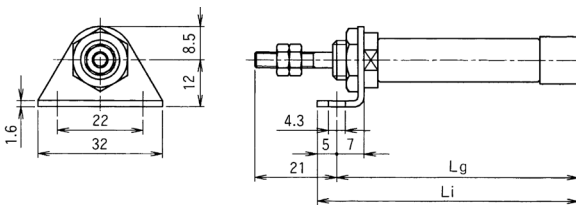
(Unit: mm)

One side nose mounting / N Port position NB ( $Z\Box NB1$ )



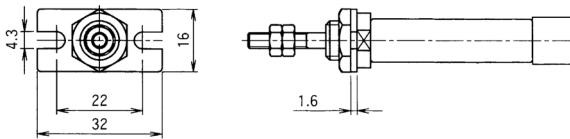
		15 st	30 st	45 st	60 st
L	Type C	83	110	137	164
	Type G	89	116	143	170
M	Type C	55	82	109	136
	Type G	61	88	115	142

One side foot mounting / L



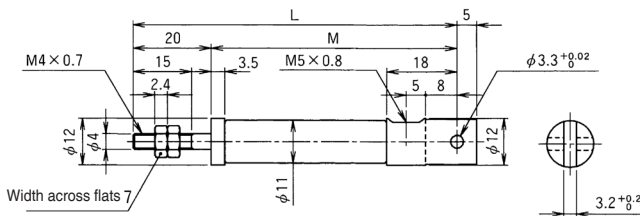
		15 st	30 st	45 st	60 st
Lg	Type C	62	89	116	143
	Type G	68	95	122	149
Li	Type C	67	94	121	148
	Type G	73	100	127	154

Flange mounting / A



Clevis mounting / W

(Clevis mounting with c ring and latch)



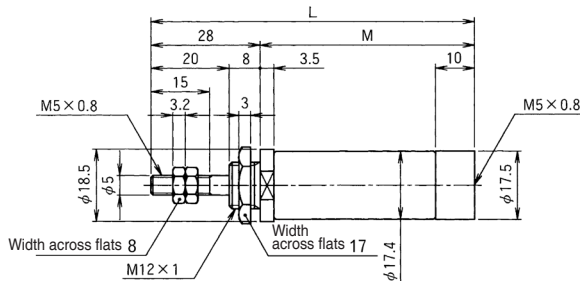
		15 st	30 st	45 st	60 st
L	Type C	83	110	137	164
	Type G	89	116	143	170
M	Type C	63	90	117	144
	Type G	69	96	123	150

Note: The minimum standard is 15 mm stroke.

Single-acting spring return type  $\varnothing 16 / Z\Box 1-16$

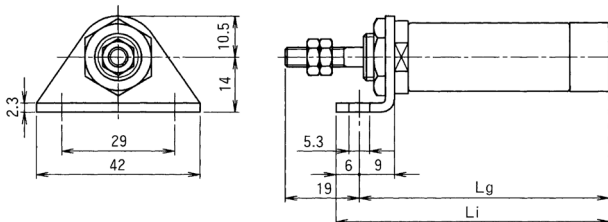
(Unit: mm)

One side nose mounting / N Port position NB ( $Z\Box NB1$ )



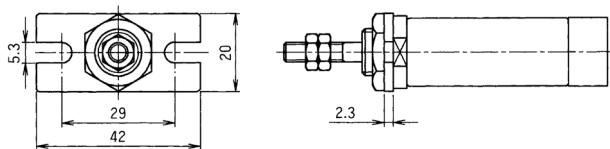
		15 st	30 st	45 st	60 st
L	Type C	83	110	137	164
	Type G	89	116	143	170
M	Type C	55	82	109	136
	Type G	61	88	115	142

One side foot mounting / L



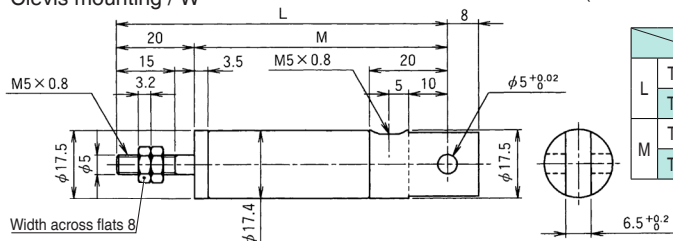
		15 st	30 st	45 st	60 st
Lg	Type C	64	91	118	145
	Type G	70	97	124	151
Li	Type C	70	97	124	151
	Type G	76	103	130	157

Flange mounting / A



Clevis mounting / W

(Clevis mounting with c ring and latch)



		15 st	30 st	45 st	60 st
L	Type C	85	112	139	166
	Type G	91	118	145	172
M	Type C	65	92	119	146
	Type G	71	98	125	152

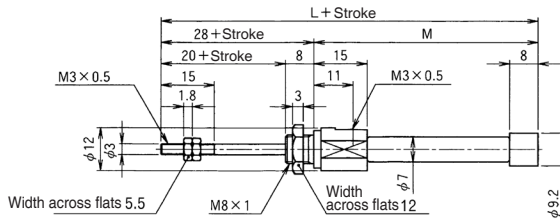
Note: The minimum standard is 15 mm stroke.



Single-acting spring extend type  $\varnothing 6 / Z\Box 0-6$

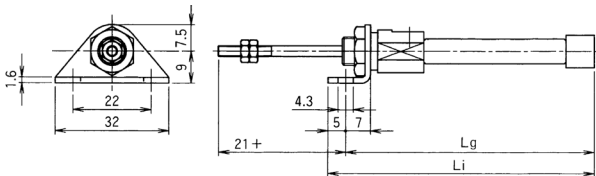
(Unit: mm)

One side nose mounting / N



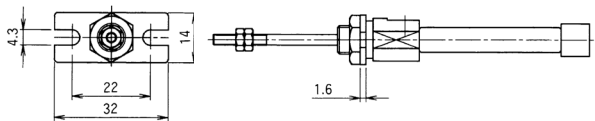
		15 st	30 st	45 st	60 st
L	Type C	91	118	145	172
	Type G	98	125	152	179
M	Type C	63	90	117	144
	Type G	70	97	124	151

One side foot mounting / L



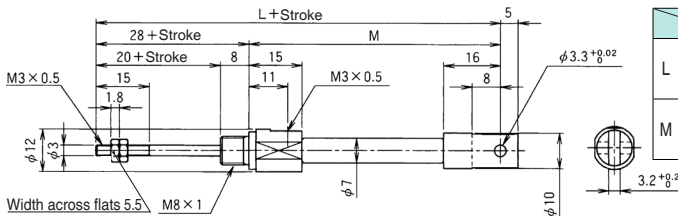
		15 st	30 st	45 st	60 st
Lg	Type C	70	97	124	151
	Type G	77	104	131	158
Li	Type C	75	102	129	156
	Type G	82	109	136	163

Flange mounting / A



Clevis mounting / W

(Clevis mounting with c ring and latch)



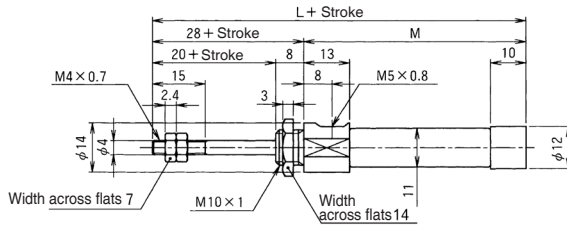
		15 st	30 st	45 st	60 st
L	Type C	99	126	153	180
	Type G	106	133	160	187
M	Type C	71	98	125	152
	Type G	78	105	132	159

Note: The minimum standard is 15 mm stroke.

Single-acting spring extend type  $\varnothing 10 / Z\text{□}0-10$ 

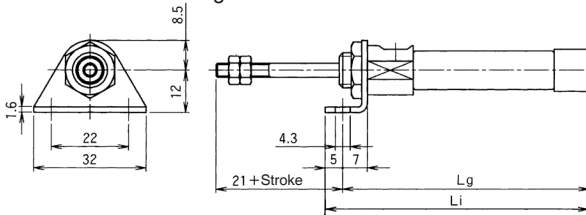
(Unit: mm)

## One side nose mounting / N



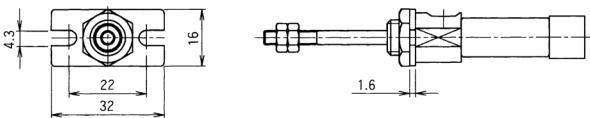
		15 st	30 st	45 st	60 st
L	Type C	92.5	119.5	146.5	173.5
	Type G	98.5	125.5	152.5	179.5
M	Type C	64.5	91.5	118.5	145.5
	Type G	70.5	97.5	124.5	151.5

## One side foot mounting / L



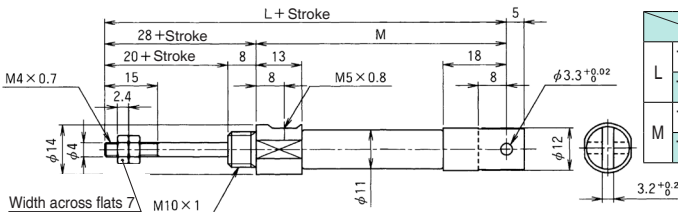
		15 st	30 st	45 st	60 st
Lg	Type C	71.5	98.5	125.5	152.5
	Type G	77.5	104.5	131.5	158.5
Li	Type C	76.5	103.5	130.5	157.5
	Type G	82.5	109.5	136.5	163.5

## Flange mounting / A



## Clevis mounting / W

(Clevis mounting with c ring and latch)



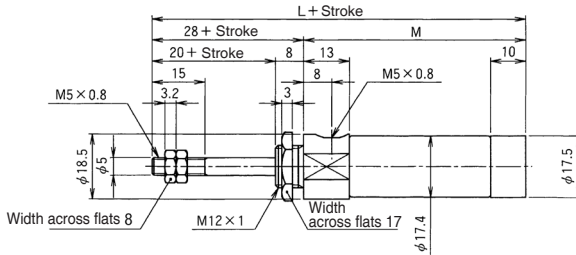
		15 st	30 st	45 st	60 st
L	Type C	100.5	127.5	154.5	181.5
	Type G	106.5	133.5	160.5	187.5
M	Type C	72.5	99.5	126.5	153.5
	Type G	78.5	105.5	132.5	159.5

Note: The minimum standard is 15 mm stroke.

Single-acting spring extend type  $\varnothing 16 / Z\square 0-16$

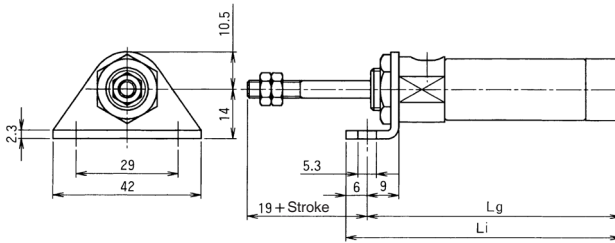
(Unit: mm)

One side nose mounting / N



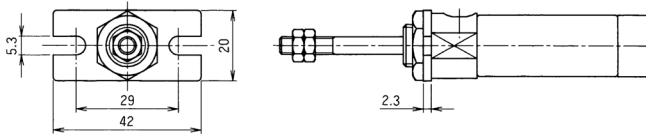
		15 st	30 st	45 st	60 st
L	Type C	92.5	119.5	146.5	173.5
	Type G	98.5	125.5	152.5	179.5
M	Type C	64.5	91.5	118.5	145.5
	Type G	70.5	97.5	124.5	151.5

One side foot mounting / L



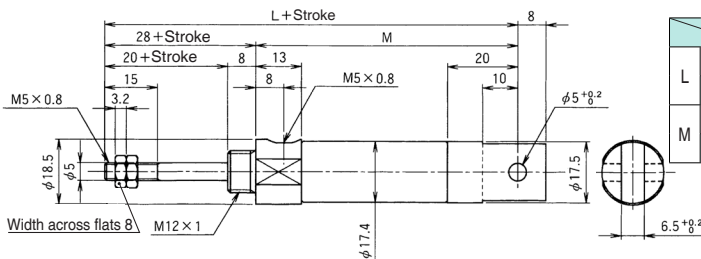
		15 st	30 st	45 st	60 st
Lg	Type C	73.5	100.5	127.5	154.5
	Type G	79.5	106.5	133.5	160.5
Li	Type C	79.5	106.5	133.5	160.5
	Type G	85.5	112.5	139.5	166.5

Flange mounting / A



Clevis mounting / W

(Clevis mounting with c ring and latch)

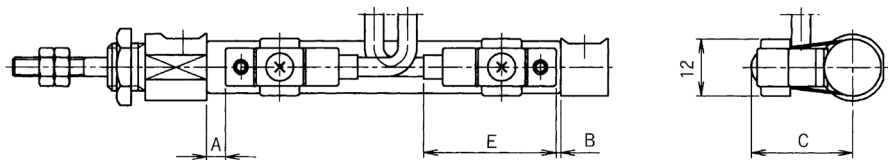


		15 st	30 st	45 st	60 st
L	Type C	102.5	129.5	156.5	183.5
	Type G	108.5	135.5	162.5	189.5
M	Type C	74.5	101.5	128.5	155.5
	Type G	80.5	107.5	134.5	161.5

Note: The minimum standard is 15 mm stroke.

## Switch Set Position

(Unit: mm)



Action	Bore	M type reed switch		M type proximity switch		C	
		A	B	A	B		
Double acting	∅6	7	1	10	5	20	
	∅10	6	1	9	5	22	
	∅16	5	2	9	5	25.5	
Single acting (Spring return)	∅6	15st	13	1	16	5	20
		30st	25	1	28	5	
		45st	37	1	40	5	
		60st	49	1	52	5	
	∅10	15st	13	1	17	5	22
		30st	25	1	29	5	
		45st	37	1	41	5	
		60st	49	1	53	5	
	∅16	15st	13	2	16	5	25.5
		30st	25	2	28	5	
		45st	37	2	40	5	
		60st	49	2	52	5	
Single acting (Spring extend)	∅6	15st	1	13	5	16	20
		30st	1	25	5	28	
		45st	1	37	5	40	
		60st	1	49	5	52	
	∅10	15st	6	9	9	12	22
		30st	6	21	9	24	
		45st	6	33	9	36	
		60st	6	45	9	48	
	∅16	15st	5	9	9	13	25.5
		30st	5	21	9	25	
		45st	5	33	9	37	
		60st	5	45	9	49	

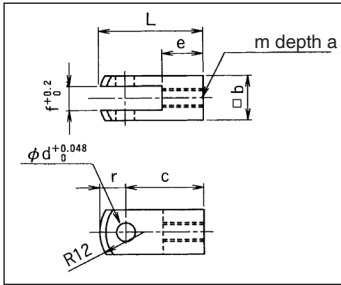
Switch	E
M type reed switch	28
M type proximity switch	26.5(24)

Note: The size in ( ) is MT-※U type.

Accessories

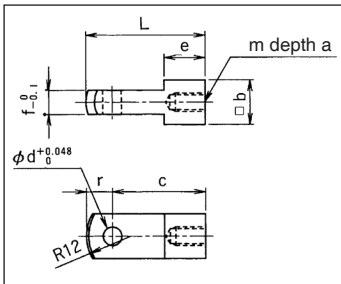
(Unit: mm)

Rod end female clevis



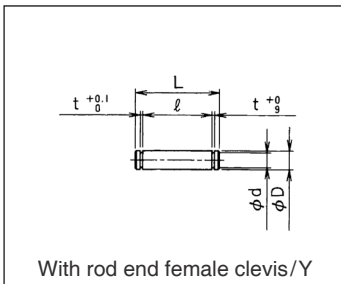
Model No.	Bore	L	a	b	c	d	e	f	m	r
Z10-Y	∅10	28	8	12	21	3.3	11	3.2	M4x0.7	7
Z16-Y	∅16	28	11	12	21	5	11	6.5	M5x0.8	7

Rod end male clevis



Model No.	Bore	L	a	b	c	d	e	f	m	r
Z10-l	∅10	28	8	12	21	3.3	12	3.1	M4x0.7	7
Z16-l	∅16	32	8	12	25	5	11	6.4	M5x0.8	7

Pin for rod end female clevis/Y



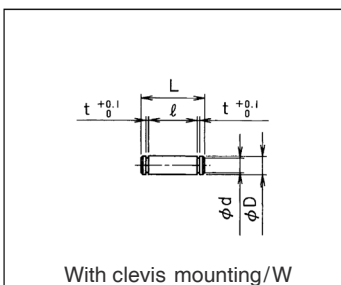
With rod end female clevis/Y

Model No.	Bore	D	L	d	ℓ	t	C ring
Z10-WP	∅10	$3.3^{+0.01}_{-0.03}$	17	$2^{+0.06}_0$	13	$0.5^{+0.05}_0$	E2
Z16-YP	∅16	$5^{+0.01}_{-0.03}$	17	$4^{+0.07}_0$	13	$0.7^{+0.1}_0$	E4

Note: For common use with ∅10 Pin

Note: Attached to the rod end female clevis/Y

Pin for clevis mounting/W



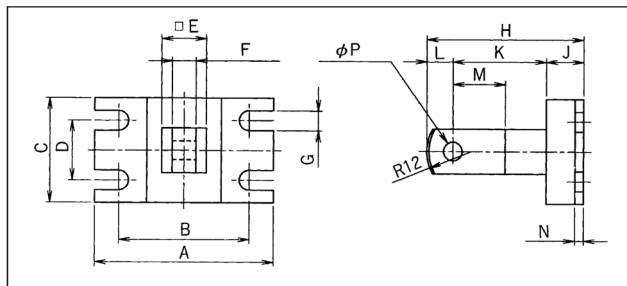
With clevis mounting/W

Model No.	Bore	D	a	b	ℓ	t	C ring
Z6-WP	∅6	$3.3^{+0.01}_{-0.03}$	15	$2^{+0.06}_0$	11	$0.5^{+0.05}_0$	E2
Z10-WP	∅10	$3.3^{+0.01}_{-0.03}$	17	$2^{+0.07}_0$	13	$0.5^{+0.05}_0$	E2
Z16-YP	∅16	$5^{+0.01}_{-0.03}$	22.5	$4^{+0.07}_0$	18.5	$0.7^{+0.1}_0$	E4

Note: Attached to the clevis mounting/W

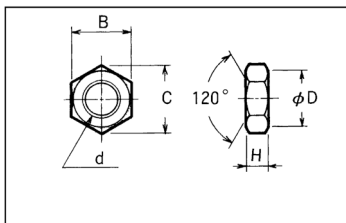
## Accessories

(Unit: mm)



Model No.	Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P
Z10-BY	∅6, ∅10	40	30	22	12	12	3.1 <sup>0</sup> <sub>-0.1</sub>	4.3	36	8	21	7	9	2.3	3.3 <sup>+0.04</sup> <sub>0</sub>
Z16-BY	∅16	48	35	28	16	12	6.4 <sup>0</sup> <sub>-0.1</sub>	5.3	42	10	25	7	14	2.3	5 <sup>+0.048</sup> <sub>0</sub>

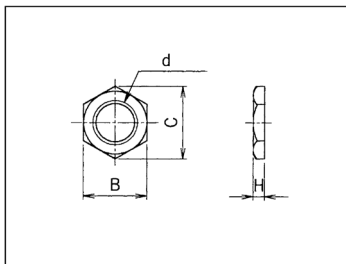
## Rod end nut



Model No.	Bore	d	H	B	C	D
Z4-RN	∅4	M2x0.4	1.6	4	4.6	3.8
Z6-RN	∅6	M3x0.5	1.8	5.5	6.4	5.3
Z10-RN	∅10	M4x0.7	2.4	7	8.1	6.8
Z16-RN	∅16	M5x0.8	3.2	8	9.2	7.8

Note: Two Rod end nuts are provided by default

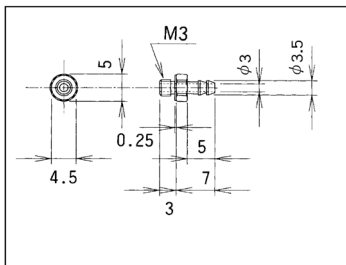
## Nose nut



Model No.	Bore	d	H	B	C
Z2.5-NN	∅2.5	M2.5x0.45	1.6	4	4.6
Z4-NN	∅4	M2x0.7	2.4	5	5.7
Z6-NN	∅6	M8x1	3	12	13.9
Z10-NN	∅10	M10x1	3	14	16.2
Z16-NN	∅16	M12x1	3	17	19.6

Note: A Nose nut is provided by default

## Air chuck



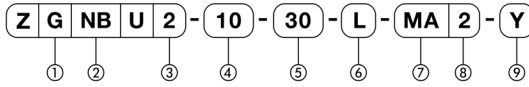
Model No.	Bore
BC-03-M3	∅4x ∅2.5(PU tube)

Note: Can only work with ∅6 cylinders

# Z□U series

Air Cylinder / Non-Rotating Piston Rod Type  
 ∅10, ∅16

## Ordering Instructions



### ① Magnet

C: No magnet (switch unavailable)  
 G: With built-in magnet (switch available)

### ② Port position

No label: At right angles to piston axis (Standard)  
 NB: In direction of piston axis

### ③ Action

2: Double-acting, single rod  
 1: Single-acting (Spring return)  
 0: Single-acting (Spring extend)

### ④ Bore (mm)

10: ∅10  
 16: ∅16

### ⑤ Stroke (mm)

Bore	Stroke
∅10	15, 30, 45, 60
∅16	15, 30, 45, 60

### ⑥ Mounting

N : One side nose mounting  
 L : One side foot mounting  
 A : Flange mounting  
 W : Female clevis (Except ∅6)

### ⑦ Sensor switch type

No label	No switch		
MA	MA-1	(AC110V, DC24V)	M type reed switch
MB	MD-1	(DC24V)	
MC	MD-3	(DC5, 6V)	
MD	MR	(AC, DC5-110V)	
ME	MA-2L	(AC110V)	
MF	MA-2H	(AC220V)	
MG	MT-3	(DC5-30V)	M type proximity switch
MH	MT-3U	(DC5-30V)	
MJ	MT-2	(DC24V)	
MK	MT-2U	(DC24V)	

### ⑧ Number of switches

No mark: No switch  
 2: With 2 units  
 1: With 1 unit

### ⑨ Accessories

No mark: With rod end nut  
 Y: Rod end female clevis  
 I: Rod end male clevis

## Model No. of Switch Mounting Bracket

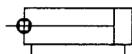
Bore (mm)	M type switch
∅10	Z10-MJ
∅16	Z16-MJ

## Model No. of Mounting Bracket

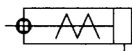
Bore (mm)	∅10	∅16
Foot mounting	Z10-L	Z16-L
Flange mounting	Z10-A	Z16-A
Rear hinge	Z10-BY	Z16-BY



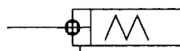
## JIS Label



Double acting



Single acting(Spring return)



Single acting(Spring extend)

Value shown in this catalog is shown in SI unit. However, value within this output table is in generic unit. Use the following formula to convert to SI unit :

Pressure

$$Y(\text{MPa}) = X(\text{kgf/cm}^2) \times 9.80665 \times 10^{-2}$$

Force

$$Y(\text{N}) = X(\text{kgf}) \times 9.80665$$

## Specifications

Action	Unit	Double-acting	Single-acting
Fluid		Non-lubricated air	
Pressure range	MPa (kgf/cm <sup>2</sup> )	0.1~0.7 (1~7.1)	0.15~0.7 (1.5~7.1)
Proof pressure	MPa (kgf/cm <sup>2</sup> )	1.05(10.7)	
Range temperature	°C	5~60	
Piston speed range	mm/s	50~500	
Cushion		Built-in gasket	
Piston stroke allowance	mm	+1.0 0	
Non-rotation accuracy for axis	°C	±2	
Mounting		Nose mounting, Foot mounting, Flange mounting, Female clevis	

## Accessories

	Name	Nose mounting	Foot mounting	Mounting flange	Clevis
Standard	Nose nut	○	○	○	—
	Rod end nut	○	○	○	○
	Clevis pin	—	—	—	○
Optional	Rod end female clevis	○	○	○	○
	Rod end male clevis	○	○	○	○
	Rear hinge	—	—	—	○

## Standard Stroke

(Unit: mm)

Acting	Bore	Standard Stroke	Max. Stroke
Double acting	∅10	15, 30, 45, 60	150
	∅16		
Single acting	∅6	15, 30, 45, 60	90
	∅10		

## Double acting

(Unit: g)

Bore (mm)	Mounting	Stroke(mm)			
		15	30	45	60
∅10	One side nose	28	32	36	40
	Female clevis/W	42	45	49	53
∅16	One side nose	53	61	69	77
	Female clevis/W	86	93	101	109

## Single acting

(Unit: g)

Bore (mm)	Mounting	Stroke(mm)			
		15	30	45	60
∅10	One side nose	27	34	41	48
	Female clevis/W	40	47	54	61
∅16	One side nose	54	68	82	96
	Female clevis/W	86	100	114	128



**Model With Switch****M Type Reed Switch  
Lead With Wire**

Model No.	Rated voltage(V)	Rated current range(mA)	Pilot lamp (Lights up at ON)	Application
MA-1	AC110	5-45	○	Relay / PLC
	DC24	5-45		
MD-1	DC24	25-65	○	Relay
MD-3	DC5, 6	Max.50(Inductive load) Max.300(Resistive load)	○	IC circuit
MR	AC 5-110 DC 5-110	Max.50(Inductive load) Max.300(Resistive load)	No indicator light	Relay / PLC
MA-2L	AC100/110	5-150	○	Relay
MA-2H	AC200/220	5-150	○	Relay

**M Type Proximity Switch  
Lead With Wire**

Model No.	Rated voltage (V)	Rated current range(mA)	Pilot lamp (Lights up at CN)	Application
MT-2 MT-2U	DC24 (DC10-30)	5-100	○	Relay / PLC
MT-3 MT-3U	DC5-30	5-200	○	Relay / PLC / IC circuit

**Minimum Stroke with M Type Switch (Unit: mm)**

Bore	Number of switches		
	With 2 units (On the same surface)	With 2 units (On different surfaces)	With 1 unit
∅10	45	15	15
∅16	35		

Note: The MA-2L is the same as the MA-1 except that MA-2L is also equipped with protective circuit SS-2L.

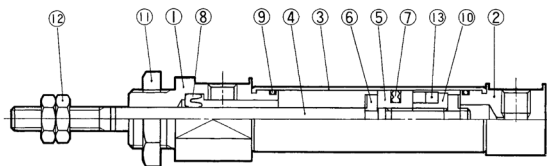
The MA-2H is the same as the MA-1 except that MA-2H is also equipped with protective circuit SS-2H.

**Sensor switch position**

Refer to Z Series.

**Double acting (Indecomposable)**

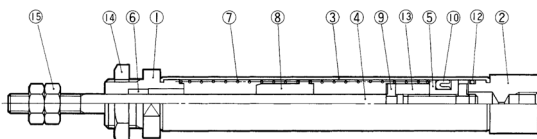
ZGU2



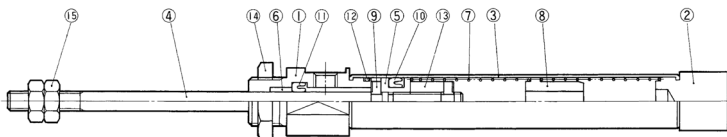
No.	Name	No.	Name	No.	Name
1	Rod cover	6	Damper cushion	11	Nose nut
2	Head cover	7	Piston parking	12	Rod end nut
3	Cylinder tube	8	Rod parking	13	Magnet
4	Piston	9	O-ring		
5	Piston rod	10	Magnet base		

**Single acting (Indecomposable)**

Spring return ZCU1



Spring extend ZCU0

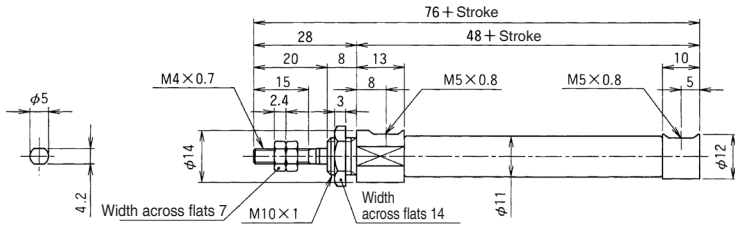


No.	Name	No.	Name	No.	Name
1	Rod cover	6	Resetting spring	11	O-ring
2	Head cover	7	Spring base	12	Collar
3	Cylinder tube	8	Damper cushion	13	Nose nut
4	Piston	9	Piston parking	14	Rod end nut
5	Piston rod	10	Rod parking		

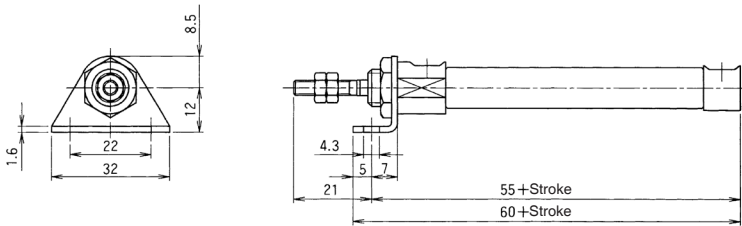
Double-acting  $\varnothing 10$  / ZGU-10

(Unit: mm)

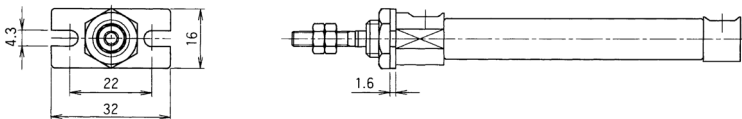
One side nose mounting / N



One side foot mounting / L

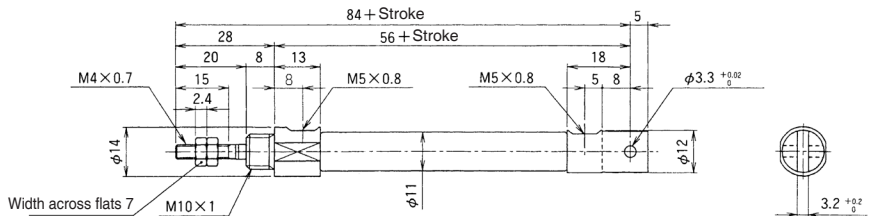


Flange mounting / A



Clevis mounting / W

(Clevis mounting with c ring and latch)



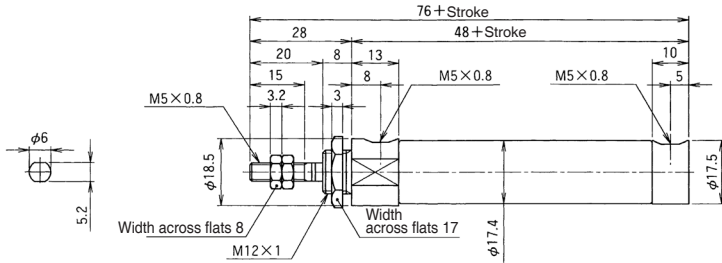
Note: The minimum standard is 15 mm stroke.

Double-acting  $\varnothing 16$  / ZGU-16

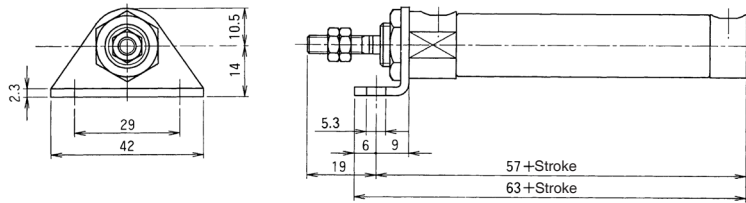
(Unit: mm)

Z Series

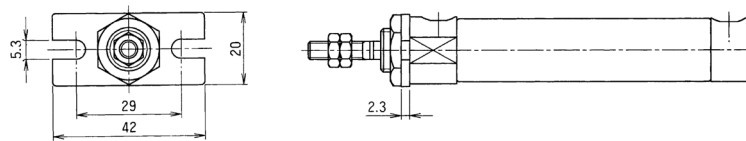
One side nose mounting / N



One side foot mounting / L

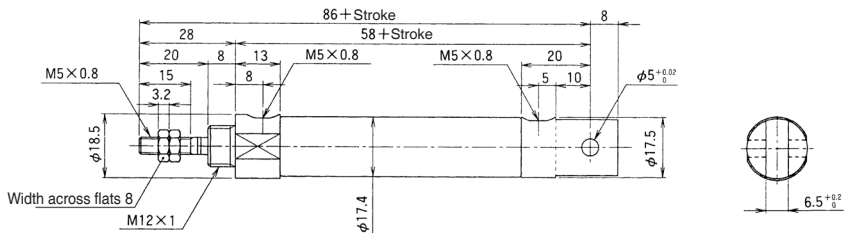


Flange mounting / A



Clevis mounting / W

(Clevis mounting with c ring and latch)

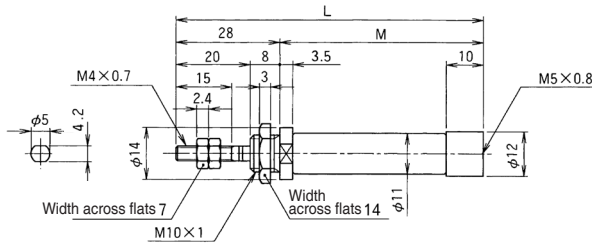


Note: The minimum standard is 15 mm stroke.

Single-acting spring return type  $\varnothing 10$  / Z□U1-10

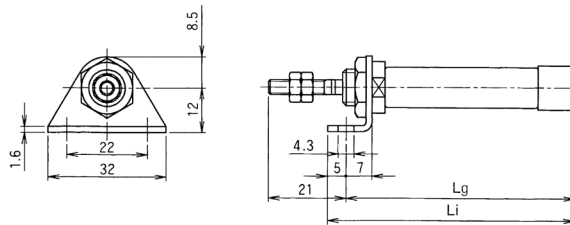
(Unit: mm)

One side nose mounting / N port position NB (Z□NBU1)



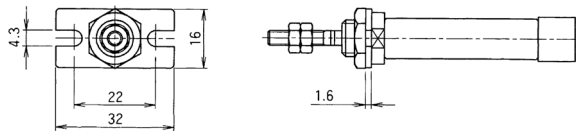
		15 st	30 st	45 st	60 st
L	Type C	83	110	137	164
	Type G	89	116	143	170
M	Type C	55	82	109	136
	Type G	61	88	115	142

One side foot mounting / L



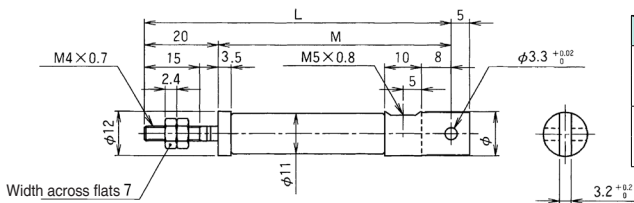
		15 st	30 st	45 st	60 st
Lg	Type C	62	89	116	143
	Type G	68	95	122	149
Li	Type C	67	94	121	148
	Type G	73	100	127	154

Flange mounting / A



Clevis mounting / W

(Clevis mounting with c ring and latch)



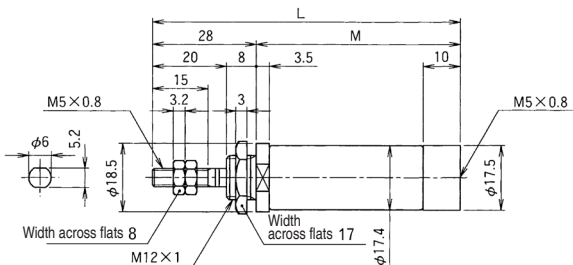
		15 st	30 st	45 st	60 st
L	Type C	83	110	137	164
	Type G	94	121	148	175
M	Type C	63	90	117	144
	Type G	69	96	123	150

Note: The minimum standard is 15 mm stroke.

Single-acting spring return type  $\varnothing 16$  / ZU1-16

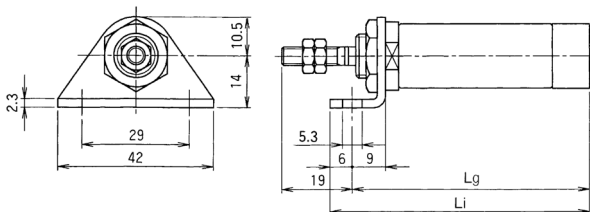
(Unit: mm)

One side nose mounting / N port position NB (ZU1-16)



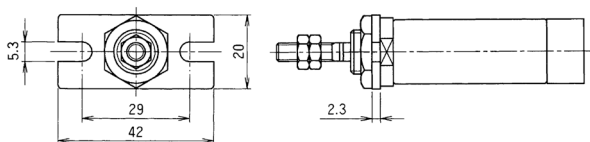
		15 st	30 st	45 st	60 st
L	Type C	83	110	137	164
	Type G	89	116	143	170
M	Type C	55	82	109	136
	Type G	61	88	115	142

One side foot mounting / L



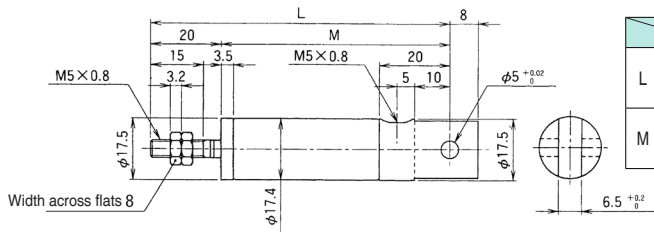
		15 st	30 st	45 st	60 st
Lg	Type C	64	91	118	145
	Type G	70	97	124	151
Li	Type C	70	97	124	151
	Type G	76	103	130	157

Flange mounting / A



Clevis mounting / W

(Clevis mounting with c ring and latch)



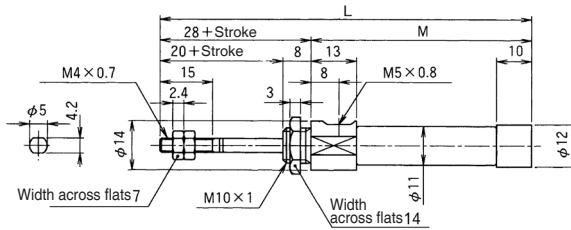
		15 st	30 st	45 st	60 st
L	Type C	85	112	139	166
	Type G	91	118	145	172
M	Type C	65	92	119	146
	Type G	71	98	125	152

Note: The minimum standard is 15 mm stroke.

Single-acting spring return type  $\varnothing 10$  / Z□UO-10

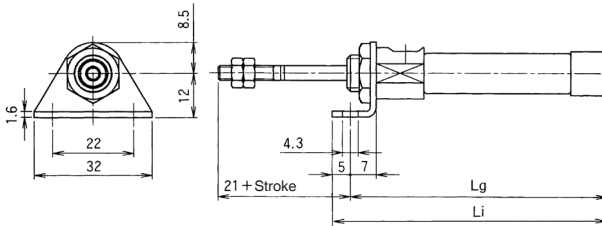
(Unit: mm)

One side nose mounting / N



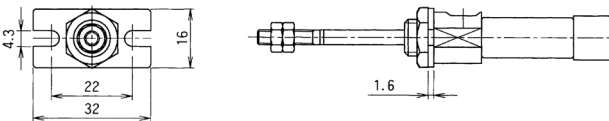
		15 st	30 st	45 st	60 st
L	Type C	92.5	119.5	146.5	173.5
	Type G	98.5	125.5	152.5	179.5
M	Type C	64.5	91.5	118.5	145.5
	Type G	70.5	97.5	124.5	151.5

One side foot mounting / L



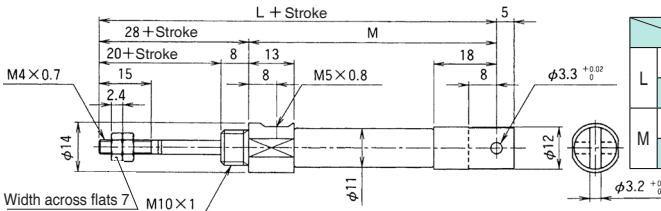
		15 st	30 st	45 st	60 st
Lg	Type C	71.5	98.5	125.5	152.5
	Type G	77.5	104.5	131.5	158.5
Li	Type C	76.5	103.5	130.5	157.5
	Type G	82.5	109.5	136.5	163.5

Flange mounting / A



Clevis mounting / W

(Clevis mounting with c ring and latch)



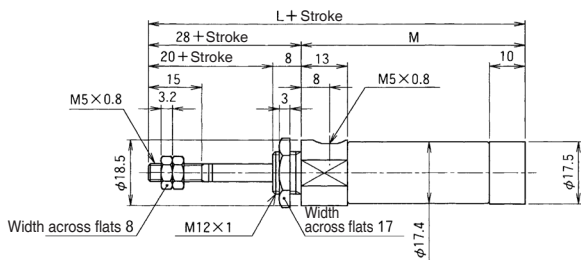
		15 st	30 st	45 st	60 st
L	Type C	100.5	127.5	154.5	181.5
	Type G	106.5	133.5	160.5	187.5
M	Type C	72.5	99.5	126.5	153.5
	Type G	78.5	105.5	132.5	159.5

Note: The minimum standard is 15 mm stroke.

Single-acting spring return type  $\varnothing 16 / Z\Box UO-16$

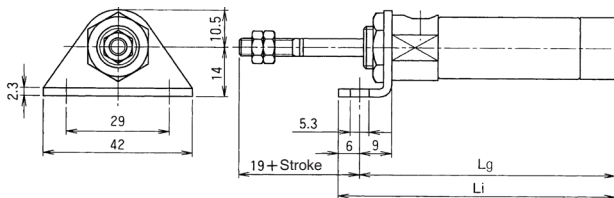
(Unit: mm)

One side nose mounting / N



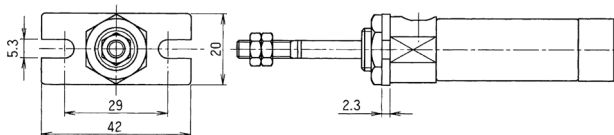
		15 st	30 st	45 st	60 st
L	Type C	92.5	119.5	146.5	173.5
	Type G	98.5	125.5	152.5	179.5
M	Type C	64.5	91.5	118.5	145.5
	Type G	70.5	97.5	124.5	151.5

One side foot mounting / L



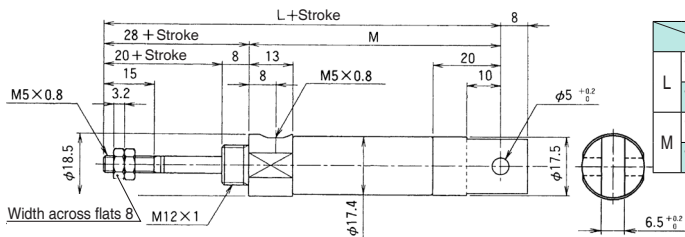
		15 st	30 st	45 st	60 st
Lg	Type C	73.5	100.5	127.5	154.5
	Type G	79.5	106.5	133.5	160.5
Li	Type C	79.5	106.5	133.5	160.5
	Type G	85.5	112.5	139.5	166.5

Flange mounting / A



Clevis mounting / W

(Clevis mounting with c ring and latch)



		15 st	30 st	45 st	60 st
L	Type C	102.5	129.5	156.5	183.5
	Type G	108.5	135.5	162.5	189.5
M	Type C	74.5	101.5	128.5	155.5
	Type G	80.5	107.5	134.5	161.5

Note: The minimum standard is 15 mm stroke.