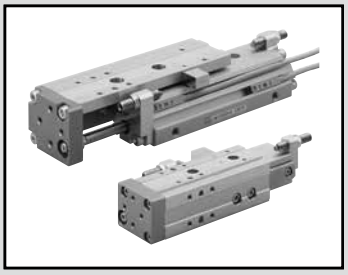
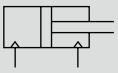


Linear slide cylinder Double acting/single rod

LCW Series

●Bore size: ø12/ø16/ø20

JIS symbol 

RoHS CAD

Specifications

Item		LCW		
Bore size	mm	ø12	ø16	ø20
Actuation		Double acting		
Working fluid		Compressed air		
Max. working pressure	MPa	0.7 (≈100 psi, 7 bar)		
Min. working pressure	MPa	0.15 (≈22 psi, 1.5 bar) (*1)		
Proof pressure	MPa	1.05 (≈150 psi, 10.5 bar)		
Ambient temperature	°C	-10 (14°F) to 60 (140°F) (no freezing) (*2)		
Port size		M5		
Working piston speed	mm/s	50 to 500 (*3)		
Cushion		Rubber cushion		
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)		
Allowable absorbed energy	J	* Refer to Table 3 on page 243.		

*1: Use at a pressure of 0.4 MPa and over when using a metal stopper with rubber cushion in order to allow metal contact at the end of the stroke.
*2: Operate at -5 to 60°C when using a shock absorber stopper.
*3: Keep within 50 to 200 mm/s when using a metal stopper with rubber cushion.

Stroke length

Bore size (mm)	Standard stroke length (mm)
ø12	30/50/75
ø16	
ø20	

Note: Products with stroke lengths other than the above are not available.

Adjustable stroke range

(Unit: mm)

Bore size (mm)	Standard rubber cushion				Metal with rubber cushion				Shock absorber	
	Standard stroke length		Custom stroke compatible (S)		Standard stroke length (M)		Custom stroke compatible (MS)		Standard stroke length (A)	
	PUSH	PULL	PUSH	PULL	PUSH	PULL	PUSH	PULL	PUSH	PULL
ø12	10	10	28	10	9	11.5	28	11.5	4	6.5
ø16	7.5	7.5	25	7.5	6	8.5	25	8.5	1.5	3.5
ø20	8	8	25	8	7.5	12	25	12	12.5	17

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa						
		0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø12	PUSH	17	23	34	45	57	68	79
	PULL	13	17	25	34	42	51	59
ø16	PUSH	30	40	60	80	101	121	141
	PULL	26	35	52	69	86	104	121
ø20	PUSH	47	63	94	126	157	188	220
	PULL	40	53	79	106	132	158	185

Switch specifications

Item	Reed 2-wire				Proximity 2-wire		Proximity 3-wire	
	T0H/T0V		T5H/T5V		T2H/T2V	T2WH/T2WV	T3H/T3V	T3WH/T3WV
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection		Dedicated for programmable controller		For programmable controller, relay	
Output method	-		-		-		NPN output	
Power supply voltage	-		-		-		10 to 28 VDC	
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 20 mA		100 mA or less	50 mA or less
Indicator lamp	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	0 mA				1 mA or less		10 µA or less	
Weight g	1 m:18 3 m:49 5 m:80							

Item	Proximity 2-wire	Proximity 3-wire	Proximity 2-wire		Proximity 3-wire	
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3YH/F3YV
Applications	Dedicated for programmable controller	For programmable controller, relay	Dedicated for programmable controller		For programmable controller, relay	
Output method	-	NPN output	-		NPN output	
Power supply voltage	-	10 to 28 VDC	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20 mA	50 mA or less	5 to 20 mA		50 mA or less	
Indicator lamp	Red LED (Lit when ON)		LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	1 mA or less	10 µA or less	1 mA or less		10 µA or less	
Weight g	1 m:10 3 m:29					

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.
*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.
*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*4 : The F type switch uses a bend-resistant lead wire.

Cylinder weight

● Basic (Unit: g)

Bore size (mm)	Stroke length (mm)		
	30	50	75
ø12	240	370	380
ø16	380	390	600
ø20	690	720	1070

● Stopper additional part (Unit: g)

Bore size (mm)	Stopper code		
	S	MS	A
ø12	3	3	0
ø16	3	3	0
ø20	5	5	14

For stopper code M, the weight is the same as the basic.

How to order

● Without switch (built-in magnet for switch)

LCW - 16 - 30 - R — A

● With switch (built-in magnet for switch)

LCW - 16 - 30 - R - T2H - R - A

Ⓐ Bore size

Ⓑ Stroke length

Ⓒ Piping direction

Ⓓ Switch model No.

Ⓔ Switch quantity

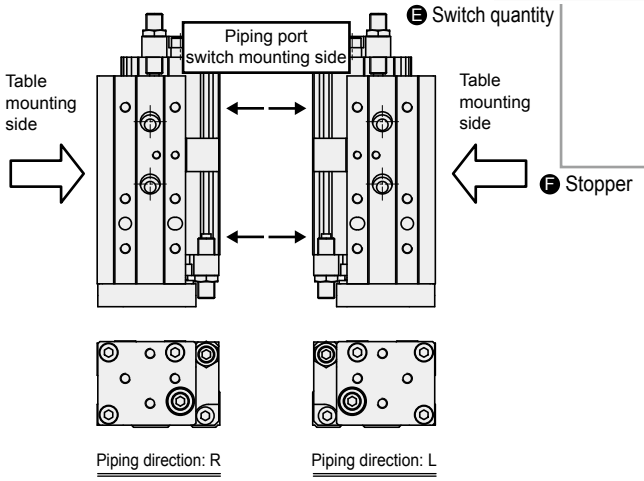
Ⓕ Stopper

[Example of model No.]

LCW-16-30-R-T2H-D-A

Model: Linear slide cylinder

Ⓐ Bore size : ø16
Ⓑ Stroke length : 30 mm
Ⓒ Piping direction : Right from rod side
Ⓓ Switch model No. : Proximity switch T2H, lead wire 1 m
Ⓔ Switch quantity : 2
Ⓕ Stopper : Shock absorber



Code	Description
Ⓐ Bore size (mm)	
12	ø12
16	ø16
20	ø20

Ⓑ Stroke length (mm)	
30	30
50	50
75	75

Ⓒ Piping direction	
R	Right from rod side
L	Left from rod side

Ⓓ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire	Bore size ø12	Bore size ø16	Bore size ø20
-	**F2S***	Proximity		●	1-color display	2-wire	●		
-	**F3S***			●		3-wire			
F2H*	**F2V***			●		2-wire			
F3H*	**F3V***			●		3-wire			
F2YH*	**F2YV***			●	2-color display	2-wire			
F3YH*	**F3YV***			●		3-wire			
T0H*	**T0V***	Reed	●	●	1-color display	2-wire		●	●
T5H*	**T5V***		●	●	Without indicator lamp				
T2H*	**T2V***	Proximity		●	1-color display	2-wire			
T3H*	**T3V***			●		3-wire			
T2WH*	**T2WV***			●	2-color display	2-wire			
T3WH*	**T3WV***			●		3-wire			

*** Lead wire length**			
Blank	1 m (standard)	●	
3	3 m (option)	●	
5	5 m (option)		●

Ⓔ Switch quantity	
R	1 on rod side
H	1 on head side
D	2

Ⓕ Stopper	
Blank	Cushion stopper
S	Rubber cushion long stopper (custom stroke compatible)
M	Metal stopper with rubber cushion
MS	Long metal stopper with rubber cushion (custom stroke compatible)
A	Shock absorber stopper

How to order switch

For ø12

SW - F2H

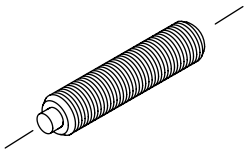
Switch model No.
(Item Ⓓ on page 206)

For ø16, ø20

SW - T0H

Switch model No.
(Item Ⓓ on page 206)

How to order discrete rubber cushion stopper



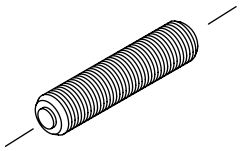
LCW - 12 - S01

Bore size
(Item Ⓐ on page 206)

Ⓐ Adjustable stroke range	Bore size	Thread size	Adjustable stroke length
S01 (Standard)	ø12	M6×1.0	Single side 10 mm
	ø16	M6×1.0	Single side 7.5 mm
	ø20	M8×1.0	Single side 8 mm
S02 (Long)	ø12	M6×1.0	Single side 28 mm
	ø16	M6×1.0	Single side 25 mm
	ø20	M8×1.0	Single side 25 mm

*1: SO2 can also be mounted to the head side.
Adjustable stroke length in that case is the same as above.

How to order discrete metal stopper with rubber cushion



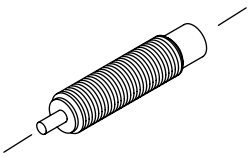
LCW - 12 - M01

Bore size
(Item Ⓐ on page 206)

Ⓐ Adjustable stroke range	Bore size	Thread size	Adjustable stroke length	
			PUSH	PULL
M01 (Standard)	ø12	M6×1.0	Single side 9 mm	Single side 11.5 mm
	ø16	M6×1.0	Single side 6 mm	Single side 8.5 mm
	ø20	M8×1.0	Single side 7.5 mm	Single side 12 mm
M02 (Long)	ø12	M6×1.0	Single side 28 mm	Single side 30 mm
	ø16	M6×1.0	Single side 25 mm	Single side 27 mm
	ø20	M8×1.0	Single side 25 mm	Single side 30 mm

*1: Cannot be changed from the rubber cushion stopper.
*2: Cannot be changed from the shock absorber stopper.
(ø12, ø16 only)
*3: MO2 can also be mounted to the head side.
Adjustable stroke length in that case is the same as above.

How to order discrete shock absorber stopper



LCW - 12 - A01

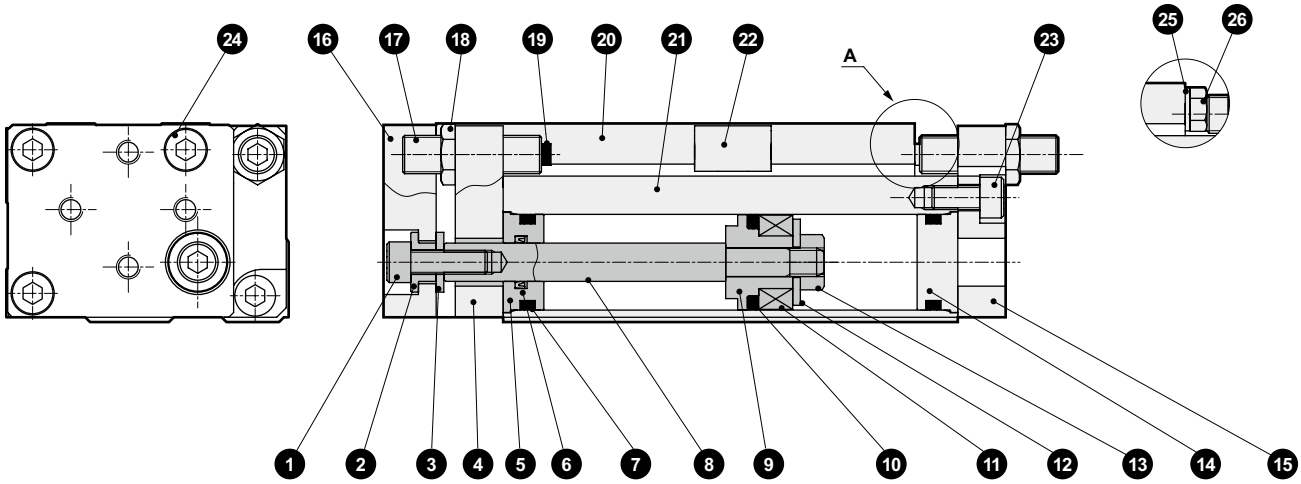
Bore size
(Item Ⓐ on page 206)

Bore size	Thread size
ø12	M6×0.75
ø16	M6×0.75
ø20	M8×1.0

*1: Cannot be changed from the rubber cushion stopper.
*2: Cannot be changed from the metal stopper with rubber cushion.
(ø12, ø16 only)

Internal structure and parts list

For metal stopper with A part rubber cushion (M, MS), shock absorber (A)



Parts list

No.	Part name	Material	Remarks
1	Hexagon socket head cap screw	Steel	Zinc chromate
2	Floating bush A	Stainless steel	
3	Floating bush B	Stainless steel	
4	Cover holder	Aluminum alloy	Alumite
5	Rod cover	Aluminum alloy	Hard alumite
6	Rod packing	Nitrile rubber	
7	O-ring	Nitrile rubber	
8	Piston rod	Stainless steel	
9	Piston	Aluminum alloy	Chromate
10	Piston packing	Nitrile rubber	
11	Magnet	-	
12	Plain washer	Stainless steel	
13	Hexagon nut	Stainless steel	
14	Head cover	Aluminum alloy	Chromate
15	Cover holder	Aluminum alloy	Alumite
16	End plate	Aluminum alloy	Hard alumite
17	Stopper bolt	Steel	Nickeling
18	Hexagon nut	Steel	Nickeling
19	Cushion rubber	Urethane rubber	
20	Table	Aluminum alloy	Alumite
21	Body	Aluminum alloy	Hard alumite
22	Stopper block	Steel	Nickeling
23	Hexagon socket head cap screw	Steel	Zinc chromate
24	Hexagon socket head cap screw	Steel	Zinc chromate
25	Plain washer	Stainless steel	
26	Hexagon head bolt	Stainless steel	

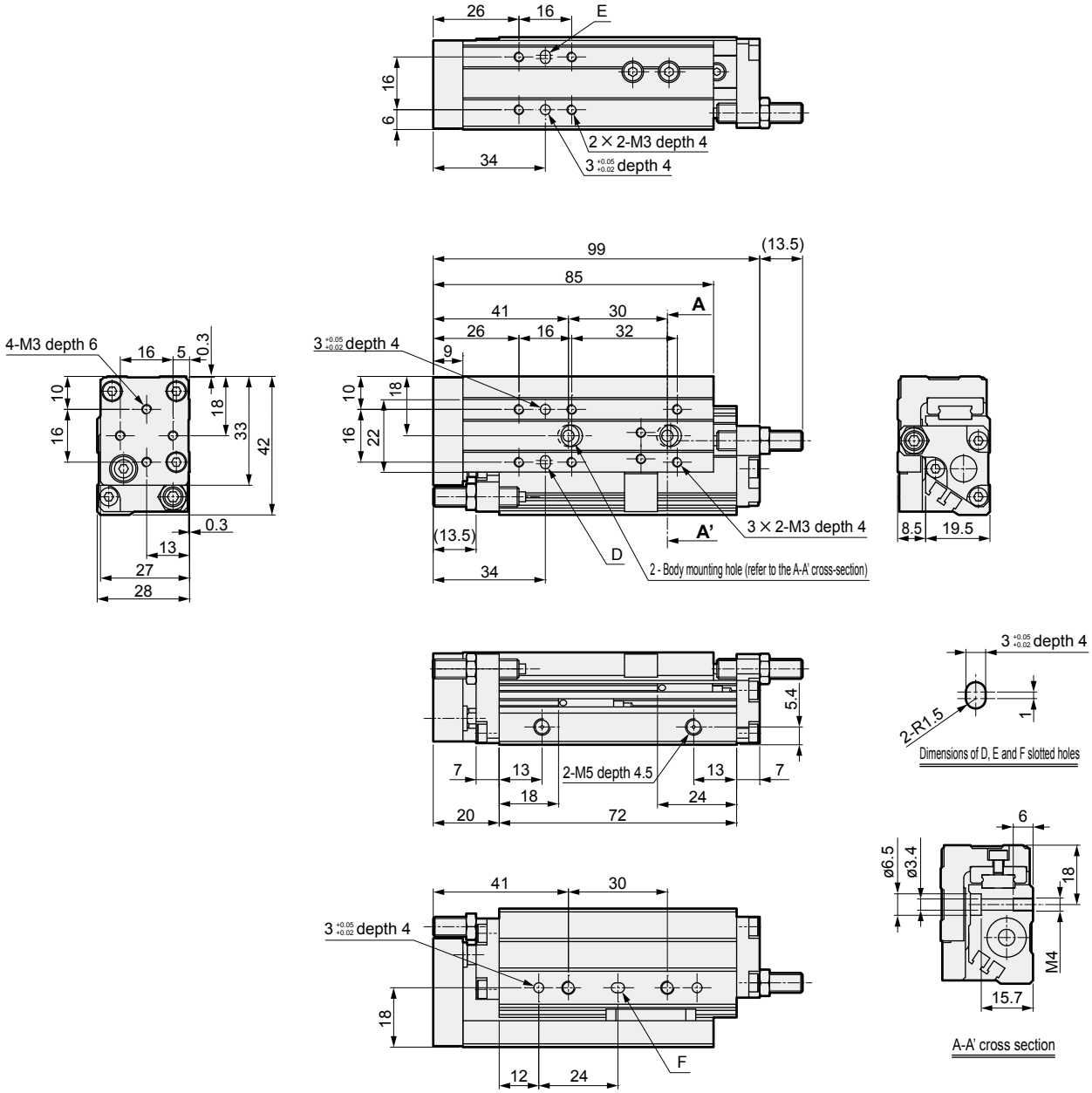
Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø12	LCW-12K	⑥⑦⑩⑲
ø16	LCW-16K	
ø20	LCW-20K	

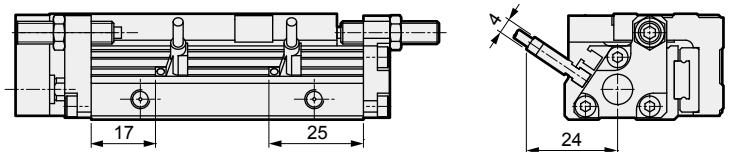
MEMO

Dimensions (bore size: ø12)

● LCW-12
Stroke length: 30 Piping direction: R



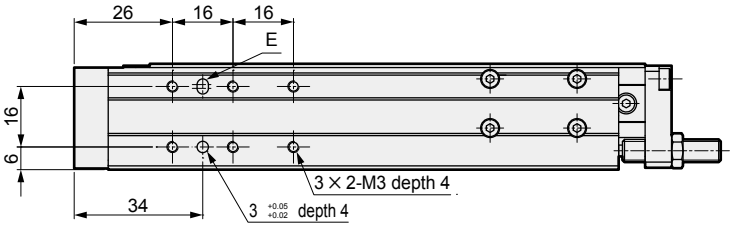
● Dimensions of protruding section when the F2S or F3S cylinder switch is mounted

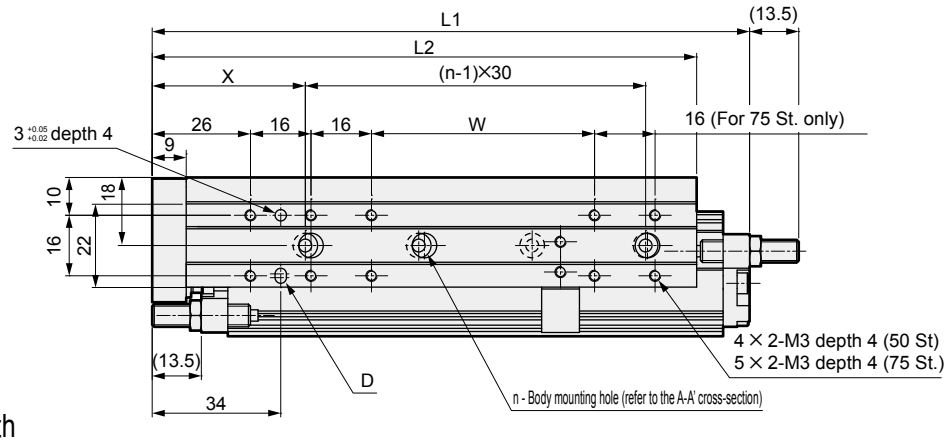


*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.
*3: Mount as shown in the figure for F2S and F3S switch specifications.

Dimensions (bore size: ø12)

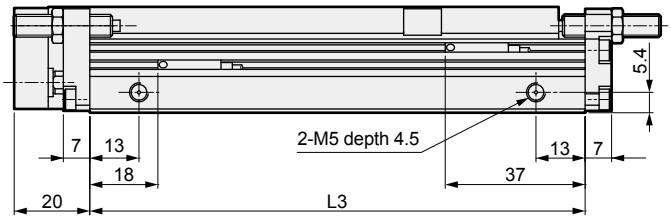
● LCW-12
Stroke length: 50, 75 Piping direction: R
(Body mounting hole in the figure shows 75 mm stroke length)

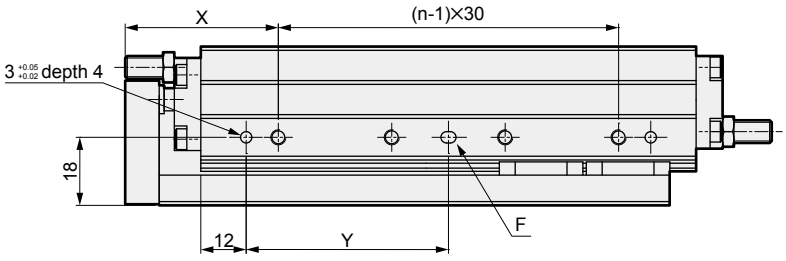




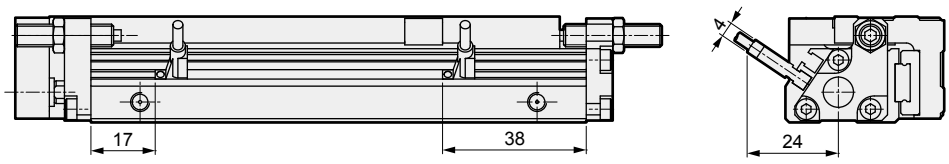
Dimensions by stroke length

Stroke length	50	75
L1	133	158
L2	119	144
L3	106	131
X	43	40.5
Y	50	53.5
W	50	59
n	3	4





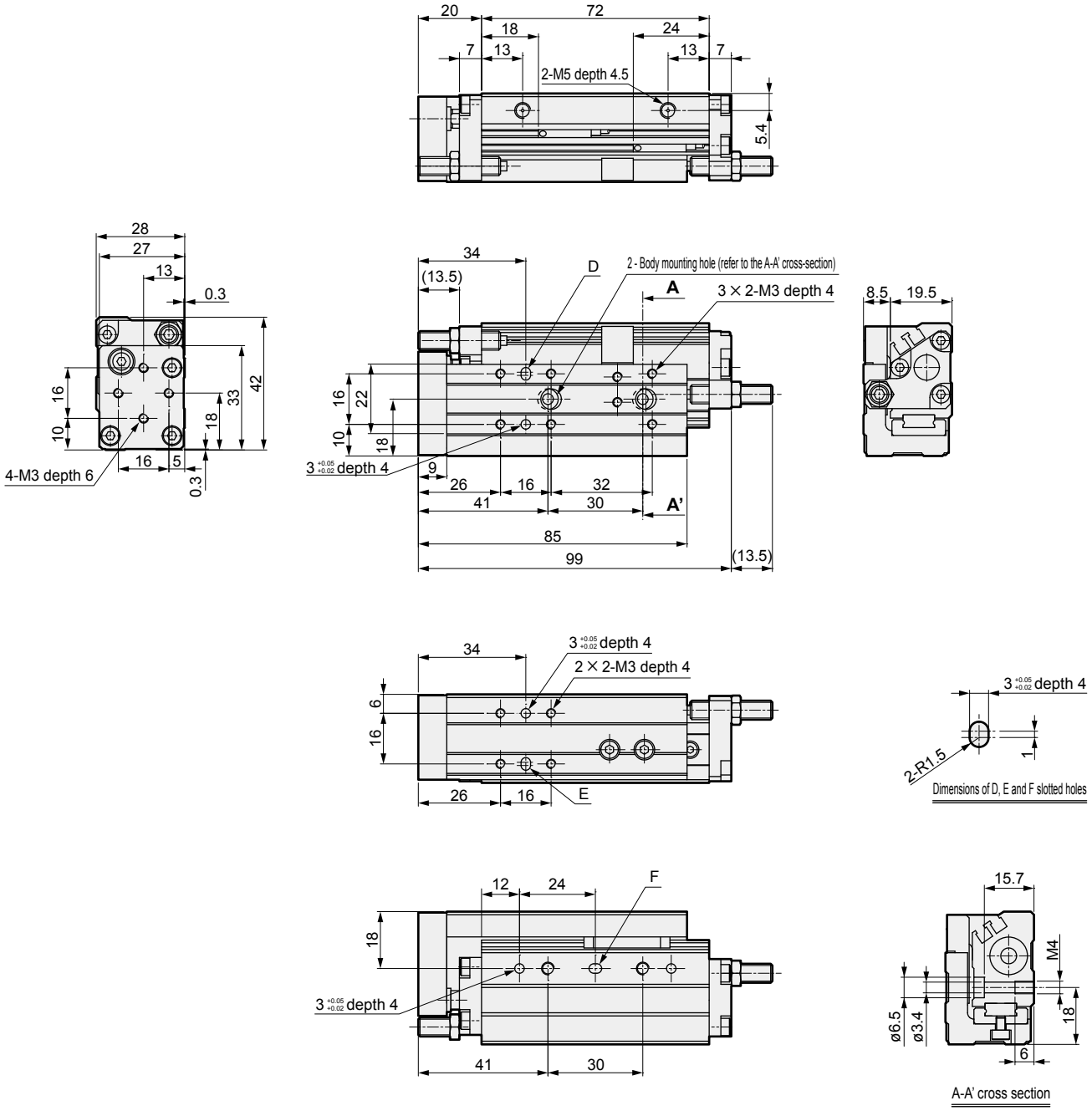
● Dimensions of protruding section when the F2S or F3S cylinder switch is mounted



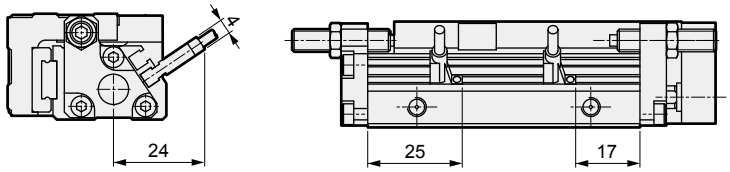
*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.
*3: Mount as shown in the figure for F2S and F3S switch specifications.

Dimensions (bore size: ø12)

● LCW-12
Stroke length: 30 Piping direction: L



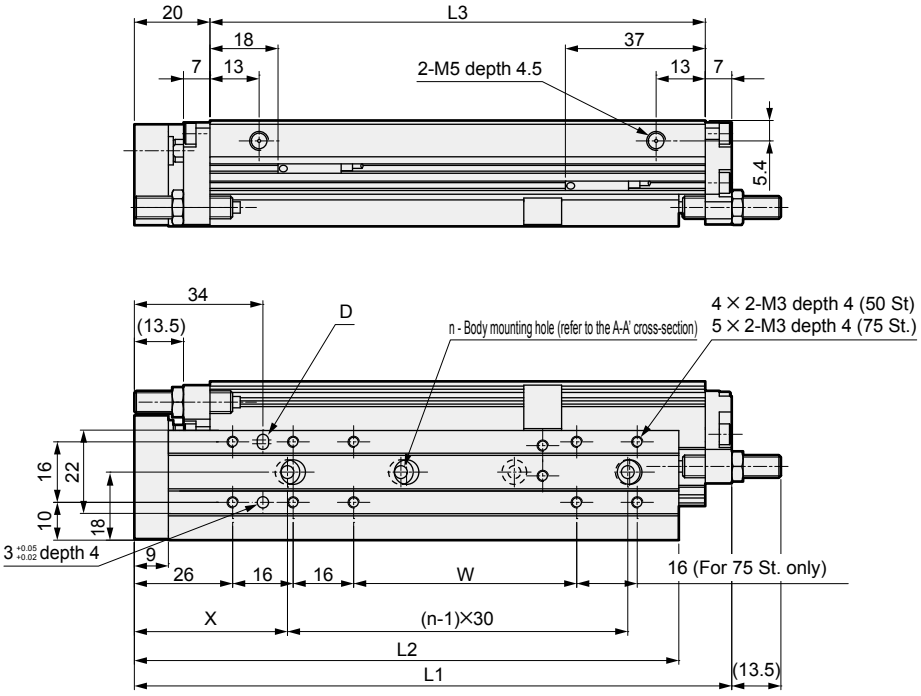
● Dimensions of protruding section when the F2S or F3S cylinder switch is mounted



*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.
*3: Mount as shown in the figure for F2S and F3S switch specifications.

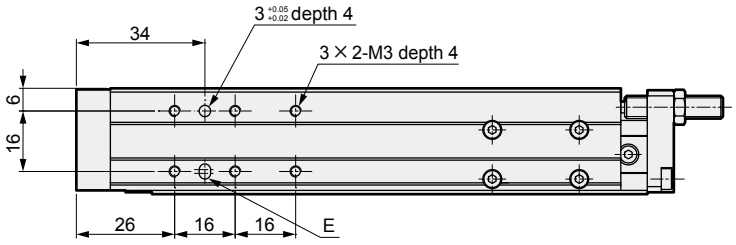
Dimensions (bore size: ø12)

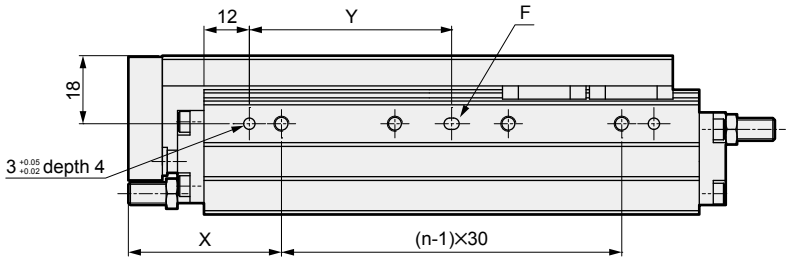
● LCW-12
Stroke length: 50, 75 Piping direction: L
(Body mounting hole in the figure shows 75 mm stroke length)



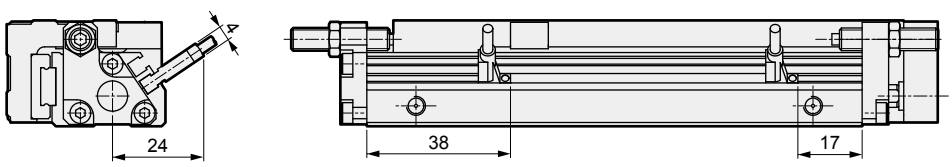
Dimensions by stroke length

Stroke length	50	75
L1	133	158
L2	119	144
L3	106	131
X	43	40.5
Y	50	53.5
W	50	59
n	3	4





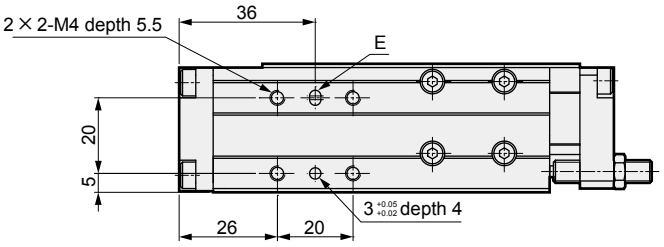
● Dimensions of protruding section when the F2S or F3S cylinder switch is mounted

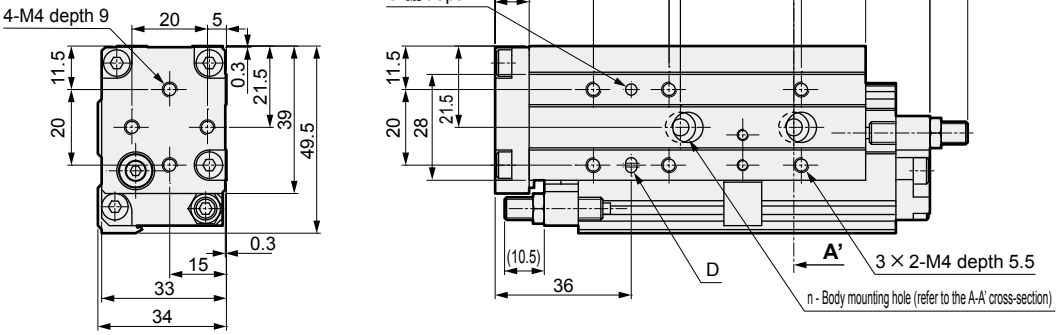


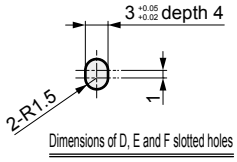
*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.
*3: Mount as shown in the figure for F2S and F3S switch specifications.

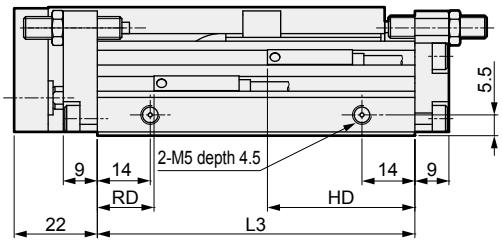
Dimensions (bore size: ø16)

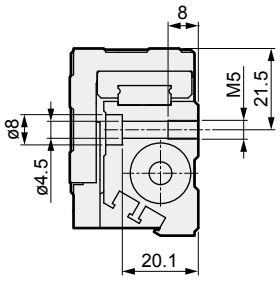
● LCW-16
Stroke length: 30, 50 Piping direction: R
(Body mounting hole in the figure shows 30 mm stroke length)

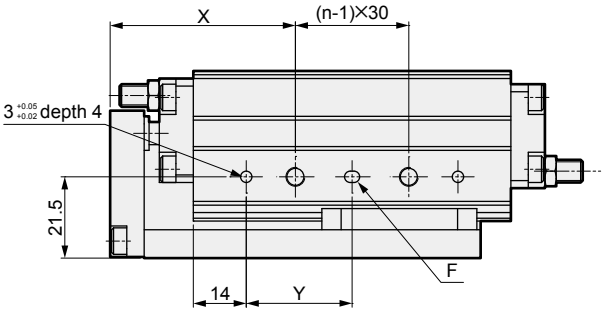












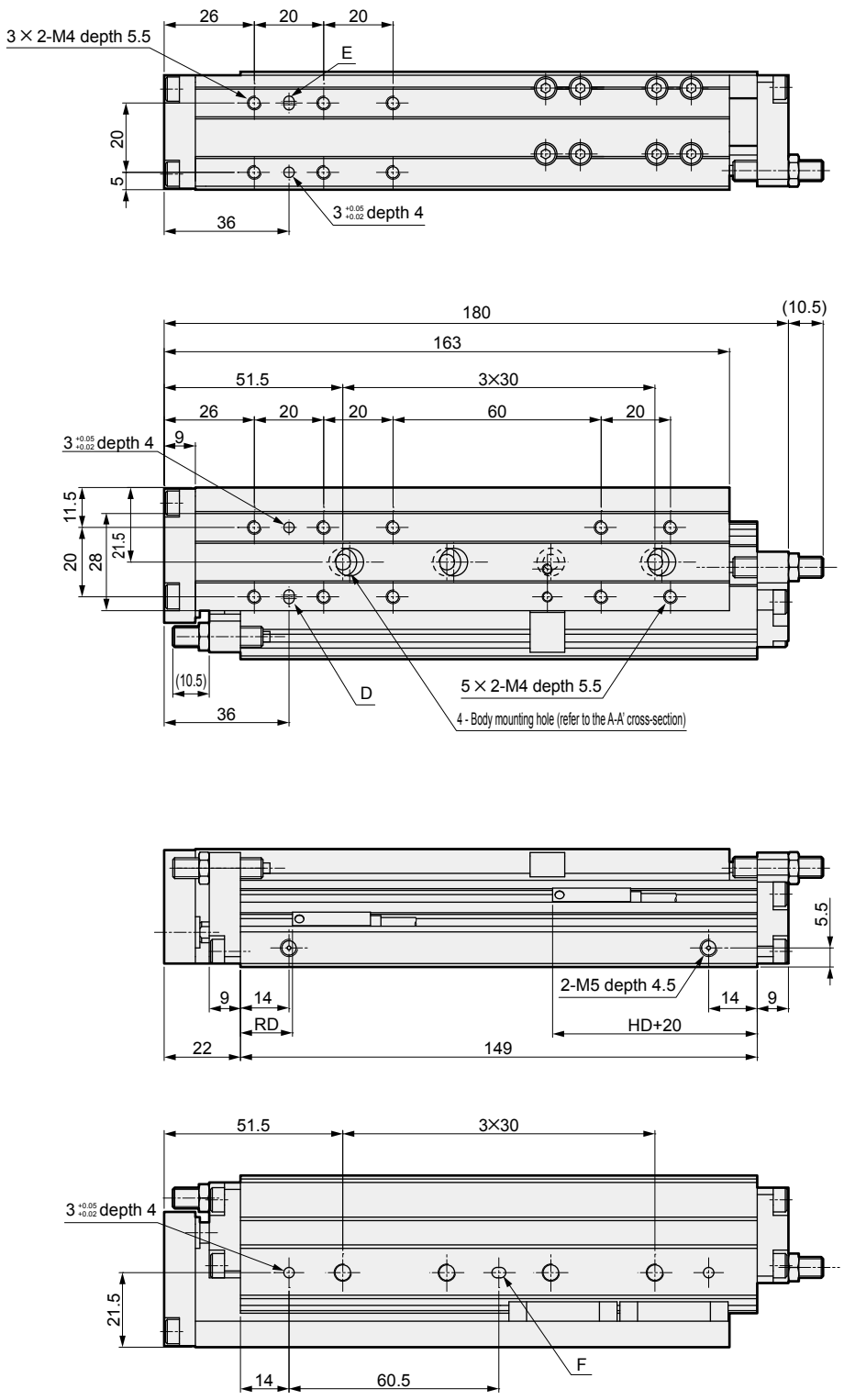
Dimensions by stroke length

Stroke length		30	50
L1		115	135
L2		98	118
L3		84	104
X		49	44
Y		28	50
W		35	55
n		2	3
T0/5* T2/3*	RD	15	
	HD	39	
T2/3W*	RD	17	
	HD	37	

*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

Dimensions (bore size: ø16)

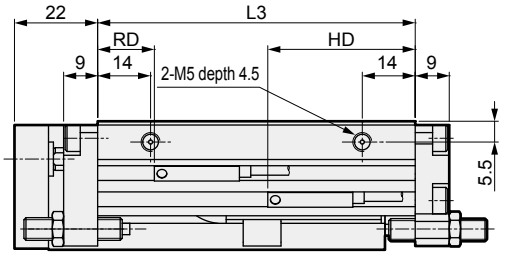
● LCW-16
Stroke length: 75 Piping direction: R

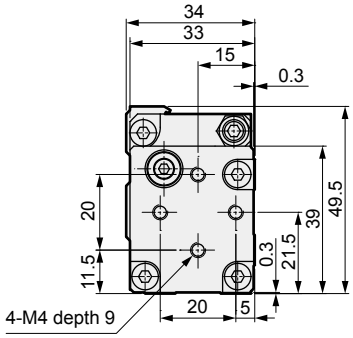


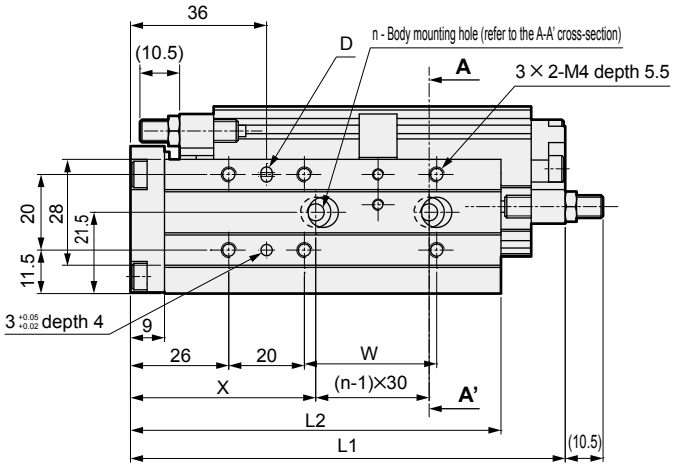
*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

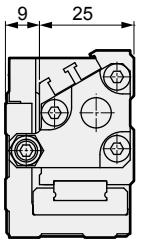
Dimensions (bore size: ø16)

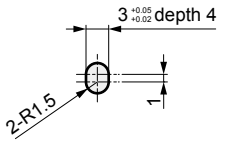
● LCW-16
Stroke length: 30, 50 Piping direction: L
(Body mounting hole in the figure shows 30 mm stroke length)



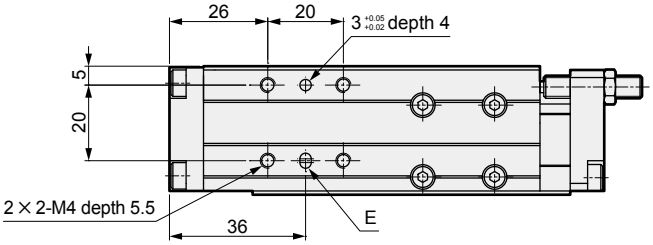


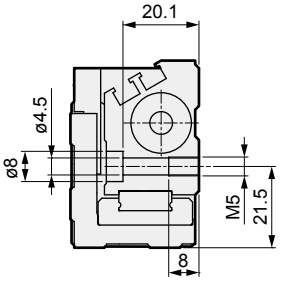




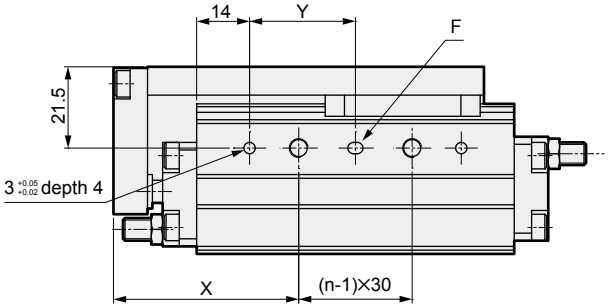


Dimensions of D, E and F slotted holes





A-A' cross section



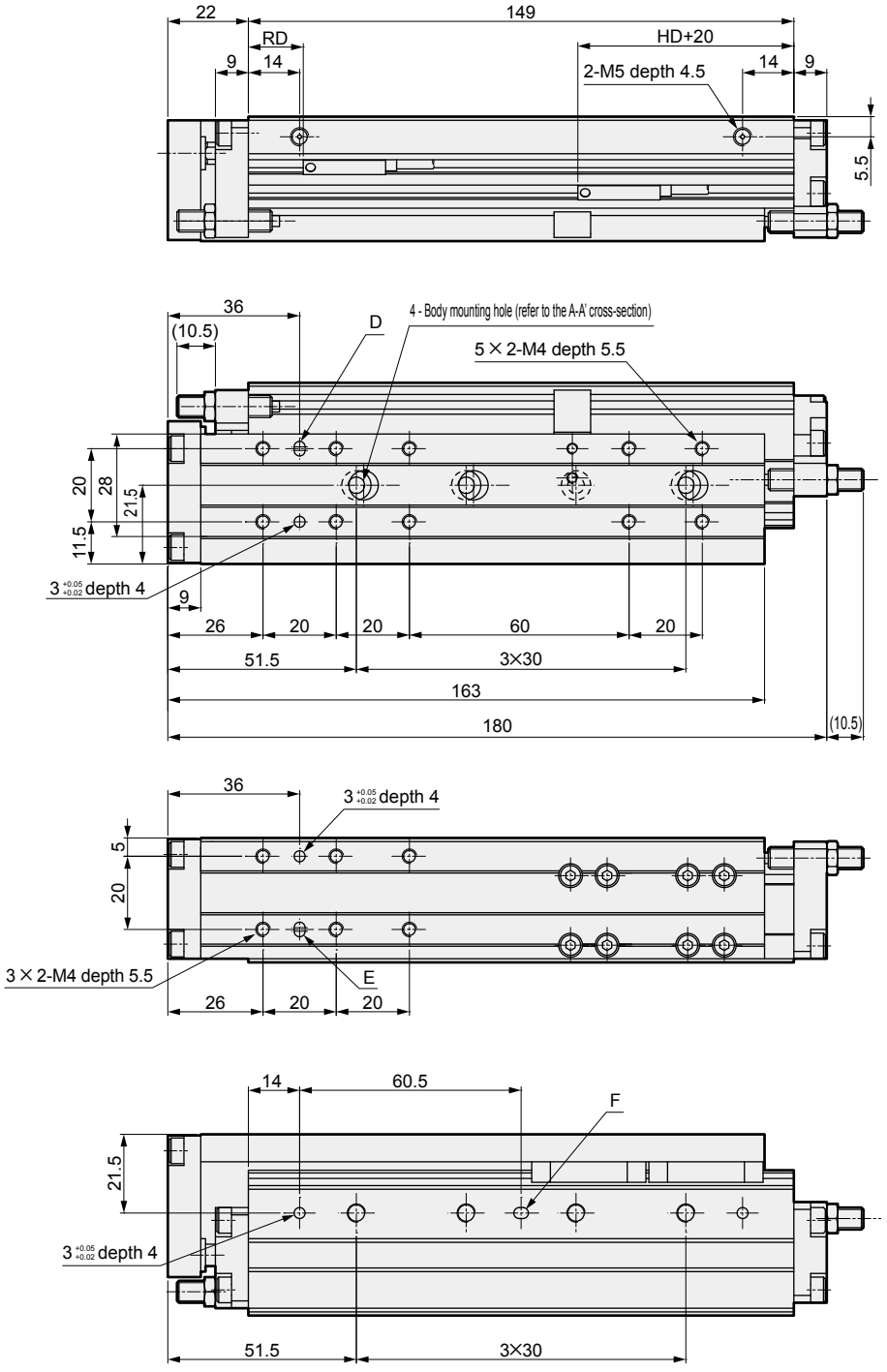
Dimensions by stroke length

Stroke length		30	50
L1		115	135
L2		98	118
L3		84	104
X		49	44
Y		28	50
W		35	55
n		2	3
T0/5* T2/3*	RD	15	
	HD	39	
T2/3W*	RD	17	
	HD	37	

*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

Dimensions (bore size: ø16)

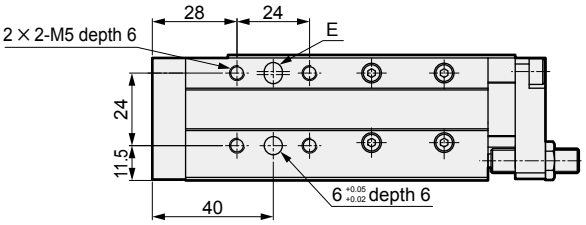
● LCW-16
Stroke length: 75 Piping direction: L

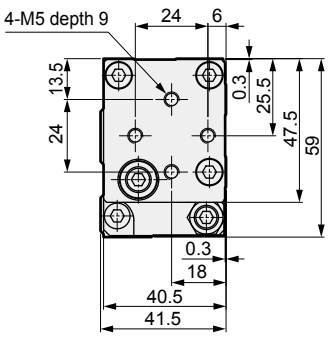


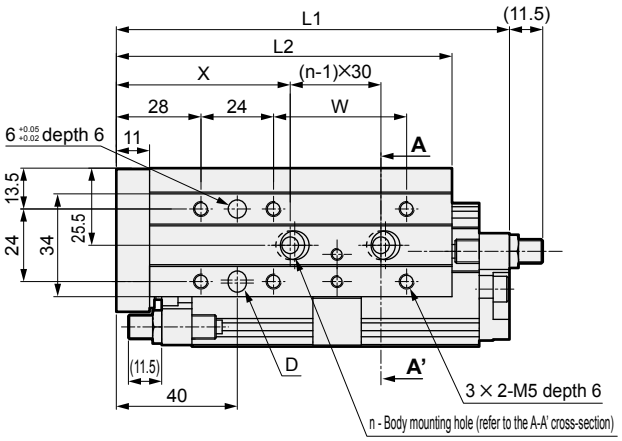
*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

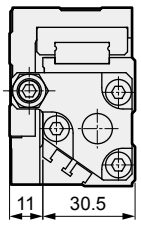
Dimensions (bore size: ø20)

● LCW-20
Stroke length: 30, 50 Piping direction: R
(Body mounting hole in the figure shows 30 mm stroke length)



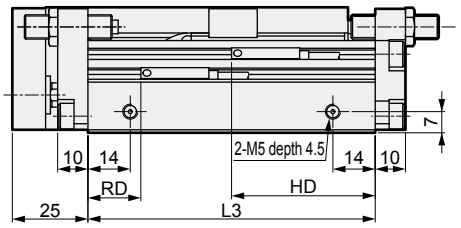


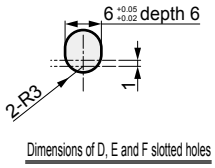




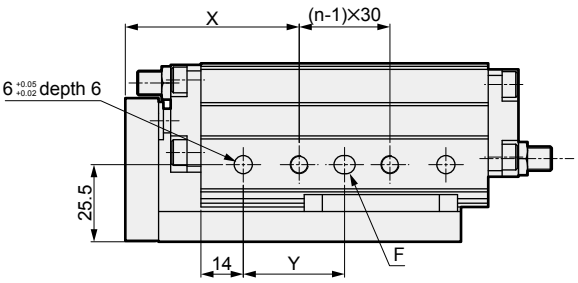
Dimensions by stroke length

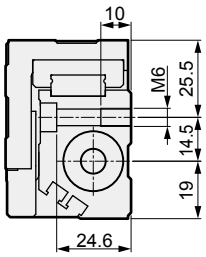
Stroke length		30	50
L1		130	150
L2		111	131
L3		95	115
X		57.5	52.5
Y		33.5	60
W		44	64
n		2	3
T0/5* T2/3*	RD	17.5	
	HD	47.5	
T2/3W*	RD	19.5	
	HD	45.5	





Dimensions of D, E and F slotted holes



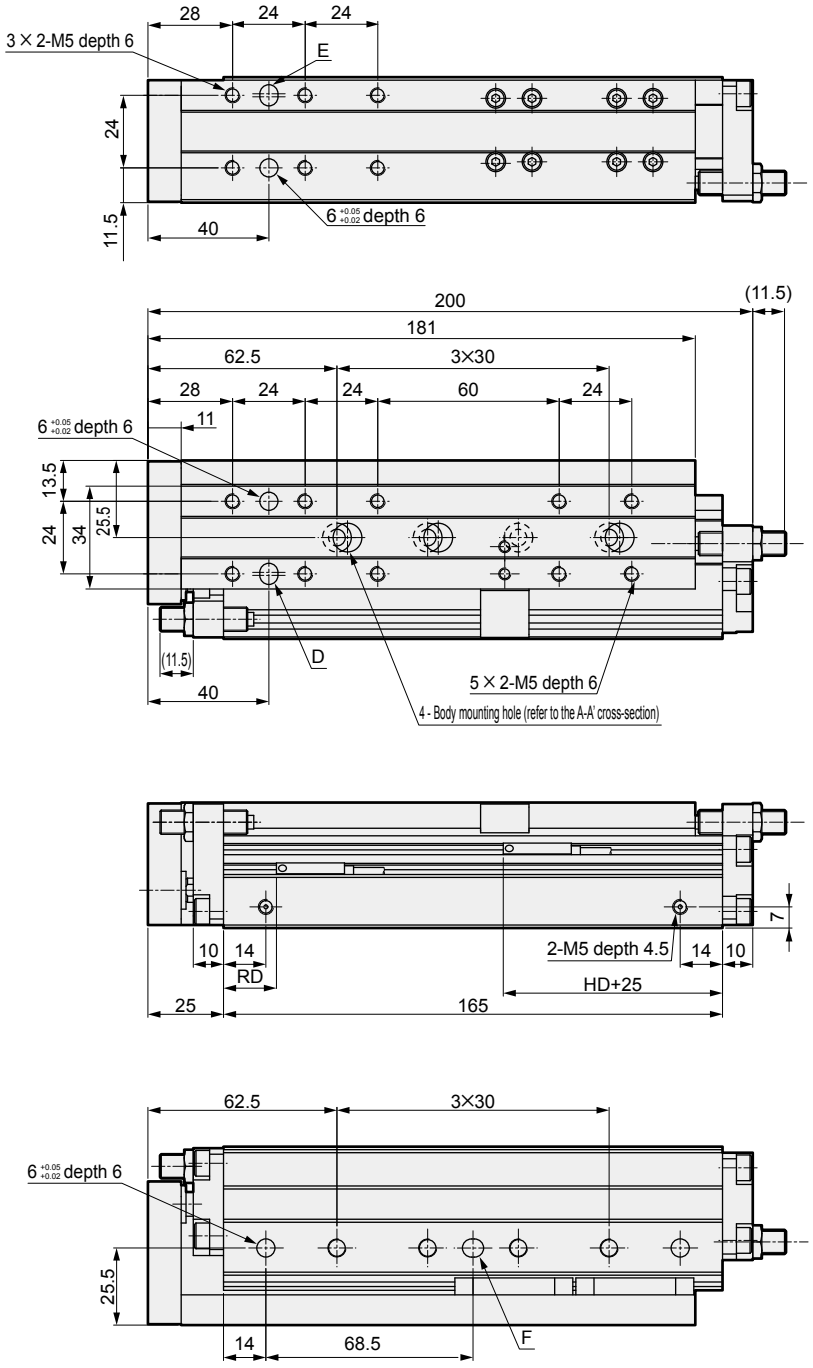


A-A' cross section

*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

Dimensions (bore size: ø20)

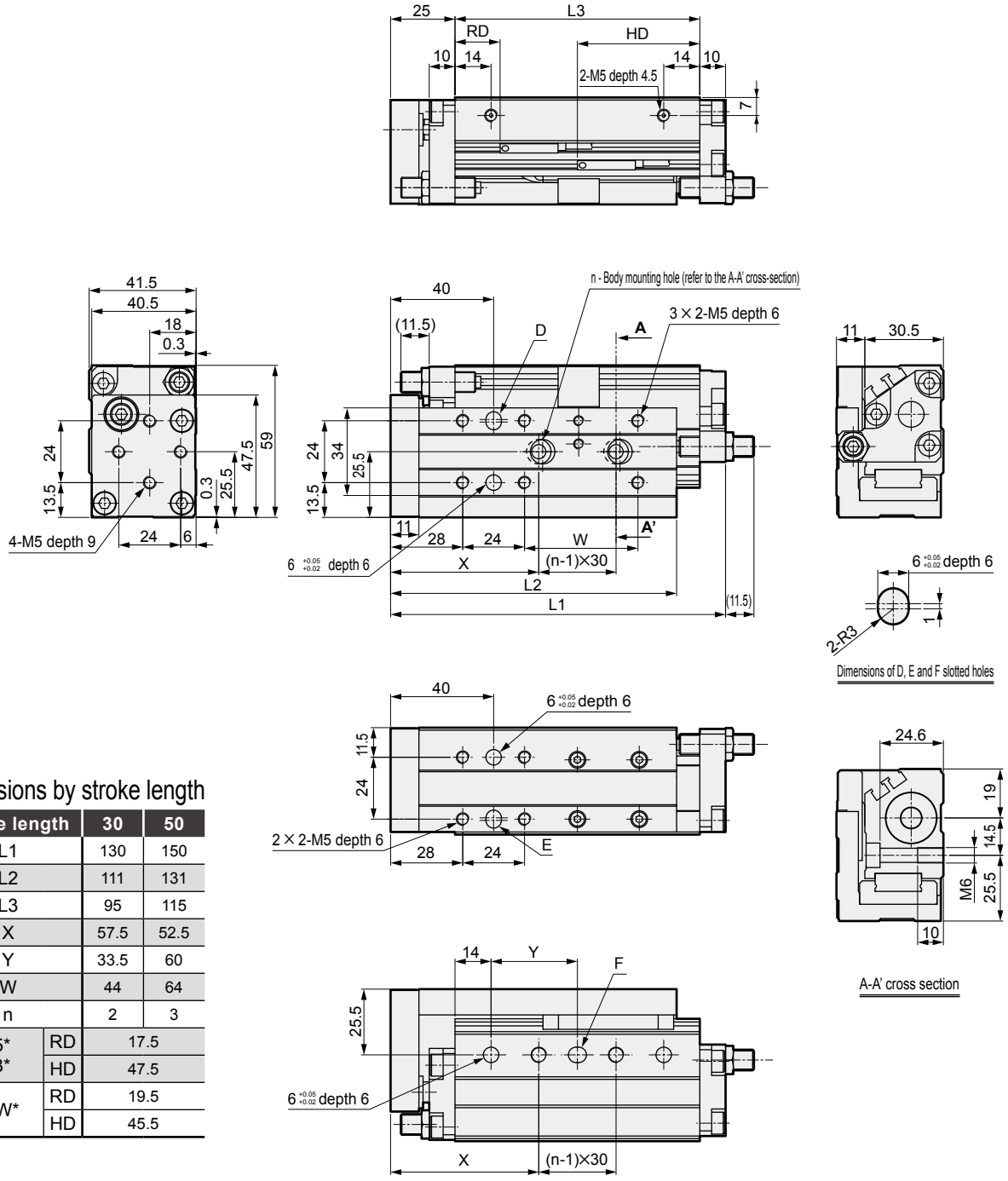
● LCW-20
Stroke length: 75 Piping direction: R



*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

Dimensions (bore size: ø20)

● LCW-20
Stroke length: 30, 50 Piping direction: L
(Body mounting hole in the figure shows 30 mm stroke length)



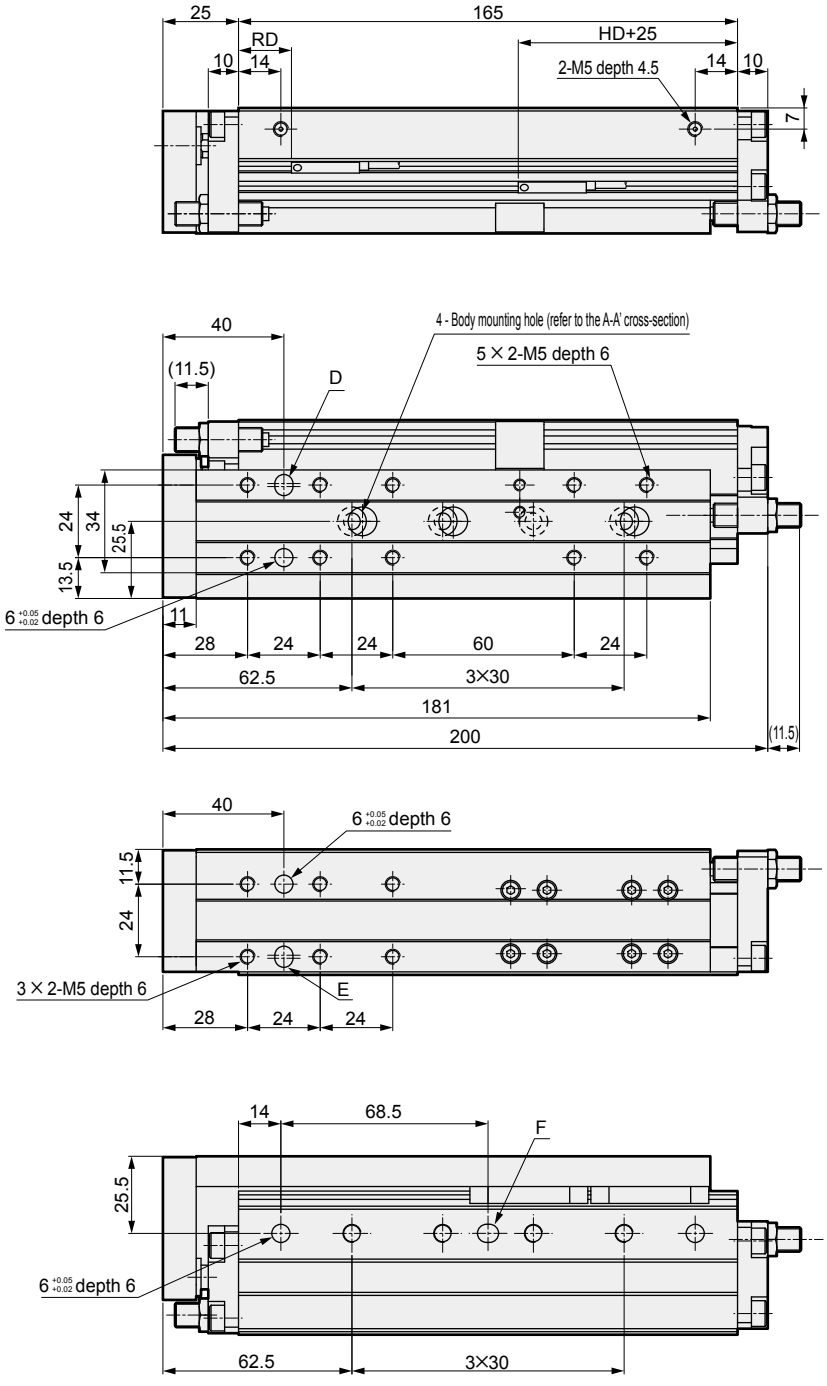
Dimensions by stroke length

Stroke length		30	50
L1		130	150
L2		111	131
L3		95	115
X		57.5	52.5
Y		33.5	60
W		44	64
n		2	3
T0/5* T2/3*	RD	17.5	
	HD	47.5	
T2/3W*	RD	19.5	
	HD	45.5	

*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

Dimensions (bore size: ø20)

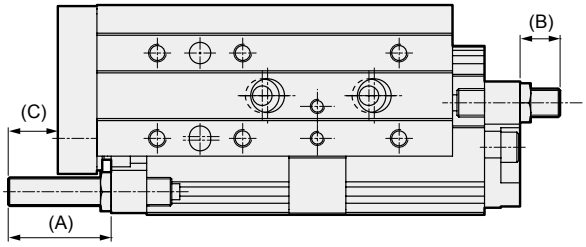
● LCW-20
Stroke length: 75 Piping direction: L



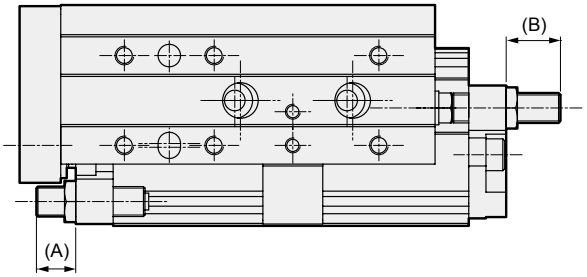
*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

Dimensions: Option

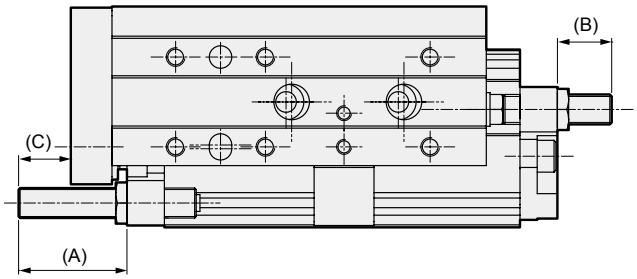
● Rubber cushion long stopper (S)



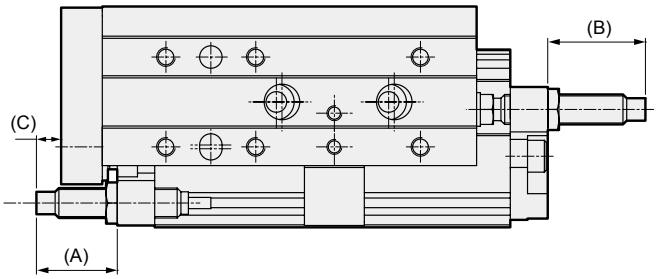
● Metal stopper with rubber cushion (M)



● Metal long stopper with rubber cushion (MS)



● Shock absorber stopper (A)



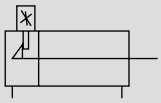
Bore size	Rubber cushion long stopper (S)			Metal stopper with rubber cushion (M)			Metal long stopper with rubber cushion (MS)			Shock absorber stopper (A)		
	A	B	C	A	B	C	A	B	C	A	B	C
ø12	31.5	13.5	18.5	12	14.5	-	31	14.5	18	11	13.5	-
ø16	28.5	10.5	15.5	9.5	11.5	-	28.5	11.5	15.5	8.5	10.5	-
ø20	28.5	11.5	13.5	10.5	15	-	28.5	15	13.5	21.5	26	6.5

MEMO

Linear slide cylinder Double acting/position locking

LCW-Q Series

●Bore size: ø12/ø16/ø20

JIS symbol 

RoHS

Specifications

Item		LCW-Q		
Bore size	mm	ø12	ø16	ø20
Actuation		Double acting		
Working fluid		Compressed air		
Max. working pressure	MPa	0.7 (≈100 psi, 7 bar)		
Min. working pressure	MPa	0.15 (≈22 psi, 1.5 bar) (*1)		
Proof pressure	MPa	1.05 (≈150 psi, 10.5 bar)		
Ambient temperature	°C	-10 (14°F) to 60 (140°F) (no freezing) (*2)		
Port size		M5		
Working piston speed	mm/s	50 to 500 (*3)		
Cushion		Rubber cushion		
Holding force	N	15.5	27.6	47.6
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)		
Allowable absorbed energy	J	* Refer to Table 3 on page 243.		

*1: Use at a pressure of 0.4 MPa and over when using a metal stopper with rubber cushion in order to allow metal contact at the end of the stroke.
*2: Operate at -5 to 60°C when using a shock absorber stopper.
*3: Keep within 50 to 200 mm/s when using a metal stopper with rubber cushion.

Stroke length

Bore size (mm)	Standard stroke length (mm)
ø12	30/50/75
ø16	
ø20	

Note: Products with stroke lengths other than the above are not available.

Adjustable stroke range

(Unit: mm)

Bore size (mm)	Standard rubber cushion		Metal with rubber cushion		Shock absorber
	Standard stroke length	Custom stroke compatible (S)	Standard stroke length (M)	Custom stroke compatible (MS)	Standard stroke length (A)
	PUSH	PUSH	PUSH	PUSH	PUSH
ø12	10	28	9	28	4
ø16	7.5	25	6	25	1.5
ø20	8	25	7.5	25	12.5

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa						
		0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø12	PUSH	17	23	34	45	57	68	79
	PULL	13	17	25	34	42	51	59
ø16	PUSH	30	40	60	80	101	121	141
	PULL	26	35	52	69	86	104	121
ø20	PUSH	47	63	94	126	157	188	220
	PULL	40	53	79	106	132	158	185

Switch specifications

Item	Reed 2-wire				Proximity 2-wire		Proximity 3-wire	
	T0H/T0V		T5H/T5V		T2H/T2V	T2WH/T2WV	T3H/T3V	T3WH/T3WV
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection		Dedicated for programmable controller		For programmable controller, relay	
Output method	-		-		-		NPN output	
Power supply voltage	-		-		-		10 to 28 VDC	
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 20 mA		100 mA or less	50 mA or less
Indicator lamp	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	0 mA				1 mA or less		10 µA or less	
Weight g	1 m:18 3 m:49 5 m:80							

Item	Proximity 2-wire	Proximity 3-wire	Proximity 2-wire		Proximity 3-wire	
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3YH/F3YV
Applications	Dedicated for programmable controller	For programmable controller, relay	Dedicated for programmable controller		For programmable controller, relay	
Output method	-	NPN output	-		NPN output	
Power supply voltage	-	10 to 28 VDC	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20 mA	50 mA or less	5 to 20 mA		50 mA or less	
Indicator lamp	Red LED (Lit when ON)		LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	1 mA or less	10 µA or less	1 mA or less		10 µA or less	
Weight g	1 m:10 3 m:29					

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.
*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.
*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*4 : The F type switch uses a bend-resistant lead wire.

Cylinder weight

● Position locking (Unit: g)

Bore size (mm)	Stroke length (mm)		
	30	50	75
ø12	300	440	450
ø16	450	460	690
ø20	770	800	1,160

● Stopper additional part (Unit: g)

Bore size (mm)	Stopper code		
	S	MS	A
ø12	3	3	0
ø16	3	3	0
ø20	5	5	14

For stopper code M, the weight is the same as the position locking.

How to order

● Without switch (built-in magnet for switch)

LCW-Q - 16 - 30 - H R ——— S

● With switch (built-in magnet for switch)

LCW-Q - 16 - 30 - H R - T2H - R - S

Ⓐ Bore size

Ⓑ Stroke length

Ⓒ Position locking mechanism

Ⓓ Piping direction

Ⓔ Switch model No.

Ⓕ Switch quantity

Ⓖ Stopper

Code	Description
Ⓐ Bore size (mm)	
12	ø12
16	ø16
20	ø20
Ⓑ Stroke length (mm)	
30	30 mm
50	50 mm
75	75 mm
Ⓒ Position locking mechanism	
H	Head side position locking mechanism
Ⓓ Piping direction	
R	Right from rod side
L	Left from rod side

Ⓔ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire	Bore size ø12	Bore size ø16	Bore size ø20
-	**F2S***	Proximity		●	1-color display	2-wire	●		
-	**F3S***			●		3-wire			
F2H*	**F2V***			●		2-wire			
F3H*	**F3V***			●		3-wire			
F2YH*	**F2YV***			●	2-color display	2-wire			
F3YH*	**F3YV***			●		3-wire			
T0H*	**T0V***	Reed	●	●	1-color display	2-wire		●	●
T5H*	**T5V***		●	●	no indicator lamp				
T2H*	**T2V***	Proximity		●	1-color display	2-wire			
T3H*	**T3V***			●		3-wire			
T2WH*	**T2WV***			●	2-color display	2-wire			
T3WH*	**T3WV***			●		3-wire			

* Lead wire length			
Blank	1 m (standard)	●	
3	3 m (option)	●	
5	5 m (option)		●

Ⓕ Switch quantity	
R	1 on rod side
H	1 on head side
D	2

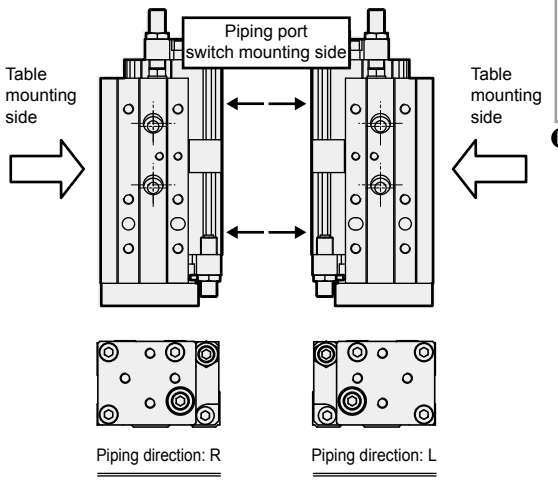
Ⓖ Stopper	
Blank	Cushion stopper
S	Rubber cushion long stopper (custom stroke compatible)
M	Metal stopper with rubber cushion
MS	Long metal stopper with rubber cushion (custom stroke compatible)
A	Shock absorber stopper

[Example of model No.]

LCW-Q-16-30-HR-T2H-D-A

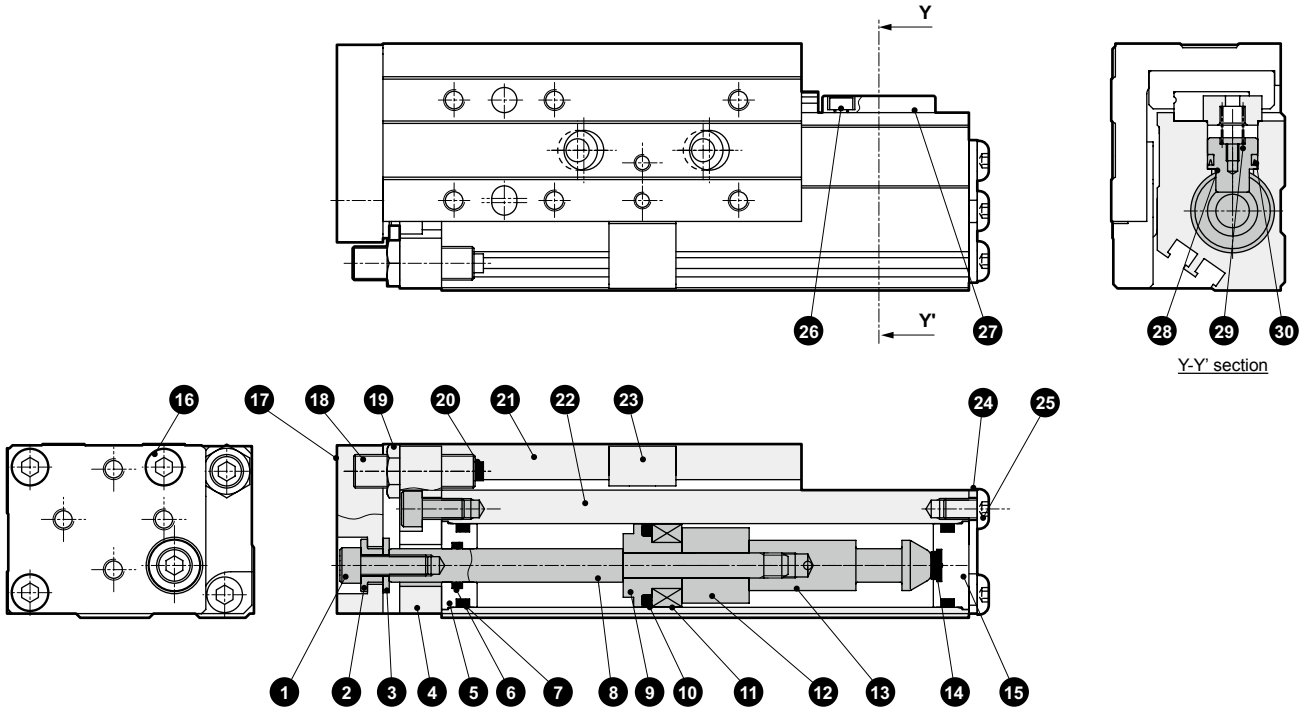
Model: Linear slide cylinder/position locking

Ⓐ Bore size : ø16
Ⓑ Stroke length : 30 mm
Ⓒ Position locking mechanism : Head side position locking mechanism
Ⓓ Piping direction : Right from rod side
Ⓔ Switch model No. : Proximity switch T2H, lead wire 1 m
Ⓕ Switch quantity : 2
Ⓖ Stopper : Shock absorber stopper



* Refer to page 207 for how to order discrete items.

Internal structure and parts list



Parts list

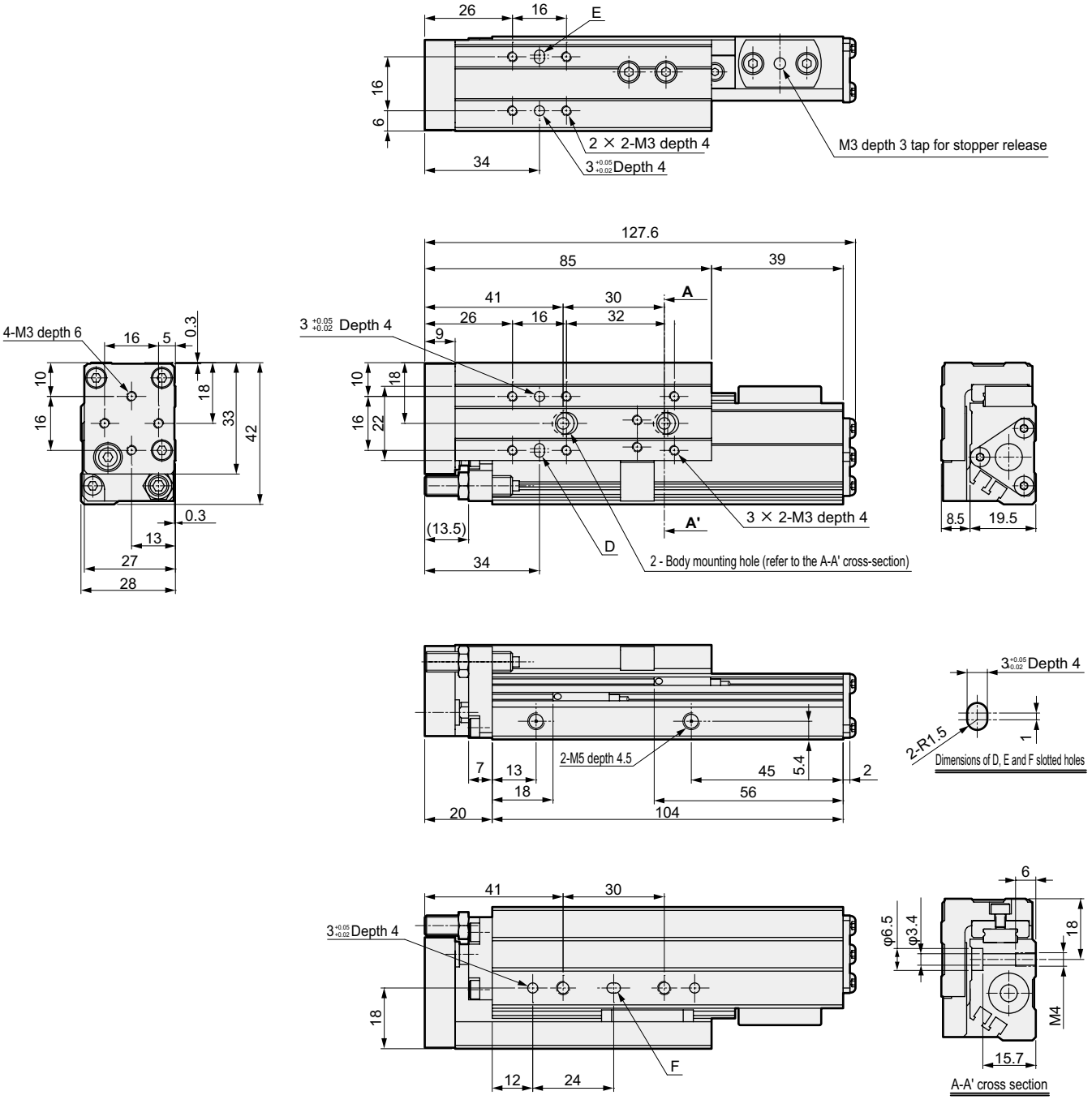
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Hexagon socket head cap screw	Steel	Zinc chromate	16	Hexagon socket head cap screw	Steel	Zinc chromate
2	Floating bush A	Stainless steel		17	End plate	Aluminum alloy	Hard alumite
3	Floating bush B	Stainless steel		18	Stopper bolt	Steel	Nickeling
4	Cover holder	Aluminum alloy	Alumite	19	Hexagon nut	Steel	Nickeling
5	Rod cover	Aluminum alloy	Hard alumite	20	Cushion rubber	Urethane rubber	
6	Rod packing	Nitrile rubber		21	Table	Aluminum alloy	Alumite
7	O-ring	Nitrile rubber		22	Body	Aluminum alloy	Hard alumite
8	Piston rod	Stainless steel		23	Stopper block	Steel	Nickeling
9	Piston	Aluminum alloy	Chromate	24	Cover holder	Stainless steel	
10	Piston packing	Nitrile rubber		25	Hexagon socket button head bolt	Steel	Zinc chromate
11	Magnet	-		26	Hexagon socket head cap screw	Steel	Zinc chromate
12	Collar	Aluminum alloy	Chromate	27	Stopper cover	Stainless steel	
13	Sleeve	Steel	Nitriding	28	Stopper piston	Steel	Nitriding
14	Cushion rubber	Urethane rubber		29	Coil spring	Steel	
15	Head cover	Aluminum alloy	Chromate	30	Stopper packing	Nitrile rubber	

Repair parts list

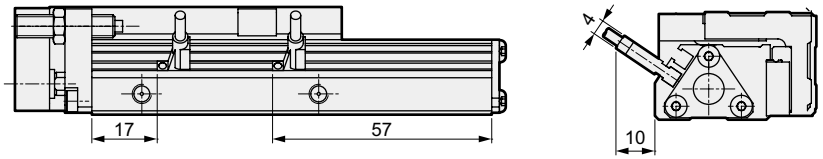
Bore size (mm)	Kit No.	Repair parts No.
ø12	LCW-Q-12HK	⑥⑦⑩⑭㉔
ø16	LCW-Q-16HK	
ø20	LCW-Q-20HK	

Dimensions (bore size: ø12)

● LCW-Q-12
Stroke length: 30 Piping direction: R



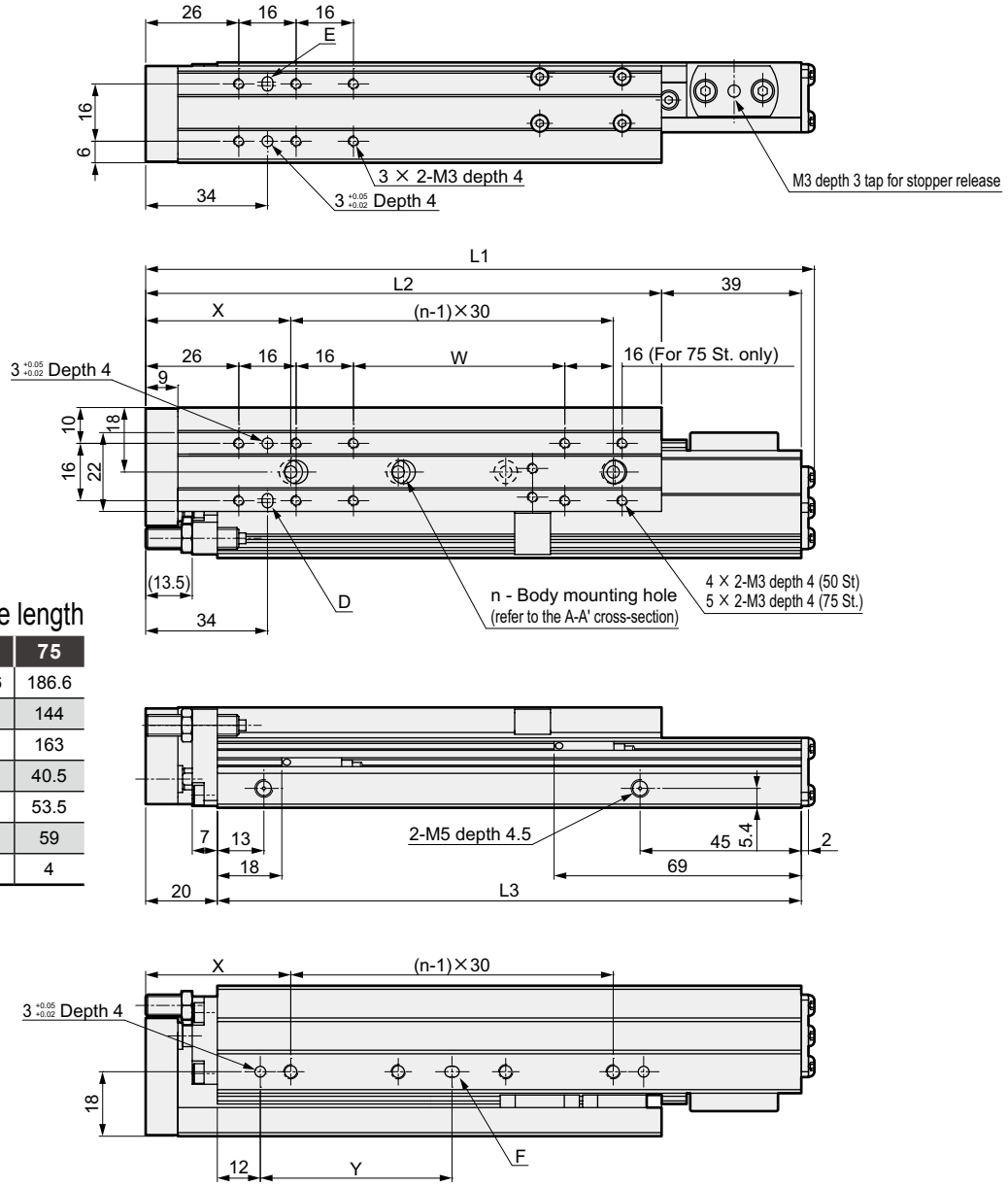
● Dimensions of protruding section when the F2S or F3S cylinder switch is mounted



*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.
*3: Mount as shown in the figure for F2S and F3S switch specifications.

Dimensions (bore size: ø12)

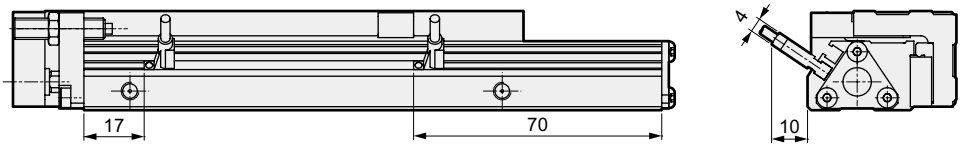
● LCW-Q-12
Stroke length: 50, 75 Piping direction: R
(Body mounting hole in the figure shows 75 mm stroke length)



Dimensions by stroke length

Stroke length	50	75
L1	161.6	186.6
L2	119	144
L3	138	163
X	43	40.5
Y	50	53.5
W	50	59
n	3	4

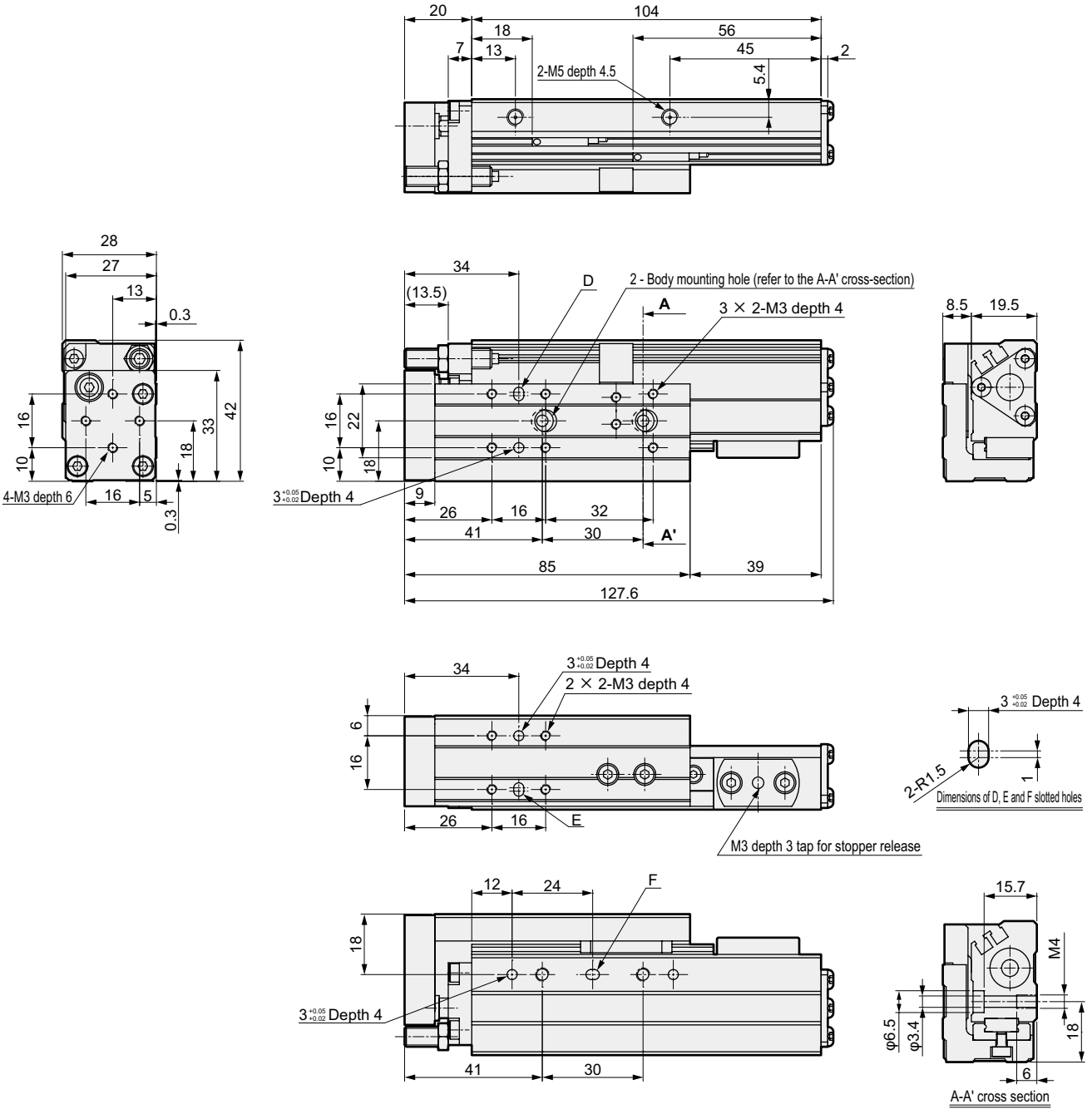
● Dimensions of protruding section when the F2S or F3S cylinder switch is mounted



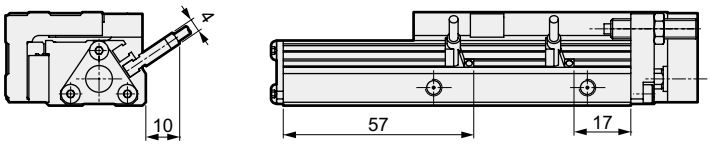
*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.
*3: Mount as shown in the figure for F2S and F3S switch specifications.

Dimensions (bore size: ø12)

● LCW-Q-12
Stroke length: 30 Piping direction: L



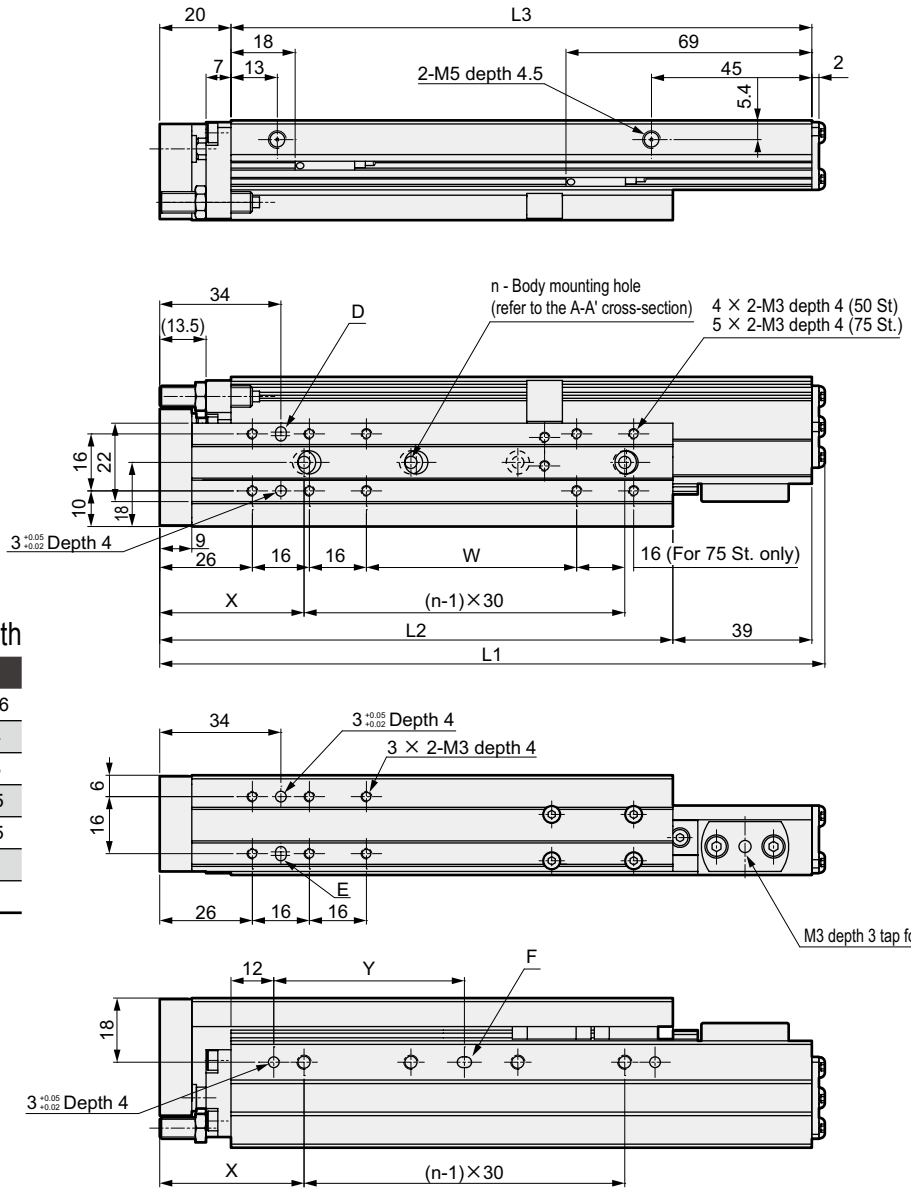
● Dimensions of protruding section when the F2S or F3S cylinder switch is mounted



*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.
*3: Mount as shown in the figure for F2S and F3S switch specifications.

Dimensions (bore size: ø12)

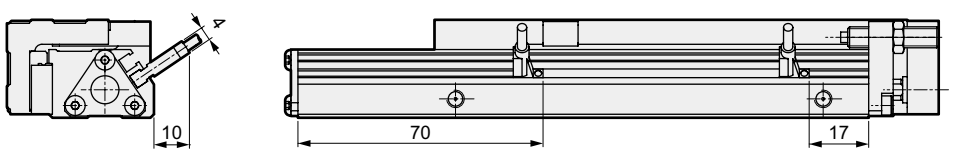
● LCW-Q-12
Stroke length: 50, 75 Piping direction: L
(Body mounting hole in the figure shows 75 mm stroke length)



Dimensions by stroke length

Stroke length	50	75
L1	161.6	186.6
L2	119	144
L3	138	163
X	43	40.5
Y	50	53.5
W	50	59
n	3	4

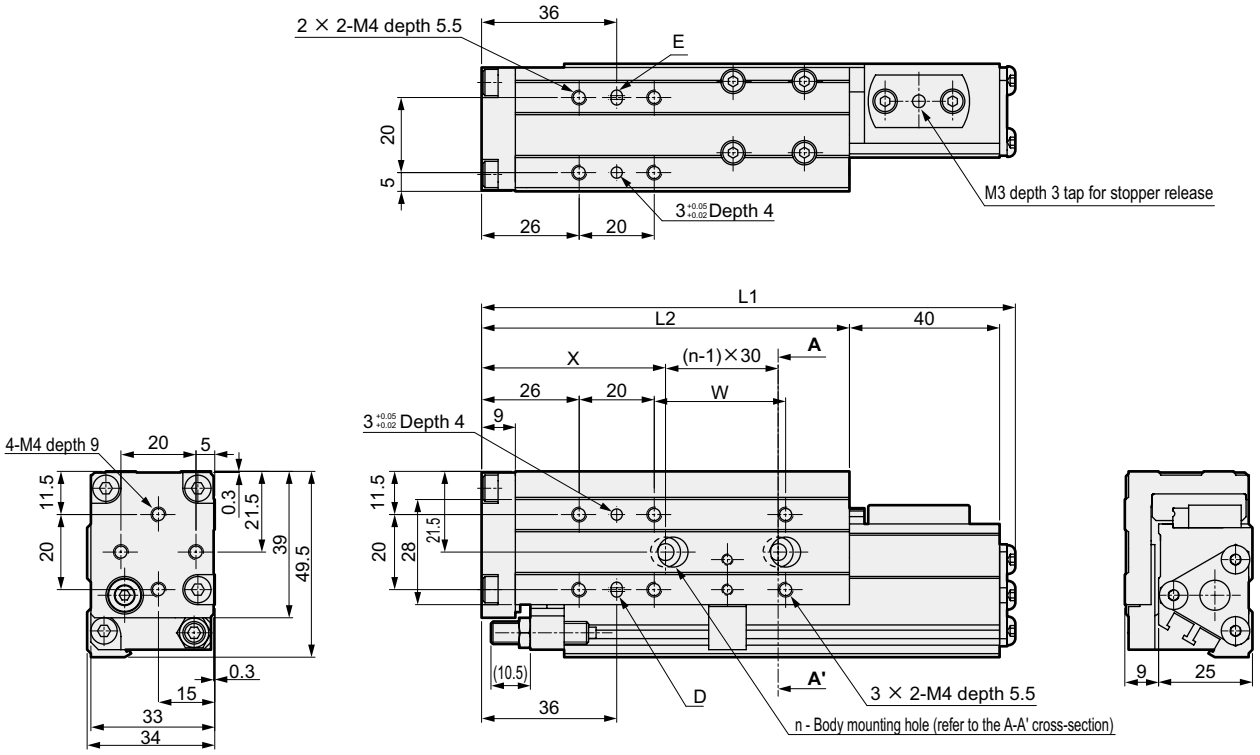
● Dimensions of protruding section when the F2S or F3S cylinder switch is mounted



*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.
*3: Mount as shown in the figure for F2S and F3S switch specifications.

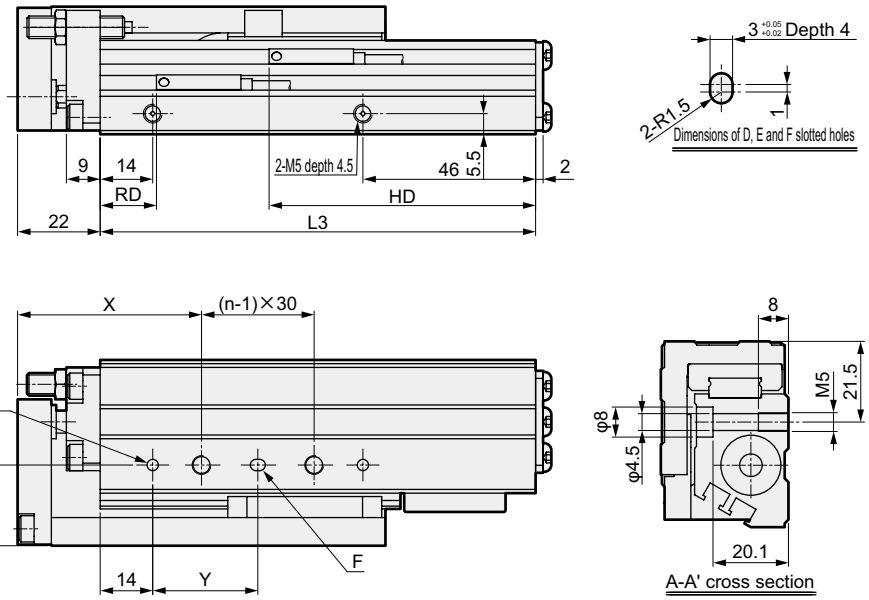
Dimensions (bore size: ø16)

● LCW-Q-16
Stroke length: 30, 50 Piping direction: R
(Body mounting hole in the figure shows 30 mm stroke length)



Dimensions by stroke length

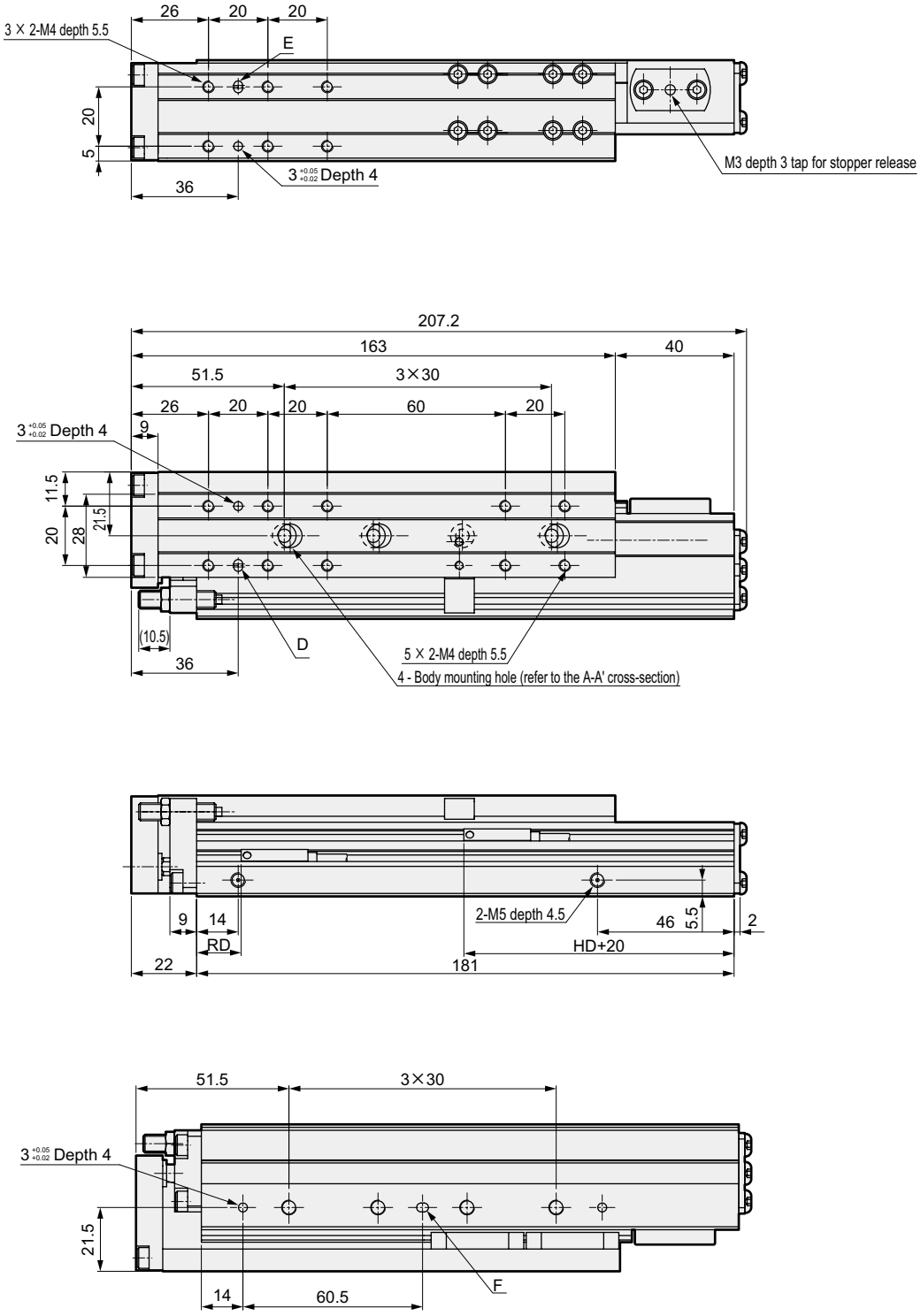
Stroke length		30	50
L1		142.2	162.2
L2		98	118
L3		116	136
X		49	44
Y		28	50
W		35	55
n		2	3
T0/5* T2/3*	RD	15	
	HD	71	
T2/3W*	RD	17	
	HD	69	



*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

Dimensions (bore size: ø16)

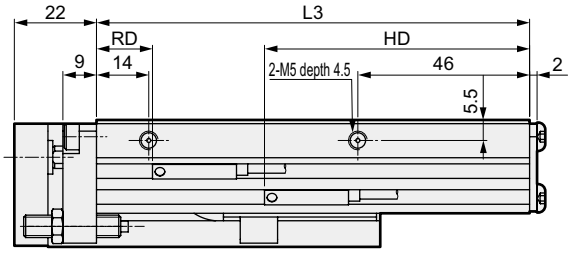
● LCW-Q-16
Stroke length: 75 Piping direction: R

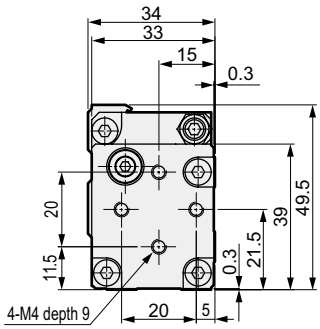


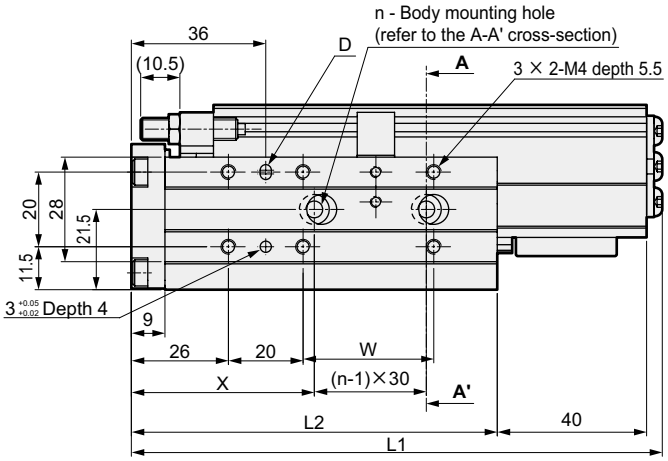
*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

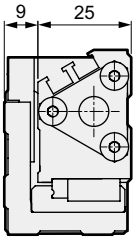
Dimensions (bore size: ø16)

● LCW-Q-16
Stroke length: 30, 50 Piping direction: L
(Body mounting hole in the figure shows 30 mm stroke length)



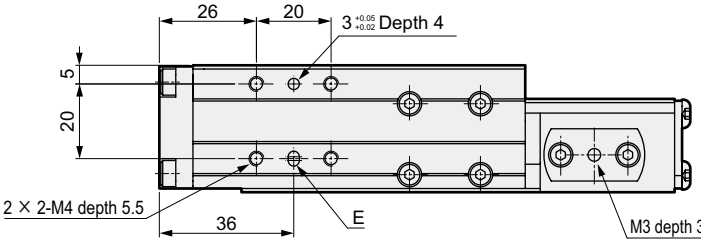


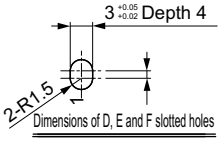


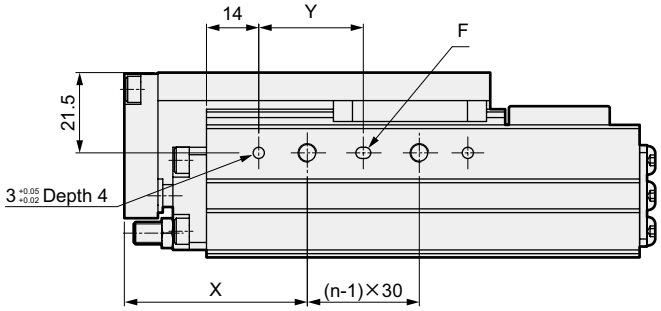


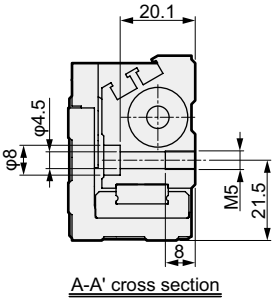
Dimensions by stroke length

Stroke length		30	50
L1		142.2	162.2
L2		98	118
L3		116	136
X		49	44
Y		28	50
W		35	55
n		2	3
T0/5* T2/3*	RD	15	
	HD	71	
T2/3W*	RD	17	
	HD	69	





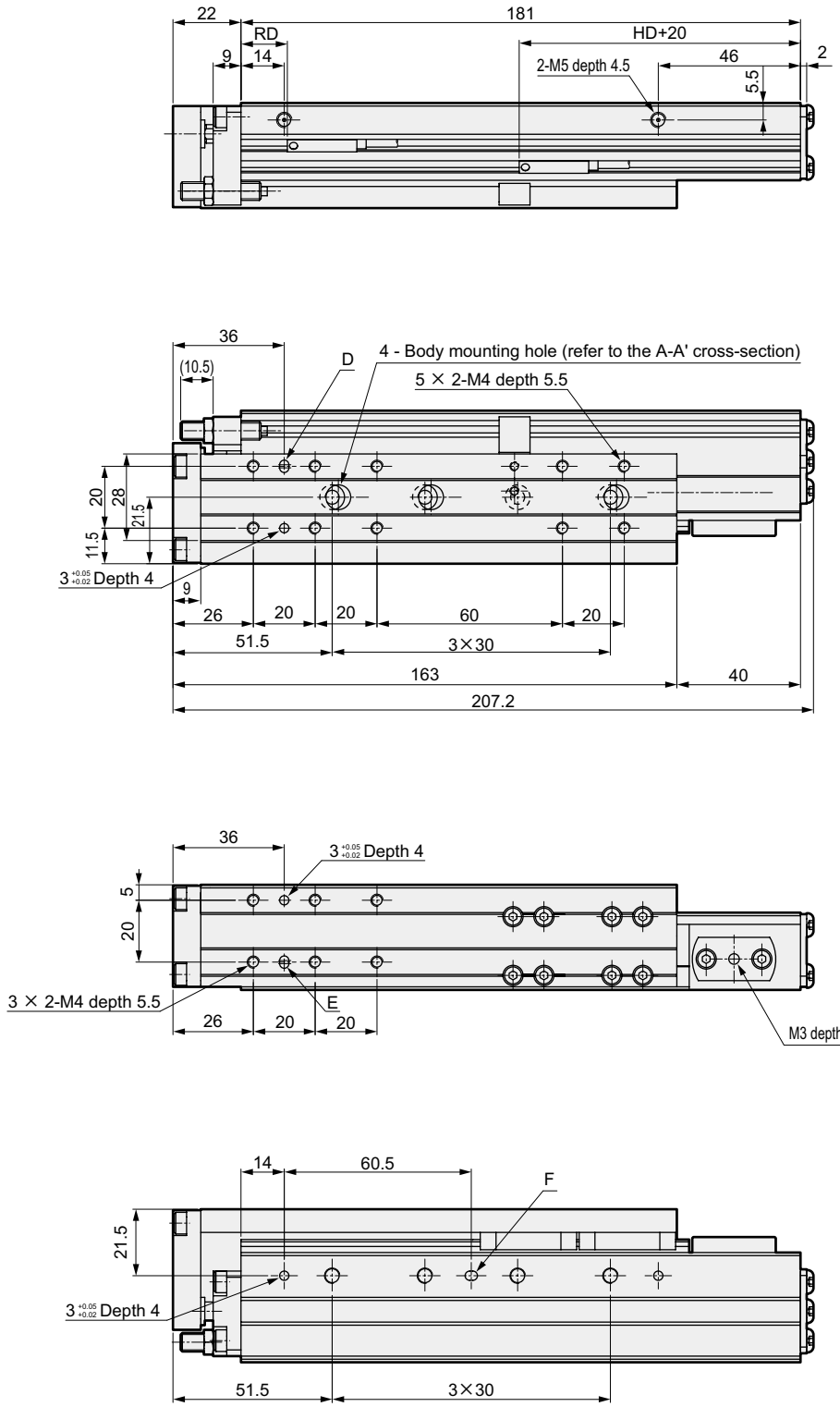




*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

Dimensions (bore size: ø16)

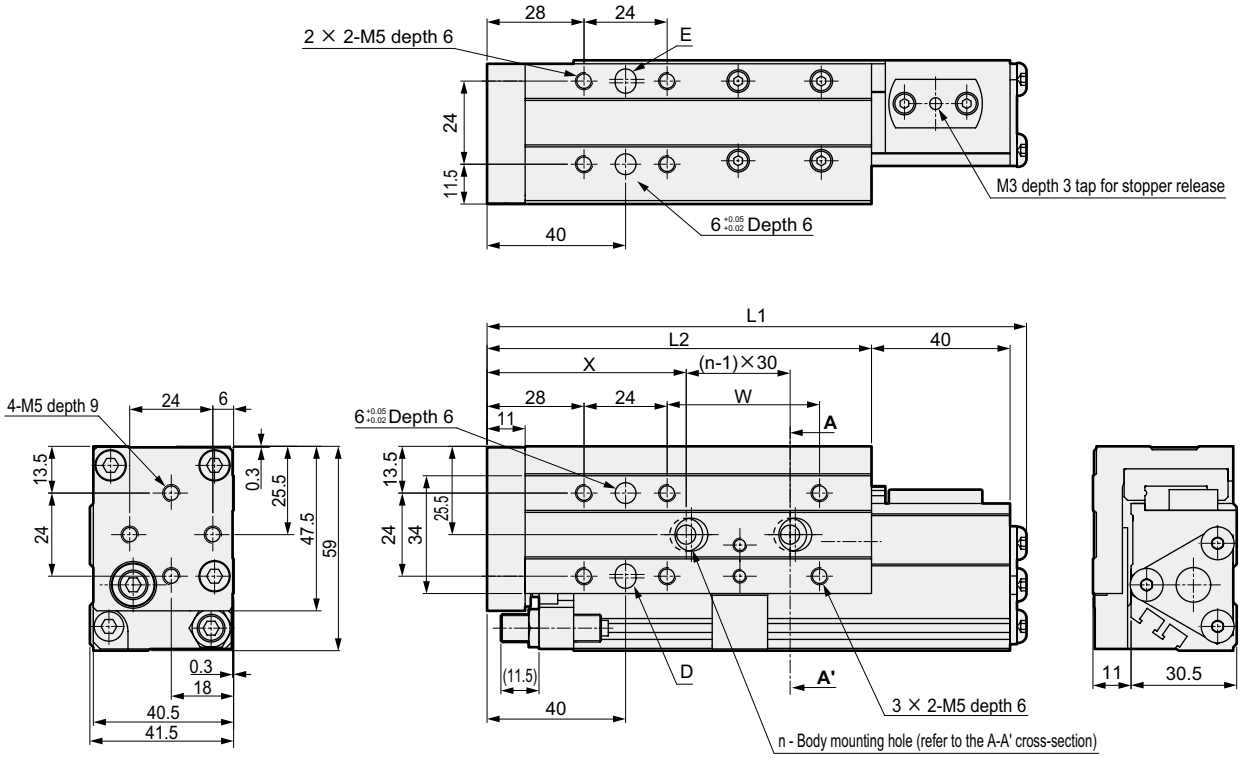
● LCW-Q-16
Stroke length: 75 Piping direction: L



*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

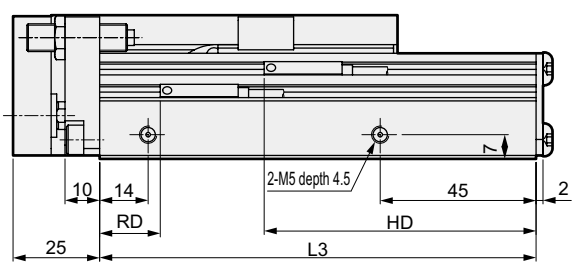
Dimensions (bore size: ø20)

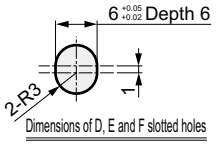
● LCW-Q-20
Stroke length: 30, 50 Piping direction: R
(Body mounting hole in the figure shows 30 mm stroke length)

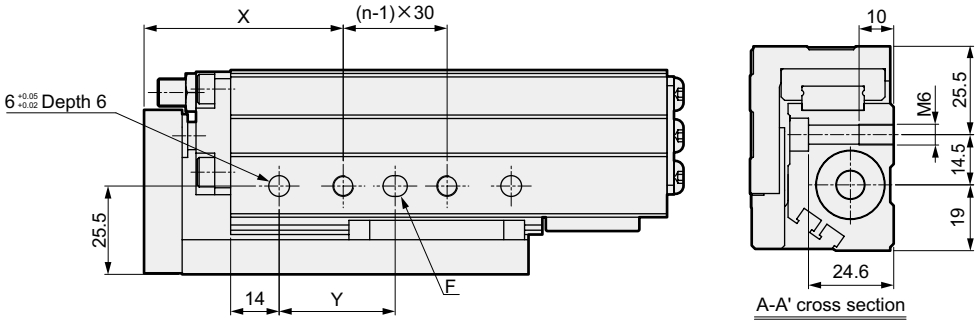


Dimensions by stroke length

Stroke length		30	50
L1		155.8	175.8
L2		111	131
L3		126	146
X		57.5	52.5
Y		33.5	60
W		44	64
n		2	3
T0/5* T2/3*	RD	17.5	
	HD	78.5	
T2/3W*	RD	19.5	
	HD	76.5	



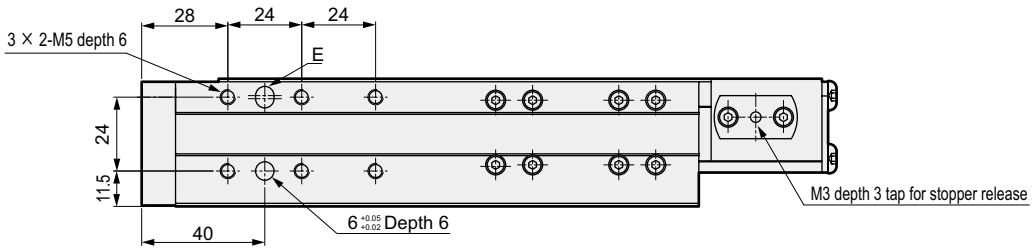


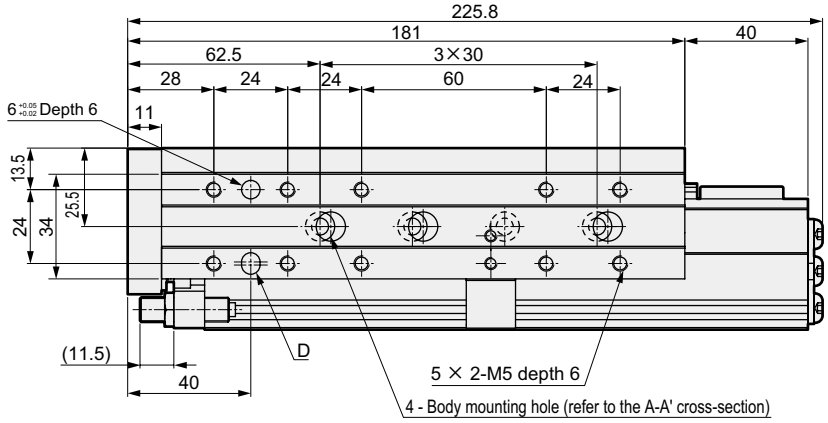


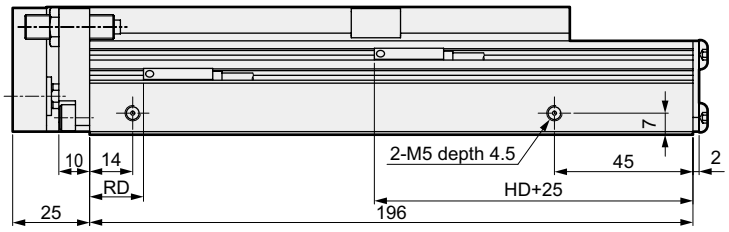
*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

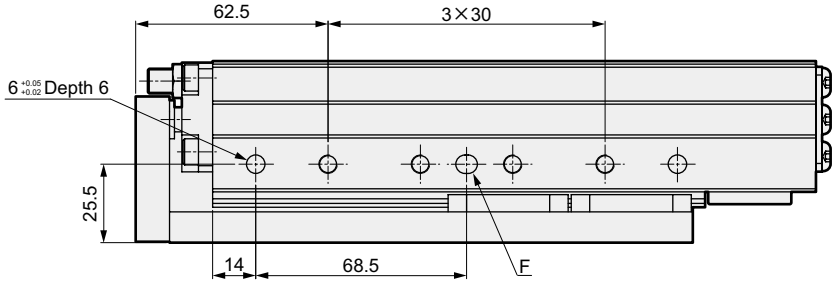
Dimensions (bore size: ø20)

● LCW-Q-20
Stroke length: 75 Piping direction: R





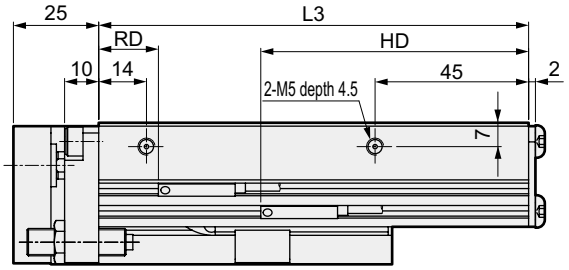


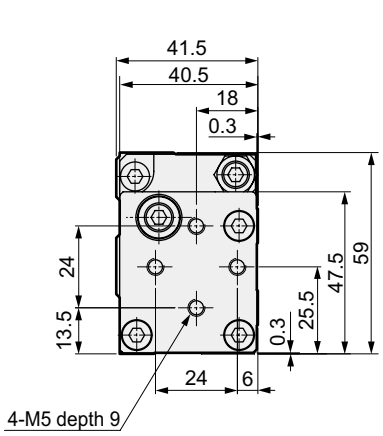


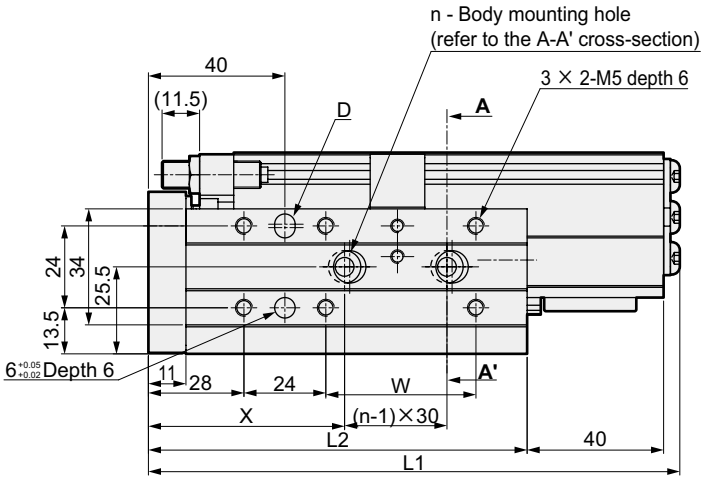
*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

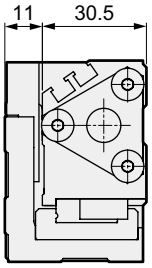
Dimensions (bore size: ø20)

● LCW-Q-20
Stroke length: 30, 50 Piping direction: L
(Body mounting hole in the figure shows 30 mm stroke length)



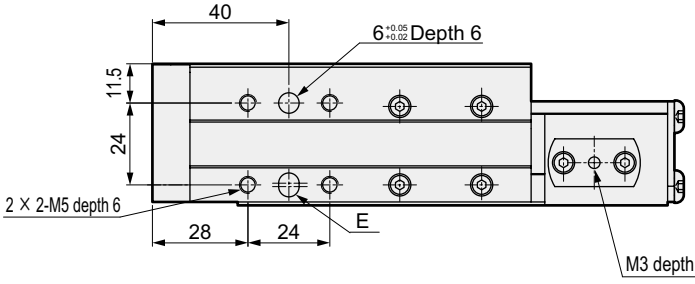


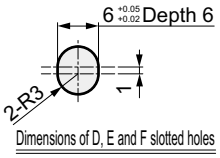


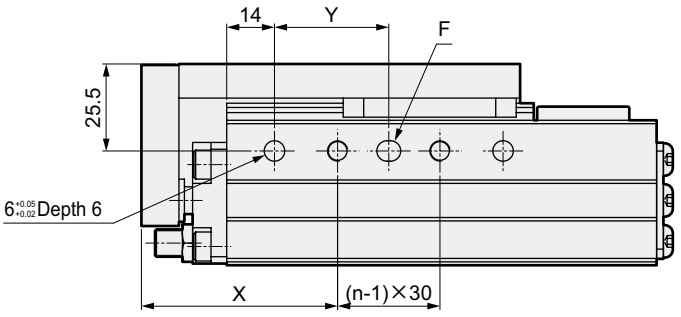


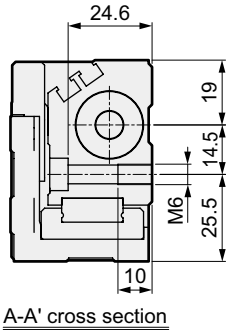
Dimensions by stroke length

Stroke length		30	50
L1		155.8	175.8
L2		111	131
L3		126	146
X		57.5	52.5
Y		33.5	60
W		44	64
n		2	3
T0/5* T2/3*	RD	17.5	
	HD	78.5	
T2/3W*	RD	19.5	
	HD	76.5	





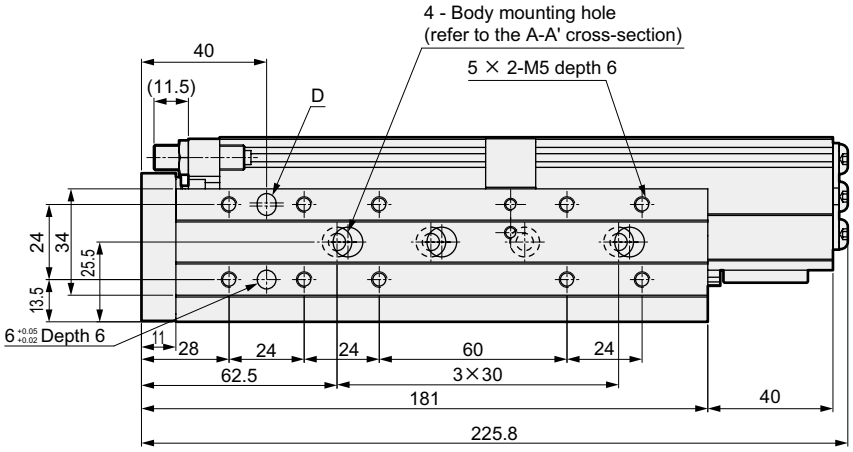


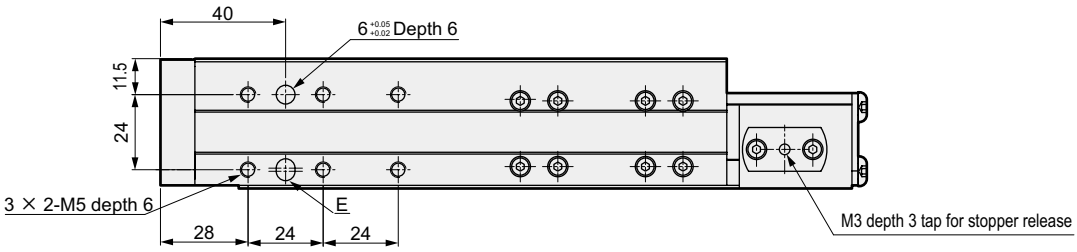


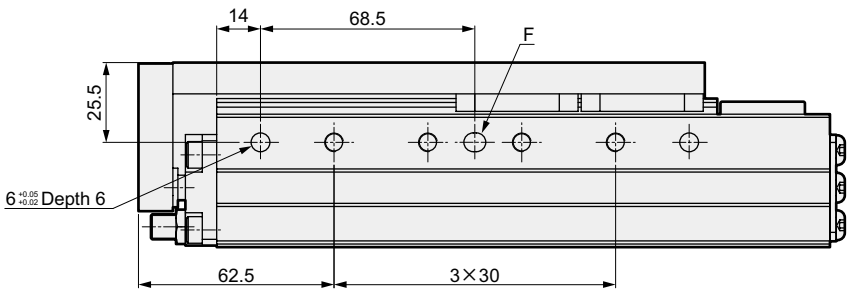
*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

Dimensions (bore size: ø20)

● LCW-Q-20
Stroke length: 75 Piping direction: L



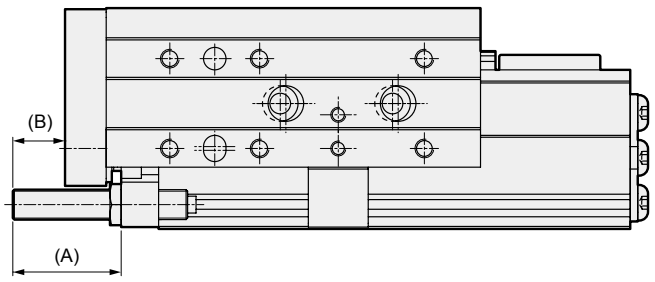




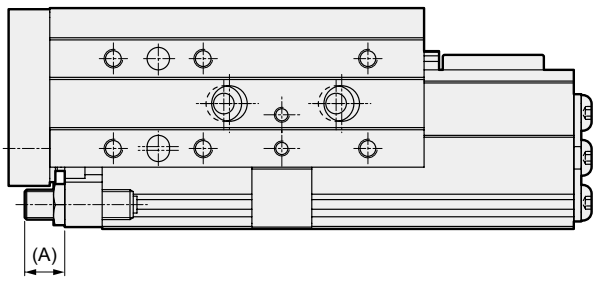
*1: When using a positioning hole, use a pin of dimensions that do not require press fitting. The recommended tolerance of a pin is JIS tolerance m6 or less.
*2: Mount the rod side switch for the radial lead wire, as shown in the figure.

Dimensions: Option

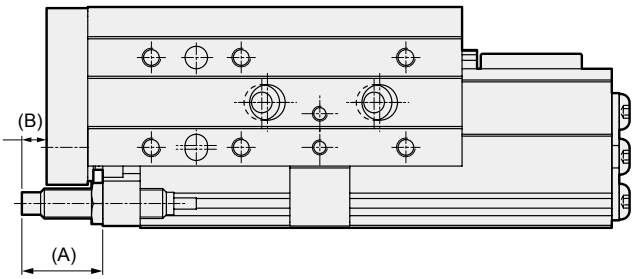
● Rubber cushion long stopper (S)
Metal long stopper with rubber cushion (MS)



● Metal stopper with rubber cushion (M)



● Shock absorber stopper (A)



Bore size	Rubber cushion long stopper (S)		Metal stopper with rubber cushion (M)		Metal long stopper with rubber cushion (MS)		Shock absorber stopper (A)	
	A	B	A	B	A	B	A	B
ø12	31.5	18.5	12	-	31	18	11	-
ø16	28.5	15.5	9.5	-	28.5	15.5	8.5	-
ø20	28.5	13.5	10.5	-	28.5	13.5	21.5	6.5