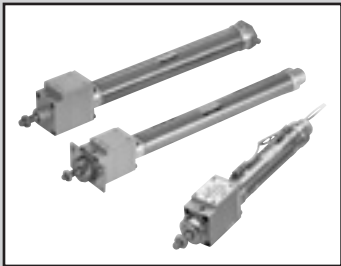


LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



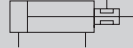
Brake cylinder Double acting, double acting/with valve for brake

ULK/ULK-V Series

● Bore size: ø20/ø25/ø32/ø40

JIS symbol

● Double acting



RoHS



Specifications

Item		ULK				ULK-V			
Bore size mm		ø20	ø25	ø32	ø40	ø20	ø25	ø32	ø40
Actuation		Double acting				Double acting/with valve for brake			
Working fluid		Compressed air							
Max. working pressure MPa		1.0				Cylinder section: 1.0 Brake section: 0.6			
Min. working	Brake section MPa	0.3							
pressure	Cylinder section MPa	0.15							
Proof pressure MPa		1.6							
Ambient temperature°C		-10 to 60 (no freezing)				-10 to 50 (no freezing)			
Port size	Brake section	Rc1/8							
	Cylinder	Rc1/8							
Stroke tolerance mm		^{+2.0} ₀ (up to 200)				^{+2.4} ₀ (201 up)			
Working piston speedmm/s		50 to 500							
Cushion		Rubber cushion							
Lubrication		Not required (use turbine oil class 1 ISO VG32 if lubrication is necessary)							
Holding force N		251	393	643	1005	251	393	643	1005
Allowable absorbed energy J		0.166	0.308	0.424	0.639	0.166	0.308	0.424	0.639

Note: For details of valves (P5136 Series), refer to "Pneumatic Valves" CB-023SA.

Electrical specification for brake valve

Item	ULK-V- Bore size -VALVE-KIT-		Voltage
Rated voltage (V)	100 AC (50/60Hz)	200 AC (50/60Hz)	24 DC
Starting current (A)	0.056/0.044	0.034/0.026	0.075
Holding current (A)	0.028/0.022	0.017/0.013	
Power consumption (W)	1.8/1.4	2.1/1.6	1.8
Voltage fluctuation range	±10%		
Insulation class	Class B molded coil		

*1: 100/200 VAC coil is available for 110/220 VAC (60 Hz).

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø20	25/50 /75/100/150 200/250/300	700	5
ø25			
ø32			
ø40			

*1: The custom stroke is available in 1 mm increments.

*2: The min. stroke varies depending on switch mounting method. Refer to the following table.

Min. stroke with switch

Switch quantity	1						2						3					
	Proximity			Reed			Proximity			Reed			Proximity			Reed		
	T2,T3	T1,T*Y	T*W	T0,T5	T8		T2,T3	T1,T*Y	T*W	T0,T5	T8		T2,T3	T1,T*Y	T*W	T0,T5	T8	
ø20	10						25	35	30	25	35		50	55	55	50	55	
ø25	10						25	35	30	25	35		50	55	55	50	55	
ø32	10						25	35	30	25	35		50	55	55	50	55	
ø40	10						25	35	30	25	35		50	55	55	50	55	

*1: Up to 3 switches can be mounted.

Switch specifications

● 1-color/2-color LED

Item	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire					
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V	
Applications	Programmable controller For relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		Programmable controller, relay/C circuit (no indicator lamp), for serial connection		For programmable controller, relay	
Output method	-				NPN output	PNP output	NPN output	NPN output	-					
Pwr. supp. V.	-				10 to 28 VDC				-					
Load voltage	85 to 265 VAC	10 to 30 VDC	24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC
Load current	5 to 100mA	5 to 20 mA (*3)		100 mA or less		50 mA or less		5 to 50mA	7 to 20mA	50 mA or less	20 mA or less	5 to 50mA	7 to 20mA	7 to 10mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		No indicator lamp		LED (Lit when ON)	
Leakage current	1 mA or less with 100 VAC, 2 mA or less with 200 VAC	1 mA or less		10 µA or less				0mA						
Weight g	1 m: 33	1 m: 18	1 m: 33	1 m: 18	1 m: 18		1 m: 33	1 m: 18	1 m: 18		1 m: 33		1 m: 33	
	3 m: 87	3 m: 49	3 m: 87	3 m: 49	3 m: 49		3 m: 87	3 m: 49	3 m: 49		3 m: 87		3 m: 87	
	5 m: 142	5 m: 80	5 m: 142	5 m: 80	5 m: 80		5 m: 142	5 m: 80	5 m: 80		5 m: 142		5 m: 142	

*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)

Cylinder weight

● ULK

Item/mounting	STROKE = 0Product weight when mm						Switch weight	SwitchH Rail + band weight	Additional weight per S = 10 mm
	Basic (00)	Axial foot (LB)	Flange (FA)	Clevis (CA)	Clevis (CC)	Trunnion (TA/TB)			
Bore size (mm)									
ø20	0.47	0.62	0.53	0.62	0.48	0.52	Refer to the weight in the Use this as a reference.	0.005	0.01
ø25	0.84	1.10	0.99	1.08	0.84	0.94		0.005	0.01
ø32	0.88	1.14	1.03	1.12	0.88	0.98		0.009	0.02
ø40	1.47	1.73	1.62	1.71	1.49	1.63		0.009	0.02

● ULK-V (with valve for brake)

Item/mounting	STROKE = 0Product weight when mm						Switch weight	SwitchH Rail + band weight	Additional weight per S = 10 mm
	Basic (00)	Axial foot (LB)	Flange (FA)	Clevis (CA)	Clevis (CC)	Trunnion (TA/TB)			
Bore size (mm)									
ø20	0.53	0.68	0.59	0.68	0.54	0.58	Refer to the weight in the Use this as a reference.	0.005	0.01
ø25	0.90	1.16	1.05	1.14	0.90	1.00		0.005	0.01
ø32	0.94	1.20	1.09	1.18	0.94	1.04		0.009	0.02
ø40	1.53	1.79	1.68	1.77	1.55	1.69		0.009	0.02

Theoretical thrust table

Bore size (mm)	Operating direction	Working pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	47.1	62.8	94.2	1.26 x 10 ²	1.57 x 10 ²	1.88 x 10 ²	2.20 x 10 ²	2.51 x 10 ²	2.83 x 10 ²	3.14 x 10 ²
	Pull	35.3	47.1	70.7	94.2	1.18 x 10 ²	1.41 x 10 ²	1.65 x 10 ²	1.88 x 10 ²	2.12 x 10 ²	2.36 x 10 ²
ø25	Push	73.6	98.2	1.47 x 10 ²	1.96 x 10 ²	2.45 x 10 ²	2.95 x 10 ²	3.44 x 10 ²	3.93 x 10 ²	4.42 x 10 ²	4.91 x 10 ²
	Pull	56.7	75.6	1.13 x 10 ²	1.51 x 10 ²	1.89 x 10 ²	2.27 x 10 ²	2.64 x 10 ²	3.02 x 10 ²	3.40 x 10 ²	3.78 x 10 ²
ø32	Push	1.21 x 10 ²	1.61 x 10 ²	2.41 x 10 ²	3.22 x 10 ²	4.02 x 10 ²	4.83 x 10 ²	5.63 x 10 ²	6.43 x 10 ²	7.24 x 10 ²	8.04 x 10 ²
	Pull	1.04 x 10 ²	1.38 x 10 ²	2.07 x 10 ²	2.76 x 10 ²	3.46 x 10 ²	4.15 x 10 ²	4.84 x 10 ²	5.53 x 10 ²	6.22 x 10 ²	6.91 x 10 ²
ø40	Push	1.88 x 10 ²	2.51 x 10 ²	3.77 x 10 ²	5.03 x 10 ²	6.28 x 10 ²	7.54 x 10 ²	8.80 x 10 ²	1.01 x 10 ³	1.13 x 10 ³	1.26 x 10 ³
	Pull	1.65 x 10 ²	2.21 x 10 ²	3.31 x 10 ²	4.41 x 10 ²	5.51 x 10 ²	6.62 x 10 ²	7.72 x 10 ²	8.82 x 10 ²	9.92 x 10 ²	1.10 x 10 ³

ULK/ULK-V Series

How to order

Without valve

Without switch (built-in magnet for switch)

ULK - 00 - 20 - 100 - V I

With switch (built-in magnet for switch)

ULK - 00 - 20 - 100 - T0H - R - V I

With valve for brake

Without switch (built-in magnet for switch)

ULK-V - 00 - 20 - 100 - 1 - V I

With switch (built-in magnet for switch)

ULK-V - 00 - 20 - 100 - 1 - T0H - R - V I

A Model No.

B Mounting

C Bore size

D Stroke

E Valve voltage

F Switch model No.

⚠ Precautions for model No. selection

- *1 : Refer to page 680 for the min. stroke with switch.
- *2 : The stroke will be 25 mm and over with bellows "J". Contact CKD when stroke is shorter than 25 mm.
- *3 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.
- *4 : "I" and "Y" cannot be selected together.
- *5 : Up to three switches can be installed. If four or more switches are required, switch mounting brackets for the extra switches must be prepared separately.
- *6 : Refer to Ending Page 85 for custom specifications of rod end form.

[Example of model No.]

ULK-V-LB-20-100-1-T0H-R-JI

Model: Brake cylinder

- A** Model No. : Double acting/With valve for brake
- B** Mounting : Axial foot
- C** Bore size : ø20 mm
- D** Stroke : 100 mm
- E** Valve voltage : 100 VAC (50/60 Hz)
- F** Switch model No. : Reed T0H switch
- G** Switch quantity : 1 on rod side
- H** Option : Bellows material, max. ambient temperature 100°C, instantaneous max. temperature 200°C
- I** Accessory : Rod eye

- G** Switch quantity *5
- H** Option *3
- I** Accessory *4

A Model No.

Double acting

Double acting/
with valve -Y

Code	Description	Double acting	Double acting/ with valve -Y
B Mounting			
00	Basic	●	●
LB	Axial foot	●	●
FA	Rod side flange	●	●
CA	Eye bracket	●	●
CC	Eye bracket integrated	●	●
CC1	Eye bracket bush pressfit	●	●
TA	Rod side trunnion	●	●
TB	Head side trunnion	●	●

C Bore size (mm)			
20	ø20	●	●
25	ø25	●	●
32	ø32	●	●
40	ø40	●	●

D Stroke (mm)			
Bore size	Stroke *1	Custom stroke	
ø20	5 to 700	In 1 mm increments	
ø25	5 to 700		
ø32	5 to 700		
ø40	5 to 700		

E Valve voltage			
1	100 VAC (50/60 Hz)	●	●
2	200 VAC (50/60 Hz)	●	●
3	24 VDC	●	●

F Switch model No.						
Straight lead wire	L-shaped lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T8H*	T8V*		●	●	1-color LED	
T1H*	T1V*	Proximity	●	●	1-color LED	2-wire
T2H*	T2V*		●	●	1-color LED	2-wire
T3H*	T3V*		●	●		3-wire
T2WH*	T2WV*		●	●	2-color LED	2-wire
T2YH*	T2YV*		●	●		3-wire
T3WH*	T3WV*		●	●		
T3YH*	T3YV*		●	●	1-color LED off-delay	3-wire
T3PH*	T3PV*		●	●		2-wire
T2JH*	T2JV*		●	●		

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

G Switch quantity			
R	1 on rod side	●	●
H	1 on head side	●	●
D	2	●	●
T	3	●	●

H Option				
		Max. ambient temperature	instantaneous max. temp	
J	Bellows	100°C	200°C	●
L	Bellows	250°C	400°C	●
M	Piston rod material (stainless steel)			●
V	Boss cutoff			●

I Accessory			
I	Rod eye	●	●
Y	Rod clevis (pin, washer, split pin attached)	●	●
B2	Clevis bracket (pin, snap ring attached)	●	●

How to order switch

- Switch body + mounting bracket set

ULK - T0H - 20

Switch model No.
(Item ⑤ on page 682)

Bore size
(Item ③ on page 682)

- Switch body only

SW - T0H

Switch model No.
(Item ⑤ on page 682)

- Mounting bracket set

ULK - T - 20

Mounting bracket

Bore size
(Item ③ on page 682)

How to order brake valve only

ULK-V - ③ Bore size - VALVE-KIT - ⑤ Valve voltage

How to order brake unit only

ULK - ③ Bore size - BRAKE-UNIT

How to order mounting bracket

Bore size (mm)	ø20	ø25	ø32	ø40
Mounting bracket				
Basic (00) *3	M1-00-20	M1-00-30	M1-00-30	M1-00-30
Axial foot (LB)	M1-LB-20	M1-LB-30	M1-LB-30	M1-LB-30
Flange (FA)	M1-FA-20	M1-FA-30	M1-FA-30	M1-FA-30
Eye bracket (CA)	M1-CA-20	M1-CA-30	M1-CA-30	M1-CA-30
Trunnion (TA/TB)	M1-TA-20	M1-TA-30	M1-TA-30	M1-TA-40

*1: As for mounting brackets, the axial foot and flange include mounting nuts and toothed washers, and the trunnion includes mounting nuts.

2: For axial foot, 2 sets of the above "M1-LB-" are required.

*3: Mounting nut, toothed washer only. Although 1 set is attached with the basic of the product (00), use this when needed.

Specifications for rechargeable battery (Catalog No. CC-1226A)

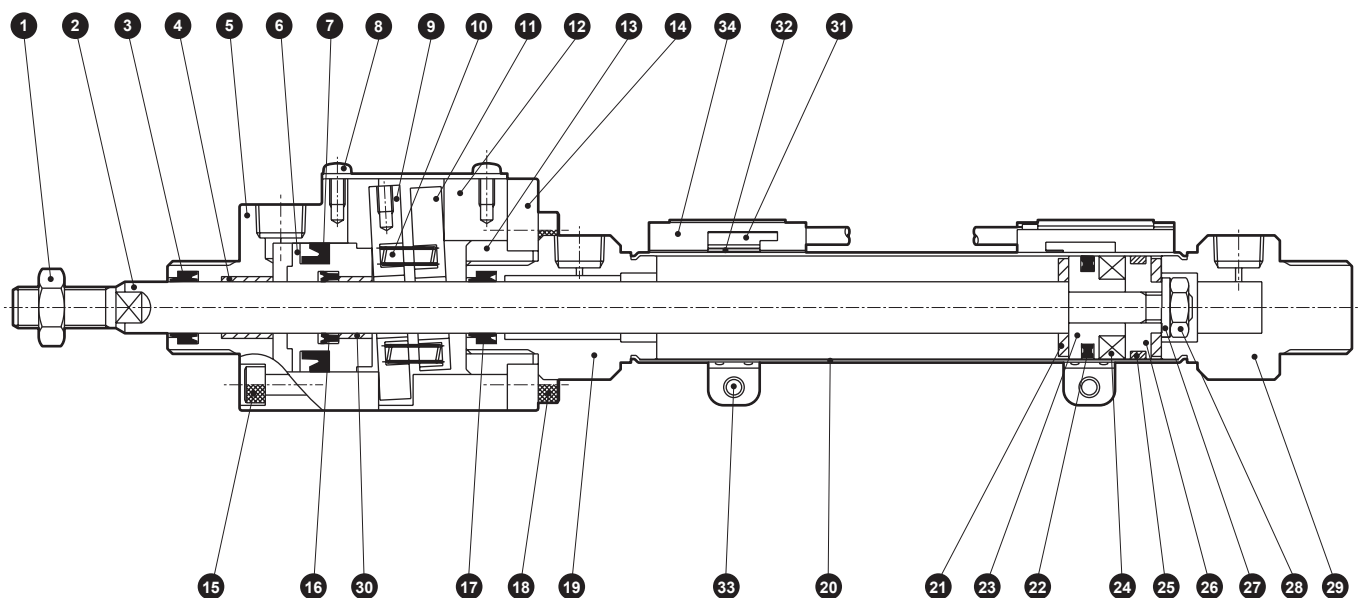
ULK - ... - P4*

- Design compatible with rechargeable battery manufacturing process.

* Contact CKD for details.

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Internal structure and parts list



Cannot be disassembled

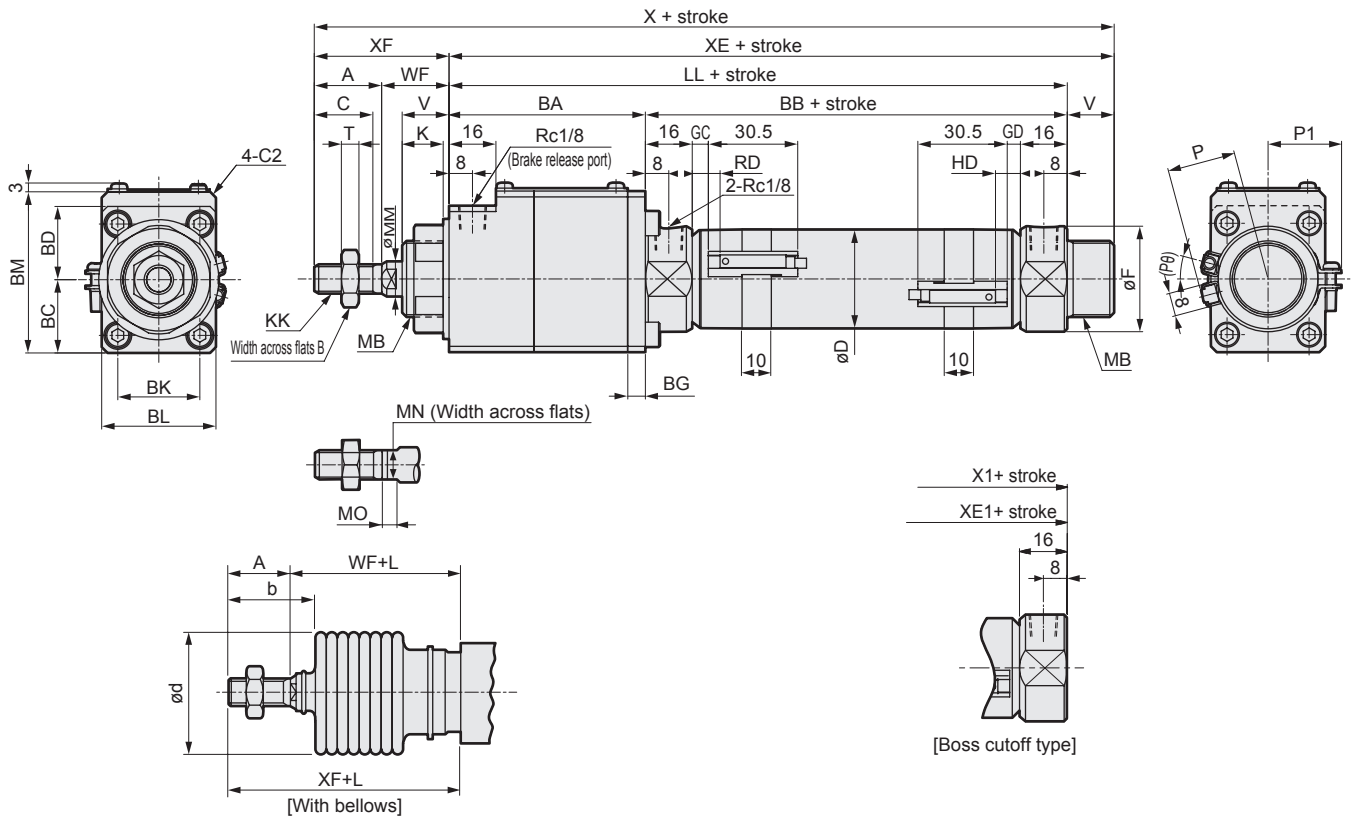
* This product cannot be disassembled.

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Zinc chromate	18	Hexagon socket head cap screw	Steel	Black finish
2	Piston rod	ø20/ø25: stainless steel ø32/ø40: steel	Industrial chrome plating	19	Rod cover	Aluminum alloy	
3	Brake rod packing	Nitrile rubber		20	Cylinder tube	Stainless steel	
4	Bearing	Acetal resin		21	Cushion rubber	Urethane rubber	
5	Body A	Aluminum alloy	Alumite	22	Piston packing	Nitrile rubber	
6	Release piston	Aluminum alloy	Alumite	23	Piston A	Aluminum alloy	
7	Release piston packing	Nitrile rubber		24	Magnet	Plastic	
8	Pan head machine screw	Steel		25	Wear ring	Acetal resin	
9	Brake plate A	Special steel	Zinc chromate	26	Piston B	Aluminum alloy	
10	Brake spring	Piano wire	Black finish	27	Spacer	Steel	
11	Brake plate B	Special steel	Zinc chromate	28	Hexagon nut	Steel	Zinc chromate
12	Body B	Aluminum alloy	Alumite	29	Head cover	Aluminum alloy	
13	Fixing nut	Steel	Zinc chromate	30	Release rod metal	Acetal resin	
14	Brake flange	Steel	Zinc chromate	31	Switch body		
15	Hexagon socket head cap screw	Steel	Black finish	32	Band	Stainless steel	
16	Release rod packing	Nitrile rubber		33	Pan head machine screw	Stainless steel	
17	Rod packing	Nitrile rubber		34	Switch rail	Stainless steel	

Dimensions



● Basic (00)



RD: Rod side max. sensitivity position

HD: Head side max. sensitivity position

1 : Refer to page 693 for HD, RD and protruding dimensions of T1, T8* and 2-color LED switches.

*2 : For the L dimension, round up below the decimal point.

*3 : For the dimensions of the accessories, refer to page 694.

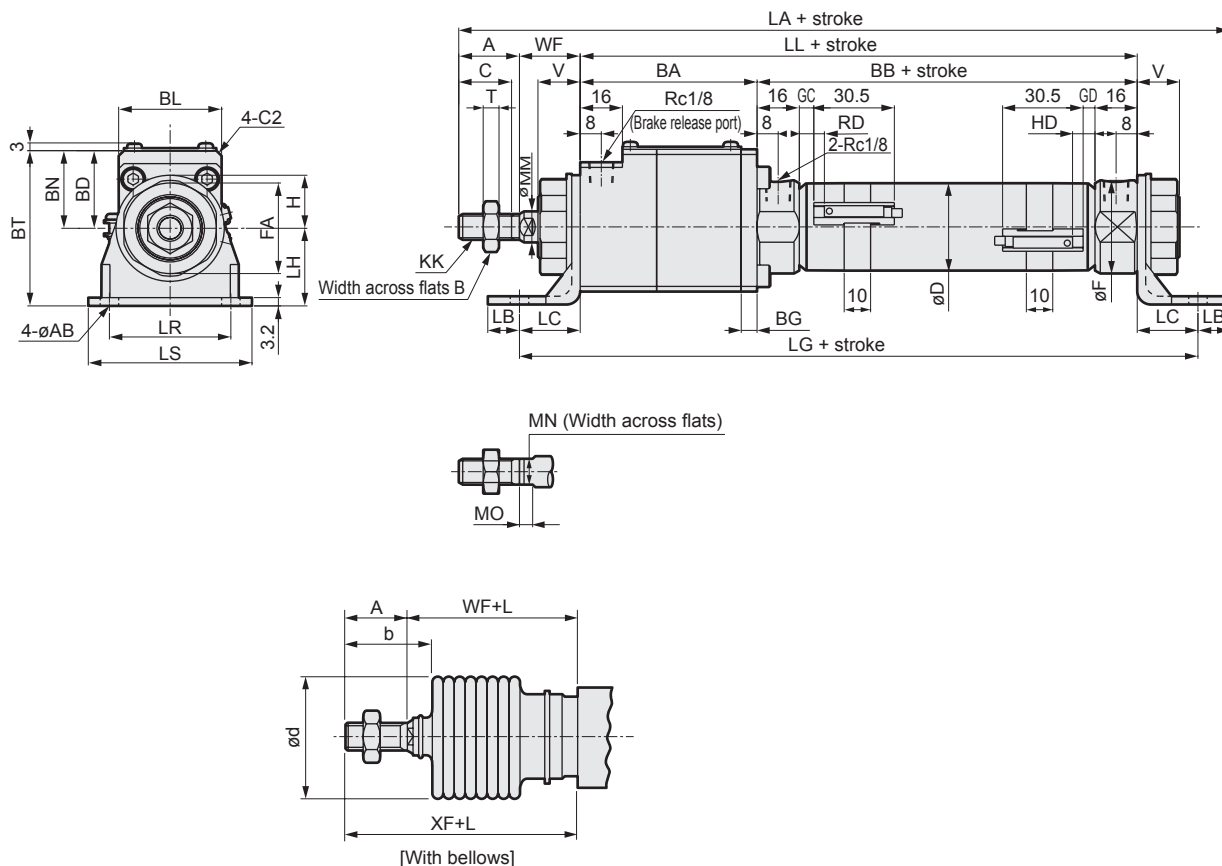
Code	Basic (00) basic dimensions																	
Bore size (mm)	A	B	BA	BB	BC	BD	BG	BK	BL	BM	C	D	F	K				
ø20	20	13	58	66	20	20	6	20	29	45	18	21.4	28	12				
ø25	23	17	67	69	25	25	6	28	39	55	20	26.4	32	14				
ø32	23	17	67	69	25	25	6	28	39	55	20	33.6	36	14				
ø40	25	19	74	73	29	30	9	39	50	69	22	41.6	45	14				
Code												With switch (T0, T5, T2, T3)						
Bore size (mm)	KK		LL	MB		MM	MN	MO	T	V	WF	X	XE	XF	GC	GD	RD	HD
ø20	M8x1.0		124	M18x1.5		10	8	5	5	14	24	182	138	44	4.0	3.0	8.0	7.0
ø25	M10x1.25		136	M26x1.5		12	10	5	6	16	23	198	152	46	5.5	4.5	9.5	8.5
ø32	M10x1.25		136	M26x1.5		12	10	5	6	16	23	198	152	46	5.5	4.5	9.5	8.5
ø40	M12x1.5		147	M26x1.5		14	12	6	7	16	23	211	163	48	7.5	6.5	11.5	10.5
Code	With switch (T2W, T3W)							With bellows				Boss cutoff type						
Bore size (mm)	GC	GD	RD	HD	P	P1	(P8)°	b	d	L		X1		XE1				
ø20	6.0	5.0	10.0	9.0	17.3	19.5	22	30	30	(Stroke/3) + 6		168		124				
ø25	7.5	6.5	11.5	10.5	19.8	22.0	18	32	46	(Stroke/3.25) + 7		182		136				
ø32	7.5	6.5	11.5	10.5	24.3	25.5	15	32	46	(Stroke/3.25) + 7		182		136				
ø40	9.5	8.5	13.5	12.5	28.3	29.5	12	34	46	(Stroke/3.25) + 7		195		147				

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Dimensions



● Axial foot (LB)



1 : Refer to page 693 for HD, RD and protruding dimensions of T1, T8* and 2-color LED switches.

*2 : For the L dimension, round up below the decimal point.

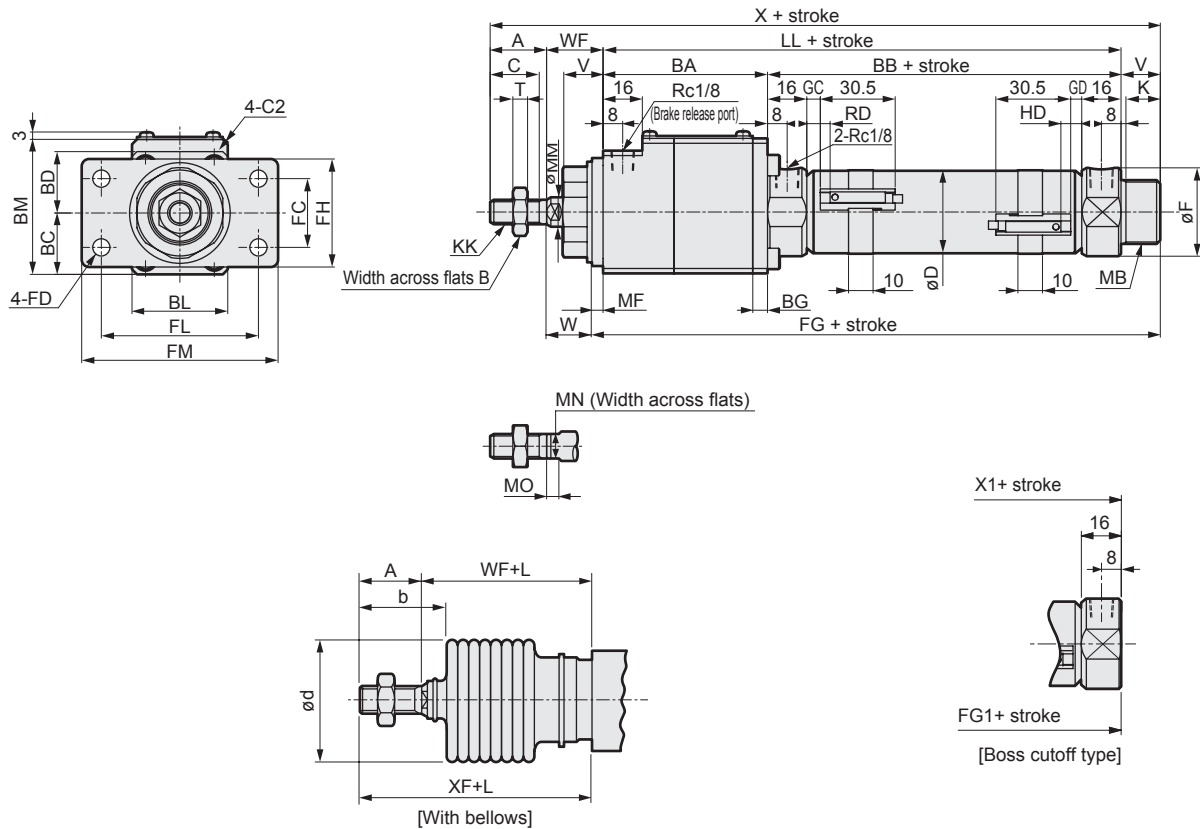
*3 : For the dimensions of the accessories, refer to page 694.

Code	Axial foot (LB) basic dimensions																		
Bore size	A	AB	B	BA	BB	BD	BG	BL	BN	BT	C	D	F	FA	H	KK			
ø20	20	6	13	58	66	20	6	29	25	50	18	21.4	28	26	15	M8x1.0			
ø25	23	7	17	67	69	25	6	39	30	60	20	26.4	32	35	20	M10x1.25			
ø32	23	7	17	67	69	25	6	39	30	60	20	33.6	36	35	20	M10x1.25			
ø40	25	7	19	74	73	30	9	50	40	70	22	41.6	45	35	20	M12x1.5			
Code								Mounting dimensions							With switch (T0, T5, T2, T3)				
Bore size	LL	MM	MN	MO	T	V	WF	LA	LB	LC	LG	LH	LR	LS	GC	GD	RD	HD	
ø20	124	10	8	5	5	14	24	196	10	18	160	25	30	44	4.0	3.0	8.0	7.0	
ø25	136	12	10	5	6	16	23	217	12	23	182	30	46	62	5.5	4.5	9.5	8.5	
ø32	136	12	10	5	6	16	23	217	12	23	182	30	46	62	5.5	4.5	9.5	8.5	
ø40	147	14	12	6	7	16	23	230	12	23	193	30	46	62	7.5	6.5	11.5	10.5	
Code	With switch (T2W, T3W)				With bellows														
Bore size (mm)	GC	GD	RD	HD	XF	b	d	L											
ø20	6.0	5.0	10.0	9.0	44	30	30	(Stroke/3) + 6											
ø25	7.5	6.5	11.5	10.5	46	32	46	(Stroke/3.25) + 7											
ø32	7.5	6.5	11.5	10.5	46	32	46	(Stroke/3.25) + 7											
ø40	9.5	8.5	13.5	12.5	48	34	46	(Stroke/3.25) + 7											

Dimensions



● Rod side flange (FA)



1 : Refer to page 693 for HD, RD and protruding dimensions of T1, T8* and 2-color LED switches.

*2 : For the L dimension, round up below the decimal point.

*3 : For the dimensions of the accessories, refer to page 694.

Code	Rod side flange (FA) basic dimensions															
Bore size (mm)	A	B	BA	BB	BC	BD	BG	BL	BM	C	D	F	K	KK	LL	MB
ø20	20	13	58	66	20	20	6	29	45	18	21.4	28	12	M8x1.0	124	M18x1.5
ø25	23	17	67	69	25	25	6	39	55	20	26.4	32	14	M10x1.25	136	M26x1.5
ø32	23	17	67	69	25	25	6	39	55	20	33.6	36	14	M10x1.25	136	M26x1.5
ø40	25	19	74	73	29	30	9	50	69	22	41.6	45	14	M12x1.5	147	M26x1.5

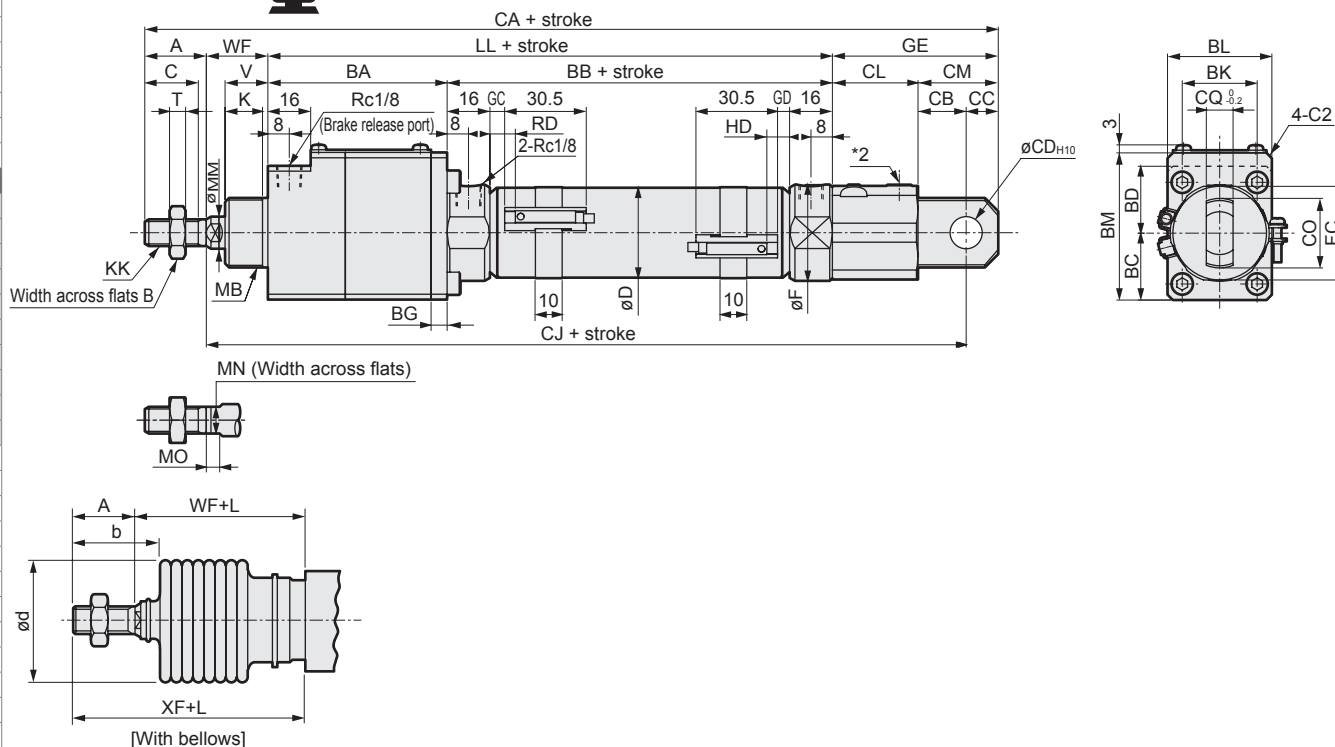
Code	Mounting dimensions										With switch (T0, T5, T2, T3)			
Bore size (mm)	MF	MM	MN	MO	T	V	W	WF	X	FC	FD	FG	FH	FL
ø20	3.2	10	8	5	5	14	20.8	24	182	20	6	141.2	34	40
ø25	4.5	12	10	5	6	16	18.5	23	198	28	7	156.5	44	64
ø32	4.5	12	10	5	6	16	18.5	23	198	28	7	156.5	44	64
ø40	4.5	14	12	6	7	16	18.5	23	211	28	7	167.5	44	64

Code	With switch (T2W, T3W)				With bellows				Boss cutoff type	
Bore size (mm)	GC	GD	RD	HD	XF	b	d	L	X1	FG1
ø20	6.0	5.0	10.0	9.0	44	30	30	(Stroke/3) + 6	168	127.2
ø25	7.5	6.5	11.5	10.5	46	32	46	(Stroke/3.25) + 7	182	140.5
ø32	7.5	6.5	11.5	10.5	46	32	46	(Stroke/3.25) + 7	182	140.5
ø40	9.5	8.5	13.5	12.5	48	34	46	(Stroke/3.25) + 7	195	151.5

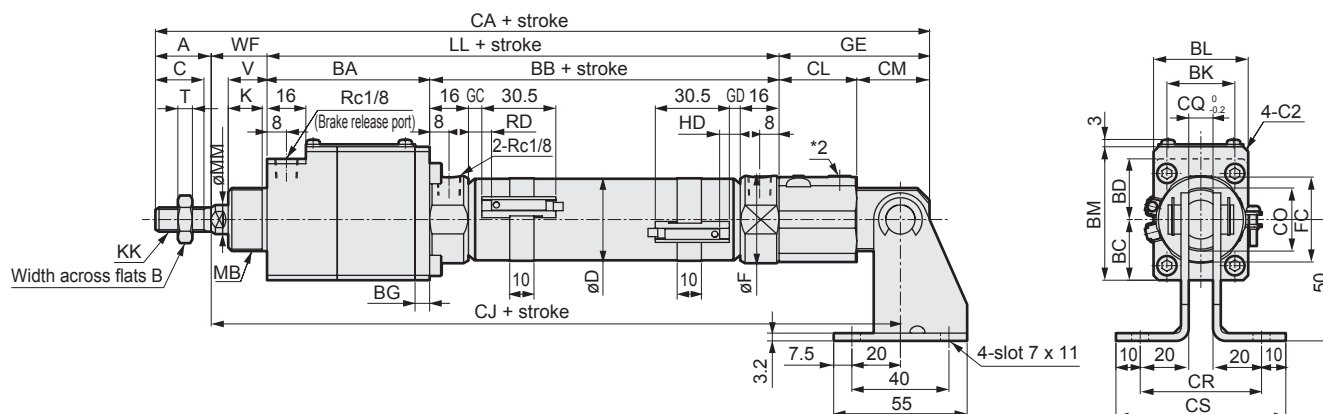
LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Dimensions

● Eye bracket (CA)



● With bracket (Option B2)



1 : Refer to page 693 for HD, RD and protruding dimensions of T1, T8* and 2-color LED switches.

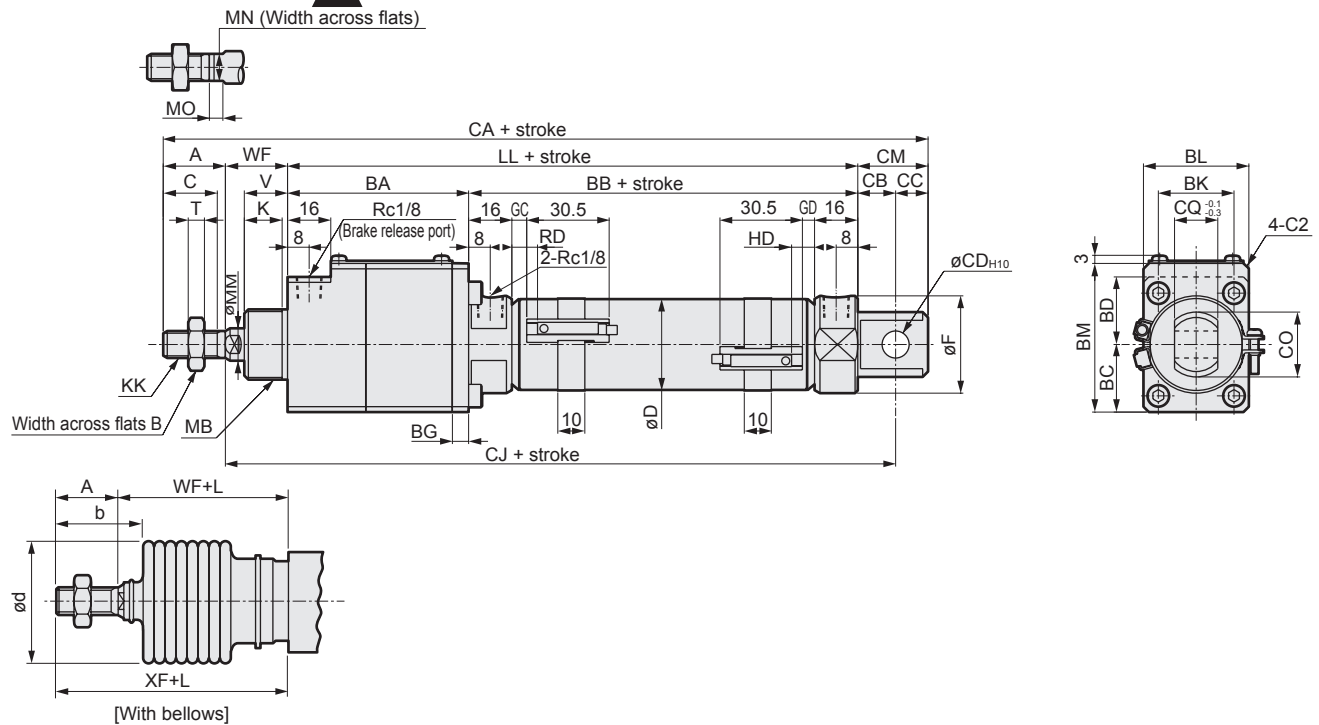
*2 : It is not a piping port. *3 : For the L dimension, round up below the decimal point.

*4 : For the dimensions of the accessories, refer to page 694.

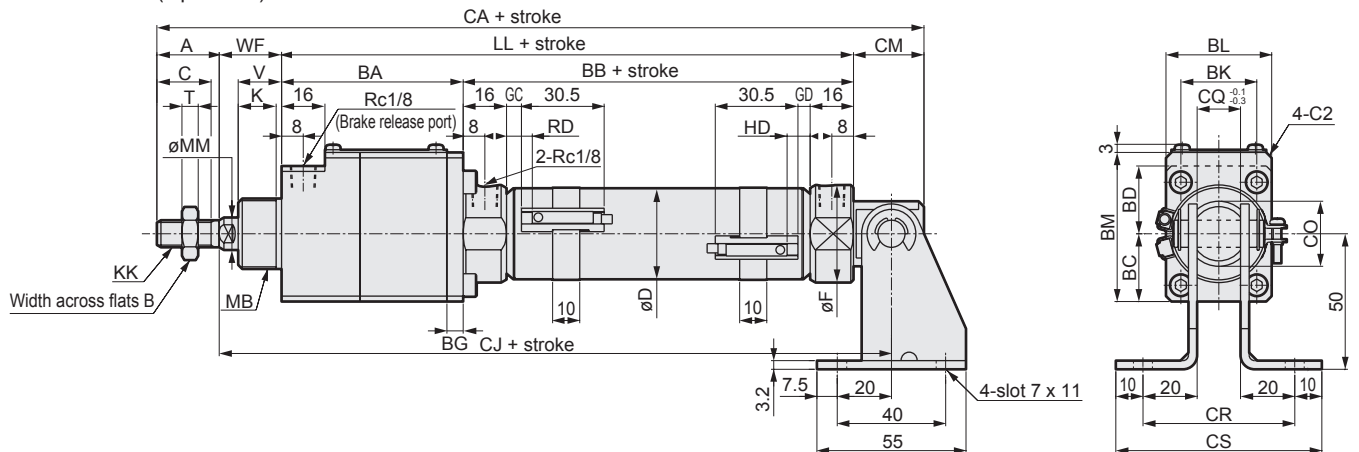
Code	Eye bracket (CA) basic dimensions																				
Bore size (mm)	A	B	BA	BB	BC	BD	BG	BK	BL	BM	C	D	F	FC	GE	K	KK	LL	MB		
ø20	20	13	58	66	20	20	6	20	29	45	18	21.4	28	26	55	12	M8x1.0	124	M18x1.5		
ø25	23	17	67	69	25	25	6	28	39	55	20	26.4	32	35	62	14	M10x1.25	136	M26x1.5		
ø32	23	17	67	69	25	25	6	28	39	55	20	33.6	36	35	62	14	M10x1.25	136	M26x1.5		
ø40	25	19	74	73	29	30	9	39	50	69	22	41.6	45	35	62	14	M12x1.5	147	M26x1.5		
Code							Mounting dimensions												With switch (T0, T5, T2, T3)		
Bore size (mm)	MM	MN	MO	T	V	WF	CA	CB	CC	CD	CJ	CL	CM	CO	CQ	CR	CS	GC	GD	RD	HD
ø20	10	8	5	5	14	24	223	14	10	10	193	31	24	22	8	48	68	4.0	3.0	8.0	7.0
ø25	12	10	5	6	16	23	244	18	12	12	209	32	30	26	10	50	70	5.5	4.5	9.5	8.5
ø32	12	10	5	6	16	23	244	18	12	12	209	32	30	26	10	50	70	5.5	4.5	9.5	8.5
ø40	14	12	6	7	16	23	257	18	12	12	220	32	30	26	10	50	70	7.5	6.5	11.5	10.5
Code	With switch (T2W, T3W)					With bellows															
Bore size (mm)	GC	GD	RD	HD	XF	b	d	L													
ø20	6.0	5.0	10.0	9.0	44	30	30	(Stroke/3) + 6													
ø25	7.5	6.5	11.5	10.5	46	32	46	(Stroke/3.25) + 7													
ø32	7.5	6.5	11.5	10.5	46	32	46	(Stroke/3.25) + 7													
ø40	9.5	8.5	13.5	12.5	48	34	46	(Stroke/3.25) + 7													

Dimensions

● Eye bracket integrated (CC)



● With bracket (Option B2)



1 : Refer to page 693 for HD, RD and protruding dimensions of T1, T8* and 2-color LED switches.

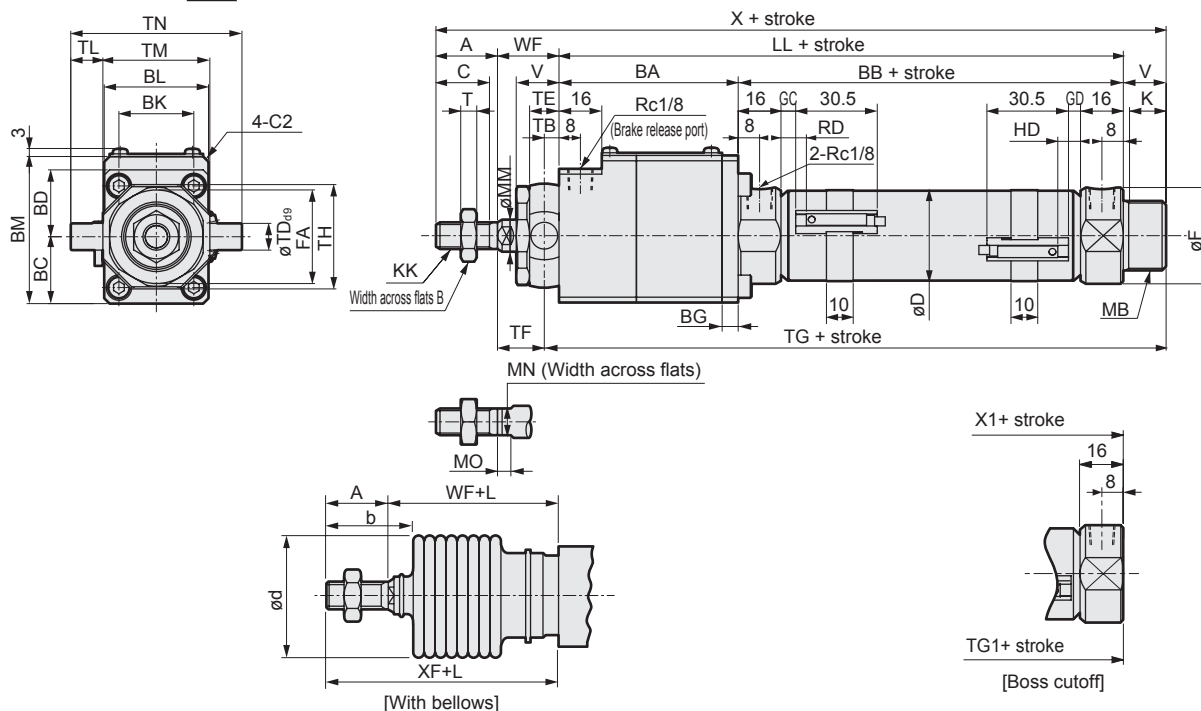
*2 : For the L dimension, round up below the decimal point.

*3 : For the dimensions of the accessories, refer to page 694.

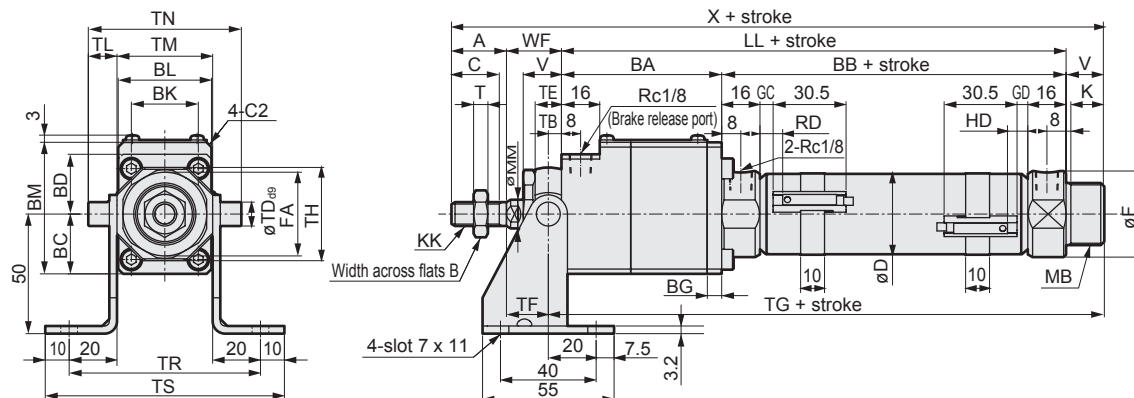
Code	Eye bracket integrated (CC) basic dimensions																				
Bore size (mm)	A	B	BA	BB	BC	BD	BG	BK	BL	BM	C	D	F	K	KK	LL					
ø20	20	13	58	66	20	20	6	20	29	45	18	21.4	28	12	M8x1.0	124					
ø25	23	17	67	69	25	25	6	28	39	55	20	26.4	32	14	M10x1.25	136					
ø32	23	17	67	69	25	25	6	28	39	55	20	33.6	36	14	M10x1.25	136					
ø40	25	19	74	73	29	30	9	39	50	69	22	41.6	45	14	M12x1.5	147					
Code								Mounting dimensions									With switch (T0, T5, T2, T3)				
Bore size (mm)	MB	MM	MN	MO	T	V	WF	CA	CB	CC	CD	CJ	CM	CO	CQ	CR	CS	GC	GD	RD	HD
ø20	M18x1.5	10	8	5	5	14	24	189	12	9	8	160	21	22	16	56	76	4.0	3.0	8.0	7.0
ø25	M26x1.5	12	10	5	6	16	23	203	12	9	8	171	21	24	16	56	76	5.5	4.5	9.5	8.5
ø32	M26x1.5	12	10	5	6	16	23	208	14	12	10	173	26	24	16	56	76	5.5	4.5	9.5	8.5
ø40	M26x1.5	14	12	6	7	16	23	225	16	14	12	186	30	30	20	60	80	7.5	6.5	11.5	10.5
Code	With switch (T2W, T3W)				With bellows																
Bore size (mm)	GC	GD	RD	HD	XF	b	d	L													
ø20	6.0	5.0	10.0	9.0	44	30	30	(Stroke/3) + 6													
ø25	7.5	6.5	11.5	10.5	46	32	46	(Stroke/3.25) + 7													
ø32	7.5	6.5	11.5	10.5	46	32	46	(Stroke/3.25) + 7													
ø40	9.5	8.5	13.5	12.5	48	34	46	(Stroke/3.25) + 7													

Dimensions

● Rod side trunnion (TA)



● With bracket (Option B2)



1 : Refer to page 693 for HD, RD and protruding dimensions of T1, T8* and 2-color LED switches.

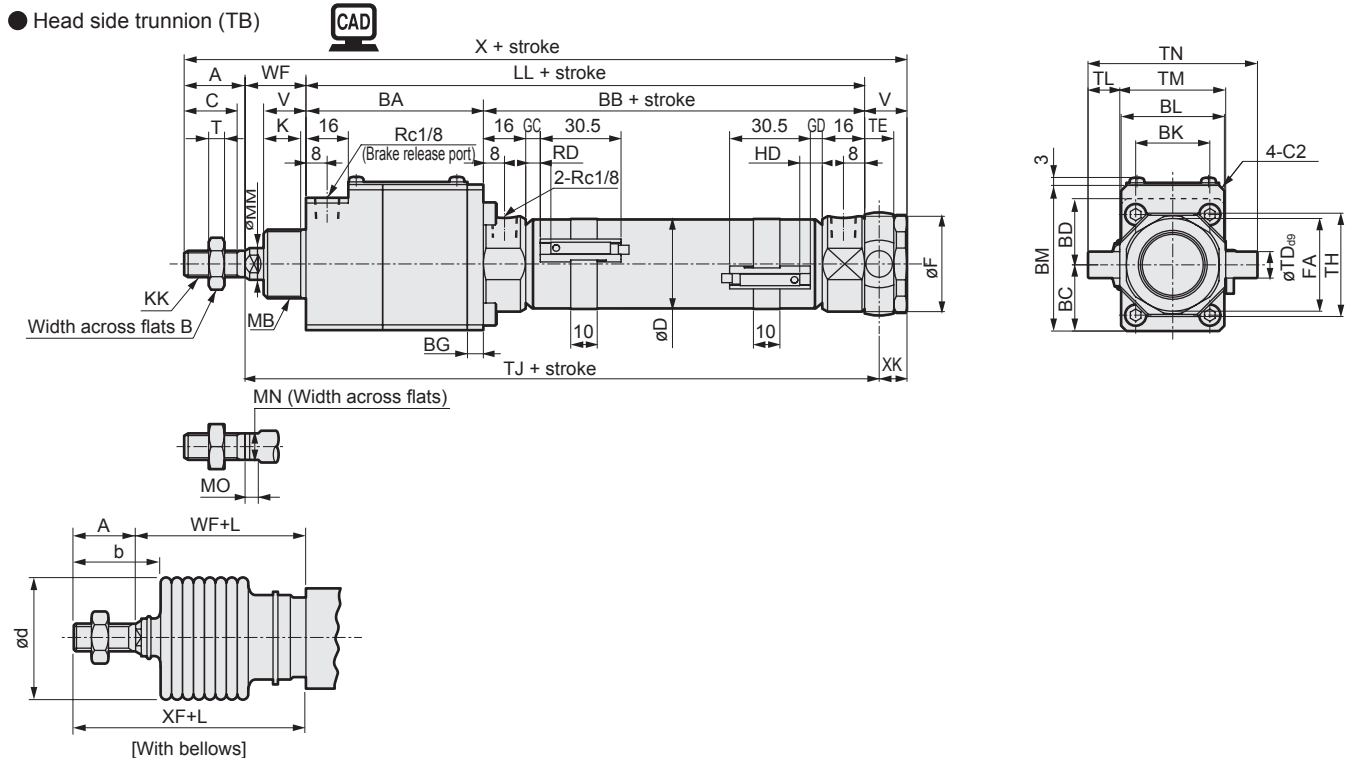
*2 : For the L dimension, round up below the decimal point.

*3 : For the dimensions of the accessories, refer to page 694.

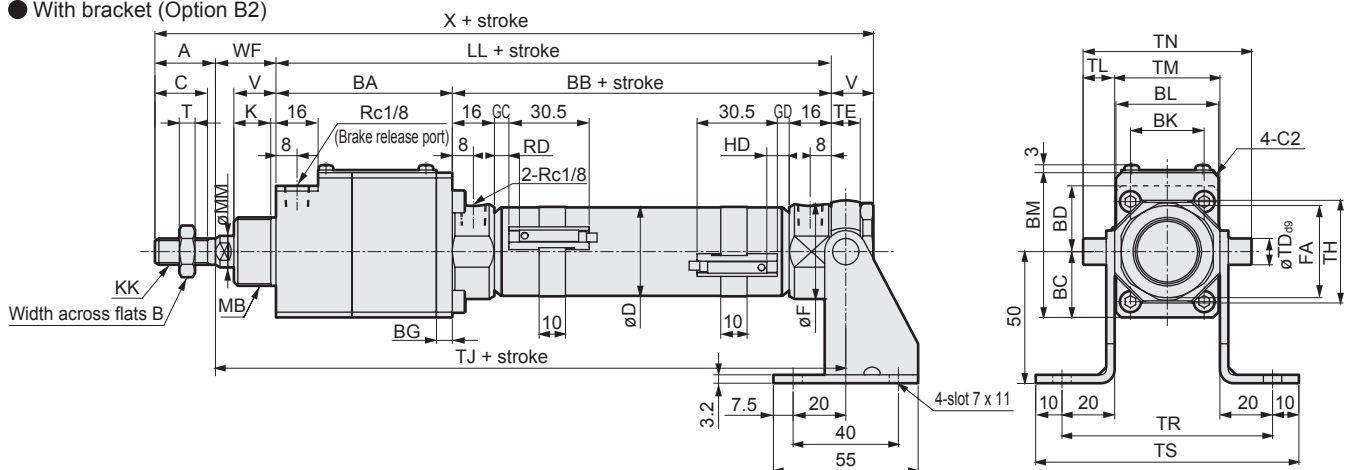
Code	Rod side trunnion (TA) basic dimensions																	
Bore size (mm)	A	B	BA	BB	BC	BD	BG	BK	BL	BM	C	D	F	FA	K	KK	LL	MB
$\phi 20$	20	13	58	66	20	20	6	20	29	45	18	21.4	28	26	12	M8x1.0	124	M18x1.5
$\phi 25$	23	17	67	69	25	25	6	28	39	55	20	26.4	32	35	14	M10x1.25	136	M26x1.5
$\phi 32$	23	17	67	69	25	25	6	28	39	55	20	33.6	36	35	14	M10x1.25	136	M26x1.5
$\phi 40$	25	19	74	73	29	30	9	39	50	69	22	41.6	45	35	14	M12x1.5	147	M26x1.5
Code	Mounting dimensions																	
Bore size (mm)	MM	MN	MO	T	V	WF	X	TB	TD	TE	TF	TG	TH	TL	TM	TN	TR	TS
$\phi 20$	10	8	5	5	14	24	182	4.5	8	9	19.5	142.5	29.5	8	30	46	70	90
$\phi 25$	12	10	5	6	16	23	198	5.5	10	11	17.5	157.5	39	12	40	64	80	100
$\phi 32$	12	10	5	6	16	23	198	5.5	10	11	17.5	157.5	39	12	40	64	80	100
$\phi 40$	14	12	6	7	16	23	211	5.5	10	11	17.5	168.5	44	9.5	53	72	93	113
Code	With switch (T0, T5, T2, T3)										With bellows							
Bore size (mm)	GC	GD	RD	HD	XF	b	d	L				Boss cutoff						
$\phi 20$	6.0	5.0	10.0	9.0	44	30	30	(Stroke/3) + 6				X1				TG1		
$\phi 25$	7.5	6.5	11.5	10.5	46	32	46	(Stroke/3.25) + 7				168				128.5		
$\phi 32$	7.5	6.5	11.5	10.5	46	32	46	(Stroke/3.25) + 7				182				141.5		
$\phi 40$	9.5	8.5	13.5	12.5	48	34	46	(Stroke/3.25) + 7				182				141.5		
								(Stroke/3.25) + 7				195				152.5		

Dimensions

● Head side trunnion (TB)



● With bracket (Option B2)



1 : Refer to page 693 for HD, RD and protruding dimensions of T1, T8* and 2-color LED switches.

*2 : For the L dimension, round up below the decimal point.

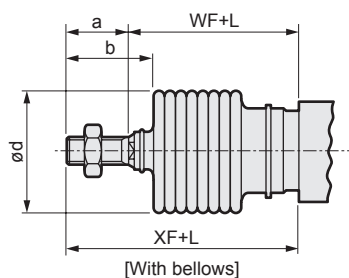
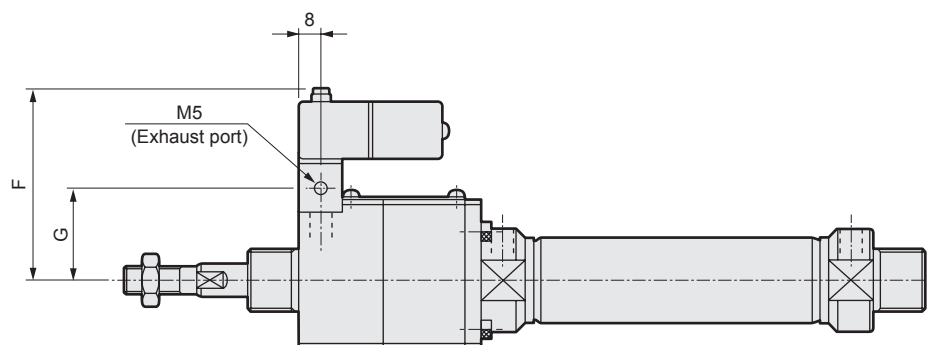
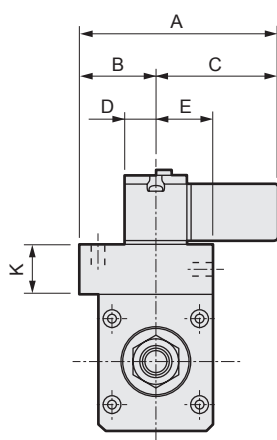
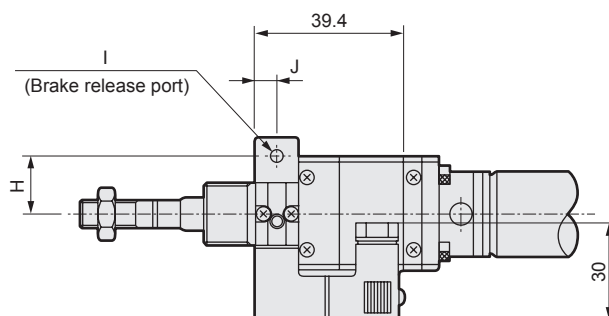
*3 : For the dimensions of the accessories, refer to page 694.

Code	Rod side flange (TB) basic dimensions																							
Bore size (mm)	A	B	BA	BB	BC	BD	BG	BK	BL	BM	C	D	F	FA	K	KK	LL	MB						
ø20	20	13	58	66	20	20	6	20	29	45	18	21.4	28	26	12	M8x1.0	124	M18x1.5						
ø25	23	17	67	69	25	25	6	28	39	55	20	26.4	32	35	14	M10x1.25	136	M26x1.5						
ø32	23	17	67	69	25	25	6	28	39	55	20	33.6	36	35	14	M10x1.25	136	M26x1.5						
ø40	25	19	74	73	29	30	9	39	50	69	22	41.6	45	35	14	M12x1.5	147	M26x1.5						
Code											Mounting dimensions								With switch (T0, T5, T2, T3)					
Bore size (mm)	MM	MN	MO	T	V	WF	X	XK	TD	TE	TH	TJ	TL	TM	TN	TR	TS	GC	GD	RD	HD			
ø20	10	8	5	5	14	24	182	9.5	8	9	29.5	152.5	8	30	46	70	90	4.0	3.0	8.0	7.0			
ø25	12	10	5	6	16	23	198	10.5	10	11	39	164.5	12	40	64	80	100	5.5	4.5	9.5	8.5			
ø32	12	10	5	6	16	23	198	10.5	10	11	39	164.5	12	40	64	80	100	5.5	4.5	9.5	8.5			
ø40	14	12	6	7	16	23	211	10.5	10	11	44	175.5	9.5	53	72	93	113	7.5	6.5	11.5	10.5			
Code	With switch (T2W, T3W)				With bellows																			
Bore size (mm)	GC	GD	RD	HD	XF	b	d	L																
ø20	6.0	5.0	10.0	9.0	44	30	30	(Stroke/3) + 6																
ø25	7.5	6.5	11.5	10.5	46	32	46	(Stroke/3.25) + 7																
ø32	7.5	6.5	11.5	10.5	46	32	46	(Stroke/3.25) + 7																
ø40	9.5	8.5	13.5	12.5	48	34	46	(Stroke/3.25) + 7																

Dimensions



● With valve for brake



*Dimensions not listed below are the same as the basic type on page 685.

*1 : For the L dimension, round up below the decimal point.

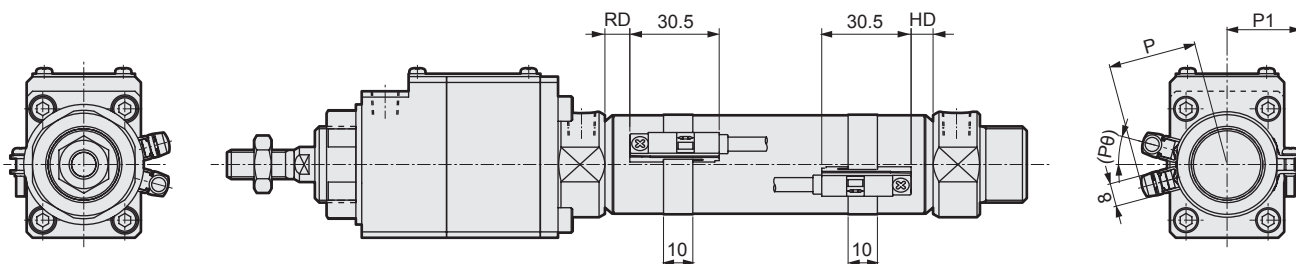
*2 : For the dimensions of the accessories, refer to page 694.

Code	A	B	C	D	E	F	G	H	I	J	K
Bore size (mm)											
ø20	56.5	25	31.5	8	15	54	26.5	17	M5	8	12
ø25	57	21	36	4	18	60	31	16	Rc1/8	9	13
ø32	57	21	36	4	18	60	31	16	Rc1/8	9	13
ø40	57	24	33	7	18	65	36	16	Rc1/8	9	13

Code	With bellows					
Bore size (mm)	a	WF	XF	b	d	L
ø20	20	24	44	30	30	(Stroke/3) + 6
ø25	23	23	46	32	46	(Stroke/3.25) + 7
ø32	23	23	46	32	46	(Stroke/3.25) + 7
ø40	25	23	48	34	46	(Stroke/3.25) + 7

ULK Series common dimensions (with T1, T8 switches, with 2-color LED switch)

● ULK-**-**-T1H/V, T8H/V, T₃YH/V



Switch installation dimensions

Code	1-color LED (T1, T8) 2-color LED (T Y) ₃							
	RD		HD		P		P1	(P0)°
	T1, T ₃ Y	T8	T1, T ₃ Y	T8	T1	T ₃ Y, T8		
Bore size (mm)								
ø20	7.0	2.0	6.0	1	28.5	23.1	19.5	22
ø25	8.5	3.5	7.5	2.5	31.0	25.6	22.0	18
ø32	8.5	3.5	7.5	2.5	35.5	30.1	25.5	15
ø40	10.5	5.5	9.5	4.5	39.5	34.1	29.5	12

LCM
LCR
LGC
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

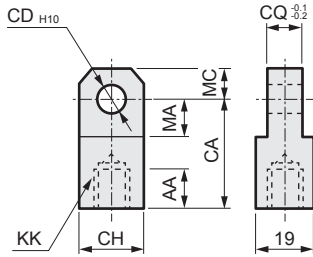
Accessory dimensions (rod/bracket/pin) with bellows

● Rod eye (I)



Material: Steel

Zinc chromate treatment



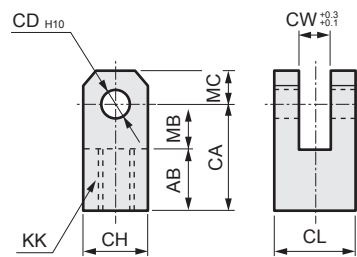
Model No.	Applicable bore size (mm)	AA	CA	CD	CH	CQ	KK	MA	MC	Wt (g)
M1-I-20	20	14	30	10	19	8	M8x1.0	13	10	60
M1-I-30	25/32	14	36	12	25	10	M10x1.25	16	12	106
M1-I-40	40	14	36	12	25	10	M12x1.5	16	12	100

● Rod clevis (Y)



Material: Steel

Zinc chromate treatment



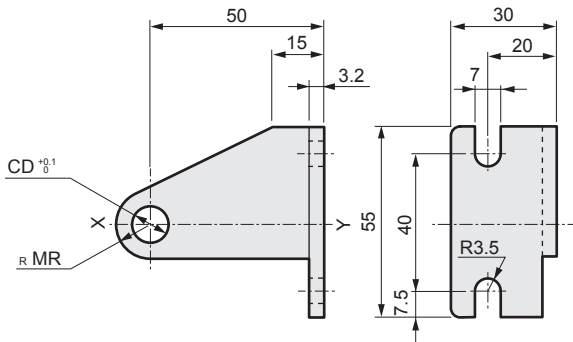
A pin, a washer, and a split pin are attached.

Model No.	Applicable bore size (mm)	AB	CA	CD	CH	CL	CW	KK	MB	MC	Wt (g)
M1-Y-20	20	17	30	10	19	19	8	M8x1.0	13	10	99
M1-Y-30	25/32	20	36	12	25	25	10	M10x1.25	16	12	197
M1-Y-40	40	20	36	12	25	25	10	M12x1.5	16	12	193

● Clevis bracket (B2)



Material: Steel, zinc chromate treatment



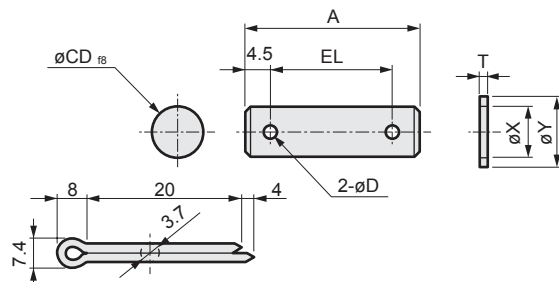
Model No.	Compatibility	Applicable bore size (mm)	CD	MR	Weight (g)
M1-B2-20-CC	ULK-CC	20/25	8	8	145
M1-B2-30-CC		32	10	11	163
M1-B2-40-CC		40	12	11	170
M1-B2-30-CA	ULK-CA	20	10	11	158
M1-B2-40-CA		25/32/40	12	11	162
M1-B2-20-TA	ULK-TA/TB	20	8	8	132
M1-B2-30-TA		25/32/40	10	11	142

*1: One pair is composed of two pieces with XY symmetry.

*2: The model No. above includes snap ring and pin. 2 pieces are included in a set. (However, the pin and snap rings are not included with the trunnion.)

● Rod clevis pin (P)

Material: Steel, zinc chromate treatment



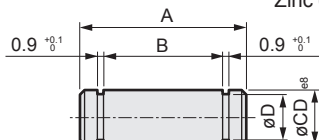
Model No.	Applicable bore size (mm)	A	D	CD	EL	T	X	Y	Weight (g)
M1-P-20	20	37	4	10	28	1.6	10.5	18	29
M1-P-30	25/32/40	46	4	12	37	2.3	12.5	22	50

Note : A pin, a washer and a split pin for rod clevis use are attached with the product.

● Clevis bracket pin (P1) (P2)

Material: Steel

Zinc chromate treatment



Model No.	Compatible Bore size model and (mm)	A	B	CD	D	Applicable snap ring	Weight (g)
M1-P1-20	ULK-CC-20/25	33	28	8	7	E type 7	13
M1-P1-30	ULK-CC-32	33	28	10	9	E type 9	21
M1-P1-40	ULK-CC-40	37	32	12	9	E type 9	32
M1-P2-20	ULK-CA-20	25	20	10	9	E type 9	16
M1-P2-30	ULK-CA-25/32/40	27	22	12	9	E type 9	24

Note : A pin and snap ring for bracket use are attached with the product. (However, the pin and snap rings are not included with the trunnion.)