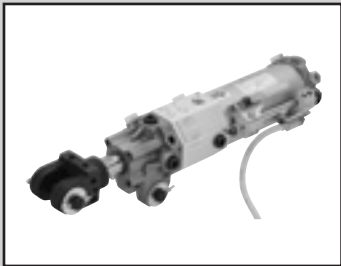


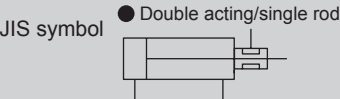
LCM
 LCR
 LCG
 LCW
 LCX
 STM
 STG
 STS/STL
 STR2
 UCA2
 ULK*
 JSK/M2
 JSG
 JSC3/JSC4
 USSD
 UFCD
 USC
 UB
 JSB3
 LMB
 LML
 HCM
 HCA
 LBC
 CAC4
UCAC2
 CAC-N
 UCAC-N
 RCS2
 RCC2
 PCC
 SHC
 MCP
 GLC
 MFC
 BBS
 RRC
 GRC
 RV3*
 NHS
 HRL
 LN
 Hand
 Chuk
 MecHnd/Chuk
 ShkAbs
 FJ
 FK
 SpdContr
 Ending



Position locking clamp cylinder

UCAC2 Series

● Bore size: ø50/ø63



Specifications

Item		UCAC2	
Bore size	mm	ø50	ø63
Actuation		Double acting	
Working fluid		Compressed air	
Max. working pressure	MPa	1.0 (≈150 psi, 10 bar)	
Min. working pressure	MPa	0.25 (≈36 psi, 2.5 bar)	
Proof pressure	MPa	1.6 (≈230 psi, 16 bar)	
Ambient temperature	°C	-10 (14°F) to 60 (140°F) (no freezing)	
Port size		Rc1/4	
Standard stroke	mm	50, 75, 100, 125, 150	
Stroke tolerance		+1.0 0	
Working piston speed	mm/s	50 to 400	50 to 300
Cushion		Head side air cushioned	
Lubrication		Not available	
Mounting		Clevis bracket	
Position locking mechanism		Forward/backward locking	
Lock force	N	1470	
Allowable absorbed energy	Cushioned Without cushion	6.54 0.137	11.63 0.206

Note: Without any cushion, this product cannot absorb large energy generated by an external load. We recommend using an external shock absorber.

Stroke

Bore size (mm)	Standard stroke (mm)	Min. stroke (mm)	Max. stroke (mm)
ø50	50/75/100/125/150	50	150
ø63			

Products other than standard stroke are made-to-order products.

Switch specifications (T-switch)

● 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	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay, IC circuit (no indicator lamp), 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	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA
Indicator	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 at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA						
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		
	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		
	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		

*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)

● For AC magnetic field

Item	Proximity 2-wire	
	T2YD, T2YDT	T2YDU (Made to order)
Applications	Dedicated for programmable controller	
Indicator	Red/green LED (Lit when ON)	
Load voltage	24 VDC ±10%	
Load current	5 to 20 mA	
Internal voltage drop	6V or less	
Leakage current	1.0 mA or less	
Output delay time *1 (ON Delay, OFF delay)	60 ms or less	
Lead wire length	1 m (oil resistant vinyl cabtyre cable ø 6, 0.5 mm ² x 2-conductor) *2, *3	Flame-resistant cabtyre cable with cable connector, 0.5 mm ² , 2-conductor
Insulation resistance	100 MΩ and over with 500 VDC megger	
Withstand voltage	No failure after 1 minute of 1,000 VAC application.	
Shock resistance	980 m/s ²	
Ambient temperature	-10 to +60°C	
Degree of protection	JIS C0920 (water-tight), IEC standards IP67, oil resistance	
Weight	g 1 m:61 3 m:166 5 m:272	

*1: Indicates the time from magnetic sensor detection of the piston magnet until switch output.

*2: 3 m and 5 m lead wires are available as options.

*3: Flame-resistant lead wires are available as options.

*4: Switch for AC magnetic field (T2YD, T2YDT) cannot be used in DC magnetic field.

Switch specifications (H-switch)

● Strong magnetic field

Item	Reed 2-wire	
	H0	H0Y (2-color LED)
Applications	For programmable controller, relay	Dedicated for programmable controller
Load voltage	12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA
Internal voltage drop	5V or less	6V or less
Leakage current	10 μA or less	10 μA or less
Indicator	Green LED (Lit when ON)	Red/green LED (Lit when ON)
Lead wire (standard)	1 m (flame-resistant cabtyre cable 2-conductor 0.5 mm ²)	
Insulation resistance	100 MΩ and over with 500 VDC megger	
Withstand voltage	No failure after 1 minute of 1,000 VAC application.	
Shock resistance	294 m/s ²	
Ambient temperature	-10 to +60°C	
Degree of protection	IEC Standard IP67, JIS C9020 (water-tight), oil resistance	
Weight	g 1 m:76 3 m:181 5 m:289	

*1: The above 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

(Unit: kg)

Bore size (mm)		Product weight per 0 mm stroke	Additional weight per 100 mm stroke	Accessory weight					Switch weight	Mounting bracket weight			Weight of tie rod at 0 mm stroke	Additional weight of tie rod per S = 10 mm									
				Axial foot	Rod clevis	Rod eye	Limit switch mounting base	Dog bracket		T type		H type											
										Tie rod mount	Band mounting												
ø50	Forward locking: F	1.61	0.40	0.21	0.37	0.27	0.18	0.08	Refer to the weight in the switch specifications.	0.021	0.008	0.024	0.019	0.003									
	Backward locking: B	1.56	0.39																				
ø63	Forward locking: F	2.11	0.40																	0.009			
	Backward locking: B	2.06	0.39																				

(Example) Product weight of UCAC2-A-50B-50R-B-TOH-D

- Product weight at 0 mm stroke (backward locking: B) 1.56 kg
- Additional weight per 50 mm stroke $0.39 \times \frac{50}{100} = 0.195$ kg
- Weight of tie rod at 0 mm stroke 0.019 kg
- Additional weight of tie rod at 50 mm stroke $0.003 \times \frac{50}{10} = 0.015$ kg
- Weight of 2 TOH switches $0.018 \times 2 = 0.036$ kg
- Weight of 2 mounting brackets $0.021 \times 2 = 0.042$ kg
- Product weight $1.56 + 0.195 + 0.019 + 0.015 + 0.036 + 0.042 = 1.867$ kg

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa								
		0.25	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø50	Push	4.91x10 ²	5.89x10 ²	7.85x10 ²	9.82x10 ²	1.18x10 ³	1.37x10 ³	1.57x10 ³	1.77x10 ³	1.96x10 ³
	Pull	4.12x10 ²	4.95x10 ²	6.60x10 ²	8.25x10 ²	9.90x10 ²	1.15x10 ³	1.32x10 ³	1.48x10 ³	1.65x10 ³
ø63	Push	7.79x10 ²	9.35x10 ²	1.25x10 ³	1.56x10 ³	1.87x10 ³	2.18x10 ³	2.49x10 ³	2.81x10 ³	3.12x10 ³
	Pull	7.01x10 ²	8.41x10 ²	1.12x10 ³	1.40x10 ³	1.68x10 ³	1.96x10 ³	2.24x10 ³	2.52x10 ³	2.80x10 ³

UCAC2 Series

How to order

Without switch (built-in magnet for switch)

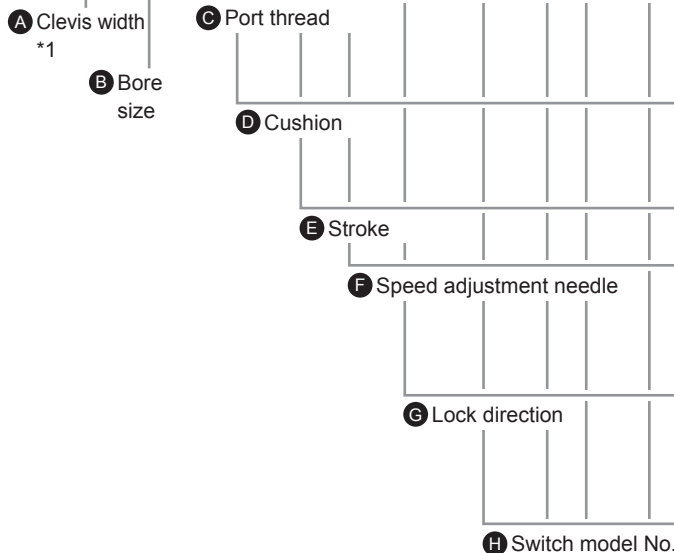
UCAC2-A-50N-B-50N-B-Y1

With switch (built-in magnet for switch)

UCAC2-A-50N-B-50N-B-T2H-DB-Y1

With strong magnetic field proof (for H0, HOY switches) switch (built-in magnet for switch)

UCAC2-L2-A-50N-B-50N-B-H0-DB-Y1



Precautions for model No. selection

- *1 : A clevis pin, split pin, and plain washer are attached with A/B/AL/BL.
The clevis width and rod clevis width are the same.
- *2 : If blank is selected for C Port thread, the head side cushion comes with "Blank" for D Cushion and "H" for all other options.
- *3 : The switch cannot be attached on the same surface as the bypass tube mounting position.
- *4 : Cannot be selected with H Switch model No. "HO*", "HOY**".
- *5 : A pin, split pin, and plain washer are attached with Y/Y1.
- *6 : For Q, piston rod protruding length is different from the standard. This cannot be mounted on the standard.
- *7 : When selecting "Q", only "A" can be selected for A Clevis width.
- *8 : Bellows max. ambient temperature 100°C, instantaneous max. temperature 200°C
- *9 : Cannot be mounted if A Clevis width is AL or BL.

[Example of model No.]

UCAC2-A-50B-50R-B-T0H-DB-Y

Model: Position locking clamp cylinder double acting

- A Clevis width : 16.5 mm
- B Bore size : ø50 mm
- C Port thread : Rc thread
- D Cushion : With both sides
- E Stroke : 50 mm
- F Speed adjustment needle : With rod side
- G Lock direction/bypass tube position : Backward locking
- H Switch model No. : Reed T0H switch, Lead wire 1 m
- I Switch quantity : 2
- J Switch mounting position and mounting : B
- K Accessory : Rod clevis Cast iron

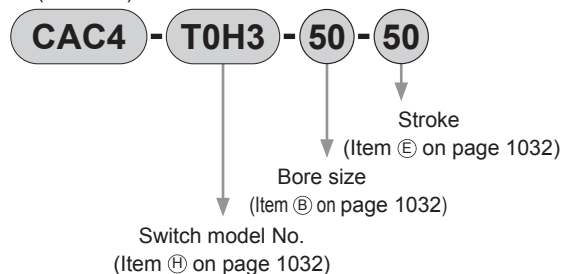
Code	Description				
A Clevis width (mm)					
A	16.5				
B	19.5				
AL	16.5 (Axial foot)				
BL	19.5 (Axial foot)				
B Bore size (mm)					
50	ø50				
63	ø63				
C Port thread					
Blank	Rc thread				
N	NPT thread (made-to-order product)				
G	G thread (made-to-order product)				
D Cushion					
Blank/H *2	Head side cushioned				
B	Both sides cushioned				
N	Without cushion				
E Stroke (mm)					
50, 75, 100, 125, 150					
F Speed adjustment needle					
Blank	With both sides				
R	With rod side				
H	With head side				
N	None				
G Lock direction/bypass tube position					
F	Forward lock (bypass tube position F, port position F1)				
F1	Forward lock (bypass tube position F1, port position F2)				
F2	Forward lock (bypass tube position F2, port position F1)				
B	Backward locking				
H Switch model No.					
Lead wire Straight	Lead wire L-shaped	Contact	Voltage AC DC	Indicator	Lead wire
T0H*	T0V*	Reed	● ●	1-color LED	2-wire
T5H*	T5V*		● ●	No indicator lamp	
T8H*	T8V*	Proximity	● ●	1-color LED	
T1H*	T1V*		● ●	1-color LED	2-wire
T2H*	T2V*		● ●		
T3H*	T3V*		● ●		
T3PH*	T3PV*		● ●	1-color LED	3-wire
T2YH*	T2YV*		● ●	2-color LED	2-wire
T2WH*	T2WV*		● ●		
T3YH*	T3YV*		● ●		
T3WH*	T3WV*		● ●	2-color LED	3-wire
T2YD*	-		● ●		
T2YDT*	-	● ●			
T2YDU*	-	● ●	AC magnetic field	2-wire	
T2JH*	T2JV*	● ●	2-color LED for AC magn field, connector	2-wire	
H0*	-	Reed	● ●	1-color LED off-delay	2-wire
H0Y*	-		● ●	1-color LED for strong magn field	2-wire
* Lead wire length					
Blank	1 m (standard)				
3	3 m (option)				
5	5 m (option)				
I Switch quantity					
R	1 on rod side				
H	1 on head side				
D	2				
T	3				
J Switch mounting position and mounting					
Blank	Tie rod mounting				
B					
C					
Z *4	Band mounting				
* Selectable only when the switch model No. is not specified					
Tie rod mounting position					
Blank	Without tie rod				
A					
B					
C					
K Accessory					
Blank	Without accessory (rod eye)				
Y	Rod clevis Cast iron				
Y1	Rod clevis Steel				
I	Rod eye Steel				
K	Bellows				
D	Limit switch	With dog			
D1	mounting base	Without dog			
Q	Clamp bracket				

How to order switch * Pay attention to the direction when mounting the tie rod. Refer to page 1036.

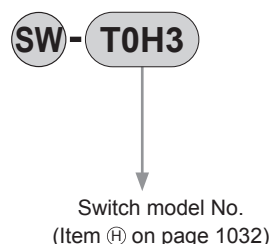
[Switch mounting: Tie rod]

T type cylinder switch

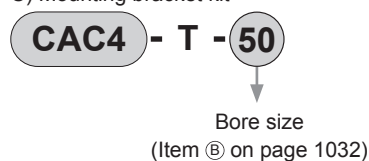
A) Switch body + mounting bracket set
(=B+C+D)



B) Switch body only



C) Mounting bracket kit



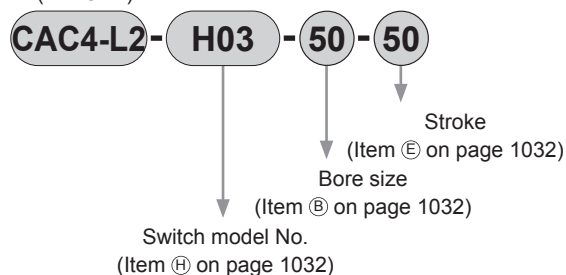
D) Mounting tie rod kit



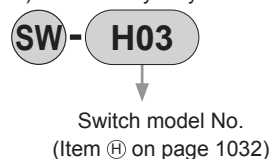
Strong magnetic field proof cylinder switch

● H type cylinder switch

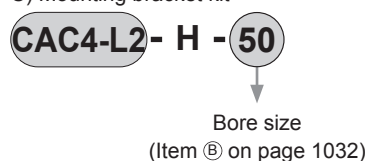
A) Switch body + mounting bracket set
(=B+C+D)



B) Switch body only



C) Mounting bracket kit

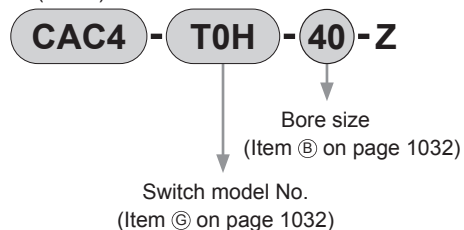


D) Mounting tie rod kit

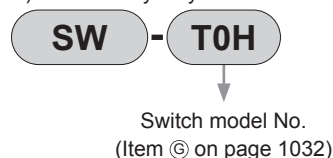


[Switch mounting: Band]

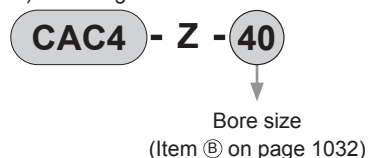
A) Switch body + mounting bracket set + band
(=B+C)



B) Switch body only



C) Mounting bracket set + band

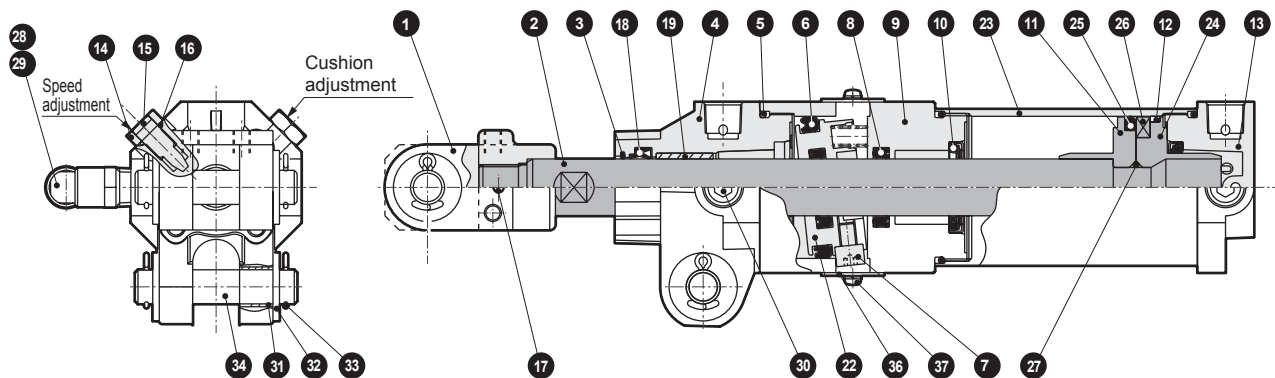


LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
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LN
Hand
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MechHnd/Chuk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

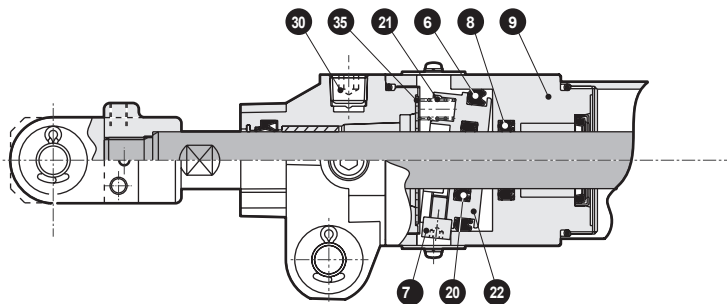
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LCX
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UCA2
ULK*
JSK/M2
JSG
USC3/USC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Internal structure and parts list

● With forward locking (UCAC2-F)



● With backward locking (UCAC2-B)



Cannot be disassembled

Note)Cushion packing 10 is attached to the rod side only when both sides are cushioned.

Parts list

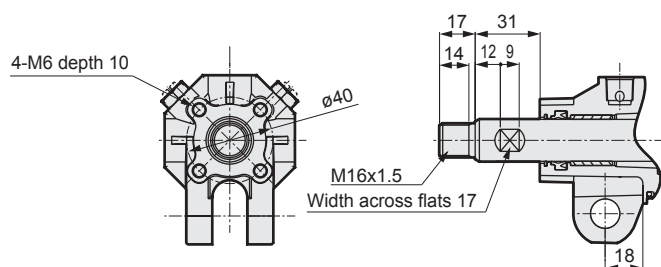
Part No.	Part name	Material	Remarks	Part No.	Part name	Material	Remarks
1	Rod clevis	Y: Cast iron Y1: Steel	Y: Manganese phosphate Y1: Black finish	20	Lock rod packing	Nitrile rubber	
2	Piston rod	Steel	Industrial chrome plating	21	Lock spring	Steel	Black finish
3	Metal scraper	Copper alloy		22	Lock metal	Special steel	Chromate
4	Rod cover	Aluminum alloy die-casting	Chromate	23	Cylinder tube	Aluminum alloy	
5	Cylinder gasket	Nitrile rubber		24	Piston (R)	Aluminum alloy die-casting	
6	Lock piston packing	Nitrile rubber		25	Piston packing	Nitrile rubber	
7	Fulcrum nut	Steel	Chromate	26	Magnet	Plastic	
8	Rod packing	Nitrile rubber		27	Piston gasket	Nitrile rubber	
9	Intermediate cover	Aluminum alloy		28	Bypass tube		Not required with PULL side lock (B)
10	Cushion packing	Nitrile rubber, steel	Chromate	29	Push-in fitting		Not required with PULL side lock (B)
11	Piston (H)	Aluminum alloy die-casting		30	Flush plug with sealant	Steel	Black finish
12	Wear ring	Polyacetal resin		31	Bush for clevis	Tetrafluoroethylene resin, steel	
13	Head cover	Aluminum alloy die-casting		32	Flat washer	Steel	Chromate
14	Hexagon nut	Steel	Chromate	33	Split pin	Steel	Chromate
15	Needle	Copper alloy		34	Clevis pin	Steel	Black finish
16	Needle gasket	Nitrile rubber		35	Washer	Steel	Not required with PULL side lock (B) Zinc chromate
17	Spring pin	Steel	Black finish	36	Dust cover	Aluminum alloy	
18	Rod packing	Nitrile rubber		37	Small machine screw	Steel	Chromate
19	Bush	Copper alloy					

Note: Do not disassemble as it may lead to a decrease in holding force.

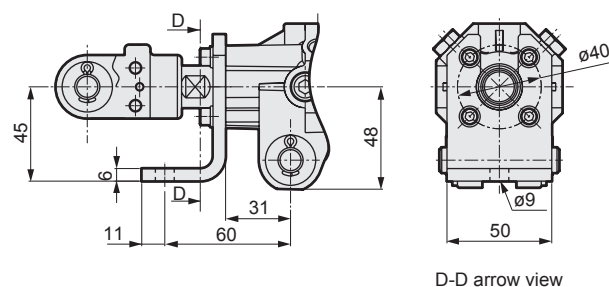
Dimensions



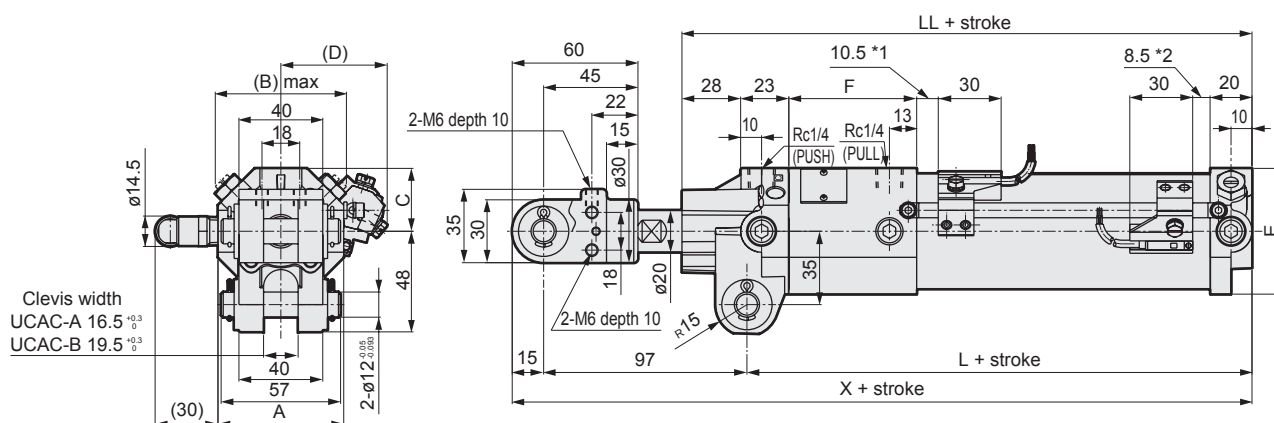
● Without rod eye



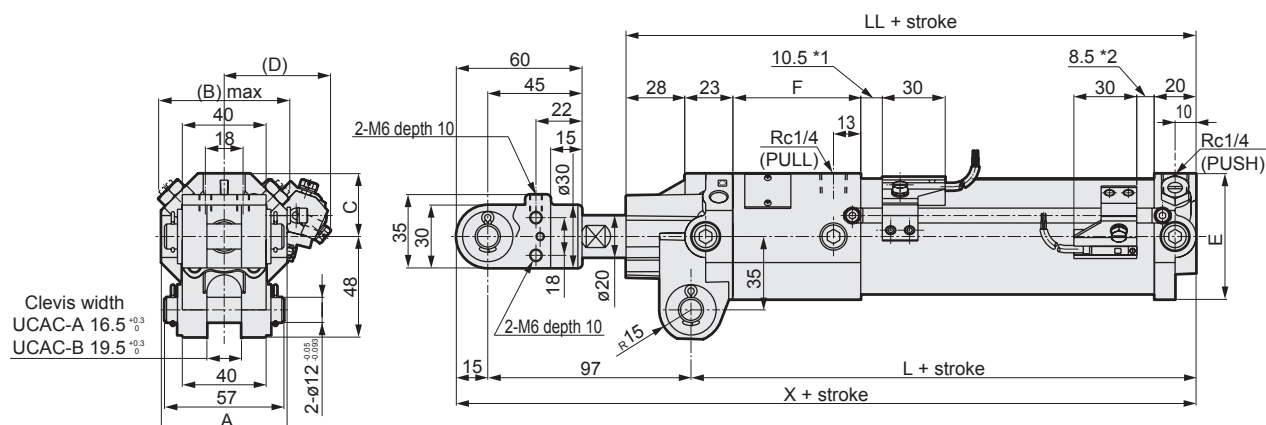
● Axial foot



● With forward locking (UCAC2-F)



● With backward locking (UCAC2-B)



Code	A	(B)	C	(D)	E	F	L	LL	X
Bore size (mm)									
ø50	60	63	30	50	60	61	141	172	253
ø63	70	66	35	56	70	63	143	174	255

*1: 5.5 for switch T8H/V and 13.5 for switch T2/3W

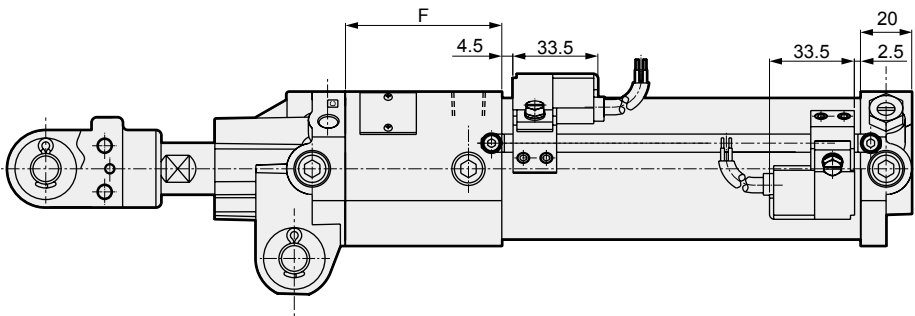
*2: 3.5 for switch T8H/V and 11.5 for switch T2/3W

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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*
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ShkAbs
FJ
FK
SpdContr
Ending

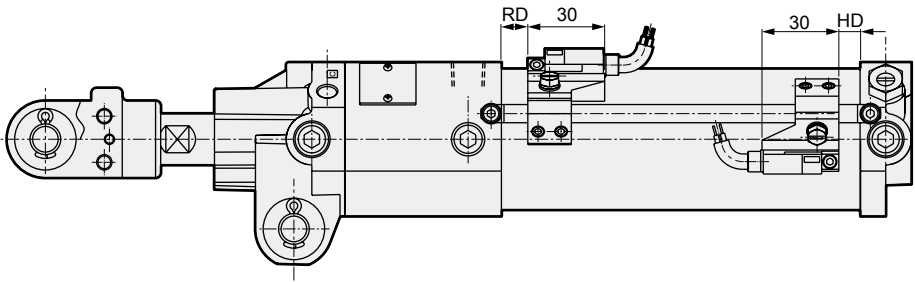
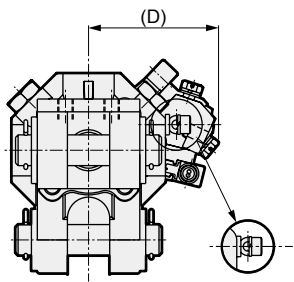
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STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/USC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Dimensions (Switch mounting: Tie rod type)

● H type switch mounting position



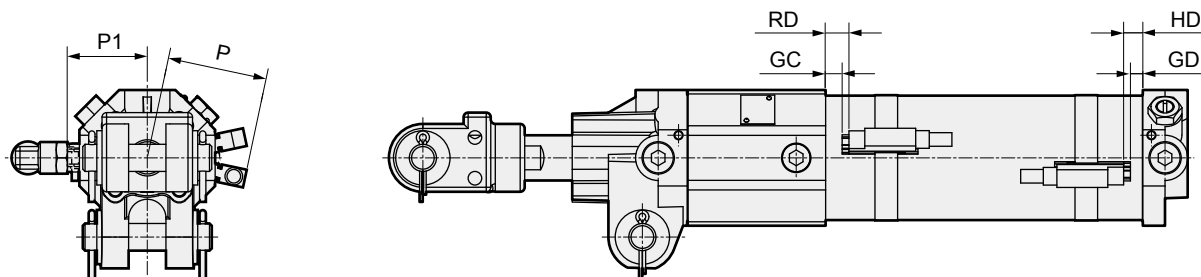
● T2YD type switch mounting position



Code	HD	RD	(D)	F
Bore size (mm)				
ø50	8.5	10.5	50	61
ø63	8.5	10.5	56	63

* Pay attention to the direction when mounting the tie rod.

Dimensions (switch mounting: band)



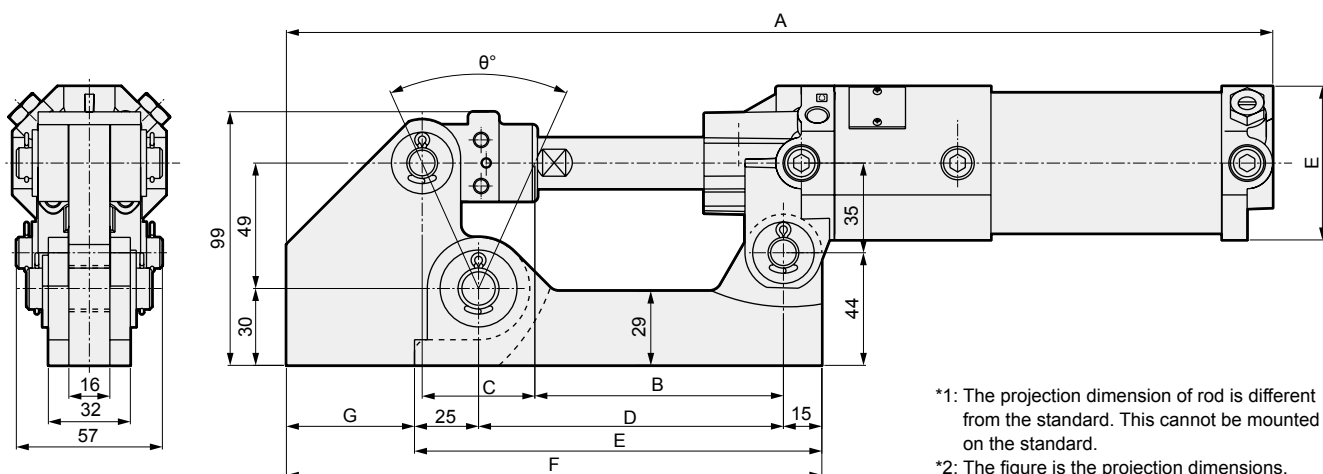
Code	T0,T5,T2,T3						T1,T2YD,T2YDT						T2Y,T3Y,T2J					
Bore size (mm)	GC	GD	RD	HD	P	P1	GC Note	GD Note	RD	HD	P	P1	GC Note	GD Note	RD	HD	P	P1
ø50	6.5	4.5	10.5	8.5	34.5	36	-	-	10.5	8.5	45.5	36	-	-	10.5	8.5	40	36
ø63	6.5	4.5	10.5	8.5	41	42.5	-	-	10.5	8.5	52	42.5	-	-	10.5	8.5	46.5	42.5

Code	T8						T2W,T3W					
Bore size (mm)	GC Note	GD Note	RD	HD	P	P1	GC	GD	RD	HD	P	P1
ø50	-	-	5.5	3.5	40	36	9.5	7.5	13.5	11.5	34.5	36
ø63	-	-	5.5	3.5	46.5	42.5	9.5	7.5	13.5	11.5	41	42.5

Note: Because the rail and the end face of the switch are on the same surface, the dimensions of GC and GD will be the same as those of RD and HD.

Dimensions

● Clamp bracket dimensions



- *1: The projection dimension of rod is different from the standard. This cannot be mounted on the standard.
- *2: The figure is the projection dimensions. Dimension B represents the center position of the rod eye pin when the rod is retracted.
- *3: Dimensions with bellows are the same.
- *4: This product is mounted by welding.

Code	Stroke length	A	B	C	D	E	F	G	θ°
Model No.									
UCAC2-A-50*-Q	50	387	97	44	119	159	209	50	48
UCAC2-A-75*-Q	75	435	107	70	142	182	232	50	71
UCAC2-A-100*-Q	100	478	115	90	160	200	250	50	85
UCAC2-A-125*-Q	125	531	128	120	188	228	278	50	101
UCAC2-A-150*-Q	150	576	128	140	198	238	298	60	110

● Rod eye dimensions

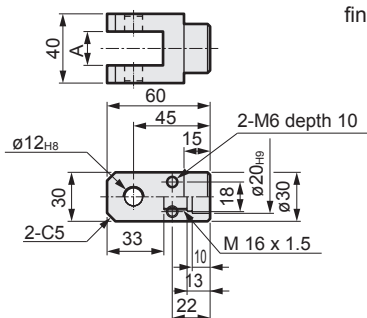
● Rod clevis Cast iron (Y) dimensions

* Spring pin is attached.

Model No.	A	Applicable clamp	Weight (kg)
CAC4-IB	19.5 ^{0.1-} _{0.4}	UCAC2-A, UCAC2-B	0.27

● Rod clevis Steel (Y1) dimensions

For ø40 to ø63



* A pin, split pin, spring pin and a plain washer are attached.

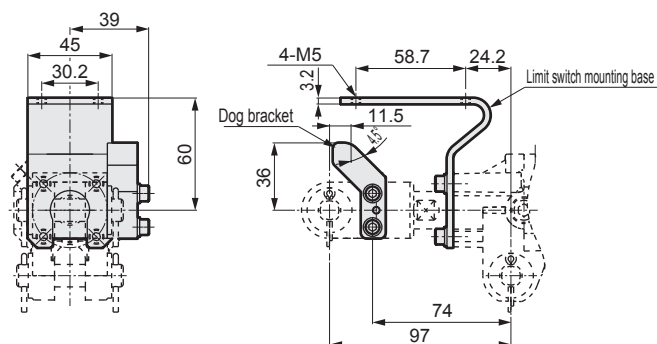
Model No.	A	Applicable clamp	Weight (kg)
CAC4-Y1A	16.5 ^{+0.3} ₀	UCAC2-A	0.37
CAC4-Y1B	19.5 ^{+0.3} ₀	UCAC2-B	0.37

● Limit switch mounting base dimensions

Material: Steel, black finish

- Dog bracket dimensions

Material: Steel, black finish

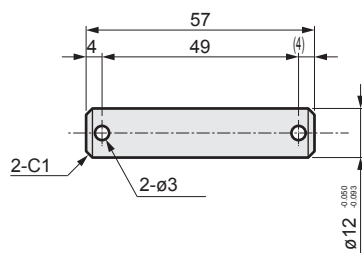


● Use WLH2 limit switch [OMRON] or equivalent.

Model No.	Part name	Applicable clamp	Weight (kg)
CAC4-L	Limit switch mounting base	UCAC2-A, UCAC2-B	0.18
CAC4-D	Dog bracket		0.08

● clevis pin dimensions

Material:Steel Zinc chromate
treatment



* A split pin and flat washer are attached.

Model No.	Applicable clamp	Weight (kg)
CAC4-P	UCAC2-A, UCAC2-B	0.05