

Product MAP with brake function

1) Cylinder with position locking and brake

Model	Function	Structure/Operational principle	Driving cylinder	Features
ULK* JSK/M2 JSG JSC3/JSC4 USSD UFCD USC JSB3 LMB LML		Swash plate ● Brake operating principle When air is discharged from port A, the brake plates A and B tilt to the arrow direction from the fulcrum. This boosts the brake force by generating cylinder thrust, enabling retention of the piston rod. ● Brake release principle When air is supplied from port A, the brake plates A and B are pushed by the release piston. The brake plates A and B become perpendicular to the piston rod, and the piston rod becomes free to move.	SCP*2 $\phi 16$	Cylinder with brake. It can be stopped or held stationary during operation.
ULK			CMK2 $\phi 20$ to $\phi 40$	JSG saves more space in the brake area when compared to the conventional JSC3 Series. The ULK also saves more space by reducing the brake height compared to the conventional JSK2 Series.
JSK2	With brake (Stop when operating)	Rod clamping ● Brake release principle Air supplied from port A pushes the piston under it and opens the lever. The eccentric rings directly connected to the lever rotate and release the piston rod. ● Brake operating principle If air is discharged from port A, the eccentric rings rotate with the spring force, generating an eccentric load to brake the piston rod.	CMK2 $\phi 20$ to $\phi 40$	[Applications] (1) When multipoint positioning is required (2) When position locking is required (3) When emergency stop is required (4) When locking a workpiece
JSM2			CMA2 $\phi 20$ to $\phi 40$	
JSG			SCG $\phi 40$ to $\phi 100$	
JSC3			SCA2 $\phi 40$ to $\phi 100$	
JSC4			SCS2 $\phi 125$ to $\phi 180$	
USSD	Free position locking (Retain stationary state)	Round slit method New long life position locking mechanism is used. Applying torque M to the lock metal generates axial force F. This force holds the rod.	SSD $\phi 25$ to $\phi 100$	Cylinder with position locking mechanism (for holding cylinder stationary). 2 lock direction
UFCD			FCD $\phi 25$ to $\phi 63$	Opposite locking direction is free
USC			SCA2 $\phi 40$ to $\phi 100$	[Application] When position locking is required

2) Braking unit

Model	Function	Size	Features
JSB3	Brake (Stop when operating)	Rod size $\phi 16$ to $\phi 45$	A module of the brake mechanism of JSC3 Series. Able to stop the movable rod immediately and lock it firmly, it can be used in safety mechanisms and clamping mechanisms of many kinds of devices.
LMB	Stationary state locked	THK Rail width: 15/20/25	A lock unit installed in a linear guide. When used with a system incorporating a linear guide, this lock unit can be used to lock a workpiece after moving it to a specified position, or to enable emergency stop for safety, etc. LMB is narrower than LML, and LML is lower-profile than LMB.
LML		THK, IKO Rail width: 15/20/25/30/35	

USSD

With brake/position locking

Position locking compact cylinder

φ20/φ25/φ32/φ40
φ50/φ63/φ80/φ100

Overview

Compact cylinder that integrates the cylinder switch into the body, with an anti-dropping mechanism that functions at any piston rod position, and an ultrashort compact square cylinder.



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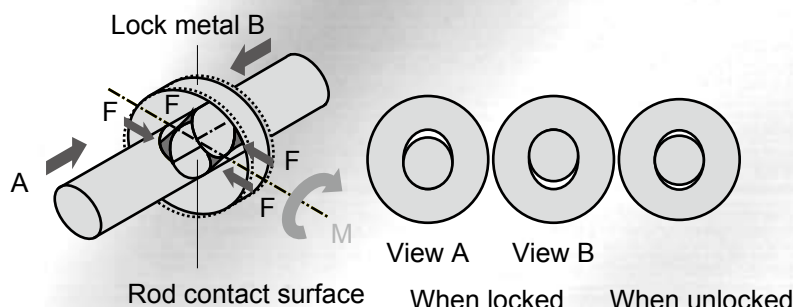
LCW
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USC
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HCM
HCA
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UCAC2
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UCAC-N
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RRC
GRC
RV3*
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MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Compact and short stroke length with position

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
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LBC
CAC4
UCAC2
CAC-N
UCAC-N
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RRC
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RV3*
NHS
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MedHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

High abrasion-resistant round slit method

New long life position locking mechanism is used. Applying torque M to the lock metal generates axial force F . This force holds the rod.



Lockable at any point throughout full stroke length

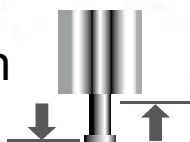
The stop position can be locked at any point throughout the full stroke length, including the stroke end, as long as the piston rod remains still.

No more workpiece damage

Prevents the cylinder from falling due to its own weight during power blackouts, etc. This resolves the workpiece damage issue.

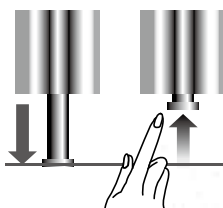
2 types of lock direction

Either forward lock or backward lock can be selected.



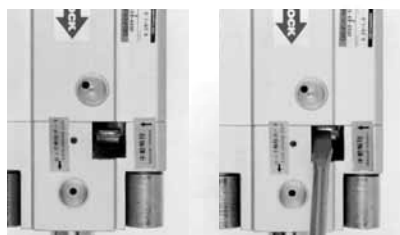
Lock reverse direction is free

Piston rod moves freely in reverse lock direction, and is therefore easy to remove even with workpiece clamped.



Easy lock release

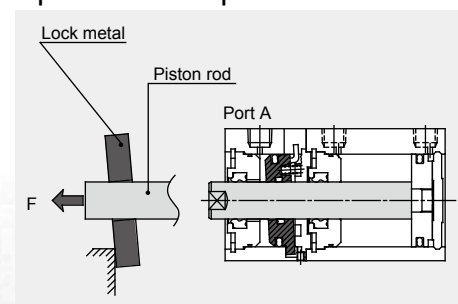
It can be unlocked easily with a flathead screwdriver.



Lock in operation

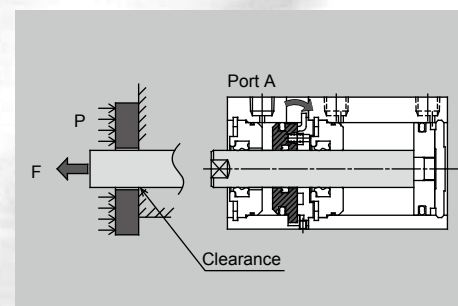
Unlocked

Operational explanation



Lock operation

If air is discharged from port A, the lock metal tilts in response to spring force, and the piston rod is held.



Unlocked

Air supply from port A brings the lock plate to vertical. This creates a clearance between the lock metal and the piston rod, allowing the rod to move freely.

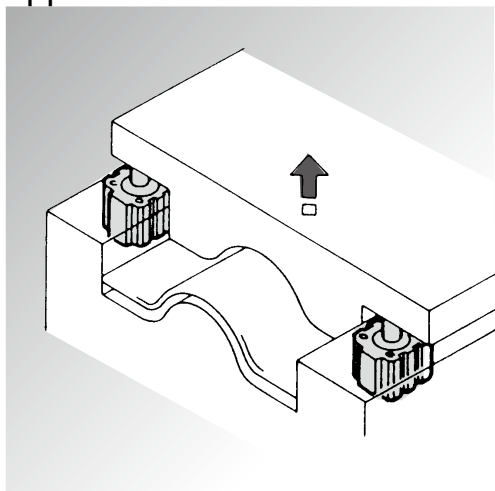


SUPER COMPACT CYLINDER
USSD SERIES

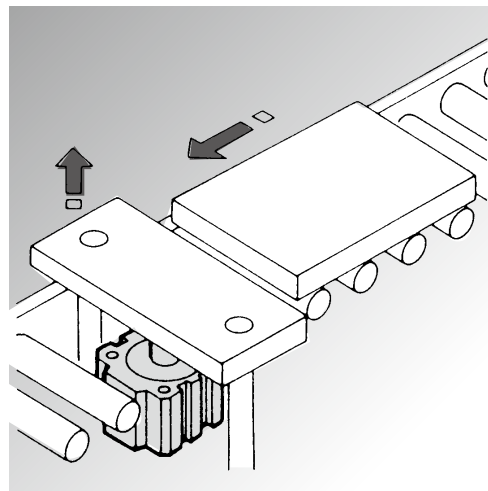
locking.

Space saving short stroke compact cylinder now with position locking mechanism.
Workpiece safety is maintained even during power failures or accidents.

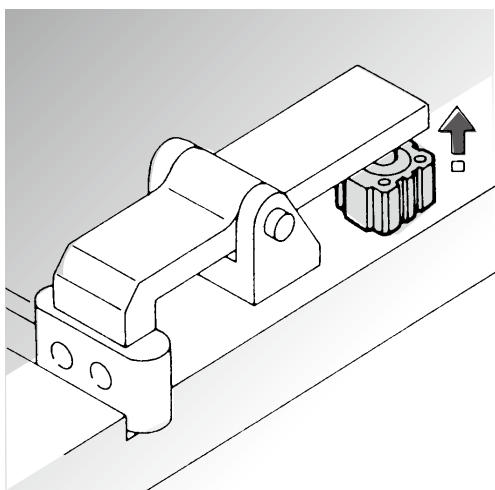
Applications



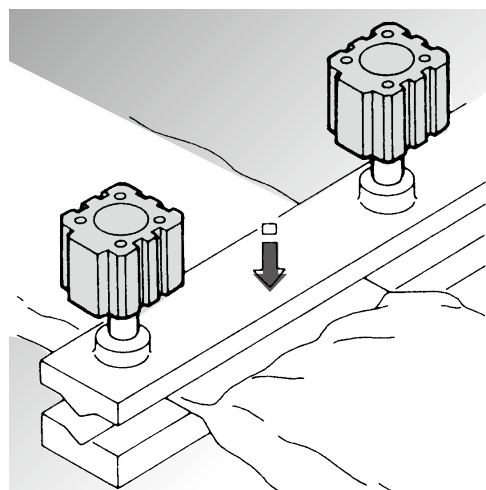
● Safety mechanism in mold casting



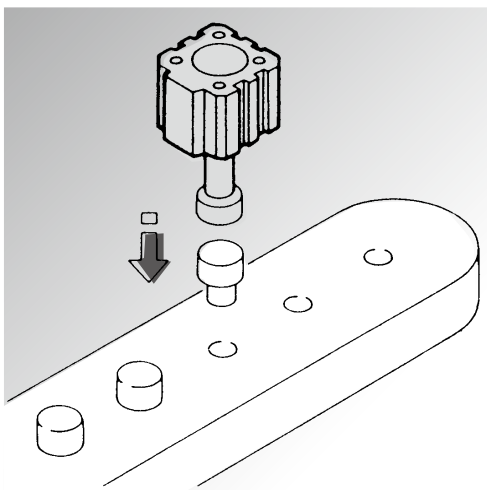
● Position locking of stopper



● Position locking of clamp jig



● Position locking of press jig



● Position locking of press-fit jig

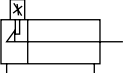
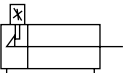
LCW
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STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
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SpdContr
Ending

Series variation



Position locking compact cylinder USSD Series

LCW
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STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/USC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
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SpdContr
Ending

Variation	Model No. JIS symbol	Bore size (mm)	Standard stroke length (mm)						
			5	10	15	20	25	30	
Double acting with switch	USSD USSD-L 	φ20	●	●	●	●	●	●	
		φ25/φ32/φ40/φ50	●	●	●	●	●	●	
		φ63/φ80/φ100	●	●		●		●	
Double acting/high load with switch	USSD-K USSD-KL 	φ20	●	●	●	●	●	●	
		φ25/φ32/φ40/φ50		●	●	●	●	●	
		φ63/φ80/φ100		●		●		●	

●: Standard ○: Option ■: Not available

Stroke length (mm)								Min. stroke length (mm)	Max. stroke length (mm)	Custom stroke length (per mm)	Option	Mounting bracket		Switch	Page
	40	50	60	70	80	90	100				Rod end male thread	Foot	Clevis bracket		
											N	LB	CB		
	■	■	■	■	■	■	■	1	30	1	○	○	○	○	836
	●	●	■	■	■	■	■		50		○	○	○		
	●	●	■	■	■	■	■		50		○	○	○		
	●	●	■	■	■	■	■	1	200	1	○	○	○	○	836
	●	●	●	●	●	●	●		300		○	○	○		
	●	●	●	●	●	●	●		300		○	○	○		

LCW
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Ending



Position locking compact cylinder

USSD/USSD-K Series

● Bore size: $\phi 20/\phi 25/\phi 32/\phi 40/\phi 50/\phi 63/\phi 80/\phi 100$

JIS symbol



Common specifications

Descriptions		USSD/USSD-K							
Bore size	mm	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
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) (no load) Note							
Proof pressure	MPa	1.6 (≈230 psi, 16 bar)							
Ambient temperature	°C	-10 (14°F) to 60 (140°F) (no freezing)							
Port size		M5		Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance	mm	USSD: ^{+1.0} ₀				USSD-K: ^{+2.0} ₀			
Working piston speed	mm/s	50 to 500					50 to 300		
Cushion		USSD: None				USSD-K: Rubber cushion			
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)							
Lock force	N	150	235	386	603	943	1497	2464	3847
Option		Rod end male thread (N)							
Allowable absorbed energy J	Without cushion	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56
	With cushion	0.157	0.157	0.402	0.628	0.98	1.56	2.51	7.92

Note: Depending on the installation condition, piston rod may start moving at 0.05 MPa. Therefore, pay attention to residual and exhaust pressure.

Individual specifications

Model No.	USSD (double acting single rod)	USSD-K (double acting single rod/high load)
Stroke tolerance mm	+1.0 0	+2.0 0
Cushion	None	Rubber cushion

Stroke length

Model	Bore size (mm)	Standard stroke (mm) (*4)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke with switch (mm)
USSD	$\phi 20$	5, 10, 15, 20, 25, 30	30	1 (*3)	5 (*4)
	$\phi 25, \phi 32, \phi 40, \phi 50$	5, 10, 15, 20, 25, 30, 40, 50	50		
	$\phi 63, \phi 80, \phi 100$	5, 10, 20, 30, 40, 50			
USSD-K	$\phi 20$	5, 10, 15, 20, 25, 30, 40, 50	200 (*1)	1 (*3)	5 (*4)
	$\phi 25, \phi 32, \phi 40, \phi 50$	10, 15, 20, 25, 30, 40, 50 60, 70, 80, 90, 100	300 (*1)		
	$\phi 63, \phi 80, \phi 100$	10, 20, 30, 40, 50, 60, 70 80, 90, 100			

*1 : Stroke length over standard to maximum is available in increments of 10. (Example) USSD-K-20: 60, 70, 80, 90, 100

Dimensions of custom stroke length (example: 64 mm stroke length) are the same as the next longer stroke length (example: 70 mm stroke length).

*2 : The custom stroke length is available in 1 mm increments. However, the total length is the same as that of the next longer standard stroke length.

*3 : The min. stroke length is available from 1 mm. Take into account the stroke tolerance when placing an order.

4 : 10 mm or shorter type is not available for 2-color display, off-delay, strong magnetic field proof, or with T1 or T8* switch.

Switch specifications

- 1-color/2-color display

Descriptions	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 (custom)	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	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC
Load current	5 to 100 mA	5 to 20 mA (*1)			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 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)		Without 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 other switch specifications.

*2 : 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)

*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.

*4 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

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
φ20	Push	78.5	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	58.9	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
φ25	Push	1.23×10^2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	94.3	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
φ32	Push	2.01×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	1.51×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
φ40	Push	3.14×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	2.64×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
φ50	Push	4.91×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	4.13×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
φ63	Push	7.79×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	7.01×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
φ80	Push	1.26×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	1.13×10^3	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
φ100	Push	1.97×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	1.79×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

LCW
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LCX
LCM
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STG
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STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
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MCP
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ShkAbs
FJ
FK
SpdContr
Ending

USSD/USSD-K Series

How to order

● Without switch (without magnet for switch)

USSD-K - **20** - **5** - **F** - **N** - **LB**

● With switch (built-in magnet for switch)

USSD-KL - **20** - **5** - **F** - **T0H** - **R** - **N** - **LB**

A Model No.

B Bore size (mm)

C Stroke length (mm)

D Lock direction

E Switch model No.

*3

*4

F Switch quantity

G Option

H Mounting bracket

*2

*4

⚠ Precautions for model No. selection

*1 : Switches other than **E** Switch model No. are also available. (Custom order)

Refer to Ending Page 1 for details.

*2 : The mounting bracket is attached at shipment.

3 : T8 switch cannot be mounted for USSD-*L with bore size φ20 to φ32.

*4 : Switches and mounting brackets are shipped with the product.
Contact CKD if assembling before shipment is necessary.

[Example of model No.]

USSD-KL-20-5-F-T0H-R-N

Model: Position locking compact cylinder

A Model No. : Double acting/high load/with switch

B Bore size : φ20 mm

C Stroke length : 5 mm

D Lock direction : Forward locking

E Switch model No. : Reed axial lead wire 1 m

F Switch quantity : 1 on rod side

G Option : Rod end male thread

Code	Content
A Model No.	
USSD	Double acting
USSD-L	Double acting/with switch
USSD-K	Double acting/high load
USSD-KL	Double acting/high load/with switch

B Bore size (mm)	
20	φ20
25	φ25
32	φ32
40	φ40
50	φ50
63	φ63
80	φ80
100	φ100

C Stroke length (mm)	
Refer to the stroke length table on the following page.	

D Lock direction	
F	Forward locking
B	Backward locking

E Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Display	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	Without indicator lamp	
T8H*	T8V*		●	●	1-color display	
T1H*	T1V*	Proximity	●		1-color display	2-wire
T2H*	T2V*			●		
T3H*	T3V*			●	1-color display (custom)	3-wire
T3PH*	T3PV*			●		
T2WH*	T2WV*			●	2-color display	2-wire
T2YH*	T2YV*			●		
T3WH*	T3WV*			●		
T3YH*	T3YV*			●	Off-delay	2-wire
T2JH*	T2JV*			●		

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

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

G Option	
Blank	Rod end female thread
N	Rod end male thread

H Mounting bracket	
LB	Axial foot
CB	Clevis bracket (pin and snap ring attached)

Stroke length

Series	Stroke length (mm)	Bore size (mm)							
		φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
USSD	Standard stroke length	5	●	●	●	●	●	●	●
		10	●	●	●	●	●	●	●
		15	●	●	●	●	●	●	●
		20	●	●	●	●	●	●	●
		25	●	●	●	●	●	●	●
		30	●	●	●	●	●	●	●
		40	●	●	●	●	●	●	●
		50	●	●	●	●	●	●	●
	Min. stroke length	*1	1						
	Custom stroke length	*1, *2	1						
USSD-K	Standard stroke length	5	●	●	●	●	●	●	●
		10	●	●	●	●	●	●	●
		15	●	●	●	●	●	●	●
		20	●	●	●	●	●	●	●
		25	●	●	●	●	●	●	●
		30	●	●	●	●	●	●	●
		40	●	●	●	●	●	●	●
		50	●	●	●	●	●	●	●
		60	●	●	●	●	●	●	●
		70	●	●	●	●	●	●	●
		80	●	●	●	●	●	●	●
		90	●	●	●	●	●	●	●
		100	●	●	●	●	●	●	●
	Min. stroke length	*1	1						
	Custom stroke length	*1, *2	1						

*1: The total length is the same as that of the next longer standard stroke length.
(Less than 5 mm with switch not available)
2-color display, off-delay, or 10 mm or shorter type with T1* or T8* switch is not available.

How to order switch

SW - T0H

Switch model No.
(Item ⑤ on the previous page)

Dimensions for ordering mounting bracket

Bore size (mm)	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
Mounting bracket								
Foot (LB)	USSD-LB-20	USSD-LB-25	USSD-LB-32	USSD-LB-40	USSD-LB-50	USSD-LB-63	USSD-LB-80	USSD-LB-100
Clevis bracket (CB)	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100

*1: The foot mounting bracket is provided as 2 pcs./set.

Specifications for rechargeable battery

(Catalog No. CC-1226A)

● Design compatible with rechargeable battery manufacturing process.

USSD -...- P4*

USSD-K

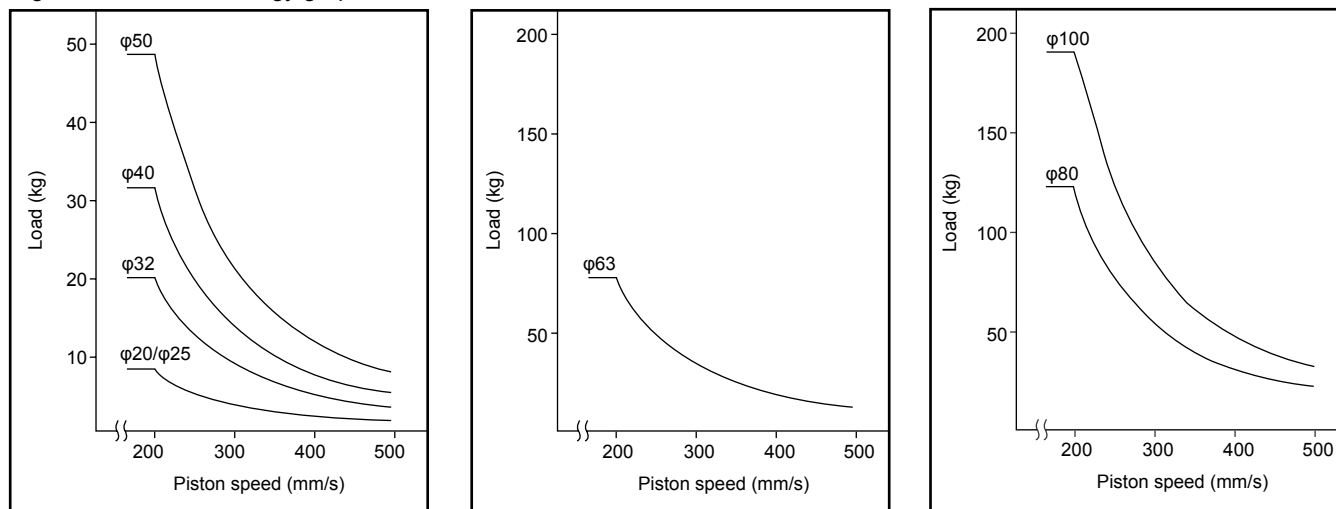
* Contact CKD for details.

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

USSD/USSD-K Series

High load allowable energy graph/weight table

High load allowable energy graph



USSD Cylinder weight table (weight with switch includes weight for two cylinder switches)

Unit: g

Stroke length (mm)	5		10		15		20		25		30		40		50	
Bore size (mm)	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch
φ20	173	228	185	260	198	273	211	286	223	298	236	311	-	-	-	-
φ25	247	338	262	353	278	369	294	385	310	401	325	416	357	448	388	479
φ32	342	456	364	478	386	500	408	522	429	543	451	565	495	609	538	652
φ40	493	636	520	663	546	689	573	716	600	743	626	769	679	822	732	875
φ50	859	1053	901	1095	943	1137	985	1179	1027	1221	1070	1264	1154	1348	1238	1432
φ63	1342	1621	1397	1676	-	-	1507	1786	-	-	1617	1896	1728	2007	1838	2117
φ80	2591	3004	2678	3091	-	-	2851	3264	-	-	3024	3437	3198	3611	3371	3784
φ100	4219	4786	4333	4900	-	-	4560	5127	-	-	4788	5355	5015	5582	5243	5810

USSD-K Cylinder weight table (weight with switch includes weight for two cylinder switches) Unit: g

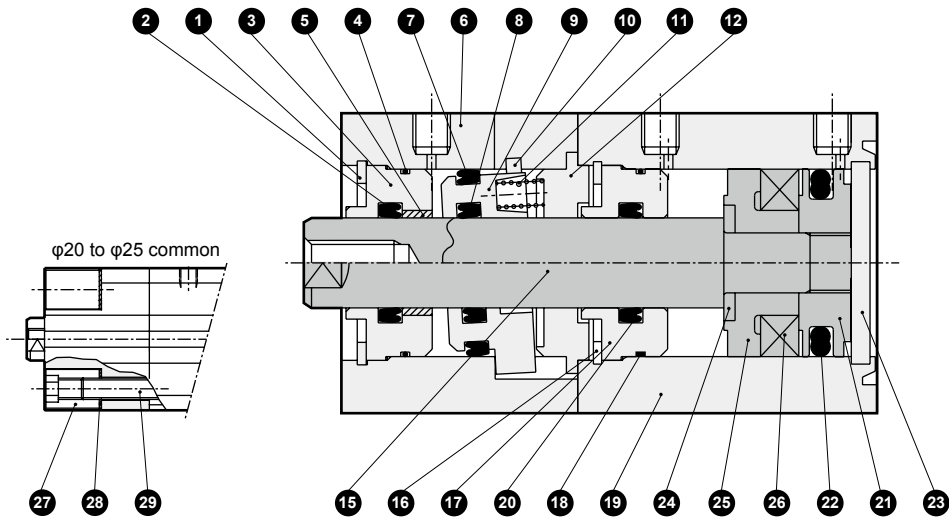
Stroke length (mm)	5		10		15		20		25		30		40		50		60		70		80	
Bore size (mm)	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch
φ20	185	260	198	273	211	286	223	298	236	311	248	323	273	348	298	373	323	398	348	423	373	448
φ25	-	-	278	369	294	385	310	401	325	416	342	433	374	465	406	497	438	529	470	561	502	593
φ32	-	-	408	522	429	543	451	565	473	587	495	609	538	652	581	695	624	738	667	781	710	824
φ40	-	-	573	716	600	743	626	769	652	795	679	822	732	875	785	928	838	981	891	1034	944	1087
φ50	-	-	985	1179	1027	1221	1070	1264	1113	1307	1154	1348	1238	1432	1322	1516	1406	1600	1490	1684	1574	1768
φ63	-	-	1507	1786	-	-	1617	1896	-	-	1728	2007	1838	2117	1948	2227	2058	2337	2168	2447	2278	2557
φ80	-	-	2851	3264	-	-	3024	3437	-	-	3198	3611	3371	3784	3544	3957	3717	4130	3890	4303	4063	4476
φ100	-	-	4560	5127	-	-	4788	5355	-	-	5015	5582	5243	5810	5471	6038	5699	6266	5927	6494	6155	6722
Stroke length (mm)	90		100		110		120		130		140		150		160		170		180		190	
Bore size (mm)	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch
φ20	398	473	423	498	448	523	473	548	498	573	523	598	548	623	573	648	598	673	623	698	648	723
φ25	534	625	566	657	598	689	630	721	662	753	694	785	726	817	758	849	790	881	822	913	854	945
φ32	753	867	796	910	839	953	882	996	925	1039	968	1082	1011	1125	1053	1167	1096	1210	1139	1253	1182	1296
φ40	997	1140	1050	1193	1103	1246	1156	1299	1209	1352	1262	1405	1315	1458	1368	1511	1421	1564	1474	1617	1527	1670
φ50	1658	1852	1742	1936	1826	2020	1910	2104	1994	2188	2078	2272	2162	2356	2260	2454	2345	2539	2430	2624	2515	2709
φ63	2388	2667	2498	2777	2608	2887	2718	2997	2828	3107	2938	3217	3048	3327	3158	3437	3268	3547	3378	3657	3488	3767
φ80	4236	4649	4409	4822	4582	4995	4755	5168	4928	5341	5101	5514	5274	5687	5447	5860	5620	6033	5793	6206	5966	6379
φ100	6383	6950	6611	7178	6839	7406	7067	7634	7295	7862	7523	8090	7751	8318	7979	8546	8207	8774	8435	9002	8663	9230
Stroke length (mm)	200		210		220		230		240		250		260		270		280		290		300	
Bore size (mm)	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch
φ20	673	748	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
φ25	886	977	929	1009	961	1041	993	1073	1025	1105	1057	1137	1089	1169	1121	1201	1153	1233	1185	1265	1217	1297
φ32	1225	1339	1268	1382	1311	1425	1354	1468	1397	1511	1440	1554	1483	1597	1526	1640	1569	1683	1612	1726	1655	1769
φ40	1580	1723	1633	1776	1686	1829	1739	1882	1792	1935	1845	1988	1898	2041	1951	2094	2004	2147	2057	2200	2110	2253
φ50	2600	2794	2685	2879	2770	2964	2855	3049	2940	3134	3025	3219	3110	3304	3195	3389	3280	3474	3365	3559	3450	3644
φ63	3598	3877	3707	3986	3817	4096	3927	4206	4037	4316	4147	4426	4257	4536	4367	4646	4477	4756	4587	4866	4697	4976
φ80	4139	6552	6311	6724	6484	6897	6657	7070	6830	7243	7003	7416	7176	7589	7349	7762	7522	7935	7695	8108	7868	8281
φ100	8891	9458	9120	9687	9348	9915	9576	10143	9804	10371	10032	10599	10260	10827	10488	11055	10716	11283	10944	11511	11172	11739

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

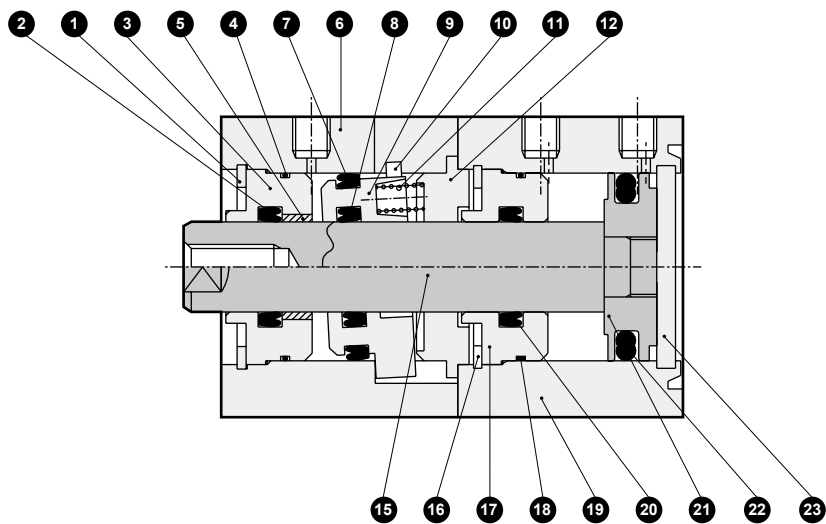
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JSG
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USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Internal structure and parts list (φ20, φ25)

- USSD-L-20, 25-F
(Double acting, with switch, forward locking: F)



- USSD-20, 25-F
(Double acting, forward locking: F)



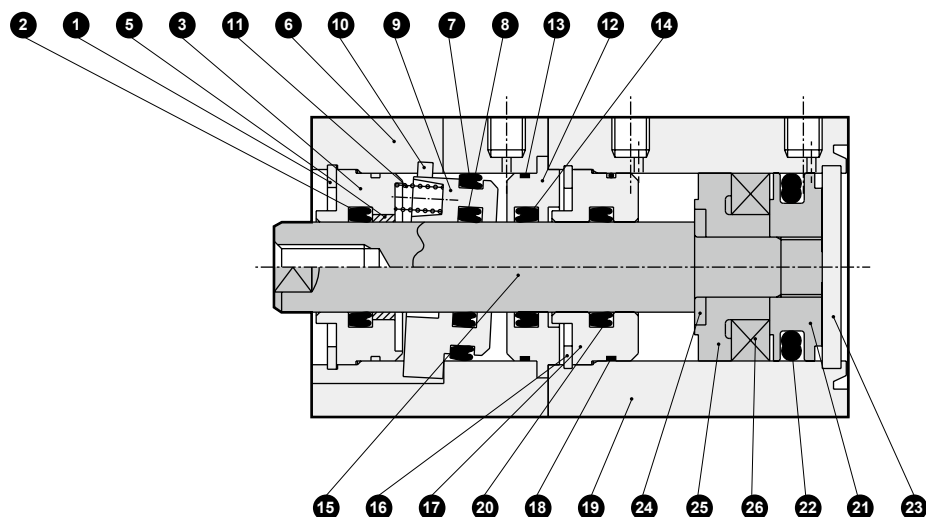
Cannot be disassembled

Parts list

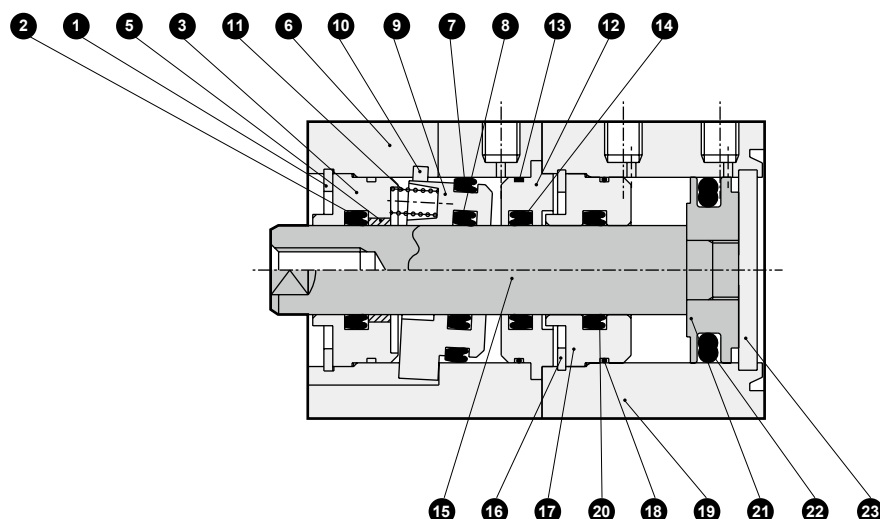
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	C type snap ring (2)	Steel	Zinc phosphate film	9	Lock metal	Special steel	Zinc chromate
2	Rod packing (2)	Nitrile rubber		10	Release lever	Steel	Black finish
3	Rod metal (2)	Special aluminum	Alumite	11	Spring	Steel	Black finish
4	Rod metal gasket (2)	Nitrile rubber		12	Joint	Aluminum alloy	
5	Bush (2)	Dry bearing		13	Rod metal gasket (3)	Nitrile rubber	(B type only)
6	Lock body	Aluminum alloy	Hard alumite	14	Rod packing (4)	Nitrile rubber	(B type only)
7	Piston packing (2)	Nitrile rubber		15	Piston rod	Stainless steel	Industrial chrome plating
8	Rod packing (3)	Nitrile rubber		16	C type snap ring (1)	Steel	Zinc phosphate film

Internal structure and parts list (φ20, φ25)

- USSD-L-20, 25-B
(Double acting, with switch, backward locking: B)



- USSD-20, 25-B
(Double acting, backward locking: B)



Cannot be disassembled

Parts list

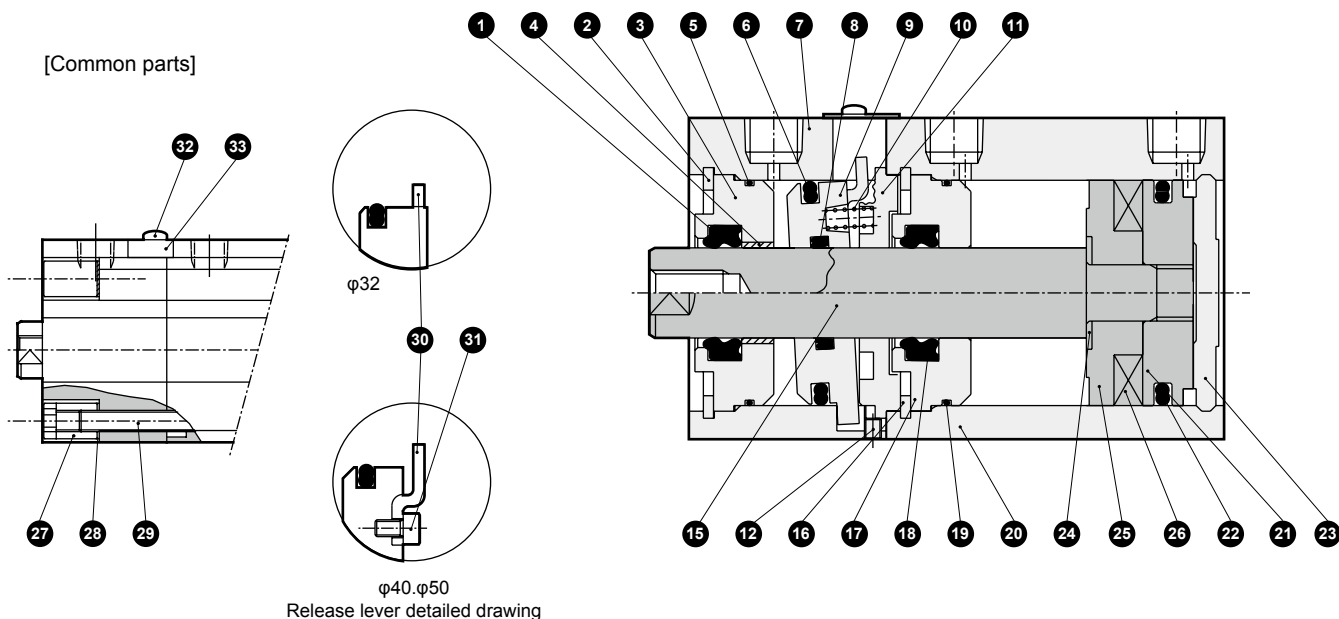
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
17	Rod metal (1)	Special aluminum	Alumite	24	Spacer washer	Stainless steel	With switch only
18	Rod metal gasket (1)	Nitrile rubber		25	Spacer	Special resin	With switch only
19	Cylinder body	Aluminum alloy	Hard alumite	26	Piston magnet	Plastic magnet	With switch only
20	Rod packing (1)	Nitrile rubber		27	Round nut	Steel	Zinc chromate
21	Piston	Stainless steel		28	Conical spring washer	Steel	Black finish
22	Piston packing (1)	Nitrile rubber		29	Hexagon socket set screw	Steel	Black finish
23	Cover	Stainless steel					

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

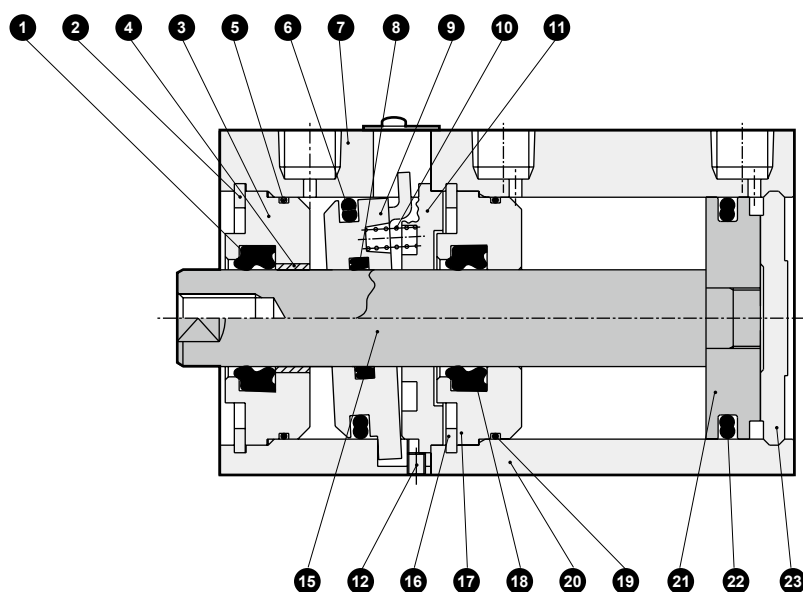
Internal structure and parts list (φ32 to φ50)

- USSD-L-32 to 50-F
(Double acting, with switch, forward locking: F)

[Common parts]



- USSD-32 to 50-F
(Double acting, forward locking: F)



Cannot be disassembled

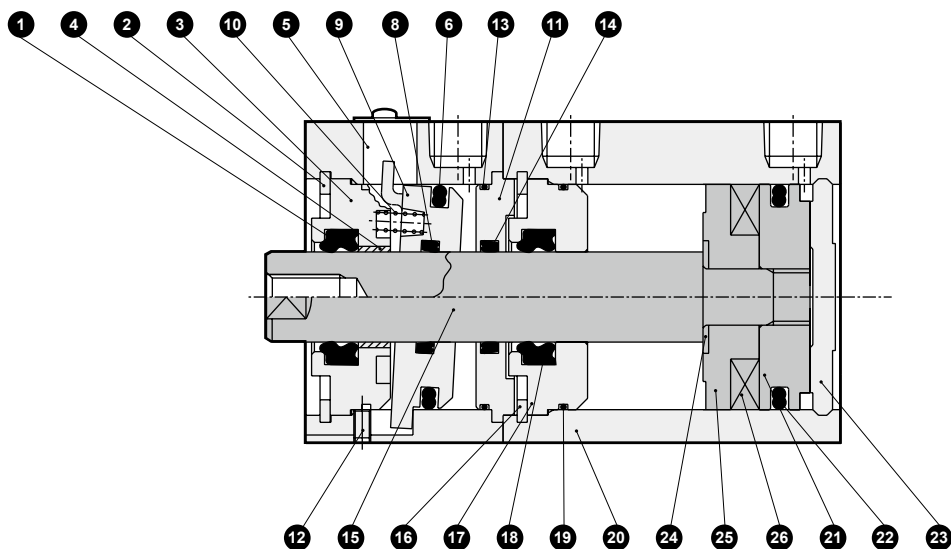
Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod packing (2)	Nitrile rubber		9	Lock metal	Special steel	Zinc chromate
2	C type snap ring (2)	Steel	Zinc phosphate film	10	Spring	Steel	Black finish
3	Rod metal (2)	Aluminum alloy	Alumite (*1)	11	Joint	Aluminum alloy	
4	Bush (2)	Dry bearing		12	Hexagon socket set screw	Steel	Black finish (φ40 to φ50)
5	Rod metal gasket (2)	Nitrile rubber		13	Rod metal gasket (3)	Nitrile rubber	(B type only)
6	Piston packing (2)	Nitrile rubber		14	Rod packing (4)	Nitrile rubber	(B type only)
7	Lock body	Aluminum alloy	Hard alumite	15	Piston rod	Steel	Industrial chrome plating
8	Rod packing (3)	Nitrile rubber		16	C type snap ring (1)	Steel	Zinc phosphate film

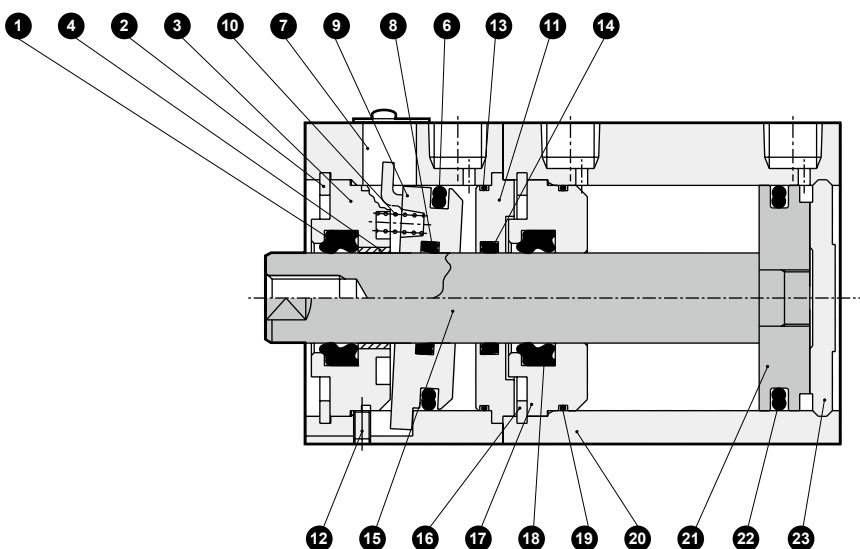
*1: If the lock direction is F with φ32, chromate is used for the surface treatment.

Internal structure and parts list (φ32 to φ50)

- USSD-L-32 to 50-B
(Double acting, with switch, backward locking: B)



- USSD-32 to 50-B
(Double acting, backward locking: B)



Cannot be disassembled

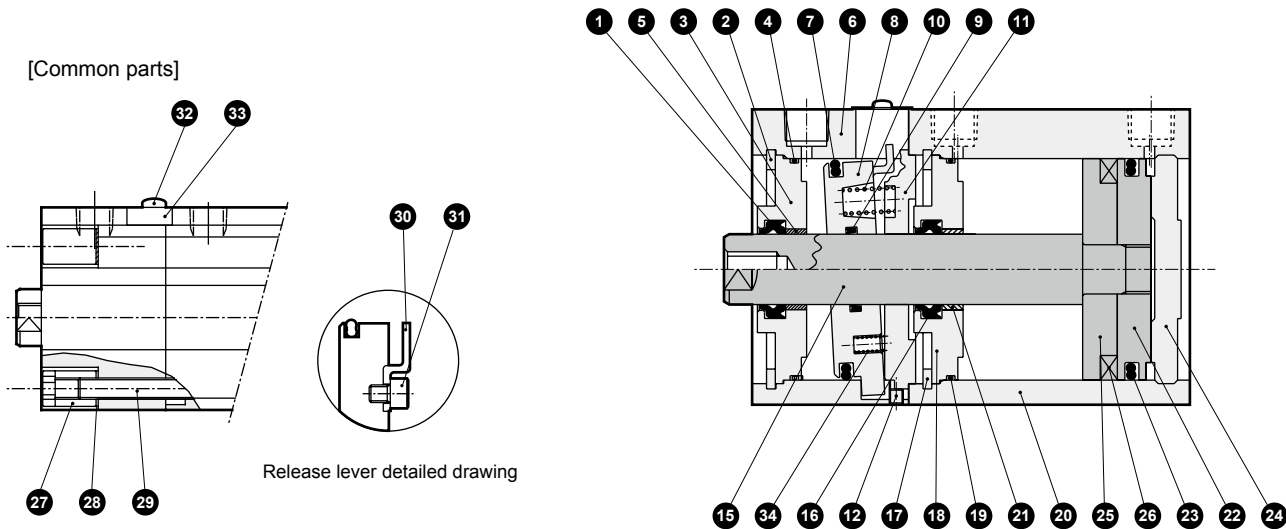
Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
17	Rod metal (1)	Aluminum alloy	Alumite	25	Spacer	Special resin	With switch only
18	Rod packing (1)	Nitrile rubber		26	Piston magnet	Plastic magnet	With switch only
19	Rod metal gasket (1)	Nitrile rubber		27	Round nut	Steel	Zinc chromate
20	Cylinder body	Aluminum alloy	Hard alumite	28	Conical spring washer	Steel	Black finish
21	Piston	Aluminum alloy		29	Hexagon socket set screw	Steel	Black finish
22	Piston packing (1)	Nitrile rubber		30	Release lever	Steel	φ32 Black finish φ40 to φ50 Zinc chromate
23	Cover	Aluminum alloy		31	Hexagon socket head cap screw	Steel	φ40 to φ50
24	Spacer washer	Stainless steel	With switch only	32	Cross-recessed round machine screw	Steel	
				33	Dust cover	Stainless steel	

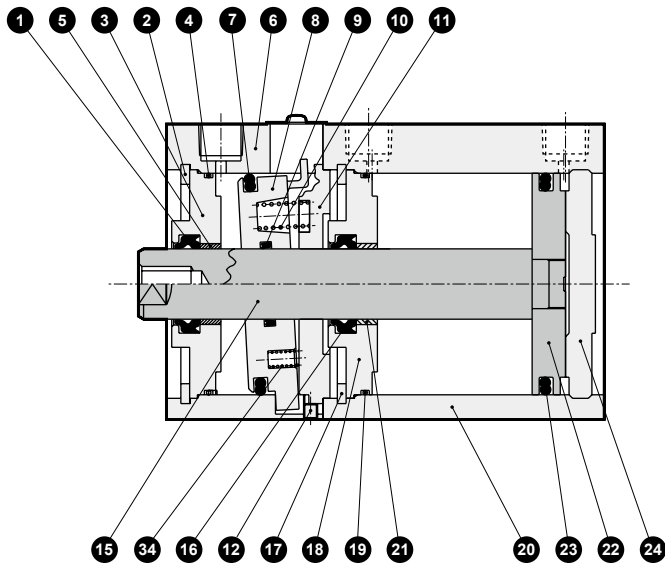
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LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Internal structure and parts list (φ63 to φ100)

- USSD-L-63 to 100-F
(Double acting, with switch, forward locking: F)



- USSD-63 to 100-F
(Double acting, forward locking: F)



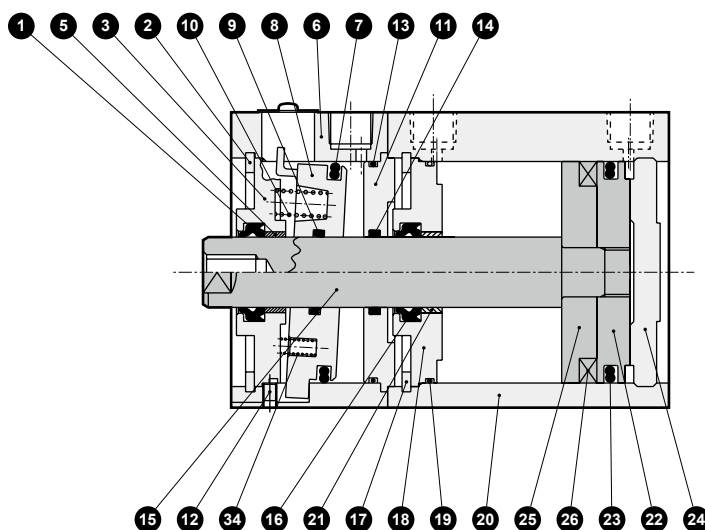
Cannot be disassembled

Parts list

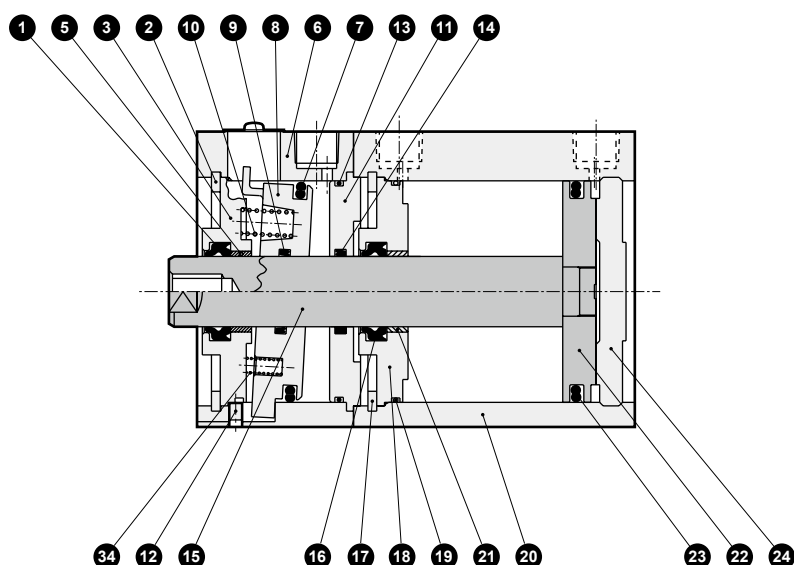
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod packing (2)	Nitrile rubber		9	Rod packing (3)	Nitrile rubber	
2	C type snap ring (2)	Steel	Zinc phosphate film	10	Spring (1)	Steel	Black finish
3	Rod metal (2)	Aluminum alloy	Alumite	11	Joint	Aluminum alloy	
4	Rod metal gasket (2)	Nitrile rubber		12	Hexagon socket set screw	Steel	Black finish
5	Bush (2)	Dry bearing		13	Rod metal gasket (3)	Nitrile rubber	(B type only)
6	Lock body	Aluminum alloy	Hard alumite	14	Rod packing (4)	Nitrile rubber	(B type only)
7	Piston packing (2)	Nitrile rubber		15	Piston rod	Steel	Industrial chrome plating
8	Lock metal	Special steel	Zinc chromate	16	Rod packing (1)	Nitrile rubber	

Internal structure and parts list (φ63 to φ100)

- USSD-L-φ63 to 100-B
(Double acting, with switch, backward locking: B)



- USSD-φ63 to 100-B
(Double acting, backward locking: B)



Cannot be disassembled

Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
17	C type snap ring (1)	Steel	Zinc phosphate film	26	Piston magnet	Plastic magnet	With switch only
18	Rod metal (1)	Aluminum alloy	Alumite	27	Round nut	Steel	Zinc chromate
19	Rod metal gasket (1)	Nitrile rubber		28	Conical spring washer	Steel	Black finish
20	Cylinder body	Aluminum alloy	Hard alumite	29	Hexagon socket set screw	Steel	Black finish
21	Bush (1)	Dry bearing		30	Release lever	Steel	Zinc chromate
22	Piston	Aluminum alloy	Chromate	31	Hexagon socket head cap screw	Steel	Black finish
23	Piston packing (1)	Nitrile rubber		32	Cross-recessed round machine screw	Steel	
24	Cover	Aluminum alloy	Chromate	33	Dust cover	Stainless steel	
25	Spacer	Aluminum alloy	Chromate (with switch only)	34	Spring (2)	Steel	Black finish (φ80/φ100 only)

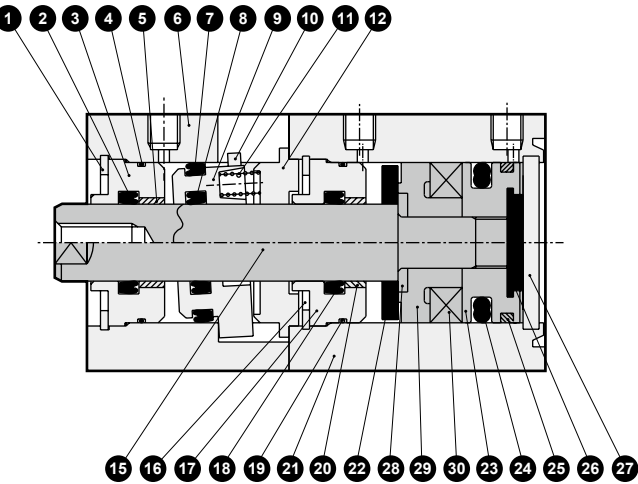
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LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

USSD-K Series

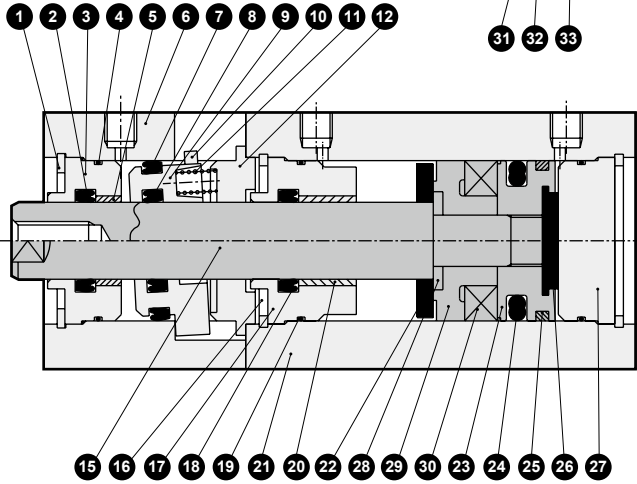
Internal structure and parts list (high load $\phi 20$, $\phi 25$)

- USSD-KL-20, 25-F (Internal structure varies depending on stroke length.)
(Double acting/high load, with switch, forward locking: F)

$\phi 20$: 100 stroke length or less
 $\phi 25$: 150 stroke length or less

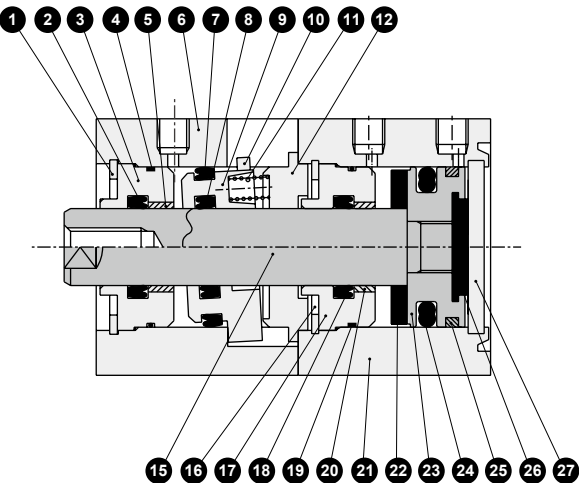


$\phi 20$: Over 100 to 200 stroke length
 $\phi 25$: Over 150 to 300 stroke length

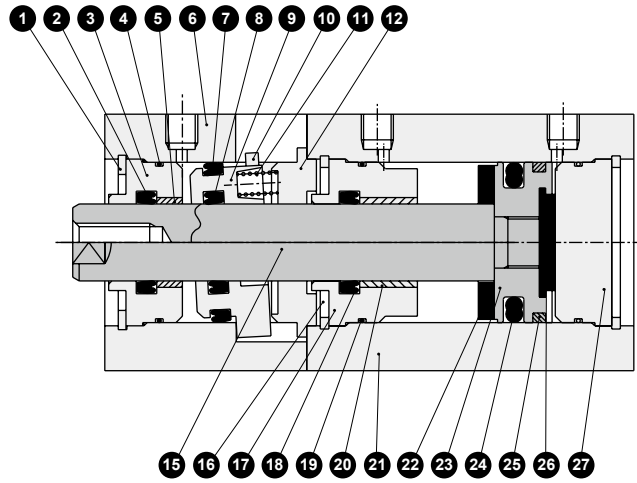


- USSD-K-20, 25-F (Internal structure varies depending on stroke length.)
(Double acting, high load, forward locking: F)

$\phi 20$: 100 stroke length or less
 $\phi 25$: 150 stroke length or less



$\phi 20$: Over 100 to 200 stroke length
 $\phi 25$: Over 150 to 300 stroke length



Cannot be disassembled

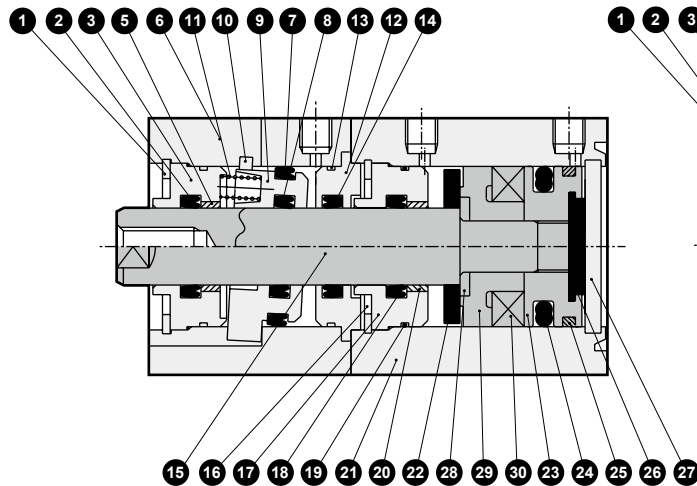
Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	C type snap ring (2)	Steel	Zinc phosphate film	10	Release lever	Steel	Black finish
2	Rod packing (2)	Nitrile rubber		11	Spring	Steel	Black finish
3	Rod metal (2)	Special aluminum	Alumite	12	Joint	Aluminum alloy	
4	Rod metal gasket (2)	Nitrile rubber		13	Rod metal gasket (3)	Nitrile rubber	(B type only)
5	Bush (2)	Dry bearing		14	Rod packing (4)	Nitrile rubber	(B type only)
6	Lock body	Aluminum alloy	Hard alumite	15	Piston rod	Stainless steel	Industrial chrome plating
7	Piston packing (2)	Nitrile rubber		16	C type snap ring (1)	Steel	Zinc phosphate film
8	Rod packing (3)	Nitrile rubber		17	Rod metal (1)	Special aluminum	Alumite
9	Lock metal	Special steel	Zinc chromate	18	Rod packing (1)	Nitrile rubber	

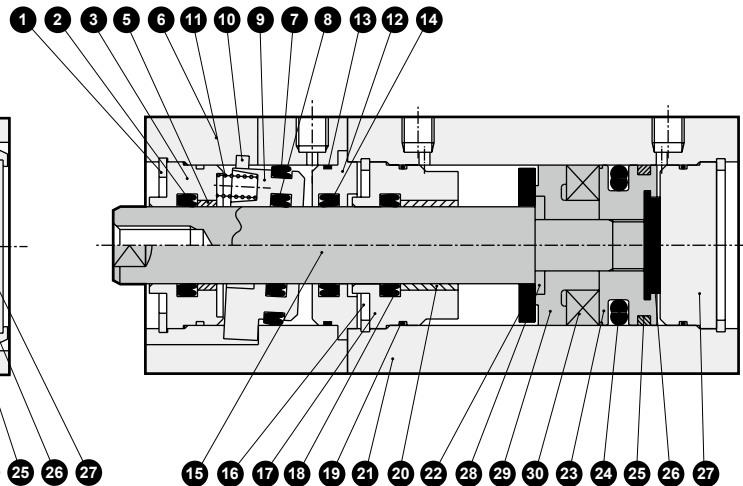
Internal structure and parts list (high load φ20, φ25)

- USSD-KL-20, 25-B (Internal structure varies depending on stroke length.)
(Double acting/high load, with switch, backward locking: B)

φ20: 100 stroke length or less
φ25: 150 stroke length or less

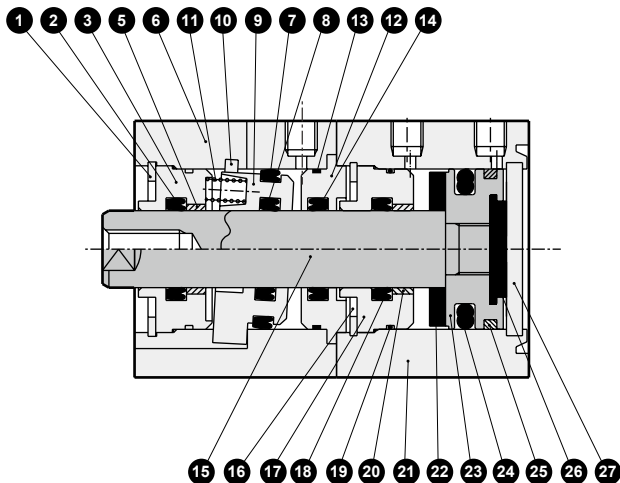


φ20: Over 100 to 200 stroke length
φ25: Over 150 to 300 stroke length

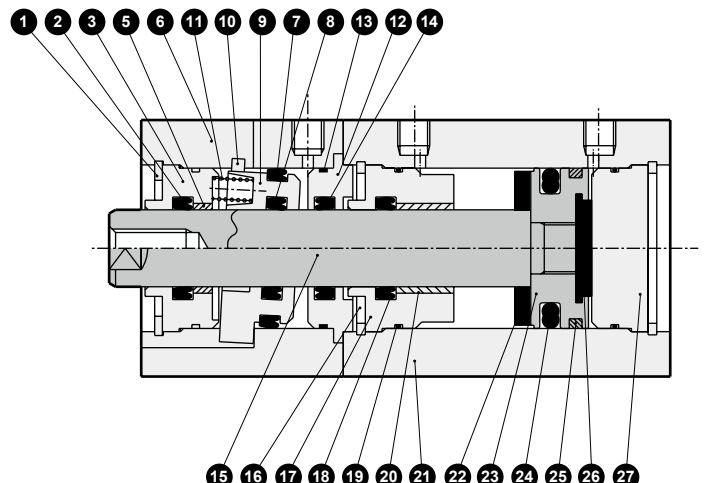


- USSD-K-20, 25-B (Internal structure varies depending on stroke length.)
(Double acting, high load, backward locking: B)

φ20: 100 stroke length or less
φ25: 150 stroke length or less



φ20: Over 100 to 200 stroke length
φ25: Over 150 to 300 stroke length



Cannot be disassembled

Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
19	Rod metal gasket (1)	Nitrile rubber		27	Cover	Stainless steel	(*1)
20	Bush (1)	Dry bearing		28	Spacer washer	Stainless steel	With switch only
21	Cylinder body	Aluminum alloy	Hard alumite	29	Spacer	Special resin	With switch only
22	Cushion rubber (R)	Urethane rubber		30	Piston magnet	Plastic magnet	
23	Piston	Stainless steel		31	Round nut	Steel	Zinc chromate
24	Piston packing (1)	Nitrile rubber		32	Conical spring washer	Steel	Black finish
25	Wear ring	Acetal resin		33	Hexagon socket set screw	Steel	Black finish
26	Cushion rubber (H)	Urethane rubber					

*1: For cover for long stroke, Material: Aluminum alloy Remarks: Alumite

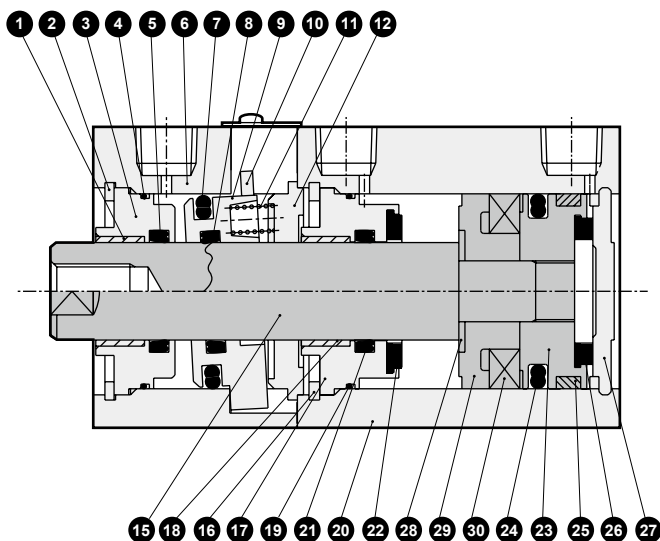
LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

USSD-K Series

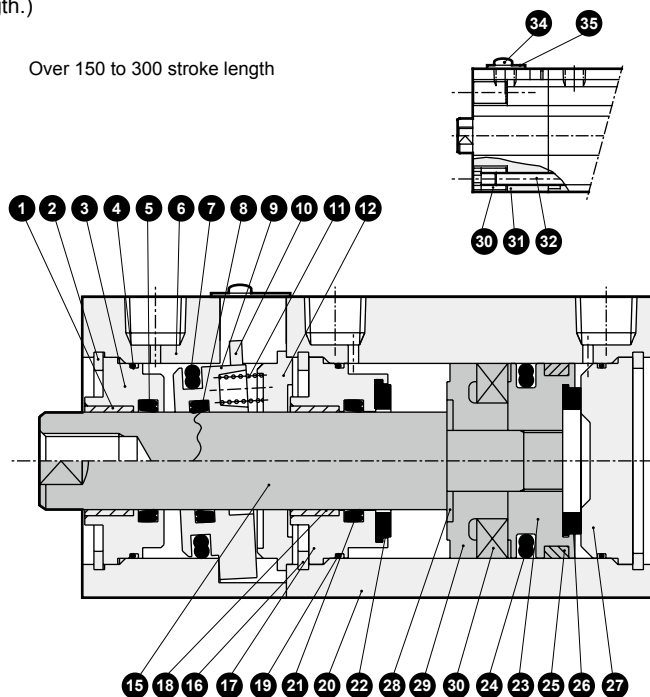
Internal structure and parts list (high load $\phi 32$)

- USSD-KL-32-F (Internal structure varies depending on stroke length.)
(Double acting/high load, with switch, forward locking: F)

150 stroke length or less

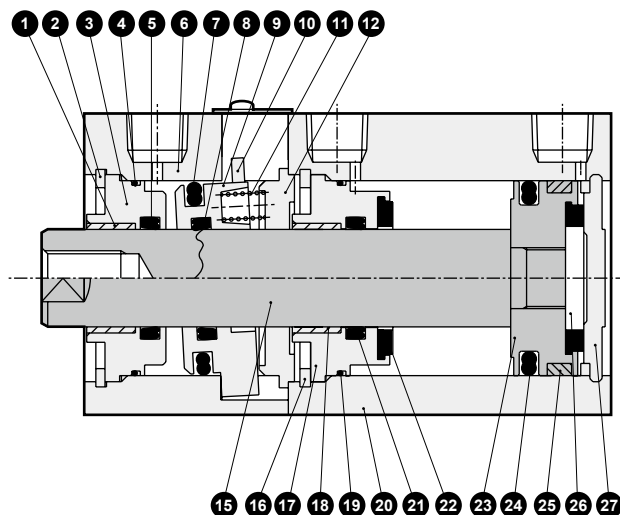


Over 150 to 300 stroke length

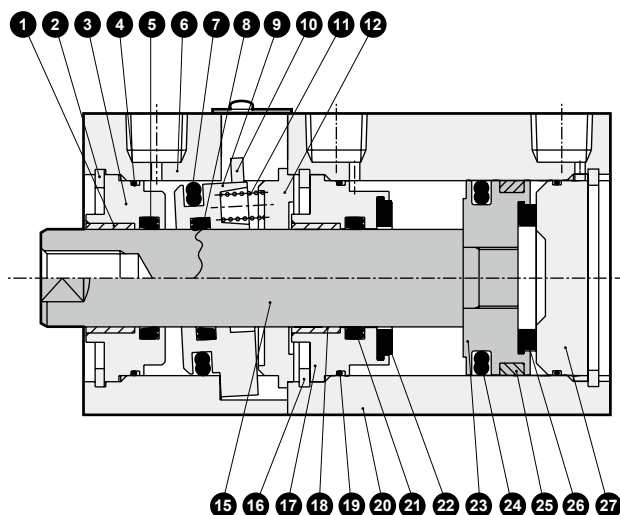


- USSD-K-32-F (Internal structure varies depending on stroke length.)
(Double acting, high load, forward locking: F)

150 stroke length or less



Over 150 to 300 stroke length



Cannot be disassembled

Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Bush (2)	Dry bearing		10	Release lever	Steel	Black finish
2	C type snap ring (2)	Steel	Zinc phosphate film	11	Spring	Steel	Black finish
3	Rod metal (2)	Special aluminum	Alumite (*1)	12	Joint	Aluminum alloy	
4	Rod metal gasket (2)	Nitrile rubber		13	Rod metal gasket (3)	Nitrile rubber	(B type only)
5	Rod packing (2)	Nitrile rubber		14	Rod packing (4)	Nitrile rubber	(B type only)
6	Lock body	Aluminum alloy	Hard alumite	15	Piston rod	Stainless steel	Industrial chrome plating
7	Piston packing (2)	Nitrile rubber		16	C type snap ring (1)	Steel	Zinc phosphate film
8	Rod packing (3)	Nitrile rubber		17	Rod metal (1)	Special aluminum	Chromate
9	Lock metal	Special steel	Zinc chromate	18	Bush (1)	DU dry bearing	

*1: If the lock direction is F, chromate is used for the surface treatment.

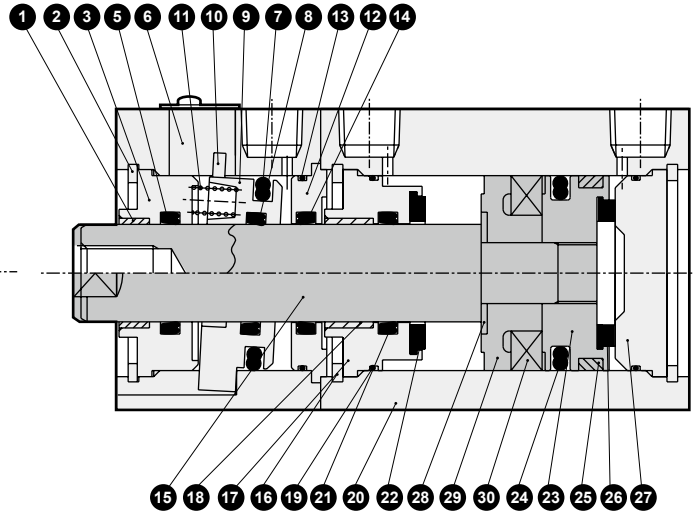
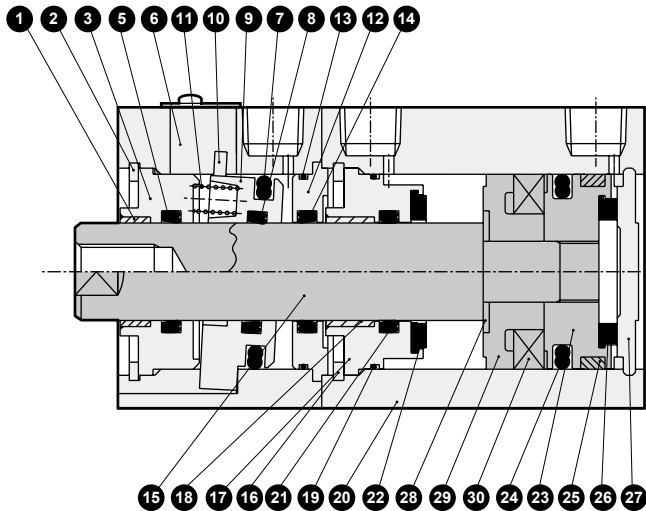
Internal structure and parts list (high load φ32)

- USSD-KL-32-B (Internal structure varies depending on stroke length.)

(Double acting/high load, with switch, backward locking: B)

150 stroke length or less

Over 150 to 300 stroke length

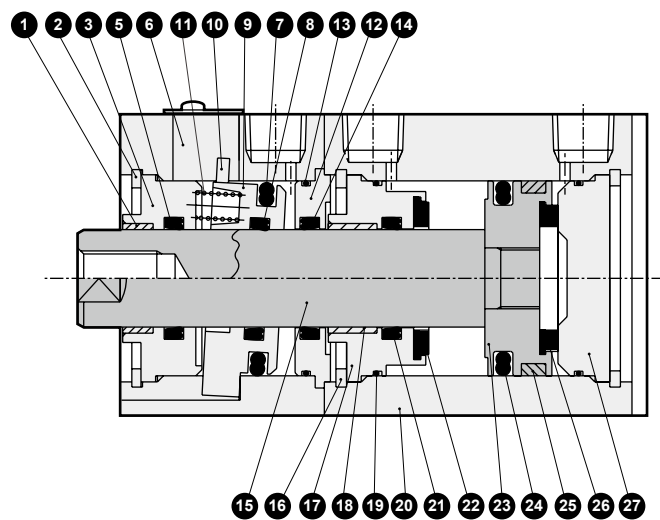
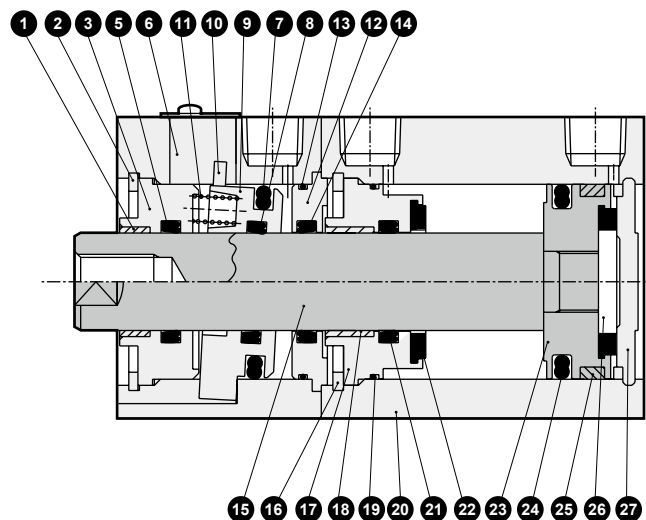


- USSD-K-32-B (Internal structure varies depending on stroke length.)

(Double acting, high load, backward locking: B)

150 stroke length or less

Over 150 to 300 stroke length



Cannot be disassembled

Parts list

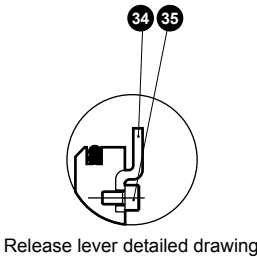
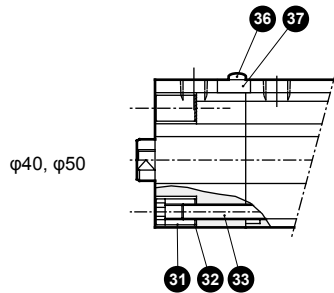
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
19	Rod metal gasket (1)	Nitrile rubber		28	Spacer washer	Stainless steel	With switch only
20	Cylinder body	Aluminum alloy	Hard alumite	29	Spacer	Special resin	With switch only
21	Rod packing (1)	Nitrile rubber		30	Piston magnet	Plastic magnet	With switch only
22	Cushion rubber (R)	Urethane rubber		31	Round nut	Steel	Zinc chromate
23	Piston	Stainless steel		32	Conical spring washer	Steel	Black finish
24	Piston packing (1)	Nitrile rubber		33	Hexagon socket set screw	Steel	Black finish
25	Wear ring	Acetal resin		34	Cross-recessed round machine screw	Steel	
26	Cushion rubber (H)	Urethane rubber		35	Dust cover	Stainless steel	
27	Cover	Aluminum alloy	Chromate (*1)				

*1: For cover for long stroke, Remarks: Alumite

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

Internal structure and parts list (high load $\phi 40$, $\phi 50$)

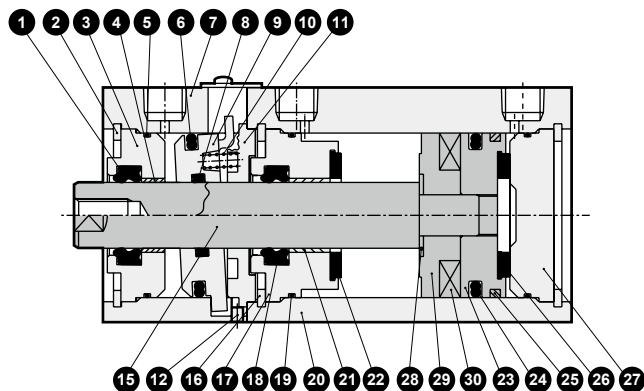
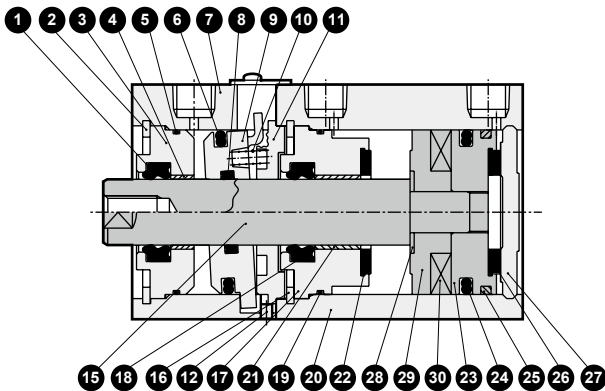
[Common parts]



- USSD-KL-40, 50-F (Internal structure varies depending on stroke length.)
(Double acting/high load, with switch, forward locking: F)

$\phi 40/\phi 50$: 150 stroke length or less

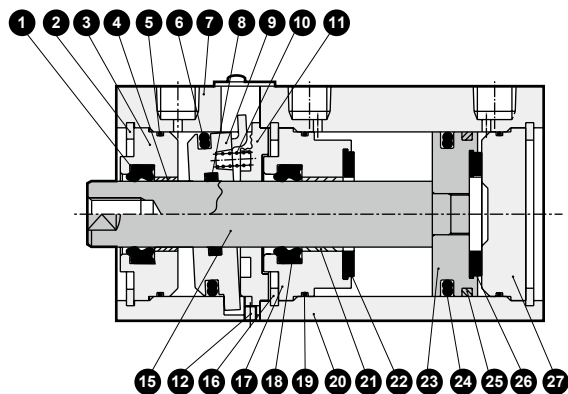
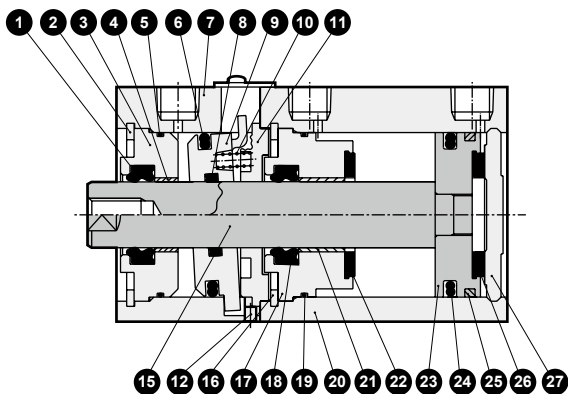
$\phi 40/\phi 50$: Over 150 to 300 stroke length



- USSD-K-40, 50-F (Internal structure varies depending on stroke length.)
(Double acting, high load, forward locking: F)

$\phi 40/\phi 50$: 150 stroke length or less

$\phi 40/\phi 50$: Over 150 to 300 stroke length



Cannot be disassembled

Parts list

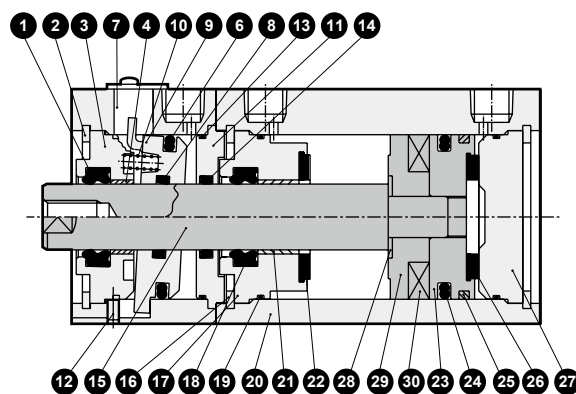
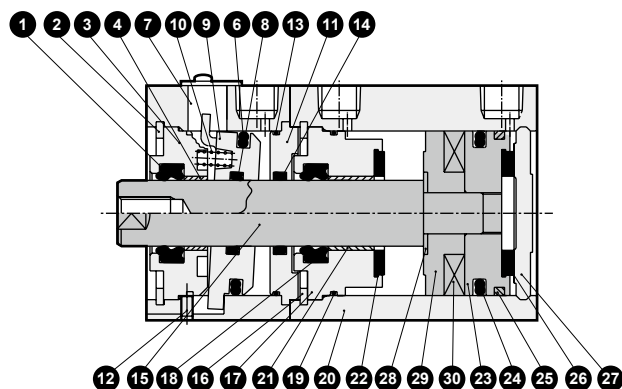
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod packing (2)	Nitrile rubber		10	Spring	Steel	Black finish
2	C type snap ring (2)	Steel	Zinc phosphate film	11	Joint	Aluminum alloy	
3	Rod metal (2)	Aluminum alloy	Alumite	12	Hexagon socket set screw	Steel	Black finish
4	Bush (2)	Dry bearing		13	Rod metal gasket (3)	Nitrile rubber	(B type only)
5	Rod metal gasket (2)	Nitrile rubber		14	Rod packing (4)	Nitrile rubber	(B type only)
6	Piston packing (2)	Nitrile rubber		15	Piston rod	Steel	Industrial chrome plating
7	Lock body	Aluminum alloy	Hard alumite	16	C type snap ring (1)	Steel	Zinc phosphate film
8	Rod packing (3)	Nitrile rubber		17	Rod metal (1)	Aluminum alloy	Chromate
9	Lock metal	Special steel	Zinc chromate	18	Rod packing (1)	Nitrile rubber	

Internal structure and parts list (high load φ40, φ50)

- USSD-KL-40, 50-B (Internal structure varies depending on stroke length.)
(Double acting/high load, with switch, backward locking: B)

φ40/φ50: 150 stroke length or less

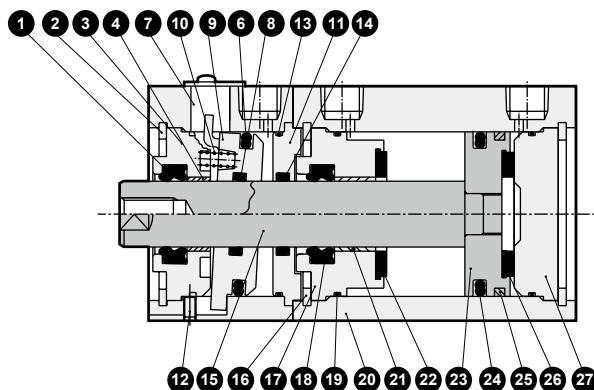
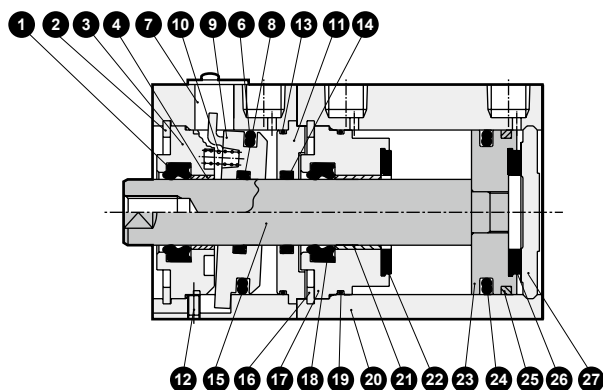
Over 150 to 300 stroke length



- USSD-K-40, 50-B (Internal structure varies depending on stroke length.)
(Double acting, high load, backward locking: B)

φ40/φ50: 150 stroke length or less

Over 150 to 300 stroke length



Cannot be disassembled

Parts list

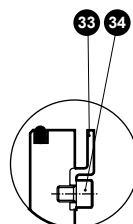
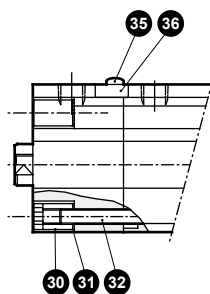
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
19	Rod metal gasket (1)	Nitrile rubber		29	Spacer	Special resin	With switch only
20	Cylinder body	Aluminum alloy	Hard alumite	30	Piston magnet	Plastic magnet	With switch only
21	Bush (1)	Dry bearing		31	Round nut	Steel	Zinc chromate
22	Cushion rubber (R)	Urethane rubber		32	Conical spring washer	Steel	Black finish
23	Piston	Aluminum alloy		33	Hexagon socket set screw	Steel	Black finish
24	Piston packing (1)	Nitrile rubber		34	Release lever	Steel	Zinc chromate
25	Wear ring	Acetal resin		35	Hexagon socket head cap screw	Steel	Black finish
26	Cushion rubber (H)	Urethane rubber		36	Cross-recessed round machine screw	Steel	
27	Cover	Aluminum alloy	Chromate (*1)	37	Dust cover	Stainless steel	
28	Spacer washer	Stainless steel	With switch only				

*1: For cover for long stroke, Remarks: Alumite

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

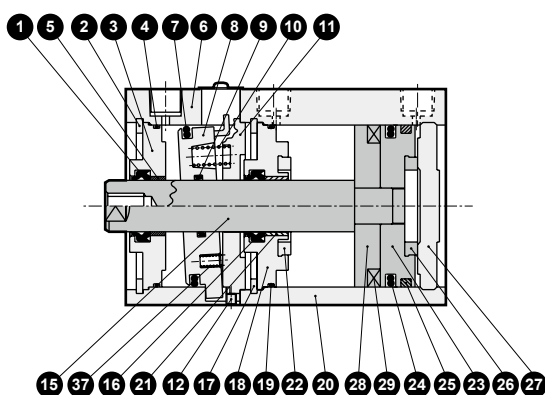
Internal structure and parts list (high load $\phi 63$ to $\phi 100$)

[Common parts]

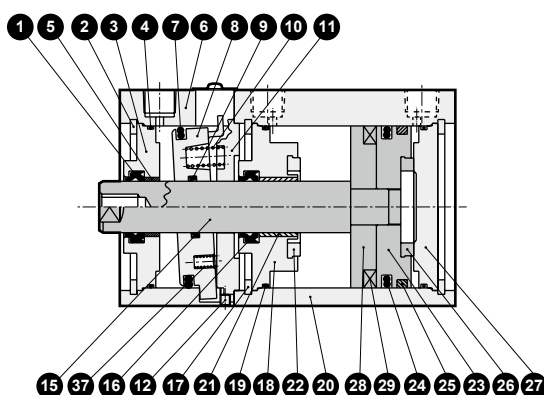


Release lever detailed drawing

- USSD-KL-63 to 100-F (Internal structure varies depending on stroke length.)
(Double acting/high load, with switch, forward locking: F)
200 stroke length or less

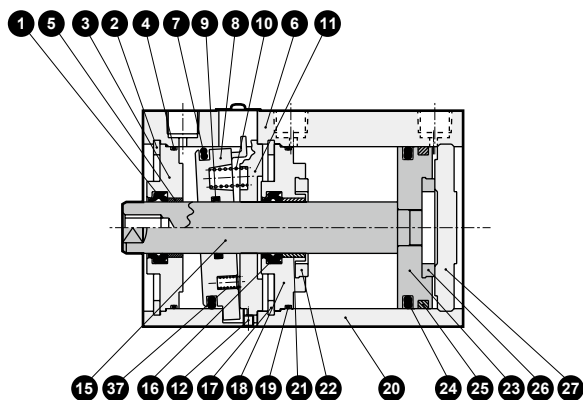


Over 200 to 300 stroke length

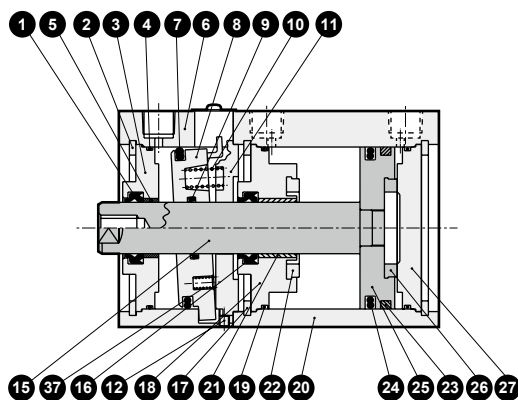


- USSD-K-63 to 100-F (Internal structure varies depending on stroke length.)
(Double acting, high load, forward locking: F)

200 stroke length or less



Over 200 to 300 stroke length



Cannot be disassembled

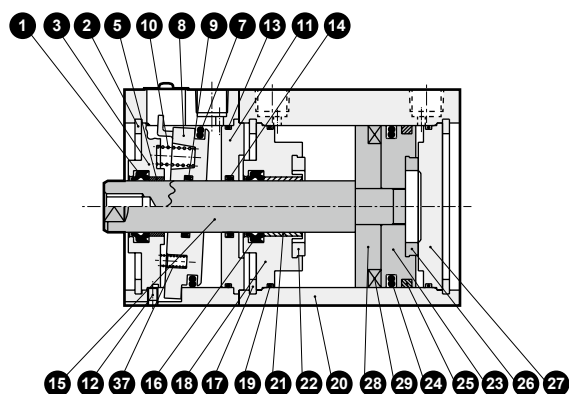
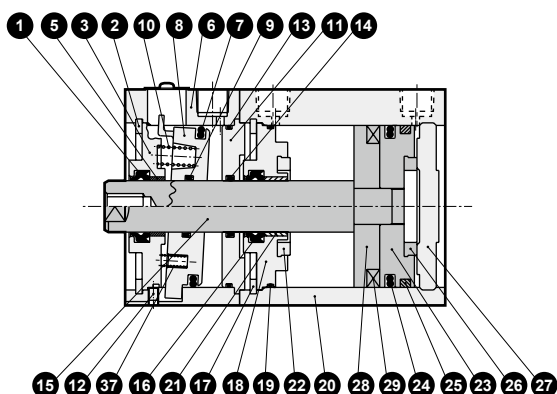
Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod packing (2)	Nitrile rubber		10	Spring (1)	Steel	Black finish
2	C type snap ring (2)	Steel	Zinc phosphate film	11	Joint	Aluminum alloy	
3	Rod metal (2)	Aluminum alloy	Alumite	12	Hexagon socket set screw	Steel	Black finish
4	Rod metal gasket (2)	Nitrile rubber		13	Rod metal gasket (3)	Nitrile rubber	(B type only)
5	Bush (2)	Dry bearing		14	Rod packing (4)	Nitrile rubber	(B type only)
6	Lock body	Aluminum alloy	Hard alumite	15	Piston rod	Steel	Industrial chrome plating
7	Piston packing (2)	Nitrile rubber		16	Rod packing (1)	Nitrile rubber	
8	Lock metal	Special steel	Zinc chromate	17	C type snap ring (1)	Steel	Zinc phosphate film
9	Rod packing (3)	Nitrile rubber		18	Rod metal (1)	Aluminum alloy	Alumite

Internal structure and parts list (high load φ63 to φ100)

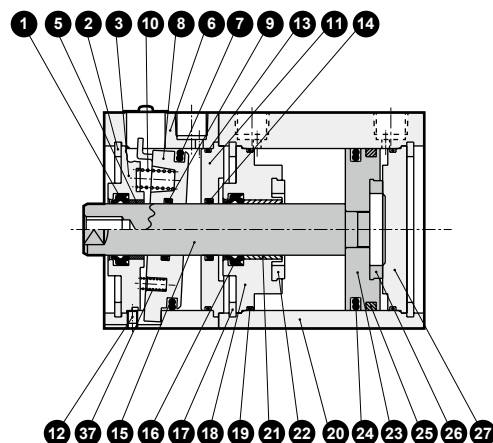
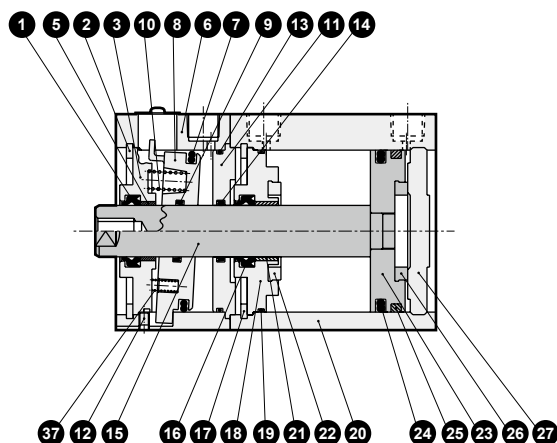
- USSD-KL-63 to 100-B (Internal structure varies depending on stroke length.)
(Double acting/high load, with switch, backward locking: B)
200 stroke length or less

Over 200 to 300 stroke length



- USSD-K-63 to 100-B (Internal structure varies depending on stroke length.)
(Double acting, high load, backward locking: B)
200 stroke length or less

Over 200 to 300 stroke length



Cannot be disassembled

Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
19	Rod metal gasket (1)	Nitrile rubber		28	Spacer	Aluminum alloy	Chromate (with switch only)
20	Cylinder body	Aluminum alloy	Hard alumite	29	Piston magnet	Plastic magnet	With switch only
21	Bush (1)	Dry bearing		30	Round nut	Steel	Zinc chromate
22	Cushion rubber (R)	Urethane rubber		31	Conical spring washer	Steel	Black finish
23	Piston	Aluminum alloy	Chromate	32	Hexagon socket set screw	Steel	Black finish
24	Piston packing (1)	Nitrile rubber		33	Release lever	Steel	Zinc chromate
25	Wear ring	Acetal resin		34	Hexagon socket head cap screw	Steel	Black finish
26	Cushion rubber (H)	Urethane rubber		35	Cross-recessed round machine screw	Steel	
27	Cover	Aluminum alloy	Chromate (*1)	36	Dust cover	Stainless steel	
				37	Spring (2)	Steel	Black finish (φ80/φ100 only)

*1: For cover for long stroke, Remarks: Alumite

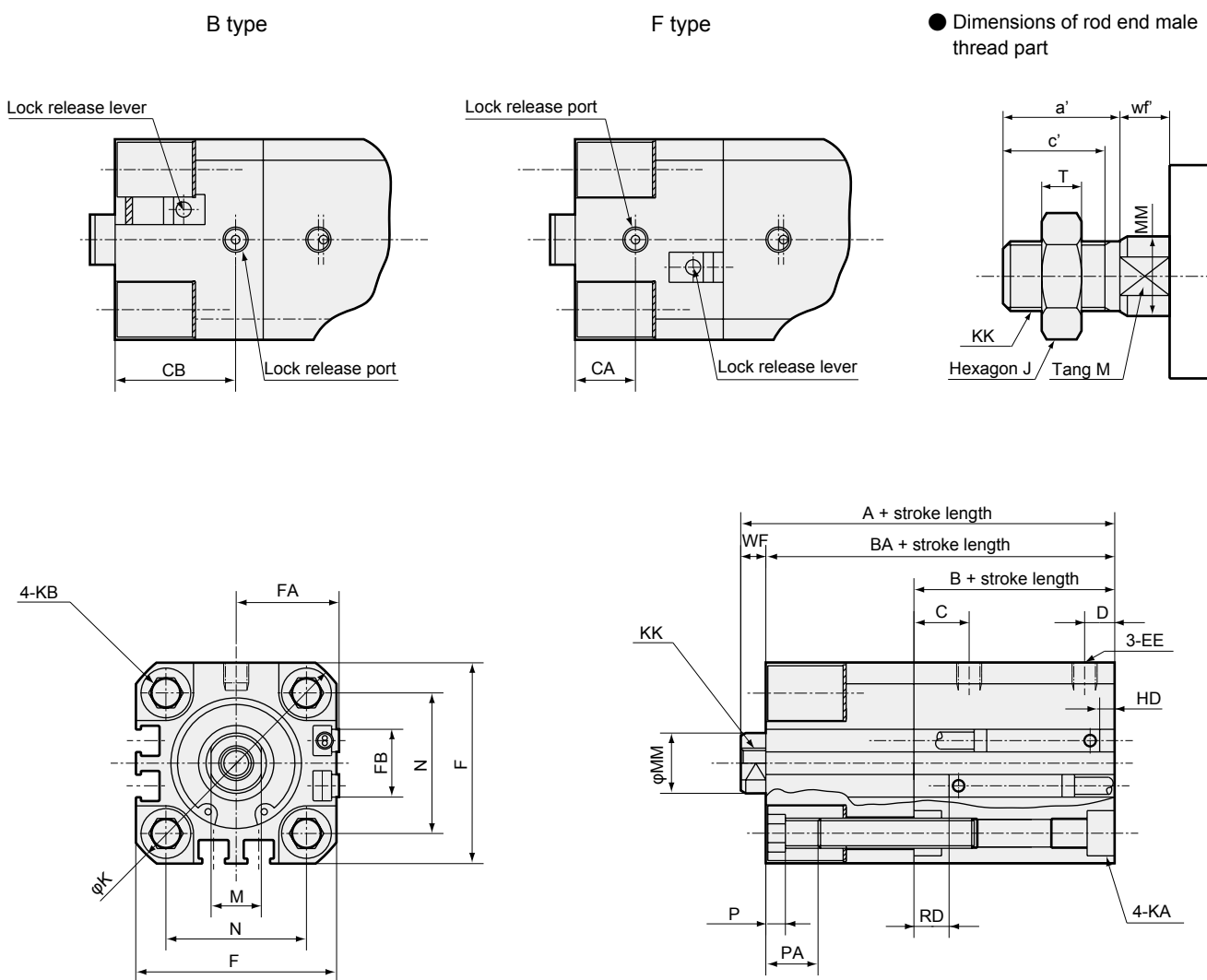
LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



Dimensions (φ20, φ25)

- USSD-20, 25
- USSD-L-20, 25 (with switch/TOH/V, T5H/V, T2H/V, T3H/V, T2WH/V, T3WH/V)

- Dimensions of rod end male thread part



Code	Without switch			Common dimensions with switch										
Bore size (mm)	A *1	B *1	BA *1	A *1	B *1	BA *1	C	CA	CB	D	EE	F	FA	FB
φ20	51	19.5	46.5	61	29.5	56.5	8	10	22	5.5	M5	36	18.5	12.5
φ25	59	22.5	54	69	32.5	64	11	12	26	6	M5	40	20.5	13.5
Code	Common dimensions with switch													
Bore size (mm)	KB	K	KA		KK	M	MM	N	WF	P	PA			
φ20	M6	47	9 spot face depth 5.5, M6 depth 11		M5 depth 7	8	10	25.5	4.5	3.5	10			
φ25	M6	51	9 spot face depth 5.5, M6 depth 11		M6 depth 12	10	12	28	5	3.5	10			
Code	Reed TOH/TOV, T5H/T5V			Proximity T2H/T2V, T3H/T3V			Proximity T2WH/T2WV, T3WH/T3WV							
Bore size (mm)	HD	RD		HD	RD		HD	RD						
φ20	3	6.5		3	6.5		3	6.5						
φ25	3	9.5		3	9.5		3	9.5						

*1 : To calculate A + stroke length, B + stroke length or BA + stroke length when using custom stroke length, apply the next longer standard stroke length (instead of the custom stroke length) to the stroke length value.
(Example) If the custom stroke length is 7 mm, apply the standard stroke length of 10 mm.

*2 : HD and RD dimensions for 5 mm stroke length differ from these dimensions according to the setting.

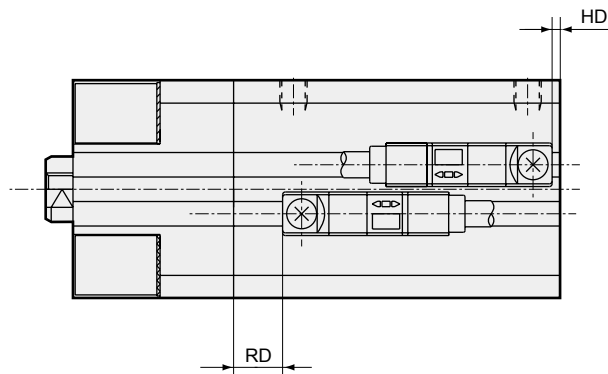
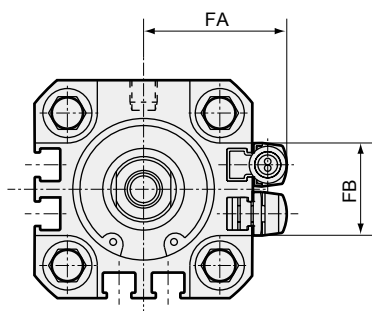
Rod end male thread part dimensions

Code	a'	c'	J	KK	M	MM	T	wf'
Bore size (mm)								
φ20	14	12	13	M8	8	10	5	4.5
φ25	17.5	15	17	M10×1.25	10	12	6	5

Dimensions (φ20, φ25)

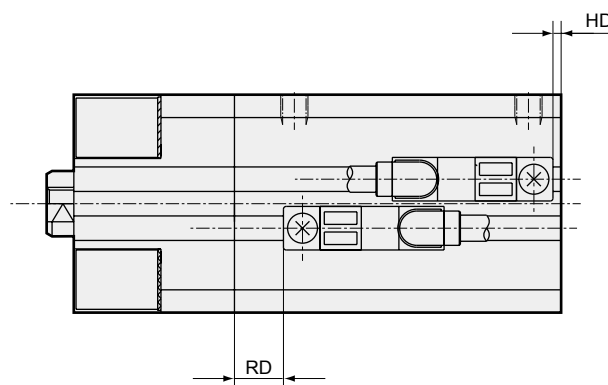
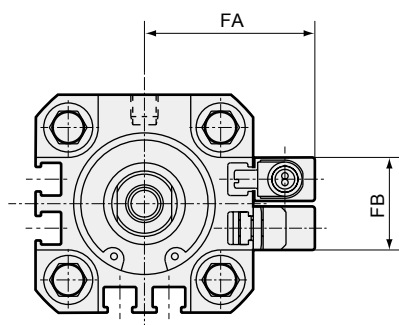


- USSD-L-20, 25 (2-color display, off-delay, T2Y^H/V, T3Y^H/V, T2J^H/V, T8^H/V)



Code	FA	FB	T2Y ^H /V, T3Y ^H /V, T2J ^H /V	
Bore size (mm)			RD	HD
φ20	24.3	16	5	1.5
φ25	26.3	17	8	1.5

- USSD-L-20, 25 (with T1* switch/T2YD, T2YDT, T1^H/V)



Code	FA	FB	RD	HD
Bore size (mm)				
φ20	29.3	16	5	1.5
φ25	31.3	17	8	1.5

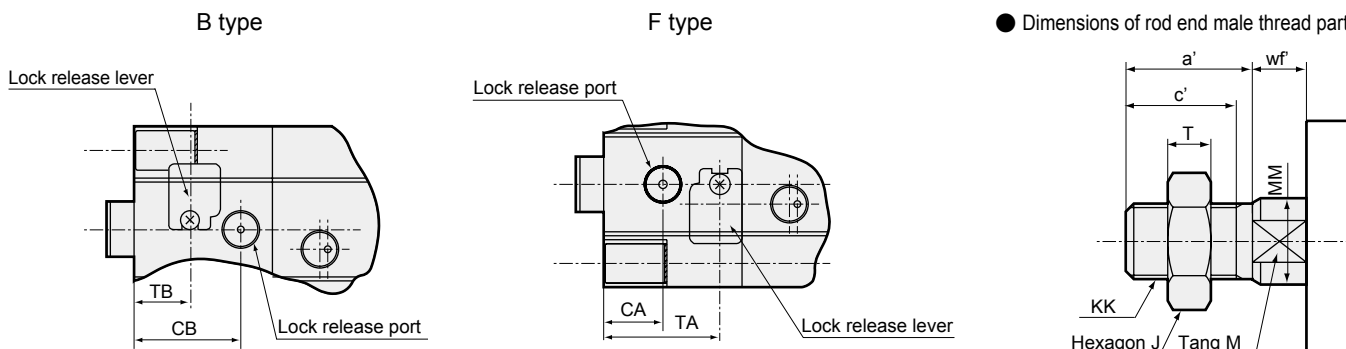
LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



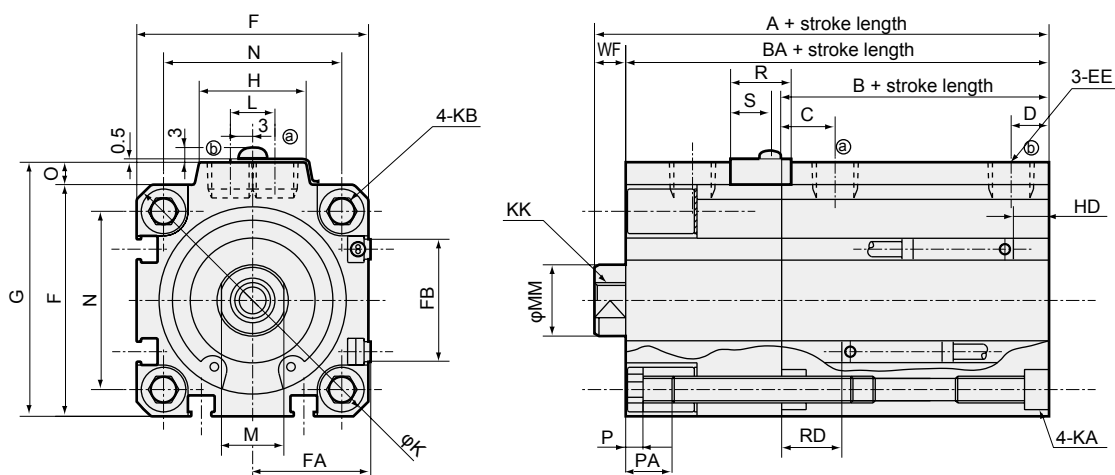
Dimensions (φ32 to φ63)

- USSD-32 to 63
- USSD-L-32 to 63 (with switch/TOH/V, T5H/V, T2H/V, T3H/V, T2WH/V, T3WH/V)

- Dimensions of rod end male thread part



Note) The figure below shows F type.



Code	Without switch			Common dimensions with switch											
Bore size (mm)	A *1	B *1	BA *1	A *1	B *1	BA *1	C	CA	CB	D	EE	F	FA	FB	G
φ32	63.5	23	56.5	73.5	33	66.5	8	12	25.5	8	RC1/8	45	23	20.5	49.5
φ40	71.5	29.5	64.5	81.5	39.5	74.5	12	15	27	8.5	RC1/8	52	26.5	27.5	57
φ50	77.5	30.5	69.5	87.5	40.5	79.5	10.5	15	30	10.5	RC1/4	64	32.5	28.5	71
φ63	88.5	36	80.5	98.5	46	90.5	13	15.5	34	11	RC1/4	77	39	28.5	84
Code	Common dimensions with switch														
Bore size (mm)	H	KB	K	KA		KK	L	M	MM	N	O	WF	P	PA	
φ32	24	M6	60	9 spot face depth 5.5, M6 depth 11		M8 depth 13	10	14	16	34	4.5	7	3.5	10	
φ40	24	M6	69	9 spot face depth 5.5, M6 depth 11		M8 depth 13	10	14	16	40	5	7	3.5	10	
φ50	33	M8	86	11 spot face depth 6.5, M8 depth 13		M10 depth 15	15	17	20	50	7	8	4	12.5	
φ63	33	M10	103	14 spot face depth 9, M10 depth 25		M10 depth 15	15	17	20	60	7	8	4	13.5	
Code	R	S	TA	TB	Reed TOH/TOV, T5H/T5V			Proximity T2H/T2V, T3H/T3V			Proximity T2WH/T2WV, T3WH/T3WV				
Bore size (mm)					HD *2		RD *2		HD *2		RD *2		HD *2	RD *2	
φ32	14	9	29.5	12.4	3.5		9		3.5		9		3.5	9	
φ40	12	6	30.3	14.7	7.0		12.0		7.0		12.0		7.0	12.0	
φ50	14	7	33	15.7	7.5		12.5		7.5		12.5		7.5	12.5	
φ63	17	8.5	37	16.2	12.5		13.0		12.5		13.0		12.5	13.0	

*1 : To calculate A + stroke length, B + stroke length or BA + stroke length when using custom stroke length, apply the next longer standard stroke length (instead of the custom stroke length) to the stroke length value.
(Example) If the custom stroke length is 7 mm, apply the standard stroke length of 10 mm.

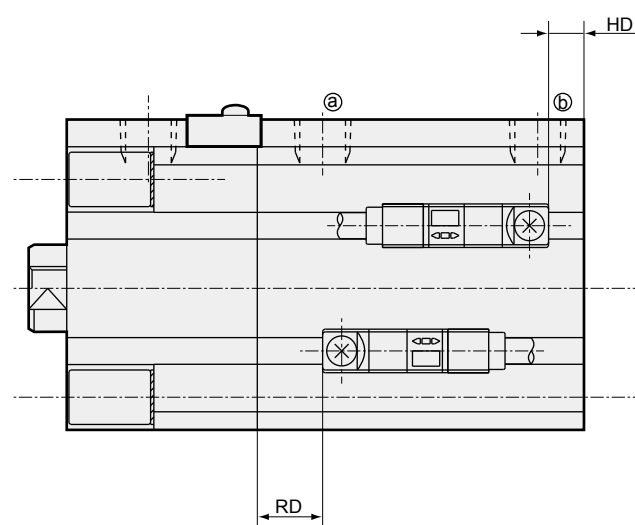
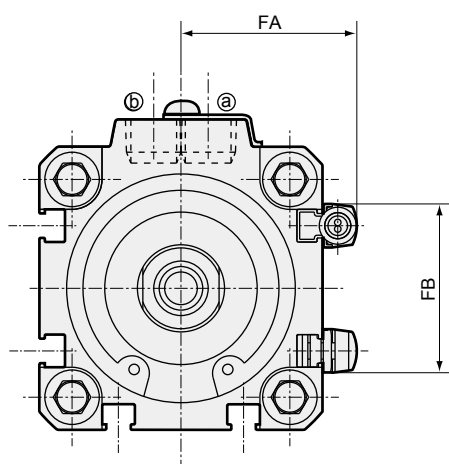
*2 : HD and RD dimensions for 5 mm stroke length differ from these dimensions according to the setting.

Rod end male thread part dimensions								
Code	a'	c'	J	KK	M	MM	T	wf'
Bore size (mm)								
φ32	23.5	20.5	22	M14×1.5	14	16	8	5
φ40	23.5	20.5	22	M14×1.5	14	16	8	5
φ50	28.5	26	27	M18×1.5	17	20	11	5
φ63	28.5	26	27	M18×1.5	17	20	11	5

Dimensions (φ32 to φ63)



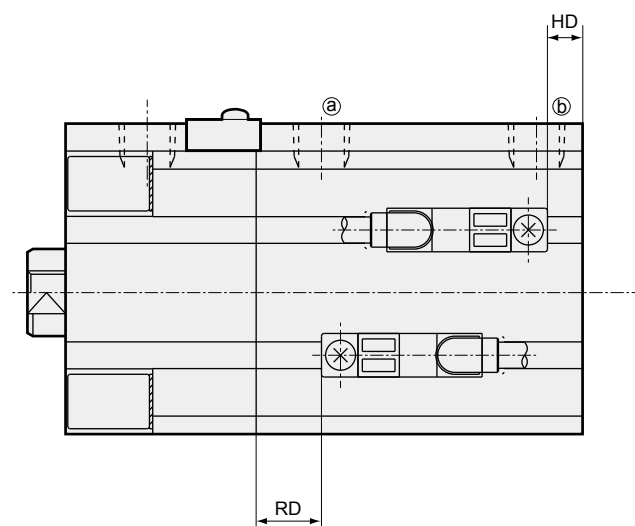
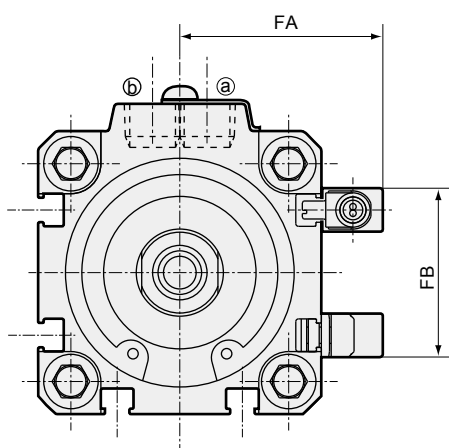
- USSD-L-32 to 63 (2-color display, off-delay, T8* with switch T2Y^{H/V}, T3Y^{H/V}, T2J^{H/V}, T8^{H/V})



Note) The figure above shows F type.

Code Bore size (mm)	FA	FB	T2Y ^{H/V} , T3Y ^{H/V} , T2J ^{H/V}		T8 ^{H/V}	
			RD	HD	RD	HD
φ32	28.8	24	7.5	2	-	-
φ40	32.3	31	10.5	5.5	6	1
φ50	38.3	32	11	6	6.5	1.5
φ63	44.8	32	11.5	11	7	6.5

- USSD-L-32 to 63 (with T1* switch/T2YD, T2YDT, T1^{H/V})



Note) The figure above shows F type.

Code Bore size (mm)	FA	FB	RD	HD
φ32	33.8	24	7.5	2
φ40	37.3	31	10.5	5.5
φ50	43.3	32	11	6
φ63	49.8	32	11.5	11

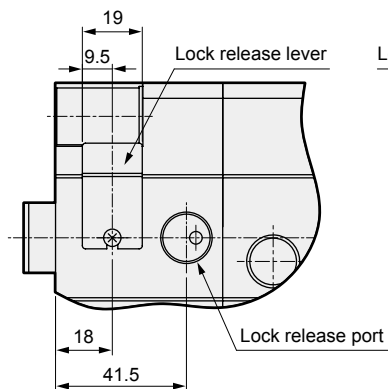
LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Dimensions (φ80)

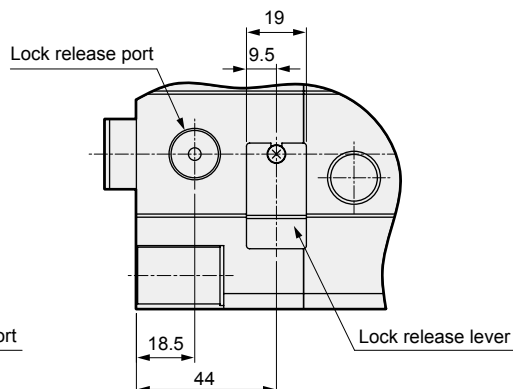


- USSD-80
- USSD-L-80 (with switch/TOH/V, T5H/V, T2H/V, T3H/V, T2WH/V, T3WH/V)

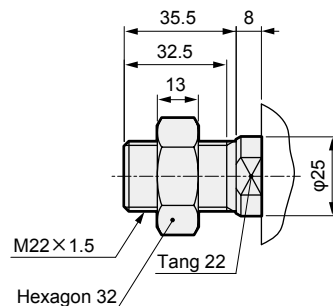
B type



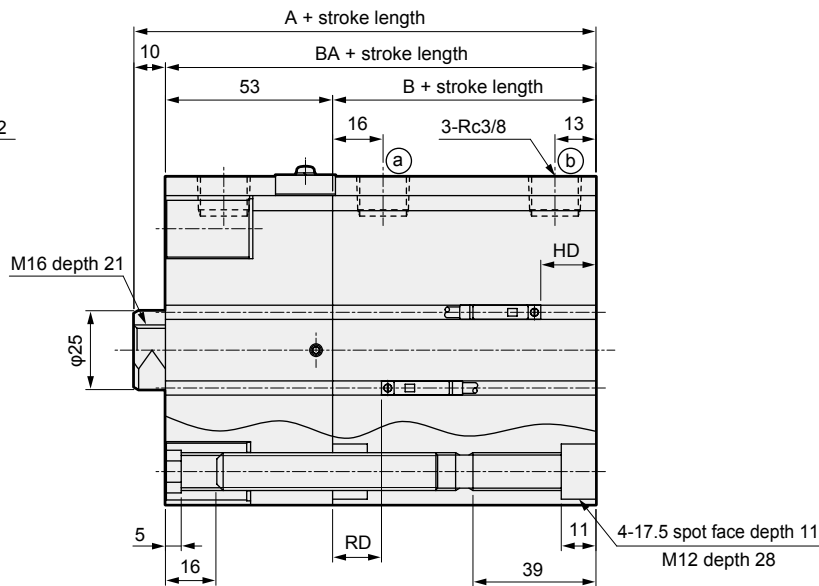
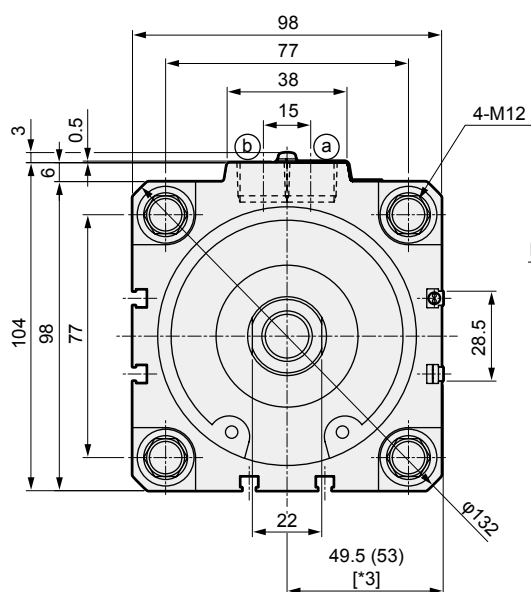
F type



- Dimensions of rod end male thread part



Note) The figure below shows F type.



Code	Without switch			With switch			Reed T0H/T0V, T5H/T5V		Proximity T2H/T2V, T3H/T3V		Proximity T2WH/T2WV, T3WH/T3WV	
Bore size (mm)	A *1	B *1	BA *1	A *1	B *1	BA *1	HD *1	RD *1	HD *1	RD *1	HD *1	RD *1
φ80	106.5	43.5	96.5	116.5	53.5	106.5	17.5	15.5	17.5	15.5	17.5	15.5

*1 : To calculate A+ stroke length or B+ stroke length when using a custom stroke length, apply the next longer standard stroke length instead of the custom stroke length.

(Example) If the custom stroke length is 7 mm, apply the standard stroke length of 10 mm.

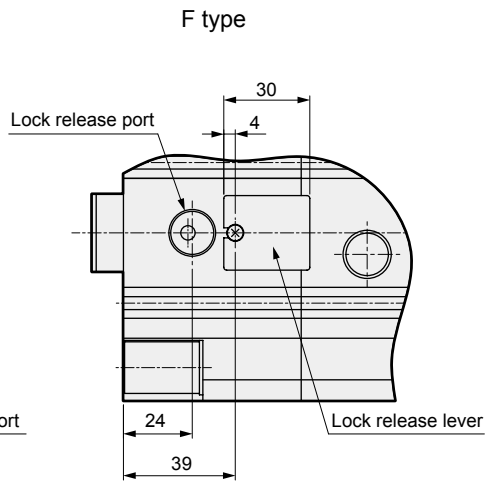
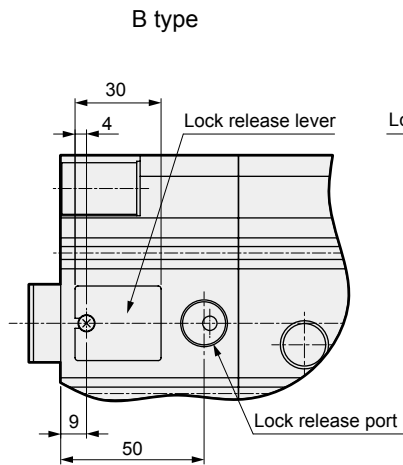
*2 : HD and RD dimensions for 5 mm stroke length differ from these dimensions according to the setting.

*3 : Dimensions in () are for the radial lead wire.

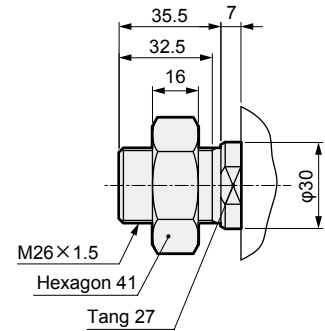
Dimensions (φ100)



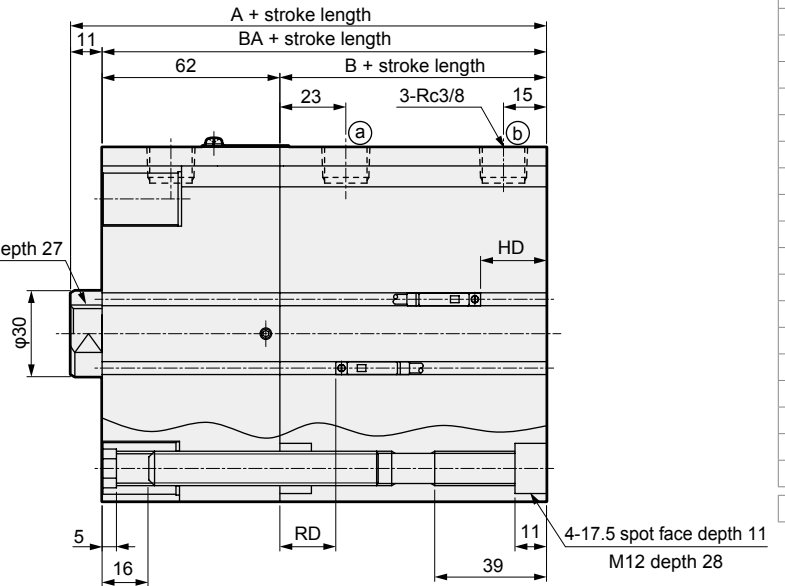
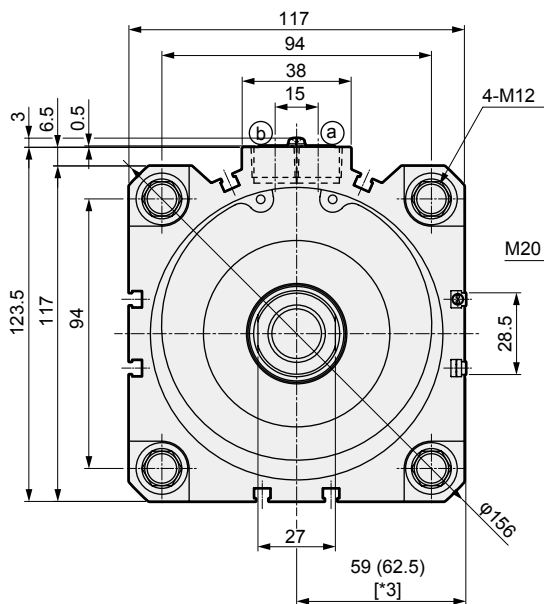
- USSD-100
- USSD-L-100 (with switch/TOH/V, T5H/V, T2H/V, T3H/V, T2WH/V, T3WH/V)



- Dimensions of rod end male thread part



Note) The figure below shows F type.



Code	Without switch			With switch			Reed T0H/T0V, T5H/T5V		Proximity T2H/T2V, T3H/T3V		Proximity T2WH/T2WV, T3WH/T3WV	
Bore size (mm)	A *1	B *1	BA *1	A *1	B *1	BA *1	HD *1	RD *1	HD *1	RD *1	HD *1	RD *1
φ100	126	53	115	136	63	125	23	19.5	23	19.5	23	19.5

*1 : To calculate A+ stroke length or B+ stroke length when using custom stroke length, apply the next longer standard stroke length (instead of the custom stroke length) to the stroke length value.
(Example) If the custom stroke length is 7 mm, apply the standard stroke length of 10 mm.

*2 : HD and RD dimensions for 5 mm stroke length differ from these dimensions according to the setting.

*3 : Dimensions in () are for the radial lead wire.

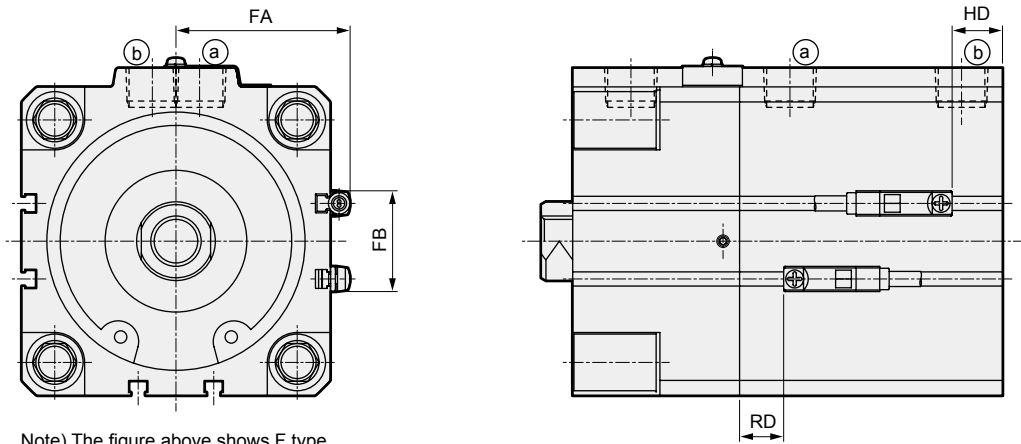
LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

USSD Series

Double acting/single rod (φ80 to φ100)

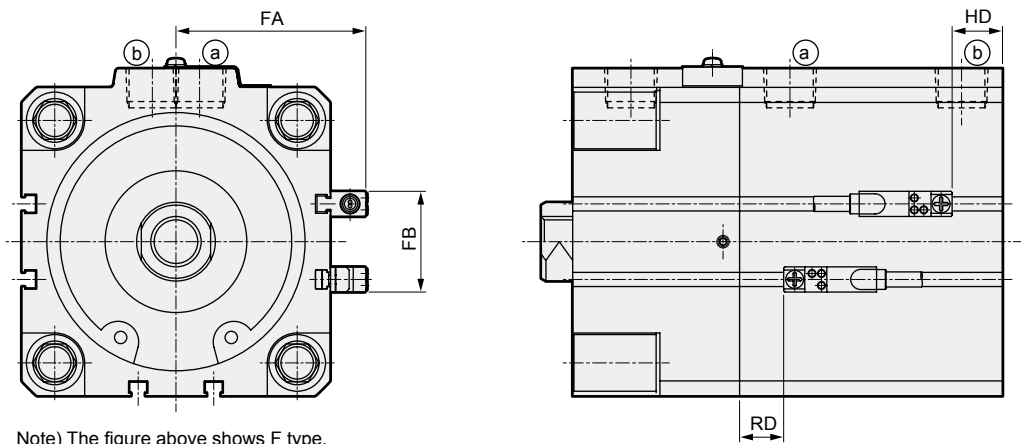
Dimensions (φ80 to φ100) 

● USSD-L-80 to 100 (with 2-color display, off-delay, T8* with switch T2Y^{H/V}, T3Y^{H/V}, T2J^{H/V}, T8^{H/V})



Code Bore size (mm)	FA	FB	T2Y ^{H/V} , T3Y ^{H/V} , T2J ^{H/V}		T8 ^{H/V}	
			RD	HD	RD	HD
φ80	55.3	32	14	16	9.5	11.5
φ100	64.8	32	18	21.5	13.5	7

● USSD-L-80 to 100 (with T1* switch T1^{H/V})



Code Bore size (mm)	FA	FB	RD	HD
φ80	60.3	32	14	16
φ100	69.8	32	18	21.5

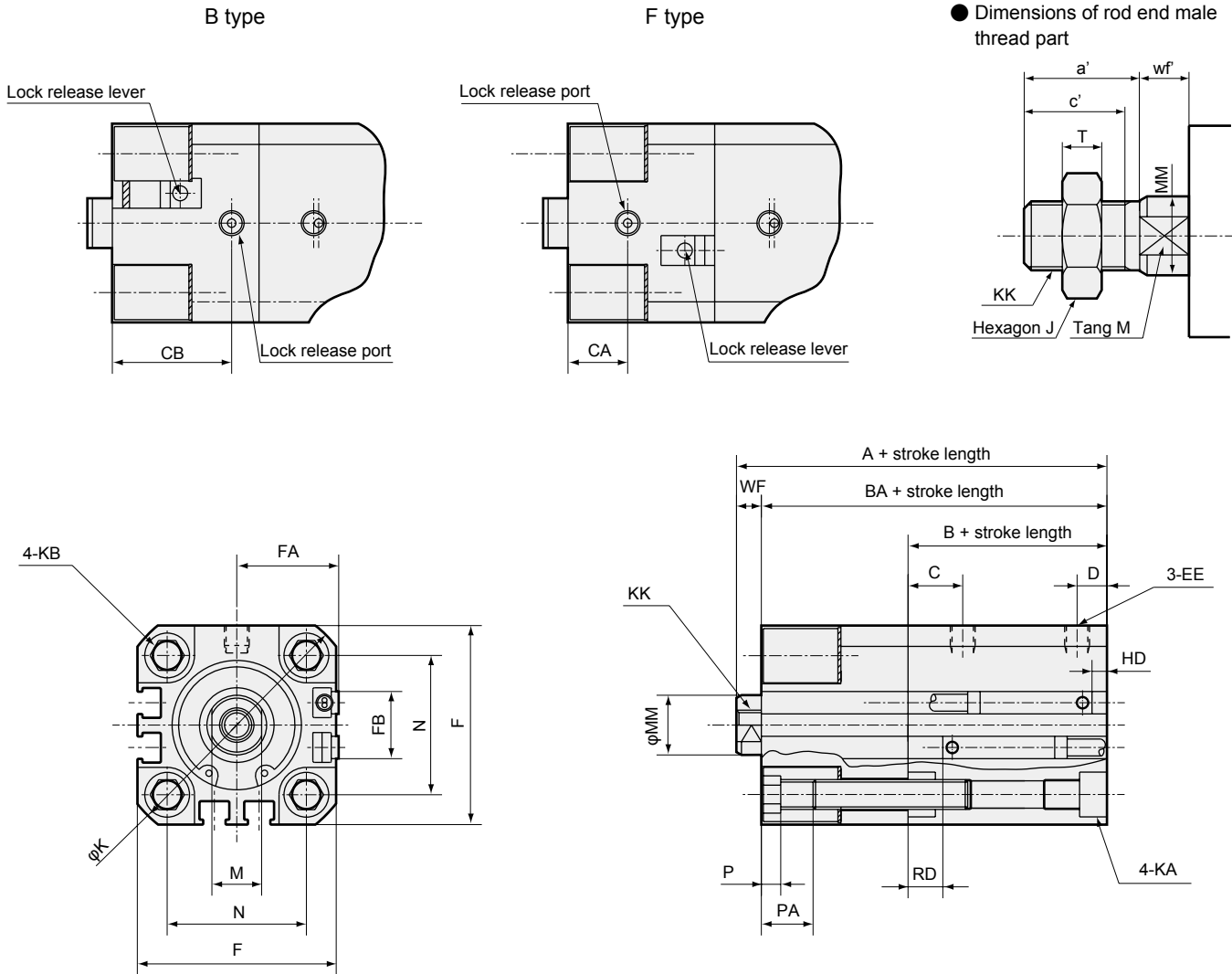
MEMO

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



Dimensions (high load $\phi 20$, $\phi 25$)

- USSD-K-20, 25
- USSD-KL-20, 25 (with switch/TOH/V, T5H/V, T2H/V, T3H/V, T2WH/V, T3WH/V)



Code	Without switch			Common dimensions with switch											
Bore size (mm)	A ⁺¹ ₋₂	B ⁺¹ ₋₂	BA ⁺¹ ₋₂	A ⁺¹ ₋₂	B ⁺¹ ₋₂	BA ⁺¹ ₋₂	C	CA	CB	D	EE	F	FA	FB	
φ20	56(67.5)	24.5(36)	51.5(63)	66(77.5)	34.5(46)	61.5(73)	8	10	22	5.5(8)	M5	36	18.5	12.5	
φ25	64(77.5)	27.5(41)	59(72.5)	74(87.5)	37.5(51)	69(82.5)	11	12	26	6(11)	M5	40	20.5	13.5	
Code	Common dimensions with switch														
Bore size (mm)	KB	K	KA		KK	M	MM	N	WF	P	PA				
φ20	M6	47	9 spot face depth 5.5, M6 depth 11		M5 depth 7	8	10	25.5	4.5	3.5	10				
φ25	M6	51	9 spot face depth 5.5, M6 depth 11		M6 depth 7	10	12	28	5	3.5	10				
Code	Reed TOH/TOV, T5H/T5V			Proximity T2H/T2V, T3H/T3V			Proximity T2WH/T2WV, T3WH/T3WV								
Bore size (mm)	HD ⁺² ₊₃	RD ⁺² ₊₃		HD ⁺² ₊₃	RD ⁺² ₊₃		HD ⁺² ₊₃	RD ⁺² ₊₃		HD ⁺² ₊₃	RD ⁺² ₊₃				
φ20	6.0(12.5)	8.5(13.5)		6(12.5)	8.5(13.5)		6(12.5)	8.5(13.5)		6(12.5)	8.5(13.5)				
φ25	5.5(14)	12(17)		5.5(14)	12(17)		5.5(14)	12(17)		5.5(14)	12(17)				

*1 : To calculate A+ stroke length, B+ stroke length or BA+ stroke length when using a custom stroke length, apply the next longer standard stroke length instead of the custom stroke length.
(Example) If the custom stroke length is 7 mm, apply the standard stroke length of 10 mm.

*2 : When longer than $\phi 20$: 100 mm stroke or $\phi 25$: 150 mm stroke, A, B, BA, D, HD, and RD dimensions are indicated in ().

*3 : HD and RD dimensions for 5-stroke will be adjusted at product shipment and are thus different from these.

Rod end male thread part dimensions								
Code	a'	c'	J	KK	M	MM	T	wf'
Bore size (mm)								
$\phi 20$	14	12	13	M8	8	10	5	4.5
$\phi 25$	17.5	15	17	M10×1.25	10	12	6	5

Dimensions (high load (φ32 to φ63))

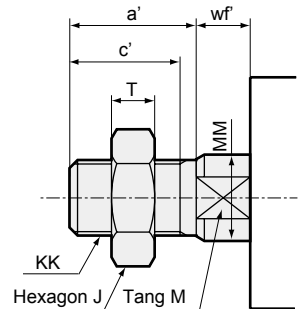
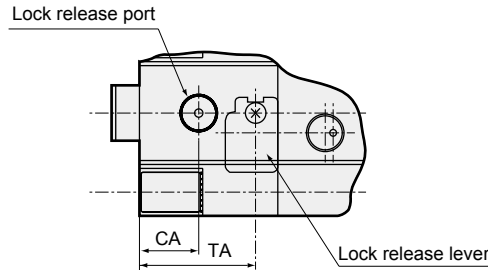
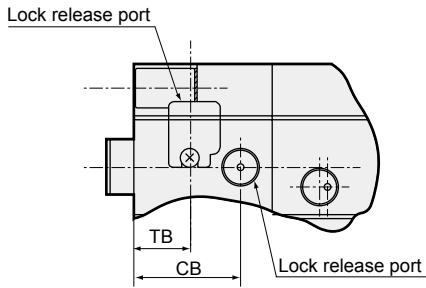


- USSD-K-32 to 63
- USSD-KL-32 to 63 (with switch/TOH/V, T5H/V, T2H/V, T3H/V, T2WH/V, T3WH/V)

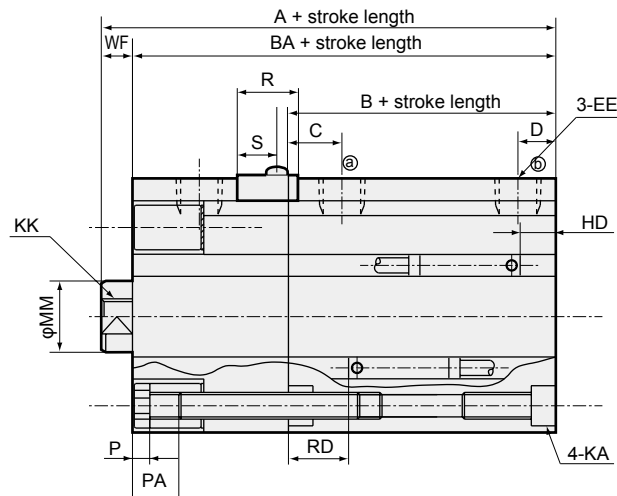
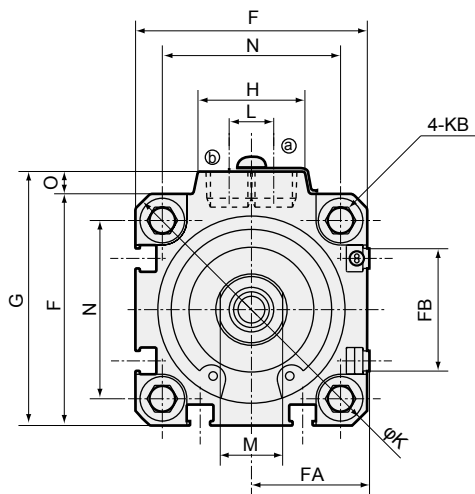
B type

F type

- Dimensions of rod end male thread part



Note) The figure below shows F type.



Code	Without switch			Common dimensions with switch											
Bore size (mm)	A *1	B *1	BA *1	A *1	B *1	BA *1	C	CA	CB	D	EE	F	FA	FB	G
φ32	73.5(81)	33(40.5)	66.5(74)	83.5(91)	43(50.5)	76.5(84)	8	12	25.5	8	RC1/8	45	23	20.5	49.5
φ40	81.5(91)	39.5(49)	74.5(84)	91.5(101)	49.5(59)	84.5(94)	12	15	27	8.5(12)	RC1/8	52	26.5	27.5	57
φ50	87.5(101)	40.5(54)	79.5(93)	97.5(111)	50.5(64)	89.5(103)	10.5	15	30	10.5	RC1/4	64	32.5	28.5	71
φ63	98.5(108.5)	46(56)	90.5(100.5)	108.5(118.5)	56(66)	100.5(110.5)	13	15.5	34	11(13)	RC1/4	77	39	28.5	84
Code	Common dimensions with switch														
Bore size (mm)	H	KB	K	KA		KK	L	M	MM	N	O	WF	P	PA	
φ32	24	M6	60	9 spot face depth 5.5, M6 depth 11		M8 depth 13	10	14	16	34	4.5	7	3.5	10	
φ40	24	M6	69	9 spot face depth 5.5, M6 depth 11		M8 depth 13	10	14	16	40	5	7	3.5	10	
φ50	33	M8	86	11 spot face depth 6.5, M8 depth 13		M10 depth 15	15	17	20	50	7	8	4	12.5	
φ63	33	M10	103	14 spot face depth 9, M10 depth 25		M10 depth 15	15	17	20	60	7	8	4	13.5	
Code	R	S	TA	TB	Reed TOH/TOV, T5H/T5V		Proximity T2H/T2V, T3H/T3V		Proximity T2WH/T2WV, T3WH/T3WV						
Bore size (mm)					HD *2	RD *2	HD *2	RD *2	HD *2	RD *2					
φ32	14	9	29.5	12.4	8.5(16)	14(14)	8.5(16)	14(14)	8.5(16)	14(14)					
φ40	12	6	30.3	14.7	9.5(19)	19.5(19.5)	9.5(19)	19.5(19.5)	9.5(19)	19.5(19.5)					
φ50	14	7	33	15.7	10(19)	20(25)	10(19)	20(25)	10(19)	20(25)					
φ63	17	8.5	37	16.2	17.5(23)	18(23)	17.5(23)	18(23)	17.5(23)	18(23)					

*1 : To calculate A+ stroke length, B+ stroke length or BA+ stroke length when using a custom stroke length, apply the next longer standard stroke length instead of the custom stroke length.

(Example) If the custom stroke length is 7 mm, apply the standard stroke length of 10 mm.

*2 : When longer than φ32 to φ50: 150 mm stroke or φ63: 200 mm stroke, A, B, BA, HD, D, and RD dimensions are indicated in ().

*3 : HD and RD dimensions for 5-stroke will be adjusted at product shipment and are thus different from these.

Rod end male thread part dimensions

Code	a'	c'	J	KK	M	MM	T	wf'
Bore size (mm)								
φ32	23.5	20.5	22	M14×1.5	14	16	8	5
φ40	23.5	20.5	22	M14×1.5	14	16	8	5
φ50	28.5	26	27	M18×1.5	17	20	11	5
φ63	28.5	26	27	M18×1.5	17	20	11	5

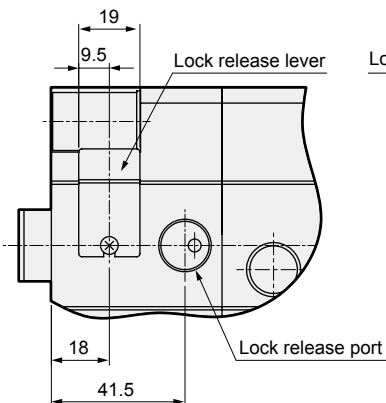
LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



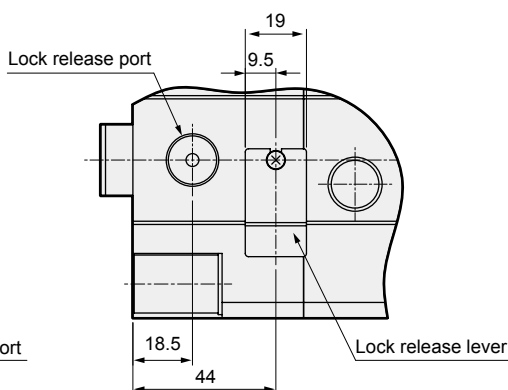
Dimensions (high load $\phi 80$)

- USSD-K-80
- USSD-KL-80 (with switch/TOH/V, T5H/V, T2H/V, T3H/V, T2WH/V, T3WH/V)

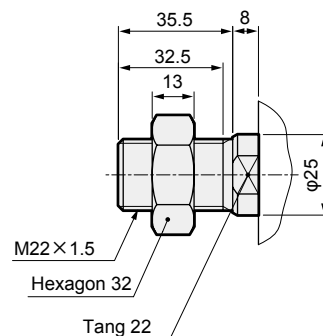
B type



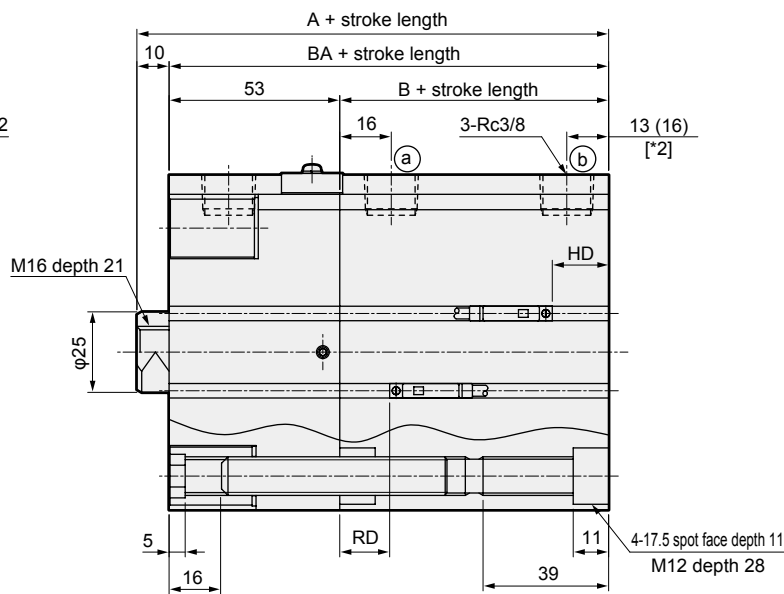
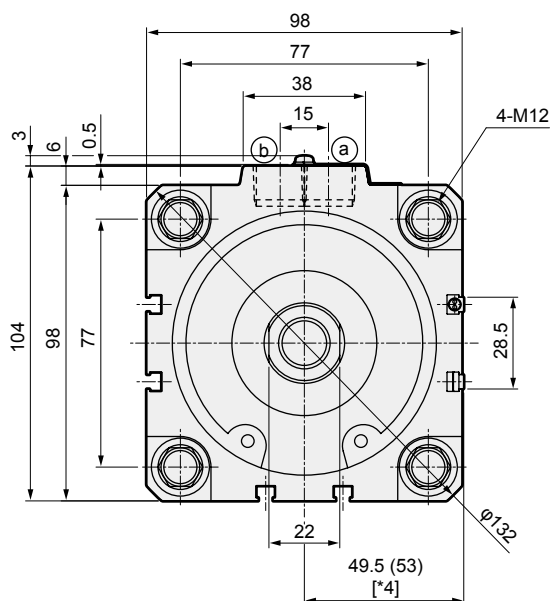
F type



- Dimensions of rod end male thread part



Note) The figure below shows F type.



Code	Without switch			With switch			Reed T0H/T0V, T5H/T5V		Proximity T2H/T2V, T3H/T3V		Proximity T2WH/T2WV, T3WH/T3WV	
Bore size (mm)	A *1	B *1	BA *1	A *1	B *1	BA *1	HD *1	RD *1	HD *1	RD *1	HD *1	RD *1
$\phi 80$	116.5 (126.5)	53.5 (63.5)	106.5 (116.5)	126.5 (136.5)	63.5 (73.5)	116.5 (126.5)	22 (28)	20.5 (25.5)	22.5 (28)	20.5 (25.5)	22.5 (28)	20.5 (25.5)

*1 : To calculate A+ stroke length or B+ stroke length when using custom stroke length, apply the next longer standard stroke length (instead of the custom stroke length) to the stroke length value.
(Example) If the custom stroke length is 7 mm, apply the standard stroke length of 10 mm.

*2 : When longer than 200 mm stroke, A, B, BA, HD and RD dimensions are indicated in ().

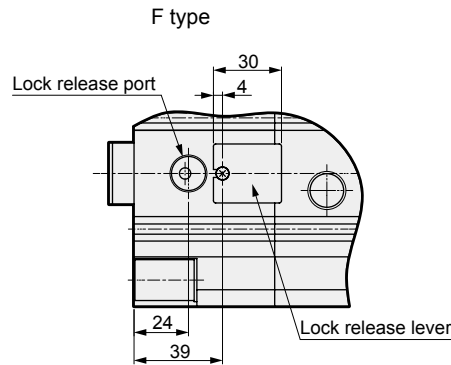
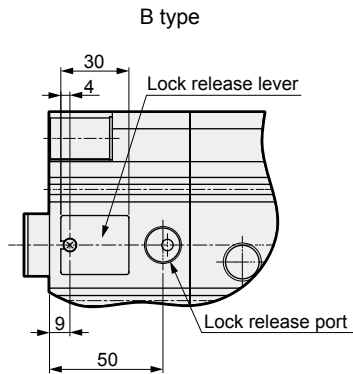
*3 : HD and RD dimensions for 5 mm stroke length differ from these dimensions according to the setting.

*4 : Dimensions in () are for the radial lead wire.

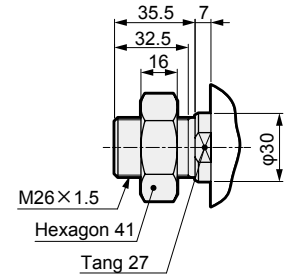
Dimensions (high load φ100)



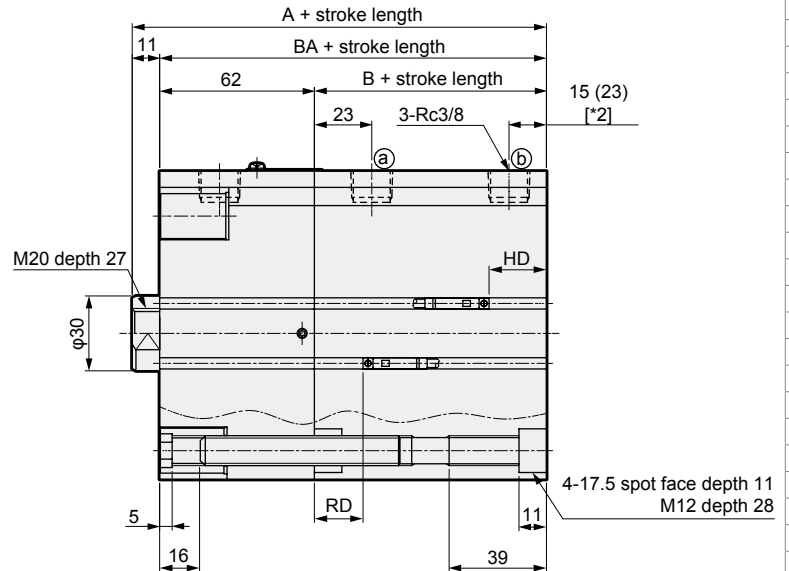
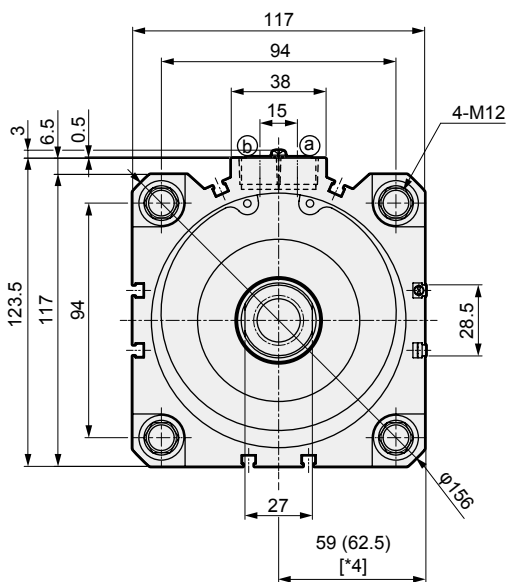
- USSD-K-100
- USSD-KL-100 (with switch/TOH/V, T5H/V, T2H/V, T3H/V, T2WH/V, T3WH/V)



- Dimensions of rod end male thread part



Note) The figure below shows F type.



Code	Without switch			With switch			Reed TOH/TOV, T5H/T5V		Proximity T2H/T2V, T3H/T3V		Proximity T2WH/T2WV, T3WH/T3WV	
Bore size (mm)	A *1	B *1	BA *1	A *1	B *1	BA *1	HD *1	RD *1	HD *1	RD *1	HD *1	RD *1
φ100	136 (136)	63 (73)	125 (135)	146 (156)	73 (83)	135 (145)	28 (33.5)	24.5 (29.5)	28 (33.5)	24.5 (29.5)	28 (33.5)	24.5 (29.5)

- *1 : To calculate A+ stroke length or B+ stroke length when using custom stroke length, apply the next longer standard stroke length (instead of the custom stroke length) to the stroke length value.
(Example) If the custom stroke length is 7 mm, apply the standard stroke length of 10 mm.
- *2 : When longer than 200 mm stroke, A, B, BA, HD, and RD dimensions are indicated in ().
- *3 : HD and RD dimensions for 5 mm stroke length differ from these dimensions according to the setting.
- *4 : Dimensions in () are for the radial lead wire.

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

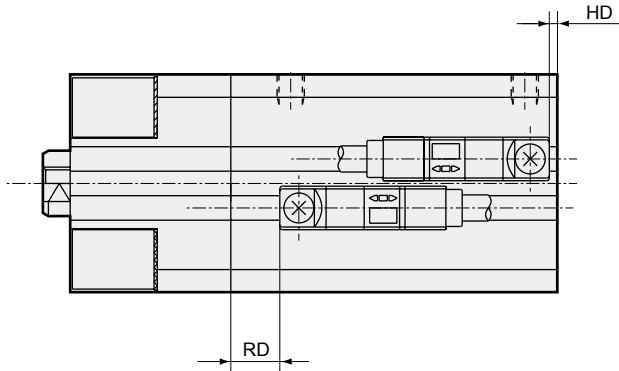
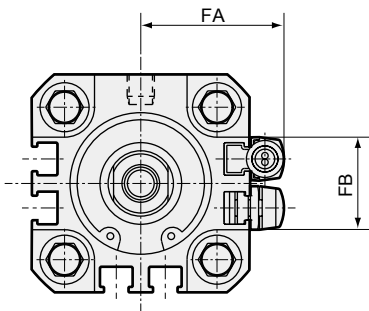
USSD-K Series

Double acting/high load (φ20, φ25)

Dimensions (φ20, φ25)



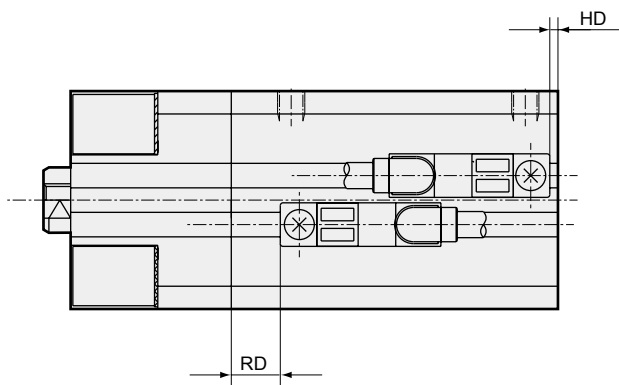
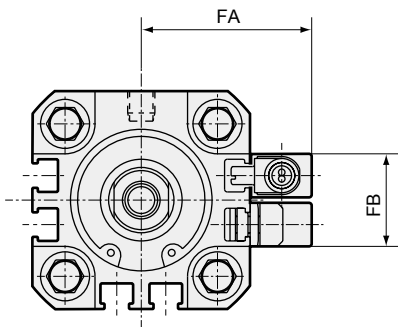
● USSD-KL-20, 25 (2-color display, off-delay, T8* with switch T2Y^{H/V}, T3Y^{H/V}, T2J^{H/V}, T8^{H/V})



*1: When longer than φ20: 100 mm stroke length or φ25: 150 mm stroke length, HD and RD dimensions are indicated in ().

Code	FA	FB	T2Y ^{H/V} , T3Y ^{H/V} , T2J ^{H/V}		T8 ^{H/V}	
			RD *1	HD *1	RD *1	HD *1
Bore size (mm)						
φ20	24.3	16	7(12)	4.5(11)	2.5(7.5)	0(6.5)
φ25	26.3	17	10.5(15.5)	4(12.5)	6(11)	0(8)

● USSD-KL-20, 25 (with T1* switch, T1^{H/V})



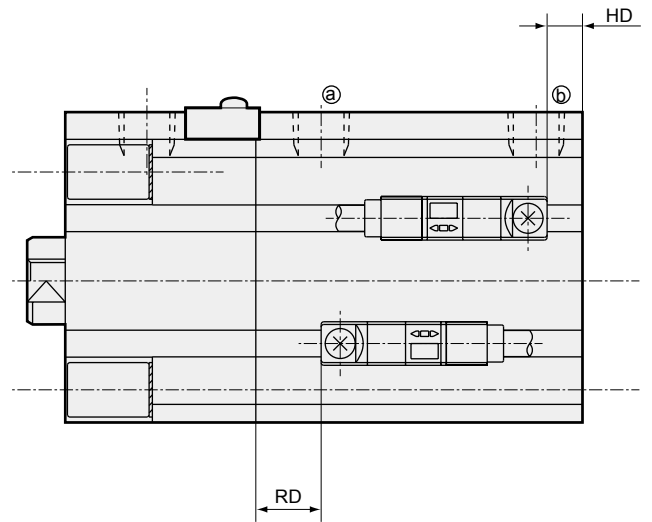
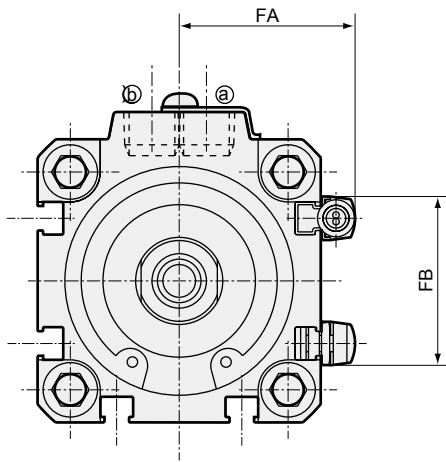
*1: When longer than φ20: 100 mm stroke length or φ25: 150 mm stroke length, HD and RD dimensions are indicated in ().

Code	FA	FB	RD *1	HD *1
Bore size (mm)				
φ20	29.3	16	7(12)	4.5(11)
φ25	31.3	17	10.5(15.5)	4(12.5)

Dimensions (φ32 to φ100)



- USSD-KL-32 to 100 (2-color display, off-delay, T8* with switch T2Y^{H/V}, T3Y^{H/V}, T2J^{H/V}, T8^{H/V})

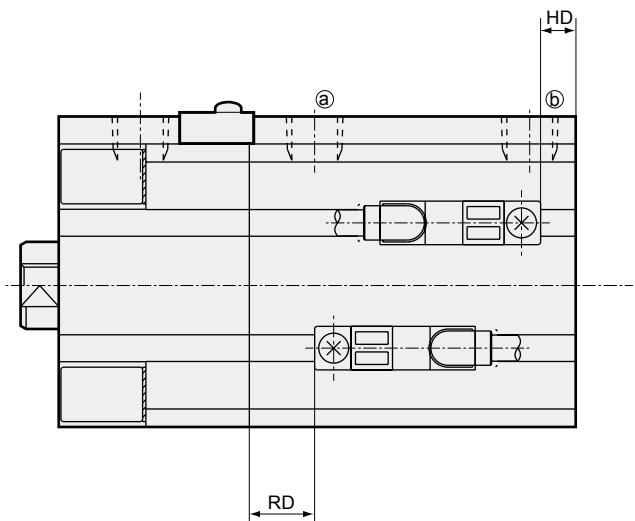
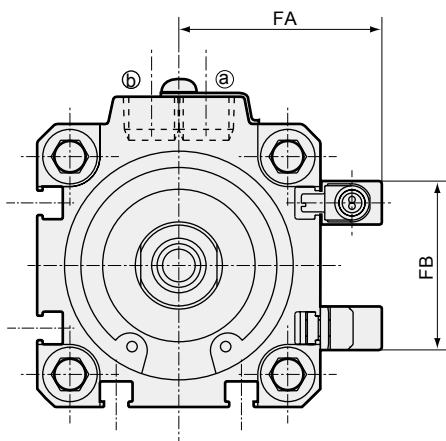


Note) The figure above shows F type.

*1: When longer than φ32 to 50: 150 mm stroke or φ63: 200 mm stroke, HD and RD dimensions are indicated in ().

Code Bore size (mm)	FA	FB	T2Y ^{H/V} , T3Y ^{H/V} , T2J ^{H/V}		T8 ^{H/V}	
			RD *1	HD *1	RD *1	HD *1
φ32	28.8	24	12.5(12.5)	8(14.5)	8(8)	3.5(10)
φ40	32.3	31	18(18)	8(17.5)	13.5(13.5)	3.5(13)
φ50	38.3	32	18.5(23.5)	8.5(17.5)	14(19)	4(13)
φ63	44.8	32	16.5(21.5)	16(21.5)	12(17)	11.5(17)
φ80	55.3	32	19(24)	20.5(26.5)	14.5(19.5)	16(22)
φ100	64.8	32	23(28)	26.5(32)	18.5(23.5)	22(27.5)

- USSD-KL-32 to 100 (with T1* switch/T2YD, T2YDT, T1^{H/V})



Note) The figure above shows F type.

*1: When longer than φ32 to 50: 150 mm stroke or φ63: 200 mm stroke, HD and RD dimensions are indicated in ().

Code Bore size (mm)	FA	FB	RD *1	HD *1
φ32	33.8	24	12.5(12.5)	8(14.5)
φ40	37.3	31	18(18)	8(17.5)
φ50	43.3	32	18.5(23.5)	8.5(17.5)
φ63	49.8	32	16.5(21.5)	16(21.5)
φ80	60.3	32	19(24)	20.5(26.5)
φ100	69.8	32	23(28)	26.5(32)

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

USSD/USSD-K Series

Accessory

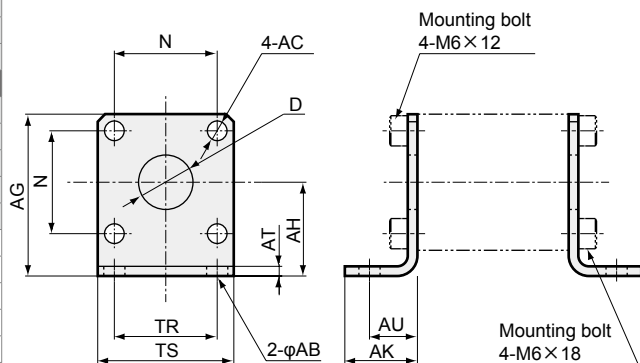
Dimensions (Mounting bracket)



● Mounting bracket Axial foot (LB)

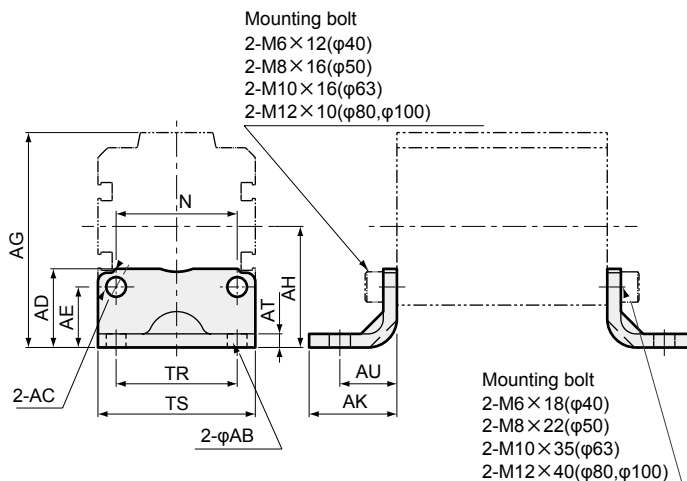
φ20/φ25/φ32

Material: Steel
Zinc chromate treatment



φ40/φ50/φ63/φ80/φ100

Material: Steel
Zinc chromate treatment



* 8 hexagon socket head cap screws are attached for installation.

Model No.	Bore size	AB	AC	AG	AH	AO	AT	AU	AK	D	N	TR	TS	Weight (g)
USSD-LB-20	φ20	7	6.5	42	24	8	3.2	15.9	24	12	25.5	24	36	140
USSD-LB-25	φ25	7	6.5	46	26	8	3.2	15.9	24	14	28	28	40	150
USSD-LB-32	φ32	7	6.5	53.5	31	8	3.2	15.9	24	18	34	34	45	180

* 4 hexagon socket head cap screws are attached for installation.

Model No.	Bore size	AB	AC	AD	AE	AG	AH	AK	AT	AU	N	R	TR	TS	Weight (g)
USSD-LB-40	φ40	7	6.5	26	20	71	40	29	4.5	19	40	15	40	52	170
USSD-LB-50	φ50	9	9	23	15	79	40	34	4.5	22	50	25	46	64	270
USSD-LB-63	φ63	11	11	33	21	96.5	51	40	4.5	25	60	23	60	77	420
USSD-LB-80	φ80	13	13	42	23	116.5	61.5	50	6	35	77	27	77	98	890
USSD-LB-100	φ100	13	13	48	22	134	69	50	6	35	94	36	94	117	1050

Dimensions (Mounting bracket)



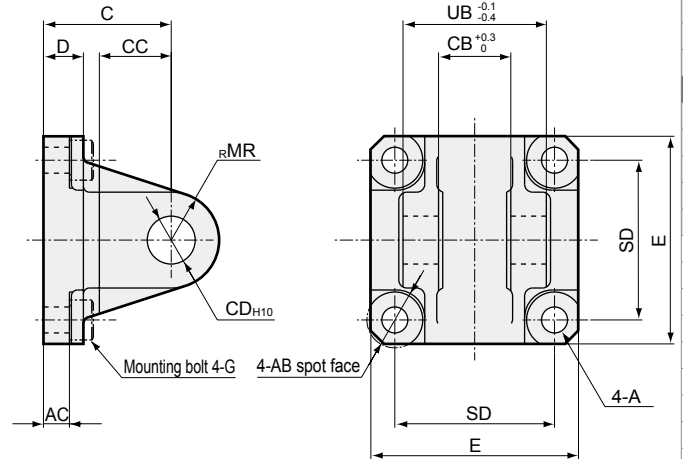
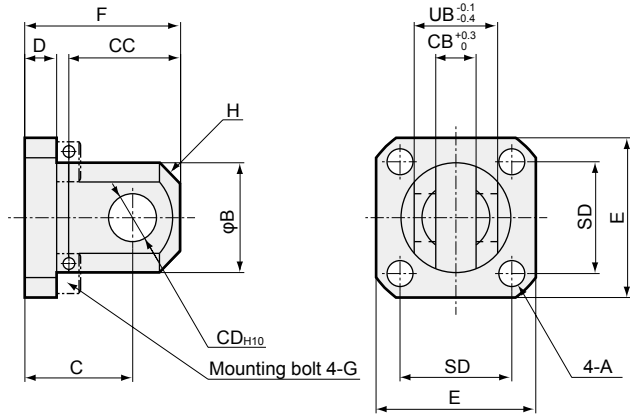
- Mounting bracket Clevis bracket (CB) * Pin (including C ring) and snap ring are attached.
- * When used for oscillating, high load cylinder is recommended.

φ20/φ25

φ32/φ40/φ50/φ63/φ80/φ100

Material: Cast iron
Painting

Material: Cast iron
Painting



* 4 hexagon socket head cap screws are attached for installation.

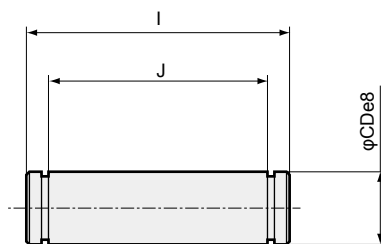
Model No.	Bore size	A	B	C	CB	CC	CD	D	E	F	G	H	SD	UB	Wt (g)
SSD-CB-20	φ20	6.5	24	23	8.1	22	10	8	36	33	M6×22	C4	25.5	19	140
SSD-CB-25	φ25	6.5	27.5	27	10.1	28	12	8	40	39	M6×22	C5	28	21	180

* 4 hexagon socket head cap screws are attached for installation.

Model No.	Bore size	A	AB	AC	C	CB	CC	CD	D	E	G	MR	SD	UB	Weight (g)
SSD-CB-32	φ32	6.5	13	9.5	30	10.1	16	12	10	45	M6×25	12	34	21	230
SSD-CB-40	φ40	6.5	14	6.5	32	18.1	18	12	10	52	M6×20	12	40	36	290
SSD-CB-50	φ50	9	16	6.5	32	18.1	18	12	10	64	M8×25	12	50	36	390
SSD-CB-63	φ63	11	20	7.5	37	20.1	24	14	10	77	M10×40	16	60	40	630
SSD-CB-80	φ80	14	20	10.5	52	28.1	30	20	14	98	M12×40	20	77	56	1530
SSD-CB-100	φ100	14	20	10.5	52	28.1	30	20	16	118	M12×40	20	94	56	1900

- Clevis bracket (CB) attached pin dimensions table

Material: Steel
Zinc chromate treatment



Model No.	Bore size	I	J	CD	Weight (g)	Applicable snap ring
SSD-P-20	φ20	25	20	10	17	E type 9
SSD-P-25	φ25	27	22	12	25	E type 9
SSD-P-32	φ32	27	22	12	25	E type 9
SSD-P-40	φ40	43.5	36.2	12	39	C type for shaft 12
SSD-P-50	φ50	43.5	36.2	12	39	C type for shaft 12
SSD-P-63	φ63	47.5	40.2	14	58	C type for shaft 12
SSD-P-80	φ80	64	56.2	20	156	C type for shaft 20
SSD-P-100	φ100	64	56.2	20	156	C type for shaft 20

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



Safety Precautions

Be sure to read this section before use.

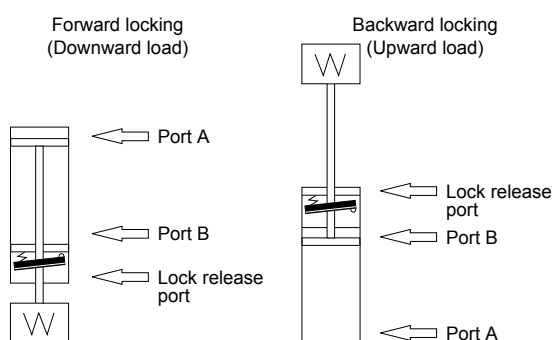
Refer to Intro Page 73 for general information of the cylinder, and to Intro Page 80 for general information of the cylinder switch.

Product-specific cautions: Compact cylinder with position locking USSD Series

Design/selection

WARNING

- Cylinder with position locking mechanism (for holding cylinder stationary).
Emergency stops (while the cylinder is in operation) can significantly decrease the service life.
- If back pressure is applied to the locking mechanism, the lock may be released. Use a discrete valve, or use an individual exhaust manifold.
- Do not apply torque to the rod when locked because the holding force may decrease, creating a dangerous condition. Also, use this product in mechanisms in which the rod does not rotate.
- To release the lock, when using forward locking, supply pressure to port B, and when using backward locking, supply pressure to port A. Check that load is not applied to the locking mechanism. When both ports A and B are exhausted and the piston is locked, if pressure is supplied to port A for forward locking or to port B for backward locking, the lock may not be released or, even if released, the piston rod may pop out, creating a hazard.

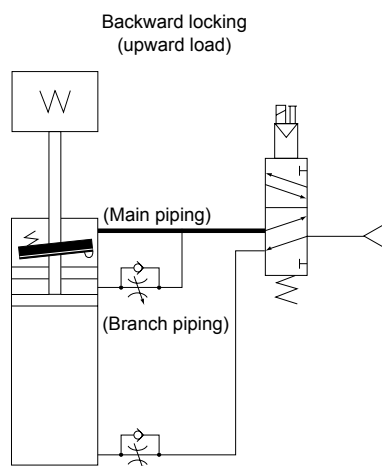
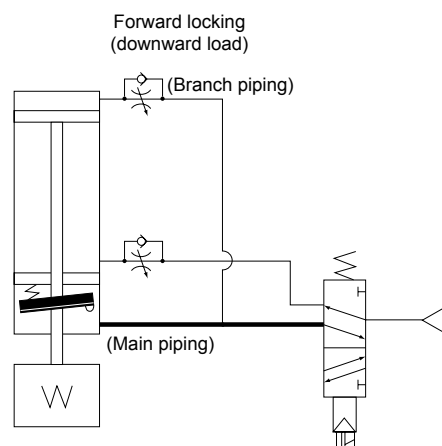


CAUTION

Basic circuit diagram

Arrange the air piping of this cylinder as shown in the figure below. Arranging the pipes differently from the figure below, such as piping the position locking part as a single unit, may cause problems such as delayed response.

1. Be sure to branch the piping of this cylinder after the valve into the position locking part (lock release port as main piping) and cylinder part (cylinder port as branch piping) as shown in the figure below.
2. Be sure to design the piping so that the lock is released before the cylinder starts operating. Failure to do so may prevent unlocking or cause the piston rod to jump out.



Using the emergency stop with the air piping as shown in the figure above will move the cylinder backward in a forward locking and forward in a backward locking, returning it to the original position. (When there is no residual pressure, the cylinder stops at that point.)

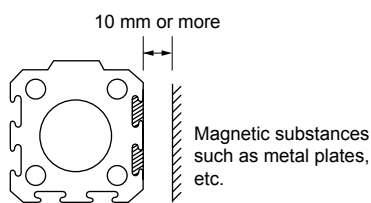
Mounting, installation and adjustment

⚠ WARNING

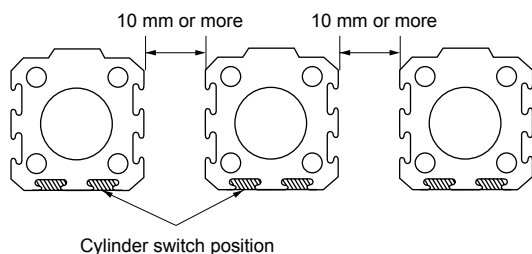
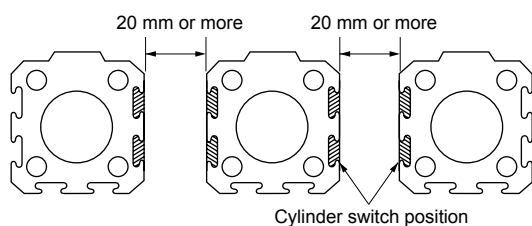
- Do not apply grease to the piston rod because the holding force may decrease, creating a dangerous condition.
- Do not use the product so as to apply rotation torque to the piston rod, as the holding force may decrease.

⚠ CAUTION

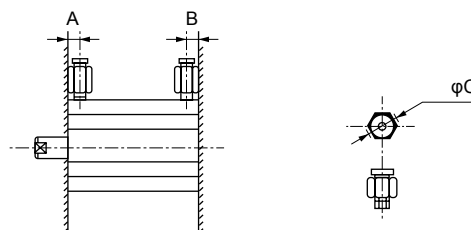
- Main piping in the basic circuit diagram on the previous page should be thicker and shorter than branch piping.
- The cylinder switch could malfunction if there is a magnetic substance such as a metal plate installed adjacently. Confirm that a distance of at least 10 mm is allocated from the surface of the cylinders. (Same for all bore sizes)



- The cylinder switch may malfunction if cylinders are installed adjacently. Check that the following distances are provided between cylinders. (Same for all bore sizes)



- Be sure to provide a guide separately when using multiple synchronized cylinders. Using only the cylinder may impair synchronicity and cause the rod to twist, leading to malfunctions.
- As compatible piping fittings are limited, refer to the table below to select the fitting.



Descriptions Bore size (mm)	Port size	Port position		Applicable fittings	Fitting O.D. φC	Inapplicable fittings
		A	B			
φ20	M5×0.8	10	5.5	SC3W-M5-4 SC3W-M5-6 GWS4-M5-S GWS4-M5 GWL4-M5 GWL6-M5	φ11 or less	GWS6-M5
φ25		12	6			
φ32	Rc1/8	12	8	SC3W-6-4/6/8 GWS4-6 GWS6-6 GWS8-6 GWL4-6 GWL6-6	φ15 or less	GWS10-6 GWL8-6 GWL10-6
φ40		15	8.5			
φ50	Rc1/4	15	10.5	SC3W-8-6/8/10 GWS4-8 GWS6-8 GWS10-8 GWL4 to 12-8	φ21 or less	GWS12-8
φ63		15.5	11			
φ80	Rc3/8	16	13	SC3W-10-6/8/10 GWS6-10 GWS8-10 GWS10-10 GWL6 to 12-10	φ21 or less	—
φ100		23	15			

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

Use/maintenance

⚠ WARNING

■ The required grease is applied to brakes. Avoid applying extra grease and do not wipe grease off.

■ Do not disassemble the unit, as doing so may be dangerous.

■ Always use the product with the dust cover on, except for when performing manual release, in order to prevent failure or malfunction.

■ If no air pressure is supplied in vertical mounting, etc., holding force may not be sufficient when the lock is manually released. This may cause the rod to move (drop) with the load's weight.

For safety, take the following measures before manually releasing the lock:

- Move the load to the bottom end.
- Provide a stopper to the load
- Apply air pressure to the cylinder to balance the load.

⚠ CAUTION

■ When locking the first time after leaving the lock released for a long time, a delayed response may occur in the lock.

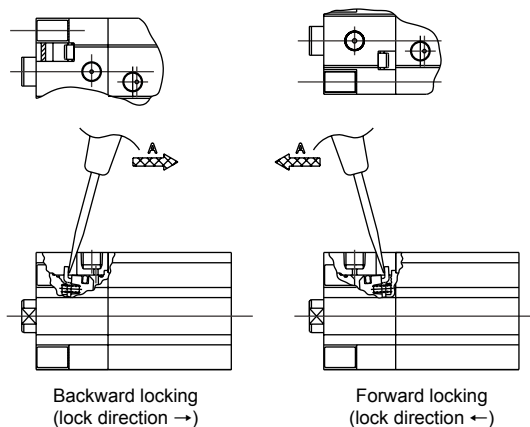
Do not leave the lock pressurized, and operate the lock at each cylinder operation.

(Use the basic circuit diagram shown on page 872)

■ Keeping the cylinder with pressure applied to the lock mechanism may cause the lock to release. Do not use 3-position closed center and 3-position P/A/B connection solenoid valves.

■ Due to the structure, the piston rod drops by about 1 mm when the lock is applied.

■ How to unlock manually



- Remove the cover, insert a flathead screwdriver and lightly push it down in the direction of arrow A to lift the release lever, unlock and free the piston rod.

■ The cylinder body may be damaged or may malfunction if a unit with excessive inertia, etc., is actuated. Use within the allowable absorbed energy range.