

Non-lubrication type Heavy duty pneumatic cylinders conforming to ISO Standard

- Heavy duty pneumatic cylinders using steel material as a main parts
- Use of urethane dust wipers
- ISO Standards apply (except to 140 and 180 mm bore cylinders).
- The bore size from 32 to 250 mm are available.
- Non-lubrication type



Cylinder Specifications

Series variations		Double acting type				Double rod type		Adjustable stroke (retraction side)	
Series	Standard type	Switch Set	VAL Set	SV Set	Standard type	VAL Set	Standard type	VAL Set	
	10A-2	10A-2R	10A-2V2	10A-2K2	10A-2D	10A-2V2D	10A-2A2	10A-2V2A2	
Note 1)	φ32·φ40·φ50·φ63	φ32·φ40·φ50	φ40·φ50·φ63·φ80·φ100		φ32·φ40·φ50·φ63	φ40·φ50·φ63	φ32·φ40·φ50	φ40·φ50·φ63	
Cylinder bore (mm)	φ80·φ100·φ125	φ63·φ80·φ100			φ80·φ100·φ125	φ80·φ100	φ63·φ80·φ100	φ80·φ100	
	(φ140)·φ160	φ125·(φ140)			(φ140)·φ160		φ125·(φ140)		
	(φ180)·φ200·φ250	φ160			(φ180)·φ200·φ250		φ160		
Working fluid	Air								
Lubrication	Unnecessary								
Working pressure range	0.1 to 1 MPa		0.17 to 0.7 MPa		0.1 to 1 MPa	0.17 to 0.7MPa	0.1 to 1 MPa	0.17 to 0.7 MPa	
Proof test pressure	1.5 MPa		1.05 MPa		1.5 MPa	1.05 MPa	1.5 MPa	1.05 MPa	
Working speed range	50 to 700mm/s		50 to 500mm/s		50 to 700mm/s	50 to 500mm/s	50 to 700mm/s	50 to 500mm/s	
Note 2) Working temperature range	-10 to +70℃		+5 to +50℃		-10 to +70℃	+5 to +50℃	-10 to +70℃	+5 to +50℃	
Structure of cushioning	With cushions on both ends								
Cushion stroke	φ32 to φ63 : 14mm(rod side)13mm(cap side) φ80·φ100 : 15mm(rod side/cap side) φ125 : 17mm(rod side)15mm(cap side) φ140 to φ200 : 20mm(rod side/cap side) φ250 : 22mm(rod side/cap side)				φ32 to φ100 : 14mm φ125 : 16mm φ140 to φ200 : 19mm φ250 : 21mm		φ32 to φ63: 14mm(rod side)13mm(cap side) φ80·φ100 : 15mm(rod side/cap side) φ125 : 17mm(rod side)15mm(cap side) φ140·φ160: 20mm(rod side/cap side) * Values at full stroke on the cap side		
Stroke adjusting range	————						0 to 50mm		
Tolerance for thread	JIS 6g/6H								
Tolerance of stroke	0 to 250 mm ^{+1.0} ₀		251 to 1000mm ^{+1.5} ₀		1001 to 2000mm ^{+2.0} ₀				
Mounting style	(SD)·(LB)·FA·FB CA·(CC)·CB·(CD) TA·TC		(SD)·(LB)·FA·FB CA·CB·TA·TC		(SD)·(LB)·FA·TA·TC				
Accessories	Note 3) Boots	Standard: Nylon tarpaulin				Semi-standard: Chloroprene, Conex			
	Rod end attachments	Rod eye (T-end), rod eye with spherical bearing (S-end), rod clevis (Y-end) with pin, floating joint (F-end)							
	Others	CB/CD bracket, TA/TC bracket				TA/TC bracket			

Note 1) The parenthesized bores are not specified in ISO Standards.
Note 2) No freezing
Note 3) Conex, material of the boots, is the registered trademark of Teijin Limited.

Product Lineup

Unit: mm

Series Variations		φ32	φ40	φ50	φ63	φ80	φ100	φ125	φ140	φ160	φ180	φ200	φ250
Double acting type	Standard type 10A-2	●	●	●	●	●	●	●	●	●	●	●	●
	Switch Set 10A-2R	●	●	●	●	●	●	●	●	●	●	●	●
	VAL Set 10A-2V2		●	●	●	●	●	●	●	●	●	●	●
	SV Set 10A-2K2		●	●	●	●	●	●	●	●	●	●	●
Double rod type	Standard type 10A-2D	●	●	●	●	●	●	●	●	●	●	●	●
	Switch Set 10A-2RD	●	●	●	●	●	●	●	●	●	●	●	●
	VAL Set 10A-2V2D		●	●	●	●	●	●	●	●	●	●	●
	SV Set 10A-2K2D		●	●	●	●	●	●	●	●	●	●	●
Adjustable stroke (retraction side)	Standard type 10A-2A2	●	●	●	●	●	●	●	●	●	●	●	●
	Switch Set 10A-2RA2	●	●	●	●	●	●	●	●	●	●	●	●
	VAL Set 10A-2V2A2		●	●	●	●	●	●	●	●	●	●	●
	SV Set 10A-2K2A2		●	●	●	●	●	●	●	●	●	●	●
Adjustable stroke (extension side)	Standard type 10A-2A1	●	●	●	●	●	●	●	●	●	●	●	●
	Switch Set 10A-2RA1	●	●	●	●	●	●	●	●	●	●	●	●
	VAL Set 10A-2V2A1		●	●	●	●	●	●	●	●	●	●	●
	SV Set 10A-2K2A1		●	●	●	●	●	●	●	●	●	●	●
Dual stroke single rod	Standard type 10A-2Q1 (Order made)	●	●	●	●	●	●	●	●	●	●	●	●
	Switch Set 10A-2RQ1 (Order made)	●	●	●	●	●	●	●	●	●	●	●	●
Dual stroke double rod	Standard type 10A-2Q2 (Order made)	●	●	●	●	●	●	●	●	●	●	●	●
	Switch Set 10A-2RQ2 (Order made)	●	●	●	●	●	●	●	●	●	●	●	●

Sensor List

Semi-standard specification

Type	Sensor symbol	Load voltage range	Load current range	Max. switching capacity	Protective circuit	Indicating lamp	Wiring method	Cord length	Applicable load			
Reed sensor	 AX101CE	DC:5 to 30V AC:5 to 120V	DC:5 to 40mA AC:5 to 20mA	DC:1.5W AC:2VA	None	LED (Lights in red when sensing)	0.3 mm ² , 2-core, outer dia. φ4 mm, rear wiring	1.5m	Small relay, programmable controller			
	 AX105CE							5m				
	 AX111CE							1.5m				
	 AX115CE							5m				
	 AX125CE	DC:30 V or less AC:120 V or less	DC: 40 mA or less AD: 20 mA or less	2VA	None	None	4-pin connector type, rear wiring	5m				
	 AX11ACE	AC:5 to 120V	5 to 20mA					Provided		LED (Lights in red when sensing)	0.5m	
	 AX11BCE	DC:5 to 30V	5 to 40mA								1.5W	0.5m
	 AX135CE	AC:90 to 240V DC:90 to 240V	5 to 300mA								B contact output	Provided
	 SR405	AC:80 to 220V	2 to 300mA	30VA	Provided	Neon lamp (Lights in red when not sensing)	0.5 mm ² , 2-core, outer dia. φ6 mm, rear wiring	5m		Small relay, programmable controller, small solenoid, pilot lamp		
	Solid state sensor	 AX201CE-1	DC:5 to 30V	5 to 40mA	—	Provided	LED (Lights in red when sensing)	0.3 mm ² , 2-core, outer dia. φ4 mm, rear wiring		1.5m	Small relay, programmable controller	
 AX205CE-1		5m										
 AX211CE-1		1.5m										
 AX215CE-1		5m										
 AX211CE-1		LED (2-LED type in red/green)					0.3 mm ² , 2-core, outer dia. φ4 mm, rear wiring	1.5m				
 AX215CE-1								5m				
 AX21BCE-1								4-pin connector type, rear wiring	0.5m			
 AZ211CE-1								0.3 mm ² , 2-core, outer dia. φ4 mm, upper wiring	1.5m			
 AZ215CE-1								5m				
 AZ21BCE-1								4-pin connector type, upper wiring	0.5m			

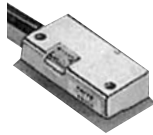
- Notes) ● For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
● The output logic of AX135CE is a B contact. When the piston is detected, the sensor contact turns off (the lamp turns on).
● For the detailed specifications and handling of sensors, see the sensor specifications at the end of this catalog.
● The AX type sensors can be mounted on any type in addition to the above types. See the sensor specifications at the end of this catalog.
● We recommend AND Unit (AU series) for multiple sensors connected in series.
For details, refer to AND Unit at the end of this catalog.

●AX type sensor

●SR type sensor

Cord type

Connector type



Unit: mm

Standard Stroke Range

Series variations	Type	Bore					
		ϕ 32	ϕ 40	ϕ 50 $\cdot\phi$ 63	ϕ 80 $\cdot\phi$ 100	ϕ 125 to ϕ 160	ϕ 180 to ϕ 250
Double acting type	Standard type	800	1200	1400	1800	2000	2000
	Switch Set	800	1200	1400	1800	2000	—
	VAL Set	—	1200	1400	1800	—	—
	SV Set	—	1200	1400	1800	—	—
Double rod type	Standard type	800	1200	1200	1200	1200	1200
	VAL Set	—	1200	1200	1200	—	—
Adjustable stroke (refraction side)	Standard type	800	1200	1400	1800	2000	—
	VAL Set	—	1200	1400	1800	—	—

- Notes) ● The minimum stroke of VAL Set Cylinders is 50 mm. (However, that of TC style cylinders is 75 mm.)
The left table shows the maximum available strokes for the standard type.
● For the rod buckling, check with the buckling chart in the selection materials. Contact us for longer strokes.

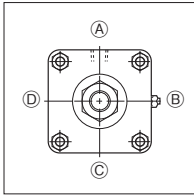
Sensor Mountable Minimum Stroke

Type	AX type		SR type	
	Switch Set	SV Set	Switch Set	SV Set
With 1 sensor	25	50	15	50
With 2 sensors	25	50	15	50
TC style	120	120	125	125

Specifications for Valves for VAL Set

Rated voltage		100 V AC		200 V AC		24 V DC	
Working voltage range V		90 to 132		180 to 264		21.6 to 26.4	
Current value (when rated voltage is applied)	Frequency Hz	50	60	50	60	—	
	Starting mA (r.m.s)	34	32	17	16	—	
	Exciting mA (r.m.s)	22	20	11	10	DIN terminal type: 75mA (1.8W) Lead wire type: 65mA (1.6W)	
Allowable circuit leakage current value mA		4		2		4	
Type of insulation		Class B					
Insulation resistance MΩ		100 or more					
Protective circuit		—				Flywheel diode	
DIN terminal type	Indicator lamp	Yellow		Green		Red	
	Terminal No.	No.1, No.2				No.1(－), No.2(＋)	
Lead wire type	Color of lead wire	Yellow		White		Black(－), Red(＋)	

★Standard specifications



- With cushions on both ends
- Port position ①, cushion valve position ②

★Change of port and cushion valve positions

The standard port position is ①, and the standard cushion valve position is ②.
When modifying the positions, enter the symbol shown in the following figure.

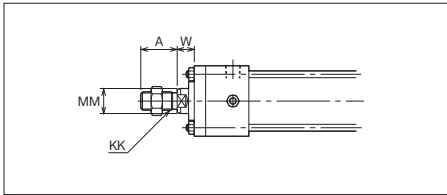
Example) 10A-2R SD63 B200-**B** **C** AH2

Port position (A, B, C, D) Cushion valve position (A, B, C, D, O)

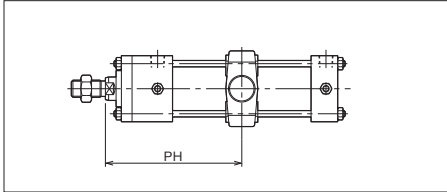
- For the TA style, the standard port position and cushion valve position are ① and ③ on the rod side and ① and ② on the cap side.
- In case that the cushion is not equipped, the cushion valve position is "O". However, the cushion valve is provided.

★Semi-standard range

- With boots
- Adjustable stroke
- Heat proof
- Modification of piston rod end style and dimension



- Modification of TC accessory position (dimensional symbol: PH)



Weight Table/Double acting type

Unit: kg

Bore mm	Basic weight (SD style)				Additional weight per mm of stroke		Mounting accessory weight								Bracket weight		Rod end attachment weight				
	Standard type	Switch Set	VAL Set	SV Set	Standard VAL Set	Switch Set SV Set	LB	FA	FB	CA	CC	CB	CD	TA	TC	CB	TA/TC	Rod eye (S-end)	Rod eye (T-end)	Rod clevis (Y-end)	Floating joint (F-end)
φ32	1.28	1.12	—	—	0.00345	0.00251	0.19	0.18	0.24	0.12	—	0.12	—	0.05	0.30	0.46	0.45	0.08	0.16	0.22	0.10
φ40	1.74	1.51	1.95	1.72	0.00454	0.00338	0.23	0.25	0.32	0.18	—	0.15	—	0.19	0.48	0.66	1.06	0.11	0.16	0.27	0.10
φ50	2.78	2.40	2.99	2.61	0.00779	0.00534	0.36	0.40	0.50	0.26	—	0.30	—	0.19	0.55	0.66	1.06	0.20	0.21	0.34	0.38
φ63	4.18	3.55	4.42	3.79	0.00945	0.00638	0.46	0.55	0.65	0.42	—	0.39	—	0.19	0.70	0.66	1.06	0.20	0.21	0.34	0.38
φ80	8.11	7.17	8.35	7.41	0.0135	0.00916	0.86	1.38	1.59	1.08	—	0.80	—	0.19	1.16	1.97	1.47	0.36	0.62	0.87	0.72
φ100	11.94	10.52	12.18	10.76	0.0153	0.00984	1.12	1.99	2.20	1.39	—	1.05	—	0.19	1.53	1.97	1.47	0.36	0.62	0.87	1.30
φ125	16.60	13.94	—	—	0.0242	0.0154	2.00	2.58	2.58	0.57	2.59	0.76	2.86	0.19	2.20	2.60	3.05	—	1.24	1.47	2.47
φ140	25.52	21.49	—	—	0.0398	0.0223	2.83	4.38	4.38	0.94	5.05	1.72	5.69	0.57	5.00	7.80	8.15	—	2.40	3.32	4.30
φ160	31.36	26.38	—	—	0.0365	0.0222	3.22	5.48	5.48	1.35	6.18	1.82	6.73	0.57	4.95	7.80	8.15	—	2.40	3.32	4.30
φ180	40.70	—	—	—	0.0535	—	5.69	7.22	7.22	1.25	9.04	1.72	9.73	0.57	6.00	7.80	8.15	—	2.40	3.32	—
φ200	46.90	—	—	—	0.0593	—	6.12	8.30	8.30	1.25	10.18	1.72	10.86	0.57	6.30	7.80	8.15	—	2.40	3.32	—
φ250	90.07	—	—	—	0.0635	—	8.38	15.70	15.70	3.23	20.10	4.22	21.30	1.12	10.50	16.65	15.50	—	4.62	5.93	—

Sensor Additional Weight

Unit: kg

Sensor	AX type			SR type	
Bore	Cord length 1.5 m	Cord length 5 m	Connector type	Cord length 5 m	
φ32	0.05	0.13	0.04	0.22	
φ40					
φ50					
φ63	0.07	0.13	0.04		
φ80	0.05	0.13	0.04		
φ100					
φ125	0.07	0.14	0.06		
φ140	0.07	0.15	0.06		
φ160					

Valve Additional Weight

Unit: kg

Valve Bore	Energized extending type	Detent type	3-position closed center type
	Energized retracting type		3-position exhaust center type
φ40	0.51	0.59	0.63
φ50	0.51	0.59	0.63
φ63	0.52	0.60	0.64
φ80	0.52	0.60	0.64
φ100	0.55	0.63	0.67

Note) For VAL Set or SV Set Cylinder, add the valve additional weight according to the operating method.

[Calculation formula] Cylinder weight (kg)=basic weight+(sensor additional weight×sensor quantity)+valve additional weight
+mounting accessory weight+(additional weight per mm of stroke×cylinder stroke (mm))

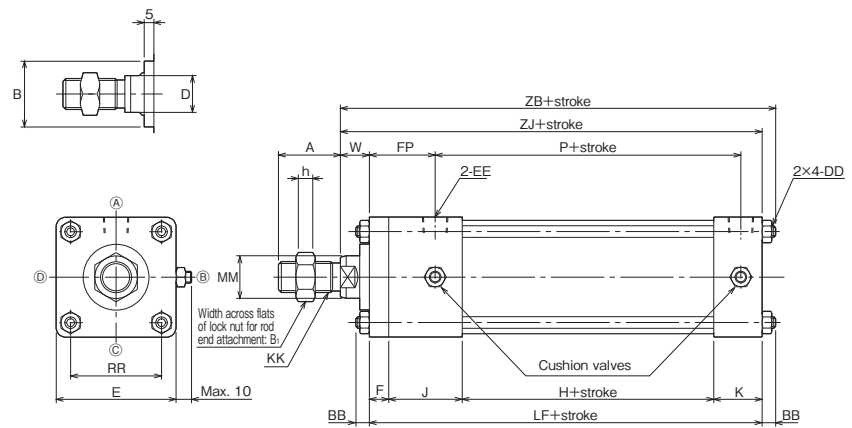
[Calculation example] SV Set Cylinder, energized extending type, 2 pcs of AX sensors (cord length 1.5 m),

LB style, cylinder bore 80 mm, cylinder stroke 200 mm
7.41+(0.05×2)+0.52+0.86+(0.00916×200)=10.722kg

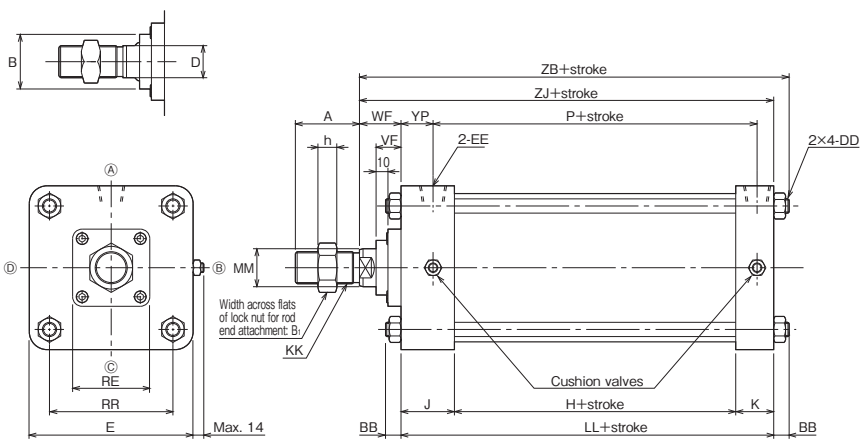
CAD/DATA is available. 

SD
10A-2 SD Bore B Stroke

• $\phi 32$ to $\phi 100$



• $\phi 125$ to $\phi 250$



Dimensional Table

Symbol Bore	A	B	B ₁	BB	D	DD	E	EE	F	FP	H	h	J
$\phi 32$	22 (19)	$\phi 24$	17	7	10	M6×1	$\square 44$	Rc1/8	10	34	30	6	38
$\phi 40$	24 (21)	$\phi 30$	19	7	13	M6×1	$\square 50$	Rc1/4	10	34	30	7	38
$\phi 50$	32 (28)	$\phi 34$	22	7	19	M6×1	$\square 62$	Rc1/4	10	34	30	10	38
$\phi 63$	32 (28)	$\phi 34$	22	9	19	M8×1.25	$\square 76$	Rc3/8	10	34	33	10	38
$\phi 80$	40 (36)	$\phi 39$	27	10	22	*M10×1.25	$\square 94$	Rc3/8	16	43	31	12	45
$\phi 100$	40 (36)	$\phi 39$	27	10	22	*M10×1.25	$\square 114$	Rc1/2	16	43	31	12	45
$\phi 125$	54 (49)	$\phi 46$	36	13	27	*M12×1.5	$\square 138$	Rc1/2	—	—	37	16	45
$\phi 140$	72 (67)	$\phi 55$	50	16	36	*M16×1.5	$\square 156$	Rc3/4	—	—	43	20	50
$\phi 160$	72 (67)	$\phi 55$	50	16	36	*M16×1.5	$\square 178$	Rc3/4	—	—	43	20	50
$\phi 180$	72 (67)	$\phi 55$	50	16	36	*M16×1.5	$\square 200$	Rc3/4	—	—	43	20	50
$\phi 200$	72 (67)	$\phi 55$	50	16	36	*M16×1.5	$\square 216$	Rc3/4	—	—	43	20	50
$\phi 250$	84 (79)	$\phi 60$	60	19	41	*M20×1.5	$\square 270$	Rc1	—	—	55	22	57

Symbol Bore	K	KK	LF	LL	MM	P	RE	RR	VF	W	WF	YP	ZB	ZJ
$\phi 32$	25	M10×1.25	103	—	$\phi 12$	58	—	$\square 33$	—	15	—	—	125	118
$\phi 40$	25	M12×1.25	103	—	$\phi 16$	58	—	$\square 37$	—	15	—	—	125	118
$\phi 50$	25	M16×1.5	103	—	$\phi 22$	58	—	$\square 47$	—	15	—	—	125	118
$\phi 63$	25	M16×1.5	106	—	$\phi 22$	61	—	$\square 56$	—	15	—	—	130	121
$\phi 80$	32	M20×1.5	124	—	$\phi 25$	67	—	$\square 70$	—	19	—	—	153	143
$\phi 100$	32	M20×1.5	124	—	$\phi 25$	67	—	$\square 84$	—	19	—	—	153	143
$\phi 125$	32	M27×2	—	114	$\phi 32$	73	$\square 65$	$\square 104$	21	—	35	27	162	149
$\phi 140$	38	M36×2	—	131	$\phi 40$	85	$\square 76$	$\square 123$	25	—	41	29	188	172
$\phi 160$	38	M36×2	—	131	$\phi 40$	85	$\square 76$	$\square 134$	25	—	41	29	188	172
$\phi 180$	38	M36×2	—	131	$\phi 40$	85	$\square 76$	$\square 156$	25	—	41	29	188	172
$\phi 200$	38	M36×2	—	131	$\phi 40$	85	$\square 76$	$\square 163$	25	—	41	29	188	172
$\phi 250$	50	M42×2	—	162	$\phi 45$	109	$\square 90$	$\square 202$	30	—	48	30	229	210

* The parenthesized values of dimension A indicate the screw length.

Comparison of Screw Pitches of New and Old Tie Rods

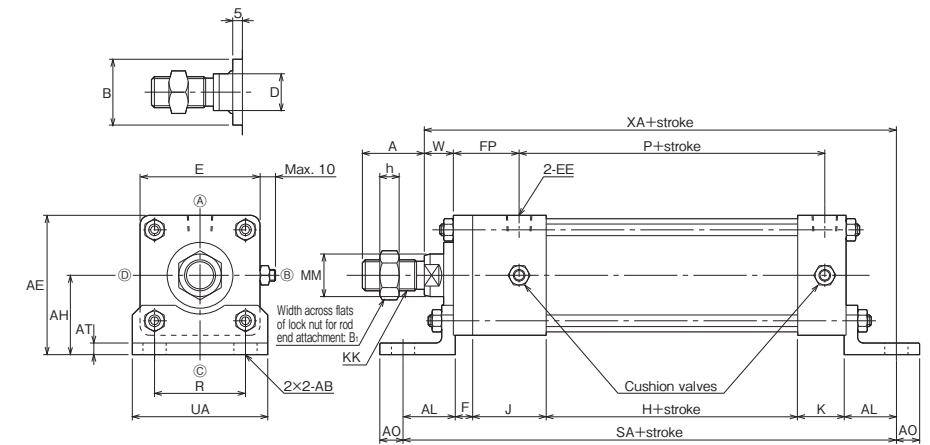
Symbol Bore	Dimension DD	
	Old	New
$\phi 80$	M10×1.5	M10×1.25
$\phi 100$	M10×1.5	M10×1.25
$\phi 125$	M12×1.75	M12×1.5
$\phi 140$	M16×2	M16×1.5
$\phi 160$	M16×2	M16×1.5
$\phi 180$	M16×2	M16×1.5
$\phi 200$	M16×2	M16×1.5
$\phi 250$	M20×2.5	M20×1.5

Note) A part of the screw pitches (dimension DD) of the tie rods have been changed from those shown in the 1996 catalog. The changed values are marked with *. If an SD style (basic style) cylinder is purchased and a tie rod is installed with the tie rod screw supplied with the cylinder or only a tie rod is purchased, the tie rod is not applicable to the old screw pitch. Before placing an order, sufficiently check the pitch. Implemented from shipment on Dec. 1, 1995 (From serial No.512)

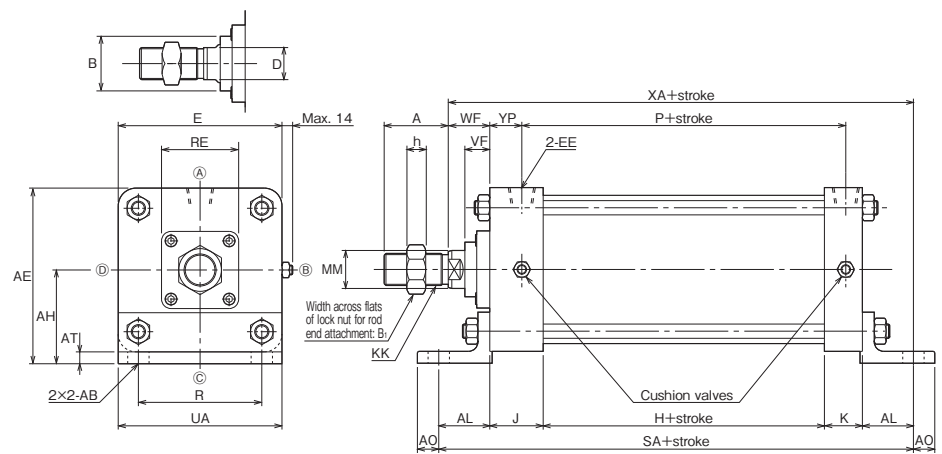
CAD/DATA
10A-2/TA2 is available.

LB
10A-2 LB Bore B Stroke

• $\phi 32$ to $\phi 100$



• $\phi 125$ to $\phi 250$



• All dimensions of the bodies and mounting accessories of Switch Set Cylinders ($\phi 32$ to $\phi 160$), VAL Set Cylinders ($\phi 40$ to $\phi 100$) and SV Set Cylinders ($\phi 40$ to $\phi 100$) are the same as those of the standard type cylinders.

Dimensional Table

Symbol Bore	A	AB	AE	AH	AL	AO	AT	B	B ₁	D	E	EE	F	FP
$\phi 32$	22 (19)	$\phi 9$	55	33	23	10	5	$\phi 24$	17	10	$\square 44$	Rc1/8	10	34
$\phi 40$	24 (21)	$\phi 12$	60	35	25	12	5	$\phi 30$	19	13	$\square 50$	Rc1/4	10	34
$\phi 50$	32 (28)	$\phi 12$	72	41	26	12	6	$\phi 34$	22	19	$\square 62$	Rc1/4	10	34
$\phi 63$	32 (28)	$\phi 12$	86	48	28	12	6	$\phi 34$	22	19	$\square 76$	Rc3/8	10	34
$\phi 80$	40 (36)	$\phi 14$	106	59	34	14	8	$\phi 39$	27	22	$\square 94$	Rc3/8	16	43
$\phi 100$	40 (36)	$\phi 14$	123	66	34	14	8	$\phi 39$	27	22	$\square 114$	Rc1/2	16	43
$\phi 125$	54 (49)	$\phi 18$	148	79	43	18	10	$\phi 46$	36	27	$\square 138$	Rc1/2	—	—
$\phi 140$	72 (67)	$\phi 22$	171	93	50	22	10	$\phi 55$	50	36	$\square 156$	Rc3/4	—	—
$\phi 160$	72 (67)	$\phi 22$	187	98	50	22	10	$\phi 55$	50	36	$\square 178$	Rc3/4	—	—
$\phi 180$	72 (67)	$\phi 22$	215	115	55	22	15	$\phi 55$	50	36	$\square 200$	Rc3/4	—	—
$\phi 200$	72 (67)	$\phi 22$	226	118	55	22	15	$\phi 55$	50	36	$\square 216$	Rc3/4	—	—
$\phi 250$	84 (79)	$\phi 26$	276	141	60	24	15	$\phi 60$	60	41	$\square 270$	Rc1	—	—

Symbol Bore	H	h	J	K	KK	MM	P	R	RE	SA	UA	VF	W	WF	XA	YP
$\phi 32$	30	6	38	25	M10×1.25	$\phi 12$	58	33	—	149	54	—	15	—	141	—
$\phi 40$	30	7	38	25	M12×1.25	$\phi 16$	58	37	—	153	60	—	15	—	143	—
$\phi 50$	30	10	38	25	M16×1.5	$\phi 22$	58	47	—	155	70	—	15	—	144	—
$\phi 63$	33	10	38	25	M16×1.5	$\phi 22$	61	56	—	162	80	—	15	—	149	—
$\phi 80$	31	12	45	32	M20×1.5	$\phi 25$	67	70	—	192	97	—	19	—	177	—
$\phi 100$	31	12	45	32	M20×1.5	$\phi 25$	67	84	—	192	114	—	19	—	177	—
$\phi 125$	37	16	45	32	M27×2	$\phi 32$	73	104	$\square 65$	200	138	21	—	35	192	27
$\phi 140$	43	20	50	38	M36×2	$\phi 40$	85	123	$\square 76$	231	156	25	—	41	222	29
$\phi 160$	43	20	50	38	M36×2	$\phi 40$	85	134	$\square 76$	231	178	25	—	41	222	29
$\phi 180$	43	20	50	38	M36×2	$\phi 40$	85	156	$\square 76$	241	200	25	—	41	227	29
$\phi 200$	43	20	50	38	M36×2	$\phi 40$	85	163	$\square 76$	241	216	25	—	41	227	29
$\phi 250$	55	22	57	50	M42×2	$\phi 45$	109	202	$\square 90$	282	270	30	—	48	270	30

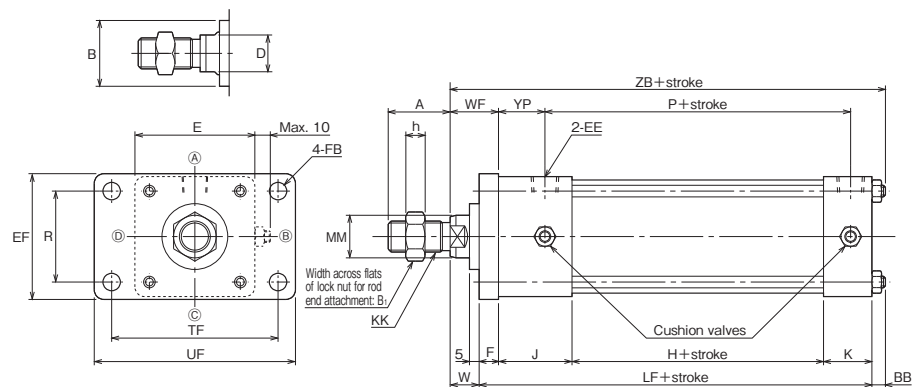
* The parenthesized values of dimension A indicate the screw length.

FA

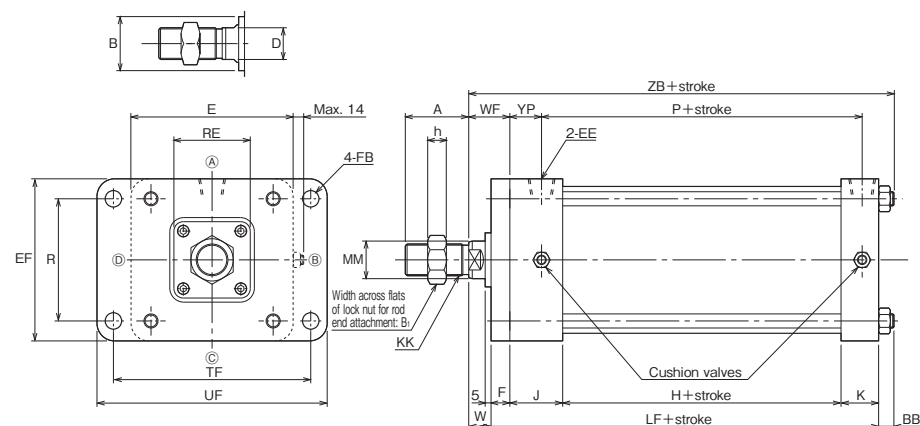
10A-2 FA Bore B Stroke

ISO (140 and 180 mm bore cylinders do not conform to ISO.)

- $\phi 32$ to $\phi 100$



● $\phi 125$ to $\phi 250$



● All dimensions of the bodies and mounting accessories of Switch Set Cylinders (ø32 to ø160), VAL Set Cylinders (ø40 to ø100) and SV Set Cylinders (ø40 to ø100) are the same as those of the standard type cylinders.

Dimensional Table

Symbol Bore	A	B	B ₁	BB	D	E	EE	EF	F	FB	H	h
φ 32	22 (19)	φ 24	17	7	10	□44	Rc1/8	47	10	φ 7	30	6
φ 40	24 (21)	φ 30	19	7	13	□50	Rc1/4	52	10	φ 7	30	7
φ 50	32 (28)	φ 34	22	7	19	□62	Rc1/4	65	10	φ 9	30	10
φ 63	32 (28)	φ 34	22	9	19	□76	Rc3/8	76	10	φ 9	33	10
φ 80	40 (36)	φ 39	27	10	22	□94	Rc3/8	95	16	φ 12	31	12
φ 100	40 (36)	φ 39	27	10	22	□114	Rc1/2	115	16	φ 12	31	12
φ 125	54 (49)	φ 46	36	13	27	□138	Rc1/2	138	16	φ 14	37	16
φ 140	72 (67)	φ 55	50	16	36	□156	Rc3/4	156	20	φ 18	43	20
φ 160	72 (67)	φ 55	50	16	36	□178	Rc3/4	178	20	φ 18	43	20
φ 180	72 (67)	φ 55	50	16	36	□200	Rc3/4	200	20	φ 18	43	20
φ 200	72 (67)	φ 55	50	16	36	□216	Rc3/4	216	20	φ 18	43	20
φ 250	84 (79)	φ 60	60	19	41	□270	Rc1	270	25	φ 22	55	22

Symbol Bore	J	K	KK	LF	MM	P	R	RE	TF	UF	W	WF	YP	ZB
φ 32	38	25	M10×1.25	103	φ 12	58	33	—	58	72	15	25	24	125
φ 40	38	25	M12×1.25	103	φ 16	58	36	—	70	84	15	25	24	125
φ 50	38	25	M16×1.5	103	φ 22	58	47	—	86	104	15	25	24	125
φ 63	38	25	M16×1.5	106	φ 22	61	56	—	98	116	15	25	24	130
φ 80	45	32	M20×1.5	124	φ 25	67	70	—	119	143	19	35	27	153
φ 100	45	32	M20×1.5	124	φ 25	67	84	—	138	162	19	35	27	153
φ 125	45	32	M27×2	130	φ 32	73	104	□65	168	196	19	35	27	162
φ 140	50	38	M36×2	151	φ 40	85	123	□76	190	226	21	41	29	188
φ 160	50	38	M36×2	151	φ 40	85	134	□76	212	248	21	41	29	188
φ 180	50	38	M36×2	151	φ 40	85	156	□76	234	270	21	41	29	188
φ 200	50	38	M36×2	151	φ 40	85	163	□76	250	286	21	41	29	188
φ 250	57	50	M42×2	187	φ 45	109	201	□90	312	356	23	48	30	229

* The parenthesized values of dimension A indicate the screw length.

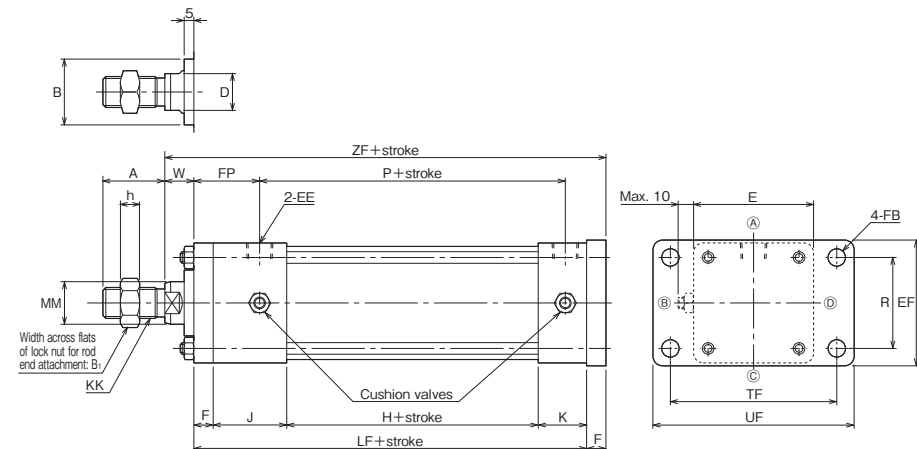
10A-2/TA2  is available. 

FB

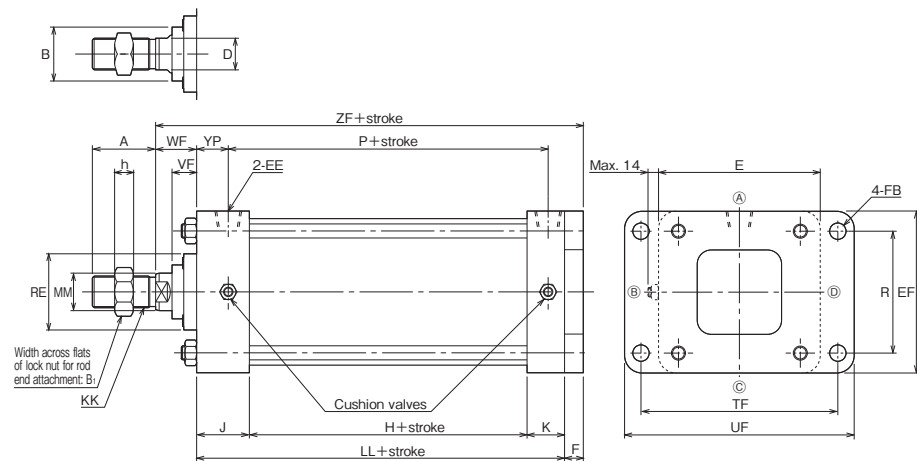
10A-2 FB  

ISO (140 and 180 mm bore cylinders do not conform to ISO.)

● $\phi 32$ to $\phi 100$



● $\phi 125$ to $\phi 250$



● All dimensions of the bodies and mounting accessories of Switch Set Cylinders ($\phi 32$ to $\phi 160$), VAL Set Cylinders ($\phi 40$ to $\phi 100$) and SV Set Cylinders ($\phi 40$ to $\phi 100$) are the same as those of the standard type cylinders.

Dimensional Table

Symbol Bore	A	B	B ₁	D	E	EE	EF	F	FB	FP	H	h	J
$\phi 32$	22 (19)	$\phi 24$	17	10	$\square 44$	Rc1/8	47	10	$\phi 7$	34	30	6	38
$\phi 40$	24 (21)	$\phi 30$	19	13	$\square 50$	Rc1/4	52	10	$\phi 7$	34	30	7	38
$\phi 50$	32 (28)	$\phi 34$	22	19	$\square 62$	Rc1/4	65	10	$\phi 9$	34	30	10	38
$\phi 63$	32 (28)	$\phi 34$	22	19	$\square 76$	Rc3/8	76	10	$\phi 9$	34	33	10	38
$\phi 80$	40 (36)	$\phi 39$	27	22	$\square 94$	Rc3/8	95	16	$\phi 12$	43	31	12	45
$\phi 100$	40 (36)	$\phi 39$	27	22	$\square 114$	Rc1/2	115	16	$\phi 12$	43	31	12	45
$\phi 125$	54 (49)	$\phi 46$	36	27	$\square 138$	Rc1/2	138	16	$\phi 14$	—	37	16	45
$\phi 140$	72 (67)	$\phi 55$	50	36	$\square 156$	Rc3/4	156	20	$\phi 18$	—	43	20	50
$\phi 160$	72 (67)	$\phi 55$	50	36	$\square 178$	Rc3/4	178	20	$\phi 18$	—	43	20	50
$\phi 180$	72 (67)	$\phi 55$	50	36	$\square 200$	Rc3/4	200	20	$\phi 18$	—	43	20	50
$\phi 200$	72 (67)	$\phi 55$	50	36	$\square 216$	Rc3/4	216	20	$\phi 18$	—	43	20	50
$\phi 250$	84 (79)	$\phi 60$	60	41	$\square 270$	Rc1	270	25	$\phi 22$	—	55	22	57

Symbol Bore	K	KK	LF	LL	MM	P	R	RE	TF	UF	VF	W	WF	YP	ZF
$\phi 32$	25	M10×1.25	103	—	$\phi 12$	58	33	—	58	72	—	15	—	—	128
$\phi 40$	25	M12×1.25	103	—	$\phi 16$	58	36	—	70	84	—	15	—	—	128
$\phi 50$	25	M16×1.5	103	—	$\phi 22$	58	47	—	86	104	—	15	—	—	128
$\phi 63$	25	M16×1.5	106	—	$\phi 22$	61	56	—	98	116	—	15	—	—	131
$\phi 80$	32	M20×1.5	124	—	$\phi 25$	67	70	—	119	143	—	19	—	—	159
$\phi 100$	32	M20×1.5	124	—	$\phi 25$	67	84	—	138	162	—	19	—	—	159
$\phi 125$	32	M27×2	—	114	$\phi 32$	73	104	$\square 65$	168	196	21	—	35	27	165
$\phi 140$	38	M36×2	—	131	$\phi 40$	85	123	$\square 76$	190	226	25	—	41	29	192
$\phi 160$	38	M36×2	—	131	$\phi 40$	85	134	$\square 76$	212	248	25	—	41	29	192
$\phi 180$	38	M36×2	—	131	$\phi 40$	85	156	$\square 76$	234	270	25	—	41	29	192
$\phi 200$	38	M36×2	—	131	$\phi 40$	85	163	$\square 76$	250	286	25	—	41	29	192
$\phi 250$	50	M42×2	—	162	$\phi 45$	109	201	$\square 90$	312	356	30	—	48	30	235

* The parenthesized values of dimension A indicate the screw length.

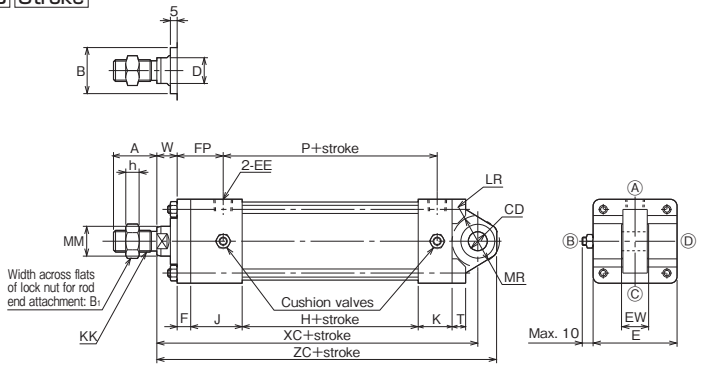
10A-2/TA2 Bore is available. CAD/DATA is available.

CA

10A-2 CA Bore B Stroke

• $\phi 32$ to $\phi 100$

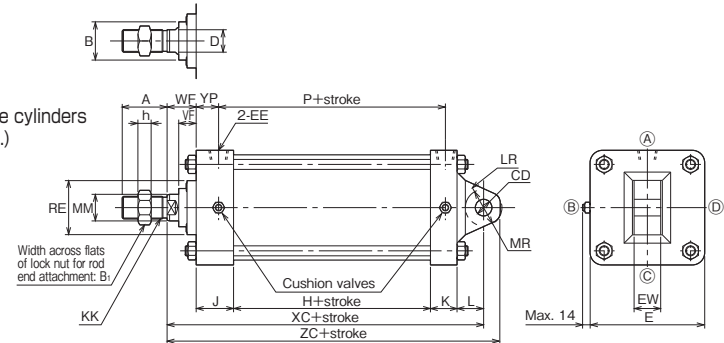
ISO



• $\phi 125$ to $\phi 250$

ISO

(140 and 180 mm bore cylinders do not conform to ISO.)

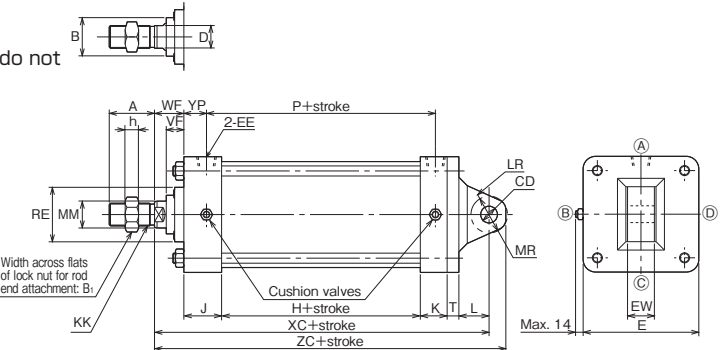


CC

10A-2 CC Bore B Stroke

• $\phi 125$ to $\phi 250$

(CC style cylinders do not conform to ISO.)



• All dimensions of the bodies and mounting accessories of Switch Set Cylinders ($\phi 32$ to $\phi 160$), VAL Set Cylinders ($\phi 40$ to $\phi 100$) and SV Set Cylinders ($\phi 40$ to $\phi 100$) are the same as those of the standard type cylinders.

Dimensional Table

Symbol Bore	A	B	B ₁	CD	D	E	EE	EW	F	FP	H	h	J	K	KK
$\phi 32$	22(19)	$\phi 24$	17	$\phi 12H9$	10	$\square 44$	Rc1/8	$16^{+0}_{-0.070}$	10	34	30	6	38	25	M10×1.25
$\phi 40$	24(21)	$\phi 30$	19	$\phi 14H9$	13	$\square 50$	Rc1/4	$20^{+0}_{-0.084}$	10	34	30	7	38	25	M12×1.25
$\phi 50$	32(28)	$\phi 34$	22	$\phi 14H9$	19	$\square 62$	Rc1/4	$20^{+0}_{-0.084}$	10	34	30	10	38	25	M16×1.5
$\phi 63$	32(28)	$\phi 34$	22	$\phi 14H9$	19	$\square 76$	Rc3/8	$20^{+0}_{-0.084}$	10	34	33	10	38	25	M16×1.5
$\phi 80$	40(36)	$\phi 39$	27	$\phi 20H9$	22	$\square 94$	Rc3/8	$32^{+0}_{-0.100}$	16	43	31	12	45	32	M20×1.5
$\phi 100$	40(36)	$\phi 39$	27	$\phi 20H9$	22	$\square 114$	Rc1/2	$32^{+0}_{-0.100}$	16	43	31	12	45	32	M20×1.5
$\phi 125$	54(49)	$\phi 46$	36	$\phi 20H9$	27	$\square 138$	Rc1/2	$32^{+0}_{-0.100}$	—	—	37	16	45	32	M27×2
$\phi 140$	72(67)	$\phi 55$	50	$\phi 28H9$	36	$\square 156$	Rc3/4	$40^{+0}_{-0.100}$	—	—	43	20	50	38	M36×2
$\phi 160$	72(67)	$\phi 55$	50	$\phi 28H9$	36	$\square 178$	Rc3/4	$40^{+0}_{-0.100}$	—	—	43	20	50	38	M36×2
$\phi 180$	72(67)	$\phi 55$	50	$\phi 28H9$	36	$\square 200$	Rc3/4	$40^{+0}_{-0.100}$	—	—	43	20	50	38	M36×2
$\phi 200$	72(67)	$\phi 55$	50	$\phi 28H9$	36	$\square 216$	Rc3/4	$40^{+0}_{-0.100}$	—	—	43	20	50	38	M36×2
$\phi 250$	84(79)	$\phi 60$	60	$\phi 36H9$	41	$\square 270$	Rc1	$50^{+0}_{-0.100}$	—	—	55	22	57	50	M42×2

Symbol Bore	L		LR		MM	MR	P	RE	T	VF	W	WF	XC		YP	ZC	
	CA style	CC style	CA style	CC style									CA style	CC style		CA style	CC style
$\phi 32$	—	—	R17	—	$\phi 12$	R14	58	—	8	—	15	—	137	—	—	149	—
$\phi 40$	—	—	R17	—	$\phi 16$	R16	58	—	8	—	15	—	137	—	—	151	—
$\phi 50$	—	—	R19	—	$\phi 22$	R17	58	—	10	—	15	—	137	—	—	151	—
$\phi 63$	—	—	R19	—	$\phi 22$	R17	61	—	13	—	15	—	140	—	—	154	—
$\phi 80$	—	—	R26	—	$\phi 25$	R22	67	—	18	—	19	—	175	—	—	195	—
$\phi 100$	—	—	R27	—	$\phi 25$	R22	67	—	18	—	19	—	175	—	—	195	—
$\phi 125$	32	36	R22	R26	$\phi 32$	R22	73	$\square 65$	14	21	—	35	181	199	27	201	219
$\phi 140$	38	44	R30	R32	$\phi 40$	R30	85	$\square 76$	20	25	—	41	210	236	29	238	264
$\phi 160$	38	44	R30	R32	$\phi 40$	R30	85	$\square 76$	20	25	—	41	210	236	29	238	264
$\phi 180$	38	44	R30	R32	$\phi 40$	R30	85	$\square 76$	25	25	—	41	210	241	29	238	269
$\phi 200$	38	44	R30	R32	$\phi 40$	R30	85	$\square 76$	25	25	—	41	210	241	29	238	269
$\phi 250$	54	58	R42	R46	$\phi 45$	R44	109	$\square 90$	30	30	—	48	264	298	30	300	334

* The parenthesized values of dimension A indicate the screw length.

Dimensional Table

Symbol	A	B	B ₁	CD	CP	D	E	EE	EW	F	FP	H	h	J	K	KK
Bore																
φ32	22(19)	φ24	17	φ12 ^{+0.08} _{-0.05}	46	10	□44	Rc1/8	16 ^{+0.7} _{+0.5}	10	34	30	6	38	25	M10×1.25
φ40	24(21)	φ30	19	φ14 ^{+0.08} _{-0.05}	58	13	□50	Rc1/4	20 ^{+0.7} _{+0.5}	10	34	30	7	38	25	M12×1.25
φ50	32(28)	φ34	22	φ14 ^{+0.08} _{-0.05}	66	19	□62	Rc1/4	20 ^{+0.7} _{+0.5}	10	34	30	10	38	25	M16×1.5
φ63	32(28)	φ34	22	φ14 ^{+0.08} _{-0.05}	66	19	□76	Rc3/8	20 ^{+0.7} _{+0.5}	10	34	33	10	38	25	M16×1.5
φ80	40(36)	φ39	27	φ20 ^{+0.08} _{-0.05}	78	22	□94	Rc3/8	32 ^{+0.7} _{+0.5}	16	43	31	12	45	32	M20×1.5
φ100	40(36)	φ39	27	φ20 ^{+0.08} _{-0.05}	78	22	□114	Rc1/2	32 ^{+0.7} _{+0.5}	16	43	31	12	45	32	M20×1.5
φ125	54(49)	φ46	36	φ20 ^{+0.08} _{-0.05}	78	27	□138	Rc1/2	32 ^{+0.7} _{+0.5}	—	—	37	16	45	32	M27×2
φ140	72(67)	φ55	50	φ28 ^{+0.08} _{-0.05}	97	36	□156	Rc3/4	40 ^{+0.8} _{+0.5}	—	—	43	20	50	38	M36×2
φ160	72(67)	φ55	50	φ28 ^{+0.08} _{-0.05}	97	36	□178	Rc3/4	40 ^{+0.8} _{+0.5}	—	—	43	20	50	38	M36×2
φ180	72(67)	φ55	50	φ28 ^{+0.08} _{-0.05}	97	36	□200	Rc3/4	40 ^{+0.8} _{+0.5}	—	—	43	20	50	38	M36×2
φ200	72(67)	φ55	50	φ28 ^{+0.08} _{-0.05}	97	36	□216	Rc3/4	40 ^{+0.8} _{+0.5}	—	—	43	20	50	38	M36×2
φ250	84(79)	φ60	60	φ36 ^{+0.08} _{-0.05}	117	41	□270	Rc1	50 ^{+0.8} _{+0.5}	—	—	55	22	57	50	M42×2

Symbol	L		LR	MM	MR	P	RE	T	UB	VF	W	WF	XC		YP	ZC	
Bore	CB style	CD style											CB style	CD style		CB style	CD style
φ32	—	—	R18	φ12	R15	58	—	8	32	—	15	—	137	—	—	150	—
φ40	—	—	R18	φ16	R15	58	—	8	44	—	15	—	137	—	—	150	—
φ50	—	—	R19	φ22	R18	58	—	8	52	—	15	—	137	—	—	152	—
φ63	—	—	R19	φ22	R18	61	—	8	52	—	15	—	140	—	—	155	—
φ80	—	—	R32	φ25	R23	67	—	11	64	—	19	—	175	—	—	196	—
φ100	—	—	R32	φ25	R23	67	—	11	64	—	19	—	175	—	—	196	—
φ125	32	36	R26	φ32	R22	73	□65	14	64	21	—	35	181	199	27	201	219
φ140	38	44	R32	φ40	R30	85	□76	20	80	25	—	41	210	236	29	238	264
φ160	38	44	R32	φ40	R30	85	□76	20	80	25	—	41	210	236	29	238	264
φ180	38	44	R32	φ40	R30	85	□76	25	80	25	—	41	210	241	29	238	269
φ200	38	44	R32	φ40	R30	85	□76	25	80	25	—	41	210	241	29	238	269
φ250	54	58	R46	φ45	R44	109	□90	30	100	30	—	48	264	298	30	300	334

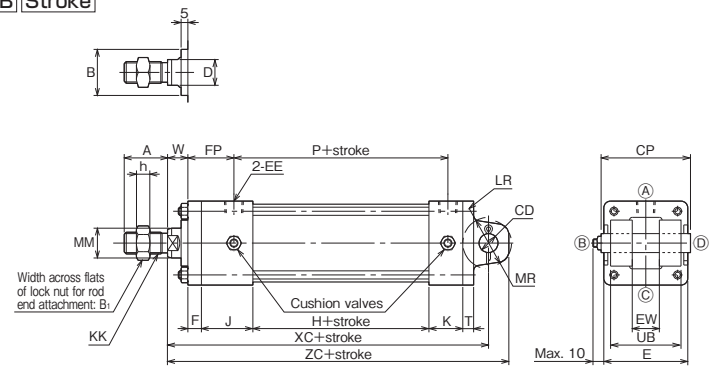
Note) Dimension LR indicates the maximum size of the mating part.
* The parenthesized values of dimension A indicate the screw length.

CB

10A-2 CB Bore B Stroke

● φ32 to φ100

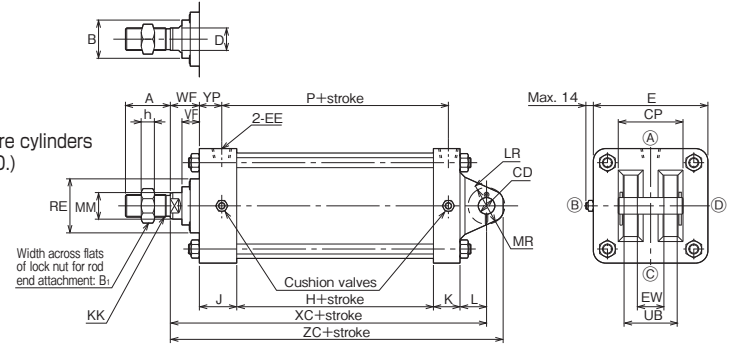
ISO



● φ125 to φ250

ISO

(140 and 180 mm bore cylinders do not conform to ISO.)

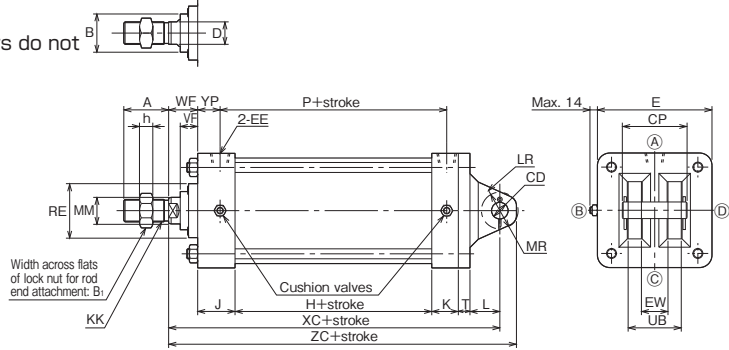


CD

10A-2 CD Bore B Stroke

● φ125 to φ250

(CD style cylinders do not conform to ISO.)



● All dimensions of the bodies and mounting accessories of Switch Set Cylinders (φ32 to φ160), VAL Set Cylinders (φ40 to φ100) and SV Set Cylinders (φ40 to φ100) are the same as those of the standard type cylinders.

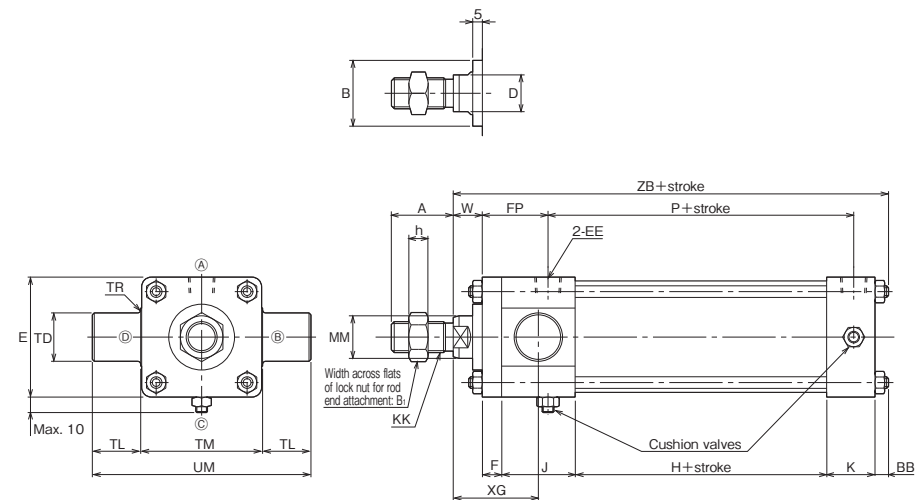
CAD/DATA
10A-2/TA2[Bore] is available.

TA

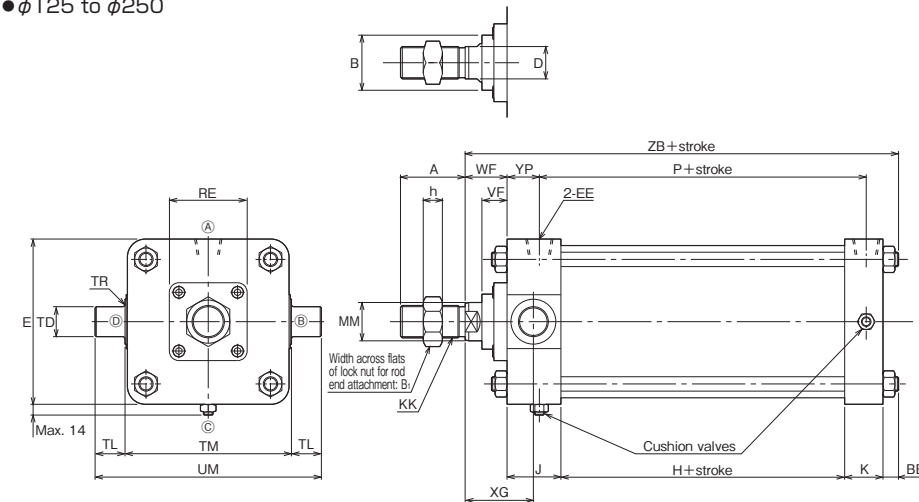
10A-2 TA [Bore] [B] [Stroke]

● $\phi 32$ to $\phi 100$

ISO (140 and 180 mm bore cylinders do not conform to ISO.)



● $\phi 125$ to $\phi 250$



- If the TA style mounting bracket interferes with the sensor, change the sensor mounting surface. (Mount on the top surface.)
- On the TA style cylinder, the cushion valve of the rod cover is positioned on © for structural reasons.
- All dimensions of the bodies and mounting accessories of Switch Set Cylinders ($\phi 32$ to $\phi 160$), VAL Set Cylinders ($\phi 40$ to $\phi 100$) and SV Set Cylinders ($\phi 40$ to $\phi 100$) are the same as those of the standard type cylinders.

Dimensional Table

Symbol Bore	A	B	B ₁	BB	D	E	EE	F	FP	H	h	J	K
$\phi 32$	22 (19)	$\phi 24$	17	7	10	$\square 44$	Rc1/8	10	34	30	6	38	25
$\phi 40$	24 (21)	$\phi 30$	19	7	13	$\square 50$	Rc1/4	10	34	30	7	38	25
$\phi 50$	32 (28)	$\phi 34$	22	7	19	$\square 62$	Rc1/4	10	34	30	10	38	25
$\phi 63$	32 (28)	$\phi 34$	22	9	19	$\square 76$	Rc3/8	10	34	33	10	38	25
$\phi 80$	40 (36)	$\phi 39$	27	10	22	$\square 94$	Rc3/8	16	43	31	12	45	32
$\phi 100$	40 (36)	$\phi 39$	27	10	22	$\square 114$	Rc1/2	16	43	31	12	45	32
$\phi 125$	54 (49)	$\phi 46$	36	13	27	$\square 138$	Rc1/2	—	—	37	16	45	32
$\phi 140$	72 (67)	$\phi 55$	50	16	36	$\square 156$	Rc3/4	—	—	43	20	50	38
$\phi 160$	72 (67)	$\phi 55$	50	16	36	$\square 178$	Rc3/4	—	—	43	20	50	38
$\phi 180$	72 (67)	$\phi 55$	50	16	36	$\square 200$	Rc3/4	—	—	43	20	50	38
$\phi 200$	72 (67)	$\phi 55$	50	16	36	$\square 216$	Rc3/4	—	—	43	20	50	38
$\phi 250$	84 (79)	$\phi 60$	60	19	41	$\square 270$	Rc1	—	—	55	22	57	50

Symbol Bore	KK	MM	P	RE	TD	TL	TM	TR	UM	VF	W	WF	XG	YP	ZB
$\phi 32$	M10×1.25	$\phi 12$	58	—	$\phi 16e9$	16	44	R1	76	—	15	—	44	—	125
$\phi 40$	M12×1.25	$\phi 16$	58	—	$\phi 25e9$	25	50	R1.6	100	—	15	—	44	—	125
$\phi 50$	M16×1.5	$\phi 22$	58	—	$\phi 25e9$	25	63	R1.6	113	—	15	—	44	—	125
$\phi 63$	M16×1.5	$\phi 22$	61	—	$\phi 25e9$	25	76	R1.6	126	—	15	—	44	—	130
$\phi 80$	M20×1.5	$\phi 25$	67	—	$\phi 25e9$	25	95	R1.6	145	—	19	—	57	—	153
$\phi 100$	M20×1.5	$\phi 25$	67	—	$\phi 25e9$	25	114	R2	164	—	19	—	57	—	153
$\phi 125$	M27×2	$\phi 32$	73	$\square 65$	$\phi 25e9$	25	139	R2	189	21	—	35	57	27	162
$\phi 140$	M36×2	$\phi 40$	85	$\square 76$	$\phi 36e9$	36	156	R2.5	228	25	—	41	66	29	188
$\phi 160$	M36×2	$\phi 40$	85	$\square 76$	$\phi 36e9$	36	178	R2.5	250	25	—	41	66	29	188
$\phi 180$	M36×2	$\phi 40$	85	$\square 76$	$\phi 36e9$	36	200	R2.5	272	25	—	41	66	29	188
$\phi 200$	M36×2	$\phi 40$	85	$\square 76$	$\phi 36e9$	36	216	R2.5	288	25	—	41	66	29	188
$\phi 250$	M42×2	$\phi 45$	109	$\square 90$	$\phi 45e9$	45	270	R3	360	30	—	48	76	30	229

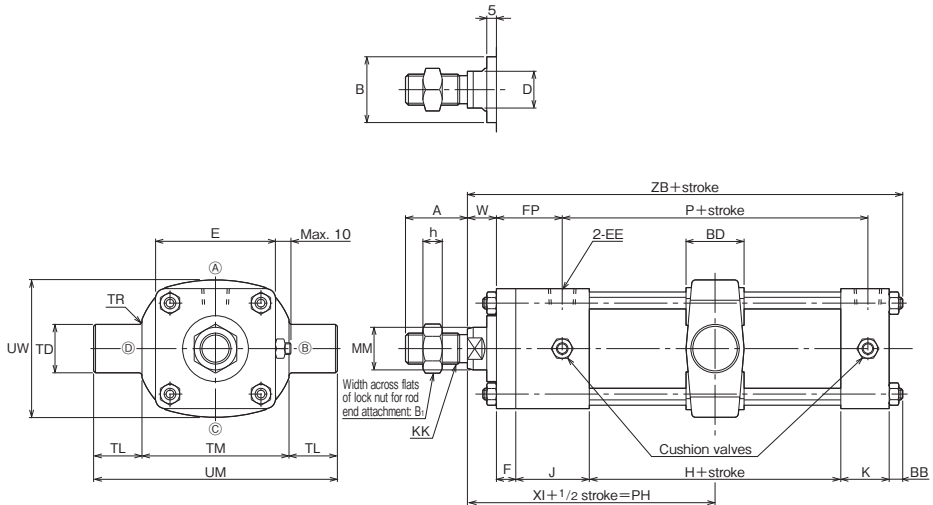
* The parenthesized values of dimension A indicate the screw length.

10A-2/TA2 Bore CAD/DATA is available.

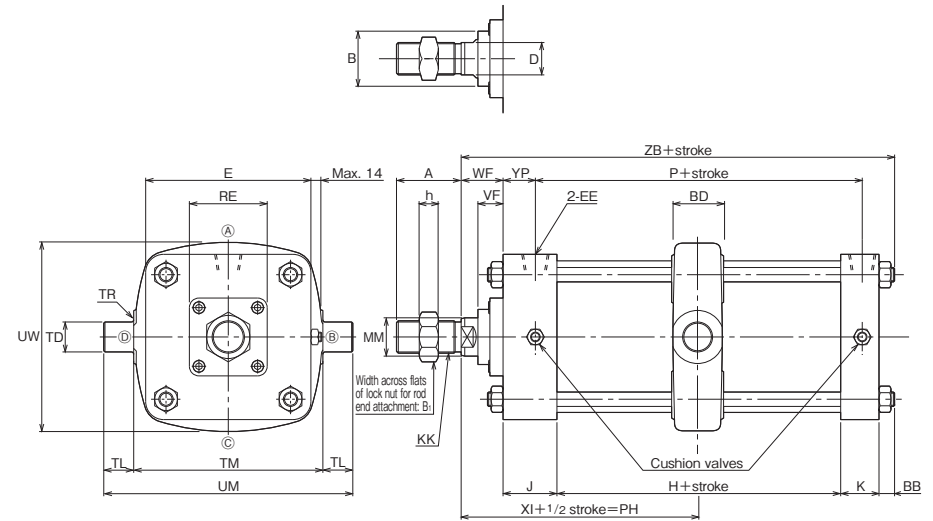
TC 10A-2 TC Bore B Stroke

ISO (140 and 180 mm bore cylinders do not conform to ISO.)

• φ32 to φ100



• φ125 to φ250



• All dimensions of the bodies and mounting accessories of Switch Set Cylinders (φ32 to φ160), VAL Set Cylinders (φ40 to φ100) and SV Set Cylinders (φ40 to φ100) are the same as those of the standard type cylinders.

Dimensional Table

Symbol Bore	A	B	B ₁	BB	BD	D	E	EE	F	FP	H	h	J	K	KK
φ32	22(19)	φ24	17	7	30	10	□44	Rc1/8	10	34	30	6	38	25	M10×1.25
φ40	24(21)	φ30	19	7	30	13	□50	Rc1/4	10	34	30	7	38	25	M12×1.25
φ50	32(28)	φ34	22	7	30	19	□62	Rc1/4	10	34	30	10	38	25	M16×1.5
φ63	32(28)	φ34	22	9	30	19	□76	Rc3/8	10	34	33	10	38	25	M16×1.5
φ80	40(36)	φ39	27	10	35	22	□94	Rc3/8	16	43	31	12	45	32	M20×1.5
φ100	40(36)	φ39	27	10	40	22	□114	Rc1/2	16	43	31	12	45	32	M20×1.5
φ125	54(49)	φ46	36	13	43	27	□138	Rc1/2	—	—	37	16	45	32	M27×2
φ140	72(67)	φ55	50	16	53	36	□156	Rc3/4	—	—	43	20	50	38	M36×2
φ160	72(67)	φ55	50	16	53	36	□178	Rc3/4	—	—	43	20	50	38	M36×2
φ180	72(67)	φ55	50	16	53	36	□200	Rc3/4	—	—	43	20	50	38	M36×2
φ200	72(67)	φ55	50	16	53	36	□216	Rc3/4	—	—	43	20	50	38	M36×2
φ250	84(79)	φ60	60	19	58	41	□270	Rc1	—	—	55	22	57	50	M42×2

Symbol Bore	MM	P	Min. PH	TC style min. stroke	RE	TD	TL	TM	TR	UM	UW	VF	W	WF	XI	YP	ZB
φ32	φ12	58	78	3	—	φ16e9	16	55	R1	87	52	—	15	—	78	—	125
φ40	φ16	58	78	3	—	φ25e9	25	63	R1.6	113	59	—	15	—	78	—	125
φ50	φ22	58	78	3	—	φ25e9	25	76	R1.6	126	71	—	15	—	78	—	125
φ63	φ22	61	78	0	—	φ25e9	25	88	R1.6	138	86	—	15	—	79.5	—	130
φ80	φ25	67	98	7	—	φ25e9	25	114	R1.6	164	104	—	19	—	95.5	—	153
φ100	φ25	67	100	12	—	φ25e9	25	132	R2	182	128	—	19	—	95.5	—	153
φ125	φ32	73	102	9	□65	φ25e9	25	158	R2	208	158	21	—	35	98.5	27	162
φ140	φ40	85	119	13	□76	φ36e9	36	183	R2.5	255	183	25	—	41	112.5	29	188
φ160	φ40	85	119	13	□76	φ36e9	36	200	R2.5	272	200	25	—	41	112.5	29	188
φ180	φ40	85	119	13	□76	φ36e9	36	228	R2.5	300	228	25	—	41	112.5	29	188
φ200	φ40	85	119	13	□76	φ36e9	36	246	R2.5	318	246	25	—	41	112.5	29	188
φ250	φ45	109	134	6	□90	φ45e9	45	304	R3	394	304	30	—	48	132.5	30	229

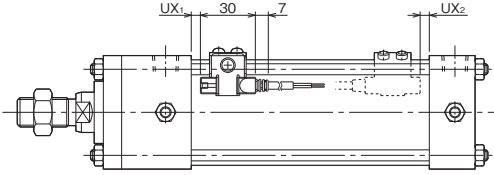
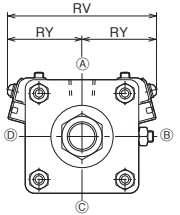
* The parenthesized values of dimension A indicate the screw length.

Switch Set

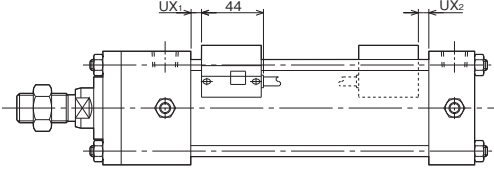
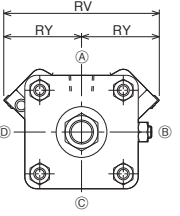
10A-2R [SD] Bore [B] Stroke [] - [Sensor symbol] [Sensor quantity]

● $\phi 32$ to $\phi 100$

● AX type sensor

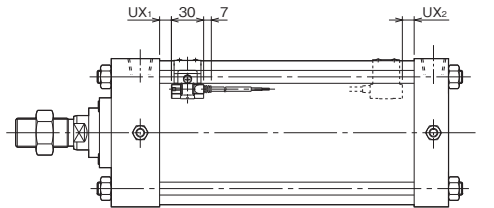
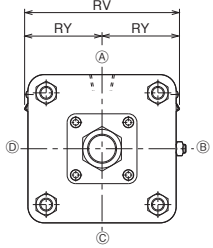


● SR type sensor

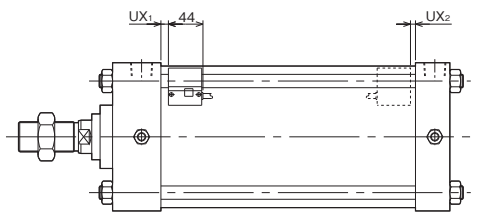
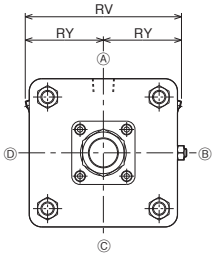


● $\phi 125$ to $\phi 250$

● AX type sensor



● SR type sensor



- All dimensions of the cylinder bodies and mounting accessories are the same as those of the standard type cylinders.
- If the TA style mounting bracket interferes with the sensor, change the sensor mounting surface. (Mount on (A).)

Dimensional Table

Symbol Bore	RV		RY		UX ₁		UX ₂	
	AX type	SR type	AX type	SR type	AX type	SR type	AX type	SR type
$\phi 32$	68	74	34	37	5	1	5	1
$\phi 40$	72	80	36	40	5	1	5	0
$\phi 50$	82	90	41	45	5	1	5	0
$\phi 63$	94	102	47	51	6	1	6	1
$\phi 80$	110	118	55	59	4	0	4	0
$\phi 100$	120	132	60	66	4	0	4	0
$\phi 125$	146	154	73	77	11	6	7	3
$\phi 140$	162	168	81	84	14	8	11	4
$\phi 160$	178	184	89	92	14	9	11	6

Note) Dimension UX indicates the optimum sensor mounting position for detection of stroke end.

Operating Range and Hysteresis

Bore mm	Reed sensor				Solid state sensor		
	AX1 * * type		SR type		AX2 * * type		
	Operating range	Hysteresis	Operating range	Hysteresis	Operating range	Hysteresis	
φ 32	5 to 10	2 or less	6 to 10	3 or less	3 to 6	1 or less	
φ 40							
φ 50							
φ 63	7 to 11		9 to 13		3 or less		3 to 7
φ 80							
φ 100							4 to 7
φ 125	8 to 12		5 to 8				
φ 140							
φ 160							

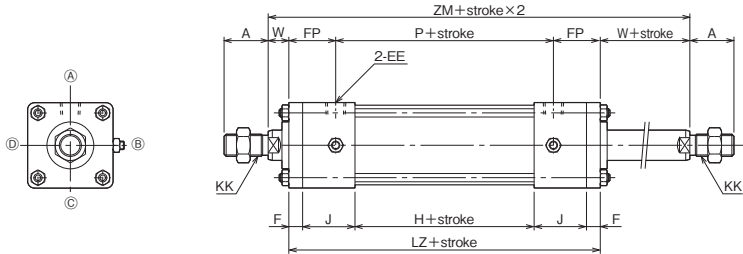
Sensor Mountable Minimum Stroke

Type	AX type		SR type	
	Switch Set	SV Set	Switch Set	SV Set
With 1 sensor	25	50	15	50
With 2 sensors	25	50	15	50
TC style	120	120	125	125

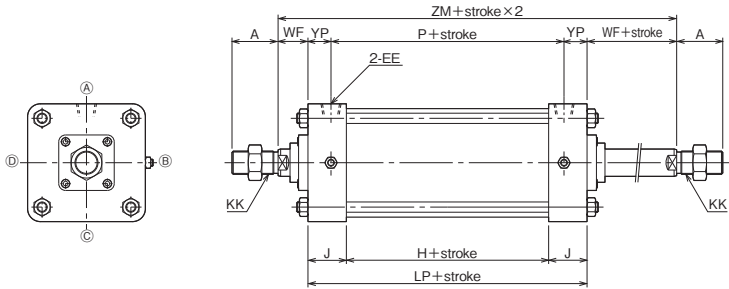
Double Rod Type

10A-2D SD Bore B Stroke

● φ32 to φ100



● φ125 to φ250



● For dimensions of mounting accessories, see the dimensional drawings of each mounting style.

Dimensional Table

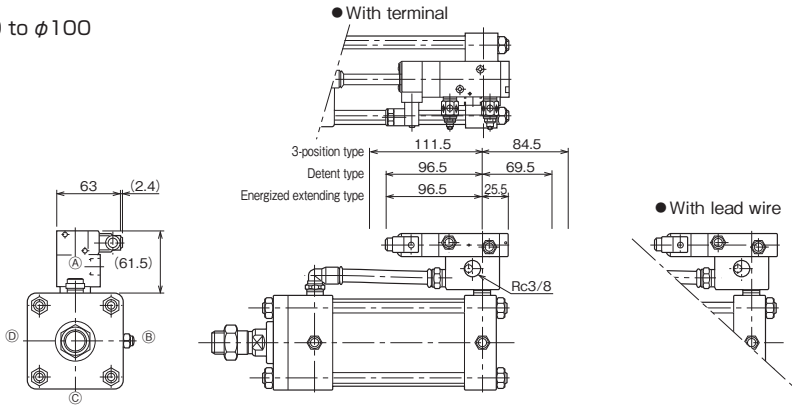
Symbol Bore	A	EE	F	FP	H	J	KK	LP	LZ	P	W	WF	YP	ZM
φ32	22 (19)	Rc1/8	10	34	30	38	M10×1.25	—	126	58	15	—	—	156
φ40	24 (21)	Rc1/4	10	34	30	38	M12×1.25	—	126	58	15	—	—	156
φ50	32 (28)	Rc1/4	10	34	30	38	M16×1.5	—	126	58	15	—	—	156
φ63	32 (28)	Rc3/8	10	34	33	38	M16×1.5	—	129	61	15	—	—	159
φ80	40 (36)	Rc3/8	16	43	31	45	M20×1.5	—	153	67	19	—	—	191
φ100	40 (36)	Rc1/2	16	43	31	45	M20×1.5	—	153	67	19	—	—	191
φ125	54 (49)	Rc1/2	—	—	37	45	M27×2	127	—	73	—	35	27	197
φ140	72 (67)	Rc3/4	—	—	43	50	M36×2	143	—	85	—	41	29	225
φ160	72 (67)	Rc3/4	—	—	43	50	M36×2	143	—	85	—	41	29	225
φ180	72 (67)	Rc3/4	—	—	43	50	M36×2	143	—	85	—	41	29	225
φ200	72 (67)	Rc3/4	—	—	43	50	M36×2	143	—	85	—	41	29	225
φ250	84 (79)	Rc1	—	—	55	57	M42×2	169	—	109	—	48	30	265

* The parenthesized values of dimension A indicate the screw length.

VAL Set

10A-2V2 [SD] [Bore B] [Stroke] – [Valve operating method] [Valve voltage]

●φ40 to φ100



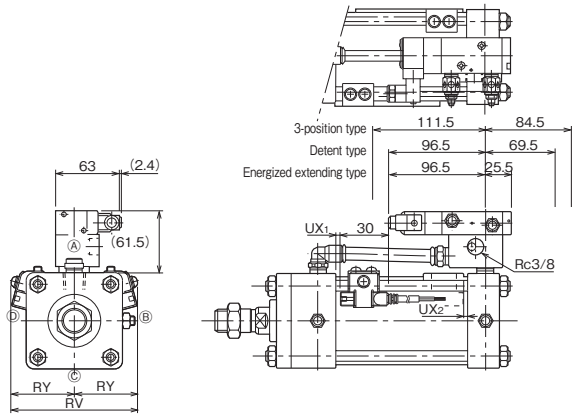
●All dimensions of the cylinder bodies and mounting accessories are the same as those of the standard type cylinders.

SV Set

10A-2K2 [SD] [Bore B] [Stroke] – [Valve operating method] [Valve voltage] [Sensor symbol] [Sensor quantity]

●φ40 to φ100

- All dimensions of the cylinder bodies and mounting accessories are the same as those of the standard type cylinders.
- If the TA style mounting bracket interferes with the sensor, change the sensor mounting surface. (Mount on the top surface.)
- This drawing shows the AX type sensor.

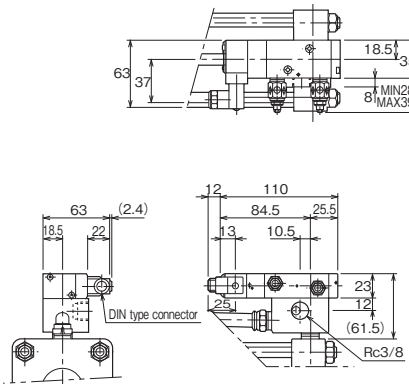


Dimensional Table

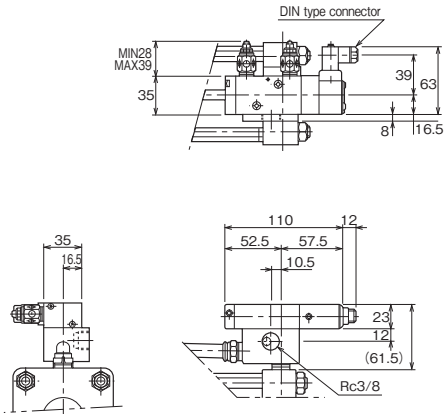
Symbol Bore	RV		RY		UX ₁		UX ₂	
	AX type	SR type	AX type	SR type	AX type	SR type	AX type	SR type
φ40	72	80	36	40	5	1	5	0
φ50	82	90	41	45	5	1	5	0
φ63	94	102	47	51	6	1	6	1
φ80	110	118	55	59	4	0	4	0
φ100	120	132	60	66	4	0	4	0

Drawings of Valve Mounting Dimensions

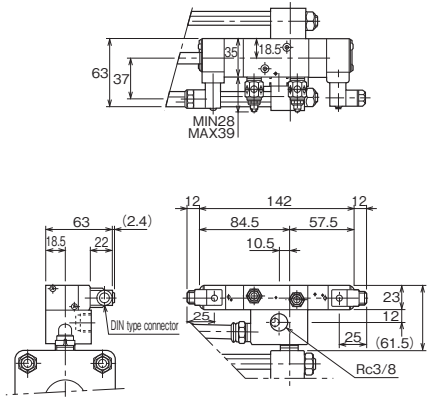
Energized extending type



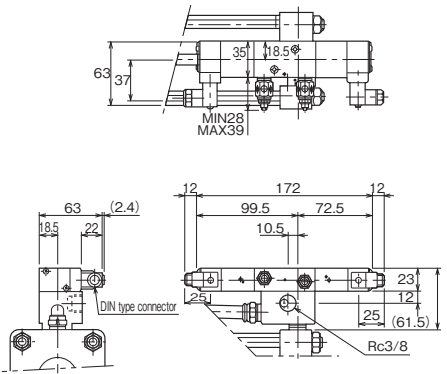
Energized retracting type



Detent type



3-position closed center type
3-position exhaust center type



Specifications for Adjustable Stroke Cylinders

Series variations	Adjustable extended stroke		Adjustable retracted stroke	
	Standard type	Switch Set	Standard type	Switch Set
Series	10A-2A1	10A-2RA1	10A-2A2	10A-2RA2
Cylinder bore (mm)	φ32·φ40·φ50·φ63·φ80·φ100·φ125·φ140·φ160·φ180·φ200·φ250	φ32·φ40·φ50·φ63·φ80·φ100·φ125·φ140·φ160	φ32·φ40·φ50·φ63·φ80·φ100·φ125·φ140·φ160	
Working fluid	Air			
Lubrication	Unnecessary			
Working pressure range	0.1 to 1 MPa			
Working speed range	50 to 700mm/s			
Proof test pressure	1.5 MPa			
Working temperature range	-10 to +70℃ (No freezing)			
Structure of cushioning	With cushions on both ends (none at rod extending end for adjustment)		With cushions on both ends (none at rod retracting end for adjustment)	
Cushion stroke (cushion ring parallel part length)	φ32 to φ100: 14mm φ125: 16mm φ140 to φ200: 19mm φ250: 21mm	φ32 to φ63: R side: 14mm H side: 13mm φ80·φ100·14mm φ125: R side: 17mm H side: 15mm φ140·φ160: 20mm	φ32 to φ63: R side: 14mm H side: 13mm φ80·φ100: 15mm φ125: R side: 17mm H side: 15mm φ140·φ160: 20mm	
Stroke adjusting method	Stopper adjustment		Adjuster screw adjustment	
Stroke adjusting range	0 to 50mm			
Tolerance for thread	JIS 6H/6g			
Mounting style	SD, LB, FA, TA, TA w/ bracket, TC, TC w/ bracket			

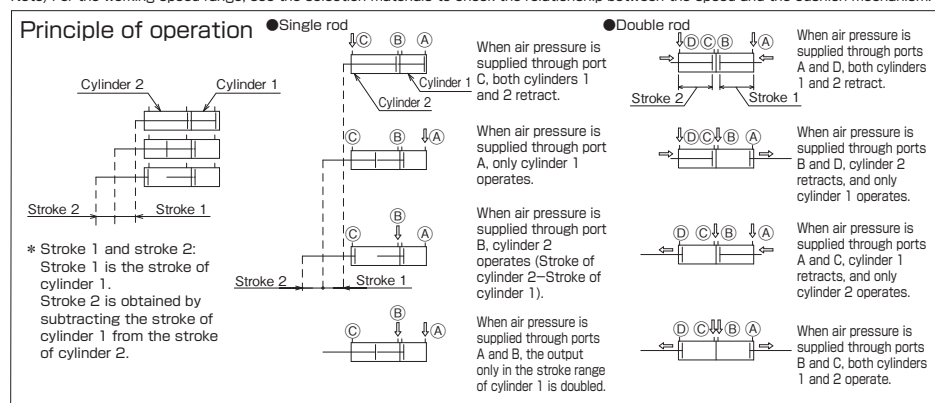
(Note) For the working speed range, see the selection materials to check the relationship between the speed and the cushion mechanism.

Order Made Specifications
Specifications for Dual Stroke Cylinders

Series variations	Single rod		Double rod	
	Standard type	Switch Set	Standard type	Switch Set
Series	10A-2Q1	10A-2RQ1	10A-2Q2	10A-2RQ2
Cylinder bore (mm)	φ32·φ40·φ50·φ63·φ80·φ100·φ125·φ140·φ160·φ180·φ200·φ250	φ32·φ40·φ50·φ63·φ80·φ100·φ125·φ140·φ160	φ32·φ40·φ50·φ63·φ80·φ100·φ125·φ140·φ160·φ180·φ200·φ250	φ32·φ40·φ50·φ63·φ80·φ100·φ125·φ140·φ160
Working fluid	Air			
Lubrication	Unnecessary			
Working pressure range	0.1 to 0.7 MPa			
Working speed range	50 to 700mm/s			
Proof test pressure	1.5 MPa			
Working temperature range	-10 to +70°C (No freezing)			
Structure of cushioning	With cushions on both ends			
Cushion stroke (cushion ring parallel part length)	φ32 to φ100: 14mm φ125: 16mm φ140 to φ200: 19mm φ250: 21mm	φ32 to φ63: R side: 14mm H side: 13mm φ80·φ100·14mm φ125: R side: 17mm H side: 15mm φ140·φ160: 20mm	φ32 to φ100: 14mm φ125: 16mm φ140 to φ200: 19mm φ250: 21mm	φ32 to φ63: R side: 14mm H side: 13mm φ80·φ100: 14mm φ125: R side: 17mm H side: 15mm φ140·φ160: 20mm
Tolerance for thread	JIS 6H/6g			
* Mounting style	SD, LB, FA, FB, CA, (CC), CB, CB w/ bracket, (CD), (CD w/ bracket), TA, TA w/ bracket, TC, TC w/ bracket		SD, LB, FA, TA, TA w/ bracket, TC, TC w/ bracket	

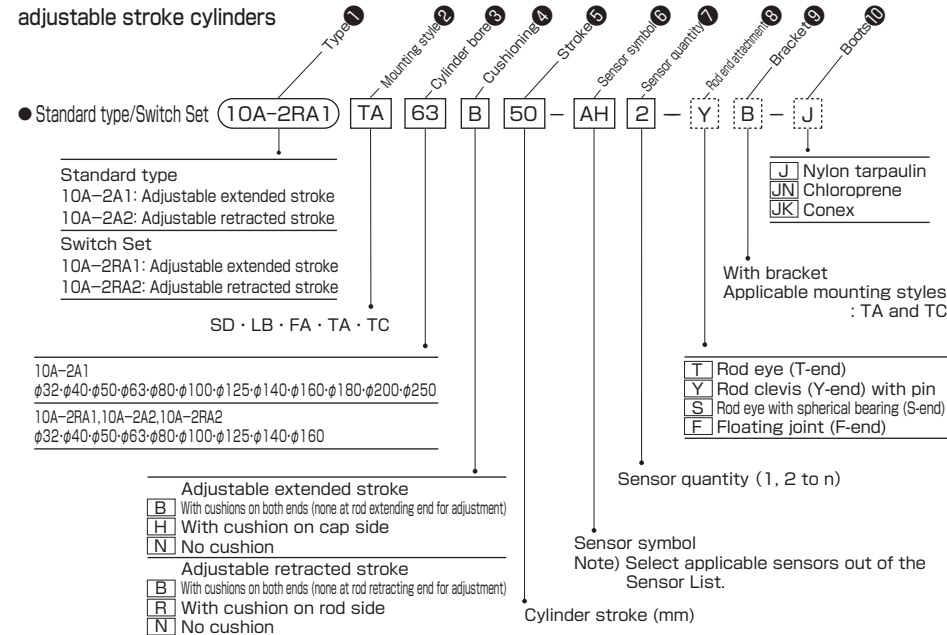
*The parenthesized styles are applicable to cylinders with a bore of 125 mm or more.

(Note) For the working speed range, see the selection materials to check the relationship between the speed and the cushion mechanism.

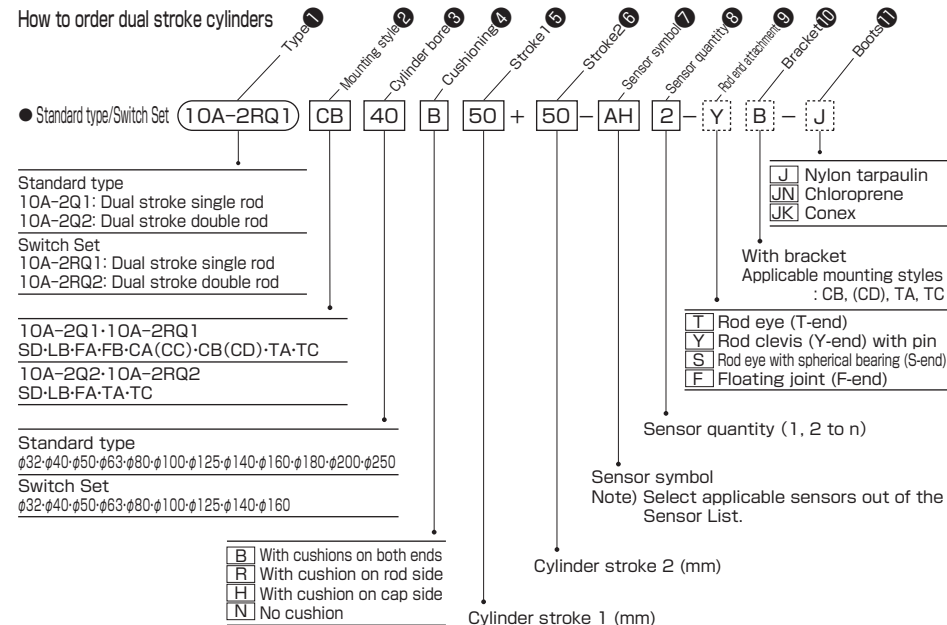


How to order

adjustable stroke cylinders



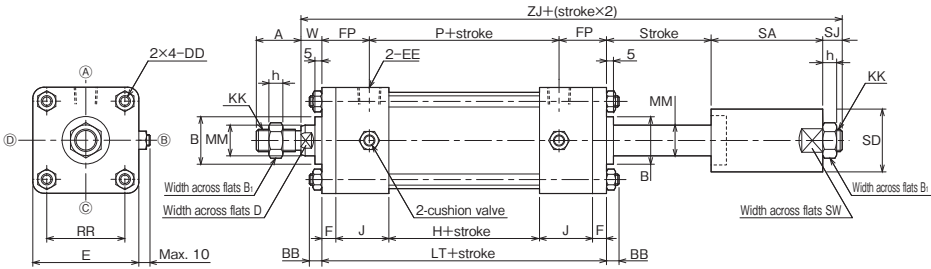
How to order dual stroke cylinders



Adjustable Extended Stroke

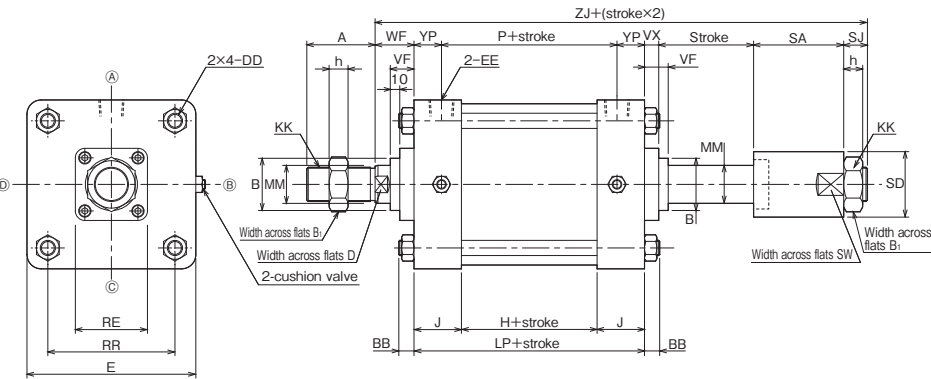
10A-2A1 SD Bore B Stroke
10A-2RA1 SD Bore B Stroke - Sensor symbol Sensor quantity

- Bore φ32 to φ100



- Extended stroke adjustment range: 0 to 50mm

- Bore φ125 to φ250(10A-2A1)
- Bore φ125 to φ160(10A-2RA1)



- Extended stroke adjustment range: 0 to 50mm

Dimensional Table

Symbol Bore	A	B	B ₁	BB	D	DD	E	EE	F	FP	H	h	J	KK	LP
φ32	22	φ24	17	7	10	M6×1	□44	Rc1/8	10	34	30	6	38	M10×1.25	—
φ40	24	φ30	19	7	13	M6×1	□50	Rc1/4	10	34	30	7	38	M12×1.25	—
φ50	32	φ34	22	7	19	M6×1	□62	Rc1/4	10	34	30	10	38	M16×1.5	—
φ63	32	φ34	22	9	19	M8×1.25	□76	Rc3/8	10	34	33	10	38	M16×1.5	—
φ80	40	φ39	27	10	22	M10×1.25	□94	Rc3/8	16	43	31	12	45	M20×1.5	—
φ100	40	φ39	27	10	22	M10×1.25	□114	Rc1/2	16	43	31	12	45	M20×1.5	—
φ125	54	φ46	36	13	27	M12×1.5	□138	Rc1/2	—	—	37	16	45	M27×2	127
φ140	72	φ55	50	16	36	M16×1.5	□156	Rc3/4	—	—	43	20	50	M36×2	143
φ160	72	φ55	50	16	36	M16×1.5	□178	Rc3/4	—	—	43	20	50	M36×2	143
φ180	72	φ55	50	16	36	M16×1.5	□200	Rc3/4	—	—	43	20	50	M36×2	143
φ200	72	φ55	50	16	36	M16×1.5	□216	Rc3/4	—	—	43	20	50	M36×2	143
φ250	84	φ60	60	19	41	M20×1.5	□270	Rc1	—	—	55	22	57	M42×2	169

Symbol Bore	LT	MM	P	RE	RR	SA	SD	SJ	SW	VF	VX	W	WF	YP	ZJ
φ32	126	φ12	58	—	□33	75	φ35	10	32	—	—	15	—	—	226
φ40	126	φ16	58	—	□37	80	φ40	11	36	—	—	15	—	—	232
φ50	126	φ22	58	—	□47	85	φ45	14	41	—	—	15	—	—	240
φ63	129	φ22	61	—	□56	85	φ45	14	41	—	—	15	—	—	243
φ80	153	φ25	67	—	□70	85	φ50	17	46	—	—	19	—	—	274
φ100	153	φ25	67	—	□84	85	φ50	17	46	—	—	19	—	—	274
φ125	—	φ32	73	□65	□104	95	φ56	21	50	21	11	—	35	27	289
φ140	—	φ40	85	□76	□123	95	φ70	25	65	25	15	—	41	29	319
φ160	—	φ40	85	□76	□134	95	φ70	25	65	25	15	—	41	29	319
φ180	—	φ40	85	□76	□156	95	φ70	25	65	25	15	—	41	29	319
φ200	—	φ40	85	□76	□163	95	φ70	25	65	25	15	—	41	29	319
φ250	—	φ45	109	□90	□202	100	φ80	27	75	30	20	—	48	30	364

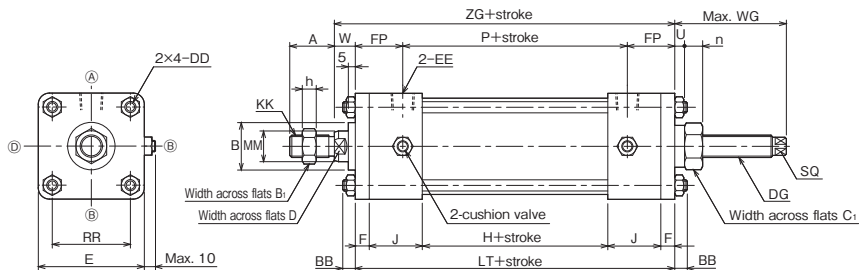
Adjustable Retracted Stroke

10A-2A2 SD Bore B Stroke

10A-2RA2 SD Bore B Stroke - Sensor symbol Sensor quantity

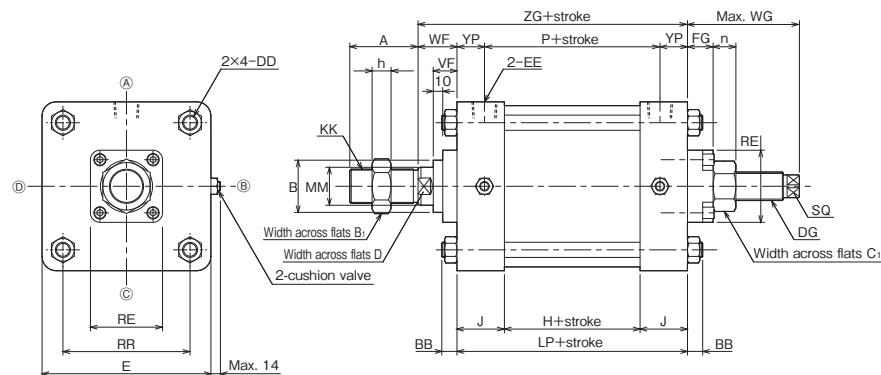


● Bore $\phi 32$ to $\phi 100$



● Retracted stroke adjustment range: 0 to 50mm

● Bore $\phi 125$ to $\phi 160$



● Retracted stroke adjustment range: 0 to 50mm

Dimensional Table

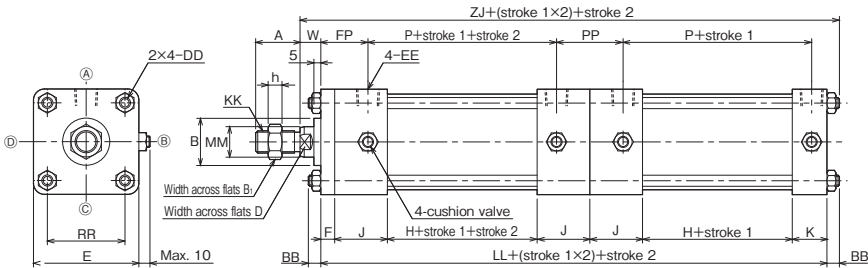
Symbol	A	B	B ₁	BB	C ₁	D	DD	DG	E	EE	F	FG	FP	H	h	J
Bore																
$\phi 32$	22	$\phi 24$	17	7	19	10	M6×1	M12×1.25	□44	Rc1/8	10	—	34	30	6	38
$\phi 40$	24	$\phi 30$	19	7	19	13	M6×1	M12×1.25	□50	Rc1/4	10	—	34	30	7	38
$\phi 50$	32	$\phi 34$	22	7	29	19	M6×1	M16×1.5	□62	Rc1/4	10	—	34	30	10	38
$\phi 63$	32	$\phi 34$	22	9	29	19	M8×1.25	M16×1.5	□76	Rc3/8	10	—	34	33	10	38
$\phi 80$	40	$\phi 39$	27	10	32	22	M10×1.25	M20×1.5	□94	Rc3/8	16	—	43	31	12	45
$\phi 100$	40	$\phi 39$	27	10	32	22	M10×1.25	M20×1.5	□114	Rc1/2	16	—	43	31	12	45
$\phi 125$	54	$\phi 46$	36	13	36	27	M12×1.5	M24×1.5	□138	Rc1/2	—	20	—	37	16	45
$\phi 140$	72	$\phi 55$	50	16	46	36	M16×1.5	M30×2	□156	Rc3/4	—	27	—	43	20	50
$\phi 160$	72	$\phi 55$	50	16	46	36	M16×1.5	M30×2	□178	Rc3/4	—	27	—	43	20	50

Symbol	KK	LP	LT	MM	n	P	RE	RR	SQ	U	VF	W	WF	WG	YP	ZG
Bore																
$\phi 32$	M10×1.25	—	126	$\phi 12$	10	58	—	□33	□8	7	—	15	—	77	—	141
$\phi 40$	M12×1.25	—	126	$\phi 16$	10	58	—	□37	□8	7	—	15	—	77	—	141
$\phi 50$	M16×1.5	—	126	$\phi 22$	13	58	—	□47	□11	7	—	15	—	80	—	141
$\phi 63$	M16×1.5	—	129	$\phi 22$	13	61	—	□56	□11	7	—	15	—	80	—	144
$\phi 80$	M20×1.5	—	153	$\phi 25$	16	67	—	□70	□14	10	—	19	—	88	—	172
$\phi 100$	M20×1.5	—	153	$\phi 25$	16	67	—	□84	□14	10	—	19	—	88	—	172
$\phi 125$	M27×2	127	—	$\phi 32$	19	73	□65	□104	□17	—	21	—	35	103	27	162
$\phi 140$	M36×2	143	—	$\phi 40$	24	85	□76	□123	□19	—	25	—	41	118	29	184
$\phi 160$	M36×2	143	—	$\phi 40$	24	85	□76	□134	□19	—	25	—	41	118	29	184

Dual Stroke/Single Rod

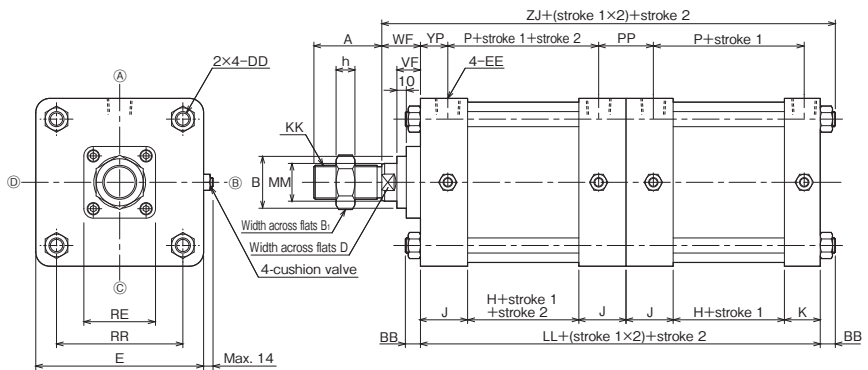
10A-2Q1 SD Bore B Stroke1 + Stroke2
10A-2RQ1 SD Bore B Stroke1 + Stroke2 - Sensor symbol Sensor quantity

- Bore φ32 to φ100



- Stroke limit (stroke 1×2+stroke 2)
φ 32 : 1200mm
φ 40 : 1400mm
φ 50, φ 63 : 1600mm
φ 80, φ 100 : 1800mm

- Bore φ125 to φ250(10A-2Q1)
- Bore φ125 to φ160(10A-2RQ1)



- Stroke limit (stroke 1×2+stroke 2)
φ 125 to φ 250 : 2000mm

Dimensional Table

Symbol Bore	A	B	B ₁	BB	D	DD	E	EE	F	FP	H	h	J	K
φ32	22	φ24	17	7	10	M6×1	□44	Rc1/8	10	34	30	6	38	25
φ40	24	φ30	19	7	13	M6×1	□50	Rc1/4	10	34	30	7	38	25
φ50	32	φ34	22	7	19	M6×1	□62	Rc1/4	10	34	30	10	38	25
φ63	32	φ34	22	9	19	M8×1.25	□76	Rc3/8	10	34	33	10	38	25
φ80	40	φ39	27	10	22	M10×1.25	□94	Rc3/8	16	43	31	12	45	32
φ100	40	φ39	27	10	22	M10×1.25	□114	Rc1/2	16	43	31	12	45	32
φ125	54	φ46	36	13	27	M12×1.5	□138	Rc1/2	—	—	37	16	45	32
φ140	72	φ55	50	16	36	M16×1.5	□156	Rc3/4	—	—	43	20	50	38
φ160	72	φ55	50	16	36	M16×1.5	□178	Rc3/4	—	—	43	20	50	38
φ180	72	φ55	50	16	36	M16×1.5	□200	Rc3/4	—	—	43	20	50	38
φ200	72	φ55	50	16	36	M16×1.5	□216	Rc3/4	—	—	43	20	50	38
φ250	84	φ60	60	19	41	M20×1.5	□270	Rc1	—	—	55	22	57	50

Symbol Bore	KK	LL	MM	P	PP	RE	RR	VF	W	WF	YP	ZJ
φ32	M10×1.25	209	φ12	58	48	—	□33	—	15	—	—	231
φ40	M12×1.25	209	φ16	58	48	—	□37	—	15	—	—	231
φ50	M16×1.5	209	φ22	58	48	—	□47	—	15	—	—	231
φ63	M16×1.5	215	φ22	61	48	—	□56	—	15	—	—	239
φ80	M20×1.5	245	φ25	67	54	—	□70	—	19	—	—	274
φ100	M20×1.5	245	φ25	67	54	—	□84	—	19	—	—	274
φ125	M27×2	241	φ32	73	54	□65	□104	21	—	35	27	289
φ140	M36×2	274	φ40	85	58	□76	□123	25	—	41	29	331
φ160	M36×2	274	φ40	85	58	□76	□134	25	—	41	29	331
φ180	M36×2	274	φ40	85	58	□76	□156	25	—	41	29	331
φ200	M36×2	274	φ40	85	58	□76	□163	25	—	41	29	331
φ250	M42×2	331	φ45	109	60	□90	□202	30	—	48	30	398

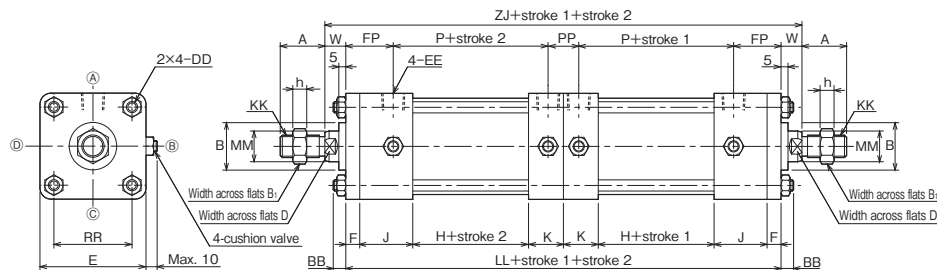
Dual Stroke/Double Rod



10A-2Q2 SD Bore B Stroke1 + Stroke2

10A-2RQ2 SD Bore B Stroke1 + Stroke2 - Sensor symbol Sensor quantity

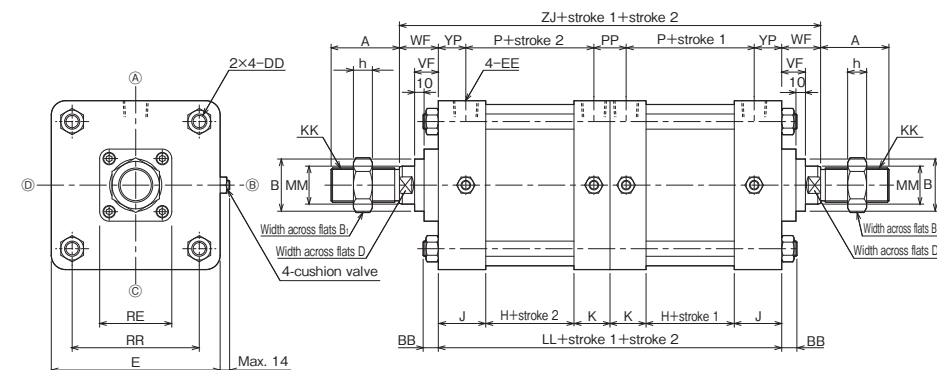
- Bore $\phi 32$ to $\phi 100$



- Stroke limit (stroke 1+stroke 2)

$\phi 32$: 1200mm
 $\phi 40$: 1400mm
 $\phi 50, \phi 63$: 1600mm
 $\phi 80, \phi 100$: 1800mm

- Bore $\phi 125$ to $\phi 250$ (10A-2Q2)
- Bore $\phi 125$ to $\phi 160$ (10A-2RQ2)



- Stroke limit (stroke 1+stroke 2)

$\phi 125$ to $\phi 250$: 2000mm

Dimensional Table

Symbol	A	B	B ₁	BB	D	DD	E	EE	F	FP	H	h	J	K
Bore														
$\phi 32$	22	$\phi 24$	17	7	10	M6×1	□44	Rc1/8	10	34	30	6	38	25
$\phi 40$	24	$\phi 30$	19	7	13	M6×1	□50	Rc1/4	10	34	30	7	38	25
$\phi 50$	32	$\phi 34$	22	7	19	M6×1	□62	Rc1/4	10	34	30	10	38	25
$\phi 63$	32	$\phi 34$	22	9	19	M8×1.25	□76	Rc3/8	10	34	33	10	38	25
$\phi 80$	40	$\phi 39$	27	10	22	M10×1.25	□94	Rc3/8	16	43	31	12	45	32
$\phi 100$	40	$\phi 39$	27	10	22	M10×1.25	□114	Rc1/2	16	43	31	12	45	32
$\phi 125$	54	$\phi 46$	36	13	27	M12×1.5	□138	Rc1/2	—	—	37	16	45	32
$\phi 140$	72	$\phi 55$	50	16	36	M16×1.5	□156	Rc3/4	—	—	43	20	50	38
$\phi 160$	72	$\phi 55$	50	16	36	M16×1.5	□178	Rc3/4	—	—	43	20	50	38
$\phi 180$	72	$\phi 55$	50	16	36	M16×1.5	□200	Rc3/4	—	—	43	20	50	38
$\phi 200$	72	$\phi 55$	50	16	36	M16×1.5	□216	Rc3/4	—	—	43	20	50	38
$\phi 250$	84	$\phi 60$	60	19	41	M20×1.5	□270	Rc1	—	—	55	22	57	50

Symbol	KK	LL	MM	P	PP	RE	RR	VF	W	WF	YP	ZJ
Bore												
$\phi 32$	M10×1.25	206	$\phi 12$	58	22	—	□33	—	15	—	—	236
$\phi 40$	M12×1.25	206	$\phi 16$	58	22	—	□37	—	15	—	—	236
$\phi 50$	M16×1.5	206	$\phi 22$	58	22	—	□47	—	15	—	—	236
$\phi 63$	M16×1.5	212	$\phi 22$	61	22	—	□56	—	15	—	—	242
$\phi 80$	M20×1.5	248	$\phi 25$	67	28	—	□70	—	19	—	—	286
$\phi 100$	M20×1.5	248	$\phi 25$	67	28	—	□84	—	19	—	—	286
$\phi 125$	M27×2	228	$\phi 32$	73	28	□65	□104	21	—	35	27	298
$\phi 140$	M36×2	262	$\phi 40$	85	34	□76	□123	25	—	41	29	344
$\phi 160$	M36×2	262	$\phi 40$	85	34	□76	□134	25	—	41	29	344
$\phi 180$	M36×2	262	$\phi 40$	85	34	□76	□156	25	—	41	29	344
$\phi 200$	M36×2	262	$\phi 40$	85	34	□76	□163	25	—	41	29	344
$\phi 250$	M42×2	324	$\phi 45$	109	46	□90	□202	30	—	48	30	420

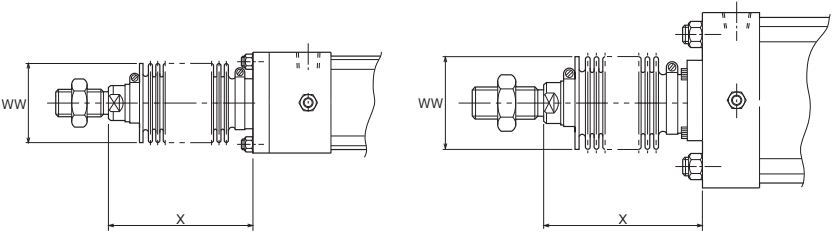
CAD/DATA
10A-2/TA2 Bore K is available.



With Boots

●φ32 to φ100

●φ125 to φ250



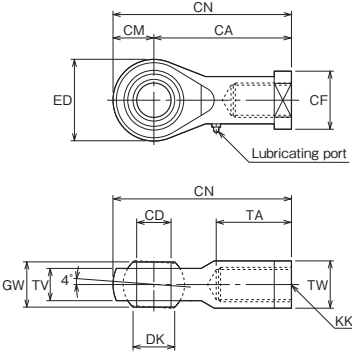
	Standard		Semi-standard
Material	Nylon tarpaulin	Chloroprene	Conex
Heat proof	80℃	100℃	200℃

- Notes) ●Remember that the heat proof field in the table above shows the allowable temperatures for the boots, not for the cylinder.
- Conex is the registered trademark of Teijin Limited.
 - If the calculated value has a fractional part, round it up.
 - The boots have been mounted at our factory prior to delivery.
 - Dimension X is the distance from the cover end. When using the FA accessory, check dimension carefully. (On 32 to 100 mm bore cylinders, the distance is measured from the retainer end face.)
 - Note that the seal housings of 32 to 100 mm bore cylinders with boots differ from those of standard type cylinders.

Rod End Attachment

Rod eye with spherical bearing (S-end)

●φ32 to φ100



With Boots

Dimensional Table/With boots (nylon tarpaulin/chloroprene)

Symbol Bore	WW	X (standard strokes)												X (other than standard strokes)
		50	75	100	125	150	200	250	300	350	400	450	500	Nylon tarpaulin/chloroprene
φ32	φ36	67	75	84	92	100	117	134	150	167	184	200	217	1/3 stroke+50
φ40	φ40	67	75	84	92	100	117	134	150	167	184	200	217	
φ50	φ45	72	80	89	97	105	122	139	155	172	189	205	222	1/3 stroke+55
φ63	φ45	72	80	89	97	105	122	139	155	172	189	205	222	
φ80	φ60	78	84	90	97	103	115	128	140	153	165	178	190	1/4 stroke+65
φ100	φ60	78	84	90	97	103	115	128	140	153	165	178	190	
φ125	φ71	84	90	96	103	109	121	134	146	159	171	184	196	1/4 stroke+71
φ140	φ80	88	94	100	107	113	125	138	150	163	175	188	200	
φ160	φ80	88	94	100	107	113	125	138	150	163	175	188	200	1/4 stroke+75
φ180	φ80	88	94	100	107	113	125	138	150	163	175	188	200	
φ200	φ80	88	94	100	107	113	125	138	150	163	175	188	200	
φ250	φ80	93	99	105	112	118	130	143	155	168	180	193	205	1/4 stroke+80

Dimensional Table/With boots (Conex)

Symbol Bore	WW	X (standard strokes)												X (other than standard strokes)
		50	75	100	125	150	200	250	300	350	400	450	500	Conex
φ32	φ61	70	80	90	100	110	130	150	170	190	210	230	250	1/2.5 stroke+50
φ40	φ61	70	80	90	100	110	130	150	170	190	210	230	250	
φ50	φ61	75	85	95	105	115	135	155	175	195	215	235	255	1/2.5 stroke+55
φ63	φ61	75	85	95	105	115	135	155	175	195	215	235	255	
φ80	φ61	82	90	99	107	115	132	149	165	182	199	215	232	1/3 stroke+65
φ100	φ61	82	90	99	107	115	132	149	165	182	199	215	232	
φ125	φ71	88	96	105	113	121	138	155	171	188	205	221	238	1/3 stroke+71
φ140	φ80	92	100	109	117	125	142	159	175	192	209	225	242	
φ160	φ80	92	100	109	117	125	142	159	175	192	209	225	242	1/3 stroke+75
φ180	φ80	92	100	109	117	125	142	159	175	192	209	225	242	
φ200	φ80	92	100	109	117	125	142	159	175	192	209	225	242	
φ250	φ80	97	105	114	122	130	147	164	180	197	214	230	247	1/3 stroke+80

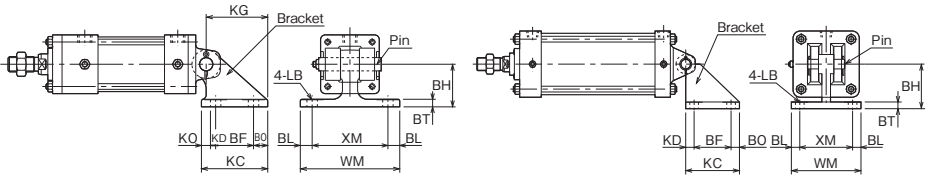
Dimensional table/Rod eye with spherical bearing (S-end)

Symbol Bore	Part number	CA	CD	CF	CM	CN	DK	ED	GW	KK	TA	TV	TW
φ32	RSA-10-A	43	φ10H9	φ19	13	56	φ12.9	26	14 ⁰ _{-0.1}	M10×1.25	21	10.5±0.1	17
φ40	RSA-12-A	50	φ12H9	φ22	15	65	φ15.4	30	16 ⁰ _{-0.1}	M12×1.25	24	12 ±0.1	19
φ50	RSA-16-A	64	φ16H9	φ27	19	83	φ19.4	38	21 ⁰ _{-0.1}	M16×1.5	33	15 ±0.1	22
φ63		64	φ16H9	φ27	19	83	φ19.4	38	21 ⁰ _{-0.1}	M16×1.5	33	15 ±0.1	22
φ80	RSA-20-A	77	φ20H9	φ34	23	100	φ24.4	46	25 ⁰ _{-0.1}	M20×1.5	40	18 ±0.1	30
φ100		77	φ20H9	φ34	23	100	φ24.4	46	25 ⁰ _{-0.1}	M20×1.5	40	18 ±0.1	30

CAD/DATA
10A-2/TA2  K is available. 

Bracket
CB/CD bracket
●φ32 to φ100

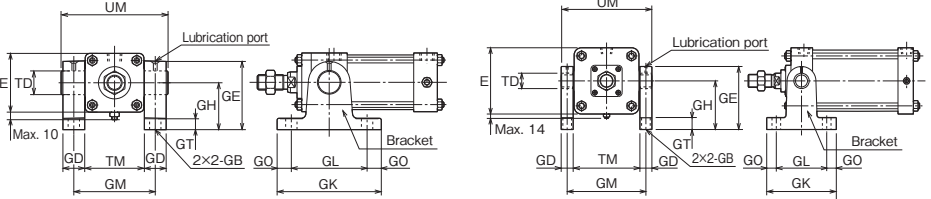
●φ125 to φ250



●For the dimensions of the cylinder bodies, see the drawings of CB and CD.

TA bracket
●φ32 to φ100

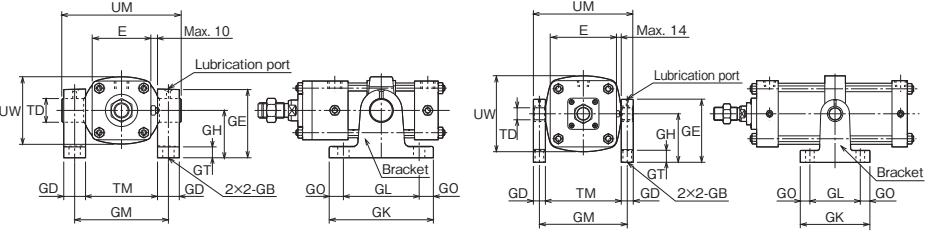
●φ125 to φ250



●For the dimensions of the cylinder bodies, see the drawings of TA.

TC bracket
●φ32 to φ100

●φ125 to φ250



●For the dimensions of the cylinder bodies, see the drawings of TC.

Dimensional Table/CB/CD bracket

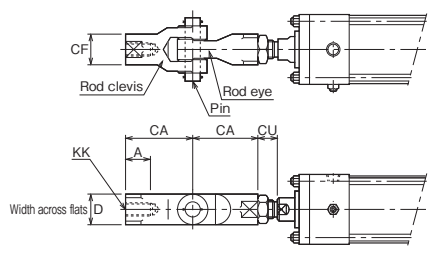
Symbol Bore	Part number	BF	BH	BL	BO	BT	KC	KD	KG	KO	LB	WM	XM
φ32	BCA-12-A	40	35	10	10	8	60	5	55	5	φ9	85	65
φ40	BCA-14-A	40	45	12.5	15	8	70	10	65	5	φ11	105	80
φ50													
φ63													
φ80	BCA-20-A	65	60	15	16.5	12	98	5	85	10	φ14	135	105
φ100													
φ125	BCA-20-1-A	77	75	17.5	17.5	14	112	17.5	—	—	φ18	145	110
φ140	BCA-28-A	120	115	22.5	22.5	23	165	22.5	—	—	φ22	175	130
φ160													
φ180													
φ200													
φ250	BCA-36-A	165	140	25	25	28	215	25	—	—	φ26	220	170

Dimensional Table/TA/TC bracket

Symbol Bore	Part number	E	GB	GD	GE	GH	GK	GL	GM		GO	GT	TD	TM		UM		UW
									TA style	TC style				TA style	TC style	TA style	TC style	
φ32	BTA-16-A	□44	φ9	15	56	40	80	60	59	70	10	12	φ16 ^{H₉/e₉}	44	55	76	87	52
φ40	BTA-25-A	□50	φ12	23	72	50	110	80	73	86	15	12	φ25 ^{H₉/e₉}	50	63	100	113	59
φ50		□62							86	99				63	76	113	126	71
φ63		□76							99	111				76	88	126	138	86
φ80	BTA-25-1-A	□94	φ14	23	92	70	120	85	118	137	17.5	14	φ25 ^{H₉/e₉}	95	114	145	164	104
φ100		□114							137	155				114	132	164	182	128
φ125	BTA-25-2-A	□138	φ18	25	115	85	145	105	164	183	20	25	φ25 ^{H₉/e₉}	139	158	189	208	158
φ140	BTA-36-A	□156	φ22	36	170	130	185	140	192	219	22.5	25	φ36 ^{H₉/e₉}	156	183	228	255	183
φ160		□178							214	236				178	200	250	272	200
φ180		□200							236	264				200	228	272	300	228
φ200		□216							252	282				216	246	288	318	246
φ250	BTA-45-A	□270	φ26	45	210	160	215	165	315	349	25	32	φ45 ^{H₉/e₉}	270	304	360	394	304

Combination of rod end attachments (For 125 to 250 mm bore cylinders, the same combinations can be used. However, dimensions differ from those shown in the following drawings.)

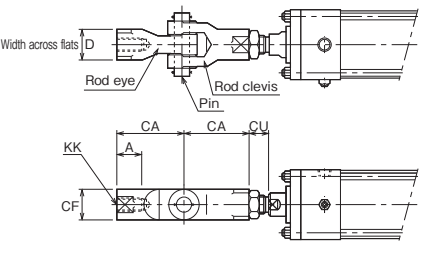
Rod eye—rod clevis



Dimensional Table

Symbol Bore	A	CA	CF	CU		D	KK
				Min.	Max.		
φ32	23	55	φ24	6	12	24	M10×1.25
φ40	25	60	φ24	7	13	24	M12×1.25
φ50	33	60	φ28	10	17	27	M16×1.5
φ63	33	60	φ28	10	17	27	M16×1.5
φ80	41	85	φ36	12	21	36	M20×1.5
φ100	41	85	φ36	12	21	36	M20×1.5

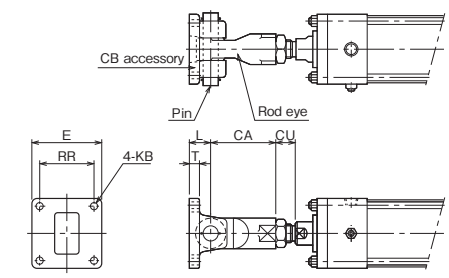
Rod clevis—rod eye



Dimensional Table

Symbol Bore	A	CA	CF	CU		D	KK
				Min.	Max.		
φ32	23	55	φ24	6	12	24	M10×1.25
φ40	25	60	φ24	7	13	24	M12×1.25
φ50	33	60	φ28	10	17	27	M16×1.5
φ63	33	60	φ28	10	17	27	M16×1.5
φ80	41	85	φ36	12	21	36	M20×1.5
φ100	41	85	φ36	12	21	36	M20×1.5

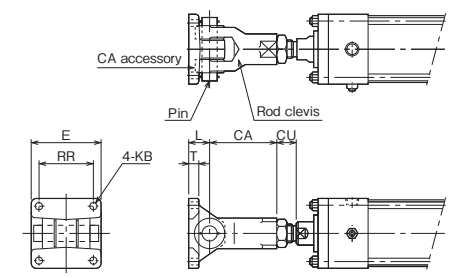
Rod eye—CB accessory



Dimensional Table

Symbol Bore	CA	CU		E	KB	L	RR	T
		Min.	Max.					
φ32	55	6	12	□43	M6×1	19	□33	8
φ40	60	7	13	□49	M6×1	19	□37	8
φ50	60	10	17	□60	M6×1	19	□47	8
φ63	60	10	17	□74	M8×1.25	19	□56	8
φ80	85	12	21	□93	M10×1.25	32	□70	11
φ100	85	12	21	□110	M10×1.25	32	□84	11

Rod clevis—CA accessory

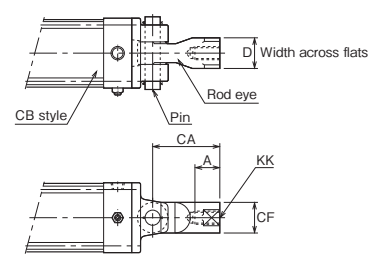


Dimensional Table

Symbol Bore	CA	CU		E	KB	L	RR	T
		Min.	Max.					
φ32	55	6	12	□43	M6×1	19	□33	8
φ40	60	7	13	□49	M6×1	19	□37	8
φ50	60	10	17	□60	M6×1	19	□47	10
φ63	60	10	17	□74	M8×1.25	19	□56	13
φ80	85	12	21	□93	M10×1.25	32	□70	18
φ100	85	12	21	□110	M10×1.25	32	□84	18

Combination of rod end attachments (For 125 to 250 mm bore cylinders, the same combinations can be used. However, dimensions differ from those shown in the following drawings.)

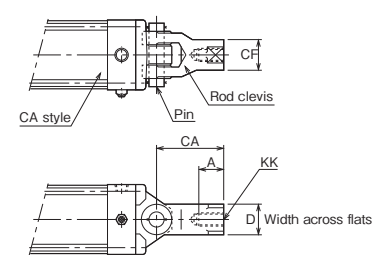
CB style—rod eye



Dimensional Table

Symbol Bore	A	CA	CF	D	KK
φ32	23	55	φ24	24	M10×1.25
φ40	25	60	φ24	24	M12×1.25
φ50	33	60	φ28	27	M16×1.5
φ63	33	60	φ28	27	M16×1.5
φ80	41	85	φ36	36	M20×1.5
φ100	41	85	φ36	36	M20×1.5

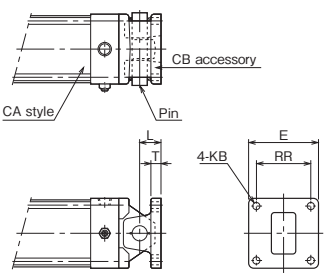
CA style—rod clevis



Dimensional Table

Symbol Bore	A	CA	CF	D	KK
φ32	23	55	φ24	24	M10×1.25
φ40	25	60	φ24	24	M12×1.25
φ50	33	60	φ28	27	M16×1.5
φ63	33	60	φ28	27	M16×1.5
φ80	41	85	φ36	36	M20×1.5
φ100	41	85	φ36	36	M20×1.5

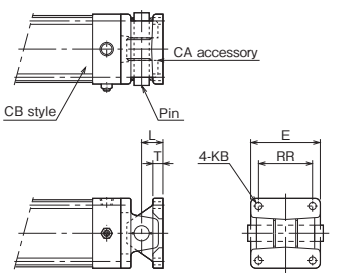
CA style—CB accessory



Dimensional Table

Symbol Bore	E	KB	L	RR	T
φ32	□43	M6×1	19	□33	8
φ40	□49	M6×1	19	□37	8
φ50	□60	M6×1	19	□47	8
φ63	□74	M8×1.25	19	□56	8
φ80	□93	M10×1.25	32	□70	11
φ100	□110	M10×1.25	32	□84	11

CB style—CA accessory

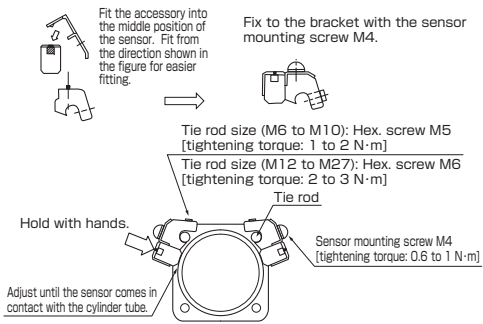


Dimensional Table

Symbol Bore	E	KB	L	RR	T
φ32	□43	M6×1	19	□33	8
φ40	□49	M6×1	19	□37	8
φ50	□60	M6×1	19	□47	10
φ63	□74	M8×1.25	19	□56	13
φ80	□93	M10×1.25	32	□70	18
φ100	□110	M10×1.25	32	□84	18

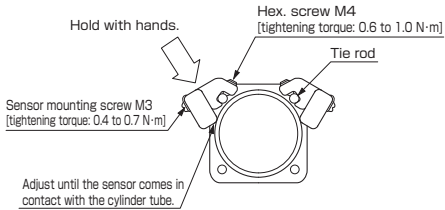
Setting method of sensor detecting position

AX type



1. Loosen the two hex. screws with a hex. wrench, and move them along the tie rod.
2. Adjust the detecting position (for the 2-LED type, the position where the green lamp lights up) 2 to 5 mm (about half of the operating range is appropriate) before the required position where the sensor indicator lamp starts to light up (ON). Then, gently hold the top of the sensor so that the cylinder tube contacts the detecting face of the sensor, and clamp the hex. screw to an appropriate tightening torque.
Note) Inappropriate tightening torque may cause the off-center of the sensor position.
3. The indicating lamp lights up when the sensor is set to the ON position.
4. Sensors can be mounted to any of four tie rods and on the most suitable position depending on the mounting space of the cylinder and wiring method.
5. Mount a sensor to the most suitable position to detect the stroke end with the "sensor mounting dimension" (dimension UX).

SR type



1. Loosen the two hex. screws with a hex. wrench, and move them along the tie rod.
2. Adjust the detecting position 2 to 5 mm (about half of the operating range is appropriate) before the required position where the sensor indicator lamp starts to light up (ON). Then, gently hold the top of the sensor so that the cylinder tube contacts the detecting face of the sensor, and clamp the hex. screw to an appropriate tightening torque.
Note) Inappropriate tightening torque may cause the off-center of the sensor position.
3. The indicating lamp goes out when the sensor is set to the ON position.
4. Sensors can be mounted to any of four tie rods and on the most suitable position depending on the mounting space of the cylinder and wiring method.
5. Mount a sensor to the most suitable position to detect the stroke end with the "sensor mounting dimension" (dimension UX).