

Compact Cylinder Series CQ2

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160, ø180, ø200

With a short overall length, the space-saving cylinder helps to make various jigs and equipment more compact.

Series Variations

Series	Action	Rod	Basic	Built-in magnet	Mounting female thread (A)	Rod end male thread	With rubber bumper	With boss in head side	Bore size (mm)	Standard stroke (mm)	Page
Standard 	Double acting	Single rod CQ2	•	•	•	•	•	•	12, 16, 20, 25 32, 40, 50, 63 80, 100	ø12, ø16/5 to 30 ø20, ø25/5 to 50 ø32, ø40/5 to 100 ø50 to ø100/10 to 100	7-6-2
		Double rod CQ2W	•	•	•	•	•	•	•	12, 16, 20, 25 32, 40, 50, 63 80, 100	ø12, ø16/5 to 30 ø20, ø40/5 to 50 ø32, ø40/5 to 100 ø50 to ø100/10 to 100
	Single acting	Spring return/ Spring extend CQ2	•	•	•	•	•	•	12, 16, 20 25, 32, 40 50	ø12 to ø40/5, 10 ø50/10, 20	7-6-42
Non-rotating Rod 	Double acting	Single rod CQ2K	•	•	•	•	•	•	12, 16, 20 25, 32, 40 50, 63	ø12, ø16/5 to 30 ø20, ø25/5 to 50 ø32, ø40/5 to 100 ø50, ø63/10 to 100	7-6-62
		Double rod CQ2KW	•	•	•	•	•	•	•	12, 16, 20 25, 32, 40 50, 63	ø12, ø16/5 to 30 ø20, ø40/5 to 50 ø50, ø63/10 to 50
Axial Piping (Centralized Piping Type) 	Double acting	Single rod CQP2	•	•	•	•	•	•	12, 16, 20, 25 32, 40, 50, 63, 80, 100	ø12, ø16/5 to 30 ø20, ø25/5 to 50 ø32, ø40/5 to 100 ø50 to ø100/10 to 100	7-6-88
	Single acting	Spring return/ Spring extend CQP2	•	•	•	•	•	•	12, 16, 20 25, 32, 40 50	ø12 to ø40/5, 10 ø50/10, 20	7-6-98
Large Bore Size 	Double acting	Single rod CQ2	•	•	•	•	•	•	125, 140 160, 180 200	10 to 300	7-6-108
		Double rod CQ2W	•	•	•	•	•	•	•	125, 140 160, 180 200	10 to 300
Long Stroke 	Double acting	Single rod CQ2	•	•	•	•	•	•	32, 40, 50 63, 80, 100	125 to 300	7-6-121
Anti-lateral Load 	Double acting	Single rod CQ2□S	•	•	•	•	•	•	32, 40, 50 63, 80, 100	ø32 to ø40/5 to 100 ø50 to ø100/10 to 100	7-6-132
With End Lock 	Double acting	Single rod CBQ2	•	•	•	•	•	•	20, 25, 32 50, 63, 80 100	ø20 to ø63/10 to 100 ø80, ø100/25 to 100	7-6-142

Built-in One-touch fittings (Bore size ø32 to ø63)
Foot/Flange style
Double clevis style
Copper-free
Air-hydra (Bore size ø20 to ø100)
Clean Series (Bore size ø12 to ø63)

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Data

Standard: Double Acting, Double Rod Series **CDQ2W** With Auto Switch



* Refer to page 7-9-1 for further information on auto switches.

How to Order

For "How to Order" with auto switch, refer to page 7-6-25.

Minimum Stroke for Auto Switch Mounting

(mm)

No. of auto switches mounted	D-F7□V D-J79C D-M9□V	D-A7□ D-A80 D-A73C D-A80C D-A9□V	D-F7□WV D-F9□WV D-F7BAVL	D-A7□H D-A80H D-F7□ D-J79 D-M9□ D-F9□W	D-A79W	D-F7□W D-J79W D-F7BAL D-F79F D-F9BAL	D-P5DWL	D-A9□
1 pc.	5	5	10	15	15	20	30	10
2 pcs.	5	10	15	15	20	20	30	10

Weight

(g)

Bore size (mm)	Cylinder stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	55	63	71	79	87	95	—	—	—	—	—	—
16	88	99	110	121	132	143	—	—	—	—	—	—
20	135	152	169	186	203	220	237	254	271	288	—	—
25	182	199	216	233	250	267	284	301	318	335	—	—
32	247	271	295	319	343	367	391	415	439	463	487	511
40	370	401	432	463	494	525	556	587	618	649	680	711
50	—	647	692	737	782	827	872	917	962	1007	1052	1097
63	—	833	872	911	950	989	1028	1067	1106	1145	1184	1223
80	—	1500	1584	1668	1752	1836	1920	2004	2088	2172	2256	2340
100	—	2501	2620	2739	2858	2977	3096	3215	3334	3453	3572	3691

Additional Weight

(g)

Bore size (mm)	12	16	20	25	32	40	50	63	80	100
	Both ends tapped style	1	1	3	3	6	6	6	19	45
Rod end male thread	Male thread	3	6	12	24	52	54	106	106	240
	Nut	2	4	8	16	34	34	64	64	98
With rubber bumper	0	0	-2	-2	-3	-7	-12	-19	-34	-54
Built-in One-touch fittings	—	—	—	—	12	12	21	21	—	—
Foot style (Including mounting bolt)	52	65	153	177	159	171	267	349	735	1117
Flange style (Including mounting bolt)	54	67	131	153	180	214	373	559	1056	1365

Calculation:

(Example) CDQ2WF32-20DCM

• Cylinder weight: CDQ2WB32-20D 319 g

• Option weight: Both ends tapped style..... 6 g

• Rod end male thread 86 g

• Rubber bumper -3 g

• Rod side flange style 180 g

588 g

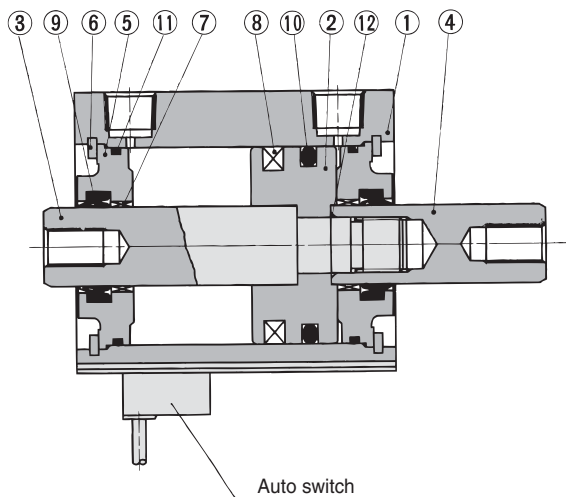
If auto switches are to be installed, the weight that corresponds to the number of auto switches and mounting brackets to be used must be added.

Auto Switch Mounting Bracket Weight

Mounting bracket part no.	Applicable bore (mm)	Weight (g)
BQ-1	12 to 25	1.5
BQ-2	32 to 100	1.5

* For the auto switch weight, refer to page 7-9-1.

Construction



Component Parts

No.	Description	Material	Note
①	Cylinder tube	Aluminum alloy	Hard anodized
②	Piston	Aluminum alloy	Chromated
③	Piston rod A	Stainless steel	ø12 to ø25
		Carbon steel	ø32 to ø100, Hard chrome plated
④	Piston rod B	Stainless steel	ø12 to ø25
		Carbon steel	ø32 to ø100, Hard chrome plated
⑤	Collar	Aluminum alloy	ø12 to ø40, Anodized
		Aluminum alloy casted	ø50 to ø100, Chromated, painted
⑥	Snap ring	Carbon tool steel	Phosphate coated
⑦	Bushing	Lead-bronze casted	For ø50 or larger only
⑧	Magnet	—	—
⑨*	Rod seal	NBR	
⑩*	Piston seal	NBR	
⑪*	Tube gasket	NBR	
⑫	Piston gasket	NBR	

Replacement Parts: Seal Kit (Pneumatic)

Bore size (mm)	Kit no.	Contents
12	CQ2WB12-PS	Set of nos. above ⑨, ⑩, ⑪
16	CQ2WB16-PS	
20	CQ2WB20-PS	
25	CQ2WB25-PS	
32	CQ2WB32-PS	
40	CQ2WB40-PS	
50	CQ2WB50-PS	
63	CQ2WB63-PS	
80	CQ2WB80-PS	
100	CQ2WB100-PS	

* Seal kits includes ⑨, ⑩, ⑪. Order the seal kit, based on each bore size.

Replacement Parts: Seal Kit (Air-hydro)

Bore size (mm)	Kit no.	Contents
20	CQ2WBH20-PS	Set of nos. above ⑨, ⑩, ⑪
25	CQ2WBH25-PS	
32	CQ2WBH32-PS	
40	CQ2WBH40-PS	
50	CQ2WBH50-PS	
63	CQ2WBH63-PS	
80	CQ2WBH80-PS	
100	CQ2WBH100-PS	

* Seal kits includes ⑨, ⑩, ⑪. Order the seal kit, based on each bore size.

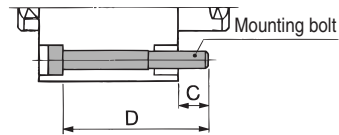
Compact Cylinder with Auto Switch: Standard Type Double Acting, Double Rod Series **CDQ2W**

Mounting Bolt for CDQ2 with Auto Switch

Mounting method: Mounting bolt for through-hole mounting style of CDQ2WB is available as an option.

Ordering: Add the word "Bolt" in front of the bolts to be used.

Example) Bolt M3 x 40ℓ 4 pcs.



Model	C	D	Bolt
CDQ2WB12-5DC	6.1	40	M3 x 40ℓ
-10DC		45	x 45ℓ
-15DC		50	x 50ℓ
-20DC		55	x 55ℓ
-25DC		60	x 60ℓ
-30DC		65	x 65ℓ
CDQ2WB16-5D	7.5	45	M3 x 45ℓ
-10D		50	x 50ℓ
-15D		55	x 55ℓ
-20D		60	x 60ℓ
-25D		65	x 65ℓ
-30D		70	x 70ℓ
CDQ2WB20-5D	9	45	M5 x 45ℓ
-10D		50	x 50ℓ
-15D		55	x 55ℓ
-20D		60	x 60ℓ
-25D		65	x 65ℓ
-30D		70	x 70ℓ
-35D		75	x 75ℓ
-40D		80	x 80ℓ
-45D		85	x 85ℓ
-50D		90	x 90ℓ
CDQ2WB25-5D	8	45	M5 x 45ℓ
-10D		50	x 50ℓ
-15D		55	x 55ℓ
-20D		60	x 60ℓ
-25D		65	x 65ℓ
-30D		70	x 70ℓ
-35D		75	x 75ℓ
-40D		80	x 80ℓ
-45D		85	x 85ℓ
-50D		90	x 90ℓ

Model	C	D	Bolt	
CDQ2WB32-5D	6.5	45	M5 x 45ℓ	
-10D		50	x 50ℓ	
-15D		55	x 55ℓ	
-20D		60	x 60ℓ	
-25D		65	x 65ℓ	
-30D		70	x 70ℓ	
-35D		75	x 75ℓ	
-40D		80	x 80ℓ	
-45D		85	x 85ℓ	
-50D		90	x 90ℓ	
CDQ2WB40-5D	7	55	M5 x 55ℓ	
-10D		60	x 60ℓ	
-15D		65	x 65ℓ	
-20D		70	x 70ℓ	
-25D		75	x 75ℓ	
-30D		80	x 80ℓ	
-35D		85	x 85ℓ	
-40D		90	x 90ℓ	
-45D		95	x 95ℓ	
-50D		100	x 100ℓ	
CDQ2WB50-10D	12.5	125	M6 x 125ℓ	
-100D		150	x 150ℓ	
CDQ2WB60-10D		12.5	65	M6 x 65ℓ
-15D			70	x 70ℓ
-20D			75	x 75ℓ
-25D			80	x 80ℓ
-30D			85	x 85ℓ
-35D			90	x 90ℓ
-40D			95	x 95ℓ
-45D			100	x 100ℓ
-50D	105		x 105ℓ	
-75D	130		x 130ℓ	
-100D	155	x 155ℓ		

Model	C	D	Bolt
CDQ2WB63-10D	13.5	65	M8 x 65ℓ
-15D		70	x 70ℓ
-20D		75	x 75ℓ
-25D		80	x 80ℓ
-30D		85	x 85ℓ
-35D		90	x 90ℓ
-40D		95	x 95ℓ
-45D		100	x 100ℓ
-50D		105	x 105ℓ
-75D		130	x 130ℓ
CDQ2WB80-10D	12.5	70	M10 x 70ℓ
-15D		75	x 75ℓ
-20D		80	x 80ℓ
-25D		85	x 85ℓ
-30D		90	x 90ℓ
-35D		95	x 95ℓ
-40D		100	x 100ℓ
-45D		105	x 105ℓ
-50D		110	x 110ℓ
-75D		135	x 135ℓ
CDQ2WB100-10D	13	80	M10 x 80ℓ
-15D		85	x 85ℓ
-20D		90	x 90ℓ
-25D		95	x 95ℓ
-30D		100	x 100ℓ
-35D		105	x 105ℓ
-40D		110	x 110ℓ
-45D		115	x 115ℓ
-50D		120	x 120ℓ
-75D		145	x 145ℓ
-100D	170	x 170ℓ	

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Data

Series CDQ2W

Proper Auto Switch Mounting Position (Detection at stroke end) and Its Mounting Height

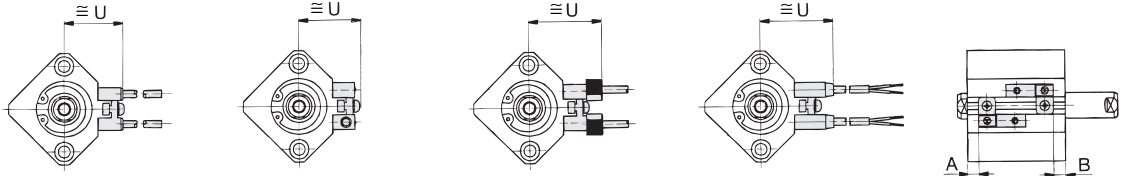
D-A7□
D-A80

D-A7□H, D-A80H
D-F7□, D-J79
D-F7□W, D-J79W
D-F79F, D-F7NTL
D-F7BAL

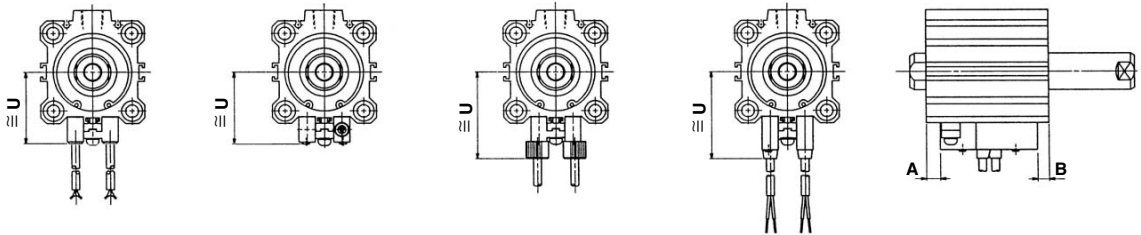
D-A73C
D-A80C
D-J79C

D-A79W
D-F7□WV
D-F7□V
D-F7BAVL

ø12 to ø25



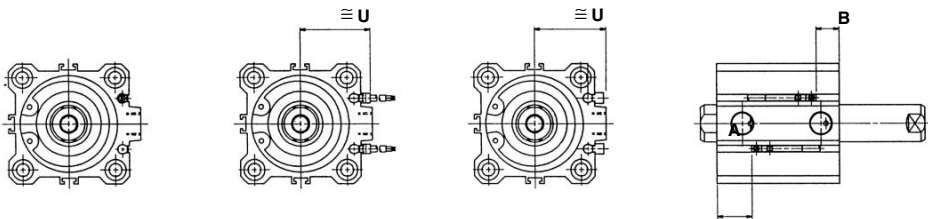
ø32 to ø100



D-A9□
D-M9□, D-F9□W

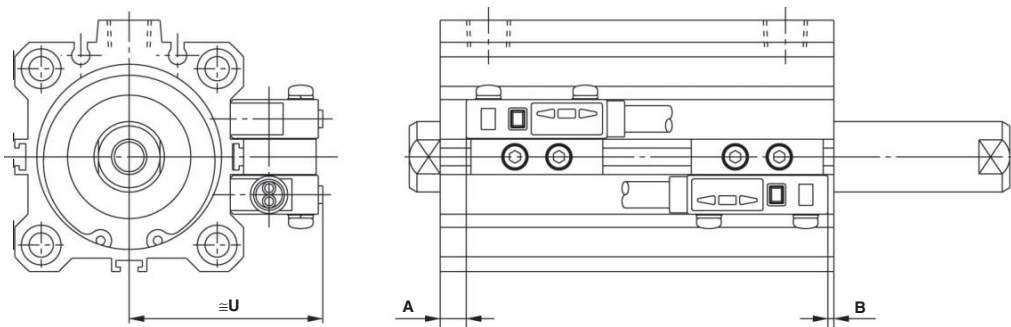
D-A9□V
D-M9□V
D-F9□WV

D-F9BAL



ø40 to ø100

D-P5DWL



Compact Cylinder with Auto Switch: Standard Type Double Acting, Double Rod Series **CDQ2W**

Proper Auto Switch Mounting Position

Bore size (mm)	D-A7□/A80		D-F7□H/A80H D-A73C/A80C D-F7□/J79/J79W D-F7□V/J79C D-F7□W/F7□WV D-F7BAL/F7BAVL D-F79F		D-A79W		D-A9□ D-A9□V		D-M9□ D-M9□V D-F9□W D-F9□WV		D-F9BAL		D-P5DWL	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
12	4.5	10	5	10.5	2	7.5	—	—	—	—	—	—	—	—
16	7.5	10.5	8	11	5	8	—	—	—	—	—	—	—	—
20	7.5	13	8	13.5	5	10.5	—	—	—	—	—	—	—	—
25	7.5	13	8	13.5	5	10.5	—	—	—	—	—	—	—	—
32	9	13.5	9.5	14	6.5	11	8	12.5	12	16.5	11	15.5	—	—
40	13	19	13.5	19.5	10.5	16.5	12	18	16	22	15	21	9	15
50	11	21.5	11.5	22	8.5	19	10	20.5	14	24.5	13	23.5	7	17.5
63	13.5	20.5	14	21	11	18	12.5	19.5	16.5	23.5	15.5	22.5	9.5	16.5
80	17.5	29	18	29.5	15	26.5	16.5	28	20.5	32	19.5	31	13.5	25
100	21.0	31.5	—	32	18.5	29	20	30.5	24	34.5	23	33.5	17	27.5

Auto Switch Mounting Height

Bore size (mm)	D-A7□/A80	D-A7□H D-A80H D-F7□ D-J79 D-F7□W	D-J79W D-F9BAL D-F79F D-F7NTL	D-A73C D-A80C	D-F7□V D-F7□WV D-F7BAVL	D-J79C	D-A79W	D-A9□V	D-M9□V D-F9□WV	D-F9BAL	D-P5DWL
	U	U	U	U	U	U	U	U	U	U	U
12	19.5	20.5	26.5	23	26	22	—	—	—	—	—
16	22.5	23.5	29.5	26	29	25	—	—	—	—	—
20	24.5	25.5	31.5	28	31	27	—	—	—	—	—
25	27.5	28.5	34.5	31	34	30	—	—	—	—	—
32	31.5	32.5	38.5	35	38	34	27	29	26.5	—	—
40	35	36	42	38.5	41.5	37.5	30.5	32.5	30	44	—
50	41	42	48	44.5	47.5	43.5	36.5	38.5	36	50	—
63	47.5	48.5	54.5	51	54	50	40	42	39.5	56.5	—
80	57.5	58.5	64.5	61	64	60	50	52	49.5	66.5	—
100	67.5	68.5	74.5	71	74	70	60	62	59.5	76.5	—

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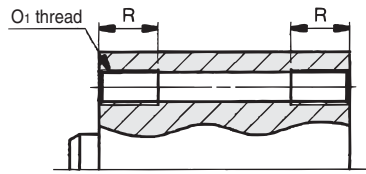
Data

Series CQ2W

Dimensions: $\phi 12$ to $\phi 25$ /Without Auto Switch

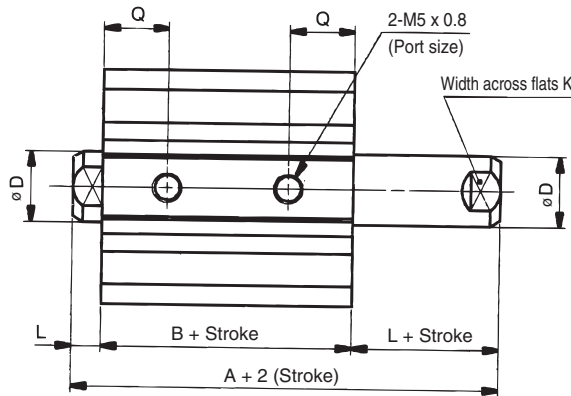
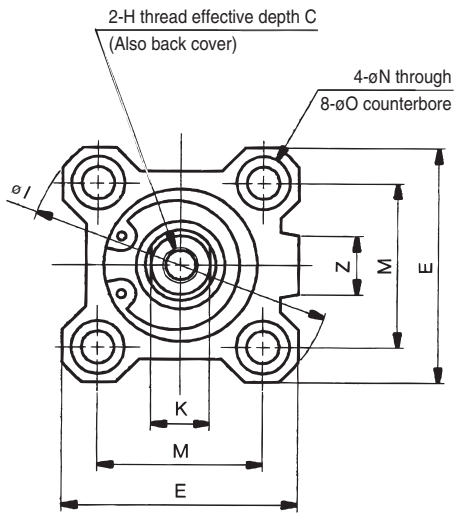
Basic style (Through-hole): CQ2WB

Both ends tapped style: CQ2WA



Both Ends Tapped Style

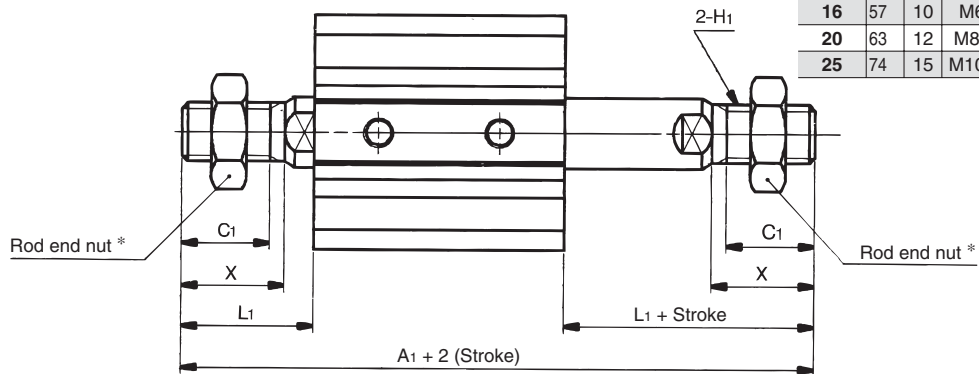
Bore size (mm)	O ₁	R
12	M4 x 0.7	7
16	M4 x 0.7	7
20	M6 x 1.0	10
25	M6 x 1.0	10



Rod End Male Thread

Bore size (mm)	A ₁	C ₁	H ₁	L ₁	X
12	53.2	9	M5 x 0.8	14	10.5
16	57	10	M6 x 1.0	15.5	12
20	63	12	M8 x 1.25	18.5	14
25	74	15	M10 x 1.25	22.5	17.5

Rod end male thread



Basic Style

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	H	I	K	L	M	N	O	Q	Z
12	5 to 30	32.2	25.2	6	6	25	M3 x 0.5	32	5	3.5	15.5	3.5	6.5 depth 3.5	10	—
16	5 to 30	33	26	8	8	29	M4 x 0.7	38	6	3.5	20	3.5	6.5 depth 3.5	10	10
20	5 to 50	35	26	7	10	36	M5 x 0.8	47	8	4.5	25.5	5.5	9 depth 7	9.5	10
25	5 to 50	39	29	12	12	40	M6 x 1.0	52	10	5	28	5.5	9 depth 7	11	10

Note) External dimensions with rubber bumper are same as standard type as shown above.

* For details about the rod end nut and accessory brackets, refer to page 7-6-20.