

Compact Cylinder Series NCQ8

Bore size: 056(9/16"), 075(3/4"), 106(1 1/16"), 150(1 1/2")
200(2"), 250(2 1/2"), 300(3"), 400(4")

Now available in 300 (3") and
400 (4") bore sizes



Standard type	Actuation	Style	Built-in magnet	Rod end male thread	With rubber bumper	Bore size	Standard stroke (in)	Page
	Double acting	Single rod	○	○	○	056(9/16") 075(3/4") 106(1 1/16") 150(1 1/2") 200(2") 250(2 1/2") 300(3")★★ 400(4")★★	012(1/8"), 025(1/4"), 037(3/8"), 050(1/2"), 062(5/8"), 075(3/4"), 087(7/8"), 100(1"), 125(1 1/4"), 150(1 1/2"), 175(1 3/4"), 200(2"), 250(2 1/2"), 300(3"), 350(3 1/2"), 400(4")	1
		Double rod	○	○	○		13	
	Single acting	Single rod	○	○	○		012(1/8"), 025(1/4"), 037(3/8"), 050(1/2"), 062(5/8"), 075(3/4"), 087(7/8"), 100(1"), 125(1 1/4"), 150(1 1/2"), 175(1 3/4"), 200(2")	22
Super Compact	Actuation	Style	Built-in magnet	Rod end male thread	With rubber bumper	Bore size	Standard stroke (in)	Page
	Double acting	Single rod	★	○	○	056(9/16") 075(3/4") 106(1 1/16") 150(1 1/2") 200(2") 250(2 1/2") 300(3")★★ 400(4")★★	025(1/4"), 037(3/8"), 050(1/2"), 062(5/8"), 075(3/4"), 087(7/8"), 100(1"), 125(1 1/4"), 150(1 1/2"), 175(1 3/4"), 200(2"), 250(2 1/2"), 300(3"), 350(3 1/2"), 400(4")	1
	Single acting	Single rod	★	○	○		025(1/4"), 037(3/8"), 050(1/2"), 062(5/8"), 075(3/4"), 087(7/8"), 100(1"), 125(1 1/4"), 150(1 1/2"), 175(1 3/4"), 200(2")	22

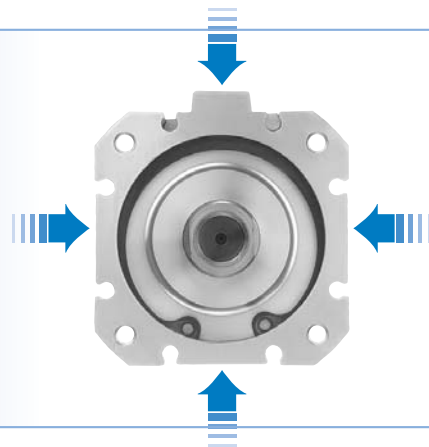
Note) Built-in magnet type has a minimum stroke of 025 (1/4").

★ Super Compact type is only available with a magnet.

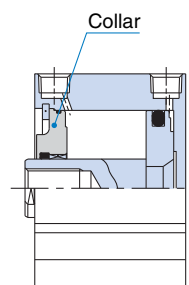
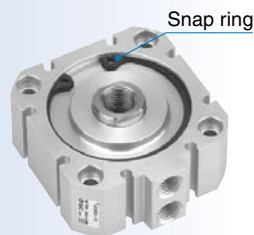
★★ 300 (3") and 400 (4"): Available for double acting type only.

COMPACT CYLINDER

- Square body allows close center to center mounting
- Visibility of auto switch is improved.
- Auto switch mountable on multiple-sides
- No protrusion from cylinder's exterior when mounting auto switches



Snap ring design allows for quick and easy maintenance.
Just by removing the snap ring and collar,
seal replacement is possible.

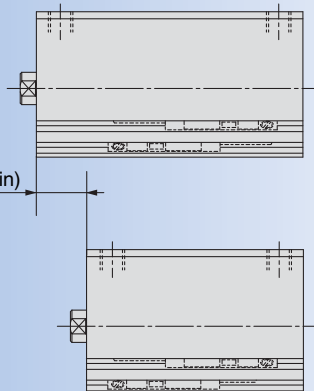


Super Compact type is available - saves additional space.

NCDQ8□
With auto switch,
Standard type

Difference in dimension (in)

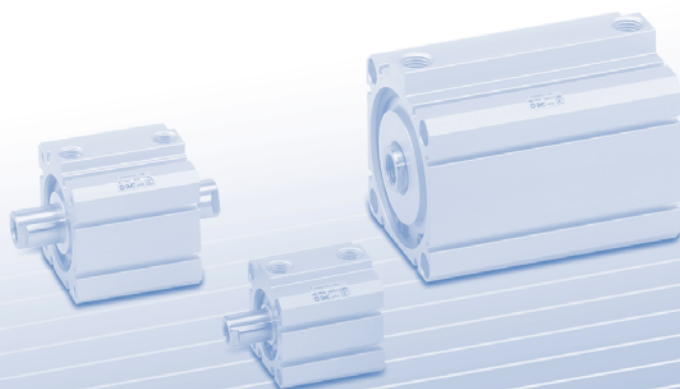
NCDQ8□Z
With auto switch,
Super Compact type



Bore size	Cylinder tube whole length (in)*		Difference in dimension (in)
	NCDQ8□	NCDQ8□Z	
056(9/16")	1.44	1.06	0.38
075(3/4")	1.44	1.06	0.38
106(1 1/16")	1.75	1.25	0.50
150(1 1/2")	1.75	1.25	0.50
200(2")	1.81	1.19	0.62
250(2 1/2")	2.06	1.44	0.62
300(3")	2.13	1.50	0.63
400(4")	2.44	1.80	0.63

*Indicates the dimension for 0 (zero) stroke of double acting, single rod.

Series
NCDQ8



Compact Cylinder Double Acting, Single Rod Series *NCQ8*

Bore size: 056(9/16"), 075(3/4"), 106(1 1/16"), 150(1 1/2"), 200(2"), 250(2 1/2"), 300(3"), 400(4")

How to Order

Without auto switch

NCQ8 **B** **056** - **025**

With auto switch

NCDQ8 **B** **Z** **056** - **025** - **M9BW** **S** -

Built-in magnet

Mounting

B	Through-hole
A	Both ends tapped
C	Rear clevis
E	Screw clearance hole, front mount
M	Screw clearance hole, rear mount
N	Screw clearance hole, through

Overall length type

Nil	Standard
Z	Super Compact

Nominal bore size

056	9/16"
075	3/4"
106	1 1/16"
150	1 1/2"
200	2"
250	2 1/2"
300	3"
400	4"

Cylinder stroke (in)

Symbol	Stroke (in)	Symbol	Stroke (in)	Symbol	Stroke (in)	Symbol	Stroke (in)
012	1/8"	062	5/8"	125	1 1/4"	250	2 1/2"
025	1/4"	075	3/4"	150	1 1/2"	300	3"
037	3/8"	087	7/8"	175	1 3/4"	350	3 1/2"
050	1/2"	100	1"	200	2"	400	4"

Note 1) With auto switch is available on strokes 025(1/4") and greater.

X-Option

Nil	Standard
XB6	High temp.
XC4	With scraper

Note 3) XB6: Not available with magnet.

*Refer to page 36.

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	"n" pcs.

Auto switch type

Nil	Without auto switch (Built-in magnet cylinder)
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*Refer to the table below for auto switch model numbers.

*Auto switches are shipped together, (but not assembled).

Body option

Nil	Standard (Female rod end)
C	Rubber bumper
M	Male rod end

Note 2) Stroke will be reduced by 0.06" for rubber bumper type.

*Combination of body options(CM) is available.

Applicable Auto Switches

Type	Special function	Electrical entry	Indicator light	Wiring (output)	Load voltage			Auto switch model		Lead wire length (in)*				Applicable load	
					DC		AC	Perpendicular	In-line	20(0.5m)	39(1m)	118(3m)	197(5m)		
							(Nil)			(M)	(L)	(Z)			
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	—	●	○	IC circuit	Relay, PLC
				3-wire (PNP)		12 V		M9PV	M9P	●	—	●	○		
				2-wire		5 V, 12 V		M9BV	M9B	●	—	●	○		
	Diagnostic indication (2-color display)	Grommet		3-wire (NPN)	5 V, 12 V	M9NWV	M9NW	●	●	●	○	IC circuit			
				3-wire (PNP)		M9PWV	M9PW	●	●	●	○				
				2-wire		12 V	M9BWV	M9BW	●	●	●		○		
	Water resistant (2-color display)					—	F9BA	—	—	●	○	—			
Reed switch	—	Grommet	Yes	3-wire (NPN equiv.)	—	5 V	—	A96V	A96	●	—	●	—	IC circuit	—
			No	2-wire	24 V	5 V, 12 V	100 V	A90V	A90	●	—	●	—	IC circuit	Relay, PLC
			Yes			12 V		A93V	A93	●	—	●	—	—	

*Lead wire length symbols: 20in (0.5 m)..... Nil
39in (1 m)..... M
118in (3 m)..... L
197in (5 m)..... Z

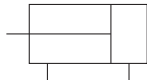
(Example) M9NW
M9NWM
M9NWL
M9NWX

*Solid state switches marked with a "○" symbol are produced upon receipt of order.
*39 in (1 m: M): Available in the D-M9□W(V) only.

Series NCQ8



Symbol
Double acting,
Single rod



Specifications

Bore size		056(9/16")	075(3/4")	106(1 1/16")	150(1 1/2")	200(2")	250(2 1/2")	300(3")	400(4")
Piping size		#10-32UNF	#10-32UNF	NPT1/8	NPT1/8	NPT1/8	NPT1/4	NPT1/4	NPT3/8
Type		Pneumatic (Non-lube)							
Action		Double acting, Single rod							
Fluid		Air							
Proof pressure		300PSI (2.1MPa)							
Maximum operating pressure		200PSI (1.4MPa)							
Minimum operating pressure		11PSI (0.07MPa)	8PSI (0.05MPa)						
Ambient and fluid temperature	Without auto switch	15 to 150F(-10 to 65C) (No freezing)							
	With auto switch	15 to 140F(-10 to 60C) (No freezing)							
Cushion		Rubber bumper (C)							
Rod end thread		Female thread							
Rod end thread tolerance		ANSI/ASME B 1.1-1989							
Stroke tolerance		0 to +0.04 in (+1.0mm)							
Mounting		Through-hole (B), Both ends tapped (A), Clevis, SCH (E,M,N)							
Piston speed		2 to 20in/sec (50 to 500mm/s)						2 to 11.8in/sec (50 to 300mm/s)	

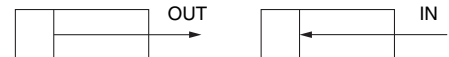
Applicable Stroke

Unit: inch

Bore size	Standard stroke
056(9/16")	012(1/8"), 025(1/4"), 037(3/8"), 050(1/2") 062(5/8"), 075(3/4"), 087(7/8"), 100(1") 125(1 1/4"), 150(1 1/2"), 175(1 3/4"), 200(2") 250(2 1/2"), 300(3"), 350(3 1/2"), 400(4")
075(3/4")	
106(1 1/16")	
150(1 1/2")	
200(2")	
250(2 1/2")	
300(3")	
400(4")	

* With auto switch is available on strokes 025(1/4") and greater.

Theoretical Output Table



Unit: lbf

Bore size (in)	Operating direction	Operating pressure/PSI (MPa)			
		45(0.3)	75(0.5)	145(1.0)	200(1.4)
056(9/16")	IN	8.87	14.6	28.6	39.2
	OUT	11.1	18.2	35.7	48.9
075(3/4")	IN	16.4	27.0	52.9	72.5
	OUT	19.9	32.7	64.1	87.8
106(1 1/16")	IN	30.8	50.8	99.5	136
	OUT	39.7	65.3	128	175
150(1 1/2")	IN	65.7	108	212	290
	OUT	79.5	131	256	351
200(2")	IN	121	200	391	536
	OUT	141	232	456	624
250(2 1/2")	IN	201	330	648	888
	OUT	221	363	712	975
300(3")	IN	278	463	927	1298
	OUT	304	506	1013	1418
400(4")	IN	506	844	1689	2364
	OUT	540	900	1801	2522

Compact Cylinder Double Acting, Single Rod *Series NCQ8*

Weight Table

Product's Weight (Double Acting, Single Rod, Without Auto Switch)

(OZ)

Model \ Stroke	012 (1/8")	025 (1/4")	037 (3/8")	050 (1/2")	062 (5/8")	075 (3/4")	087 (7/8")	100 (1")	125 (1 1/4")	150 (1 1/2")	175 (1 3/4")	200 (2")	250 (2 1/2")	300 (3")	350 (3 1/2")	400 (4")
NCQ8□056-□	0.82	0.96	1.10	1.24	1.38	1.52	1.66	1.80	2.09	2.37	2.65	2.93	3.50	4.06	4.63	5.19
NCQ8□075-□	1.24	1.45	1.66	1.86	2.07	2.28	2.49	2.70	3.11	3.53	3.94	4.36	5.19	6.03	6.86	7.69
NCQ8□106-□	3.27	3.64	4.01	4.38	4.75	5.12	5.49	5.86	6.60	7.34	8.08	8.82	10.3	11.8	13.3	14.8
NCQ8□150-□	5.30	5.84	6.37	6.91	7.45	7.99	8.53	9.07	10.2	11.3	12.4	13.4	15.6	17.8	19.9	22.1
NCQ8□200-□	8.89	9.69	10.5	11.3	12.1	12.9	13.7	14.5	16.1	17.7	19.3	20.8	24.0	27.2	30.4	33.5
NCQ8□250-□	14.3	15.1	15.9	16.7	17.5	18.3	19.1	20.0	21.6	23.2	24.8	26.6	29.6	33.2	36.1	39.3
NCQ8□300-□	20.9	22.1	23.0	24.2	25.4	26.5	27.7	28.9	31.2	33.6	35.9	38.3	42.9	47.6	52.3	57.0
NCQ8□400-□	40.4	42.1	43.4	45	46.7	48.3	49.9	51.6	54.8	58.1	61.3	64.6	71.1	77.6	84.1	90.6

Product's Weight (Double Acting, Single Rod, With Auto Switch)

(OZ)

Model \ Stroke	012 (1/8")	025 (1/4")	037 (3/8")	050 (1/2")	062 (5/8")	075 (3/4")	087 (7/8")	100 (1")	125 (1 1/4")	150 (1 1/2")	175 (1 3/4")	200 (2")	250 (2 1/2")	300 (3")	350 (3 1/2")	400 (4")
NCDQ8□056-□	—	2.14	2.28	2.42	2.56	2.70	2.84	2.99	3.27	3.55	3.83	4.11	4.68	5.24	5.81	6.37
NCDQ8□075-□	—	3.35	3.56	3.77	3.98	4.18	4.39	4.60	5.02	5.43	5.85	6.27	7.10	7.93	8.76	9.59
NCDQ8□106-□	—	6.99	7.36	7.73	8.10	8.47	8.84	9.21	9.95	10.7	11.5	12.2	13.7	15.2	16.7	18.1
NCDQ8□150-□	—	11.4	11.9	12.5	13.0	13.5	14.1	14.6	15.7	16.8	17.9	18.9	21.1	23.3	25.4	27.6
NCDQ8□200-□	—	17.9	18.7	19.5	20.3	21.1	21.9	22.7	24.2	25.8	27.4	29.0	32.2	35.4	38.5	41.7
NCDQ8□250-□	—	25.3	26.1	26.9	27.7	28.5	29.3	30.1	31.8	33.4	35.0	36.6	39.9	43.1	46.4	49.6
NCDQ8□300-□	—	35.0	36.2	37.4	38.5	39.7	40.9	42.1	44.4	46.8	49.1	51.4	56.1	60.8	65.5	70.2
NCDQ8□400-□	—	61.1	62.7	64.4	66.0	67.6	69.3	70.9	74.1	77.4	80.7	83.9	90.4	96.9	103.4	110.0

Product's Weight (Double Acting, Single Rod, With Auto Switch, Super Compact)

(OZ)

Model \ Stroke	012 (1/8")	025 (1/4")	037 (3/8")	050 (1/2")	062 (5/8")	075 (3/4")	087 (7/8")	100 (1")	125 (1 1/4")	150 (1 1/2")	175 (1 3/4")	200 (2")	250 (2 1/2")	300 (3")	350 (3 1/2")	400 (4")
NCDQ8□Z056-□	—	1.61	1.75	1.89	2.03	2.17	2.32	2.46	2.74	3.02	3.30	3.58	4.15	4.71	5.28	5.84
NCDQ8□Z075-□	—	2.52	2.73	2.94	3.15	3.36	3.56	3.77	4.19	4.60	5.02	5.44	6.27	7.10	7.93	8.77
NCDQ8□Z106-□	—	5.05	5.42	5.79	6.16	6.53	6.90	7.27	8.01	8.75	9.49	10.3	11.8	13.2	14.7	16.2
NCDQ8□Z150-□	—	8.13	8.67	9.21	9.75	10.3	10.9	11.4	12.5	13.6	14.7	15.7	17.9	20.1	22.2	24.4
NCDQ8□Z200-□	—	12.4	13.2	14.0	14.8	15.6	16.4	17.2	18.8	20.4	22.0	23.5	26.7	29.9	33.1	36.2
NCDQ8□Z250-□	—	18.6	19.4	20.2	21.0	21.8	22.7	23.5	25.1	26.7	28.3	30.0	33.2	36.4	39.7	42.9
NCDQ8□Z300-□	—	25.9	27.1	28.3	29.5	30.6	31.8	33.0	35.3	37.7	40.0	42.3	47.0	51.7	56.4	61.1
NCDQ8□Z400-□	—	47.0	48.6	50.2	51.9	53.5	55.1	56.8	60.0	63.3	66.5	69.8	76.3	82.8	89.3	95.9

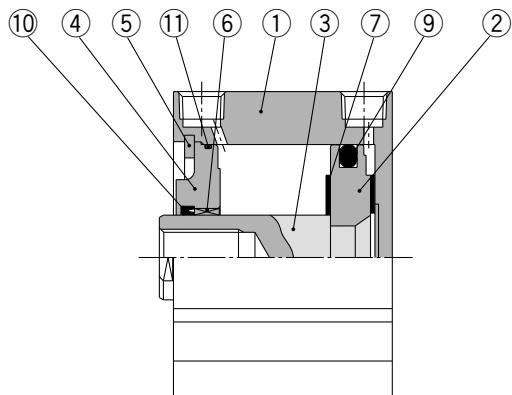
Optional Weight

Unit: OZ

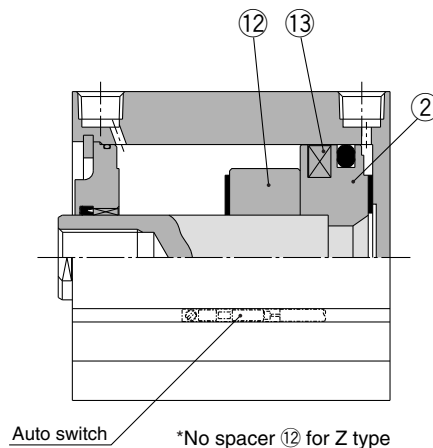
Bore size	Clevis
056(9/16")	0.71
075(3/4")	0.93
106(1 1/16")	1.64
150(1 1/2")	4.16
200(2")	6.04
250(2 1/2")	8.74
300(3")	14.57
400(4")	23.46

Construction

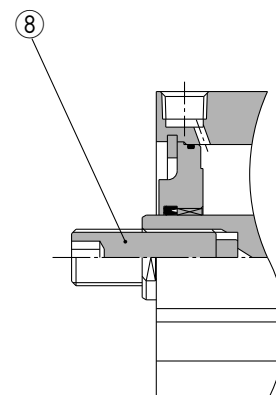
Without auto switch



With auto switch



Male thread



Parts List

No.	Description	Material	Remarks
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	Chromated
3	Piston rod	Stainless steel	056 to 106
		Carbon steel	150 to 400 Hard chrome plated
4	Collar	Aluminum alloy	Anodized
5	Snap ring	Carbon tool steel	Phosphate coated
6	Bushing	Phosphor bronze alloy	200 to 400
7	Rubber bumper	NBR	With rubber bumper only
8	Stud	Steel alloy	Electroless nickel plated
9	Piston seal	NBR	
10	Rod seal	NBR	
11	Tube gasket	NBR	
12	Spacer	Aluminum alloy	Chromated, Use for with auto switch type only(No spacer for Z type)
13	Magnet	—	

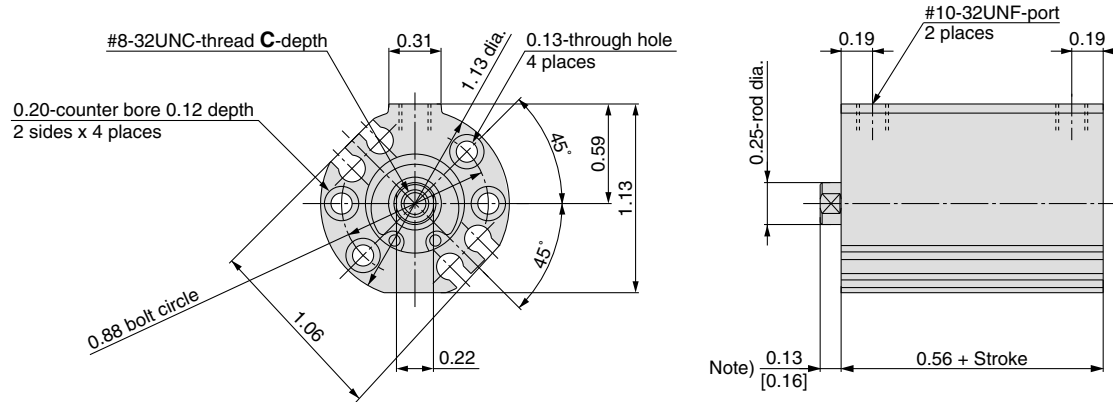
Repair Parts: Standard Seal Kit for Double Acting, Single Rod

Bore size	Kit no.	Remarks
056(9/16")	NCQ8B056-PS	Piston seal, rod seal, and tube gasket are included.
075(3/4")	NCQ8B075-PS	
106(1 1/16")	NCQ8B106-PS	
150(1 1/2")	NCQ8B150-PS	
200(2")	NCQ8B200-PS	
250(2 1/2")	NCQ8B250-PS	
300(3")	NCQ8B300-PS	
400(4")	NCQ8B400-PS	

Compact Cylinder Double Acting, Single Rod **Series NCQ8**

Dimensions/NCQ8B056 to 400 [Without Auto switch]

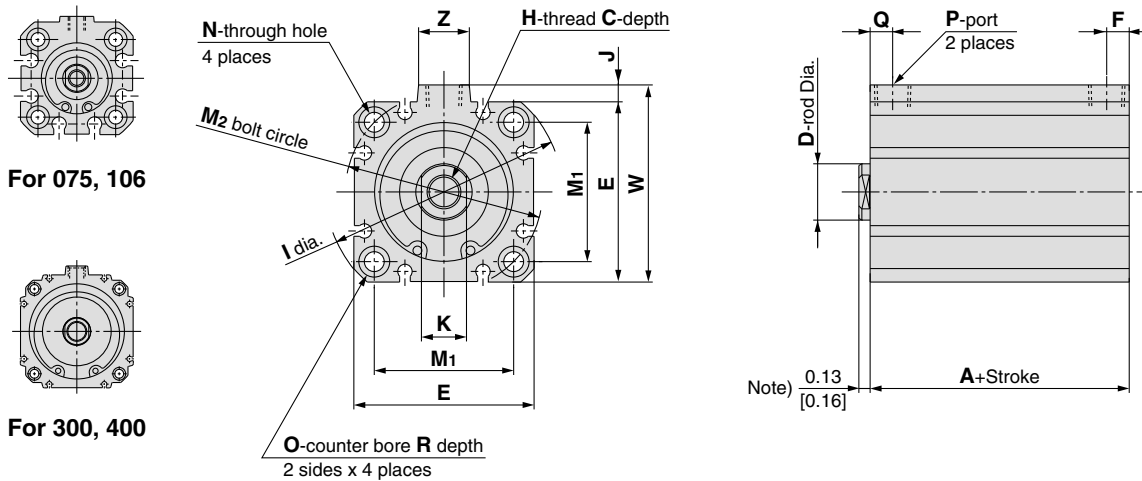
056(9/16")



Symbol	C
Stroke	
1/8"	0.36
1/4" to 4"	0.46

Note) With rubber bumper type, the stroke is reduced by 0.06" and the rod extension is 0.16".

075(3/4"), 106(1 1/16"), 150(1 1/2"), 200(2"), 250(2 1/2"), 300(3"), 400(4")



Symbol	A	C			D	E	F	H	I	J	K	M ₁	M ₂	N	O	P	Q	R	W	Z
		1/8"st	1/4"st	3/8" to 4"st																
Bore																				
075(3/4")	0.56	0.36		0.46	0.31	1.25	0.19	#10-32UNF	1.56	0.06	0.25	0.86	1.22	0.15	0.25	#10-32UNF	0.19	0.15	1.31	0.38
106(1 1/16")	0.88		0.52	0.70	0.50	1.56	0.25	5/16-24UNF	2.03	0.16	0.44	1.19	1.69	0.15	0.25	NPT1/8	0.25	0.15	1.72	0.56
150(1 1/2")	0.88		0.50	0.70	0.63	2.00	0.25	3/8-24UNF	2.63	0.19	0.50	1.55	2.19	0.22	0.34	NPT1/8	0.25	0.20	2.19	0.56
200(2")	0.94		0.44	0.70	0.75	2.53	0.25	1/2-20UNF	3.13	0.20	0.63	1.90	2.69	0.22	0.34	NPT1/8	0.25	0.20	2.73	0.56
250(2 1/2")	1.19	0.44		0.70	0.75	2.84	0.33	1/2-20UNF	3.75	0.39	0.63	2.30	3.25	0.28	0.41	NPT1/4	0.33	0.26	3.23	0.69
300(3")	1.25		0.55	0.73	0.88	3.56	0.37	5/8-18UNF	4.25	0.28	0.75	2.67	3.78	0.28	0.41	NPT1/4	0.37	0.26	3.84	0.69
400(4")	1.56		0.65	0.80	1.00	4.56	0.46	3/4-16UNF	5.50	0.41	0.88	3.49	4.94	0.34	0.50	NPT3/8	0.46	0.33	4.97	1.00

Note) With rubber bumper type, the stroke is reduced by 0.06" and the rod extension is 0.16".