

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")



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")
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")

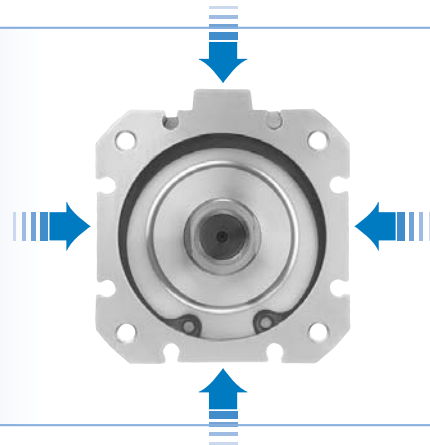
Note) Built-in magnet type has a minimum stroke of 025 (1/4").

★ Super Compact type is only available with a magnet.

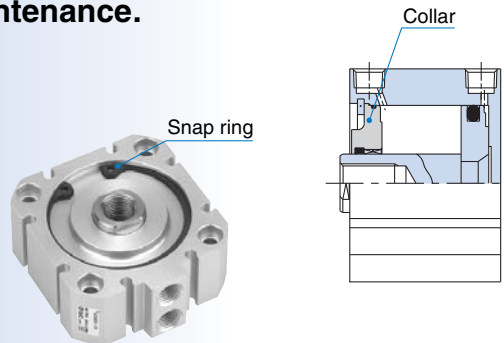
★★ 300 (3") and 400 (4"): Available for double acting type only.

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



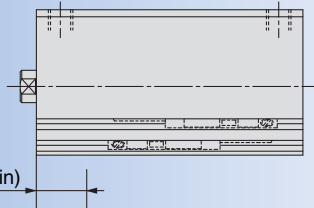
Snap ring design allows for quick and easy maintenance. Just by removing the snap ring and collar, seal replacement is possible.



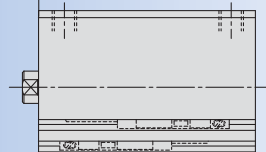
Super Compact type is available - saves additional space.

NCDQ8□
With auto switch,
Standard type

Difference in dimension (in)



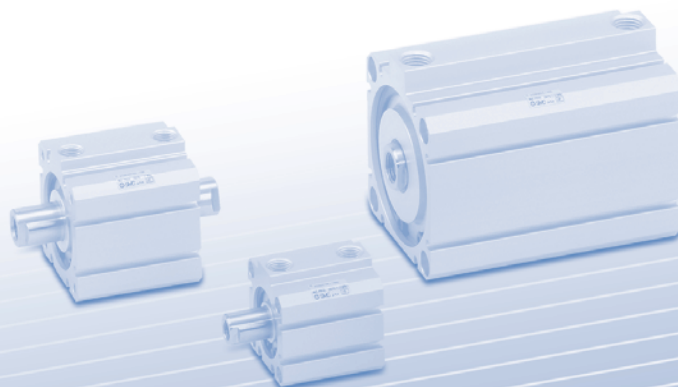
NCDQ8□Z
With auto switch,
Super Compact type



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"

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.

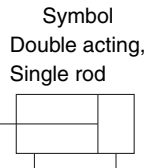
Note 1) With auto switch is available on strokes 025(1/4") and greater.

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	—	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	—	●	○	IC circuit
				3-wire (PNP)				M9PV	M9P	●	—	●	○	
				2-wire				M9BV	M9B	●	—	●	○	
	Diagnostic indication (2-color display)	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NWV	M9NW	●	●	●	○	IC circuit
				3-wire (PNP)				M9PWV	M9PW	●	●	●	○	
				2-wire				M9BWV	M9BW	●	●	●	○	
Reed switch	—	Grommet	Yes	3-wire (NPN equiv.)	24 V	5 V, 12 V	100 V	A96V	A96	●	—	●	—	IC circuit
				2-wire				A90V	A90	●	—	●	—	IC circuit
								A93V	A93	●	—	●	—	—

*Lead wire length symbols: 20in (0.5 m)..... Nil (Example) M9NW *Solid state switches marked with a "○" symbol are produced upon receipt of order.
39in (1 m)..... M M9NWM *39 in (1 m: M): Available in the D-M9□W(V) only.
118in (3 m)..... L M9NWL
197in (5 m)..... Z M9NWZ

Series NCQ8



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)	

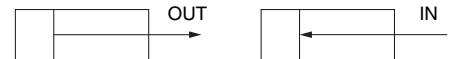
Applicable Stroke

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)

Stroke Model	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)

Stroke Model	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)

Stroke Model	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

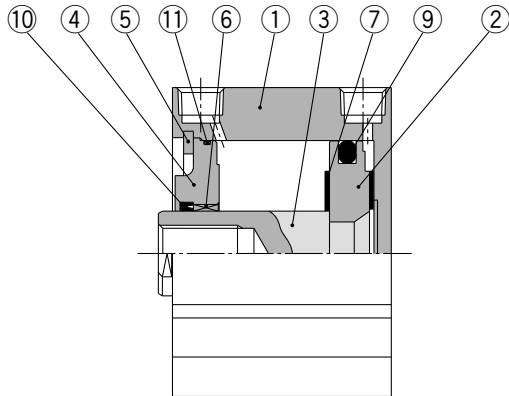
Unit: OZ

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

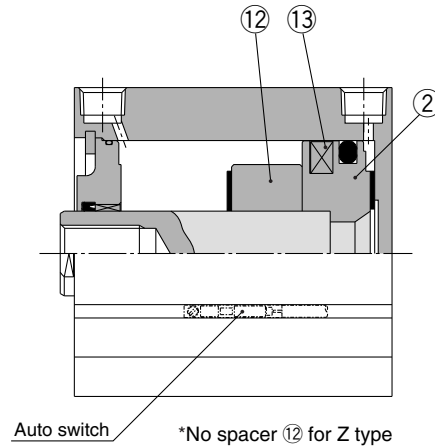
Series NCQ8

Construction

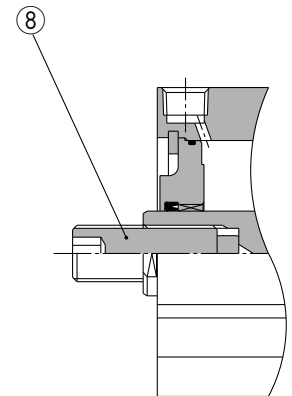
Without auto switch



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	—	

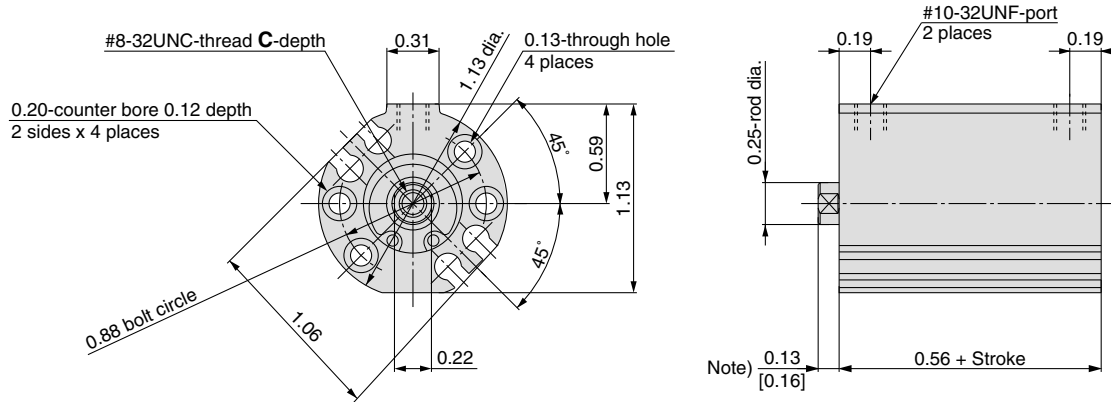
Repair Parts: Standard Seal Kit for Double Acting, Single Rod

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]

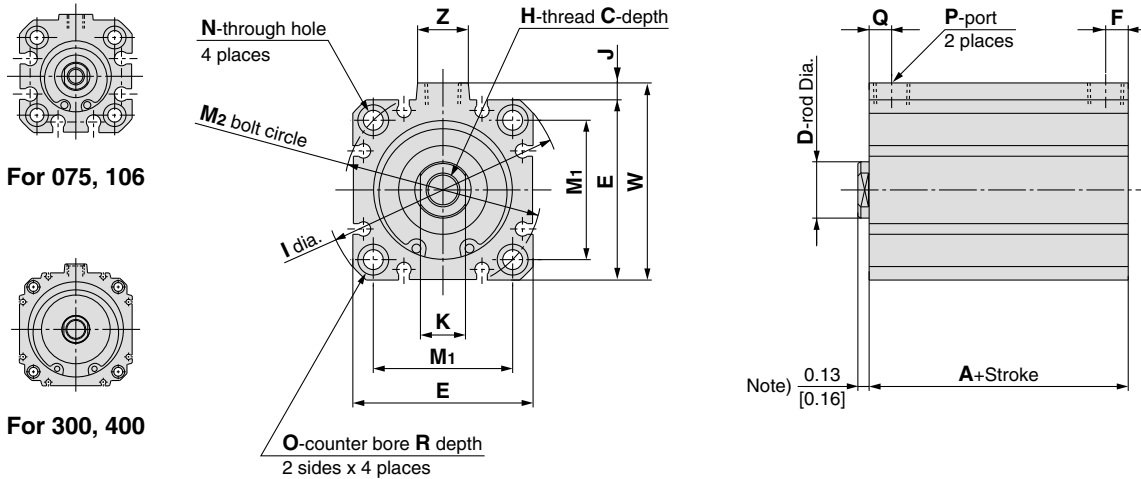
056(9/16")



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")



For 075, 106

For 300, 400

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																
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".