

Series N Actuators

1-1/8" to 4" bore sizes



Precision machined 300 Series stainless steel components.

Cylinders rated to 250 PSI air, 400 PSI hydraulic (non-shock).

Designed for non-lube service. Switches available on all bore sizes.

Technical data

Medium:
Filtered compressed air to 250 psi
(for hydraulic service consult factory.)

Operating Temperatures:
-20°F to 200°F
(-29°C to 93°C)

Operating Pressure:
250 psig (17.2 bar)
1-1/8" Bore pressure rating: 150 psi

Bore Sizes:
1-1/8", 1-1/2", 2", 2-1/2", 3-1/4", 4"

Materials:
Head and end caps - anodized 6061-T6 aluminum
Tube: 6063-T832 aluminum, clear anodized O.D., hard coat anodized I.D.

Piston Rod: C1141 hard chrome plated steel

Piston: 2011-T451 aluminum
Rod Bearings: G2 Durabar cast iron, teflon coated

Seals: carboxylated nitrile
Tie Rods: 12L14 steel

Options selector

N C 04 J - E 0 2 - A M B 0 0

Series	Series N	N
Series Q Electroless Nickel	Q	

Bore	Single rod end	Double rod end*
1-1/8"	B	P
1-1/2"	C	Q
2"	D	R
2-1/2"	E	S
3-1/4"	F	T
4"	G	U

* Double Rod End has two Piston Rods on one end and one Piston Rod on opposite end.

Strokes in inches	Substitute
0" Stroke	00
1" Stroke	01
2" Stroke	02
3" Stroke	03
4" Stroke	04
5" Stroke	05
6" Stroke	06
...	...
30" Stroke	30
Special	xx

Fractional Increments of Stroke			
0"	A	1/2"	J
1/16"	B	9/16"	K
1/8"	C	5/8"	M
3/16"	D	11/16"	N
1/4"	E	3/4"	P
5/16"	F	13/16"	R
3/8"	G	7/8"	S
7/16"	H	15/16"	T
X	Special		

Options	
No Options	0
Metal Rod Scraper	M
Air/Oil Piston	P
Double Rod W/OS Cap Rod	R
Stainless Piston Rods	S
Viton Seals	V
Special	X

Magnetic Option	
No Magnet	0
Magnetic Piston	M

Design Level	B
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Cushions†				
Needle Position	1	2**	3	4
No Cushions	A			
Head Only	B	C	D	E
Cap Only	G	H	J	K
Head and Cap	N	M	P	R
Special	X			

†Cushions not available on 1-1/8" Bore.
**Standard position

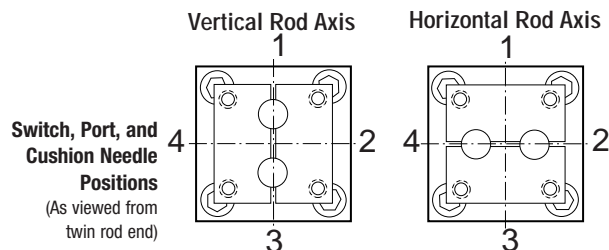
Ports				
Position	1**	2	3	4
Standard	A	B	C	D
Special	X			

**Standard position

Mounting Options		
01 No Mounts (MX0)	07 Det. Clevis (MP2)	
02 Bottom Tap (MS4)	18 Det. Eye (MP4)	
04 Front Flange (MF1)	20 Base Bar	
05 Rear Flange (MF2)	XX Special	

Rod Axis	
Horizontal Rod Axis	E
Vertical Rod Axis	N
No Tooling Plate - Horizontal Rod	A
No Tooling Plate - Vertical Rod	B
Blank Rod End - Horizontal Rod*	C
Blank Rod End - Vertical Rod*	D
Special	X

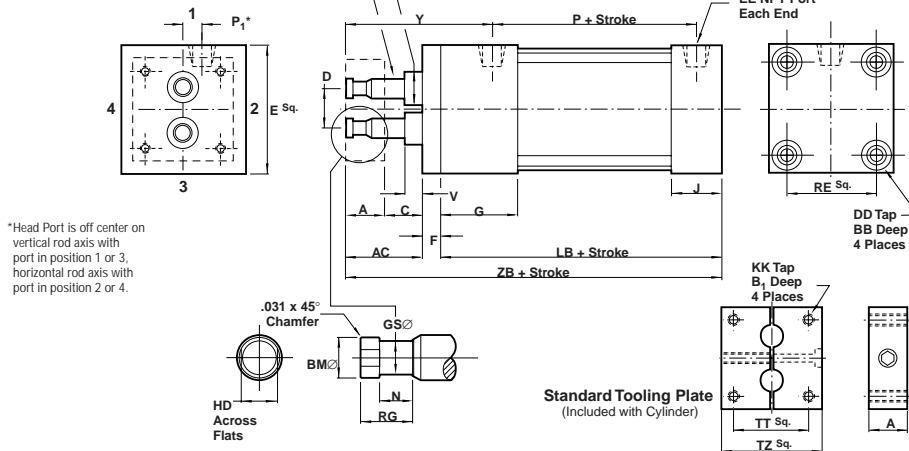
* Does not include tooling plate
Note: Double rod is not available with oversize rear rod on 1-1/2" bore.



Series N Actuators

1-1/8" to 4" bore sizes

Basic Actuator 01 (MX0)

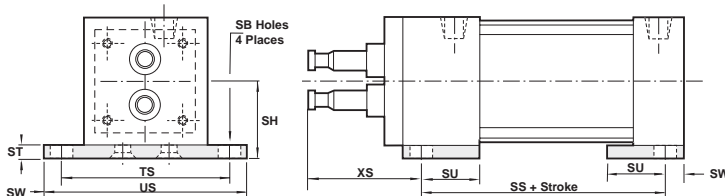


*Head Port is off center on vertical rod axis with port in position 1 or 3, horizontal rod axis with port in position 2 or 4.

Bore	A	AC	B	B1	BB	BM	C	D	DD	E	EE	F	G	GS
1-1/8"	0.625	1.25	N/A	0.5	0.188	0.27	0.625	0.627	10 - 32	1.5	1/8	0.25	1	0.19
1-1/2"	0.625	1.5	0.59	Thru	0.312	0.33	0.875	0.75	1/4 - 28	2	1/4	0.375	1.5	0.25
2"	0.75	1.5	0.9	Thru	0.312	0.55	0.75	1.052	5/16 - 24	2.5	1/4	0.375	1.5	0.5
2-1/2"	0.75	1.75	0.9	Thru	0.312	0.55	1	1.398	5/16 - 24	3	1/4	0.375	1.5	0.5
3-1/4"	1.25	1.75	1.498	Thru	0.437	0.9	0.5	2	3/8 - 24	3.75	3/8	0.625	1.75	0.75
4"	1.25	1.75	1.498	Thru	0.437	0.9	0.5	2.36	3/8 - 24	4.5	3/8	0.625	1.75	0.75

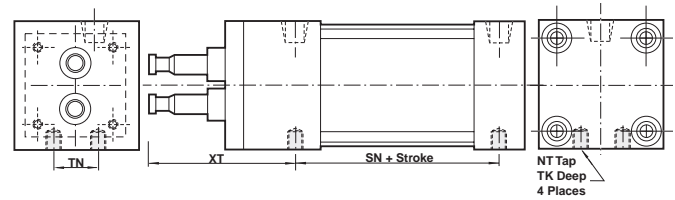
Bore	HD	J	KK	LB	MM	N	P	P1	RE	RG	TT	TZ	V	Y	ZB
1-1/8"	0.25	0.625	6 - 32	2.25	0.312	0.4	1.469	0.241	1.125	0.58	0.75	1.25	N/A	2.031	3.75
1-1/2"	0.312	1	10 - 32	3.625	0.375	0.4	2.125	0.303	1.428	0.58	1.125	1.5	0.25	2.875	5.5
2"	0.5	1	1/4 - 28	3.625	0.625	0.526	2.125	0.48	1.84	0.705	1.43	2	0.25	2.875	5.5
2-1/2"	0.5	1	5/16 - 24	3.75	0.625	0.526	2.25	0.635	2.192	0.705	1.84	2.5	0.25	3.125	5.875
3-1/4"	0.812	1.25	3/8 - 24	4.25	1	0.784	2.625	0.845	2.758	1.205	1.79	3.25	0.25	3.437	6.625
4"	0.812	1.25	3/8 - 24	4.25	1	0.784	2.625	0.875	3.323	1.205	3.44	4	0.25	3.437	6.625

Cylinder with 20 (not NFPA) Base Bar



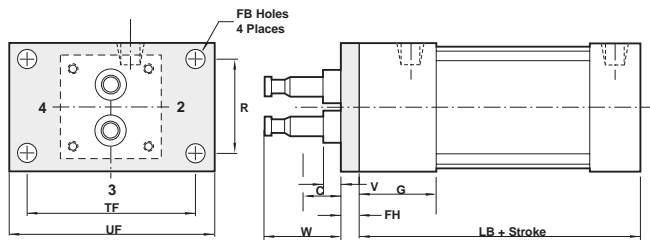
Bore	F	G	LB	SB	SS	ST	SU	SW	TS	US	XS
1-1/8"	0.25	1	2.25	0.203	1.75	0.25	0.75	0.25	1.875	2.375	1.75
1-1/2"	0.375	1.5	3.625	0.437	2.875	0.25	1.125	0.375	2.75	3.5	2.25
2"	0.375	1.5	3.625	0.437	2.875	0.25	1.125	0.375	3.25	4.0	2.25
2-1/2"	0.375	1.5	3.75	0.437	3	0.375	1.125	0.375	3.75	4.5	2.5
3-1/4"	0.625	1.75	4.25	0.563	3.25	0.5	1.25	0.5	4.75	5.75	2.875
4"	0.625	1.75	4.25	0.563	3.25	0.5	1.25	0.5	5.5	6.5	2.875

Cylinder with 02 Bottom Tap



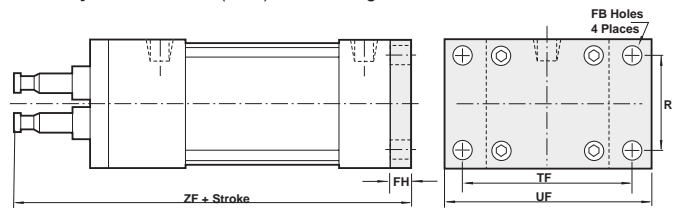
Bore	NT	SN	TK	TN	XT
1-1/8"	10 - 32	1.5	0.25	0.5	2
1-1/2"	1/4 - 20	2.25	0.375	0.625	2.812
2"	5/16 - 18	2.25	0.375	0.875	2.812
2-1/2"	3/8 - 16	2.375	0.625	1.25	3.063
3-1/4"	1/2 - 13	2.625	0.625	1.5	3.437
4"	1/2 - 13	2.625	0.75	2.063	3.437

Cylinder with 04 (MF1) Front Flange



Bore	C	FB	FH	R	TF	UF	W
1-1/8"	0.625	0.219	0.25	1	2	2.5	1.25
1-1/2"	0.875	0.312	0.375	1.43	2.75	3.75	1.5
2"	0.75	0.375	0.375	1.84	3.375	4.125	1.5
2-1/2"	1	0.375	0.375	2.19	3.875	4.625	1.75
3-1/4"	0.5	0.437	0.625	2.76	4.688	5.5	1.75
4"	0.5	0.437	0.625	3.32	5.437	6.25	1.75

Cylinder with 05 (MF2) Front Flange

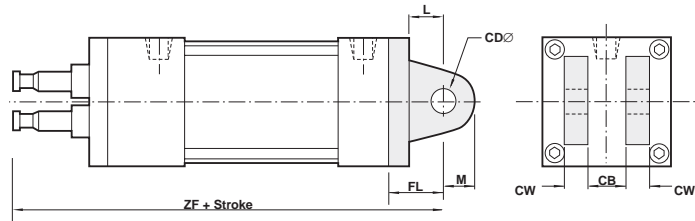


Bore	FB	FH	TF	UF	ZF
1-1/8"	0.219	0.25	2	2.5	4
1-1/2"	0.312	0.375	2.75	3.75	5.875
2"	0.375	0.375	3.375	4.125	5.875
2-1/2"	0.375	0.375	3.875	4.625	6.25
3-1/4"	0.437	0.625	4.688	5.5	7.25
4"	0.437	0.625	5.437	6.25	7.25

Series N Actuators

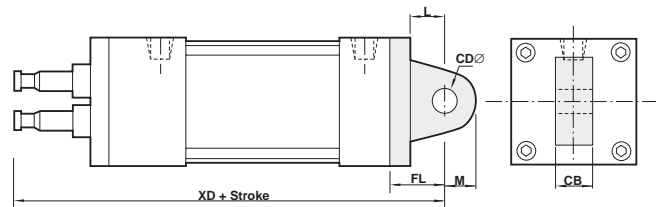
1-1/8" to 4" bore sizes

Cylinder with 07 (MP2) Detachable Clevis



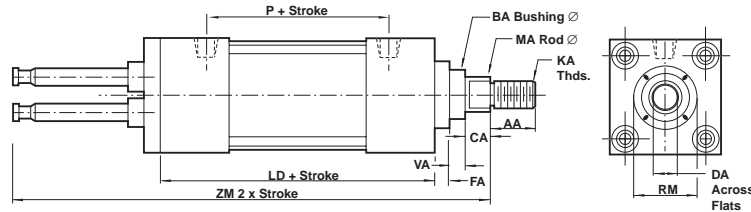
Bore	CB	CD	CW	FL	L	M
1-1/8"	0.375	0.375	0.25	1.125	0.625	0.375
1-1/2"	0.75	0.5	0.5	1.125	0.75	0.625
2"	0.75	0.5	0.5	1.125	0.75	0.625
2-1/2"	0.75	0.5	0.5	1.125	0.75	0.625
3-1/4"	1.25	0.75	0.625	1.875	1.25	0.875
4"	1.25	0.75	0.625	1.875	1.25	0.875

Cylinder with 18 (MP4) Detachable Clevis



Bore	CB	CD	FL	L	M	XD
1-1/8"	0.375	0.375	1.125	0.625	0.375	4.875
1-1/2"	0.75	0.5	1.125	0.75	0.625	6.625
2"	0.75	0.5	1.125	0.75	0.625	6.625
2-1/2"	0.75	0.5	1.125	0.75	0.625	7
3-1/4"	1.25	0.75	1.875	1.25	0.875	8.375
4"	1.25	0.75	1.875	1.25	0.875	8.375

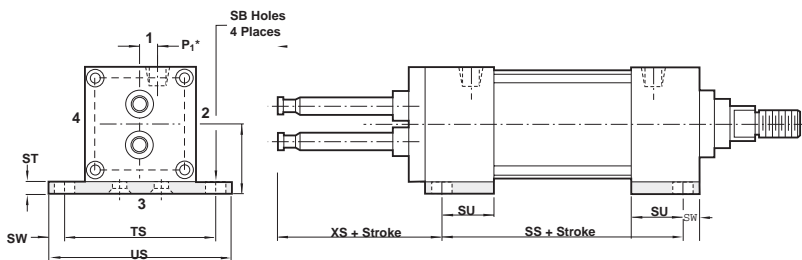
Double rod End Cylinder



Bore		AA	BA	CA	DA	FA	KA	LD	MA	P	RM	VA	ZM
1-1/8"	Standard	0.625	N/A	0.25	0.312	0.125	3/8 - 24	±2.875	0.375	±1.844	0.75	N/A	±4.625
	Oversize	0.75	N/A	0.25	0.437		1/2 - 20		0.5		1.00	N/A	
1-1/2"	Standard	0.75	1.125	0.375	0.5	0.375	1/2 - 20	4.125	0.625	2.125	2.00	0.25	7.00
	Oversize	1.125	1.4	0.5	0.812		3/4 - 16		1.00	2.00	0.5		
2"	Standard	0.75	1.125	0.375	0.5	0.375	1/2 - 20	4.125	0.625	2.125	2.00	0.25	7.00
	Oversize	1.125	1.5	0.5	0.812		3/4 - 16		1.00	2.50	0.5		
2-1/2"	Standard	.75	1.125	0.375	0.5	0.375	1/2 - 20	4.25	0.625	2.25	2.00	0.25	7.35
	Oversize	1.125	1.5	0.5	0.812		3/4 - 16		1.00	3.00	0.5		
3-1/4"	Standard	1.125	1.5	0.5	0.812	0.625	3/4 - 16	4.75	1.00	2.65	2.625	0.25	8.50
	Oversize	1.625	2	0.625	1.125		1 - 14		1.375	3.375	0.375		
4"	Standard	1.125	1.5	0.5	0.812	0.625	3/4 - 16	4.75	1.00	2.625	2.625	0.25	8.5
	Oversize	1.625	2	0.625	1.125		1 - 14		1.375	3.375	0.375		

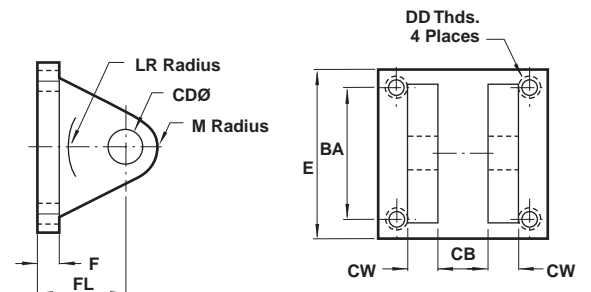
*Note: 1-1/8" bore overall body is 3/8" longer than our standard Series "C" Double Rod End Cylinder.

Double Rod End w/20 (not NFPA) base bar



Bore	F	SB	SS	ST	SU	SW	TS	US	XS
1-1/8"	0.25	0.203	2.25	0.25	0.75	0.25	1.875	2.375	1.75
1-1/2"	0.375	0.437	3.375	0.25	1.125	0.375	2.75	3.5	2.25
2"	0.375	0.437	3.375	0.25	1.125	0.375	3.25	4	2.25
2-1/2"	0.375	0.437	3.5	0.375	1.125	0.375	3.75	4.5	2.25
3-1/4"	0.625	0.563	3.75	0.5	1.25	0.5	4.75	5.75	2.875
4"	0.625	0.563	3.75	0.5	1.25	0.5	5.5	6.5	2.875

NFPA Clevis Bracket Dimensions

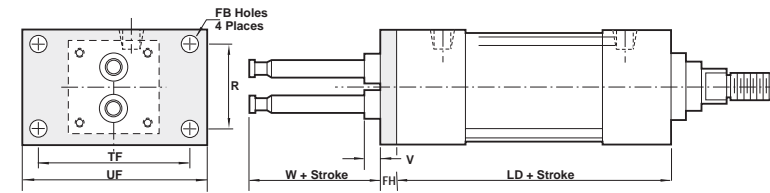


	BA	CB	CD	CW	DD	E	F	FL	LR	M
C-91-03A	1.625	.750	.50	.50	3/8-24	2.50	.375	1.125	.750	.500
C-91-065A	2.562	1.250	.750	.625	1/2-20	3.500	.625	1.875	1.250	.812
C-91-12A	3.250	1.500	1.000	.750	5/8-18	4.500	.750	2.250	1.500	1.000

Series N Actuators

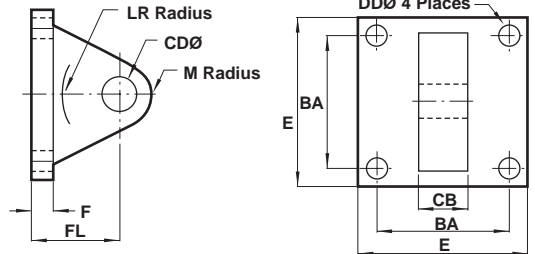
1-1/8" to 4" bore sizes

Double Rod End w/04 (MF1) Front Flange



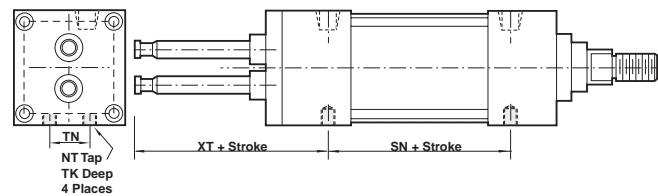
Bore	C	FB	FH	TF	TZ	UF	V	W
1-1/8"	0.625	0.219	0.250	2	1.25	2.5	N/A	1.25
1-1/2"	0.875	0.312	0.375	2.75	1.5	3.75	0.25	1.5
2"	0.75	0.375	0.375	3.375	2	4.125	0.25	1.5
2-1/2"	1	0.375	0.375	3.875	2.5	4.625	0.25	1.75
3-1/4"	0.5	0.437	0.625	4.688	3.25	5.5	0.25	1.75
4"	0.5	0.437	0.625	5.437	4	6.25	0.25	1.75

NFPA Eye Bracket Dimensions



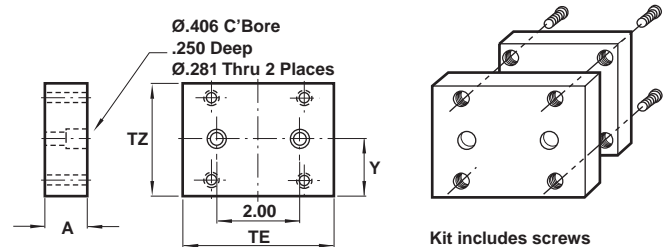
Bore	BA	CB	CD	DD	E	F	FL	LR	M
C-89-03A	1.625	.750	.500	.406	2.500	.375	1.125	.750	.50
C-89-065A	2.562	1.250	.750	.531	3.500	.625	1.875	1.250	.750
C-89-12A	3.250	1.500	1.000	.656	4.500	.750	2.250	1.500	1.000

Double Rod End w/02 (MS4) bottom tap



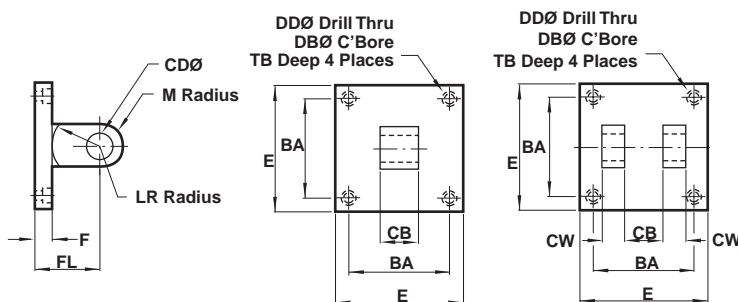
Bore	NT	SN	TK	TN	XT
1-1/8"	10 - 32	1.875	0.25	0.5	2
1-1/2"	1/4 - 20	2.25	0.375	0.625	2.812
2"	5/16 - 18	2.25	0.375	0.875	2.812
2-1/2"	3/8 - 16	2.375	0.625	1.25	3.063
3-1/4"	1/2 - 13	2.625	0.625	1.5	3.437
4"	1/2 - 13	2.625	0.75	2.063	3.437

Modular Adaptor Plate Dimensions



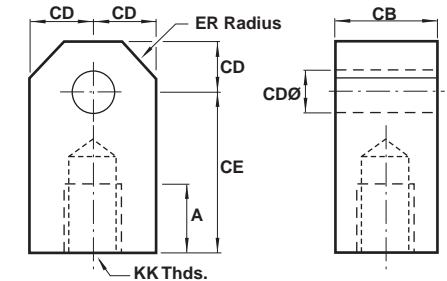
Bore	A	TE	TZ	Y
NB-172-225K (1-1/8")	0.625	3.00	1.25	0.625
NB-172-03K (1-1/2")	0.625	3.00	1.50	0.75
NB-172-04K (2")	0.625	3.00	2.00	1.00
NB-172-05K (2-1/2")	0.625	3.00	2.50	1.25

1-1/8" Bore Eye & Clevis Bracket Dimensions



	BA	CB	CD	CW	DB	DD	E	F	FL	LA	M	TB
W-89-225K Eye	1.125	.375	.375	-	.328	.203	1.500	.500	1.125	.625	.375	.312
W-91-225K Clevis	1.150	.375	.375	.250	.328	.203	1.500	.500	1.125	.625	.375	.312

Rod Eye Dimensions

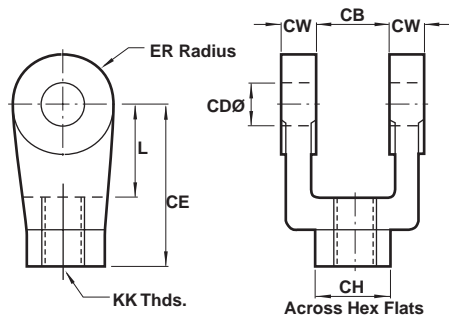


	CB	CD	CE	ER	KK
C-97-03	.750	.500	1.500	.562	1/2-20
C-97-065	1.250	.750	2.062	.937	3/4-16
C-97-12	1.500	1.000	2.812	1.125	1-14

Series N Actuators

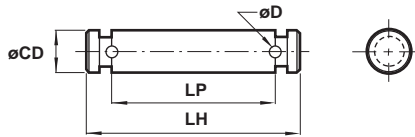
1-1/8" to 4" bore sizes

Rod Clevis Dimensions



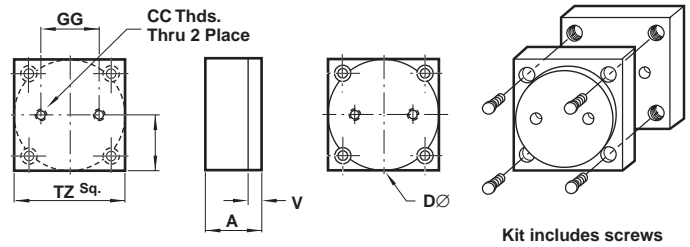
	CB	CD	CE	CH	CW	ER	KK	L
C-92-03	.750	.500	1.500	1.000	.500	.500	1/2-20	.750
C-92-065	1.250	.750	2.375	1.250	.625	.750	3/4-16	1.250
C-92-12	1.500	1.000	3.125	1.500	.750	1.000	1-14	1.500

NFPA Pin Dimensions



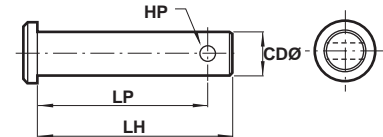
	CD	LH	LP
C-96-03A	.500	2.219	1.875
C-96-065A	.750	3.125	2.750
C-96-12A	1.000	3.750	3.250

Pilot Adaptor Plate Dimensions



Bore	A	CC	D	GG	TZ	V	Y
NB-171-225K (1-1/8)	.625	1/4-20	1.260	.750	1.25	.160	.625
NB-171-03K (1-1/2")	.625	5/16-18	1.575	.860	1.500	.160	.750
NB-171-04K(2")	.625	5/16-18	1.969	1.180	2.000	.200	1.000
NB-171-05K (2-1/2")	.625	3/8-16	2.480	1.500	2.500	.200	1.250
NB-171-065K (3/4")	.875	1/2-13	3.150	1.970	3.250	.200	1.625
NB-171-08K (4")	.875	1/2-13	3.937	2.760	4.000	.200	2.000

Standard Pin Dimensions



	CD	HP	LH	LP
C-96-225	.375	.156	1.250	1.032
C-96-03	.500	.156	2.250	2.093
C-96-065	.750	.156	3.000	2.843
C-96-12	1.000	.203	3.500	3.297