

NEN Series NFPA Aluminum Cylinders



1-1/2" to 4" bore sizes

- Competitively priced
- Magnetic piston standard
- Adjustable cushion standard
- Sleeve nut construction standard
- Stocked strokes



Technical data

Medium:

Filtered compressed air

Operating temperature:

-25°F to 140°F (-5°C to 60°C)

With Viton Seals: -23°F to 300°F

(-5°C to 150°C)

Operating Pressure:

Minimum 7 psi (.5 bar)

Maximum 140 psi (9.7 bar)

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

Rod Diameter: 5/8" diameter piston rod in 1-1/2", 2", 2-1/2" bore

1" diameter piston rod in 3-1/4" and 4" bore

Lubrication: None required

Norgren Air Cylinders are rated for "no lube added" service.

Materials

Head and End Caps:

Die cast aluminum painted for corrosion protection.

Tube: Aluminum alloy, hard coat anodized

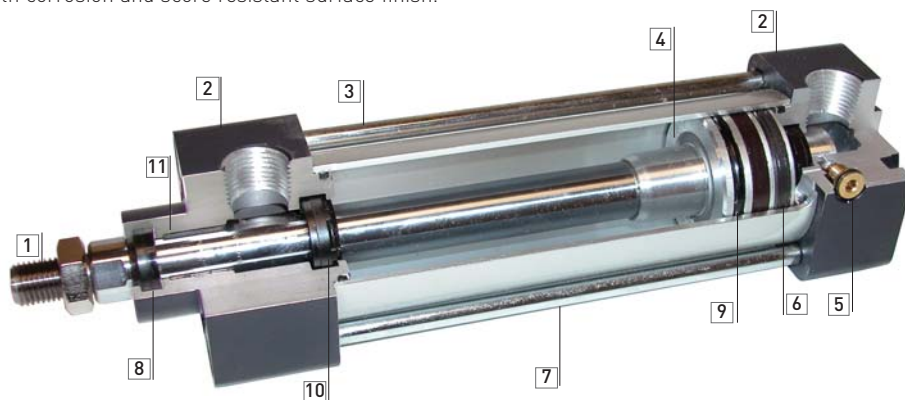
Piston: machined high-strength aluminum casting.

Rod Bearing: clean metal teflon composite

Seals: nitrile rod seal/wiper, nitrile piston seals, nitrile tube end seals

Tie Rods: Nickel plated high-tensile strength steel.

- 1 Piston Rod: Hard chrome plated carbon steel, ground and polished.
- 2 Head Bearing Housing and cap: Die cast aluminum
- 3 Tie-Rods: Nickel plated steel
- 4 Piston: Machined aluminum .
- 5 Captive Cushion Needle Adjustment: Provides safe and precise cushion adjustment.
- 6 Wear Ring: Teflon® material provides supreme wear and excellent bearing support.
- 7 Cylinder Tube: Hard anodized aluminum alloy, with corrosion and score resistant surface finish.
- 8 Piston Rod Wiper/Seal: Abrasion resistant nitrile.
- 9 Piston Seal: Single Nitrile bi-directional piston seal.
- 10 Cushion Seal: Nitrile cushion seal is captured within a precision machined groove allowing for linear and radial float eliminating misalignment.
- 11 Rod Bearing: A composite of Teflon and polyphenylene sulfide and bronze molded to a steel backing provides low friction and excellent linear features.



NEN "Add-a-mount" flexibility

NEN cylinders allow you to add NFPA mounts shown below when you order the cylinder from the factory, or add the mounts later.



NFPA MF1



NFPA MF2



NFPA MP1



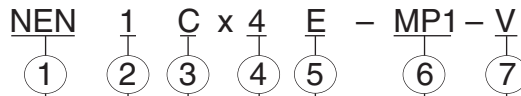
NFPA MP2

NEN Series NFPA Aluminum Cylinders



All Dimensions in Inches (mm)

Cylinder Order Information



Series
NEN

Piston Rod Threads	
Small Male (Solid) (std)	1
Intermediate Thread Male (Solid)	2
Female	3

Bore	Single rod
1-1/2"	C
2.0"	D
2-1/2"	E
3-1/4"	F
4.0"	G

Stroke (whole inches)	
All bores	48" max.*

* Contact factory for strokes longer than 48".

Fraction of Stroke length	
0	Blank
0.125"	C
0.250"	E
0.375"	G
0.500"	J
0.625"	M
0.750"	P
0.875"	S

Additional Options	
Viton® Seals	V
Rod Extension	RX
Non-standard piston rod thread	T
Piston Rod thread extension	TX
Stainless steel piston rod	S
Stainless steel tie rods	SS

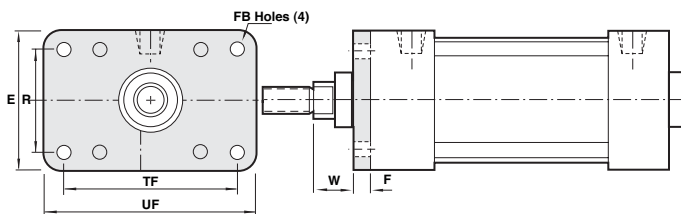
Mounting Options**	
MS4 (standard)	blank
Head Rectangular Flange	MF1
Cap Rectangular Flange	MF2
Detachable Cap Clevis	MP2
Cap Fixed Clevis	MP1
Tie Rod Extended both ends	MX1
Tie Rod Extended Cap	MX2
Tie Rod Extended Head	MX3
Side Lug Mount	MS2

** For factory installed mounts specify mounting option in position 6. If no mount required leave position 6 blank. Mounting kits can be ordered separately. Contact factory for mounting kits, or visit www.norgren.com

Stock Stroke Cylinders

1-1/2" Bore			2.0" Bore			2-1/2" Bore			3-1/4" Bore			4.0" Bore		
Model Number	Cylinder Bore	Stroke	Model Number	Cylinder Bore	Stroke	Model Number	Cylinder Bore	Stroke	Model Number	Cylinder Bore	Stroke	Model Number	Cylinder Bore	Stroke
NEN1C x 1	1-1/2"	1.00	NEN1D x 1	2	1.00	NEN1E x 1	2-1/2"	1.00	NEN1F x 1	3-1/4"	1.00	NEN1G x 1	4	1.00
NEN1C x 2	1-1/2"	2.00	NEN1D x 2	2	2.00	NEN1E x 2	2 1/2"	2.00	NEN1F x 2	3-1/4"	2.00	NEN1G x 2	4	2.00
NEN1C x 3	1-1/2"	3.00	NEN1D x 3	2	3.00	NEN1E x 3	2 1/2"	3.00	NEN1F x 3	3-1/4"	3.00	NEN1G x 3	4	3.00
NEN1C x 4	1-1/2"	4.00	NEN1D x 4	2	4.00	NEN1E x 4	2 1/2"	4.00	NEN1F x 4	3-1/4"	4.00	NEN1G x 4	4	4.00
NEN1C x 5	1-1/2"	5.00	NEN1D x 5	2	5.00	NEN1E x 5	2 1/2"	5.00	NEN1F x 5	3-1/4"	5.00	NEN1G x 5	4	5.00
NEN1C x 6	1-1/2"	6.00	NEN1D x 6	2	6.00	NEN1E x 6	2 1/2"	6.00	NEN1F x 6	3-1/4"	6.00	NEN1G x 6	4	6.00
NEN1C x 8	1-1/2"	8.00	NEN1D x 8	2	8.00	NEN1E x 8	2 1/2"	8.00	NEN1F x 8	3-1/4"	8.00	NEN1G x 8	4	8.00
NEN1C x 10	1-1/2"	10.00	NEN1D x 10	2	10.00	NEN1E x 10	2 1/2"	10.00	NEN1F x 10	3-1/4"	10.00	NEN1G x 10	4	10.00
NEN1C x 12	1-1/2"	12.00	NEN1D x 12	2	12.00	NEN1E x 12	2 1/2"	12.00	NEN1F x 12	3-1/4"	12.00	NEN1G x 12	4	12.00
NEN1C x 14	1-1/2"	14.00	NEN1D x 14	2	14.00	NEN1E x 14	2 1/2"	14.00	NEN1F x 14	3-1/4"	14.00	NEN1G x 14	4	14.00
NEN1C x 16	1-1/2"	16.00	NEN1D x 16	2	16.00	NEN1E x 16	2 1/2"	16.00	NEN1F x 16	3-1/4"	16.00	NEN1G x 16	4	16.00
NEN1C x 18	1-1/2"	18.00	NEN1D x 18	2	18.00	NEN1E x 18	2 1/2"	18.00	NEN1F x 18	3-1/4"	18.00	NEN1G x 18	4	18.00
NEN1C x 20	1-1/2"	20.00	NEN1D x 20	2	20.00	NEN1E x 20	2 1/2"	20.00	NEN1F x 20	3-1/4"	20.00	NEN1G x 20	4	20.00
N/A	-	24.00	NEN1D x 24	2	24.00	NEN1E x 24	2 1/2"	24.00	NEN1F x 24	3-1/4"	24.00	NEN1G x 24	4	24.00

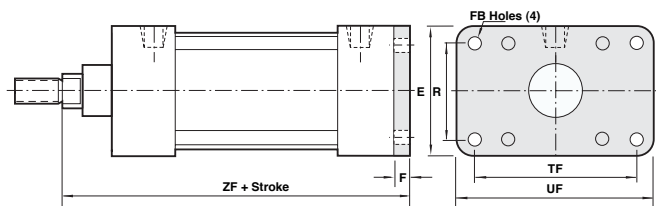
NFPA (MF1) 03 Head Rectangular Flange Mount



Bore	1-1/2"	2"	2-1/2"	3-1/4"	4"
E	2.000	2.500	3.000	3.750	4.500
F	.375	.375	.375	.625	.625
FB	.313	.375	.375	.438	.438
R	1.428	1.838	2.192	2.758	3.323
TF	2.750	3.375	3.875	4.688	5.438
UF	3.375	4.125	4.625	5.500	6.250
W	.625	.625	.625	.750	.750

All dimensions ± .015 unless otherwise noted.

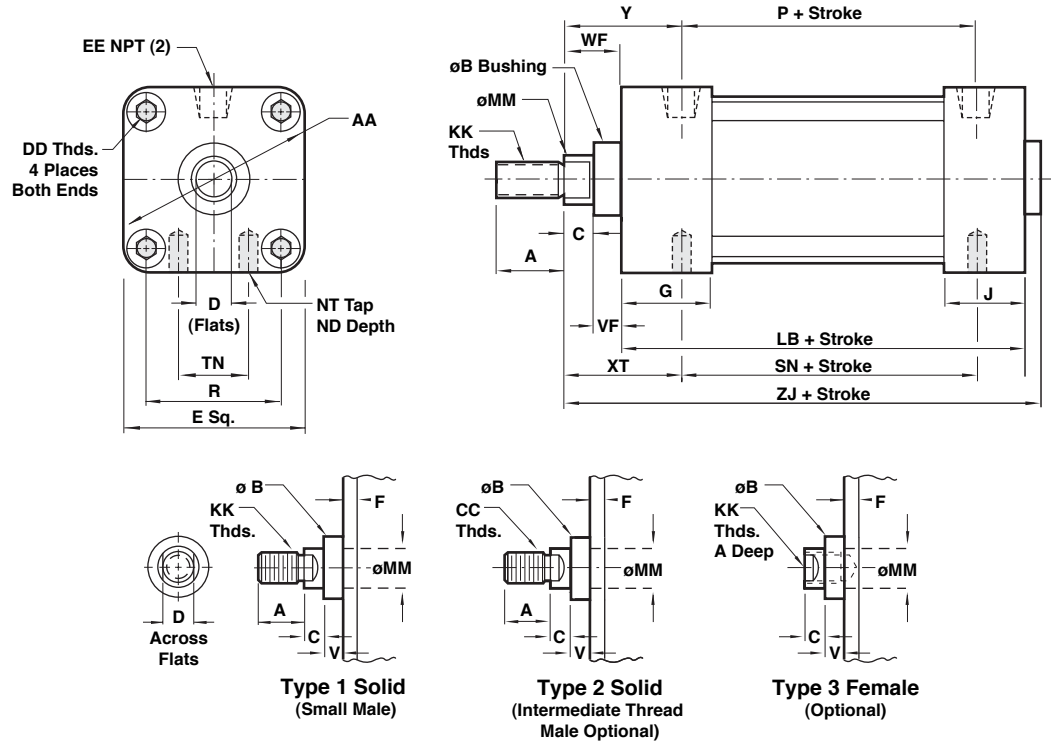
NFPA (MF2) 04 Cap Rectangular Flange Mount



Bore	1-1/2"	2"	2-1/2"	3-1/4"	4"
E	2.000	2.500	3.000	3.750	4.500
F	.375	.375	.375	.625	.625
FB	.313	.375	.375	.438	.438
R	1.428	1.838	2.192	2.758	3.323
TF	2.750	3.375	3.875	4.687	5.438
UF	3.375	4.125	4.625	5.500	6.250
ZF	5.000	5.000	5.125	6.250	6.250

All dimensions ± .015 unless otherwise noted.

NFPA (MS4) Side tap mount standard



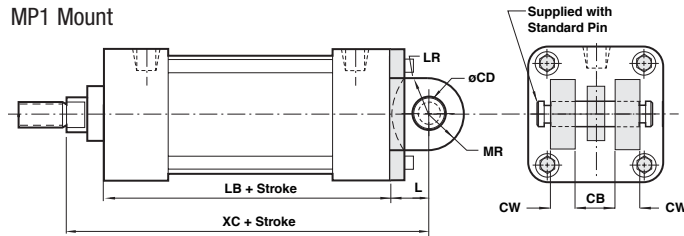
Bore	1-1/2"	2"	2-1/2"	3-1/4"	4"
ø Rod	5/8"	5/8"	5/8"	1"	1"
A	0.750	0.750 (19.05)	0.750 (19.05)	1.125 (28.58)	1.125 (28.58)
AA	2.020	2.600 (66.04)	3.100 (78.74)	3.900 (99.06)	4.700 (119.38)
B	1.124	1.124 (28.55)	1.124 (28.55)	1.500 (38.07)	1.499 (38.07)
BA	1.125 (28.58)	1.125 (28.58)	1.125 (28.58)	1.250 (28.58)	1.250 (28.58)
C	0.375 (9.53)	0.375 (9.53)	0.375 (9.53)	0.500 (12.70)	0.500 (12.70)
CC	1/2-20	1/2-20	1/2-20	7/8-14	7/8-14
D	0.562 (14.27)	0.562 (14.27)	0.562 (14.27)	0.875 (22.23)	0.875 (22.23)
DD	1/4-28	5/16-24	5/16-24	3/8-24	3/8-24
E	2.000 (50.80)	2.500 (63.50)	3.000 (76.20)	3.750 (95.25)	4.500 (114.30)
EE	3/8	3/8	3/8	1/2	1/2
G	1.260 (32.00)	1.260 (32.00)	1.300 (33.02)	1.570 (39.88)	1.570 (39.88)
J	1.010 (25.65)	1.060 (26.92)	1.060 (26.92)	1.180 (29.97)	1.180 (29.97)
KK	7/16-20	7/16-20	7/16-20	3/4-16	3/4-16
LB	3.625 (92.08)	3.625 (92.08)	3.750 (95.25)	4.250 (107.95)	4.250 (107.95)
MM	0.625 (15.88)	0.625 (15.88)	0.625 (15.88)	1.000 (25.40)	1.000 (25.40)
NT	1/4-20	5/16-18	3/8-16	1/2-13	1/2-13
ND	0.281 (7.14)	0.438 (11.13)	0.593 (15.06)	0.625 (15.88)	0.625 (15.88)
P	2.360 (59.94)	2.400 (60.96)	2.480 (62.99)	2.720 (69.09)	2.720 (69.09)
R	1.430 (36.32)	1.840 (46.74)	2.190 (55.63)	2.760 (70.10)	3.320 (84.33)
SN	2.250 (57.15)	2.250 (57.15)	2.375 (60.33)	2.625 (66.68)	2.625 (66.68)
TN	0.625 (15.88)	0.875 (22.23)	1.250 (31.75)	1.500 (38.10)	2.063 (52.40)
VF	0.625 (15.88)	0.625 (15.88)	0.625 (15.88)	0.875 (22.23)	0.875 (22.23)
WF	1.000 (25.40)	1.000 (25.40)	1.000 (25.40)	1.375 (34.93)	1.375 (34.93)
XT	1.938 (49.23)	1.938 (49.23)	1.938 (49.23)	2.438 (61.93)	2.438 (61.93)
Y	1.710 (43.43)	1.710 (43.43)	1.750 (44.45)	2.340 (59.44)	2.340 (59.44)
ZJ	4.750 (120.65)	4.750 (120.65)	4.870 (123.95)	5.820 (147.83)	5.820 (147.83)

NEN Series NFPA Aluminum Cylinders



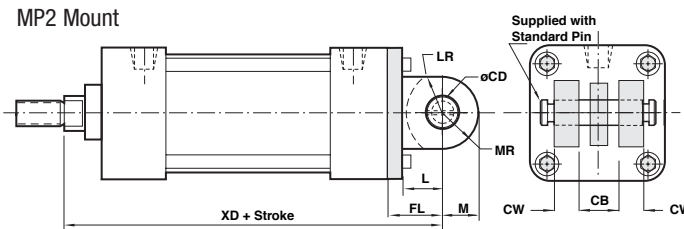
All Dimensions in Inches (mm)

MP1 Mount



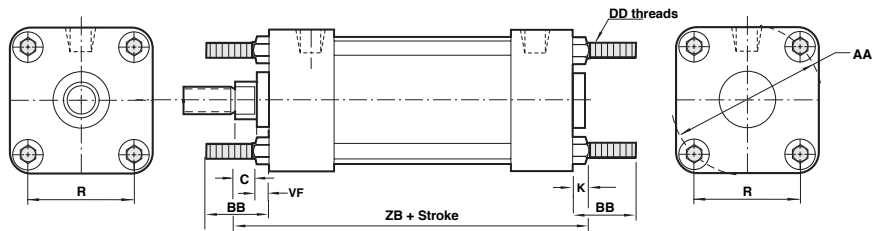
Bore	1-1/2"	2"	2-1/2"	3-1/4"	4"
CB	0.750	0.750	0.750	1.250	1.250
CD	0.500	0.500	0.500	0.750	0.750
CW	0.500	0.500	0.500	0.625	0.625
L	0.750	0.750	0.750	1.250	1.250
LB	3.625	3.625	3.750	4.250	4.250
LR	0.625	0.625	0.625	0.875	0.875
MR	0.625	0.625	0.625	0.875	0.875
XC	5.375	5.375	5.500	6.875	6.875

MP2 Mount



Bore	1-1/2"	2"	2-1/2"	3-1/4"	4"
CB	0.750	0.750	0.750	1.250	1.250
CD	0.500	0.500	0.500	0.750	0.750
CW	0.500	0.500	0.500	0.625	0.625
FL	1.125	1.125	1.125	1.875	1.875
L	0.750	0.750	0.750	1.250	1.250
LR	0.750	0.750	0.750	1.250	1.250
M	0.500	0.500	0.500	0.875	0.750
MR	0.625	0.625	0.625	0.875	0.875
XD	5.750	5.750	5.875	7.500	7.500

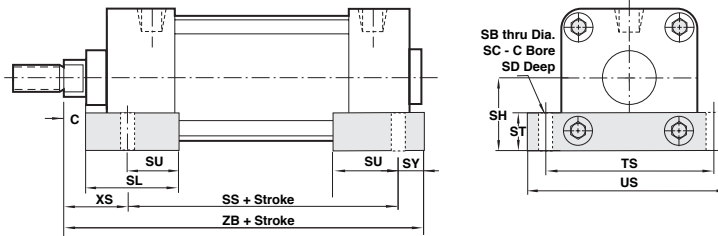
- NFPA (MX1) (4) Extended Tie Rods Both Ends Mount
- NFPA (MX2) Cap Tie Rods Extended Mount
- NFPA (MX3) Head Tie Rods Extended Mount



Bore	1-1/2"	2"	2-1/2"	3-1/4"	4"
AA	2.020	2.600	3.100	3.900	4.700
BB	1.000	1.125	1.125	1.375	1.375
C	0.375	0.375	0.375	0.500	0.500
DD	1/4 - 28	5/16 - 24	5/16 - 24	3/8 - 24	3/8 - 24
K	0.250	0.313	0.313	0.375	0.375
R	1.428	1.838	2.192	2.758	3.323
VF	0.625	0.625	0.625	0.875	0.875
ZB	4.875	4.938	5.063	6.000	6.000

All dimensions ± .015 unless otherwise noted.

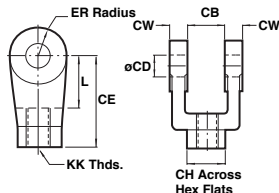
MS2 Mount



Bore	1-1/2"	2"	2-1/2"	3-1/4"	4"
SB	0.438	0.438	0.438	0.563	0.563
SC	0.690	0.690	0.690	0.800	0.800
SD	0.030	0.030	0.030	0.030	0.030
SH	1.000	1.250	1.500	1.875	2.250
SL	1.875	1.875	1.875	2.500	2.500
SY	0.940	0.940	0.940	1.250	1.250
SS	2.875	2.875	3.000	3.250	3.250
ST	0.620	0.620	0.750	1.000	1.000
SU	0.940	0.940	0.940	1.250	1.250
TS	2.750	3.250	3.750	4.750	5.500
US	3.500	4.000	4.500	5.750	6.500
XS	1.375	1.375	1.375	1.875	1.875
ZB	5.190	5.190	5.310	6.380	6.380

NEN Cylinder Accessories and Kits

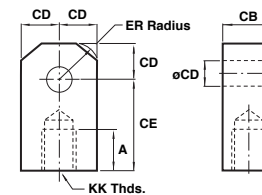
RC (rod clevis)



Kit number	KK	CB	CD	CE	CH	CW	ER	L
NENC-RC	7/16-20	0.750	0.500	1.500	1.000	0.500	0.500	0.750
NENF-RC	3/4-16	1.250	0.750	2.375	1.250	0.625	0.750	1.250

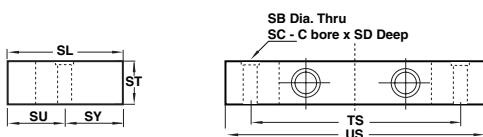
RC and RE rod accessories come complete with pivot pin and retaining clips.

RE (rod eye)



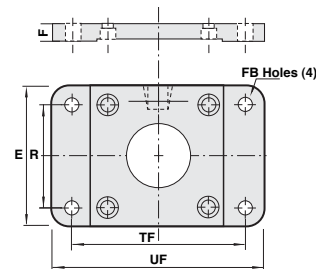
Kit number	KK	A	CB	CD	CE	ER
NENC-RE	7/16-20	0.750	0.750	0.500	1.500	0.563
NENF-RE	3/4-16	1.125	1.250	0.750	2.063	0.875

MS2 Mounting Kit



Kit number	SB	SC	SD	SY	ST	SU	TS	US
MK-NENC-MS2	0.41	0.69	0.03	0.94	0.62	0.94	2.75	3.50
MK-NEND-MS2	0.41	0.69	0.03	0.94	0.62	0.94	3.25	4.00
MK-NENE-MS2	0.41	0.69	0.03	0.94	0.75	0.94	3.75	4.50
MK-NENF-MS2	0.52	0.80	0.03	1.25	1.00	1.25	4.75	5.75
MK-NENG-MS2	0.52	0.80	0.03	1.25	1.00	1.25	5.50	6.50

NFPA MF1 / MF2 Mounting Kit - MK-NEN-MF1



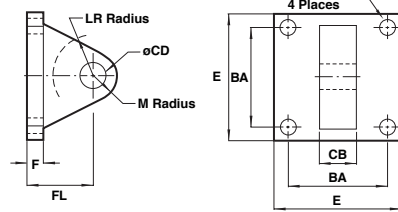
Kit number	UF	TF	FB	E	R	F
MK-NENC-MF1	3-3/8	2-3/4	5/16	2.00	1.43	3/8
MK-NEND-MF1	4-1/8	3-3/8	3/8	2-1/2	1.84	3/8
MK-NENE-MF1	4-5/8	3-7/8	3/8	3.00	2.19	3/8
MK-NENF-MF1	5-1/2	4-11/16	7/16	3-3/4	2.76	5/8
MK-NENG-MF1	6-1/4	5-7/16	7/16	4-1/2	3.32	5/8

NEN Series NFPA Aluminum Cylinders



All Dimensions in Inches (mm)

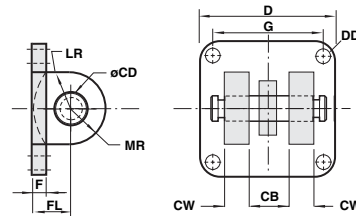
EB (eye bracket)



NFPA Eye Bracket	NENC-EB	NENF-EB
BA	1.625	2.563
CB	0.750	1.250
CD	0.500	0.750
DD	0.406	0.531
E	2.500	3.500
F	0.375	0.625
FL	1.125	1.875
LR	0.750	1.250
M	0.500	0.750

All dimensions ± .015 unless otherwise noted.

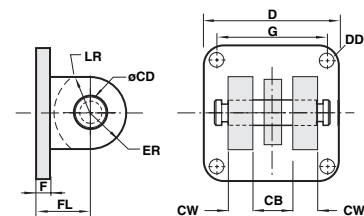
MP1 Mount kit - MK-NEN-MP1



Kit number	CD	FL	F	B	CW	D	MR	G	LR	DD
MK-NENC-MP1	0.502	0.75	0.38	0.76	0.50	2.00	0.62	1.43	0.62	0.28
MK-NEND-MP1	0.502	0.75	0.38	0.76	0.50	2.50	0.62	1.84	0.62	0.34
MK-NENE-MP1	0.502	0.75	0.38	0.76	0.50	3.00	0.62	2.19	0.62	0.34
MK-NENF-MP1	0.752	1.25	0.63	1.26	0.62	3.75	0.87	2.77	0.87	0.41
MK-NENG-MP1	0.752	1.25	0.63	1.26	0.62	4.50	0.87	3.32	0.87	0.41

MP1 and MP2 kits come complete with mounting hardware, pivot pin and retaining clips.

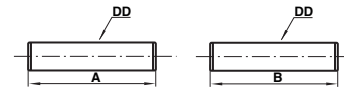
MP2 Mount kit - MK - NEN - MP2



Kit number	CD	FL	F	B	CW	D	ER	G	DD
MK-NENC-MP2	0.502	1.13	0.38	0.76	0.50	2.00	0.62	1.43	0.28
MK-NEND-MP2	0.502	1.13	0.38	0.76	0.50	2.50	0.62	1.84	0.34
MK-NENE-MP2	0.502	1.13	0.38	0.76	0.50	3.00	0.62	2.19	0.34
MK-NENF-MP2	0.752	1.88	0.63	1.26	0.62	3.75	0.87	2.77	0.41
MK-NENG-MP2	0.752	1.88	0.63	1.26	0.62	4.50	0.87	3.32	0.41

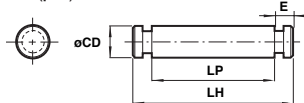
MX1 Mount kit - MK-NEN-MX1

MX2/MX3 Mount kit-MK-NEN-MX2



MX1 Mount Kit-MK-NEN-MX1 Tie Rod extended Both Ends			
Kit number	DD	A	B
MK-NENC-MX1	1/4-28	1.375	1.375
MK-NEND-MX1	5/16-24	1.500	1.500
MK-NENE-MX1	5/16-24	1.500	1.500
MK-NENF-MX1	3/8-24	1.812	1.937
MK-NENG-MX1	3/8-24	1.812	1.937
MX2 Mount Kit-MK-NEN-MX2 Tie Rod Extended Cap End			
Kit number	DD	A	B
MK-NENC-MX2	1/4-28	N/A	1.375
MK-NEND-MX2	5/16-24	N/A	1.500
MK-NENE-MX2	5/16-24	N/A	1.500
MK-NENF-MX2	3/8-24	N/A	1.937
MK-NENG-MX2	3/8-24	N/A	1.937
MX3 Mount Kit-MK-NEN-MX3 Tie Rod Extended Head End			
Kit number	DD	A	B
MK-NENC-MX3	1/4-28	1.375	N/A
MK-NEND-MX3	5/16-24	1.500	N/A
MK-NENE-MX3	5/16-24	1.500	N/A
MK-NENF-MX3	3/8-24	1.812	N/A
MK-NENG-MX3	3/8-24	1.812	N/A

P (pin)



NFPA Pin	NEN-5	NEN-7
CD	0.500	0.750
E	0.109	0.125
LH	2.094	2.875
LP	1.875	2.625

WARNING

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under **Technical Data**.

Before using these products with fluids other than those specified for non-industrial applications, life-support systems, or other applications not within published specifications, consult Norgren.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure mode of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.