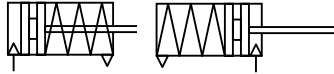


# Series 90000 Compact Actuators

DC/91000/M, DC/93000/M

Single acting

Ø 12 ... 63 mm



One third the basic length of a corresponding ISO/VDMA model

Low friction, long life seal design

Fully non-corrodible specification

Corrosion resistant specification

Non-lube operation

Optional non-rotating piston rod

Standard magnetic piston for full control system versatility

## Technical data

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

DC/91000/M Single acting, non-cushioned, magnetic piston spring return

DC/93000/M Single acting, non-cushioned, magnetic piston spring extend

Operating pressure:

14.5 to 145 psi (1 to 10 bar)

Operating temperature:

23°F\* to 176°F (-5°C to +80°C)

Consult our Technical Service for use below 35°F (+2°C)

Materials

Barrel & end caps: anodized aluminum alloy

Piston rod: stainless steel

(Ø 12 to 40 mm Austenitic, Ø 50 and 63 mm Martensitic)

Seals: polyurethane and/or nitrile rubber



## Standard models

Ø	Piston rod Ø	Port size	Magnetic, standard Spring return	Spring extend	Service kit	Spring return	Magnetic, non-rotating Spring return	Service kit
12	6	10-32	DC/91012/M/*	DC/93012/M/*	-	-	-	-
16	8	10-32	DC/91016/M/*	DC/93016/M/*	-	DC/91016/N2/*	DC/93016/N2/*	-
20	10	10-32	DC/91020/M/*	DC/93020/M/*	-	DC/91020/N2/*	DC/93020/N2/*	-
25	12	10-32	DC/91025/M/*	DC/93025/M/*	-	DC/91025/N2/*	DC/93025/N2/*	-
32	16	1/8 NPT	DC/91032/M/*	DC/93032/M/*	-	DC/91032/N2/*	DC/93032/N2/*	-
40	16	1/8 NPT	DC/91040/M/*	DC/93040/M/*	-	DC/91040/N2/*	DC/93040/N2/*	-
50	20	1/8 NPT	DC/91050/M/*	DC/93050/M/*	QM/92050/00	DC/91050/N2/*	DC/93050/N2/*	QM/92050/N2/00
63	20	1/4 NPT	DC/91063/M/*	DC/93063/M/*	QM/92063/00	DC/91063/N2/*	DC/93063/N2/*	QM/92063/N2/00

\* Insert stroke length in inches.

Ø	DC/91000/M Theoretical forces lbs (nm) at 87 psi (6 bar)		DC/93000/M Theoretical forces lbs (nm) at 87 psi (6 bar)	
	Outstroke	Instroke	Outstroke	Instroke
12	12.8 (57)	1.57 (7)	9.0 (40)	1.57 (7)
16	23.2 (103)	2.81 (12.5)	16.2 (72)	2.81 (12.5)
20	36.2 (161)	3.26 (14.5)	26.8 (119)	3.26 (14.5)
25	59.3 (264)	4.50 (20)	44.3 (197)	4.50 (20)
32	97.1 (432)	7.19 (32)	70.0 (311)	7.19 (32)
40	154.4 (687)	9.89 (44)	127.3 (566)	9.89 (44)
50	245.9 (1094)	12.70 (56.5)	203.7 (906)	12.70 (56.5)
63	397.9 (1770)	16.75 (74.5)	355.6 (1582)	16.75 (74.5)

F1 = Return force of spring (N).

## Options selector

DC/9\*\*\*\*\*/\*\*/\*\*

Cylinder	Substitute
NPT ports, inch threads & stroke	C
ISO G ports, metric threads & stroke	M

Operating	Substitute
Single acting spring return	1
Single acting spring extend	3

Cylinder diameters (mm)	Substitute
12	012
16	016
20	020
25	025
32	032
40	040
50	050
63	063

Stroke length (inch for NPT, mm for ISO G)	
Bore	Max Stroke
Ø 1/2", 5/8"	3/8"
Ø 3/4", 1", 1-1/4", 1-1/2"	2"
Ø 2", 2-1/2"	
Ø 12, 16 mm	10 mm
Ø 20, 25, 32, 40, 50, 63 mm	50 mm

Options	Substitute
Magnetic piston	M
Non-rotating piston rod	N2

Note: Disregard option positions not used. For combinations of cylinder variants consult our Technical Service.

# Series 90000 Compact Actuators

DC/91000/M, DC/93000/M

Single acting

Ø 12 ... 63 mm

## Mountings\*

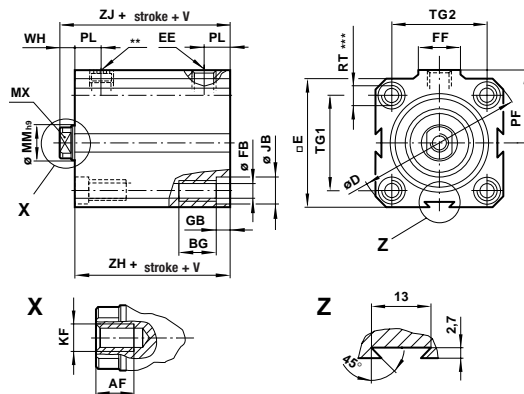
Ø	B & G Flange Mount	C Foot Bars	F Rod Clevis	Rod Jam Nut	Male Rod Stud**	Adapter**	Assembly Kit - Back to Back cylinders
12	QC/90012/22	QC/90012/21	RC-12	C-76-36	C-653-24-00J	–	QC/92012/55
16	QC/90016/22	QC/90016/21	RC-16	C-76-37	C-653-04-00M	–	QC/92016/55
20	QC/90020/22	QC/90020/21	RC-20	C-76-225	C-653-25-00P	–	QC/92020/55
25	QC/90025/22	QC/90025/21	RC-25	C-76-03A	C-653-08-01A	–	QC/92025/55
32	QC/90032/22	QC/90032/21	RC-32	C-76-04A	C-653-11-01A	–	QC/92032/55
40	QC/90040/22	QC/90040/21	RC-32	C-76-04A	C-653-11-01A	–	QC/92040/55
50	QC/90050/22	QC/90050/21	RC-50	–	C-653-14-01E	M/P71470/1	QC/92050/55
63	QC/90063/22	QC/90063/21	RC-63	–	C-653-16-01P	M/P71470/2	QC/92063/55

\*NPT. For additional mounting options go to the Norgren web link.

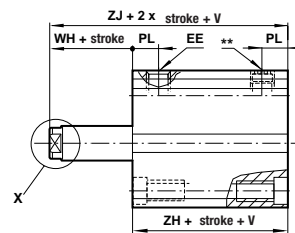
\*\*For attaching F mounting to female piston rod thread.

## Standard cylinders

DC/91000/M (spring return)



DC/93000/M (spring extend)



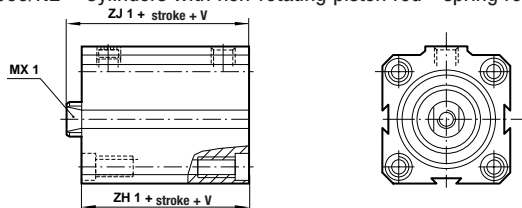
\*\* Port thread with inserted filter, do not obstruct

\*\*\* Only the 4 front holes are tapped on stroke lengths of less than:

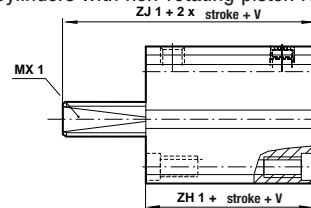
Ø 25 and 32 mm: 5 mm, Ø 40 and 63 mm: 15 mm (.../N2: 5 mm), Ø 50 mm: 10 mm

Note: Ø 12 to 20 mm feature only two side dovetails.

DC/91000/N2 – Cylinders with non-rotating piston rod - spring return



DC/93000/N2 – Cylinders with non-rotating piston rod - spring extend



Ø	AF	BG	Ø D	E	EE	Ø FB	FF	GB	Ø JB	KF	Ø MM (h9)	MX (A/F)	MX1 (A/F)	PF
12	0.24 (6)	0.35 (9)	1.28 (32.5)	0.98 (25)	10-32	0.13 (3.3)	0.39 (10)	0.14 (3.5)	0.24 (6)	4-40 (M3)	0.24 (6)	0.20 (5)	–	0.59 (15)
16	0.28 (7)	0.35 (9)	1.44 (36.5)	1.10 (28)	10-32	0.13 (3.3)	0.39 (10)	0.14 (3.5)	0.24 (6)	8-32 (M4)	0.31 (8)	0.24 (6)	0.24 (6)	0.67 (17)
20	0.31 (8)	0.35 (9)	1.63 (41.5)	1.26 (32)	10-32	0.13 (3.3)	0.39 (10)	0.14 (3.5)	0.24 (6)	10-32 (M5)	0.39 (10)	0.31 (8)	0.31 (8)	0.77 (19.5)
25	0.35 (9)	0.47 (12)	1.89 (48)	1.46 (37)	10-32	0.17 (4.2)	0.39 (10)	0.18 (4.5)	0.30 (7.5)	1/4-28 (M6)	0.47 (12)	0.39 (10)	0.39 (10)	0.87 (22)
32	0.47 (12)	0.47 (12)	2.28 (58)	1.77 (45)	1/8 NPT	0.17 (4.2)	0.71 (18)	0.18 (4.5)	0.30 (7.5)	5/16-24 (M8)	0.63 (16)	0.51 (13)	0.51 (13)	1.08 (27.5)
40	0.47 (12)	0.63 (16)	2.81 (71.5)	2.17 (55)	1/8 NPT	0.27 (6.8)	0.71 (18)	0.26 (6.5)	0.41 (10.5)	5/16-24 (M8)	0.63 (16)	0.51 (13)	0.51 (13)	1.24 (31.5)
50	0.55 (14)	0.63 (16)	3.19 (81)	2.48 (63)	1/8 NPT	0.27 (6.8)	0.71 (18)	0.26 (6.5)	0.41 (10.5)	3/8-24 (M10)	0.79 (20)	0.67 (17)	0.63 (16)	1.46 (37)
63	0.63 (16)	0.79 (20)	4.09 (104)	3.15 (80)	1/4 NPT	0.33 (8.5)	0.87 (22)	0.33 (8.5)	0.53 (13.5)	7/16-20 (M12)	0.79 (20)	0.67 (17)	0.63 (16)	1.89 (48)
V (strokes)														
Ø	PL	RT	TG 1	TG 2	0 ... 25 mm	26 ... 50 mm	WH	ZH	ZH 1	ZJ	ZJ 1	lb (kg)	lb (kg)	
					0 mm	5 mm						0 mm	5 mm	
12	0.28 (7)	8-32 (M4)	0.67 (17)	0.51 (13)	0.55 (14)	–	0.18 (4.5)	0.94 (24)	–	1.12 (28.5)	–	0.15 (0.07)	0.04 (0.02)	
16	0.30 (7.5)	8-32 (M4)	0.79 (20)	0.79 (20)	0.59 (15)	–	0.22 (5.5)	0.96 (24.5)	1.36 (34.5)	1.18 (30)	1.57 (40)	0.20 (0.09)	0.04 (0.02)	
20	0.30 (7.5)	8-32 (M4)	0.91 (23)	0.91 (23)	0.67 (17)	1.34 (34)	0.24 (6)	1.02 (26)	1.42 (36)	1.26 (32)	1.65 (42)	0.26 (0.12)	0.04 (0.02)	
25	0.31 (8)	10-32 (M5)	1.06 (27)	1.06 (27)	0.71 (18)	1.42 (36)	0.26 (6.5)	1.12 (28.5)	1.52 (38.5)	1.38 (35)	1.77 (45)	0.37 (0.17)	0.07 (0.03)	
32	0.35 (9)	10-32 (M5)	1.30 (33)	1.30 (33)	0.75 (19)	1.50 (38)	0.26 (6.5)	1.14 (29)	1.54 (39)	1.40 (35.5)	1.79 (45.5)	0.62 (0.28)	0.11 (0.05)	
40	0.39 (10)	5/16-24 (M8)	1.61 (41)	1.61 (41)	0.79 (20)	1.57 (40)	0.26 (6.5)	1.24 (31.5)	1.63 (41.5)	1.50 (38)	1.89 (48)	0.97 (0.44)	0.13 (0.06)	
50	0.41 (10.5)	5/16-24 (M8)	1.89 (48)	1.89 (48)	1.18 (30)	2.36 (60)	0.31 (8)	1.38 (35)	1.77 (45)	1.69 (43)	2.09 (53)	1.10 (0.50)	0.18 (0.08)	
63	0.51 (13)	3/8-24 (M10)	2.40 (61)	2.40 (61)	1.18 (30)	2.36 (60)	0.31 (8)	1.67 (42.5)	2.07 (52.5)	2.00 (50.5)	2.38 (60.5)	1.98 (0.90)	0.24 (0.11)	

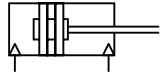
Dimensions in inch (mm)

# Series 92000 Compact Actuators

DC/92000/M

Double acting

Ø 12 ... 100 mm



- One third the basic length of a corresponding ISO/VDMA model
- Low friction, long life seal design
- Fully non-corrodible specification
- Corrosion resistant specification
- Non-lube operation
- Optional non-rotating or guided piston rod
- Standard magnetic piston for full control system versatility

**Technical data**

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

Double acting, magnetic piston buffer cushioning

Operating pressure:

14.5 to 145 psi (1 to 10 bar)

Operating temperature:

23°F\* to 176°F (-5°C to +80°C)  
Consult our Technical Service for use below 35°F (+2°C)

**Materials**

Barrel & end caps: anodized aluminum alloy

Piston rod: stainless steel

(Ø 12 to 40 mm Austenitic, Ø 50 to 100 mm Martensitic)

Seals: polyurethane and/or nitrile rubber

**Standard models**

Ø	Piston rod Ø	Port size	Magnetic Standard	Magnetic Guided	Service kit	Magnetic Non-rotating	Service kit
12	6	10-32	DC/92012/M/*	–	–	–	–
16	8	10-32	DC/92016/M/*	DC/92016/N4/*	–	DC/92016/N2/*	–
20	10	10-32	DC/92020/M/*	DC/92020/N4/*	–	DC/92020/N2/*	–
25	12	10-32	DC/92025/M/*	DC/92025/N4/*	–	DC/92025/N2/*	–
32	16	1/8 NPT	DC/92032/M/*	DC/92032/N4/*	–	DC/92032/N2/*	–
40	16	1/8 NPT	DC/92040/M/*	DC/92040/N4/*	–	DC/92040/N2/*	–
50	20	1/8 NPT	DC/92050/M/*	DC/92050/N4/*	QM/92050/00	DC/92050/N2/*	QM/92050/N2/00
63	20	1/4 NPT	DC/92063/M/*	DC/92063/N4/*	QM/92063/00	DC/92063/N2/*	QM/92063/N2/00
80	25	1/4 NPT	DC/92080/M/*	DC/92080/N4/*	QM/92080/00	DC/92080/N2/*	QM/92080/N2/00
100	25	1/4 NPT	DC/92100/M/*	DC/92100/N4/*	QM/92100/00	DC/92100/N2/*	QM/92100/N2/00

\*Insert stroke length in inches.

**Options selector**

★DC/92★ ★★/★ ★/★ ★★

Special variants #	Substitute
Heat resistant seals, 150°C max.	T

#Ø 32 to 100 mm bore.

Cylinder	Substitute
NPT ports, inch threads & stroke	C
ISO G ports, metric threads & stroke	M

Operating	Substitute
Double acting	2

Cylinder diameters (mm)	Substitute
12	012
16	016
20	020
25	025
32	032
40	040
50	050
63	063
80	080
100	100

Stroke length (inch for NPT, mm for ISO G)	Max Stroke
Ø 1/2"	2"
Ø 5/8", 3/4", 1"	8"
Ø 1-1/4", 1-1/2"	10"
Ø 2", 2-1/2", 3-1/8", 4"	12"
Ø 12 mm	50 mm
Ø 16, 20, 25 mm	200 mm
Ø 32, 40 mm	250 mm
Ø 50, 63, 80, 100 mm	300 mm

Options (magnetic piston)	Substitute
Standard	M
Non rotating piston rod	N2
Guided piston rod	N4
Double ended piston rod	JM

Note: Disregard option positions not used.  
For combinations of cylinder options consult our Technical Service.

# Series 92000 Compact Actuators

DC/92000/M

Double acting

Ø 12 ... 100 mm

## Mountings\*

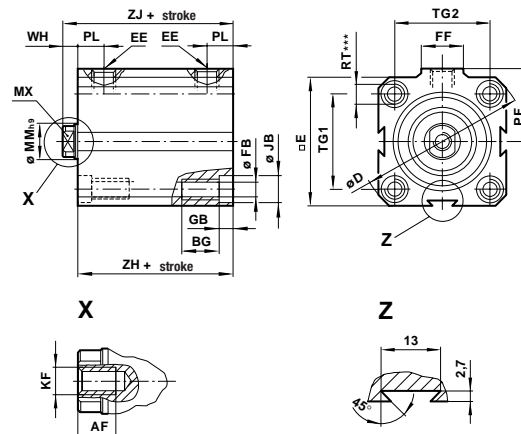
Ø	B & G	C	F	Nut	Stud**	Adapter**	Assembly kit
12	QC/90012/22	QC/90012/21	RC-12	C-76-36	C-653-24-00J	–	QC/92012/55
16	QC/90016/22	QC/90016/21	RC-16	C-76-37	C-653-04-00M	–	QC/92016/55
20	QC/90020/22	QC/90020/21	RC-20	C-76-225	C-653-25-00P	–	QC/92020/55
25	QC/90025/22	QC/90025/21	RC-25	C-76-03A	C-653-08-01A	–	QC/92025/55
32	QC/90032/22	QC/90032/21	RC-32	C-76-04A	C-653-11-01A	–	QC/92032/55
40	QC/90040/22	QC/90040/21	RC-32	C-76-04A	C-653-11-01A	–	QC/92040/55
50	QC/90050/22	QC/90050/21	RC-50	C-76-05A	C-653-14-01E	M/P71470/1	QC/92050/55
63	QC/90063/22	QC/90063/21	RC-63	C-76-065A	C-653-16-01P	M/P71470/2	QC/92063/55
80	QM/90080/22	QM/90080/21	RC-80	C-76-12A	C-653-18-01J	M/P71470/3	QM/92080/55
100	QM/90100/22	QM/90100/21	RC-80	C-76-12A	C-653-18-01J	M/P71470/3	QM/92100/55

\*NPT. For additional mounting options go to the Norgren web link.

\*\*For attaching F mounting to female piston rod thread.

## Standard cylinders

DC/92000/M



\*\*\* Only the 4 front holes are tapped on stroke lengths of less than:  
 Ø 25 and 32 mm: 5 mm, Ø 40 and 63 mm: 15 mm (.../N2: 5 mm),  
 Ø 50 and 80 mm: 10 mm, Ø 100 mm: 25 mm (.../N2: 15 mm).  
 Note: Ø 12 to 20 mm feature only two side dovetails.

Ø	AF	BG	Ø D	E	EE	Ø FB	FF	GB	Ø JB	KF	Ø MM (h9)	MX (AF)
12	0.24 (6)	0.35 (9)	1.28 (32.5)	0.98 (25)	10-32 (M5)	0.13 (3.3)	0.39 (10)	0.14 (3.5)	0.24 (6)	4-40 (M3)	0.24 (6)	0.20 (5)
16	0.28 (7)	0.35 (9)	1.44 (36.5)	1.10 (28)	10-32 (M5)	0.13 (3.3)	0.39 (10)	0.14 (3.5)	0.24 (6)	8-32 (M4)	0.31 (8)	0.24 (6)
20	0.31 (8)	0.35 (9)	1.63 (41.5)	1.26 (32)	10-32 (M5)	0.13 (3.3)	0.39 (10)	0.14 (3.5)	0.24 (6)	10-32 (M5)	0.39 (10)	0.31 (8)
25	0.35 (9)	0.47 (12)	1.89 (48)	1.46 (37)	10-32 (M5)	0.17 (4.2)	0.39 (10)	0.18 (4.5)	0.30 (7.5)	1/4-28 (M6)	0.47 (12)	0.39 (10)
32	0.47 (12)	0.47 (12)	2.28 (58)	1.77 (45)	1/8 NPT (G 1/8)	0.17 (4.2)	0.71 (18)	0.18 (4.5)	0.30 (7.5)	5/16-24 (M8)	0.63 (16)	0.51 (13)
40	0.47 (12)	0.63 (16)	2.81 (71.5)	2.17 (55)	1/8 NPT (G 1/8)	0.27 (6.8)	0.71 (18)	0.26 (6.5)	0.41 (10.5)	5/16-24 (M8)	0.63 (16)	0.51 (13)
50	0.55 (14)	0.63 (16)	3.19 (81)	2.48 (63)	1/8 NPT (G 1/8)	0.27 (6.8)	0.71 (18)	0.26 (6.5)	0.41 (10.5)	3/8-24 (M10)	0.79 (20)	0.67 (17)
63	0.63 (16)	0.79 (20)	4.09 (104)	3.15 (80)	1/4 NPT (G 1/8)	0.33 (8.5)	0.87 (22)	0.33 (8.5)	0.53 (13.5)	7/16-20 (M12)	0.79 (20)	0.67 (17)
80	0.87 (22)	0.79 (20)	4.72 (120)	3.70 (94)	1/4 NPT (G 1/8)	0.33 (8.5)	0.87 (22)	0.33 (8.5)	0.53 (13.5)	1/2-20 (M16)	0.98 (25)	0.87 (22)
100	0.87 (22)	0.98 (25)	5.85 (148.5)	4.59 (116.5)	1/4 NPT (G 1/8)	0.40 (10.2)	0.87 (22)	0.41 (10.5)	0.65 (16.5)	1/2-20 (M16)	0.98 (25)	0.87 (22)
Ø	MX1 (AF)	PF	PL	RT	TG1	TG2	WH	ZH	ZJ	lb (kg) 0 mm	lb (kg) 2.5 mm	
12	-	0.59 (15)	0.28 (7)	8-32 (M4)	0.67 (17)	0.51 (13)	0.18 (4.5)	0.94 (24)	1.12 (28.5)	0.13 (0.06)	0.09 (0.04)	
16	0.24 (6)	0.67 (17)	0.30 (7.5)	8-32 (M4)	0.79 (20)	0.79 (20)	0.22 (5.5)	0.96 (24.5)	1.18 (30)	0.18 (0.08)	0.09 (0.04)	
20	0.31 (8)	0.77 (19.5)	0.30 (7.5)	8-32 (M4)	0.91 (23)	0.91 (23)	0.24 (6)	1.02 (26)	1.26 (32)	0.22 (0.10)	0.13 (0.06)	
25	0.39 (10)	0.87 (22)	0.31 (8)	10-32 (M5)	1.06 (27)	1.06 (27)	0.26 (6.5)	1.12 (28.5)	1.38 (35)	0.33 (0.15)	0.15 (0.07)	
32	0.51 (13)	1.08 (27.5)	0.35 (9)	10-32 (M5)	1.30 (33)	1.30 (33)	0.26 (6.5)	1.14 (29)	1.40 (35.5)	0.55 (0.25)	0.26 (0.12)	
40	0.51 (13)	1.24 (31.5)	0.39 (10)	5/16-24 (M8)	1.61 (41)	1.61 (41)	0.26 (6.5)	1.24 (31.5)	1.50 (38)	0.84 (0.38)	0.33 (0.15)	
50	0.63 (16)	1.46 (37)	0.41 (10.5)	5/16-24 (M8)	1.89 (48)	1.89 (48)	0.31 (8)	1.38 (35)	1.69 (43)	0.99 (0.45)	0.40 (0.18)	
63	0.63 (16)	1.89 (48)	0.51 (13)	3/8-24 (M10)	2.40 (61)	2.40 (61)	0.31 (8)	1.67 (42.5)	1.98 (50.5)	1.81 (0.82)	0.57 (0.26)	
80	0.83 (21)	2.24 (57)	0.57 (14.5)	3/8-24 (M10)	2.87 (73)	2.87 (73)	0.35 (9)	1.85 (47)	2.20 (56)	2.65 (1.20)	0.73 (0.33)	
100	0.83 (21)	2.64 (67)	0.63 (16)	7/16-20 (M12)	3.56 (90.5)	3.56 (90.5)	0.39 (10)	1.91 (48.5)	2.30 (58.5)	4.03 (1.83)	0.93 (0.42)	

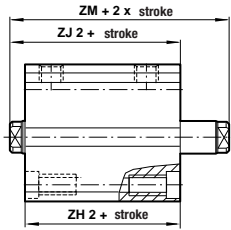
Dimensions in inch (mm) Long Stroke versions (columns ZH and ZJ), > 2" (>50mm), incorporate a longer rod bearing which increases the overall body by .394" (10mm).

# Series 92000 compact actuators

## DC/92000/M

### Double acting

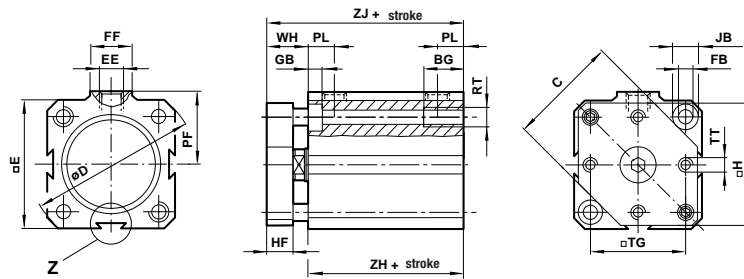
DC/92000/JM – Cylinders with double ended piston rod



Ø	ZH2	ZJ2	ZM
16	1.16 (29.5)	1.38 (35)	1.61 (41)
20	1.24 (31.5)	1.48 (37.5)	1.73 (44)
25	1.36 (34.5)	1.61 (41)	1.89 (48)
32	1.44 (36.5)	1.69 (43)	1.97 (50)
40	1.56 (39.5)	1.81 (46)	2.09 (53)
50	1.65 (42)	1.97 (50)	2.32 (59)
63	2.05 (52)	2.36 (60)	2.72 (69)
80	2.20 (56)	2.56 (65)	2.91 (74)
100	2.28 (58)	2.68 (68)	3.07 (78)

Dimensions in inch (mm)

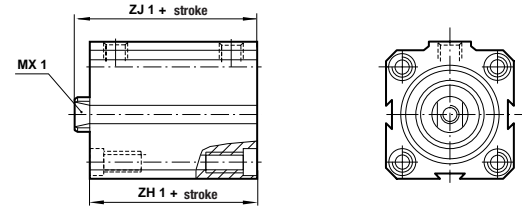
DC/92000/N4 – Cylinders with guided piston rod



Ø	BG	C	Ø D	E	EE	Ø FB	FF	GB	H	HF	Ø JB	PF	PL	RT	TG	TT	WH	ZH	ZJ
16	0.35 (9)	0.83 (21)	1.44 (36.5)	1.10 (28)	10-32 (M5)	0.13 (3.3)	0.39 (10)	0.14 (3.5)	1.02 (26.5)	0.24 (6)	0.24 (6)	0.67 (17)	0.30 (7.5)	8-32 (M4)	0.79 (20)	4-40 (M3)	0.45 (11.5)	0.96 (24.5)	1.42 (36)
20	0.35 (9)	0.98 (25)	1.63 (41.5)	1.26 (32)	10-32 (M5)	0.13 (3.3)	0.39 (10)	0.14 (3.5)	1.18 (30)	0.31 (8)	0.24 (6)	0.77 (19.5)	0.30 (7.5)	8-32 (M4)	0.91 (23)	4-40 (M3)	0.55 (14)	1.02 (26)	1.57 (40)
25	0.47 (12)	1.16 (29.5)	1.89 (48)	1.46 (37)	10-32 (M5)	0.17 (4.2)	0.39 (10)	0.18 (4.5)	1.38 (35)	0.31 (8)	0.30 (7.5)	0.87 (22)	0.31 (8)	10-32 (M5)	1.06 (27)	8-32 (M4)	0.57 (14.5)	1.12 (28.5)	1.69 (43)
32	0.47 (12)	1.50 (38)	2.28 (58)	1.77 (45)	1/8 NPT (G1/8)	0.17 (4.2)	0.71 (18)	0.18 (4.5)	1.69 (43)	0.39 (10)	0.30 (7.5)	1.08 (27.5)	0.35 (9)	10-32 (M5)	1.30 (33)	8-32 (M4)	0.65 (16.5)	1.14 (29)	1.79 (45.5)
40	0.63 (16)	1.83 (46.5)	2.81 (71.5)	2.17 (55)	1/8 NPT (G1/8)	0.27 (6.8)	0.71 (18)	0.26 (6.5)	2.05 (52)	0.39 (10)	0.41 (10.5)	1.24 (31.5)	0.39 (10)	5/16-24 (M8)	1.61 (41)	10-32 (M5)	0.65 (16.5)	1.24 (31.5)	1.89 (48)
50	0.63 (16)	2.22 (56.5)	3.19 (81)	2.48 (63)	1/8 NPT (G1/8)	0.27 (6.8)	0.71 (18)	0.26 (6.5)	2.36 (60)	0.47 (12)	0.41 (10.5)	1.46 (37)	0.41 (10.5)	5/16-24 (M8)	1.89 (48)	1/4-28 (M6)	0.79 (20)	1.38 (35)	2.17 (55)
63	0.79 (20)	2.80 (71)	4.09 (104)	3.15 (80)	1/4 NPT (G1/4)	0.33 (8.5)	0.87 (22)	0.33 (8.5)	2.99 (76)	0.47 (12)	0.53 (13.5)	1.89 (48)	0.51 (13)	3/8-24 (M10)	2.40 (61)	5/16-24 (M8)	0.79 (20)	1.67 (42.5)	2.46 (62.5)
80	0.79 (20)	3.50 (89)	4.72 (120)	3.70 (94)	1/4 NPT (G1/4)	0.33 (8.5)	0.87 (22)	0.33 (8.5)	3.54 (90)	0.63 (16)	0.53 (13.5)	2.24 (57)	0.57 (14.5)	3/8-24 (M10)	2.87 (73)	3/8-24 (M10)	0.98 (25)	1.85 (47)	2.83 (72)
100	0.98 (25)	4.33 (110)	5.85 (148.5)	4.59 (116.5)	1/4 NPT (G1/4)	0.40 (10.2)	0.87 (22)	0.41 (10.5)	4.45 (113)	0.79 (20)	0.65 (16.5)	2.64 (67)	0.63 (16)	7/16-20 (M12)	3.56 (90.5)	7/16-20 (M12)	1.18 (30)	1.91 (48.5)	3.09 (78.5)

Dimensions in inch (mm) Long Stroke versions (columns ZH and ZJ), > 2" (>50mm), incorporate a longer rod bearing which increases the overall body by .394" (10mm).

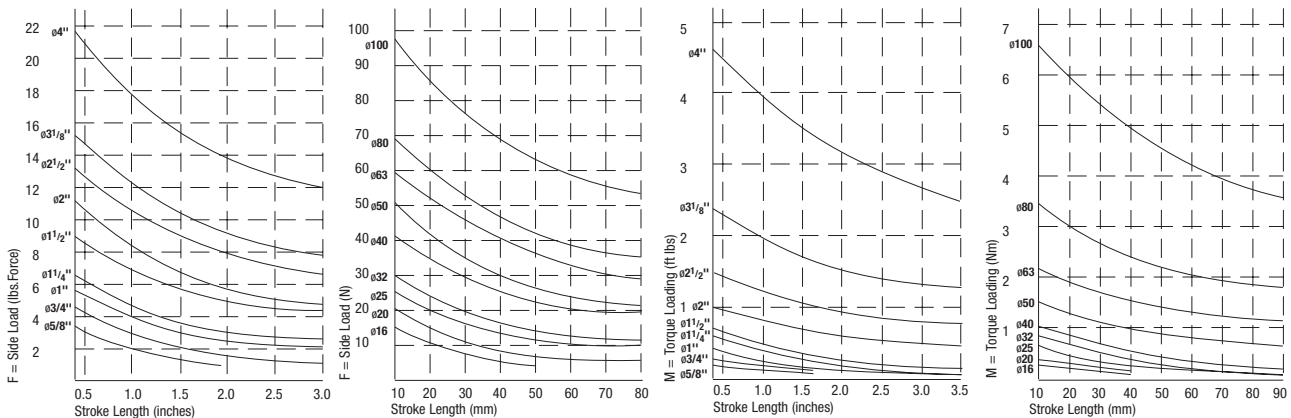
DC/92000/N2 – Cylinders with non-rotating piston rod



Ø	MX1 (A/F)	ZH1	ZJ1	Max. Torque inch lb (Nm)
16	0.24 (6)	1.36 (34.5)	1.57 (40)	1.33 (0.15)
20	0.31 (8)	1.42 (36)	1.65 (42)	2.21 (0.25)
25	0.39 (10)	1.50 (38)	1.77 (45)	3.54 (0.40)
32	0.51 (13)	1.54 (39)	1.79 (45.5)	6.64 (0.75)
40	0.51 (13)	1.63 (41.5)	1.89 (48)	6.64 (0.75)
50	0.63 (16)	1.77 (45)	2.09 (53)	13.28 (1.50)
63	0.63 (16)	2.07 (52.5)	2.38 (60.5)	13.28 (1.50)
80	0.83 (21)	2.24 (57)	2.60 (66)	22.13 (2.50)
100	0.83 (21)	2.30 (58.5)	2.70 (68.5)	22.13 (2.50)

Dimensions in inch (mm)

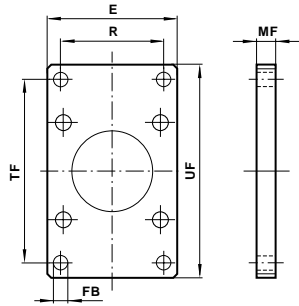
### External non-rotating guidance DC/92000/N4 inch, DM/92000/N4 metric – Permissible load and torque



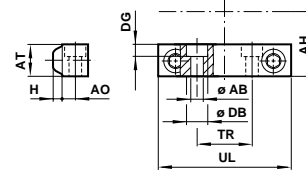
# Series 90000 accessories

For DC/91000/M, DC/92000/M, DC/93000/M

Front flange – G  
Rear flange – B  
QC/900\*\*/22 (inch)  
QM/900\*\*/22 (metric)  
\*\* insert bore size



Foot – C  
QC/900\*\*/21 (inch)  
QM/900\*\*/21 (metric)  
\*\* insert bore size



Ø	E	R	Ø FB	MF	TF	UF	lb (kg)
12	1.02 (26)	0.71 (18)	0.14 (4)	0.20 (5)	1.50 (38)	1.81 (46)	0.04 (0.02)
16	1.18 (30)	0.87 (22)	0.14 (4)	0.20 (5)	1.65 (42)	1.97 (50)	0.04 (0.02)
20	1.30 (33)	0.98 (25)	0.14 (4)	0.20 (5)	1.89 (48)	2.20 (56)	0.04 (0.02)
25	1.50 (38)	1.10 (28)	0.18 (5)	0.26 (7)	2.13 (54)	2.52 (64)	0.09 (0.04)
32	1.81 (46)	1.42 (36)	0.18 (5)	0.26 (7)	2.60 (66)	2.99 (76)	0.13 (0.06)
40	2.24 (57)	1.69 (43)	0.26 (7)	0.37 (10)	3.07 (78)	3.62 (92)	0.33 (0.15)
50	2.52 (64)	1.97 (50)	0.26 (7)	0.37 (10)	3.54 (90)	4.09 (104)	0.37 (0.17)
63	3.19 (81)	2.48 (63)	0.33 (9)	0.49 (13)	4.33 (110)	5.04 (128)	0.73 (0.33)
80	3.74 (95)	3.03 (77)	0.33 (9)	0.49 (13)	5.04 (128)	5.75 (146)	0.90 (0.41)
100	4.65 (118)	3.86 (98)	0.43 (11)	0.49 (13)	6.14 (156)	6.93 (176)	1.59 (0.72)

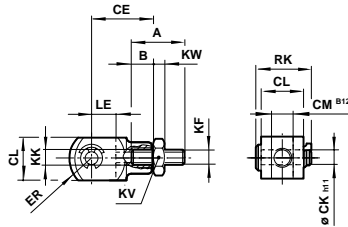
Ø	Ø AB	AH	AO	AT	H	Ø DB	DG
12	0.13 (3)	0.53 (14)	0.16 (4)	0.37 (10)	0.08 (2)	0.24 (6)	0.14 (4)
16	0.13 (3)	0.59 (15)	0.16 (4)	0.37 (10)	0.08 (2)	0.24 (6)	0.14 (4)
20	0.13 (3)	0.65 (17)	0.16 (4)	0.37 (10)	0.08 (2)	0.24 (6)	0.14 (4)
25	0.17 (4)	0.79 (20)	0.20 (5)	0.49 (13)	0.12 (3)	0.30 (8)	0.18 (5)
32	0.17 (4)	0.91 (23)	0.20 (5)	0.49 (13)	0.12 (3)	0.30 (8)	0.18 (5)
40	0.25 (6)	1.12 (29)	0.26 (7)	0.63 (16)	0.18 (5)	0.41 (11)	0.26 (7)
50	0.25 (6)	1.26 (32)	0.26 (7)	0.63 (16)	0.18 (5)	0.41 (11)	0.26 (7)
63	0.33 (8)	1.63 (42)	0.31 (8)	0.87 (22)	0.22 (6)	0.53 (14)	0.33 (9)
80	0.33 (8)	1.93 (49)	0.31 (8)	1.00 (26)	0.22 (6)	0.53 (14)	0.33 (9)
100	0.41 (11)	2.34 (60)	0.35 (9)	1.12 (29)	0.26 (7)	0.65 (17)	0.41 (11)

Dimensions in inches (mm)

Ø	TR	UL	lb (kg)
12	0.98 (25)	1.30 (33)	0.04 (0.02)
16	1.26 (32)	1.57 (43)	0.04 (0.02)
20	1.38 (35)	1.69 (43)	0.04 (0.02)
25	1.61 (41)	2.01 (51)	0.09 (0.04)
32	0.75 (19)	1.81 (46)	0.09 (0.04)
40	0.83 (21)	2.20 (56)	0.22 (0.10)
50	1.06 (27)	2.52 (64)	0.24 (0.11)
63	1.34 (34)	3.19 (81)	0.29 (0.13)
80	1.73 (44)	3.74 (95)	0.40 (0.18)
100	2.20 (56)	4.65 (118)	1.06 (0.48)

Dimensions in inches (mm)

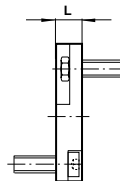
Piston rod clevis – F  
Part numbers in table below.



Bore Ø	1/2" (12)	5/8" (16)	3/4" (20)	1" (25)	1-1/4" (32)	1-1/2" (40)	2" (50)	2-1/2" (63)	3-1/8" (80)	4" (100)			
Clevis Inch	RC-12	RC-16	RC-20	RC-25	RC-32	RC-32	RC-50	RC-63	RC-80	RC-80			
Metric	QM/57008/25	QM/8010/25	QM/92020/25	QM/57016/25	QM/57020/25	QM/57020/25	QM/57025/25	QM/57040/25	QM/57063/25	QM/57063/25			
Stud Inch	C-653-24-00J	C-653-04-00M	C-653-05-00P	C-653-08-01A	C-653-11-01A	C-653-11-01A	C-653-14-01E	C-653-16-01P	C-653-18-01J	C-653-18-01J			
Metric	M/P1710/18	M/P1710/19	M/P1710/20	M/P1710/21	M/P1710/22	M/P1710/22	–	–	–	–			
Nut Inch	C-76-36	C-76-37	C-76-225	C-76-03A	C-76-04A	C-76-04A	C-76-05A	C-76-065A	C-76-12A	C-76-12A			
Metric	M/P1500/111	M/P1501/80	M/P1501/109	M/P1501/79	M/P1501/60	M/P1501/60	–	–	–	–			
Adaptor (mm)	–	–	–	–	–	–	M/P71470/1	M/P71470/2	M/P71470/3	M/P71470/3			
Bore Ø	A	B	CE	Ø CK B11	CL	CM B12	ER	KF	KK	KV (A/F)	KW	LE	RK
12	12	–	0.43 (11)	0.12 (3)h9	0.24 (6)	0.12 (3)	0.18 (4.5)	M3	M3	0.24 (6)	0.08 (2)	0.20 (5)	0.39 (10)
16	16	–	0.63 (16)	0.16 (4)	0.31 (8)	0.16 (4)	0.25 (6.5)	M4	M4	0.28 (7)	0.08 (2)	0.31 (8)	0.45 (11.5)
20	20	–	0.79 (20)	0.20 (5)	0.39 (10)	0.20 (5)	0.31 (8)	M5	M5	0.31 (8)	0.08 (2)	0.39 (10)	0.57 (14.5)
25	25	–	0.79 (20)	0.20 (5)	0.39 (10)	0.20 (5)	0.31 (8)	M6	M6	0.39 (10)	0.12 (3)	0.39 (10)	0.57 (14.5)
32 & 40	25	–	0.94 (24)	0.24 (6)	0.47 (12)	0.24 (6)	0.37 (9.5)	M8	M8	0.51 (13)	0.16 (4)	0.47 (12)	0.69 (17.5)
50	29	0.47 (12)	1.02 (26)	0.31 (8)	0.55 (14)	0.28 (7)	0.45 (11.5)	M10	M10x1.25	0.47 (12)	0.20 (5)	0.47 (12)	0.81 (20.5)
63	35	0.59 (15)	1.57 (40)	0.39 (10)	0.79 (20)	0.39 (10)	0.63 (16)	M12	M12x1.25	0.51 (13)	0.20 (5)	0.79 (20)	1.14 (29)
80 & 100	45	0.79 (20)	2.20 (56)	0.55 (14)	1.06 (27)	0.55 (14)	0.83 (21)	M16	M16x1.5	0.67 (17)	0.20 (5)	1.10 (28)	1.44 (36.5)

Dimensions in inches (mm)

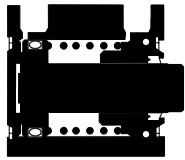
Back to back mounting kit  
QC/920\*\*/55 (inch)  
QM/920\*\*/55 (metric)  
\*\* insert bore size



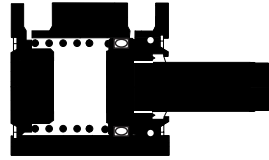
Bore Ø	L
12	.39 (10)
16	.39 (10)
20	.39 (10)
25	.39 (10)
32	.39 (10)
40	.59 (15)
50	.59 (15)
63	.79 (20)
80	.79 (20)
100	.79 (25)

# Series 95000 Compact Actuators

Spring return



Spring extend



## Light weight

Compact design, which is considerably shorter than ISO/VDMA or NFPA equivalent.

Low friction characteristics for high speed operation

Hard anodized body for corrosion protection and longer life

Duralon® rod bearing for reduced wear

Chrome plated stainless steel piston rods

## Technical data

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

DM/95000 BSP parallel ports, single acting, non-cushioned, metric ports, spring return

DM/96000 BSP parallel ports, single acting, non-cushioned, metric ports, spring extend

DC/95000 NPT ports, single acting, non-cushioned, metric ports, spring return

DC/96000 NPT ports, single acting, non-cushioned, metric ports, spring extend

Operating pressure:

14.5 to 145 psig (1 to 10 bar)

Operating temperature:

-25°F to +250°F (-32°C to +121°C)

Consult our Technical Service for use below 35°F (+2°C)

## Materials

Barrel: hard anodized aluminum

End caps: hard anodized aluminum alloy

Piston rod: stainless steel, hard chrome plated

Elastomers: Buna N

## Options selector

★DC/9★0★\*/★/★/★

Temperature	Substitute
High temperature (Viton® seals)	T

Ports	Substitute
NPT Ports	C
BSP parallel	M

Operation	Substitute
Spring return	5
Spring extend	6

Cylinder ø (mm)	Substitute
12	012
16	016
20	020
25	025
32	032
40	040
50	050

Mounting	Substitute
Without	None
Foot	C
Flange rod end	G
Flange cap end	B
ISO Flange rod end	IG
ISO Flange cap end	IB
Rear clevis	D
Tapped holes - both ends	A

Stroke (mm)
10 mm max. (Ø 12 to 40 mm)
20 mm max. (Ø 50 mm)

Variants (non-magnetic)	Substitute
Std, female rod thread, rod end	X
Male rod thread, rod end	None

For combinations of alternative cylinders consult our Technical Service.

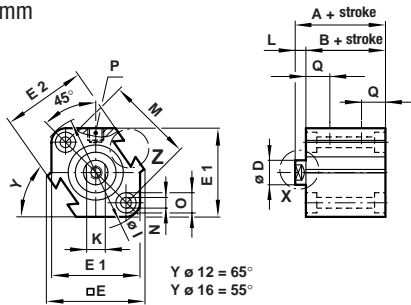
## Strokes (mm)

Ø	5	10	20
12	●	●	—
16	●	●	—
20	●	●	—
25	●	●	—
32	●	●	—
40	●	●	—
50	—	●	●

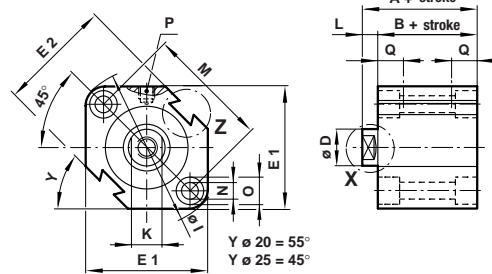
# Series 95000 compact actuators

Basic dimensions –D\*/95000/X, D\*/96000/X

Ø 12 ... 16 mm

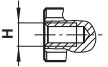


Ø 20 ... 25 mm

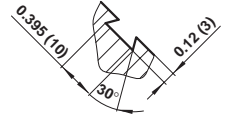


Ø 12 ... 25 mm

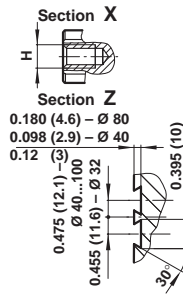
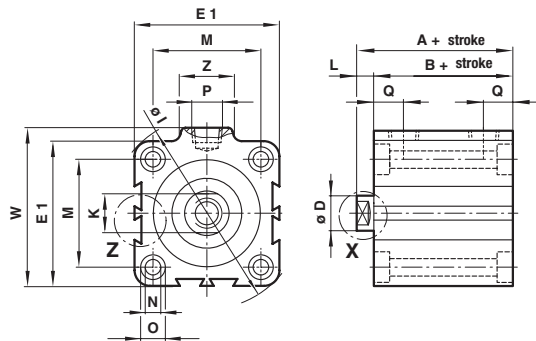
Section X



Section Z



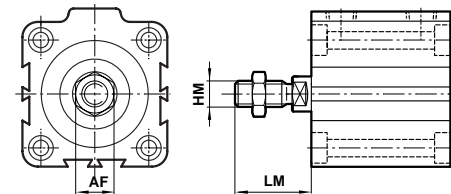
Ø 32 ... 50 mm



Cylinder with rod end male thread

D\*/95000, D\*/96000

Ø 12 ... 50 mm



Ø	Stroke range	A	AF	B	Ø D	□ E	E1	E2
12	5 ... 10	0.81 (20.5)	0.34 (8)	0.67 (17.0)	0.236 (6)	1.09 (27.7)	0.98 (25)	0.90 (23)
16	5 ... 10	0.87 (22.0)	0.34 (10)	0.73 (18.5)	0.315 (8)	1.25 (31.7)	1.14 (29)	1.07 (27.2)
20	5 ... 10	0.94 (24.0)	0.38 (13)	0.77 (19.5)	0.394 (10)	- (-)	1.42 (36)	1.23 (31.2)
25	5 ... 10	1.08 (27.5)	0.43 (17)	0.86 (22.5)	0.472 (12)	- (-)	1.57 (40)	1.45 (36.9)
32	5 ... 10	1.18 (30.0)	0.50 (22)	0.91 (23.0)	0.630 (16)	- (-)	1.75 (44.5)	- (-)
40	5 ... 10	1.44 (36.5)	0.56 (22)	1.16 (29.5)	0.630 (16)	- (-)	2.05 (52)	- (-)
50	10 ... 20	1.52 (38.5)	0.75 (27)	1.20 (30.5)	0.787 (20)	- (-)	2.51 (63.7)	- (-)

Ø	Stroke range	H	HM	Ø I	K	L	LM	M	Ø N
12	5 ... 10	#8-32 x 0.21 (M3 x 0.5-5 deep)	#8-32 x 0.31 (M5 x 0.8-9 deep)	1.24 (31.5)	0.20 (5)	0.14 (3.5)	0.45 (14)	0.87 (22)	0.14 (3.5)
16	5 ... 10	#8-32 x 0.21 (M4 x 0.7-5 deep)	#8-32 x 0.31 (M6 x 1.0-10 deep)	1.46 (37.1)	0.24 (6)	0.14 (3.5)	0.45 (15.5)	1.10 (28)	0.14 (3.5)
20	5 ... 10	#10-32 x 0.28 (M5 x 0.8-7 deep)	#10-32 x 0.31 (M8 x 1.25-12 deep)	1.85 (47)	0.31 (8)	0.18 (4.5)	0.49 (18.5)	1.42 (36)	0.22 (5.5)
25	5 ... 10	1/4-28 x 0.39 (M6 x 1.0-10 deep)	1/4-28 x 0.37 (M10 x 1.25-15 deep)	2.02 (51.3)	0.39 (10)	0.20 (5)	0.57 (22.5)	1.57 (40)	0.22 (5.5)
32	5 ... 10	5/16-24 x 0.50 (M8 x 1.25-12 deep)	5/16-24 x 0.50 (M14 x 1.5-20.5 deep)	2.32 (58.9)	0.55 (14)	0.28 (7)	0.78 (28.5)	1.34 (34)	0.22 (5.5)
40	5 ... 10	3/8-24 x 0.50 (M8 x 1.25-12 deep)	3/8-24 x 0.63 (M14 x 1.5-20.5 deep)	2.72 (69)	0.55 (14)	0.28 (7)	0.91 (28.5)	1.57 (40)	0.22 (5.5)
50	10 ... 20	1/2-20 x 0.50 (M10 x 1.5-12 deep)	1/2-20 x 0.77 (M18 x 1.5-26 deep)	3.34 (84.9)	0.67 (17)	0.31 (8)	1.08 (33.5)	1.97 (50)	0.26 (6.6)

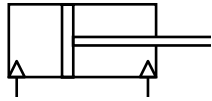
Ø	Stroke range	Ø O	P	Q	W	Z	lb (kg) at 0 mm	lb (kg) per 5 mm
12	5 ... 10	0.26 x 0.14 (6.5 x 3.5 deep)	M5 x 0.8	0.28 (7.0)	- (-)	- (-)	0.15 (0.07)	0.04 (0.02)
16	5 ... 10	0.26 x 0.14 (6.5 x 3.5 deep)	M5 x 0.8	0.31 (7.8)	- (-)	- (-)	0.20 (0.09)	0.04 (0.02)
20	5 ... 10	0.35 x 0.28 (9.0 x 7.0 deep)	M5 x 0.8	0.32 (8.1)	- (-)	- (-)	0.26 (0.12)	0.04 (0.02)
25	5 ... 10	0.35 x 0.28 (9.0 x 7.0 deep)	M5 x 0.8	0.33 (8.4)	- (-)	- (-)	0.37 (0.17)	0.07 (0.03)
32	5 ... 10	0.35 x 0.28 (9.0 x 7.0 deep)	M5 x 0.8	0.34 (8.7)	1.94 (49.3)	0.84 (21.4)	0.62 (0.28)	0.11 (0.05)
40	5 ... 10	0.35 x 0.28 (9.0 x 7.0 deep)	1/8	0.36 (9.2)	2.24 (57.0)	0.84 (21.4)	0.97 (0.44)	0.13 (0.06)
50	10 ... 20	0.43 x 0.31 (11.0 x 8.0 deep)	1/4	0.41 (10.5)	2.78 (70.6)	1.04 (26.5)	1.10 (0.50)	0.18 (0.08)

Dimensions in inches (mm)

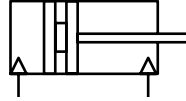


# Series 99000 Compact Actuators

Non-magnetic



Magnetic



**Light weight**

**Compact design, which is considerably shorter than ISO/VDMA or NFPA equivalent.**

**Low friction characteristics for high speed operation**

**Duralon® rod bearing for reduced wear**

**Chrome plated stainless steel piston rods**

**Technical data**

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

DM/99000 BSP parallel ports, double acting, non-cushioned, metric threads

DC/99000 NPT ports, double acting, non-cushioned, inch threads

Operating pressure: 14.5 to 145 psig (1 to 10 bar)

Operating temperature: -25°F to +250°F (-32°C to +121°C)

Consult our Technical Service for use below 35°F (+2°C)

**Materials**

Barrel: hard anodized aluminum

End caps: hard anodized aluminum alloy

Piston rod: stainless steel, hard chrome plated

Elastomers: Buna N

**Options selector**

★D★/99★ ★★/★/★/★

Temperature	Substitute
High temperature (Viton® seals)	T

Ports	Substitute
NPT Ports (inch threads, stroke in mm)	C
BSP parallel ports (metric ports, threads, stroke in mm)	M

Cylinder diameters (mm)	Substitute
12	012
16	016
20	020
25	025
32	032
40	040
50	050
63	063
80	080
100	100

Mounting	Substitute
Without	None
Foot	C
Flange rod end	G
Flange cap end	B
ISO Flange rod end	IG
ISO Flange cap end	IB
Rear clevis	D
Tapped holes - both ends	A

Variants (non-magnetic piston)	Substitute
Standard, female rod thread	X
Male rod thread, single rod	None
Double ended piston rod, female rod thread	JX
Double ended piston rod, male thread, both ends	J
Non-rotating piston rod, female rod thread	N1X
Cylinder with guided toolplate	N3
Double ended piston rod, non-rotating, female rod thread	N5X
Boss, rod end, female rod thread	EX
Boss, cap end, female rod thread	FX
Bumpers on both ends, female rod thread (Ø 12 ... 100 mm)	BX
Adjustable stroke, retract, single rod, female rod thread	SX

**Strokes**

Ø	5	10	15	20	25	30	35	40	45	50	75	100	125	150	175	200	250	300	
12	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
16	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
40	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
50	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
63	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
80	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
100	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

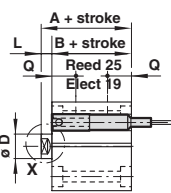
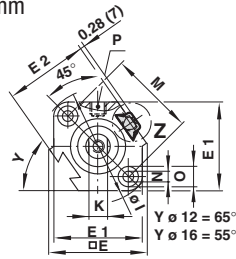
For combinations of alternative cylinders consult our Technical Service.

Variants (magnetic piston)	Substitute
Standard, female rod thread	MX
Male rod thread, single rod	M
Double ended piston rod, male thread, both ends	JM
Double ended piston rod, female rod thread	JMX
Non-rotating piston rod, female rod thread	N2X
Cylinder with guided toolplate	N4
Double ended piston rod, non-rotating, female rod thread	N6X
Boss, rod end, female rod thread	MEX
Boss, cap end, female rod thread	MFX
Bumpers on both ends, female rod thread (Ø 12 ... 100 mm)	MBX
Adjustable stroke, retract, single rod, female rod thread	MSX

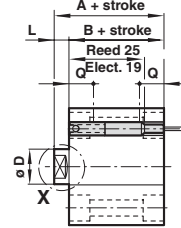
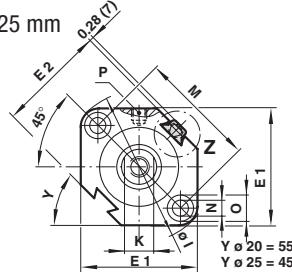
# Series 99000 compact actuators

Basic dimensions – DM/99000/X (Non-magnetic) DM/99000/MX (Magnetic)

Ø 12 ... 16 mm

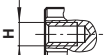


Ø 20 ... 25 mm



Ø 12 ... 25 mm

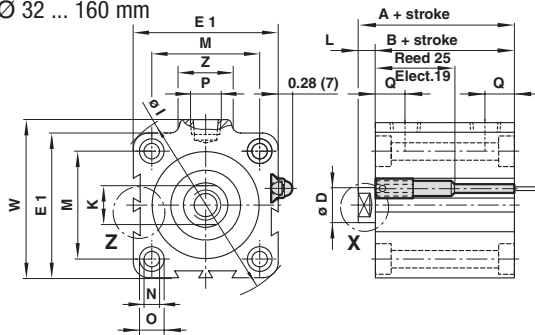
Section X



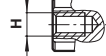
Section Z



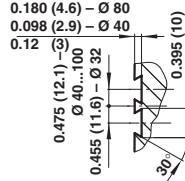
Ø 32 ... 160 mm



Section X



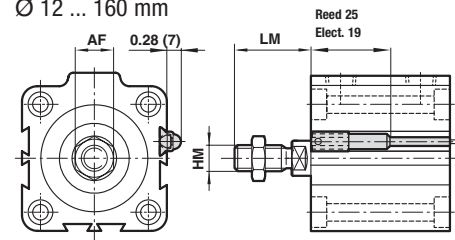
Section Z



Cylinder with rod end male thread

D\*/99000/M

Ø 12 ... 160 mm



Ø	Stroke range	A non-mag	A mag	AF	B non-mag	B mag	Ø D	E	E1	E2
12	5 ... 30	0.81 (20.5)	1.24 (31.5)	0.34 (8)	0.67 (17)	1.10 (28)	0.236 (6)	1.09 (27.7)	0.98 (25)	0.90 (23)
16	5 ... 30	0.87 (22)	1.34 (34)	0.34 (10)	0.73 (18.5)	1.20 (30.5)	0.315 (8)	1.25 (31.7)	1.14 (29)	1.07 (27.2)
20	5 ... 50	0.94 (24)	1.42 (36)	0.38 (13)	0.77 (19.5)	1.24 (31.5)	0.394 (10)	- (-)	1.42 (36)	1.23 (31.2)
25	5 ... 50	1.08 (27.5)	1.48 (37.5)	0.43 (17)	0.86 (22.5)	1.28 (32.5)	0.472 (12)	- (-)	1.57 (40)	1.45 (36.9)
32	5 ... 50	1.18 (30)	1.57 (40)	0.50 (22)	0.91 (23)	1.30 (33)	0.630 (16)	- (-)	1.75 (44.5)	-
40	5 ... 50	1.44 (36.5)	1.83 (46.5)	0.56 (22)	1.16 (29.5)	1.56 (39.5)	0.630 (16)	- (-)	2.05 (52)	-
50	10 ... 50	1.52 (38.5)	1.91 (48.5)	0.75 (27)	1.20 (30.5)	1.59 (40.5)	0.787 (20)	- (-)	2.51 (63.7)	-
63	10 ... 50	1.73 (44)	2.13 (54)	0.75 (27)	1.42 (36)	1.81 (46)	0.787 (20)	- (-)	3.02 (76.7)	-
80	10 ... 50	2.11 (53.5)	2.50 (63.5)	0.93 (32)	1.71 (43.5)	2.11 (53.5)	0.984 (25)	- (-)	3.85 (97.8)	-
100	10 ... 50	2.56 (65)	2.95 (75)	1.13 (46)	2.09 (53)	2.48 (63)	1.181 (30)	- (-)	4.54 (115.3)	-

Ø	Stroke range	H	HM	Ø I	K	L	LM	M
12	5 ... 30	#8-32 x 0.21 (M3 x 0.5-5 deep)	#8-32 x 0.31 (M5 x 0.8-9 deep)	1.24 (31.5)	0.20 (5)	0.14 (3.5)	0.45 (14)	0.87 (22)
16	5 ... 30	#8-32 x 0.21 (M4 x 0.7-5 deep)	#8-32 x 0.31 (M6 x 1.0-10 deep)	1.46 (37.1)	0.24 (6)	0.14 (3.5)	0.45 (15.5)	1.10 (28)
20	5 ... 50	#10-32 x 0.28 (M5 x 0.8-7 deep)	#10-32 x 0.31 (M8 x 1.25-12 deep)	1.85 (47)	0.31 (8)	0.18 (4.5)	0.49 (18.5)	1.42 (36)
25	5 ... 50	1/4-28 x 0.39 (M6 x 1.0-10 deep)	1/4-28 x 0.37 (M10 x 1.25-15 deep)	2.02 (51.3)	0.39 (10)	0.20 (5)	0.57 (22.5)	1.57 (40)
32	5 ... 50	5/16-24 x 0.50 (M8 x 1.25-12 deep)	5/16-24 x 0.50 (M14 x 1.5-20.5 deep)	2.32 (58.9)	0.55 (14)	0.28 (7)	0.78 (28.5)	1.34 (34)
40	5 ... 50	3/8-24 x 0.50 (M8 x 1.25-12 deep)	3/8-24 x 0.63 (M14 x 1.5-20.5 deep)	2.72 (69)	0.55 (14)	0.28 (7)	0.91 (28.5)	1.57 (40)
50	10 ... 50	1/2-20 x 0.50 (M10 x 1.5-12 deep)	1/2-20 x 0.77 (M18 x 1.5-26 deep)	3.34 (84.9)	0.67 (17)	0.31 (8)	1.08 (33.5)	1.97 (50)
63	10 ... 50	1/2-20 x 0.50 (M10 x 1.5-12 deep)	1/2-20 x 0.77 (M18 x 1.5-26 deep)	4.01 (101.8)	0.67 (17)	0.31 (8)	1.08 (33.5)	2.36 (60)
80	10 ... 50	5/8-18 x 0.88 (M16 x 2.0-22 deep)	5/8-18 x 1.00 (M22 x 1.5-32.5 deep)	5.11 (129.8)	0.87 (22)	0.39 (10)	1.40 (43.5)	3.03 (77)
100	10 ... 50	3/4-16 x 0.88 (M20 x 2.5-22 deep)	3/4-16 x 1.12 (M26 x 1.5-32.5 deep)	6.06 (153.9)	1.06 (27)	0.47 (12)	1.59 (43.5)	3.70 (94)

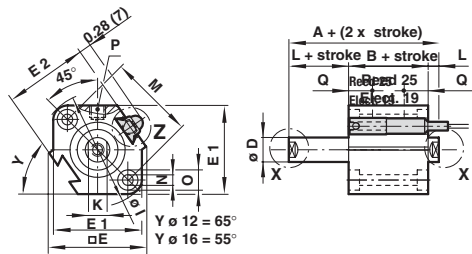
Ø	Stroke range	Ø N	Ø O	P*	Q	W	Z
12	5 ... 30	0.14 (3.5)	0.26 x 0.14 (6.5 x 3.5 deep)	M5 x 0.8	0.28 (7)	- (-)	- (-)
16	5 ... 30	0.14 (3.5)	0.26 x 0.14 (6.5 x 3.5 deep)	M5 x 0.8	0.31 (7.8)	- (-)	- (-)
20	5 ... 50	0.22 (5.5)	0.35 x 0.28 (9.0 x 7.0 deep)	M5 x 0.8	0.32 (8.1)	- (-)	- (-)
25	5 ... 50	0.22 (5.5)	0.35 x 0.28 (9.0 x 7.0 deep)	M5 x 0.8	0.33 (8.4)	- (-)	- (-)
32	5 ... 50	0.22 (5.5)	0.35 x 0.28 (9.0 x 7.0 deep)	1/8*	0.34 (8.7)	1.94 (49.3)	0.84 (21.4)
40	5 ... 50	0.22 (5.5)	0.35 x 0.28 (9.0 x 7.0 deep)	1/8*	0.36 (9.2)	2.24 (57)	0.84 (21.4)
50	10 ... 50	0.26 (6.6)	0.43 x 0.31 (11.0 x 8.0 deep)	1/4*	0.41 (10.5)	2.78 (70.6)	1.04 (26.5)
63	10 ... 50	0.35 (9)	0.55 x 0.41 (14.0 x 10.5 deep)	1/4*	0.45 (11.5)	3.29 (83.6)	1.04 (26.5)
80	10 ... 50	0.43 (11)	0.69 x 0.53 (17.5 x 13.5 deep)	3/8*	0.55 (14.0)	4.09 (104)	1.18 (30)
100	10 ... 50	0.43 (11)	0.69 x 0.53 (17.5 x 13.5 deep)	3/8*	0.71 (18)	4.80 (121.9)	1.18 (30)

\* Port sizes: DM/99000/... = G (BSP parallel ports), DC/99000/... = NPT (NPT ports). Note: M5 x 0.8 port will accept #10-32 male thread fittings. Dimensions in inches (mm)

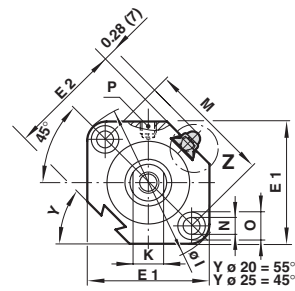
# Actuators

Double ended piston rod – DM/99000/JX (Non-magnetic) & DM/99000/JMX (Magnetic)

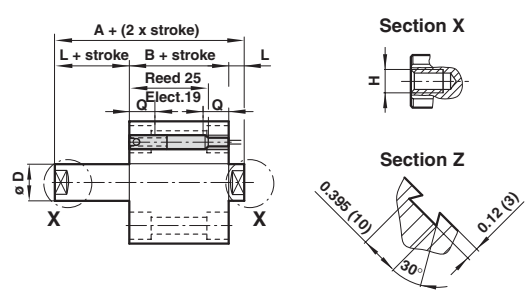
Ø 12 ... 16 mm



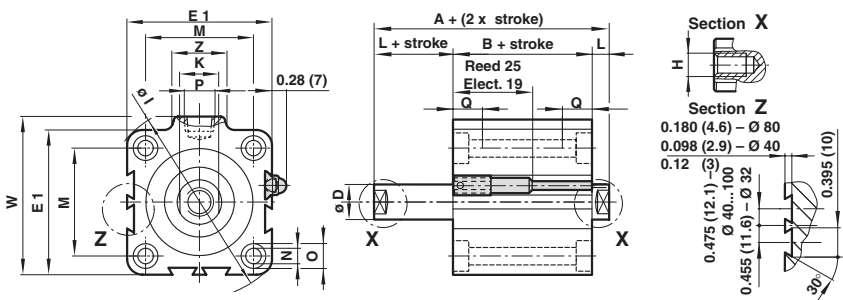
Ø 20 ... 25 mm



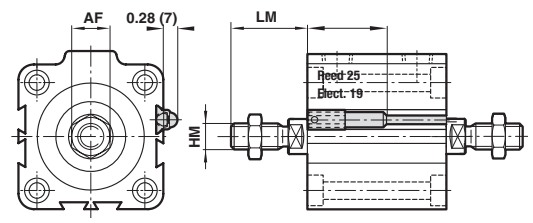
Ø 12 ... 25 mm



Ø 32 ... 160 mm



Cylinder with rod end male thread  
D\*/99000/JM Ø 12 ... 160 mm



Ø	Stroke range	A non-mag	A mag	AF	B non-mag	B mag	Ø D	E	E1	E2
12	5 ... 30	1.27 (32.2)	1.55 (39.4)	0.34 (8)	0.99 (25.2)	1.28 (32.4)	0.236 (6)	1.09 (27.7)	0.98 (25)	0.90 (23)
16	5 ... 30	1.30 (33.0)	1.69 (43.0)	0.34 (10)	1.02 (26.0)	1.42 (36.0)	0.315 (8)	1.25 (31.7)	1.14 (29)	1.07 (27.2)
20	5 ... 50	1.38 (35.0)	1.85 (47.0)	0.38 (13)	1.02 (26.0)	1.50 (38.0)	0.394 (10)	-	1.42 (36)	1.23 (31.2)
25	5 ... 50	1.54 (39.0)	1.93 (49.0)	0.43 (17)	1.14 (29.0)	1.54 (39)	0.472 (12)	-	1.57 (40)	1.45 (36.9)
32	5 ... 50	1.75 (44.5)	2.15 (54.5)	0.50 (22)	1.20 (30.5)	1.59 (40.5)	0.630 (16)	-	1.75 (44.5)	-
40	5 ... 50	2.13 (54.0)	2.52 (64.0)	0.56 (22)	1.57 (40.0)	1.97 (50.0)	0.630 (16)	-	2.05 (52)	-
50	10 ... 50	2.22 (56.5)	2.62 (66.5)	0.75 (27)	1.59 (40.5)	1.99 (50.5)	0.787 (20)	-	2.51 (63.7)	-
63	10 ... 50	2.28 (58.0)	2.68 (68.0)	0.75 (27)	1.65 (42.0)	2.05 (52.0)	0.787 (20)	-	3.02 (76.7)	-
80	10 ... 50	2.80 (71.0)	3.19 (81.0)	0.93 (32)	2.01 (2.38)	2.40 (61.0)	0.984 (25)	-	3.85 (97.8)	-
100	10 ... 50	3.33 (84.5)	3.72 (94.5)	1.13 (46)	2.38 (60.5)	2.78 (70.5)	1.181 (30)	-	4.54 (115.3)	-

Ø	Stroke range	H	HM	Ø I	K	L	LM	M
12	5 ... 30	#8-32 x .21 (M3 x 0.5-5 deep)	#8-32 x 0.31 (M5 x 0.8-9 deep)	1.24 (31.5)	0.20 (5)	0.14 (3.5)	0.45 (14)	0.87 (22)
16	5 ... 30	#8-32 x .21 (M4 x 0.7-5 deep)	#8-32 x 0.31 (M6 x 1.0-10 deep)	1.46 (37.1)	0.24 (6)	0.14 (3.5)	0.45 (15.5)	1.10 (28)
20	5 ... 50	#10-32 x .28 (M5 x 0.8-7 deep)	#10-32 x 0.31 (M8 x 1.25-12 deep)	1.85 (47)	0.31 (8)	0.18 (4.5)	0.49 (18.5)	1.42 (36)
25	5 ... 50	1/4-28 x .39 (M6 x 1.0-10 deep)	1/4-28 x 0.37 (M10 x 1.25-15 deep)	2.02 (51.3)	0.39 (10)	0.20 (5)	0.57 (22.5)	1.57 (40)
32	5 ... 50	5/16-24 x .50 (M8 x 1.25-12 deep)	5/16-24 x 0.50 (M14 x 1.5-20.5 deep)	2.32 (58.9)	0.55 (14)	0.28 (7)	0.78 (28.5)	1.34 (34)
40	5 ... 50	3/8-24 x .50 (M8 x 1.25-12 deep)	3/8-24 x 0.63 (M14 x 1.5-20.5 deep)	2.72 (69)	0.55 (14)	0.28 (7)	0.91 (28.5)	1.57 (40)
50	10 ... 50	1/2-20 x .50 (M10 x 1.5-12 deep)	1/2-20 x 0.77 (M18 x 1.5-26 deep)	3.34 (84.9)	0.67 (17)	0.31 (8)	1.08 (33.5)	1.97 (50)
63	10 ... 50	1/2-20 x .50 (M10 x 1.5-12 deep)	1/2-20 x .77 (M18 x 1.5-26 deep)	4.01 (101.8)	0.67 (17)	0.31 (8)	1.08 (33.5)	2.36 (60)
80	10 ... 50	5/8-18 x .88 (M16 x 2.0-22 deep)	5/8-18 x 1.00 (M22 x 1.5-32.5 deep)	5.11 (129.8)	0.87 (22)	0.39 (10)	1.40 (43.5)	3.03 (77)
100	10 ... 50	3/4-16 x .88 (M20 x 2.5-22 deep)	3/4-16 x 1.12 (M26 x 1.5-32.5 deep)	6.06 (153.9)	1.06 (27)	0.47 (12)	1.59 (43.5)	3.70 (94)

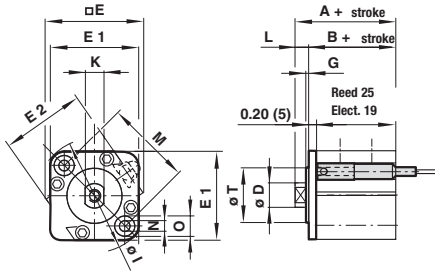
Ø	Stroke range	Ø N	Ø O	P*	Q	W	Z
12	5 ... 30	0.14 (3.5)	0.26 x 0.14 (6.5 x 3.5 deep)	M5 x 0.8	0.28 (7.0)	-	-
16	5 ... 30	0.14 (3.5)	0.26 x 0.14 (6.5 x 3.5 deep)	M5 x 0.8	0.31 (7.8)	-	-
20	5 ... 50	0.22 (5.5)	0.35 x 0.28 (9.0 x 7.0 deep)	M5 x 0.8	0.32 (8.1)	-	-
25	5 ... 50	0.22 (5.5)	0.35 x 0.28 (9.0 x 7.0 deep)	M5 x 0.8	0.33 (8.4)	-	-
32	5 ... 50	0.22 (5.5)	0.35 x 0.28 (9.0 x 7.0 deep)	1/8*	0.34 (8.7)	1.94 (49.3)	0.84 (21.4)
40	5 ... 50	0.22 (5.5)	0.35 x 0.28 (9.0 x 7.0 deep)	1/8*	0.36 (9.2)	2.24 (57.0)	0.84 (21.4)
50	10 ... 50	0.26 (6.6)	0.43 x 0.31 (11.0 x 8.0 deep)	1/4*	0.41 (10.5)	2.78 (70.6)	1.04 (26.5)
63	10 ... 50	0.35 (9)	0.55 x 0.41 (14.0 x 10.5 deep)	1/4*	0.45 (11.5)	3.29 (83.6)	1.04 (26.5)
80	10 ... 50	0.43 (11)	0.69 x 0.53 (17.5 x 13.5 deep)	3/8*	0.55 (14.0)	4.09 (104)	1.18 (30.0)
100	10 ... 50	0.43 (11)	0.69 x 0.53 (17.5 x 13.5 deep)	3/8*	0.71 (18.0)	4.80 (121.9)	1.18 (30.0)

\* Port sizes: DM/99000/... = G (BSP parallel ports), DC/99000/... = NPT (NPT ports). Note: M5 x 0.8 port will accept #10-32 male thread fittings.

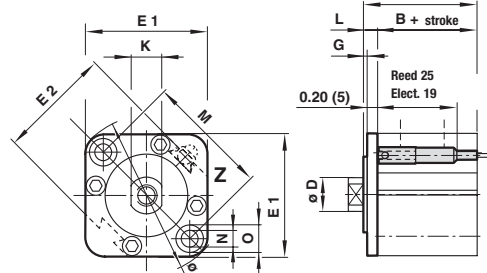
Dimensions in inches (mm)

Cylinders with non-rotating piston rod – DM/99000/N1X (Non-magnetic), DM/99000/N2X (Magnetic)

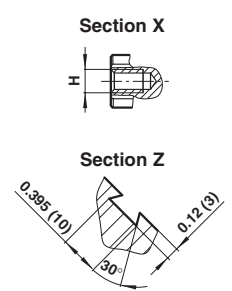
Ø 12 ... 16 mm



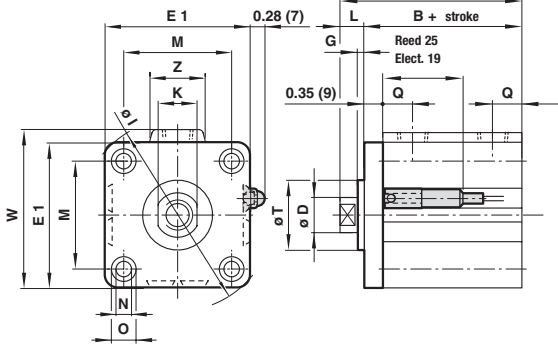
Ø 20 ... 25 mm



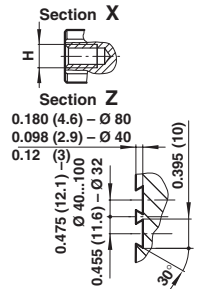
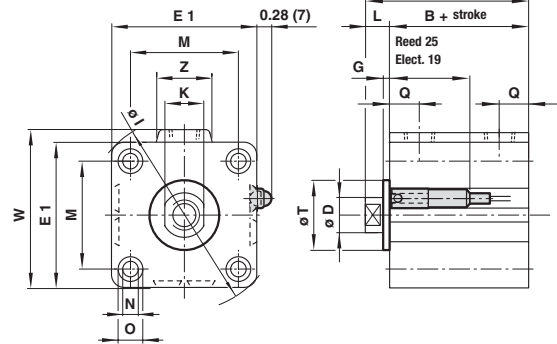
Ø 12 ... 25 mm



Ø 32 mm



Ø 40 ... 100 mm



**WARNING:** This cylinder has a non-rotating rod. To prevent internal damage hold rod by flats ONLY WHEN FULLY RETRACTED while installing or removing attachments. DO NOT SCRATCH OR DENT SHAFT.

Ø	Stroke range	A non-mag	A mag	AF	B non-mag	B mag	Ø D	E	E1	E2	G
12	5 ... 30	1.00 (25.5)	1.44 (36.5)	0.34 (8)	0.87 (22.0)	1.30 (33.0)	0.236 (6)	1.09 (27.7)	0.98 (25)	0.90 (23)	0.059 (1.5)
16	5 ... 30	1.06 (27.0)	1.54 (39.0)	0.34 (10)	0.93 (23.5)	1.40 (35.5)	0.315 (8)	1.25 (31.7)	1.14 (29)	1.07 (27.2)	0.059 (1.5)
20	5 ... 50	1.26 (32.0)	1.73 (44.0)	0.38 (13)	1.08 (27.5)	1.56 (39.5)	0.394 (10)	-	1.42 (36)	1.23 (31.2)	0.079 (2.0)
25	5 ... 50	1.40 (35.5)	1.79 (45.5)	0.43 (17)	1.20 (30.5)	1.59 (40.5)	0.472 (12)	-	1.57 (40)	1.45 (36.9)	0.079 (2.0)
32	5.10 ... 50	1.54 (39.0)	1.93 (49.0)	0.50 (22)	1.26 (32.0)	1.65 (42.0)	0.630 (16)	-	1.75 (44.5)	-	0.079 (2.0)
40	5 ... 50	1.44 (36.5)	1.83 (46.5)	0.56 (22)	1.16 (29.5)	1.56 (39.5)	0.630 (16)	-	2.05 (52)	-	0.079 (2.0)
50	10 ... 50	1.52 (38.5)	1.91 (48.5)	0.75 (27)	1.20 (30.5)	1.59 (40.5)	0.787 (20)	-	2.51 (63.7)	-	0.079 (2.0)
63	10 ... 50	1.73 (44.0)	2.13 (54.0)	0.75 (27)	1.42 (36.5)	1.81 (46.0)	0.787 (20)	-	3.02 (76.7)	-	0.079 (2.0)
80	10 ... 50	2.11 (53.5)	2.50 (63.5)	0.93 (32)	1.71 (43.5)	2.11 (53.5)	0.984 (25)	-	3.85 (97.8)	-	0.079 (2.0)
100	10 ... 50	2.56 (65.0)	2.95 (75.0)	1.13 (46)	2.09 (53.0)	2.48 (63.0)	1.181 (30)	-	4.54 (115.3)	-	0.079 (2.0)

Ø	Stroke range	H	HM	Ø I	K	L	LM	M	Ø N
12	5 ... 30	#8-32 x 0.21 (M3 x 0.5-5 deep)	#8-32 x 0.31 (M5 x 0.8-9 deep)	1.24 (31.5)	0.20 (5.2)	0.14 (3.5)	0.45 (14)	0.87 (22)	0.14 (3.5)
16	5 ... 30	#8-32 x 0.21 (M4 x 0.7-5 deep)	#8-32 x 0.31 (M6 x 1.0-10 deep)	1.46 (37.1)	0.24 (6)	0.14 (3.5)	0.45 (15.5)	1.10 (28)	0.14 (3.5)
20	5 ... 50	#10-32 x 0.28 (M5 x 0.8-7 deep)	#10-32 x 0.31 (M8 x 1.25-12 deep)	1.85 (47)	0.31 (8)	0.18 (4.5)	0.49 (18.5)	1.42 (36)	0.22 (5.5)
25	5 ... 50	1/4-28 x 0.39 (M6 x 1.0-10 deep)	1/4-28 x 0.37 (M10 x 1.25-15 deep)	2.02 (51.3)	0.39 (10)	0.20 (5)	0.57 (22.5)	1.57 (40)	0.22 (5.5)
32	5.10 ... 50	5/16-24 x 0.50 (M8 x 1.25-12 deep)	5/16-24 x 0.50 (M14 x 1.5-20.5 deep)	2.32 (58.9)	0.55 (14)	0.28 (7)	0.78 (28.5)	1.34 (34)	0.22 (5.5)
40	5 ... 50	3/8-24 x 0.50 (M8 x 1.25-12 deep)	3/8-24 x 0.63 (M14 x 1.5-20.5 deep)	2.72 (69)	0.55 (14)	0.28 (7)	0.91 (28.5)	1.57 (40)	0.22 (5.5)
50	10 ... 50	1/2-20 x 0.50 (M10 x 1.5-12 deep)	1/2-20 x 0.77 (M18 x 1.5-26 deep)	3.34 (84.9)	0.71 (18)	0.31 (8)	1.08 (33.5)	1.97 (50)	0.26 (6.6)
63	10 ... 50	1/2-20 x 0.50 (M10 x 1.5-12 deep)	1/2-20 x .77 (M18 x 1.5-26 deep)	4.01 (101.8)	0.71 (18)	0.31 (8)	1.08 (33.5)	2.36 (60)	0.35 (9)
80	10 ... 50	5/8-18 x 0.88 (M16 x 2.0-22 deep)	5/8-18 x 1.00 (M22 x 1.5-32.5 deep)	5.11 (129.8)	0.87 (22)	0.39 (10)	1.40 (43.5)	3.03 (77)	0.43 (11)
100	10 ... 50	3/4-16 x 0.88 (M20 x 2.5-22 deep)	3/4-16 x 1.12 (M26 x 1.5-32.5 deep)	6.06 (153.9)	1.06 (27)	0.47 (12)	1.59 (43.5)	3.7 (94)	0.43 (11)

Ø	Stroke range	Ø 0	P*	Q	Ø T	W	Z
12	5 ... 30	0.26 x 0.14 (6.5 x 3.5)	M5 x 0.8	0.28 (7.0)	0.591 ±0.002 (15 ±0.043)	- (-)	- (-)
16	5 ... 30	0.26 x 0.14 (6.5 x 3.5)	M5 x 0.8	0.31 (7.8)	0.787 ±0.002 (20 ±0.052)	- (-)	- (-)
20	5 ... 50	0.35 x 0.28 (9.0 x 7.0)	M5 x 0.8	0.32 (8.1)	0.512 ±0.002 (13 ±0.043)	- (-)	- (-)
25	5 ... 50	0.35 x 0.28 (9.0 x 7.0)	M5 x 0.8	0.33 (8.4)	0.591 ±0.002 (15 ±0.043)	- (-)	- (-)
32	5.10 ... 50	0.35 x 0.28 (9.0 x 7.0)	M5 x 0.8	0.34 (8.7)	0.827 ±0.002 (21 ±0.062)	1.94 (49.3)	0.84 (21.4)
40	5 ... 50	0.35 x 0.28 (9.0 x 7.0)	1/8*	0.36 (9.2)	1.102 ±0.002 (28 ±0.062)	2.24 (57.0)	0.84 (21.4)
50	10 ... 50	0.43 x 0.31 (11.0 x 8.0)	1/4*	0.41 (10.5)	1.378 ±0.002 (35 ±0.062)	2.78 (70.6)	1.04 (26.5)
63	10 ... 50	0.55 x 0.41 (14.0 x 10.5)	1/4*	0.45 (11.5)	1.378 ±0.002 (35 ±0.062)	3.29 (83.6)	1.04 (26.5)
80	10 ... 50	0.69 x 0.53 (17.5 x 13.5)	3/8*	0.55 (14.0)	1.693 ±0.002 (43 ±0.062)	4.09 (104)	1.18 (30.0)
100	10 ... 50	0.69 x 0.53 (17.5 x 13.5)	3/8*	0.71 (18.0)	2.323 ±0.003 (59 ±0.074)	4.8 (121.9)	1.18 (30.0)

Dimensions in inches (mm) \* Port sizes: DM/99000/... = G (BSP parallel ports), DC/99000/... = NPT (NPT ports). Note: M5 x 0.8 port will accept #10-32 male thread fittings.

### Non-rotation accuracy

Deflection of the mounting plate B (°) at instroke position without load

Ø	12	16	20	25	32	40	50	63	80	100
	±2°	±1°	±1°	±1°	±0.8°	±0.8°	±0.8°	±0.8°	±0.8°	±0.8°

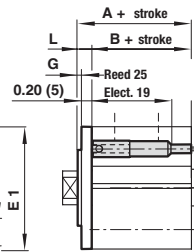
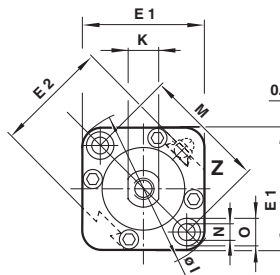
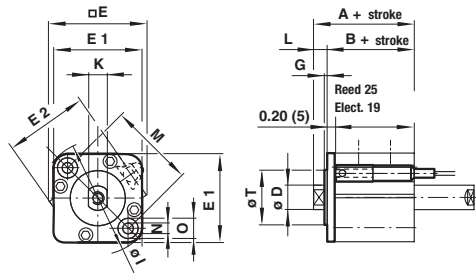
# Actuators

Cylinders with non-rotating piston rod – DM/99000/N5X (Non-magnetic) & DM/99000/N6X (Magnetic)

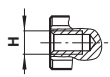
Ø 12 ... 16 mm

Ø 20 ... 25 mm

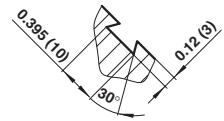
Ø 12 ... 25 mm



Section X

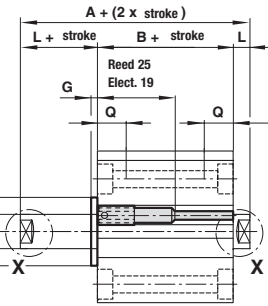
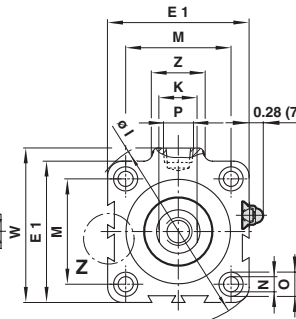
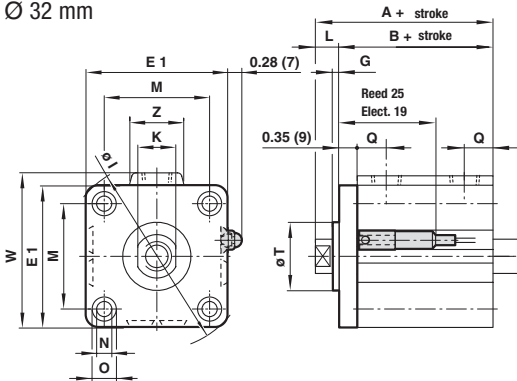


Section Z

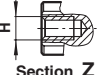


Ø 32 mm

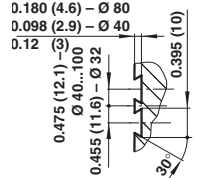
Ø 40 ... 100 mm



Section X



Section Z



**WARNING:** This cylinder has a non-rotating rod. To prevent internal damage hold rod by flats ONLY WHEN FULLY RETRACTED while installing or removing attachments. DO NOT SCRATCH OR DENT SHAFT.

Ø	Stroke range	A non-mag	A mag	AF	B non-mag	B mag	Ø D	E	E1	E2	G
12	5 ... 30	1.46 (37.2)	1.75 (44.4)	0.34 (8)	1.19 (30.2)	1.47 (37.4)	0.236 (6)	1.09 (27.7)	0.98 (25)	0.90 (23)	0.059 (1.5)
16	5 ... 30	1.50 (38.0)	1.89 (48.0)	0.34 (10)	1.22 (31.0)	1.61 (41.0)	0.315 (8)	1.25 (31.7)	1.14 (29)	1.07 (27.2)	0.059 (1.5)
20	5 ... 50	1.69 (43.0)	2.17 (55.0)	0.38 (13)	1.34 (34.0)	1.81 (46.0)	0.394 (10)	- (-)	1.42 (36)	1.23 (31.2)	0.079 (2.0)
25	5 ... 50	1.85 (47.0)	2.24 (57.0)	0.43 (17)	1.46 (37.0)	1.85 (47.0)	0.472 (12)	- (-)	1.57 (40)	1.45 (36.9)	0.079 (2.0)
32	5.10 ... 50	2.11 (53.5)	2.50 (63.5)	0.50 (22)	1.56 (39.5)	1.95 (49.5)	0.630 (16)	- (-)	1.75 (44.5)	- (-)	0.079 (2.0)
40	5 ... 50	2.13 (54.0)	2.52 (64.0)	0.56 (22)	1.57 (40.0)	1.97 (50.0)	0.630 (16)	- (-)	2.05 (52)	- (-)	0.079 (2.0)
50	10 ... 50	2.22 (56.5)	2.62 (66.5)	0.75 (27)	1.59 (40.5)	1.99 (50.5)	0.787 (20)	- (-)	2.51 (63.7)	- (-)	0.079 (2.0)
63	10 ... 50	2.28 (58.0)	2.68 (68.0)	0.75 (27)	1.65 (42.0)	2.05 (52.0)	0.787 (20)	- (-)	3.02 (76.7)	- (-)	0.079 (2.0)
80	10 ... 50	2.80 (71.0)	3.19 (81.0)	0.93 (32)	2.01 (51.0)	2.40 (61.0)	0.984 (25)	- (-)	3.85 (97.8)	- (-)	0.079 (2.0)
100	10 ... 50	3.33 (84.5)	3.72 (94.5)	1.13 (46)	60.5 (2.38)	2.78 (70.5)	1.181 (30)	- (-)	4.54 (115.3)	- (-)	0.079 (2.0)

Ø	Stroke range	H	HM	Ø I	K	L	LM	M	Ø N
12	5 ... 30	#8-32 x 0.21 (M3 x 0.5-5 deep)	#8-32 x 0.31 (M5 x 0.8-9 deep)	1.24 (31.5)	0.20 (5.2)	0.14 (3.5)	0.45 (14)	0.87 (22)	0.14 (3.5)
16	5 ... 30	#8-32 x 0.21 (M4 x 0.7-5 deep)	#8-32 x 0.31 (M6 x 1.0-10 deep)	1.46 (37.1)	0.24 (6)	0.14 (3.5)	0.45 (15.5)	1.10 (28)	0.14 (3.5)
20	5 ... 50	#10-32 x 0.28 (M5 x 0.8-7 deep)	#10-32 x 0.31 (M8 x 1.25-12 deep)	1.85 (47)	0.31 (8)	0.18 (4.5)	0.49 (18.5)	1.42 (36)	0.22 (5.5)
25	5 ... 50	1/4-28 x 0.39 (M6 x 1.0-10 deep)	1/4-28 x 0.37 (M10 x 1.25-15 deep)	2.02 (51.3)	0.39 (10)	0.20 (5)	0.57 (22.5)	1.57 (40)	0.22 (5.5)
32	5.10 ... 50	5/16-24 x 0.50 (M8 x 1.25-12 deep)	5/16-24 x 0.50 (M14 x 1.5-20.5 deep)	2.32 (58.9)	0.55 (14)	0.28 (7)	0.78 (28.5)	1.34 (34)	0.22 (5.5)
40	5 ... 50	3/8-24 x 0.50 (M8 x 1.25-12 deep)	3/8-24 x 0.63 (M14 x 1.5-20.5 deep)	2.72 (69)	0.55 (14)	0.28 (7)	0.91 (28.5)	1.57 (40)	0.22 (5.5)
50	10 ... 50	1/2-20 x 0.50 (M10 x 1.5-12 deep)	1/2-20 x 0.77 (M18 x 1.5-26 deep)	3.34 (84.9)	0.71 (18)	0.31 (8)	1.08 (33.5)	1.97 (50)	0.26 (6.6)
63	10 ... 50	1/2-20 x 0.50 (M10 x 1.5-12 deep)	1/2-20 x .77 (M18 x 1.5-26 deep)	4.01 (101.8)	0.71 (18)	0.31 (8)	1.08 (33.5)	2.36 (60)	0.35 (9)
80	10 ... 50	5/8-18 x 0.88 (M16 x 2.0-22 deep)	5/8-18 x 1.00 (M22 x 1.5-32.5 deep)	5.11 (129.8)	0.87 (22)	0.39 (10)	1.40 (43.5)	3.03 (77)	0.43 (11)
100	10 ... 50	3/4-16 x 0.88 (M20 x 2.5-22 deep)	3/4-16 x 1.12 (M26 x 1.5-32.5 deep)	6.06 (153.9)	1.06 (27)	0.47 (12)	1.59 (43.5)	3.7 (94)	0.43 (11)

Ø	Stroke range	Ø 0	P*	Q	Ø T	W	Z
12	5 ... 30	0.26 x 0.14 (6.5 x 3.5)	M5 x 0.8	0.28 (7.0)	0.591 ± 0.002 (15 ± 0.043)	- (-)	- (-)
16	5 ... 30	0.26 x 0.14 (6.5 x 3.5)	M5 x 0.8	0.31 (7.8)	0.787 ± 0.002 (20 ± 0.052)	- (-)	- (-)
20	5 ... 50	0.35 x 0.28 (9.0 x 7.0)	M5 x 0.8	0.32 (8.1)	0.512 ± 0.002 (13 ± 0.043)	- (-)	- (-)
25	5 ... 50	0.35 x 0.28 (9.0 x 7.0)	M5 x 0.8	0.33 (8.4)	0.591 ± 0.002 (15 ± 0.043)	- (-)	- (-)
32	5.10 ... 50	0.35 x 0.28 (9.0 x 7.0)	M5 x 0.8	0.34 (8.7)	0.827 ± 0.002 (21 ± 0.062)	1.94 (49.3)	0.84 (21.4)
40	5 ... 50	0.35 x 0.28 (9.0 x 7.0)	1/8*	0.36 (9.2)	1.102 ± 0.002 (28 ± 0.062)	2.24 (57.0)	0.84 (21.4)
50	10 ... 50	0.43 x 0.31 (11.0 x 8.0)	1/4*	0.41 (10.5)	1.378 ± 0.002 (35 ± 0.062)	2.78 (70.6)	1.04 (26.5)
63	10 ... 50	0.55 x 0.41 (14.0 x 10.5)	1/4*	0.45 (11.5)	1.378 ± 0.002 (35 ± 0.062)	3.29 (83.6)	1.04 (26.5)
80	10 ... 50	0.69 x 0.53 (17.5 x 13.5)	3/8*	0.55 (14.0)	1.693 ± 0.002 (43 ± 0.062)	4.09 (104)	1.18 (30.0)
100	10 ... 50	0.69 x 0.53 (17.5 x 13.5)	3/8*	0.71 (18.0)	2.323 ± 0.003 (59 ± 0.074)	4.8 (121.9)	1.18 (30.0)

Dimensions in inches (mm) \* Port sizes: DM/99000/... = G (BSP parallel ports), DC/99000/... = NPT (NPT ports). Note: M5 x 0.8 port will accept #10-32 male thread fittings.

## Non-rotation accuracy

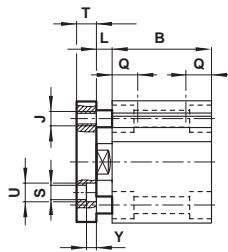
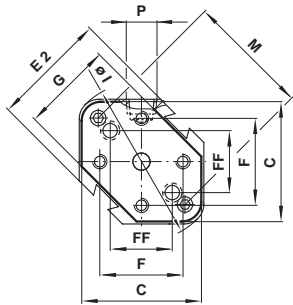
Deflection of the mounting plate B (°) at instroke position without load

Ø	12	16	20	25	32	40	50	63	80	100
	±2°	±1°	±1°	±1°	±0.8°	±0.8°	±0.8°	±0.8°	±0.8°	±0.8°

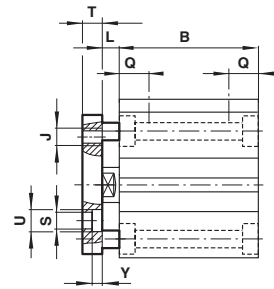
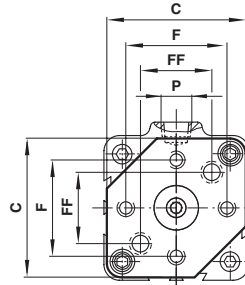
# Series 99000 compact actuators

Guided toolplate – DM/99000/N3 (Non-magnetic)

Ø 12 ... 25 mm

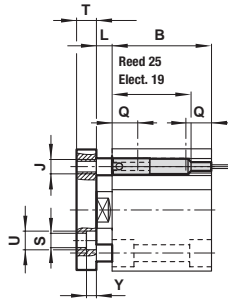
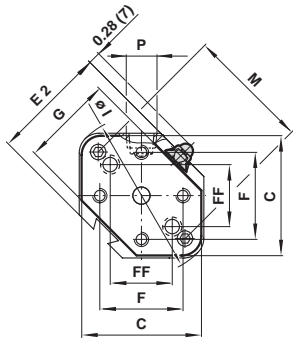


Ø 32 ... 160 mm

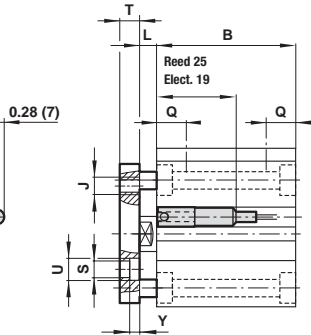
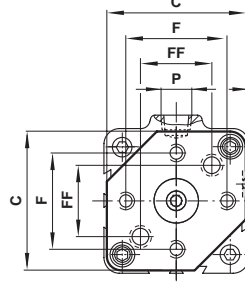


Guided toolplate – DM/99000/N4 (Magnetic)

Ø 12 ... 25 mm



Ø 32 ... 160 mm



Ø	Stroke range	C	E1	E2	F	FF	G	Ø I	J	L	M
12	5 ... 100	0.94 (24)	0.98 (25)	0.90 (23)	0.63 (16)	–	0.82 (20.8)	1.24 (31.5)	6-32	(M3 x 0.5)	0.14 (3.5) 0.87 (22)
16	5 ... 100	1.10 (28)	1.14 (29)	1.07 (27.2)	0.81 (20)	0.44 (11)	0.98 (25)	1.46 (37.1)	6-32	(M4 x 0.7)	0.14 (3.5) 1.10 (28)
20	5 ... 100	1.38 (35)	1.42 (36)	1.23 (31.2)	1.06 (27)	0.57 (14.5)	1.00 (25.4)	1.85 (47)	8-32	(M6 x 1.0)	0.18 (4.5) 1.42 (36)
25	5 ... 100	1.54 (40)	1.57 (40)	1.45 (36.9)	1.13 (28.5)	0.66 (16.6)	1.18 (30)	2.02 (51.3)	8-32	(M6 x 1.0)	0.20 (5) 1.57 (40)
32	5 ... 150	1.71 (43.4)	1.75 (44.5)	–	1.19 (30)	0.84 (21.2)	1.44 (36.7)	2.32 (58.9)	10-24	(M5 x 0.8)	0.28 (7) 1.34 (34)
40	5 ... 150	2.00 (50.5)	2.05 (52)	–	1.38 (35)	0.97 (24.7)	1.78 (45.1)	2.72 (69)	1/4-20	(M6 x 1.0)	0.28 (7) 1.57 (40)
50	5 ... 150	2.47 (62.7)	2.51 (63.7)	–	1.75 (45.5)	1.24 (32.2)	2.25 (57.1)	3.34 (84.9)	5/16-18	(M8 x 1.25)	0.31 (8) 1.97 (50)
63	5 ... 150	2.98 (75.7)	3.02 (76.7)	–	2.00 (50.5)	1.41 (35.7)	2.69 (68.3)	4.01 (101.8)	7/16-14	(M10 x 1.5)	0.31 (8) 2.36 (60)
80	5 ... 150	3.81 (96.9)	3.85 (97.8)	–	2.75 (70)	1.95 (49.5)	3.50 (88.9)	5.11 (129.8)	1/2-13	(M12 x 1.75)	0.39 (10) 3.03 (77)
100	5 ... 150	4.50 (114.4)	4.54 (115.3)	–	3.25 (82.5)	2.30 (58.3)	4.45 (112.9)	6.06 (153.9)	1/2-13	(M12 x 1.75)	0.47 (12) 3.70 (94)

Ø	Stroke range	N	O	P	Q	S	T	U	W	Y	Z
12	5 ... 100	–	(–)	–	(–)	M5 x 0.8	0.28 (7)	–	(–)	0.24 (6.1)	–
16	5 ... 100	–	(–)	0.26 x 14	(6.5 x 3.5 deep)	M5 x 0.8	0.31 (7.8)	0.14 (3.3)	0.24 (6.1)	–	–
20	5 ... 100	–	(–)	0.35 x 0.28	(9.0 x 7.0 deep)	M5 x 0.8	0.32 (8.1)	0.17 (4.2)	0.27 (6.9)	0.28 (7)	–
25	5 ... 100	–	(–)	0.35 x 0.28	(9.0 x 7.0 deep)	M5 x 0.8	0.33 (8.4)	0.17 (4.2)	0.33 (8.3)	–	–
32	5 ... 150	0.22 (5.5)	0.35 x 0.28	(9.0 x 7.0 deep)	1/8*‡	0.34 (8.7)	0.20 (5.2)	0.33 (8.3)	–	1.94 (49.3)	–
40	5 ... 150	0.22 (5.5)	0.35 x 0.28	(9.0 x 7.0 deep)	1/8*	0.36 (9.2)	0.26 (6.1)	0.33 (8.3)	–	2.24 (57)	–
50	5 ... 150	0.26 (6.6)	0.43 x 0.31	(11.0 x 8.0 deep)	1/4*	0.41 (10.5)	0.33 (8.2)	0.48 (12.1)	0.49 (13.5)	2.78 (70.6)	0.10 (2.5)
63	5 ... 150	0.35 (9)	0.55 x 0.41	(14.0 x 10.5 deep)	1/4*	0.45 (11.5)	0.45 (11.5)	0.49 (12.5)	0.68 (16.5)	3.29 (83.6)	0.18 (3.3)
80	5 ... 150	0.43 (11)	0.69 x 0.53	(17.5 x 13.5 deep)	3/8*	0.55 (14)	0.52 (12.3)	0.55 (14)	0.77 (18.5)	4.09 (104)	0.18 (3.8)
100	5 ... 150	0.43 (11)	0.69 x 0.53	(17.5 x 13.5 deep)	3/8*	0.71 (18)	0.52 (12.3)	0.55 (14)	0.77 (18.5)	4.80 (121.9)	0.13 (3.2)

\* Port sizes: DM/99000/... = G (BSP parallel ports), DC/99000/... = NPT (NPT ports). Note: M5 x 0.8 port will accept #10-32 male thread fittings.

‡ Note: On 32 bore, 5 mm stroke, non-magnetic model only, port thread is M5 x 0.8 which will accept #10-32 male thread fittings.

Please see next page for 'B' and 'Q' dimensions.

Dimensions in inches (mm)

# Series 99000 compact actuators

Ø Q	Stroke (mm)		50	75	100	125, 150	175 ... 300
	5 ... 45	5 ... 100					
12	0.28 (7)	- (-)	0.35 (9)	0.35 (9)	0.35 (9)	- (-)	- (-)
16	0.31 (8)	- (-)	0.40 (10)	0.40 (10)	0.40 (10)	- (-)	- (-)
20	0.32 (8)	- (-)	0.32 (8)	0.48 (12)	0.48 (12)	- (-)	- (-)
25	0.33 (8.5)	- (-)	0.33 (8.5)	0.50 (12.5)	0.50 (12.5)	- (-)	- (-)
32	- (-)	0.34 (9)	- (-)	- (-)	- (-)	0.50 (12.5)	- (-)
40	- (-)	0.36 (9)	- (-)	- (-)	- (-)	0.50 (12.5)	- (-)
50	- (-)	0.41 (10.5)	- (-)	- (-)	- (-)	0.52 (13)	- (-)
63	- (-)	0.45 (11.5)	- (-)	- (-)	- (-)	0.73 (18.5)	- (-)
80	- (-)	0.55 (14)	- (-)	- (-)	- (-)	0.55 (14)	- (-)
100	- (-)	0.71 (18)	- (-)	- (-)	- (-)	0.71 (18)	- (-)

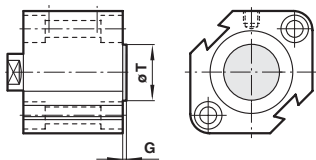
## Non-magnetic piston

Ø B	Stroke (mm)														
	5	10	15	20	25	30	35	40	45	50	75	100	125	150	
12	1.30 (33)	1.50 (38)	1.69 (43)	1.89 (48)	2.07 (53)	2.28 (58)	- (-)	- (-)	- (-)	3.30 (84)	4.28 (109)	5.27 (134)	- (-)	- (-)	
16	1.40 (35.5)	1.59 (40.5)	1.79 (45.5)	1.99 (50.5)	2.19 (55.5)	2.38 (60.5)	- (-)	- (-)	- (-)	3.39 (86)	4.38 (111)	5.36 (136)	- (-)	- (-)	
20	1.44 (36.5)	1.63 (41.5)	1.83 (46.5)	2.03 (51.5)	2.22 (56.5)	2.42 (61.5)	- (-)	- (-)	- (-)	3.21 (81.5)	4.59 (116.5)	5.57 (141.5)	- (-)	- (-)	
25	1.48 (37.5)	1.67 (42.5)	1.87 (47.5)	2.07 (52.5)	2.26 (57.5)	2.46 (62.5)	- (-)	- (-)	- (-)	3.25 (82.5)	4.82 (122.5)	5.81 (147.5)	- (-)	- (-)	
32	1.10 (28)	1.30 (33)	1.50 (38)	1.69 (43)	1.89 (48)	2.09 (53)	2.28 (58)	2.48 (63)	2.68 (68)	2.87 (73)	4.25 (108)	5.24 (133)	6.80 (173)	7.79 (198)	
40	1.36 (34.5)	1.56 (39.5)	1.75 (44.5)	1.95 (49.5)	2.15 (54.5)	2.34 (59.5)	2.54 (64.5)	2.74 (69.5)	2.93 (74.5)	3.13 (79.5)	4.51 (114.5)	5.49 (139.5)	7.11 (180.5)	8.09 (205.5)	
50	-	1.59 (40.5)	1.79 (45.5)	1.99 (50.5)	2.19 (55.5)	2.38 (60.5)	2.58 (65.5)	2.78 (70.5)	2.97 (75.5)	3.17 (80.5)	4.55 (115.5)	5.53 (140.5)	7.26 (184.5)	8.24 (209.5)	
63	-	1.81 (46)	2.01 (51)	2.20 (56)	2.40 (61)	2.60 (66)	2.80 (71)	2.99 (76)	3.19 (81)	3.39 (86)	4.76 (121)	5.75 (146)	7.46 (189.5)	8.49 (214.5)	
80	-	2.11 (53.5)	2.30 (58.5)	2.50 (63.5)	2.70 (68.5)	2.89 (73.5)	3.09 (78.5)	3.29 (83.5)	3.48 (88.5)	3.68 (93.5)	5.06 (128.5)	6.04 (153.5)	7.66 (194.5)	8.64 (219.5)	
100	-	2.48 (63)	2.68 (68)	2.87 (73)	3.07 (78)	3.27 (83)	3.46 (88)	3.66 (93)	3.86 (98)	4.06 (103)	5.43 (138)	6.42 (163)	7.94 (202)	8.93 (227)	

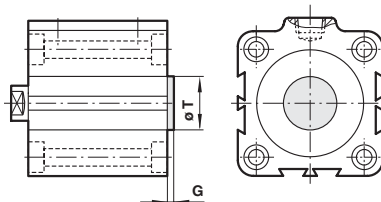
## Magnetic piston

Ø B	Stroke (mm)														
	5	10	15	20	25	30	35	40	45	50	75	100	125	150	
12	1.30 (33)	1.50 (38)	1.69 (43)	1.89 (48)	2.07 (53)	2.28 (58)	- (-)	- (-)	- (-)	3.30 (84)	4.28 (109)	5.27 (134)	- (-)	- (-)	
16	1.40 (35.5)	1.59 (40.5)	1.79 (45.5)	1.99 (50.5)	2.19 (55.5)	2.38 (60.5)	- (-)	- (-)	- (-)	3.39 (86)	4.38 (111)	5.36 (136)	- (-)	- (-)	
20	1.44 (36.5)	1.63 (41.5)	1.83 (46.5)	2.03 (51.5)	2.22 (56.5)	2.42 (61.5)	- (-)	- (-)	- (-)	3.21 (81.5)	4.59 (116.5)	5.57 (141.5)	- (-)	- (-)	
25	1.48 (37.5)	1.67 (42.5)	1.87 (47.5)	2.07 (52.5)	2.26 (57.5)	2.46 (62.5)	- (-)	- (-)	- (-)	3.25 (82.5)	4.82 (122.5)	5.81 (147.5)	- (-)	- (-)	
32	1.50 (38)	1.69 (43)	1.89 (48)	2.09 (53)	2.28 (58)	2.48 (63)	2.68 (68)	2.87 (73)	3.07 (78)	3.27 (83)	4.25 (108)	5.24 (133)	6.80 (173)	7.79 (198)	
40	1.75 (44.5)	1.95 (49.5)	2.15 (54.5)	2.34 (59.5)	2.54 (64.5)	2.74 (69.5)	2.93 (74.5)	3.13 (79.5)	3.33 (84.5)	3.52 (89.5)	4.51 (114.5)	5.49 (139.5)	7.11 (180.5)	8.09 (205.5)	
50	- (-)	1.99 (50.5)	2.19 (55.5)	2.38 (60.5)	2.58 (65.5)	2.78 (70.5)	2.97 (75.5)	3.17 (80.5)	3.37 (85.5)	3.56 (90.5)	4.55 (115.5)	5.53 (140.5)	7.26 (184.5)	8.24 (209.5)	
63	- (-)	2.20 (56)	2.40 (61)	2.60 (66)	2.80 (71)	2.99 (76)	3.19 (81)	3.39 (86)	3.58 (91)	3.78 (96)	4.76 (121)	5.75 (146)	7.46 (189.5)	8.49 (214.5)	
80	- (-)	2.50 (63.5)	2.70 (68.5)	2.89 (73.5)	3.09 (78.5)	3.29 (83.5)	3.48 (88.5)	3.68 (93.5)	3.88 (98.5)	4.07 (103.5)	5.06 (128.5)	6.04 (153.5)	7.66 (194.5)	8.64 (219.5)	
100	- (-)	2.87 (73)	3.07 (78)	3.27 (83)	3.46 (88)	3.66 (93)	3.86 (98)	4.06 (103)	4.25 (108)	4.45 (113)	5.43 (138)	6.42 (163)	7.94 (201.5)	8.93 (226.5)	

Boss, cap end – DM/99000/FX  
Ø 12 ... 25 mm

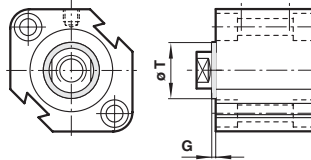


Ø 32 ... 160 mm

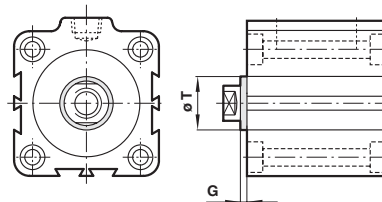


Dimensions in inches (mm)

Boss, rod end – DM/99000/EX  
Ø 12 ... 25 mm



Ø 32 ... 160 mm

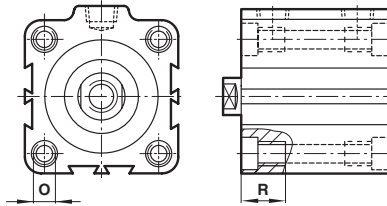


Ø	Ø T	G
12	0.591 ±0.002 (15 ±0.043)	0.059 (1.5)
16	0.787 ±0.002 (20 ±0.052)	0.059 (1.5)
20	0.512 ±0.002 (13 ±0.043)	0.079 (2.0)
25	0.591 ±0.002 (15 ±0.043)	0.079 (2.0)
32	0.827 ±0.002 (21 ±0.062)	0.079 (2.0)
40	1.102 ±0.002 (28 ±0.062)	0.079 (2.0)
50	1.378 ±0.002 (35 ±0.062)	0.079 (2.0)
63	1.378 ±0.002 (35 ±0.062)	0.079 (2.0)
80	1.693 ±0.002 (43 ±0.062)	0.079 (2.0)
100	2.323 ±0.003 (59 ±0.074)	0.079 (2.0)

# Series 99000 compact actuators

## Mountings

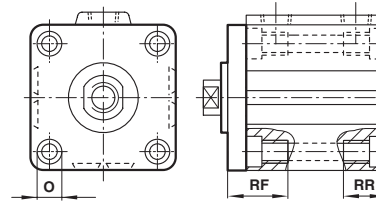
Tapped hole mounting both ends – A  
For single and double ended piston rod



Ø	O	R		
12	#8-32	(M4 x 0.7)	0.43	(11)
16	#8-32	(M4 x 0.7)	0.43	(11)
16	1/4-20	(M6 x 1.0)	0.67	(17)
25	1/4-20	(M6 x 1.0)	0.67	(17)
32	1/4-20	(M6 x 1.0)	0.67	(17)
40	1/4-20	(M6 x 1.0)	0.75	(19)
50	5/16-18	(M8 x 1.25)	0.75	(19)
63	7/16-14	(M10 x 1.5)	0.87	(22)
80	1/2-13	(M12 x 1.75)	1.13	(29)
100	1/2-13	(M12 x 1.75)	1.13	(29)

Note: Inch threads for 'C' port code.  
Metric threads for 'M' port codes.  
Metric for foot, flange, or clevis mount.

For cylinders with non-rotating piston rod

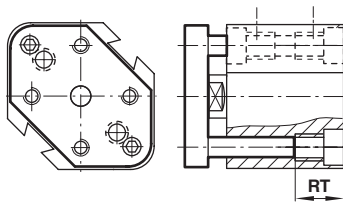


Ø	O		Places front	RF	Places rear	RR
12	#8-32	(M4 x 0.7)	2	0.63 (16)	2	0.43 (11)
16	#8-32	(M4 x 0.7)	2	0.63 (16)	2	0.43 (11)
16	1/4-20	(M6 x 1.0)	2	0.98 (25)	2	0.67 (17)
25	1/4-20	(M6 x 1.0)	2	0.98 (25)	2	0.67 (17)
32	1/4-20	(M6 x 1.0)	2	1.02 (26)	4	0.67 (17)
40	1/4-20	(M6 x 1.0)	4	0.75 (19)	4	0.75 (19)
50	5/16-18	(M8 x 1.25)	4	0.75 (19)	4	0.75 (19)
63	7/16-14	(M10 x 1.5)	4	0.87 (22)	4	0.87 (22)
80	1/2-13	(M12 x 1.75)	4	1.13 (29)	4	1.13 (29)
100	1/2-13	(M12 x 1.75)	4	1.13 (29)	4	1.13 (29)

Note: Inch threads for 'C' port code.  
Metric threads for 'M' port codes.  
Metric for foot, flange, or clevis mount.

For cylinders with toolplate

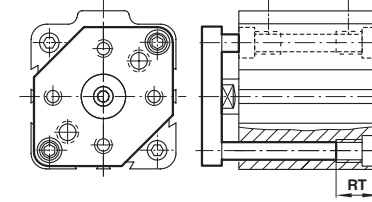
Ø 12 .... 25 mm



Ø	OT		RT	
12	#8-32	(M4 x 0.7)	0.38	(9.7)
16	#8-32	(M4 x 0.7)	0.51	(13)
20	1/4-20	(M6 x 1.0)	0.53	(13.5)
25	1/4-20	(M6 x 1.0)	0.59	(15)
32	1/4-20	(M6 x 1.0)	0.67	(17)
40	1/4-20	(M6 x 1.0)	0.75	(19)
50	5/16-18	(M8 x 1.25)	0.75	(19)
63	7/16-14	(M10 x 1.5)	0.87	(22)
80	1/2-13	(M12 x 1.75)	1.13	(29)
100	1/2-13	(M12 x 1.75)	1.13	(29)

Note: Inch threads for 'C' port code.  
Metric threads for 'M' port codes.  
Metric for foot, flange, or clevis mount.

Ø 32 .... 100 mm



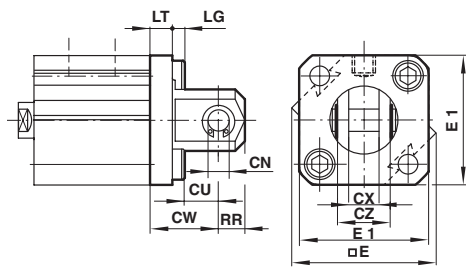
Dimensions in inches (mm)



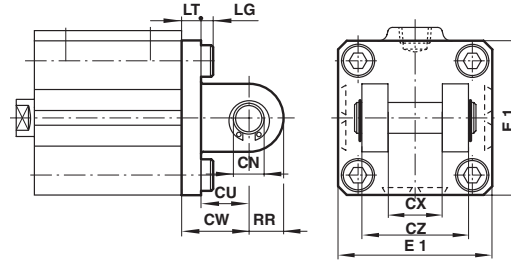
# Series 90000 compact actuators

Rear clevis mounting – D

Ø 12 ... 25 mm



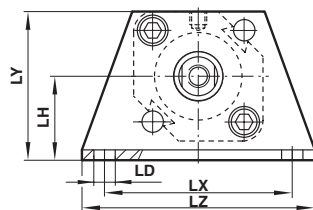
Ø 32 ... 50 mm



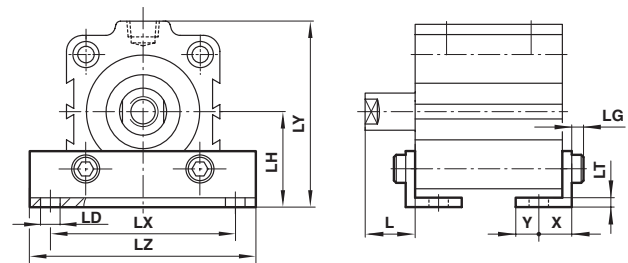
Ø	CN	CW	CU	CX	GZ	LT	LG	RR	E1	□ E	lb (kg)
12	0.187 (5)	0.55 (14)	0.28 (7)	0.21 (5.3)	0.39 (10)	0.2 (5)	0.11 (2.8)	0.24 (6.0)	0.98 (25)	1.09 (27.7)	0.05 (0.02)
16	0.187 (5)	0.59 (15)	0.39 (10)	0.27 (6.8)	0.47 (12)	0.2 (5)	0.11 (2.8)	0.24 (6.0)	1.14 (29)	1.25 (31.7)	0.05 (0.02)
20	0.312 (8)	0.71 (18)	0.47 (12)	0.33 (8.3)	0.63 (16)	0.2 (5)	0.16 (4.0)	0.35 (9.0)	1.42 (36)	– (–)	0.10 (0.05)
25	0.375 (10)	0.79 (20)	0.55 (14)	0.41 (10.3)	0.79 (20)	0.2 (5)	0.16 (4.0)	0.39 (10)	1.57 (40)	– (–)	0.15 (0.07)
32	0.375 (10)	0.79 (20)	0.55 (14)	0.72 (18.3)	1.42 (36)	0.24 (6)	0.16 (4.0)	0.39 (10)	1.75 (44.5)	– (–)	0.20 (0.09)
40	0.375 (10)	0.87 (22)	0.55 (14)	0.72 (18.3)	1.42 (36)	0.31 (8)	0.16 (4.0)	0.39 (10)	2.05 (52)	– (–)	0.29 (0.13)
50	0.5 (14)	1.1 (28)	0.79 (20)	0.88 (22.3)	1.73 (44)	0.31 (8)	0.2 (5.0)	0.55 (14)	2.51 (63.7)	– (–)	0.46 (0.22)
63	0.5 (14)	1.18 (30)	0.79 (20)	0.88 (22.3)	1.73 (44)	0.39 (10)	0.24 (6.0)	0.55 (14)	3.02 (76.7)	– (–)	0.75 (0.34)
80	0.75 (18)	1.5 (38)	1.07 (27)	1.11 (28.3)	2.2 (56)	0.43 (11)	0.28 (7.0)	0.71 (18)	3.85 (97.8)	– (–)	1.19 (0.54)
100	0.875 (22)	1.77 (45)	1.22 (31)	1.27 (32.3)	2.52 (64)	0.55 (14)	0.28 (7.0)	0.87 (22)	4.54 (115.3)	– (–)	1.98 (0.90)

Foot mounting – C

Ø 12 ... 25 mm



Ø 32 ... 50 mm



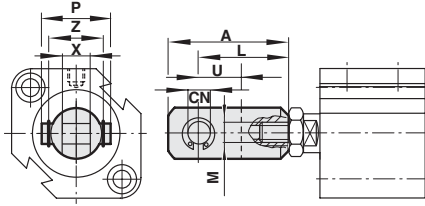
Ø	LD	LH	LX	LY	LZ	L	LT	X	Y	LG	lb (kg)
12	0.18 (4.5)	0.67 (17)	1.39 (34)	1.16 (29.5)	1.73 (44)	0.53 (13.5)	0.08 (2)	0.31 (8)	0.18 (4.5)	0.11 (2.8)	0.04 (0.02)
16	0.18 (4.5)	0.75 (19)	1.50 (38)	1.32 (33.5)	1.89 (48)	0.53 (13.5)	0.08 (2)	0.31 (8)	0.20 (5)	0.11 (2.8)	0.04 (0.02)
20	0.26 (6.5)	0.94 (24)	1.89 (48)	1.65 (42)	2.44 (62)	0.57 (14.5)	0.13 (3.2)	0.36 (9.2)	0.23 (5.8)	0.16 (4)	0.04 (0.02)
25	0.26 (6.5)	1.02 (26)	2.05 (52)	1.81 (46)	2.60 (66)	0.59 (15)	0.13 (3.2)	0.42 (10.7)	0.23 (5.8)	0.16 (4)	0.09 (0.04)
32	0.26 (6.5)	1.18 (30)	2.24 (57)	2.24 (57)	2.80 (71)	0.67 (17)	0.13 (3.2)	0.44 (11.2)	0.23 (5.8)	0.16 (4)	0.09 (0.04)
40	0.26 (6.5)	1.30 (33)	2.52 (64)	2.52 (64)	3.07 (78)	0.67 (17)	0.13 (3.2)	0.44 (11.2)	0.28 (7)	0.16 (4)	0.22 (0.10)
50	0.35 (9)	1.54 (39)	3.11 (79)	3.07 (78)	3.74 (95)	0.71 (18)	0.13 (3.2)	0.58 (14.7)	0.31 (8)	0.20 (5)	0.24 (0.11)
63	0.43 (11)	1.81 (46)	3.74 (95)	3.6 (91.5)	4.45 (113)	0.71 (18)	0.13 (3.2)	0.64 (16.2)	0.35 (9)	0.24 (6)	0.29 (0.13)
80	0.51 (13)	2.32 (59)	4.65 (118)	4.49 (114)	5.51 (140)	0.79 (20)	0.18 (4.5)	0.77 (19.5)	0.43 (11)	0.28 (7)	0.40 (0.18)
100	0.51 (13)	2.80 (71)	5.39 (137)	5.35 (136)	6.38 (162)	0.87 (22)	0.24 (6)	0.91 (23)	0.49 (12.5)	0.28 (7)	1.06 (0.47)

Dimensions in inches (mm)

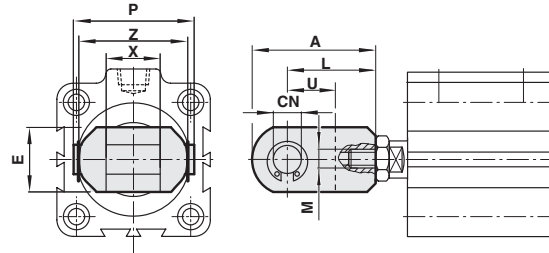
## Series 90000 compact actuators

### Accessories

Piston rod clevis  
 $\varnothing$  12 ... 25 mm



$\varnothing$  32 ... 50 mm



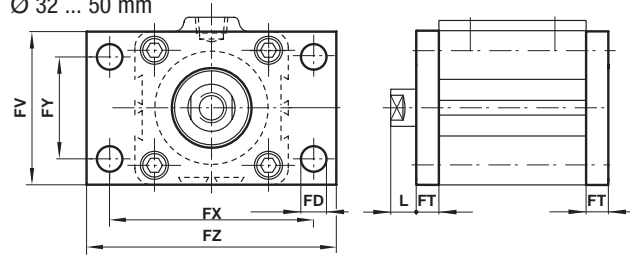
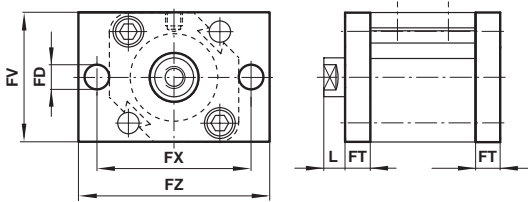
$\varnothing$	Model	Metric	Metric		L	U	X	Z	P	E	A	lb (kg)
			CN	M								
12	QC/99012/25	QM/99012/25	0.187 (5)	#8-32 (M5 x 0.8 deep)	0.63 (16)	0.27 (7)	0.21 (5.3)	0.39 (10)	0.55 (14)	0.39 (10)	0.85 (21.5)	0.02 (0.01)
16	QC/99016/25	QM/99016/25	0.187 (5)	#8-32 (M6 x 1.0 deep)	0.83 (21)	0.39 (10)	0.26 (6.6)	0.47 (12)	0.63 (16)	0.47 (12)	1.10 (28)	0.02 (0.01)
20	QC/99020/25	QM/99020/25	0.312 (8)	#10-32 (M8 x 1.25 deep)	0.98 (25)	0.45 (11.5)	0.33 (8.3)	0.63 (16)	0.83 (21)	0.63 (16)	1.34 (34)	0.02 (0.01)
25	QC/99025/25	QM/99025/25	0.375 (10)	1/4-28 (M10 x 1.25 deep)	1.18 (30)	0.55 (14)	0.41 (10.3)	0.78 (20)	0.98 (25)	0.78 (20)	1.61 (41)	0.02 (0.01)
32	QC/99032/25	QM/99032/25	0.375 (10)	5/16-24 (M14 x 1.5 deep)	1.18 (30)	0.55 (14)	0.72 (18.4)	1.44 (36.6)	1.61 (41)	0.87 (22)	1.65 (42)	0.04 (0.02)
40	QC/99040/25	QM/99032/25	0.375 (10)	3/8-24 (M14 x 1.5 deep)	1.18 (30)	0.55 (14)	0.72 (18.4)	1.44 (36.6)	1.61 (41)	0.87 (22)	1.65 (42)	0.04 (0.02)
50	QC/99050/25	QM/99050/25	0.500 (14)	1/2-20 (M18 x 1.5 deep)	1.57 (40)	0.79 (20)	0.88 (22.4)	1.7 5(44.5)	1.97 (50)	1.10 (28)	2.20 (56)	0.09 (0.04)
63	QC/99050/25	QM/99050/25	0.500 (14)	1/2-20 (M18 x 1.5 deep)	1.57 (40)	0.79 (20)	0.88 (22.4)	1.75 (44.5)	1.97 (50)	1.10 (28)	2.20 (56)	0.20 (0.09)
80	QC/99080/25	QM/99080/25	0.750 (18)	5/8-18 (M22 x 1.5 deep)	1.97 (50)	1.06 (27)	1.12 (28.4)	2.19 (55.6)	2.46 (62.5)	1.50 (38)	2.80 (71)	0.48 (0.22)
100	QC/99100/25	QM/99100/25	0.875 (22)	3/4-16 (M26 x 1.5 deep)	2.17 (55)	1.22 (31)	1.28 (32.4)	2.50 (63.5)	2.78 (70.6)	1.73 (44)	3.11 (79)	0.48 (0.22)

# Series 90000 compact actuators

Flange rod end mounting – G Flange cap end mounting – B  
 ISO Flange rod end mounting – IG ISO Flange cap end mounting – IB

Ø 12 ... 25 mm

Ø 32 ... 50 mm



ISO

Non-ISO

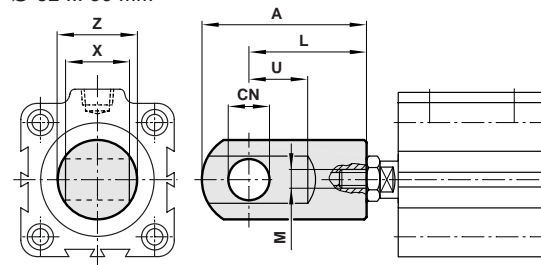
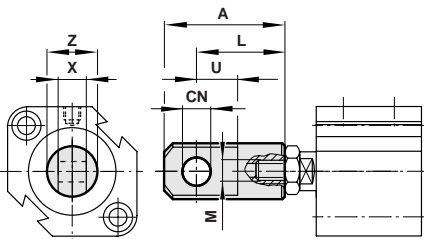
Ø	FT	L	FD	FY	FX	FV	FZ	FD	FY	FX	FV	F	Z	lb (kg)
12	0.22 (5.5)	0.31 (8.0)	0.22 (5.5)	- (-)	1.57 (40)	0.98 (25)	1.97 (50)	0.18 (4.5)	- (-)	1.77 (45)	0.98 (25)	2.17 (55)	2.17 (55)	0.04 (0.02)
16	0.22 (5.5)	0.31 (8.0)	0.22 (5.5)	- (-)	1.57 (40)	1.18 (30)	1.97 (50)	0.18 (4.5)	- (-)	1.77 (45)	1.18 (30)	2.17 (55)	2.17 (55)	0.04 (0.02)
20	0.31 (8)	0.26 (6.5)	0.26 (6.6)	- (-)	1.97 (50)	1.54 (39)	2.44 (62)	0.26 (6.5)	- (-)	1.89 (48)	1.54 (39)	2.36 (60)	2.36 (60)	0.04 (0.02)
25	0.31 (8)	0.28 (7.0)	0.26 (6.6)	- (-)	1.97 (50)	1.65 (42)	2.44 (62)	0.26 (6.5)	- (-)	2.05 (52)	1.65 (42)	2.52 (64)	2.52 (64)	0.09 (0.04)
32	0.31 (8)	0.35 (9.0)	0.28 (7)	1.26 (32)	2.52 (64)	1.89 (48)	2.99 (76)	0.22 (5.5)	1.34 (34)	2.2 (56)	1.89 (48)	2.56 (65)	2.56 (65)	0.13 (0.06)
40	0.31 (8)	0.35 (9.0)	0.35 (9)	1.42 (36)	2.83 (72)	2.13 (54)	3.47 (88)	0.22 (5.5)	1.57 (40)	2.44 (62)	2.13 (54)	2.83 (72)	2.83 (72)	0.33 (0.15)
50	0.35 (9)	0.35 (9.0)	0.35 (9)	1.77 (45)	3.54 (90)	2.64 (67)	4.17 (106)	0.26 (6.5)	1.97 (50)	2.99 (76)	2.64 (67)	3.5 (89)	3.5 (89)	0.37 (0.16)
63	0.35 (9)	0.35 (9)	0.35 (9)	1.97 (50)	3.94 (100)	3.15 (80)	4.57 (116)	0.35 (9)	2.36 (60)	3.62 (92)	3.15 (80)	4.25 (108)	4.25 (108)	0.73 (0.32)
80	0.43 (11)	0.35 (9)	0.47 (12)	2.48 (63)	4.96 (126)	3.9 (99)	5.91 (150)	0.43 (11)	3.03 (77)	4.57 (116)	3.9 (99)	5.28 (134)	5.28 (134)	0.90 (0.40)
100	0.43 (11)	0.43 (11)	0.55 (14)	2.95 (75)	5.91 (150)	4.61 (117)	7.01 (178)	0.43 (11)	3.7 (94)	5.35 (136)	4.61 (117)	6.06 (154)	6.06 (154)	1.58 (0.70)

Dimensions in inches (mm)

Piston rod eye

Ø 12 ... 25 mm

Ø 32 ... 50 mm



Ø	Model	CN	M	L	U	X	Z	A	lb (kg)
Inch	Metric								
12	QC/99012/32	QM/99012/32	#8-32 (M5 x 0.8 deep)	0.63 (16)	0.27 (7)	0.18 (4.7)	0.38 (9.7)	0.85 (21)	0.05 (0.02)
16	QC/99016/32	QM/99016/32	#8-32 (M6 x 1.0 deep)	0.98 (25)	0.55 (14)	0.24 (6.2)	0.44 (11.2)	1.26 (32)	0.05 (0.02)
20	QC/99020/32	QM/99020/32	#10-32 (M8 x 1.25 deep)	0.98 (25)	0.45 (11.5)	0.3 (7.7)	0.63 (16)	1.34 (34)	0.10 (0.05)
25	QC/99025/32	QM/99025/32	1/4-28 (M10 x 1.25 deep)	1.18 (30)	0.55 (14)	0.38 (9.7)	0.75 (19)	1.61 (41)	0.15 (0.07)
32	QC/99032/32	QM/99032/32	5/16-24 (M14 x 1.5 deep)	1.18 (30)	0.55 (14)	0.69 (17.5)	0.87 (22)	1.65 (42)	0.20 (0.09)
40	QC/99040/32	QM/99032/32	3/8-24 (M14 x 1.5 deep)	1.18 (30)	0.55 (14)	0.69 (17.5)	0.87 (22)	1.65 (42)	0.29 (0.13)
50	QC/99050/32	QM/99050/32	1/2-20 (M18 x 1.5 deep)	1.57 (40)	0.79 (20)	0.85 (21.5)	1.06 (27)	2.2 (56)	0.73 (0.33)
63	QC/99050/32	QM/99050/32	1/2-20 (M18 x 1.5 deep)	1.57 (40)	0.79 (20)	0.85 (21.5)	1.06 (27)	2.2 (56)	0.73 (0.33)
80	QC/99080/32	QM/99080/32	5/8-18 (M22 x 1.5 deep)	1.97 (50)	1.06 (27)	1.08 (27.5)	1.50 (38)	2.8 (71)	1.52 (0.67)
100	QC/99100/32	QM/99100/32	3/4-16 (M26 x 1.5 deep)	2.17 (55)	1.22 (31)	1.24 (31.5)	1.75 (44.5)	3.11 (79)	1.52 (0.67)

Dimensions in inches (mm)

Ordering information To order a basic 25 mm bore cylinder, spring return, with a 10 mm stroke, BSP parallel ports, quote: DM/95025/10 plus piston rod eye mounting: QM/99025/32

## Spares

Cylinder	Spares kit
D*/99012	QM/99012/00
D*/99016	QM/99016/00
D*/99020	QM/99020/00
D*/99025	QM/99025/00
D*/99032	QM/99032/00
D*/99040	QM/99040/00
D*/99050	QM/99050/00
D*/99063	QM/99063/00
D*/99080	QM/99080/00
D*/99100	QM/99100/00
D*/99125	QM/99125/00
D*/99160	QM/99160/00