

RM/28000/M Roundline cylinders (ISO)

Single acting, ISO 6432

Ø 10 ... 25 mm

- Magnetic piston as standard
- Generally conforms to ISO 6432
- High strength, double crimped end cap design
- Corrosion resistant
- Nose mounting nut and piston rod locknut supplied as standard



Technical features

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

Single acting (Spring return), magnetic piston, buffer cushioning

Operating pressure:

29 to 145 psi (2 to 10 bar)

Operating temperature:

14°F to 176°F (-10°C to +80°C) max.

Consult our technical service for use below 32°F (2°C)

Materials

Barrel: stainless steel
End covers: clear anodised aluminum alloy
Piston rod: stainless steel
Buffer: polyurethane
Seals: nitrile rubber

Standard models

	Models			Accessories					
	Ø	Piston rod Ø	Port size	Reed switch with integral 5m cable	Switch mounting >15 mm stroke	Switch mounting <15 mm stroke	Straight fitting	Elbow fitting	
									
	10	4	M5	RM/28010/M/*	M/50/LSU/5V	QM/33/010/22	QM/33/010/23	C02250405	C02470405
	12	6	M5	RM/28012/M/*	M/50/LSU/5V	QM/33/012/22	QM/33/016/23	C02250405	C02470405
	16	6	M5	RM/28016/M/*	M/50/LSU/5V	QM/33/016/22	QM/33/016/23	C02250405	C02470405
	20	8	G1/8	RM/28020/M/*	M/50/LSU/5V	QM/33/020/22	QM/33/020/23	C02250618	C02470618
	25	10	G1/8	RM/28025/M/*	M/50/LSU/5V	QM/33/025/22	QM/33/025/23	C02250618	C02470618

* Insert stroke length in mm.
Service kits are not available for these cylinders.

Standard strokes

Ø	10	25	50
12	•	•	•
16	•	•	•
20	•	•	•
25	•	•	•

Theoretical forces

Cylinder Ø	Theoretical forces (N) at 6 bar	
	Outstroke	F1
10	40.7	3.7
12	57.7	4.8
16	102	10.5
20	165	16.1
25	260	21.6

F1 = Return force of spring

Options selector

RM/28★★★★/★★/★★

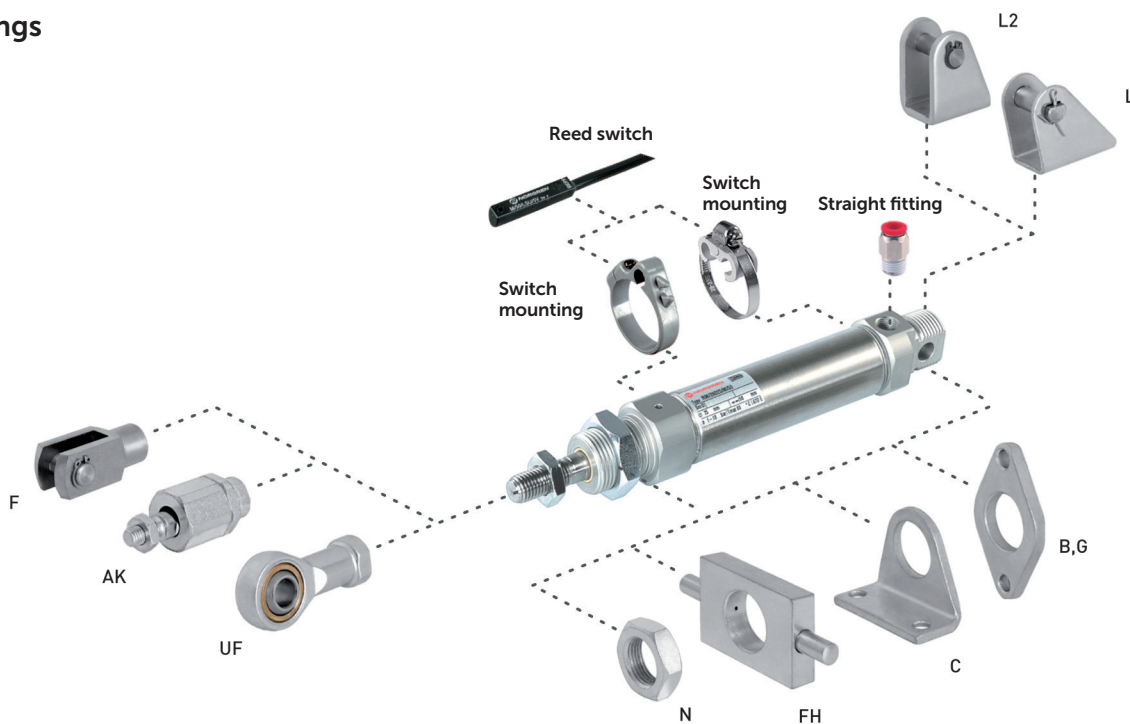
Cylinder Ø (mm)	Substitute
10	010
12	012
16	016
20	020
25	025

Note: If option is not required, disregard option position within part number eg. RM/28025/M/50.

This options selector explains only the cylinder variants. Additional variants/options are not possible.

Stroke (mm)	
max. 50	
Variants (magnetic piston)	Substitute
Standard with integral eye mounting	M
Central rear port	MC
Flat rear cover	MF
20	020
25	025

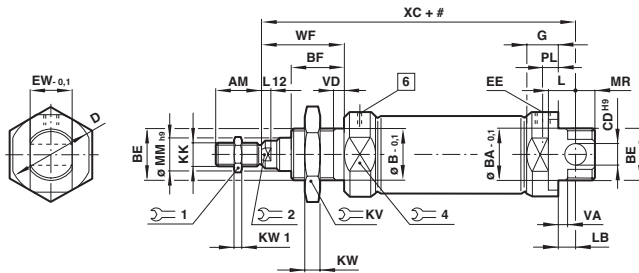
Mountings



Ø	AK	B, G	C	F	FH	L	L2	N	UF
10	QM/8010/38	M/P19407	M/P19369	QM/8010/25	—	QM/947	QM/8010/44	M/P1501/90	QM/8010/32
12	QM/8012/38	M/P19408	M/P19389	QM/8012/25	QM/8012/34	QM/8012/24	QM/8012/44	M/P13834	QM/8012/32
16	QM/8012/38	M/P19408	M/P19389	QM/8012/25	QM/8012/34	QM/8012/24	QM/8012/44	M/P13834	QM/8012/32
20	QM/8020/38	M/P19409	M/P19406	QM/8020/25	QM/8020/34	QM/8020/24	QM/8020/44	M/P13615	QM/8020/32
25	QM/8025/38	M/P19409	M/P19406	QM/8025/25	QM/8020/34	QM/8020/24	QM/8020/44	M/P13615	QM/8025/32

Basic dimensions

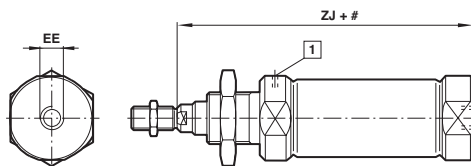
RM/28000/M – Standard



Models	Ø	AM	Ø B/BA _{0.1}	BE	BF	Ø CD _{H9}	Ø D	EE	EW _{0.1}	G	KK	KV	1	KW	KW1
RM/28010/M.	10	12	12	M12x1.25	12	4	16.5	M5	7.9	9	M4	19	7	6	2
RM/28012/M.	12	16	16	M16x1.5	17	6	21	M5	11.9	9.5	M6	22	10	5	3
RM/28016/M.	16	16	16	M16x1.5	17	6	21	M5	11.9	9.5	M6	22	10	5	3
RM/28020/M.	20	20	22	M22x1.5	20	8	30	G1/8	15.9	15	M8	27	13	8	4
RM/28025/M.	25	22	22	M22x1.5	22	8	30	G1/8	15.9	15	M10x1.25	27	17	8	5
Models	Ø	L	L12	LB	Ø MM _{H9}	MR	PL	2	4	WF	VA/VD	XC	at 0 mm	per 25 mm	
RM/28010/M.	10	6	—	2	4	8	5.5	—	14	16	1.5	64	0.075 lb	0.015 lb	
RM/28012/M.	12	9	3	3	6	8	5.5	5	19	22	2	75	0.138 lb	0.024 lb	
RM/28016/M.	16	9	3	4	6	7	5.5	5	19	22	2	82	0.154 lb	0.026 lb	
RM/28020/M.	20	12	3	3	8	11	8	7	27	24	2	95	0.320 lb	0.039 lb	
RM/28025/M.	25	12	4	7	10	9	8	9	27	28	2	104	0.441 lb	0.062 lb	

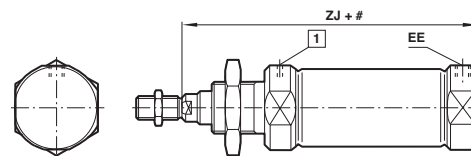
Cylinder variants

RM/28000/MC – Cylinders with central rear port



Models	Ø	EE	ZJ	at 0 mm	per 25 mm
RM/28010/M.	10	M5	62	0.068 lb	0.015 lb
RM/28012/M.	12	M5	72	0.115 lb	0.024 lb
RM/28016/M.	16	M5	78	0.141 lb	0.026 lb
RM/28020/M.	20	G1/8	92	0.287 lb	0.040 lb
RM/28025/M.	25	G1/8	97	0.408 lb	0.062 lb

RM/28000/MF – Cylinders with flat rear cover



- # Stroke
- 1 Exhaust position, do not obstruct

RM/8000/M Roundline cylinders (ISO)

Double acting, ISO 6432

Ø 10 to 25 mm



- Magnetic piston as standard
- Corrosion resistant
- Conforms to ISO 6432
- Buffer or adjustable cushioning
- High strength, double crimped end cap design
- Nose mounting nut and piston rod locknut supplied as standard

Technical features

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

Double acting, magnetic piston with buffer or adjustable cushioning

Operating pressure:

29 to 145 psi (2 to 10 bar)

Operating temperature:

14°F to 176°F (-10°C to +80°C) max.
Consult our technical service for use below 32°F (2°C)

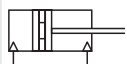
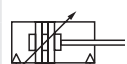
Materials

Barrel: stainless steel
End covers: clear anodised aluminum alloy
Piston rod: stainless steel
Buffer: polyurethane

Wiper: polyurethane

Seals: nitrile rubber

Standard Models

	Bore Ø	Piston rod Ø	Port size	Models	Accessories	Reed switch with integral 5m cable	Switch mounting >15 mm stroke	Switch mounting <15 mm stroke	Banjo flow control	Straight fitting	Elbow fitting
				Buffer cushioning	Adjustable cushioning						
									Tube diameter in bold		
											
Buffer cushioning											
											
Adjustable cushioning											
	10	4	M5	RM/8010/M/*		M/50/LSU/5V	QM/33/010/22	QM/33/010/23	C0K510405	C02250405	C02470405
	12	6	M5	RM/8012/M/*		M/50/LSU/5V	QM/33/012/22	QM/33/016/23	C0K510405	C02250405	C02470405
	16	6	M5	RM/8016/M/*	RM/8017/M/*	M/50/LSU/5V	QM/33/016/22	QM/33/016/23	C0K510405	C02250405	C02470405
	20	8	G1/8	RM/8020/M/*	RM/8021/M/*	M/50/LSU/5V	QM/33/020/22	QM/33/020/23	C0K510618	C02250618	C02470618
	25	10	G1/8	RM/8025/M/*	RM/8026/M/*	M/50/LSU/5V	QM/33/025/22	QM/33/025/23	C0K510618	C02250618	C02470618

*Insert stroke length in mm.
Service kits are not available for these cylinders.

Standard strokes (buffer cushioning) RM/8010, 12, 16, 20, 25

Ø	10	25	40	50	80	100	125	160	200	250
10	•	•	•	•	•	•				
12	•	•	•	•	•	•	•	•	•	
16	•	•	•	•	•	•	•	•	•	
20	•	•	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•	•	•

Other strokes available

Standard strokes (adjustable cushioning) RM/8017, 21, 26

Ø	25	50	80	100	125	160	200	250
16	•	•	•	•	•	•	•	
20	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•

Other strokes available

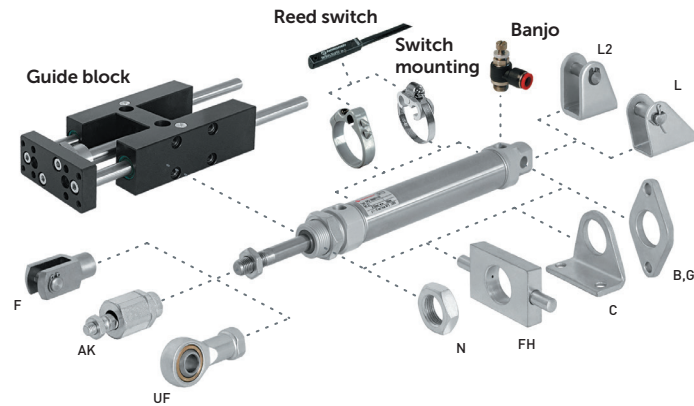
Options selector

★ RM/8 ★ ★ ★ ★ / ★ ★ ★ / ★ ★ ★		Stroke (mm)	
Special variants	Substitute	max. 500	
High temperature version: 29 to 145 psi (2 to 10 bar) 14°F to 176°F (-10°C to +80°C) max.	T	Variants (magnetic piston)	Substitute
Piston Rod Material	Substitute	Standard with integral eye mounting	M
Non-Chrome plated stainless steel	R	Central rear port	MC
Cylinder Ø (mm) with buffer	Substitute	Flat rear cover	MF
10	010	Non-rotating piston rod	N2
12	012	Double ended piston rod	JM
16	016	Locking unit	L4
20	020	Extended piston rod	MU
25	025	RM/8*** / MU / *** / ***	Extension (mm)
Cylinder Ø (mm) with adjustable cushioning	Substitute		
16	017		
20	021		
25	026		

Note: If option is not required, disregard option position within part number eg. RM/8025/M/50. For combinations of cylinder variants consult our Technical Service. Please note that heat resistant seals are not available for all variants.

This options selector explains only the cylinder variants. Additional variants/options are not possible.

Mountings



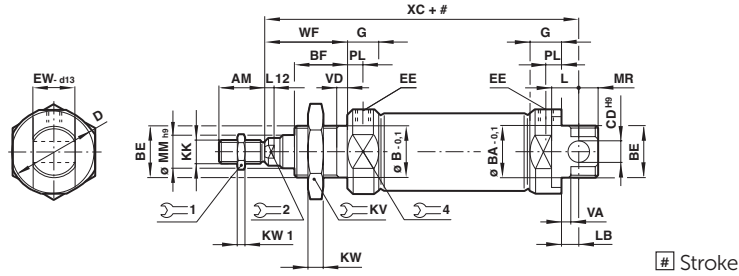
Ø	AK	B, G	C	F	FH	L	L2
10	QM/8010/38	M/P19407	M/P19369	QM/8010/25	—	QM/947	QM/8010/44
12	QM/8012/38	M/P19408	M/P19389	QM/8012/25	QM/8012/34	QM/8012/24	QM/8012/44
16	QM/8012/38	M/P19408	M/P19389	QM/8012/25	QM/8012/34	QM/8012/24	QM/8012/44
20	QM/8020/38	M/P19409	M/P19406	QM/8020/25	QM/8020/34	QM/8020/24	QM/8020/44
25	QM/8025/38	M/P19409	M/P19406	QM/8025/25	QM/8020/34	QM/8020/24	QM/8020/44
Ø	N	UF	Guide block				
10	M/P1501/90	QM/8010/32	—				
12	M/P13834	QM/8012/32	QM/8012/61/*				
16	M/P13834	QM/8012/32	QM/8012/61/*				
20	M/P13615	QM/8020/32	QM/8020/61/*				
25	M/P13615	QM/8025/32	QM/8025/61/*				

* Insert standard stroke length: Ø 12 mm: 50, 100, 160, 200 and 250 mm; Ø 16 ... 25 mm: 50, 100, 160, 200, 250, 320, 400 and 500 mm.

Other stroke lengths are not available, use nearest standard stroke.

Basic dimensions

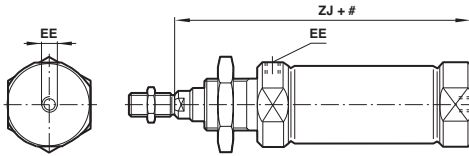
RM/8000/M – Standard



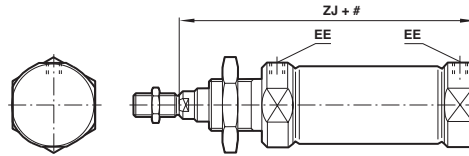
Models	Ø	AM	Ø B/BA _{-0.1}	BE	BF	Ø CD ^{H9}	Ø D	EE	EW _{-0.1}	G	KK	≡ KV	≡ 1	KW	KW1
RM/8010/M/. 10	12	12		M12x1.25	12	4	16.5	M5	7.9	9	M4	19	7	6	2
RM/8012/M/. 12	16	16		M16x1.5	17	6	21	M5	11.9	9.5	M6	22	10	5	3
RM/8016/M/. 16	16	16		M16x1.5	17	6	21	M5	11.9	9.5	M6	22	10	5	3
RM/8020/M/. 20	20	22		M22x1.5	20	8	30	G1/8	15.9	15	M8	27	13	8	4
RM/8025/M/. 25	22	22		M22x1.5	22	8	30	G1/8	15.9	15	M10x1.25	27	17	8	5
Models	Ø	L	L12	LB	Ø MM _{H9}	MR	PL	≡ 2	≡ 4	WF	VA/VD	XC	at 0 mm	per 25 mm	
RM/8010/M/. 10	6	—		2	4	8	5.5	—	14	16	1.5	64	0.127 lb	0.015 lb	
RM/8012/M/. 12	9	3		3	6	8	5.5	5	19	22	2	75	0.128 lb	0.024 lb	
RM/8016/M/. 16	9	3		4	6	7	5.5	5	19	22	2	82	0.154 lb	0.026 lb	
RM/8020/M/. 20	12	3		3	8	11	8	7	27	24	2	95	0.320 lb	0.040 lb	
RM/8025/M/. 25	12	4		7	10	9	8	9	27	28	2	104	0.441 lb	0.062 lb	

Cylinder Variants

RM/8000/MC – Cylinder with central rear port



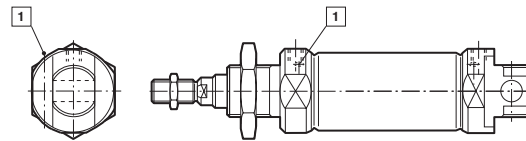
RM/8000/MF – Cylinder with flat rear cover



Models	Ø	EE	ZJ	at 0 mm	per 25 mm
RM/8010/M/.	10	M5	62	0.068 lb	0.015 lb
RM/8012/M/.	12	M5	72	0.115 lb	0.024 lb
RM/8016/M/.	16	M5	78	0.141 lb	0.026 lb
RM/8020/M/.	20	G1/8	92	0.287 lb	0.040 lb
RM/8025/M/.	25	G1/8	97	0.420 lb	0.062 lb

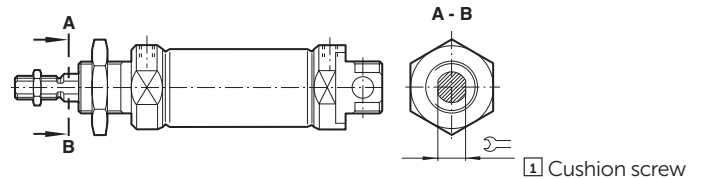
RM/8017/M, RM/8021/M, RM/8026/M – Cylinder with adjustable cushioning

Models	Ø	at 0 mm	per 25 mm
RM/8017/M/.	16	0.154 lb	0.026 lb
RM/8021/M/.	20	0.320 lb	0.040 lb
RM/8026/M/.	25	0.430 lb	0.062 lb



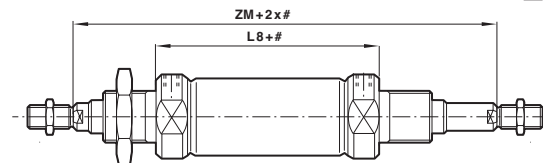
RM/8000/N2 – Cylinder with non-rotating piston rod

Models max.	Ø	2	Torque	at 0 mm	per 25 mm
RM/8012/N2/.	12	5	0.04 Nm	0.128 lb	0.024 lb
RM/8016/N2/.	16	5	0.04 Nm	0.154 lb	0.026 lb
RM/8020/N2/.	20	6	0.15 Nm	0.320 lb	0.040 lb
RM/8025/N2/.	25	8	0.25 Nm	0.441 lb	0.062 lb

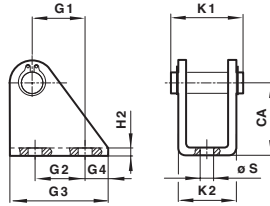


RM/8000/JM – Cylinder with double ended piston rod

Models	Ø	L8	ZM	at 0 mm	per 25 mm
RM/8016/JM/.	16	56	100	0.176 lb	0.037 lb
RM/8020/JM/.	20	68	116	0.364 lb	0.062 lb
RM/8025/JM/.	25	69	125	0.551 lb	0.095 lb

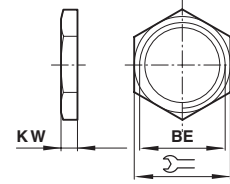


Rear hinge - L2



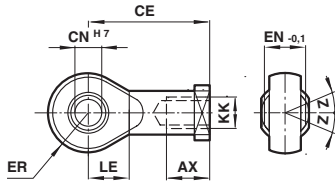
Models	Ø	CA	G1	G2	G3	G4	H2	K1	K2	Ø S	lb
QM/8010/44	10	24	11	12.5	20	4	2.5	17.5	13	4.5	0.040
QM/8012/44	12/16	27	13	15	25	5	3	23	18	5.5	0.077
QM/8020/44	20/25	30	16	20	32	6	4	29.5	24	6.6	0.170

Nose nut - N



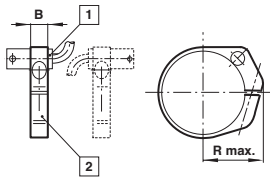
Models	Ø	BE	⌀	KW	lb
M/P1501/90	10	M12x1.25	19	6	0.02
M/P13834	12/16	M16x1.5	22	5	0.02
M/P13615	20/25	M22x1.5	27	8	0.04

Universal piston rod eye - UF



Models	Ø	KK	AX	CE	Ø CN ^{H7}	EN _{-0.1}	ER	LE	Z	lb
QM/8010/32	10	M4	14	27	5	8	8	10	5°	0.04
QM/8012/32	12/16	M6	14	30	6	9	9	11	5°	0.04
QM/8020/32	20	M8	16	36	8	12	11	13	5°	0.11
QM/8025/32	25	M10x1.25	25	42	10	14	14	15	5°	0.18

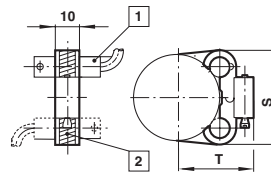
Switch Brackets for strokes > 15mm For use with M50 style switch



- 1 Magnetically operated switch
2 Switch mounting bracket

Models	Ø	B	R max.	lb
QM/33/010/22	10	8	16	0.02
QM/33/012/22	12	8	18	0.02
QM/33/016/22	16	10	20	0.02
QM/33/020/22	20	10	22	0.02
QM/33/025/22	25	10	24	0.02

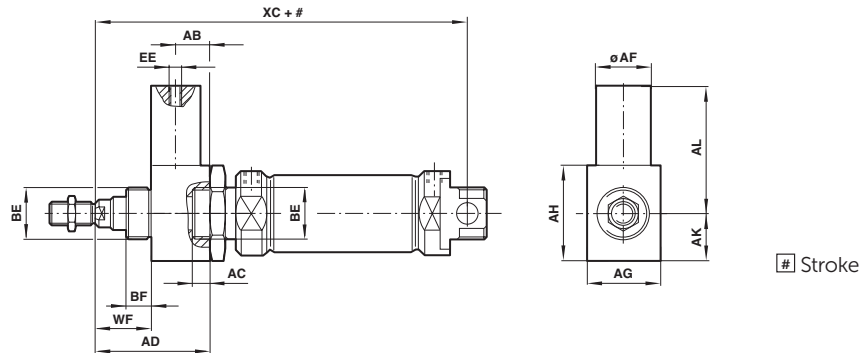
Switch Brackets for strokes < 15mm For use with M50 style switch



- 1 Magnetically operated switch
2 Switch mounting bracket

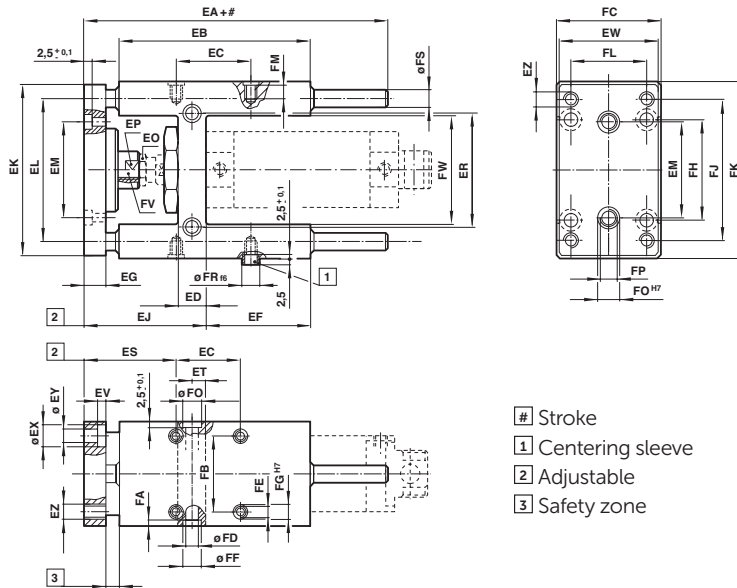
Models	Ø	S	T	lb
QM/33/010/23	10	27.5	19.5	0.02
QM/33/016/23	12	28.5	21.5	0.02
QM/33/016/23	16	29.5	23.5	0.02
QM/33/020/23	20	29.5	26	0.02
QM/33/025/23	25	31.5	28.5	0.02

RM/8000/L4 – Cylinder with locking unit



Models	Ø	AB	AC	AD	Ø AF	AG	AH	AL	AK
RM/8012/L4/.	12	21	13	48.5	20	20	20	43.5	10
RM/8016/L4/.	16	21	13	48.5	20	20	20	43.5	10
RM/8020/L4/.	20	24	14	66	22	27	33	45.5	16.5
RM/8025/L4/.	25	24	14	65	22	27	33	45.5	16.5
Models	Ø	BE	BF	EE	WF	XC	Locking forces	at 0 mm	per 25 mm
RM/8012/L4/.	12	M16x1.5	12	M5	18.5	109	200 N	0.287 lb	0.024 lb
RM/8016/L4/.	16	M16x1.5	12	M5	18.5	116	200 N	0.309 lb	0.026 lb
RM/8020/L4/.	20	M22x1.5	23	M5	31	145	350 N	0.661 lb	0.040 lb
RM/8025/L4/.	25	M22x1.5	23	M5	30	151.5	400 N	0.794 lb	0.062 lb

Basic dimensions QM/8000/61/*

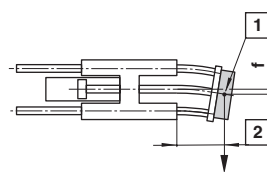
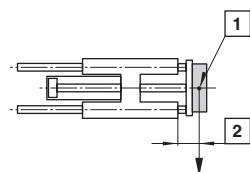


Models	Ø	EA	EB	EC	ED	EF	EG	EJ	EK	EL	EM	EO	EP	ER	ES	ET	EV	EW	Ø EX	Ø EY	EZ
QM/8012/61	12/16	132	75	32.5	16.5	37	10	76	63	46	24	10	8	24	65	6.5	4.6	27	8	4.5	M4
QM/8020/61	20	160	108	32.5	19	58	12	90	76	58	38	13	13	38	75	8.5	5.7	32	10	5.5	M5
QM/8025/61	25	160	108	32.5	19	58	12	90	76	58	38	17	13	38	75	8.5	5.7	32	10	5.5	M5
Models	FA	FB	FC	Ø	FE	FF	Ø FG ^{H7}	FH	FJ	FK	FL	FM	Ø FO ^{H7}	FP	Ø FR ₁₆	Ø FS	FV	FW	lb at 0 mm	lb per 100 mm	
QM/8012/61	6	22	30	5.5	M 4	9	6	32	54	65	15	10	9	M 5	6	8	M 6	27	0.88	0.09	
QM/8020/61	7	23	34	6.6	M 6	11	9	40	68	79	20	14	9	M 6	9	10	M 8	37	1.43	0.13	
QM/8025/61	7	23	34	6.6	M 6	11	9	40	68	79	20	14	9	M 6	9	10	M 10 x 1.25	37	1.43	0.13	

Note: supplied complete with cylinder mounting screws and two centering sleeves

Maximum load

In the case of shock load applications, the figures given in the diagrams above must be reduced by a factor of 2.



- 1 Centre of gravity
- 2 Outstroke

Maximum load capacity is dependent on the outstroke of a horizontally installed guide unit. In the case of short stroke operation, the load capacity figures taken from the diagram must be multiplied by the correction factor (diagram 2).

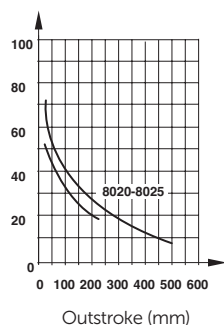
In the load capacity graph (diagram 1), the short stroke corrections have already been taken into account for an outstroke > 60 mm

The total deflection of guide rods will be determined by the addition of that due to own weight (diagram 3) and that due to load capacity (diagram 4).

Maximum load capacity depending on outstroke

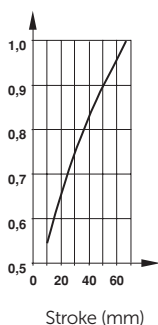
(diagram 1)

Load capacity (N)



(diagram 2)

Correction factor

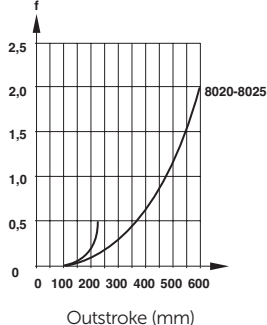


Reduction of load capacity for short stroke operation

Deflection caused by own weight

(diagram 3)

Deflection (mm)



Deflection caused by a load of 10 N

(diagram 4)

Deflection (mm)

