

- **Central rear port option**
- **Threaded rear end covers incorporate an integral eye mounting**
- **Synthetic rubber buffers reduce end of stroke shock**
- **Supplied complete with nose mounting nut and piston rod locknut**
- **Corrosion resistant construction**

Technical Data

Medium:

Compressed air, filtered, lubricated or non-lubricated

Standard:

ISO 6432

Note: The basic length of the single acting version (RM/28010/M and RM/28012/M) is slightly longer than its standard equivalent.

Operation:

RM/28000	Single acting with buffer cushioning, sprung in
RM/28000/M	Single acting with magnetic piston, buffer cushioning, sprung in
RM/28500	Single acting with buffer cushioning, central rear port, sprung in
RM/28500/M	Single acting with magnetic piston, buffer cushioning, central rear port, sprung in

Operating Pressure:

1 to 10 bar

Operating Temperature:

-10°C* to +80°C max.

*Consult our Technical Service for use below +2°C

Cylinder Diameters:

10, 12, 16, 20, 25 mm

Standard Strokes:

10, 25, 50 mm

Non-standard Strokes:

Non-standard strokes available

Materials:

Stainless steel (Martensitic) piston rod, stainless steel (Austenitic) barrel, clear anodised aluminium alloy end covers, nitrile rubber seals.

Alternative Cylinders:

See page N 1.4.031.02



Ordering Information

To order a basic Ø 10 mm bore cylinder with 50 mm stroke quote: RM/28010/50

To order a basic Ø 25 mm bore cylinder with magnetic piston and 25 mm stroke quote: RM/28025/M/25

To order mounting brackets refer to appropriate cylinder mounting table.

Order magnetically operated switches separately.

Accessories

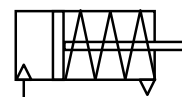
See page

Switches QM/33, QM/34

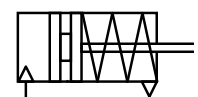
N 4.3.051.01

Switches QM/134, QM/134/N

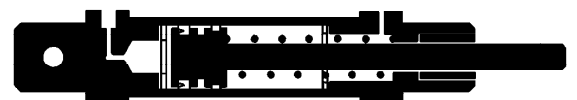
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Non-magnetic piston



Magnetic piston





Alternative Cylinders

Symbol	Model (non-magnetic piston)	Description
	CM/28000, CM/28500	Hard chromium plated piston rod
	SM/28000, SM/28500	Stainless steel piston rod (Austenitic)

Theoretical Forces • Air Consumption • Weight of Cylinders (kg)

Model	Theoretical forces (N) at 6 bar		Air consumption (l/cm stroke) at 6 bar	28000 Weight up to 25 mm	28500 Weight up to 25 mm	Weight per 25 mm
	Outstroke	Instroke F1 (spring force)				
28010, 28510	37,8	3	0,006	0,050	0,047	0,010
28012, 28512	59,8	4	0,008	0,065	0,055	0,017
28016, 28516	105	7	0,014	0,070	0,063	0,020
28020, 28520	165	14	0,022	0,167	0,148	0,025
28025, 28525	258	23	0,035	0,205	0,188	0,045

F 1 = Return force of spring (N)

Weights of Cylinders and Mountings (kg)

Ø								
	Style 'AK'	Style 'B'+G'	Style 'C'	Style 'F'	Style 'L'	Style 'UF'	Switch brackets	Switch brackets
10	0,015	0,020	0,020	0,010	0,010	0,020	0,003	0,007
12	0,024	0,030	0,030	0,020	0,020	0,020	0,004	0,008
16	0,024	0,030	0,030	0,020	0,020	0,020	0,006	0,008
20	0,054	0,050	0,060	0,060	0,040	0,050	0,006	0,008
25	0,223	0,050	0,060	0,100	0,040	0,080	0,007	0,007

Warning

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

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

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

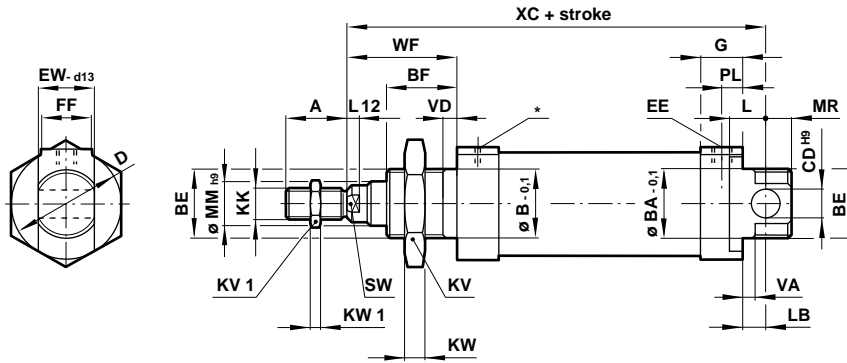
The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

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

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

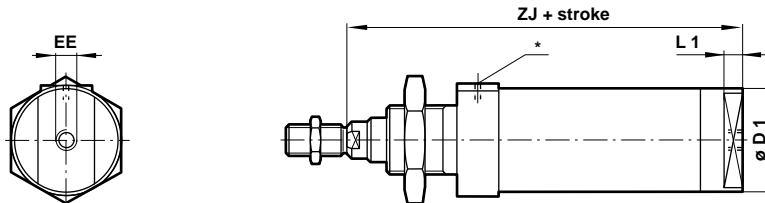


Basic Dimensions



* Filtered exhaust position, do not obstruct

Cylinder with central rear port



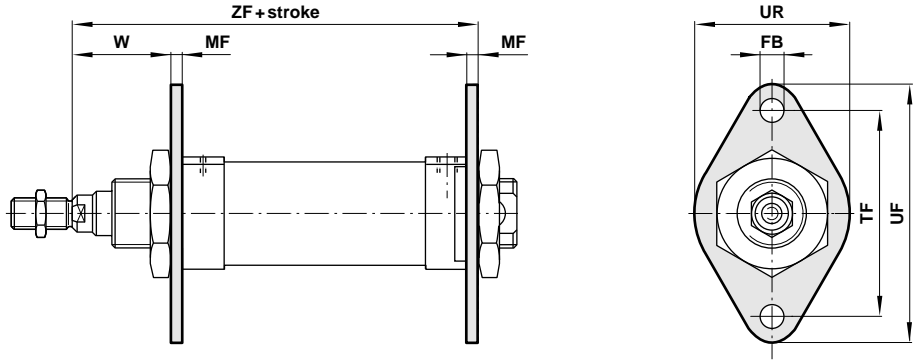
* Filtered exhaust position, do not obstruct

Model	28010, 28510	28012, 28512	28016, 28516	28020, 28520	28025, 25525
∅	10	12	16	20	25
AM	12	16	16	20	22
∅ B/ BA _{-0,1}	12	16	16	22	22
BE	M 12 x 1,25	M 16 x 1,5	M 16 x 1,5	M 22 x 1,5	M 22 x 1,5
BF	12	17	17	20	22
∅ CD H ⁹	4	6	6	8	8
∅ D	15	20	20	27	27
∅ D 1	11,5	13,5	17,5	21,5	26,5
EE	M 5	M 5	M 5	G 1/8	G 1/8
EW _{d 13}	8	12	12	16	16
FF	9,5	9,5	9,5	14,5	14,5
G	9	10	9,5	15	15
KK	M 4	M 6	M 6	M 8	M 10 x 1,25
KV (A/F)	19	22	22	27	27
KV 1 (A/F)	7	10	10	13	17
KW	6	5	5	8	8
KW 1	2	3	3	4	5
L	6	9	9	12	12
L 1	5	6	6	7	7
L 12	-	3	3	3	4
LB	2	3	4	3	7
∅ MM H ⁹	4	6	6	8	10
MR	10	14	13	17	15
PL	5,5	6	5,5	8	8
SW (A/F)	-	5	5	7	9
WF	16	22	22	24	28
VA/VD	1,5	2	2	2	2
XC	64 (87,5)	75 (98,5)	82	95	104
ZJ	62 (85,5)	72 (95,5)	78	92	97

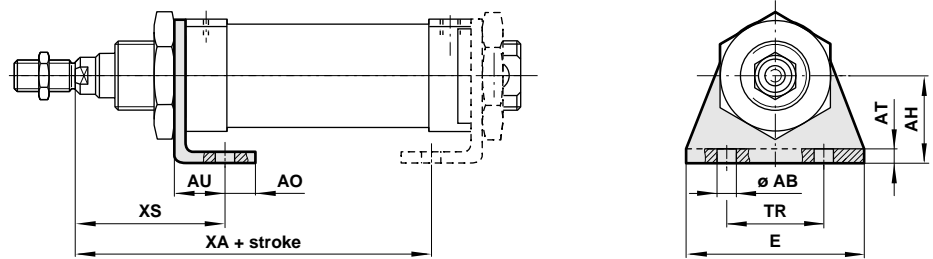
() = for magnetic piston cylinders



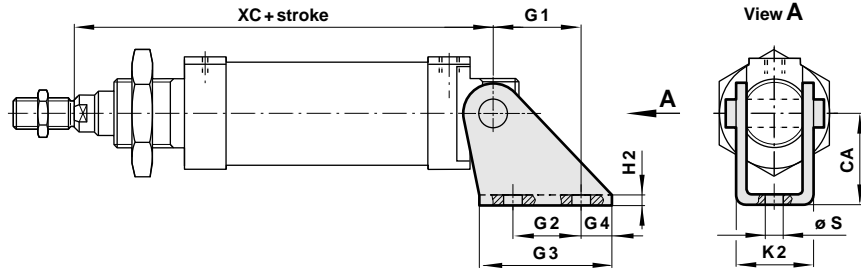
Rear or Front Flange Mounting Style 'B' or 'G'



Foot Mounting Style 'C'



Rear Hinge Mounting Style 'L'

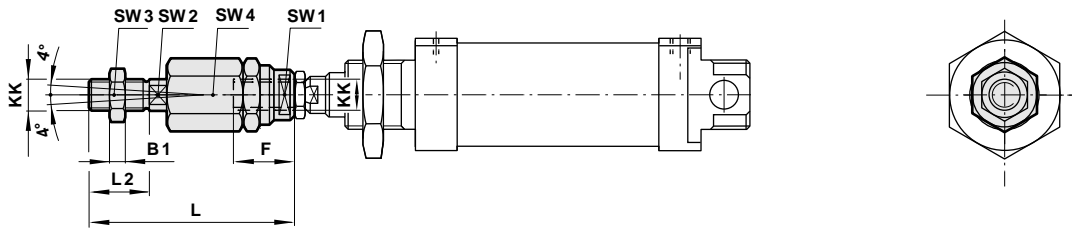


Model 'B' and 'G'	M/P 19407	M/P 19408	M/P 19408	M/P 19409	M/P 19409
Model 'C'	M/P 19369	M/P 19389	M/P 19389	M/P 19406	M/P 19406
Model 'L'	QM/947	QM/8012/24	QM/8012/24	QM/8020/24	QM/8020/24
∅	10	12	16	20	25
∅ AB	4,5	5,5	5,5	6,6	6,6
AH	16	20	20	25	25
AO	6	6	6	7,5	7,5
AT	2	3	3	4	4
AU	10	13	13	16	16
CA	12	20	20	25	25
E	35	43	43	53	53
∅ FB	4,5	5,5	5,5	6,6	6,6
G1	6,5	18,5	18,5	20	20
G2	-	15	15	15	15
G3	15	30	30	35	35
G4	6	8	8	10	10
H2	1	1,5	1,5	2	2
K2	10,5	15	15	20,5	20,5
MF	3	4	4	5	5
∅ S	4,8	5,5	5,5	6,6	6,6
TF	30	40	40	50	50
TR	25	32	32	40	40
UF	40	51	51	63	63
UR	22	28	28	38	38
W	13	18	18	19	23
XA	54 (77,5)	62 (85,5)	68	80	85
XC	64 (87,5)	75 (98,5)	82	95	104
XS	24	32	32	36	40
ZF	65 (88,5)	76 (99,5)	82	97	102

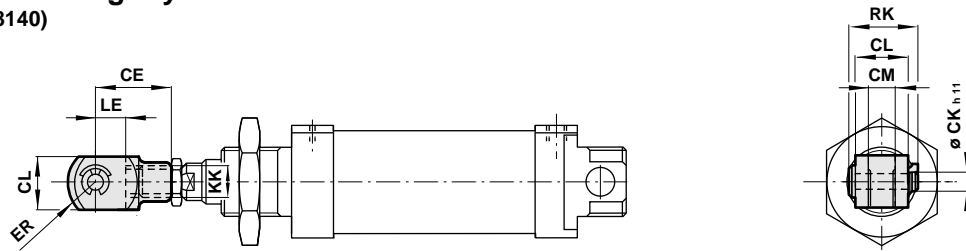
() = for magnetic piston cylinders



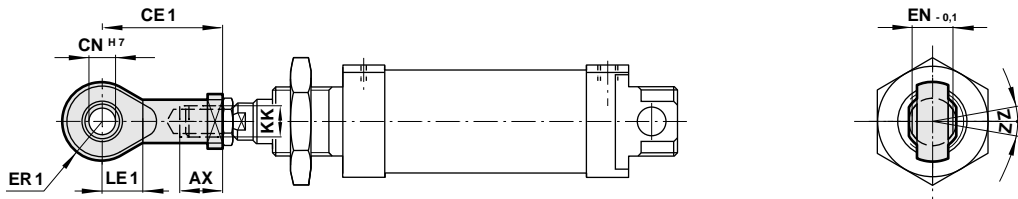
Piston Rod Swivel Mounting Style 'AK'



Piston Rod Clevis Mounting Style 'F' (Corresponds to DIN ISO 8140)



Universal Piston Rod Eye Mounting Style 'UF' (Corresponds to DIN ISO 8139)

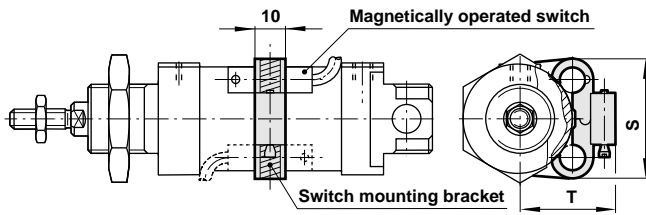


Model 'AK'	QM/8010/38	QM/8012/38	QM/8012/38	QM/8020/38	QM/8025/38
Model 'F'	QM/8010/25	QM/8012/25	QM/8012/25	QM/8020/25	QM/8025/25
Model 'UF'	QM/8010/32	QM/8012/32	QM/8012/32	QM/8020/32	QM/8025/32
∅	10	12	16	20	25
AX	14	14	14	16	25
B1	2	3	3	4	5
CE	16	24	24	32	40
CE 1	27	30	30	36	42
∅ CK h11	4	6	6	8	10
CL	8	12	12	16	20
CM	4	6	6	8	10
∅ CN H7	5	6	6	8	10
EN -0,1	8	9	9	12	14
ER	6,5	9,5	9,5	13	16
ER 1	8	9	9	11	14
F	12,5	14	14	18	26
KK	M 4	M 6	M 6	M 8	M 10 x 1,25
L	33	39	39	55	73
L 2	8	12	12	16	20
LE	8	12	12	16	20
LE 1	10	11	11	13	15
RK	11,5	17,5	17,5	22	28
SW 1 (A/F)	11	7	7	10	19
SW 2 (A/F)	3,2	5	5	7	12
SW 3 (A/F)	7	10	10	13	17
SW 4 (A/F)	11	13	13	17	30
Z	5°	5°	5°	5°	5°

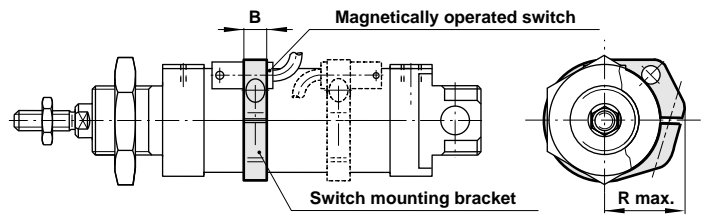


Switch Mounting Brackets

≥ 15 mm stroke

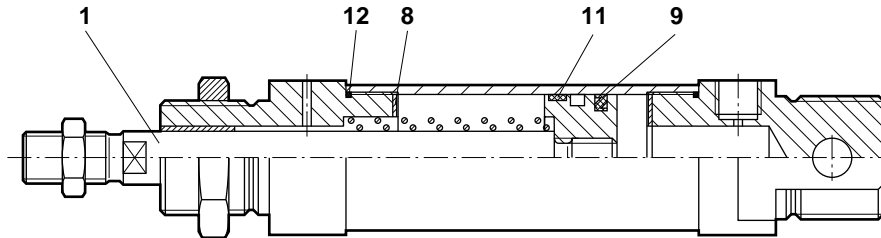


< 15 mm stroke



≥ 15 mm stroke						< 15 mm stroke					
Model	QM/33/010/22	QM/33/012/22	QM/33/016/22	QM/33/020/22	QM/33/025/22	Model	QM/33/010/23	QM/33/016/23	QM/33/016/23	QM/33/020/23	QM/33/025/23
∅	10	12	16	20	25	∅	10	12	16	20	25
B	8	8	10	10	10	S	27,5	28,5	29,5	29,5	31,5
R max.	16	18	20	22	24	T	19,5	21,5	23,5	26	28,5

Spares



Model	Spares kit	Comprising Item	Description	Quantity	Piston rod Item 1
RM/28010, RM/28010/M (28510)	QM/28010/00	8	Buffer	2	SM/P 30248/*
RM/28012, RM/28012/M (28512)	QM/28012/00	9	Piston seal	1	SM/P 30249/*
RM/28016, RM/28016/M (28516)	QM/28016/00	11	Wear ring	- (1)	SM/P 30250/*
RM/28020, RM/28020/M (28520)	QM/28020/00	12	O-Ring	1	SM/P 30251/*
RM/28025, RM/28025/M (28525)	QM/28025/00				SM/P 30252/*

() for ∅ 16 to 25 mm bore

* Insert stroke length

Note: Please quote the cylinder number when ordering spare parts