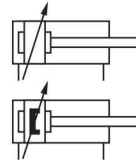




- > Ø 32 ... 320 mm
- > Comprehensive range for the utmost versatility
- > Conforms to ISO 15552 (ISO 6431, VDMA 24562 and NFE 49-003-1)
- > High performance, stability and reliability ideal for the demands of today
- > Supplied complete with piston rod locknut
- > Comprehensive range of standard mountings



Technical features

Medium:

Compressed air, filtered, lubricated or non-lubricated

Standard:

ISO 15552

Operation:

RA/8000: Double acting, adjustable cushioning
RA/8000/M: Double acting, adjustable cushioning and magnetic piston

Operating pressure:

Ø 32 ... 200 mm
1 ... 16 bar (14 ... 232 psi)

Ø 250 & 320 mm

1 ... 10 bar (14 ... 145 psi)

Ports:

G1/8 ... G1

Cylinder diameters:

32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 320 mm

Strokes:

See page below

Non-standard strokes:

Available (10 ... 3000 mm)

Operating temperature:

Ø 32 ... 125 mm

-20 ... +80°C max. (-4 ... +176 °F)

Ø 160 ... 320 mm

-10 ... +80°C max. (+14 ... +176°F)

Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F).

Materials:

Barrel: Anodised aluminium
End covers: Pressure diecast aluminium (Ø 200 ... 320 mm gravity cast aluminium)
Piston rod: Stainless steel (martensitic)
Piston rod seals: PUR (Ø 125 ... 320 mm NBR)
Piston seals: PUR (Ø 125 ... 320 mm NBR)
'O'-rings: NBR

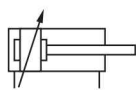
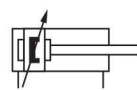
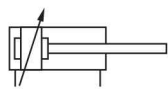
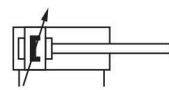
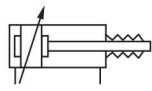
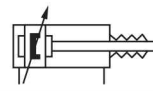
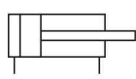

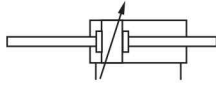
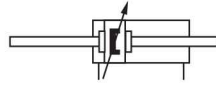
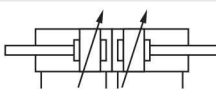
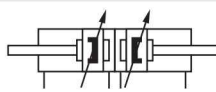
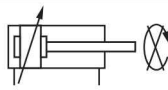
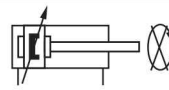
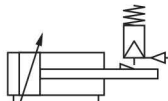
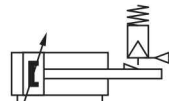
Technical data

Cylinder Ø (mm)	32	40	50	63	80	100	125	160	200	250	320
Port size	G1/8	G1/4	G1/4	G3/8	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1
Piston rod Ø (mm)	12	16	20	20	25	25	32	40	40	50	63
Piston rod thread	M10 x 1,25	M12 x 1,25	M16 x 1,5	M16 x 1,5	M20 x 1,5	M20 x 1,5	M27 x 2	M36 x 2	M36 x 2	M42 x 2	M48 x 2
Cushion length mm	19	22	24	24	27	34	41	45	45	60	65
Initial cushion volume (cm³)	12,3	20,7	36	64	116	242	451	816	1324	2900	5200
Theoretical thrusts at 6 bar outstroke (N)	482	754	1178	1870	3016	4710	7363	12064	18840	29436	48228
Theoretical thrusts at 6 bar instroke (N)	414	633	990	1680	2722	4416	6882	11310	18090	28236	47292
Air consumption at 6 bar outstroke (l/cm)	0,056	0,088	0,137	0,218	0,35	0,55	0,86	1,41	2,2	3,44	5,63
Air consumption at 6 bar instroke (l/cm)	0,048	0,074	0,114	0,195	0,32	0,51	0,79	1,32	2,1	3,3	5,41

Standard strokes

Cylinder Ø (mm)	Stroke length (mm)										
	25	50	80	100	125	160	200	250	320	400	500
32	•	•	•	•	•	•	•	•	•	•	•
40	•	•	•	•	•	•	•	•	•	•	•
50	•	•	•	•	•	•	•	•	•	•	•
63	•	•	•	•	•	•	•	•	•	•	•
80	•	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•	•
125	•	•	•	•	•	•	•	•	•	•	•
160	•	•	•	•	•	•	•	•	•	•	•
200	•	•	•	•	•	•	•	•	•	•	•
250	•	•	•	•	•	•	•	•	•	•	•
320	•	•	•	•	•	•	•	•	•	•	•

Cylinder variants

Symbol	H	T	C	S	ModelNon-magnetic piston	Symbol	H	T	C	S	Model magnetic piston	Description	Dimensions
	•	•	•	•	RA/8000		•	•	•	•	RA/8000/M	Standard cylinder	6
					• RA/8000/W1						• RA/8000/W2	Cylinder with special wiper/seal (suitable for appl. with cement, plaster (stucco), arizona sand, hoar-frost or ice (Ø 32 ... 200 mm))	6
			•	•	RA/8000/X1				•	•	RA/8000/X2	Low friction cylinders, operating pressure: 1 ... 10 bar Medium: Compressed air, filtered and non-lubricated recommended (Ø 32 ... 200 mm)	6
	•	•	•	•	RA/8000/IU		•	•	•	•	RA/8000/MU	Cylinder with extended piston rod	6
				•	RA/8000/W5					•	RA/8000/W6	Cylinder with extended piston rod and special wiper/seal (suitable for applications with cement, plaster (stucco), arizona sand, hoar-frost or ice (Ø 32 ... 125 mm))	
	•	•	•		RA/8000/G		•	•	•		RA/8000/MG	Cylinder with piston rod bellows	8
			•	•	RA/8000/W				•	•	RA/8000/MW	Cylinder without cushioning	7
				•	RA/8000/X3					•	RA/8000/X4	Low friction cylinders without cushioning, operating pressure: 1 ... 10 bar Medium: Compressed air, filtered and non-lubricated recommended (Ø 32 ... 200 mm)	
	•	•	•	•	RA/8000/J		•	•	•	•	RA/8000/JM	Cylinder with double ended piston rod	7
				•	RA/8000/W3					•	RA/8000/W4	Cylinder with double ended piston rod and special wiper/seal (suitable for applications with cement, plaster (stucco), arizona sand, hoar-frost or ice (Ø 32 ... 125 mm))	
			•	•	RA/8000/IT				•	•	RA/8000/MT	Four position cylinders (Ø 32 ... 200 mm)	7
					RA/8000/N1						RA/8000/N2	Cylinder with non-rotating piston rod, (Ø 32 ... 100 mm)	6
				•	RA/8000/L2					•	RA/8000/L4	Cylinder with locking unit (passive) spring force on removal of the signal to the unit. Operating pressure for locking unit: 4 ... 10 bar (Ø 32 ... 125 mm)	9

For the cylinder models style H*1), T, C and S see options selector

*1) Cylinder style H (Hydraulic version): Ø 32 ... 100 mm only



Option selector

Non-standard variants	Substitute
High temperature version 150°C max.	T
Hydraulic version ø 32 ... 100 mm only	H
Piston rod material	Substitute
Stainless steel martensitic	R
Hard chromium plated	C
Stainless steel austenitic	S
Cylinder Ø	Substitute
032, 040, 050, 063, 080, 100, 125, 160, 200, 250, 320	
Variants (magnetic piston)	Substitute
Standard	M
Special wiper/seal	W2
Low friction	X2
Piston rod bellow	MG
Without cushion	MW
Without cushion, low friction	X4
Double ended piston rod	JM
Double ended piston rod special wiper/seal	W4
Four-position cylinder	MT
Non-rotating piston rod (internal)	N2
Locking unit (passive)	L4
Extended piston rod	MU
Extended piston rod, special wiper/seal	W6
A/8*MU/*****/**** /W6/ → Extension (mm)	

★★A/8★★★/★★/★★★★

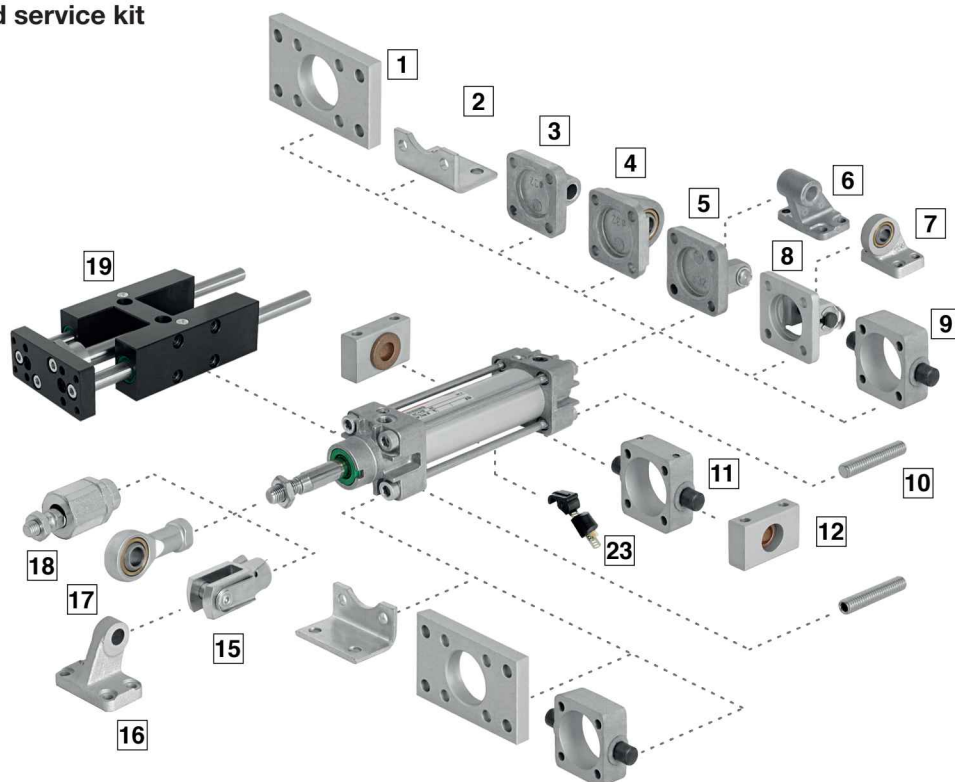
Strokes (mm)	
3000 max.	
Variants (non-magnetic piston)	Substitute
Standard	None
Special wiper/seal	W1
Low friction	X1
Piston rod bellow	G
Without cushion	W
Without cushion, low friction	X3
Double ended piston rod	J
Double ended piston rod special wiper/seal	W3
Four-position cylinder	IT
Non-rotating piston rod (internal)	N1
Locking unit (passive)	L2
Extended piston rod	IU
Extended piston rod special wiper/seal	W5
P**/182**/IU/*****/**** /W5/ → Extension (mm)	

Note: If option is not required, disregard option position within part number eg. RA/8100/M/100.

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 and service kit




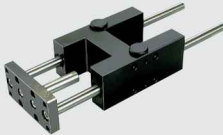


Mountings

Model	A	AK	B, G	C	D	D2	F	FH	H
									
Cyl. Ø	10	18	1	2	5	8	15	9	11
	Page 10	Page 10	Page 10	Page 10	Page 11	Page 11	Page 11	Page 11	Page 12
32	QM/8032/35	QM/8025/38	QA/8032/22	QA/8032/21	QA/8032/23	QA/8032/42	QM/8025/25	QA/8032/34	QA/8032/28
40	QM/8032/35	QM/8040/38	QA/8040/22	QA/8040/21	QA/8040/23	QA/8040/42	QM/8040/25	QA/8040/34	QA/8040/28
50	QM/8050/35	QM/8050/38	QA/8050/22	QA/8050/21	QA/8050/23	QA/8050/42	QM/8050/25	QA/8050/34	QA/8050/28
63	QM/8050/35	QM/8050/38	QA/8063/22	QA/8063/21	QA/8063/23	QA/8063/42	QM/8050/25	QA/8063/34	QA/8063/28
80	QM/8080/35	QM/8080/38	QA/8080/22	QA/8080/21	QA/8080/23	QA/8080/42	QM/8080/25	QA/8080/34	QA/8080/28
100	QM/8080/35	QM/8080/38	QA/8100/22	QA/8100/21	QA/8100/23	QA/8100/42	QM/8080/25	QA/8100/34	QA/8100/28
125	QM/8125/35	QM/8125/38	QM/8125/22	QM/8125/21	QM/8125/23	QA/8125/42	QM/8125/25	QA/8125/34	QM/8125/28
160	QM/8160/35	QM/8160/38	QM/8160/22	QM/8160/21	QM/8160/23	QA/8160/42	QM/8160/25	—	QM/8160/28
200	QM/8160/35	QM/8160/38	QM/8200/22	QM/8200/21	QM/8200/23	QA/8200/42	QM/8160/25	—	QM/8200/28
250	QM/8250/35	—	QM/8250/22	QM/8250/21	QM/8250/23	—	QM/8250/25	—	QM/8250/28
320	QM/8320/35	—	QM/8320/22	QM/8320/21	QM/8320/23	—	QM/8320/25	—	QM/8320/28

Mountings

	R	S	SS	SW	UF	UH	UR	US
								
Cyl. Ø	3	12	16	6	17	11	4	7
	Page 12	Page 12	Page 14	Page 13	Page 13	Page 12	Page 13	Page 14
32	QA/8032/27	QA/8032/41	M/P19931	M/P19493	QM/8025/32	PQA/182032/40	QA/8032/33	M/P40310
40	QA/8040/27	QA/8040/41	M/P19932	M/P19494	QM/8040/32	PQA/182040/40	QA/8040/33	M/P40311
50	QA/8050/27	QA/8040/41	M/P19933	M/P19495	QM/8050/32	PQA/182050/40	QA/8050/33	M/P40312
63	QA/8063/27	QA/8063/41	M/P19934	M/P19496	QM/8050/32	PQA/182063/40	QA/8063/33	M/P40313
80	QA/8080/27	QA/8063/41	M/P19935	M/P19497	QM/8080/32	PQA/182080/40	QA/8080/33	M/P40314
100	QA/8100/27	QA/8100/41	M/P19936	M/P19498	QM/8080/32	PQA/182100/40	QA/8100/33	M/P40315
125	QM/8125/27	QA/8100/41	M/P19937	M/P19499	QM/8125/32	PQA/182125/40	QM/8125/33	M/P71355
160	QM/8160/27	QA/8160/41	M/P19938	M/P19679	QM/8160/32	QM/8160/40	QM/8160/33	M/P71356
200	QM/8200/27	QA/8160/41	M/P19939	M/P19683	QM/8160/32	QM/8200/40	QM/8200/33	M/P71357
250	—	—	—	M/P19446	QM/8250/32	—	QM/8250/33	—
320	—	—	—	M/P19447	QM/8320/32	—	QM/8320/33	—



Guide blocks

	Guide blocks - plain bearings	Guide blocks - roller bearings	Guide blocks - plain bearings, long coupling	Guide blocks - plain bearings, short coupling
				
Cyl. Ø	19	19	19	19
	Page 15	Page 16	Page 18	Page 18
32	QA/8032/51/*	QA/8032/61/*	QA/8032/81/*	QA/8032/85/*
40	QA/8040/51/*	QA/8040/61/*	QA/8040/81/*	QA/8040/85/*
50	QA/8050/51/*	QA/8050/61/*	QA/8050/81/*	QA/8050/85/*
63	QA/8063/51/*	QA/8063/61/*	QA/8063/81/*	QA/8063/85/*
80	QA/8080/51/*	QA/8080/61/*	QA/8080/81/*	QA/8080/85/*
100	QA/8100/51/*	QA/8100/61/*	QA/8100/81/*	QA/8100/85/*


* Insert standard stroke length: 50, 100, 160, 200, 250, 320, 400 and 500 mm, use nearest standard stroke.

Accessories

Magnetically operated switches

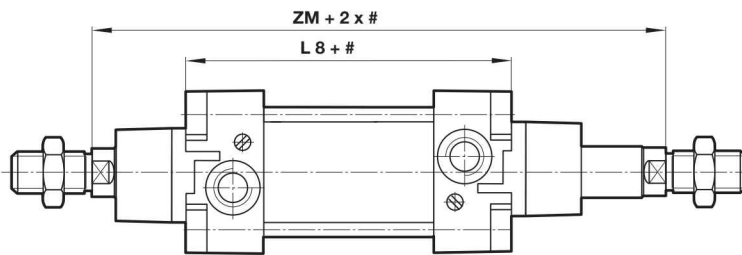
	M/50/**	Switch mounting brackets for M/50	TQM/31, QM/32, QM/132	Switch mounting brackets for TQM/31, QM/32, QM/132	QM/140	Switch mounting brackets for QM/140
						
Cyl. Ø		23				
	Page 20 & 21	Page 21	Page 22	Page 22	Page 23	Page 23
32		QM/27/2/1		QM/31/032/22		QM/140/010/22
40		QM/27/2/1		QM/31/032/22		QM/1w40/010/22
50		QM/27/2/1		QM/31/032/22		QM/140/010/22
63		QM/27/2/1		QM/31/032/22		QM/140/010/22
80		QM/27/2/1		QM/31/080/22		QM/140/010/22
100		QM/27/2/1		QM/31/080/22		QM/140/010/22
125		QM/27/2/1		QM/31/080/22		—
160		QM/27/2/1		QM/31/160/22		—
200		QM/27/2/1		QM/31/160/22		—
250		—		QM/31/250/22		—
320		—		QM/31/320/22		—

Service kit

	Service kit
	
Cyl. Ø	
32	QA/8032/00
40	QA/8040/00
50	QA/8050/00
63	QA/8063/00
80	QA/8080/00
100	QA/8100/00
125	QA/8125/00
160	QA/8160/00
200	QA/8200/00
250	QA/8250/00
320	QA/8320/00



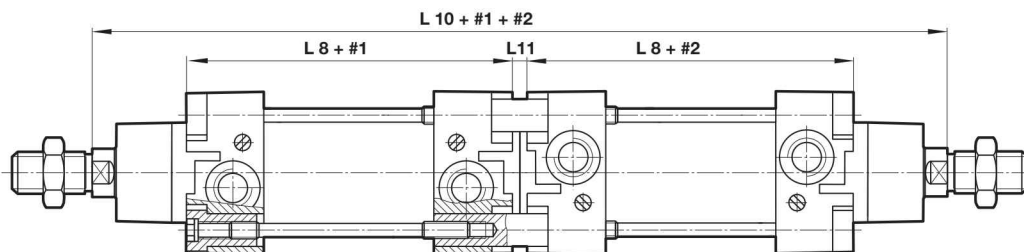
Cylinder variants
RA/8000/J, RA/8000/JM – Cylinder with double ended piston rod

 Dimensions in mm
Projection/First angle


Stroke

Ø	ZM	L8	Model non-magnetic piston	Model magnetic piston
32	146	94	RA/8032/J/*	RA/8032/JM/*
40	165	105	RA/8040/J/*	RA/8040/JM/*
50	180	106	RA/8050/J/*	RA/8050/JM/*
63	195	121	RA/8063/J/*	RA/8063/JM/*
80	220	128	RA/8080/J/*	RA/8080/JM/*
100	240	138	RA/8100/J/*	RA/8100/JM/*
125	290	160	RA/8125/J/*	RA/8125/JM/*
160	340	180	RA/8160/J/*	RA/8160/JM/*
200	370	180	RA/8200/J/*	RA/8200/JM/*
250	410	200	RA/8250/J/*	RA/8250/JM/*
320	460	220	RA/8320/J/*	RA/8320/JM/*

* Please insert standard stroke length.

RA/8000/IT, RA/8000/MT – Four-position cylinder


Stroke

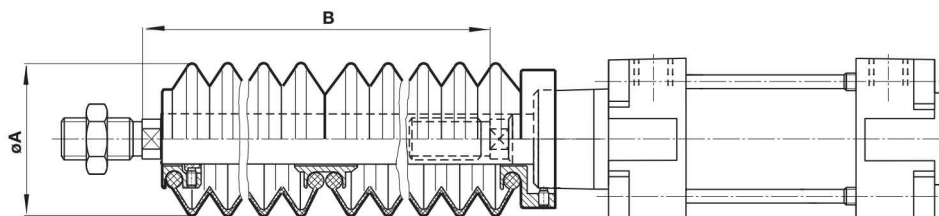
Ø	L 8	L 10	L 11	Model non-magnetic piston	Model magnetic piston
32	94	247	7	RA/8032/IT/*/**	RA/8032/MT/*/**
40	105	278	8	RA/8040/IT/*/**	RA/8040/MT/*/**
50	106	294	8	RA/8050/IT/*/**	RA/8050/MT/*/**
63	121	325	9	RA/8063/IT/*/**	RA/8063/MT/*/**
80	128	357	9	RA/8080/IT/*/**	RA/8080/MT/*/**
100	138	387	9	RA/8100/IT/*/**	RA/8100/MT/*/**
125	160	462	12	RA/8125/IT/*/**	RA/8125/MT/*/**
160	180	532	12	RA/8160/IT/*/**	RA/8160/MT/*/**
200	180	560	10	RA/8200/IT/*/**	RA/8200/MT/*/**

* Please insert standard stroke length 1

** Please insert standard stroke length 2

RA/8000/G, RA/8000/MG – Piston rod bellow

Dimensions in mm
Projection/First angle



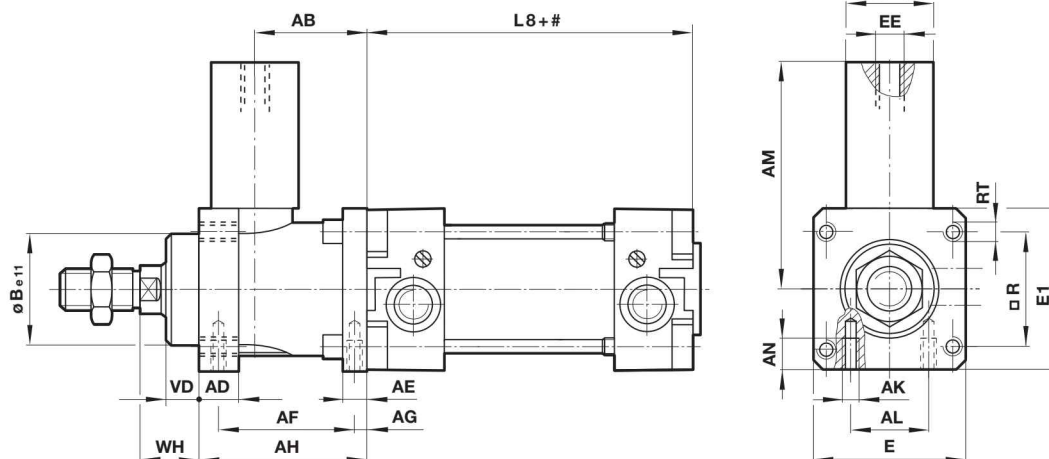
Ø	Ø A	Max. stroke per bellow	Piston rod extension B		Model non-magnetic piston	Model magnetic piston
			for first bellow	for further bellow		
32	40	60	30	25	RA/8032/G/*	RA/8032/MG/*
40	63	145	50	32	RA/8040/G/*	RA/8040/MG/*
50	63	145	40	32	RA/8050/G/*	RA/8050/MG/*
63	63	145	40	32	RA/8063/G/*	RA/8063/MG/*
80	80	250	50	45	RA/8080/G/*	RA/8080/MG/*
100	80	250	50	45	RA/8100/G/*	RA/8100/MG/*
125	80	250	50	45	RA/8125/G/*	RA/8125/MG/*
160	116	350	70	60	RA/8160/G/*	RA/8160/MG/*
200	116	350	70	60	RA/8200/G/*	RA/8200/MG/*
250	116	350	70	60	RA/8250/G/*	RA/8250/MG/*
320	143	500	110	100	RA/8320/G/*	RA/8320/MG/*

* Please insert standard stroke length.



RA/8000/L2, RA/8000/L4 – Cylinder with locking unit (passive)

Dimensions in mm
Projection/First angle



Stroke

Ø	AB	AD	AE	AF	AG	AH	Ø AJ	AK	AL	AM	AN	Ø B e11	E	E 1	EE
32	32	12	8	40	4,2	48	25	M 5	16	59	8	30	48	50	M 5
40	35,5	12	10	46	4,5	55	24	M 5	21	61,5	10	35	56	58	G 1/8
50	49	16	15	54	11,5	70	30	M 6	24	75	12	40	68	70	G 1/8
63	49	15	15	55	7,5	70	38	M 8	32	86	12	45	82	85	G 1/8
80	62	16	16	70	10	90	53	M 8	44	119	16	45	100	105	G 1/8
100	65	18	16	70	10	92	48	M 8	60	119	16	55	120	130	G 1/8
125	85	27	25	95	11	122	65	M 10	75	140	20	60	140	150	G 1/8
Ø	L 8	□ R	RT	VD	WH	Locking force (N)	Spare part Locking unit *1)		Spare part Cartridge		Model Non-magnetic piston		Model Magnetic piston		
32	94	32,5	M 6	10	16	600	QA/8032/59		QA/8032/63		RA/8032/L2/*		RA/8032/L4/*		
40	105	38	M 6	10	18	1000	QA/8040/59		QA/8040/63		RA/8040/L2/*		RA/8040/L4/*		
50	106	46,5	M 8	12	22	1500	QA/8050/59		QA/8050/63		RA/8050/L2/*		RA/8050/L4/*		
63	121	56,5	M 8	12	20	2200	QA/8063/59		QA/8063/63		RA/8063/L2/*		RA/8063/L4/*		
80	128	72	M 10	20	33	5000	QA/8080/59		QA/8100/63		RA/8080/L2/*		RA/8080/L4/*		
100	138	89	M 10	23	38	5000	QA/8100/59		QA/8100/63		RA/8100/L2/*		RA/8100/L4/*		
125	160	110	M 12	32	65	7000	QA/8125/59		QA/8125/63		RA/8125/L2/*		RA/8125/L4/*		

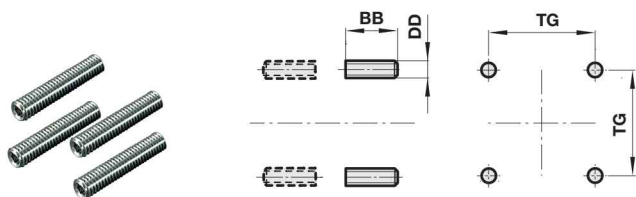
* Please insert standard stroke length.

*1) With cartridge

Mountings

Front or rear stud mounting A

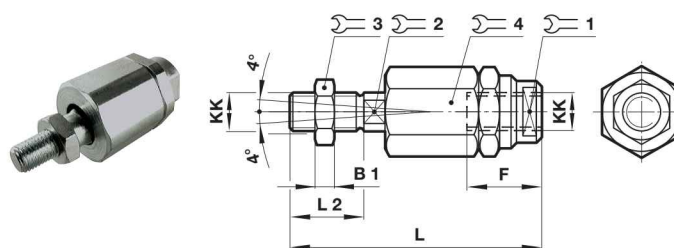
Conforms to ISO 15552, type MX1



Ø	BB	DD	TG	kg	Model (A)
32/40	17	M6	32,5/38	0,02	QM/8032/35
50/63	23	M8	46,5/56,5	0,05	QM/8050/35
80/100	28	M10	72/89	0,08	QM/8080/35
125	34	M12	110	0,14	QM/8125/35
160/200	42	M16	140/175	0,31	QM/8160/35
250	50	M20	220	0,92	QM/8250/35
320	60	M24	270	1,46	QM/8320/35

Piston rod swivel AK

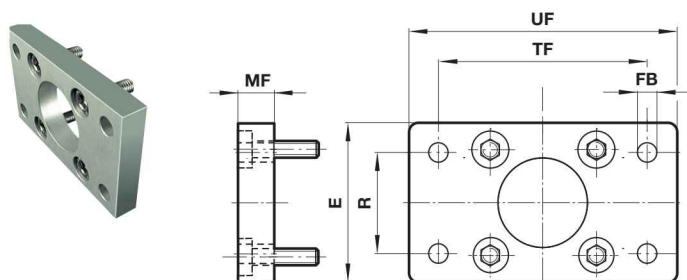
Dimensions in mm
 Projection/First angle



Ø	KK	B1	F	L	L2	1	2	3	4	kg	Model (AK)
32	M10x1,25	5	26	73	20	19	12	17	30	0,20	QM/8025/38
40	M12x1,25	6	26	77	24	19	12	19	30	0,20	QM/8040/38
50/63	M16x1,5	8	34	106	32	30	19	24	42	0,65	QM/8050/38
80/100	M20x1,5	10	42	122	40	30	19	30	42	0,72	QM/8080/38
125	M27x2	13,5	40	147	54	40	24	41	55	1,70	QM/8125/38
160/200	M36x2	18	78	251	72	50	36	55	75	5,4	QM/8160/38

Front flange B, G

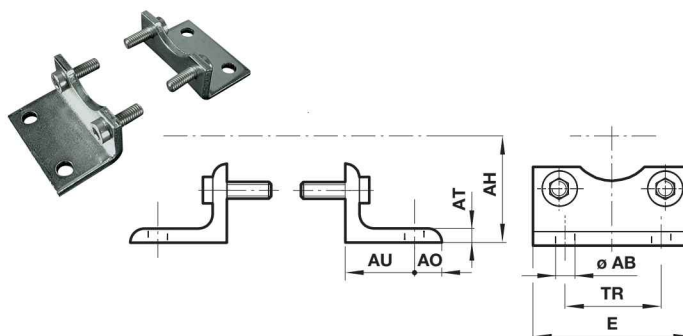
Conforms to ISO 15552, type MF1 and MF2



Ø	E	Ø FB	MF	R	TF	UF	kg	Model (B, G)
32	50	7	10	32	64	80	0,25	QA/8032/22
40	55	9	10	36	72	90	0,35	QA/8040/22
50	65	9	12	45	90	110	0,70	QA/8050/22
63	75	9	12	50	100	125	0,80	QA/8063/22
80	100	12	16	63	126	154	1,35	QA/8080/22
100	120	14	16	75	150	186	2,20	QA/8100/22
125	140	16	20	90	180	224	2,70	QM/8125/22
160	180	18	20	115	230	280	3,1	QM/8160/22
200	220	22	25	135	270	320	4,6	QM/8200/22
250	280	26	25	165	330	395	7,4	QM/8250/22
320	350	33	30	200	400	475	13,6	QM/8320/22

Foot mounting C

Conforms to ISO 15552, type MS1



Ø	Ø AB	AH	AO	AT	AU	E	TR	kg	Model (C)
32	7	32	8	4	24	48	32	0,15	QA/8032/21
40	10	36	9	4	28	53	36	0,18	QA/8040/21
50	10	45	10	5	32	64	45	0,30	QA/8050/21
63	10	50	12	5	32	74	50	0,39	QA/8063/21
80	12	63	19	5	41	98	63	0,80	QA/8080/21
100	14	71	19	5	41	115	75	0,95	QA/8100/21
125	16	90	20	9	45	140	90	2,40	QM/8125/21
160	18	115	20	8	60	180	115	3,5	QM/8160/21
200	22	135	30	9	70	220	135	5,25	QM/8200/21
250	26	165	35	10	75	280	165	9,5	QM/8250/21
320	33	200	45	16	85	350	200	22	QM/8320/21