

Pneumatic cylinders
 ISO 15552
 Non-magnetic and magnetic piston
 Double acting
 Ø 32 to 320 mm

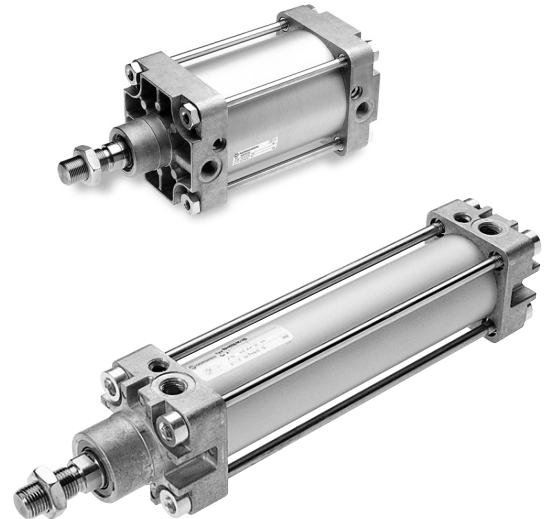
Comprehensive range for the utmost versatility

**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 data

Medium:
 Compressed air, filtered, lubricated or non-lubricated
 Standard:
 ISO 15552
 Operation:
 Double acting
 RA/8000: adjustable cushioning
 RA/8000/M: magnetic piston, adjustable cushioning
 Operating pressure:
 1 to 16 bar (1 to 10 bar for Ø 250 and 320 mm)
 Operating temperature:
 -20 to +80°C max. (Ø 32 to 125 mm)
 -10 to +80°C max. (Ø 160 to 320 mm)
 (consult our Technical Service for use below +2°C)
 Cylinder diameters:
 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 320 mm
 Strokes:
 Standard: see page 3
 Non-standard strokes (10 to 3000 mm) available

Materials:

Barrel: Anodised aluminium
 End covers: Pressure diecast aluminium
 (Ø 200 to 320 mm gravity cast aluminium)
 Piston rod: Stainless steel (Martensitic)
 Piston rod seals: Polyurethane
 (Ø 125 to 320 mm nitrile rubber)
 Piston seals: Polyurethane
 (Ø 125 to 320 mm nitrile rubber)
 'O'-rings: Nitrile rubber

Ordering information

See page 5

Mountings and Switches

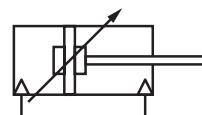
See page 4 and 5

Alternative variants

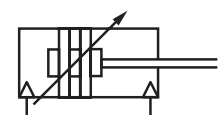
Single acting cylinder see page N/en 1.4.101

Guide units

See page N/en 1.10.021



Non-magnetic piston



Magnetic piston



Cylinder variants

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

For combinations of cylinder variants consult our Technical Service.
For types H*1), T, and C, S see options selector
*1) type H: Ø 32 to 100 mm

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.

Options selector

★ ★ A/8 ★ ★ ★ / ★ ★ / ★ ★ ★ ★

Special variants	Substitute
High temperature version: 150°C max.	T
Piston rod material	Substitute
Stainless steel (martensitic)	R
Hard chromium plated	C
Stainless steel (austenitic)	S
Cylinder Ø (mm)	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 cushioning	MW
Without cushioning, low friction	X4
Double ended piston rod	JM
Double ended piston rod, special wiper/seal	W4
Four position	MT
Non-rotating piston rod	N2
Locking unit	L4
Extended piston rod	MU
Extended piston rod, special wiper/seal	W6
A/8* /MU/****/****	
/W6/	→ Extension (mm)

Strokes (mm)	3000 max.
Variants (non-magnetic piston)	Substitute
Standard	
Special wiper/seal	W1
Low friction	X1
Piston rod bellow	G
Without cushioning	W
Without cushioning, low friction	X3
Double ended piston rod	J
Double ended piston rod, special wiper/seal	W3
Four position	IT
Non-rotating piston rod	N1
Locking unit	L2
Extended piston rod	IU
Extended piston rod, special wiper/seal	W5
A/8* /IU/****/****	
/W5/	→ Extension (mm)

Note: If option is not required, disregard option position within part number, eg. RA/8100/100. 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 can not be derived from.

Standard strokes

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

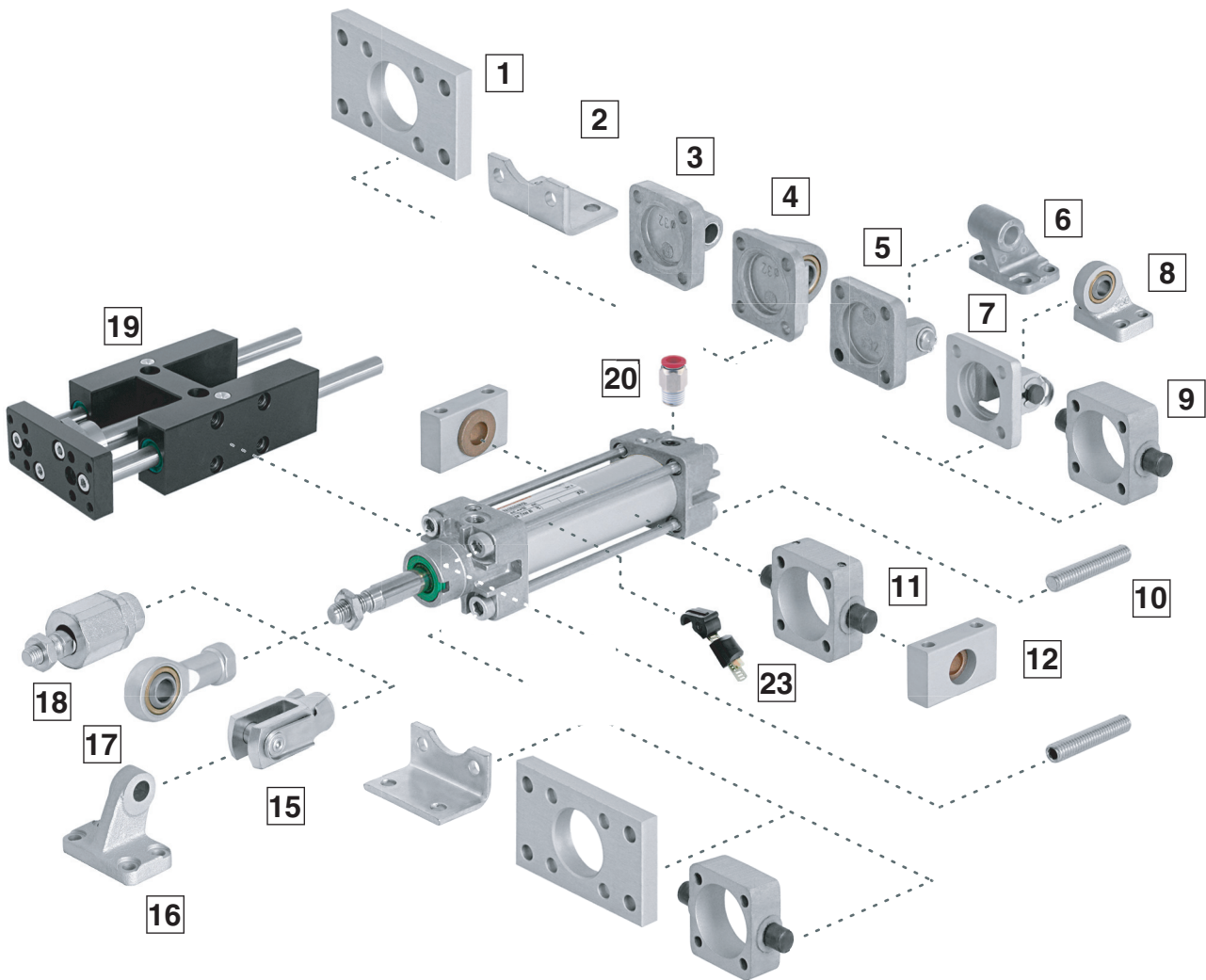
Mountings

	Style A	Style AK	Style B, G	Style C	Style D	Style D2	Style F	Style FH	Style H
	10	18	1	2	5	7	15	9	11
Cylinder Ø	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
	Style R	Style S	Style SS	Style SW	Style UF	Style UH	Style UR	Style US	
	3	12	16	6	17	11	4	8	
Cylinder Ø	Page 12	Page 12	Page 13	Page 13	Page 13	Page 12	Page 13	Page 13	
32	QA/8032/27	QA/8032/41	M/P19931	M/P19493	QM/8025/32	QA/8032/40	QA/8032/33	M/P40310	
40	QA/8040/27	QA/8040/41	M/P19932	M/P19494	QM/8040/32	QA/8040/40	QA/8040/33	M/P40311	
50	QA/8050/27	QA/8040/41	M/P19933	M/P19495	QM/8050/32	QA/8050/40	QA/8050/33	M/P40312	
63	QA/8063/27	QA/8063/41	M/P19934	M/P19496	QM/8050/32	QA/8063/40	QA/8063/33	M/P40313	
80	QA/8080/27	QA/8063/41	M/P19935	M/P19497	QM/8080/32	QA/8080/40	QA/8080/33	M/P40314	
100	QA/8100/27	QA/8100/41	M/P19936	M/P19498	QM/8080/32	QA/8100/40	QA/8100/33	M/P40315	
125	QM/8125/27	QA/8100/41	M/P19937	M/P19499	QM/8125/32	QM/8125/40	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	-	
	Brackets for switches			Guide unit					
	*1)	*2)	*3)						
	23			19					
Cylinder Ø	Page 14	Page 14	Page 14	See datasheet 1.10.021					
32	QM/27/2/1	QM/31/032/22	QM/140/010/22						
40	QM/27/2/1	QM/31/032/22	QM/140/010/22						
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	-						

*1) M/50

*2) TQM/31, QM/32 oder QM/132

*3) QM/140



Switches

Type Reed	With cable		With connector		Current max.	Temperature °C	LED	Features	Cable/ Connector length	Cable type	Cable with Connector	Datasheet
	Solid state	Voltage V a.c.	V d.c.	Voltage V a.c.								
M/50/LSU/*V	–	10 to 240	10 to 170	180 mA	-20 to +80	•	–	–	2, 5, 10 m	PVC 2 x 0,25	–	N/UK 4.3.005
M/50/LSU/5U	–	10 to 240	10 to 170	180 mA	-20 to +80	•	–	–	5 m	PUR 2 x 0,25	–	N/UK 4.3.005
TM/50/RAU/2S	–	10 to 240	10 to 170	180 mA	-20 to +150	–	–	–	2 m	Silicone 2 x 0,25	–	N/UK 4.3.005
M/50/RAC/5V	–	10 to 240	10 to 170	180 mA	-20 to +80	–	Changeover	–	5 m	PVC 3 x 0,25	–	N/UK 4.3.005
M/50/LSU/CP	–	10 to 60	10 to 75	180 mA	-20 to +80	•	Plug M8x1	–	5 m	PVC 3 x 0,25	MP73001/5	N/UK 4.3.005
–	M/50/EAP/*V	–	10 to 30	150 mA	-20 to +80	•	PNP	–	2, 5, 10 m	PVC 3 x 0,25	–	N/UK 4.3.007
–	M/50/EAP/CP	–	10 to 30	150 mA	-20 to +80	•	PNP, Plug M8x1	–	5 m	PVC 3 x 0,25	MP73001/5	N/UK 4.3.007
–	M/50/EAP/CC	–	10 to 30	150 mA	-20 to +80	•	PNP, Plug M12x1	–	5 m	PVC 3 x 0,25	MP34614/5	N/UK 4.3.007
–	M/50/EAN/*V	–	10 to 30	150 mA	-20 to +80	•	NPN	–	2, 5, 10 m	PVC 3 x 0,25	–	N/UK 4.3.007
–	M/50/EAN/CP	–	10 to 30	150 mA	-20 to +80	•	NPN, Plug M8x1	–	5 m	PVC 3 x 0,25	MP73001/5	N/UK 4.3.007

* Please insert cable length
Further information (technical data, cable material, dimensions) see datasheet.

Magnetically operated switches

Type Reed	With cable		With connector (M12x1)		Current max.	Temperature °C	LED	Features	Cable/ Connector length	Cable Type	Cable with Connector	Datasheet
	Solid state	Voltage V a.c.	V d.c.	Voltage V a.c.								
TQM/31/*	–	10 to 240	10 to 240	2 A	-20 to +150	–	High temperature	–	5 m	Silicone 2x0,75	–	N/UK 4.3.021
QM/32/*	–	10 to 240	10 to 240	1 A	-20 to +80	•	–	–	2, 5, 10 m	PVC 2 x 0,75	–	N/UK 4.3.021
QM/32/5/PU	–	10 to 240	10 to 240	1 A	-20 to +80	•	–	–	5 m	PUR 2 x 0,75	–	N/UK 4.3.021
QM/32/P	–	10 to 240	10 to 240	1 A	-20 to +80	•	–	–	5 m	PVC 3 x 0,34	MP34692/5	N/UK 4.3.021
–	QM/132/*	–	10 to 30	0,2 A	-20 to +80	•	PNP	–	2, 5, 10 m	PVC 3 x 0,35	–	N/UK 4.3.025
–	QM/132/5/PU	–	10 to 30	0,2 A	-20 to +80	•	PNP	–	5 m	PUR 3 x 0,34	–	N/UK 4.3.025
–	QM/132/P	–	10 to 30	0,2 A	-20 to +80	•	PNP	–	5 m	PVC 3 x 0,34	MP34692/5	N/UK 4.3.025
–	QM/132/E/5	–	10 to 30	0,2 A	-20 to +80	•	Pulse stretcher	–	5 m	PVC 3 x 0,35	–	N/UK 4.3.025
–	QM/132/S/5	20 to 250	–	300 mA	-20 to +80	•	–	–	5 m	PVC 2 x 0,75	–	N/UK 4.3.025

* Please insert cable length
Further information (technical data, cable material, dimensions) see data sheet.

Pneumatically operated switch

Type Pneumatic	Operating pressure	Flow rate	Orifice size	Temperature	LED	Connections	Datasheet
QM/140	2 to 6 bar	40 l/min	2 mm	+60°C	•	for 3 mm I/D tubing	N/UK 4.3.061

* Please insert cable length
Further information (technical data, cable material, dimensions) see data sheet.

Ordering information

Cylinders

To order a basic 80 mm bore magnetic piston cylinder with a 50 mm stroke quote: **RA/8080/M/50**

Mountings

To order a front flange mounting style 'G' for 80 mm bore cylinder quote: **QA/8080/22**

Switches

To order a reed switch with LED and 2 m cable length quote: **M/50/LSU/2V**

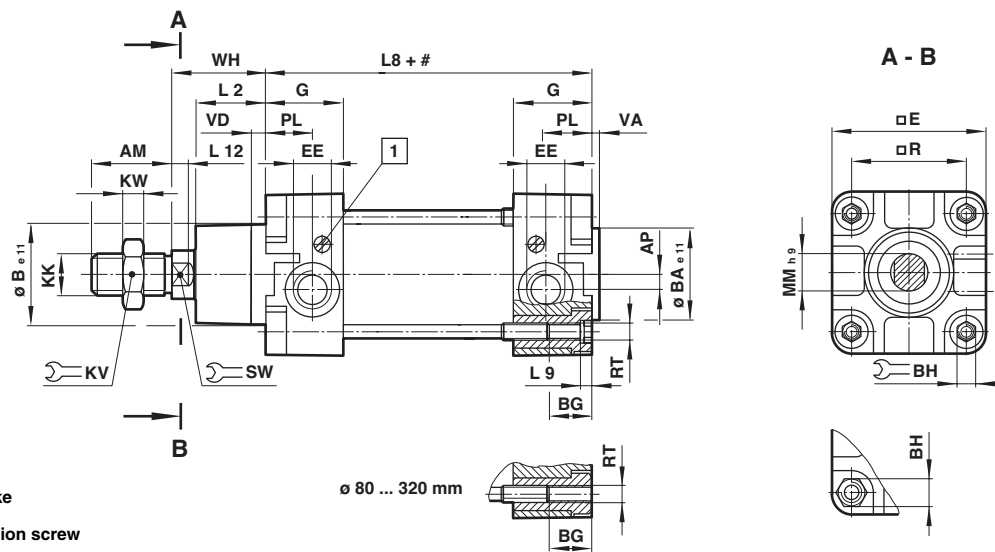
Brackets for switches

To order a bracket for magnetically operated switches M/50/LSU/2V; 80 mm bore cylinder quote: **QM/27/2/1**

Theoretical forces, cushioning, air consumption

Type	Cylinder Ø	Theoretical forces (N) at 6 bar		Cushion length (mm)	Initial cushion volume (cm ³)	Air consumption (l/cm stroke) at 6 bar	
		outstroke	instroke			outstroke	instroke
RA/8032/.	32	482	414	19	12,3	0,056	0,048
RA/8040/.	40	754	633	22	20,7	0,088	0,074
RA/8050/.	50	1178	990	24	36	0,137	0,114
RA/8063/.	63	1870	1680	24	64	0,218	0,195
RA/8080/.	80	3016	2722	27	116	0,35	0,32
RA/8100/.	100	4710	4416	34	242	0,55	0,51
RA/8125/.	125	7363	6882	41	451	0,86	0,79
RA/8160/.	160	12064	11310	45	816	1,41	1,32
RA/8200/.	200	18840	18090	45	1324	2,20	2,10
RA/8250/.	250	29436	28236	60	2900	3,44	3,30
RA/8320/.	320	48228	47292	65	5200	5,63	5,41

**Basic dimensions
RA/8000, RA/8000/M – Standard cylinder**

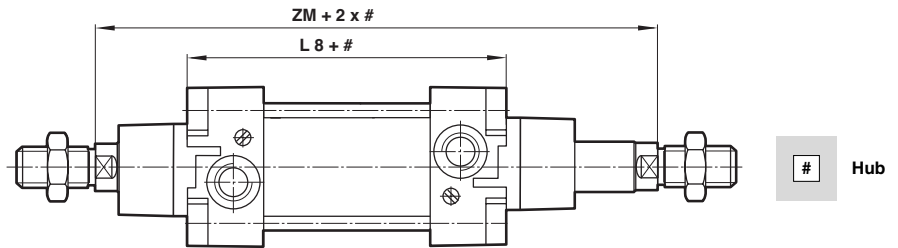


Type	Ø	AM	AP	Ø Be11	Ø BAe11	BG	BH	E	EE	G	KK	KV	KW	L2
RA/8032/.	32	22	3,5	30	30	18	6	47	G 1/8	27,5	M10x1,25	17	5	20
RA/8040/.	40	24	4,5	35	35	18	6	53	G 1/4	32	M12x1,25	19	6	22
RA/8050/.	50	32	6	40	40	18	8	65	G 1/4	31	M16x1,5	24	8	27
RA/8063/.	63	32	10	45	45	17,5	8	75	G 3/8	33	M16x1,5	24	8	29
RA/8080/.	80	40	8,5	45	45	21,5	19	95	G 3/8	33	M20x1,5	30	10	33
RA/8100/.	100	40	9	55	55	21,5	19	115	G 1/2	37	M20x1,5	30	10	36
RA/8125/.	125	54	10	60	60	30	24	140	G 1/2	46	M27x2	41	13,5	45
RA/8160/.	160	72	18	65	65	28,5	32	183,5	G 3/4	50	M36x2	55	18	58
RA/8200/.	200	72	18	75	75	28,5	32	224	G 3/4	50	M36x2	55	18	67
RA/8250/.	250	84	22,5	90	90	35	36	280	G 1	58	M42x2	65	21	80
RA/8320/.	320	96	22,5	110	110	30	46	350	G 1	60	M48x2	75	24	90
Type	Ø	L8	L9	L12	Ø MMh9	PL	R	RT	SW	VA	VD	WH	at 0 mm per 25 mm	
RA/8032/.	32	94	4	6	12	13	32,5	M 6	10	3	6	26	0,51 kg	0,06 kg
RA/8040/.	40	105	4	6,5	16	15	38	M 6	13	3,5	6	30	0,80 kg	0,08 kg
RA/8050/.	50	106	5	8	20	18,5	46,5	M 8	17	3,5	6	37	1,33 kg	0,12 kg
RA/8063/.	63	121	5	8	20	19	56,5	M 8	17	4	6	37	1,80 kg	0,13 kg
RA/8080/.	80	128	-	10	25	19	72	M 10	22	4	6	46	3,25 kg	0,20 kg
RA/8100/.	100	138	-	10	25	18	89	M 10	22	4	6	51	4,81 kg	0,23 kg
RA/8125/.	125	160	-	13	32	22,5	110	M 12	27	6	15,5	65	8,00 kg	0,33 kg
RA/8160/.	160	180	-	16	40	21	140	M 16	36	4	15	80	14,9 kg	0,55 kg
RA/8200/.	200	180	-	16	40	21	175	M 16	36	5	15	95	21,7 kg	0,60 kg
RA/8250/.	250	200	-	20	50	29	220	M 20	41	7	13	105	32,6 kg	0,92 kg
RA/8320/.	320	220	-	24	63	30	270	M 24	55	7	13	120	59,8 kg	1,46 kg

Alternative variants

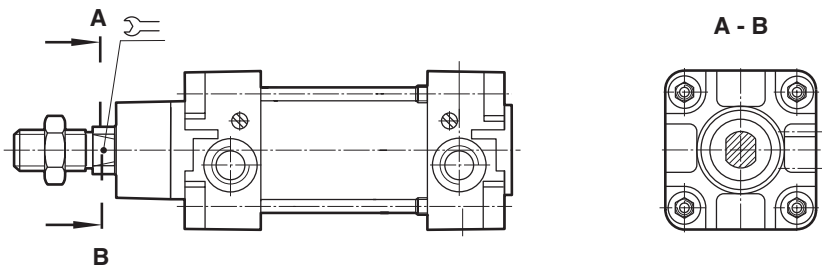
RA/8000/J, RA/8000/JM – Cylinder with double ended piston rod

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



RA/8000/N1, RA/8000/N2 – Cylinder with non-rotating piston rod

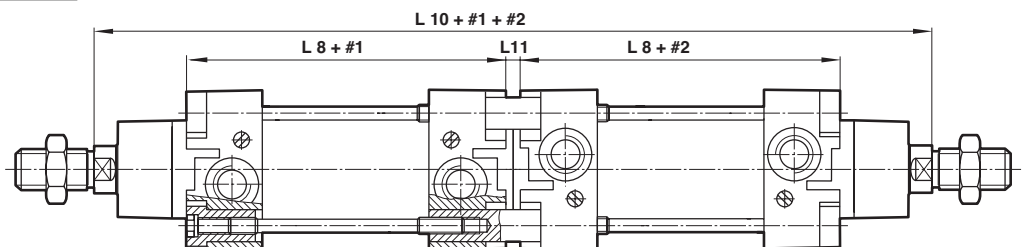
Type	Ø		Torque max. (Nm)
RA/8032/N./.	32	10	0,5
RA/8040/N./.	40	13	1,0
RA/8050/N./.	50	16	1,5
RA/8063/N./.	63	16	1,5
RA/8080/N./.	80	16	2,5
RA/8100/N./.	100	21	2,5



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

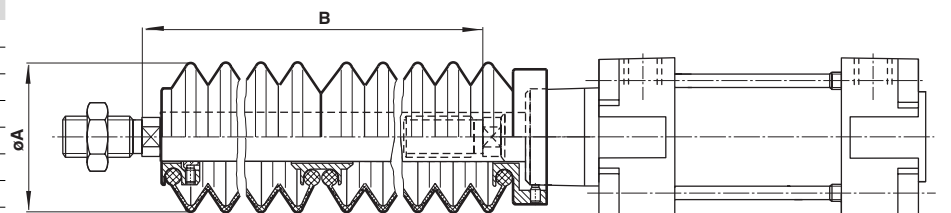
Type	Ø	L 8	L 10	L 11
RA/8032/T./.	32	94	247	7
RA/8040/T./.	40	105	278	8
RA/8050/T./.	50	106	294	8
RA/8063/T./.	63	121	325	9
RA/8080/T./.	80	128	357	9
RA/8100/T./.	100	138	387	9
RA/8125/T./.	125	160	462	12
RA/8160/T./.	160	180	532	12
RA/8200/T./.	200	180	560	10

stroke

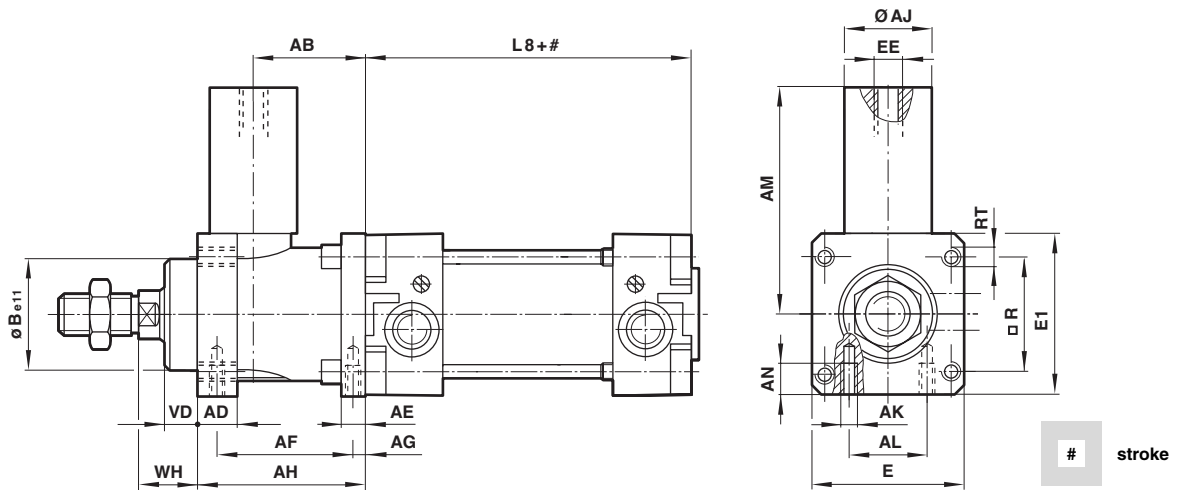


RA/8000/G und RA/8000/MG – Cylinder with piston rod bellows

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



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

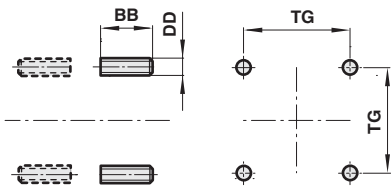


Type	Ø	AB	AD	AE	AF	AG	AH	Ø AJ	AK	AL	AM	AN
RA/8032/L./.	32	32	12	8	40	4,2	48	25	M 5	16	59	8
RA/8040/L./.	40	35,5	12	10	46	4,5	55	24	M 5	21	61,5	10
RA/8050/L./.	50	49	16	15	54	11,5	70	30	M 6	24	75	12
RA/8063/L./.	63	49	15	15	55	7,5	70	38	M 8	32	86	12
RA/8080/L./.	80	62	16	16	70	10	90	53	M 8	44	119	16
RA/8100/L./.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

Mountings

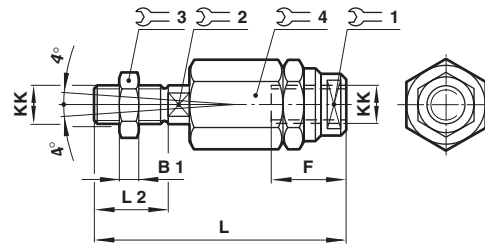
Front or rear stud mounting A

Conforms to ISO 15552, type MX1



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

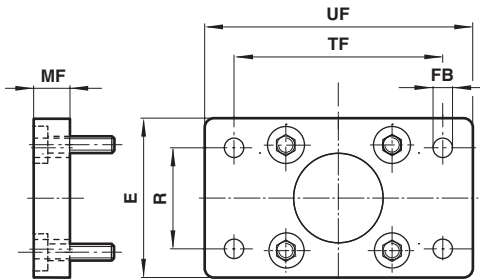
Piston rod swivel AK



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

Front flange B, G

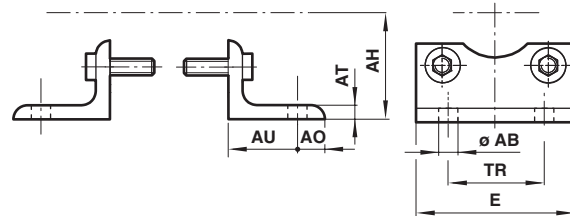
Conforms to ISO 15552, type MF1 and MF2



Style (B, G)	Ø	E	Ø FB	MF	R	TF	UF	kg
QA/8032/22	32	50	7	10	32	64	80	0,25
QA/8040/22	40	55	9	10	36	72	90	0,35
QA/8050/22	50	65	9	12	45	90	110	0,70
QA/8063/22	63	75	9	12	50	100	125	0,80
QA/8080/22	80	100	12	16	63	126	154	1,35
QA/8100/22	100	120	14	16	75	150	186	2,20
QM/8125/22	125	140	16	20	90	180	224	2,70
QM/8160/22	160	180	18	20	115	230	280	3,10
QM/8200/22	200	220	22	25	135	270	320	4,60
QM/8250/22	250	280	26	25	165	330	395	7,40
QM/8320/22	320	350	33	30	200	400	475	13,6

Foot mounting C

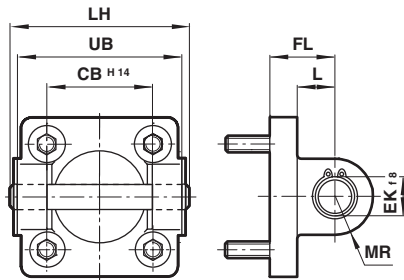
Conforms to ISO 15552, type MS1



Typ (C)	Ø	Ø AB	AH	AO	AT	AU	E	TR	kg
QA/8032/21	32	7	32	8	4	24	48	32	0,15
QA/8040/21	40	9	386	9	4	28	53	36	0,18
QA/8050/21	50	9	45	10	5	32	64	45	0,30
QA/8063/21	63	9	50	12	5	32	74	50	0,39
QA/8080/21	80	12	63	19	5	41	98	63	0,80
QA/8100/21	100	14	71	19	5	41	115	75	0,95
QM/8125/21	125	16	90	20	9	45	140	90	2,40
QM/8160/21	160	18	115	20	8	60	180	115	3,50
QM/8200/21	200	22	135	30	9	70	220	135	5,25
QM/8250/21	250	26	165	35	10	75	280	165	9,50
QM/8320/21	320	33	200	45	16	85	350	200	22,0

Rear clevis D

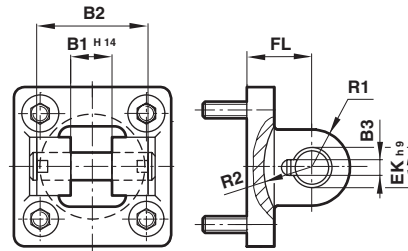
Conforms to ISO 15552, type MP2



Style (D)	Ø	CB H14	Ø EK h9	FL	L	LH	MR	UB	kg
QA/8032/23	32	26	10	22	13	52	9	45	0,11
QA/8040/23	40	28	12	25	16	60	12	52	0,16
QA/8050/23	50	32	12	27	17	68	12	60	0,22
QA/8063/23	63	40	16	32	22	79	15	70	0,34
QA/8080/23	80	50	16	36	22	99	15	90	0,54
QA/8100/23	100	60	20	41	27	119	20	110	0,90
QM/8125/23	125	70	25	50	31	139	25	130	2,70
QM/8160/23	160	90	30	55	35,5	181	30	170	4,30
QM/8200/23	200	90	30	60	36	181	30	170	6,10
QM/8250/23	250	110	40	70	45	218	40	200	19,0
QM/8320/23	320	120	45	80	50	238	45	220	30,5

Rear clevis D2

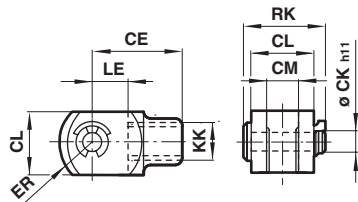
Conforms to ISO 15552, type AB6



Style (D2)	Ø	B1 H14	B2	B3	Ø EK h9	FL	R1	R2	kg
QA/8032/42	32	14	34	3,3	10	22	11	17	0,20
QA/8040/42	40	16	40	4,3	12	25	12	20	0,23
QA/8050/42	50	21	45	4,3	16	27	14,5	22	0,36
QA/8063/42	63	21	51	4,3	16	32	18	25	0,55
QA/8080/42	80	25	65	4,3	20	36	22	30	0,90
QA/8100/42	100	25	75	4,3	20	41	22	32	1,45
QA/8125/42	125	37	97	6,3	30	50	30	42	2,70
QA/8160/42	160	43	122	6,3	35	55	36	46	4,30
QA/8200/42	200	43	122	6,3	35	60	38	49	6,10

Piston rod clevis F

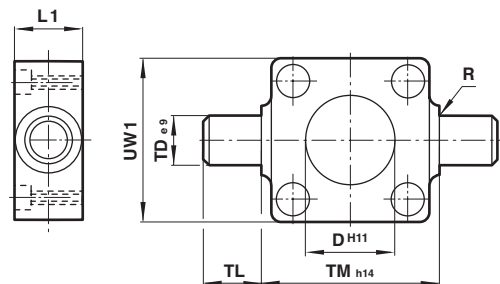
Conforms to DIN ISO 8140



Style (F)	Ø	KK	CE	Ø CK h11	CL	CM	ER	LE	RK	kg
QM/8025/25	32	M10x1,25	40	10	20	10	16	20	28	0,09
QM/8040/25	40	M12x1,25	48	12	24	12	19	24	32	0,13
QM/8050/25	50/63	M16x1,5	64	16	32	16	25	32	41,5	0,33
QM/8080/25	80/100	M20x1,5	80	20	40	20	32	40	50	0,67
QM/8125/25	125	M27x2	110	30	55	30	45	54	62	1,35
QM/8160/25	160/200	M36x2	144	35	70	35	57	72	95	3,00
QM/8250/25	250	M42x2	168	40	85	40	68	84	106	6,40
QM/8320/25	320	M48x2	192	50	96	50	85	96	121	8,70

Front or rear detachable trunnion FH

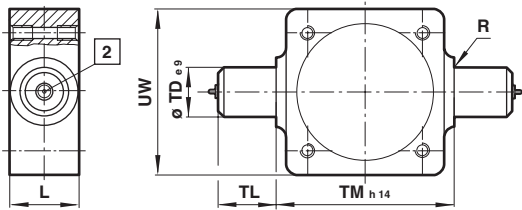
Conforms to VDMA 24562 part 2, type MT 5/6



Style (FH)	Ø	Ø D h11	L1	R	Ø TD e9	TL	TM h14	UW1	kg
QA/8032/34	32	30	16	1	12	12	50	50	0,20
QA/8040/34	40	35	20	1,6	16	16	63	55	0,38
QA/8050/34	50	40	24	1,6	16	16	75	65	0,60
QA/8063/34	63	45	24	1,6	20	20	90	75	1,10
QA/8080/34	80	45	28	1,6	20	20	110	100	1,90
QA/8100/34	100	55	38	2	25	25	132	120	3,50
QA/8125/34	125	60	50	2	25	25	160	145	6,50

Centre trunnion H

Conforms to ISO 15552, type MT4



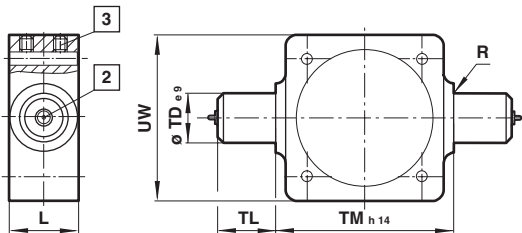
2 Grease nipple up to Ø 125 mm

Type (H)	Ø	L	R	Ø TD e9	TL	TM h14	UW	XV min.	XV max.	kg
QA/8032/28	32	20	1	12	12	50	50	66	80	0,16
QA/8040/28	40	24	1,6	16	16	63	58	76	89	0,35
QA/8050/28	50	28	1,6	16	16	75	70	82	98	0,65
QA/8063/28	63	28	1,6	20	20	90	80	88	107	0,85
QA/8080/28	80	28	1,6	20	20	110	100	97	123	1,20
QA/8100/28	100	38	2	25	25	132	126	112	128	2,30
QM/8125/28	125	50	2	25	25	160	152	136	154	3,30
QM/8160/28	160	50	2,5	32	32	200	192	155	185	5,30
QM/8200/28	200	50	2,5	32	32	250	240	170	200	9,40
QM/8250/28	250	60	3,2	40	40	320	318	193	217	18,0
QM/8320/28	320	70	3,2	50	50	400	400	215	245	30,0

Note: Style 'H': These mountings are only supplied assembled complete with the cylinder. Unless otherwise specified, units will be supplied with dimension 'XV' plus half the stroke length. 'XV' = Distance from the piston rod shoulder to the centre of the mounting.

Adjustable intermediate trunnion mounting UH

Conforms to ISO 15552, type MT4



2 Grease nipple up to Ø 125 mm

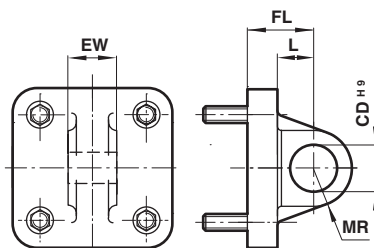
3 Locking screws
Torque max
Ø 32 & 40 mm = 6 Nm
Ø 50 & 63 mm = 10 Nm
Ø 80 & 100 mm = 15 Nm
Ø 125 mm = 25 Nm
Ø 160 & 200 mm = 40 Nm

Type (UH)	Ø	L	R	Ø TD e9	TL	TM h14	UW	XV min.	XV max.	kg
QA/8032/40	32	20	1	12	12	50	50	66	80	0,16
QA/8040/40	40	24	1,6	16	16	63	58	76	89	0,35
QA/8050/40	50	28	1,6	16	16	75	70	82	98	0,65
QA/8063/40	63	28	1,6	20	20	90	80	88	107	0,85
QA/8080/40	80	28	1,6	20	20	110	100	97	123	1,20
QA/8100/40	100	38	2	25	25	132	126	112	128	2,30
QM/8125/40	125	50	2	25	25	160	152	136	154	3,30
QM/8160/40	160	50	2,5	32	32	200	192	155	185	5,30
QM/8200/40	200	50	2,5	32	32	250	240	170	200	9,40

Style 'UH': It is most important that the locking screws which secure the mounting to the tie rod are tightened to the torque figures shown in the table below. For maximum energy input, consult our Technical Service.

Rear eye R

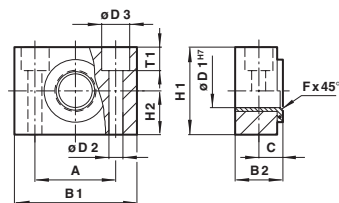
Conforms to ISO 15552, type MP4



Style (R)	Ø	Ø CD ^{H9}	EW	FL	L	MR	kg
QA/8032/27	32	10	25,8	22	13	9	0,09
QA/8040/27	40	12	27,8	25	16	12	0,11
QA/8050/27	50	12	31,7	27	17	12	0,17
QA/8063/27	63	16	39,7	32	22	15	0,24
QA/8080/27	80	16	49,7	36	22	15	0,37
QA/8100/27	100	20	59,7	41	27	20	0,59
QM/8125/27	125	25	69,7	50	33	25	3,20
QM/8160/27	160	30	89,7	55	35,5	30	6,10
QM/8200/27	200	30	89,7	60	37	30	6,80

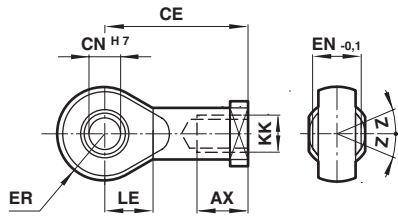
Trunnion support S

Conforms to ISO 15552, type AT4



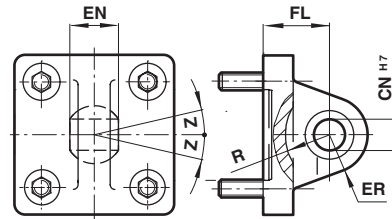
Type (S)	Ø	A	B1	B2	C	Ø D1 ^{H7}	Ø D2	Ø D3	F x 45°	H1	H2	T1	kg
QA/8032/41	32	32	46	18	10,5	12	6,6	11	1	30	15	6,8	0,10
QA/8040/41	40/50	36	55	21	12	16	9	15	1,6	36	18	9	0,14
QA/8063/41	63/80	42	65	23	13	20	11	18	1,6	40	20	11	0,18
QA/8100/41	100/125	50	75	28,5	16	25	14	20	2	50	25	13	0,34
QA/8160/41	160/200	60	92	39	21,5	32	18	26	2,5	60	25	15,5	1,90

Universal piston rod eye UF
Conforms to DIN ISO 8139



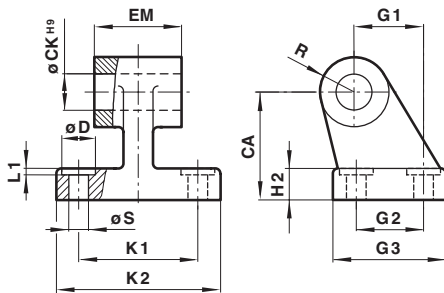
Style (UF)	Ø	Gewinde KK	AX	CE	Ø CN ^{H7}	EN _{-0,1}	ER	LE	Z	kg
QM/8025/32	32	M10x1,25	20	43	10	14	14	15	13°	0,09
QM/8040/32	40	M12x1,25	22	50	12	16	16	17	13°	0,13
QM/8050/32	50/63	M16x1,5	28	64	16	21	21	22	15°	0,33
QM/8080/32	80/100	M20x1,5	33	77	20	25	25	26	15°	0,67
QM/8125/32	125	M27x2	51	110	30	37	35	36	15°	1,35
QM/8160/32	160/200	M36x2	56	125	35	43	40	41	16°	3,00
QM/8250/32	250	M42x2	60	142	40	49	45	46	17°	6,40
QM/8320/32	320	M48x2	65	160	50	60	58	59	12°	8,70

Universal rear eye UR
Conforms to ISO 15552, type MP6



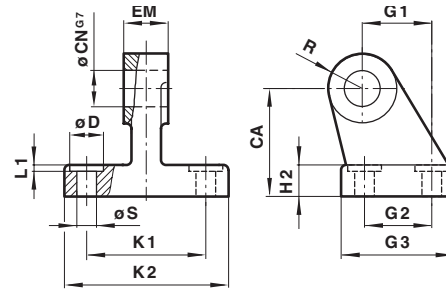
Style (UR)	Ø	Ø CN ^{H7}	EN	ER	FL	R	Z	kg
QA/8032/33	32	10	14	16	22	14,5	13°	0,15
QA/8040/33	40	12	16	19	25	18	13°	0,25
QA/8050/33	50	16	21	21	27	19	13°	0,40
QA/8063/33	63	16	21	24	32	24	15°	0,55
QA/8080/33	80	20	25	28	36	24	15°	0,90
QA/8100/33	100	20	25	30	41	29	15°	1,50
QM/8125/33	125	30	37	40	50	36	15°	2,70
QM/8160/33	160	35	43	44	55	41	16°	4,6
QM/8200/33	200	35	43	48	60	42	16°	7,3
QM/8250/33	250	40	49	50	70	47	10°	16,5
QM/8320/33	320	50	60	58	80	52	8°	26,0

Wide hinge SW
Conforms to ISO 15552, type AB7



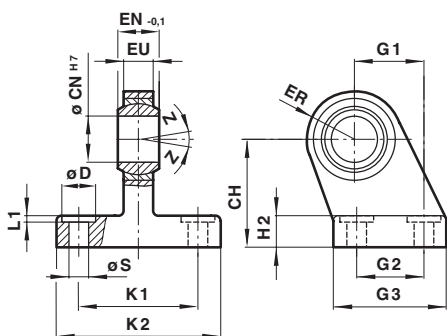
Typ (SW)	Ø	CA	Ø CK ^{H9}	Ø D	H2	EM	G1	G2	G3	K1	K2	L1	R	Ø S	kg
M/P19493	32	32	10	11	8	26,5	21	18	31	38	51	1,6	10	6,6	0,05
M/P19494	40	36	12	11	10	28,5	24	22	35	41	54	1,6	11	6,6	0,07
M/P19495	50	45	12	15	12	32,5	33	30	45	50	65	1,6	13	9	0,14
M/P19496	63	50	16	15	12	40,5	37	35	50	52	67	1,6	15	9	0,18
M/P19497	80	63	16	18	14	50,5	47	40	60	66	86	2,5	15	11	0,28
M/P19498	100	71	20	18	15	60,5	55	50	70	76	96	2,5	19	11	0,42
M/P19499	125	90	25	20	20	70,5	70	60	90	94	124	3,2	22	14	2,70
M/P19679	160	115	30	20	25	89,5	97	88	126	118	156	4	31	14	6,30
M/P19683	200	135	30	26	30	89,5	105	90	130	122	162	4	31	18	8,00
M/P19446	250	165	40*	40	35	109,5	128	110	160	150	200	4	39	22	13,4
M/P19447	320	200	45*1)	48	40	119,5	150	122	186	170	234	4	44	26	22,0

Narrow hinge SS



Typ (SS)	Ø	CA	Ø CN ^{G7}	Ø D	H2	EM	G1	G2	G3	K1	K2	L1	R	Ø S	kg
M/P19931	32	32	10	11	8	10	21	18	31	38	51	1,6	10	6,6	0,15
M/P19932	40	36	12	11	10	12	24	22	35	41	54	1,6	11	6,6	0,20
M/P19933	50	45	10	15	12	16	33	30	45	50	65	1,6	13	9	0,48
M/P19934	63	50	16	15	12	16	37	35	50	52	67	1,6	15	9	0,50
M/P19935	80	63	20	18	14	20	47	40	60	66	86	2,5	15	11	0,75
M/P19936	100	71	20	18	15	20	55	50	70	76	96	2,5	19	11	1,20
M/P19937	125	90	25	20	20	30	70	60	90	94	124	3,2	22	14	2,50
M/P19938	160	115	35	20	25	35	97	88	126	118	156	4	31	14	6,00
M/P19939	200	135	35	26	30	35	105	90	130	122	162	4	31	18	7,60

Swivel hinge US
Conforms to VDMA 24562 part 2

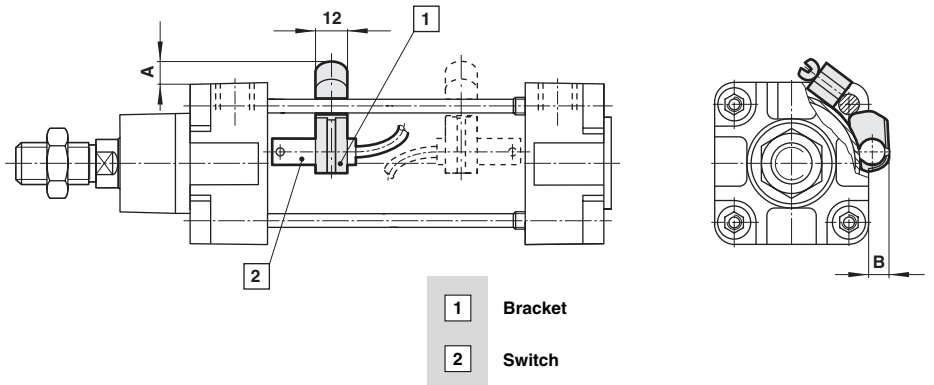


Typ (US)	Ø	CH	Ø CN ^{H7}	Ø D	EN _{-0,1}	ER	EU	G1	G2	G3	H2	K1	K2	L1	Ø S	Z	kg
M/P40310	32	32	10	11	14	16	10,5	21	18	31	8	38	51	1,6	6,6	13°	0,19
M/P40311	40	36	12	11	16	19	12	24	22	35	10	41	54	1,6	6,6	13°	0,24
M/P40312	50	45	16	15	21	21	15	33	30	45	12	50	65	1,6	9	13°	0,46
M/P40313	63	50	16	15	21	24	15	37	35	50	12	52	67	1,6	9	15°	0,59
M/P40314	80	63	20	18	25	28	18	47	40	60	14	66	86	2,5	11	15°	1,03
M/P40315	100	71	20	18	25	30	18	55	50	70	15	76	96	2,5	11	15°	1,40
M/P71355	125	90	30	20	37	40	25	70	60	90	20	94	124	3,2	14	15°	3,10
M/P71356	160	115	35	20	43	44	28	97	88	126	25	118	159	4	14	15°	6,40
M/P71357	200	135	35	26	43	48	28	105	90	130	30	122	162	4	18	15°	9,10

Brackets

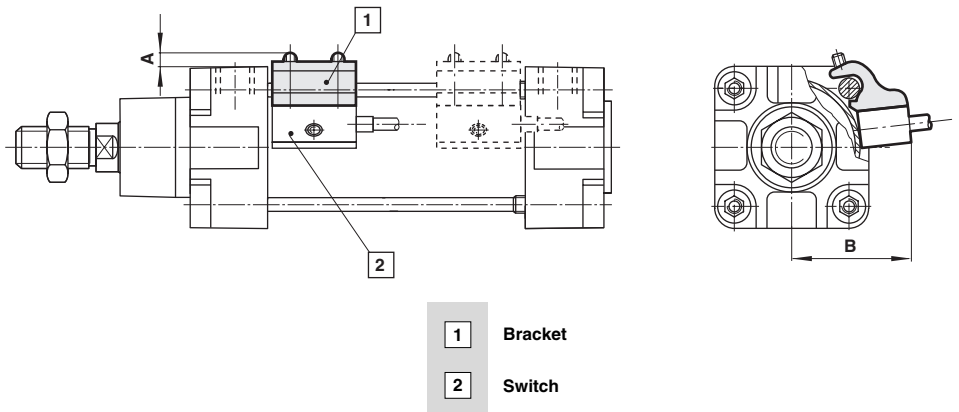
QM/27/2/1 – Bracket
Switches: M/50

Cylinder Ø	A	B	Weight
32	9	7	0,010 kg
40	8	8	0,010 kg
50	7	5	0,010 kg
63	7	7	0,010 kg
80	7	4	0,010 kg
100	2	2	0,010 kg
125	- 4	- 3	0,010 kg
160	- 10	- 9	0,010 kg
200	- 17	- 14	0,010 kg



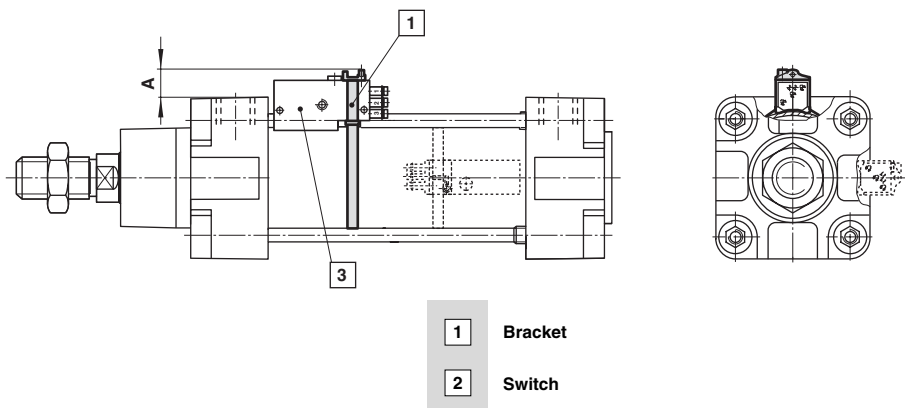
QM/31/000/22 – Bracket
Switches: TQM/31, QM/32, QM/132

Cylinder Ø	A	B	Weight
32	4,5	38	0,026 kg
40	5,5	43	0,026 kg
50	4,5	48	0,026 kg
63	4,5	53	0,026 kg
80	1,5	61	0,028 kg
100	0,5	68	0,028 kg
125	- 1	79	0,028 kg
160	0	91,5	0,023 kg
200	- 4	106	0,023 kg
250	- 3	138	0,041 kg
320	- 21	154	0,080 kg

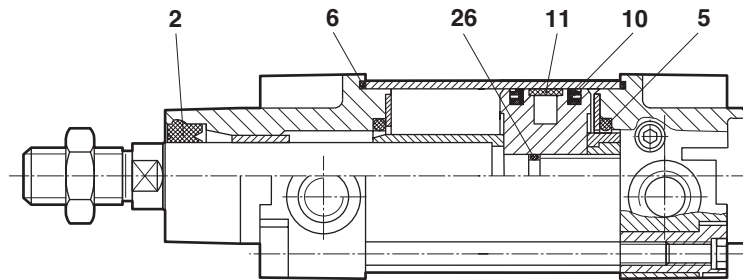


QM/140/010/22 – Bracket with holding strap
Pneumatic switch: QM/140

Cylinder Ø	A	Weight
32	31,5	0,020 kg
40	30,5	0,020 kg
50	31,5	0,020 kg
63	29,5	0,020 kg
80	30,5	0,020 kg
100	30,0	0,020 kg



Spares



Cylinder Ø	Type	Spare kit	Comprising Item	Description	Quantity
32	RA/8032	QA/8032/00	2	Piston rod seal	1
32	RA/8032/M	QA/8032/00	5	Cushion seal	2
40	RA/8040, RA/8040/M	QA/8040/00	6	'O'-ring	2
50	RA/8050, RA/8050/M	QA/8050/00	10	Piston seal	2
63	RA/8063, RA/8063/M	QA/8063/00	11	Wear ring	1
80	RA/8080, RA/8080/M	QA/8080/00	26	'O'-ring (Ø 32 to 100 mm)	1
100	RA/8100, RA/8100/M	QA/8100/00			
125	RA/8125, RA/8125/M	QA/8127/00			
160	RA/8160, RA/8160/M	QA/8160/00			
200	RA/8200, RA/8200/M	QA/8200/00			
250	RA/8250, RA/8250/M	QA/8250/00			
320	RA/8320, RA/8320/M	QA/8320/00			

* Insert stroke length

Note: please quote the cylinder type number when ordering spares kits and piston rods!