

# PRA/802000/M, RA/802000/M, RA/8000, RA/8000/M ISOLine™ 15552 cylinder, double acting



- > ø 32 ... 320 mm
- > High performance adaptive cushioning system "ACS"
- > Low temperature version up to -40 °C
- > High temperature version up to +150 °C
- > 16 bar version available
- > Rail Cylinder Shock and vibration tested to EN 61373 Category 1; Class A + B



## Technical features

### Medium:

Compressed air, filtered, lubricated or non-lubricated

### Standard:

ISO 15552

### Operation:

Double acting, adjustable cushioning

### Operating pressure:

ø 32 ... 125 mm (Profile barrel)  
1 ... 12 bar (14 ... 174 psi)  
ø 32 ... 200 mm (Round barrel)  
1 ... 16 bar (14 ... 232 psi)  
ø 250 & 320 mm (Round barrel)  
1 ... 10 bar (14 ... 145 psi)

### Ports:

G1/8 ... 1

### Cylinder diameters:

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

### Standard strokes:

25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500 mm

### Non-standard strokes:

ø 32 ... 125 mm (5 ... 2800 mm)  
ø 160 ... 320 mm (5 ... 2600 mm)

### Operating temperature:

ø 32 ... 125 mm  
"Standard version"  
-20 ... +80 °C (-4 ... +176 °F)  
ø 160 ... 320 mm  
"Standard version"  
-10 ... +80 °C (+14 ... +176 °F)  
ø 32 ... 320 mm  
"High temperature version" (T)  
0 ... +150 °C (-17,7 ... +302 °F)  
ø 32 ... 200 mm  
"Low temperature version" (L)  
-40 max. ... +80 °C (-40 ... +176 °F)  
Air supply must be dry enough to avoid ice formation at temperatures below +2 °C (+35 °F)

### Standard Materials:

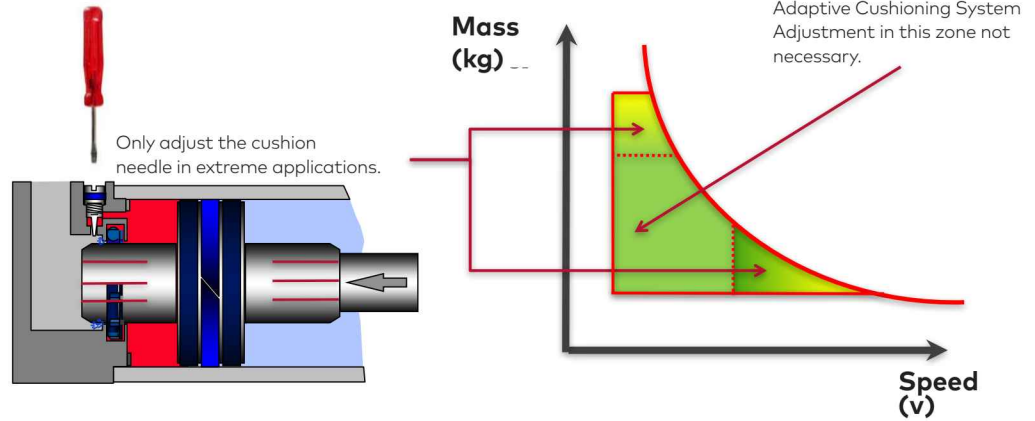
Barrel: Anodised aluminium  
End covers: Pressure diecast aluminium (ø 200 ... 320 mm gravity cast aluminium)  
Piston rod: Stainless steel (martensitic)  
Piston rod seals: PUR (ø 160 ... 320 mm NBR)  
Piston seals: PUR (ø 160 ... 320 mm NBR)  
'O'-rings: NBR

## Technical data

Cylinder ø (mm)	32	40	50	63	80	100	125	160	200	250	320
Profile barrel	•	•	•	•	•	•	•				
Round barrel	•	•	•	•	•	•	•	•	•	•	•
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	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5	M27x2	M36x2	M36x2	M42x2	M48x2
Cushion length (mm)	20	22	24	24	26	33	39	43	43	55	60
Cushioning Adaptive cushioning systems "ACS"	•	•	•	•	•	•	•				
Cushioning (adjustable cushion)								•	•	•	•
Initial cushion volume (cm3)	12,8	20,2	36	64	111	235	427	784	1273	2534	4559
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

### The function

The new "ACS" Adaptive Cushioning System provides a high performance pneumatic damping function. The system will automatically cushion for a wide range of general applications as delivered. Manual adjustment is still possible for extreme applications.



## Design and sizing in pneumatics

### Golden Rules

Design and sizing in pneumatics is often based upon experience coupled with an element of fear of under specifying crucial equipment. In an attempt to ensure enough power, engineers may select over sized cylinders and then select over sized valves to supply them with enough air. The same uncertainty can also lead to over sized specification of air line equipment, fittings and tubing. The outcome is components larger than necessary that use too much compressed air and waste energy and money. However when following some well proven golden rules and a few laws of pneumatics it is easy to achieve correctly sized pneumatic installations.

### Basics to Consider

The force required, the pressure available, the speed of movement and air consumption. ISO and VDMA standard or compact style also cushioning and sensors. Cylinders are greased on assembly and operate under normal conditions without additional lubrication. However using a lubricator will extend the life of these products.

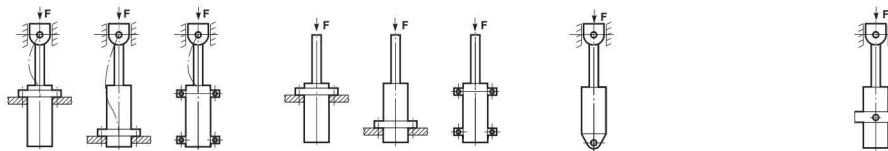
### Golden Rule:

The theoretical force of the cylinder should be 25% extra for high speed, 50% extra for low speed and 100% extra for ultra low speed (positioning) applications.

The correct sizing is based upon the required force and applied pressure. Go to page 1 for more information on cylinder sizing and air consumption.









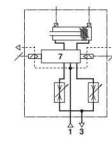

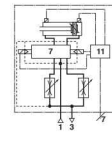

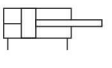





### Load and Buckling

For applications with high side loading, use pneumatic slide actuators or standard cylinders fitted with guide units. Alternatively external guide bearings should be installed. When a long stroke length is specified, care must be taken to ensure the rod length is within the limits for prevention of buckling. The table shows the maximum stroke length for a variety of installation arrangements.



Cylinder ø (mm)	Piston rod ø (mm)	Load case 1 Pressure (bar)				Load case 2 Pressure (bar)				Load case 3 Pressure (bar)				Load case 4 Pressure (bar)			
		4	6	10	16	4	6	10	16	4	6	10	16	4	6	10	16
32	12	1100	860	650	500	500	390	290	210	650	520	380	290	760	600	450	340
40	16	1600	1200	950	730	730	580	430	320	940	750	560	430	1100	880	660	500
50	20	2000	1600	1200	930	930	740	550	420	1200	960	720	550	1400	1100	840	640
63	20	1500	1200	930	720	720	570	420	310	930	740	550	420	1100	860	650	490
80	25	1900	1500	1100	880	880	700	510	380	1100	910	680	510	1300	1100	800	600
100	25	1500	1200	880	670	670	520	380	270	880	690	510	370	1000	820	600	450
125	32	2000	1600	1200	910	910	710	520	380	1200	940	690	520	1400	1100	820	620
160	40	2400	1900	1500	1100	1100	880	640	480	1400	1200	860	640	1700	1400	1000	760
200	40	1900	1500	1100	860	860	670	480	350	1100	890	650	480	1300	1000	770	580
250	50	2400	1900	1400	1100	1100	850	620	440	1400	1100	830	610	1700	1300	980	730
320	63	2600	2400	1800	1400	1400	1100	780	570	1800	1400	1000	780	2100	1700	1200	930

**Additional ISO 15552 Cylinder ranges (Cylinder ranges in the red frame are shown in this data sheet.)**

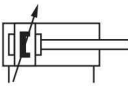
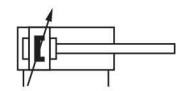
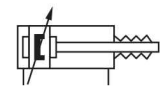
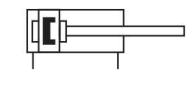
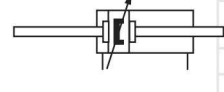
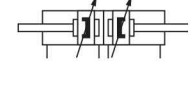
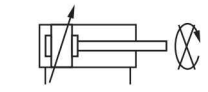
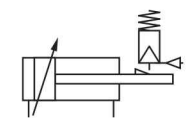
																			
Symbols		Profile barrel Round Barrel	Industrial Automation	Food & Beverage	Automotive	ATEX II 2GD	Rail **1)	CE-marked	ø (mm)	Range	Description	Datasheet							
		•	•	•	•	•	•	•	32 ... 125	PRA/802000	Double Acting Cylinder	1_5_220_PRA_802000_M_RA_8000_M							
									LPRA/802000	1_5_225_PRA_802000_M_EX									
									•	•	•	•	•	•	•	32 ... 125	RA/802000	Double Acting Cylinder	1_5_220_PRA_802000_M_RA_8000_M
																LPRA/802000	1_5_225_PRA_802000_M_EX		
									•	•	•	•	•	•	•	160 ... 320	RA/8000	Double Acting Cylinder	1_5_220_PRA_802000_M_RA_8000_M
																	LRA/8000		1_5_126_RA_8000_M_EX
										•	•	•	•	•	•	•	32 ... 200	KA/802000	Stainless steel Cylinder
												1_5_228_KA_802000_M_EX							
		•	•	•	•	•	•	•	32 ... 100	PRA/822000	Smooth Line Cylinder	1_5_230_PRA_822000_M							
												1_5_235_PRA_822000_M_EX							
		•	•	•	•	•	•	•	32 ... 100	PRA/842000	Clean Line Cylinder	1_5_240_PRA_842000_M							
												1_5_245_PRA_842000_M_EX							
		•	•	•	•	•	•	•	32 ... 100	PRA/862000	IVAC Industrial Cylinder	1_5_250_PRA_862000_M							
												1_5_255_PRA_862000_M_EX							
		•	•	•	•	•	•	•	32 ... 100	PRA/882000	IVAC Clean Line Cylinder	1_5_260_PRA_882000_M							
												1_5_265_PRA_882000_M_EX							
		•	•	•	•	•	•	•	40 ... 125	PSA/802000/F1	Cylinder with position sensor	1_9_067_PSA_802000_F1							
												1_9_068_PSA_802000_F1_EX							
		•	•	•	•	•	•	•	160 ... 320	SA/8000/F1	Cylinder with position sensor	Datasheet (standard)							
												1_9_062_SA_8000_F1_EX							
		•	•	•	•	•	•	•	32 ... 100	PRA/801000, PRA/803000	Standard Single Acting Cylinder	1_4_101_PRA_801000_803000							
												-							
		•	•	•	•	•	•	•	32 ... 100	RA/801000, RA/803000	Standard Single Acting Cylinder	1_4_101_PRA_801000_803000							
												-							

\* Range available. For additional information please contact the technical service or <http://www.norgren.com>

\*1) Rail Cylinder Shock and vibration tested to EN 61373 Category 1; Class A + B



## Cylinder variants

Symbol	Versions		Piston Rod Material				Standard Model with		ø	Description	Page	
	H	L	T	R	S	C	D	Male Piston Rod Thread				Female Piston Rod Thread
	Please see the description below											
	•	•	•	X	•	•	•	.PRA/802000/M	.PRA/802000/MX	32 ... 125	Standard Cylinder (Profile barrel)	9
	•	•	•	X	•	•	•	.RA/802000/M	.RA/802000/MX	32 ... 125	Standard Cylinder (Round barrel)	9
	•	•	X	•	•	•	.RA/8000/M	-	160 ... 320	Standard Cylinder (Round barrel)	10	
	•	•	X	•	•	•	.RA/8000	-	160 ... 320	Standard Cylinder (Round barrel) without Magnet	10	
				X	•	•	•	PRA/802000/W2	PRA/802000/W2X	32 ... 125	Cylinder with Special Wiper - Seal (suitable for appl. with cement, plaster (stucco), arizona sand, hoar-frost or ice)	12
				X	•	•	•	RA/802000/W2	RA/802000/W2X	32 ... 125	Cylinder with Special Wiper - Seal without Magnet	12
				X	•	•	•	RA/8000/W1	-	160 ... 200	Cylinder with Special Wiper - Seal without Magnet	12
				X	•	•	•	PRA/802000/X2	PRA/802000/X2X	32 ... 125	Low Friction Cylinder	12
				X	•	•	•	RA/802000/X2	RA/802000/X2X	32 ... 125	Operating pressure: 1 ... 10 bar, Medium: Compressed air, filtered and non-lubricated recommended	12
			X	•	•	•	RA/8000/X2	-	160 ... 200	Low Friction Cylinder without Magnet	12	
			X	•	•	•	RA/8000/X1	-	160 ... 200	Low Friction Cylinder without Magnet	12	
	•	•	•	X	•	•	.PRA/802000/MU	.PRA/802000/MUX	32 ... 125	Cylinder with Extended Piston Rod	12	
	•	•	•	X	•	•	.RA/802000/MU	.RA/802000/MUX	32 ... 125	ø 32 ... 125 mm (Stroke + Extension = 2800 mm)	12	
	•	•	X	•	•	•	.RA/8000/MU	-	160 ... 320	ø 160 ... 320 mm (Stroke + Extension = 2600 mm)	12	
	•	•	X	•	•	•	RA/8000/1U	-	160 ... 320	Cylinder with Extended Piston Rod without Magnet	12	
				X	•	•	•	PRA/802000/W6	PRA/802000/W6X	32 ... 125	Cylinder with Extended Piston Rod and Special Wiper - Seal suitable for appl. with cement, plaster (stucco), arizona sand, hoar-frost or ice	12
				X	•	•	•	RA/802000/W6	RA/802000/W6X	32 ... 125	Cylinder with Extended Piston Rod and Special Wiper - Seal without Magnet	12
	•	X	•	•	•	.PRA/802000/MG	.PRA/802000/MGX	32 ... 125	Cylinder with Piston Rod Bellows	14		
	•	X	•	•	•	.RA/802000/MG	.RA/802000/MGX	32 ... 125	Maximum stroke: ø 32 mm = 1860 mm, ø 40 ... 320 mm = 2000 mm	14		
	•	X	•	•	•	.RA/8000/MG	-	160 ... 320	Cylinder with Piston Rod Bellows without Magnet	14		
	•	X	•	•	•	.RA/8000/G	-	160 ... 320	Cylinder with Piston Rod Bellows without Magnet	14		
	•	X	•	•	•	.PRA/802000/MW	.PRA/802000/MWX	32 ... 125	Cylinder without Cushioning	12		
	•	X	•	•	•	.RA/802000/MW	.RA/802000/MWX	32 ... 125	Cylinder without Cushioning	12		
	•	X	•	•	•	.RA/8000/MW	-	160 ... 320	Cylinder without Cushioning without Magnet	12		
	•	X	•	•	•	.RA/8000/W	-	160 ... 320	Cylinder without Cushioning without Magnet	12		
				X	•	•	•	PRA/802000/X4	PRA/802000/X4X	32 ... 125	Low Friction Cylinder without Cushioning	12
				X	•	•	•	RA/802000/X4	RA/802000/X4X	32 ... 125	Operating pressure: 1 ... 10 bar, Medium: Compressed air, filtered and non-lubricated recommended	12
	•	•	•	X	•	•	.PRA/802000/JM	.PRA/802000/JMX	32 ... 125	Cylinder with Double Ended Piston Rod	13	
	•	•	•	X	•	•	.RA/802000/JM	.RA/802000/JMX	32 ... 125	Cylinder with Double Ended Piston Rod	13	
	•	•	X	•	•	•	.RA/8000/JM	-	160 ... 320	Cylinder with Double Ended Piston Rod without Magnet	13	
				X	•	•	•	PRA/802000/W4	PRA/802000/W4X	32 ... 125	Cylinder with Double Ended Piston Rod and Special Wiper - Seal without Magnet	9
				X	•	•	•	RA/802000/W4	RA/802000/W4X	32 ... 125	(suitable for appl. with cement, plaster (stucco), arizona sand, hoar-frost or ice)	9
	•	•	X	•	•	•	.PRA/802000/MT	.PRA/802000/MTX	32 ... 125	Four Position Cylinder	13	
	•	•	X	•	•	•	.RA/802000/MT	.RA/802000/MTX	32 ... 125	Maximum stroke = stroke 1 + stroke 2	13	
	•	•	X	•	•	•	.RA/8000/MT	-	160 ... 200	ø 32 mm = 700 mm, ø 40 mm = 1000 mm, ø 50 mm = 1000 mm, ø 63 mm = 900 mm, ø 80 mm = 1200 mm, ø 100 mm = 1100 mm, ø 125 mm = 1200 mm, ø 160 mm = 1200 mm, ø 200 mm = 1100 mm	13	
	•	•	X	•	•	•	.RA/8000/IT	-	160 ... 200	Four Position Cylinder without Magnet	13	
				X			PRA/802000/N2	PRA/802000/N2X	32 ... 100	Cylinder with Non-Rotating Piston Rod	12	
				X			RA/802000/N2	RA/802000/N2X	32 ... 100	Maximum stroke: 1000 mm	12	
				X	•	•	PRA/802000/L4	PRA/802000/L4X	32 ... 125	Cylinder with Locking unit (Passive)	15	
				X	•	•	RA/802000/L4	RA/802000/L4X	32 ... 125	Spring force on removal of the signal to the unit. Operating pressure for locking unit: 4 ... 10 bar Maximum stroke: 2600 mm	15	
				X	•	•	PRA/802000/L8	PRA/802000/L8X	32 ... 125	Cylinder with Locking unit (Passive) and Special Wiper - Seal Spring force on removal of the signal to the unit. Operating pressure for locking unit: 4 ... 10 bar (suitable for appl. with cement, plaster (stucco), arizona sand, hoar-frost or ice)	15	
				X	•	•	RA/802000/L8	RA/802000/L8X	32 ... 125	Maximum stroke: 2600 mm	15	

Note: Versions: H = Hydraulic (ø 32 ... 100 mm); L = Low temperature -40 °C (-40 °F) (ø 32 ... 125 mm), -30 °C (-22 °F) (ø 160 ... 320 mm); T = High temperature +150 °C (+302 °F); Piston Rod Material: C = Hard chromium plated; D = Stainless steel austenitic & hard chromium plated; R = Stainless steel martensitic; S = Stainless steel austenitic; X = Standard; • = Option

**Option selector**

Non-standard variants		Substitute	Strokes (mm)		Substitute
Standard		None	5 ... 2800		
Hydraulic version ø 32 ... 100 mm only		H			
Low temperature version -40 °C (-40 °F) (ø 32 ... 125 mm) -30 °C (-22 °F) (ø 160 ... 320 mm)		L			
High temperature version +150 °C max. (+302 °F)		T			
<b>Standard</b>		<b>Substitute</b>			
Round barrel		None			
Profile barrel		P			
<b>Piston rod material</b>		<b>Substitute</b>			
Stainless steel martensitic		R			
Stainless steel austenitic		S			
Hard chromium plated		C			
Stainless steel austenitic & hard chromium plated		D			
<b>Cushioning</b>		<b>Substitute</b>			
"ACS" (ø 32 ... 125 mm)		O2			
Standard (ø 160 ... 320 mm)		None			
<b>Cylinder ø (mm)</b>		<b>Substitute</b>			
032, 040, 050, 063, 080, 100, 125, 160, 200, 250, 320					
<b>Variants ø 32 ... 320 mm (magnetic piston)</b>		<b>Substitute</b>			
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			
Locking unit (passive), special wiper/seal		L8			
Extended piston rod		MU			
**A/8****/MU****/****					
					<b>Extension (mm)</b>
Extended piston rod, special wiper/seal		W6			
**A/8****/W6****/****					
					<b>Extension (mm)</b>

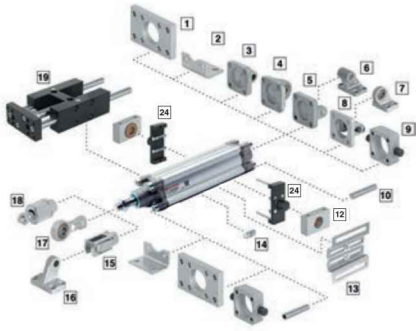
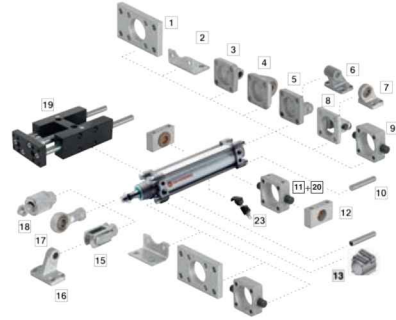
\*\*\*A/8\*\*\*\*/\*\*\*\*/\*\*\*\*











Strokes (mm)		Substitute
5 ... 2800		
<b>Piston rod thread</b>		<b>Substitute</b>
Male		None
Female		X
<b>Variants ø 160 ... 320 mm (non-magnetic piston)</b>		<b>Substitute</b>
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
Extended piston rod		IU
**A/8****/IU****/****		
		<b>Extension (mm)</b>
Extended piston rod		W5
**A/8****/W5****/****		
		<b>Extension (mm)</b>

Note: If position ist not required, disregard option position within part number e.g. RA/802100/M/100. For combinations of cylinder variants consult our technical service.





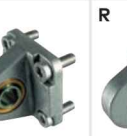





For example: Please note that heat resistant seals are not available for all variants. This option selector explains only the cylinder variants. Additional variants/options are not possible.

Detail's see table on page 4.

**Cylinder with Profile barrel  $\varnothing$  32 ... 125 mm**

**Cylinder with Round barrel  $\varnothing$  32 ... 320 mm**

**Mountings**

Model	A	AK	B, G	C	D	D2	F	FH	H	UH
										
$\varnothing$	<b>10</b> Page 16	<b>18</b> Page 16	<b>1</b> Page 16	<b>2</b> Page 16	<b>5</b> Page 17	<b>8</b> Page 17	<b>15</b> Page 17	<b>9</b> Page 17	<b>11</b> Page 18	<b>20</b> Page 18
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	QA/8032/40
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	QA/8040/40
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	QA/8050/40
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	QA/8063/40
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	QA/8080/40
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	QA/8100/40
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	QA/8125/40
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	QA/8160/40
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	QA/8200/40
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	-

	UH	S	SW	UF	UR	R	SS	US	Groove key	Valve mounting kit
										
$\varnothing$	<b>24</b> Page 18	<b>12</b> Page 18	<b>6</b> Page 19	<b>17</b> Page 19	<b>4</b> Page 19	<b>3</b> Page 19	<b>16</b> Page 20	<b>7</b> Page 20	<b>14</b> Page 20	<b>13</b> Page 33 & 34
32	PQA/802032/40	QA/8032/41	M/P19493	QM/8025/32	QA/8032/33	QA/8032/27	M/P19931	M/P40310	M/P72816	More Details see page 33 & 34
40	PQA/802040/40	QA/8040/41	M/P19494	QM/8040/32	QA/8040/33	QA/8040/27	M/P19932	M/P40311	M/P72816	
50	PQA/802050/40	QA/8040/41	M/P19495	QM/8050/32	QA/8050/33	QA/8050/27	M/P19933	M/P40312	M/P72816	
63	PQA/802063/40	QA/8063/41	M/P19496	QM/8050/32	QA/8063/33	QA/8063/27	M/P19934	M/P40313	M/P72816	
80	PQA/802080/40	QA/8063/41	M/P19497	QM/8080/32	QA/8080/33	QA/8080/27	M/P19935	M/P40314	M/P72816	
100	PQA/802100/40	QA/8100/41	M/P19498	QM/8080/32	QA/8100/33	QA/8100/27	M/P19936	M/P40315	M/P72816	
125	PQA/802125/40	QA/8100/41	M/P19499	QM/8125/32	QM/8125/33	QM/8125/27	M/P19937	M/P71355	M/P72816	
160	-	QA/8160/41	M/P19679	QM/8160/32	QM/8160/33	QM/8160/27	M/P19938	M/P71356	-	
200	-	QA/8160/41	M/P19683	QM/8160/32	QM/8200/33	QM/8200/27	M/P19939	M/P71357	-	
250	-	-	M/P19446	QM/8250/32	QM/8250/33	-	-	-	-	
320	-	-	M/P19447	QM/8320/32	QM/8320/33	-	-	-	-	





Pos.	Style	Standard
1	B, G	Clear anodised aluminium
2	C	Galvanized steel ( $\varnothing$ 32 ... 100 mm), Painted steel ( $\varnothing$ 125 ... 320 mm)
3	R	Die-cast aluminium
4	UR	Galvanized aluminium Inner ring: steel, Outer ring: brass
5	D	Die-cast aluminium Bolt: galvanized steel (martensitic) Circlip: galvanized steel
6	SW	Die-cast aluminium
7	US	Galvanized aluminium Inner ring: steel, Outer ring: brass

Pos.	Style	Standard
8	D2	$\varnothing$ 32 ... 125 mm Die-cast aluminium, $\varnothing$ 160 ... 200 mm Painted cast iron, Bolt: stain- less steel (martensitic), Circlip: galvanized steel
9	FH	Cast iron
10	A	Galvanized steel
11	H	Cast iron
12	S	Clear anodised aluminium Bearing: brass
13	Valve mounting kit	Galvanized steel
14	Groove key	Steel

Pos.	Style	Standard
15	F	Galvanized steel, Bolt: galvanized steel, Circlip: Galvanized steel
16	SS	Painted cast iron
17	UF	Galvanized steel, Inner ring: steel, Outer ring: brass
18	AK	Galvanized steel
19	51, 61, 81, 85	Anodised aluminium
20	UH	Cast iron
24	UH	Anodised aluminium






## Guide blocks

	Guide blocks - plain bearings	Guide blocks - roller bearings	Guide blocks - plain bearings, long coupling	Guide blocks - plain bearings, short coupling
				
Ø	<b>19</b> Page 21	<b>19</b> Page 22	<b>19</b> Page 24	<b>19</b> Page 24
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 the next bigger standard stroke.

## Accessories for Profile (Ø 32 ... 125 mm) & Round barrel (Ø 32 ... 320 mm)

Model Profile barrel	Model Round barrel	Ø	Port size	Banjo flow control	Straight fitting	Elbow fitting
						
PRA/802032/M/*	RA/802032/M/*	32	G1/8	COK510618	C02250618	C02470618
PRA/802040/M/*	RA/802040/M/*	40	G1/4	COK510628	C02250628	C02470628
PRA/802050/M/*	RA/802050/M/*	50	G1/4	COK510828	C02250828	C02470828
PRA/802063/M/*	RA/802063/M/*	63	G3/8	COK510838	C02250838	C02470838
PRA/802080/M/*	RA/802080/M/*	80	G3/8	COK511038	C02251038	C02471038
PRA/802100/M/*	RA/802100/M/*	100	G1/2	COK511248	C02251248	C02471248
PRA/802125/M/*	RA/802125/M/*	125	G1/2	COK511248	C02251248	C02471248
-	RA/8160/M/*	160	G3/4	M840 (Inline)	-	-
-	RA/8200/M/*	200	G3/4	M840 (Inline)	-	-
-	RA/8250/M/*	250	G1	M855 (Inline)	-	-
-	RA/8320/M/*	320	G1	M855 (Inline)	-	-

For alternative fitting types please contact the technical service.

## Magnetically operated switches

	M/50/**	Groove cover	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
							
Ø	Page 26 ... 29	Page 20	<b>23</b> Page 27	Page 30	Page 31	Page 32	Page 33
32		M/P72725/1000	QM/27/2/1		QM/31/032/22		QM/140/010/22
40		M/P72725/1000	QM/27/2/1		QM/31/032/22		QM/140/010/22
50		M/P72725/1000	QM/27/2/1		QM/31/032/22		QM/140/010/22
63		M/P72725/1000	QM/27/2/1		QM/31/032/22		QM/140/010/22
80		M/P72725/1000	QM/27/2/1		QM/31/080/22		QM/140/010/22
100		M/P72725/1000	QM/27/2/1		QM/31/080/22		QM/140/010/22
125		M/P72725/1000	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/27/2/2		QM/31/250/22		-
320		-	QM/27/2/3		QM/31/320/22		-

**Spares kit for profile and round barrel**

(wearing parts to be replaced are: piston seals, barrel seals, damping seals and piston rod seals as well as the wear ring)



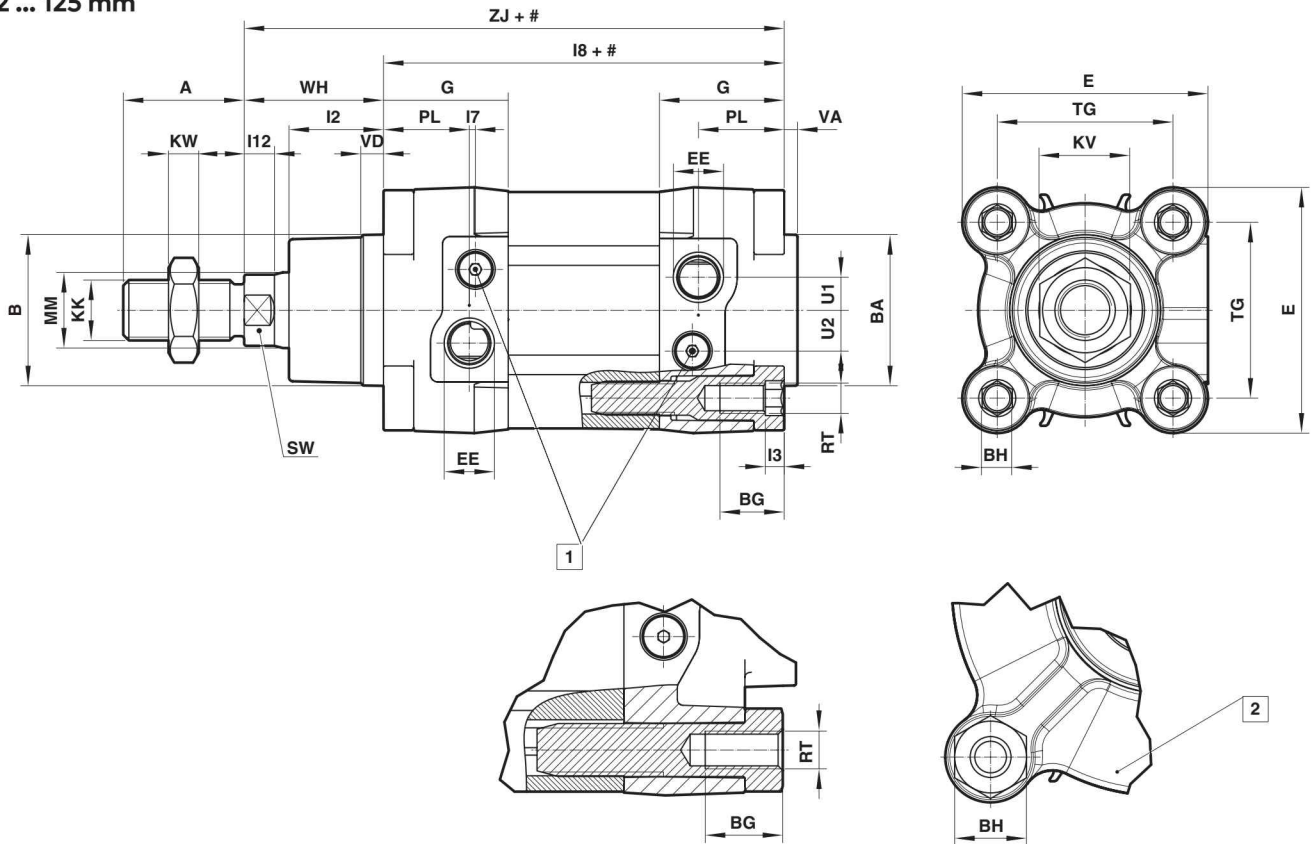
Spares kit		Option								
Piston rod thread	Male thread		/ M / IU / MU / W / MW / G / MG / L2 / L4	J / JM	W1 / W2 / W5 / W6 / L8	W3 / W4	N1 / N2	X1 / X2 / X3 / X4	IT / MT	
	Female thread		MX / MUX / MWX / MGX / L4X	JMX	W2X / W6X / L8X	W4X	N2X	X2X / X4X	MTX	
<b>Model</b>		<b>ø</b>	<b>Standard temperature (-20 °C / -10 °C ... +80 °C)</b>							
Standard	PRA/802***	032	QA/8032/00	QA/8032/J/00	QA/8032/W1/00	2x QA/8032/W1/00	QA/8032/N1/00	QA/8032/X1/00	2x QA/8032/00	
	PSA/802***	040	QA/8040/00	QA/8040/J/00	QA/8040/W1/00	2x QA/8040/W1/00	QA/8040/N1/00	QA/8040/X1/00	2x QA/8040/00	
	PCA/802***	050	QA/8050/00	QA/8050/J/00	QA/8050/W1/00	2x QA/8050/W1/00	QA/8050/N1/00	QA/8050/X1/00	2x QA/8050/00	
	PDA/802***	063	QA/8063/00	QA/8063/J/00	QA/8063/W1/00	2x QA/8063/W1/00	QA/8063/N1/00	QA/8063/X1/00	2x QA/8063/00	
	RA/802***	080	QA/8080/00	QA/8080/J/00	QA/8080/W1/00	2x QA/8080/W1/00	QA/8080/N1/00	QA/8080/X1/00	2x QA/8080/00	
	SA/802***	100	QA/8100/00	QA/8100/J/00	QA/8100/W1/00	2x QA/8100/W1/00	QA/8100/N1/00	QA/8100/X1/00	2x QA/8100/00	
	CA/802***	125	QA/8125/00	QA/8125/J/00	QA/8125/W1/00	2x QA/8125/W1/00	-	QA/8125/X1/00	2x QA/8125/00	
	DA/802***	160	QA/8160/00	QA/8160/J/00	QA/8160/W1/00	-	-	QA/8160/X1/00	2x QA/8160/00	
	RA/8***	200	QA/8200/00	QA/8200/J/00	QA/8200/W1/00	-	-	QA/8200/X1/00	2x QA/8200/00	
	SA/8***	250	QA/8250/00	QA/8250/J/00	-	-	-	-	2x QA/8250/00	
	CA/8***	320	QA/8320/00	QA/8320/J/00	-	-	-	-	2x QA/8320/00	
	DA/8***									
	<b>Model</b>		<b>ø</b>	<b>High temperature (0 °C ... +150 °C)</b>						
	Special option	TPRA/802***	032	TQA/8032/00	TQA/8032/J/00	-	-	-	-	2x TQA/8032/00
TPSA/802***		040	TQA/8040/00	TQA/8040/J/00	-	-	-	-	2x TQA/8040/00	
TPCA/802***		050	TQA/8050/00	TQA/8050/J/00	-	-	-	-	2x TQA/8050/00	
TPDA/802***		063	TQA/8063/00	TQA/8063/J/00	-	-	-	-	2x TQA/8063/00	
TRA/802***		080	TQA/8080/00	TQA/8080/J/00	-	-	-	-	2x TQA/8080/00	
TSA/802***		100	TQA/8100/00	TQA/8100/J/00	-	-	-	-	2x TQA/8100/00	
TCA/802***		125	TQA/8125/00	TQA/8125/J/00	-	-	-	-	2x TQA/8125/00	
TDA/802***		160	TQA/8160/00	TQA/8160/J/00	-	-	-	-	2x TQA/8160/00	
TRA/8***		200	TQA/8200/00	TQA/8200/J/00	-	-	-	-	2x TQA/8200/00	
TSA/8***		250	TQA/8250/00	TQA/8250/J/00	-	-	-	-	2x TQA/8250/00	
TCA/8***		320	TQA/8320/00	TQA/8320/J/00	-	-	-	-	2x TQA/8320/00	
TDA/8***										
<b>Model</b>		<b>ø</b>	<b>Low temperature (-40 °C ... +80 °C)</b>							
Special option		LPRA/802***	032	LQA/8032/00	LQA/8032/00	-	-	-	-	2x LQA/8032/00
		LPSA/802***	040	LQA/8040/00	LQA/8040/00	-	-	-	-	2x LQA/8040/00
		LPCA/802***	050	LQA/8050/00	LQA/8050/00	-	-	-	-	2x LQA/8050/00
		LPDA/802***	063	LQA/8063/00	LQA/8063/00	-	-	-	-	2x LQA/8063/00
		LRA/802***	080	LQA/8080/00	LQA/8080/00	-	-	-	-	2x LQA/8080/00
	LSA/802***	100	LQA/8100/00	LQA/8100/00	-	-	-	-	2x LQA/8100/00	
	LCA/802***	125	LQA/8125/00	LQA/8125/00	-	-	-	-	2x LQA/8125/00	
	LDA/802***	160	LQA/8160/00	LQA/8160/00	-	-	-	-	2x LQA/8160/00	
	LRA/8***	200	LQA/8200/00	LQA/8200/00	-	-	-	-	2x LQA/8200/00	
	LSA/8***	250	LQA/8250/00	LQA/8250/00	-	-	-	-	2x LQA/8250/00	
	LCA/8***	320	LQA/8320/00	LQA/8320/00	-	-	-	-	2x LQA/8320/00	
	LDA/8***									
	<b>Model</b>		<b>ø</b>	<b>Hydraulic</b>						
	Special option	HPRA/802***	032	HQA/8032/00	2x HQA/8032/00	-	-	-	-	2x HQA/8032/00
HPSA/802***		040	HQA/8040/00	2x HQA/8040/00	-	-	-	-	2x HQA/8040/00	
HPCA/802***		050	HQA/8050/00	2x HQA/8050/00	-	-	-	-	2x HQA/8050/00	
HPDA/802***		063	HQA/8063/00	2x HQA/8063/00	-	-	-	-	2x HQA/8063/00	
HRA/802***		080	HQA/8080/00	2x HQA/8080/00	-	-	-	-	2x HQA/8080/00	
HSA/802***		100	HQA/8100/00	2x HQA/8100/00	-	-	-	-	2x HQA/8100/00	
HCA/802***										

\*\*\* = add cylinder diameter



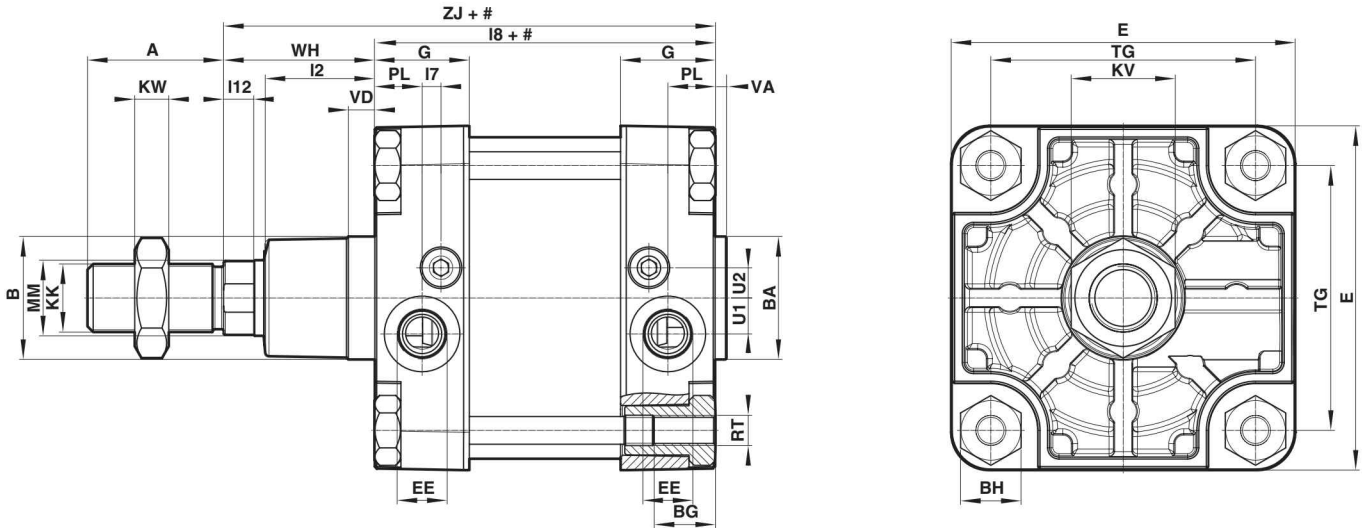
**Basic dimensions**  
**PRA/802000/M, RA/802000/M, RA/8000, RA/8000/M**  
**Standard Cylinder**  
**ø 32 ... 125 mm**

Dimensions in mm  
 Projection/First angle



**Basic dimensions**  
**PRA/802000/M, RA/802000/M, RA/8000, RA/8000/M**  
**Standard Cylinder**  
**ø 160 ... 320 mm**

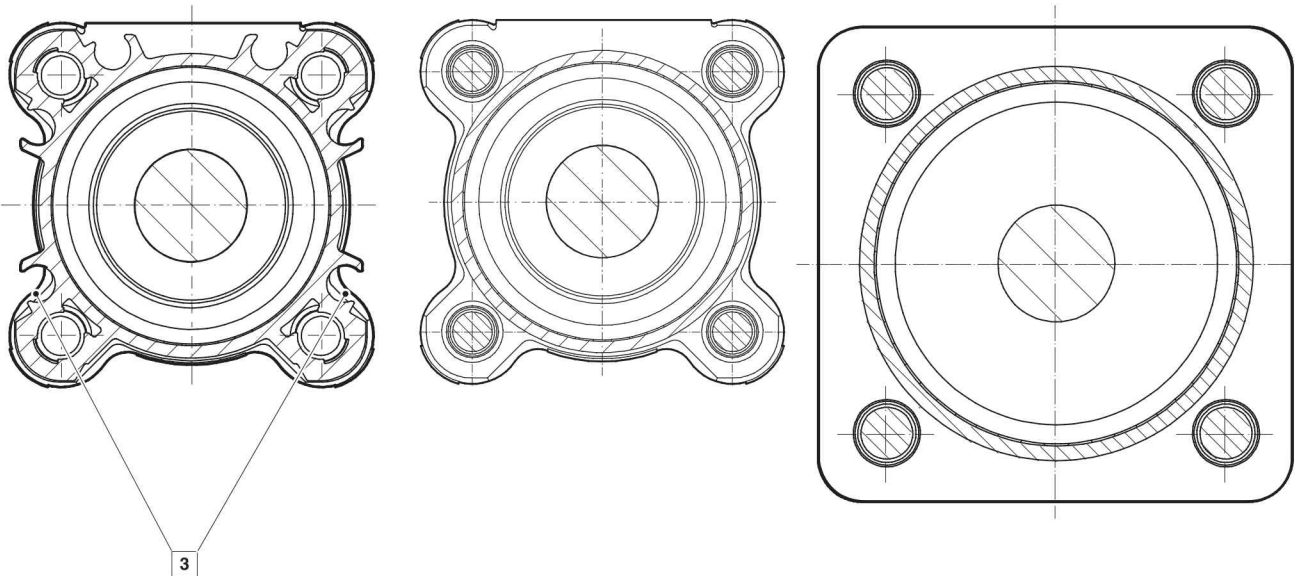
Dimensions in mm  
 Projection/First angle



**Model Profile barrel**  
 ø 32 ... 125 mm

**Model Round barrel**  
 ø 32 ... 125 mm

**Model Round barrel**  
 ø 160 ... 320 mm



# Stroke

\$ Piston rod extension

1 Cushion screw

2 ø 80 ... 320 mm

3 M/50 switches can be mounted flush with the profile

For additional information please contact the technical service or <http://www.norgren.com>