

Actuators

A vast array of actuators – from ISO/VDMA profile to compact short stroke, rodless and roundline cylinders to rotary actuators, a range of shock absorbers and our more traditional actuator ranges. In this catalogue we have listed the part numbers of hundreds of ex-stock configurations, available off the shelf for rapid delivery.

A whole selection of simple and complex specifications are just a phone call or email away contact the Team for rapid, expert advice on the right product for your application. Each item is clearly listed to help ensure you get everything you need to get the job done.



Industry standard or something different?



Compact or ultra compact?



Fast Find Guide

Please note: These products represent only part of the IMI Precision Engineering actuator range. If you can't see the option you require please contact us.

- Single Acting
- Double Acting

● Roundline Cylinders

<p>RM/8000/M ■ ISO 6432 Ø 10 ... 25 mm</p>  <p style="text-align: right;">Page 16</p>	<p>RT/57200/M ■ Ø 10 ... 63 mm</p>  <p style="text-align: right;">Page 19</p>
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● Compact Cylinders

<p>RA/192000/MX ■ ISO 21287 Ø 20 ... 50 mm</p>  <p style="text-align: right;">Page 23</p>	<p>RM/92000/M ■ Ø 12 ... 100 mm</p>  <p style="text-align: right;">Page 26</p>
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● Profile Cylinders


<p>PRA/802000/M, RA/802000/M, RA/8000/M ■ ISO 15552 Ø 32 ... 320 mm</p>  <p style="text-align: right;">Page 30</p>	<p>PRA/882000/M IVAC Clean Line ■ Ø 32 ... 63 mm</p>  <p style="text-align: right;">Page 36</p>
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● Air Bellows

<p>M/31000 ■ Ø 6 ... 16"</p>  <p style="text-align: right;">Page 39</p>	<p>PM/31000 ■ Ø 2 3/4 ... 12"</p>  <p style="text-align: right;">Page 40</p>
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● Switches

M/50 (Reed and solid state)



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● Mountings

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	RM/92000/M	26
Profile cylinders	PRA/802000/M, RA/802000/M, RA/8000/M	33
	PRA/882000/M (IVAC cylinder)	36



Introducing IMI Norgren ELION E/809000 Rod-Style Electric Actuator Range

Electric Actuators offer the perfect solution when precise control, accurate positioning (often to multiple locations) and repeatability is essential

Designed to meet our Customers requirements, our flagship range of high performance ISO standard rod-style electromechanical linear actuators are suitable for a variety of demanding industrial applications.

Further, we offer a one-stop shop for your needs. Partnering with Control Techniques, a world-leading servo motor and drives manufacturer, we are able to offer you a complete electric actuator solution to suit your application.

- > **Accurate and Repeatable:** Ball screw and servo motor provides accurate and repeatable positioning
- > **Long Life:** Ball screw and bearing mechanisms enables high cycle life
- > **Ease of Installation:** Based on ISO 15552 standard with universal mounting options
- > **Performance Monitoring:** Integral sensors and external switches monitor actuator performance and enable planned maintenance
- > **Energy Saving:** Electromechanical components efficiently convert electricity to mechanical power, only energised when movement is required, reducing energy consumption and the cost of ownership
- > **Safety in Service:** Servo motor with optional integrated holding brake enables actuators to self-lock when the power is isolated
- > **Industries:** Carefully selected materials and product specifications suitable for a variety of applications
- > **Smart Configurations:** Our online configurator enables quick and easy product selection based on Customer application input
- > **One-Stop Shop:** Motors, drives and accessories are available

*Engineering
GREAT Solutions*



Find out more
www.imi-precision.com

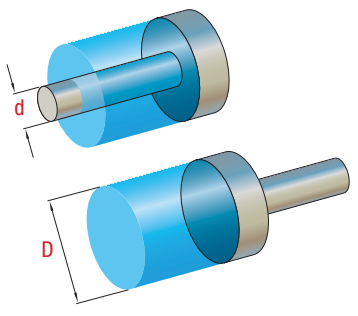


CYLINDER SIZING AND SPEED CONTROL

Cylinder sizing for thrust

The theoretical thrust (outstroke) or pull (instroke) of a cylinder is calculated by multiplying the effective area of the piston by the working pressure. The effective area for thrust is the full area of the cylinder bore. The effective area for pull is reduced by the cross section area of the piston rod.

Current practice specifies bore (D) and piston rod diameter (d) in millimetres and working pressure (P) in bar gauge. In the formula, P is divided by 10 to express pressure in Newtons (N).



The theoretical force (F) is given by

$$\text{Thrust } F = \frac{\pi D^2 P}{40} = N$$

$$\text{Pull } F = \frac{\pi(D^2 - d^2)P}{40} = N$$

Where
 D = Cylinder bore in millimetres
 d = Piston rod diameter in millimetres
 P = Pressure in bar
 F = Thrust or Pull in Newtons

Example: Find the theoretical thrust and pull of a 50 mm bore cylinder supplied with a pressure of 8 bar

$$\text{Thrust } F = \frac{\pi 50^2 \cdot 8}{40} = 1571 \text{ N}$$

$$\text{Pull } F = \frac{\pi(50^2 - 20^2) \cdot 8}{40} = 1319 \text{ N}$$

Table of thrust and pulls, double acting cylinders

Cylinder bore mm (inches)	Piston rod diameter mm (inches)	Thrust N at 6 bar	Pull N at 6 bar
8	3	30	25
10	4	47	39
12	6	67	50
16	6	120	103
20	8	188	158
25	10	294	246
32	12	482	414
40	16	753	633
44,45 (1,75)	16	931	810
50	20	1178	989
63	20	1870	1681
76,2 (3)	25	2736	2441
80	25	3015	2721
100	25	4712	4418
125	32	7363	6881
152,4 (6)	(1,5)	10944	10260
160	40	12063	11309
200	40	18849	18095
250	50	29452	28274
304,8 (12)	(2,25)	43779	42240
320	63	48254	46384
355,6 (14)	(2,25)	59588	58049

Correct sizing of pneumatic actuators is based upon knowledge of the required force and the applied air pressure. Theoretical thrust and pull of both single and double acting cylinders is shown on the accompanying tables and is calculated by multiplying the effective piston area by the working pressure. Units are generally shown in Newtons (kg x 9,81 = N). Note the difference in thrust and pull figures on double acting rodded cylinders due to the reduction made by the piston rod area. These figures are purely theoretical, and make no allowance for frictional losses, pressure differences, leakage, or a 'safety factor'. It is strongly recommended that a factor of safety be included in all sizing calculations – on all dynamic applications this should be 50%, and on static applications 5%.

Pneumatic actuators generally work best and can be better controlled when well within their load capacity, and this safety factor should always be considered to reduce potential issues during operation. In addition, when working at ultra slow speeds, control will be improved if the cylinder is oversized and working well within its total capacity. All figures shown represent theoretical thrust at 6 bar (gauge). For working pressures other than this figure, simply divide the figure shown by 6 and multiply by the desired pressure to arrive at new values.

Table of consumption

Bore mm	Rod mm	Push stroke consumption dm ³ /mm of stroke at 6 bar	Pull stroke consumption dm ³ /mm of stroke at 6 bar	Combined consumption dm ³ /mm of stroke/cycle
10	4	0,00054	0,00046	0,00100
12	6	0,00079	0,00065	0,00144
16	6	0,00141	0,00121	0,00262
20	8	0,00220	0,00185	0,00405
25	10	0,00344	0,00289	0,00633
32	12	0,00563	0,00484	0,01047
40	16	0,00880	0,00739	0,01619
50	20	0,01374	0,01155	0,02529
63	20	0,02182	0,01962	0,04144
80	25	0,03519	0,03175	0,06694
100	25	0,05498	0,05154	0,10652
125	32	0,08590	0,08027	0,16617
160	40	0,14074	0,13195	0,27269
200	40	0,21991	0,21112	0,43103
250	50	0,34361	0,32987	0,67348

Table of thrust and pulls, single acting cylinders

Cylinder bore mm (inches)	Thrust N at 6 bar	Pull N at 6 bar
10	37	3
12	59	4
16	105	7
20	165	14
25	258	23
32	438	27
40	699	39
50	1102	48
63	1760	67
80	2892	86
100	4583	99

What if the
air fails?



ISO Roundline cylinders

When applying pneumatic actuators to lighter duty, lower force applications, many machine builders tend to select a simple 'roundline' product. The most common of these are actuators that conform to ISO6432, a dimensional standard ensuring interchangeability between manufacturers.

A number of features make the ISO roundline cylinders stand apart from the competition:

- > IMI Precision Engineering uses a 'Z' type low friction seal to support both low and high speed applications with operating life up to 10 million cycles

Load too
heavy?



- > The standard actuator is fully non-corrodible in standard applications. For more arduous environments, you can choose a stainless version
- > If you're looking for a more specialised and cost-effective solution, choose from double ended or non-rotating piston rods, add a rod lock, select different end-cap styles to save space, add a guide block to improve load capacity, or fit high temperature seals
- > Uses the standard IMI Norgren M/50 series switch (reed or solid state) as fitted to virtually the entire IMI Norgren actuator range

Anything more
compact?



Engineering
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Find out more

www.imi-precision.com



ISO ROUNDLINE CYLINDERS

RM/8000/M Double acting, ISO 6432 – Ø 10 ... 25 mm

- Perfect for small to medium force applications
- Low friction 'Z' seals offer both high and low speed working and extremely long life
- Unit is fully non corrodible reducing the need for costly protection in more aggressive environments
- Choice of three end cap styles, and other technical variants, allows a wider use of standard products

Technical Data

Medium:
Compressed air, filtered, lubricated or non-lubricated

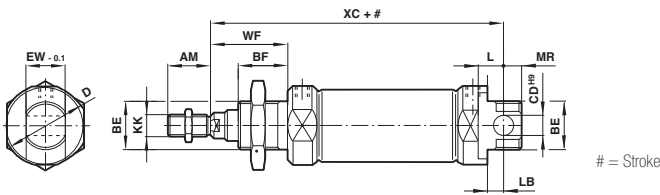
Operation:
Double acting, magnetic piston with buffer cushioning

Operating pressure:
1 ... 10 bar

Ambient temperature:
-10°C ... +80°C max.
Air supply must be dry enough to avoid ice formation at temperatures below +2°C



Dimensions



Dia. Ø	AM	BE	BF	Ø CD _{H9}	ØD	EW _{0.1}	KK	L	LB	MR	WF	XC
10	12	M12x1,25	12	4	16,5	7,9	M4	6	2	8	16	64
12	16	M16x1,5	17	6	21	11,9	M6	9	3	8	22	75
16	16	M16x1,5	17	6	21	11,9	M6	9	4	7	22	82
20	20	M22x1,5	20	8	30	15,9	M8	12	3	11	24	95
25	22	M22x1,5	22	8	30	15,9	M10x1,25	12	7	9	28	104



PRODUCT LINKS

Valves...

Despite their different bore sizes and stroke length, improvements in valve technology mean that only a 1/8" ported valve is required to operate this entire range of actuators. Look to our V60 series on page 79 for more information for the simplest solution, or speak to your Express team if you have more complex requirements



PRODUCT PLUS

AK Mount...

Misalignment during operation is the most common cause of actuator failure which can result in expensive down time. Fitting a swivel mount (AK style) between the piston rod and machine will ensure that any error is removed and costs much less than a breakdown!









ISO ROUNDLINE CYLINDERS

RM/8000/M Double acting, ISO 6432 – Ø 10 ... 25 mm

Models

Accessories

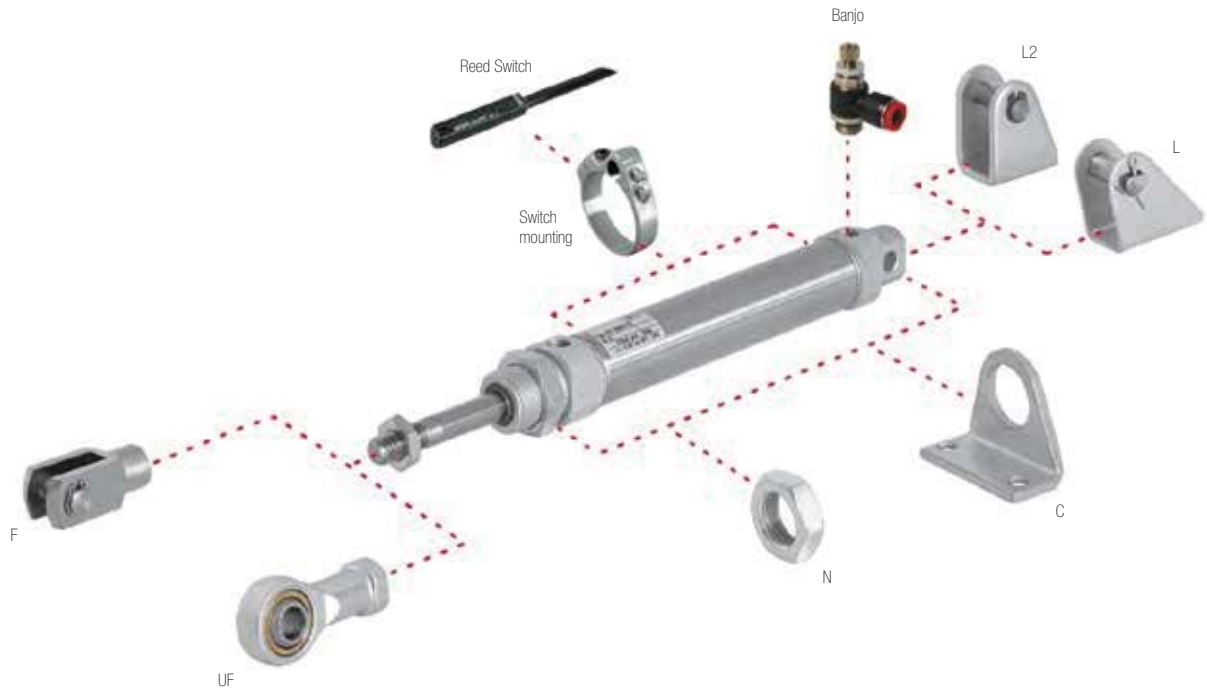
Buffer Cushioning Model	Dia. Ø	Stroke length	Port size	Piston rod Ø	Reed switch with integral 5 m cable	Switch mounting ≥15 mm stroke	Banjo flow control	Straight fitting	Elbow fitting
									
RM/8010/M/10	10	10	M5	4	M/50/LSU/5V	–	C0K510405	C02250405	C02470405
RM/8010/M/25	10	25	M5	4	M/50/LSU/5V	QM/33/010/22	C0K510405	C02250405	C02470405
RM/8010/M/40	10	40	M5	4	M/50/LSU/5V	QM/33/010/22	C0K510405	C02250405	C02470405
RM/8010/M/50	10	50	M5	4	M/50/LSU/5V	QM/33/010/22	C0K510405	C02250405	C02470405
RM/8010/M/80	10	80	M5	4	M/50/LSU/5V	QM/33/010/22	C0K510405	C02250405	C02470405
RM/8010/M/100	10	100	M5	4	M/50/LSU/5V	QM/33/010/22	C0K510405	C02250405	C02470405
RM/8012/M/10	12	10	M5	6	M/50/LSU/5V	–	C0K510405	C02250405	C02470405
RM/8012/M/25	12	25	M5	6	M/50/LSU/5V	QM/33/012/22	C0K510405	C02250405	C02470405
RM/8012/M/40	12	40	M5	6	M/50/LSU/5V	QM/33/012/22	C0K510405	C02250405	C02470405
RM/8012/M/50	12	50	M5	6	M/50/LSU/5V	QM/33/012/22	C0K510405	C02250405	C02470405
RM/8012/M/80	12	80	M5	6	M/50/LSU/5V	QM/33/012/22	C0K510405	C02250405	C02470405
RM/8012/M/100	12	100	M5	6	M/50/LSU/5V	QM/33/012/22	C0K510405	C02250405	C02470405
RM/8016/M/10	16	10	M5	6	M/50/LSU/5V	–	C0K510405	C02250405	C02470405
RM/8016/M/25	16	25	M5	6	M/50/LSU/5V	QM/33/016/22	C0K510405	C02250405	C02470405
RM/8016/M/40	16	40	M5	6	M/50/LSU/5V	QM/33/016/22	C0K510405	C02250405	C02470405
RM/8016/M/50	16	50	M5	6	M/50/LSU/5V	QM/33/016/22	C0K510405	C02250405	C02470405
RM/8016/M/80	16	80	M5	6	M/50/LSU/5V	QM/33/016/22	C0K510405	C02250405	C02470405
RM/8016/M/100	16	100	M5	6	M/50/LSU/5V	QM/33/016/22	C0K510405	C02250405	C02470405
RM/8016/M/125	16	125	M5	6	M/50/LSU/5V	QM/33/016/22	C0K510405	C02250405	C02470405
RM/8016/M/160	16	160	M5	6	M/50/LSU/5V	QM/33/016/22	C0K510405	C02250405	C02470405
RM/8016/M/200	16	200	M5	6	M/50/LSU/5V	QM/33/016/22	C0K510405	C02250405	C02470405
RM/8020/M/10	20	10	G1/8	8	M/50/LSU/5V	–	C0K510618	C02250618	C02470618
RM/8020/M/25	20	25	G1/8	8	M/50/LSU/5V	QM/33/020/22	C0K510618	C02250618	C02470618
RM/8020/M/40	20	40	G1/8	8	M/50/LSU/5V	QM/33/020/22	C0K510618	C02250618	C02470618
RM/8020/M/50	20	50	G1/8	8	M/50/LSU/5V	QM/33/020/22	C0K510618	C02250618	C02470618
RM/8020/M/80	20	80	G1/8	8	M/50/LSU/5V	QM/33/020/22	C0K510618	C02250618	C02470618
RM/8020/M/100	20	100	G1/8	8	M/50/LSU/5V	QM/33/020/22	C0K510618	C02250618	C02470618
RM/8020/M/125	20	125	G1/8	8	M/50/LSU/5V	QM/33/020/22	C0K510618	C02250618	C02470618
RM/8020/M/160	20	160	G1/8	8	M/50/LSU/5V	QM/33/020/22	C0K510618	C02250618	C02470618
RM/8020/M/200	20	200	G1/8	8	M/50/LSU/5V	QM/33/020/22	C0K510618	C02250618	C02470618
RM/8020/M/250	20	250	G1/8	8	M/50/LSU/5V	QM/33/020/22	C0K510618	C02250618	C02470618
RM/8025/M/10	25	10	G1/8	10	M/50/LSU/5V	–	C0K510618	C02250618	C02470618
RM/8025/M/25	25	25	G1/8	10	M/50/LSU/5V	QM/33/025/22	C0K510618	C02250618	C02470618
RM/8025/M/40	25	40	G1/8	10	M/50/LSU/5V	QM/33/025/22	C0K510618	C02250618	C02470618
RM/8025/M/50	25	50	G1/8	10	M/50/LSU/5V	QM/33/025/22	C0K510618	C02250618	C02470618
RM/8025/M/80	25	80	G1/8	10	M/50/LSU/5V	QM/33/025/22	C0K510618	C02250618	C02470618
RM/8025/M/100	25	100	G1/8	10	M/50/LSU/5V	QM/33/025/22	C0K510618	C02250618	C02470618
RM/8025/M/125	25	125	G1/8	10	M/50/LSU/5V	QM/33/025/22	C0K510618	C02250618	C02470618
RM/8025/M/160	25	160	G1/8	10	M/50/LSU/5V	QM/33/025/22	C0K510618	C02250618	C02470618
RM/8025/M/200	25	200	G1/8	10	M/50/LSU/5V	QM/33/025/22	C0K510618	C02250618	C02470618
RM/8025/M/250	25	250	G1/8	10	M/50/LSU/5V	QM/33/025/22	C0K510618	C02250618	C02470618

Other stroke lengths available up to 500 mm maximum, please contact us.
Service kits are not available for this range of cylinders.
For information on alternative magnetic switches, please contact us.

For alternative fitting types, shapes or sizes, refer to our fittings section.

MOUNTINGS FOR ISO ROUNDLINE CYLINDERS

RM/8000/M Double acting



Dia. Ø	C	F	L	L2	N	UF
10	M/P19369	QM/8010/25	QM/947	QM/8010/44	M/P1501/90	QM/8010/32
12	M/P19389	QM/8012/25	QM/8012/24	QM/8012/44	M/P13834	QM/8012/32
16	M/P19389	QM/8012/25	QM/8012/24	QM/8012/44	M/P13834	QM/8012/32
20	M/P19406	QM/8020/25	QM/8020/24	QM/8020/44	M/P13615	QM/8020/32
25	M/P19406	QM/8025/25	QM/8020/24	QM/8020/44	M/P13615	QM/8025/32

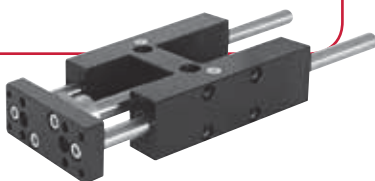
Note: This actuator is supplied with one nose nut, an additional lock nut style 'N' is required when ordering mountings 'C' to connect to the rear end cap.



PRODUCT PLUS

Guide Block...

Guide blocks can be fitted to standard actuators to allow high axial loads to be applied to the end of the piston rod. They provide accurate piston rod guidance, come complete with centering sleeves and conform to ISO6432.



ROUNDLINE CYLINDERS

RT/57200/M Double acting – Ø 10 ... 63 mm

- Saves 20% space over the basic length of a corresponding ISO/VDMA cylinder
- Low friction, long life seals
- High strength, double crimped end cap design
- Standard magnetic piston for full control system versatility

Technical Data

Medium:
Compressed air, filtered, lubricated or non-lubricated

Operation:
Double acting, buffer cushioning

Mounting:
Side port, integral eye mounting (Ø 10 ... 40 mm), fixing holes in the end cover (Ø 50 and 63 mm)

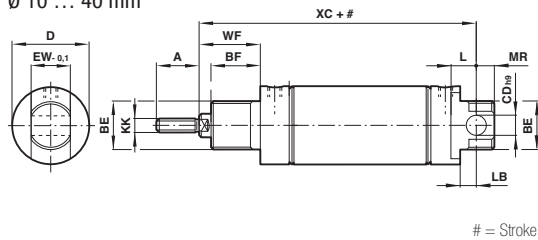
Operating pressure:
1 ... 10 bar

Ambient temperature:
-10°C ... +80°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

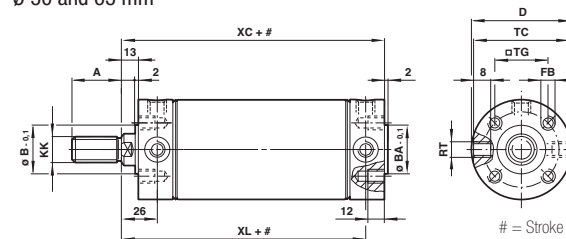


Dimensions

Ø 10 ... 40 mm



Ø 50 and 63 mm



Ø 10 ... 40 mm

Dia. Ø	A	BE	BF	Ø CD _{rod}	Ø D	EW _{0,1}	KK	L	LB	MR	WF	XC
10	9	M10 x 1	8	4	15	8	M4	–	5	4	10	54
12	9	M10 x 1	8	4	15	8	M4	–	5	4	10	54
16	12	M12 x 1,25	10	5	17,5	10	M6	–	7	5	13,5	64,5
20	14	M16 x 1,5	12	6	22	12	M8	–	7	6	15,5	75,5
25	16	M18 x 1,5	12	8	26,5	14	M10 x 1,25	–	9	8	16,5	78,5
32	22	M22 x 1,5	15	8	33,5	16	M10 x 1,25	12	7	8	23	93
40	23	M30 x 1,5	15	10	41,5	20	M12 x 1,25	14	5	10	24	96

Ø 50 and 63 mm

Dia. Ø	A	Ø B/BA _{0,1}	Ø D	FB	KK	RT	TC	TG	XC	XL
50	23	28	52,5	M 6	M 12 x 1,25	M 10 x 1	49	28,5	97	84
63	30	35	65,5	M 8	M 16 x 1,5	M 12 x 1,5	62	35,5	99	86



PRODUCT LINKS

Additional ranges...

Central rear port and side port flat end.
For more information call your Express Team



PRODUCT PLUS

Valves...

Despite their different bore sizes and stroke length, improvements in valve technology mean that only a 1/8" ported valve is required to operate this entire range of actuators. Look to our V60 series on page 79 for more information for the simplest solution, or speak to your Express team if you have more complex requirements









ROUNDLINE CYLINDERS

RT/57200/M Double acting – Ø 10 ... 63 mm

Models

Accessories

Model	Dia. Ø	Stroke length	Port size	Piston rod Ø	Reed switch with integral 5 m cable	Switch mounting ≥15 mm stroke	Banjo flow control	Straight fitting	Elbow fitting
									
RT/57210/M/10	10	10	M5	4	M/50/LSU/5V	–	COK510405	C02250405	C02470405
RT/57210/M/25	10	25	M5	4	M/50/LSU/5V	QM/33/010/22	COK510405	C02250405	C02470405
RT/57210/M/40	10	40	M5	4	M/50/LSU/5V	QM/33/010/22	COK510405	C02250405	C02470405
RT/57210/M/50	10	50	M5	4	M/50/LSU/5V	QM/33/010/22	COK510405	C02250405	C02470405
RT/57212/M/10	12	10	M5	4	M/50/LSU/5V	–	COK510405	C02250405	C02470405
RT/57212/M/25	12	25	M5	4	M/50/LSU/5V	QM/33/012/22	COK510405	C02250405	C02470405
RT/57212/M/40	12	40	M5	4	M/50/LSU/5V	QM/33/012/22	COK510405	C02250405	C02470405
RT/57212/M/50	12	50	M5	4	M/50/LSU/5V	QM/33/012/22	COK510405	C02250405	C02470405
RT/57216/M/10	16	10	M5	6	M/50/LSU/5V	–	COK510405	C02250405	C02470405
RT/57216/M/25	16	25	M5	6	M/50/LSU/5V	QM/33/016/22	COK510405	C02250405	C02470405
RT/57216/M/40	16	40	M5	6	M/50/LSU/5V	QM/33/016/22	COK510405	C02250405	C02470405
RT/57216/M/50	16	50	M5	6	M/50/LSU/5V	QM/33/016/22	COK510405	C02250405	C02470405
RT/57216/M/80	16	80	M5	6	M/50/LSU/5V	QM/33/016/22	COK510405	C02250405	C02470405
RT/57220/M/10	20	10	Rc 1/8	8	M/50/LSU/5V	–	COTA00618	C01250618	C01470618
RT/57220/M/25	20	25	Rc 1/8	8	M/50/LSU/5V	QM/33/020/22	COTA00618	C01250618	C01470618
RT/57220/M/40	20	40	Rc 1/8	8	M/50/LSU/5V	QM/33/020/22	COTA00618	C01250618	C01470618
RT/57220/M/50	20	50	Rc 1/8	8	M/50/LSU/5V	QM/33/020/22	COTA00618	C01250618	C01470618
RT/57220/M/80	20	80	Rc 1/8	8	M/50/LSU/5V	QM/33/020/22	COTA00618	C01250618	C01470618
RT/57220/M/100	20	100	Rc 1/8	8	M/50/LSU/5V	QM/33/020/22	COTA00618	C01250618	C01470618
RT/57225/M/10	25	10	Rc 1/8	10	M/50/LSU/5V	–	COTA00618	C01250618	C01470618
RT/57225/M/25	25	25	Rc 1/8	10	M/50/LSU/5V	QM/33/025/22	COTA00618	C01250618	C01470618
RT/57225/M/40	25	40	Rc 1/8	10	M/50/LSU/5V	QM/33/025/22	COTA00618	C01250618	C01470618
RT/57225/M/50	25	50	Rc 1/8	10	M/50/LSU/5V	QM/33/025/22	COTA00618	C01250618	C01470618
RT/57225/M/80	25	80	Rc 1/8	10	M/50/LSU/5V	QM/33/025/22	COTA00618	C01250618	C01470618
RT/57225/M/100	25	100	Rc 1/8	10	M/50/LSU/5V	QM/33/025/22	COTA00618	C01250618	C01470618
RT/57225/M/125	25	125	Rc 1/8	10	M/50/LSU/5V	QM/33/025/22	COTA00618	C01250618	C01470618
RT/57225/M/160	25	160	Rc 1/8	10	M/50/LSU/5V	QM/33/025/22	COTA00618	C01250618	C01470618
RT/57225/M/200	25	200	Rc 1/8	10	M/50/LSU/5V	QM/33/025/22	COTA00618	C01250618	C01470618
RT/57232/M/10	32	10	Rc 1/8	12	M/50/LSU/5V	QM/33/032/22	COTA00618	C01250618	C01470618
RT/57232/M/25	32	25	Rc 1/8	12	M/50/LSU/5V	QM/33/032/22	COTA00618	C01250618	C01470618
RT/57232/M/40	32	40	Rc 1/8	12	M/50/LSU/5V	QM/33/032/22	COTA00618	C01250618	C01470618
RT/57232/M/50	32	50	Rc 1/8	12	M/50/LSU/5V	QM/33/032/22	COTA00618	C01250618	C01470618
RT/57232/M/80	32	80	Rc 1/8	12	M/50/LSU/5V	QM/33/032/22	COTA00618	C01250618	C01470618
RT/57232/M/100	32	100	Rc 1/8	12	M/50/LSU/5V	QM/33/032/22	COTA00618	C01250618	C01470618
RT/57232/M/125	32	125	Rc 1/8	12	M/50/LSU/5V	QM/33/032/22	COTA00618	C01250618	C01470618
RT/57232/M/160	32	160	Rc 1/8	12	M/50/LSU/5V	QM/33/032/22	COTA00618	C01250618	C01470618
RT/57232/M/200	32	200	Rc 1/8	12	M/50/LSU/5V	QM/33/032/22	COTA00618	C01250618	C01470618
RT/57232/M/250	32	250	Rc 1/8	12	M/50/LSU/5V	QM/33/032/22	COTA00618	C01250618	C01470618
RT/57240/M/25	40	25	Rc 1/8	14	M/50/LSU/5V	QM/33/040/22	COTA00618	C01250618	C01470618
RT/57240/M/40	40	40	Rc 1/8	14	M/50/LSU/5V	QM/33/040/22	COTA00618	C01250618	C01470618
RT/57240/M/50	40	50	Rc 1/8	14	M/50/LSU/5V	QM/33/040/22	COTA00618	C01250618	C01470618
RT/57240/M/80	40	80	Rc 1/8	14	M/50/LSU/5V	QM/33/040/22	COTA00618	C01250618	C01470618
RT/57240/M/100	40	100	Rc 1/8	14	M/50/LSU/5V	QM/33/040/22	COTA00618	C01250618	C01470618
RT/57240/M/125	40	125	Rc 1/8	14	M/50/LSU/5V	QM/33/040/22	COTA00618	C01250618	C01470618
RT/57240/M/160	40	160	Rc 1/8	14	M/50/LSU/5V	QM/33/040/22	COTA00618	C01250618	C01470618
RT/57240/M/200	40	200	Rc 1/8	14	M/50/LSU/5V	QM/33/040/22	COTA00618	C01250618	C01470618
RT/57240/M/320	40	320	Rc 1/8	14	M/50/LSU/5V	QM/33/040/22	COTA00618	C01250618	C01470618
RT/57250/M/50	50	50	Rc 1/4	16	M/50/LSU/5V	QM/33/050/22	COTA00828	C01250828	C01470828
RT/57250/M/80	50	80	Rc 1/4	16	M/50/LSU/5V	QM/33/050/22	COTA00828	C01250828	C01470828
RT/57250/M/100	50	100	Rc 1/4	16	M/50/LSU/5V	QM/33/050/22	COTA00828	C01250828	C01470828
RT/57250/M/125	50	125	Rc 1/4	16	M/50/LSU/5V	QM/33/050/22	COTA00828	C01250828	C01470828
RT/57250/M/160	50	160	Rc 1/4	16	M/50/LSU/5V	QM/33/050/22	COTA00828	C01250828	C01470828
RT/57250/M/200	50	200	Rc 1/4	16	M/50/LSU/5V	QM/33/050/22	COTA00828	C01250828	C01470828
RT/57250/M/250	50	250	Rc 1/4	16	M/50/LSU/5V	QM/33/050/22	COTA00828	C01250828	C01470828
RT/57263/M/50	63	50	Rc 1/4	20	M/50/LSU/5V	QM/33/063/22	COTA00828	C01250828	C01470828
RT/57263/M/80	63	80	Rc 1/4	20	M/50/LSU/5V	QM/33/063/22	COTA00828	C01250828	C01470828
RT/57263/M/100	63	100	Rc 1/4	20	M/50/LSU/5V	QM/33/063/22	COTA00828	C01250828	C01470828
RT/57263/M/125	63	125	Rc 1/4	20	M/50/LSU/5V	QM/33/063/22	COTA00828	C01250828	C01470828
RT/57263/M/160	63	160	Rc 1/4	20	M/50/LSU/5V	QM/33/063/22	COTA00828	C01250828	C01470828

Other bore sizes and stroke lengths available up to 500 mm maximum, please contact us.

Service kits are not available for this range of cylinders.

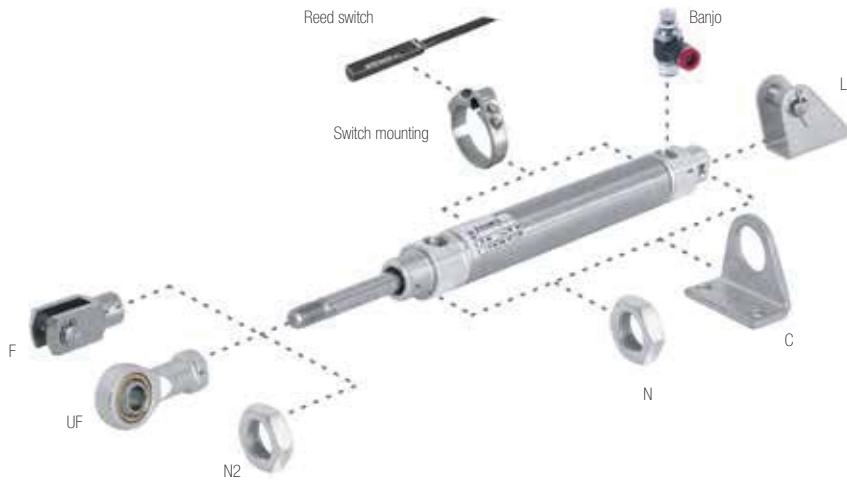
For information on alternative magnetic switches, please contact us.

For alternative fitting types, shapes or sizes, refer to our fittings section.

MOUNTINGS FOR ROUNDLINE CYLINDERS

RT/57200/M Double acting

Ø 10 ... 40 mm



Ø 50 ... 63 mm



Dia. Ø	C	F	N	N2	UF
10	M/P71273/2	QM/8010/25	M/P71364	M/P1501/80	QM/8010/32
12	M/P71273/2	QM/8010/25	M/P71364	M/P1501/80	QM/8010/32
16	M/P19369	QM/57016/25	M/P1501/90	M/P1501/79	QM/8012/32
20	M/P19389	QM/57020/25	M/P13834	M/P1501/60	QM/8020/32
25	M/P40381	QM/57025/25	M/P13607	M/P1501/89	QM/8025/32
32	M/P19406	QM/57032/25	M/P13615	M/P1501/89	QM/8025/32
40	M/P71273/3	QM/57040/25	M/P29254	M/P1501/90	QM/8040/32
50	QM/57050/21	QM/57040/25	–	M/P1501/90	QM/8040/32
63	QM/57063/21	QM/57063/25	–	M/P1501/91	QM/8050/32

Simple to complex applications covered in one range



Integral switch Grooves



ISO Compact cylinders

ISO 21287 is the most recently-added actuator standard.

These compact cylinders are perfect for high force/short stroke applications where space is at a premium. Not just meeting the standard for compliance, but exceeding it, this range of actuators includes many unique technical variants:

- > Sleek, anodised aluminium profile barrel housing switch mounting grooves (standard IMI Norgren M/50 switch) coupled with pressure die cast end caps for pleasing appearance
- > Wide range of standard bore and stroke combinations from stock with male or female piston rod thread, plus non-standard stroke length units on fast availability
- > Accepts standard ISO/VDMA mounting brackets, and is also available in non-rotating versions, linear slide version, with heavy duty wiper seal, tandem and multi-position versions, and also can accept guide block assembly

Multi-position And tandem versions



Guided

Engineering GREAT Solutions

Find out more
www.imi-precision.com



ISO COMPACT CYLINDERS

RA/192000/MX Double acting, ISO 21287 – Ø 20 ... 50 mm

- Conforms to ISO 21287
- Up to 30% shorter than full ISO/VDMA actuators
- Uses standard ISO/VDMA mountings

Technical Data

Medium:
Compressed air, filtered,
lubricated or non-lubricated

Operation:
RA/192000/MX
Double acting, magnetic piston, female
piston rod thread, buffer cushioning

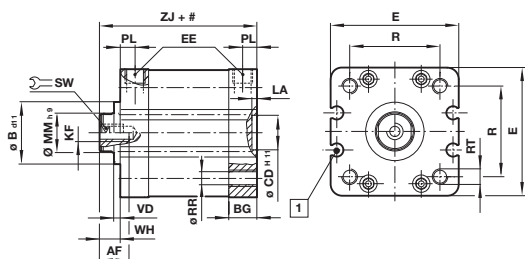
Operating pressure:
1 ... 10 bar

Ambient temperature:
-5°C ... +80°C max.
Air supply must be dry enough to avoid ice
formation at temperatures below +2°C



Dimensions

RA/192000/MX Standard cylinder
With female piston rod thread



Stroke

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

Model	Ø	AF	Ø B d11	BG	Ø CD H11	□ E	EE	KF	LA	Ø MM h9
RA/192020/MX	20	10	–	12	10	37	M 5	M6	2,5	10
RA/192025/MX	25	10	–	13	10	41	M 5	M6	2,5	10
RA/192032/MX	32	12	–	14,5	14	48	G1/8	M8	2,5	12
RA/192040/MX	40	12	–	14,5	14	54,5	G1/8	M8	2,5	16
RA/192050/MX	50	16	–	14	18	66	G1/8	M10	2,5	20
Ø	PL	□ R	Ø RR	RT	SW	WH	ZJ	kg at 0 mm	kg per 5 mm	
20	7	22	4,3	M5	8	6	43	0,12	0,01	
25	7	26	4,3	M5	8	6	45	0,15	0,01	
32	7,5	32,5	5,3	M6	10	7	51	0,23	0,02	
40	7,5	38	5,3	M6	13	7	52	0,30	0,02	
50	7,5	46,5	6,8	M8	17	8	53	0,46	0,03	

ISO COMPACT CYLINDERS

RA/192000/MX Double acting, ISO 21287 – Ø 20 ... 50 mm

● Models

Accessories

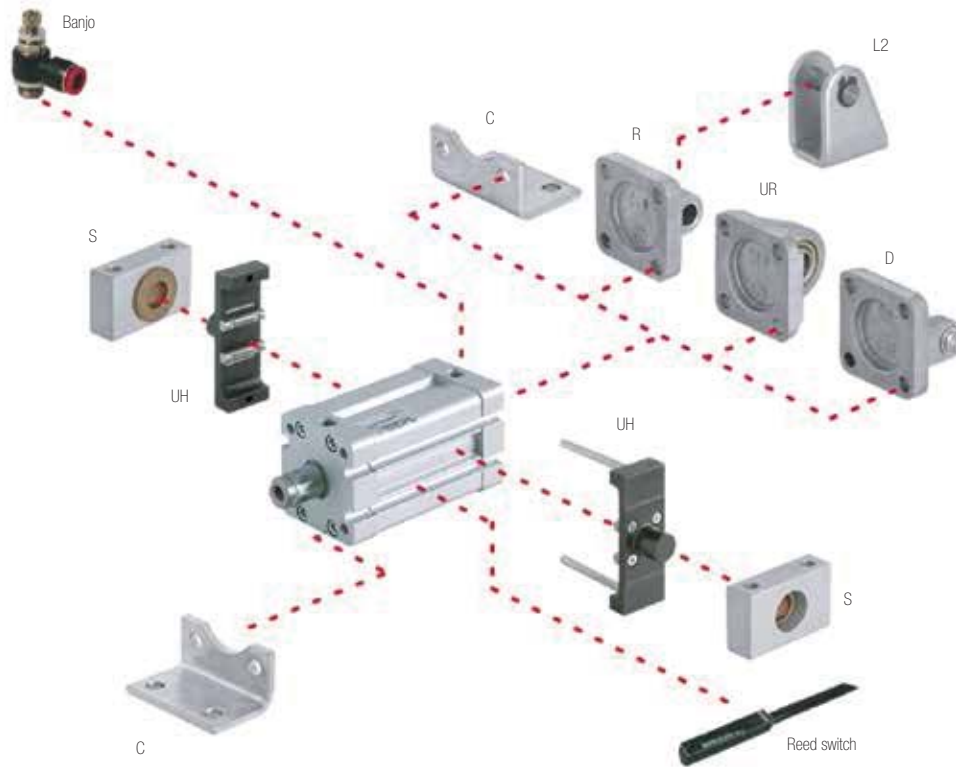
Female thread	Dia. Ø	Stroke length	Port size	Piston rod Ø	Reed switch with integral 5 m cable	Banjo flow control	Straight fitting	Elbow fitting	Service Kit
									
RA/192020/MX/10	20	10	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192020/00
RA/192020/MX/15	20	15	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192020/00
RA/192020/MX/20	20	20	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192020/00
RA/192020/MX/25	20	25	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192020/00
RA/192020/MX/30	20	30	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192020/00
RA/192020/MX/40	20	40	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192020/00
RA/192020/MX/50	20	50	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192020/00
RA/192025/MX/10	25	10	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192025/00
RA/192025/MX/15	25	15	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192025/00
RA/192025/MX/20	25	20	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192025/00
RA/192025/MX/25	25	25	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192025/00
RA/192025/MX/30	25	30	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192025/00
RA/192025/MX/40	25	40	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192025/00
RA/192025/MX/50	25	50	M5	10	M/50/LSU/5V	COK510405	C02250405	C02470405	QM/192025/00
RA/192032/MX/10	32	10	G1/8	12	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192032/00
RA/192032/MX/15	32	15	G1/8	12	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192032/00
RA/192032/MX/20	32	20	G1/8	12	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192032/00
RA/192032/MX/25	32	25	G1/8	12	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192032/00
RA/192032/MX/30	32	30	G1/8	12	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192032/00
RA/192032/MX/40	32	40	G1/8	12	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192032/00
RA/192032/MX/50	32	50	G1/8	12	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192032/00
RA/192032/MX/60	32	60	G1/8	12	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192032/00
RA/192032/MX/80	32	80	G1/8	12	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192032/00
RA/192032/MX/100	32	100	G1/8	12	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192032/00
RA/192040/MX/10	40	10	G1/8	16	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192040/00
RA/192040/MX/15	40	15	G1/8	16	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192040/00
RA/192040/MX/20	40	20	G1/8	16	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192040/00
RA/192040/MX/25	40	25	G1/8	16	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192040/00
RA/192040/MX/30	40	30	G1/8	16	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192040/00
RA/192040/MX/40	40	40	G1/8	16	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192040/00
RA/192040/MX/50	40	50	G1/8	16	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192040/00
RA/192040/MX/60	40	60	G1/8	16	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192040/00
RA/192040/MX/80	40	80	G1/8	16	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192040/00
RA/192040/MX/100	40	100	G1/8	16	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192040/00
RA/192050/MX/10	50	10	G1/8	20	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192050/00
RA/192050/MX/15	50	15	G1/8	20	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192050/00
RA/192050/MX/20	50	20	G1/8	20	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192050/00
RA/192050/MX/25	50	25	G1/8	20	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192050/00
RA/192050/MX/30	50	30	G1/8	20	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192050/00
RA/192050/MX/40	50	40	G1/8	20	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192050/00
RA/192050/MX/50	50	50	G1/8	20	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192050/00
RA/192050/MX/60	50	60	G1/8	20	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192050/00
RA/192050/MX/80	50	80	G1/8	20	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192050/00
RA/192050/MX/100	50	100	G1/8	20	M/50/LSU/5V	COK510618	C02250618	C02470618	QM/192050/00

Other stroke lengths available up to 500 mm maximum, depending upon bore size, please contact us.
For information on alternative magnetic switches, please contact us.

For alternative fitting types, shapes or sizes, refer to our fittings section.

MOUNTINGS FOR ISO COMPACT CYLINDERS

RA/192000/MX Double acting



Dia. Ø	B, G	C	D	L2	R	S	UH	UR
20	QA/192020/22	QM/192020/21	-	QM/8020/44	QM/192020/27	-	-	-
25	QA/192025/22	QM/192025/21	-	QM/8020/44	QM/192025/27	-	-	-
32	QA/8032/22	QA/192032/21	QA/8032/23	-	QA/8032/27	QA/8032/41	PQA/182032/40	QA/8032/33
40	QA/8040/22	QA/192040/21	QA/8040/23	-	QA/8040/27	QA/8040/41	PQA/182040/40	QA/8040/33
50	QA/8050/22	QA/192050/21	QA/8050/23	-	QA/8050/27	QA/8040/41	PQA/182050/40	QA/8050/33



PRODUCT LINKS

Valves...

Despite their different bore sizes and stroke length, improvements in valve technology mean that only a 1/8" ported valve is required to operate this entire range of actuators. Look to our V60 series on page 79 for more information for the simplest solution, or speak to your Express team if you have more complex requirements



PRODUCT PLUS

Need a non-rotating piston rod?

We have three versions available including an externally mounted precision slide unit.

Please call your Express Team.



COMPACT CYLINDERS

RM/92000/M Double acting – Ø 12 ... 100 mm

- One third the basic length of a corresponding ISO/VDMA model
- Low friction, long life seal design
- Fully non-corrodible specification
- Standard magnetic piston for full control system versatility

Technical Data

Medium:
Compressed air, filtered, lubricated or non-lubricated

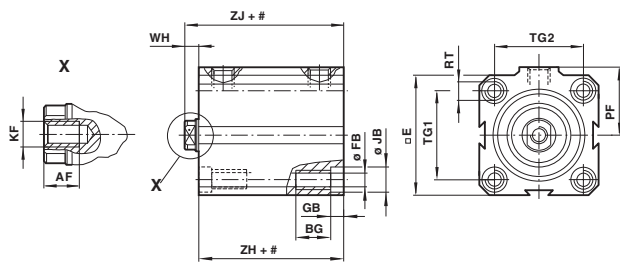
Operation:
Double acting, magnetic piston non-cushioned

Operating pressure:
1 ... 10 bar

Ambient temperature:
-5°C ... +80°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C




Dimensions



Dia. Ø	AF	BG	E	Ø FB	GB	Ø JB	KF	PF	RT	TG1	TG2	WH	ZH	ZJ
12	6	9	25	3,3	3,5	6	M 3	15	M 4	17	13	4,5	24	28,5
16	7	9	28	3,3	3,5	6	M 4	17	M 4	20	20	5,5	24,5	30
20	8	9	32	3,3	3,5	6	M 5	19,5	M 4	23	23	6	26	32
25	9	12	37	4,2	4,5	7,5	M 6	22	M 5	27	27	6,5	28,5	35
32	12	12	45	4,2	4,5	7,5	M 8	27,5	M 5	33	33	6,5	29	35,5
40	12	16	55	6,8	6,5	10,5	M 8	31,5	M 8	41	41	6,5	31,5	38
50	14	16	63	6,8	6,5	10,5	M 10	37	M 8	48	48	8	35	43
63	16	20	80	8,5	8,5	13,5	M 12	48	M 10	61	61	8	42,5	50,5
80	22	20	94	8,5	8,5	13,5	M 16	57	M 10	73	73	9	47	56
100	22	25	116,5	10,2	10,5	16,5	M 16	67	M 12	90,5	90,5	10	48,5	58,5

Models

Accessories

Model	Dia. Ø	Stroke length	Port size	Piston rod Ø	Reed switch with integral 5 m cable	Switch mounting	Banjo flow control	Straight fitting	Elbow fitting	Service kit
	12	10	M5	6	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92012/M/15	12	15	M5	6	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92012/M/20	12	20	M5	6	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92012/M/25	12	25	M5	6	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92016/M/10	16	10	M5	8	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92016/M/15	16	15	M5	8	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92016/M/20	16	20	M5	8	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92016/M/25	16	25	M5	8	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92016/M/30	16	30	M5	8	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92020/M/10	20	10	M5	10	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92020/M/15	20	15	M5	10	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92020/M/20	20	20	M5	10	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92020/M/25	20	25	M5	10	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–

COMPACT CYLINDERS

RM/92000/M Double acting – Ø 12 ... 100 mm

Models

Accessories

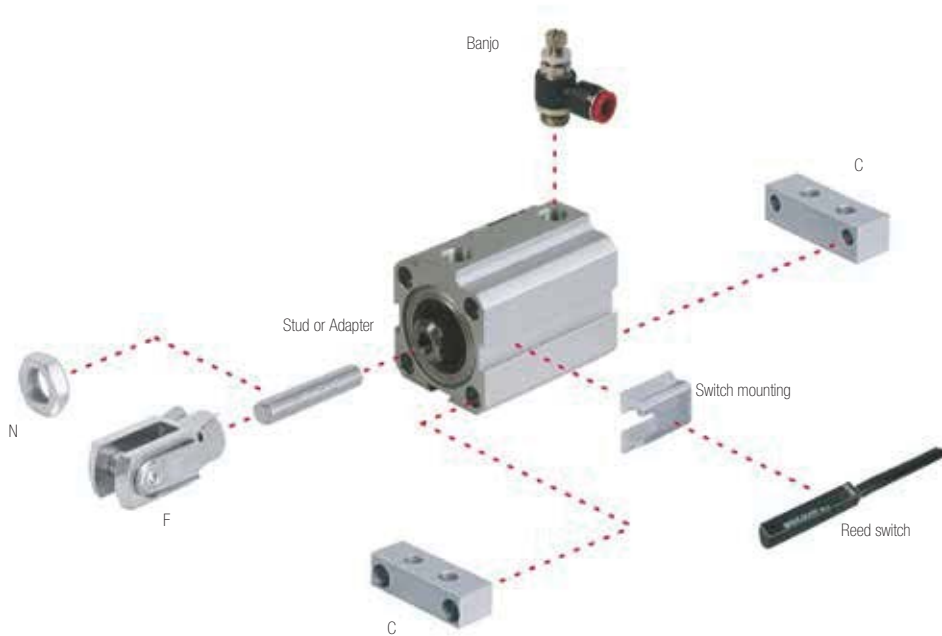
Model	Dia. Ø	Stroke length	Port size	Piston rod Ø	Reed switch with integral 5 m cable	Switch mounting	Banjo flow control	Straight fitting	Elbow fitting	Service kit
RM/92020/M/30	20	30	M5	10	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92020/M/40	20	40	M5	10	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92020/M/50	20	50	M5	10	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92025/M/10	25	10	M5	12	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92025/M/15	25	15	M5	12	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92025/M/20	25	20	M5	12	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92025/M/25	25	25	M5	12	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92025/M/30	25	30	M5	12	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92025/M/40	25	40	M5	12	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92025/M/50	25	50	M5	12	M/50/LSU/5V	MP72487B	COK510405	C02250405	C02470405	–
RM/92032/M/10	32	10	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92032/M/15	32	15	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92032/M/20	32	20	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92032/M/25	32	25	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92032/M/30	32	30	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92032/M/40	32	40	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92032/M/50	32	50	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92032/M/80	32	80	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92040/M/10	40	10	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92040/M/15	40	15	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92040/M/20	40	20	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92040/M/25	40	25	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92040/M/30	40	30	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92040/M/40	40	40	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92040/M/50	40	50	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92040/M/80	40	80	G1/8	16	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	–
RM/92050/M/10	50	10	G1/8	20	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	QM/92050/00
RM/92050/M/15	50	15	G1/8	20	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	QM/92050/00
RM/92050/M/20	50	20	G1/8	20	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	QM/92050/00
RM/92050/M/25	50	25	G1/8	20	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	QM/92050/00
RM/92050/M/30	50	30	G1/8	20	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	QM/92050/00
RM/92050/M/40	50	40	G1/8	20	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	QM/92050/00
RM/92050/M/50	50	50	G1/8	20	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	QM/92050/00
RM/92050/M/80	50	80	G1/8	20	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	QM/92050/00
RM/92050/M/100	50	100	G1/8	20	M/50/LSU/5V	MP72487B	COK510618	C02250618	C02470618	QM/92050/00
RM/92063/M/10	63	10	G1/4	20	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92063/00
RM/92063/M/25	63	25	G1/4	20	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92063/00
RM/92063/M/30	63	30	G1/4	20	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92063/00
RM/92063/M/40	63	40	G1/4	20	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92063/00
RM/92063/M/50	63	50	G1/4	20	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92063/00
RM/92063/M/80	63	80	G1/4	20	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92063/00
RM/92063/M/100	63	100	G1/4	20	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92063/00
RM/92080/M/25	80	25	G1/4	25	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92080/00
RM/92080/M/30	80	30	G1/4	25	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92080/00
RM/92080/M/40	80	40	G1/4	25	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92080/00
RM/92080/M/50	80	50	G1/4	25	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92080/00
RM/92080/M/80	80	80	G1/4	25	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92080/00
RM/92080/M/100	80	100	G1/4	25	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92080/00
RM/92100/M/25	100	25	G1/4	25	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92100/00
RM/92100/M/30	100	30	G1/4	25	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92100/00
RM/92100/M/40	100	40	G1/4	25	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92100/00
RM/92100/M/50	100	50	G1/4	25	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92100/00
RM/92100/M/80	100	80	G1/4	25	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92100/00
RM/92100/M/100	100	100	G1/4	25	M/50/LSU/5V	MP72487B	COK510628	C02250628	C02470628	QM/92100/00

Other stroke lengths available up to 300 mm maximum, please contact us.
For information on additional magnetic switches, please contact us.

For alternative fitting types, shapes or sizes, refer to our fittings section.

MOUNTINGS FOR COMPACT CYLINDERS

RM/92000/M Double acting



Dia. Ø	C	F	N	Stud or adaptor*
12	QM/90012/21	QM/57008/25	M/P1500/111	M/P1710/18
16	QM/90016/21	QM/8010/25	M/P1501/80	M/P1710/19
20	QM/90020/21	QM/92020/25	M/P1501/109	M/P1710/20
25	QM/90025/21	QM/57016/25	M/P1501/79	M/P1710/21
32	QM/90032/21	QM/57020/25	M/P1501/60	M/P1710/22
40	QM/90040/21	QM/57020/25	M/P1501/60	M/P1710/22
50	QM/90050/21	QM/57025/25	-	M/P71470/1
63	QM/90063/21	QM/57040/25	-	M/P71470/2
80	QM/90080/21	QM/57063/25	-	M/P71470/3
100	QM/90100/21	QM/57063/25	-	M/P71470/3

* For attaching F mounting to female piston rod thread.



PRODUCT LINKS

Valves...

Despite their different bore sizes and stroke length, improvements in valve technology mean that only a 1/8" ported valve is required to operate this entire range of actuators. Look to our V60 series on page 79 for more information for the simplest solution, or speak to your Express team if you have more complex requirements



PRODUCT PLUS

Need a non-rotating piston rod?

We have three versions available including an externally mounted precision slide unit. Please call your Express Team.



From one supplier you have total availability of both standard and more specialised products meeting most industrial requirements



ISO/VDMA range

Not all 'ISO/VDMA' actuators look alike and perform to a similar standard.

The range covers standard and specific use products, up to 320 mm bore and 2800 mm stroke length and up to 125 mm bore features our new ACS - Adaptive Cushioning System.

What's more, IMI Precision Engineering were the first to utilise a flush-mounted switch system, now standard for almost ten years, which ensures that switches are fully protected from all kinds of mechanical damage.

- > Very low static and dynamic friction characteristics allow low pressure working at speeds down to 3 mm/sec and for ultra-low friction applications a special version is available. Running costs can be optimised for maximum efficiency without use of special products, reducing cost of ownership and inventory holding
- > The vast IMI Norgren range includes both profile and traditional round barrel versions, a stainless steel version, heavy duty wiper and low friction options, non or extended cushion, integrated valve and actuator combined on one unit (IVAC), piston rod lock, guide block and unit complete with position sensor

IVAC - Integrated valve and actuator combined



Engineering GREAT Solutions

Find out more

www.imi-precision.com



ISOLINE™ CYLINDER

PRA/802000/M, RA/802000/M, RA/8000/M Double acting - Ø 32 ... 320 mm

- Cylinder conforms to ISO 15552
- High performance adaptive cushioning system "ACS"
- 16 bar version available
- Flush mounted switch system with profile barrel

Technical Data

Medium:
Compressed air, filtered, lubricated or non-lubricated

Standard:
ISO 15552

Operation:
Double acting, magnetic piston with Ø 32 ... 125 mm ACS
Cushioning system, Ø 160 ... 320 mm with adjustable cushioning

Operating pressure:
Ø 32 ... 125 mm (Profile barrel)
1 ... 12 bar
Ø 32 ... 200 mm (Round barrel)
1 ... 16 bar
Ø 250 & 320 mm (Round barrel)
1 ... 10 bar

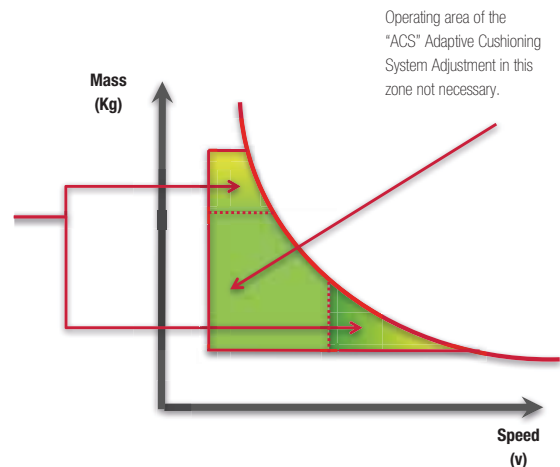
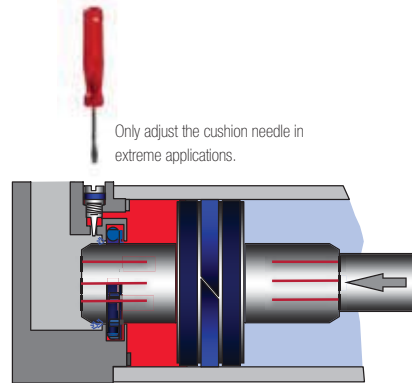
Ambient temperature:
Ø 32 ... 125 mm
"Standard version"
-20°C ... +80°C max.
Ø 160 ... 320 mm
"Standard version"
-10°C ... +80°C max.
Air supply must be dry enough to avoid ice formation at temperatures below +2°C



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	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
Cushioning: Adaptive cushioning systems "ACS"	•	•	•	•	•	•	•				
Cushioning: Adjustable cushioning								•	•	•	•

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



ISOLINE™ CYLINDER

PRA/802000/M, RA/802000/M, RA/8000/M Double acting - Ø 32 ... 320 mm

● Models

Accessories

Model Profile barrel	Model Round barrel	Dia. Ø	Port size	Banjo flow control	Straight fitting	Elbow fitting	Reed switch with integral 5 m cable	Switch mounting*	Service Kit
									
PRA/802032/M*	RA/802032/M*	32	G1/8	C0K510618	C02250618	C02470618	M/50/LSU/5V	QM/27/2/1	QA/8032/00
PRA/802040/M*	RA/802040/M*	40	G1/4	C0K510628	C02250628	C02470628	M/50/LSU/5V	QM/27/2/1	QA/8040/00
PRA/802050/M*	RA/802050/M*	50	G1/4	C0K510828	C02250828	C02470828	M/50/LSU/5V	QM/27/2/1	QA/8050/00
PRA/802063/M*	RA/802063/M*	63	G3/8	C0K510838	C02250838	C02470838	M/50/LSU/5V	QM/27/2/1	QA/8063/00
PRA/802080/M*	RA/802080/M*	80	G3/8	C0K511038	C02251038	C02471038	M/50/LSU/5V	QM/27/2/1	QA/8080/00
PRA/802100/M*	RA/802100/M*	100	G1/2	C0K511248	C02251248	C02471248	M/50/LSU/5V	QM/27/2/1	QA/8100/00
PRA/802125/M*	RA/802125/M*	125	G1/2	C0K511248	C02251248	C02471248	M/50/LSU/5V	QM/27/2/1	QA/8125C/00
-	RA/8160/M*	160	G3/4	M840 (Inline)	-	-	M/50/LSU/5V	QM/27/2/1	QA/8160D/00
-	RA/8200/M*	200	G3/4	M840 (Inline)	-	-	M/50/LSU/5V	QM/27/2/1	QA/8200B/00
-	RA/8250/M*	250	G1	M855 (Inline)	-	-	M/50/LSU/5V	QM/27/2/1	QA/8250/00
-	RA/8320/M*	320	G1	M855 (Inline)	-	-	M/50/LSU/5V	QM/27/2/1	QA/8320/00

For alternative fitting types please contact the technical service.

* For use with round barrel

● Standard strokes

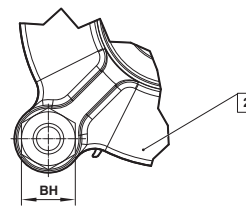
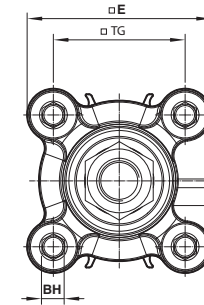
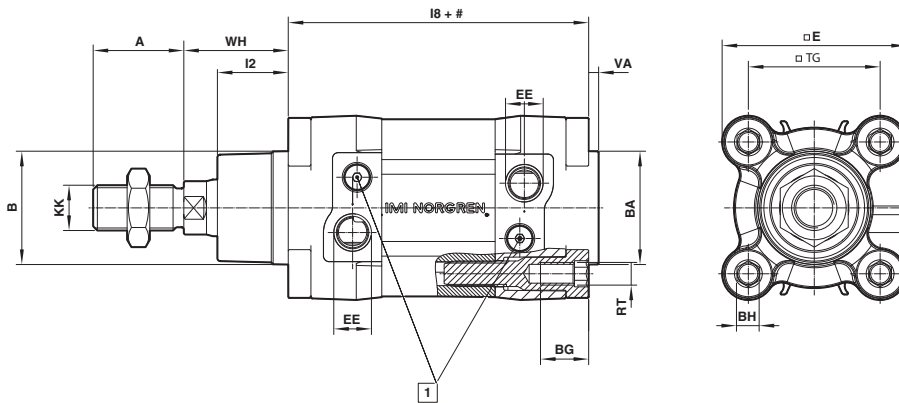
Cylinder Ø (mm)	Stroke length (mm)										
	25	50	80	100	125	160	200	250	320	400	500
32	•	•	•	•	•	•	•	•	•	•	•
40	•	•	•	•	•	•	•	•	•	•	•
50	•	•	•	•	•	•	•	•	•	•	•
63	•	•	•	•	•	•	•	•	•	•	•
80	•	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•	•
125	•	•	•	•	•	•	•	•	•	•	•
160	•	•	•	•	•	•	•	•	•	•	•
200	•	•	•	•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

ISOLINE™ CYLINDER

PRA/802000/M, RA/802000/M, RA/8000/M Double acting - Ø 32 ... 320 mm

Dimensions

PRA/802000/M, RA/802000/M, RA/8000/M



Stroke

1 Cushion screw

2 Ø 80 ... 320 mm

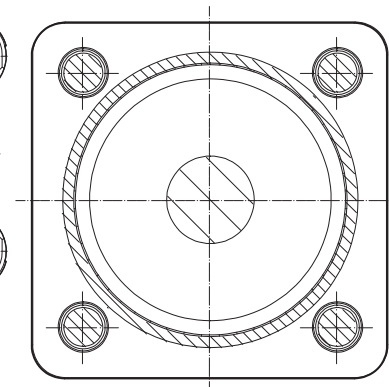
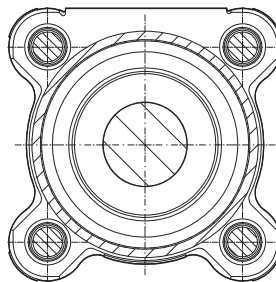
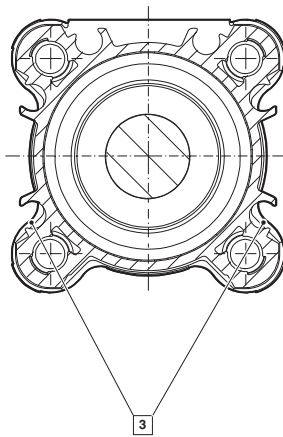
3 M/50 switches can be mounted flush with the profile


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

Model Profile barrel
Ø 32 ... 125 mm

Model Round barrel
Ø 32 ... 125 mm

Model Round barrel
Ø 160 ... 320 mm



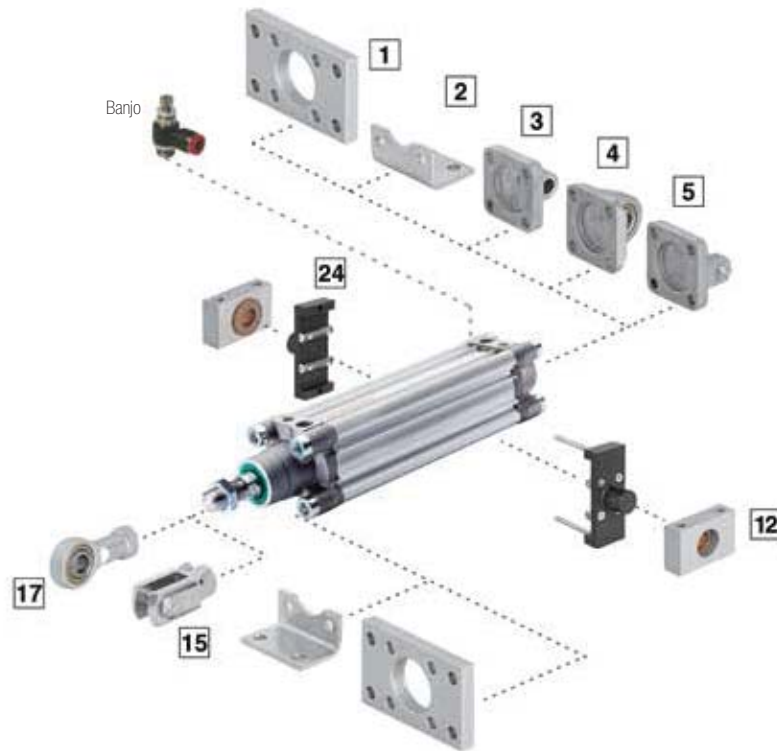
Ø	A -0,5	Ø B d11	Ø BA d11	BG min	 BH	E	EE	KK	L2	L8	TG	RT	VA	WH
32	22	30	30	16	6	47	G1/8	M10 x 1,25	19,5	94	32,5	M 6	3,5	26
40	24	35	35	16	6	53	G1/4	M12 x 1,25	22	105	38	M 6	3,5	30
50	32	40	40	16	8	65	G1/4	M16 x 1,5	25	106	46,5	M 8	3,5	37
63	32	45	45	16	8	75	G3/8	M16 x 1,5	25	121	56,5	M 8	3,5	37
80	40	45	45	17	19	95	G3/8	M20 x 1,5	33	128	72	M 10	3,5	46
100	40	55	55	17	19	113	G1/2	M20 x 1,5	35	138	89	M 10	3,5	51
125	54	60	60	20	24	140	G1/2	M27 x 2	44	160	110	M 12	5,5	65
160	72	65	65	28,5	32	183,5	G3/4	M36 x 2	58	180	140	M 16	4	80
200	72	75	75	28,5	32	224	G3/4	M36 x 2	67	180	175	M 16	5	95
250	84	90	90	35	36	280	G1	M42 x 2	80	200	220	M 20	7	105
320	96	110	110	30	46	350	G1	M48 x 2	90	220	270	M 24	7	120

ISOLINE™ CYLINDER

PRA/802000/M, RA/802000/M, RA/8000/M Double acting - Ø 32 ... 320 mm

● Mountings

Cylinder with Profile barrel Ø 32 ... 125 mm

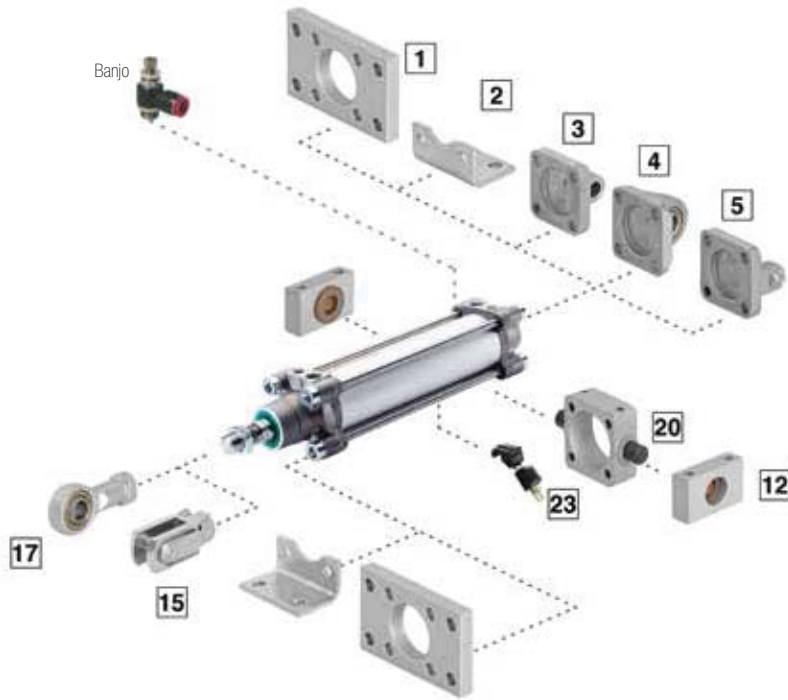


Ø	B, G	C	D	F	UH
	1	2	5	15	24
32	QA/8032/22	QA/8032/21	QA/8032/23	QM/8025/25	PQA/802032/40
40	QA/8040/22	QA/8040/21	QA/8040/23	QM/8040/25	PQA/802040/40
50	QA/8050/22	QA/8050/21	QA/8050/23	QM/8050/25	PQA/802050/40
63	QA/8063/22	QA/8063/21	QA/8063/23	QM/8050/25	PQA/802063/40
80	QA/8080/22	QA/8080/21	QA/8080/23	QM/8080/25	PQA/802080/40
100	QA/8100/22	QA/8100/21	QA/8100/23	QM/8080/25	PQA/802100/40
125	QM/8125/22	QM/8125/21	QM/8125/23	QM/8125/25	PQA/802125/40
160	QM/8160/22	QM/8160/21	QM/8160/23	QM/8160/25	-
200	QM/8200/22	QM/8200/21	QM/8200/23	QM/8160/25	-
250	QM/8250/22	QM/8250/21	QM/8250/23	QM/8250/25	-
320	QM/8320/22	QM/8320/21	QM/8320/23	QM/8320/25	-

ISOLINE™ CYLINDER

PRA/802000/M, RA/802000/M, RA/8000/M Double acting - Ø 32 ... 320 mm

Cylinder with Round barrel Ø 32 ... 320 mm



Ø	UH 20	S 12	UF 17	UR 4	R 3	23
32	QA/8032/40	QA/8032/41	QM/8025/32	QA/8032/33	QA/8032/27	QM/27/2/1
40	QA/8040/40	QA/8040/41	QM/8040/32	QA/8040/33	QA/8040/27	QM/27/2/1
50	QA/8050/40	QA/8040/41	QM/8050/32	QA/8050/33	QA/8050/27	QM/27/2/1
63	QA/8063/40	QA/8063/41	QM/8050/32	QA/8063/33	QA/8063/27	QM/27/2/1
80	QA/8080/40	QA/8063/41	QM/8080/32	QA/8080/33	QA/8080/27	QM/27/2/1
100	QA/8100/40	QA/8100/41	QM/8080/32	QA/8100/33	QA/8100/27	QM/27/2/1
125	QA/8125/40	QA/8100/41	QM/8125/32	QM/8125/33	QM/8125/27	QM/27/2/1
160	QA/8160/40	QA/8160/41	QM/8160/32	QM/8160/33	QM/8160/27	QM/27/2/1
200	QA/8200/40	QA/8160/41	QM/8160/32	QM/8200/33	QM/8200/27	QM/27/2/1
250	-	-	QM/8250/32	QM/8250/33	-	QM/27/2/1
320	-	-	QM/8320/32	QM/8320/33	-	QM/27/2/1



IVAC

Integrated Valve and Actuator Control

PRA/882000 Series

32 to 100 mm bore – up to 1,000 mm stroke length.

IMI Precision Engineering has worked closely with customers in key industry sectors to fully understand what improvements they wanted from their pneumatic controls. The response highlighted a widespread need for improved energy efficiency, reduced downtime and greater ease of use.

The IVAC from IMI Precision Engineering now answers these needs: A family of products incorporating proven technology, IVAC is a light weight, strong, actuator with integrated solenoid valve, cushion and speed control plus position sensors. The ISO/VDMA dimensions mean that it

can be used to replace existing traditional systems, or used on new installations. Using IVAC rather than traditional components, energy consumption can be reduced by up to 50%. The unit has been rigorously tested in operational conditions by customers in a wide range of industries.

The unique patented design delivers significant benefits:

- > Faster response times
- > Fully modular design
- > Integrated sensor adjustment
- > Life expectancy of over 200 million cycles
- > Cleanline body offers simple washdown when used in critical applications
- > Integrated pressure protection

*Engineering
GREAT Solutions*

Find out more
www.imi-precision.com



IVAC CLEAN LINE CYLINDER

PRA/882000/M Double acting – Ø 32 ... 63 mm

- Complete functional unit with LED display
- Central electrical connector, polarity-safe
- Integrated 5/2 or 5/3 valve
- Additional output ports (2 & 4)
- Integrated flow regulator for speed control
- Integrated reed or solid state switches
- Protection class IP67, suitable for food and beverage sector
- Energy efficient

Technical Data

Medium:
Compressed air, filtered, lubricated or non-lubricated
Particles size: Class 7, ISO 8573 – 1 (dated 2001)
Humidity and water content: Air supply must be dry. Corresponding of the application and working conditions the air must be dry enough to avoid condensate. The pressure dewpoint must be minimum 15° under the application and working conditions.
Oil: Class 4, ISO 8573 – 1 (dated 2001)

Standard:
Based on ISO 15552 (length, mounting pitch and thread dimensions according to ISO 15552. Some outside dimensions different to ISO 15552)

Operation:
Double acting, magnetic piston, adjustable cushioning

Operating pressure:
2 ... 8 bar

Ambient temperature:
-2°C ... +70°C max.
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Supply voltage:
24 V d.c.

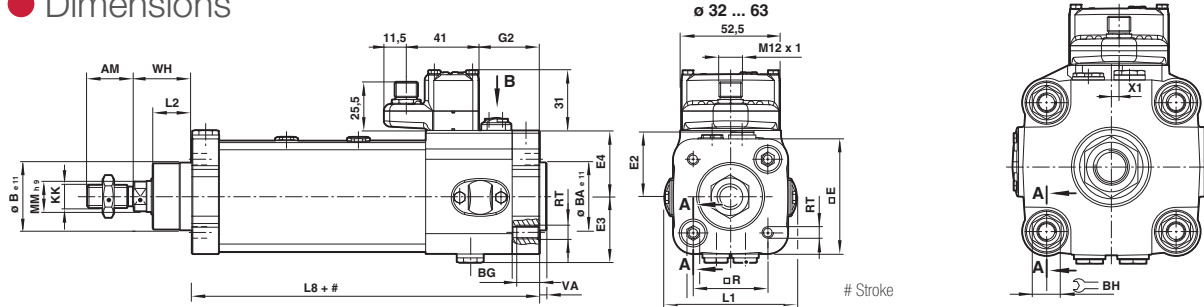
Multipole connection:
M12 x 1 male, 8 pin

Power consumption:
1 W max

Rating:
100% E.D







Dimensions



Dia. Ø	AM	Ø B _{eff}	Ø BA _{eff}	BG	BH	□ E	E2	E3	E4	G2	KK	L1	L2	L8	□ R	RT	VA	WH	X1
32	22	30	30	16	6	53	31	30,5	32	30,5	M10x1,25	68,5	20	94	32,5	M 6	3	26	0
40	24	35	35	16	6	60	34,5	34	34	30,5	M12x1,25	68,5	21	105	38	M 6	3,5	30	0
50	32	40	40	16	8	71,5	40	39	39	34,5	M16x1,5	92,5	28	106	46,5	M 8	3,5	37	1,5
63	32	45	45	16	8	82	46	45,5	45,5	38	M16x1,5	91,5	28	121	56,5	M 8	4	37	0

Models - With glandless spool

Accessories

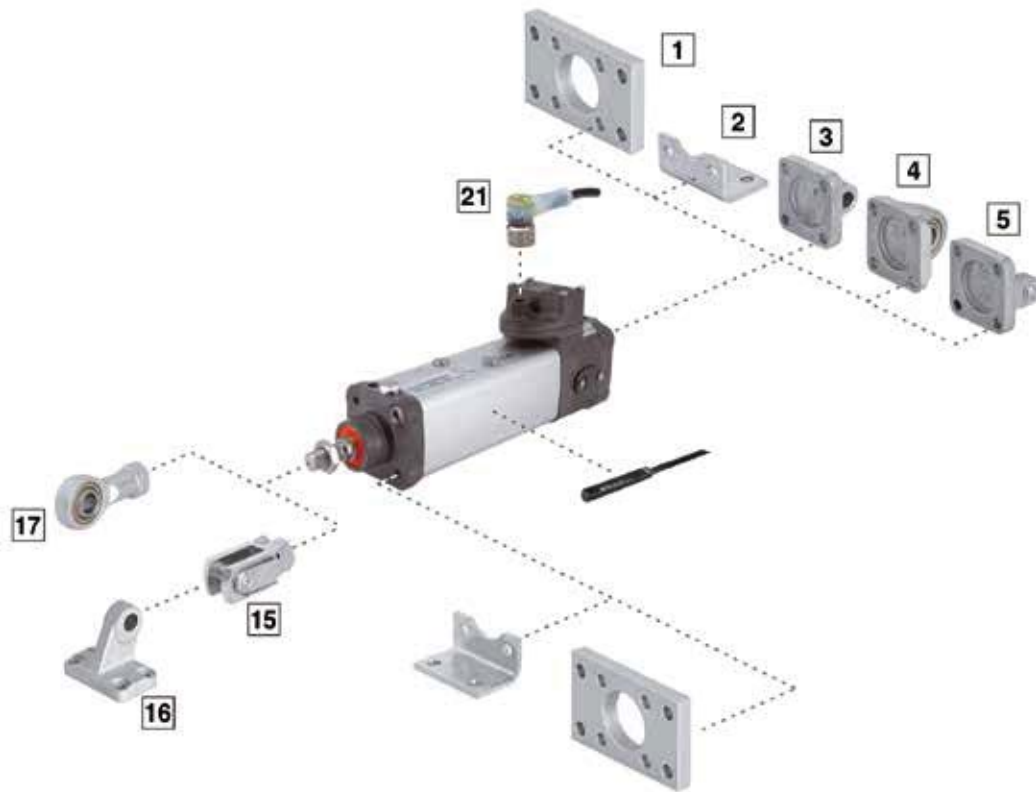
Model	Dia. Ø	Port size	Piston rod Ø	Stroke length (mm)	Valve function	Actuation	Cylinder function	Plug with 5m moulded cable	Elbow fitting	Silencer	
											
PRA/882032/MIB/M4/50	32	G1/8	12	50	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470618	M/S1	
PRA/882032/MIB/M4/80	32	G1/8	12	80	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470618	M/S1	
PRA/882032/MIB/M4/100	32	G1/8	12	10	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470618	M/S1	
PRA/882032/MIB/M4/160	32	G1/8	12	160	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470618	M/S1	
PRA/882040/MIB/M4/50	40	G1/8	16	50	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470618	M/S1	
PRA/882040/MIB/M4/80	40	G1/8	16	80	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470618	M/S1	
PRA/882040/MIB/M4/100	40	G1/8	16	100	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470618	M/S1	
PRA/882040/MIB/M4/200	40	G1/8	16	200	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470618	M/S1	
PRA/882050/MIB/M4/50	50	G1/8	20	50	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470618	M/S1	
PRA/882050/MIB/M4/80	50	G1/8	20	80	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470618	M/S1	
PRA/882050/MIB/M4/100	50	G1/8	20	100	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470618	M/S1	
PRA/882050/MIB/M4/200	50	G1/8	20	200	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470618	M/S1	
PRA/882063/MIB/M4/100	63	G1/4	20	100	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470828	M/S2	
PRA/882063/MIB/M4/160	63	G1/4	20	160	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470828	M/S2	
PRA/882063/MIB/M4/200	63	G1/4	20	200	5/2 bistable	Sol/Sol	not defin	MP74582/5	C02470828	M/S2	

Other stroke length available up to 1000 mm maximum, other variants available, please call our Technical Service.

For alternative fittings types, shapes or sizes, refer to our fitting section.

MOUNTINGS FOR IVAC CLEAN LINE CYLINDER

PRA/882000/M Double acting



Cyl. Ø	B, G 1	C 2	D 5	F 15	R 3	UF 17	UR 4
32	QA/8032/22	QA/8032/21	QA/8032/23	QM/8025/25	QA/8032/27	QM/8025/32	QA/8032/33
40	QA/8040/22	QA/8040/21	QA/8040/23	QM/8040/25	QA/8040/27	QM/8040/32	QA/8040/33
50	QA/8050/22	QA/8050/21	QA/8050/23	QM/8050/25	QA/8050/27	QM/8050/32	QA/8050/33
63	QA/8063/22	QA/8063/21	QA/8063/23	QM/8050/25	QA/8063/27	QM/8050/32	QA/8063/33
80	QA/8080/22	QA/8080/21	QA/8080/23	QM/8080/25	QA/8080/27	QM/8080/32	QA/8080/33
100	QA/8100/22	QA/8100/21	QA/8100/23	QM/8080/25	QA/8100/27	QM/8080/32	QA/8100/33



Lintra® Plus Range

M/146000 Internal Guide,
M/146100 External Guide,
M/146200 Precision Roller Guide
Double acting – Ø 16 ... 80 mm

- > Widest rodless range covers all requirements from lighter to heavier duties
- > Unique integrated guides housed in the main extrusion
- > Unique zip action sealing system
- > Protection system preventing dust ingress
- > Reliable operation up to 6,000 Km of travel
- > Interchangeable with previous M/46*00 series units



PRODUCT PLUS

IMI Precision Engineering offers rodless actuator in a whole series of bore and stroke combinations. Please, contact our Technical Service.

Find out more

www.imi-precision.com

● Models

Internal guide	Piston Ø	Stroke length	Port size
M/146016/M/****	16	made to order	M5
M/146020/M/****	20	made to order	G1/8
M/146025/M/****	25	made to order	G1/8
M/146032/M/****	32	made to order	G1/4
M/146040/M/****	40	made to order	G1/4
M/146050/M/****	50	made to order	G3/8
M/146063/M/****	63	made to order	G1/2
M/146080/M/****	80	made to order	G1/2
External guide	Piston Ø	Stroke length	Port size
M/146116/M/****	16	made to order	M5
M/146120/M/****	20	made to order	G1/8
M/146125/M/****	25	made to order	G1/8
M/146132/M/****	32	made to order	G1/4
M/146140/M/****	40	made to order	G1/4
M/146150/M/****	50	made to order	G3/8
M/146163/M/****	63	made to order	G1/2
M/146180/M/****	80	made to order	G1/2
Precision roller guide	Piston Ø	Stroke length	Port size
M/146225/M/****	25	made to order	G1/8
M/146232/M/****	32	made to order	G1/4
M/146240/M/****	40	made to order	G1/4
M/146250/M/****	50	made to order	G3/8
M/146263/M/****	63	made to order	G1/2

**** Insert stroke length in mm – very best availability in multiples of 100 mm.

Engineering
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AIR BELLOWS

M/31000 Single acting – Ø 6 ... 16"

- Frictionless operation
- No maintenance or lubrication
- High vibration isolation level
- Simple to install

Technical Data

Medium:
Compressed air lubricated or unlubricated, Nitrogen, water (with glycol)

Operating pressure:
5,5 bar recommended dynamic pressure 8 bar max.

Ambient temperature:
-40°C ... +70°C "Static"
-30°C ... +50°C "Dynamic"

When operated at this temperature (+70°C) for pro-longed periods, the bellow will experience a reduce working life.
Static = constant/unchanging external load
Dynamic = vibration or a changing internal pressure as a result of changing external load



Important instructions:

Thrust:

The thrust depends on the height of the bellow. When height increases - the thrust decreases.

- Before installing the air bellow, check it carefully for any damage it may have suffered from transport or improper storage.
- Do not inflate the air bellow until it has been secured properly.

Clearance:

There must be enough clearance around the air bellow.

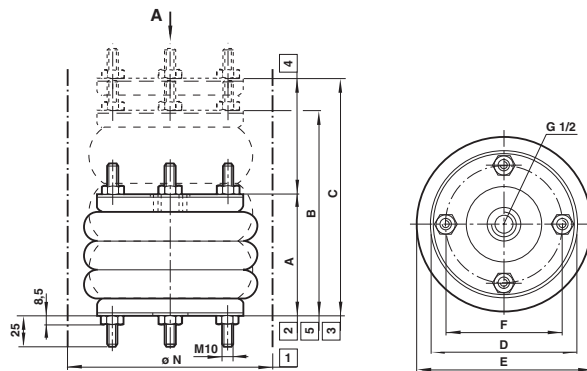
- The full surface of the metal parts is to be used to bear the forces.
- Air bellows must be equipped with lateral guides.
- Deflate the air bellows fully before removing.
- Ensure that the bellows are not constantly in contact with hydraulic oil, lubricants, solvents, metal cuttings and welding sparks.
- Should the air bellow be subjected to special media in an application, ask IMI Precision Engineering for further information, specifying the medium, temperature and concentration.

Stops:

To avoid damage when the bellow is compressed or extended mechanical stops at both end positions have to be used.

Dimensions

M/31061 ... M/31163



- 1 Installation diameter min.
- 2 Installation height min.
- 3 Installation height max.
- 4 Stroke
- 5 Recommended max. working height

Models	Normal Ø (inch) x convolutions	Recommended max. working height B (mm)	Stroke (mm)	Installation height A min. (mm)	Installation height C max. (mm)	Max. torque for mounting studs (Nm)	Ø E	Ø D	Ø F	Ø N	Weight (kg)
M/31061	6 x 1	95	55	50	105	25	175	154	127	190	2,2
M/31062	6 x 2	170	115	75	190	25	175	154	127	190	2,7
M/31081	8 x 1	115	75	50	130	25	230	184	155	245	3
M/31082	8 x 2	220	175	75	250	25	230	184	155	245	3,7
M/31102	10 x 2	245	225	75	300	25	270	210	181	300	4,7
M/31103	10 x 3	350	330	100	430	25	270	210	181	300	5,2
M/31121	12 x 1	135	100	50	150	25	330	260	232	350	5,4
M/31122	12 x 2	245	225	75	300	25	330	260	232	350	6,2
M/31123	12 x 3	350	330	100	430	25	330	260	232	350	6,9
M/31141	14 1/2 x 1	150	100	50	150	25	400	310	282	425	7,1
M/31142	14 1/2 x 2	290	265	75	340	25	400	310	282	425	8,3
M/31143	14 1/2 x 3	420	380	100	480	25	400	310	282	425	9,6
M/31162	16 x 2	350	350	75	390	25	435	310	282	460	7,6
M/31163	16 x 3	475	430	120	550	25	435	310	282	460	10,4

COMPACT AIR BELLOWS

PM/31000 Single acting – Ø 2 3/4 ... 12"

- Frictionless operation
- No maintenance or lubrication
- Ideal for short stroke, high-force applications
- High vibration isolation level
- Easy, compact installation

Technical Data

Medium:
Compressed air lubricated or unlubricated, Nitrogen, water (with glycol)

Operating pressure:
5,5 bar recommended dynamic pressure 8 bar max.

Ambient temperature:
-40°C ... +70°C "Static"
-30°C ... +50°C "Dynamic"
When operated at this temperature (+70°C) for pro-longed periods, the bellow will experience a reduce working life.
Static = constant/unchanging external load
Dynamic = vibration or a changing internal pressure as a result of changing external load



Important instructions:

Thrust:

The thrust depends on the height of the bellow. When height increases - the thrust decreases.

- Before installing the air bellow, check it carefully for any damage it may have suffered from transport or improper storage.
- Do not inflate the air bellow until it has been secured properly.

Clearance:

There must be enough clearance around the air bellow.

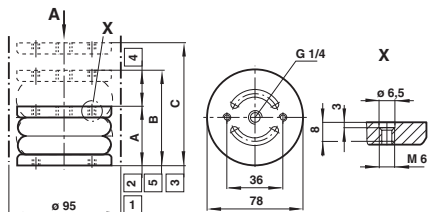
- The full surface of the metal parts is to be used to bear the forces.
- Air bellows must be equipped with lateral guides.
- Deflate the air bellows fully before removing
- Ensure that the bellows are not constantly in contact with hydraulic oil, lubricants, solvents, metal cuttings and welding sparks.
- Should the air bellow be subjected to special media in an application, ask IMI Precision Engineering for further information, specifying the medium, temperature and concentration

Stops:

To avoid damage when the bellow is compressed or extended mechanical stops at both end positions have to be used.

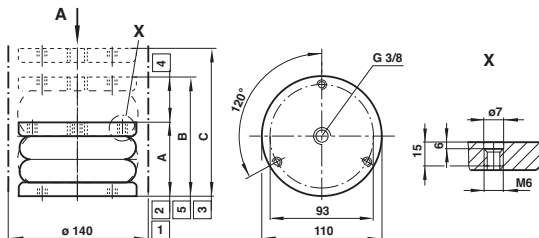
Dimensions

PM/31021, PM/31022, PM/31023



- 1 Installation diameter min.
- 2 Installation height min.
- 3 Installation height max.
- 4 Stroke
- 5 Recommended max. working height

PM/31041, PM/31042, PM/31043

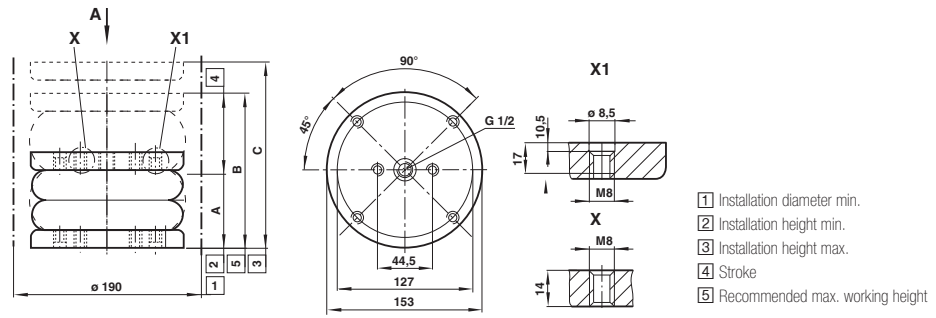


Models	Nominal Ø (inch) x convolutions	Recommended max. working height B (mm)	Stroke (mm)	Installation height A min. (mm)	Installation height C max. (mm)	Max. torque for mounting studs (Nm)	Weight (kg)
PM/31021	2 3/4 x 1	65	20	50	70	5	0,35
PM/31022	2 3/4 x 2	105	45	65	110	5	0,4
PM/31023	2 3/4 x 3	130	60	80	140	5	0,5
PM/31041	4 1/2 x 1	80	40	50	90	5	0,75
PM/31042	4 1/2 x 2	135	85	65	150	5	0,95

COMPACT AIR BELLOWS

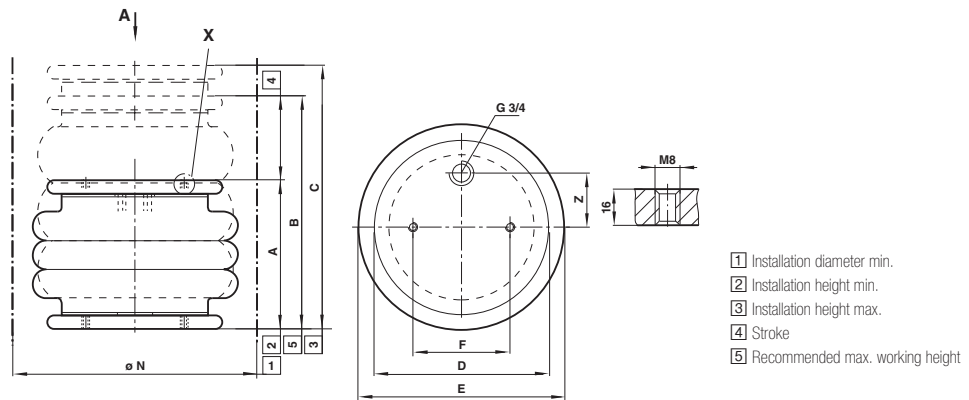
PM/31000 Single acting – Ø 2 3/4 ... 12"

PM/31061 to PM/31063



Models	Normal Ø (inch) x convolutions	Recommended max. working height B (mm)	Stroke (mm)	Installation height A min. (mm)	Installation height C max. (mm)	Max. torque for mounting studs (Nm)	Weight (kg)
PM/31061	6 x 1	100	55	55	110	12	2
PM/31062	6 x 2	170	115	80	190	12	2,7

PM/31081 to PM/31123



Models	Normal Ø (inch) x convolutions	Recommended max. working height B (mm)	Stroke (mm)	Installation height A min. (mm)	Installation height C max. (mm)	Max. torque for mounting studs (Nm)	Ø E	Ø D	Ø F	Ø N	Z	Weight (kg)
PM/31081	8 x 1	140	95	55	140	12	225	133	70	240	–	1,8
PM/31082	8 x 2	250	185	80	250	12	220	133	70	240	–	2,3
PM/31091	9 1/4 x 1	150	105	55	150	12	255	155	89	275	38	2,3
PM/31092	9 1/4 x 2	295	230	80	310	12	255	155	89	275	38	3,1
PM/31121	12 x 1	151	129	51	180	25	343	228	157	360	73	4,3
PM/31122	12 x 2	265	230	75	305	25	325	228	157	340	73	4,8

MAGNETICALLY OPERATED SWITCHES

M/50 Reed and Solid State

- Suitable for all cylinder ranges with magnetic piston
- When used on profile bodied actuators, switch fits flush with surface and requires no mounting bracket or adaptor
- LED indicator – Solid State (standard), Reed (LSU models only)
- Solid State switches are up to 4000 times faster in operation and have greater life expectancy
- Easy IO link versions available
- CE certified
- UL certified
- IO-Link Easy Function:
 - Visual installation aid
 - Counter
 - Temperature diagnostic
 - Power LED

Technical Data

Operation:
 Reed normally open
 Solid State normally open PNP/NPN

Voltage a.c.:
 Reed 10 ... 240V
 (M/50/LSU/CP 10 ... 60V)

Voltage d.c.:
 Reed 10 ... 170V
 (M/50/LSU/CP 10 ... 60V)
 Solid State 10 ... 30V

Current max.:
 Reed 180mA
 Solid State 150mA

Response time:
 Reed 1,8 ms
 Solid State <0,5 ms



● Technical data - Solid state

Symbol	Voltage (V d.c.)	Current maximum (mA)	Function	IO-Link *2)	Operating temperature (°C)	LED	Protection class	Plug	Cable length (m)	Cable type	Weight (g)	Model
	10 ... 30	100	PNP		-40 ... +80	•	IP67	—	2, 5 or 10	PVC 3 x 0,12	37	M/50/EAP/V
	10 ... 30	100	PNP	•	-40 ... +80	•	IP67	—	5	PVC 3 x 0,12	37	M/50/10P/5V
	10 ... 30	100	PNP		-40 ... +80	•	IP68	—	5	PUR 3 x 0,14	37	M/50/EAP/5U
	10 ... 30	100	PNP		-40 ... +80	•	IP67	M8 x 1	0,3	PVC 3 x 0,14	16	M/50/EAP/CP *1)
	10 ... 30	100	PNP	•	-40 ... +80	•	IP67	M8 x 1	0,3	PVC 3 x 0,14	16	M/50/10P/CP *1)
	10 ... 30	100	PNP		-40 ... +80	•	IP67	M12 x 1	0,3	PVC 3 x 0,14	16	M/50/EAP/CC *1)
	10 ... 30	100	NPN		-40 ... +80	•	IP67	—	2, 5 or 10	PVC 3 x 0,12	37	M/50/EAN/V
	10 ... 30	100	NPN		-40 ... +80	•	IP67	M8 x 1	0,3	PVC 3 x 0,14	16	M/50/EAN/CP *1)

* Insert cable length; *1) Plug-in connector below; Color code: BK = black, BN = brown, BU = blue

● Models - Reed and ATEX approved switches

Model	LED (Yellow)	Cable length / plug	Temperature range	Cable material	Features	Extension cable 5 m (PVC)	Extension cable 10 m (PVC)
M/50/LSU/2V	•	2 m	-25 ... +80°C	PVC	Protection IP66	—	—
M/50/LSU/5V	•	5 m	-25 ... +80°C	PVC	Protection IP66	—	—
M/50/LSU/10V	•	10 m	-25 ... +80°C	PVC	Protection IP66	—	—
M/50/LSU/CP	•	0,3 m with M8 Plug	-25 ... +80°C	PVC	Protection IP66	M/P73001/5	M/P73001/10

Accessories

● Models - Solid State and ATEX approved switches

Model	LED (Yellow)	Cable length / plug	Switching function	IO-Link	Temp range	Cable material	Ex-Identification	Extension cable 5 m (PVC)	Extension cable 10 m (PVC)
M/50/EAP/2V	•	2 m	PNP	—	-40 ... +80°C	PVC	—	—	—
M/50/EAP/5V	•	5 m	PNP	—	-40 ... +80°C	PVC	—	—	—
M/50/EAP/10V	•	10 m	PNP	—	-40 ... +80°C	PVC	—	—	—
M/50/EAP/CP	•	0,3 m with M8 Plug	PNP	—	-40 ... +80°C	PVC	—	M/P73001/5	M/P73001/10
M/50/EAP/CC	•	0,3 m with M12 Plug	PNP	—	-40 ... +80°C	PVC	—	M/P34692/5	—
M/50/10P/5V	•	5 m	PNP	•	-40 ... +80°C	PVC	—	—	—
M/50/10P/CP	•	0,3 m with M8 Plug	PNP	•	-40 ... +80°C	PVC	—	M/P73001/5	M/P73001/10

Note: If a bracket/adaptor is required to attach a switch to a cylinder this part number is shown on the relevant actuator product page.

Accessories