

LINTRA® Rodless Cylinders
Magnetic Piston
Double Acting
Ø 25 to 40 mm

- **New compact, space-saving design**
- **Proven sealing system**
- **Integral switch mounting**
- **Adjustable cushioning**
- **Magnetic piston as standard**



Technical Data

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

Double acting

Magnetic piston

Operating Pressure:

1 to 8 bar

Operating Temperature:

-30°C* to +80°C max.

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

Cylinder Diameters:

25, 32, 40 mm

Strokes:

5000 mm or 196 inches max.

longer strokes on request

Materials:

Barrel: Anodised aluminium alloy

End covers: Aluminium alloy

Yoke: Anodised aluminium alloy

Cover and Pistons: Plastic

Sealing strip: Polyurethane

Cover strip: Polyamide

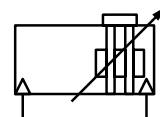
Seals: Nitrile rubber and polyurethane

Ordering Examples

See page 2

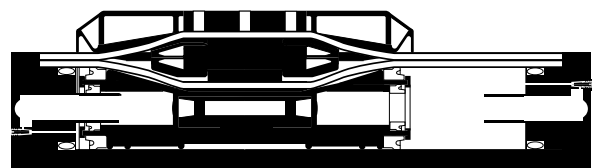
Mountings and Switches

See page 2



Magnetic piston

Adjustable cushioning





Model Codes

*/44000/M/****

Porting	Substitute
ISO G-thread	M
NPT-thread	C

Guiding System	Substitute
Internal	0

Cylinder Diameters (mm)	Substitute
25	25
32	32
40	40

Note: When specifying NPT ports the stroke should be given in inches

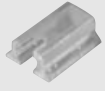
Stroke length in mm for ISO G-thread
5000 max.

Stroke length in full inches for NPT-thread
196 max.

*

Fractional increments of stroke (inches) for NPT-thread					
Substitute	Substitute	Substitute	Substitute	Substitute	Substitute
0	A	3/8	G	3/4	P
1/16	B	7/16	H	13/16	R
1/8	C	1/2	J	7/8	S
3/16	D	9/16	K	15/16	T
1/4	E	5/8	M	Special	X
5/16	F	11/16	N		

Mountings

	Style 'C'	Style 'V'	Style 'S'	Switch Mounting Bracket
				
Ø	Page 5	Page 5	Page 5	
25	QM/44025/21	Q44025AAAAAM332	Q44025AAAAAM337	M/P72487
32	QM/44032/21	Q44032AAAAAM332	Q44032AAAAAM337	M/P72487
40	QM/44040/21	Q44040AAAAAM332	Q44040AAAAAM337	M/P72487

Switches

	Cable	Plug (M8x1)
Model		
Reed	M/50/LSU/..	M/50/LSU/CP
	M/50/RAC/5V	—
Solid state	M/50/EAP/..	M/50/EAP/CP
	M/50/EAN/..	M/50/EAN/CP

Reed	Model	Voltage V a.c.	V d.c.	Current Max.	Temperature °C	LED	Features	Cable/Plug	Cable Type	Plug-in Cable Straight	90°	Catalogue Page
	M/50/LSU/*V	10 to 240	10 to 170	180 mA	-20° to +80°	●	—	2, 5, 10 m	PVC 2 x 0,25	—	—	N 4.3.005
	M/50/LSU/5U	10 to 240	10 to 170	180 mA	-20° to +80°	●	—	5 m	PUR 2 x 0,25	—	—	N 4.3.005
	M/50/RAC/5V	10 to 240	10 to 170	180 mA	-20° to +80°	—	Changeover	5 m	PVC 3 x 0,25	—	—	N 4.3.005
	M/50/LSU/CP	10 to 60	10 to 75	180 mA	-20° to +80°	●	—	Plug M8x1	—	M/P73001/5	—	N 4.3.005
	M/50/EAP/*V	—	10 to 30	150 mA	-20° to +80°	●	PNP	2, 5, 10 m	PVC 3 x 0,25	—	—	N 4.3.007
	M/50/EAP/CP	—	10 to 30	150 mA	-20° to +80°	●	PNP	Plug M8x1	—	M/P73001/5	—	N 4.3.007
	M/50/EAN/*V	—	10 to 30	150 mA	-20° to +80°	●	NPN	2, 5, 10 m	PVC 3 x 0,25	—	—	N 4.3.007
	M/50/EAN/CP	—	10 to 30	150 mA	-20° to +80°	●	NPN	Plug M8x1	—	M/P73001/5	—	N 4.3.007

* Insert cable length

Full information on switches (technical data, cable materials, dimensions etc.) please refer to relevant catalogue pages

Ordering Examples

Cylinders

To order a 25 mm bore cylinder with adjustable cushioning, magnetic piston and a 800 mm stroke quote:

M/44025/M/800

Mountings

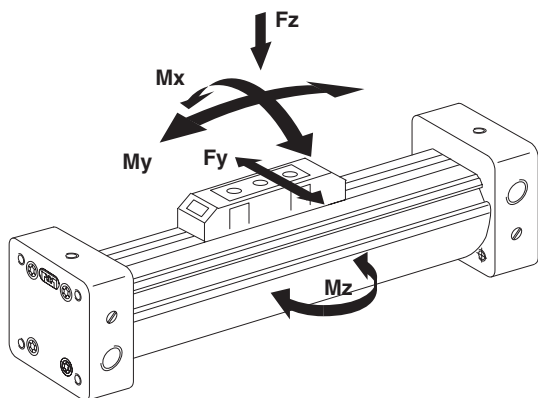
To order a centre support mounting style 'V' for 25 mm bore cylinder quote: **Q44025AAAAAM337**

Switches

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

Switch Mounting Bracket

To order a bracket for magnetically operated switches M/50; 25 mm bore cylinder quote: **M/P72487**



Loading values for LINTRA®Cylinders

The values given in the table below show the forces in the directions Fy and Fz and the maximum moments Mx, My and Mz. All values are applicable for speeds up to 0,2 m/s. A requirement for using these values is a smooth movement of the mass over the whole stroke length of the cylinder. The reference point from which the moments for all cylinders should be calculated is the centre line of the piston.

Total loads

When a LINTRA®Cylinder has to take several loads and moments, an additional calculation is necessary using the following formula:

$$\frac{M_x}{M_{x \max}} + \frac{M_y}{M_{y \max}} + \frac{M_z}{M_{z \max}} + \frac{F_y}{F_{y \max}} + \frac{F_z}{F_{z \max}} \leq 1$$

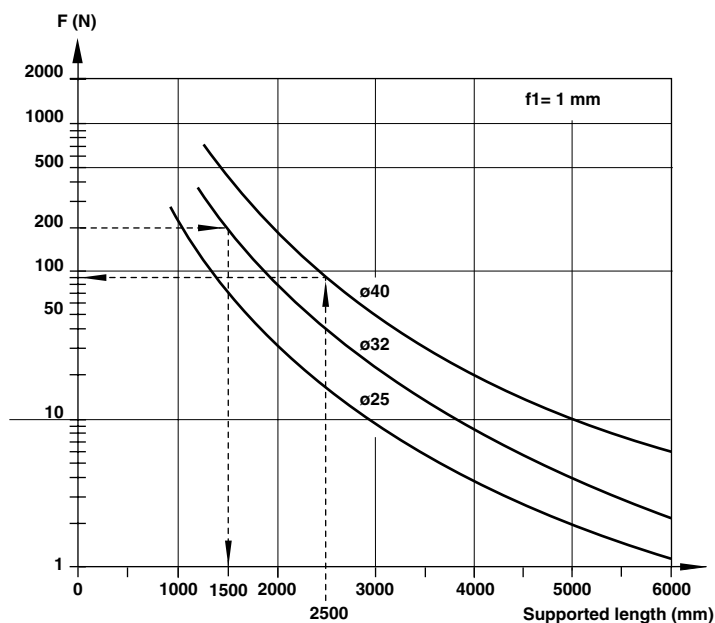
Thrust • Air consumption • Cushion length • Loading values

Ø	Theoretical forces at 6 bar (N)	Air consumption per stroke at 6 bar (l/cm)	Cushion length (mm)	Loading values Fy (N)	Fz (N)	Mx (Nm)	My (Nm)	Mz (Nm)
25	250	0,035	18	90	280	1	13	4
32	410	0,056	23	120	370	2	21	6
40	640	0,088	35	240	720	4	56	16

Loading values applicable to a speed of ≤ 0,2 m/s. Maximum working life is normally reached below a speed of 1 m/s.

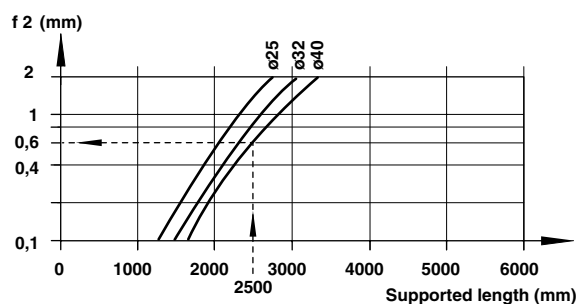
Cylinder Deflection

Deflection due to external force.



Cylinder Ø 32 mm, stroke length 3500 mm, external load 200 N
Maximum distance between supports = 1500 mm (see diagram).
Therefore additional support is required.

Deflection due to cylinder weight.



Cylinder Ø 40 mm, external force 120 N, distance between supports 2500 mm

Required: Total deflection

1. Deflection due to external force (f1):

See diagram → (1mm/90 N) · 120 N

1,3 mm

2. Deflection due to cylinder weight (f2): See diagram → +0,6 mm

Total deflection:

1,9 mm

Maximum permitted deflection:

f1 + f2 ≤ 1 mm per 1000 mm stroke

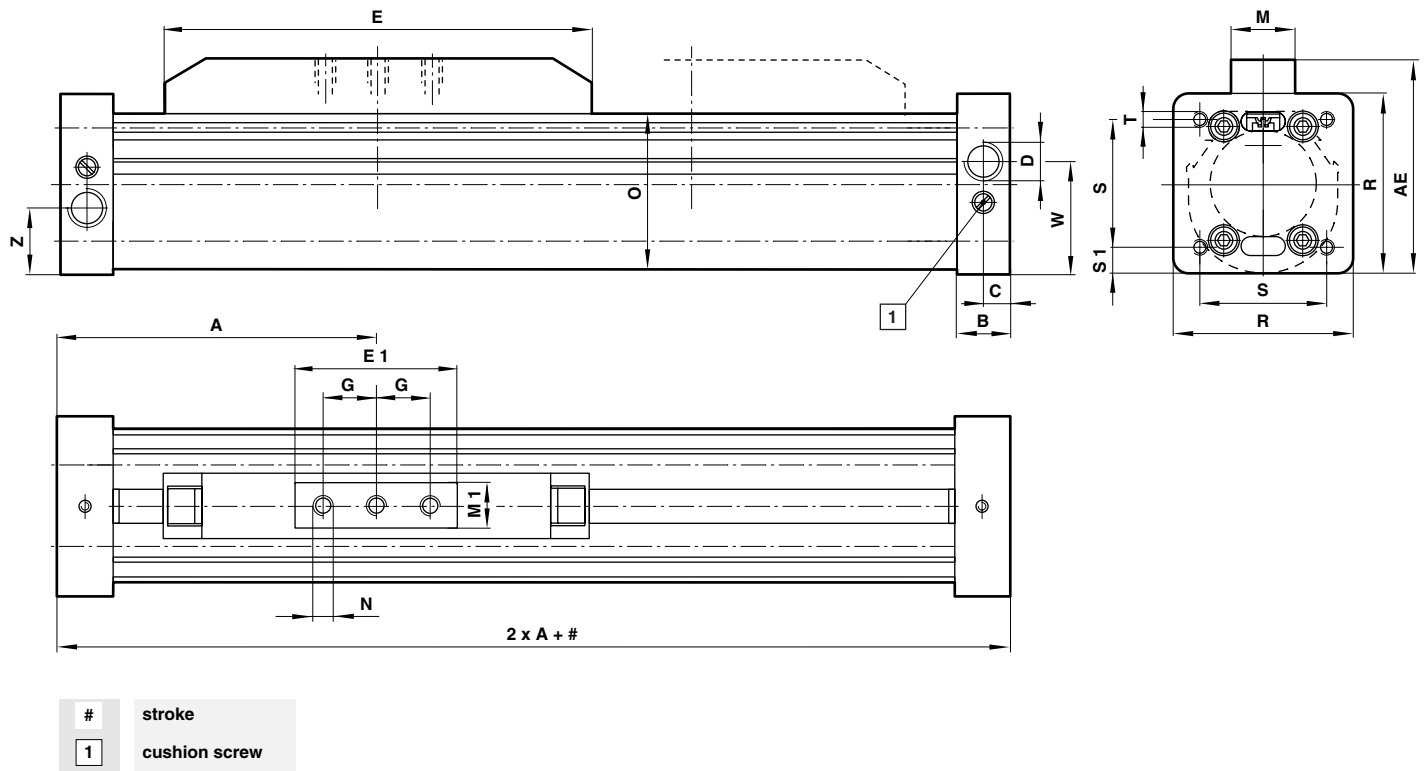
Result:

1,9 mm are below the max. permitted deflection of 2,5 mm



BASIC DIMENSIONS

M/44000/M/... — Standard Cylinders



Ø	A	AE	B	C	D (Port threads)*		E	E1	G	M	M1
25	72,5	53,2	13,5	7	G 1/8	1/8 NPT	100	40	12,5	22	18
32	82,5	67,8	13,5	7	G 1/8	1/8 NPT	120	50	15	24	20
40	112,5	79,3	19	9,5	G 1/4	1/8 NPT	165	60	20	24	20

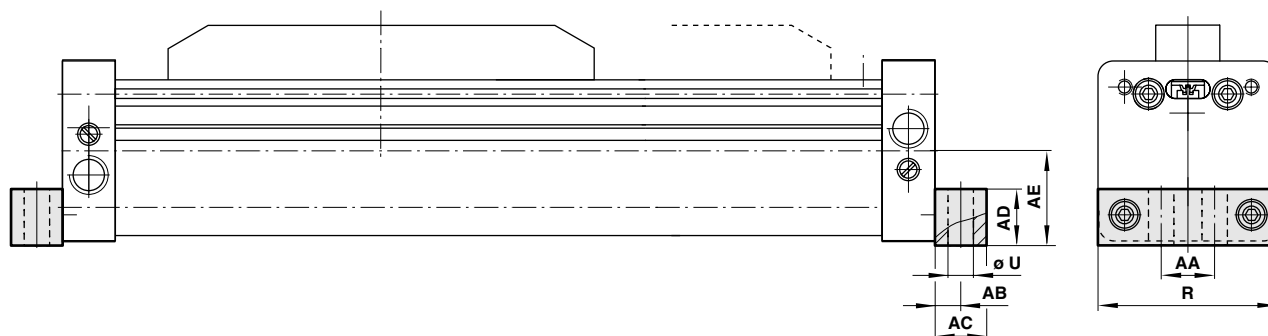
Ø	N	O	R	S	S1	T	W	Z	at 0 mm	per 100 mm	
25	M5-7 deep	35	42	33	4,5	M4-13,5	25,6	16,4	0,60 kg	0,15 kg	
32	M6-10 deep	46,5	53	41	6	M6-13,5	33,5	19,5	0,90 kg	0,25 kg	
40	M6-10 deep	58	65,5	48	8,75	M6-19	40,8	24,8	1,40 kg	0,35 kg	

* Optional ISO G or NPT-thread

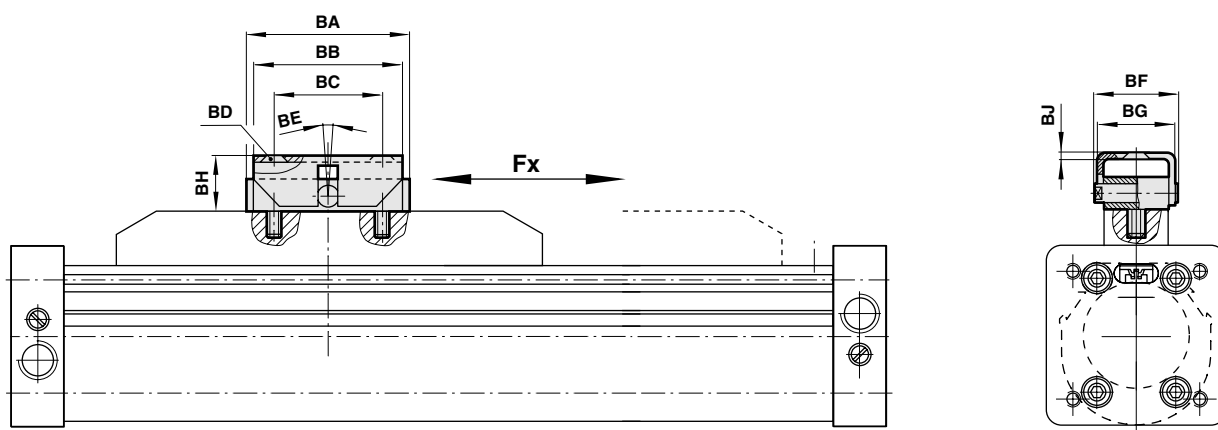


MOUNTINGS

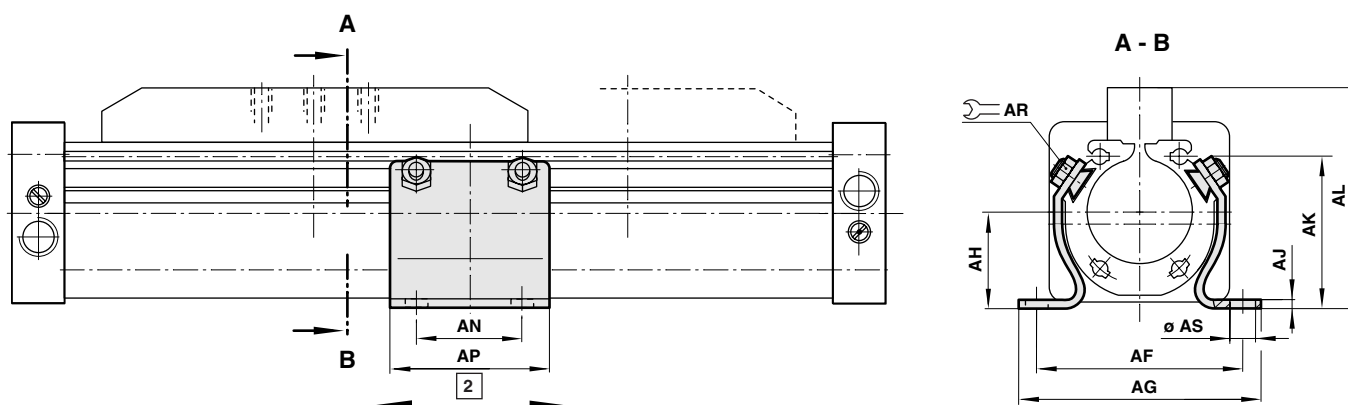
QM/44000/21 — Foot Mounting Style 'C'



Q44000AAAAAM337 — Swinging Bridge Mounting Style 'S'



Q44000AAAAAM332 — Centre Support Mounting Style 'V'



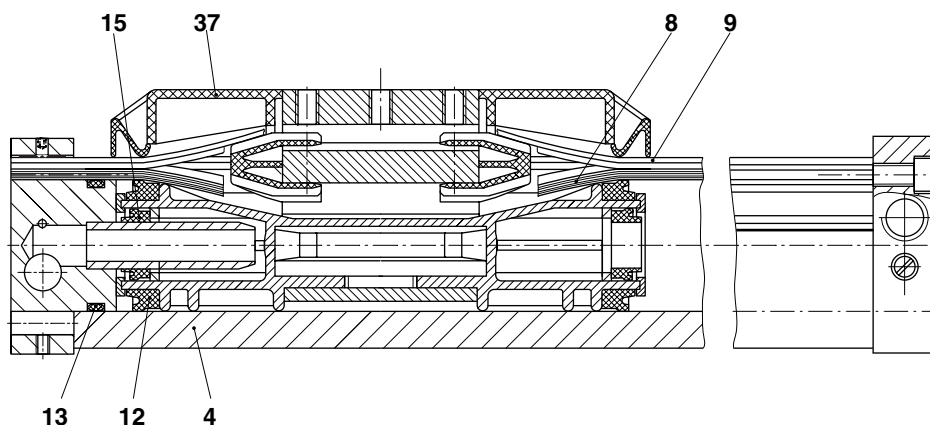
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adjustable

Ø	AA	AB	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AN	AP	AR	Ø AS
25	18,5	5	10	10	21,5	58	70	21,5	3	31	53,5	25	40	10	6,6
32	20	8	16	16	28,5	70	83	28,5	3	43	70	30	50	10	9
40	27	7,5	15	22	35	79	92	35	3	55	81,5	40	60	10	9
Ø	BA	BB	BC	BD (DIN 74)	BE	BF	BG	BH	BJ	Fx	R	ØU	Style 'C'	Style 'S'	Style 'V'
25	40	40	28	BM 5	± 8	29	28	15 + 5	2	250 N	42	5,5	0,04 kg	0,15 kg	0,07 kg
32	50	55	40	BM 6	± 8	31	30	17,5 + 5	2	410 N	53	9	0,09 kg	0,20 kg	0,15 kg
40	60	55	40	BM 6	± 8	31	30	18 + 5	2	640 N	65,5	9	0,13 kg	0,25 kg	0,25 kg



SPARES



Ø	Model	Spares kit	Comprising Item	Description	Quantity	Seal strip Item 8	Cover strip Item 9	Barrel Item 4
25	M/44025/M	Q44025AAGAAT788*	8/9	Seal/cover strip	1/1	M/P 41628/*	M/P 41631/*	M/P 41933/*
32	M/44032/M	Q44032AAGAAT788*	12/15	Piston/cushion seal	2/2	M/P 41629/*	M/P 41632/*	M/P 41934/*
40	M/44040/M	Q44040AAGAAT788*	13	O-Ring	2	M/P 41630/*	M/P 41633/*	M/P 41935/*
			37	Cover Grease	1 2			

* Insert stroke length

Note: Spares kits are common for all cylinder types
Please quote the cylinder type number when ordering spare parts

Warning

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

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

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

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

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

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