

**TWIN-LINTRA® Rodless Cylinders**  
**Non-magnetic and Magnetic Piston**  
**Double Acting**  
 Ø 25 and 40 mm

- Double stroke compared with conventional cylinders
- Design covered by patent
- Maximum stroke length from minimal envelope dimensions
- High free carriage speed
- Alternative mounting/port options
- Internal air supply at M/46900/IA models
- Two synchronous carriage movements at M/46900/M models


**Technical Data**

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

Double acting with adjustable cushioning

M/46900/IA Air connections in the fixed carriage

M/46900/M Air connections in the end covers with magnetic piston

Operating Pressure:

1.5 to 10 bar

Operating Temperature:

-30°C\* to +80°C max.

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

Cylinder Diameters:

25, 40 mm

Standard Strokes:

Made to order

Maximum Strokes:

2000 mm M/46900/IA

3000 mm M/46900/M

Materials:

Anodised aluminium end covers, carriages and yoke, special anodised extruded aluminium alloy cylinder barrel, polyurethane sealing strip, toothed belt and piston seals, plastic cover strip, nitrile rubber or oil resistant plastic seals

**Ordering Information** (see drawings page 2)

To order a TWIN-LINTRA® cylinder (air connection in the fixed carriage) 40 mm bore with a 2000 mm stroke quote: M/46940/IA/2000

To order a TWIN-LINTRA® cylinder (air connection in the end covers and magnetic piston) 40 mm bore with a 3000 mm stroke quote: M/46940/M/3000/3000

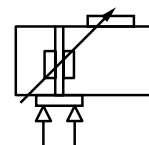
To order mountings refer to appropriate cylinder.

Order magnetically operated switches separately.

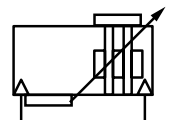
**Accessories**

See page

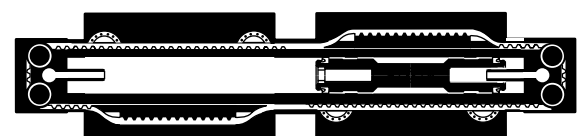
Switches	QM/45/RAP, QM/45/LAP	
	QM/45/LSU	N 4.3.045.01
Switch	QM/45/EAP	N 4.3.047.01



M/46900/IA



M/46900/M





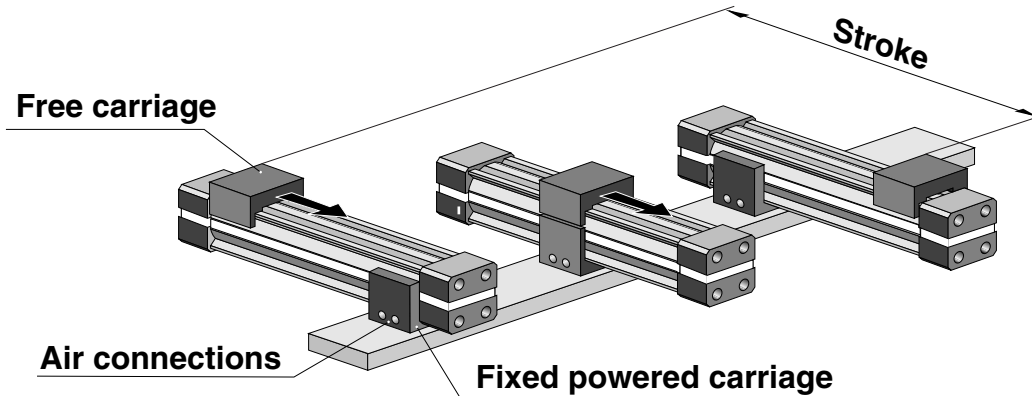
**Thrust • Cushion length**

Ø mm	Thrust at 6 bar (N)		Air consumption (l/cm) per stroke at 6 bar		Cushion length (mm)
	M/46900/IA	M/46900/M	M/46900/IA	M/46900/M	
25	125	250	0,017	0,035	26
40	320	640	0,044	0,088	50

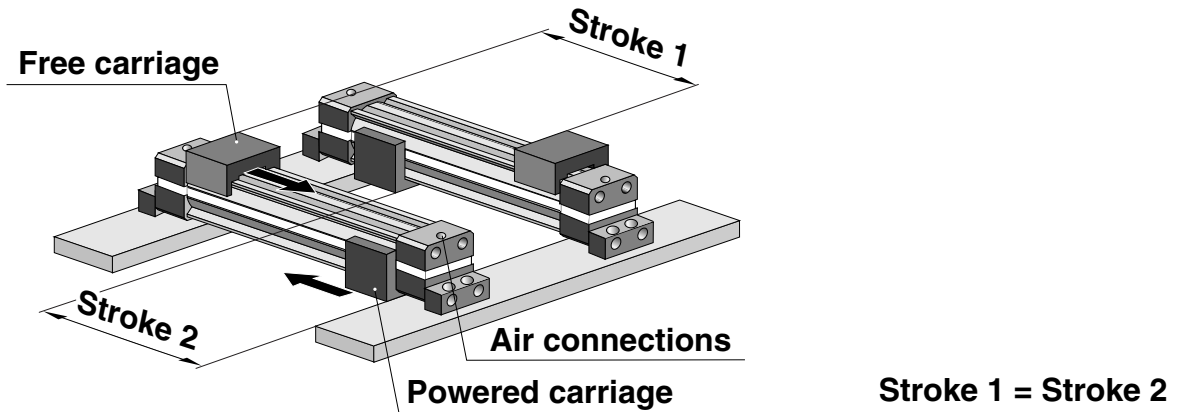
**Weights of Cylinders and Mountings (kg)**

Model Ø	M/46900/IA		M/46900/M		Style 'C' (for M/46900/M)	Power supply chain (for M/46900/IA)	Kit for switches (for M/46900/IA)	Kit for switches (for M/46900/M)
	at 0 mm	per 100 mm	at 0 mm	per 100 mm				
25	2,600	0,125	2,600	0,250	0,010	0,310	0,015	0,025
40	8,000	0,290	8,000	0,580	0,200	0,350	0,025	0,035

**TWIN-LINTRA® M/46900/IA**



**TWIN-LINTRA® M/46900/M**



**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.

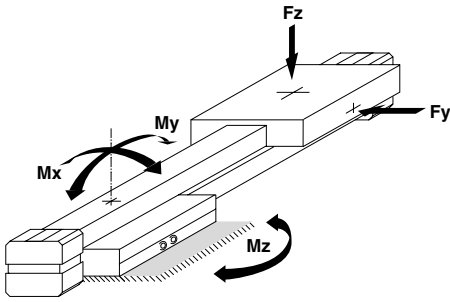
**System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.**

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

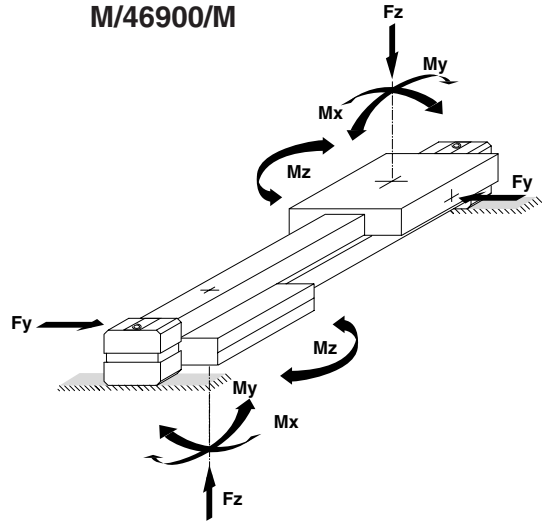


Loading values

M/46900/IA



M/46900/M



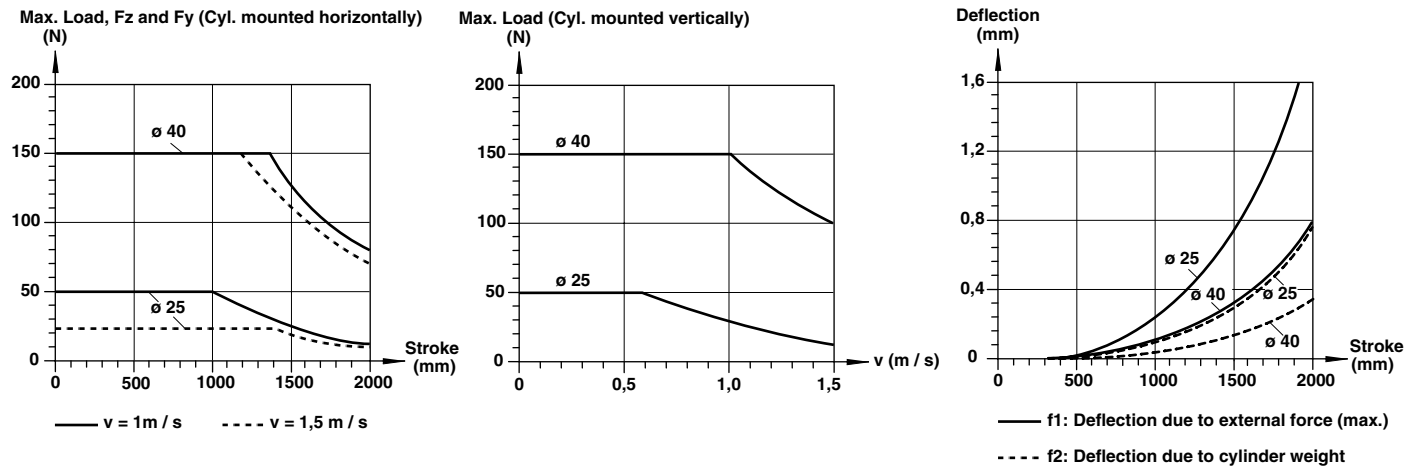
∅	Fy (N)	Fz (N)	Mx (Nm)	My, Mz (Nm)
25	see graph	see graph	13	42
40	see graph	see graph	58	160

The values given in the tables below show the single forces in the directions Fy and Fz and the maximum moments Mx, My and Mz. A requirement for using these values is a constant 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 centreline of the piston. **For speeds up to 2 m/s please use our calculation programme PNEUCALC. It is available upon request. PNEUCALC is suitable for all PC's having MS-DOS 3.1 and higher.**

When a TWIN-LINTRA® cylinder has to take several loads and moments, an additional calculation is necessary using this formula:

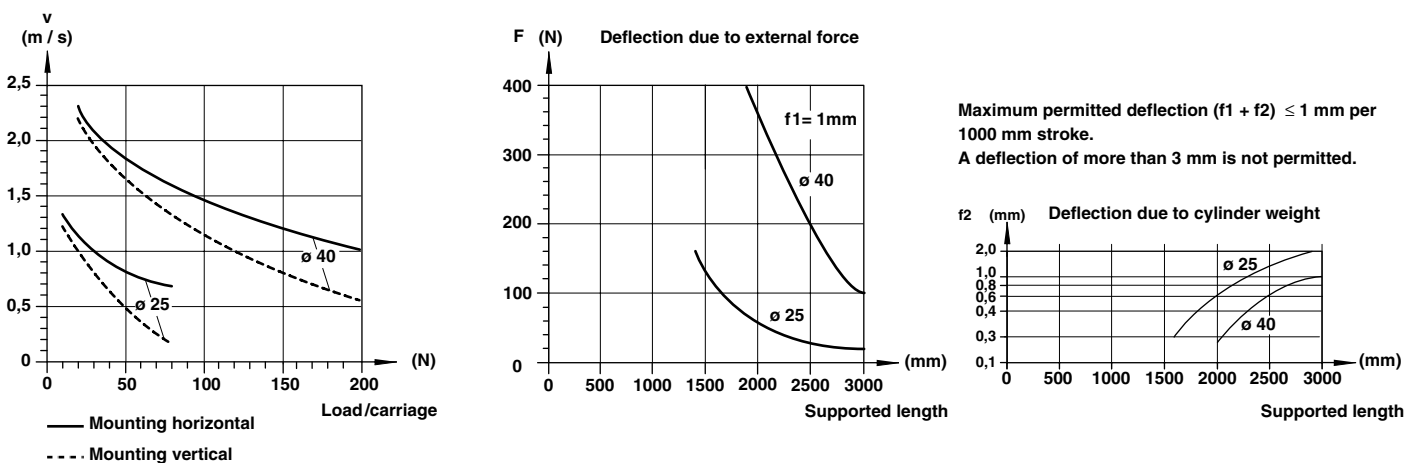
$$\frac{M_x}{M_x \max} + \frac{M_y}{M_y \max} + \frac{M_z}{M_z \max} + \frac{F_y}{F_y \max} + \frac{F_z}{F_z \max} \leq 1$$

Maximum Loads and Deflection for TWIN-LINTRA® M/46900/IA



Maximum permitted deflection (f1 + f2) ≤ 1 mm per 1000 mm stroke.  
A deflection of more than 3 mm is not permitted.

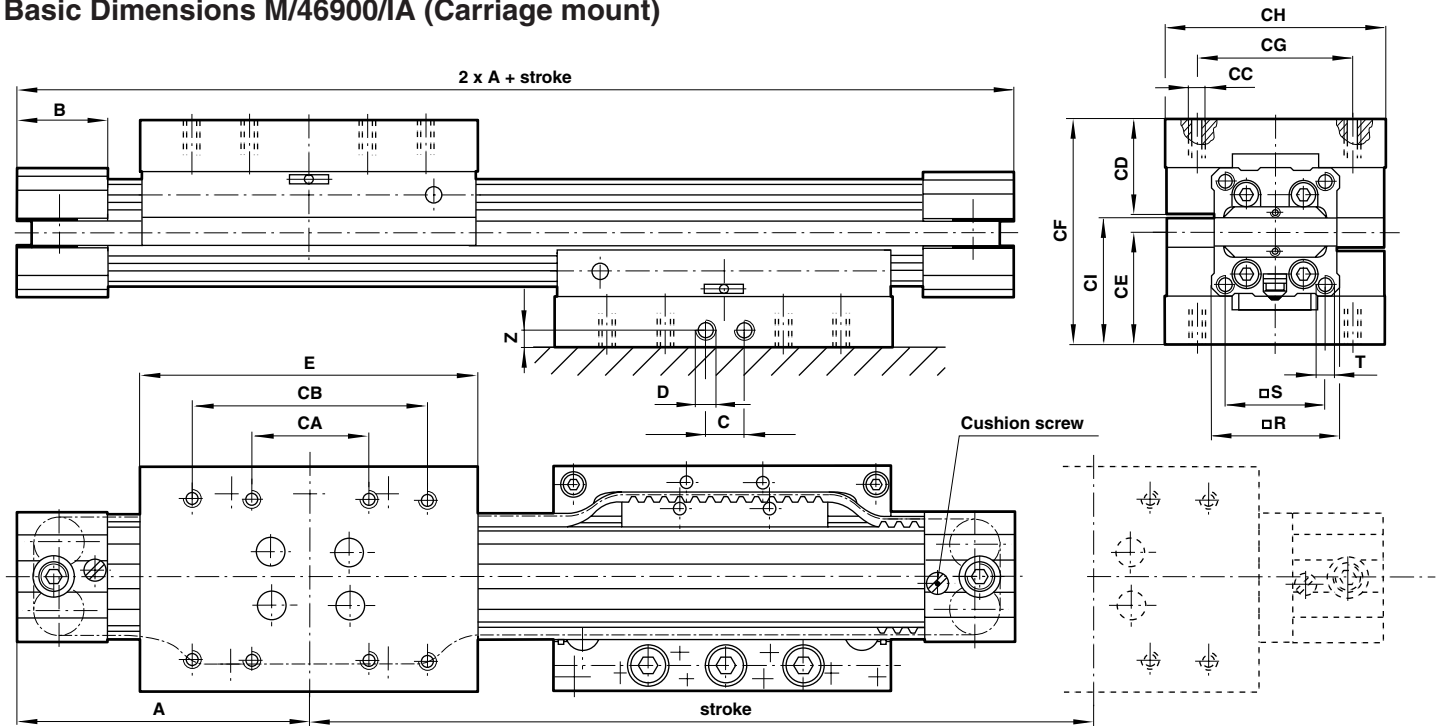
Maximum Loads and Deflection for TWIN-LINTRA® M/46900/M



Maximum permitted deflection (f1 + f2) ≤ 1 mm per 1000 mm stroke.  
A deflection of more than 3 mm is not permitted.



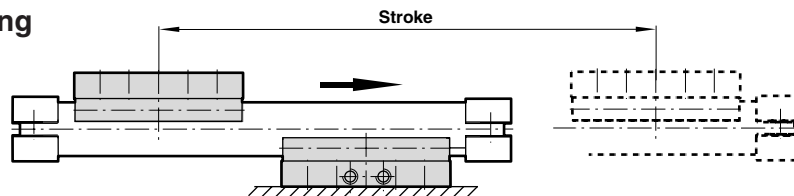
### Basic Dimensions M/46900/IA (Carriage mount)



Model	∅	A	B	C	CA	CB	CC	CD	CE	CF
M/46925/IA	25	112	35	15	45	90	M 6 x 14 deep	36	42	84
M/46940/IA	40	174	54	22	80	150	M 8 x 16 deep	42	57,5	115
Model	CG	CH	CI	D	E	R	S	T	Z	
M/46925/IA	60	85	47	M 5	130	48	37	M 5 x 13 deep	6,5	
M/46940/IA	92	118	67,5	G 1/8	215	75	58	M 8 x 20 deep	9,5	

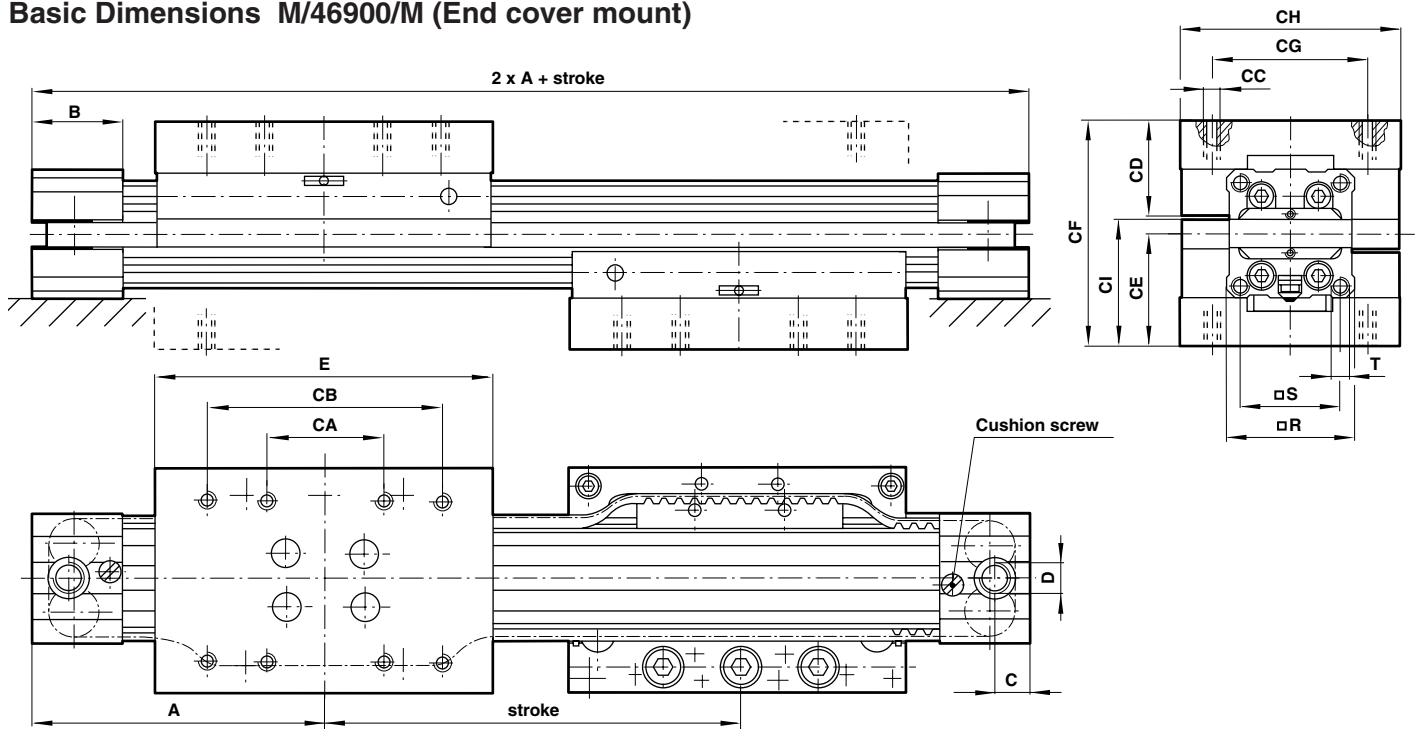
To order a TWIN-LINTRA® cylinder (air connections in the fixed carriage) 25 mm bore with a 1000 mm stroke quote: M/46925/IA/1000

### Operation and Mounting





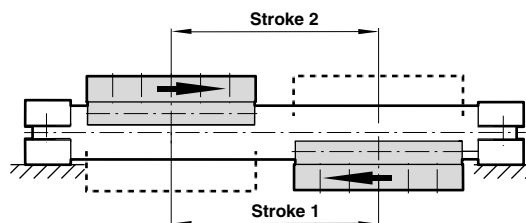
### Basic Dimensions M/46900/M (End cover mount)



Model	∅	A	B	C	CA	CB	CC	CD	CE
M/46925/M	25	112	35	15	45	90	M 6 x 14 deep	36	42
M/46940/M	40	174	54	29	80	150	M 8 x 16 deep	42	57,5
Model	CF	CG	CH	CI	D	E	R	S	T
M/46925/M	84	60	85	47	G 1/8	130	48	37	M 5 x 13 deep
M/46940/M	115	92	118	67,5	G 1/4	215	75	58	M 8 x 20 deep

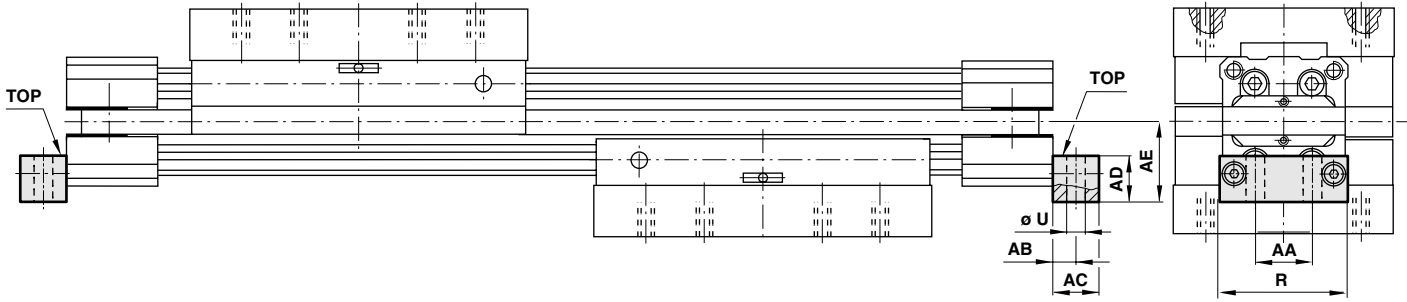
To order a TWIN-LINTRA® cylinder (air connection in the end covers with magnetic piston) 40 mm bore with a 2000 mm stroke  
 quote: M/46940/M/2000/2000

### Operation and Mounting



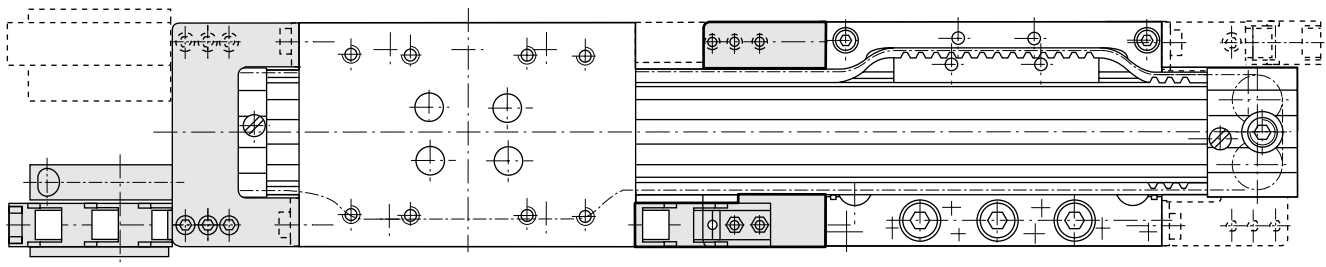
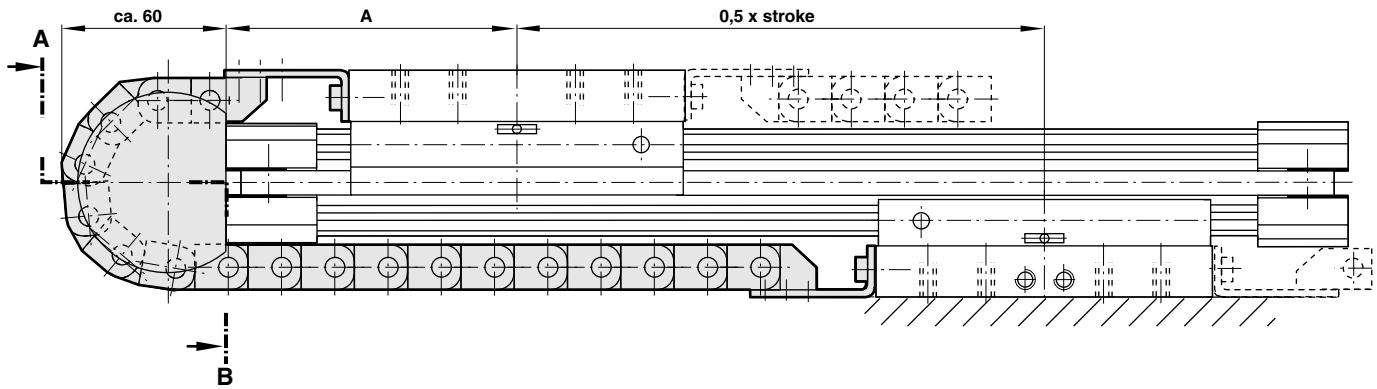


Foot Mounting Style 'C' (for M/46900/M)

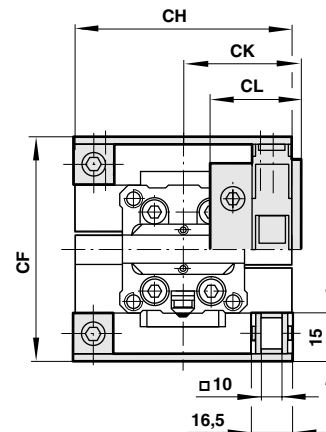


Model 'C'	∅	AA	AB	AC	AD	AE	R	∅ U
QM/46025/21	25	18	7	15	13,5	24	48	7
QM/46040/21	40	30	11	22	19,5	37,5	75	9

Kit: Power supply chain (for cylinders M/46900/IA)



Section A - B

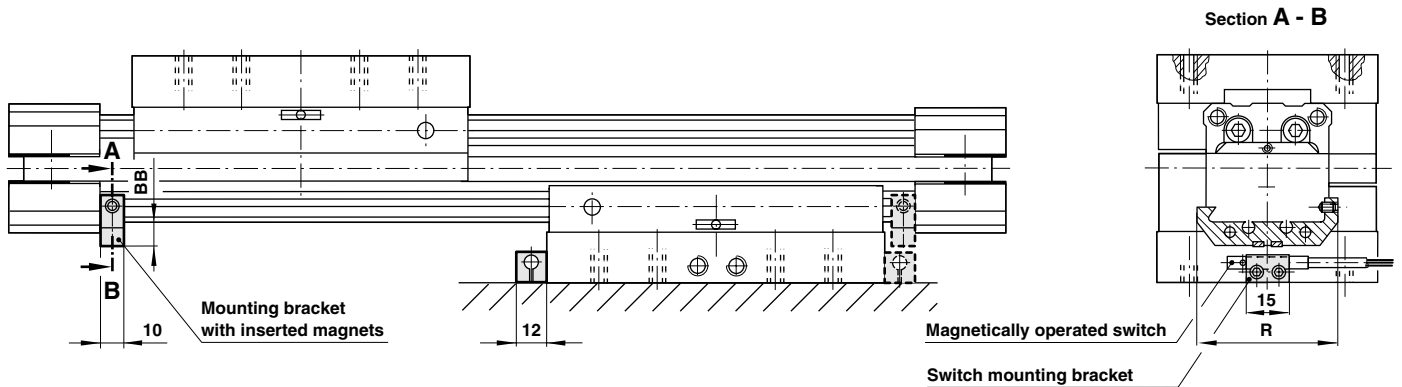


The kit includes generally a power supply chain for 2000 mm stroke, which has to be shortened individually

Model	∅	CF	CH	CK	CL
QM/46925/IA/80	25	84	85	45	32
QM/46940/IA/80	40	115	118	58	38

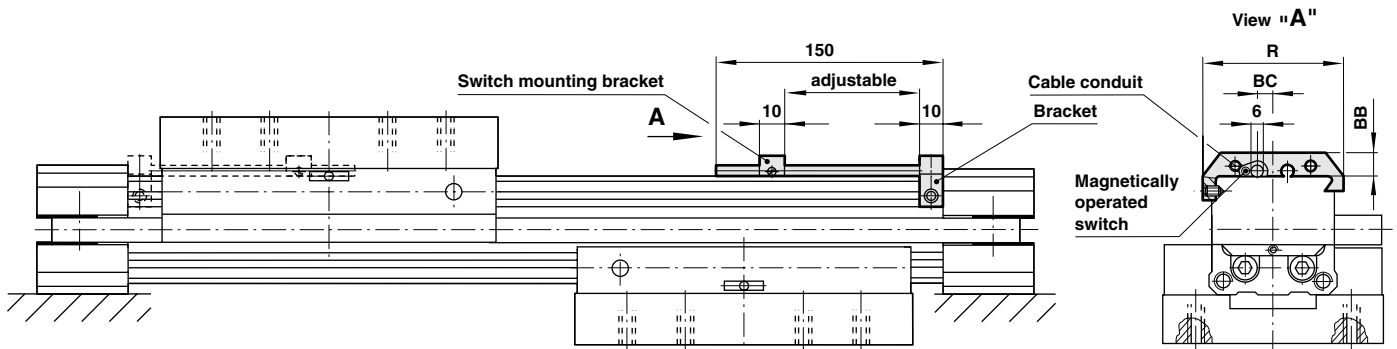


**Kit for switches (for cylinders M/46900/IA)**  
 (Comprise: Magnet mounting bracket and switch mounting bracket)



Model	∅	BB	R
QM/46925/IA/22/64	25	8,5	48
QM/46940/IA/22/64	40	9,5	75

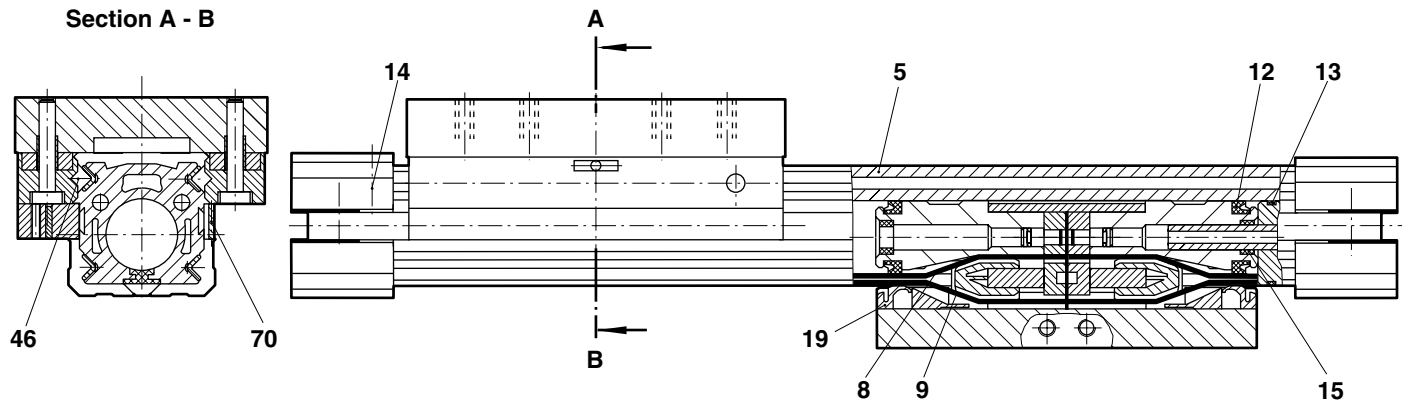
**Kit for switches (for cylinders M/46900/M)**  
 (Comprise: Bracket, switch mounting bracket and rod)



Model	∅	BB	BC	R
QM/46925/22/64	25	8,5	0	48
QM/46940/22/64	40	9,5	10	75



Spares



Model	Spares kit	Comprising Items	Description	Quantity	Seal strip Item 8	Cover strip Item 9	Barrel Item 5	Bearing** Item 46	Toothed belt Item 70
M/46925/IA	QM/46925/IA*/88	8 + 9	Seal/cover strip	1	M/P 71502/*	M/P 71503/*	M/P 71501/*	QM/46225/12	M/P 71505/*
M/46925/M	QM/46025*/88	12	Seal	2	M/P 40262/*	M/P 19567/2/*	M/P 41066/*	QM/46225/12	M/P 71591/*
M/46940/IA	QM/46940/IA*/88	13, 14	O-Ring	2	M/P 71520/*	M/P 71521/*	M/P 71519/*	M/P 34558	M/P 71523/*
M/46940/M	QM/46040*/88	15	Seal	2	M/P 40263/*	M/P 19606/2/*	M/P 41017/*	M/P 34558	M/P 71593/*
		19	Closer assy.	2					
			Grease	1					

\* Insert stroke length

\*\* Bearing with pin for  $\varnothing$  25 mm

Note: Please quote the cylinder model number when ordering spare parts