

## General

Rodless cylinder based on the stainless steel strip sealing technology widely used and tested on bigger bore sizes.

**Available versions:** sliding shoe as standard ("MH").

This system ensures high resistance and long life as the carriage which supports the weight is not tied to the piston and therefore the piston only transfers the movement without bearing any force.

**Air connections:** M5 threaded connections.

All air connections on one end cap version available. (side-back-bottom side)

### Mountings:

- Foot brackets and intermediate supports if needed (depending on the stroke)

- Swivel bracket

- Directly in position via the slot on the end caps- in this conditions the air supply can come directly from the mounting plate.

**Magnetic sensors:** sensors series (1590...., LRS.... and LHS....) can be used directly in the 2 slots on the barrel.

## Construction characteristics

End covers	Anodised aluminium
Barrel	Anodised aluminium
Bands	Stainless steel
External carriage	Anodised aluminium
Sliding bushes	Special technopolymer
Piston	Acetal resin
Cushion bearings	Aluminium
Piston seals	Special NBR
Other seals	NBR

## Technical characteristics

Fluid	Filtered and lubricated air
Working pressure	1,5 - 8 bar
Working temperature	-5°C - +70°C
Max. speed	1 m/s (normal working conditions)
Max. stroke	2,5 meters
Cushioning length	18 mm

Please follow the suggestions below to ensure a long life for these cylinders:

- use clean and lubricated air
- Please adequately evaluate the load involved and its direction, especially in respect to the moving carriage (also see tables for loads and admitted moments).
- avoid high speeds together with long strokes and heavy loads: this would produce kinetic energy which the cylinder cannot absorb, especially if used as a limit stop (in this case use mechanical stop device)
- evaluate the environmental characteristics of cylinder used (high temperature, hard atmosphere, dust, humidity etc.)

**Please note: air must be dried for applications with lower temperature.**

Use hydraulic oils H class (ISO VG32) for correct continued lubrication.

Our Technical Department will be glad to help.

For applications where a low smooth uniform operations speed is required, you must specify this on your purchase order so that we can use the proper special grease.

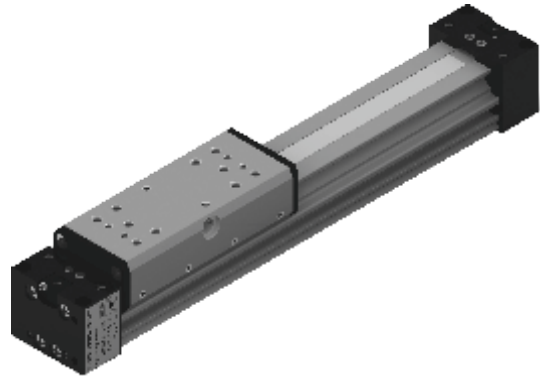
## Use and maintenance

This type of cylinder, due to its characteristics, has to be used within certain criteria. Correct use will give long and troublefree operation. Filtered and lubricated compressed air reduce seal wear. Verify that the load will not produce unforeseen stresses. Never combine high speed with heavy load. Always support the long stroke cylinder with intermediate brackets and never exceed the specified working conditions.

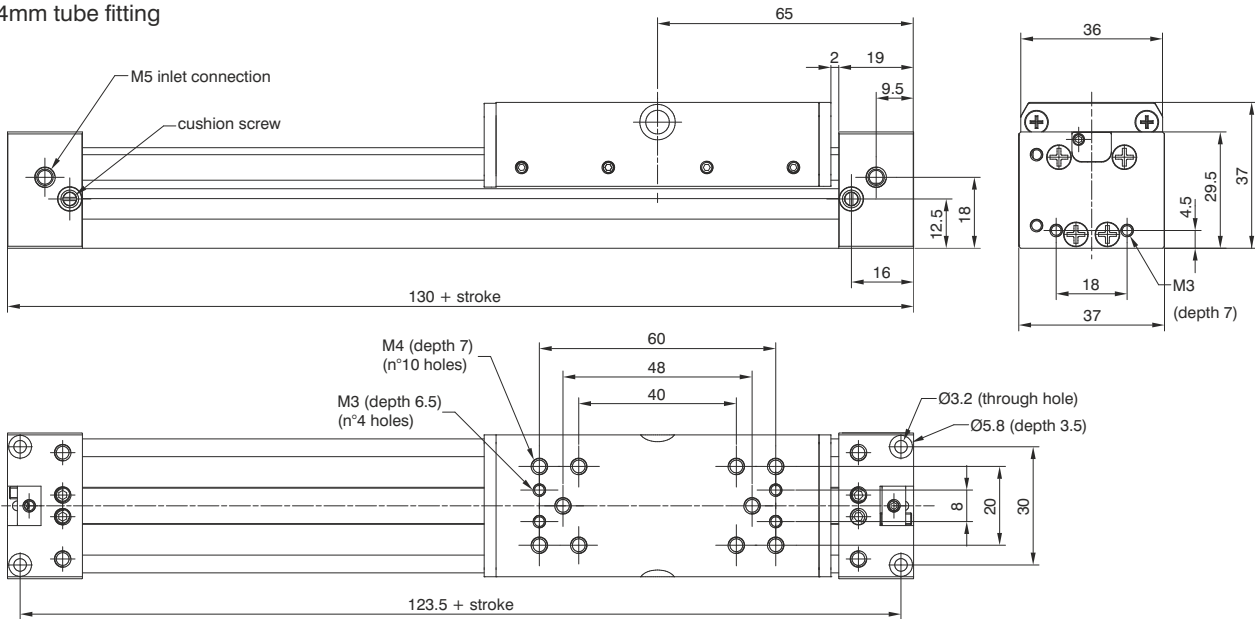
If maintenance is required, follow the instructions supplied with the repair kit.

**Basic version (cylinder with sliding shoes bushes)**

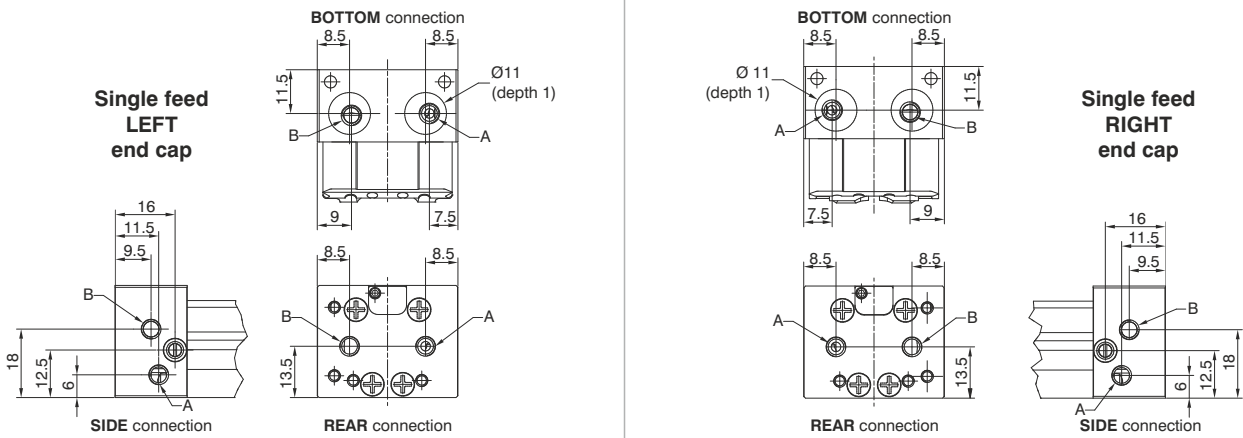
Ordering code
<b>1605.16.stroke.01.MH</b>
Possibility of a single feed cylinder head
<b>1605.16.stroke.02.MH</b> left end cap-side connection
<b>1605.16.stroke.03.MH</b> right end cap-side connection
<b>1605.16.stroke.04.MH</b> left end cap-rear connection*
<b>1605.16.stroke.05.MH</b> right end cap-rear connection*
<b>1605.16.stroke.06.MH</b> left end cap-bottom connection
<b>1605.16.stroke.07.MH</b> right end cap-bottom connection



\* in case of mounting with 1600.16.01F bracket use 4mm tube fitting

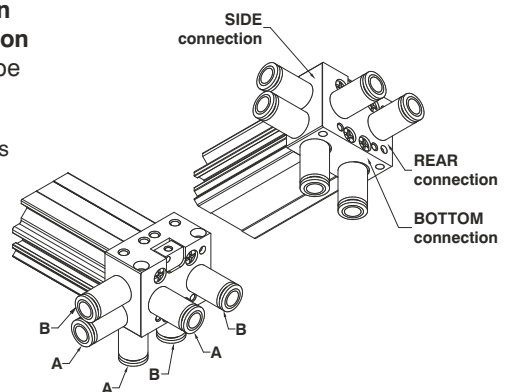
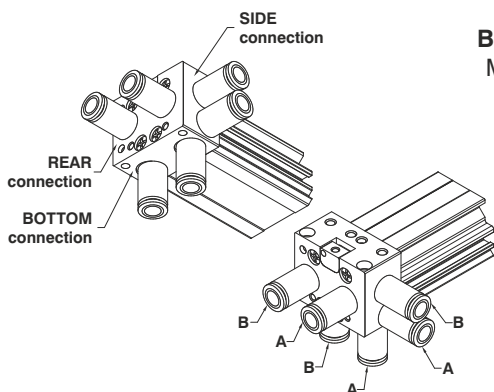


**Possibility of a single feed right or left cylinder head and on 3 different end cap sides**

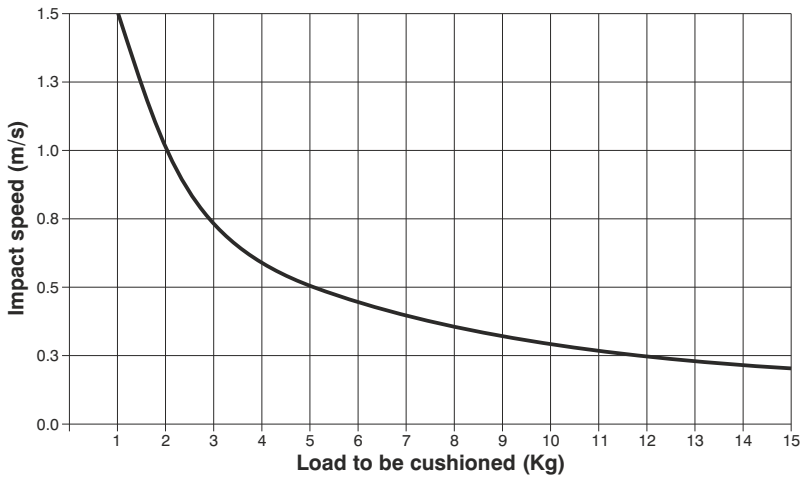


**A = forward stroke connection**  
**B = backwards stroke connection**  
M5 tube Ø4 and Ø6 fittings can be used for air connections.

In case of use with 1600.16.01F mounting and REAR air connections use a 4mm pipe fitting.



**Operating end stroke decelerator diagram**

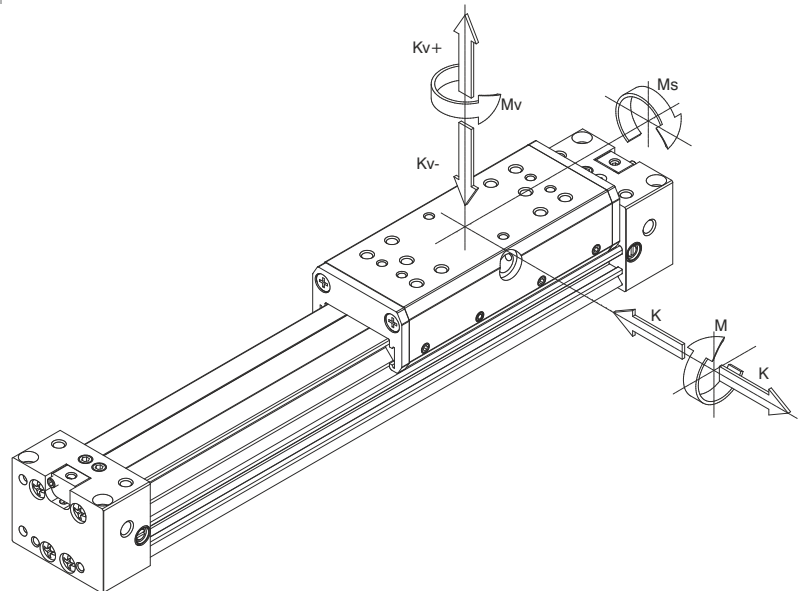


In case of extreme applications close to the maximum allowed values in the graph it is strongly recommended to add external damping systems.

**Suggested loads and moments**

K1	K2	K	M	Ms	Mv
200	250	100	10	2	3
(N)			(Nm)		

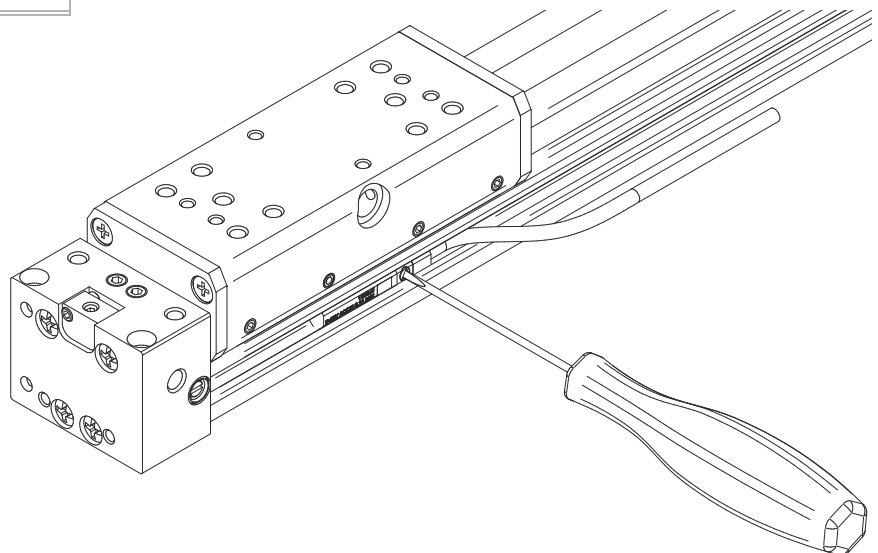
Maximum Load and moments allowed in static or dynamic conditions (max. speed 0,2 m/s)



**Magnetic sensors**

Ordering code

- 1590...
- LRS...
- LHS...



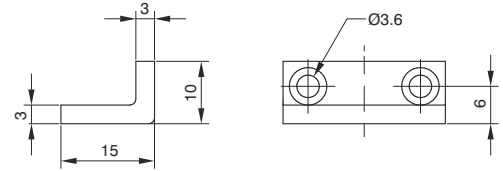
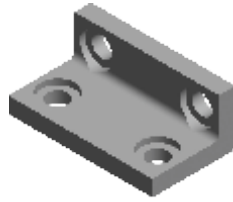
The two side slots allow the direct use of 1590...LRS... and LHS... sensors mounted from the top and positioned via the built in screw.

**Mounting foot brackets**

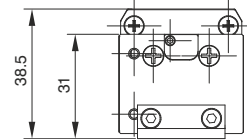
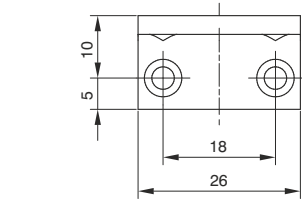
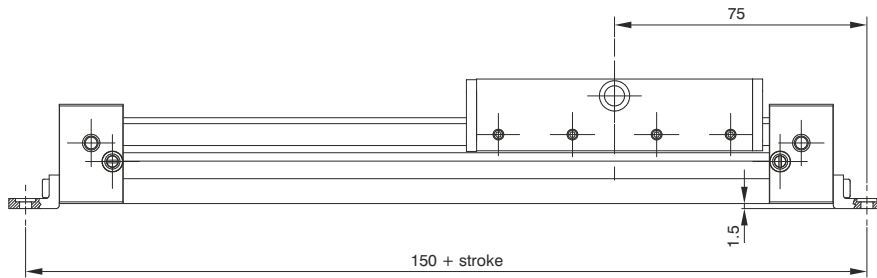
Ordering code

**1600.16.01F**  
(1 piece)

The kit comprises:  
n°1 foot (plated zinc steel)  
n°2 screws (plated zinc steel)



**Attention:** based on the stroke evaluate the need to use also side mounted supports. (see below)

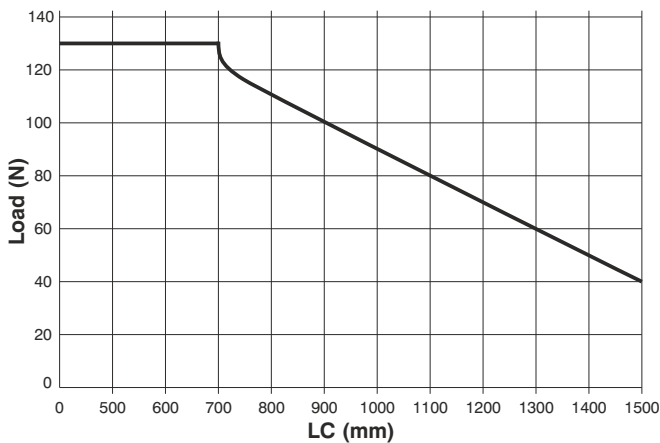
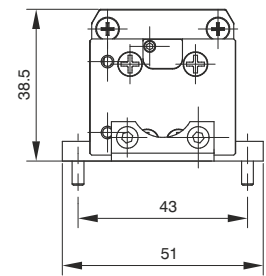
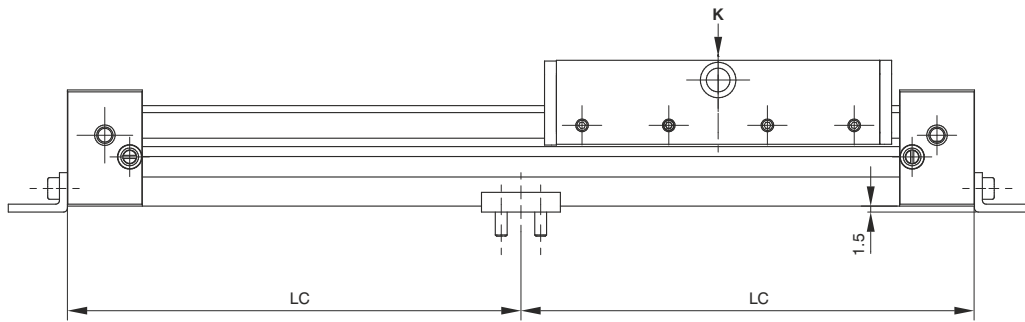
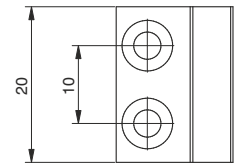
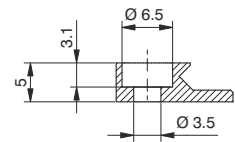
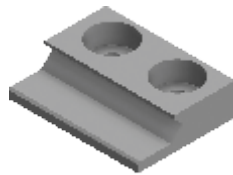


**Intermediate support**

Ordering code

**1600.16.02F**  
(1 piece)

The kit comprises:  
n°1 support (aluminium)  
n°2 screws (plated zinc steel)



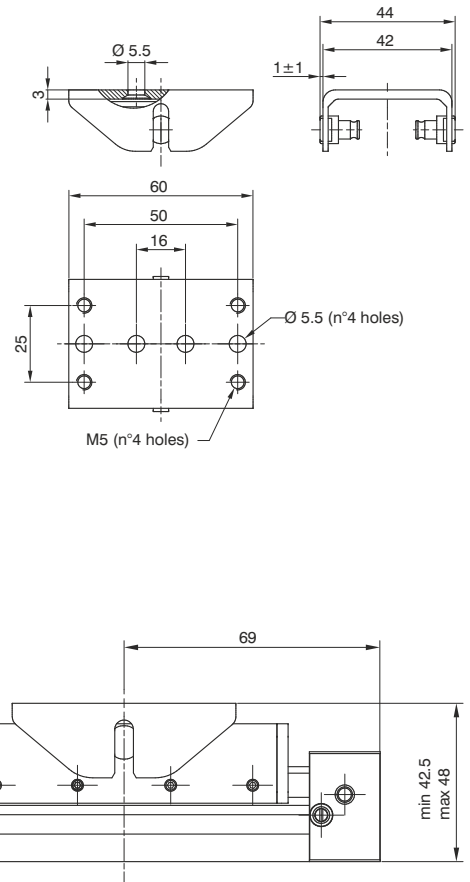
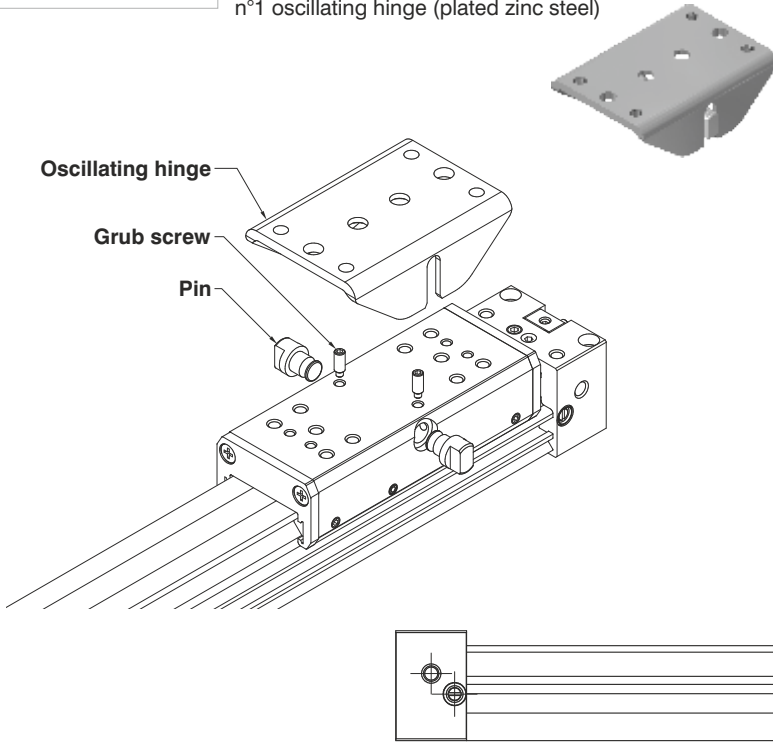
The graph shows the LC limit in conjunction with the applied load K beyond which it is necessary to mount an intermediate side support in order to prevent the barrel from bending.

**Oscillating hinge**

Ordering code

**1600.16.03F**  
(1 piece)

The kit comprises:  
n°2 pins (plated zinc steel)  
n°2 grub screw (steel)  
n°1 oscillating hinge (plated zinc steel)



mounting sequence:

- mount the pin into the dedicated housing
- tighten the blocking grub screws in the dedicated housing

**Direct mounting without brackets**

Ordering code

**1600.16.04F**  
(1 piece)

The kit comprises:  
n°4 screws M3x35 (plated zinc steel)  
n°2 O-Rings (NBR)

**Direct mounting without brackets**

Thanks to the mounting holes with counter bores on the end caps it is possible to mount the cylinder directly onto the mounting surface. Having the end caps and barrel flush and in contact with the mounting plate it is not necessary to use any intermediate mounting brackets even in case of long strokes. It is also possible to supply air to the cylinder directly through the mounting plate through the two air connection on the bottom side of the end cap (06.MH and 07.MH) which are machined with counterbores.

