



Interchangeability

Versatility

Durability

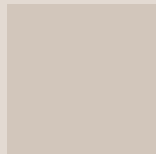
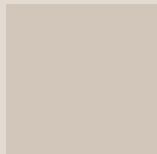
Integration

LINTRA® PLUS ADVANTAGE



>> LINTRA® PLUS

RELIABLE, DURABLE & PROVEN



LINTRA® Plus builds on the well-proven reputation of Norgren's existing LINTRA® series. Optimised to offer maximum operational versatility and cost-effective actuation in a space saving design, LINTRA® Plus provides high performance, combined with absolute reliability.





» REPUTATION PLUS

The new Norgren LINTRA® Plus combines all the features you have come to expect with Norgren's existing LINTRA® series:

- Plus - Higher load capacity from improved piston design
- Plus - Lower static and dynamic friction levels
- Plus - Universal mounting grooves on profile
- Plus - Single ended and alternative porting options
- Plus - Improved dust protection across the whole range

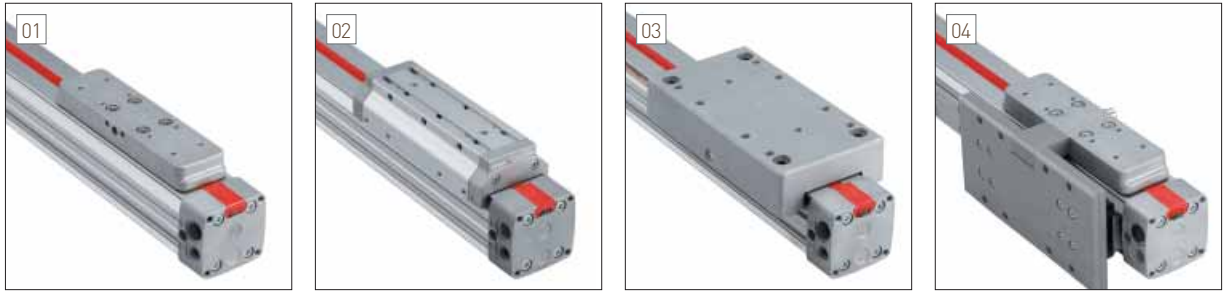
Rodless LINTRA® cylinders are suitable for use in a wide variety of industry sectors. The cost-effective LINTRA® Plus provides the machine design engineer with a high degree of versatility and flexibility due to its alternative guiding systems.

Utilised in numerous mechanical engineering applications, such as:

- » Lifting/Lowering
- » Pick & Place
- » Filling
- » Cutting
- » Feeding/Guiding
- » Sorting
- » Spraying

Lintra Plus is ideal for inclusion in these sectors:

- » Automotive
- » Machine Tool
- » Wood Processing
- » Food Processing & Packaging
- » Material Handling
- » Paper & Packaging
- » Textiles



>> VERSATILITY PLUS

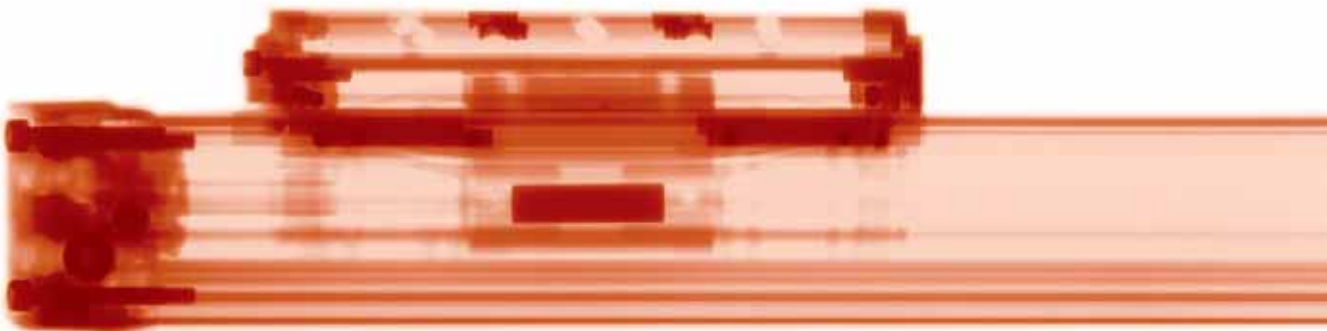
The LINTRA® Plus offers a standardised series, capable of carrying medium to heavy loads or simply transmitting motion to a machine function for maximum design versatility.

THE SERIES HAS FOUR VARIANTS:

- 01 M/146000 - Internal guiding
- 02 M/146100 - External guiding
- 03 M/146200 - Precision roller guiding
- 04 M/146200/P - Precision caged ball linear motion guiding

All versions feature integral pneumatic cushioning, large enough to deal with most applications. Add external shock absorbers for extreme conditions.

See details on page 9



INTEGRATION PLUS

New weight-saving aluminium profile can be directly integrated into your machine. Universal mounting grooves enables direct mounting of the LINTRA® Plus onto proprietary machine building systems and simple attachment of many other components or accessories.



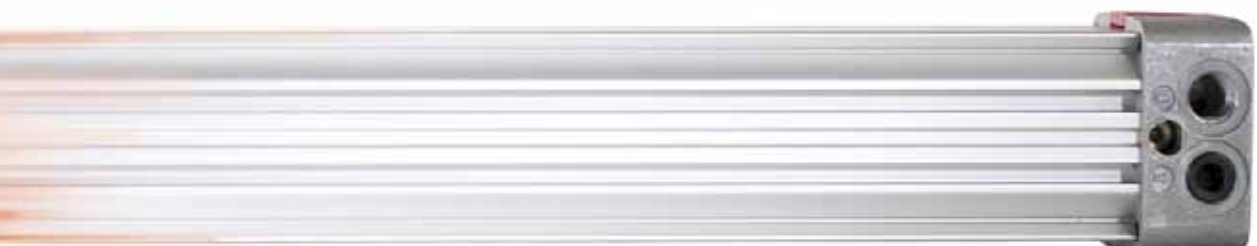
DURABILITY PLUS

Polyurethane piston seals and precision extruded aluminium profile mean that the new LINTRA® Plus offers long life. New wiper seal and cover strip design on all guide system options prevent dirt ingress.



INTERCHANGEABILITY PLUS

LINTRA® Plus is fully interchangeable with the long established Norgren LINTRA® enabling you to replace existing LINTRA® cylinders with LINTRA® Plus without the need for any machine modifications.





M/146000 "INTERNAL GUIDING"

Basic cylinder with internal guiding for light to medium loads

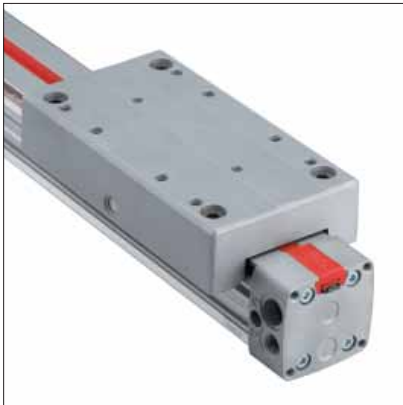
- » New closer mechanism reduces friction for smoother movement
- » New wiper seal and cover strip design provides dust protection as standard
- » New piston design provides 10% higher load capacity than the existing LINTRA®



M/146100 "EXTERNAL ADJUSTABLE GUIDING"

Based on the internal guide LINTRA® Plus, this variant offers...

- » Polyethylene bearings to offer increased load capacity
- » Pre-set and ready to use external guiding
- » Universal mounting grooves and location holes on the guiding bridge



M/146200 "PRECISION ROLLER GUIDING"

Based on the internal guide LINTRA® Plus, this variant offers...

- » Precision roller guides for medium to high loads
- » Hardened steel V-rails embedded in the LINTRA® Plus profile for smooth and precise motion
- » Location holes on the guiding bridge



M/146200/P "PRECISION CAGED BALL LINEAR MOTION GUIDING"

Based on the internal guide LINTRA® Plus, this variant offers...

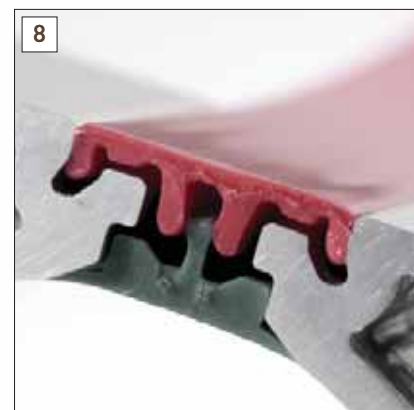
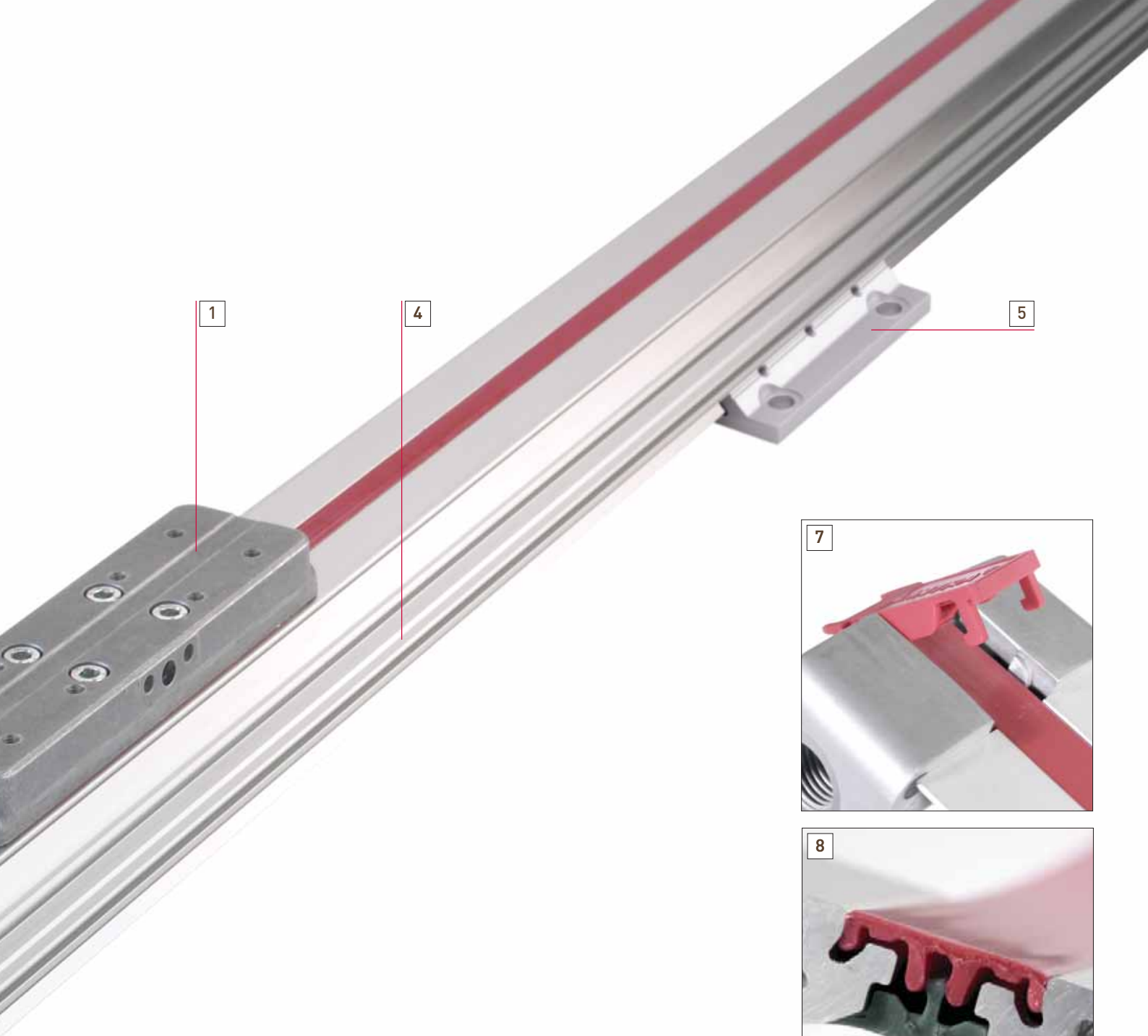
- » A bolt-on guiding system for greater accuracy and higher loads
- » Flexible mounting kit allows integration of customers preferred guiding system
- » Rail system specially dust protected and lubricated

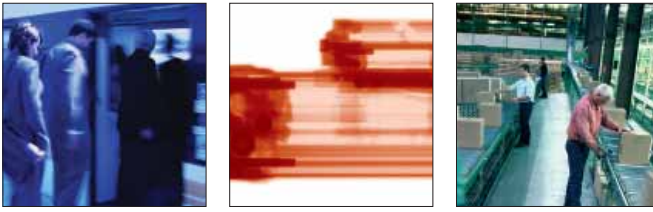
Refer to page 10 for loading information



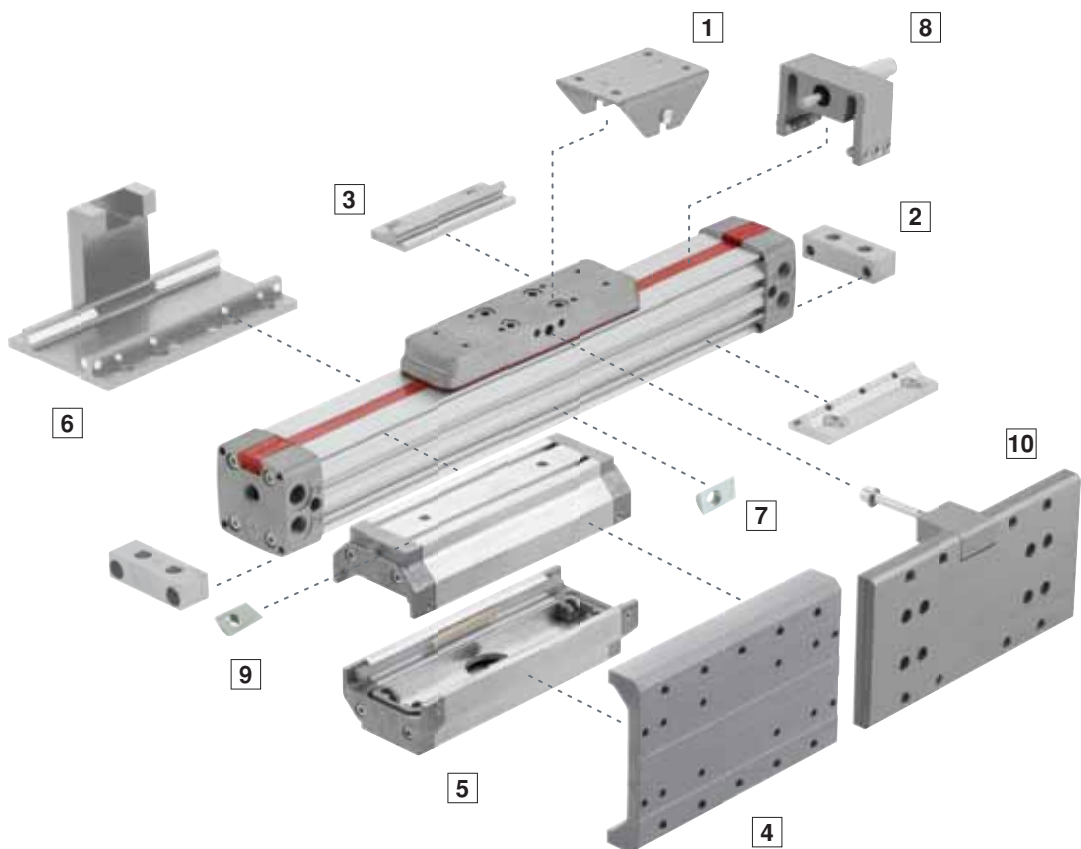
- 1 New wiper seal design provides dust ingress protection across the complete range offering smoother operation and increased cylinder life
- 2 New closer mechanism reduces friction in the carriage assembly resulting in smoother movement
- 3a Advanced strip divider gives better running performance
- 3b Integral wear ring provides additional support and increases load carrying capacity
- 4 Universal mounting grooves allow simple and positive integration into machine design
- 5 Centre support mounting provides support for long stroke applications
- 6 Multiple porting as standard on all LINTRA® Plus models
- 7 Sophisticated strip fixing enables the seal to be replaced without the need for tools
- 8 Patented sealing system using a geometric labyrinth seal prevents dust ingress, increases cylinder life and offers smoother operation
- 9 New reduced weight aluminium profile allows for direct integration into the machine design
- 10 Port identification showing carriage direction







>> LINTRA® PLUS MOUNTINGS AND ASSEMBLY KITS



HIGH FLEXIBILITY COMPLEMENTED BY A WIDE RANGE OF MOUNTINGS AND ASSEMBLY KITS:

- | | |
|---|---|
| 1 SWINGING BRIDGE MOUNTING | 6 CARRIAGE MOUNTING PLATE |
| 2 FOOT MOUNTING | 7 GROOVE KEY |
| 3 CENTRE SUPPORT MOUNTING | 8 ADJUSTABLE STOP (Ø32 AND 40 mm) |
| 4 SIDE MOUNTING PLATE | 9 GROOVE KEY FOR GUIDING BRIDGE |
| 5 SECONDARY CARRIAGE (FREE CARRIAGE) | 10 ASSEMBLY KIT FOR CAGED BALL LINEAR MOTION GUIDE |

>> DEDICATED LINTRA® PLUS RESOURCE CENTRE

Visit www.norgren.com

FOR » Selection software

- » Data sheets
- » 2D / 3D CAD
- » and lots more



LINTRA® PLUS LOADING VALUES

LOADING VALUES FOR LINTRA® CYLINDERS

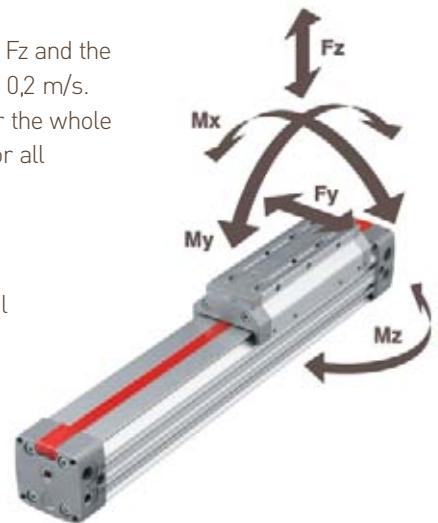
The values given in the equation below show the force in the directions F_y and F_z and the maximum moments M_x , M_y and M_z . All values are applicable for speeds up to 0,2 m/s. A requirement for using these values is a smooth movement of the mass over the whole stroke length of the cylinder. The reference point from which the movement 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:

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

For speeds up to 2 m/s please use our calculation programme LINTRA® - Pneucalc. Available as a free download on the Norgren Home page



Ømm	M/146000					M/146100				M/146200				M/146200/P			
	F_y (N)	F_z (N)	M_x (Nm)	M_y (Nm)	M_z (Nm)	F_y, F_z (N)	M_x (Nm)	M_y, M_z (Nm)	F_y (N)	F_z (N)	M_x (Nm)	M_y, M_z (Nm)	F_y (N)	F_z (N)	M_x (Nm)	M_y, M_z (Nm)	
32	165	500	3	33	10	780	17	43	780	1560	25	64	4000	4000	64	400	
40	330	990	6,5	84	24	1600	39	110	1500	3000	58	160	4000	4000	64	400	
50	440	1320	11	120	35	2000	65	160	2000	4000	97	240	8000	8000	180	800	



>> LINTRA® PLUS TECHNICAL DATA

TECHNICAL DATA

Medium:	Compressed air, filtered, lubricated or non-lubricated
Operating Pressure:	1 to 8 bar
Operating Temperature:	-30°C to +80°C max. (Consult our Technical Service for use below +2°C)
Cylinder Diameter:	32, 40, 50 mm
Speed:	Up to 2m/s; Special variants for low or high speed on request
Strokes:	Made to order Maximum Strokes Standard: Ø 32 and 40 mm = 8500 mm Ø 50 mm = 8000 mm Maximum Strokes M/146200/P: Ø 32 and 40 mm = 1500 mm Ø 50 mm = 2600 mm

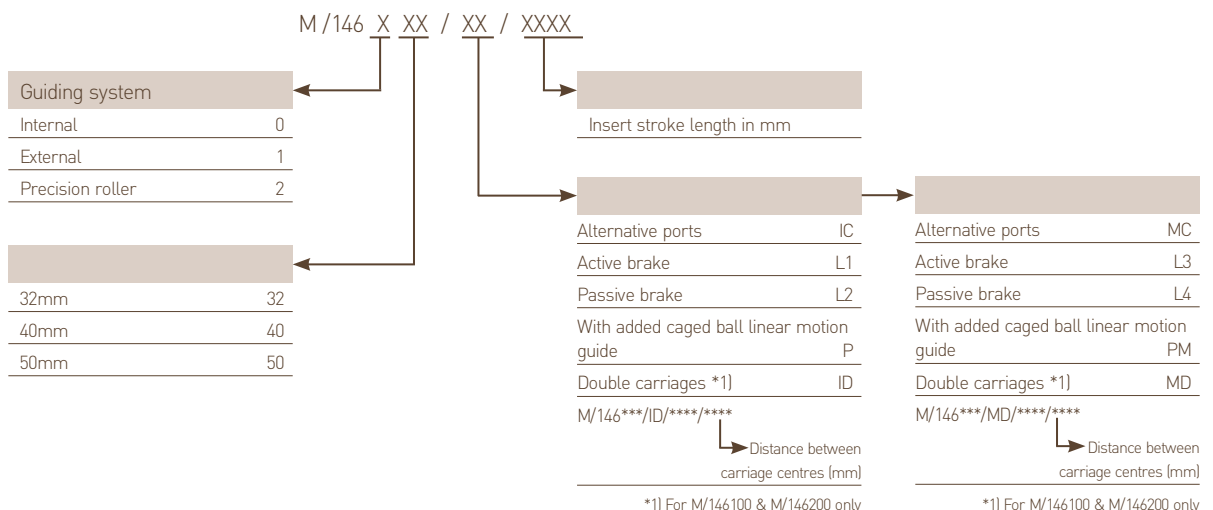
MATERIAL

Pressure die cast aluminium	End cover, cover, guiding bridge, carriage and closer
Anodised aluminium alloy	Yoke, guiding bridge, carriage and profile
Polyurethane	Sealing strip, piston seal, wiper
Polyamide	Cover strip
Nitrile rubber	Seals

ALTERNATIVE CYLINDER

ATEX version (II 2G T4, II 3D T4) on request

HOW TO ORDER



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