

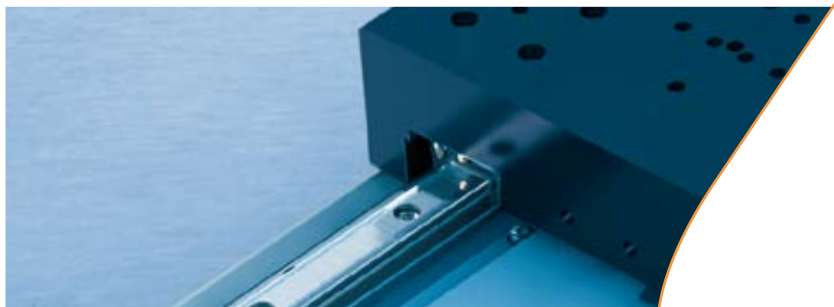
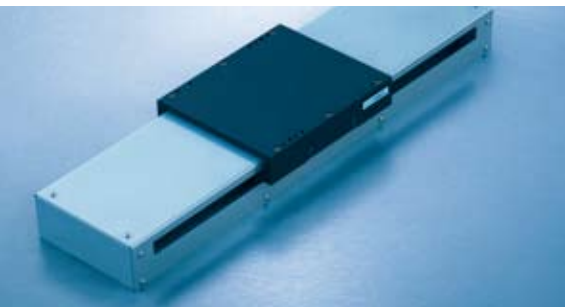
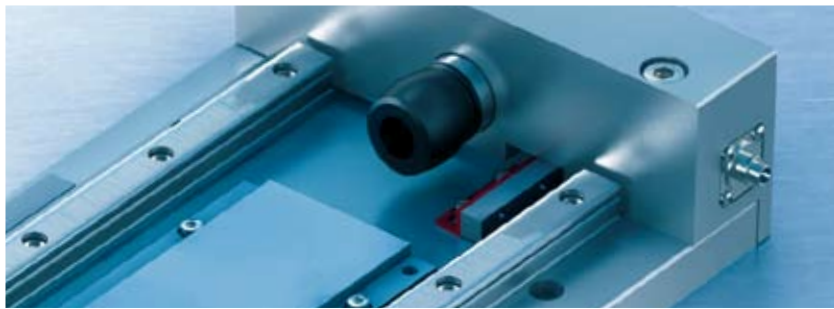
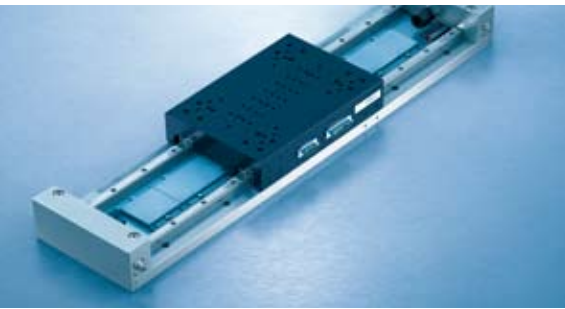
MOTION & CONTROL TECHNOLOGY ▷ LINEAR ▷ ROTATIVE ▷ DIRECT ▷ CONVENTIONAL

TAKE THE LEAD

LINEAR MOTION
TECHNOLOGY GMBH

KML[®]

STANDARD LINEAR MOTOR SYSTEMS
SERIES LMS 2



LMS 2

The LMS 2 series of the standardised KML Linear Motor Systems was developed to position small to medium sized loads with high dynamics. The series distinguishes itself by a very high force density, which can be traced back to the compact assembly and a powerful motor.

Due to the stiff and low oscillation construction a high accuracy is possible, even with highest dynamics.

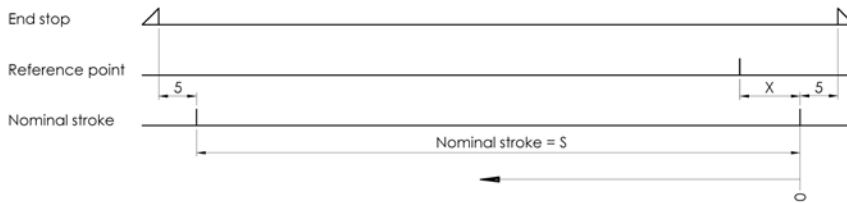
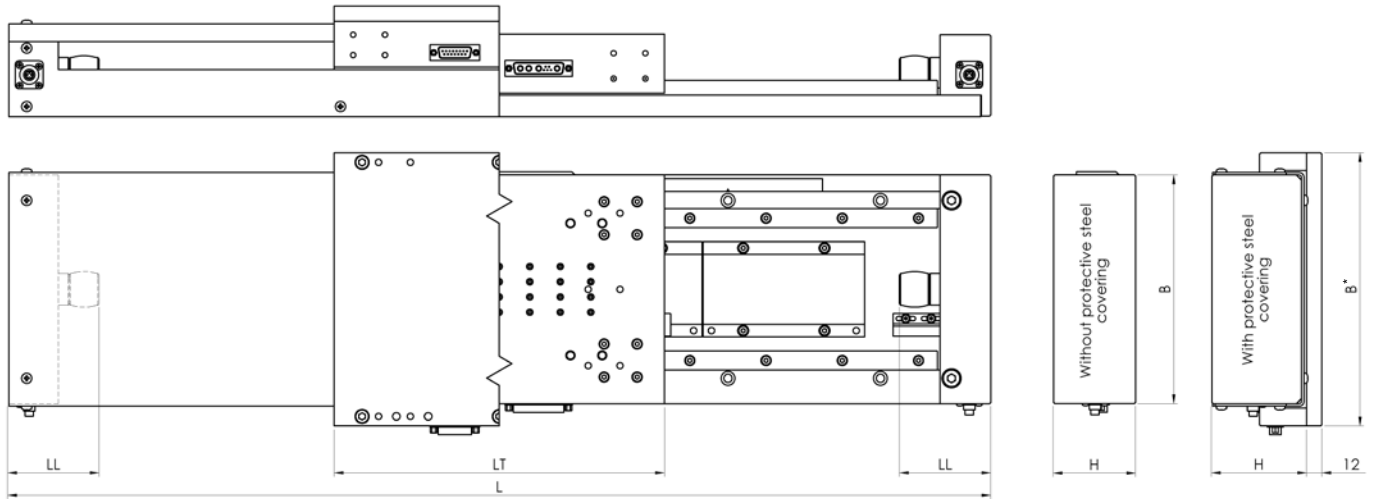
The stroke length – please refer to the type designation code – can be manufactured according customers specifications due to the fact of flexibility of the model variation. Because of the large number of different motors available and the extensive range of accessories it is possible to create a system which is specified to your requirements. KML Linear Motor Systems from the LMS 2 series can optionally be combined with other multiple axis solutions from other type series.

Characteristics:

- high accuracy and repeatability
- high rigidity
- precise running accuracy
- standardised covered configuration
- almost no maintenance

Fields of application:

- precision applications
- cross table
- robotics
- laser machining
- X-rays
- AOI applications
- Pick & Place machines
- test systems
- printers
- handling



Acceleration Curves LMS2-18 and LMS2-23

Taking into consideration the movable external mass (customer mass) and the peak force or continuous force, the maximal possible acceleration of the linear motor system can be determined by using the diagram.

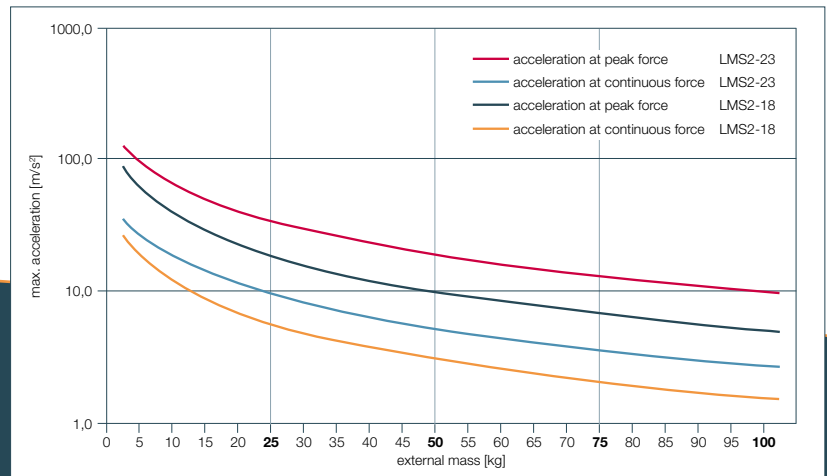


Table 1

size	width B [mm]*	height H [mm]*	comment
2-18	180 (215)	65 (75)	-
2-18V	180 (215)	85 (95)	strengthened baseplate
2-23	230 (265)	65 (75)	-
2-23V	230 (265)	85 (95)	strengthened baseplate

*) The values in brackets refer to systems with protective steel coverings.

Table 2

dimensions		
L	total length [mm]*	$L = S + 2 \times (LL + 5) + N \times LT + (N - 1) \times (LL2 + 5)$
S	nominal stroke (standard nominal stroke, see also table 5) [mm]	-
LL	length of the end stop system with elastomer dampers (ES042) [mm]	72
LL	length of the end stop system with hydraulic dampers (ES070 - ES292) [mm]	132
N	number of slides [1]	-
LT	length of the slide [mm]	260
LL2	length of the end stop between the slides with elastomer dampers ES042) [mm]	26
LL2	length of the end stop between the slides with elastomer dampers (ES070 - ES292) [mm]	110

*) Only valid for systems without protective coverings and for systems with protective steel coverings. For systems with bellows, please see your contact person.

- S corrosion protection**
- S limited corrosive protection
 - exterior aluminium parts are anodised
 - steel parts blank or gun metal finished
 - sheet metal parts made of stainless steel
 - linear bearings normal steel
 - C broader corrosion protection
 - all aluminium parts are anodised
 - steel parts made of stainless steel
 - sheet metal parts made of stainless steel
 - linear bearings made of stainless steel or coated

A01 output signal and signal period of the measuring system Table 6

	output signal	pitch	signal period	method
A01	1Vss	20µm	20,00µm	optical
A02	TTL	20µm	5,00µm	optical
A03	TTL	20µm	1,00µm	optical
A04	TTL	20µm	0,50µm	optical
A05	TTL	20µm	0,20µm	optical
A06	TTL	20µm	0,10µm	optical
A07	TTL	20µm	0,05µm	optical
A09	1Vss	1000µm	40,00µm	inductive

P0050 accuracy class of the measuring system and compatibility Table 7

	accuracy [µm/1000mm]	A01	A02	A03	A04	A05	A06	A07	A09
P0010	±1	X	X	X	X	X	X	X	
P0020	±2	X	X	X	X	X	X	X	
P0030	±3	X	X	X	X	X	X	X	
P0050	±5	X	X	X	X	X	X	X	X
P0100	±10								X
P0200	±20								X

- CD1 measuring system's direction of counting**
- CD1 system counts positively from right to left
 - CD2 system counts positively from left to right
 - CD7 valid only for systems with two slides, right slide counts positively from right to left, left slide counts positively from left to right
 - CDS the direction of counting is adjusted according to customer specification (look at the system in plan view, connectors face downwards)

LR1 **position of the reference point**

LR0 without reference point
 LR1 10mm before the negative position switch
 LR2 in the middle of the stroke
 LR3 10mm before the positive position switch
 LR4 in systems with two slides, there is a reference point 10mm before both the positive and negative position switches
 LRS reference point adjusted according to customer specifications

ES042 **type of end stop** Table 8

	construction	energy capacity [Nm]	travel [mm]
ES042	elastomer	42	12
ES070	hydraulic	70	15
ES150	hydraulic	150	15
ES292	hydraulic	292	15

ESXXX special types, KML designated code for customised machines

LS1 **end switch**

LS0 without end switch
 LS1 PNP break contact at both ends, for systems with several slides extra break between each slide
 LSS end switch to be defined by the customer

S **special design**

For some configurations (SSX, XXXXX, LRS, LSS) a final S must be added at the end of the code.

Possible additional special designs:

- designs with increased load capacity
- designs with increased running accuracy precision, the slide length is 340mm
- air seal interface
- special customer drilling template
- pneumatic mass compensation
- special customer wishes on request



▶ TORQUE MOTORS
RDD SERIES



The developed torque motors have been designed with a stationary or moveable hollow shaft and have a high energy spectrum. Precise movements and positioning can be achieved with high continuous and peak torques at high speeds.

Characteristics:

- high speed (several 1000 rotations per min)
- high torque
- compact construction
- high accuracy and repeatability

Fields of application:

- rotary indexing tables
- winder drives
- grinding spindle drive
- precision rotary units

▶ ACCESSORIES

All standard systems can be delivered with the necessary accessories. This includes rigid support structures, mounting accessories, energy chains, ready-to-use cables and controls, including servo and motion controllers.

▶ SERVICES

Defined motion sequences are simulated, an optional measurement and logging of the systems precision is possible using a laser interferometer. A complete combination of mechatronic assemblies with visualisation software solutions allows a fast integration of our system solutions in your machine. Initial operation and on-site maintenance as well as training round out our services.

TAKE THE LEAD THROUGH INNOVATION.

KML is setting new standards for simple as well as complex, dynamic and precise assembly group solutions with linear and rotary drive axis. Due to our long experience, we can look back on many successful standardised and individual system solutions.

Our high quality standards are guaranteed by our demand for the best personnel, process stability and operational reliability.

Take the lead – with innovation & passion.

CUSTOMISED SOLUTIONS

Optimised individual solutions can be created in cooperation with our customers who have needs not covered by our standard range.

Conception

Wide range of knowledge in:

- mechanics
- electronics
- measurement and test engineering
- drive and control technology
- programming and visualisation

Construction and Development

Years of experience in the implementation of individual system solutions with conventional and direct drive technologies through:

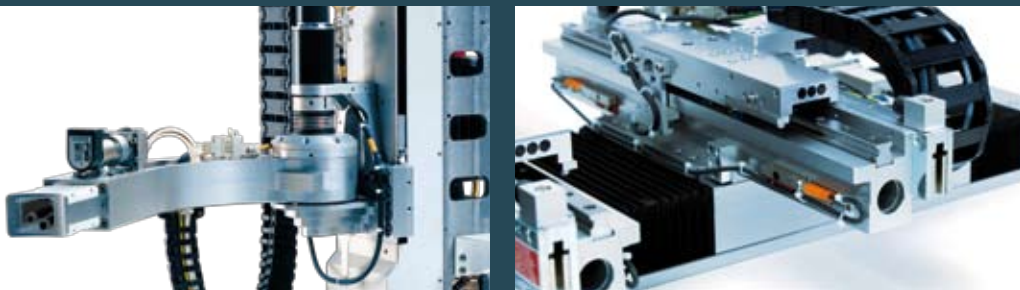
- synergetic networking the different drive technology sectors with mechanical construction
- wide-ranging manufacturing knowledge from cost-efficient prototypes to mass production

- professional application of new technologies
 - CFP and ceramic materials
 - various coating technologies (nanotechnology)
 - new production methods to raise cost-efficiency
- use of integral concepts in conjunction with casting technologies to optimise function, production and costs
- 3D CAD systems with integrated FEM-Software allow for a construction with optimised, rigidity, strength, vibration and is thermally optimised

Quality Assurance

Process consulting and monitoring through:

- comprehensive measuring equipment
- qualified testing processes
- preclusion of errors from the development stage on with failure mode and effect analysis (FMEA)



Manufacturing

Implementation of sophisticated single and multiple axis solutions

- in flexible production areas for a large range of quantities
- with a wide range of equipment for just about every branch of industry
- for clean room applications (up to clean room Class 3 according to JIS 9920)

Start-up and Measuring

High quality, speedy and reliable machine start-up.

- KML factory start-up
- customer specific tests with logging and measuring

Service and Training

Always up to date.

- 24-hour-hotline
- on-site customer start-up
- employee training

KML Linear Motion Technology GmbH

Headquarters

Daumegasse 1-3, A-1100 Wien
Telephone: +43 1 6415030 0, Fax: +43 1 6415030 50
E-mail: office@kml.at, Web: <http://www.kml.at/>

Sales Austria

Reinhard Mauerschitz
Daumegasse 1-3, A-1100 Wien
Telephone: +43 1 6415030 35, Fax: +43 1 6415030 50
Mobile: +43 699 1 403 99 71
E-mail: r.mauerschitz@kml.at, Web: <http://www.kml.at/>

Sales Office Germany

Jan Brandt
Mauerstraße 8, D-98527 Suhl
Telephone: +49 3681 453789 10, Fax: +49 3681 453789 20
Mobile: +49 160 9464 1468
E-mail: j.brandt@kml.at, Web: <http://www.kml.at/>

