BAUMÜLLER

be in motion be in motion

LSE – LSC – LSA

7000 8000 9000 10000

Linear Motors

90 100

13,750 14,000 14,250 14,500 14,750

11,750 12,750 13,750

14,750

14,450 14,550 14,650

11,000 12,000 13,000 14,000

Baumüller linear motors have been designed for use as direct drives with synchronous motors. Customized motor concepts can be created using a modular system, meaning that Baumüller linear motors can achieve maximum thrust forces of up to 14,750 N.

Direct Drive Technology with Baumüller Linear Motors

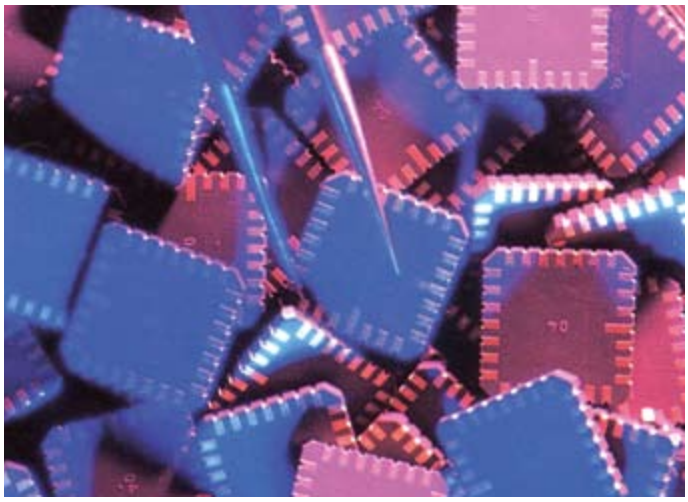
Baumüller linear motors are synchronous motors. They consist of a primary with a wound lamination stack and a secondary with permanent magnets (magnetic strip). The primary is laminated with carbon fiber. This allows Baumüller linear motors to achieve consistently high stiffness and maximum continuous force, thanks to their improved capacity for heat dissipation.

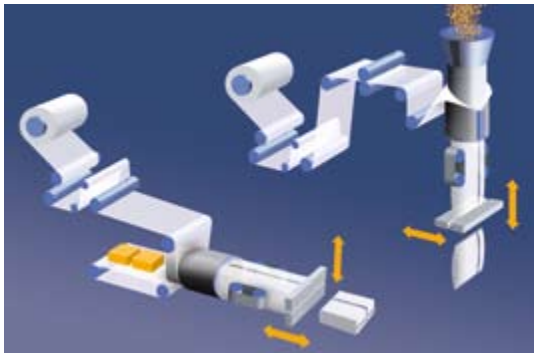
The scope of products and services provided is not merely limited to linear motor components. On the contrary, Baumüller offers the user a plug & play solution with clearly defined interfaces that can be immediately connected to his machine, in the form of a very compact and flexibly designed complete linear axis, LSA, which is essentially comprised of linear components, a guidance system, a mechanical structure, and a length measuring system.

Customized Motor Concepts

Baumüller synchronous linear motors have been designed to offer a highly scaled, modular system. This allows the output and structure to be individually tailored to each application.

For example, the various secondary segments can be used to create traverse paths of any distance using standardized lengths. The basic linear motor can also be expanded by adding other components to it, such as water cooling and a stainless steel cover for the secondary.





15,000

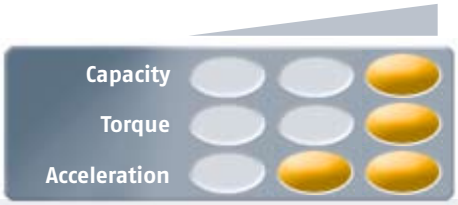
Baumüller linear motors – factors of their success:

- replacement of traditional solutions for linear motion that are not driven directly (spindle, belt, rack-and-pinion, chain drives, etc.).
- tried-and-tested converter and controller technology used in Baumüller rotary drive systems can be used for linear systems without restriction.
- modular system with various motor frame sizes and lengths: optimum solution in terms of cost
- designed to give maximum performance with feed forces of up to 14,750 N and speeds of up to 10 m/s
- plug & play solutions: minimize R&D and assembly costs
- various winding designs for all motor sizes to ensure optimum velocity adjustment
- carbon fiber lamination of the primary, optional for the secondary: increased productivity and service life
- up to IP65 type of protection for all motor components: increased service life suitable for a wide variety of ambient conditions
- motor winding protected against thermal overload by means of integrated temperature sensors (temperature detector and KTY84)
- highly flexible, tension-relieved and screened power cable feed
- repeat accuracy of down to 2 µm

LSA – The Plug & Play Solution

The Baumüller LSA linear axis High Performance has been designed for the upper power range and enables velocities of up to 10 m/s, accelerations of up to 150 m/s² and a repeat accuracy of down to 2 µm to be achieved, depending on the length measuring system used.

- very compact design, minimum installation space required
- individual fixing options
- minimum weight
- maximum velocities of up to 10 m/s
- maximum acceleration of up to 150 m/s²
- repeat accuracy of down to 2 µm
- defined mechanical and electrical interfaces



LSA – Technical Data

		LSA 18 xxx	LSA 22 xxx	LSA 33 xxx
F_N	[N]	870	1870	3280
F_{max}	[N]	1660	3810	7050
v_{max}	[m/s]	10	10	10
a_{max}	[m/s²]	150	150	150
width x height	[mm]	180 x 75	220 x 80	330 x 100
max. length	[mm]	3000	3000	3000

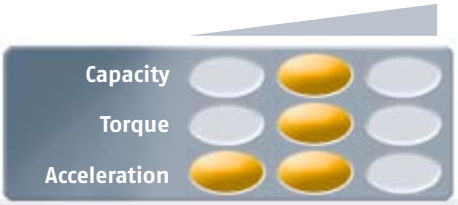
		LSA 18 xxx	LSA 22 xxx	LSA 33 xxx
F_N	[lbf]	196	420	737
F_{max}	[lbf]	373	856	1584
v_{max}	[ft/s]	33	33	33
a_{max}	[ft/s²]	491	491	491
width x height	[in]	ca. 7.1 x 2.95	ca. 8.7 x 3.15	ca. 13 x 3.94
max. length	[in]	ca. 118	ca. 118	ca. 118

Safety function: safety shock absorber, thermal protection (motor); Power chain: IGUS; Length measuring systems: magnetic/optical
Subject to change. The values specified are maximum values. For details, please refer to the relevant technical documentation.

LSA 14 – The Plug & Play Solution

The Baumüller LSA linear axis Middle Performance has been primarily designed for use in medium-performance linear packaging and handling applications and is particularly convincing thanks to its excellent price/performance ratio.

- very compact design, minimum installation space required
- individual fixing options for cable drag chain, brake, etc.
- minimum weight
- maximum velocities of up to 8 m/s
- maximum acceleration of up to 40 m/s²
- repeat accuracy of down to 5 µm
- defined mechanical and electrical interfaces



LSA – Technical Data

		LSA 14 xxx
F_N	[N]	700
F_{max}	[N]	1880
v_{max}	[m/s]	8
a_{max}	[m/s²]	40
width x height	[mm]	211 x 92
max. length	[mm]	6000

		LSA 14 xxx
F_N	[lbf]	157
F_{max}	[lbf]	422
v_{max}	[ft/s]	26
a_{max}	[ft/s²]	131
width x height	[in]	ca. 8,3 x 3,62
max. length	[in]	ca. 236

Safety function: safety shock absorber, thermal protection (motor); Power chain: IGUS; Length measuring systems: magnetic/optical
Subject to change. The values specified are maximum values. For details, please refer to the relevant technical documentation.

LSE 10 – The Customized Solution

The LSE 10 motor series is characterized by high continuous forces and an extremely compact design. Due to these features, it is ideal for use in applications in extremely confined spaces. LSE 10 linear motors are also available with water cooling for applications with maximum continuous load requirements, alternating loads or high processing forces.

- modular system: optimum solution in terms of cost
- use of carbon fiber lamination: increased productivity and service life
- minimum latching forces due to oblique magnets
- high velocities and accelerations: increased productivity
- optional stainless steel cover for the secondary facilitates use in a wide variety of ambient conditions
- up to IP65 type of protection for all motor components

LSE 10 linear motors are available in uncooled, externally ventilated and water cooled versions.

LSE 10 – Technical Data

		LSE 10 W 06xx	LSE 10 W 08xx	LSE 10 W 10xx	LSE 10 W 13xx	LSE 10 W 16xx	LSE 10 W 20xx	LSE 10 W 26xx	LSE 10 W 32xx
F_N [1]	[N]	870	1380	1870	2580	3280	3950	5220	6480
F_{max}	[N]	1660	2730	3810	5430	7050	8670	11710	14750
v_{max}	[m/s]	10	10	10	10	10	10	10	10
a_{max}	[m/s²]	150	150	150	150	150	150	150	150

		LSE 10 W 06xx	LSE 10 W 08xx	LSE 10 W 10xx	LSE 10 W 13xx	LSE 10 W 16xx	LSE 10 W 20xx	LSE 10 W 26xx	LSE 10 W 32xx
F_N [1]	[lbf]	196	310	420	580	737	888	1173	1456
F_{max}	[lbf]	373	613	856	1220	1584	1948	2631	3315
v_{max}	[ft/s]	33	33	33	33	33	33	33	33
a_{max}	[ft/s²]	491	491	491	491	491	491	491	491

1) Rated forces for water cooled versions
Subject to change. The values specified are maximum values. For details, please refer to the relevant technical documentation.

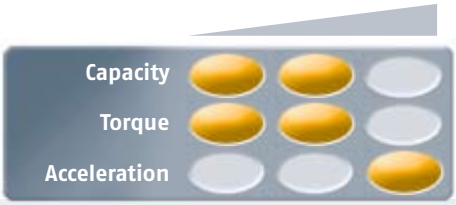
LSC – The Ironless Solution

Baumüller's LSC ironless linear motors achieve maximum rates of current and force rise and are, therefore, suited to highly dynamic applications with maximum stiffness relative to disturbing forces. Due to its principle of operation, this ironless linear motor does not apply any forces of attraction to the guidance system. As no other latching forces occur, this motor is able to achieve a unique degree of synchronism.

- modular system: optimum solution in terms of cost
- no magnetic forces of attraction on the guidance system: optimal sizing of the guidance system
- no latching forces: improved product quality
- maximum rates of current and force rise: increased productivity

240,000 270,000

LSC 50 linear motors are available in an uncooled version.



LSC – Technical Data

		LSC 50G
F_N	[N]	515
F_{max}	[N]	2300
v_{max}	[m/s]	10
a_{max}	[m/s²]	150

		LSC 50G
F_N	[lbf]	116
F_{max}	[lbf]	517
v_{max}	[ft/s]	33
a_{max}	[ft/s²]	491

Subject to change.
The values specified are maximum values.
For details, please refer to the relevant technical documentation.

Headquarters

Baumüller Nürnberg GmbH
Ostendstraße 80–90, DE–90482 Nürnberg
T: +49 (0) 911 5432 – 0, F: +49 (0) 911 5432 – 130
www.baumueller.com

Baumüller Anlagen–Systemtechnik GmbH & Co. KG
Ostendstraße 84, DE–90482 Nürnberg
T: +49 (0) 911 54408 – 0, F: +49 (0) 911 54408 – 769
www.baumueller.com

Baumüller Reparaturwerk GmbH & Co. KG
Andernacher Straße 19, DE–90411 Nürnberg
T: +49 (0) 911 9552 – 0, F: +49 (0) 911 9552 – 999
www.baumueller.com

Nürmont Installations GmbH & Co. KG
Am Keuper 14, DE–90475 Nürnberg
T: +49 (0) 9128 9255 – 0, F: +49 (0) 9128 9255 – 333
www.nuermont.com

Subsidiaries

Australia
Baumüller Australia Pty. Ltd.
19 Baker Street, Botany NSW 2019, Sydney, AU
T: +61 2 83350 – 100, F: +61 2 83350 – 169

Austria
Baumüller Austria GmbH
Im Bäckerfeld 17, AT–4060 Leonding
T: +43 (0) 732 674414 – 0, F: +43 (0) 732 674414 – 32

Brazil
NC Service Indústria e Comércio Ltda.
Av. Tamboré, 1217 Barueri–SP, BR–06460–000
T: +55 (0) 11 4195 – 0502, F: +55 (0) 11 4195 – 2479

China
Baumueller Automation Equipment
Trading (Shanghai) Co. Ltd., Cailun Rd. 88,
Pudong Zhangjiang, 201203 Shanghai, CN
T: +86 (0) 21 5855 1533, F: +86 (0) 21 5855 9487

China
Beijing Yanghai Automation Technology Co., Ltd.
Room 1008, No.7, Huaqing Business Building,
Iluaqing Garden, Wudaokou, Haidian District,
100083 Beijing, CN
T: +86 (0) 10 8286 7980, F: +86 (0) 10 8286 7987

China
Sunary Automatic Technology Limited Company
3rd Floor No.476, Chunxiao Rd., Zhangjiang
High–Tech Park Pudong, 201203 Shanghai, CN
T: +86 (0) 21 5080 9898, F: +86 (0) 21 5308 7675

Czech Republic, Slovakia
VAE Prosys s.r.o., Varsavska 9a, CZ–70900 Ostrava
T: +420 596 616 555, F: +420 596 616 777

Denmark
Robotek EL & Teknik A/S
Blokken 31, Postbox 30, DK–3460 Birkerød
T: +45 4484 7360, F: +45 4484 4177

Finland
Kontram Oy
Olarinluoma 12, P.O.Box 88, FI–02201 Espoo
T: +358 9 8866 4500, F: +358 9 8866 4799

France
Baumüller France S.à.r.l., Zone de la Malnoue 39,
Avenue de l´Europe, FR–77184 Emerainville
T: +33 (0) 1 6461 6622, F: +33 (0) 1 6461 6006

France
Baumüller France S.à.r.l. (Strasbourg)
9 rue de la Durance, FR–67100 Strasbourg
T: +33 (0) 3 8840 1251, F: +33 (0) 3 8840 0724

Germany – Darmstadt
Baumüller Nürnberg GmbH
Waldstraße 1, DE–64347 Griesheim
T: +49 (0) 6155 8430 – 00, F: +49 (0) 6155 8430 – 20

Germany – Düsseldorf
Baumüller Nürnberg GmbH
Jacob–Kaiser–Str. 7, DE–47877 Willich–Münchheide
T: +49 (0) 2154 487 – 0, F: +49 (0) 2154 487 – 59

Germany – Dresden
Baumüller Nürnberg GmbH
Nordstraße 57, DE–01917 Kamenz
T: +49 (0) 3578 3406 – 0, F: +49 (0) 3578 3406 – 50

Germany – Freiberg
Nürmont Installations GmbH & Co. KG
Am Junger Löwe Schacht 11, DE–09599 Freiberg
T: +49 (0) 3731 3084 – 0, F: +49 (0) 3731 3084 – 33

Germany – Hannover
Baumüller Nürnberg GmbH
Bohlenweg 10, DE–30853 Langenhagen
T: +49 (0) 511 771 968 – 0, F: +49 (0) 511 771 968 – 77

Germany – München
Baumüller Reparaturwerk GmbH & Co. KG
Meglingerstraße 58, DE–81477 München
T: +49 (0) 89 748 898 – 0, F: +49 (0) 89 748 898 – 55

Germany – Nürnberg
Baumüller Nürnberg GmbH
Ostendstraße 80–90, DE–90482 Nürnberg
T: +49 (0) 911 5432 – 501, F: +49 (0) 911 5432 – 510

Germany – Stuttgart
Baumüller Nürnberg GmbH
Im Ghai 12, DE–73776 Altbach
T: +49 (0) 7153 61036 – 0, F: +49 (0) 7153 61036 – 29

Germany – Stuttgart
Nürmont Installations GmbH & Co. KG
Im Ghai 12, DE–73776 Altbach
T: +49 (0) 7153 92798 – 0, F: +49 (0) 7153 92798 – 99

Great Britain
Baumüller (UK) Ltd.
14 Redlands Centre, GB–Coulsdon, Surrey CR5 2HT
T: +44 (0) 208 – 763 2990, F: +44 (0) 208 – 763 2959

India
Baumüller KAT India Pvt. Ltd.
4th Floor, Commerce Avenue, Mahaganesh Colony,
Paud Road, IN–411038 Pune
T: +91 20 254596 82, F: +91 20 254596 84

Italy
Baumüller Italia S.r.l.
Viale Italia 12, IT–20094 Corsico (Mi)
T: +39 02 45100 – 181, F: +39 02 45100 – 426

Netherlands
Baumüller Benelux B.V.
Platinastraat 141, NL–2718 SR Zoetermeer
T: +31 (0) 79 3614 – 290, F: +31 (0) 79 3614 – 339

Poland
Mekelburger Polska
Ul. Kóscielna 39 F/3, PL–60537 Poznán
T: +48 (0) 61 8481 520, F: +48 (0) 61 8481 520

Russia
Prosensor
Zavadoskaj 1b/2, Moscow, 124365, RU
T: +7 495 6428 476, F: +7 495 6428 477

Slovenia
Baumüller Dravinja d.o.o.
Delavska cesta 10, SI–3210 Slovenske–Konjice
T: +386 3 75723 – 00, F: +386 3 75723 – 32 / 33

South Africa
Motion Tronic cc
Unit 18 Wareing Park, ZA–3610 Pinetown
T: +27 31 7011620, F: +27 86 6150597

South Korea
Bomac Systems
712 Yucheon Factophia, 196 Anyang–7 dong,
Mananku, Anyangsi, Kyungkido 430–017, KR
T: +82 31 467 – 2030, F: +82 31 467 – 2033

Spain
Baumüller Ibérica S.A.
C / Ausias Marc 13 1º 2ª, ES–08010 Barcelona
T: +34 (0) 93 342 69 26, F: +34 (0) 93 270 13 21

Switzerland
Baumüller Suisse S.A.
Rue Galilée 9, CH–1400 Yverdon–les–Bains
T: +41 (0) 24 420 77 – 70, F: +41 (0) 24 420 77 – 79

Switzerland
Baumüller Schweiz AG (Büro Ost)
Oberwiesenstrasse 75, CH–8500 Frauenfeld
T: +41 (0) 52 723 28 – 00, F: +41 (0) 52 723 28 – 01

Thailand
Mr. Tom Sale and Service Co., Ltd.
39/9 Moo 1, Tepkanjana Rd., Tambol Nadee
Amphur Muang, TH–74000 Samutsakorn
T: +66 34 854932–4, F: +66 34 854935

Turkey
Baumüller Motor Kontrol Sistem San. ve Tic. Ltd. Sti.
Girne Mah., Kücükyali Is Merkezi, B Blok No. 12
Maltepe, TR–34852 Maltepe – Istanbul
T: +90 216 519 – 9071, F: +90 216 519 – 9072

USA
Baumueller Inc.
117 West Dudley Town Road, US–Bloomfield,
CT 06002, T: +1 860 243–0232, F: +1 860 286–3080

USA
Baumueller Inc.
1858 S. Elmhurst Road, Mount Prospect,
IL 60056, T: +1 847 956–7392, F: +1 847 956–7925

USA
Baumueller–Nuermont Corp.
1858 S. Elmhurst Road, Mount Prospect,
IL 60056, T: +1 847 956–7392, F: +1 847 956–7925

USA
Baumueller–Nuermont Corp.
2650 Pleasantdale Road, Suite 15, US–Doraville,
GA 30340, T: +1 678 291–0535, F: +1 678 291–0537

Venezuela, Colombia, Ecuador
Nimbus International C.A.
C.C. Parque Tuy, Local P–18, VE–Ocumare del Tuy, 1209
T: +58 239 225 1347, F: +58 239 225 7149

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Responsible for content: Baumüller Nürnberg GmbH Ostendstraße 80–90 90482 Nürnberg T: +49 (0) 911 5432 – 0 F: +49 (0) 911 5432 – 130 **www.baumueller.com**
Baumüller Anlagen–Systemtechnik GmbH & Co. KG Ostendstraße 84 90482 Nürnberg T: +49 (0) 911 54408 – 0 F: +49 (0) 911 54408 – 769
Baumüller Reparaturwerk GmbH & Co. KG Andernacher Str. 19 90411 Nürnberg T: +49 (0) 911 9552 – 0 F: +49 (0) 911 9552 – 999

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