

power at work

Customized electric drives

★★★★★
SERVAX
DRIVES

Always in motion



A look back at the history of Landert Motoren AG fills us with pride – agility and dynamism are terms that aptly describe both our drive solutions and our constant progress. Since it was founded, our company has grown continually. The cornerstone of our success is and remains our power of innovation.

The Division and the brand SERVAX offers drive solutions in first-class Swiss quality. SERVAX stands for a flexible technology platform with which we assembly modules to make your unique drive system. The wide variety of technical designs in our well-proven solutions makes us the ideal partner for a wide variety of industrial sectors.

For us, your requests are the motor that drives our peak performance as a company. We look forward to your challenges.

motion



Success, made in Switzerland

Respect and trust. The gratifying feeling that comes with finding the optimal solution is what drives us. Working together with our employees, partners and customers, we use the power of constructive collaboration. Mutual [trust](#), [openness](#), [partnerships](#), [customer orientation](#) and [effectiveness](#) shape this dialogue. With such an approach, we can learn from each other, grow together and further develop our strengths. This inspires our customers, partners and employees, and it creates the perfect conditions for drive solutions with added value.

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- 1924** With just CHF 1000.– of start-up capital and one main spindle lathe, Heinrich Landert and his school friend Rudolf Weber form a company they name "Landert & Weber, Technical Laboratory". Rudolf Weber later leaves the company, and Landert Motoren AG is formed.
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- 1968** SERVAX manufactures and markets THYRAX, the first brushless asynchronous motors with variable speed control and phase-shift control based on triac semiconductors.
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- 1994** Development of an ISO 9001 quality management system.
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- 1994** Introduction of the automatic safety door actuator for machine tools (MxP).
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- 2000** After an intensive period of research and development, SERVAX succeeds in translating transversal flux technology into an economically interesting form.
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- 2005** SERVAX is granted the patent for "permanently excited synchronous machines with external rotors using the transversal flux principle".
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- 2005** The successful MxP protective door actuator is updated to meet the latest market requirements: the NTiB is launched.
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- 2012** SERVAX introduces to the market a new generation of safe protective door drives that meet the requirements of the directive 2006/42/EC.
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roots

Swiss Quality for Demanding Customers

The Landert Group is an independent privately owned Group of companies, characterised by innovation, quality and genuine entrepreneurship. In our day-to-day activities, this, means sometimes looking at things from a different perspective, never being satisfied with common solutions, acting flexibly and always showing the dynamism of a pioneer.

The Landert Group was founded in 1924 with its head quarters in Bülach near Zürich, Switzerland, and employs over 800 staff members across its two divisions TORMAX (automatic door systems) and SERVAX (customized electric drives).



Intelligent



Customised



Ecological



Reliable

Challenges inspire us. It's always possible to improve. Thus we continually look for new opportunities to optimise our services. For example, with the efficient design of our well thought out platform for customized solutions in the drive area. The latest projects in our company strengthen us in our strategy of offering our customers unique, high-quality solutions in the shortest possible time. Our guiding principles are [together](#), [clear](#) and [focussed](#).

Our contribution to the environment. Your decision to work with us is also a decision to treat our environment with special respect. By use of modern design techniques, manufacturing methods and high quality components we manage to achieve high efficiency values up to 98% on our products. We contribute to the sustainable use of resources providing very long life-cycle products reducing the need of replacement to an absolute minimum. In addition, our modular system also enables the specific replacement of individual components. We assure an environmentally friendly recycling of replaced parts. We place the focus on efficient transportation methods, for example by reducing CO₂ emissions through the use of collective deliveries up to the end customer. SERVAX products can be recycled to 98%.



global

Local production global application

Our sophisticated sales network combines direct sales with selected resellers and thus allows us to offer our products around the world. With central production in Switzerland, we can ensure that all of our expertise is integrated into existing and future customer projects.

Custom-designed drives. As our customer, you benefit from a unique value-added chain which includes all the components involved in building electric motors – from start to finish. Thanks to our dedicated team which does initial sampling we ensure that everything is running properly from the very start. With the continuous optimisation of motors and our own basic developments, we help you to continually keep your company at the forefront of competitiveness. Our rigorous process-oriented organisation also ensures that you receive solutions tailored to your specific needs in the shortest possible time.

Value-added chain – for our customers.

Customer meeting

Electro magnetic design

Construction of mechanical parts

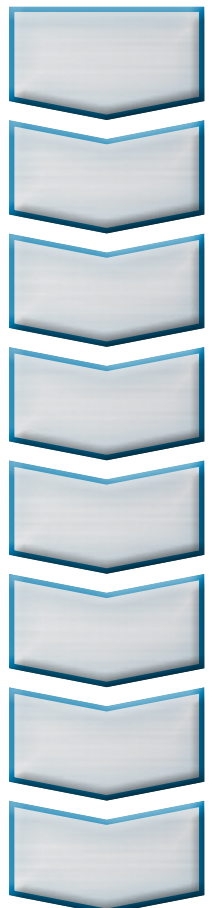
Initial sampling and customer support

Testing and verification

Support during commissioning

Series production during the machine's
entire life cycle

Upgrades and repairs of our own drives





power

Custom-designed drives

Everything from one source leads to your success. Based on your requirements, we design the optimal drive for your machine or system with the ideal technology, type of construction and cooling.

The table below shows a concise summary of the range of SERVAX electric motors.

We are the right partner for you.



Lightweight

Gliding through the air without a sound and no emissions.



Productive


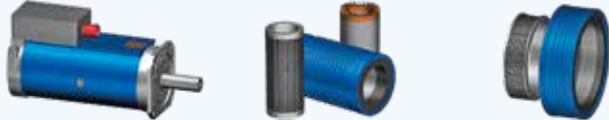
Highest productivity and repeatable quality in coating systems for CDs.



Clean

Manufacturing of medical components in a clean room places high demands on the cleanliness and reliability of this injection moulding machine.

The range of SERVAX electric drives.

COOLING	Air cooled motors		Liquid cooled motors				
APPLICATION CRITERIA	Clean, non sensitive environments		Harsh to very sensitive environments				
							
TYPE OF CONSTRUCTION	Framed motors		Framed motors	Motor components		Ring torque motors	
TECHNOLOGY	ASM	PSM	ASM	PSM	ASM	PSM	PSM
MAX. CONTINUOUS POWER – P _n [kW]	100	115	300	350	400	400	to 150
MAX. NOMINAL TORQUE – T _n [Nm]	200	370	600	1 100	1200	2000	1500
MAX. PEAK TORQUE – T _p [Nm]	1600	4400	1600	4400	2400	6000	6000
MAX. SPEED – N [min ⁻¹]	30 000	60 000	30 000	60 000	30 000	60 000	3000

Special designs: hybrid technology – PSM with damping cage upon request.



technology

State of the art technology

ASM – asynchronous motors

The robust and cost-effective workhorses. SERVAX recommends asynchronous machines above all when you need robust drives which are simple to maintain. They are well suited where constant speed is required and equally so for constant power across a large bandwidth, and this at high operating temperatures.

We develop and produce custom-tailored asynchronous motors in the following designs:

- Outer diameter from 60 to approx. 400 mm
- Internal or external rotor
- Number of poles matched to the application



Robust

Relaxing travel in high-speed trains – difficult to imagine if the rails are not precisely grinded.



Flexible

Our customers demand the perfect integration of the main spindle drive into the machine environment, and this at cost-effective conditions – even for smaller batch sizes.



Reliable

The manufacture of top-class synthetic fibres places special requirements on smooth operation.

PSM – permanent magnet synchronous motors

High performance with efficiency. SERVAX recommends the use of permanent magnet synchronous motors where there are increased requirements on utilisation (in terms of space), dynamic performance (overloading), speed control range and efficiency.

We develop and manufacture custom-tailored permanent magnet synchronous motors for you in the following designs:

- Outer diameter from 60 to approx. 750 mm
- Short or long version
- Internal or external rotor
- Low or high number of poles
- Optimised in terms of utilisation, smooth operation and overload capacity

Hybrid – PSM with a damping cage

The best of both worlds. SERVAX recommends using the hybrid – PSM with a damping cage wherever synchronous operation is desired and there is no need for the full dynamic performance of servo motors. The machine ramps up asynchronously to a high speed and then transfers over to synchronous operation. This results in clearly better utilization, higher efficiency and output.

We develop and manufacture custom-tailored permanent magnet hybrid motors in the following designs:

- Outer diameter from 60 to approx. 400 mm
- Speeds from 50 to 20 000 rpm
- Air or liquid cooled
- Optimised in terms of utilisation, smooth operation and overload capacity

A large industrial machine, possibly a lathe or mill, with a prominent red safety door on the left. The door has a rectangular window showing the interior. To the right is a control panel with a red emergency stop button, a black rotary switch, and a digital display. The machine is white and metallic. The word "safety" is overlaid in white text at the bottom.

safety

Safety Machine Door Systems

SMDA-200 and SMDA-400/SMDA-400-iB

New generation and yet tried and proven. The basis for the new generation is the tried and proven TÜV certified (EN-13849-1 PLd) iMotion® technology for personal access supplied by the TORMAX Division of Landert Motoren AG.

Protective machine door drives from SERVAX include the technology for implementing a safe force and speed limit for horizontal doors with door weights up to 750 kg. This enables safe compliance with the approved forces without requiring

additional safety elements such as light barriers or two-handed operation.

The intelligent operating software – **SMDTuner** – ensures efficient commissioning of the drive. Thanks to the integrated AutoTuning, there is virtually no need to perform settings during commissioning. The system works in the low voltage range and includes a galvanically isolated mains power supply as well as an opto-isolated interface for the superordinate PLC.



Intelligent

Uncompromised personnel protection along with higher machine productivity demand intelligent solutions for the safe drive of protective doors in machine tools, die-casting machines and injection-moulding machines.



An overall concept

Drive, controls and operating software as the perfect systems solution. Also as "In the Box" version for easy retrofitting.



Technical data.

Model		SMDA-200	SMDA-400/SMDA-400-iB
DOOR WEIGHT	kg	260	200 – 750
FORCE	N	230	400
TRANSVERSE PATH	mm	≤ 8,0	≤ 8,0
MAX. TRAVERSING SPEED	m/s	1,0	1,0
Motor data			
TECHNOLOGY		16-pole permanent magnet direct drive	16-pole permanent magnet direct drive
NOMINAL TORQUE	Nm	3,1	5,4
PEAK TORQUE	Nm	6,0	9,8
NOMINAL SPEED AT NOMINAL TORQUE	rpm	335	270
PROTECTION CLASS		IP54	IP54
Control data			
MAINS VOLTAGE	VAC	115/230/400	115/230/400
MAINS FREQUENCY	Hz	50/60	50/60
OPERATING AMBIENT TEMPERATURE	°C	+10...+40	+10...+40
RELATIVE HUMIDITY	%	15...85	15...85
PROTECTION CLASS		IP20	IP20 (IP54)
DIGITAL I/O	VDC	24	24
HOUSING DIMENSIONS (H × W × D)	mm	297 × 92 × 187	SMDA-400: 297 × 92 × 187 SMDA-400-iB: 514 × 178 × 170



quality

An obligation to provide quality

In our fast-paced world, you can't always take quality for granted – but with us, absolutely. And still more: we feel an obligation to provide quality. Since 1994 we maintain a quality management system in accordance with ISO 9001, a system which guides our daily activities.



Quality



Test laboratory



Certifications

Motors at their very best. In our own test laboratory we verify theoretical calculations using elaborately equipped test stands to see if we meet them in practice. In this way, we guarantee that you get motors with exactly the performance we promise. The data and knowledge gained from tests are integrated into model calculations for new motors and future developments. Thus, our customers profit from continual optimisations. We further underscore our attitude towards quality by making our test stands available for comparison measurements.

Service to suit and as needed. Occasional upgrades and maintenance work contribute to maintaining quality. Spare parts and equipment service are in the proven hands of the machine manufacture. Of course, we guarantee the fast delivery of spare parts and support you in related questions. And the fact that after each repair we issue a full guarantee on the complete motor (and not just on replaced parts) for 12 months is yet additional proof of the quality of our products.





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