

# Technical Article



## Linear Technology Goes Digital Five Steps to the Factory of the Future

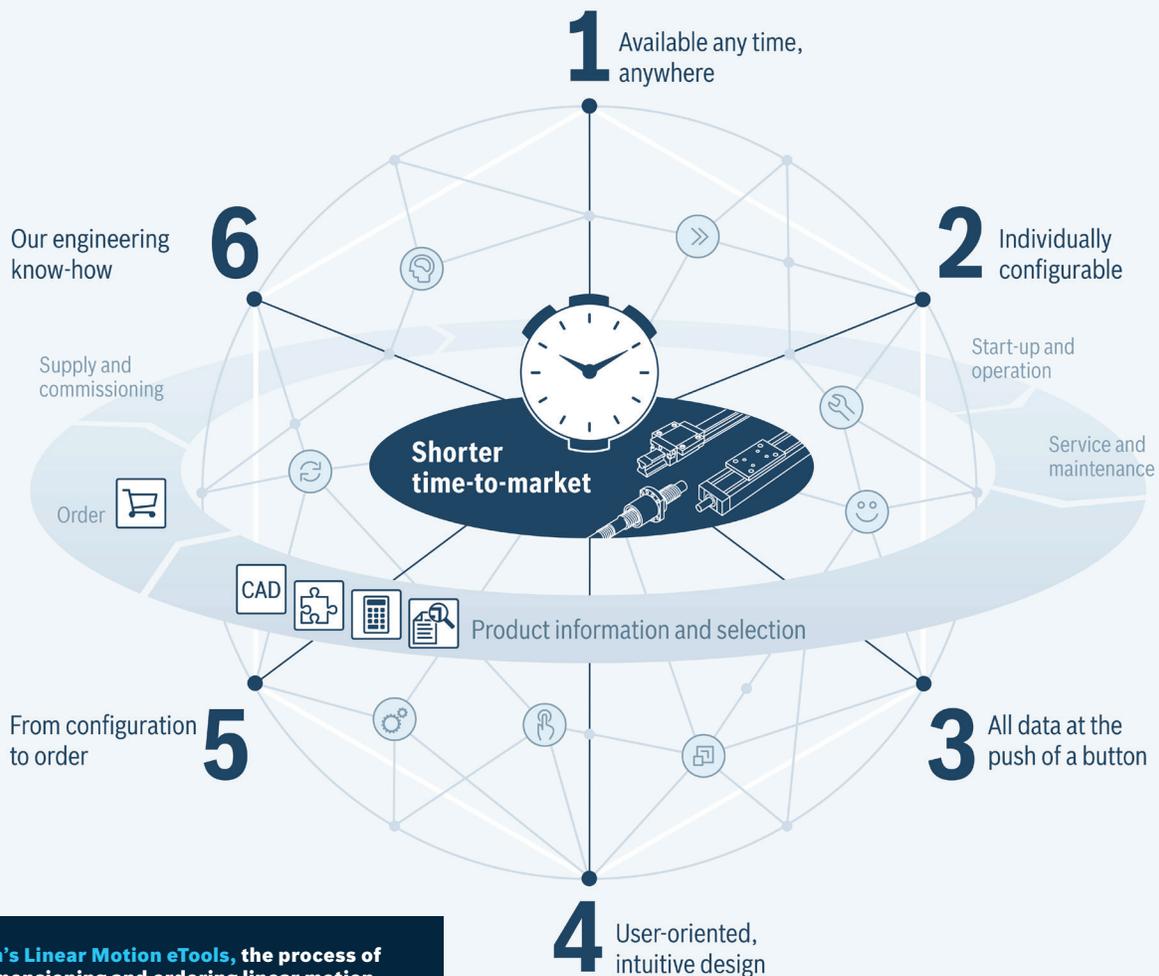
If linear motion technology is featured in your factory, it's likely that it plays a largely mechanical role in your production processes. But, as digital technology continues to evolve, linear motion technology is starting to play an increasingly important role in the Factory of the Future.

Linear motion technology solutions of the future can enable manufacturers to capture data, optimize processes and predict wear sooner and with greater accuracy than ever before. Because of this, it is important that machine manufacturers, service providers and users do not have to do any programming or integration themselves. Rather, they simply use the integrated measuring functions in the linear motion technology for their analyses.

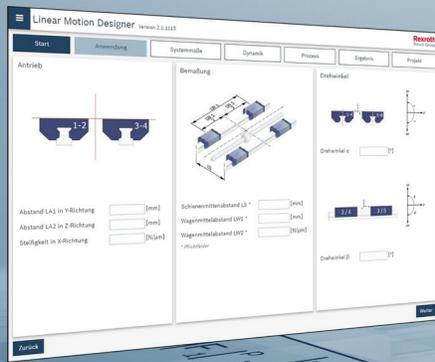
Far from being a basic mechanical technology, linear motion technology is poised to transform the modern manufacturing environment over the next several years. Key points in the manufacturing process chain are subject to change, including configuration, ordering and commissioning, operation, diagnostics and maintenance. The flexibility of digital linear motion technology allows for maximum productivity, improved configuration, and shorter time-to-market. This is because of all the software tools, online services, intelligent systems and integrated sensors available in the Factory of the Future. Still unsure about linear motion technology's crucial role in the Factory of the Future? Our experts provide the five key benefits of linear motion technology in the digital future.

# Key Insights & Considerations

- **Linear Motion eTools make product selection and sizing easier**
- **Automated processes means that providers can streamline the customers ordering and delivery process**
- **In the future, all system data will be readily available for commissioning**
- **Machine data will be picked up by sensors and passed on to the cloud during operation**
- **Sensor data will improve service and maintenance processes**



With Rexroth's Linear Motion eTools, the process of selecting, dimensioning and ordering linear motion components and systems is now easy and convenient.



Using seamless engineering e-tools, linear motion product selection and sizing has never been easier.

## 1. Product selection and sizing is made easier

Using seamless engineering e-tools, linear motion product selection and sizing has never been easier. Engineers no longer have to flip through extensive catalogs or manually look up part numbers because it can now be done conveniently online. These same tools will enable users to select and configure components and, as a next step, include multi-axis systems with impressive speed and simplicity. To ensure reliability, a digital twin for virtual environments will accompany the components and systems in the future to provide accurate simulations.

## 2. Ordering and Delivering

Automated ordering and delivery processes mean that providers such as Rexroth can receive, commission systems and dispatch orders almost immediately. The digitalization of linear motion technology means both faster commissioning and increased delivery. Digital platforms enable easy product ordering at the click of a mouse. Order tracking will be made available throughout the entire process to ensure customers are kept up-to-date.

## 3. Commissioning

In the future, all system data will be readily available for commissioning – including all axis data. Users benefit from a plug-and-play commissioning process without having to input data or correct source errors. In the digital future, the axis parameters can be stored digitally in different products. Whether in a motor encoder, integrated measuring system or digital nameplate, the axis parameters will always be available. The relevant parameters will be transmitted to the drive system, saving time and minimizing errors during start-up and maintenance.

## 4. Operation

In the future, key data for the machine will be picked up by integrated sensors and passed on to cloud services during operation. As digital technology continues to transform the way we work, sensors will permanently determine all operating and environmental data such as temperature or vibrations. The sensors can be integrated, for example, in screw drives. Or they can be attached externally to the axes and connected via open interfaces. Machine availability, quality, efficiency and other such key information will flow into Overall Equipment Effectiveness (OEE) data in real time to ensure everyone is always well informed – wherever they are – and able to react quickly.

## I 5. Service and Maintenance

By evaluating sensor data, companies will be able to see future indications of necessary maintenance and service tasks. Enhanced service and maintenance will be a key part of the future of linear motion technology. These advanced services will evaluate the data pulled from machine operation and explain what maintenance, servicing and spare parts are required to prevent unwanted downtime. As a result, manufacturing equipment and processes are able to function at their most efficient.

### Conclusion

Bosch Rexroth continues to strive towards developments in linear motion technology solutions. For today and in the years to come, the digitalization of linear motion technology will enable you to increase the productivity and flexibility of day-to-day operations. The digital journey of linear motion technology has long since begun - and it will open up monumental horizons for greater productivity over the entire life cycle.

**Find out more about the 5 steps in the digitalization of linear motion technology here:**  
<https://youtu.be/oNtFz-kedqU>



**The digitalization of linear motion technology will enable increased productivity and more flexible day-to-day operations.**

**Do you have technical advice worthy of an article?**  
Contact Susan Strauss at 610-694-8352 or [susan.strauss@boschrexroth-us.com](mailto:susan.strauss@boschrexroth-us.com)

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