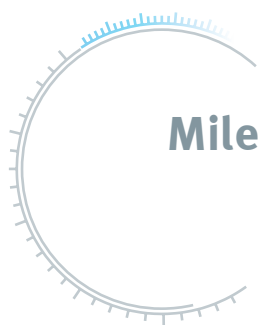


People. Solutions. Innovations.

FESTO





Milestones

05



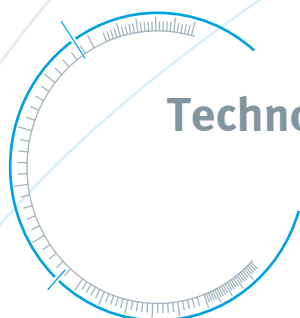
Facts and figures

11



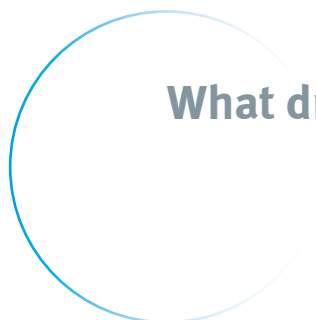
Solutions and products

21



Technologies

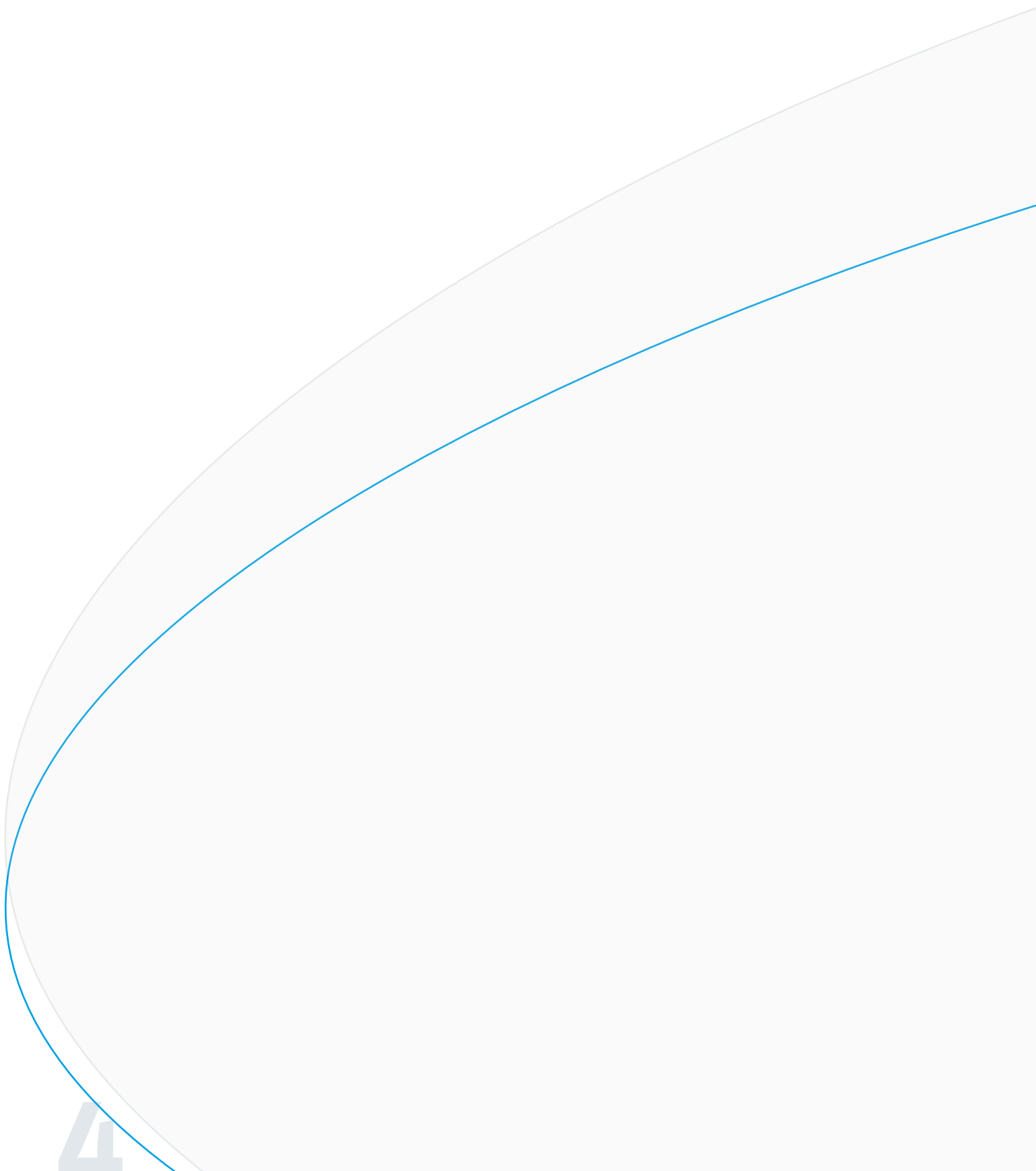
37



What drives us

53

Contents





Milestones

Milestones

Integrated approach to automation

The consistent focus at Festo on electric and pneumatic automation is not only reflected in the product portfolio, but also in the company's increased international presence – which also extends to production.

Festo SE & Co. KG

Festo Didactic SE

Acquired companies

Resolto Informatik GmbH

Solutions with artificial intelligence

Eichenberger Gewinde

Linear technology

FABCO-AIR

Pneumatics for the North American market

LabVolt

Training hardware for electric automation

2016

Automation centre,
Germany



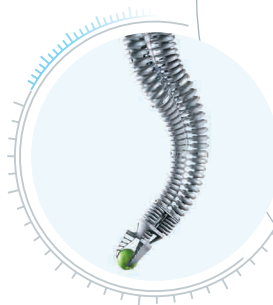
2015

Technology Factory Scharnhausen,
Germany



2006

Bionic
Learning Network



2001

Technology centre,
HQ Germany



Over **90 years**
of experience

Milestones in the company's development

2018

Mason, USA



2019

Suncun, China



Digitalisation

Automation solutions

Basic and further technical training



First pneumatic portfolio

1965

Festo Didactic



1955

Introduction of pneumatics



1925

Founding of Festo



Milestones

Innovation as a matter of principle

Festo invests around 8% of its total turnover of approximately 3 billion euros (as of 2019) in research and development. The result is a complete portfolio for electric and pneumatic automation. And a track record of disruptive innovations like the valve terminal in 1989 or the digitised Festo Motion Terminal in 2017 – a revolutionary contribution to Industry 4.0.

36,000 catalogue products
for automation

20,000 products
for technical training
in over 40 languages

Around new 100 patents annually

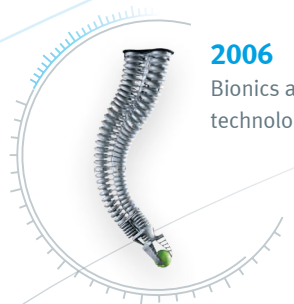
Over 2,600 patents worldwide

8% of turnover invested annually in
research and development

42,000 Didactic seminar participants
every year

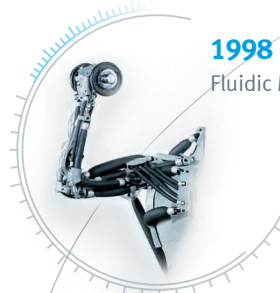
2006

Bionics as a
technology driver



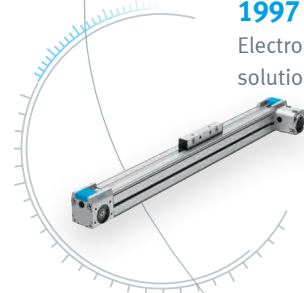
1998

Fluidic Muscle



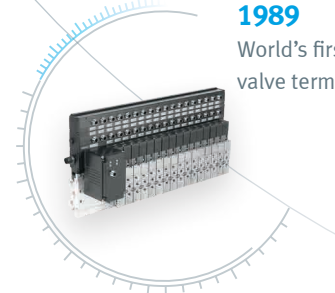
1997

Electromechanical
solutions



1989

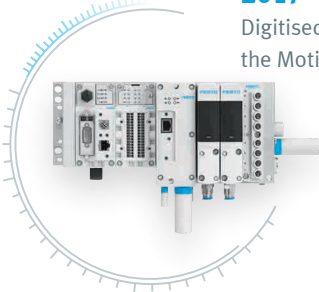
World's first
valve terminal



Milestones in product development

2017

Digitised pneumatics with the Motion Terminal



2018

Machine learning



Artificial intelligence

Intelligent pneumatics

Digitalisation

Bionics

Electrics

Pneumatics

1980

Programmable logic controllers PLCs



1975

First pneumatic ISO cylinder



1978

First pneumatic series-produced valve




This technology has been used from the successful Tiger valve to today and is produced in more than five overseas production centres.

1955

First pneumatic series-produced cylinder





Facts and figures

Facts and figures

Worldwide presence

Wherever your company is based and wherever you manufacture your products or machines, Festo is nearby! This keeps distances short so that you get products, spare parts and services as well as help and advice as quickly as possible.

Africa

Nigeria
South Africa

Australia

Australia
New Zealand

America

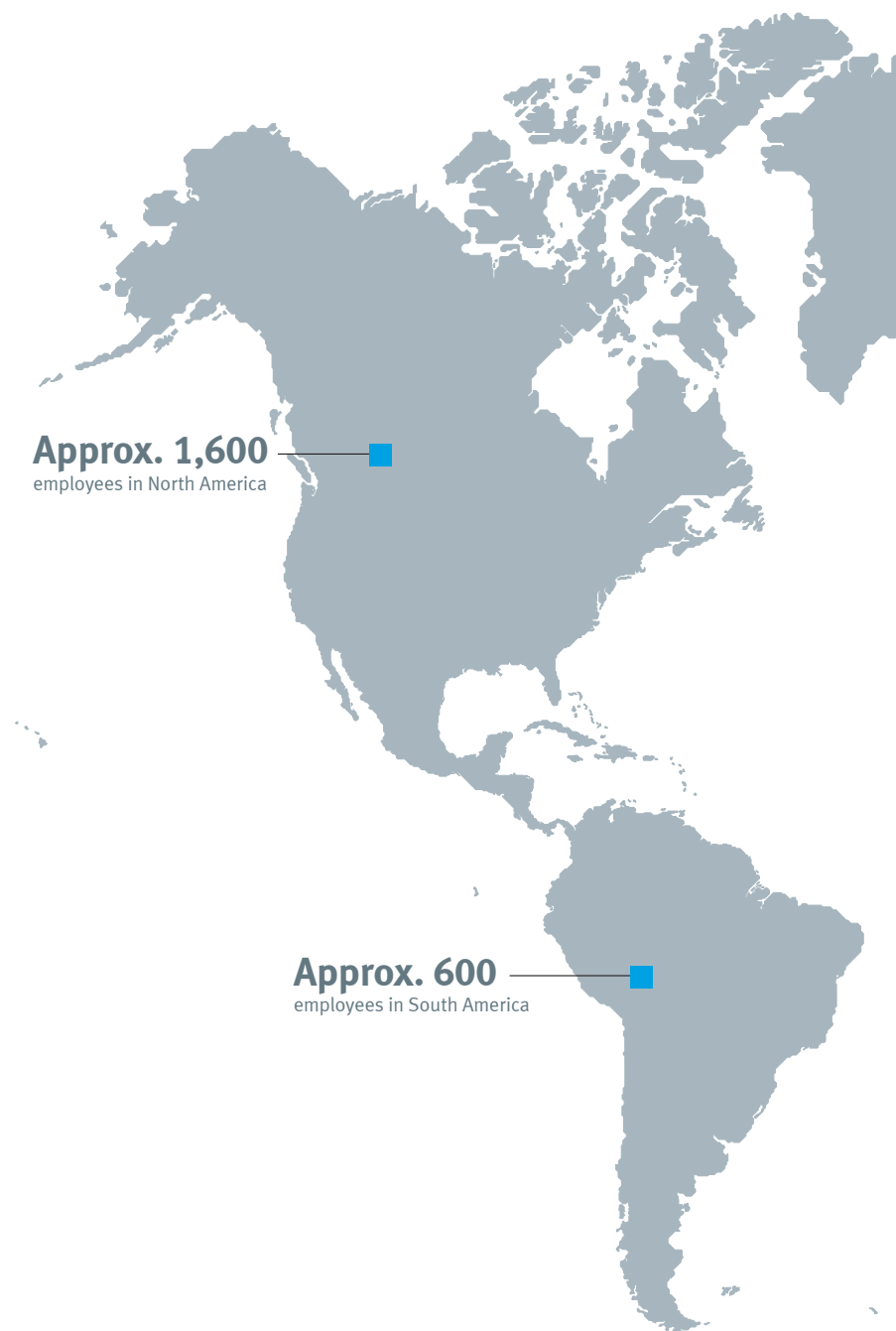
Argentina
Brazil
Canada
Chile
Colombia
Mexico
Peru
United States
Venezuela

Europe

Austria
Belarus
Belgium
Bulgaria
Croatia
Czech. republic
Denmark
Estonia
Finland
France
Germany
Great Britain
Greece
Hungary
Ireland
Italy
Latvia
Lithuania
Netherlands
Norway
Poland
Portugal
Romania
Russia
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Turkey
Ukraine

Asia

China
Dubai
Hong Kong
India
Indonesia
Iran
Israel
Japan
Jordan
Kazakhstan
Korea
Malaysia
Philippines
Singapore
Taiwan
Thailand
Vietnam



› 16 years of bionics

Operating in **176** countries

› 100 patents annually

People, countries and knowledge



Approx. 2,500 sales engineers

Approx. 20,000 automation experts

› **300,000** customers

› **56** years of Festo Didactic

Facts and figures

Experts on site

When Festo says global, it means global. The strategy is local-4-local. The extensive worldwide network of branches, sales offices, production facilities and experience centres is Festo's answer to the customers' wish for proximity.

Always nearby.



www.festo.com

will get in touch with you personally to ensure that the solutions are always right for you.



61 sales companies



133 sales offices

For the shortest possible delivery times, we're always nearby.



980 distributors



10 logistics centres

We have built production centres around the world for your market requirements.



22 production centres

In our Engineering Centres, we adapt the products to your tasks down to the last detail.



58 engineering centres

For maximum safety, we test the applications before you buy them.



26 experience centres

With more than **1,000** locations, we're there for you worldwide.

Development, Production, Logistics and Sales



Europe and Africa



Asia and Oceania



The Americas

Facts and figures

Quality – is in everything that we do

To deliver the Festo products to you in the best possible quality, we already conduct intensive tests during the development process using a variety of methods:

Computed tomography

Corrosion testing/
salt chamber testing

Temperature tests

Electromagnetic
compatibility

Heat circulation

Flow simulation

Wear

Strength simulation

Fast and cost-effective development is important for Festo too.

For the best quality, we subject our products to a large number of tests.

Environmental testing

... for compliance with norms and standards



Endurance testing

... for reliable technical data



8%

of turnover is invested in
research and development.

Research and development

Failure analysis

... for safety and identifying causes



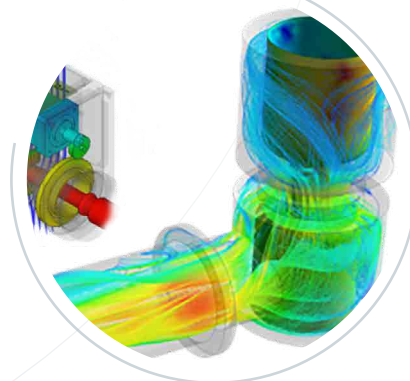
Certification

... for customer confidence in the products



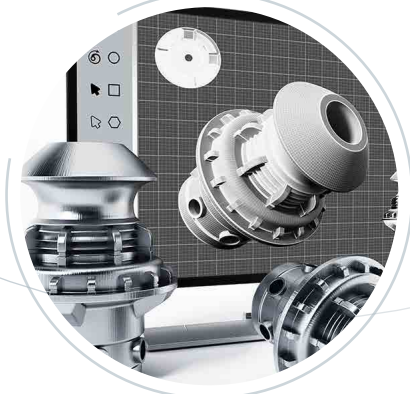
Simulation

... for an optimised product design process



Prototyping

... for speedy development



Facts and figures

Festo Didactic

With Festo Didactic, we are the leading provider of technical basic and further training and offer cutting-edge training solutions for many technology topics for educational institutions and industrial companies all over the world.

Industrial automation and Industry 4.0

Pneumatics and hydraulics

Electrical engineering and electronics

Electric energy technology

Building systems technology and heating, ventilation, air conditioning

Industrial careers

Communications and radar technology

Process automation

Environmental technology and renewable energy

STEM subjects: science, technology, engineering and mathematics

Technical basic and further training is about digitalising learning methods as well as providing forward-looking training content for Industry 4.0 and the energy revolution. The training content is specifically tailored to these topics and provides the competencies that are needed by tomorrow's experts.

Students gain technical knowledge and soft skills in team-based and practical training courses on physical training systems with industrial components. They can also increasingly use digital online learning opportunities wherever and whenever it suits them.

Our comprehensive range of training solutions and training courses gets young people excited about technical careers and increases both their employability and companies' productivity.

52,000
training labs equipped with
products from Festo

Basic and further technical training

Digital tools for more successful learning



Getting young people
excited about technology

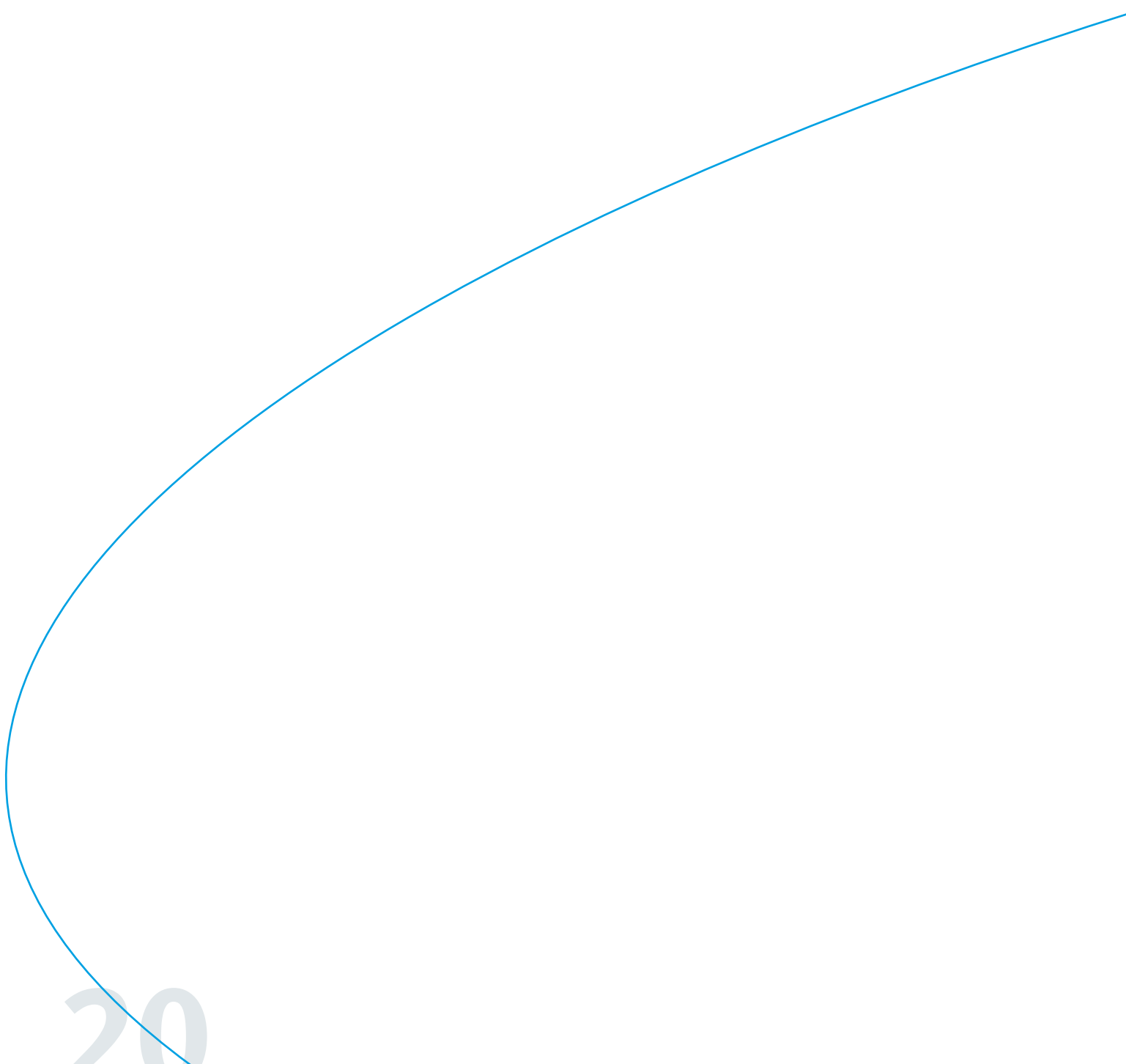


Industry 4.0 made easy to understand



Flexible training spaces for
building competence as a team







Solutions and products

Solutions and products

Everything from a single source

From the field level to the controller to the cloud – Festo offers everything from a single source!

Expertise across all technologies

We advise you on the best solution, whether it's electric, pneumatic or a mix of the two, and then implement it.

Industrial automation or process automation? Or both?

We are your partner for each type of automation, and also when it comes to combining both technologies.

Our numerous free engineering tools or the Festo Automation Suit for fast and reliable commissioning are the quickest route to get to your own handling system or automation solution.

Service and support

Factory automation

System solutions

More than **35,600**
catalogue products



Solutions and products

Reliable partner for the entire lifecycle

Benefit globally from faster processes, lower costs and maximum reliability – thanks to our first-class products and comprehensive range of services and support, from engineering and operation to modernisation.

Assembly and commissioning



Automation Suite

One piece of software to commission all electric products



Video tutorials

On the Festo Service YouTube channel



Procurement and delivery



Online Shop



Product Key

Information up to the digital twin



Over **200**
services along your entire value chain

Engineering, service and support

Operation and modernisation



Smartenance

Mobile maintenance manager



Energy Saving Services

Reduce energy costs by up to 60%!



Maintenance services

Maximising plant and system availability



Conceptualisation and design



FluidDraw

Creating pneumatic and electric circuit diagrams



EPLAN macros

Designing electric circuit diagrams



Handling Guide Online

Designing and ordering axis systems or industrial robots quickly and easily

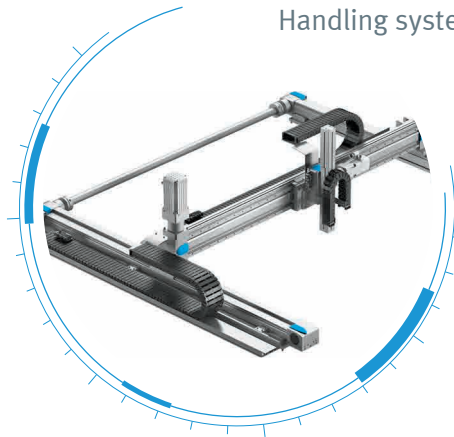


Solutions and products

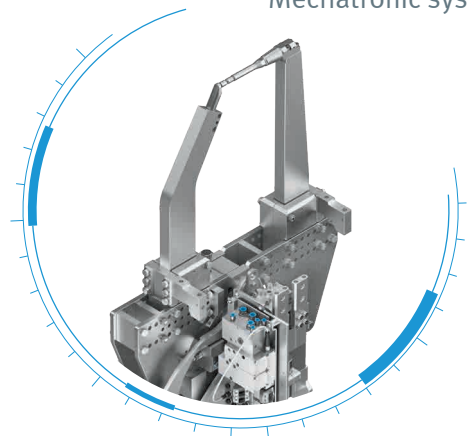
Individual solutions

The best solutions are always those that are planned out both financially and technically, and are adapted precisely and perfectly to your individual needs. That is why we prefer to work with you right from the conceptualisation phase. Together we can then develop a tailor-made solution. Not only is this the fastest way, it also saves costs and provides long-term process reliability.

Handling systems



Mechatronic systems



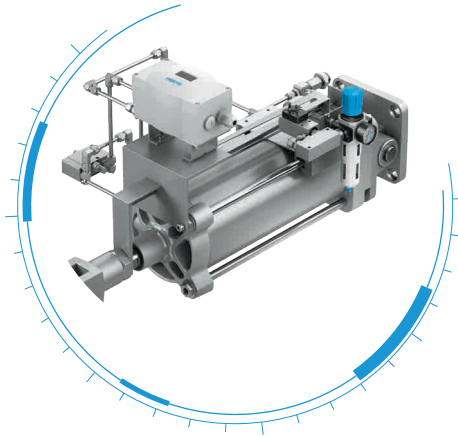
Individual solutions ...

- ... shorten the time to market
- ... increase productivity and process reliability
- ... offer higher machine, system and equipment availability
- ... reduce your overall costs by up to 50%

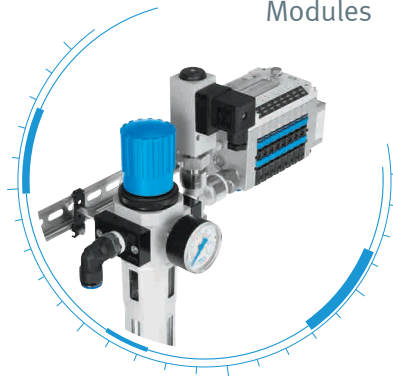
Over **10,000**
customised product developments

Application knowledge

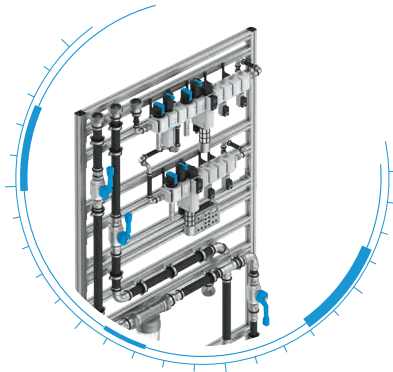
Customised
product development



Modules



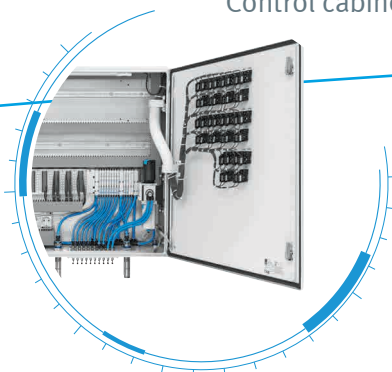
Hall/robot installation plates



Balancer solutions



Control cabinets



Solutions and products

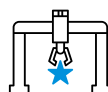
Fast delivery, worldwide

With the Festo Core Range, we have selected the most important products and functions from our broad product catalogue.

With quickest delivery worldwide, it solves the majority of your automation tasks in the long term and offers best value – even if you need large quantities.

The worldwide Festo ★ Core Range

Most automation tasks can be solved with simple solutions, which we want to make available to you quickly with our Core Range. As soon as you place your order, these products are on their way to you from the warehouse – worldwide.



Solves the majority of your automation tasks



Quickest delivery, worldwide – wherever, whenever.



Best Value



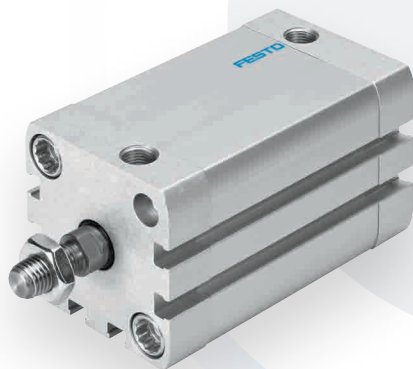
Expected high Festo quality



Easy and fast to select

★ Core Range – best value, quickest delivery

Products for the majority
of your automation tasks.



Example mini slide DGST
Production optimisation for the volume market



Design	44 parts -> 29 parts Slide and plate in one piece Standardised screw sizes Simplified connection pattern
Production	New clamping concepts Optimised basic profile Fewer screw connections

Solutions and products

Fast delivery – even in large quantities

Our production is designed for large volumes. You can conveniently place your order in our Online Shop.

The products from the Core Range are marked with a star so you can find them quickly. Select the products, place them in the basket, confirm the order and they will be in your warehouse before long.

Ready for large quantities

For our Core Range, we took another close look at our product portfolio and optimised it for a combination of modest prices and top quality.

We have also adapted production to meet these requirements, and redefined the transport routes.

Logistics

Optimised transport routes

Ready for the volume market

Fully automated production in a matter of seconds

★ Core Range – products for the volume market

1 m pneumatic tube

0,6
sec



Directional control valves VUVG

5
sec



Compact cylinders ADN

5
sec



Mini slides DGST

52
sec



Guided drives DFM

60
sec



Directional control valves CPE

76
sec



Production times

Examples from the Core Range.

Solutions and products

Industry sector expertise

Our experts are familiar with the specific requirements of your industry. As a result, Festo solutions are precisely tailored to your requirements.

This is what you can expect from us

An application-optimised offer

Our range of products and solutions is always optimised for your industry, whether in industrial or process automation.

A global network of experts

to support you directly on site.

Certified products

We have certified products, should you need them in your industry sector.

High-quality standard products

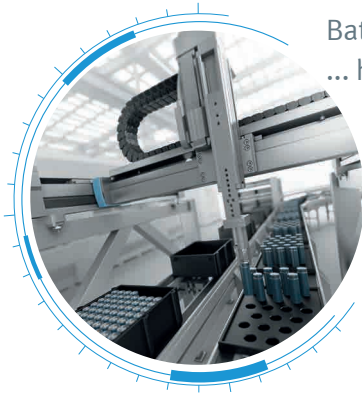
Good quality and stable technology with generous safety margins ensure that you can use products from Festo in challenging environments too – and often even in a smaller size.

An eye on important topics

Energy efficiency, machine safety, cross-technology engineering, digitalisation or artificial intelligence: we always keep an eye on these topics for you. We will be happy to advise you.

Over **200**
Industries in which we are active.

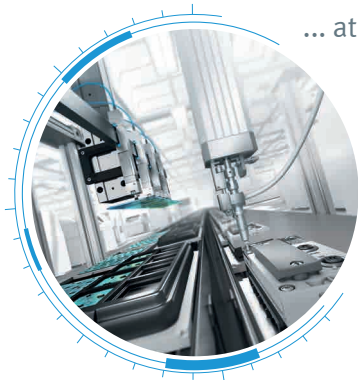
Competent partner in these industries



Battery production
... highly reliable



Food and packaging
... extremely easy to clean



Electronics and small parts assembly
... at great speed

Industrial automation

Process automation



Car manufacturing
... including machine safety

Water and wastewater
...ensures high quality



LifeTech



LifeTech
... with responsibility

Solutions and products

Investing in tomorrow

Do you want to design the future of your automation with us as your partner? The topics below are those that drive us because they boost your overall equipment effectiveness (OEE) in the long term. Greater productivity. Less downtime. Improved reproducibility. Easier monitoring. Predictive maintenance. Reliable operation. Faster engineering. All these benefits and more await you.

As an innovation leader, we are constantly investing in trending and technology topics.

Digitalisation

- Early warning systems
- Failure prediction
- Energy efficiency
- Automatic error messages
- Status displays
- Improvement of overall equipment effectiveness (OEE)

Energy efficiency

- 12 ways to save energy

Machine safety

- More than 100 safety functions

Artificial intelligence

- At product level
- At control level
- In the cloud

Digital twin

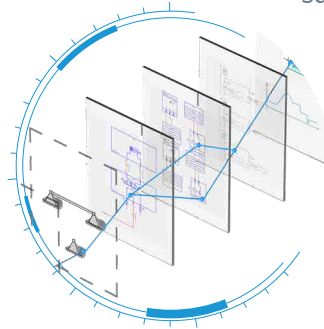
- Product data
- Geometries
- Load and function parameters
- Circuit diagrams
- Mechanical back-up system
- Simulations

Partner – now and in future



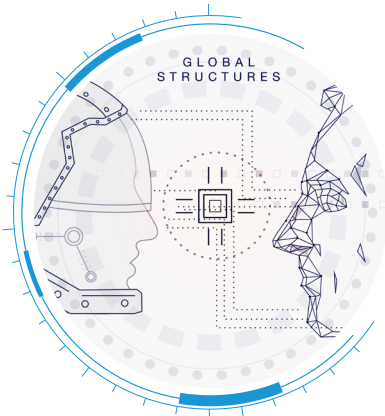
Industry 4.0

... to boost your plant and system availability and product quality



Digital twin

... to help you avoid errors and save time during the design process



Machine learning

... to increase your production flexibility and reduce your maintenance costs



Standardisation

... to save time over your system's entire product lifecycle



Energy efficiency

...we help you to reduce your carbon footprint



Machine safety

... so that you comply with all standards and guidelines



Motion. Control.

Intelligence.

The background is a dark gradient with a prominent blue curve sweeping across the upper half. In the lower center, there is a white circular graphic resembling a scale or a clock face, with a vertical line passing through its center and a horizontal line intersecting it. The circular scale has tick marks around its perimeter, with two specific points highlighted in blue.

Technologies

Technology

Perfection in motion

Festo has a complete portfolio for drives and handling systems, in pneumatic and electric versions. This also includes a complete gripper range, sensors and accessories.

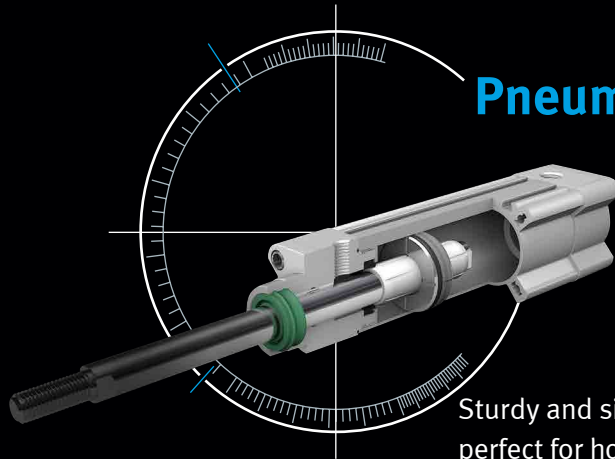
We move pneumatically.

We move electrically.

We move parts.

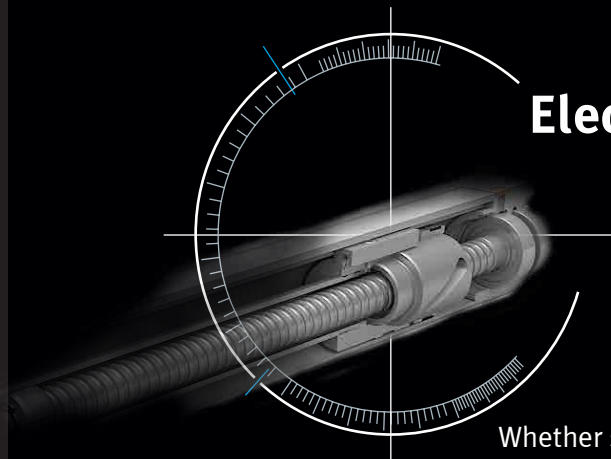
We move fluids.

Pneumatics



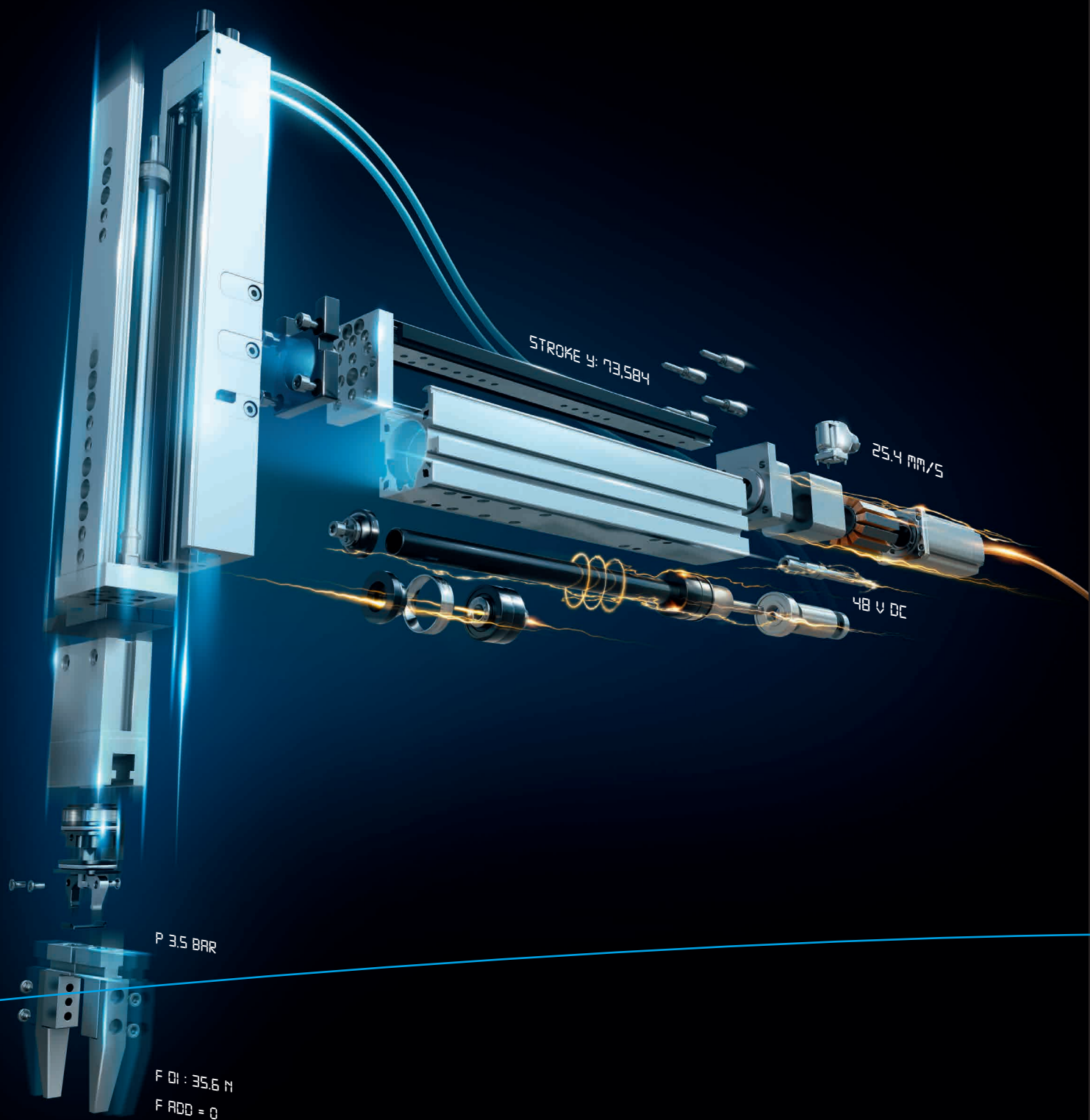
Sturdy and simple, perfect for holding and pressing or powerful travel into the end position: this is where pneumatics comes into its own.

Electrics



Whether simple electric travel into the end position or highly complex movements with intermediate positions, electric automation for linear or rotary motion is precise, dynamic and flexible.

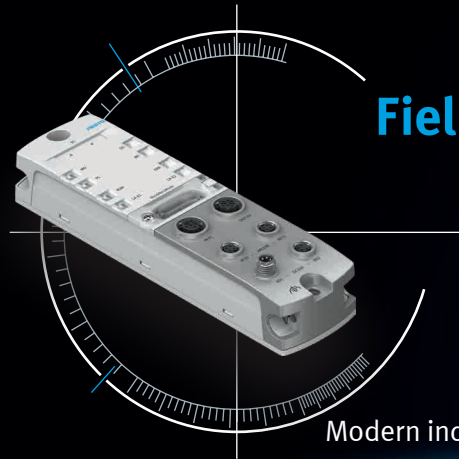
Stronger together – freely selectable mix of technologies



Technology

Future topic Automation communication

Festo offers appropriate hardware and software solutions for all communication requirements related to automation, whether point-to-point with IO-Link® at field level, higher-level controllers or big data to the cloud.



Fieldbuses

Modern industrial production is difficult to imagine without fieldbus technology. We offer fieldbus nodes and further hardware for all common fieldbus protocols.



Sensors

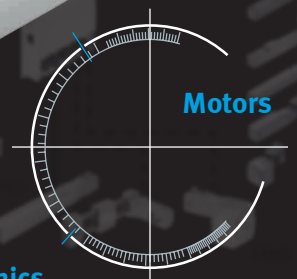
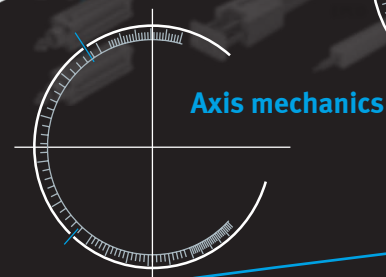
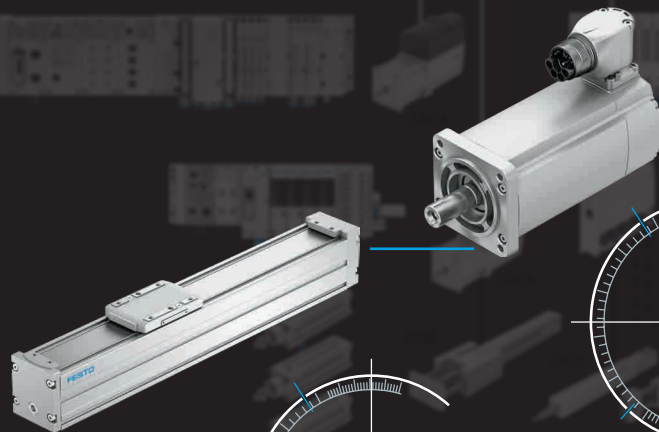
The selection of sensors offered by Festo range from simple proximity switches to pressure and flow measurement solutions to complex vision systems.



Technology

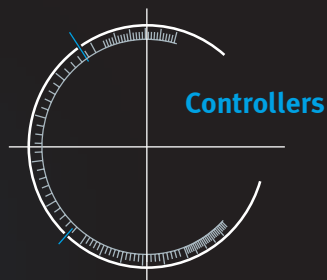
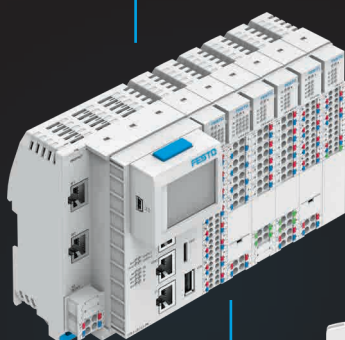
Seamless connectivity

On the road to seamless automation of machines and systems, Festo offers a unique variety of solutions. Choose from one of the widest product portfolios with different linear and rotary mechanical systems, servo drives and motors as well as controller solutions. Always complemented by a varied and open range of communication options for seamless automation solutions.



More than **6,000**
catalogue products for electric automation

Electric automation



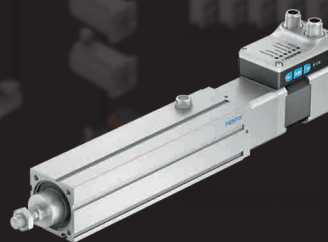
Controllers



Remote I/O



Simplified Motion Series



Technology

New valve concepts with piezo technology

Discovered in 1880 by the Curie brothers, piezoelectric materials convert mechanical energy into electric energy and vice versa into mechanical deformation. We use this capacitor effect for new and innovative valve concepts that are unique in the world. The principle opens up previously unimaginable possibilities for valve technology.

Advantages and benefits of piezo technology in products

Precise pressure and flow control

Almost unlimited service life

Silent operation

Very low power consumption –
ideal for mobile applications

No heat generation

Fast reaction times

Low weight and compact size

Low particle emissions specifically for
the semicon front-end industry

Energy-efficient



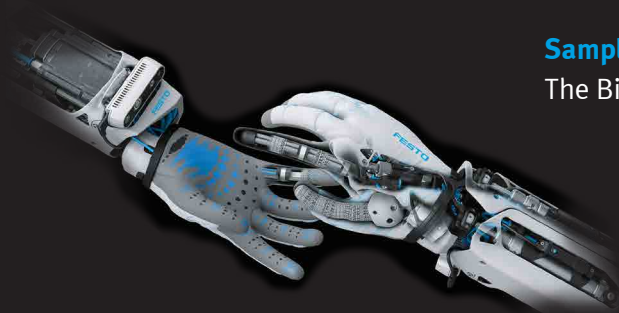
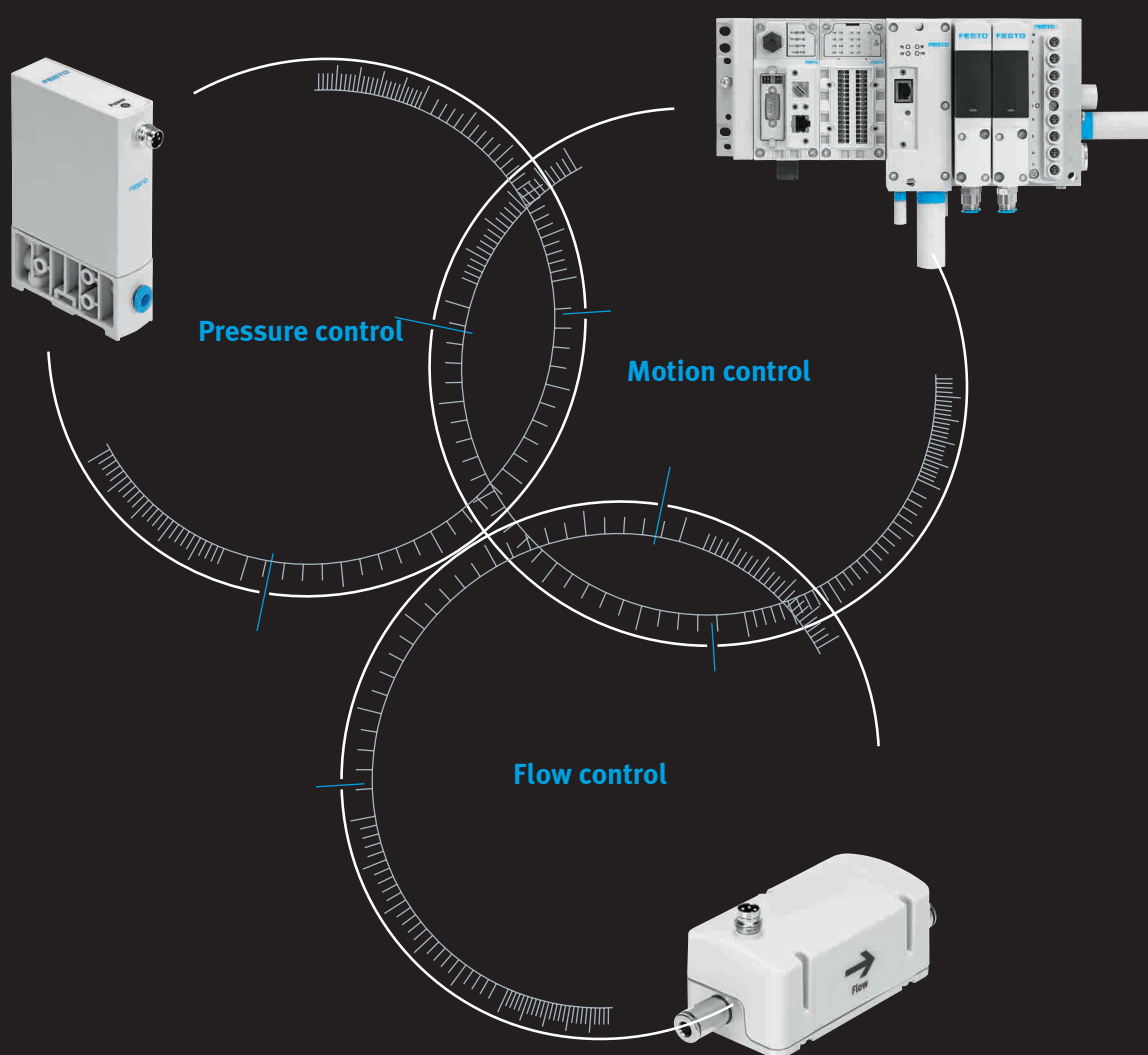
A piezo valve from Festo

100

times

longer service life than that of standard
products and 100 times more precise

Piezo-controlled pneumatics



Sample application from bionics
The Bionic Mobile Assistant

Technology

Greater efficiency through artificial intelligence

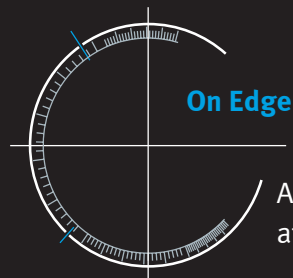
Whether on edge directly at the machine, on premises at your servers or in the cloud, with AI from Festo you can make your production more flexible and increase product quality in a way that is both easy and energy-efficient. Predictive maintenance reduces your costs further.

Machine builders

- Remote access
- Maintenance and troubleshooting
- Smart spare part business
- Shorter delivery times

End users

- Avoiding standstills
- Reduced warehousing
- Longer component service life



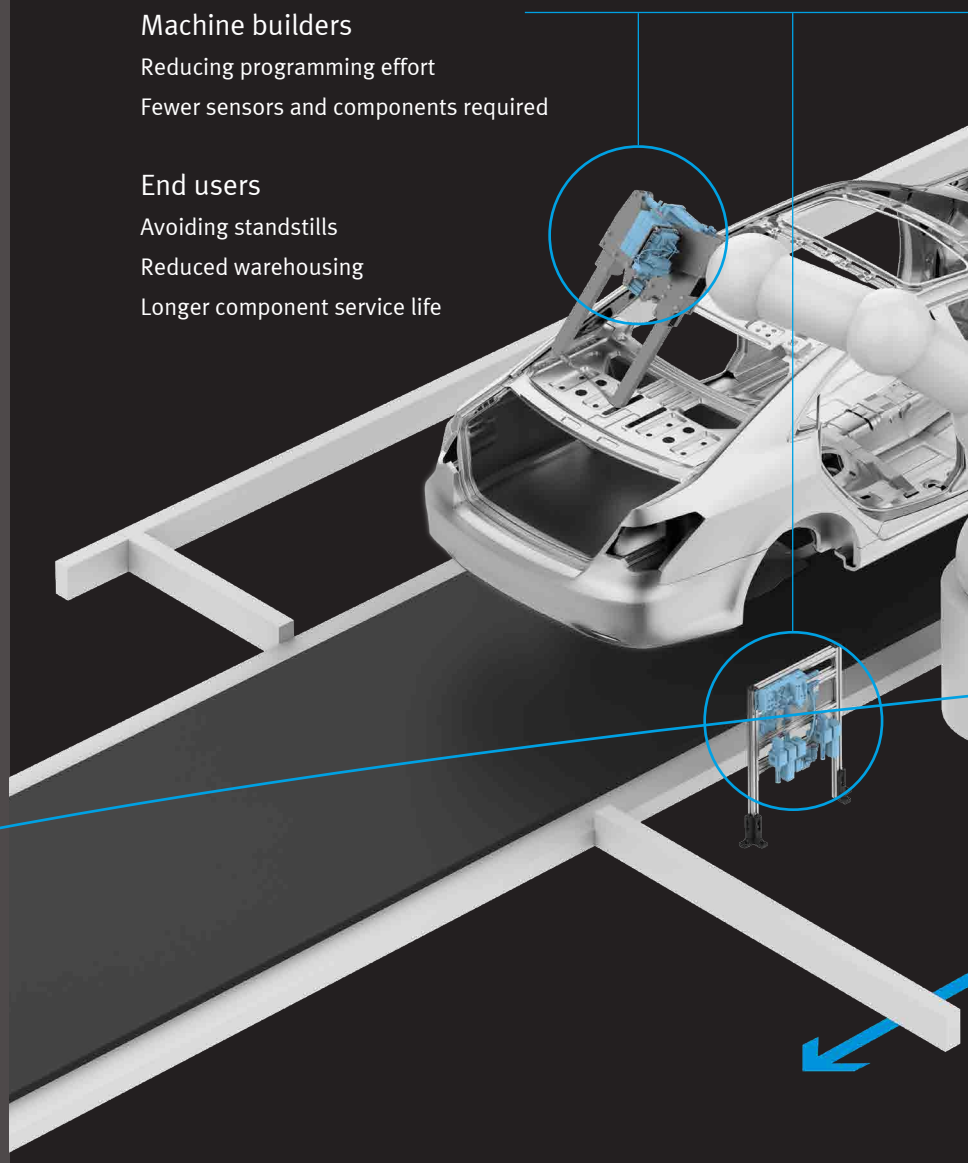
AI on the component at field level.

Machine builders

- Reducing programming effort
- Fewer sensors and components required

End users

- Avoiding standstills
- Reduced warehousing
- Longer component service life



Artificial intelligence

In the cloud

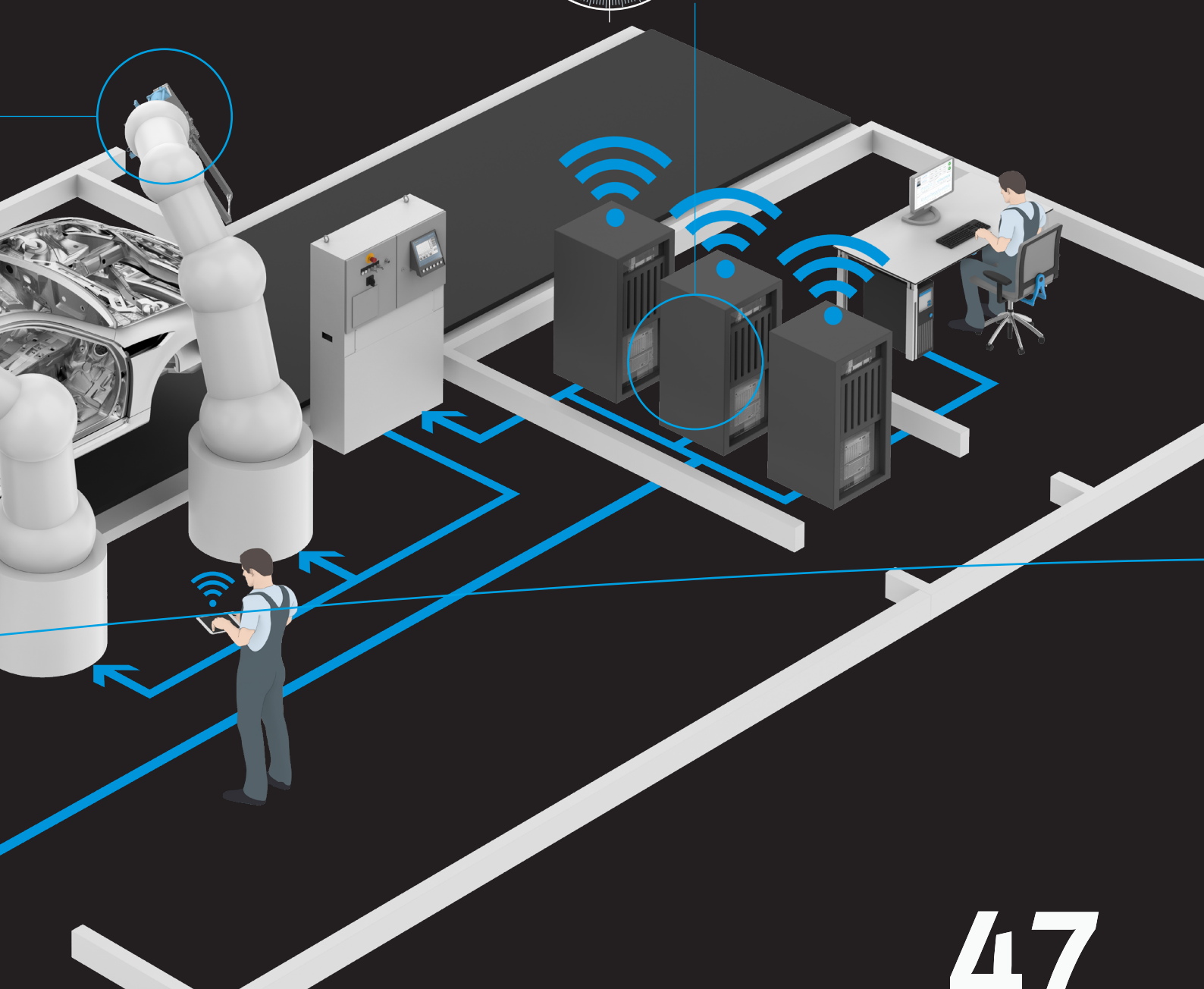
AI for evaluating large amounts
of data in the cloud

Machine builders
Quick commissioning

End users
Faster fault finding
Energy savings

On-premises

AI at the system or internal
production network level.



Technology

Festo Motion Terminal

This revolutionary innovation is ushering in a new age for production engineering.

Motion Apps control valves for almost all pneumatic tasks. One piece of hardware for all functions!

Festo App World

In the Festo App World, you will find a complete series of Motion Apps as well as many other software products such as firmware.

The Motion Apps of the Festo Motion Terminal need just one piece of hardware for a wide range of valve and analysis functions.



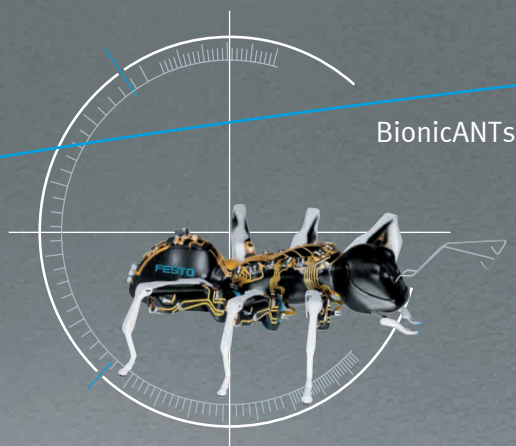
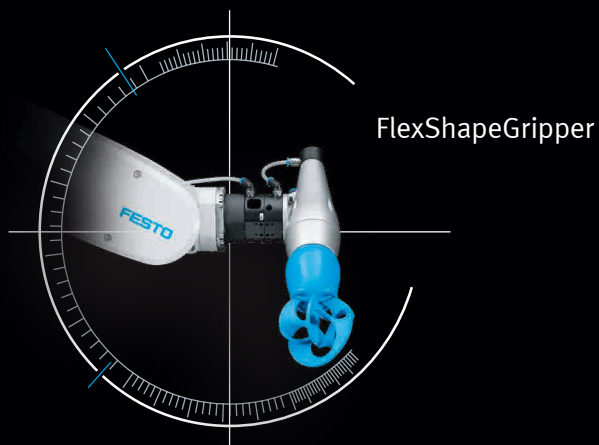
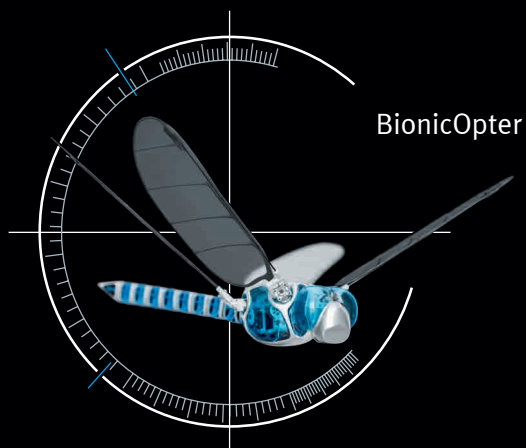
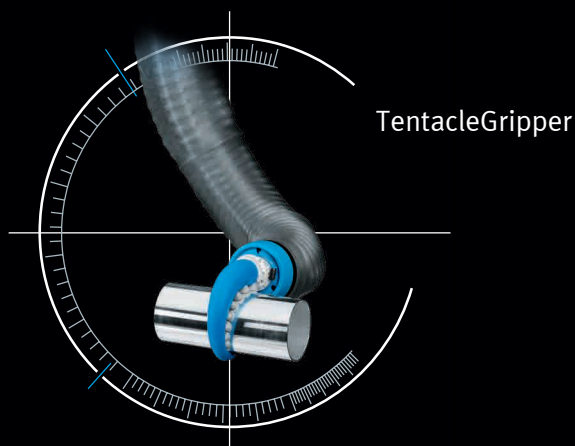
Digitised pneumatics



Technology

Inspired by nature

Learning from nature: in the Bionic Learning Network, natural principles provide new inspiration for technology and industrial applications. Nature performs typical tasks such as gripping, moving and positioning objects as well as controlling and regulating processes entirely instinctively, easily and energy-efficiently.





BionicSwift



From nature to the world of
automation technology.



People. Philosophy.

Responsibility.



What drives us

What drives us.

Philosophy

Our employees are the most valuable asset Festo has as a company. What sets them apart are shared values like responsibility and respect – today and tomorrow.

At Festo, the focus is on people.
No matter who or where. Always.

Responsibility

We carry the responsibility for our actions, ecological, ethical and social.

Globally connected

From the individual expert to the expert organisation – this trend connects us worldwide.

One team – one goal

We want to make you more productive. That's why we call ourselves the engineers of productivity.

Challenges

Speed, complexity, uncertainty ...
We will rise up to them!

Always there for you

We are there for you the world over, wherever you are or manufacture.

Ronald Johnson
Product Management



Thinking like partners

We see ourselves as our customers' partner. In my experience, this approach gives us the best results.

Miaona Chen
Key Account Manager

On a personal level

Take responsibility

Ready for the future – start planning now with a sustainable and socially responsible perspective.

Caren Rosin
Portfolio Development



Global experience

Every culture and every person is a source of inspiration for how we can make things even better.

Luis Felipe Murcia Munoz
Global Key Account Manager



New perspectives

Challenge your normal thought process! And think beyond “normal and good enough”!

Yoo Sangchul
Application Mgmt Electric Automation



What drives us.

Global responsibility for sustainable development

Festo is the work of many hands, over many generations. Our financial independence as a family-owned company enables us to shape our future.

This is our mission.

We integrate customers, employees, suppliers and the community into a shared and sustainable system of value creation.

Thanks to our competency in automation and technical training, we increase our customers' productivity and also create opportunities for the sustainable development of business, the environment and the community. That is our pledge.

People at Festo

We drive the training and ongoing development of our employees, the expansion of workplace health promotion and occupational safety as well as equality and diversity in our company.

Ethics and governance

Our points of focus over the coming years are the expansion of a global corporate compliance management system and the integration of due diligence obligations for human rights into company processes.

Environment, energy and construction

Environmental protection, energy management and construction are closely interlinked at Festo and make an important contribution to conserving resources.

Efficient use of resources and materials

We regard a sustainable lifecycle as part of an all-encompassing product responsibility. The entire spectrum is taken into account, from developing and manufacturing the product to using and disposing of it as well as all other measures to guarantee product quality and safety such as trademark protection and the active prevention of product piracy.

Fields of action of our Sustainability Strategy 2020+

Climate protection and energy efficiency

Developing innovative and smart products and services for a more efficient use of energy is an important building block in our efforts to provide our customers with worldwide support in boosting their climate-friendly manufacturing processes.

Basic and further technical training and CER

Basic and further technical training features alongside climate protection as the most important cornerstone of our sustainability efforts. Festo Didactic makes an important contribution to the technical training of today's professionals as well as future generations with its comprehensive training offer and its global projects and partnerships.



SUSTAINABLE DEVELOPMENT GOALS

Festo has varying levels of influence on the 17 Sustainable Development Goals (SDGs) of the United Nation. The goals to which we as a company can make a relevant contribution are highlighted in colour.



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You want excellent global partners.
You need a supplier who drives change.
We are ready for you.

→ **WE ARE THE ENGINEERS
OF PRODUCTIVITY.**

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