Small parts assembly, semiconductor and electronics industry

FESTO
You live speed and innovation. You think efficiency and miniaturisation. We are your solution for electrics and pneumatics.

→ WE ARE THE ENGINEERS OF PRODUCTIVITY.

Technology

Always the right choice for your application!
• Industry-specific products, solutions and services
• Complete solutions – fully assembled and tested
• System kits – kinematics, controller and software
• Know-how along the entire process chain

Engineering

Clever concepts with innovative systems!
• Worldwide, personal advice
• Electronic catalogue with engineering tools for selection, design, configuration and simulation
• Over 20,000 2D/3D CAD models
Our complete solutions – electric and pneumatic – make you more productive.

The small parts assembly, semiconductor and electronics industries are all characterised by highly complex sequences with many different work steps and processes. Fast and precise production, assembly and handling of small parts in tight spaces is a challenge faced by all these industry segments. Our specialists have these sequences fully under control. From a selection of over 30,000 components, they will put together the perfect solution for you – from compact electric drives to complete handling systems.

For more information:
www.festo.com/small_partsAssembly
www.festo.com/semiconductor
Back end

In the back-end area of the semiconductor industry, quick and precise feeding of materials plays a decisive role in ensuring efficient production. Festo provides a range of solutions for this.

Die attachment
Connecting wafers and lead frame

Wire bonding, bond inspection
High-speed unplugging of electrical connections and quality inspection

Testing, marking, packaging
Testing chips for proper function, marking them and packaging them carefully

More at: www.festo.com/back-end

Compact planar surface gantry EXCM
Extremely compact and with optimum working space coverage. High payload combined with fast acceleration. Quick commissioning thanks to Festo plug & work, including pre-parameterisation of the drive and controller package.

Toothed belt and spindle axis EGC
Many variants make for a comprehensive series with high dynamic response and speed, as well as high force resistance.

Toothed belt and spindle axis EGC-HD
Precise and fast guidance of heavy loads. Ideal for combining the handling function with processes such as joining or latching.

Electric slide EGSK
Extremely compact with high performance and process reliability built-in. Can be used as a guide rail with recirculating ball bearing guide and housing or with ball screw. Easy to integrate.

Electric slide ELGA
Cost-optimised with roller bearing guide, low vibration, for high speeds (10 m/s).

Electric slide EGSL
Maximum performance in a compact space. Its precision, load carrying ability and dynamic response with strokes of up to 300 mm make positioning extremely economical. Particularly suitable for vertical applications.

Festo core product range
covers 80 % of your automation tasks

Worldwide: Always in stock
Superb: Festo quality at an attractive price
Easy: Just a few clicks to place an order online
Fast: Ready for dispatch from the Festo factory in 24 hours

★ Ready for delivery in 24 hours from stock. Held in stock in 13 service centres worldwide!

★ Ready for delivery in 5 days maximum from stock. Held in stock in 4 service centres worldwide!
SMT process

From panels with several circuit board blanks to the final test of the individual circuit boards: Festo supports the SMT process.

More at: www.festo.com/smt-process

**Electric cylinder ESBF**
This powerhouse with ball screw drive boasts maximum feed forces of up to 17 kN and is extremely precise and fast with speeds of up to 1.35 m/s.

**Electric cylinder EPCO with motor controller CMMO-ST**
As simple as a pneumatic cylinder, with the advantages of an electric drive, yet at a lower cost and simpler than electric positioning systems. Perfect with stepper motor controller CMMO-ST with servo motor mode.

**Twin piston semi-rotary drive DRRD**
Powerful and with high load bearing capacity thanks to the twin piston principle – with very compact dimensions. Very high repetition accuracy: < 0.05°, for torques of 1.6 to 24.1 Nm.

**Short-stroke cylinder ADVC**
High clamping forces, rapid response to pneumatic actuation and minimum installation space. Integrated sensor slots, hole pattern for mounting as per VDMA 24562.

**Mini slide DGSL**
Double-acting drive with many options for mounting on grippers and other drives. Highly flexible thanks to a large number of mounting and attachment options.

**Rotary indexing table DHTG**
Designed for partially automated systems, equipment buffers, swivel tasks or separation tasks. High load capacity, precise and economical. Clockwise or anticlockwise rotation, reciprocating or flexible operation.

**Line loader**
Circuit boards are moved from the magazine onto the conveyor

**Marking system**
Circuit boards are marked with labels

**Coating**
Sensitive components are sealed with adhesive
THT process

THT process: from transporting of the circuit boards to odd form assembly and the contacting of the circuit boards, Festo provides you with the right solution.

Selective soldering
Circuit boards are moved precisely over the soldered joints

Depanneling
Removing PCBs from the panel

Testing and packaging
the components

More at: www.festo.com/tht-process

Gripper family DHxS
Great selection of reliable and durable grippers, whether radial, three-point, parallel or angle.

Vacuum generator OVEM with suction gripper ESG
Reliable processes and less machine downtime thanks to condition monitoring and automatic fault indication. Monitors the evacuation and ejection time of the cycle. Perfect in combination with suction gripper ESG.

Miniature vacuum valve MHA 1
The perfect valve combination for dynamic vacuum control with only three connections: vacuum, pressure, suction gripper. Extremely compact, and also available as a complete, integrated solution on a circuit board with valve, sub-base, sensors and control electronics.

Proportional pressure regulators VEAA/VEAB
With an innovative piezo bender as the actuating component. VEAA/VEAB combine precise regulation, low hysteresis and high repetition accuracy with low energy consumption and a compact design. Flow rate 7 l/min (VEAA) and 20 l/min (VEAB). Available from the end of 2016.

Valve terminal MPA with electrical terminal CPX
Perfect networking on MPA with CPX terminal. Supports communication with all common fieldbus systems and Ethernet. Also perfect for new perspectives, e.g. in diagnostics.

Valve terminal MPA-L
Highly modular, more flexible, lighter and less expensive. Perfect wherever maximum modularity and pneumatic performance are required. Low-cost fieldbus connection via CTEU.

Fieldbus node CTEU
Modular fieldbus connection for various valve terminal types: the fieldbus can be changed (e.g. CANopen, PROFIBUS, EtherCAT) by simply replacing the bus module (CTEU).
Final assembly

The field of small parts assembly is very diverse. We have used valve assembly as an example here to show how workpiece carriers transport the individual products to the assembly cells and position them during the process.

Valve terminal VTUG
Durable, sturdy and unbeatable with 24 valve positions. Plus an excellent price/performance ratio and high flow rates up to 1,300 l/min. Save up to 50% on energy with reversing mode. Low-cost fieldbus connection via CTEU.

Compact valve VUVG
The best valve in its class. Increase in flow rate of up to 100% and higher productivity combined with minimal space requirement.
New: VUVG-...-S
Focused features in proven Festo quality at an attractive price.

MS series service units
The comprehensive concept for application-specific solutions for your compressed air preparation requirements. Freely combinable function modules, size mixing, flow sensors, electric pressure regulators and integrated pressure sensors.

Intelligent compact vision system SBO...-Q
Extremely reliable quality inspection
Extremely reliable inspection in a very wide range of applications. Up to 256 inspection programs, each with 256 inspection features, can be saved. Optional: OCR (optical character recognition).

Master controller
Integrated CODESYS PLC and integrated CAN interface transforms it into a CANopen master controller. Ethernet interface for shared communication up to management level.

Code reading made easy
With the vision sensor SBSI, simple vision system applications can be realised quickly and inexpensively even without expert knowledge. Whether you want to read codes or carry out simple quality inspections, the SBSI can be commissioned in just 3 steps.

More at: www.festo.com/final_assembly

Housing part is fed in, quality is inspected, and the housing part is placed on the carrier

Preassembly of a component on a rotary indexing table

Sorting and placing the finished component

1 Housing part is fed in
2 Preassembly of a component
3 Sorting and placing

1
2
3
Platform strategies and modularisation for increased productivity

Industry segments like the watchmaking and automotive industries, but also the consumer electronics industry, have been using platform strategies and modularisation for years as a way of reducing costs and increasing profitability. Festo is now applying these principles to the world of automation.

Compact handling system YXMx
The compact handling system YXMx constitute the basic platform for a wide variety of applications. The ready-to-use system kits comprising software with predefined function elements, controller and kinematics are ideally suited for applications such as screwing, dispensing, testing, soldering, moving and gripping as well as opening and closing containers.

Servo press kit YJKP
The modular servo press kit YJKP for electric press-fitting applications has exactly the software functions, the appropriate standard drive components from Festo and the controller you need. The end result is an extremely precise press-fitting system with a high level of repetition accuracy and an excellent price/performance ratio.

Greater efficiency and higher productivity
Faster availability
• Solutions based on standard components

Lower project and overall costs
• Everything from a single source
• Only one part number
• Fast commissioning