Small parts assembly, semiconductor and electronics industry
Our complete solutions make you more productive – electrically and pneumatically. Ever-shorter innovation cycles. Miniaturisation and flexibility in manufacturing and assembly. Time and cost pressures. Highly complex processes. These are the challenges faced every day in the semiconductor, small parts assembly and electronics manufacturing industries. Our industry specialists are familiar with these challenges and they know your process sequences inside out: from a selection of over 30,000 electrical and pneumatic components, Festo promises to put together the perfect solution for you, from compact electric drives to complete handling systems. Everything from a single source.

For more information:
www.festo.com/small_parts_assembly
www.festo.com/semiconductor
Fast, precise, reliable and cost effective

Our solutions meet the key requirements for successful automation in the small parts assembly, electronics and semiconductor industries. And we use the most suitable technology, whether electrical or pneumatic.

Positioning
Always at the right place!

- Placing
- Aligning, rotating, turning
- Guiding, lifting
- Loading and unloading
- Sorting, feeding
- Clamping
- Stopping, separating

Testing and measuring
Reliable optimal results!

- Pneumatic
- Inductive
- Optical with sensors or Festo vision system

Handling
Get a grip on everything!

- Driving
- Gripping
- Holding
- Assembling
- Sorting
- Transporting
- Packaging

Processing
Reliability at every station!

- Marking
- Coating
- Joining, bonding
- Lasering, separating
- Pressing
- Welding, soldering
- Forming

Open and closed-loop control
Control your success!

- With Festo controller in the control cabinet, on the valve terminal or integrated in the smart camera
- Pneumatically controlled
- Servopneumatically or electrically controlled

Your advantage

Our know-how

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Your advantage

Our know-how
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

Mini H-gantry EXCM
Extremely compact and with optimum working space coverage. High pay load combined with fast acceleration. Quick commissioning thanks to Festo plug and work, including pre-parameterisation of the drive and controller package.

Toothed belt and spindle axes EGC
Many variants as a comprehensive series. High dynamic response and speed, high force resistance.

Toothed belt and spindle axis EGC-HD
Guide heavy loads precisely and quickly: EGC-HD. Perfect in cases where it is desired to combine a handling function with assembly or snap-fitting.

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

Electric slide EGSK
Extremely compact! High performance and process reliability built-in. 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 with compact space. Its precision, load carrying ability and dynamic response with strokes of up to 300 mm make positioning extremely economical. Especially ideal in vertical applications.

Toothed belt axis ELGR
For high loads and improved guidance behaviour! Fast commissioning, motor mounting in any position, open interface also for motors from other manufacturers.

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

More at: www.festo.com/back-end
From the panel with several circuit board blanks to the final test of the individual circuit boards: Festo supports the SMT process.

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

**Rotary/lifting module EHMB**
For rotary and linear motion! And for flexible and independent positioning – electric or pneumatic. Stable guide, hollow shaft for cables and hoses included.

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

**Mini slide DGSC**
With 8 mm width, the narrowest ball-bearing slide on the market! Very smooth and even movements, extremely precise.

**Mini guided drive DFC**
High precision and load capacity with minimal space requirement. Drive and guide in a single housing – with plain-bearing guide or recirculating ball bearing guide and contactless end-position sensing.

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

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

More at: www.festo.com/smt-process
THT-process: from the transport of the circuit boards to odd form assembly and the contacting of the circuit boards, Festo provides you with the right solution.

**Gripper family DHxS**
Whether radial, three-point, parallel or angle grippers: great selection of reliable and durable grippers starting at size 6.

**Vacuum generator OVEM with suction gripper ESG**
Reliable processes and less machine down-time 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, also available as a complete, integrated solution on a circuit board: valve, sub-base, sensors and control electronics.

**Valve terminal MPA with electric 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 in single steps! 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).

More at: [www.festo.com/tht-process](http://www.festo.com/tht-process)
Final assembly

The field of small parts assembly is very diverse. As an example, we have illustrated valve assembly. Workpiece carriers transport the individual products to the assembly cells and position them during the process.

Valve terminal VTUG
Unbeatable 24 valve positions, durable and sturdy. Plus an excellent price/performance ratio and high flow rates up to 750 l/min. Save up to 50% energy with reversing mode. Low-cost fieldbus connection via CTEU.

Compact valves VUVG
The best valve in its class! Increase in flow rate of up to 100 % and higher productivity combined with minimal space requirement. Durable thanks to patented cartridge principle.

Valve terminal VTOC
For safe pilot control: compact and flexible. Incredibly safe: separated conductive tracks and plug connectors, coils have dual-pole activation. Low-cost fieldbus connection via CTEU, optional hardware interlock.

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

> for control
With integrated CoDeSys PLC and integrated CAN interface, it is transformed into a CANopen master controller. Ethernet interface for shared communication up to the management level.

Service units – MS series
The fully integrated concept for application-specific solutions to your compressed air preparation requirements. Freely combinable function modules, mix of sizes, flow sensors, electric pressure regulator and integrated pressure sensors!

More at: www.festo.com/final_assembly
Provided consistently: comprehensive support

Festo’s service and support philosophy is based on constant analysis of the value chains of different types of customers. Festo has built on this to develop a sophisticated portfolio that supports you along your entire value chain.

Engineering: lever concepts with innovative systems
- Consulting
- Research and engineering tools
- Sizing tools
- Electronic catalogue
- 3D data

Procurement and logistics: everything from a single source!
- Festo online shop
- 24-hour delivery service
- Logistics optimisation service
- PrePack

Installation and commissioning: simple, flexible and fast!
- Ready-to-install handling systems
- Mounting plates
- Commissioning of axis systems
- Compressed air consumption analysis
- Free ePlan and CoDeSys macros

Operation and maintenance: high levels of system availability save money!
- Energy Saving Service
- Modular service contracts
- Compressed air quality analysis
- Spare parts catalogue/repair service
- Support portal for documentation