Partner for automation
Small parts assembly and electronics industry
Your objective: maximum performance in the smallest of spaces
Our solution: efficient automation – geared to your needs

Fast, precise, reliable and cost-effective – these are the key requirements for successful automation in the small parts assembly and electronics industries. Festo is very familiar with these challenges in its customers’ production processes. From this know-how, we develop suitable, compact and economical automation solutions that can be used to lower production costs.

For demanding precision requirements, our experts use pneumatic or electric drive technology depending on the application. Therefore, the most suitable technology is always used – and in a wide range of industries:

- Telecommunications
- Electronics
- Automotive
- White goods
- Medical technology

More at: www.festo.com/small_parts_assembly

Provided consistently: comprehensive support
It is the continuous analysis of the value added chains of numerous customers that underpins Festo’s service and support philosophy. Festo has built on this to develop a sophisticated portfolio that supports you along your entire value added chain.
Many different process steps – a single solution: Festo

Small parts assembly and the electronics industry are distinguished by highly complex sequences comprised of many different work steps and processes. Our competent specialists have these sequences fully under control: from a product range of over 30,000 components, they will undoubtedly put together the perfect solution for you – from compact electric drives to complete handling systems. Productive, economical, energy-efficient.

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

Testing and measuring
Reliable optimal results!
- Pneumatic
- Inductive
- Optical with sensors or Festo vision system

Positioning
Always at the right place!
- Placing
- Aligning, rotating, turning
- Guiding, lifting
- Loading and unloading
- Sorting, feeding
- Clamping
- Stopping, separating

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
Application knowledge

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

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

Product highlights

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.

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.

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!

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.

Selective soldering
Circuit boards are moved precisely over the soldered joints

Depanelling
Removing PCBs from the panel

Testing and packaging
the components

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.

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 for 32 ... 100 mm diameters.

Twin-piston semi-rotary drive DRQD
For swivel angles up to 360° with maximum mass moment of inertia for heavy loads and maximum dynamic response. Its powerful and resilient twin-piston principle with a repetition accuracy of less than 0.2°.

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.
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.

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

Vacuum generator OVE 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/final_assembly
Solution highlights

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!

Vision-controlled motion
Precision work and high speed: these characteristics are combined by the handling of USB sticks, which are fed to a test station. To avoid time losses, they are precisely positioned using a camera SBOQ.

Grid dimension adjustment made simple
Unique and in use as a customer-specific solution: the pitch slide module DHMP. It can be used to exactly adjust the grid dimension of the sawed-out circuit boards for further processing. Ready-to-install, weight optimised and compact, it replaces complex self-made solutions. The flexible solution is planned with few parameters.

A simple solution: gripping, guiding and press-fitting plug connectors
Reliable, dynamic and always the correct force: the precise and powerful handling and assembly device with heavy-duty axis EGC-HD combines the gripping and feeding of press-fit plug connectors with an integrated assembly process. Dual monitoring – visually and by means of force/displacement – ensures that all the pins have been press-fitted with the appropriate force and fit precisely.
Innovative and economical

Quick and reliable production

Many electronic products and non-electronic consumer products have a very short product life cycle. The small parts assembly and electronics industries are distinguished by extremely short innovation cycles and therefore short machine life cycles. With its innovative products and solutions, Festo is making it easier and more economical to meet these challenges.

www.festo.com