

# Fully automated production line for dispensing processes when manufacturing electronic components



**FESTO**

## Highlights

- Totally clean compressed air when applying the atmospheric plasma
- All-round solution for operation and control of a cartridge reservoir when applying the thermal paste onto the component part
- Exact and precise re-positioning of the system for applying sealant adhesive after replacing a mixing tube

## Customer

bdtronic GmbH, a company located in Weikersheim (Germany), is one of the world's leading suppliers of dispensing systems, including complete systems for automating the assembly and production of electronic components.

## Project

Product solutions for an automated production line:

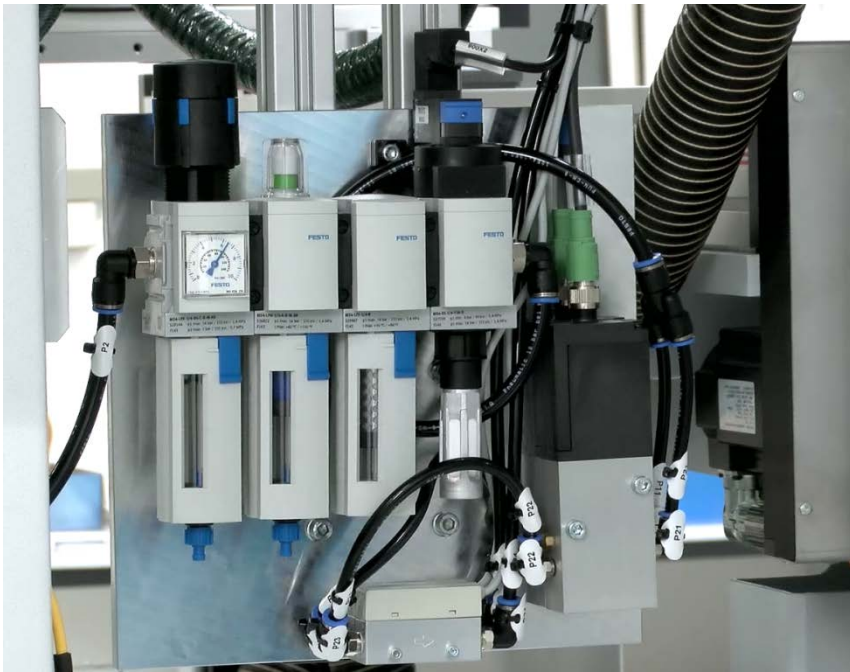
- Pre-treatment of the printed circuit board, i.e. cleaning process by applying atmospheric plasma
- Applying thermal paste
- Applying sealant adhesive

## Requirements

- Automatic manufacturing
- Maximum system availability
- Clean compressed air
- Precision and process reliability
- High number of items and choice of variants

## Solution

- MS series service units for clean compressed air
- Proportional pressure regulator VPPE
- Valves VUVG with Ethercat connection
- Compact cylinder ADN for pushing out the reservoir
- Ball valve actuator units VZBA with DSBC
- Precision thanks to electric slide unit EGSK, stepper motors EMMS-ST and motor controller CMMO-ST



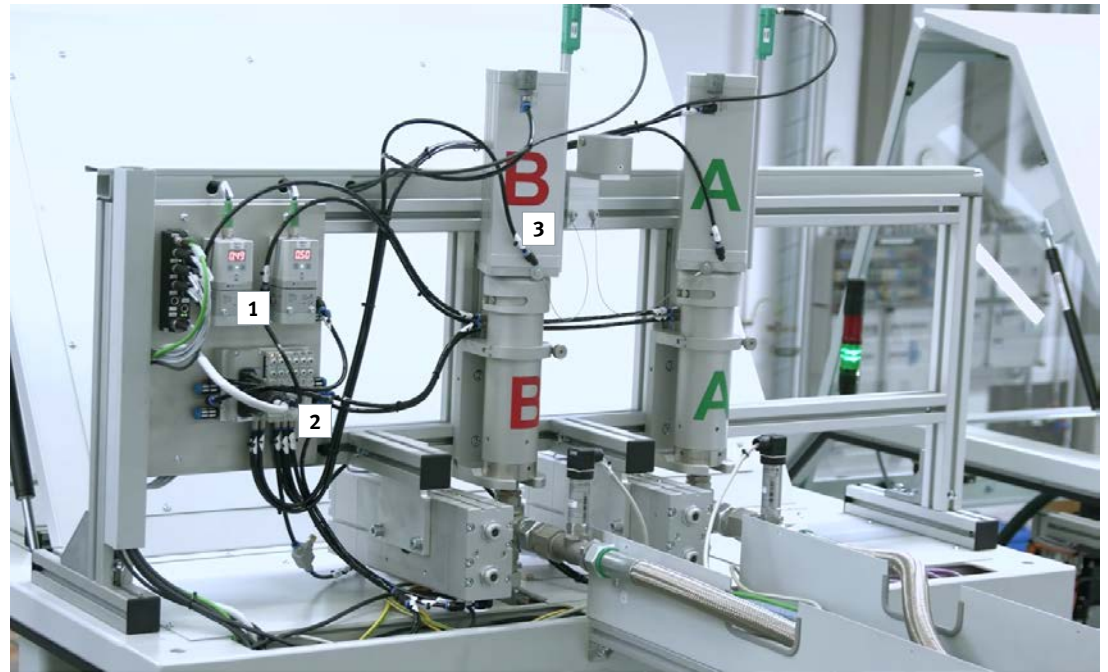
### Clean compressed air

Totally clean compressed air is required for the plasma process. This is achieved via a service unit combination of the MS series with an activated carbon filter which filters particles and oils out of the air.



### Precision

To guarantee the precise re-positioning of the system after replacing the mixing tube, precision slides EGSK are used which are powered by a stepper motor EMMS-ST and controller CMMO-ST.



### Maximum system availability

A temporary cartridge reservoir which enables the replacement of cartridges during operation guarantees maximum system availability. This was implemented using Festo components:

- 1 Proportional pressure regulator VPPE
- 2 Valves VUVG with Ethercat connection
- 3 Compact cylinder ADN for pushing out the reservoir
- 4 Ball valve actuator units VZBA
- 5 with DSBC for emptying the component container

# Fully automated production line for dispensing processes when manufacturing electronic components: Components in detail

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## Service units MS series

- High flow rates
- Energy efficient
- Individual configuration
- Integrated sensors



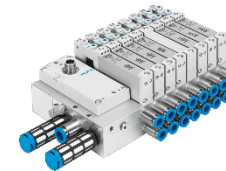
## Electric slide EGSK

- Recirculating ball bearing guide and ball screw
- Spindle axes with maximum precision, compactness and rigidity



## Valve and valve terminal series VG

- Small, compact, with high flow rate
- From individual valves right up to fieldbus-compatible valve terminals
- Ideal for all price-sensitive applications



## Ball valve VZBA

- Compact and sturdy
- High torques
- Long service life
- Brass and stainless steel design



## Compact cylinders ADN

- Compact design
- Wide range of applications
- Comprehensive, modular product range offering many variants which can be combined as required



## Stepper motors EMMS-ST

- With long service life and full positioning functionality
- Optional with brake and encoder
- Double-line hybrid stepper motor with high torque and a high protection class



## Controller CMMO-ST

- Closed-loop servo controller for stepper motors
- Assembly directly at the machine rack or in the control cabinet
- Supports safety function STO



## Prop. pressure regulator VPPE

- Available with or without display
- Good functional features with simple controlling tasks
- IP65 degree of protection
- Suitable for flanged connection



## Standards-based cylinders DSBC

- Robust and attractively priced
- Extensive range of accessories
- Available as a complete unit, e.g. with fittings, tubing, foot mountings, etc.