



## Orientation detection of electrical contacts in the automotive industry

**FESTO**

Zufag AG, a Swiss company located in Lützelflüh and specialising in automatic feed technology, relies upon the Checkbox Compact where tricky position recognition tasks are concerned.

**503.1.REF→**



**The task:**

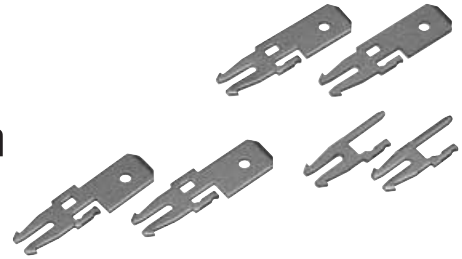
- Parallel, simultaneous and positionally accurate feeding of 2 plug contacts of the same type to a coil assembly
- Reliable orientation detection and automatic ejection of defective or bad parts
- With flexible changeover to three different types of plug contacts

**The solution:**

2 Checkbox Compact PLC each built into a vibratory bowl feeder:

- Automatic ejection of defective or bad parts
- Rapid variant changeover using type pre-selection via PLC
- Control of the entire parts feeding system via the Checkbox Compact
- Consistent, high product quality thanks to integrated quality inspection

# Checkbox Compact – a simple solution to complex tasks



**Orientation detection of electrical contacts using the Checkbox Compact**

The more closely production is geared to actual market demands, the more important efficient, intelligent control of the flow of goods becomes. Continuously optimised manufacturing sequences, high productivity and great flexibility place exacting demands on parts feeding technologies.

Zufag AG, who are now able to look back upon 12 years of experience in the field of parts feeding technology and are considered experts in creating solutions for special applications, was commissioned to fulfil a difficult assignment by a renowned supplier to the automotive industry.

2 correctly positioned plug contacts (of the same type) must be fed to a coil assembly in 2 rows, and defective parts must be ejected. Additionally,

the system should be as easy to operate as possible in order to ensure simple, time and money saving changeovers of 3 different part variants. An acceptable parts rate of 25 pieces per minute was required.

For technical reasons, as well as to reduce costs and save space for the 6 bowl feeders utilised in this system, only an optical solution would do. Zufag AG contacted Festo as a result of good experience with the Checkbox in the past.

**The economic solution**

- The system is laid out as follows:
- 1 Two vibratory bowl feeders, each with one Checkbox Compact built-in
  - 2 Two linear conveyors utilised as a buffer-zone
  - 3 One handling axis with double gripper for inserting the contacts into the coil assembly

**Small in format – big in performance**

The Checkbox Compact controls the entire parts feeding system, i.e. it activates and deactivates the vibratory bowl feeders and monitors the buffer zone. The plug contacts are advanced by the bowl feeder drive unit along a path which takes them past a camera, where they are inspected. The Checkbox Compact PLC facilitates rapid changeovers for 3 different plug contact types by means of type pre-selection.

- Incorrectly orientated parts are blown back by a pneumatic valve in the bowl feeder.
- A rate of 35 good parts per minute is achieved. With 4 possible part orientations, up to 140 parts per minute pass the camera for inspection.

Further information regarding the Checkbox Compact is available on the Internet at: [www.festo.com](http://www.festo.com)