Checkbox Compact CHB-C-N

FESTO

simply better

Exact Sorting! Accurate Counting!

Camera-based sorting, inspecting and counting of assembly components

The new Checkbox Compact

The Checkbox Compact CHB-C-N is the most advanced model of the Checkbox system family which has proven it's reliability and functionality in thousands of applications. The CHB-C-N is an intelligent system with adaptive workpiece flow control and optical workpiece identification. It sorts small parts according to type, orientation, quality as well as quantity (with quantity preselection).

It is particularly suitable for trouble-free feeding of small parts to automatic assembly and production machines, especially in cases with high part rates and a large number of workpiece types. The Checkbox Compact enables reliable rejection of faulty parts, prevents assembly of incorrect types and reduces setup times to a minimum.
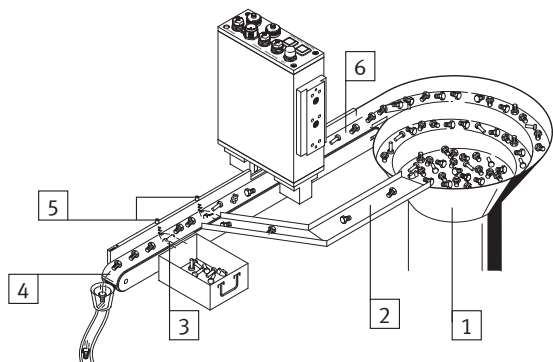
Compact versatility

The CHB-C-N consists of a sturdy aluminium housing with all the necessary components:
- User interface (push buttons, LEDs, display)
- Connectors for the electrical connection of actuators, buffer zone sensors, diagnostics PC, power supply, encoder and master PLC
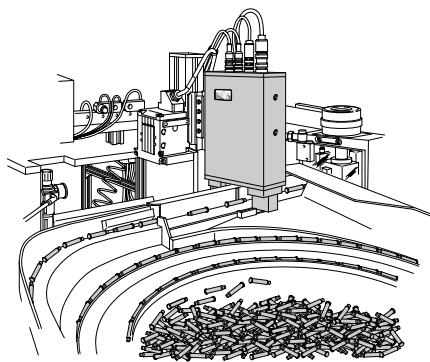- Line scan technology (illumination, light guides, line-scan camera)

The workpieces are scanned in the optical channel between the two prisms on the underside of the device. The optics are designed to be open on the underside, allowing the CHB-C-N to be installed above various types of customer specific transport equipment (e.g. a conveyor belt)

Highlights

Safe:
- 100% parts inspection
- Exact workpiece flow control

Comfortable:
- Easy Integration
- No specific machine vision knowledge necessary
- Teach-In directly at the unit

Powerful:
- High part rates (up to ›1500/min.)
- Large number of workpiece types (256 type memories)

Cost saving:
- All control components integrated
- No additional PLC or programming necessary
- Actuators directly driven
- Control functions for small parts feeder and buffer area monitoring integrated
- Simply expandable inspection functionality by easy integration of add-on sensors, e.g Colour Sensor or Vision Sensor

Checkbox Compact CHB-C-N

Integration of the Checkbox in a transportation device:
Example with conveyor belt and two actuators

1 Small parts conveyor e.g. vibratory bowl, centrifugal or step feeder
2 Return of incorrectly orientated parts to the small parts conveyor
3 Ejecting bad parts (faulty parts, wrong part type)
4 Onward transfer of good parts to the adjacent buffer zone or the adjacent machine
5 Actuators e.g. blow-off valves, pushers or turning stations
6 Transportation device e.g. conveyor belt

Orientation detection and quality inspection of electrodes
The Checkbox CHB-C-N inspects the electrodes and controls the entire feeding process, e.g. a subsequent turning station for turning incorrectly orientated good parts and a blow-off nozzle for separating bad parts.

The following features are checked:
• Orientation
• Diameter
• Length
• Shape

Technical data	
Dimensions W x L x H [mm]	60x164x256,9
Dimensions of optical channel W x H [mm]	59,2x40
Image sensor type	CMOS line scan
Sensor resolution	2048 pixels/line
Max. line frequency, sensor [Hz]	8500
Max. no. of inspection programs	256
Max. no. of types per inspection program	1
Max. no. of different orientations per type	8
Counting range	1 ... 9999999
Min. part length [mm]	1
Max. part length [mm]	up to ›1000, depends on belt speed and resolution
Min. part diameter [mm]	0,5
Max. part diameter [mm]	25
Nominal DC operating voltage [V]	24 (-15 ... +20%)
Interfaces	Ethernet, TCP/IP Actuators: 4 digital high current outputs Small parts conveyor/buffer area: 4 digital I/Os PLC: 17 digital I/Os Encoder: RS 485
Ambient temperature [°C]	-5 ... +45
Degree of protection	IP64
Ambient conditions	Screened from extreme external light sources cleanest possible ambient air, Dry
Order number	**3501040**