Pick & Place:
Automated placing and measurement

High-resolution optical 3D measurement technology in combination with a collaborative robot arm enables automated placing, measuring and OK/NOT OK sorting in production.

An automation solution that makes it possible to set up a complete automation process within ten minutes, which can also be used in smaller production environments and pays for itself within ten months – these are the most decisive features of the latest automation option „Pick & Place". Users can extend Alicona measuring systems with a collaborative robot arm to automatically pick, place, measure and sort components. The possible connection to existing production systems including ERP facilitates adaptive production planning.

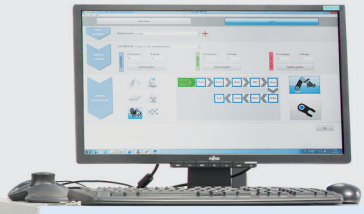
Teach-in of measurement series in only three steps

Pick & Place is based on the interaction between an administrator who pre-defines automation processes, a collaborative robot for the manipulation and placing of components as well as high-resolution optical 3D measurement technology. The teach-in of measurement series is carried out in only three steps and does not require any programming knowledge. Regardless of the number of components, only four parts per pallet have to be pre-defined. The robot handles component manipulation including the positioning on the measuring system and further sorting in OK/NO OK pallets. The operator starts the entire process in production at the push of a button, picking, placing and measurement is carried out fully automatic.

In use with machine tool

Pick & Place is also used in conjunction with the machine tool. The machined component is removed from the machine by the robot, clamped on the measuring system and measured automatically. Depending on the manufacturing strategy, there are different options of continuing the production process afterwards. Either the measurement result is fed back into the machine tool following a closed-loop strategy, where machine parameters are corrected automatically and manufacturing continues in a self-controlling manner. Alternatively, an automatic sorting into OK/NOT OK pallets follows after the 3D measurement for further processing.

Alicona measuring systems can be equipped with a collaborative robot arm enabling automated placing and measurement of components including inserts…



Closed-Loop: First part, good part

Closed-Loop refers to a closed circuit which enables producing the first part already as a good part. Production systems, machines and measurement technology form a closed loop. This requires that 3D measurements are not performed offline in a production near measuring room, but as an integral part of production. This enables the verification of dimensions, tolerances and surface quality of a component at an early stage. Measurement results are then fed back into production and manufacturing corrects itself. Thereby, faulty components are no longer produced, a first part is already a good part.