



Plastics Systems

Max Petek Reinraumtechnik



- Project:** Robot automation – radio blanking lid
- Customer:** Max Petek Reinraumtechnik
- Technology:** New development of a 2-stage handling gripper for picking and further processing of radio blanking lids under cleanroom conditions

Max Petek Reinraumtechnik is a mid-sized company having specialized in the manufacture of ready-to-use cleanroom solutions including automation technology for medical and technical cleanrooms. The devices and systems required for materials handling are part of the delivery scope. To make picking and the subsequent machining processes at the periphery efficient and cost-effective, all these steps were taken into account and automated under cleanroom conditions.

Project scope realized by SAR:

- Workflow analysis
- Evaluating various picking concepts incl. tool calibration
- Working out a concept for the favoured picking solution
- Detail engineering
- Layout design with accessibility testing for periphery made available
- Making available the interfaces for the periphery

Given that the blanking lid in its most sophisticated design version is injection moulded with a decorative film, the challenge was to prevent a contact to the visible face when picking the blanking lid from the injection moulding machine. Thus, a picking concept gripping behind the A-side between tool and component became necessary.

Following a consultation with the toolmaker, a 2-stage ejector stroke was implemented. In a first step, the component is demoulded. Then in a second step, the component is ejected such that it stops on the ejectors in a reproducible way, but the recesses in the backside mounting straps become accessible. The handling unit is equipped with two milled, movable strips – similar to a comb – which exactly fit into these recesses and pick up the component.

To ensure free access to the visible face for the subsequent cleaning station, a component shuttle has been integrated into the production cell. This shuttle is used for routing the component to a visual inspection station and to change the gripping position for the handling. In a further process step, the blanking lid is transported to a hot stamping station for applying a decorative rim followed finally by another cleaning station.

The entire process takes places under cleanroom conditions and finally merges into a conveyor transporting the finished parts. The technical cleanroom serves at the same time as protective housing for the automation.



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