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June 2020

FLEXIBLE COMBINATION OF TAMPON PRESSURE SYSTEMS WITH A LINEAR SHIFTING UNIT FOR MASKING LARGER OR MULTIPLE SURFACES AT THE SAME TIME

Verena Blunder
Bertrandt Ingenieurbüro GmbH

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Recommended Citation

Blunder, Verena, "FLEXIBLE COMBINATION OF TAMPON PRESSURE SYSTEMS WITH A LINEAR SHIFTING UNIT FOR MASKING LARGER OR MULTIPLE SURFACES AT THE SAME TIME", Technical Disclosure Commons, (June 29, 2020)

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FLEXIBLE COMBINATION OF TAMPON PRESSURE SYSTEMS WITH A LINEAR SHIFTING UNIT FOR MASKING LARGER OR MULTIPLE SURFACES AT THE SAME TIME

Technical task:

The technical task is the simultaneous masking of larger or several surfaces.

Initial situation:

Currently, sandblasting foils or a pad printing machine are used to mask the surfaces to be matted. The disadvantages of this procedure are the following:

Sandblasting foils:

- long duration of the masking process, as the film is applied manually to the component (the masking can take several minutes depending on the size of the motif)
- Film application is very complicated and requires many individual and complex steps → manual influencing variables
- exact positioning of the film not traceable during mass production → manual influencing variables
- only plane and slightly convex surfaces can be automated
- concave and convex surfaces technically not possible
- hardly automatable

Pad printing machine:

- Size of the areas to be masked is limited by the size of the system (here the maximum pressing force of the tampon printing machine must be taken into account, as smaller machines do not have enough force to sufficiently deform a larger printing tampon).

Solution:

The solution to these disadvantages is an automated masking process in combination with two pad printing machines and a processing unit, the shifting table. The processing unit is used to move a component for printing between two pad printing machines. The concept of the systems connected to a sliding table was developed in such a way that the systems can also be operated individually. Thanks to the shifting unit, both larger components and several smaller components can be easily printed at the same time.

Advantages:

Foils:

- Shorter masking times especially for larger areas
- Very high positioning accuracy
- flexible masking
- automated masking of plane, convex and concave surfaces
- a significant increase in process quality

Pad printing machine:

- automated masking of larger components
- automated masking of several components simultaneously
- a significant increase in process quality

Possible application:

- two pad printing machines
- a linear displacement unit

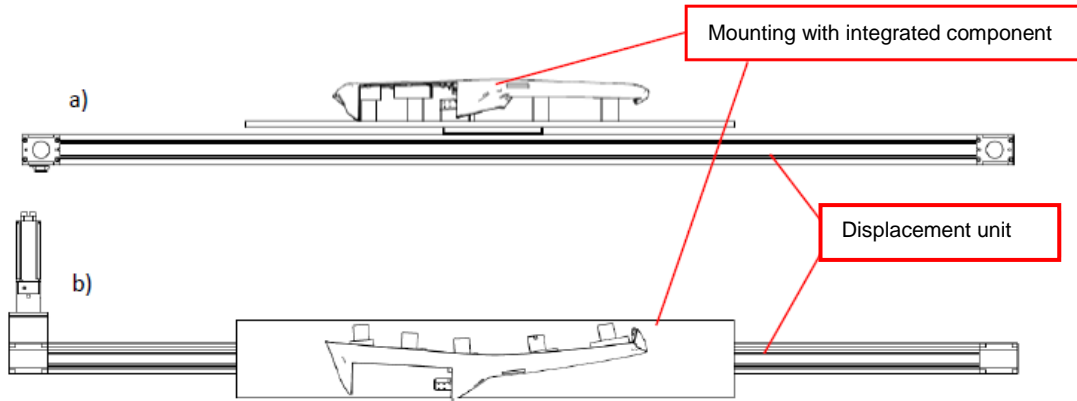


Figure 1: Schematic representation of the process unit a) from the front, b) from above

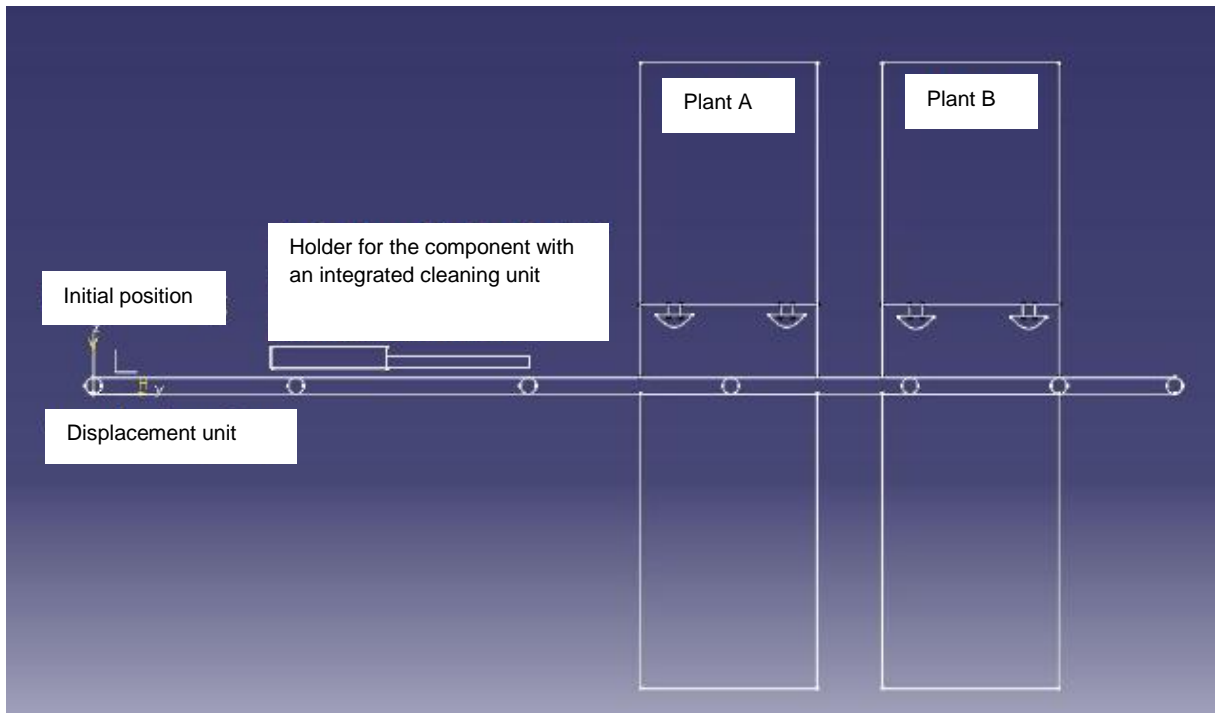


Figure 2: Schematic representation of the two tampon printing machines connected with a shifting unit