

November 2021

## Printing System for Microscope Glass Slides

Since December 2020, KENT has been developing an automated pad printing system for microscope glass slides for UK. Customer was so satisfied with performance they order the second system doubling output few months later.

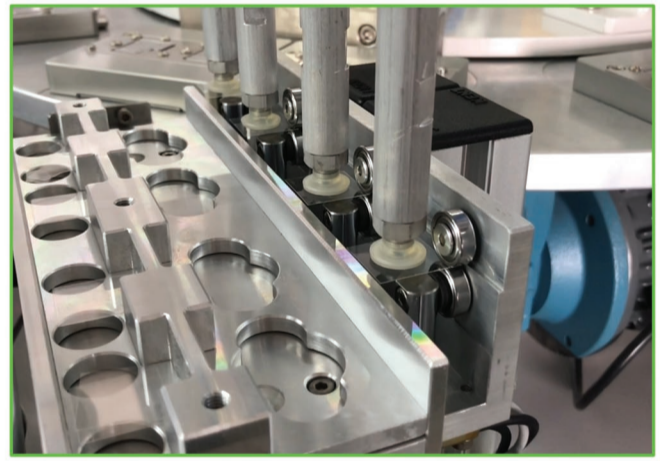
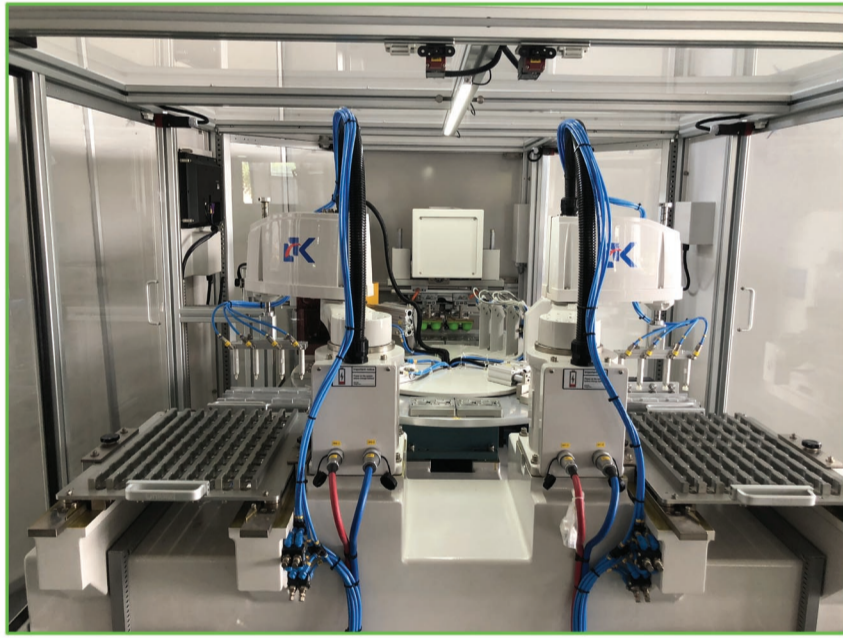
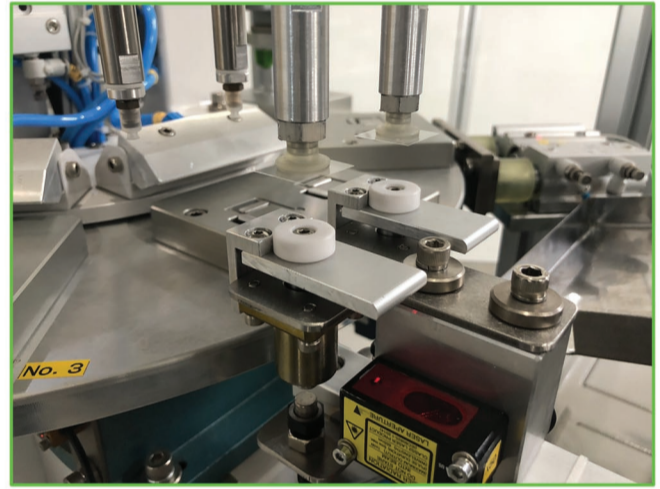
This KENT printing system was originally built for printing fine detail images on a type of microscopic glass slides. Those glass slides were intended for fecal tests on livestock or pets and used by hospitals / veterinary to check the existence of intestinal parasites periodically. Could be due to Covid-19 this printed glass plate obviously not just being used for animal fecal test, for other tests too.

It is a unique application for medical laboratory work. This test plate market could exist in other country too. We studied related application records and videos # 782, # 805 and concluded this glass slides project worth further exploration.

When searching "glass slide fecal tests" over the internet you find this industry spreads over different countries, even in Asia and mainland.



Back to the system and product, glass slides come in boxes and are piled up within. Each glass slide is ultra thin (only 0.1 mm thick) and flat for microscope use. Not surprising to know it is extremely difficult to separate between glass slides from piles because static and atmospheric pressure pushes glass plates tight together. This glass plates separation need a tailored solution in automation.

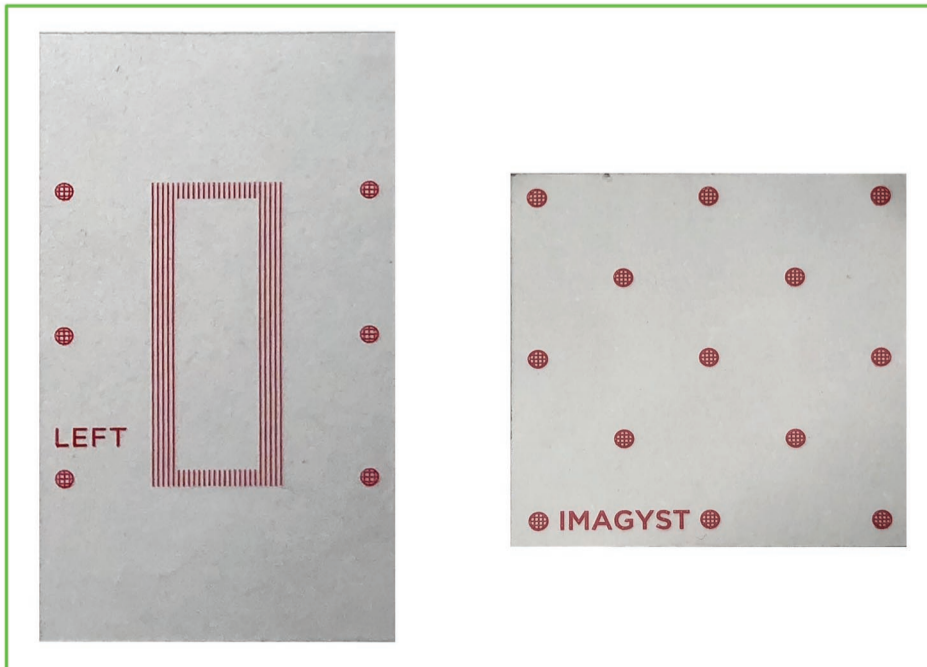


A solution should answer the following :

- How to ensure precise pad printing on ultra thin glass slides?
- Ensure green pad printing work with robotic automation for high productivity.
- How to separate glass slides one by one precisely to print ?

• Key to this application success:

The use of KENT green pad printing elements : green cups, green plate MGP, AVC automatic viscosity control and dust free enclosed cabinet. The trouble free automation system utilizing KENT Scara robot system, tailor made holding jig and slides container auto stack system. Most important the specific design printing pressure control sensor and the accurate pick and plate vacuum suction control.



The first system used just one KENT Scara robot, the second system evolved to two robot setup with highly sensitive vacuum suction head. First robot serve as pick and place glass slides to the print station while the other robot pick and place to unload printed slides to holding tray for doubling output.

Today the third system is being assemble in production. Customer actually ordered third system before they received second machine.