Automated Colony picking for Yeasts and Bacteria

Figure 1: Fully integrated cell picking system

Introduction

Increasingly there is a need for high throughput colony picking within microbiology applications, from strain selection and evolutionary development in yeasts to synthetic biology applications, and growth inhibition with traditional bacteria, or Microbiome work in an anaerobic chamber.

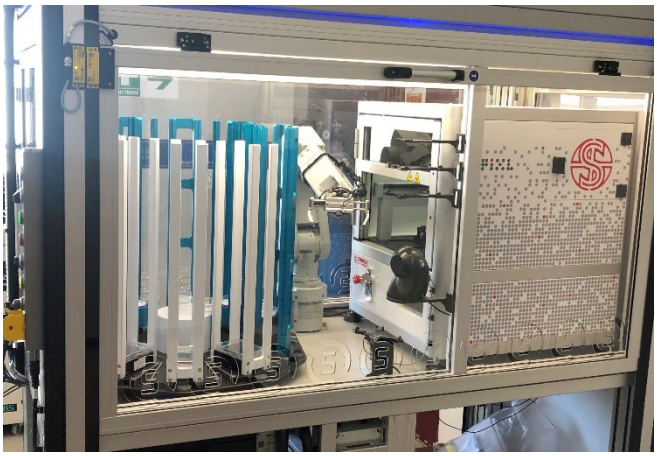

Figure 2: Automated Strain selection in Yeasts

PAA have worked with the Singer Instruments PIXL for several applications. The PIXL was selected due to it being one of the most innovative and effective colony pickers on the market with a freshly cut sterile pick up line to eliminate wash cycles, and the associated contamination risk, plus removing the requirement to store large quantities of tips on the system. The PIXL has proven to be ultra-reliable and able to handle a mixture of petri dishes, multi-well plates and omni plates making it perfect for an automated system where flexibility and reliability are crucial.

By mounting the colony picker on a turntable, it can be rotated for both automated and manual use. This is especially useful in the restricted work area of the anaerobic chamber allowing laboratories to get maximum flexibility from the instrument.

Figure 3: Automated Microbiome research in COY anaerobic chamber

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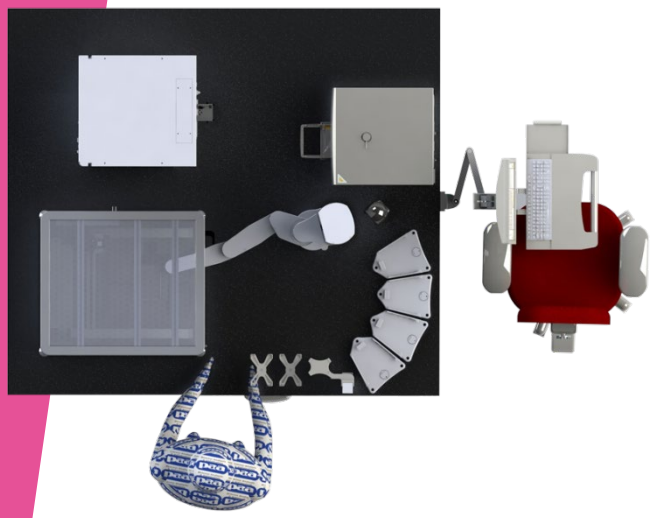

Figure 4: An example of a system designed to test aerobes under different conditions and monitor bacterial growth using the KX-2 collaborative robot

Collaborative Robotics

The KX-2 collaborative robot lends itself to simple bench top automation without the need for shielding to provide a safe working environment for the operator. Features include –

- Drag to teach – so easy to add and teach new positions and labware
- Integrated bar code scanner on gripper – so no additional process time used to scan the bar codes
- Radial reach of 641mm – This enables access to multi-instrument systems and difficult to reach positions
- Radial compactness 183mm – To enable all the work area to be used
- Continuous 360-degree rotation of the shoulder and wrist axis to optimise the workflow

PAA provide a full range of storage solutions for microbiology including hotels and stacks for petri dishes, omni-plates and multiwell plates in both shallow and deepwell formats, along with universal de-lidding stations that can be used for both Petri dishes and SBS footprint plates.

Software

The Harmony™ operator interface provides an easy to use walk up and run system to enable any operator to load and run their assay with minimal training, providing a true walk away system that is easy to use and perfect for academic institutions or companies with multiple user groups.

Summary

If you are planning to automate your Microbial workflow then it is worth considering the PAA automated microbiology system which has the flexibility to work under different environmental conditions and the scope to meet the demands of your process.

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