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RapidPick-MP Features Document

The RapidPick-MP (Multi-Pin) Series Colony Picking System is available in many configurations. Hudson offers 4 standard configurations with an extensive set of custom choices.

- Universal specifications
 - All RapidPick-MP systems can automated plate loading and unloading of both source and destination plates with a single robotic arm.
 - All RapidPick-MP Systems include a barcode reader for source plates and a barcode reader for destination plates
 - All RapidPick-MP Systems come standard with software for colony picking, cherry picking, re-arraying and plate replication.
 - All RapidPick-MP Systems come standard with software for picking from a segmented plate
 - All RapidPick-MP Systems come standard with the ability to interface with additional software packages like LIMS or a sample management database such as Titian.
 - All RapidPick-MP Systems come standard with the feature to save all log files, import text files and export data files about the colonies selected for picking.
 - All RapidPick-MP Systems can image the plate, allow off-line image processing, then return a specific plate to the picker for processing.
 - All RapidPick-MP Systems can be upgraded to image and pick halo forming colonies as well as GFP.
 - All RapidPick-MP Systems include SoftLinx scheduling software for easy integration, remote notifications and error/exception handling.
 - All RapidPick-MP Systems can be integrated with an automated incubator and multiple 3rd party devices (requires the addition of the PlateCrane EX to the RapidPick-MP Basic).
 - All RapidPick-MP Systems are made in the USA.

Manually Load Colony Picker

- RapidPick-MP Basic
 - The colony picker holds 1 source plate and 1 destination plate at a time
 - The system uses 20 tungsten pins on spring loaded linear slides attached to a rotating turret for picking.
 - The system uses a LED light box with the intensity of the lights controlled in software.
 - The LED lights can be changed to different colors if desired.

- The camera takes an image of the entire plate in a single image. No image cropping or building is required.
- The user creates parameter files for identifying good colonies. There is no limit to the number of parameter files that can be created. Good colonies are determined by size, shape, contrast to background and closeness to other colonies.
- The system gives the user the option of manually editing the plate to be picked if desired. Colonies can be selected or deselected with the click of the mouse.
- The operation of the picker is very fast and easy; scan image, analyze image, edit image and start picking.
- 4 pins are actuated at the same time, picking pin, inoculation pin, wash station, sterilization. This action takes under 1 second. After the pins are released, the rotor moves by 1 position.
- Typical picking speed is 1 pick every 1-2 seconds; ~30 a minute, 1800+ per hour
- The picking pin can pick through the agar and hit the bottom of the plate with no damage to the pin, the linear slide or the plate.
- The inoculation pin can be set to “wiggle or dither” in the destination well from 1-10 shakes. This improves the inoculation efficiency to 98%+.
- The wash station is a vacuum wash to remove loose debris on the pin. After leaving the wash station the pin travels through a brush to remove anything remaining
- The pins are sterilized with direct heat. The pins enter a heater coil or furnace at 600F for just under 1 second. The tungsten pins heats through and all samples on the pins are destroyed. The property of the tungsten allows the pin to cool before being used for picking.
- The picker can support NUNC Omnitrays and Petri dishes for picking
- The picker supports most SBS format shallow and deep well plates for the destination or in use with plate replication; 24 wells, 96, 384, 768 and 1536 formats.

The wash and sterilization system has been used on the picking system for over 10 years. Multiple customers have tested the sterilization of the system with PCR and there has never been an issue with contamination after the heater.

There is no need to change the pins for picking and reformatting applications. The RapidPick makes the change in software and uses the same pins. Larger diameter pins are available if desired. The standard pins transfer ~50nl of liquid. The system can be set up for multiple transfers from the same source if needed.

RapidPick-MP Automated Systems

- The system is commonly used as a fully automated process with Hudson’s PlateCrane EX moving both source and destination plates from stacks to and from the colony picker. Even when connected to the stacker the

colony picker can also be used in manual mode with the user loading the picker with source and destination plates.

- The RapidPick-MP System offer an optional enclosure around the instruments with UV lights and a control for the sterilization time.
- The RapidPick-MP Lite
 - The capacity for the entry level automated RapidPick-MP (RapidPick-MP Lite) is 50 shallow well SBS format plates with lids (96 or 384 well) or 18 deep well blocks for the destination.
 - The RapidPick-MP Lite can be easily configured to pick 10,000 colonies per day unattended with additional stacks.
 - Additional stacks can be added at anytime.
 - The RapidPick-MP Lite has capacity for the source side of 25 NUNC Omnitrays with lids. Each Omnitray typically has 300-500 colonies per plate.
 - The system is also ready to go for picking from segmented plates. The software is ready to go for picking X number of colonies from each segment (or well) into specific positions in the destination plate.
 - The user has complete control over the placement of colonies in the destination plate and can create any number of control formats such as leaving the last row blank or the first column or the center 4 well etc.
 - The system can be expanded at anytime to include the following options:
 - Bulk media dispensing with the Hudson Micro10x or the Multidrop Combi.
 - Plate sealing with the RSH4000 automated adhesive sealer with gas permeable seals.
 - Automated incubation with the Liconic STX shaking incubator. The incubator sits under the table and enables multi-day continuous operation.
 - The system includes email alert functions for end of run, errors and all exceptions such as missed barcodes etc.
- The RapidPick-MP Complete
 - The RapidPick-MP Complete is a fully automated system consisting of the RapidPick-MP Lite, 5 additional plate stacks, an automated plate sealer and the Micro10x media dispenser. The entire system is in a free standing 5' x 5' workcell.
 - The RapidPick-MP Complete allows for complete walk away automation and overnight runs.
 - Optional HEPA filtration and UV sterilization is available for the workcell.
- The RapidPick-MP ACIS
 - The RapidPick-MP Lite and the RapidPick-MP Complete are easily integrated with an automated incubator providing total automation of the colony picking, inoculation and growth process.
 - A variety of options for integration to a liquid handling platform are available.