

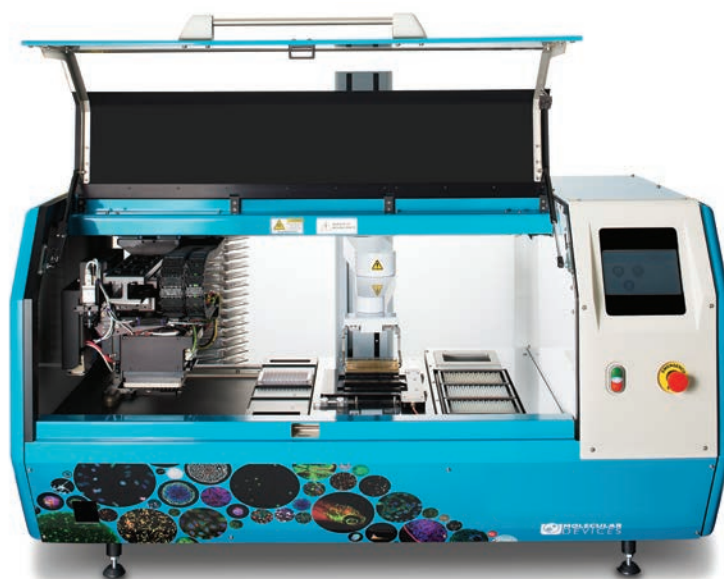
QPix Custom Microbial Colony Picker

Tailored by Advanced Workflow Engineering Solutions (AWES)



KEY BENEFITS OF CUSTOMIZATION

- A wide range of hardware and software customization possibilities to fit your unique workflow needs
- The AWES team provides comprehensive services from consultation through implementation
- Automation features can be added in modules, so system capabilities can be upgraded through AWES at any time



Get the highest level of flexibility in application and experimental design

Our expert team of engineers and application scientists can tailor the QPix™ systems to meet your workflow demands for automated microbial colony picking and plating.

Reduce hands-on FTE time with robotic operation

Add in robotic automation to increase throughput, eliminate human errors, and achieve consistent sample handling.

- Modular automation design—components can be added in modules and are upgradable

Keep samples & people safe and clean

Minimize contamination with optional additions of HEPA filters, interlocked safety guards, and more.

Suit your unique picking needs with custom picking and plating

Configure picking heads, plate holders, plating and streaking patterns, and software tools for those non-conventional microbes.



Accommodate a wide range of labware

Modify the QPix decks to be compatible with a variety of standard and non-standard labware.

Screen colonies based on attributes such as size, color, and fluorescence

Customize cameras, filters, and detection algorithms to see and pick more.

- Modes include red/white and blue/white, fluorescence

Be more efficient managing data

Simplify workflow, audit trails, and file import and export with software customization.

- Integrate with LIMS and data management systems through API

Examples of AWES projects

PROJECT 1

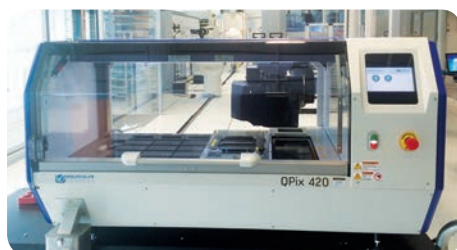
Integrating QPix system into a fully automated, high-throughput DNA manufacturing workflow

The Edinburgh Genome Foundry (EGF) is dedicated to automated design and assembly of large DNA constructs using a fully automated robotic platform. They needed an automated colony picker that can be integrated into their existing DNA assembly workflow, which included 3 robot arms, 2 liquid handlers, incubators, and PCR machines. The AWES solution:

- Modified the QPix system structural design to allow for robotic arm access
- Developed a custom picking head for the spreading of 8 samples onto a single, undivided agar tray
- Provided open API and software support for the integration process

Results

- The modified Qpix system provided the necessary high throughput sample handling (3,000 colonies/hr)
- Integrated, reliable sample tracking for effective sample data management
- Decreased FTE labor and reduced operational costs



Modified QPix system. The back of the instrument has been customized to allow robotic arm access.



Part of EGF's fully automated setup. The modified QPix system (red arrow) is in the upper left, behind the robotic arm. A second robotic arm is also visible, approaching a plate hotel.

PROJECT 2

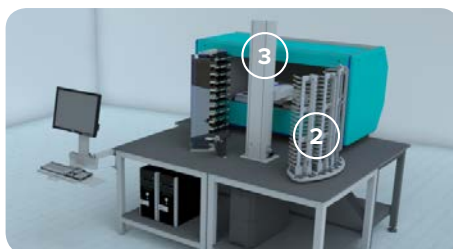
Modifying QPix system for high-throughput screening in protein evolution studies

In this project, Customer X studies directed evolution of proteins. An essential step in their workflow is screening libraries of proteins and antibodies in bacteria, a task that involves that requires colony picking and inoculation. They required a system that can pick and plate over thirty 96-well standard and deepwell plates per day. The AWES solution:

- Modifies the structural design to allow for robotic access
- Includes an automation platform powered by Green Button Go software, Preciseflex PF3400 sample mover, ambient plate and QTray storage (88 plates), and clean air HEPA enclosure.

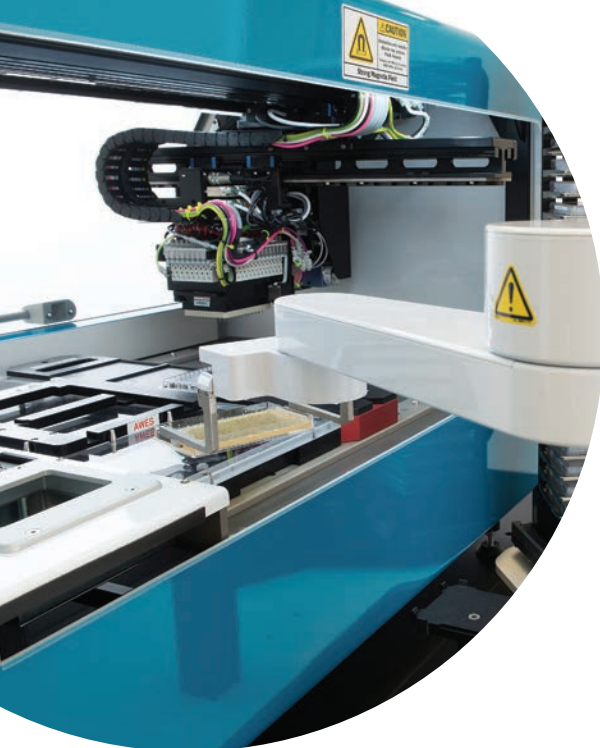


CAD drawing of the QPix setup. (1) QPix system modified to allow robot access. (2) Plate storage. (3) Preciseflex PF3400 sample mover. (4) HEPA enclosure.



Goals

- The modified Qpix system is intended to provide the necessary high throughput sample handling (3,000 colonies/hr) while simultaneously processing over 80 plates per run
- Decrease FTE labor, increase throughput, and reduce operational costs



Explore modifications with AWES

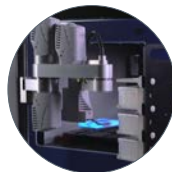
The Molecular Devices Advanced Workflow Engineering Solution team has successfully tailored QPix colony pickers for some customers to include customized software and hardware as well as integration of other lab components such as incubators, liquid handlers, and robotics for a fully automated work cell.*

*Price, time to deliver, and specifications will vary based on mutually agreed technical requirements. Solution requirements may cause adjustment to standard performance.



Turnkey service

Our AWES team works with you to match our service offerings with your needs. Our solutions are tested and validated in-house before being installed in your lab.



Scale-up automation

We can deliver a customized, automation-ready QPix system for future integration; adapt it to integrate into an existing automated solution; or design and test an entire workstation from scratch.



Hardware customization

From custom labware, to unique transfer pins, to special handling requirements, we'll work to find a solution and prove it through validation.



Software customization

We can match specific API needs, enable unique workflow capability, integrate into LIMS or data management systems, customize a UI, and/or control any custom designed hardware.



Biological validation

Our application scientists work with you to understand your process and biological requirements, to reproduce and test the actual performance in-house prior to shipment.



Global service and support

With over 30 years of experience in the life science industry, you can count on Molecular Devices to deliver quality products and worldwide support.

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