

The BioPick : a fully automatic colony picking robot / BioRobotics ; sold by genetix Limited.

Contributors

BioRobotics (Firm)
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The BioPick

*A fully automatic
colony picking
robot*



BioRobotics

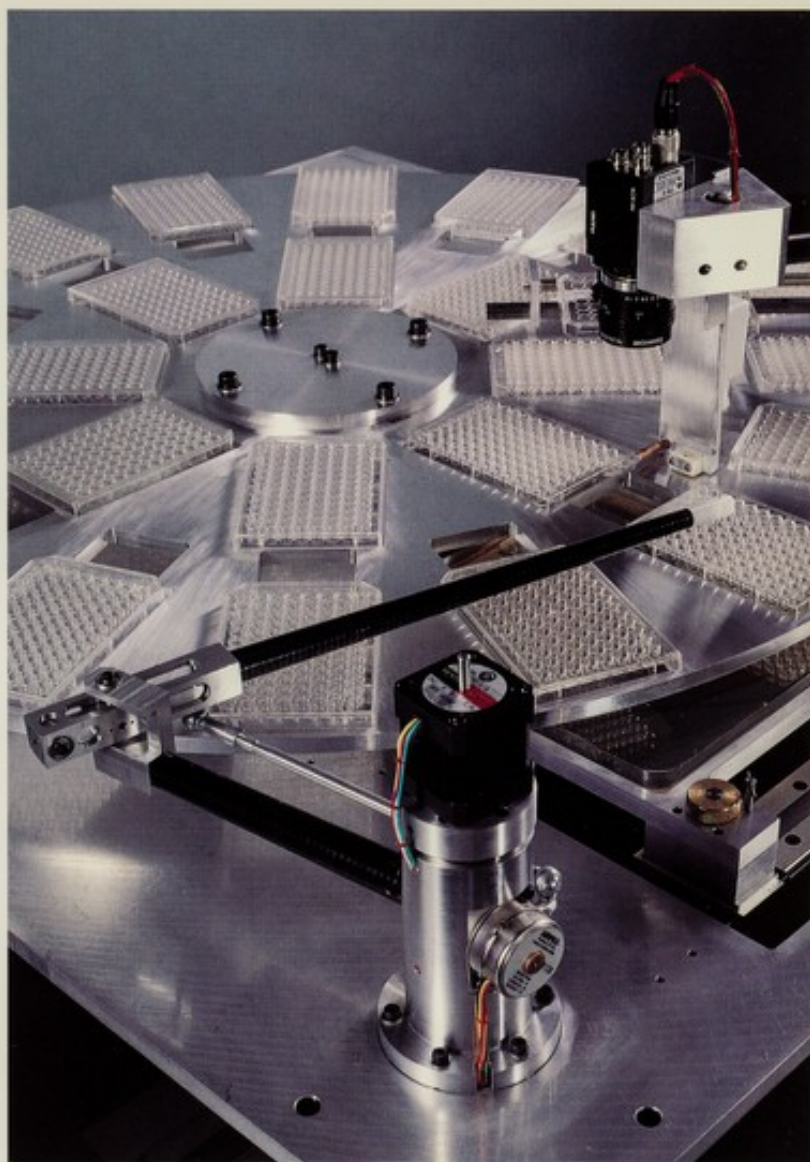
The BioPick

Leading edge vision system identifies all commonly used yeasts, E-coli and pbages

Picks over 9000 colonies in under 10 hours

Specially designed robotic arm for optimum accuracy, reliability and cost effectiveness

Picks from all commonly used petri plates to standard and quad density microtitre plates



Introducing the BioPick

One of the most tedious laboratory tasks is manual colony picking. The BioPick carries out this task entirely automatically.

Using advanced image processing to identify colonies of interest, BioPick is able to pick all colonies commonly used in molecular biology. An extremely accurate carbon fibre robotic arm positions the picking needle exactly over each colony and transfers it to a microtitre plate.

The BioPick has been designed with the user in mind. It has an easy to use graphical interface, can be transported in a hatchback and placed on a standard laboratory bench.

The BioPick is designed with modular sub-assemblies for ease of maintenance.

The BioPick

Incorporates the BioFiller, a fully programmable automatic well filler

Gridding to high density available by reverse picking

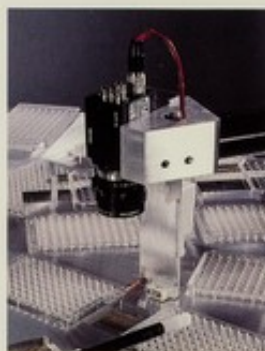
Effective elimination of airborne contamination using H.E.P.A. filters

How it works

Microtitre plates which have had their lids removed and their wells filled using the BioFiller mechanism are moved to the picking area by rotating the turntable.



A CCD camera with a field of view 30mm x 40mm is fixed in a stationary position looking down at a colony plate. As each area of the plate is presented to the camera by an x-y table, the image is analysed on a P.C., suitable colonies are selected and positional information passed to the high speed robot. The selected colonies are then transferred to the microtitre wells until the field of view is picked clean. A new portion of the colony plate is presented to the camera and the process repeated. The needle is sterilised between each pick using a heating coil and a sterilising bath.



The BioPick is designed so that the number of wells in a full load of quad density microtitre plates (9,216) approximately matches the number of colonies found in the largest Petri dish (22cm x 22cm bioassay plate) at maximum density. The speed of the machine has been optimised so that this quantity of colonies can be picked in one day or overnight.

In reverse picking mode a full load of quad density plates, gridded at 16 x density in six groups, produces one membrane with 9,216 colonies.

Service

Smaller laboratories may prefer to ask us to pick libraries for them. This service will be available and will be operated by skilled members of our staff. The service will be flexibly organised and we will either generate and grid a complete library or undertake part of this operation as required.

The BioPick

Specification

Colony Picking

Picking rate	Approximately 1000 / hr dependent on task details
Mechanical accuracy	0.05mm
Minimum Colony size	0.3mm dia
Single run capacity	2304 wells (standard plates) 9216 wells (quad density plates)
Colony plates	22cm x 22cm, 10cm x 10cm, 8cm x 12cm, 16cm dia, 9cm dia
Well filling	10µl to 300µl, continuously variable

Image processing

Colony morphology	Shape, size
Maximum colony density	16 - 20 colonies / cm ² (6,000 - 10,000 colonies on a 22cm x 22cm bioassay plate)
Colour discrimination	Blue / white

Reverse picking

Density	x 1, x 2, x 4, x 5, x 9, x 16, x 25, x 36
Reverse picking rate	1500 / hr
Membrane sizes	as colony plates above

Overall size

1.2m x 0.9m x 0.5m

Air filtration

Full biological filtering with
negative internal pressure.

Power requirements

240/220 V 5A
110 V 10A

User interface

Graphical user interface gives
flexible control of the set up
and run options.

Computer

Supplied complete with 386
based P.C. ready configured
with BioPick interface
hardware and all software.

LIKE TO FIND OUT MORE?
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