Full Automatic Colony Pick-in Machine
Pick-in Master **PM-2s**

Compact Colony Picker
Pick-in Master PM-2s multi

Improved Accuracy

Improved Sterilization

Silent Operation

Upgraded Colony Picker Now on Sale

Over the past 5 years, Microtec Co., Ltd. delivered the colony picker to a number of government and corporate research laboratories in the medical and molecular biology fields, and it received credit for its highly useful functions. In 2006, we made major upgrades to the functions of the PM-1s model, and began sales of the PM-2s model. The PM-2s is a bench-top colony picker, which handles single dish/plates at a time; a model added to our PM-1 colony picker series from 2004.

Improved Picking Accuracy

Picking accuracy has been greatly improved in the recent upgrade. Firstly, the XYZ axis motors have been changed to those of high precision models, resulting in the improved accuracy of picking the center of each colony. This enhancement, combined with the existing high-resolution 6 million color CCD, has dramatically improved picking capability.
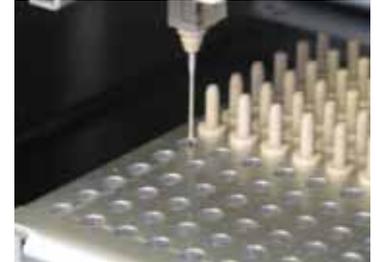
Improved Sterilization Process

The existing triplicate sterilization process, ethanol brush tank, ethanol rinsing tank, and heat sterilization container have been improved. The brushing process has been improved by adopting a new method of wiping a needle tip by scraping it with dedicated sponges. The dedicated sponges efficiently wipe viscous agar sticking to the needle tip, thereby dramatically decreasing the risk of cross contamination. The combination of these sponges with Microtec proprietary Automatic Needle Change System (A.N.C.S) realizes an ultimate contamination-free environment.

Heat sterilization

Ethanol, rinsing, brushing tank

Automatic Needle Change System (A.N.C.S.)

Silent and Compact Size

In addition to changes to the motor, the frame structure has also been improved so as to strengthen the frame stiffness, as well as to reduce operation noise without compromising the existing compact size of its body. PM-2s, which was designed specifically to handle a small amount of samples, rather than a large number of samples with high throughput capability, is most suited for operation in mid-size laboratories, as well as multi-purpose applications in the initial stages of projects.
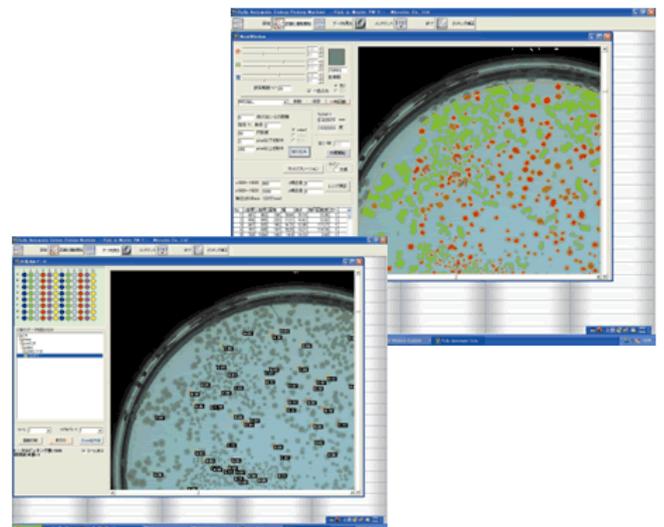
Bench-top Size Unit Saves Lab Space

Sophisticated Software

A series of sophisticated parameters in Microtec dedicated software are the results of our continued effort to improve by incorporating the large amount of feedback from our existing customers.
The software succeeds the advance software of the PM-2 series.

Wide Range of Applications

The PM-2 series corresponds not only to 10 to 5,000 colonies/day cultured colonies, such as E. coli or salmonella, but also to a variety of bacteria.
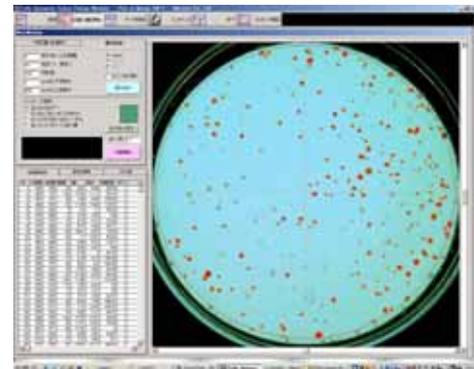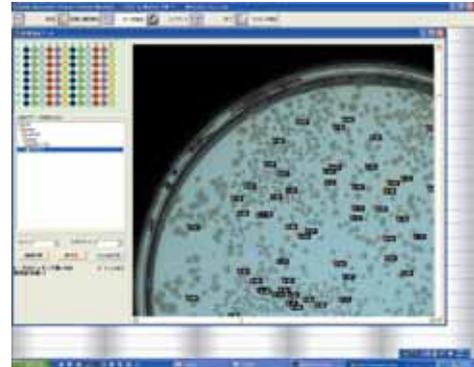
Colony
E.coli, Yeast, Phage, Plaque

Gel
1D gel, 2D gel

Cell
Animal cell, plant cell, seed
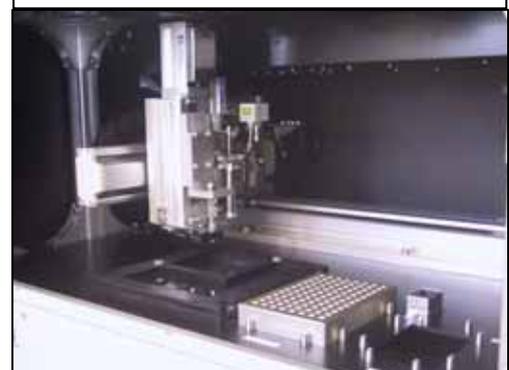

Customization

Microplate re-arrayer:
Robot designed specifically to transfer colonies in between 96, 384, deep well plates. The unit performs complicated re-arraying tasks on Excel software without risk of human error

Gel Picker:
Automatically identifies 1D or 2D electrophoresis gel band spots, cuts the spot, and arrays in 96 well plates.

Microplate re-arrayer PM-2SR

Gel Picker GM-1

PM-2s multi Specifications

	Automatic colony picking, re-arraying, and replicating.	
Image identification	Identification method	Imaging with color CCD (charge coupled device)
	Colony identification accuracy	6 million pixel RGB color CCD, pixel resolution: 0.06 mm/pixel
	Identification setting parameter	Set RGB extraction, distance to adjacent colonies, ratio of long to short ellipsis diameter, roundness, maximum number of pixels, minimum number of pixels, identification area, other (*1)
Drive	Drive type	Triaxial (2-phase stepping motor x 3) actuator type
	Positional accuracy	Actuator positioning accuracy ± 0.05 mm
	Minimum transfer colony size	Ø0.2 mm (actual size varies depending on conditions)
	Maximal processing speed	5 sec / pick (not including sterilization and washing)
	Operation set parameter	Set needle replacement, number of pickings, microplate transfer, needle pin washing, depth of needle pin insertion, other (*1)
Operation mode	Colony picking	Automatic colony picking from Petri dish to microplate.
	Re-arraying / Replicating	Replicating (Petri dish and master plate → Daughters plate) Compression (Four 96-well plates → One 384-well plate) Expansion (One 384-well plate → Four 96-well plates) Re-arraying (User definable transfer between wells by editing CSV data)
	Data view	Automatic saving of the data after the transfer completion. Import / Export to CSV data.
Dish / plate	Dishes applicable to transfer source	Ø90 mm / Ø150 mm disposable dishes
	Plates applicable to transfer targets	(Shallow): 96-, 384-well; (deep): 96-well
Needle pin	Picking movement	1 point / 1 Pick / operation
	Material and specification	SUS304, PM-2s dedicated needle pin
	Replacement procedure and storage capacity	A.N.C.S. (Automatic Needle Change System) full automatic replacement, the dedicated needle pin tray may hold a maximum of 96 needles, allowing their automatic replacement
	Pin sterilization	3-Type combination sterilization (automatic supply ethanol brushing tank, automatic ethanol rinsing tank, high temperature (400°C) heating tank)
Control	Image analysis and integrated control	Use of a personal computer, OS: Windows XP
	Drive control	In-house drive board built into the main unit
Functions	Others	UV sterilization lamp (3 fluorescent lamps) (with automatic power off timer)
		Built-in ethanol supply pump
		Low remaining ethanol supply warning, ditto discharge tank full sensor, ditto fluid leak warning sensor, front door opening sensor (with interlock function)
External dimensions	(W)× (D)× (H)	(W) 665 mm x (D) 535 mm x (H) 775 mm (does not include projections)
Weight of the main unit	Dry weight	75 kg (does not include the control computer)
Power supply	(Japanese specification)	100 V AC, 5 A (50/60 Hz) (does not include the control computer)
Accessories	Accessories for the main unit	Needle pin x 24, needle pin stocker x 1, ethanol supply pyrex glass bottle (1000 ml) x 1, ditto waste discharge pyrex glass bottle (1000 ml) x 1, instruction manual for the main unit (English) x 1
	Personal computer (*2)	Windows system x 1, TFT LCD monitor (17-inch SXGA) x 1, keyboard x 1, USB mouse x 1, RS-232C cable (2 m) x 1, USB cable (2 m) x 1, monitor cable x 1, power cable (for the main unit, personal computer, monitor x 1 each) x 1, instruction manual (English) x 1

*1 Please inquire about the details of the software function.
*2 The specifications of the used computer may vary over time.

< Attention > For the purpose of technical improvements the above specifications may be changed without prior notice.